

harman/kardon

AVR 3600

7 X 80W 7.1 CHANNEL A/V RECEIVER

SERVICE MANUAL



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harman/kardon, Inc.

8500 Balboa Blvd.

Northridge, CA. 91329

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Discontinued XXXX

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ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical change sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES devices.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.

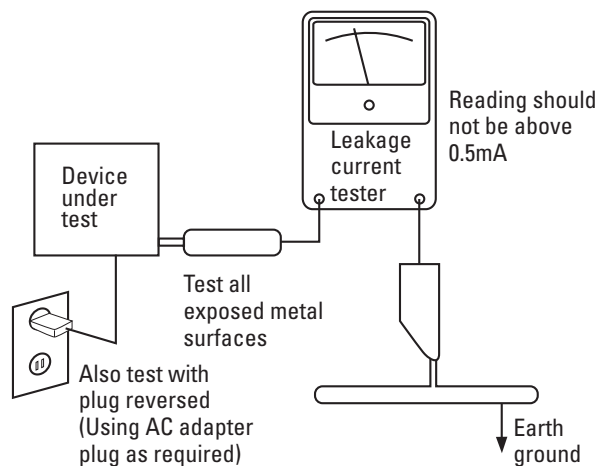
Components identified with the IEC symbol  in the parts list are of special significance to safety. When replacing a component identified with , use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

AVR 3600 TECHNICAL SPECIFICATIONS

Audio Section

Stereo Mode, Continuous Average Power (FTC)
80 Watts per channel, 20Hz–20kHz, @ <0.07% THD,
both channels driven into 8 ohms

Seven-Channel Surround Modes

Power per Individual Channel

Front L & R channels:
80 Watts per channel
@ <0.07% THD, 20Hz–20kHz into 8 ohms

Center channel:
80 Watts @ <0.07% THD, 20Hz–20kHz into 8 ohms

Surround (L & R Side, L & R Back) channels:
80 Watts per channel
@ <0.07% THD, 20Hz–20kHz into 8 ohms

Input Sensitivity/Impedance
Linear (High-Level) 200mV/47k ohms

Signal-to-Noise Ratio (IHF-A) 100dB

Surround System Adjacent Channel Separation

Pro Logic® II 40dB
Dolby® Digital (AC-3) 55dB
DTS® 55dB

Frequency Response
@ 1W (+0dB, –3dB) 10Hz –130kHz

High Instantaneous
Current Capability (HCC) ±35 Amps

Transient Intermodulation
Distortion (TIM) Unmeasurable

Slew Rate 40V/μsec

FM Tuner Section

Frequency Range 87.5–108.0MHz
Usable Sensitivity IHF 1.3μV/13.2dBf
Signal-to-Noise Ratio Mono/Stereo 70/68dB
Distortion Mono/Stereo 0.2/0.3%
Stereo Separation 40dB @ 1kHz
Selectivity ±400kHz, 70dB
Image Rejection 80dB
IF Rejection 90dB

AM Tuner Section

Frequency Range 520–1710kHz
Signal-to-Noise Ratio 45dB
Usable Sensitivity Loop 500μV
Distortion 1kHz, 50% Mod 0.8%
Selectivity ±10kHz, 30dB

Video Section

Television Format	NTSC
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response (Composite and S-Video)	10Hz–8MHz (–3dB)
Video Frequency Response (Component Video)	10Hz–100MHz (–3dB)
HDMI™	Version 1.3a with 10-bit Deep Color

General

Power Requirement	AC 120V/60Hz
Power Consumption	890W maximum (7 channels driven)
Stand-by consumption	<1W
Dimensions	(Product) (Shipping)
Width	17-5/16 inches (440mm) 21-7/8 inches (555mm)
Height	6-1/2 inches (165mm) 10-1/2 inches (266mm)
Depth	15 inches (382mm) 18-5/16 inches (465mm)
	(Product) (Shipping)
Weight	27.3 lb (12.4kg) 32.1 lb (14.6kg)

Depth measurement includes knobs, buttons and terminal connections.

Height measurement includes feet and chassis.

Features, specifications and appearance are subject to change without notice.

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CEA is a registered trademark of the Consumer Electronics Association.

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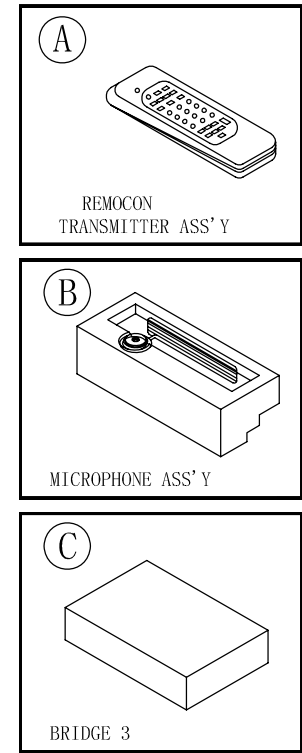
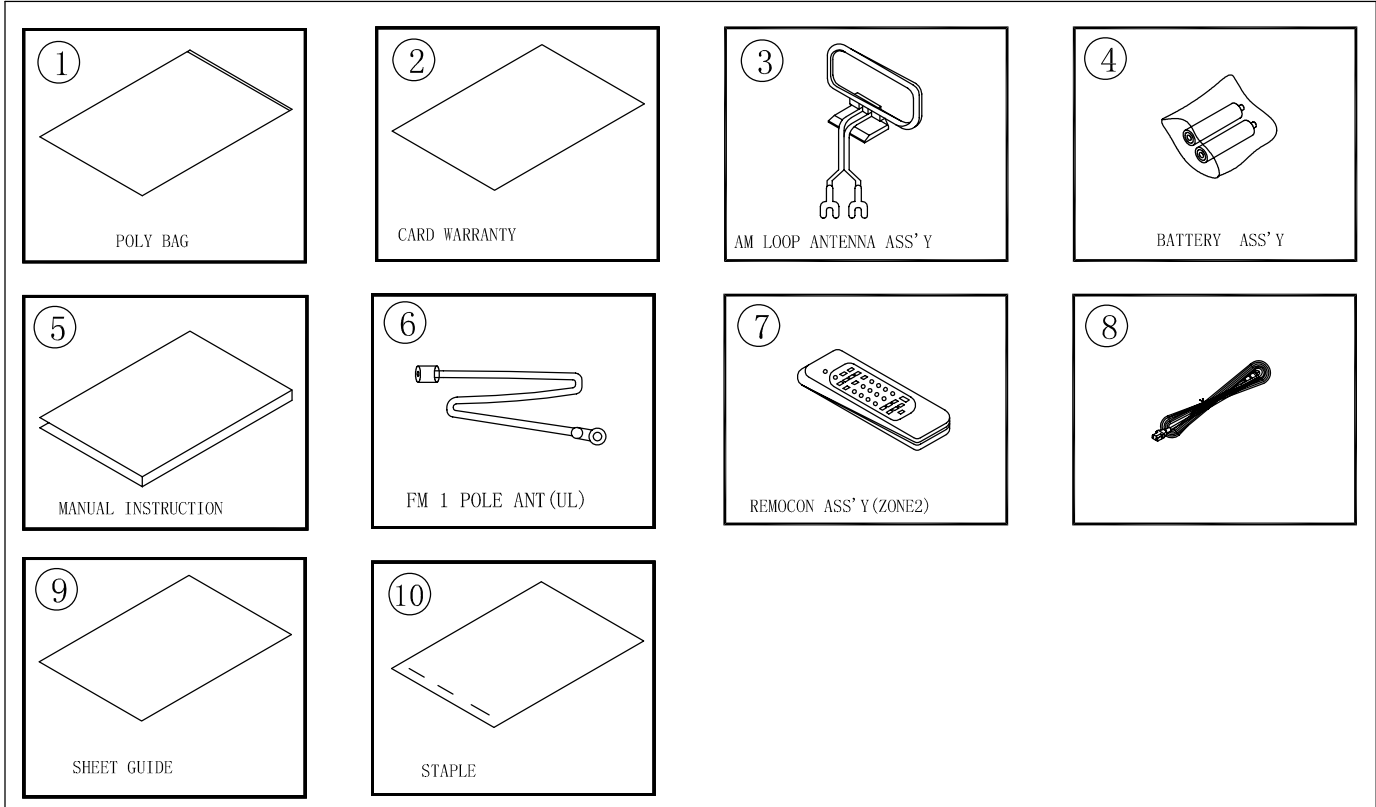
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Please register your AVR 3600 at www.harmankardon.com.
You'll need the product's serial number. At the same time, you can
choose to be notified about new products and/or special promotions.

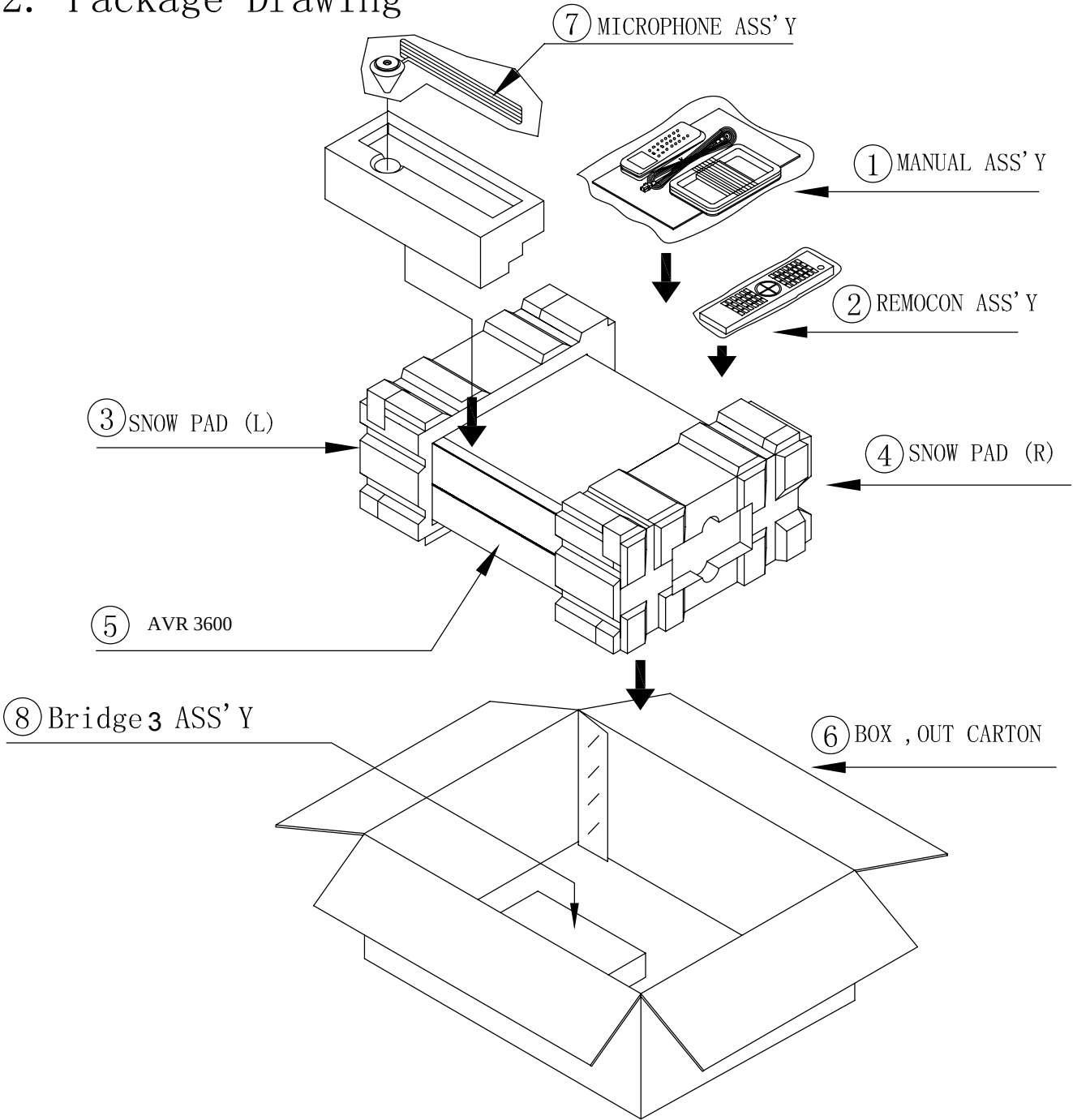
1. Instruction manual ass'y - Accessories (CQXAVR3600/120)



NO	DESCRIPTION	PARTS NO.	Q, ty
1	POLY BAG		1
2	CARD WARRANTY	CQE1A172X	1
3	ANT, AM LOOP	CSA1A032Z	1
4	BATTERY		2
5	INSTRUCTION MANUAL	visit www.harmankardon.com	1
6	FM 1 POL ANT (UL)	CSA1A019Z	1
7	REMOCON ASS'Y (ZONE2)	CARTZR60HKM	1
8	CORD, POWER (UL)	CJA2A070Z	1
9	SHEET, QUICK SETUP GUIDE		1
10	STAPLE		3
A	REMOCON ASS'Y	CARTAVR3600/120	1
B	MICROPHONE ASS'Y	CJXAVR340MICRO	1
C	BRIDGE 3	CXZBRIDGE3-HK	1

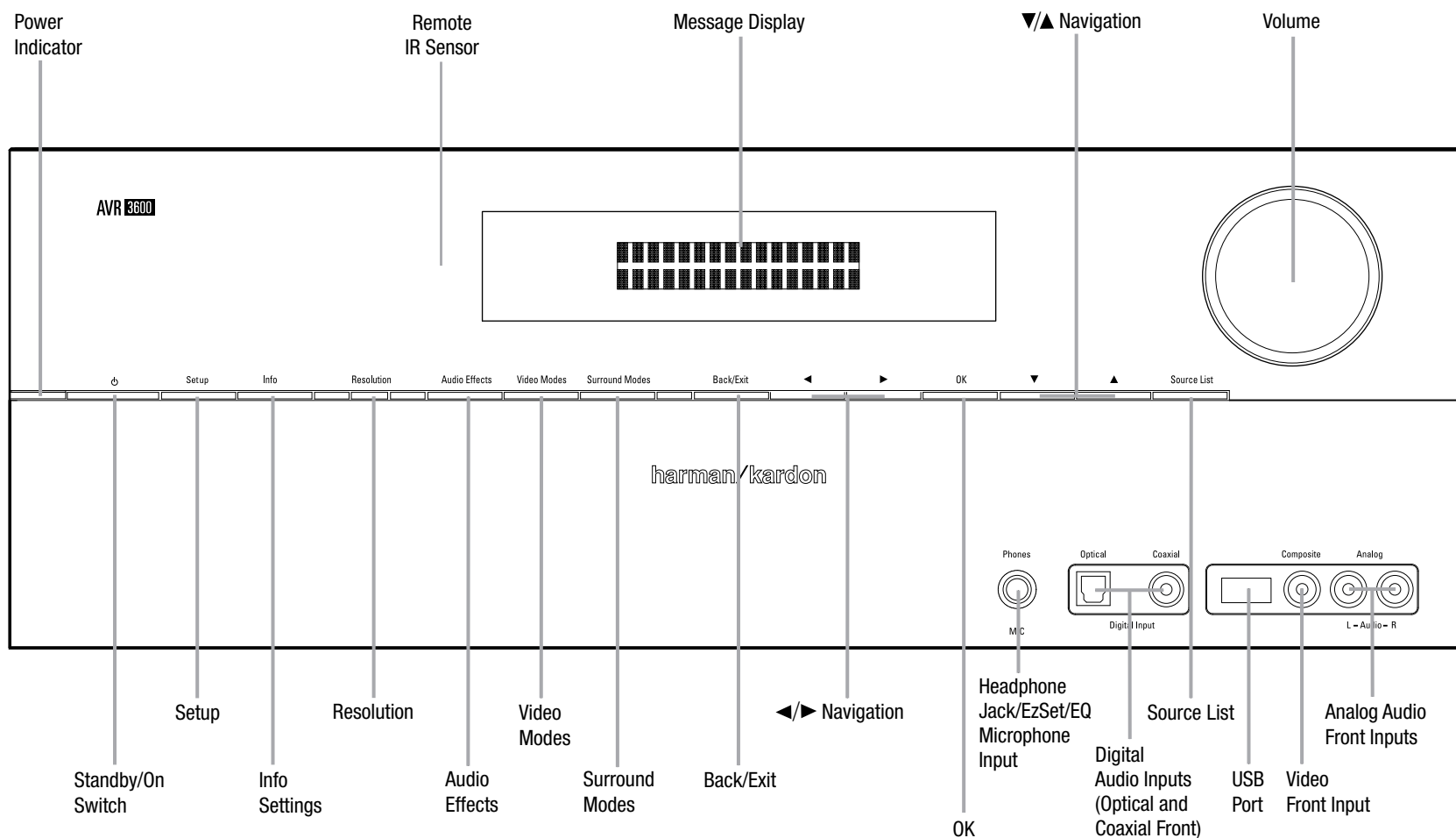
2. Package Drawing

AVR3600



NO	DESCRIPTION	PARTS NO.	Q, ty
1	ACCESSORYS	CQXAVR3600/120	1
2	REMOCON ASS'Y	CARTAVR3600/120	1
3	SNOW, PAD (L)	CPS5A564Z	1
4	SNOW, PAD (R)	CPS5A565Z	1
5	AVR 3600	AVR 3600	1
6	BOX, OUT CARTON	CPG1A891X	1
7	MICROPHONE ASS'Y	CJXAVR340MICRO	1
8	BRIDGE 3 ASS'Y	CXZBRIDGE3-HK	1

FRONT PANEL CONTROLS



NOTE: To make it easier to follow the instructions throughout the manual that refer to this illustration, a copy of this page may be downloaded from the Product Support section at www.harmankardon.com.

FRONT PANEL CONTROLS

Power Indicator: This LED has three possible modes:

- **Main Power Off:** When the AVR is unplugged or the rear-panel Main Power Switch is off, this LED is off.
- **Standby:** Amber indicates that the AVR is ready to be turned on.
- **On:** When the AVR is turned on, this LED turns white.

NOTE: If the PROTECT message ever appears, turn off the AVR and unplug it. Check all speaker wires for a possible short. If none is found, bring the unit to an authorized Harman Kardon service center for inspection and repair before using it again.

Standby/On Switch: This electrical switch turns the receiver on, or places it in Standby mode for quick turn-on.

Setup Button: Press this button to access the AVR's main menu.

Info Settings Button: Press this button to directly access the AVR's Source Info submenu, which contains the settings for the current source.

Resolution: Press this button to access the AVR's video output resolution setting: 480i, 480p, 720p, 1080i, 1080p or 1080p/24 (if available on source and display).

IMPORTANT NOTE: If the AVR's video output resolution is set higher than the capabilities of the actual connection, you will not see a picture. If the best available video connection from the AVR to the TV is composite video, press this button and change the resolution to 480i.

Audio Effects: Press this button to directly access the Audio Effects submenu, which allows adjustment of the tone and other audio controls. See the Initial Setup section for more information.

Video Modes: Press this button for direct access to the Video Modes submenu, which contains settings that may be used to improve the picture, if necessary, after you have adjusted the picture settings using the video display or TV.

Surround Modes: Press this button to select a surround sound (e.g., multichannel) mode. The Surround Modes menu will appear on screen, and the menu line will appear in the front-panel display. See the Advanced Functions section for more information on surround modes.

Source List: Press this button to select a source device, which is a component where a playback signal originates, e.g., DVD.

Back/Exit: Press this button to return to the previous menu, or to exit the menu system.

▼/▲ ◀/▶ Navigation: These buttons are used to navigate the AVR's menus.

OK: Press this button to select the currently highlighted item.

Headphone Jack/EzSet/EQ Microphone

Input: Plug a 1/4" headphone plug into this jack for private listening.

This jack is also used to connect the supplied microphone for the EzSet/EQ procedure described in the Initial Setup section.

USB Port: This port may be used in case a software upgrade for the receiver is offered in the future. Do not connect a storage device, peripheral product or a PC here, unless instructed to do so as part of an upgrade procedure.

Digital Audio and Analog Audio/Video Front

Inputs: Connect a source component that will only be used temporarily, such as a digital camera or game console, to these jacks. Use only one type of audio and one type of video connection.

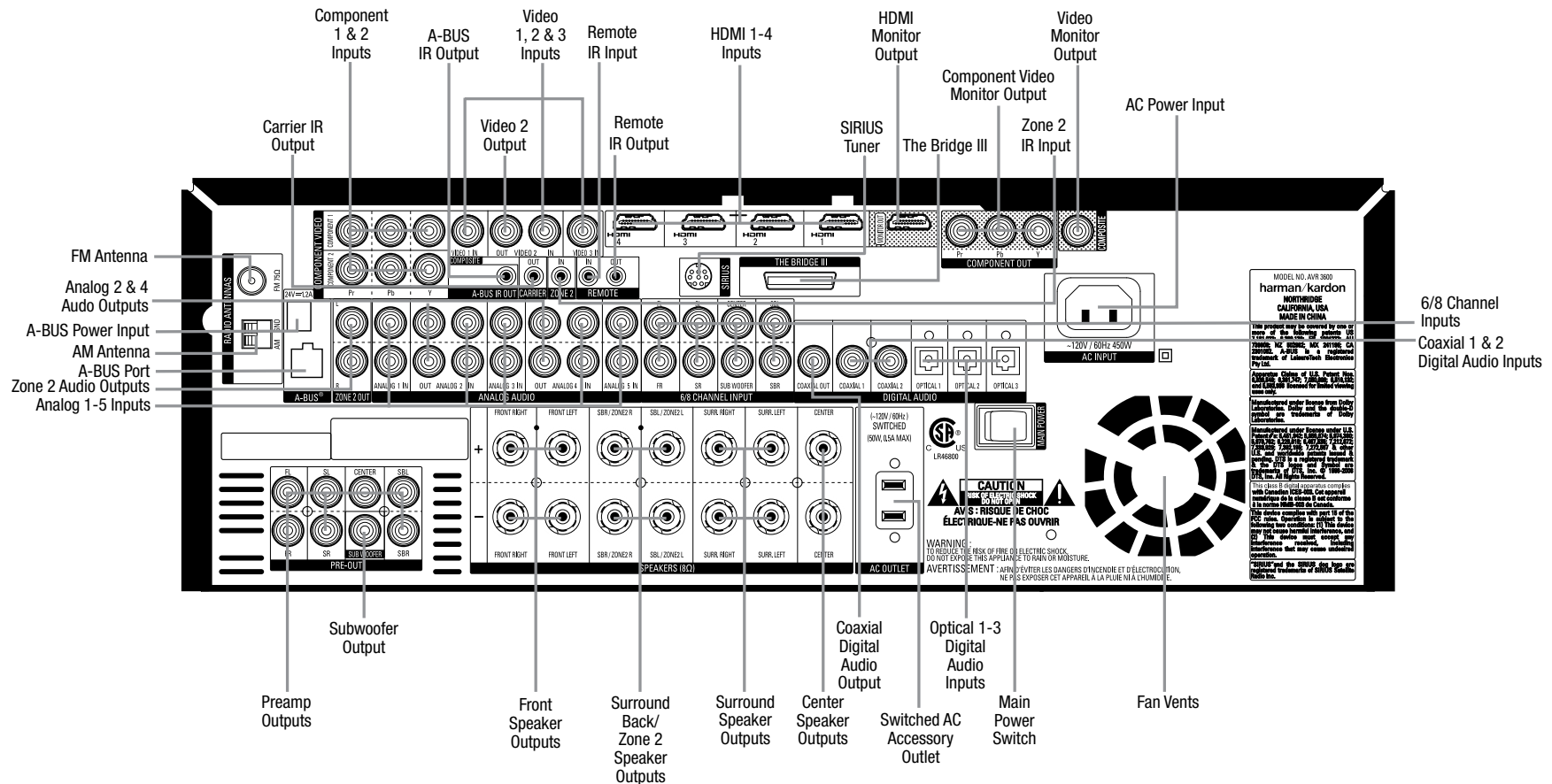
NOTE: The AVR's menus refer to these jacks as the Optical Front, Coaxial Front, Composite Front, and Analog Front inputs.

Volume Knob: Turn this knob to raise or lower the volume.

Message Display: Various messages appear in this two-line display in response to commands and changes in the incoming signal. In normal operation, the current source name appears on the upper line, while the surround mode is displayed on the lower line. When the on-screen display menu system (OSD) is in use, the current menu settings appear.

Remote IR Sensor: This sensor receives infrared (IR) commands from the remote control. It is important to ensure that it is not blocked. If covering the sensor is unavoidable, use an optional Harman Kardon HE 1000, or other infrared receiver, connecting it to the Remote IR Input on the AVR 3600's rear panel.

REAR PANEL CONNECTIONS



NOTE: To make it easier to follow the instructions throughout the manual that refer to this illustration, a copy of this page may be downloaded from the Product Support section at www.harmankardon.com.

REAR PANEL CONNECTIONS

Main Power Switch: This mechanical switch turns the power supply on or off. It is usually left on, and cannot be turned on or off using the remote control.

6-/8-Channel Inputs: Connect the multichannel analog audio outputs of a non-HDMI player (DVD-Audio, SACD™, Blu-ray Disc™ or HD-DVD, or any other external decoder) to these jacks. See page 30 for more information.

Coaxial 1/2 and Optical 1/2/3 Digital Audio Inputs: If a source has a compatible digital audio output, and if you are not using an HDMI connection for audio for the device, connect it to one of these jacks to hear digital audio formats, such as Dolby Digital, DTS and linear PCM. Use only one type of digital audio connection for each source.

Coaxial Digital Audio Output: If a source is also an audio recorder, connect the Coaxial Digital Audio Output to the recorder's matching input for improved recording quality. Only PCM digital audio signals are available for recording. Both coaxial and optical digital audio signals are available at this Digital Audio Output.

SIRIUS Tuner Jack: Connect a SIRIUS satellite radio tuner module here.

Zone 2 Infrared (IR) Input: Connect a remote IR receiver located in the remote zone of a multizone system to this jack to control the AVR (and any source devices connected to the Remote IR Output) from the remote zone.

Remote Infrared (IR) Input and Output: When the remote IR receiver on the front panel is blocked, connect an optional IR receiver to the Remote IR Input jack. The Remote IR Output may be connected to the Remote IR Input of a compatible product to enable remote control through the AVR.

Remote IR Carrier Output: This output is similar in function to the Remote IR Output, with the difference that this jack outputs the full infrared signal as received by the AVR's IR sensor or the Remote IR Input, while the Remote IR Output jack outputs a "stripped" signal that has no carrier frequency.

A-BUS IR Output: This is an additional IR output that may only be controlled through the A-BUS system. Use it as a dedicated connection to sources used only with the A-BUS system.

HDMI Inputs and Output: HDMI (High-Definition Multimedia Interface) is a connection for transmitting digital audio and video signals between devices. Connect up to four HDMI-equipped source devices to the HDMI inputs using a single-cable connection.

When you connect the HDMI Output to your video display, the AVR 3600 will automatically transcode analog video signals to the HDMI format, upscaling to as high as 1080p.

NOTE: When connecting a DVI-equipped display to one of the HDMI Outputs:

- Use an HDMI-to-DVI adapter.
- Make sure the display is HDCP-compliant. If it isn't, do not connect it to an HDMI Output; use an analog video connection instead.
- Always make a separate audio connection.

Analog 1 – 5 Inputs: Connect the left and right analog audio outputs of a source device to any of these inputs. These inputs may be paired with any video inputs.

NOTES:

- The Analog 2 and 4 inputs are each associated with a set of outputs. Consider using these connectors for an audio or video recorder.
- You may optionally connect a source to both an analog and digital audio input. This is useful for making recordings, for multizone applications or simply as a backup.

Analog 2 and 4 Outputs: Connect either of these analog audio outputs to the analog audio inputs of a recording device. A signal is available at these outputs whenever an analog audio source is playing.

Zone 2 Audio Outputs: Connect these jacks to an external amplifier to power the speakers in the remote zone of a multizone system.

Subwoofer Output: If you have a powered subwoofer with a line-level input, connect it to the Subwoofer Output.

The Bridge III Input: Connect the included Harman Kardon **The Bridge III** docking station to this input for use with most docking iPod models, 4G and later, iPhone or iPhone 3G (not included). Turn the receiver off (Standby mode) when connecting The Bridge III.

Fan Vents: This area contains vents used by the AVR 3600's fan to cool the system. Maintain a clearance of at least 3 inches from the nearest surface to avoid overheating the unit. It is normal for the fan to remain off at most normal volume levels. An automatic temperature sensor turns the fan on only when it is needed.

IMPORTANT NOTE: Never block the fan vents, as doing so could allow the AVR to overheat to dangerous levels.

Video 1/2/3 Inputs: Use these jacks to connect your video-capable source components (e.g., VCR, DVD player, cable TV box) to the receiver. Use only one type of video connection for each source.

Video 2 Output: Connect this analog video output to the composite video input of a recording device. A signal is available at this output whenever an analog video source is playing.

Video Monitor Output: If any of your sources use composite video connections, connect this monitor output to the corresponding input on your video display. If your video display is equipped with HDMI or component video inputs, this connection is unnecessary, as the AVR 3600 will convert the composite video source signal to the correct format for a single video-cable connection to the TV.

Component Video 1/2 Inputs: If a video source has analog component video (Y/Pb/Pr) capability, and if you are not using an HDMI connection, connect the component video outputs of the source to one of the sets of component video inputs. Do not make any other video connections to that source.

REAR PANEL CONNECTIONS

Component Video Monitor Outputs: If you are using one of the Component Video Inputs and your television or video display is component-video-capable (but does not have an HDMI input), connect these jacks to the video display.

NOTES:

- Due to copy-protection restrictions, there is no output at the Component Video Monitor Outputs for HDCP-copy-protected sources.
- Composite video signals are upscaled to as high as 1080i and available at these outputs. If your video display's best connection is component video, it is the only video connection required from the AVR to the display.

AM and FM Antenna Terminals: Connect the included AM and FM antennas to their respective terminals for radio reception.

Preamp Outputs: Connect these jacks to an external amplifier if more power is desired. The Surround Back/Zone 2 Preamp Outputs may be used with an external amplifier to power the remote zone of a multizone system.

A-BUS Port: Use a Category 5/5e cable to connect this port to optional A-BUS equipment for multizone operation. When the A-BUS system is used, it is possible to have a full 7.1-channel system in the main listening room at the same time the multizone system is in use.

Front, Center and Surround Speaker Outputs:

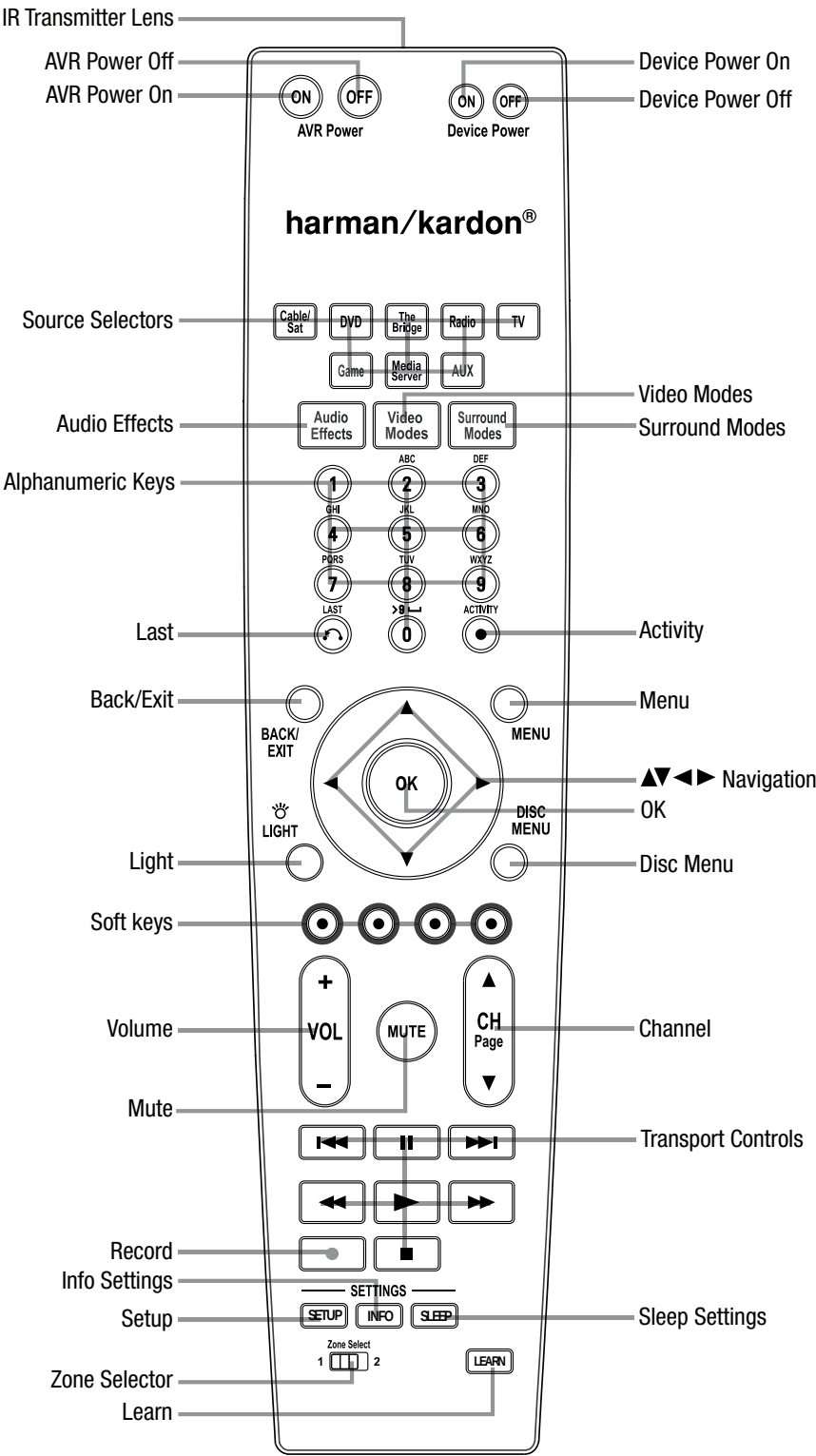
Use two-conductor speaker wire to connect each set of terminals to the correct speaker. Remember to observe the correct polarity (positive and negative connections).

Surround Back/Zone 2 Speaker Outputs: These speaker outputs are used for the surround back channels in a 7.1-channel home theater, or may be reassigned to a remote room for multizone operation.

Switched AC Accessory Outlet: You may plug the AC power cord of one source device into this outlet, and it will turn on whenever you turn on the receiver. Do not use a source that consumes more than 50 watts of power.

AC Power Input: After you have made all other connections, plug the AC power cord into this receptacle and into an unswitched wall outlet.

MAIN REMOTE CONTROL FUNCTIONS



NOTE: To make it easier to follow the instructions throughout the manual that refer to this illustration, a copy of this page may be downloaded from the Product Support section at www.harmankardon.com.

MAIN REMOTE CONTROL FUNCTIONS

The AVR 3600 remote is capable of controlling 8 devices, including the AVR itself and an iPod docked in the included The Bridge III. During the installation process, you may program the codes for each of your source components into the remote. To operate a component, press its Selector button to change the device mode.

Each Source Selector has been preprogrammed to control certain types of components, with only the codes specific to each brand and model changing, depending on which product code is programmed. The AUX and Cable/SAT Source Selectors may be used for multiple device types, depending on the first digit of the product code. Other Source Selectors may be reassigned to other device types (see Initial Setup section).

AUX Source Selector: CD player product codes begin with 0, 1 or 2. VCR codes begin with 3 or 4. HDTV set-top box codes begin with 6, PVD codes begin with 7 and TiVo® set-top box codes begin with 8.

Cable/SAT Source Selector: Cable set-top box codes begin with 0, 1 or 2, and satellite set-top box codes begin with 3 or 4.

IMPORTANT NOTE: All of the AVR 3600's audio and video inputs are independently assignable. Select the inputs to which the device is physically connected during Initial setup. Any device may be connected to any compatible input and given any name (e.g., DVD or Game).

Most of the buttons on the remote have dedicated functions, although the precise codes transmitted vary, depending on the device mode. Due to the wide variety of functions for various source devices, only a few of the most-often used functions on the remote have been included: alphanumeric keys, transport controls, television-channel control, menu access, and power on and off.

Buttons dedicated to the AVR are available at any time, even in another device mode: AVR Power On and Off, Audio Effects, Video Modes, Surround Modes, Volume, Mute and Sleep Settings. Press the Setup Button near the bottom of the remote to return it to AVR mode.

A button's function depends on which component is being controlled. See Table A13 in the appendix for listings of the functions for each type of component.

IR Transmitter Lens: As buttons are pressed on the remote, infrared codes are emitted through this lens.

AVR Power On Button: Press to turn on the AVR. The Master Power Switch on the rear panel must be on.

Device Power Off Button: Press a device's Source Selector, then press this button to turn off the device.

Device Power On Button: Press a device's Source Selector, then press this button to turn on the device.

Mute Button: Press to mute the AVR 3600's speaker and headphone outputs. To end the muting, press this button, adjust the volume, or turn off the receiver.

AVR Power Off Button: Press to turn off the AVR 3600.

Source Selectors: Press one of these buttons to select a source device, e.g., DVD, CD, cable TV, satellite or HDTV tuner. This will also turn on the receiver and switch the remote's device mode to operate the source. The first press of the Radio Selector switches the AVR to the last-used tuner band (AM, FM or SIRIUS). Each successive press changes the band.

While the DVD Source Selector may be used to operate either a Harman Kardon Blu-ray Disc player or a Harman Kardon DVD player, the default mode is to operate a Harman Kardon Blu-ray Disc player. To toggle between Harman Kardon Blu-ray Disc player and DVD player operation, press and hold the DVD Source Selector for 2 seconds. The source selector will flash twice to confirm that the remote's mode has changed to operate the other type of disc player.

Audio Effects: Press to directly access the Audio Effects submenu, which allows adjustment of the AVR's tone and other audio controls. See the Initial Setup section for more information.

Video Modes: Press for direct access to the Video Modes submenu, which contains picture settings to be used after you have adjusted the picture settings on the video display or TV. See the Advanced Functions section for more information.

Surround Modes: Press to directly access the Surround Modes submenu. Select a Surround mode category: Auto Select, Virtual Surround, Stereo, Movie, Music or Video Game. The surround mode will change when the menu line is highlighted.

To change the surround mode for the selected category, press the OK Button when the menu line is highlighted and select one of the available surround mode options, using the ▼/▲ Buttons. Press the OK Button, or press the Back/Exit Button to exit the Surround Modes menu and display the next higher menu in the hierarchy.

See the Advanced Functions section for more information on surround modes.

Sleep Settings Button: Press to activate the sleep timer, which turns off the receiver after a programmed period of time of up to 90 minutes. Each press increases the timer by 10 minutes, ending with the "Sleep Off" message.

Volume Control: Press to raise or lower the volume.

Navigation (▼/▲ ◀/▶) and OK Buttons: These buttons are used to make selections within the menu system and to operate the tuner.

Alphanumeric Keys: Use these buttons to enter numbers for radio station frequencies or to select station presets.

Last Channel: When controlling a cable, satellite or HDTV set-top box or a TV, press this button to return to the previous television channel.

Activity: With this button, up to 11 Activities may be programmed to transmit a series of commands with a single press. Execute an Activity by pressing this button, then the Alphanumeric Key (or the AVR Power On or Off Button) into which it was programmed. See the Advanced Functions section for more information on Activities.

Back/Exit: Press to return to the previous menu or to exit the menu system.

MAIN REMOTE CONTROL FUNCTIONS

Menu Button: This button is used within the Now Playing menu for the tuner (including SIRIUS Radio), and The Bridge III, and to display the main menu on some source devices. To display the AVR 3600's main menu, press the Setup Button.

Disc Menu: While a DVD is playing, press the DVD Source Selector, then this button, to display the disc's menu.

Soft Keys: These buttons are used with some source devices. See Table A13 in the appendix for details. They are also used with a Teletext-capable television if your broadcast, cable or satellite provider offers Teletext service.

Channel/Page Control: When the tuner has been selected, this control selects a preset radio station. While operating a cable, satellite or HDTV set-top box or a television, press these buttons to change channels.

Record Button: Use this button to make recordings when an audio or video recorder is in use.

Setup Button: Press to display the AVR's Main Menu, or to switch the remote to AVR device mode.

Info Settings Button: Press to display the AVR's Info Menu, which contains the settings for the current source.

Source Settings Button: Press a Source Selector and then this button to display a source device's settings menu.

Zone Selector: Use this switch to select whether AVR commands will affect the main listening area (Zone 1) or the remote zone of a multizone system (Zone 2). For normal operation, leave the switch in the Zone 1 position.

Track Skip: These buttons are used with source components to change tracks or chapters.

Transport Controls: These buttons are used to control source components and The Bridge III.

Light: Press to illuminate the buttons on the remote. Press it again to turn the backlight off, or wait 10 seconds after the last button press for the light to turn off on its own.

Learn: The AVR 3600 remote is capable of "learning" individual IR codes from the original remote that came with a source device. See page 26 in the Installation section.

CONNECTIONS

There are different types of audio and video connections used to connect the receiver, the speakers, the video display, and the source devices. The Consumer Electronics Association has established the CEA® color-coding standard. See Table 1.

Table 1 – Connection Color Guide

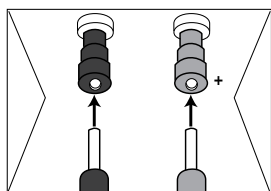
Audio Connections			
Front (FL/FR)	Left	Right	
Center (C)	White	Green	
Surround (SL/SR)	Blue	Gray	
Surround Back (SBL/SBR)	Brown	Tan	
Subwoofer (SUB)	Purple		

Digital Audio Connections						
Coaxial	Orange					
Optical	Input		Output			
Video Connections						
Component	Y	Green	Pb	Blue	Pr	Red
Composite	Yellow					
S-Video						
HDMI™ Connections (digital audio/video)						
HDMI						

Speaker Connections

Speaker cables carry an amplified signal from the receiver's speaker terminals to each loudspeaker. They contain two wire conductors, or leads, inside plastic insulation, that are differentiated in some way, such as with colors or stripes.

The differentiation preserves polarity, without which low-frequency performance can suffer. Each speaker is connected to the receiver's speaker-output terminals using two wires, one positive (+) and one negative (–). Always connect the positive terminal on the speaker, which is usually colored red, to the positive terminal on the receiver, which is colored as indicated in the Connection Color Guide (Table 1). The negative terminals are both black.



The AVR 3600 uses binding-post speaker terminals that can accept banana plugs or bare-wire cables. Banana plugs are inserted into the hole in the middle of the terminal cap. See Figure 1.

Figure 1 – Binding-Post Speaker Terminals With Banana Plugs

Bare wire cables are installed as follows (see Figure 2):

1. Unscrew the terminal cap until the pass-through hole is revealed.
2. Insert the bare end of the wire into the hole.
3. Hand-tighten the cap until the wire is held snugly.

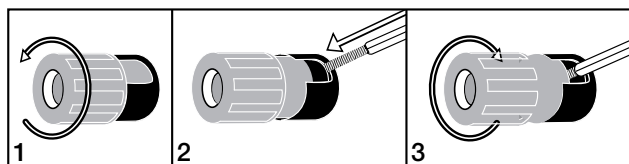


Figure 2 – Binding-Post Speaker Terminals With Bare Wires

Subwoofer

The subwoofer is dedicated to the low frequencies (bass), which require more power. To obtain the best results, most speaker manufacturers offer powered subwoofers that contain their own amplifier.

Usually, a line-level (nonamplified) connection is made from the receiver's Subwoofer Output to a corresponding jack on the subwoofer, as shown in Figure 3. Although the purple subwoofer outputs look similar to full-range analog audio jacks, they are filtered to allow only the low frequencies to pass. Don't connect these outputs to any other devices.

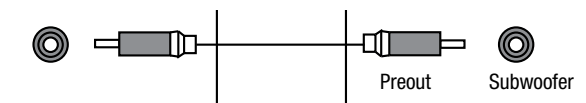


Figure 3 – Subwoofer

CONNECTING SOURCE DEVICES TO THE AVR

Audio and video signals originate in "source devices," including your Blu-ray Disc or DVD player, CD player, DVR (digital video recorder) or other recorder, tape deck, game console, cable or satellite television box, an iPod or iPhone docked in The Bridge III docking station or an MP3 player. The AVR's tuner also counts as a source, even though no external connections are needed, other than the FM and AM antennas and the SIRIUS tuner module.

Separate connections are required for the audio and video portions of the signal, except for digital HDMI connections. The types of connections used depend upon the capabilities of the source device and video display.

Audio Connections

There are two types of audio connections: digital and analog. Digital audio signals are required for listening to sources encoded with digital surround modes, such as Dolby Digital and DTS, or for noncompressed PCM digital audio. There are three types of digital audio connections: HDMI, coaxial and optical. Do not use more than one type of digital audio connection for each source device. However, it's okay to make both analog and digital audio connections to the same source.

NOTE: HDMI signals may carry both audio and video. If your video display device has an HDMI input, make a single HDMI connection from each source device to the AVR. Usually, a separate digital audio connection is not required. Turn the volume on your television all the way down.

Digital Audio

The AVR 3600 is equipped with four HDMI (High-Definition Multimedia Interface) inputs, and one output. HDMI technology enables digital audio and video information to be carried using a single cable, delivering the highest quality picture and sound.

The AVR 3600 uses HDMI (V.1.3a with Deep Color) technology and is capable of processing both the audio and video components of the HDMI data, minimizing the number of cable connections in your system. The AVR 3600 implements Deep Color, which increases by an order of magnitude the shades of color that can be displayed, and the latest lossless multichannel audio formats, including Dolby TrueHD and DTS-HD Master Audio.

CONNECTIONS

NOTE: Some DVD-Audio, SACD, Blu-ray Disc and HD-DVD players only output multichannel audio through their multichannel analog outputs. Make a separate analog audio connection in addition to the HDMI connection, which is still used for video and to listen to Dolby Digital, DTS or PCM materials that may be stored on the disc.

The AVR 3600 converts analog video signals to the HDMI format, including its on-screen menus, upscaling to high-definition 1080p resolution.

The HDMI connector is shaped for easy plug-in (see Figure 4). If your video display has a DVI input and is HDCP-compliant, use an HDMI-to-DVI adapter (not included). A separate audio connection is required. HDMI cable runs are limited to about 10 feet.

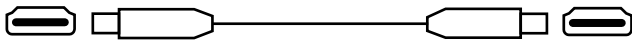


Figure 4 – HDMI Connection

If your video display or source device is not HDMI-capable, use one of the analog video connections (composite or component video) and a separate audio connection.

Coaxial digital audio jacks are usually color-coded in orange. Although they look similar to analog jacks, you should not connect coaxial digital audio outputs to analog inputs or vice versa. See Figure 5.

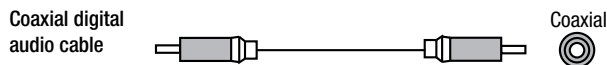


Figure 5 – Coaxial Digital Audio

Optical digital audio connectors are normally covered by a shutter to protect them from dust. The shutter opens as the cable is inserted. Input connectors are color-coded using a black shutter, while outputs use a gray shutter. See Figure 6.

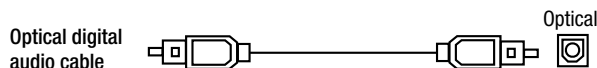


Figure 6 – Optical Digital Audio

Analog Audio

Two-channel analog connections require two cables, one for the left channel (white) and one for the right channel (red). These two cables are often attached to each other. See Figure 7.

For sources that are capable of both digital and analog audio, you may make both connections.

The analog audio connection is required for multizone operation, as the AVR 3600's multizone system is not capable of converting a digital signal to analog format. Use the analog audio connections even with the Surround Back/Zone 2 speaker outputs, in case another 2-channel digital audio source is in use in the main listening area. The AVR 3600 is only capable of processing one PCM source at a time.

You may only record materials from DVDs or other copy-protected sources using analog connections. Remember to comply with all copyright laws, if you choose to make a copy for your own personal use.

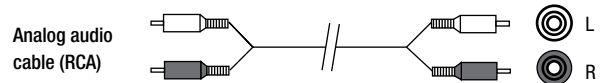


Figure 7 – Analog Audio

The 6-/8-Channel Inputs are multichannel analog connections that are used with high-definition sources that decode the copy-protected digital content, such as some DVD-Audio, SACD, Blu-ray Disc and HD-DVD players. See Figure 8. The multichannel analog audio connection is not required for players compliant with HDMI version 1.1 or better, or that output linear PCM signals via an HDMI connection. Consult the owner's guide for your disc player for more information, and see page 30.

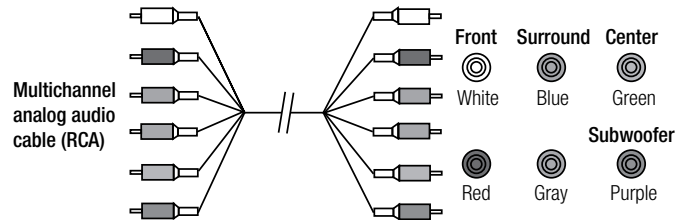


Figure 8 – Multichannel Analog Audio

The AVR 3600 also includes a proprietary, dedicated connection for The Bridge III docking station for the iPod or iPhone. If you own a docking iPod (most models, 4G or later), iPhone or iPhone 3G, connect The Bridge III (included) to The Bridge III port on the receiver. See Figure 9. Dock your iPod or iPhone (not included) in The Bridge III, and you may listen to your audio materials through your high-performance audio system. You may view still images or video materials stored on a photo- or video-capable iPod that supports video browsing or iPhone. Use the AVR 3600 remote to control the iPod, with navigation messages displayed on the front panel and on a video display connected to the AVR. The Bridge III outputs analog audio to the AVR 3600, and is available to the multizone system.



Figure 9 – The Bridge III port

Video Connections

Many sources output both audio and video signals (e.g., Blu-ray Disc or DVD player, cable television box, HDTV tuner, satellite box, VCR, DVR). In addition to the audio connection, make one type of video connection for each of these sources (only one at a time for any source).

Digital Video

If you have already connected a source device to one of the HDMI inputs, you have automatically made a video connection, as the HDMI signal includes both digital audio and video components.

Analog Video

There are two types of analog video connections used on the AVR 3600: composite video and component video.

Composite video is the basic connection most commonly available. The jack is usually color-coded yellow, and looks like an analog audio jack. Do not plug a composite video cable into an analog or coaxial digital audio jack, or vice versa. Both the chrominance (color) and luminance (intensity) components of the video signal are transmitted using a single cable. See Figure 10.

CONNECTIONS

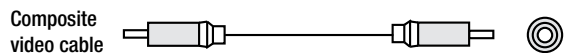


Figure 10 – Composite Video

Component video separates the video signal into three components – one luminance (“Y”) and two sub-sampled color signals (“Pb” and “Pr”) – that are transmitted using three separate cables. See Figure 11.

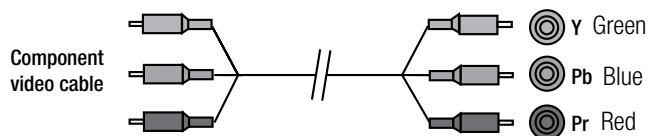


Figure 11 – Component Video

If it's available on your video display, an HDMI connection is recommended as the best quality connection, followed by component video, and then composite video.

NOTES:

- HDCP-copy-protected sources are not available at the Component Video Monitor Outputs.
- Standard and high-definition analog video signals may be upscaled to 1080i resolution for the Component Video Monitor Outputs. For improved video performance, consider upgrading to an HDMI-capable video display with 1080p resolution.

ANTENNAS

The AVR 3600 uses separate terminals for the included FM and AM antennas.

The FM antenna uses a 75-ohm F-connector. See Figure 12.

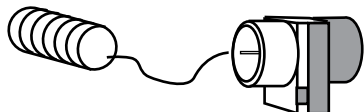


Figure 12 – FM Antenna

The AM loop antenna needs to be assembled. Connect the two leads to the spring terminals on the receiver. The AM antenna leads have no polarity, and you may connect them to either terminal. See Figure 13.

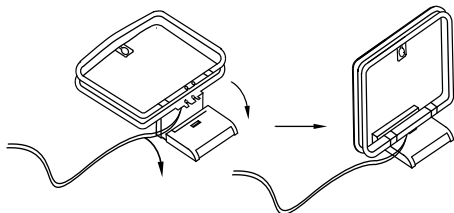


Figure 13 – AM Antenna

To enjoy SIRIUS satellite radio, purchase a SIRIUS-Ready tuner module and a subscription to the SIRIUS service. Visit www.sirius.com for information on SIRIUS-Ready tuner modules. The AVR 3600 is compatible with the SiriusConnect SC-H1 tuner module, using the 8-pin DIN cable included with the module, and it provides power for the tuner module, so that it is not necessary to use the AC adapter supplied with the tuner module. Although you may use a module

with standard audio connections, labeled for “car and home use,” you will not be able to enjoy the AVR 3600’s ease of control.

USB PORT

The USB Port on the AVR 3600 is used only for software upgrades. If an upgrade for the receiver’s operating system is released in the future, it may be downloaded to the AVR using this port. Complete instructions will be provided at that time.

INITIAL SETUP

In this section, you will configure the AVR 3600 to match your actual system. A video display must be connected to one of the video monitor outputs on the receiver.

USING THE ON-SCREEN MENU SYSTEM

Although it's possible to configure the AVR using only the remote and the front-panel messages, it is easier to use the full-screen menu system.

The menu system is accessed by pressing the Setup Button on the remote or front panel.

The Main Menu will appear (see Figure 21), and if a video source is playing, it will be visible behind the transparent menu.

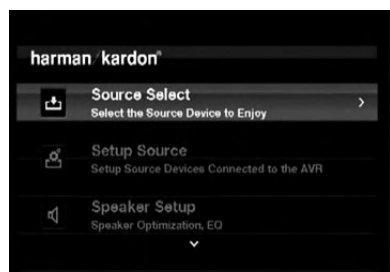


Figure 21 – Main Menu

NOTE: When using the AVR's on-screen menu system, a video output resolution of 720p or higher is recommended for easiest viewing, and to provide graphics that simplify some configuration options. Depending on the resolution selected, the menus shown by your system may vary in appearance.

The main menu system consists of five submenus: Source Selection, Setup Source, Speaker Setup, Zone 2 and System.

Use the ▼/▲ ◀/▶ Buttons on the remote or front panel to navigate the menu system, and press the OK Button to select a menu or setting line, or to enter a new setting.

The current menu, setting line or setting will appear in the Message Display, as well as on screen.

To return to the previous menu or exit the menu system, press the Back/Exit Button. Be certain all settings are correct, as any changes you have made will be retained.

Most users should follow the instructions in this Initial Setup section to configure a basic home theater system. You may return to these menus at any time to make additional adjustments, such as those described in the Advanced Functions section.

Before beginning initial setup, all loudspeakers, a video display and all source devices should be connected. You should be able to turn on the receiver and view the main menu when you press the Setup Button. If necessary, reread the Installation Section and the beginning of this section before continuing.

Configure the AVR 3600, Using EzSet/EQ Technology

One of the most important steps in setting up a home theater system is to calibrate the receiver to match the loudspeakers, optimizing sound reproduction.

Until recently, most receivers required manual calibration and configuration, a tedious process that called for a good ear or the purchase of an SPL (sound-pressure level) meter. Although you may configure the AVR 3600 manually, as described in the Advanced Functions section, it is recommended that you take advantage of the signature Harman Kardon EzSet/EQ system.

Eliminate extraneous background noise, such as noisy air conditioning. Avoid making any loud noises while running EzSet/EQ setup.

IMPORTANT SAFETY NOTE: During the EzSet/EQ procedure, a series of very loud test sweeps will be played through all of the speakers. Avoid sitting or standing close to any one speaker during the procedure. If you are particularly sensitive to loud noises, you may wish to leave the room and have someone else run the EzSet/EQ process.

STEP ONE – Place the included EzSet/EQ microphone in the listening position or in the center of the room, at about the same height as the listeners' ears. The microphone features a threaded insert on the bottom, for mounting on a camera tripod.

STEP TWO – Plug the EzSet/EQ microphone into the Headphone Jack/EzSet/EQ Microphone Input Jack on the front of the receiver, and set the level control on the subwoofer to the halfway point.

STEP THREE – Turn on the AVR 3600 and the video display. Press the Setup Button to display the Main Menu. Use the ▼ Button to highlight the Speaker Setup line, then press the OK Button. See Figure 22.

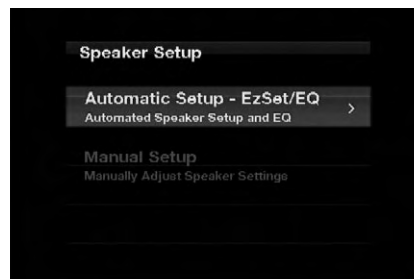


Figure 22 – Speaker Setup Menu Screen

Select "Automatic Setup-EzSet/EQ", and the screen shown in Figure 23 will appear.

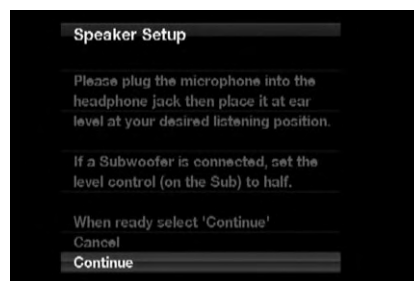


Figure 23 – EzSet/EQ Screen

To return to the Speaker Setup menu without starting the EzSet/EQ process, select Back. When you are ready to begin, select Continue.

INITIAL SETUP

NOTE: The AVR 3600 will automatically set its master volume to –25dB.

STEP FOUR – After you select “Continue”, the screen shown in Figure 24 will appear. Select the number of speakers in your system. Select 5.1 if no surround back speakers are present or if the surround back channels will be used for multizone operation.

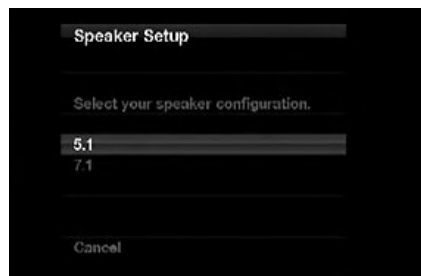


Figure 24 – EzSet/EQ: Number of Speakers

NOTE: If there are fewer than five main speakers in your system, do not use the EzSet/EQ process. Instead, proceed as described in the Advanced Functions section. If you have selected a 6.1-channel configuration with a single surround back speaker, use EzSet/EQ automatic configuration for 5.1 speakers, connect the single surround back speaker to the left Surround Back Speaker Output, then configure the surround back speaker manually, as described in the Advanced Functions section. The 6.1-channel configuration is not recommended. If the subwoofer is to be connected to the Front Speaker Outputs, do not connect the subwoofer until after running the EzSet/EQ process.

The test will begin, and the screen shown in Figure 25 will appear. Maintain silence during the EzSet/EQ configuration.

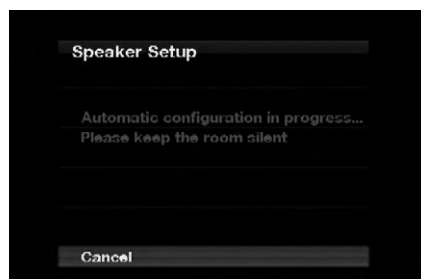


Figure 25 – EzSet/EQ in Progress

As the EzSet/EQ system tests each speaker, its position will appear on screen. If the test sweep is heard from a different speaker than the one indicated on screen, turn off the AVR and check the speaker-wire connections, then begin again.

When the test is completed, select the Continue option. These options will be displayed.

- **View Settings:** Select to view the results of the EzSet/EQ procedure.
- **Done:** Select to return to the Speaker Setup menu.

See the Advanced Functions section for instructions on how to manually configure the speakers or manually adjust the settings established by the EzSet/EQ process.

Set Up Sources

The Info Settings menu is used to assign the correct physical audio and video connections to each source.

The following settings are not optional and must be adjusted now to enable playback of each source: Video Input From Source, Audio Input From Source and Resolution to Display. The other settings may be adjusted later.

To display the Info Settings menu, press the Info Settings Button (front panel or remote). Or, from the Main Menu, select the Setup Source line and select a source from the slide-in menu. A screen similar to the one shown in Figure 26 will appear.

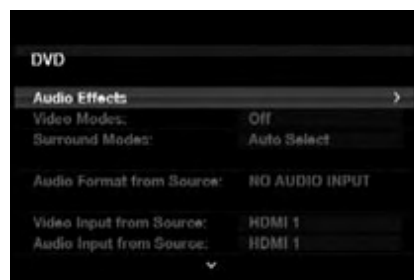


Figure 26 – Setup Source Menu

Audio Effects: Displays the Audio Effects submenu, where you may adjust the Dolby Volume setting, the bass and treble tone controls, the LFE trim, the Equalization On/Off setting and the MP3 enhancement for each source independently. Leave this submenu at its default settings, and return to it later if your system requires fine-tuning. See the Advanced Functions section for more information.

Video Modes: Displays the Video Modes submenu, where you may make picture adjustments for each source independently. Leave the settings at their factory defaults. Picture adjustments should be made to your video display first, with this menu used only for fine-tuning. See the Advanced Functions section for more information.

Surround Modes: Displays the Surround Modes submenu, where you may program surround modes for movies, music and games for each source independently.

Digital surround signals, such as Dolby Digital and DTS, are automatically played in their native formats, although you may change the surround mode. See the Advanced Functions section for more information.

Audio Format From Source: This line is informational only. When a digital program is playing, its format will be identified here. When analog audio programs are playing, this line displays ANALOG.

Audio and Video Input Selection

See Table A2 in the appendix for the factory default input assignments for each source. You may assign any available input to any source using the Info Settings menu.

When a source is selected, the AVR will check the assigned digital audio input for a signal. If one is present, the digital input will be selected. If not, the AVR will select the analog audio input specified at the Audio Auto Polling line of the Info Settings menu. If you don't want the AVR to select an analog audio input for the source, leave this setting at its default of Off.

INITIAL SETUP

The AVR will also select the assigned video source. The only “audio-only” sources on the AVR 3600 are the Radio and The Bridge III (video may be available; see page 35), which use special on-screen menus. For external sources, if no video signal is present, the display will remain black. You may pair an audio device with an A/V device's video signal using the Info Settings menu. Sources may share audio or video inputs.

NOTE: The Bridge III obtains its audio and video signals (when available) from the iPod or iPhone docked in it, and it may not be used with other audio or video sources.

Video Input From Source: Assign the correct video input. Refer to Table 2, where you noted the physical video input the source is connected to, and select that input here.

Audio Input From Source: Assign the correct analog or digital audio input. Refer to Table 2, where you noted the physical audio input the source is connected to, and select that input here. If both analog and digital audio connections were made, select the digital input here, and select the analog input at the Audio Auto Polling and Zone 2 Audio lines below.

6-/8-Channel Inputs

The 6-/8-Channel Analog Audio Inputs are used when playing certain multichannel discs (DVD-Audio, Blu-ray Disc, SACD and HD-DVD) on a player that decodes the audio and outputs it via its multichannel analog audio outputs but not via its HDMI output.

HDMI-Equipped Multichannel Disc Player:

- Connect the player's HDMI output to one of the AVR's HDMI Inputs. No other connections are necessary.
- Assign the HDMI Input to both the Audio and Video Input From Source settings.

HDMI-Equipped Multichannel Disc Player That Does Not Output Multichannel Audio via an HDMI Connection:

- Connect the player's HDMI output and its multichannel analog audio outputs to one of the AVR's HDMI Inputs and to the AVR's 6-/8-Channel Analog Audio Inputs.
- Assign the HDMI Input to both the Audio and Video Input From Source settings.
- When listening to DVD-Video discs, CDs or other materials outputting standard-definition digital audio, do nothing, as long as the HDMI Input is assigned to the Audio Input From Source setting.
- To listen to high-resolution multichannel discs, change the Audio Input From Source setting to “6/8 Channel”. Change it back to the HDMI Input to listen to standard-resolution digital materials.

Multichannel Disc Player Without HDMI Output, or When Video Display Has No HDMI Input:

- Connect the player's component video outputs to one set of Component Video Inputs on the AVR. Depending on the capabilities of the player and your video display, you may need to use a composite video connection instead.

- Connect the player's digital audio output to a digital audio input on the AVR.
- Connect the player's multichannel audio outputs to the AVR's 6-/8-Channel Analog Audio Inputs.
- Assign the correct digital audio and analog video inputs to the Audio and Video Input From Source settings.
- When listening to DVD-Video discs, CDs or other materials outputting standard-definition digital audio, do nothing, as long as the correct digital audio input is assigned to the Audio Input From Source setting.
- To listen to high-resolution multichannel discs, change the Audio Input From Source setting to “6/8 Channel”. Change it back to the digital audio input to listen to standard-resolution digital materials.

NOTE: The 6-/8-Channel Inputs pass the incoming signals directly to the volume control, without digitizing or processing them. It is not possible to change the surround mode or adjust any of the audio controls in the Audio Effects menu when using the 6-/8-Channel Inputs. Configure the bass management settings (i.e., speaker size, delay and output level) on your source device to match the settings programmed using the EzSet/EQ procedure, which may be viewed using the Speaker Setup menu (see Advanced Functions section). Consult the owner's guide for your multichannel player for more information.

Resolution to Display: This setting reflects the video output resolution, which is dependent upon the capabilities of the video display.

- If the display is connected to the AVR's HDMI Output, the two devices will communicate with each other, and the AVR will automatically select the best available video output resolution.
- If the display is connected to the AVR's Component Video Outputs, there is no automatic detection of the display's capabilities, and the video output resolution must be manually adjusted to match the display's capabilities (which may be obtained from the display's manual or its manufacturer's Web site).
- If the display is connected to the AVR's Composite Video Monitor Output, the video output resolution must be set to 480i (the factory default) to view any content, including the AVR's own menus.

Adjust the resolution by pressing the front-panel Resolution Button and using the ▲/▼ Buttons until the correct setting appears in the front-panel Message Display. For composite video, the correct setting is 480i. For component video, it is the highest resolution where a picture is visible. You will be prompted to accept or cancel the resolution change; the CANCEL message will appear on the front panel. Press the ▼ Button to view the ACCEPT option, and then press the OK Button.

NOTE: When the display has a DVI input which is connected to the AVR using an HDMI-to-DVI adapter, the picture will be distorted or blank if the display is not HDCP-compliant. In that case, a different video connection must be used (component or composite).

INITIAL SETUP

Resolution From Source: Informational only. Indicates the resolution of the video output by the source device.

HDMI Bypass: When an HDMI source signal is in use and the system includes an HDMI-capable display, the HDMI Bypass mode passes the source signal directly to the HDMI output, bypassing all video processing within the AVR, including video output resolution adjustment. To allow the AVR to process all video, including “blending” the source video with its on-screen messages and menus so that you may adjust the AVR without missing any portion of the program, turn this setting off. When the HDMI Bypass mode is on, it is not possible to “blend” the video source signal with the AVR’s on-screen menus. When any remote or front-panel buttons are pressed, the AVR will momentarily exit HDMI Bypass mode and display the on-screen menu on a black background. After the menu is cleared from the screen, either by timing out or when the Back/Exit Button is pressed, the AVR will return to HDMI Bypass mode.

Change Name: Change the display name for your source, which is useful if your source’s device type is different from the available source names. Select this line and use the ▼/▲ Buttons to scroll forward or reverse through the alphanumeric characters. When the desired character appears, use the ► Button to move the cursor to the next position. Move the cursor again to leave a blank space. When you have finished, press the OK Button. The name will appear on the front panel and next to its original name, e.g., DVD, throughout the on-screen menu system. To clear the entry without making any changes, scroll to the blank character before “A”.

Adjust Lip Sync: Resynchronizes the audio and video signals from a source to eliminate a “lip sync” problem. Lip sync issues can occur when the video portion of a signal undergoes additional processing in either the source or the video display. The Lip Sync adjuster appears by itself, enabling you to view the video while listening to the audio. Use the ◀/▶ Buttons to delay the audio by up to 180ms. See Figure 27.

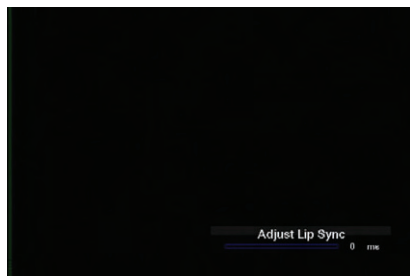


Figure 27 – Adjust Lip Sync

Audio Auto Polling: Used when both analog and digital audio connections are made. When no digital signal is present, the AVR will automatically switch to the analog audio input.

This can be useful for older cable television systems that broadcast channels in both analog and digital audio.

If an analog audio connection was made, select it here. If not, choose the Off setting, and the AVR will always use the digital audio connection.

Zone 2 Audio: Determines the audio source for the multizone system remote zone. Select the analog audio input the source is connected to. Digital audio is not available to the multizone system.

Press the Back/Exit Button, then return to the Setup Source line of the Main Menu to configure the next source. When you have finished, press the Back/Exit Button to clear the menus from view.

You are now ready to begin enjoying your new receiver!

OPERATION

Now that you have installed your components and completed a basic configuration, you are ready to begin enjoying your home theater system.

TURNING ON THE AVR 3600

Flip the rear-panel Main Power Switch to the “On” position. The Power Indicator on the front panel will turn amber, indicating that the AVR is in Standby mode and is ready to be turned on. The Main Power Switch is normally left on.

There are several ways to turn on the AVR 3600:

- a) Press the Standby/On Switch on the front panel.
- b) Using the remote, press the AVR Power On Button or any of the Source Selectors.

To turn the receiver off, press either the Standby/On Switch on the front panel or the AVR Power Off Button on the remote control. Unless the receiver will not be used for an extended period of time, leave the Main Power Switch on. When the Main Power Switch is turned off, any settings you have programmed will be preserved for up to four weeks.

IMPORTANT NOTE: If the PROTECT message ever appears in the Message Display, turn off the AVR and unplug it. Check all speaker wires for a short. If none is found, bring the unit to an authorized Harman Kardon service center for inspection and repair before using it again.

VOLUME CONTROL

Adjust the volume either by turning the knob on the front panel (clockwise to increase volume or counterclockwise to decrease volume), or by pressing the Volume Control on the remote. The volume is displayed as a negative number of decibels (dB) below the 0dB reference point.

0dB is the maximum recommended volume for the AVR 3600. Although it’s possible to turn the volume to a higher level, doing so may damage your hearing and your speakers. For certain more dynamic audio materials, even 0dB may be too high, allowing for damage to equipment. Use caution with regard to volume levels.

To change the volume level display from the default decibel scale to a 0-to-90 scale, adjust the Volume Units setting in the System Settings menu, as described on page 45.

Dolby Volume

The AVR 3600 implements Dolby Volume processing, which can improve the audio performance of the system by revealing subtle details even at normal home-listening volumes.

One concern of the typical home theater listener is that volumes can vary widely for different programs played by a source, e.g., television commercial advertisements are often much louder than the main feature. Another is that details heard in the recording studio at typically high reference volumes are lost at the lower volumes used by many listeners.

The AVR 3600 uses two Dolby Volume techniques to address these issues. The Leveler module maintains a consistent listening volume within a source, e.g., while watching commercial television or while listening to different tracks on a data CD. The Modeler module

endeavors to re-create the reference presentation that was heard in the recording studio without losing portions of the program at the typically lower volume levels often used in the home. When the Modeler module is active, you may notice details of the performance that were hidden when the program was played on other equipment.

NOTE: The Dolby Volume processor is not used to level volume across sources.

To adjust the Dolby Volume setting, press the Audio Effects Button. A screen similar to the one shown in Figure 28 will appear. Move the cursor to highlight the Dolby Volume setting, and each press of the OK Button will switch to one of the options in Table 4 below. The settings do not refer to the volume level, which is adjusted normally using the Volume Control, but rather to the amount of Dolby Volume processing desired.

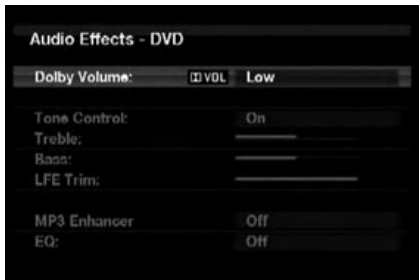


Figure 28 – Adjust Dolby Volume

Table 4 – Dolby Volume Settings

Setting	Effect
Off	No Dolby Volume processing
Low	Only Dolby Volume Modeler module is active
Medium	Both Modeler and Leveler modules are active; Leveler module has a value of 3
Max	Both Modeler and Leveler modules are active; Leveler module has a value of 9

NOTE: Dolby Volume processing is compatible with sources recorded at a sampling rate of 48kHz. High-resolution sources, such as DTS 96/24, will be decoded at 48kHz. DTS 96/24 programs will be played in DTS 5.1 mode. To hear DTS 96/24 materials in high resolution, turn off Dolby Volume processing.

Dolby Volume Calibration Offset

Calibration Offset is a feature of Dolby Volume processing that allows you to adjust the calibration of the AVR 3600 to optimally match your speakers and listening environment. The AVR 3600 is calibrated with the average speaker sensitivity in mind; however, different speakers may have different sensitivities. Use Calibration Offset to adjust the calibration of the AVR 3600 according to the types of speakers you have.

The average home audio speaker sensitivity is 88dB SPL (8 ohms, 1 watt, 1 meter). Check the sensitivity specification for your loudspeakers, found in the owner’s manual or on the manufacturer’s Web site. If your speakers have a sensitivity rating greater than 88dB SPL, increase Calibration Offset by the difference between

OPERATION

your speakers' sensitivity and 88dB. If they have a sensitivity rating of less than 88dB SPL, decrease Calibration Offset by the difference between your speakers' sensitivity and 88dB.

To adjust the Calibration Offset, press the Setup Button and scroll to the System Setup menu, then select it. Scroll to the Dolby Volume Calibration line, which defaults to 0dB. Use the ◀/▶ Buttons to adjust the setting within the range of -10dB to +10dB.

MUTE FUNCTION

To temporarily mute all speakers and the headphones, press the Mute Button on the remote. Any recording in progress will not be affected. The MUTE message will appear in the display as a reminder. To restore normal audio, press the Mute Button again, or adjust the volume. Turning off the AVR will also end muting.

SLEEP TIMER

The sleep timer sets the AVR to play for up to 90 minutes and then turn off automatically.

Press the Sleep Settings Button on the remote, and the time until turn-off will be displayed. Each additional press of the Sleep Button increases the play time by 10 minutes, with a maximum of 90 minutes. The SLEEP OFF setting disables the sleep timer.

When the sleep timer has been set, the front-panel display will automatically dim to half-brightness.

If you press the Sleep Button after the timer has been set, the remaining play time will be displayed. Press the Sleep Button again to change the play time.

AUDIO EFFECTS

Adjust the Dolby Volume setting, tone controls, LFE trim, Equalization On/Off setting or MP3 enhancement to improve performance. Access these settings from the Audio Effects submenu, as described in the Advanced Functions section.

It is recommended that you leave the settings at their default values until you are more familiar with your system.

VIDEO MODES

The settings in the Video Modes menu are used to fine-tune the picture, if necessary, after making all adjustments on the video display. It is recommended that you leave the settings at their defaults. See the Advanced Functions section for detailed information.

HEADPHONES

Plug the 1/4-inch plug on a pair of headphones into the front-panel jack for private listening. The default Headphone Bypass mode delivers a conventional 2-channel signal to the headphones.

Press the Surround Modes Button on the front panel or the remote, to switch to Harman Headphone virtual surround processing, which emulates a 5.1-channel speaker system. No other surround modes are available for the headphones.

SOURCE SELECTION

Press the front-panel Source List Button. Use the ▼/▲ Buttons to scroll through the sources. Using the on-screen menus, press the Setup Button, highlight "Source Select" and press the OK Button. Scroll to the desired source in the slide-show menu and press the OK Button.

For direct access to any source, press its Source Selector on the remote.

The AVR selects the audio and video inputs assigned to the source, and any other settings made during setup.

The source name, the audio and video inputs assigned to the source, and the surround mode will appear on the front panel. The source name and surround mode will also appear on screen.

VIDEO TROUBLESHOOTING TIPS:

If there is no picture:

- Check the source selection and video input assignment.
- Check the wires for a loose or incorrect connection.
- Check the video input selection on the display device (TV).
- Press the front-panel Resolution Button and use the ▼/▲ Buttons until the correct video output resolution is selected and a picture appears. The CANCEL message will appear. Press the ▼ Button to view the ACCEPT option, then press the OK Button.

Additional Tips for HDMI Connections:

- Turn off all devices (including the TV, AVR and any source components).
- Unplug the HDMI cables, starting with the cable between the TV and AVR, and continuing with the cables between the AVR and each source device.
- Carefully reconnect the cables from the source devices to the AVR. Connect the cable from the AVR to the TV last.
- Turn on the devices in this order: TV, AVR, source devices.

USING THE RADIO

To select the AVR 3600's built-in radio:

1. Press the Source List Button on the front panel. Use the ▼/▲ Buttons to scroll to the desired band.
2. Press the Radio Source Selector on the remote. Press it again to switch bands (AM, FM or SIRIUS).

A screen similar to the one shown in Figure 29 will appear. The SIRIUS band uses a different screen.



Figure 29 – FM Radio

OPERATION

Use the ▼/▲ Buttons or the Channel Control to tune a station (or channel for SIRIUS Radio), as displayed on the front panel and on screen.

The AVR defaults to automatic tuning, meaning each press of the ▼/▲ Buttons scans through all frequencies until a station with acceptable signal strength is found. To switch to manual tuning, in which each press of the ▼/▲ Buttons steps through a single frequency increment (0.1MHz for FM, or 10kHz for AM), press the Menu Button. The Mode line will display the current setting. Each press of the OK Button toggles between automatic and manual tuning modes.

When an FM station has been tuned, toggling the tuning mode also switches between stereo and monaural play, which may improve reception of weaker stations.

A total of 30 stations (AM and FM together) may be stored as presets. When the desired station has been tuned, press the OK Button, and two dashes will flash. Use the Alphanumeric Keys to enter the desired preset number.

To tune a preset station: Press the ◀/▶ Buttons or the ◀◀/▶▶ Transport Controls; or press the Menu Button and scroll to the desired preset, then press the OK Button; or enter the preset number using the Numeric Keys. For presets 10 through 30, press 0 before the preset number. For example, to enter preset 21, press 0-2-1.

SIRIUS SATELLITE RADIO OPERATION

To listen to Satellite Radio, you'll need to connect a SIRIUS Satellite Radio tuner (sold separately) to your SIRIUS Ready receiver. SIRIUS Satellite Radio is available to residents of the U.S. (except Alaska and Hawaii) and Canada.

Satellite Radio delivers a variety of commercial-free music from categories including Pop, Rock, Country, R&B, Dance, Jazz, Classical and many more, plus coverage of all the top professional and college sports, including play-by-play games from select leagues and teams. Additional programming includes expert sports talk, uncensored entertainment, comedy, family programming, local traffic and weather, and news from your most trusted sources.

Once you've purchased a SIRIUS tuner, you'll need to activate it and subscribe to begin enjoying the service. Easy-to-follow installation and setup instructions are provided with the SIRIUS tuner. There are a variety of programming packages available, including the option of adding "The Best of XM" programming. "The Best of XM" service is not available to SIRIUS Canada subscribers at this time. Please check with SIRIUS Canada for any updates using the numbers and Web address below.

Family-friendly packages are also available to restrict channels featuring content that may be inappropriate for children.

To subscribe to SIRIUS, U.S. and Canadian customers can call 1-888-539-SIRI (7474) or visit sirius.com (U.S.) or siriuscanada.ca (Canada).

The AVR 3600 is a SIRIUS Ready device, and is able to receive the SIRIUS service when a user-supplied SIRIUS tuner module is connected and the service activated.

Select a tuner module designated for SIRIUS Ready audio components. A SIRIUS Ready module uses the special connector on the AVR and is controlled by the AVR's internal tuner, including its 40 preset station locations and remote control. Although you may use a "car and home" module with standard audio connections, you will not be able to enjoy the AVR's ease of control.

The SIRIUS-Connect SC-H1 tuner module is compatible with the AVR 3600. Other modules that have standard analog or digital audio outputs may be connected to a compatible input and operated using their own controls.

Plug the module into the SIRIUS Tuner Jack on the rear of the AVR 3600. Place the tuner module so that it has a clear view through a south-facing window.

Select SIRIUS Radio as the source in one of these ways:

1. Press the Source List Button on the front panel. Use the ▼/▲ Buttons to scroll to "SIRIUS Radio" and press the OK Button.
2. Press the Radio Source Selector on the remote repeatedly until SIRIUS Radio is selected.

There are four ways to tune a SIRIUS Radio channel:

1. Use the ▼/▲ Buttons or the Channel Control to scan through the channel numbers.
2. Use the ◀/▶ Buttons to scan through any previously programmed preset stations.
3. After you have programmed presets, directly enter the preset number (1 through 40) using the Alphanumeric Keys. For two-digit positions, enter a "0" before the number.
4. Press the Menu Button to search for a channel by: preset, category, all channels or direct entry.

When you are able to hear Channel 1, you are ready to activate your module. If you don't hear Channel 1, make sure the module's plug is firmly seated in the SIRIUS jack, and that the module is near a south-facing window. Try rotating the module to obtain reception. You may need to purchase an extension cable to ensure that the module is near the window.

Tune to Channel 0 for a display of your module's Radio ID number. You may also view the Radio ID number by pressing the Menu Button and selecting "SIRIUS ID".

The current channel number and preset location will appear in the lower line of the Message Display. The song title, artist, channel name, channel category, channel number, preset position (if programmed) and three signal-strength bars, will all appear on screen when a video display is in use.

For traffic and weather channels, the current city's name will appear instead of the channel name, and the local weather and temperature will be displayed on screen.

A total of 40 channels may be stored as presets. When the desired channel has been tuned, press the OK Button, and two dashes will flash in the front-panel display. Use the Alphanumeric Keys to enter the desired preset number.

To tune a preset, press the ◀/▶ Buttons or the ◀◀/▶▶ Transport Controls, or press the Menu Button and scroll to the desired preset, then press the OK Button; or enter the preset number using the Numeric Keys. For presets 10 through 40, press 0 before the preset number. For example, to enter preset 21, press 0-2-1.

RECORDING

Two-channel analog and digital audio signals, as well as composite video signals, are normally available at the appropriate recording outputs. To make a recording, connect your audio or video recorder to the appropriate output jacks, as described in the Installation

OPERATION

section, insert blank media and make sure the recorder is turned on and recording while the source is playing.

NOTES:

1. Analog and digital audio signals are not converted to the other format.
2. Only PCM digital audio signals are available for recording. Proprietary formats such as Dolby Digital and DTS may not be recorded using the digital audio connections. Use the analog audio connections to make an analog recording.
3. HDMI and component video sources are not available for recording.
4. Please make certain that you are aware of any copyright restrictions on any material you record. Unauthorized duplication of copyrighted materials is prohibited by federal law.

USING DOCKING STATION

The Bridge III is an included dock that is compatible with most docking iPod models, 4G and later, and iPhone models (not included). When The Bridge III is connected to its proprietary input on the AVR 3600 and the iPod or iPhone is docked, you may play the audio, video and still-image materials on your iPod or iPhone through your high-quality audio/video system; operate the iPod or iPhone using the AVR remote or the AVR's front-panel controls; view navigation messages on the AVR's front panel or a connected video display; and charge the iPod or iPhone.

When the source The Bridge is selected and an iPod or iPhone is docked, the message "The Bridge" appears in the front-panel Message Display. If the AVR doesn't detect the iPod or iPhone, turn off the AVR, remove the iPod or iPhone from The Bridge III and reset the iPod or iPhone. When the iPod or iPhone returns to its main menu, redock it and turn on the AVR.

Table 5 summarizes the controls available with The Bridge III during normal playback.

Table 5 – Using The Bridge III

iPod or iPhone Function	Remote Control Key
Play	Play (▶)
Pause	Pause (⏸)
Menu	Menu
Back/Exit	Back/Exit or Left Arrow (◀)
Select	OK or Right Arrow (▶)
Scroll Reverse	Up Arrow (▲)
Scroll Forward	Down Arrow (▼)
Forward Search	Forward Search (▶▶)
Reverse Search	Reverse Search (◀◀)
Next Track	Next (▶▶I) or Right Arrow (▶)
Previous Track	Previous (I◀◀) or Left Arrow (◀)
Page Up/Down	Page Up/Down
Stop	Stop (■)

While a selection is playing, the song title and play mode icon will appear in the front-panel Message Display.

If a video monitor is connected to the AVR 3600 and the system is not in iPod Manual Mode, the Now Playing screen will appear and display the play mode icon, song title, artist and album. A graphic bar indicates the current play position within the track. If random or repeat play has been programmed, an icon will appear in the upper right corner.

The screen may disappear from view, depending on the Setup and Slide-In Menus setting in the System Settings menu (described in the Advanced Functions section). Restore the Now Playing screen to view by pressing either of the ◀/▶ Buttons.

NOTE: It is strongly recommended that you use the screen saver built into your video display to avoid possible damage from "burn-in" that may occur with plasma and many CRT displays when a still image, such as a menu screen, remains on display for an extended period of time.

Press the Menu Button to view the slide-out menu:

Music: Navigates the audio materials stored on the iPod or iPhone. Use the Page Up/Down Control on the remote to scroll through the content a page at a time.

Photo/Manual: Select this line to view still images stored on a photo-capable iPod or iPhone. The system will switch to iPod Manual Mode, and control will shift to the iPod. Use the screen and controls on the iPod. The AVR remote may also be used.

To view photos on a video monitor connected to the AVR, select the photo and press the Play Button on the iPod, or press the OK Button on the remote three times.

Videos: Select this line to view videos stored on an iPod that supports video browsing or an iPhone.

NOTES ON VIDEO PLAYBACK:

- As of this writing, video browsing is only supported on the iPod 5G, iPod classic (80GB, 120GB and 160GB), iPod nano 3G and 4G, and iPod touch or iPhone (when loaded with software version 2 or higher). For other iPod models, it is not possible to view photos (except iPod 4G) or videos on an external monitor while using The Bridge III. Due to the design of the iPhone, it is not possible to view photos stored on the iPhone using The Bridge III.
- Before attempting to view photos or videos stored on your device, check the Video Settings menu on the device and make sure that the TV Out setting is set to On. The TV Signal setting should be NTSC, to match the capabilities of your video display. If your selection was playing and is paused, the iPod or iPhone requires you to reselect the video for the new TV Out setting to take effect.
- If you do not see the Videos line in the menu, and the iPod supports video browsing and has video content stored on it, you may need to turn off the AVR, remove the iPod from The Bridge III, reset the iPod, turn the AVR back on and dock the iPod again. An iPhone may not need to be reset, as simply undocking and redocking it may resolve the problem. This

OPERATION

procedure may also help when a video program is selected but the “Now Playing” screen appears instead of the video images.

To exit iPod Manual Mode, with the AVR remote in The Bridge mode, press the Menu Button. To return to a previous menu level, press the Back/Exit Button or the ◀ Button.

Random: Select this setting for random playback, also known as “Shuffle Mode”. Each press of the OK Button switches the setting: shuffle by Song, shuffle by Album, or Off to end random playback.

Repeat: Select this setting to repeat a track or all tracks in the current album or playlist. Each press of the OK Button switches the setting: repeat Off, repeat One or repeat All.

NOTE: The iTunes application allows you to exempt some tracks from Shuffle mode. The AVR 3600 cannot override this setting.

The AVR supports audio playback from some applications available for the iPhone and the iPod touch. Place the system in iPod Manual Mode by pressing the Menu Button and selecting “Photo/Manual”. Then use the controls on the iPhone or iPod touch to run the application. Due to the wide variety of applications and many factors affecting them, playback is not guaranteed.

While scrolling, hold the key to scroll faster. Use the Page Up/Down control on the remote to scroll a page at a time (not in manual mode).

NOTES:

- The Play and Pause functions are not available unless content has been selected for playback.
- To search within a track (not in Manual Mode), press and hold the indicated button. Press the Previous Track Button once to skip to the beginning of the current track. Press the Previous Track Button twice to skip to the beginning of the previous track.

iPod MANUAL MODE

Press the Menu Button and select Photo/Manual to enter iPod Manual Mode. This is required to view photos stored on the iPod or iPhone.

Table 6 summarizes the controls available with The Bridge III in iPod Manual mode.

Table 6 – Using The Bridge III in iPod Manual Mode

iPod Function	Remote Control Key
Play	Play (▶)
Pause	Pause (⏸)
Menu	Back/Exit or Left Arrow (◀)
Select	OK
Select Next Screen* (Scrubber, Cover Art, Ratings)	Right Arrow (▶)
Scroll Reverse	Page Up or Up Arrow (▲)
Scroll Forward	Page Down or Down Arrow (▼)
Next Track	Next (▶▶) or Right Arrow (▶)
Previous Track	Previous (◀◀) or Left Arrow (◀)

* Does not appear on video display connected to AVR.

When a slideshow is being displayed, some controls have different effects:

- To pause the slideshow, including any audio track that is playing, press the Pause Button.
- To resume a paused slideshow, press the Pause Button. Pressing the Play Button begins audio playback.
- To play an audio track stored on the iPod, adjust the Slideshow Settings on the iPod.
- To skip to the next or previous photo on the iPod, press the Next or Previous Transport Control.
- It is not possible to skip to the next or previous audio track during a slideshow.
- To search forward or in reverse within an audio track, press the Forward or Reverse Search Transport Control. If no audio track is playing, these controls will have no effect during the slideshow.

SELECTING A SURROUND MODE

Surround mode selection can be as simple or sophisticated as your individual system and tastes. Feel free to experiment, and you may find a few favorites for certain sources or program types. More detailed information on surround modes may be found in the Advanced Functions section.

To select a surround mode, press the Surround Modes Button (front panel or remote). The Surround Modes menu will appear (see Figure 30). Use the ▼/▲ Buttons repeatedly until the desired surround mode category appears: Auto Select, Virtual Surround, Stereo, Movie, Music or Video Game. Press the OK Button to change the type's surround mode.



Figure 30 – Surround Modes Menu

Auto Select: For digital programs, such as movies recorded with a Dolby Digital soundtrack, the AVR will automatically use the native surround format. For 2-channel analog and PCM programs, the AVR uses Logic 7 Movie, Music or Game mode, depending on the source.

Virtual Surround: When only two main speakers are present in the system, Harman Virtual Surround may be used to create an enhanced sound field that virtualizes the missing speakers. Select between Wide and Reference modes.

Stereo: When 2-channel playback is desired, select the number of speakers used for playback:

- 2 CH STEREO uses only two speakers. As described on page 38, you may select Analog Bypass mode for a pure analog signal when analog audio inputs are in use. Turn off the Tone Control setting in the Audio Effects submenu, and the AVR does the rest.

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- **5 CH STEREO** plays the left-channel signal through the front and surround left speakers, the right-channel signal through the right speakers and a summed mono signal through the center speaker.
- **7 CH STEREO** follows the same scheme as 5 CH STEREO, but adds the surround back speakers. This mode is only available when the surround back speakers are present and have not been reassigned to multizone operation. See page 40 for more information.

Movie: Use when a surround mode is desired for movie playback: Logic 7 Movie, DTS Neo:6 Cinema or Dolby Pro Logic II (IIX when seven main speakers are present).

Music: Use when a surround mode is desired for music playback: Logic 7 Music, DTS Neo:6 Music or Dolby Pro Logic II (IIX when seven main speakers are present). The Dolby Pro Logic II/IIX Music mode allows access to a submenu with some additional settings. See the Advanced Functions section for more information.

Video Game: Use to select a surround mode for game playback: Logic 7 Game, or Dolby Pro Logic II (IIX when seven main speakers are present) Game.

After you have made your selection, press the Back/Exit Button.

See the Advanced Functions section for more information on surround modes.

TROUBLESHOOTING GUIDE

Symptom	Cause	Solution
Unit does not function when Main Power Switch is turned on	No AC Power	- Make certain AC power cord is plugged into a live outlet - Check whether outlet is switch-controlled
Display lights, but no sound or picture	- Intermittent input connections - Mute is on - Volume control is down	- Secure all input and speaker connections - Press Mute Button - Turn up volume control
No sound from any speaker; PROTECT message appears on front panel	- Amplifier is in protection mode due to possible short - Amplifier is in protection mode due to internal problems	- Check speaker wires for shorts at receiver and speaker ends - Contact your local Harman Kardon service center
No sound from surround or center speakers	- Incorrect surround mode - Input is monaural - Incorrect configuration - Stereo or Mono program material	- Select a mode other than Stereo center speakers - There is no surround information from mono sources - Check speaker configuration - The surround decoder may not create center- or rear-channel information from nonencoded programs
Unit does not respond to remote commands	- Weak batteries in remote - Wrong device selected - Remote sensor is obscured	- Change remote batteries - Press the Setup Button - Make certain front-panel sensor is in line of sight of remote or connect an optional remote sensor
Intermittent buzzing in tuner	Local interference	Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances
Surround Back Speaker settings cannot be accessed, and test tone does not play through Surround Back Speakers	Multizone system has been turned on, and the surround back channels were reassigned to multizone operation	Use the menu system to access the Zone 2 menu and reassign the surround back channels to the main room
The SIRIUS Preview Channel (001) is silent	- SIRIUS tuner is not plugged in - SIRIUS tuner is not located in such a way as to enable reception - SIRIUS signal requires a refresh	- Use a SIRIUS tuner module designed for use with SIRIUS Ready home audio equipment, and plug the module into the SIRIUS Radio Jack - The SIRIUS tuner module needs an unobstructed view of the southern sky, or to be within range of a SIRIUS terrestrial repeater; if necessary, purchase an extension cable from your SIRIUS Radio dealer - Visit www.siriusradio.com
Unable to activate Program mode on remote	Source Selector not held for at least 3 seconds	The selector will light as you initially press it, and go dark as you hold it down. Continue to hold it and wait 3 seconds for the selector to light again
Remote buttons light, but AVR does not respond	Remote is in Zone 2 mode	Slide the Zone Switch at the bottom of the remote to the Zone 1 position

Additional information on troubleshooting possible problems with your AVR 3600, or installation-related issues, may be found in the list of "Frequently Asked Questions", which is located in the Product Support section at www.harmankardon.com.

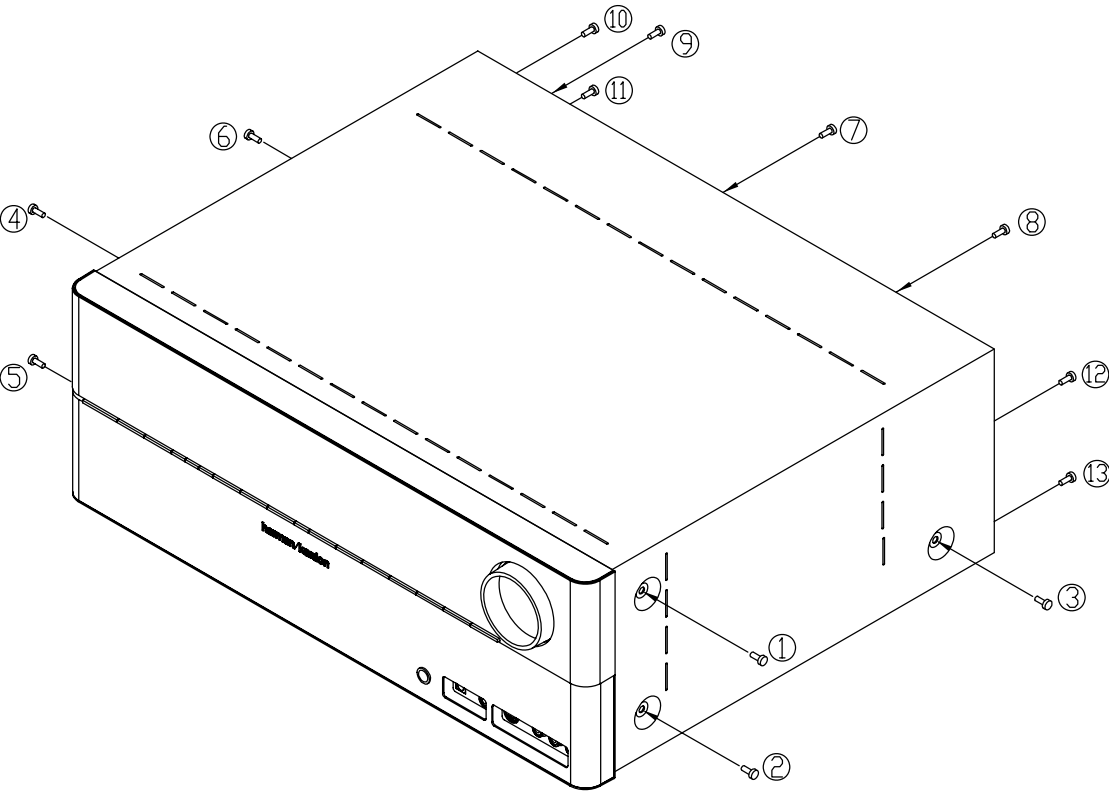
Resetting the Remote

- To reset the remote to its factory defaults, simultaneously press and hold the TV Source Selector and the "0" Alphanumeric Key. When the TV Button relights, enter the code "333". When the TV Button goes out, and all of the Source Selectors flash, the remote control will be reset.

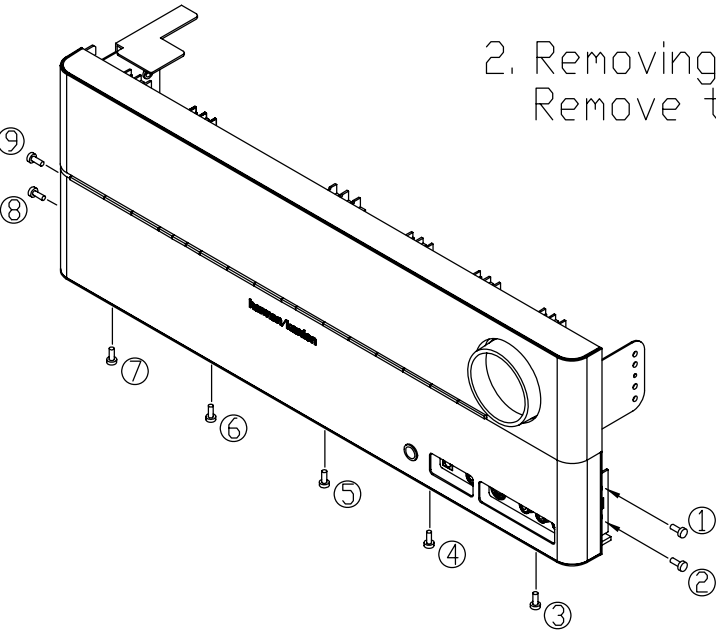
PROCESSOR RESET

- To reset the AVR 3600, place it in Standby mode (press the front panel Standby/On Switch so that the Power Indicator turns amber).
- Then press and hold the front-panel OK Button for at least 5 seconds until the RESET message appears.

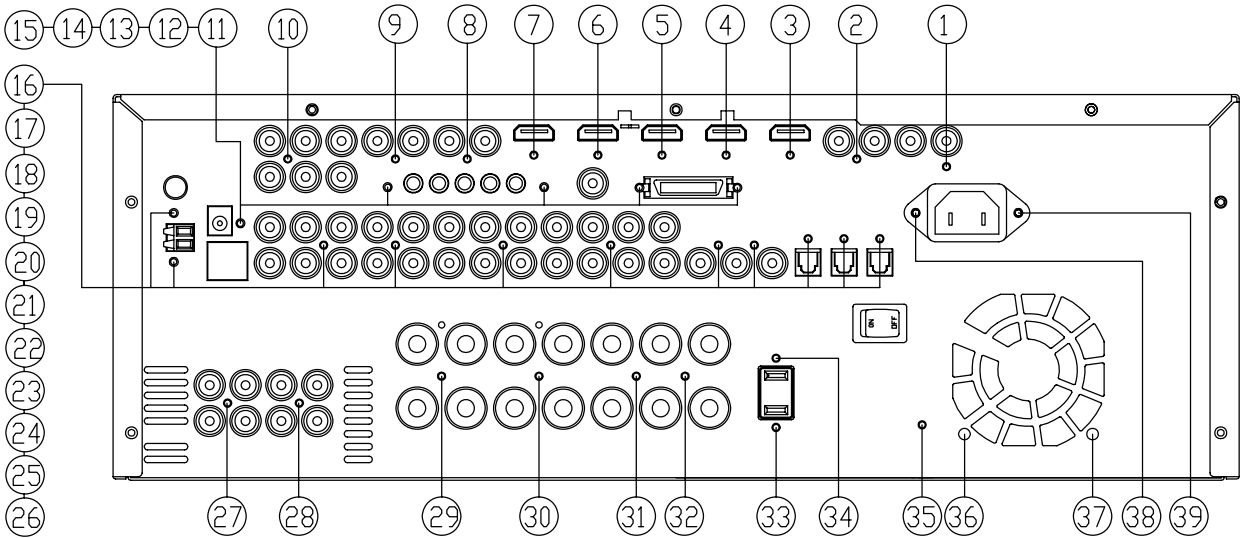
1. Removing the Top Cabinet
Remove the Screws ①~⑬



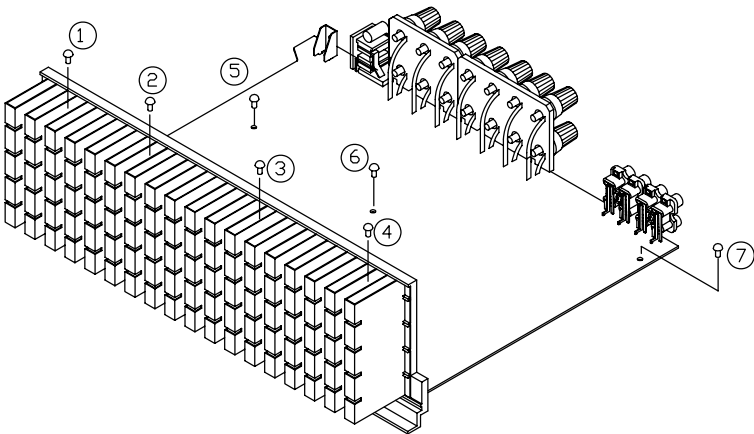
2. Removing the Front Panel
Remove the Screws ①~⑨



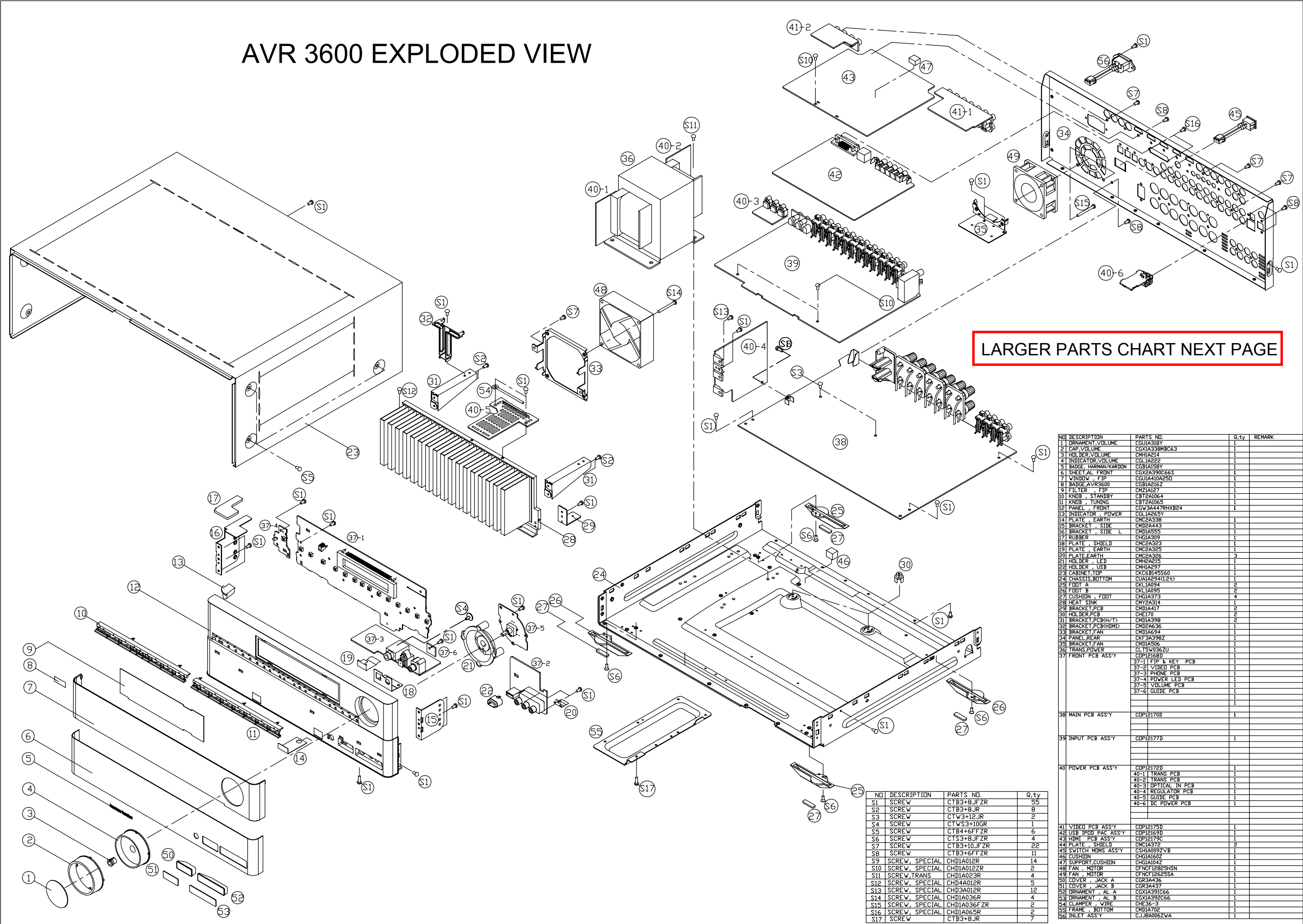
3. Removing the Rear Panel
Remove the Screws ①~③⑨



4. Removing the Main PCB
Remove the Screws ①~⑦



AVR 3600 EXPLODED VIEW

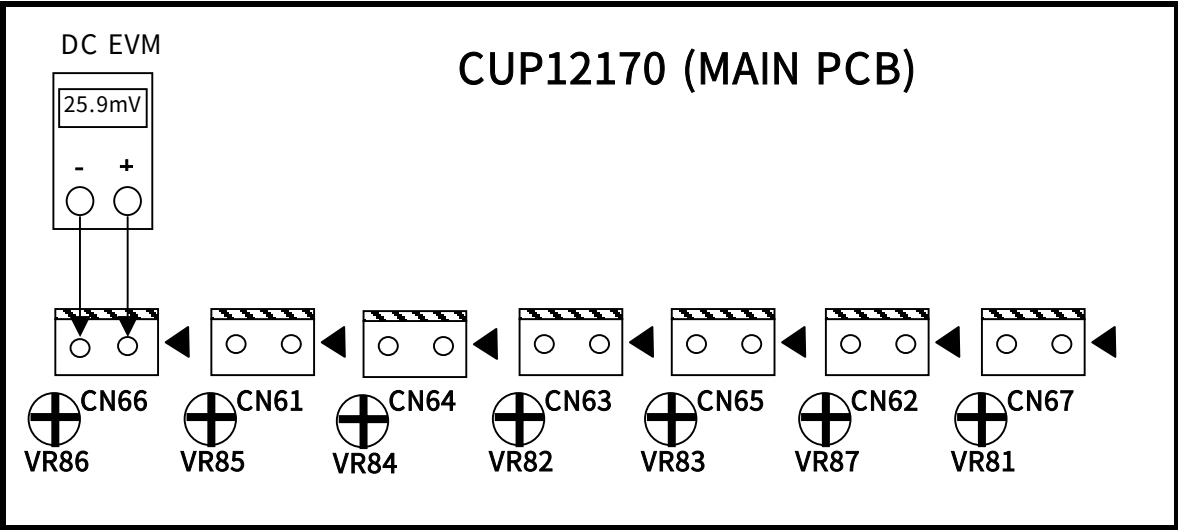


NO	DESCRIPTION	PART NO.	Qty	REMARK
1	ORNAMENT,VOLUME	CGU1A318Y	1	
2	CAP,VOLUME	CGX1A338MBC63	1	
3	HOLDER,VOLUME	CMH1A214	1	
4	INDICATOR,VOLUME	CGL1A222	1	
5	BADGE, HARMAN/KARDON	CGB1A158Y	1	
6	SHEET,AL FRONT	CGX2A390C66S	1	
7	WINDOW , FIP	CGU1A410A25D	1	
8	BADGE,AVR3600	CGB1A216Z	1	
9	FILTER , FIP	CMZ1A127	1	
10	KNOB , STANDBY	CBT2A1064	1	
11	KNOB , TUNING	CBT2A1065	1	
12	PANEL , FRONT	CGW3A447RHXB24	1	
13	INDICATOR , POWER	CGL1A265Y		
14	PLATE , EARTH	CMC2A338	1	
15	BRACKET , SIDE	CMD2A443	1	
16	BRACKET , SIDE L	CMD1A555	1	
17	RUBBER	CHG1A309	1	
18	PLATE , SHIELD	CMC2A323	1	
19	PLATE , EARTH	CMC2A325	1	
20	PLATE,EARTH	CMC2A326	3	
21	HOLDER , LED	CMH2A215	1	
22	HOLDER , USB	CMH1A297	1	
23	CABINET,TOP	CKC6B145S60	1	
24	CHASSIS,BOTTOM	CUA1A294(1.2t)	1	
25	FOOT A	CKL1A094	2	
26	FOOT B	CKL1A095	2	
27	CUSHION , FOOT	CHG1A373	4	
28	HEAT SINK	CMY2A314	1	
29	BRACKET,PCB	CMD1A417	2	
30	HOLDER,PCB	CHE170	2	
31	BRACKET,PCB(H/T)	CMD1A398	2	
32	BRACKET,PCB(HDMI)	CMD2A636	1	
33	BRACKET,FAN	CMD1A694	1	
34	PANEL,REAR	CKF3A398Z	1	
35	BRACKET,FAN	CMD1A506	1	
36	TRANS,POWER	CLT5W036ZU	1	
37	FRONT PCB ASS'Y		1	
		37-1 FIP & KEY PCB	1	
		37-2 VIDEO PCB	1	
		37-3 PHONE PCB	1	
		37-4 POWER LED PCB	1	
		37-5 VOLUME PCB	1	
		37-6 GUIDE PCB	1	
			1	
			1	
38	MAIN PCB ASS'Y		1	
39	INPUT PCB ASS'Y		1	
40	POWER PCB ASS'Y		1	
		40-1 TRANS PCB	1	
		40-2 TRANS PCB	1	
		40-3 OPTICAL IN PCB	1	
		40-4 REGULATOR PCB	1	
		40-5 GUIDE PCB	1	
		40-6 DC POWER PCB	1	
41	VIDEO PCB ASS'Y		1	
42	USB IPOD PAC ASS'Y		1	
43	HDMI PCB ASS'Y		1	
44	PLATE , SHIELD	CMC1A372	2	
45	SWITCH MOMS ASS'Y	CSH1A009ZVB	1	
46	CUSHION	CHG1A160Z	1	
47	SUPPORT,CUSHION	CHG1A104Z	1	
48	FAN , MOTOR	CFNCF12625HSN	1	
49	FAN , MOTOR	CFNCF12625SA	1	
50	COVER , JACK A	CGR3A436	1	
51	COVER , JACK B	CGR3A437	1	
52	ORNAMENT , AL A	CGX1A391C66	1	
53	ORNAMENT , AL B	CGX1A392C66	1	
54	CLAMPER , WIRE	CHE36-3	1	
55	FRAME , BOTTOM	CMD1A702	1	
56	INLET ASS'Y	CJJ8A006ZWA	1	

AMPLIFIER SECTION BIAS ADJUSTMENT

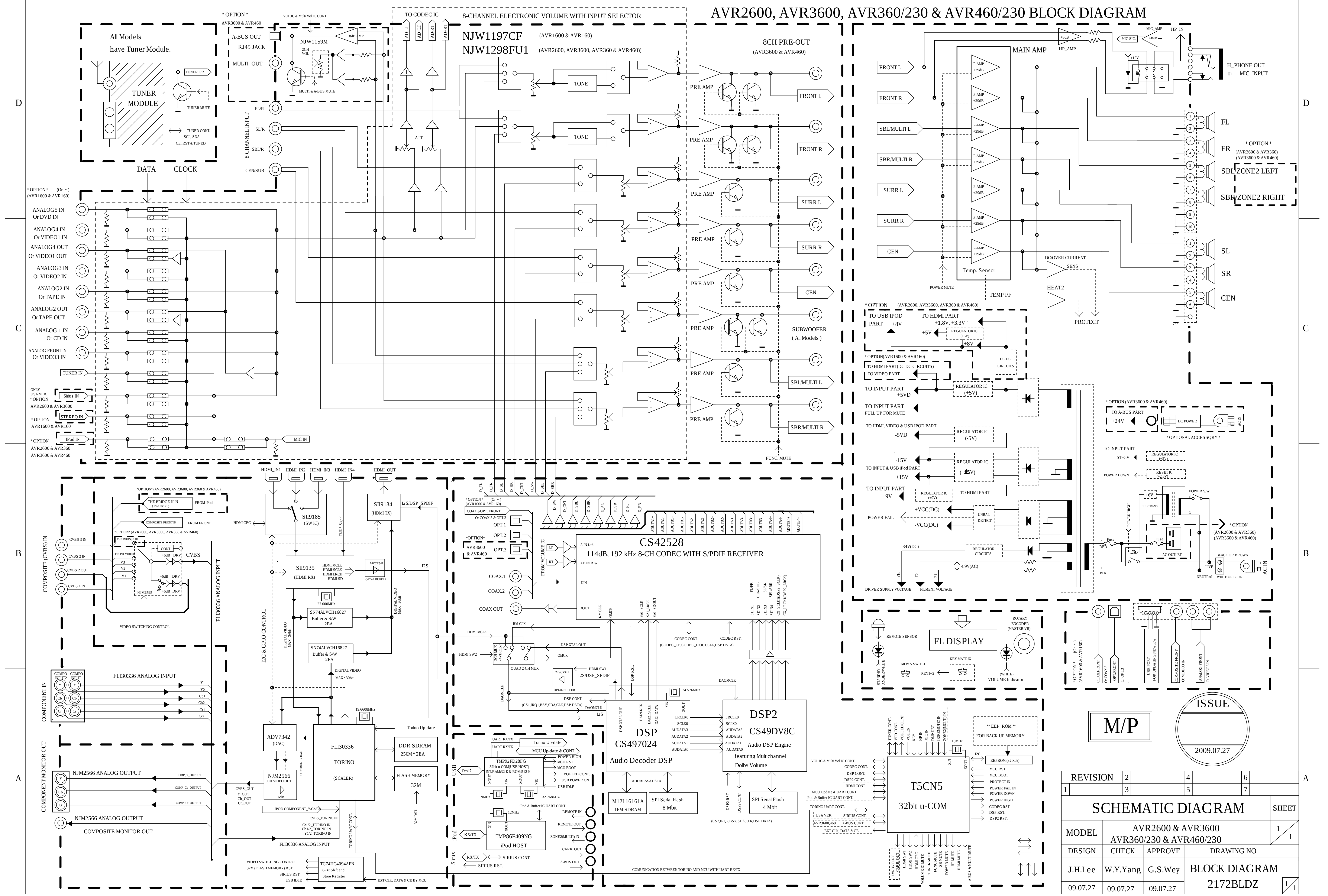
Measurement condition
; No input signal or volume position is minimum.

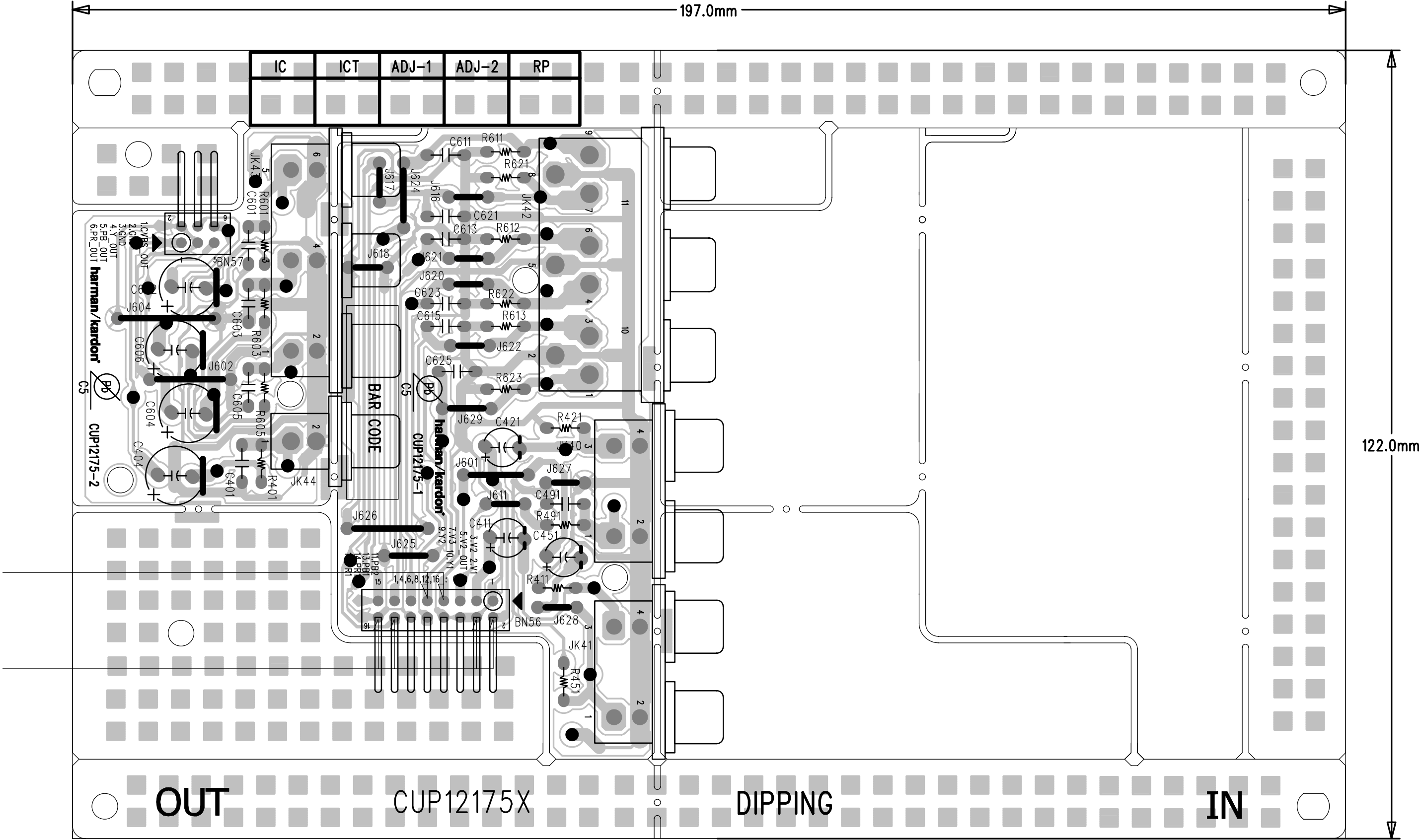
Standard value
; Ideal current = 48mA (± 5%)
; Ideal DC Voltage = 25.92mV (± 5%)

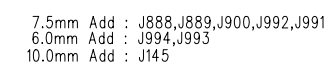


DC VOLTMETER ; Connect to
CN66(SL),CN61(CEN),CN64(SR),CN63(FL),CN65(SBL),CN62(FR),CN67(SBR)

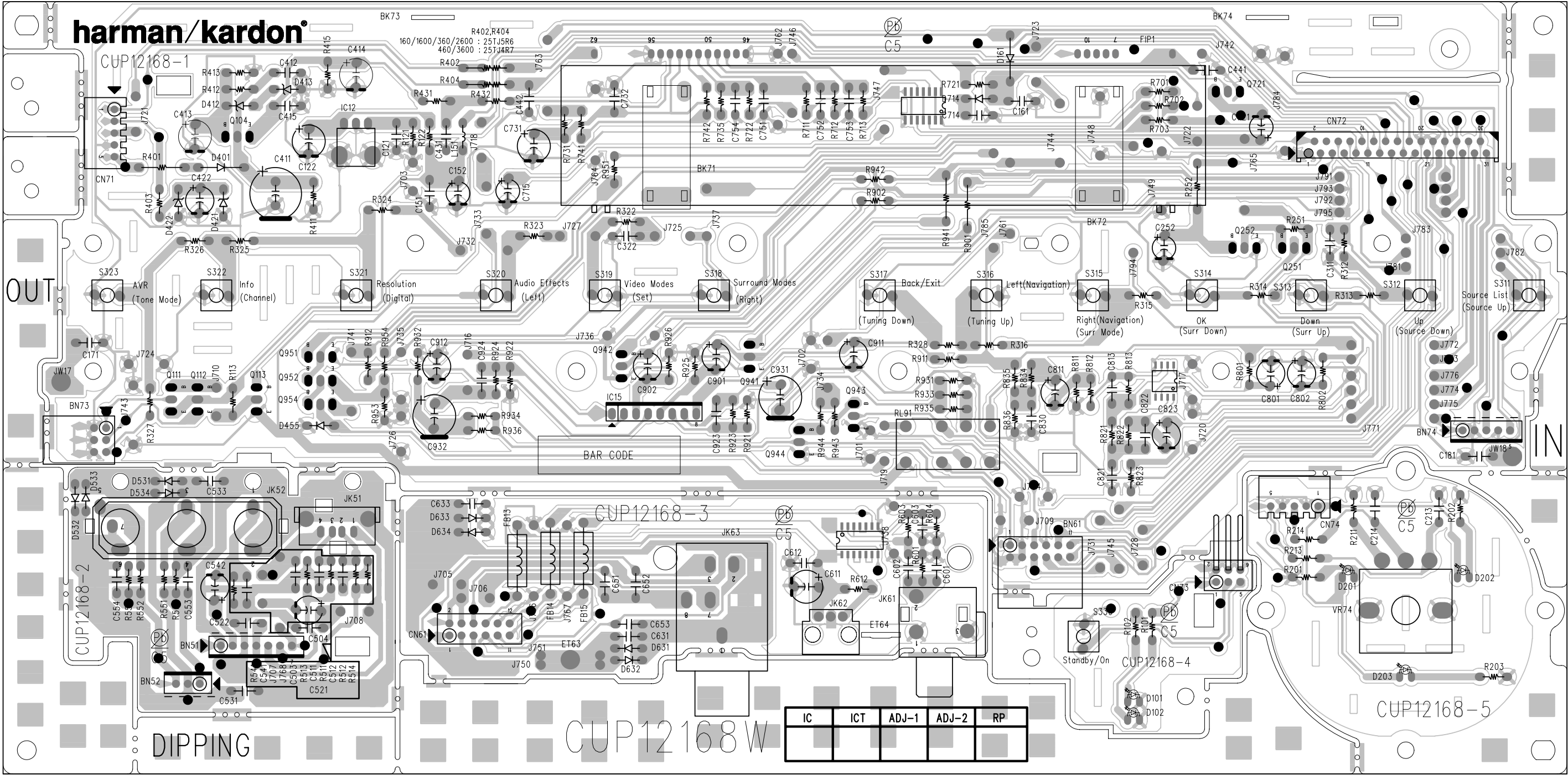
NO.	Channel	Adjust for	Adjustment
1	Front Left	25.92mV (± 5%)	CN63
2	Front Right	25.92mV (± 5%)	CN62
3	Center	25.92mV (± 5%)	CN61
4	Surround Left	25.92mV (± 5%)	CN66
5	Surround Right	25.92mV (± 5%)	CN64
6	Surround Back Left	25.92mV (± 5%)	CN65
7	Surround Back Right	25.92mV (± 5%)	CN67



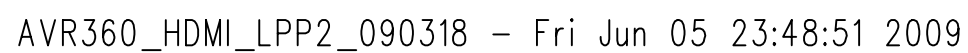








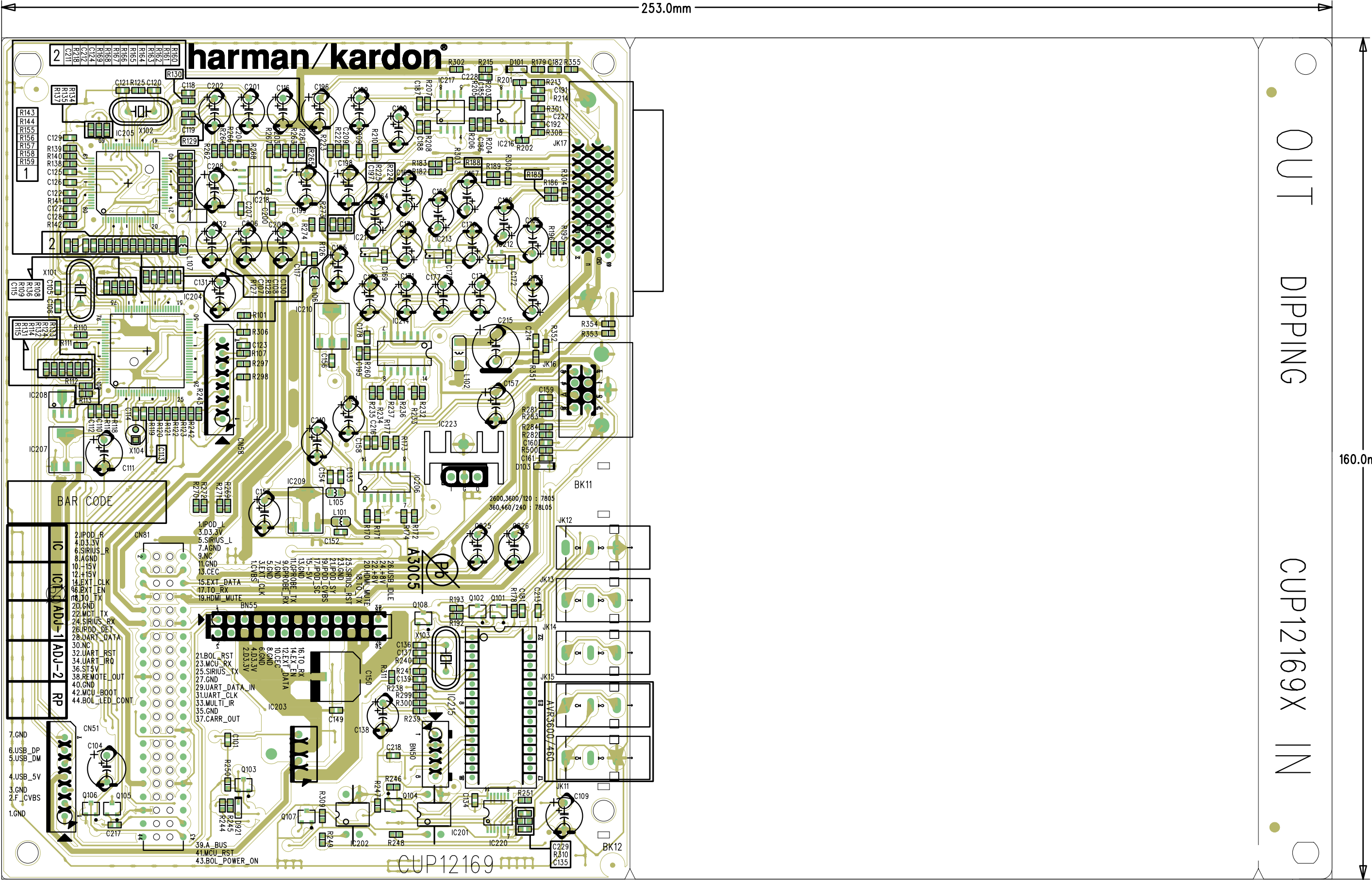
IC	ICT	ADJ-1	ADJ-2	RP





253.0mm

160.0mm



AVR3600 Electrical Parts List				
Ref. Designator	Part Number	Description	Qty	
FRONT PCB ASS'Y		COP12168D		
<i>Capacitors</i>				
C121	CCBS1H151KBT	CAP , CERAMIC(150PF/50V)	CH UP025 B151K-A-B Z	1 EA
C122	CCEA1AH331T	CAP , ELECT	330UF 10V	1 EA
C151	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	CH UP025 F473Z-A-B J	1 EA
C152	CCEA1CKS100T	CAP , ELECT	10UF 16V	1 EA
C161	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C213	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C214	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C252	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V SMALL SIZE	1 EA
C311	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1 EA
C322	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1 EA
C412	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1 EA
C413	CCEA1JH470TS	CAP , ELECT	63V/47UF/105°C	1 EA
C414	CCEA1JH470TS	CAP , ELECT	63V/47UF/105°C	1 EA
C415	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1 EA
C422	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
C431	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C441	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C442	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C503	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C504	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1 EA
C511	CCBS1H560JT	CAP , CERAMIC(56PF/50V)	CH UP025SL560J-A-B Z	1 EA
C512	CCBS1H560JT	CAP , CERAMIC(56PF/50V)	CH UP025SL560J-A-B Z	1 EA
C521	CCEA1AH101T	CAP , ELECT	100UF 10V	1 EA
C522	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1 EA
C531	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C533	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C541	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1 EA
C542	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C553	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1 EA
C554	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1 EA
C601	CCBS1H181KBT	CAP , CERAMIC(180PF/50V)	CH UP025 B181K-A-B Z	1 EA
C602	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C603	CCBS1H100JCT	CAP , CERAMIC(10PF/50V)	CH UP025CH100J-A-B Z	1 EA
C611	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C612	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C631	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C633	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C651	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C652	CCBS1H471KBT	CAP , CERAMIC(470PF/50V)	CH UP025 B471K-A-B Z	1 EA
C653	CCBS1H471KBT	CAP , CERAMIC(470PF/50V)	CH UP025 B471K-A-B Z	1 EA
C714	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C715	CCEA1CKS100T	CAP , ELECT	10UF 16V	1 EA
C721	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V SMALL SIZE	1 EA
C731	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C732	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C751	CCBS1C222MXT	CAP , CERAMIC(2200PF/16V)	CH EP025 B222M-A-B J	1 EA
C752	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1 EA
C753	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1 EA
C754	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C801	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C802	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C811	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C813	CCBS1H470JT	CAP , CERAMIC(47PF/50V)	CH UP025SL470J-A-B Z	1 EA
C821	CCBS1H471KBT	CAP , CERAMIC(470PF/50V)	CH UP025 B471K-A-B Z	1 EA
C822	CCBS1H151KBT	CAP , CERAMIC(150PF/50V)	CH UP025 B151K-A-B Z	1 EA
C823	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C830	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	CH UP025 F473Z-A-B J	1 EA
C901	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C902	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C911	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA

Ref. Designator	Part Number	Description	Qty	
FRONT PCB ASS'Y		COP12168D		
C912	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C923	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C924	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C931	CCEA1CH331T	CAP , ELECT	330UF 16V	1 EA
C932	CCEA1CH331T	CAP , ELECT	330UF 16V	1 EA
C411	CCEA1JH101E	CAP , ELECT	100UF 63V	1 EA
Semiconductors				
D161	HVD1N5819T	DIODE , SCHOTTKY	1N5819	1 EA
D401	CVD1N4003ST	DIODE , RECT	1N4003	1 EA
D412	HVDMTZJ6.8BT	DIODE , ZENER	MTZJ6.8B 1/2W	1 EA
D413	HVDMTZJ27BT	DIODE , ZENER	MTZJ27B 1/2W	1 EA
D421	HVDMTZJ6.8BT	DIODE , ZENER	MTZJ6.8B 1/2W	1 EA
D422	HVDMTZJ6.8BT	DIODE , ZENER	MTZJ6.8B 1/2W	1 EA
D455	CVD1SS133MT	DIODE	1SS133	1 EA
D531	CVD1SS133MT	DIODE	1SS133	1 EA
D534	CVD1SS133MT	DIODE	1SS133	1 EA
D631	CVD1SS133MT	DIODE	1SS133	1 EA
D632	CVD1SS133MT	DIODE	1SS133	1 EA
D633	CVD1SS133MT	DIODE	1SS133	1 EA
D634	CVD1SS133MT	DIODE	1SS133	1 EA
D714	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
Q104	CVTKTC1027YT	TRANSISTOR NPN	KTC1027Y	1 EA
Q111	HVTKRA107MT	TRANSISTOR PNP	KRA107M	1 EA
Q112	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q113	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q251	HVTKTA1271YT	TRANSISTOR PNP	KTA1271Y	1 EA
Q252	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q721	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q941	HVTKTC2874BT	TRANSISTOR , MUTE NPN	KTC2874B	1 EA
Q942	HVTKTC2874BT	TRANSISTOR , MUTE NPN	KTC2874B	1 EA
Q943	HVTKTC2874BT	TRANSISTOR , MUTE NPN	KTC2874B	1 EA
Q944	HVTKTC2874BT	TRANSISTOR , MUTE NPN	KTC2874B	1 EA
Q951	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q952	HVTKRA107MT	TRANSISTOR PNP	KRA107M	1 EA
Q954	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
D101	CVD1L0345W31BOCT201V	L.E.D , WHITE	CVD1L0345W31BOCT201	1 EA
D102	CVD30ASOGCAA-S7	L.E.D , ORANGE	T0L-30ASOGCAA-S7	1 EA
D201	CVD1L0345W31BOCT201V	L.E.D , WHITE	CVD1L0345W31BOCT201	1 EA
D202	CVD1L0345W31BOCT201V	L.E.D , WHITE	CVD1L0345W31BOCT201	1 EA
D203	CVD1L0345W31BOCT201V	L.E.D , WHITE	CVD1L0345W31BOCT201	1 EA
IC11	HVI74HCU04AFNG	I.C , INVERTER (TOSHIBA)	TC74HCU04AFNG(TOSHIBA)	1 EA
IC12	HRVNJL34H380A	SENSOR , REMOCON (JRC)	NJL34H380A(PB-F)	1 EA
IC13	HVI74ACT04MTR	I.C , HEX (ST) INVERTER	74ACT04MTR	1 EA
IC14	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC15	HVINJM4556AL	I.C , HEADPHONE (JRC) DUAL OP AMP	NJM4556AL	1 EA
Resistors				
R101	CRD20TF2200T	RES , CARBON(220 OHM, 1%)	220 OHM, 1%	1 EA
R102	CRD20TF6800T	RES , CARBON(680 OHM, 1%)	680 OHM, 1%	1 EA
R113	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R121	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1 EA
R122	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R201	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R202	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R203	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R211	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R213	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1 EA
R214	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1 EA
R251	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1 EA
R252	CRD25TJ393T	RES , CARBON (39K OHM)	39K OHM	1 EA
R312	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1 EA

Ref. Designator	Part Number	Description	Qty	
FRONT PCB ASS'Y		COP12168D		
R313	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1 EA
R314	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1 EA
R315	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1 EA
R316	CRD20TF3301T	RES , CARBON	3.3K /1/5W/F	1 EA
R322	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1 EA
R323	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1 EA
R324	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1 EA
R325	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1 EA
R326	CRD20TF3301T	RES , CARBON	3.3K /1/5W/F	1 EA
R327	CRD20TF5601T	RES , CARBON(5.6K/F)	5.6K/F	1 EA
R328	CRD20TF5601T	RES , CARBON(5.6K/F)	5.6K/F	1 EA
R401	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R402	CRD25TJ4R7T	RES , CARBON (4.7 OHM)	4.7 OHM	1 EA
R403	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R404	CRD25TJ4R7T	RES , CARBON (4.7 OHM)	4.7 OHM	1 EA
R411	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R412	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R413	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R415	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1 EA
R431	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R432	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R511	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R512	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R513	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1 EA
R514	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1 EA
R541	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R551	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R552	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R553	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R554	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R601	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R603	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R604	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R612	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R701	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R702	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R703	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R711	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1 EA
R712	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1 EA
R713	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1 EA
R721	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R722	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R731	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R735	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R741	CRD20TJ123T	RES , CARBON	12K OHM 1/5W J	1 EA
R742	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R801	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R802	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R811	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R812	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R813	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R821	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R822	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R823	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R834	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1 EA
R835	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R836	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R901	CRD25TJ101T	RES , CARBON (100 OHM)	100 OHM	1 EA
R902	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R911	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R912	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1 EA
R921	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R922	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R923	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA

Ref. Designator	Part Number	Description	Qty	
FRONT PCB ASS'Y		COP12168D		
R924	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R925	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R926	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R931	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R932	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R933	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R934	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R935	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R936	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R941	CRD25TJ432T	RES , CARBON(1/4W, 4.3K)	1/4W, 4.3K	1 EA
R942	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R943	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R944	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R951	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA
R953	CRD20TJ362T	RES , CARBON	3.6K OHM 1/5W J	1 EA
R954	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
<i>Miscellaneous</i>				
L151	HLQ02C100KT	COIL , AXAIL (10UH)	LAP02TA100K	1 EA
S311	CST1A024ZT	SW , TACT		1 EA
S312	CST1A024ZT	SW , TACT		1 EA
S313	CST1A024ZT	SW , TACT		1 EA
S314	CST1A024ZT	SW , TACT		1 EA
S315	CST1A024ZT	SW , TACT		1 EA
S316	CST1A024ZT	SW , TACT		1 EA
S317	CST1A024ZT	SW , TACT		1 EA
S318	CST1A024ZT	SW , TACT		1 EA
S319	CST1A024ZT	SW , TACT		1 EA
S320	CST1A024ZT	SW , TACT		1 EA
S321	CST1A024ZT	SW , TACT		1 EA
S322	CST1A024ZT	SW , TACT		1 EA
S323	CST1A024ZT	SW , TACT		1 EA
S330	CST1A024ZT	SW , TACT		1 EA
RL91	CSL4A016ZU	RELAY , 12V 2C2P	BC3-12H	1 EA
VR74	CSR2A037Z	ENCODER		1 EA
BK71	CMD1A572	BRACKET , FIP		1 EA
BK72	CMD1A572	BRACKET , FIP		1 EA
BK73	CMC1A390	PLATE , SHIELD		1 EA
BK74	CMC1A390	PLATE , SHIELD		1 EA
BN51	CWB1C907400BM001	SHIELD WIRE ASS'Y (2.5mm, 400mm, 7pin)		1 EA
BN52	CWB1C903400BM001	SHIELD WIRE ASS'Y (2.5mm, 400mm, 3pin)		1 EA
BN61	CJP12GB143ZB	PIN HEADER , DIP SOCKET(12PIN, 2.54mm, ANGLE)		1 EA
BN73	CJP06GB143ZB	FEMALE HEADER(6P, 2.54mm)		1 EA
BN74	CWB1C905120BM	WIRE ASS'Y	AT-900	1 EA
CN61	CJP12GA239ZB	PIN HEADER(12P, 2.54mm), STRAIGHT TYPE		1 EA
CN71	CJP05GB03ZY	WAFER , ANGLE (2.5mm)		1 EA
CN72	CJP31GA41ZM	WAFER (1.25MM, CARD CABLE, STRAIGHT 31P)	MOLEX 52045-**45	1 EA
CN73	CJP06GB142ZB	PIN HEADER(6P, 2.54mm)		1 EA
CN74	CJP05GB03ZY	WAFER , ANGLE (2.5mm)		1 EA
ET63	CMC2A325	PLATE , EARTH AVR155		1 EA
ET64	CMC4A111	PLATE , EARTH		1 EA
FB13	KLZ9H001Z	BEAD , CORE		1 EA
FB14	KLZ9H001Z	BEAD , CORE		1 EA
FB15	KLZ9H001Z	BEAD , CORE		1 EA
F1	CFL162BD01GINK	V.F.D	162-BD-01GINK	1 EA
JK51	CJJ9X006Z	JACK , USB STRAIGHT(BLACK)	U250FD004BY	1 EA
JK52	CJJ4S028Y	JACK , BOARD (3P SILVER)		1 EA
JK61	CJJ4M041Y	JACK , BOARD (COAX)	RCA-107B-02	1 EA
JK62	HJSTORX177L	MODULE , OPTICAL(RX)	TORX177L	1 EA
JK63	CJJ2E026Z	JACK , HEADPHONE(SILVER PLATE)	PJ-612A-51	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
<i>Capacitors</i>				
C501	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C502	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C503	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C504	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C505	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C506	CCKT1H331KB	CAP , CERAMIC	330PF 50V K	1 EA
C507	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1 EA
C508	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1 EA
C509	CCKT1H331KB	CAP , CERAMIC	330PF 50V K	1 EA
C510	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1 EA
C561	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C562	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C563	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C564	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C565	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C566	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C567	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C568	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C569	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C570	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C571	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C572	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C573	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C574	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C575	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C601	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C602	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C603	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C604	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C605	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C606	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C607	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C608	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C609	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C610	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C681	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C682	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C683	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C684	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C685	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C721	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C722	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C723	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C724	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C725	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C726	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C727	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C728	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1 EA
C801	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C802	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C803	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C804	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1 EA
C805	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C806	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1 EA
C811	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C812	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C813	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C814	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C815	CCKT1H331KB	CAP , CERAMIC	330PF 50V K	1 EA
C816	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1 EA
C817	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C818	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
C819	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C820	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1 EA
C851	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C852	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C853	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C854	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C855	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C856	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C857	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C900	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C901	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C905	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C907	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C908	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C910	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C911	CCEA1CH471T	CAP , ELECT	470UF 16V	1 EA
C912	CCEA1CH221T	CAP , ELECT	220UF 16V	1 EA
C913	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1 EA
C914	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C917	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C918	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C919	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C924	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1 EA
C925	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1 EA
C932	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C933	CCEA1EH221T	CAP , ELECT	220UF 25V	1 EA
C934	CCFT1H223ZF	CAP , CERAMIC	0.022UF 50V Z	1 EA
C936	CCEA1EH221T	CAP , ELECT	220UF 25V	1 EA
C939	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
C940	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C948	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1 EA
C950	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C971	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C972	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C973	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C974	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C975	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C977	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
C980	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C981	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1 EA
C990	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C991	CCEA1HH1R0T	CAP , ELECT	1UF 50V	1 EA
C992	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C993	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C994	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C995	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C996	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C997	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1 EA
C999	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1 EA
C631	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C632	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C633	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C634	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C635	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C636	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C637	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C638	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C639	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C640	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C807	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C808	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C809	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C810	CCEA1JH221E	CAP , ELECT	220UF 63V	1 EA
C904	KCKDKS472ME	CAP , CERAMIC(X1/Y2/SC)	0.0047UF/2.5KV	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
C906	CCEA1EH102E	CAP , ELECT	1000UF 25V	1 EA
C915	CCET63VKL5153NKZ	CAP , ELECT (35X55,15000uF/63V,KL5)	35X55,15000uF/63V,KL5	1 EA
C916	CCET63VKL5153NKZ	CAP , ELECT (35X55,15000uF/63V,KL5)	35X55,15000uF/63V,KL5	1 EA
<i>Semiconductors</i>				
D501	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D502	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D503	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D504	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D505	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D581	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D582	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D583	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D584	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D585	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D801	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D802	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D803	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D804	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D901	HVD1N5819T	DIODE , SCHOTTKY	1N5819	1 EA
D902	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D911	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D912	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D914	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
D917	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D953	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D954	CVD1N4003SRT	DIODE , RECT	1N4003	1 EA
D955	CVD1N4003SRT	DIODE , RECT	1N4003	1 EA
D956	CVD1N4003SRT	DIODE , RECT	1N4003	1 EA
D957	CVD1N4003SRT	DIODE , RECT	1N4003	1 EA
D961	HVD1N5819T	DIODE , SCHOTTKY	1N5819	1 EA
D962	CVD1N4003SRT	DIODE , RECT	1N4003	1 EA
D963	CVD1N4003SRT	DIODE , RECT	1N4003	1 EA
D964	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D967	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D968	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D969	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D971	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D972	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D973	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D974	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D975	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D976	HVD1SS133MT	DIODE	1SS133T-77	1 EA
D979	HVDMTZJ5.1BT	DIODE , ZENER	MTZJ5.1B 1/2W	1 EA
IC97	HVIRE5VT28CATZ	I.C , RESET (RICOH)	RE5VT28CATZ	1 EA
Q501	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q502	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q503	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q504	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q505	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q511	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q512	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q513	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q514	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q515	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q516	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q517	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q518	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q519	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q520	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q541	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA
Q542	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA
Q543	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
Q544	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA
Q545	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA
Q556	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q557	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q558	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q559	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q560	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q561	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q562	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q563	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q564	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q565	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q601	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q602	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q603	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q604	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q605	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q681	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q682	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q683	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q684	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q685	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q801	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q802	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q812	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q813	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q814	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q815	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q816	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q817	HVTKTA1268GRT	TRANSISTOR PNP	KTA1268GR	1 EA
Q818	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q819	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q820	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q821	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q822	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q823	HVTKTC3200GRT	TRANSISTOR NPN	KTC3200GR	1 EA
Q824	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA
Q825	HVTKTC3198YT	TRANSISTOR NPN	KTC3198Y	1 EA
Q901	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q911	HVTKTA1271YT	TRANSISTOR PNP	KTA1271Y	1 EA
Q912	HVTKTA1271YT	TRANSISTOR PNP	KTA1271Y	1 EA
Q913	HVTKTA1271YT	TRANSISTOR PNP	KTA1271Y	1 EA
Q914	HVTKTA1271YT	TRANSISTOR PNP	KTA1271Y	1 EA
Q915	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q916	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q917	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q918	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q938	HVTKRA107MT	TRANSISTOR PNP	KRA107M	1 EA
Q939	HVTKRA107MT	TRANSISTOR PNP	KRA107M	1 EA
Q941	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q942	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q943	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
Q960	HVTKRC107MT	TRANSISTOR NPN	KRC107M	1 EA
Q961	HVTKTA1024YT	TRANSISTOR PNP	KTA1024-Y-AT/P	1 EA
Q652	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q653	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q654	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q655	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q657	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA
Q658	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA
Q659	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA
Q660	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA
Q661	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q670	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
Q803	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA
Q804	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q805	CVT2SD2390P43M	TRANSISTOR , POWER (MICA 43 TYPE) NPN	2SD2390P	1 EA
Q807	CVT2SB1560P43M	TRANSISTOR , POWER (MICA 43 TYPE) PNP	2SB1560P43M	1 EA
Q851	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q852	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q853	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q854	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q855	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q856	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q857	HVTKTD600KGR	TRANSISTOR , BIAS NPN	KTD600KGR	1 EA
Q858	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q871	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q872	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q874	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q875	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q876	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q877	HVTKTA1360Y	TRANSISTOR , PRE DRIVE PNP	KTA1360Y	1 EA
Q881	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
Q882	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
Q883	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
Q884	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
Q885	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
Q886	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
Q887	HVTKTC3423Y	TRANSISTOR , PRE DRIVE NPN	KTC3423Y	1 EA
IC95	HVIKIA78R05PI	REGULATOR (5V OUTPUT LOW DROP)	KIA78R05PI-U/P	1 EA
<i>Resistors</i>				
R500	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R501	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R502	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R503	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R504	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R505	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R506	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R507	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R508	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R509	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R510	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R511	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R512	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R513	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R514	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R515	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R516	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R517	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R518	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R519	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R520	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R521	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R522	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R523	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R524	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R525	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R531	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R532	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R533	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R534	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R535	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R536	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R537	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R538	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R539	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
R540	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R541	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R542	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R543	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R544	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R545	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R556	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R557	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R558	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R559	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R560	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R561	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R562	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R563	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R564	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R565	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R566	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R567	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R568	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R569	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R570	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R571	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R572	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R573	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R574	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R575	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R576	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R577	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R578	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R579	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R580	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R581	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R582	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R583	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R584	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R585	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R586	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R587	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R588	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R589	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R590	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R591	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R592	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R593	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R594	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R595	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R596	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R597	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R598	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R599	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R600	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R601	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R602	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R603	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R604	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R605	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R606	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R607	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R608	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R609	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R610	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R611	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R612	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1 EA
R631	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
		18 OHM		
R632	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R633	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R634	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R635	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R636	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R637	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R638	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R639	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R640	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R646	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R647	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R648	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R649	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R650	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R651	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R652	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R653	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R654	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R655	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R666	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R667	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R668	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R669	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R670	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R671	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R672	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R673	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R674	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R675	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R676	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R677	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R678	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R679	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R680	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R681	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R682	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R683	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R684	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R685	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R686	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R687	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R688	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R689	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R690	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R696	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R697	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R698	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R699	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R700	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R701	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R702	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R703	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R704	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R705	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R706	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R707	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R708	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R771	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R772	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R773	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R774	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R775	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R776	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R777	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
R781	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R782	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R783	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R784	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R785	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R786	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R787	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1 EA
R801	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R802	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R803	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R804	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R805	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R807	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R808	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R809	CRD25TJ182T	RES , CARBON (1.8K OHM)	1.8K OHM	1 EA
R812	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R813	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R814	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R815	CRD25TJ470T	RES , CARBON (47 OHM)	47 OHM	1 EA
R817	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R818	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R819	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R820	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1 EA
R821	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R822	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R823	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R824	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE	18 OHM	1 EA
R830	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R831	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R832	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R833	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R834	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R835	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R836	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R837	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R838	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R839	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R840	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R841	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R842	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R843	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R844	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R845	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R848	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R849	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R850	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R851	CRD20TJ162T	RES , CARBON (1.6K OHM)	1.6K OHM	1 EA
R852	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R853	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R854	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R855	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R856	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R857	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R858	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R859	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1 EA
R860	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R861	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1 EA
R862	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R863	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1 EA
R870	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R871	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1 EA
R872	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R873	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1 EA
R874	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
R875	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R876	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R877	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R878	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R879	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R880	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R882	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R883	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R884	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R885	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R886	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R887	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R888	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1 EA
R891	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R892	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R893	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R894	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R895	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R896	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R897	CRD20TJ391T	RES , CARBON (390 OHM)	390 OHM	1 EA
R900	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R906	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R912	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J	1 EA
R913	C3A206	WIRE , COPPER	SN95/PB5 , 0.6	0.02 M
R917	CRD25TJ393T	RES , CARBON (39K OHM)	39K OHM	1 EA
R918	CRD25TJ393T	RES , CARBON (39K OHM)	39K OHM	1 EA
R919	CRD25TJ393T	RES , CARBON (39K OHM)	39K OHM	1 EA
R920	CRD25TJ393T	RES , CARBON (39K OHM)	39K OHM	1 EA
R924	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1 EA
R925	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1 EA
R926	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1 EA
R927	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1 EA
R928	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1 EA
R929	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1 EA
R930	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1 EA
R931	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1 EA
R933	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R934	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R935	CRD20TJ154T	RES , CARBON (150K OHM)	150K OHM	1 EA
R936	CRD20TJ334T	RES , CARBON (330K OHM)	330K OHM	1 EA
R939	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1 EA
R940	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1 EA
R941	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1 EA
R942	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R943	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R944	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1 EA
R945	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1 EA
R946	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R947	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R948	CRD25TJ392T	RES , CARBON	3.9K 1/4W J	1 EA
R949	CRD20TJ334T	RES , CARBON (330K OHM)	330K OHM	1 EA
R952	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1 EA
R953	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R954	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R955	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R956	CRD20TJ224T	RES , CARBON	220 KOHM 1/5W J	1 EA
R957	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1 EA
R958	CRD20TJ563T	RES , CARBON	56K OHM 1/5W J	1 EA
R959	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1 EA
R961	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1 EA
R962	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1 EA
R964	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R965	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1 EA
R986	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
R987	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1 EA
R988	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1 EA
R989	CRD20TJ302T	RES , CARBON (3K OHM)	3K OHM	1 EA
R991	CRD20TJ822T	RES , CARBON	8.2K OHM 1/5W J	1 EA
R998	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1 EA
R656	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R657	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R658	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R659	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R660	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R810	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R811	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)	0.27OHM(*2) ,5W	1 EA
R905	CRG1ANJ1R0H	RES , METAL OXIDE FILM	1 OHM 1W J	1 EA
R922	CRG2ANJ470H	RES , METAL OXIDE FILM	47 OHM 2W J	1 EA
R923	CRG1ANJ220H	RES , METAL OXIDE FILM	22 OHM 1W J	1 EA
R990	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
R992	KRG1SANJ271RT	RES , METAL OXIDE FILM (270 OHM)	270 OHM 1W J	1 EA
R993	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
R994	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
R995	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
R996	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
R997	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
R999	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1 EA
VR81	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
VR82	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
VR83	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
VR84	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
VR85	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
VR86	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
VR87	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1 EA
<i>Miscellaneous</i>				
ET90	HJT1A025	PLATE , EARTH	MET37-0002	1 EA
ET91	HJT1A025	PLATE , EARTH	MET37-0002	1 EA
F902	KBA2D2500TLET	FUSE (2.5A)		1 EA
	CMYAVR3600/120	HEAT SINK ASS'Y		1 EA
	CFNCF12825HSN	FAN , MOTOR		1 EA
	CHD1A012R	SCREW , SPECIAL		14 EA
	CHD1A036R	SCREW , SPECIAL		4 EA
	CHD3A012R	SCREW , SPECIAL		12 EA
	CMD1A398	BRACKET , PCB	AG-D9320	2 EA
	CMD1A417	BRACKET , PCB	AG-D8900	2 EA
	CMD1A694	BRACKET , FAN		1 EA
	CMY2A314	HEAT SINK		1 EA
	CTB3+8JR	SCREW	00M51260308M0	8 EA
	CTB3+8JR	SCREW	00M51260308M0	4 EA
BN14	CWB1D00718088	WIRE ASS'Y (2.5MM, 180MM, 7PIN, DUAL-DIPPING TYPE)		1 EA
BN15	CWB1D00915088	WIRE ASS'Y (2.5mm, 150mm, 9pin, Dual-dipping type)		1 EA
BN20	CWB3F905300UZ	WIRE ASS'Y (3.96mm, 300mm, 5pin)		1 EA
BN25	CWE8112120VV	WIRE ASS'Y (1PIN,120mm,LUG,#18,RED)		1 EA
BN26	CWE8112120VV	WIRE ASS'Y (1PIN,120mm,LUG,#18,RED)		1 EA
CN10	CJP03GA01ZY	WAFER	YMW025-03R	1 EA
CN11	CJP08GA221ZB	FEMALE HEADER (08P,2.54mm) , STRAIGHT TYPE		1 EA
CN12	CJP27GA41ZM	WAFER (1.25MM, CARD CABLE, STRAIGHT 27P)	052045-2745	1 EA
CN61	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN62	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN63	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN64	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN65	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN66	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN67	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN89	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	YMW025-02R	1 EA
CN90	CJP02GA89ZY	WAFER		1 EA

Ref. Designator	Part Number	Description	Qty	
MAIN PCB ASS'Y		COP12170D		
CN91	CJP02GA89ZY	WAFER	1	EA
CN92	CJP02KA060ZY	WAFER	1	EA
CN93	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	1	EA
ET92	CMD1A387	BRACKET , PCB	1	EA
ET93	CMD1A387	BRACKET , PCB	1	EA
JK91	CJJ5R006Z	TERMINAL , SPEAKER	1	EA
JK92	CJJ5Q012Z	TERMINAL , SPEAKER	1	EA
JK97	CJJ4P041W	JACK IN/OUT	1	EA
JK98	CJJ4P042W	JACK IN/OUT	1	EA
JW91	CWE8112120VV	WIRE ASS'Y (1PIN,120mm,LUG,#18,RED)	1	EA
JW93	CWEE102100VV	WIRE ASS'Y (1P, BLACK, 100MM)	1	EA
L501	CLEY0R5KAK	COIL , SPEAKER	1	EA
L502	CLEY0R5KAK	COIL , SPEAKER	1	EA
L503	CLEY0R5KAK	COIL , SPEAKER	1	EA
L504	CLEY0R5KAK	COIL , SPEAKER	1	EA
L505	CLEY0R5KAK	COIL , SPEAKER	1	EA
L506	CLEY0R5KAK	COIL , SPEAKER	1	EA
L507	CLEY0R5KAK	COIL , SPEAKER	1	EA
OL91	KJJ7A013Z	OUTLET , AC 1 PIN USA	1	EA
RY94	CSL1E002ZE	RELAY , POWER	1	EA
TH91	KRTP42T7D330B	THERMAL SENSOR , POSISTOR	1	EA
T902	CLT5I005ZU	TRANS, SUB	1	EA
POWER PCB ASS'Y		CIP12172D		
<i>Capacitors</i>				
C104	HCQ1H103JZT	CAP , MYLAR	1	EA
C105	HCQ1H103JZT	CAP , MYLAR	1	EA
C106	HCQ1H104JZT	CAP , MYLAR	1	EA
C107	HCQ1H103JZT	CAP , MYLAR	1	EA
C108	HCQ1H103JZT	CAP , MYLAR	1	EA
C109	HCQ1H104JZT	CAP , MYLAR	1	EA
C110	CCEA1CH101T	CAP , ELECT	1	EA
C123	CCFT1H473ZF	CAP , CERAMIC	1	EA
C124	CCFT1H473ZF	CAP , CERAMIC	1	EA
C125	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	1	EA
C127	CCBS1H104ZFT	CAP , CERAMIC	1	EA
C131	CCEA1HH4R7T	CAP , ELECT	1	EA
C132	CCFT1H473ZF	CAP , CERAMIC	1	EA
C133	CCFT1H473ZF	CAP , CERAMIC	1	EA
C134	CCFT1H473ZF	CAP , CERAMIC	1	EA
C135	CCBS1H104ZFT	CAP , CERAMIC	1	EA
C136	CCBS1H104ZFT	CAP , CERAMIC	1	EA
C750	CCEA1CH101T	CAP , ELECT	1	EA
C751	CCEA1CH101T	CAP , ELECT	1	EA
C752	CCEA1CH101T	CAP , ELECT	1	EA
C911	CCEA1HKS2R2T	CAP , ELECT	1	EA
C912	CCEA0JH102T	CAP , ELECT	1	EA
C919	CCKT1H102KB	CAP , CERAMIC	1	EA
C920	CCEA1HH470T	CAP , ELECT	1	EA
C922	KCME2E104JP04T	CAP , METALLIZED FILM (0.1UF/250V)	1	EA
C925	CCME2A103JXT	CAP , METALLIZED FILM (0.01UF/100V)	1	EA
C926	CCME2A103JXT	CAP , METALLIZED FILM (0.01UF/100V)	1	EA
C931	HCQ1H473JZT	CAP , MYLAR	1	EA
C932	HCQ1H473JZT	CAP , MYLAR	1	EA
C935	CCBS1H104ZFT	CAP , CERAMIC	1	EA
C936	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	1	EA
C937	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	1	EA
C938	CCEA1CH101T	CAP , ELECT	1	EA
C939	CCEA1EH101T	CAP , ELECT	1	EA
C940	CCEA1EH101T	CAP , ELECT	1	EA
C129	CCEA1EH103E	CAP , ELECT (10000uF/25V,22x30,KR3)	1	EA
C450	CCEA1VH471E	CAP , ELECT	1	EA

Ref. Designator	Part Number	Description	Qty	
POWER PCB ASS'Y		CIP12172D		
C929	CCEA1VH222EZ	CAP , ELECT (2200UF/35V, 12.5X31)	1	EA
C930	CCEA1VH222EZ	CAP , ELECT (2200UF/35V, 12.5X31)	1	EA
<i>Semiconductors</i>				
D114	CVD1N4003ST	DIODE , RECT	1	EA
D115	CVD1N4003ST	DIODE , RECT	1	EA
D116	CVD1N4003ST	DIODE , RECT	1	EA
D117	CVD1N4003ST	DIODE , RECT	1	EA
D124	CVD1N4003ST	DIODE , RECT	1	EA
D125	CVD1N4003ST	DIODE , RECT	1	EA
D801	CVD1SS133MT	DIODE	1	EA
D802	CVD1SS133MT	DIODE	1	EA
Q911	HVTKTA1267YT	TRANSISTOR PNP	1	EA
Q912	HVTKTC3198YT	TRANSISTOR NPN	1	EA
Q913	HVTKTC3198YT	TRANSISTOR NPN	1	EA
IC81	CVIKIA7905PI	I.C , REGULATOR(-5V)	1	EA
IC82	HVIKIA7805API	REGULATOR, +5V	1	EA
IC83	CVIKIA278R15PI	I.C , REGULATOR(15V OUTPUT LOW DROP)	1	EA
IC84	CVIKIA7915PI	I.C , REGULATOR(15V, TO-220AB)	1	EA
D701	CVDKBU804FMA	BRIDGE DIODE ASS'Y	1	EA
	HVDKBU804F	DIODE , BRIDGE	1	EA
	HVDGBJ1506	DIODE, BRIDGE.(600V)	1	EA
D991	CVDGBJ1506BIA	DIODE HEAT SINK ASS'Y (CMY2A138)	1	EA
<i>Resistors</i>				
R120	CRD20TJ103T	RES , CARBON	1	EA
R123	C3A206	WIRE , COPPER	0.02	M
R124	C3A206	WIRE , COPPER	0.02	M
R750	CRD20TJ103T	RES , CARBON	1	EA
R751	CRD20TJ103T	RES , CARBON	1	EA
R752	CRD20TJ103T	RES , CARBON	1	EA
R901	CRD20TJ272T	RES , CARBON	1	EA
R912	CRD20TJ153T	RES , CARBON	1	EA
R913	CRD20TJ153T	RES , CARBON	1	EA
R917	CRD25TJ153T	RES , CARBON (15K OHM)	1	EA
R918	CRD25TJ153T	RES , CARBON (15K OHM)	1	EA
R919	CRD25TJ153T	RES , CARBON (15K OHM)	1	EA
R920	CRD25TJ153T	RES , CARBON (15K OHM)	1	EA
R925	CRD20TJ103T	RES , CARBON	1	EA
R927	CRD20TJ104T	RES , CARBON	1	EA
R928	CRD20TJ333T	RES , CARBON	1	EA
R942	CRD20TJ104T	RES , CARBON	1	EA
R104	KRQ1AJR47H	RES , FUSE	1	EA
R105	KRQ1AJR47H	RES , FUSE	1	EA
<i>Miscellaneous</i>				
F110	KBA2D5000A2EYT	FUSE(382 Series, 250V, 5A)	1	EA
F111	KBA2D5000A2EYT	FUSE(382 Series, 250V, 5A)	1	EA
BN17	CJP06GB143ZB	FEMALE HEADER(6P, 2.54mm)	1	EA
BN20	CWB1D00715058	WIRE ASS'Y (LOCKING TYPE, 2.5MM, 7PIN, 150MM)	1	EA
BN40	CWB1C903100BM	WIRE ASS'Y	1	EA
BN96	CWB1D00912058	WIRE ASS'Y (LOCKING TYPE, 2.5MM, 9PIN, 120MM)	1	EA
CN11	CJP08GB142ZB	PIN HEADER (08P, 2.54mm) , ANGLE TYPE	1	EA
CN20	CJP05GA90ZY	WAFER , 5P(DIP, 3.96PITCH)	1	EA
CN82	CJP07GI237ZW	LOCKING TYPE , STRAIGHT WAFER, 2.5MM	1	EA
CN96	CJP09GJ243ZW	WAFER (9P LOCK ANGLE 2.5MM)	1	EA
	CMY1A219	HEAT SINK (BRIDGE DIODE)	1	EA
	CTB3+12JR	SCREW	1	EA
	CMY2A138	HEAT SINK	1	EA
	CTB3+12JR	SCREW	1	EA
ET01	CMD1A387	BRACKET , PCB	1	EA

Ref. Designator	Part Number	Description	Qty	
POWER PCB ASS'Y		CIP12172D		
ET04	CMD1A736	BRACKET , PCB	1	EA
JK75	HJSTORX177L	MODULE , OPTICAL(RX)	1	EA
JK76	HJSTORX177L	MODULE , OPTICAL(RX)	1	EA
JK77	HJSTORX177L	MODULE , OPTICAL(RX)	1	EA
JK99	CJJ9B001Z	JACK, DC POWER (3PIN / 1.GND 2.OPEN 3.DC POWER)	1	EA
VIDEO IN/OUT PCB ASS'YS		COP12175D		
<i>Capacitors</i>				
C401	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	1	EA
C404	CCEA0JH102T	CAP , ELECT	1	EA
C411	CCEA1HH100T	CAP , ELECT	1	EA
C421	CCEA1HH100T	CAP , ELECT	1	EA
C451	CCEA1HH100T	CAP , ELECT	1	EA
C491	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	1	EA
C601	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C602	CCEA0JH102T	CAP , ELECT	1	EA
C603	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C604	CCEA0JH102T	CAP , ELECT	1	EA
C605	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C606	CCEA0JH102T	CAP , ELECT	1	EA
C611	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C613	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C615	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C621	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C623	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
C625	CCBS1H220JCT	CAP , CERAMIC(22PF/50V)	1	EA
<i>Resistors</i>				
R401	C3A206	WIRE , COPPER	0.02	M
R411	CRD20TJ750T	RES , CARBON	1	EA
R421	CRD20TJ750T	RES , CARBON	1	EA
R451	CRD20TJ750T	RES , CARBON	1	EA
R491	CRD20TJ750T	RES , CARBON	1	EA
R601	C3A206	WIRE , COPPER	0.02	M
R603	C3A206	WIRE , COPPER	0.02	M
R605	C3A206	WIRE , COPPER	0.02	M
R611	CRD20TJ750T	RES , CARBON	1	EA
R612	CRD20TJ750T	RES , CARBON	1	EA
R613	CRD20TJ750T	RES , CARBON	1	EA
R621	CRD20TJ750T	RES , CARBON	1	EA
R622	CRD20TJ750T	RES , CARBON	1	EA
R623	CRD20TJ750T	RES , CARBON	1	EA
<i>Miscellaneous</i>				
BN56	CJP16GB142ZB	PIN , HEADER (16PIN, 2.54mm, ANGLE)	1	EA
BN57	CJP06GB142ZB	PIN HEADER(6P, 2.54mm)	1	EA
JK40	CJJ4N043Z	JACK , BOARD	1	EA
JK41	CJJ4N043Z	JACK , BOARD	1	EA
JK42	CJJ4R045Z	JACK , BOARD	1	EA
JK43	CJJ4S030Z	JACK , BOARD	1	EA
JK44	CJJ4M049Y	JACK , RCA(1P,RCA-115A-05)	1	EA
INPUT PCB ASS'Y		COP12177D		
<i>Capacitors</i>				
C203	CCUS1H221JA	CAP , CHIP	1	EA
C204	CCUS1H221JA	CAP , CHIP	1	EA
C205	CCUS1H221JA	CAP , CHIP	1	EA
C206	CCUS1H221JA	CAP , CHIP	1	EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
C207	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C208	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C209	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C210	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C211	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C212	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C213	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C214	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C215	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C216	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C219	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C220	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C221	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C222	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C223	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C224	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C225	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C226	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C227	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C228	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C229	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C230	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C260	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C274	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C275	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C276	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C277	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C278	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C279	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C280	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C289	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C290	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C291	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C293	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C295	CCUS1H272KC	CAP , CHIP	2700PF 50V K	1 EA
C296	CCUS1H272KC	CAP , CHIP	2700PF 50V K	1 EA
C299	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C301	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C302	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C303	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C304	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C305	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C306	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C307	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C308	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1 EA
C309	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C310	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C311	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C312	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C313	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C314	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C315	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C316	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C317	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C318	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C319	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C320	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C321	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C322	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C323	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C324	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C325	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C326	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C327	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
C328	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C329	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C330	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C331	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C332	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C333	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C334	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C335	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C336	CCUS1H561JA	CAP , CHIP	560PF 50V J	1 EA
C337	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C338	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C339	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C340	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C350	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C351	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C352	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C353	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C354	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C355	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C356	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C357	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C358	CCUS1H392KC	CAP , CHIP CERAMIC(1608, 3900p)	3900PF 50V K	1 EA
C359	CCUS1H822KC	CAP , CHIP(8200pF/50V,1608 SIZE)	0603B822K101B	1 EA
C362	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C363	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C364	CCUS1H392KC	CAP , CHIP CERAMIC(1608, 3900p)	3900PF 50V K	1 EA
C365	CCUS1H822KC	CAP , CHIP(8200pF/50V,1608 SIZE)	0603B822K101B	1 EA
C369	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C370	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C381	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C382	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C383	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C384	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C385	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C386	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C387	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C388	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C391	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C392	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C393	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C394	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C395	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C396	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C397	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C398	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C412	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C413	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C428	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C442	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C448	CCUS1H331JA	CAP , CHIP	330PF 50V J	1 EA
C467	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C468	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C469	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C470	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C476	CCUS1H101JA	CAP , CHIP	100PF 50V J	1 EA
C477	CCUS1H101JA	CAP , CHIP	100PF 50V J	1 EA
C478	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C479	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C532	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C534	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C535	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C536	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C537	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C538	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
C539	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C540	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1 EA
C601	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C603	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C605	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C607	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C609	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C610	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1 EA
C611	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C613	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C615	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C617	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C619	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C621	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C623	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C625	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C627	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C629	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C631	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C641	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C642	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C643	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C644	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C645	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C646	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C647	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C648	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C649	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C650	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C651	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C652	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C653	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C654	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C655	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C656	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C657	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C658	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C659	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C701	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1 EA
C702	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1 EA
C704	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C705	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C707	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C708	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C716	CCUS1H151JA	CAP , CHIP	150PF 50V J	1 EA
C718	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C719	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C722	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C723	CCUS1H473KC	CAP , CHIP	0.047UF 50V K	1 EA
C725	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C727	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C729	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C731	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C733	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C734	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C738	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C739	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C741	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C742	CCUS1H300JA	CAP , CHIP (30PF)	30PF	1 EA
C743	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C744	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C745	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C746	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C747	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
C748	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C751	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C754	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C756	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C758	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C759	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C760	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C761	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C762	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C763	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C765	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C767	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C768	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C769	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C770	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C771	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C772	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C773	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C778	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C780	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C781	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C782	CCUS1H103KC	CAP , CHIP	0.01UF 50V K 1608 SIZE	1 EA
C783	CCUS1H103KC	CAP , CHIP	0.01UF 50V K 1608 SIZE	1 EA
C784	CCUS1H103KC	CAP , CHIP	0.01UF 50V K 1608 SIZE	1 EA
C787	CCUS1H103KC	CAP , CHIP	0.01UF 50V K 1608 SIZE	1 EA
C789	CCUS1H103KC	CAP , CHIP	0.01UF 50V K 1608 SIZE	1 EA
C790	CCUS1H103KC	CAP , CHIP	0.01UF 50V K 1608 SIZE	1 EA
C791	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C793	CCUS1H101JA	CAP , CHIP	100PF 50V J	1 EA
C794	CCUS1H181JA	CAP , CHIP	180PF 50V J 1608 SIZE	1 EA
C795	CCUS1H181JA	CAP , CHIP	180PF 50V J 1608 SIZE	1 EA
C796	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C797	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C798	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C820	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C261	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C262	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C263	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C264	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C265	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C266	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C267	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C268	CCEA1EH470T	CAP , ELECT	47UF 25V	1 EA
C270	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C271	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C272	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C273	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C281	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C282	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C283	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C284	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C285	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C286	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C287	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C288	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C292	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C294	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C341	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C342	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C343	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C344	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C345	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C346	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C347	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
C348	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C361	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C371	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C372	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C373	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C374	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C375	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C376	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C377	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C378	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C389	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C390	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C414	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C415	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C441	CCEA1EH101T	CAP , ELECT	100UF 25V	1 EA
C443	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C444	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C446	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C447	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C449	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C452	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C453	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C454	CCEA1EH101T	CAP , ELECT	100UF 25V	1 EA
C612	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C614	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C626	CCEA1CH221T	CAP , ELECT	220UF 16V	1 EA
C628	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C630	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C660	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C703	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C706	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C715	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
C717	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
C720	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C721	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C724	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C726	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C728	CCEA1AH471T	CAP , ELECT	470UF 10V	1 EA
C730	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C737	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C740	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C749	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C750	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C752	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C753	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C764	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1 EA
C766	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1 EA
C732	CCEA0JKR3222E	CAP , ELECT	2200UF , 6.3V	1 EA
Semiconductors				
D201	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D202	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D203	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D204	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D205	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D206	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D207	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D208	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D209	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D210	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D211	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D212	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D213	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
D214	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D215	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D216	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D442	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D476	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D701	HVDRLS4148SR	DIODE, SWITCHING, SMD TYPE	RLS4148 TE-11	1 EA
D704	CVDSS34SR	DIODE , SCHOTTKY (40V,3A, DO-214AC) DELTA	SS34	1 EA
D725	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D727	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
IC20	CVINJW1298FU1	I.C , VOL WITH INPUT SELECTOR (JRC)	NJW1298FU1(PB-F	1 EA
IC21	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC22	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC23	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC24	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC25	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC26	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC28	HVINJW1159M	I.C , ELECTRONIC VOLUME (2-CH)	NJW1159V-TE1(PB	1 EA
IC29	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC31	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC32	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC33	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC34	HVINJM2068MTE1	I.C , DUAL OP AMP (JRC)	NJM2068M-TE1	1 EA
IC40	HVITC74HCU04AFN	IC , HEX INVERTER	TC74HCU04AFN	1 EA
IC41	HVICS42528-CQ	I.C , CODEC + DIR (CIRRUS LOGIC)	CS42528-CQ	1 EA
IC42	CVIF25L008A50PAG	I.C , 8Mbit SPI Serial FLASH (50MHz/8lead SOIC)	F25L008A-50PAG	1 EA
IC43	CVICS497024CVZ	I.C , DSP (CIRRUS LOGIC)	CS497024-CVZ	1 EA
IC44	CVIM12L16161A5TG	I.C , 16MB SDRAM (ESMT)	M12L16161A-5TG	1 EA
IC45	CVIF25L004A100PAG	I.C , 4M FLASH(8PIN SOIC)	F25L004A100PAG	1 EA
IC46	CVICS49DV8CCVZ	I.C , DSP (DOLBY VOLUME) CIRRUS LOGIC	CS49DV8CCVZ	1 EA
IC47	CVITC74VCX541FT	I.C , OCTAL BUS BUFFER (TOSHIBA)	TC74VCX541FT(EL	1 EA
IC48	HVITC74VHC157FT	I.C , 2-CHANNEL MUX (TOSHIBA)	TC74VHC157FT(EL	1 EA
IC49	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V) JRC	NJM2391DL1-33	1 EA
IC50	CVIKIA1117S18	I.C , REGULATOR(SOT-223)	KIA1117S/F18, SOT-223	1 EA
IC51	CVIKIA1117S33	I.C , REGULATOR(SOT-223)	KIA1117S/F33, SOT-223	1 EA
IC52	CVIANAM1459AT	I.C , U-COM (AVR2600/AVR3600)	ANAM1459AT	1 EA
	CVIT5CN5	I.C , U-COM (512KB/32KB, LQFP100P) TOSHIBA	T5CN5(F,AAD)	1 EA
IC53	CVIM24C32WMN6TP	I.C , EEPROM (32 Kbit) ST	M24C32WMN6TP	1 EA
Q301	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q302	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q303	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q304	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q305	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q306	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q307	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q401	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q402	HVTKTC812TB	TRANSISTOR , CHIP(TS6) AUDIO MUTING NPN	KTC812T-B-RTK	1 EA
Q456	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q729	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q730	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q732	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q734	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q735	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q736	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q738	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q739	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q741	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q742	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q951	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q952	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q991	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q992	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q993	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q994	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q997	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
Q998	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
D221	CVD1N4003ST	DIODE , RECT	1N4003	1 EA
D222	CVD1N4003ST	DIODE , RECT	1N4003	1 EA
D447	HVDMTZJ12BT	DIODE , ZENER	MTZJ12B 1/2W	1 EA
Q311	HVTKTC2874BT	TRANSISTOR , MUTE NPN	KTC2874B	1 EA
Q457	HVTKTA1267YT	TRANSISTOR PNP	KTA1267Y	1 EA
Q458	HVTKTA1271YT	TRANSISTOR PNP	KTA1271Y	1 EA
Q731	HVTKTA1267YT	TRANSISTOR PNP	KTA1267Y	1 EA
Q733	HVTKTC3199YT	TRANSISTOR NPN	KTC3199Y	1 EA
IC27	BVIKP1010B	IC, PHOTO COUPLER (COSMO)	KP1010B	1 EA
IC36	HVIKIA7808API	I.C , REGULATOR +8V	KIA7808 (KEC)	1 EA
IC37	CVIKIA7908PI	I.C , REGULATOR(TO-220IS)	KIA7908PI TO-220IS	1 EA
<i>Resistors</i>				
RN53	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN54	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN61	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN62	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN63	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN64	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm, 1608X4)	100R (1608)	1 EA
RN65	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm, 1608X4)	100R (1608)	1 EA
RN66	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm, 1608X4)	100R (1608)	1 EA
RN67	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm, 1608X4)	100R (1608)	1 EA
RN68	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN76	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN77	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN78	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN79	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN81	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN82	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN83	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN84	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN85	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN87	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN89	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN90	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN91	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
RN92	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm, 1608X4)	100R (1608)	1 EA
RN93	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1 EA
R203	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R204	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R205	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R206	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R207	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R208	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R209	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R210	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R211	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R212	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R213	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R214	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R215	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R216	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R219	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R220	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R221	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R222	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R223	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R224	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R225	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R226	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R229	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R230	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
R231	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R232	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R233	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R234	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R235	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R236	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R237	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R238	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R239	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R240	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R241	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R242	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R245	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R246	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R247	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R248	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R249	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R250	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R251	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R252	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R253	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R254	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R255	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R256	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R257	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R258	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R259	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R260	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R261	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R262	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R263	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R264	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R265	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R266	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R267	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R268	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R271	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R272	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R273	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R274	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R275	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R276	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R277	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R278	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1 EA
R279	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R280	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R281	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R282	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R283	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R284	CRJ10DJ912T	RES , CHIP	9.1K OHM/1608	1 EA
R285	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R286	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R287	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R288	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R289	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R290	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R291	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R292	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R293	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R294	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R295	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R296	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R297	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R298	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
R301	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R302	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R303	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R304	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R305	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R306	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R307	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R308	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R309	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R310	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R311	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R312	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R313	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R314	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R315	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R316	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R317	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R318	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1 EA
R319	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R321	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R322	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R323	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R324	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R325	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R326	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R327	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R328	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R329	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R330	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R331	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R332	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R333	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R334	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R335	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R336	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R337	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R338	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R340	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R341	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R342	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R343	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R344	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R345	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R348	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R349	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R350	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R351	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R352	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R353	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R354	CRJ10DJ301T	RES , CHIP 300 OHM	1608 SIZE	1 EA
R355	CRJ10DJ273T	RES , CHIP (27K OHM)	27K OHM	1 EA
R356	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R361	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R362	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R363	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R364	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R365	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R366	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R367	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R368	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R369	CRJ10DJ301T	RES , CHIP 300 OHM	1608 SIZE	1 EA
R370	CRJ10DJ273T	RES , CHIP (27K OHM)	27K OHM	1 EA
R371	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R372	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
R373	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R374	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R375	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R376	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R377	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R378	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R381	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R382	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R383	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R384	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R385	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R386	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R387	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R388	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R389	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R390	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R391	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R392	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R393	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R394	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R395	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R396	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R397	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R398	CRJ10DJ392T	RES . CHIP (3.9K OHM)	3.9K OHM	1 EA
R447	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R448	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R452	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R454	CRJ10DJ562T	RES , CHIP (5.6K OHM)	1608 SIZE	1 EA
R455	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R456	CRJ10DJ562T	RES , CHIP (5.6K OHM)	1608 SIZE	1 EA
R460	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R461	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R462	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R463	CRJ10DJ821T	RES , CHIP (820 OHM)	1608 SIZE	1 EA
R464	CRJ10DJ821T	RES , CHIP (820 OHM)	1608 SIZE	1 EA
R465	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R466	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R467	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R468	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R469	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R470	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R471	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R472	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R473	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1 EA
R474	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1 EA
R476	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R477	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R478	CRJ10DJ562T	RES , CHIP (5.6K OHM)	1608 SIZE	1 EA
R479	CRJ10DJ562T	RES , CHIP (5.6K OHM)	1608 SIZE	1 EA
R480	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R481	CRJ10DJ561T	RES , CHIP	560 OHM	1 EA
R482	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R483	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R484	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R485	CRJ14CJ101T	RES , CHIP 1/4W	100 OHM	1 EA
R489	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R490	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R499	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R531	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1 EA
R532	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1 EA
R533	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1 EA
R534	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1 EA
R601	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R602	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
R603	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R604	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R605	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R606	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R610	CRJ10DF5101T	RES. CHIP (5.1K 1%)	1608 SIZE	1 EA
R611	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R612	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R613	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R614	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R615	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R616	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R619	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R620	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R621	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R622	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R700	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R704	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R709	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R710	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R711	CRJ10DJ560T	RES , CHIP (56 OHM)	1608 SIZE	1 EA
R712	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R713	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R714	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R715	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R716	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R717	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R718	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R719	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R720	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R721	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R722	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R723	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R724	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R725	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R726	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1 EA
R727	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R728	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R729	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R730	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R732	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R733	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1 EA
R734	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R735	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R736	CRJ10DJ241T	RES , CHIP (240 OHM)	240 OHM	1 EA
R737	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R738	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R739	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R741	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R742	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R743	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R744	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R745	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R746	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R747	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R750	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R751	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R752	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R753	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R754	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R755	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R756	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R757	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R758	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R759	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
R760	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1 EA
R761	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R762	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R763	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R764	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R765	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R767	CRJ10DF5101T	RES. CHIP (5.1K 1%)	1608 SIZE	1 EA
R770	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1 EA
R771	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R772	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R773	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R774	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R775	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R776	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R777	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R779	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R780	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R781	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R782	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R783	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R784	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R785	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R786	CRJ10DJ471T	RES , CHIP (470 OHM)	1608 SIZE	1 EA
R787	CRJ10DJ0R0T	RES , CHIP (0 OHM)	1608 SIZE	1 EA
R788	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R789	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R791	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R792	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R795	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1 EA
R798	CRJ10DJ0R0T	RES , CHIP (0 OHM)	1608 SIZE	1 EA
R799	CRJ10DJ0R0T	RES , CHIP (0 OHM)	1608 SIZE	1 EA
R800	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R801	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R810	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R811	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R812	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R813	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R814	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R815	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R816	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R907	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R908	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1 EA
R909	CRJ10DJ682T	RES , CHIP (6.8K OHM)	1608 SIZE	1 EA
R910	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1 EA
R932	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R960	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1 EA
R963	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1 EA
R966	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R967	CRJ10DJ562T	RES , CHIP (5.6K OHM)	1608 SIZE	1 EA
R968	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1 EA
R969	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R992	CRJ10DJ562T	RES , CHIP (5.6K OHM)	1608 SIZE	1 EA
<i>Miscellaneous</i>				
L604	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L701	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L702	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L703	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L704	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L705	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
CN15	CJP17GA193ZY	WAFER, CARD CABLE (SMD)		1 EA
BN12	CJP27GA41ZM	WAFER (1.25MM, CARD CABLE, STRAIGHT 27P)	MOLEX 52045-**45	1 EA
BN72	CJP31GA41ZM	WAFER (1.25MM, CARD CABLE, STRAIGHT 31P)	MOLEX 52045-**45	1 EA

Ref. Designator	Part Number	Description	Qty	
INPUT PCB ASS'Y		COP12177D		
BN81	CJP44GA240ZB	PIN HEADER (44P,2.54mm), STRAIGHT TYPE	1	EA
CN17	CJP06GB142ZB	PIN HEADER(6P, 2.54mm)	1	EA
CN20	CJP07GI237ZW	LOCKING TYPE , STRAIGHT WAFER, 2.5MM	1	EA
CN40	CJP03GA01ZY	WAFER	1	EA
CN52	CJP03GA01ZY	WAFER	1	EA
JK11	CJJ4R019W	TERMINAL , IN/OUT	1	EA
JK12	CJJ4R019W	TERMINAL , IN/OUT	1	EA
JK13	CJJ4R019W	TERMINAL , IN/OUT	1	EA
JK14	CJJ4R037W	JACK , BOARD	1	EA
JK17	CJJ9L004Z	JACK , RJ-45	1	EA
JK78	CJJ4S022Z	JACK , BOARD	1	EA
JW70	CWE8202150AA	WIRE ASS'Y	1	EA
L301	CLM4B001Z	COIL , MPX (FM 19KHz FILTER)	1	EA
L302	CLM4B001Z	COIL , MPX (FM 19KHz FILTER)	1	EA
TUN1	CNVMM004MV1S63SA	TUNER(USA) FM(SCREW : F TYPE), AM(S/LAB)	1	EA
X701	HOX24576E150TF	CRYSTAL	1	EA
X702	HOX10000E220TF	CRYSTAL(HC-49/S,ATS) 10MHz	1	EA
HDMI PCB ASS'Y		COP12179C		
<i>Capacitors</i>				
C601	CCUS1H104KC	CAP , CHIP	1	EA
C602	CCUS1H223KC	CAP , CHIP	1	EA
C603	HCEC1CRV2101T	CAP , CHIP ELECT (100UF/16V)	1	EA
C604	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C605	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C606	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C607	CCUS1H104KC	CAP , CHIP	1	EA
C608	CCUS1H223KC	CAP , CHIP	1	EA
C609	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	1	EA
C610	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	1	EA
C611	HCEC1CRV2101T	CAP , CHIP ELECT (100UF/16V)	1	EA
C612	CCUS1H104KC	CAP , CHIP	1	EA
C613	CCUS1H102KC	CAP , CHIP	1	EA
C614	CCUS1H103KC	CAP , CHIP	1	EA
C615	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C616	CCUS1H104KC	CAP , CHIP	1	EA
C617	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C618	CCUS1H104KC	CAP , CHIP	1	EA
C619	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C620	CCUS1H104KC	CAP , CHIP	1	EA
C621	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C622	CCUS1H104KC	CAP , CHIP	1	EA
C623	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C624	CCUS1H104KC	CAP , CHIP	1	EA
C625	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C626	CCUS1H104KC	CAP , CHIP	1	EA
C627	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C628	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	1	EA
C629	CCUS1H104KC	CAP , CHIP	1	EA
C630	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C631	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C632	CCUS1H104KC	CAP , CHIP	1	EA
C633	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C634	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C635	CCUS1H104KC	CAP , CHIP	1	EA
C636	CCUS1H104KC	CAP , CHIP	1	EA
C637	CCUS1H104KC	CAP , CHIP	1	EA
C638	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	1	EA
C639	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	1	EA
C640	CCUS1H104KC	CAP , CHIP	1	EA
C641	CCUS1H104KC	CAP , CHIP	1	EA
C642	CCUS1H104KC	CAP , CHIP	1	EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
C643	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C644	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C645	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C646	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C647	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C648	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C649	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C650	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C651	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C652	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C653	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C654	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C655	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C656	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C657	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C658	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C659	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C660	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C661	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C662	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C663	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C664	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C665	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C666	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C667	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C668	CCUS1H123KC	CAP , CHIP(1608, 50V/12NF)	1608, 50V/12NF	1 EA
C669	CCUS1C154KC	CAP , CHIP	0.15UF 16V K	1 EA
C670	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C671	CCUS1H222KC	CAP , CHIP	2200PF 50V K	1 EA
C672	CCUS1H123KC	CAP , CHIP(1608, 50V/12NF)	1608, 50V/12NF	1 EA
C673	CCUS1C154KC	CAP , CHIP	0.15UF 16V K	1 EA
C674	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C675	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C676	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C677	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C678	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C679	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C680	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C681	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C682	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C683	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C684	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C685	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C687	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C688	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C689	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C690	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C691	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C692	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C693	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C694	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C695	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C696	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C697	CCU1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C698	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C699	CCEC1CRV471T	CAP , SMD ELECT(MANLEX RV, 16V/470, 10X10)		1 EA
C700	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C701	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C702	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C703	HCEC1CRV2101T	CAP , CHIP ELECT (100UF/16V)	100UF/16V	1 EA
C704	CCEC1ERV221T	CAP , SMD ELECT(MANLEX, RV, 25V/220, 8X10)	25V/220	1 EA
C705	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C707	CCEC1ERV221T	CAP , SMD ELECT(MANLEX, RV, 25V/220, 8X10)	25V/220	1 EA
C708	CCEC1CRV471T	CAP , SMD ELECT(MANLEX RV, 16V/470, 10X10)	16V/470	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
C709	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C710	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C711	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C712	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C713	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C714	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C715	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C716	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C719	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C720	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C721	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C722	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C723	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C724	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C725	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C726	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C727	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C728	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C729	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C730	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C731	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C732	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C733	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C734	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C735	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C736	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C737	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C738	CCUS1H470JA	CAP , CHIP	47PF 50V J	1 EA
C739	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C740	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C741	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C742	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C743	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C744	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C745	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C746	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C747	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C748	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C749	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C750	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C751	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C752	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C753	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C754	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C755	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C756	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C757	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C758	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C759	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C760	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C761	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C762	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C763	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C764	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C765	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C766	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C767	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C768	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C769	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C770	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C771	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C772	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C773	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C774	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
C775	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C776	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C777	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C778	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C779	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C780	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C781	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C784	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C785	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C786	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C787	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C788	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C789	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C790	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C791	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C792	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C793	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C794	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C795	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C796	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1 EA
C797	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C798	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C799	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C800	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C801	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1 EA
C802	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C803	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C804	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C805	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C806	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C807	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C808	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C809	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C810	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C811	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C812	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C813	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C814	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C815	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C816	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C817	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C818	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C819	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C820	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C821	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C822	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C823	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C824	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C825	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C826	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C827	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C828	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C829	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C830	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C831	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C832	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C833	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C834	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C835	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C836	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C837	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C838	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C839	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C840	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
C841	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C842	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C843	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C844	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C845	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C846	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C847	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C848	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C849	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C850	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C851	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C852	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C853	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C854	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C855	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C856	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C857	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C858	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C859	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C860	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C861	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C862	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C863	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C864	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C865	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C866	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C867	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C868	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C869	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C870	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C871	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C872	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C873	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C874	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C875	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C876	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C877	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C878	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C879	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C880	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C881	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C882	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C883	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C884	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C885	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C886	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C887	CCUS1H222KC	CAP , CHIP	2200PF 50V K	1 EA
C888	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C889	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C890	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C891	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C892	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C893	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C894	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C895	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C896	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C897	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C898	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C899	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C900	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C901	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C902	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C903	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C904	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
C905	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C906	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C907	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C908	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C909	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C910	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C911	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C912	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C913	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C914	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C915	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C916	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C917	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C918	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C919	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C920	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C921	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C922	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C923	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C924	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C925	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C926	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C927	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C928	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C929	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C930	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C931	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C932	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C933	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C934	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C935	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C936	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C937	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C938	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C939	CCUS1H470JA	CAP , CHIP	47PF 50V J	1 EA
C940	CCUS1H470JA	CAP , CHIP	47PF 50V J	1 EA
C941	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C942	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)	16V/0.1UF	1 EA
C943	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C944	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C945	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia XingRi)	XRCA45 XXX M XXX AT	1 EA
C946	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C947	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C948	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C949	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C950	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C951	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C954	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C956	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1 EA
C957	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C958	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C959	CCEC1ERV221T	CAP , SMD ELECT(MANLEX, RV, 25V/220, 8X10)	25V/220	1 EA
C960	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C961	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C962	CCEC1CRV471T	CAP , SMD ELECT(MANLEX RV, 16V/470, 10X10)	16V/470	1 EA
C963	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C964	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C965	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C966	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C967	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C970	CCUS1H101JA	CAP , CHIP	100PF 50V J	1 EA
C706	CCEA1EH222E	CAP , ELECT	2200UF 25V	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
<i>Semiconductors</i>				
D902	CVDSS34SR	DIODE , SCHOTTKY (40V,3A, DO-214AC) DELTA	SS34	1 EA
D903	CVDSS34SR	DIODE , SCHOTTKY (40V,3A, DO-214AC) DELTA	SS34	1 EA
D904	CVD1SS378	DIODE , SCHOTTKY BARRIER (TOSHIBA)	1SS378(TE85L,F)	1 EA
D905	CVDSS34SR	DIODE , SCHOTTKY (40V,3A, DO-214AC) DELTA	SS34	1 EA
IC101	CVISII9185ACTU	I.C , HDMI RX SW(80PIN TQFP) SILICON IMAGE	SI9185ACTU	1 EA
IC102	CVITC74VHC08FT	I.C (TOSHIBA) QUAD 2-INPUT AND GATE	TC74VHC08FT	1 EA
IC103	CVISII9134CTU	IC , HDMI TX(100PIN, TQFP)	SI9134CTU	1 EA
IC104	HVITC74HC4094FN	I.C 8-BIT SHIFT AND STORE REGISTER (3-STAT	TC74HC4094AFN	1 EA
IC105	CVISN74ALVCH16827DGG	I.C , BUFFER/DRIVER (TI)	SN74ALVCH16827DGGR , TI	1 EA
IC106	CVISN74ALVCH16827DGG	I.C , BUFFER/DRIVER (TI)	SN74ALVCH16827DGGR , TI	1 EA
IC107	CVISN74ALVCH16827DGG	I.C , BUFFER/DRIVER (TI)	SN74ALVCH16827DGGR , TI	1 EA
IC108	CVITC74VHC541FT	I.C , OCTAL BUS BUFFER (TOSHIBA)	TC74VHC541FT(EL)	1 EA
IC109	CVISII9135ACTU	I.C , HDMI RX(REVISION A,TQFP-144P)	SI9135ACTU	1 EA
IC110	CVISN74ALVCH16827DGG	I.C , BUFFER/DRIVER (TI)	SN74ALVCH16827DGGR , TI	1 EA
IC111	CVINJM2566V	I.C , NJM2566AV(TE1) JRC	NJM2566AV-TE1(P	1 EA
IC112	CVIFLI30336AC	I.C , VIDEO PROCESSOR (GENESIS)	FLI30336	1 EA
IC113	CVIA3S56D40ETPG5	I.C , 256MB DDR SDRAM	A3S56D40ETP-G5	1 EA
IC114	CVIF49L320UA70TG	I.C , 32M FLASH(48PIN TSOP1)	F49L320UA70TG	1 EA
IC115	CVIADV7342BSTZ	I.C , VIDEO ENCODER	ADV7342BSTZ	1 EA
IC116	CVIMK2302S01T	I.C , BUFFER (IDT)	MK23020S-01T(IDT)	1 EA
IC117	CVIA3S56D40ETPG5	I.C , 256MB DDR SDRAM	A3S56D40ETP-G5	1 EA
IC118	HVIKIC7SZ08FU	I.C ,INPUT AND GATE (USV PACKAGE)	KIC7SZ08FU-RTK	1 EA
IC120	HVINJM2391DL125	I.C , CHIP REGULATOR (+2.5V) JRC	NJM2391DL1-25	1 EA
IC121	CVISI8005QTL	IC , DCDC Converter (3.5A, SOP8) SANKEN	SI-8005Q	1 EA
IC122	CVISI8005QTL	IC , DCDC Converter (3.5A, SOP8) SANKEN	SI-8005Q	1 EA
IC123	CVIAT24C02NSU18	I.C , EEPROM (2K)	AT24C02BN-SH-T	1 EA
IC124	CVITC7MZ4052FK	I.C , 4CH MUX (TOSHIBA)	TC7MZ4052FK(EL)	1 EA
IC125	HVIKIC7SZ08FU	I.C ,INPUT AND GATE (USV PACKAGE)	KIC7SZ08FU-RTK	1 EA
IC126	CVINJM2595MTE1	I.C , VIDEO S/W (JRC)	NJM2595M-TE1(PB	1 EA
IC127	CVIKIA1117S50	I.C , REGULATOR(SOT-223)	KIA1117S50-RTK/P	1 EA
IC128	CVINJM2845DL133	I.C , REGULATOR(3.3V, TO-252-3) JRC	NJM2845DL1-33-T	1 EA
IC129	CVINJM2845DL118	IC , NJM2845DL1-18(TE1) JRC	NJM2845DL-18-TE	1 EA
IC130	CVISI8005QTL	IC , DCDC Converter (3.5A, SOP8) SANKEN	SI-8005Q	1 EA
IC131	CVI74FCT38072DCGI	I.C , CLOCK DRIVER (IDT)	IDT74FCT38072DCGI , IDT	1 EA
Q901	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q902	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q903	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q904	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q905	HVTKRA102S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA102S-RTK/P	1 EA
Q906	HVTKRA102S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA102S-RTK/P	1 EA
Q907	HVTKRA102S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA102S-RTK/P	1 EA
Q908	CVTUPA672T	F.E.T (NEC)	UPA672T-T1-A	1 EA
Q909	HVTKRA102S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA102S-RTK/P	1 EA
Q910	CVTUPA672T	F.E.T (NEC)	UPA672T-T1-A	1 EA
Q911	CVTUPA672T	F.E.T (NEC)	UPA672T-T1-A	1 EA
Q912	CVTUPA672T	F.E.T (NEC)	UPA672T-T1-A	1 EA
Q913	CVTUPA672T	F.E.T (NEC)	UPA672T-T1-A	1 EA
Q914	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q915	HVTKRC111S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC111S-RTK/P	1 EA
Q916	CVTKRC103S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC103S-RTK/P	1 EA
Q917	HVTKRC114S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC114S-RTK/P	1 EA
Q918	HVTKRC114S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC114S-RTK/P	1 EA
<i>Resistors</i>				
RN01	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN02	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN03	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN04	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN05	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN06	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN07	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
RN08	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN09	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN10	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN11	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN12	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN13	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1 EA
RN14	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN15	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN16	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN17	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN18	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN19	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN20	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN21	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN22	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN23	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN24	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1 EA
RN25	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1 EA
RN26	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN27	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X2)	MNR02M0APJ330	1 EA
RN28	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN29	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN30	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X2)	MNR02M0APJ330	1 EA
RN31	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN32	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN33	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN34	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN35	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN36	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X2)	MNR02M0APJ330	1 EA
RN37	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN38	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN39	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN40	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN41	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN42	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X2)	MNR02M0APJ330	1 EA
RN43	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN44	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN45	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1 EA
RN46	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN47	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN48	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN49	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN50	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1 EA
RN51	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN52	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
RN53	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X2)	MNR02M0APJ330	1 EA
RN54	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm, 1005X4)	MNR04M0APJ330	1 EA
R601	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R602	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R603	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R604	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R605	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R606	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R607	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R608	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R609	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R610	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R611	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R612	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R613	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R614	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R615	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R616	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R617	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
R618	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R619	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R620	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R622	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R623	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R624	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R625	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R626	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R627	CRJ10DJ220T	RES , CHIP (22 OHM)	1608 SIZE	1 EA
R628	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R629	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R631	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R632	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R633	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R634	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R635	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R636	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1 EA
R637	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R638	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R639	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R640	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R641	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R642	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R643	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R644	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R645	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R646	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R647	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R648	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R649	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R650	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R651	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R652	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R653	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R654	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R655	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R656	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1 EA
R657	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R658	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R659	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R660	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R662	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R663	CRJ10DF6801T	RES, CHIP 6.8KOHM/1608/1%	6.8KOHM	1 EA
R664	CRJ10DJ301T	RES , CHIP 300 OHMS	1608 SIZE	1 EA
R665	CRJ10DJ301T	RES , CHIP 300 OHMS	1608 SIZE	1 EA
R666	CRJ10DJ301T	RES , CHIP 300 OHMS	1608 SIZE	1 EA
R667	CRJ10DJ301T	RES , CHIP 300 OHMS	1608 SIZE	1 EA
R668	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R669	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R671	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R672	CRJ10DF3901T	RES, CHIP 3.9KOHM/1608/1%	3.9KOHM	1 EA
R673	CRJ10DF4301T	RES , CHIP (4.3K OHM)	4.3K OHM	1 EA
R674	CRJ10DJ151T	RES , CHIP (150 OHM)	1608 SIZE	1 EA
R675	CRJ10DJ200T	RES , CHIP(1/10W, 20OHM,1608)	1/10W, 20OHM	1 EA
R676	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R677	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R678	CRJ10DF2200T	RES , CHIP 1% (220 OHM)	1608 SIZE	1 EA
R679	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R680	CRJ10DJ151T	RES , CHIP (150 OHM)	1608 SIZE	1 EA
R681	CRJ10DJ200T	RES , CHIP(1/10W, 20OHM,1608)	1/10W, 20OHM	1 EA
R682	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R683	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R684	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R685	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
R686	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R687	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R688	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1 EA
R690	CRJ10DJ0R0T	RES , CHIP (0 OHM)	1608 SIZE	1 EA
R691	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R692	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R693	CRJ10DJ273T	RES , CHIP (27K OHM)	27K OHM	1 EA
R694	CRJ10DJ123T	RES , CHIP (12K OHM)	1608 SIZE	1 EA
R695	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R696	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R697	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R698	CRJ10DJ202T	RES , CHIP (2K OHM)	2K OHM	1 EA
R699	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R700	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R701	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R702	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R703	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R704	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R705	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R706	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R707	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R708	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R709	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R710	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R711	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R712	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R713	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R714	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R715	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R716	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R717	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R718	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R719	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R720	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R721	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R722	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1 EA
R723	CRJ10DJ182T	RES , CHIP (1.8K OHM)	1.8K	1 EA
R724	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R725	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R726	CRJ10DJ182T	RES , CHIP (1.8K OHM)	1.8K	1 EA
R728	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R729	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R730	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R731	CRJ10DF8200T	RES , CHIP 1% 820 OHM	1608 SIZE	1 EA
R732	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1 EA
R733	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R734	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R735	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R736	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R740	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R741	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R743	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R744	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R745	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R746	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R747	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R748	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R749	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R751	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R752	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R753	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R754	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R755	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R756	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
R757	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R758	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R759	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R760	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R761	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R762	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R764	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R765	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R766	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R767	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R768	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R770	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R771	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R772	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R776	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R777	CRJ10DF2800T	RES , CHIP(1/10W, 280ohm, 1608, 1%)	1/10W, 280OHM, 1608, 1%	1 EA
R778	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1 EA
R779	CRJ10DJ301T	RES , CHIP 300 OHMS	1608 SIZE	1 EA
R780	CRJ10DJ301T	RES , CHIP 300 OHMS	1608 SIZE	1 EA
R781	CRJ10DF3901T	RES, CHIP 3.9KOHM/1608/1%	3.9KOHM	1 EA
R782	CRJ10DF2200T	RES , CHIP 1% (220 OHM)	1608 SIZE	1 EA
R783	CRJ10DF2800T	RES , CHIP(1/10W, 280ohm, 1608, 1%)	1/10W, 280OHM, 1608, 1%	1 EA
R784	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R785	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R786	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R787	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R788	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R789	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R791	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R792	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1 EA
R794	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R795	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1 EA
R796	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R800	CRJ10DJ623T	RES , CHIP 1608 SIZE (62K OHM)	62K OHM	1 EA
R801	CRJ10DJ623T	RES , CHIP 1608 SIZE (62K OHM)	62K OHM	1 EA
R802	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R803	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R804	CRJ10DJ623T	RES , CHIP 1608 SIZE (62K OHM)	62K OHM	1 EA
R805	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R806	CRJ10DJ563T	RES , CHIP	56K OHMS	1 EA
R807	CRJ10DJ203T	RES , CHIP	1608 SIZE	1 EA
R808	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1 EA
R809	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1 EA
R810	CRJ10DJ683T	RES , CHIP (68K OHM)	1608 SIZE	1 EA
R811	CRJ10DJ683T	RES , CHIP (68K OHM)	1608 SIZE	1 EA
R812	CRJ10DJ683T	RES , CHIP (68K OHM)	1608 SIZE	1 EA
R813	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R814	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R815	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1 EA
R818	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
<i>Miscellaneous</i>				
BN15	CJP17GA193ZY	WAFER, CARD CABLE (SMD)		1 EA
CN55	CJP26GA226ZB	DIP , SOCKET (26PIN, 2.54mm, SMD)		1 EA
JK901	CJJ9H008Z	JACK , HDMI (TYPE-A,SMT-19P)	H050FS019G600BY	1 EA
JK902	CJJ9H008Z	JACK , HDMI (TYPE-A,SMT-19P)	H050FS019G600BY	1 EA
JK903	CJJ9H008Z	JACK , HDMI (TYPE-A,SMT-19P)	H050FS019G600BY	1 EA
JK904	CJJ9H008Z	JACK , HDMI (TYPE-A,SMT-19P)	H050FS019G600BY	1 EA
JK905	CJJ9H008Z	JACK , HDMI (TYPE-A,SMT-19P)	H050FS019G600BY	1 EA
L801	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	CMM21T-900M-3H	1 EA
L802	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	CMM21T-900M-3H	1 EA
L803	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	CMM21T-900M-3H	1 EA
L804	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	CMM21T-900M-3H	1 EA

Ref. Designator	Part Number	Description	Qty	
HDMI PCB ASS'Y		COP12179C		
L805	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L806	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L807	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L808	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L809	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L810	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L811	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L812	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L813	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L814	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L815	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L816	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L817	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L818	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L819	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L820	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L821	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L822	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L823	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L824	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L825	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L826	CLQ13E220MRZ	COIL , SMD POWER (22UH/3A)	CMI-SSP12L80F-SERIES	1 EA
L827	CLQ13E220MRZ	COIL , SMD POWER (22UH/3A)	CMI-SSP12L80F-SERIES	1 EA
L828	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L829	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L830	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L831	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L832	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L833	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L834	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L835	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L836	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L837	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L838	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L839	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L840	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L841	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L842	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L843	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L844	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L845	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L846	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L847	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L848	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L849	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L850	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L851	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L852	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L853	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1 EA
L854	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L855	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L867	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L868	CLQ13E220MRZ	COIL , SMD POWER (22UH/3A)	CMI-SSP12L80F-SERIES	1 EA
X901	HOX27000E180S	CRYSTAL , CHIP(27MHZ,SMD)	HC-49/US	1 EA
X902	COX19660E330S	X-TAL, CHIP, 19.6608 MHz (33P)		1 EA
	CMY1A297	HEAT SINK		1 EA
BN82	CWB1D00705058	WIRE ASS'Y (LOCKING TYPE, 2.5MM, 7PIN, 50MM)		1 EA
CN54	CJP05GB46ZY	WAFER	20017WR-05	1 EA
CN56	CJP16GB143ZB	DIP , SOCKET (16PIN, 2.54mm, ANGLE)		1 EA
CN57	CJP06GB143ZB	FEMALE HEADER(6P, 2.54mm)		1 EA

Ref. Designator	Part Number	Description	Qty	
USB IPOD PCB ASS'Y		COP12169D		
<i>Capacitors</i>				
C101	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C105	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1 EA
C106	CCUS1H200JA	CAP , CHIP (20PF)	20PF	1 EA
C110	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C112	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C113	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1 EA
C114	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1 EA
C115	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C123	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C134	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C135	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C136	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C137	CCUS1H270JA	CAP , CHIP	27PF 50V J	1 EA
C139	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C149	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C150	CCEC1CRV471T	CAP , SMD ELECT(MANLEX RV, 16V/470, 10X10)	VEA 470UF 16V 8	1 EA
C152	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C154	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C158	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C159	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C160	CCUS1H221JA	CAP , CHIP	220PF 50V J	1 EA
C161	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C169	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C172	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C175	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C178	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C181	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C182	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C185	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C186	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C187	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C188	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C195	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C197	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C209	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1 EA
C213	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C214	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C216	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C217	CCUS1A105KC	CAP , CHIP	1UF 10V K	1 EA
C218	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1 EA
C228	CCUS1H330JA	CAP , CHIP	33PF 50V J	1 EA
C229	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1 EA
C104	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C109	CCEA1CH221T	CAP , ELECT	220UF 16V	1 EA
C111	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1 EA
C138	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C151	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C153	CCEA1CH101T	CAP , ELECT	100UF 16V	1 EA
C157	CCEA1CH471T	CAP , ELECT	470UF 16V	1 EA
C163	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C164	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C165	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C166	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C167	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C168	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C170	CCEA1CH470T	CAP , ELECT	47UF 16V	1 EA
C171	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C173	CCEA1CH470T	CAP , ELECT	47UF 16V	1 EA
C174	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C176	CCEA1CH470T	CAP , ELECT	47UF 16V	1 EA
C177	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C179	CCEA1CH470T	CAP , ELECT	47UF 16V	1 EA

Ref. Designator	Part Number	Description	Qty	
USB IPOD PCB ASS'Y		COP12169D		
C189	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C190	CCEA1HH100T	CAP , ELECT	10UF 50V	1 EA
C196	CCEA1EH221T	CAP , ELECT	220UF 25V	1 EA
C198	CCEA1EH221T	CAP , ELECT	220UF 25V	1 EA
C215	CCEA1CH471T	CAP , ELECT	470UF 16V	1 EA
C225	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
C226	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1 EA
Semiconductors				
D101	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D103	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
D921	CVD1SS355T	DIODE , CHIP	1SS355(T/B)	1 EA
IC204	CVITMP92FD28FG	I.C , USB DECODER FLASH(100PIN, QFP) TOSH	TMP92FD28DFG, FLASH	1 EA
IC206	HVI74HCU04AFNG	I.C , INVERTER (TOSHIBA)	TC74HCU04AFNG(TOSHIBA)	1 EA
IC207	CVIKIA1117S33	I.C , REGULATOR(SOT-223)	KIA1117S/F33, SOT-223	1 EA
IC208	HVIRH5VT28C	I.C , RESET (RICOH)	RH5VT28CA-T1	1 EA
IC209	CVIKIA1117S33	I.C , REGULATOR(SOT-223)	KIA1117S/F33, SOT-223	1 EA
IC211	CVINJM2505AFTE1	I.C , VIDEO AMP(4.5~9.0V , 200MW , MTP5) JRC	NJM2505AF-TE1 , JRC	1 EA
IC212	CVINJM2505AFTE1	I.C , VIDEO AMP(4.5~9.0V , 200MW , MTP5) JRC	NJM2505AF-TE1 , JRC	1 EA
IC213	CVINJM2505AFTE1	I.C , VIDEO AMP(4.5~9.0V , 200MW , MTP5) JRC	NJM2505AF-TE1 , JRC	1 EA
IC214	HVINJM2581MTE1	I.C Dual Supply Wide Band 3ch Video Amplifier	NJM2581M	1 EA
IC216	CVITL072CDR	I.C , DUAL OP AMP/SOP/8P (TI)	TL072CDR	1 EA
IC217	HVINJM2068MDTE1	I.C , DUAL OP AMP (JRC)	NJM2068MD-TE1	1 EA
IC220	HVI74LCX32TTR	I.C , OR-GATE (ST)	74LCX32TTR	1 EA
Q101	HVTKRC102S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC102S	1 EA
Q102	HVTKRC102S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC102S	1 EA
Q103	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q104	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q105	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q106	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
Q107	HVTKRC107S	TRANSISTOR, CHIP BUILT-IN BIAS NPN	KRC107S-RTK/P	1 EA
Q108	HVTKRA107S	TRANSISTOR, CHIP BUILT-IN BIAS PNP	KRA107S-RTK/P	1 EA
IC201	BVIKP1010B	IC, PHOTO COUPLER (COSMO)	KP1010B	1 EA
IC202	BVIKP1010B	IC, PHOTO COUPLER (COSMO)	KP1010B	1 EA
IC203	HVIKIA78R05PI	REGULATOR (5V OUTPUT LOW DROP)	KIA78R05PI	1 EA
IC215	CVITMP86F409NG	I.C , IPOD UART BUFFER (TOSHIBA)	TMP86F409NG(ZM)	1 EA
IC223	CVIKIA7805APIJA	I.C HEAT SINK ASS'Y (CMY2A223)	CVIKIA7805API/CMY2A223	1 EA
	HVIKIA7805API	REGULATOR, +5V	7805API (KEC)	1 EA
Resistors				
R107	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R108	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R109	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R110	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R111	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R117	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R118	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R119	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R120	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R121	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R122	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R123	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R170	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R171	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R172	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R173	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R174	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R177	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R178	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R179	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
R182	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R183	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
USB IPOD PCB ASS'Y		COP12169D		
R185	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R186	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R188	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R189	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R192	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R193	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R195	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1 EA
R196	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1 EA
R201	CRJ10DF4992T	RES , CHIP(49.9K, 1608, 1%)	49.9K	1 EA
R202	CRJ10DF4992T	RES , CHIP(49.9K, 1608, 1%)	49.9K	1 EA
R203	CRJ10DF4992T	RES , CHIP(49.9K, 1608, 1%)	49.9K	1 EA
R204	CRJ10DF4992T	RES , CHIP(49.9K, 1608, 1%)	49.9K	1 EA
R205	CRJ10DF5101T	RES. CHIP (5.1K 1%)	1608 SIZE	1 EA
R206	CRJ10DF5101T	RES. CHIP (5.1K 1%)	1608 SIZE	1 EA
R207	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1 EA
R208	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1 EA
R209	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R210	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1 EA
R213	CRJ10DF1001T	RES , CHIP 1%	1K/1/10W/F	1 EA
R214	CRJ10DF4992T	RES , CHIP(49.9K, 1608, 1%)	49.9K	1 EA
R215	CRJ10DF4992T	RES , CHIP(49.9K, 1608, 1%)	49.9K	1 EA
R222	CRJ10DJ220T	RES , CHIP (22 OHM)	1608 SIZE	1 EA
R223	CRJ10DJ220T	RES , CHIP (22 OHM)	1608 SIZE	1 EA
R224	CRJ10DJ220T	RES , CHIP (22 OHM)	1608 SIZE	1 EA
R225	CRJ10DJ220T	RES , CHIP (22 OHM)	1608 SIZE	1 EA
R232	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R233	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R234	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R235	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R236	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R237	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R238	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R240	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R242	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R243	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1 EA
R244	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R245	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R246	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R247	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R248	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1 EA
R249	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1 EA
R250	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R251	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1 EA
R260	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1 EA
R281	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R282	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R283	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R284	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R297	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R298	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R299	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R300	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R301	CRJ10DF1001T	RES , CHIP 1%	1K/1/10W/F	1 EA
R302	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R303	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R304	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R305	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1 EA
R306	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R308	CRJ10DF1001T	RES , CHIP 1%	1K/1/10W/F	1 EA
R309	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1 EA
R310	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1 EA
R311	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1 EA
R352	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R354	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA

Ref. Designator	Part Number	Description	Qty	
USB IPOD PCB ASS'Y		COP12169D		
R355	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1 EA
R500	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1 EA
<i>Miscellaneous</i>				
L101	CLZ9R001Z	FERRITE , CHIP BEAD(60ohm, 2012)	HCB2012KF-600T40	1 EA
L102	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1 EA
L105	CLZ9R001Z	FERRITE , CHIP BEAD(60ohm, 2012)	HCB2012KF-600T40	1 EA
L106	CLZ9R001Z	FERRITE , CHIP BEAD(60ohm, 2012)	HCB2012KF-600T40	1 EA
BK11	CMD1A569	BRACKET , PCB		1 EA
BK12	CMD1A569	BRACKET , PCB		1 EA
BN50	CJP05GA19ZY	WAFER , STRAIGHT	20017WS-05	1 EA
BN55	CJP26GA240ZB	PIN HEADER (26P, 2.54mm), STRAIGHT TYPE		1 EA
CN51	CJP07GA01ZY	WAFER , STRAIGHT(7PIN)	00906-0017	1 EA
CN58	CJP07GA01ZY	WAFER , STRAIGHT(7PIN)	00906-0017	1 EA
CN81	CJP44GA241ZB	FEMALE HEADER (44P,2.54mm) , DIP/STRAIGHT		1 EA
	CMY2A223	HEAT SINK	ADV-500	1 EA
	CTB3+8JR	SCREW	00M51260308M0	1 EA
JK11	CJJ2D008Z	JACK , STEREO	PJ-308-02	1 EA
JK12	CJJ2D008Z	JACK , STEREO	PJ-308-02	1 EA
JK13	CJJ2D008Z	JACK , STEREO	PJ-308-02	1 EA
JK14	CJJ2D008Z	JACK , STEREO	PJ-308-02	1 EA
JK15	CJJ2D008Z	JACK , STEREO	PJ-308-02	1 EA
JK16	CJJ9N007Z	JACK , DIN SOCKET(8P)	DIN-801	1 EA
JK17	CJJ9L016Z	JACK , IPOD CONNECTOR (36PIN)	SCSI36P	1 EA
X101	COX09000E150C	CRYSTAL(9MHZ)		1 EA
X103	HOX12000E200C	12MHZ CRYSTAL		1 EA
X104	HOX00032K120I	CRYSTAL , 32.768KHZ	TUNING FORK	1 EA
BOTTOM CHASSIS ASS'Y				
	CFNCF12625SA	MOTOR , FAN(60X60X25MM)		1 EA
	CHD1A012ZR	SCREW , SPECIAL		2 EA
	CHD1A023R	SCREW , SPECIAL		4 EA
	CHD1A036FZR	SCREW , SPECIAL		2 EA
	CHD1A065R	SCREW , FLAT(2.6X4)		2 EA
	CHD4A012R	SCREW , SPECIAL		5 EA
	CHE170	HOLDER , PCB		2 EA
	CHE36-3	CLAMPER , WIRE		1 EA
	CHG1A104Z	CUSHION , RUBBER		2 EA
	CHG1A113	RUBBER		3 EA
	CHG1A160Z	CUSHION , RUBBER		1 EA
	CHG1A373	CUSHION , FOOT AVR350		4 EA
	CHG1A462	CUSHION , RUBBER		1 EA
	CKF3A398Y	PANEL , REAR		1 EA
	CKF3A398Z	PANEL , REAR		1 EA
	CKL1A094	FOOT , A AVR350		2 EA
	CKL1A095	FOOT , B AVR350		2 EA
	CMD1A506	BRACKET , FAN		1 EA
	CMD1A702	FRAME , BOTTOM		1 EA
	CMD2A636	BRACKET , PCB		1 EA
	CTB3+10JFZR	SCREW		24 EA
	CTB3+6FFZR	SCREW		10 EA
	CTB3+8JFZR	SCREW		12 EA
	CTB3+8JR	SCREW		7 EA
	CTS3+8JFZR	SCREW		4 EA
	CTW3+12JR	SCREW		2 EA
	CUA1A294	CHASSIS , BOTTOM		1 EA
BN90	CSH1A009ZVB	SWITCH , MOMS WIRE ASS'Y (2P, 80MM, RED)		1 EA
	CSH1A009ZV	SWITCH , MOMS		1 EA
	CWB4F202080UK	WIRE ASS'Y (3.96MM, 80MM, 2P, RED)		1 EA
BN92	CJJ8A006ZWA	RECEPTACLE(AC) WIRE ASS'Y (2P, 120MM, RD/BK)		1 EA
	CJJ8A006ZW	RECEPTACLE , AC(15A/250V,R-301,B21)	R-301(B21)	1 EA
	CWB4F002120UK	WIRE ASS'Y (3.96MM, 120MM, 2P, RD/BK)		1 EA

Ref. Designator	Part Number	Description	Qty	
BOTTOM CHASSIS ASS'Y			1	EA
CB12	CWC4C4A27B100B10	CARD , CABLE (27p,1.25mm Pitch,100mm Length,Protec	1	EA
CB15	CWC4F2A17A100B10	CARD , CABLE (17P,1.0mm Pitch,100mm Length,Protect	1	EA
F901	KBA2C8000TLEY	FUSE(218 Series, 250V, 8A)	1	EA
F901	KJCF5S	HOLDER , FUSE	2	EA
T901	CLT5W036ZU	TRANS , POWER	1	EA
TUN1	CNVMW004MV1S63SA	TUNER(USA) FM(SCREW : F TYPE), AM(S/LAB)	1	EA
		KST-MW004MV1-S63SA		



NJM2581

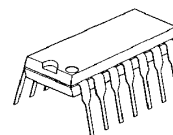
DUAL SUPPLY WIDE BAND 3ch VIDEO AMPLIFIER

■ GENERAL DESCRIPTION

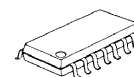
The **NJM2581** is a dual supply voltage wide band 3ch video amplifier. It is suitable for Y, Pb, and Pr signal because frequency range is 50MHz.

The **NJM2581** is suitable for Set Top Box, AV amplifier, and other high quality AV systems.

■ PACKAGE OUTLINE



NJM2581D

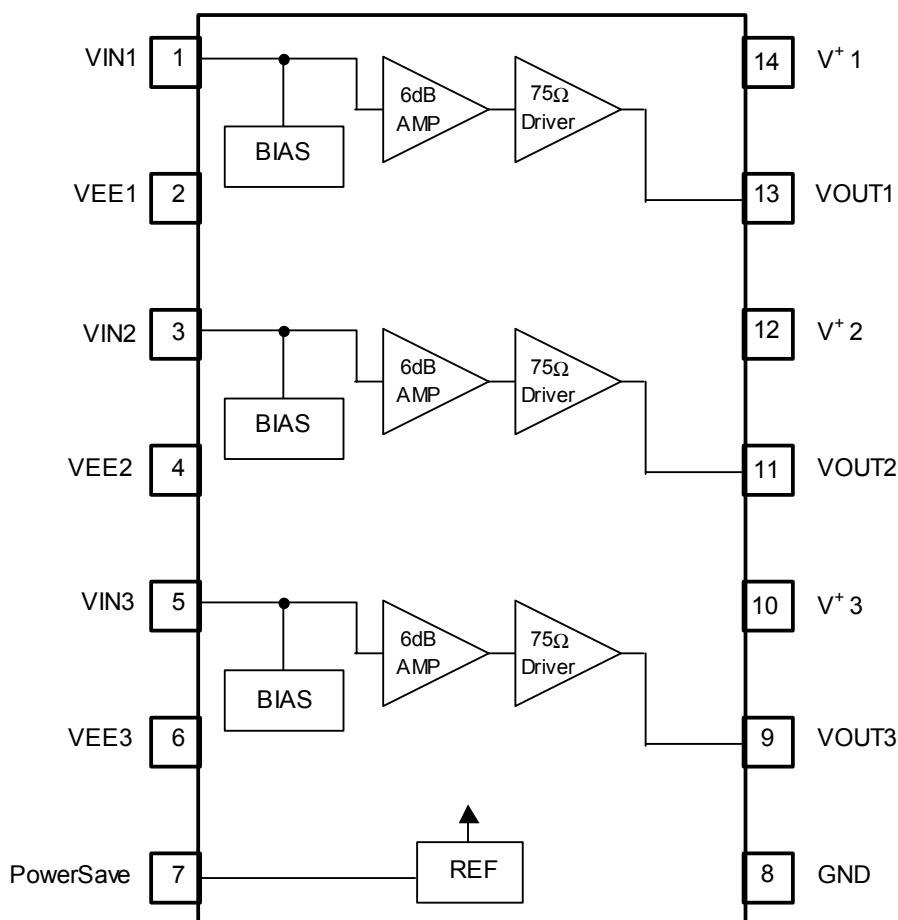


NJM2581M

■ FEATURES

- Operating Voltage ± 4.5 to $\pm 5.5V$
- Wide frequency range 50MHz at 0dB typ.
- Internal 6dB Amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline DIP14, DMP14

■ BLOCK DIAGRAM



NJM2581

■ EQUIVALENT CIRCUIT

PIN No.	PIN NAME	FUNCTION	INSIDE EQUIVALENT CIRCUIT
1 3 5	VIN1 VIN2 VIN3	Input	
13 11 9	VOUT1 VOUT2 VOUT3	Output	
7	PowerSave	Power Save	
14 12 10	V+1 V+2 V+3	V+	
2 4 6	VEE1 VEE2 VEE3	V-	
8	GND	GND	

TOSHIBA

TMP92FD28

CMOS 32-Bit Microcontrollers
 TMP92FD28FG / TMP92FD28DFG

1. Outline and Device Characteristics

The TMP92FD28 is a high-speed advanced 32-bit Microcontroller developed for controlling equipment which processes mass data.

The TMP92FD28 has a high-performance CPU (900/H1 CPU) and various built-in I/Os.

The TMP92FD28FG and TMP92FD28DFG are housed in a 100-pin flat package.

Device characteristics are as follows:

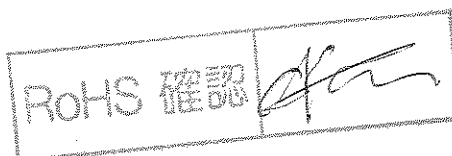
(1) CPU: 32-bit CPU (900/H1 CPU)

- Compatible with 900/L1 instruction code
- 16 Mbytes of linear address space
- General-purpose register and register banks
- Micro DMA: 8 channels (250 ns/4 bytes at $f_{SYS} = 20$ MHz, best case)

(2) Minimum instruction execution time: 50 ns (at $f_{SYS} = 20$ MHz)

주	서	상	상
주	서	상	상
주	서	상	상
주	서	상	상
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주	서	상	상
주	서	상	상

아 남 품 번	CUITMP92FD28FG
적 용 모 델	CRX-B320



이 書 類 를 承 認			
西 紀 2007 年 5 月 18 日			
亞 姆 德 子 (株) 附 設 멀티미 연구소			
멀티 미디어 연구실			
대표이사	부장	주임	주임
김영철	X	김영철	김영철

This product uses the Super Flash® technology under the license of Silicon Storage Technology, Inc.

Super Flash® is a registered trademark of Silicon Storage Technology, Inc.

- (3) Internal memory
 - Internal RAM: 32-Kbytes
 - Internal ROM: 512-Kbytes
- (4) External memory expansion
 - Expandable up to 16 Mbytes (Shared program/data area)
 - Can simultaneously support 8- or 16-bit width external data bus
 - ...Dynamic data bus sizing
 - Separate bus system
- (5) Memory controller
 - Chip select output: 3 channels
- (6) 8-bit timers: 6 channels
- (7) 16-bit timers: 2 channels
- (8) General-purpose serial interface: 2 channels
 - UART/synchronous mode: 2 channels (channel 0 , and 1)
 - IrDA ver.1.0 (115 kbps) mode selectable: 2 channels (channel 0 and 1)
- (9) Serial bus interface: 2 channels
 - I²C bus mode
 - Clock synchronous mode (only channel 1)
- (10) SPI controller : 1 channel
 - Supported up to SPI mode of SD card and MMC card
 - Built-in FIFO buffer of 32 bytes to each Input/Output
- (11) High Speed serial interface : 1 channel
 - Built-in FIFO buffer of 32 bytes to each Input/Output
- (12) USB Host Controller : 1channel
 - Universal Serial Bus Specification Rev2.0
 - Open HCI for USB Release 1.0a
 - 12Mbps – Full speed support. (Isochronous Transfer is not supported.)
- (13) Watchdog timer
- (14) Timer for real-time clock (RTC)
- (15) Key-on wake up (only for HALT release):4 channels
- (16) Program patch logic: 8 banks
- (17) Interrupts: 47interrupts
 - 9 CPU interrupts: Software interrupt instruction and illegal instruction
 - 34 internal interrupts: Seven selectable priority levels
 - 4 external interrupts (INT0 to INT3): Seven selectable priority levels
(INT0 to INT3 selectable edge or level interrupt)
- (18) Input/output ports: 70pins
- (19) Standby function
 - Three HALT modes: IDLE2 (Programmable), IDLE1, STOP
 - Power cut mode (Built-in power supply management circuits (PMC) for leak current provision.)

(20) Clock controller

- Built-in two blocks of clock doubler (PLL). PLL supplies 48 MHz for USB and 36 MHz for CPU from 9MHz
- Clock gear function: Select high-frequency clock f_c to $f_c/16$
- Special timer for CLOCK ($f_s = 32.768$ kHz)

(21) Operating voltage

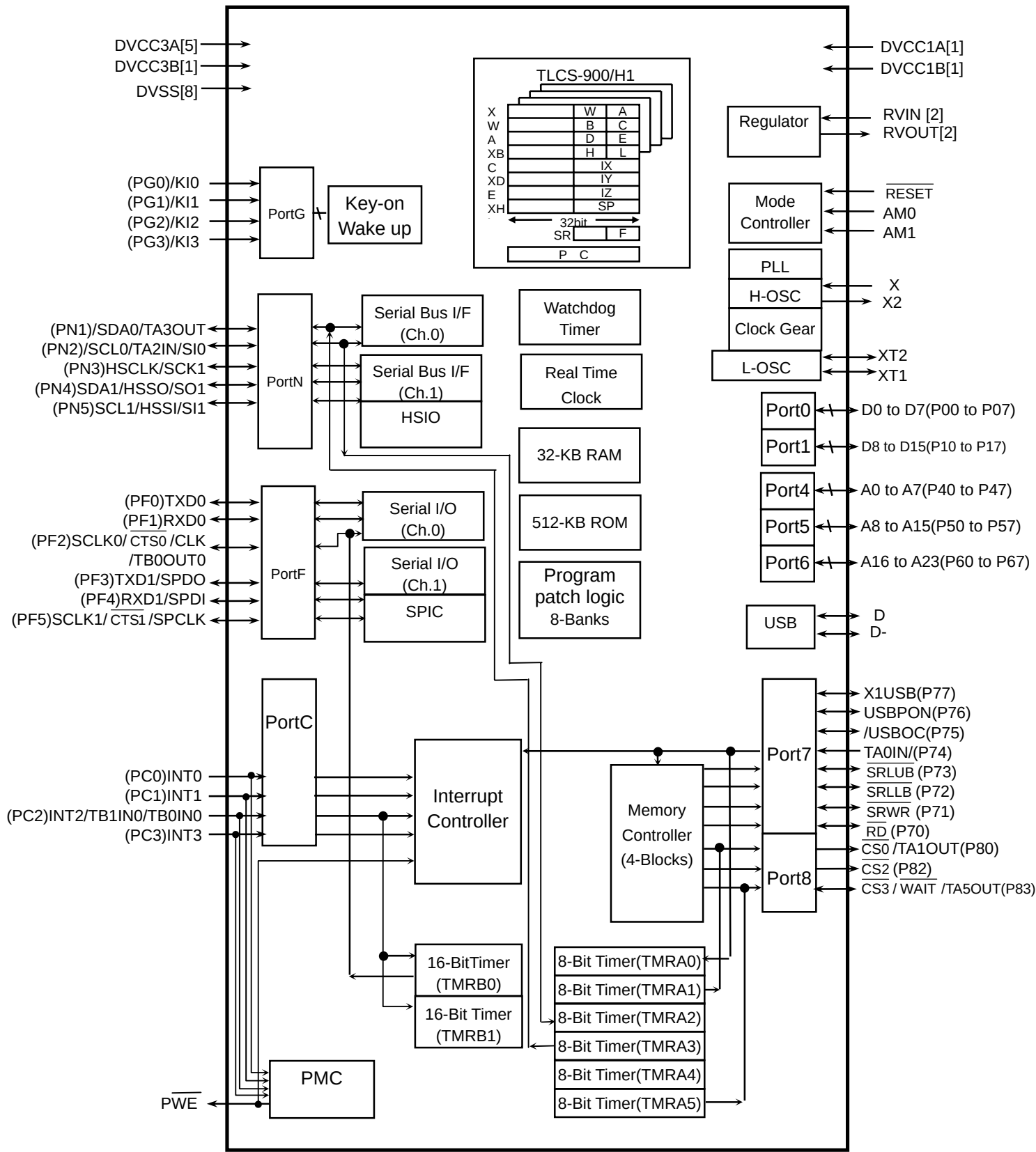
- External I/O $V_{cc} = 3.0$ to 3.6 V
- Internal $V_{CC} = 1.4$ V to 1.6 V (f_c max = 40 MHz)

(22) Package

- 100-pin QFP: P-LQFP100-1414-0.50F (TMP92FD28FG)
P-QFP100-1420-0.65A (TMP92FD28DFG)

TOSHIBA

TMP92FD28



(): Initial function after reset

Figure 1.1 TMP92FD28 Block Diagram

2. Pin Assignment and Functions

The assignment of input/output pins for the TMP92FD28, their names and functions are as follows:

2.1 Pin Assignment Diagram

Figure 2.1.1 shows the pin assignment of the TMP92FD28FG.

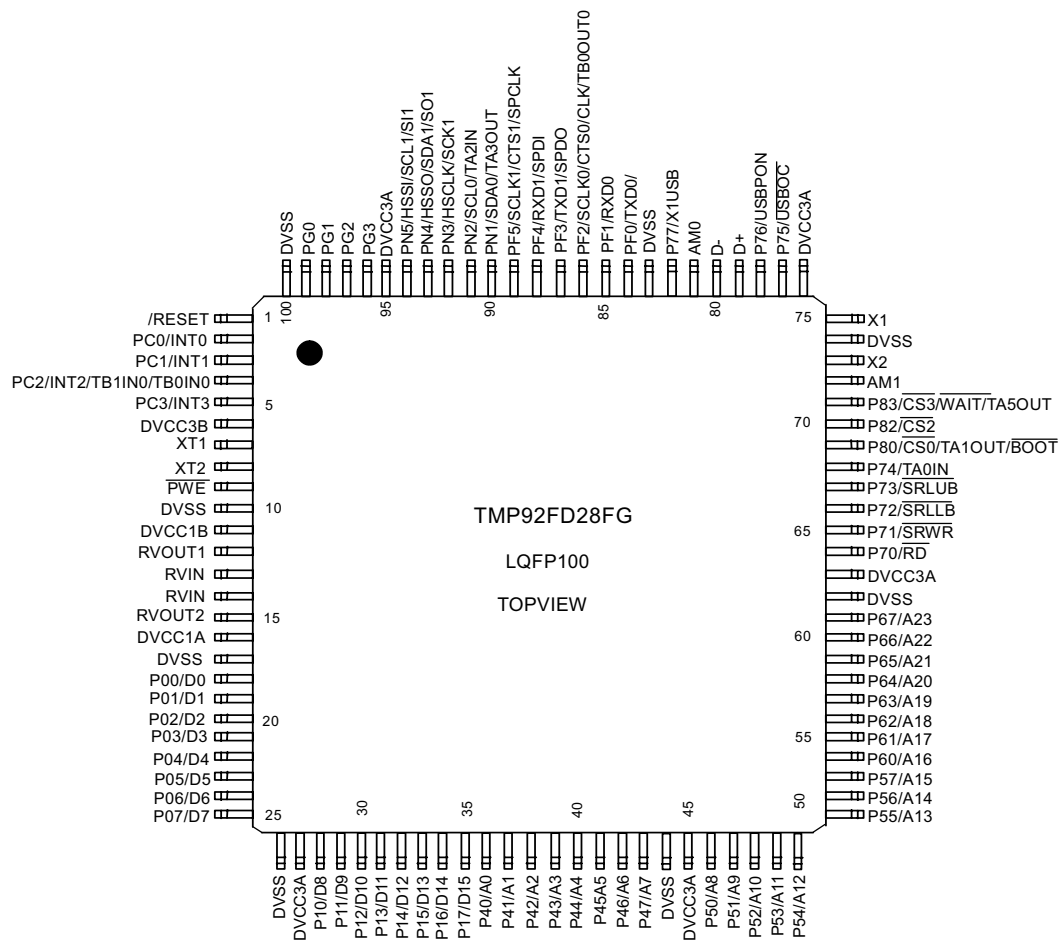


Figure 2.1.1 Pin Assignment Diagram (100-pin LQFP)

2.2 Pin Names and Functions

The following table shows the names and functions of the input/output pins.

Table 2.2.1 Pin Names and Functions (1/3)

Pin name	Number of Pin	I/O	Function
P00 to P07 D0 to D7	8	I/O I/O	Port 0: I/O port Input or output specifiable in units of bits Data: Data bus 0 to 7
P10 to P17 D8 to D15	8	I/O I/O	Port 1: I/O port Input or output specifiable in units of bits Data: Data bus 8 to 15
P40 to P47 A0 to A7	8	I/O Output	Port 4: I/O port Input or output specifiable in units of bits Address: Address bus 0 to 7
P50 to P57 A8 to A15	8	I/O Output	Port 5: I/O port Input or output specifiable in units of bits Address: Address bus 8 to 15
P60 to P67 A16 to A23	8	I/O Output	Port 6: I/O port Input or output specifiable in units of bits Address: Address bus 16 to 23
P70 $\overline{\text{RD}}$	1	I/O Output	Port 70: I/O port (Schmitt input, with pull-up register) Read: Outputs strobe signal for read external memory.
P71 $\overline{\text{SRWR}}$	1	I/O Output	Port 71: I/O port (Schmitt input, with pull-up register) Write enable for SRAM: Strobe signal for writing data.
P72 $\overline{\text{SRLB}}$	1	I/O Output	Port 72: I/O port (Schmitt input, with pull-up register) Data enable for SRAM on pins D0 to D7
P73 $\overline{\text{SRLUB}}$	1	I/O Output	Port 73: I/O port (Schmitt input, with pull-up register) Data enable for SRAM on pins D8 to D15
P74 TA0IN	1	I/O Input	Port 74: Input port (Schmitt input) 8-bit timer 0 input: Input pin of 8-bit timer TMRA0
P75 $\overline{\text{USBOC}}$	1	I/O Input	Port 75: I/O port (Schmitt input) USBOC Input
P76 USBPON	1	I/O Output	Port 76: I/O port (Schmitt input) USBPON Output
P77 X1USB	1	I/O Input	Port 77: I/O port 48MHz Clock Input for USB Host Controller
P80 $\overline{\text{CS0}}$ TA1OUT BOOT	1	Output Output Output Input	Port 80: Output port Chip select 0: Outputs "Low" when address is within specified address area 8-bit timer 1 Output: Output pin of 8-bit timer TMRA0 or TMRA1 This pin sets single boot mode (only during reset).
P82 $\overline{\text{CS2}}$	1	Output Output	Port 82: Output port Chip select 2: Outputs "Low" when address is within specified address area
P83 $\overline{\text{CS3}}$ TA5OUT $\overline{\text{WAIT}}$	1	I/O Output Output Input	Port 83: I/O port Chip select 3: Outputs "Low" when address is within specified address area 8-bit timer 5 Output: Output pin of 8-bit timer TMRA4 or TMRA5 Wait: Signal used to request CPU bus wait
PC0 INT0	1	Input Input	Port C0: Input port (Schmitt input) Interrupt request pin 0 : Interrupt request pin with programmable level/rising/falling edge
PC1 INT1	1	Input Input	Port C1: Input port (Schmitt input) Interrupt request pin 1 : Interrupt request pin with programmable level/rising/falling edge
PC2 INT2 TB0IN0 TB1IN0	1	Input Input Input Input	Port C2: Input port (Schmitt input) Interrupt request pin 2 : Interrupt request pin with programmable level/rising/falling edge 16-bit timer 0 input 0: Input of count/capture trigger in 16-bit timer TMRB0 16-bit timer 1 input 0: Input of count/capture trigger in 16-bit timer TMRB1
PC3 INT3	1	Input Input	Port C3: Input port (Schmitt input) Interrupt request pin 3 : Interrupt request pin with programmable level/rising/falling edge

TOSHIBA

TMP92FD28

Table 2.2.1 Pin Names and Functions (2/3)

Pin name	Number of Pin	I/O	Function
PF0 TXD0	1	I/O Output	Port F0: I/O port (Schmitt input) Serial 0 send data: Open drain output programmable
PF1 RXD0	1	I/O Input	Port F1: I/O port (Schmitt input) Serial 0 receive data
PF2 SCLK0 $\overline{\text{CTS0}}$ CLK TB0OUT0	1	I/O I/O Input Output Output	Port F2: I/O port (Schmitt input) Serial 0 clock I/O Serial 0 data send enable (Clear to send) Clock: System Clock output 16-bit timer 0 output 0: Output pin of 16-bit timer TMRB0
PF3 TXD1 SPDO	1	I/O Output Output	Port F3: I/O port (Schmitt input) Serial 1 send data: Open drain output programmable SPI Data output
PF4 RXD1 SPDI	1	I/O Input Input	Port F4: I/O port (Schmitt input) Serial 1 receive data SPI Data input
PF5 SCLK1 $\overline{\text{CTS1}}$ SPCLK	1	I/O I/O Input Output	Port F5: I/O port (Schmitt input) Serial 1 clock I/O Serial 1 data send enable (Clear to send) SPI Clock output
PG0 to PG3 KI0 to KI3	4	Input Input	Port G: Input port (Schmitt input) Key input 0 to 3: Pin used of key-on wakeup 0 to 3
PN1 SDA0 TA3OUT	1	I/O I/O Output	Port N1: I/O port (Schmitt input, Open drain output) Serial bus interface 0 send/receive data at I ² C mode 8-bit timer 3 Output: Output pin of 8-bit timer TMRA2 or TMRA3
PN2 SCL0 TA2IN	1	I/O I/O Input	Port N2: I/O port (Schmitt input, Open drain output) Serial bus interface 0 clock I/O data at I ² C mode 8-bit timer 2 input: Input pin of 8-bit timer TMRA2
PN3 SCK1 HSCLK	1	I/O I/O Output	Port N3: I/O port (Schmitt input) Serial bus interface 1 clock I/O data at SIO mode HSIO Clock output
PN4 SDA1 SO1 HSSO	1	I/O I/O Output Output	Port N4: I/O port (Schmitt input, Open drain output) Serial bus interface 1 send/receive data at I ² C mode Serial bus interface 1 send data at SIO mode HSIO Data output
PN5 SCL1 SI1 HSSI	1	I/O I/O Input Input	Port N5: I/O port (Schmitt input, Open drain output) Serial bus interface 1 clock I/O data at I ² C mode Serial bus interface 1 receive data at SIO mode HSIO Data input

Table 2.2.1 Pin Names and Functions (3/3)

Pin name	Number of Pin	I/O	Function
X1 / X2	2	I/O	High-frequency oscillator connection I/O pins
XT1 / XT2	2	I/O	Low-frequency oscillator circuit connection pin.
AM0, AM1	2	Input	Operation mode: Fixed to AM1 = "1" and AM0 = "1"
RESET	1	Input	Reset: Initializes TMP92FD28 (Schmitt input, with pull-up register)
PWE	1	Output	External power supply control output: Pin to control ON/OFF of external power supply. In stand-by mode, outputs "L" level. In other than stand-by mode, outputs "H" level.
D+, D-	2	I/O	Data pin connected to USB. In case USB is not used, connect both pins to pull-up(DVCC3A) or pull-down resistor for protect current flows it.
RVIN	2	Input	Power supply pin for Internal Regulator
RVOUT1, RVOUT2	2	Output	1.5V output from Internal Regulator (Only Mask ROM Version)
DVCC3A	5	—	Power supply pin for peripheral I/O-A (Connect all DVCC3A pins to power supply pin.)
DVCC3B	1	—	Power supply pin for peripheral I/O-B (Connect all DVCC3B pins to power supply pin.)
DVCC1A	1	—	Power supply pin for internal logic-A. (Only Mask ROM Version)
DVCC1B	1	—	Power supply pin for internal logic-B. (Only Mask ROM Version)
DVSS	8	—	GND pins (0 V) (All DVSS pins should be connected with GND(0V))

Note1) In Flash version, the regulator does not built. But supply voltage as DVCC3 power because RVIN pins are used power supply pins.

Note2) In Flash version, voltage does not output from RVOUT1 and RVOUT2.

Note3) When using MASK version in combination with Flash version, connect RVOUT1 and DVCC1B, RVOUT2 and DVCC1A.

When using only Flash version, connect DVCC1A and DVCC1B, RVOUT1 and RVOUT2 to VDD3

CMOS 8-Bit Microcontroller

TMP86F409NG

Product No.	ROM (FLASH)	RAM	Package	Emulation Chip
TMP86F409NG	4096 bytes	512 bytes	SDIP32-P-400-1.78	TMP86C909/987XB

1.1 Features

1. 8-bit single chip microcomputer TLCS-870/C series
 - Instruction execution time :
 - 0.25 μ s (at 16 MHz)
 - 122 μ s (at 32.768 kHz)
 - 132 types & 731 basic instructions
2. 17interrupt sources (External : 5 Internal : 12)
3. Input / Output ports (26 pins)
 - Large current output: 8pins (Typ. 20mA), LED direct drive
4. Prescaler
 - Time base timer
 - Divider output function
5. Watchdog Timer
6. 16-bit timer counter: 1 ch
 - Timer, External trigger, Window, Pulse width measurement,
 - Event counter, Programmable pulse generate (PPG) modes
7. 8-bit timer counter : 2 ch
 - Timer, Event counter, Programmable divider output (PDO),
 - Pulse width modulation (PWM) output,
 - Programmable pulse generation (PPG) modes
8. 8-bit UART : 1 ch

This product uses the Super Flash® technology under the licence of Silicon Storage Technology, Inc. Super Flash® is registered trademark of Silicon Storage Technology, Inc.

060116EBP

9. 8bit Serial Expansion Interface (SEI): 1 channel
(MSB/LSB selectable and max. 4Mbps at 16MHz)
10. 10-bit successive approximation type AD converter
 - Analog input: 6 ch
11. Key-on wakeup : 4 channels
12. Clock operation
 - Single clock mode
 - Dual clock mode
13. Low power consumption operation
 - STOP mode: Oscillation stops. (Battery/Capacitor back-up.)
 - SLOW1 mode: Low power consumption operation using low-frequency clock.(High-frequency clock stop.)
 - SLOW2 mode: Low power consumption operation using low-frequency clock.(High-frequency clock oscillate.)
 - IDLE0 mode: CPU stops, and only the Time-Based-Timer(TBT) on peripherals operate using high frequency clock. Release by falling edge of the source clock which is set by TBTCCR<TBTCK>.
 - IDLE1 mode: CPU stops and peripherals operate using high frequency clock. Release by interrupts(CPU restarts).
 - IDLE2 mode: CPU stops and peripherals operate using high and low frequency clock. Release by interrupts. (CPU restarts).
 - SLEEP0 mode: CPU stops, and only the Time-Based-Timer(TBT) on peripherals operate using low frequency clock.Release by falling edge of the source clock which is set by TBTCCR<TBTCK>.
 - SLEEP1 mode: CPU stops, and peripherals operate using low frequency clock. Release by interrupt.(CPU restarts).
 - SLEEP2 mode: CPU stops and peripherals operate using high and low frequency clock. Release by interrupt.
14. Wide operation voltage:
 - 4.5 V to 5.5 V at 16MHz /32.768 kHz
 - 2.7 V to 5.5 V at 8 MHz /32.768 kHz

1.2 Pin Assignment

VSS	1	32	P37 (AIN5/STOP5)
XIN	2	31	P36 (AIN4/STOP4)
XOUT	3	30	P35 (AIN3/STOP3)
TEST	4	29	P34 (AIN2/STOP2)
VDD	5	28	P33 (AIN1)
(XTIN) P21	6	27	P32 (AIN0)
(XTOUT) P22	7	26	P31 (TC4/PDO4/PWM4/PPG4)
RESET	8	25	P30 (TC3/PDO3/PWM3)
(STOP/INT5) P20	9	24	P12 (DVO)
(TXD) P00	10	23	P11 (INT1)
(RXD) P01	11	22	P10 (INT0)
(SCLK) P02	12	21	P07 (TC1/INT4)
(MOSI) P03	13	20	P06 (INT3/PPG)
(MISO) P04	14	19	P05 (SS)
P14	15	18	P13
P16	16	17	P15

Figure 1-1 Pin Assignment

1.3 Block Diagram

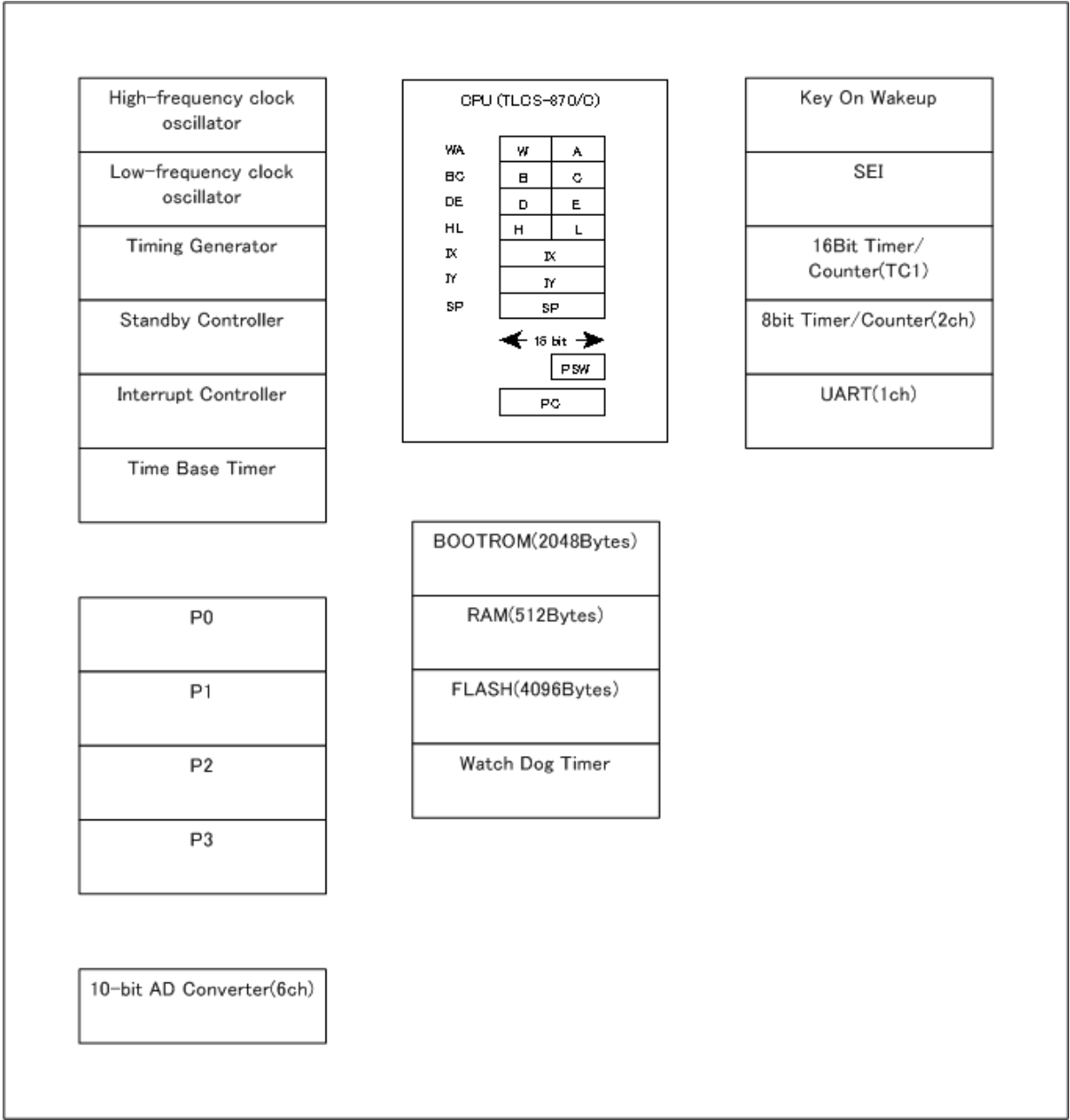


Figure 1-2 Block Diagram

1.4 Pin Names and Functions

The TMP86F409NG has MCU mode, parallel PROM mode, and serial PROM mode. Table 1-1 shows the pin functions in MCU mode. The serial PROM mode is explained later in a separate chapter.

Table 1-1 Pin Names and Functions(1/2)

Pin Name	Pin Number	Input/Output	Functions
P07 TC1 INT4	21	IO I I	PORT07 TC1 input External interrupt 4 input
P06 INT3 $\overline{\text{PPG}}$	20	IO I O	PORT06 External interrupt 3 input PPG output
P05 $\overline{\text{SS}}$	19	IO I	PORT05 SEI master/slave select input
P04 MISO	14	IO IO	PORT04 SEI master input, slave output
P03 MOSI	13	IO IO	PORT03 SEI master input, slave output
P02 SCLK	12	IO IO	PORT02 SEI serial clock input/output pin
P01 RXD	11	IO I	PORT01 UART data input
P00 TXD	10	IO O	PORT00 UART data output
P16	16	IO	PORT16
P15	17	IO	PORT15
P14	15	IO	PORT14
P13	18	IO	PORT13
P12 $\overline{\text{DVO}}$	24	IO O	PORT12 Divider Output
P11 INT1	23	IO I	PORT11 External interrupt 1 input
P10 $\overline{\text{INT0}}$	22	IO I	PORT10 External interrupt 0 input
P22 XTOUT	7	IO O	PORT22 Resonator connecting pins(32.768kHz) for inputting external clock
P21 XTIN	6	IO I	PORT21 Resonator connecting pins(32.768kHz) for inputting external clock
P20 $\overline{\text{INT5}}$ $\overline{\text{STOP}}$	9	IO I I	PORT20 External interrupt 5 input STOP mode release signal input
P37 AIN5 STOP5	32	IO I I	PORT37 Analog Input5 STOP5
P36 AIN4 STOP4	31	IO I I	PORT36 Analog Input4 STOP4

Table 1-1 Pin Names and Functions(2/2)

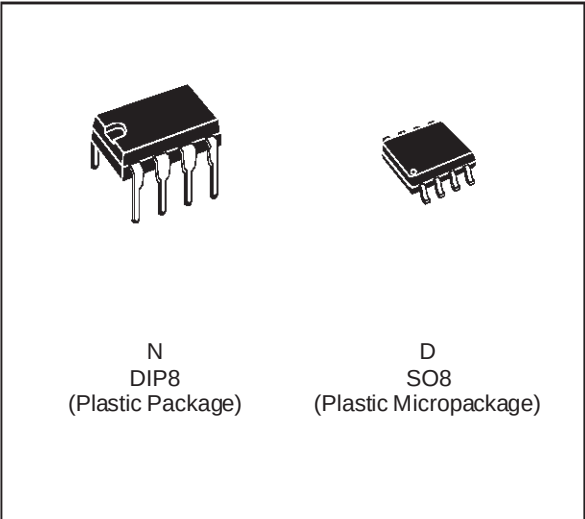
Pin Name	Pin Number	Input/Output	Functions
P35 AIN3 STOP3	30	IO I I	PORT35 Analog Input3 STOP3
P34 AIN2 STOP2	29	IO I I	PORT34 Analog Input2 STOP2
P33 AIN1	28	IO I	PORT33 Analog Input1
P32 AIN0	27	IO I	PORT32 Analog Input0
P31 TC4 PDO4/PWM4/PPG4	26	IO I O	PORT31 TC4 input PDO4/PWM4/PPG4 output
P30 TC3 PDO3/PWM3	25	IO I O	PORT30 TC3 input PDO3/PWM3 output
XIN	2	I	Resonator connecting pins for high-frequency clock
XOUT	3	O	Resonator connecting pins for high-frequency clock
RESET	8	I	Reset signal
TEST	4	I	Test pin for out-going test. Normally, be fixed to low.
VDD	5	I	+5V
VSS	1	I	0(GND)



TL072
TL072A - TL072B

LOW NOISE J-FET DUAL OPERATIONAL AMPLIFIERS

- WIDE COMMON-MODE (UP TO V_{CC}^{+}) AND DIFFERENTIAL VOLTAGE RANGE
- LOW INPUT BIAS AND OFFSET CURRENT
- LOW NOISE $e_n = 15\text{nV}/\sqrt{\text{Hz}}$ (typ)
- OUTPUT SHORT-CIRCUIT PROTECTION
- HIGH INPUT IMPEDANCE J-FET INPUT STAGE
- LOW HARMONIC DISTORTION : 0.01% (typ)
- INTERNAL FREQUENCY COMPENSATION
- LATCH UP FREE OPERATION
- HIGH SLEW RATE : $16\text{V}/\mu\text{s}$ (typ)



DESCRIPTION

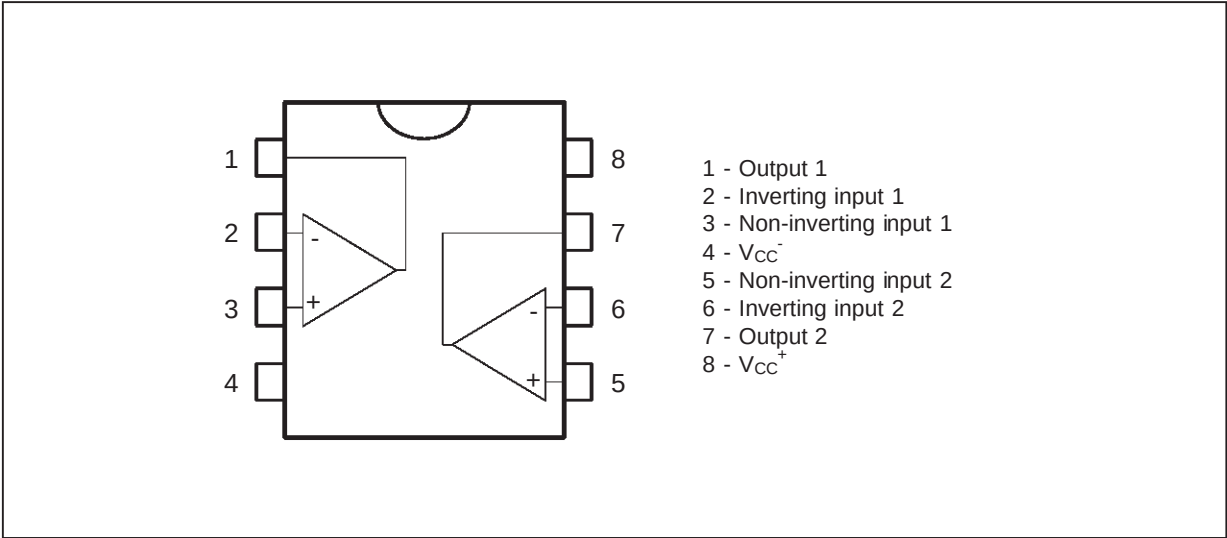
The TL072, TL072A and TL072B are high speed J-FET input dual operational amplifiers incorporating well matched, high voltage J-FET and bipolar transistors in a monolithic integrated circuit.

The devices feature high slew rates, low input bias and offset current, and low offset voltage temperature coefficient.

ORDER CODES

Part Number	Temperature Range	Package	
		N	D
TL072M/AM/BM	-55°C, +125°C	•	•
TL072I/AI/BI	-40°C, +105°C	•	•
TL072C/AC/BC	0°C, +70°C	•	•
Example : TL072CN			

PIN CONNECTIONS (top view)



TOSHIBA**TC7MZ4051,4052,4053FK**

TOSHIBA CMOS Digital Integrated Circuit Silicon Monolithic

TC7MZ4051FK, TC7MZ4052FK, TC7MZ4053FK

TC7MZ4051FK 8-Channel Analog Multiplexer/Demultiplexer

TC7MZ4052FK Dual 4-Channel Analog Multiplexer/Demultiplexer

TC7MZ4053FK Triple 2-Channel Analog Multiplexer/Demultiplexer

The TC7MZ4051/4052/4053FK are high-speed, low-voltage drive analog multiplexer/demultiplexers using silicon gate CMOS technology. In 3 V and 5 V systems these can achieve high-speed operation with the low power dissipation that is a feature of CMOS.

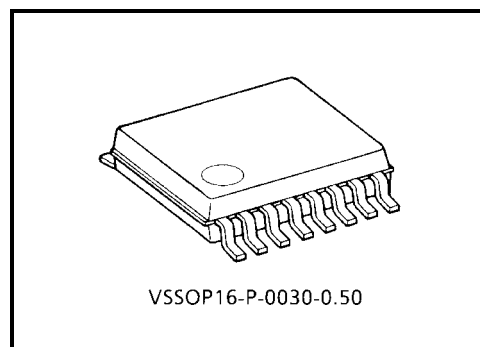
The TC7MZ4051/4052/4053FK offer analog/digital signal selection as well as mixed signals. The 4051 has an 8-channel configuration, the 4052 has an 4-channel $\times$ 2 configuration, and the 4053 has a 2-channel $\times$ 3 configuration.

The switches for each channel are turned ON by the control pin digital signals.

Although the control signal logical amplitude ($V_{CC} - GND$) is small, the device can perform large-amplitude ($V_{CC} - V_{EE}$) signal switching.

For example, if $V_{CC} = 3\text{ V}$, $GND = 0\text{ V}$, and $V_{EE} = -3\text{ V}$, signals between -3 V and $+3\text{ V}$ can be switched from the logical circuit using a single 3 V power supply.

All input pins are equipped with a newly developed input protection circuit that avoids the need for a diode on the plus side (forward side from the input to the V_{CC}). As a result, for example, 5 V signals can be permitted on the inputs even when the power supply voltage to the circuits is off. As a result of this input power protection, the TC7MZ4051/4052/4053FK can be used in a variety of applications, including in the system which has two power supplies, and in battery backup circuits.



VSSOP16-P-0030-0.50

Weight: 0.02 g (typ.)

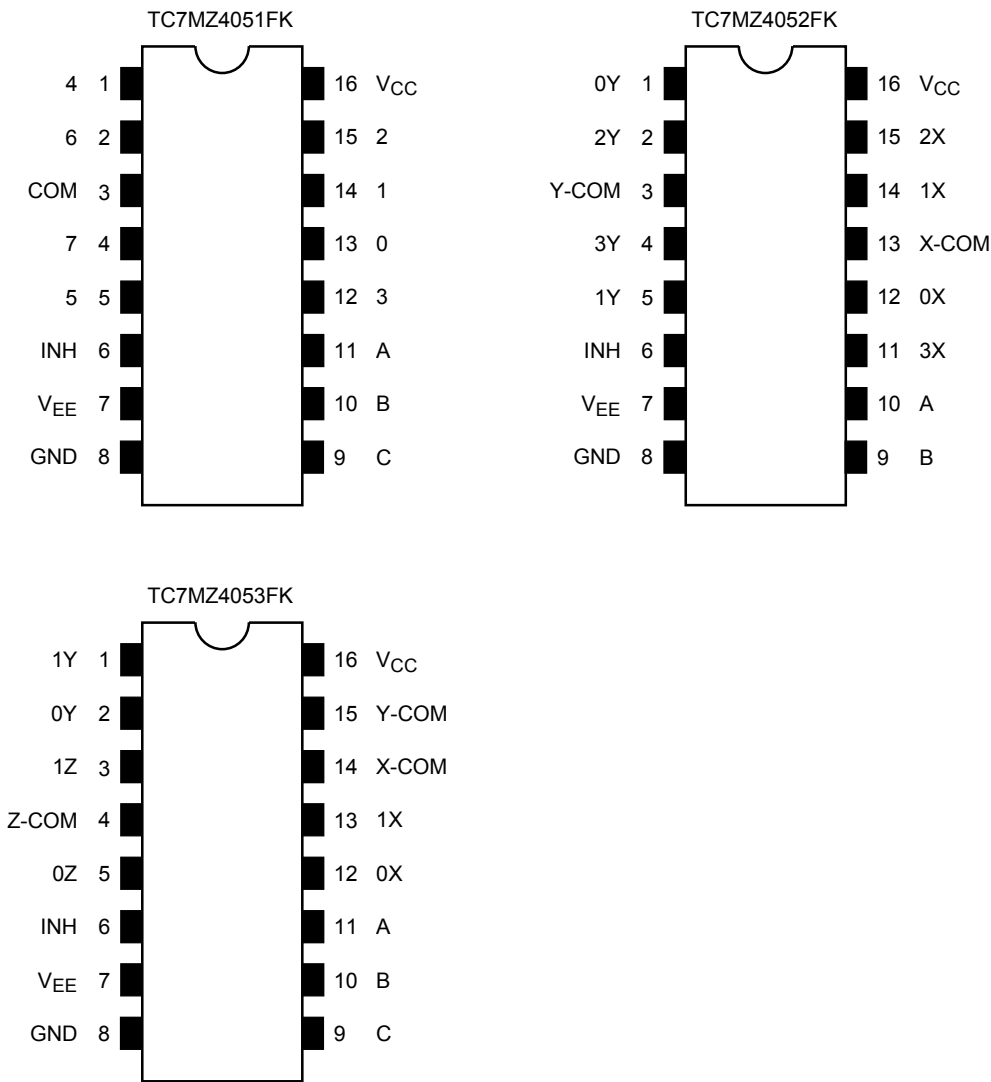
Features

- Low ON resistance: $R_{on} = 22\ \Omega$ (typ.) ($V_{CC} - V_{EE} = 3\text{ V}$)
 $R_{on} = 15\ \Omega$ (typ.) ($V_{CC} - V_{EE} = 6\text{ V}$)
- High speed: $t_{pd} = 3\text{ ns}$ (typ.) ($V_{CC} = 3.0\text{ V}$)
- Low power dissipation: $I_{CC} = 4\ \mu\text{A}$ (max) ($T_a = 25^\circ\text{C}$)
- Input level: $V_{IL} = 0.8\text{ V}$ (max) ($V_{CC} = 3\text{ V}$)
 $V_{IH} = 2.0\text{ V}$ (min) ($V_{CC} = 3\text{ V}$)
- Power down protection is provided on all control inputs
- Pin and function compatible with 74HC4051/4052/4053

TOSHIBA

TC7MZ4051,4052,4053FK

Pin Assignment (top view)



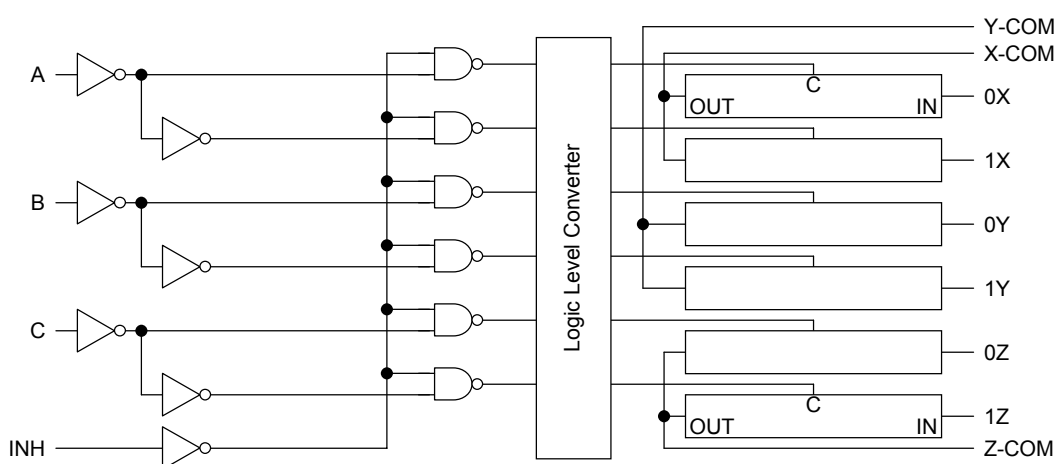
Truth Table

Control Inputs				“ON” Channel		
Inhibit	C*	B	A	MZ4051FK	MZ4052FK	MZ4053FK
L	L	L	L	0	0X, 0Y	0X, 0Y, 0Z
L	L	L	H	1	1X, 1Y	1X, 0Y, 0Z
L	L	H	L	2	2X, 2Y	0X, 1Y, 0Z
L	L	H	H	3	3X, 3Y	1X, 1Y, 0Z
L	H	L	L	4	—	0X, 0Y, 1Z
L	H	L	H	5	—	1X, 0Y, 1Z
L	H	H	L	6	—	0X, 1Y, 1Z
L	H	H	H	7	—	1X, 1Y, 1Z
H	X	X	X	None	None	None

X: Don't care, *: Except MZ4052FK

TC7MZ4051,4052,4053FK

TC7MZ4051FK



TOSHIBA

TC74VHC08F/FN/FT

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74VHC08F, TC74VHC08FN, TC74VHC08FT

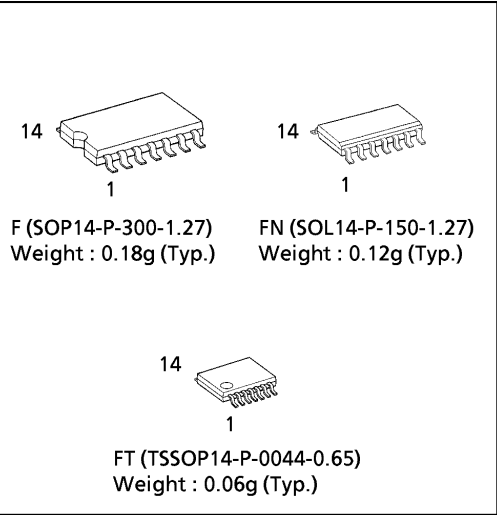
QUAD 2-INPUT AND GATE

The TC74VHC08 is an advanced high speed CMOS 2-INPUT AND GATE fabricated with silicon gate C²MOS technology. It achieves the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation.

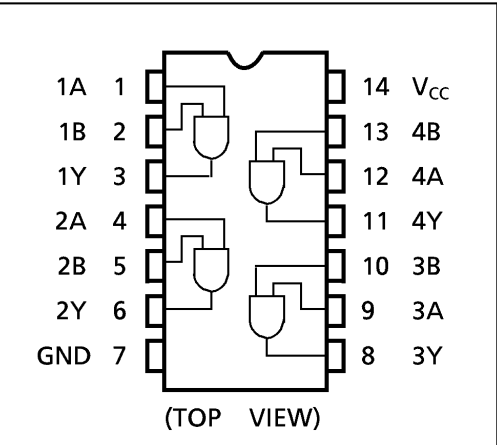
The internal circuit is composed of 4 stages including buffer output, which provide high noise immunity and stable output. An input protection circuit ensures that 0 to 5.5V can be applied to the input pins without regard to the supply voltage. This device can be used to interface from 5V to 3V systems and two supply systems such as battery back up. This circuit prevents device destruction due to mismatched supply and input voltages.

- FEATURES:
- High Speed..... $t_{pd} = 4.3\text{ns}(\text{typ.})$ at $V_{CC} = 5\text{V}$
 - Low Power Dissipation..... $I_{CC} = 2\mu\text{A}(\text{Max.})$ at $T_a = 25^\circ\text{C}$
 - High Noise Immunity..... $V_{NIH} = V_{NIL} = 28\% V_{CC} (\text{Min.})$
 - Power Down Protection is provided on all inputs.
 - Balanced Propagation Delays..... $t_{pLH} \approx t_{pHL}$
 - Wide Operating Voltage Range..... $V_{CC} (\text{opr}) = 2\text{V} \sim 5.5\text{V}$
 - Low Noise $V_{OLP} = 0.8\text{V} (\text{Max.})$
 - Pin and Function Compatible with 74ALS08

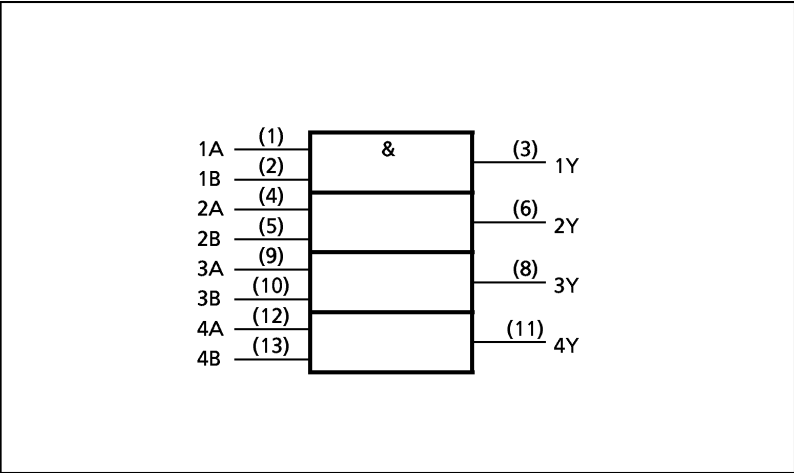
(Note) The JEDEC SOP (FN) is not available in Japan.



PIN ASSIGNMENT



IEC LOGIC SYMBOL



TRUTH TABLE

A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

980910EBA2



Data Sheet

SiI9135/9135A HDMI Receiver with Enhanced Audio and Deep Color Outputs

Data Sheet

Document # SiI-DS-0206-F



SiI9135/9135A HDMI Receiver with Enhanced Audio and Deep Color Outputs

Data Sheet

Introduction

The SiI9135/9135A HDMI Receiver with Enhanced Audio and Deep Color Outputs is a second-generation High Definition Multimedia Interface (HDMI) v1.3 receiver. It is software-compatible with the SiI9133 receiver, but adds audio support for DTS-HD and Dolby TrueHD. Digital televisions that can display 10- or 12-bit color depth can now provide the highest quality protected digital audio and video over a single cable. The SiI9135 and SiI9135A devices, which are functionally identical, can receive deep color video up to 12-bit, 1080p @ 60 Hz. Backward compatibility with the DVI 1.0 specification allows HDMI systems to connect to existing DVI 1.0 hosts, such as HD set-top boxes and PCs. The specialized audio and video processing contained in the receiver can add HDMI capability to earlier-generation consumer electronics. Efficient color space conversion receives RGB video data and delivers either standard-definition or high-definition YCbCr formats.

Features

- Dual-Input HDMI 1.3a, HDCP 1.3, and DVI 1.0 compliant receiver.
- Integrated Transition Minimized Differential Signaling® (TMDS®) core running at 25–225 MHz.
- Flexible support for many different standard- and high-definition video formats.
- All high-end audio formats supported.
- Integrated HDCP decryption engine for receiving protected audio and video content includes pre-programmed keys.
- Software compatible with SiI9033 and SiI9133 receivers, with additional register programming required for deep color, DTS-HD and Dolby TrueHD support
- Flexible power management
- 20 mm x 20 mm 144-pin TQFP package with ePad™

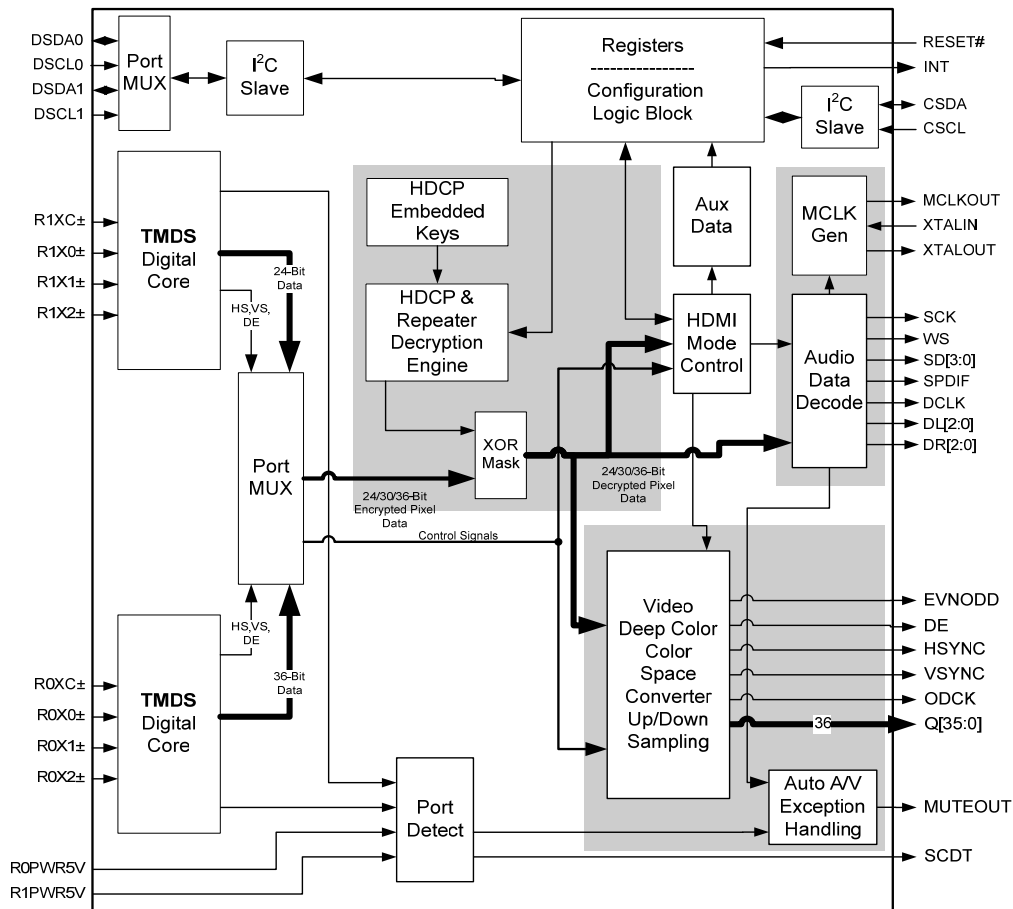


Figure 1. Functional Block Diagram

SiI9135/9135A HDMI Receiver with Enhanced Audio and Deep Color Outputs**Data Sheet**

Silicon Image, Inc.

Overview

The SiI9135/9135A receiver can send and receive up to eight channels of uncompressed digital audio at 192 kHz and 2-channel digital audio up to 192 kHz. Compressed streams are also supported through either the S/PDIF port or over I²S for DTS-HD and Dolby TrueHD. An industry-standard I²S port allows direct connection to low-cost audio DACs at up to 192 kHz. An S/PDIF port supports up to 192 kHz audio. The device supports Super Audio Compact Disc (SACD) and provides Direct Stream Digital (DSD) ports that support 44.1- and 88.2-kHz one-bit audio. Audio down-sampling allows the receiver to share the audio bus with a high-sample-rate audio DAC while down-sampling audio for an attached display that supports only lower rates.

The chip comes pre-programmed with High-bandwidth Digital Content Protection (HDCP) keys. This set of keys simplifies the manufacturing process and lowers costs while providing the highest level of HDCP key security.

Silicon Image HDMI receivers use the latest generation of TMDS core technology. These cores pass all HDMI compliance tests.

Unless otherwise specified, all mentions of the SiI9135 receiver in this datasheet also refer to the SiI9135A receiver.

Additional Features

The digital video interface supports the following video formats:

- 36-bit RGB / YCbCr 4:4:4
- 16/20/24-bit YCbCr 4:2:2
- 8/10/12-bit YCbCr 4:2:2 (ITU BT.656)
- 12/15/18-bit Digital Multimedia Output (DMO) RGB/YCbCr 4:4:4 (clocked with rising and falling edges)
- Color Space Conversion for both RGB-to-YCbCr and YCbCr-to-RGB (both 601 and 709)
- True 12-bit accurate data using 14-bit processing
- Auto video mode configuration simplifies system firmware design

The digital audio interface supports the following high-end audio formats:

- DTS-HD and Dolby TrueHD high bit rate audio support
- Four I²S inputs accept Dolby Digital, DVD-Audio input (2-channel 192 kHz and 8-channel 192 kHz)
- S/PDIF input supports PCM, Dolby Digital, DTS digital audio transmission (32–192 kHz Fs sample rate)
- IEC60958 or IEC61937 compatible
- Flexible, programmable I²S channel mapping
- 2:1 and 4:1 down-sampling to handle 96 kHz and 192 kHz audio streams.

The HDCP decryption provides the following features:

- Pre-programmed HDCP keys provide the highest level of key security, simplify manufacturing, and lower cost
- Full support for HDCP repeaters (up to 16 attached downstream devices)
- HDCP Built-In Self Test (BIST)

Data Sheet

Pin Diagram

Sil9135
144-Pin
TQFP
(Top View)

Pin	Signal	Pin	Signal
1	Q9	73	IOGND
2	Q9	74	IOVCC33
3	Q8	75	MUTEOUT
4	IOGND	76	RSVDNC
5	ODCK	77	RSVDNC
6	IOVCC33	78	SPDIF
7	Q7	79	CGND
8	Q6	80	CVCC18
9	Q5	81	SD0
10	Q4	82	SD1
11	CGND	83	SD2
12	CVCC18	84	SD3
13	Q3	85	WS
14	Q2	86	SCK
15	Q1	87	IOGND
16	Q0	88	IOVCC33
17	IOGND	89	MCLK
18	IOVCC33	90	CGND
19	DE	91	CVCC18
20	HSYNC	92	DVCC18
21	VSYNC	93	DGND
22	EVNODD	94	XTALOUT
23	CGND	95	XTALIN
24	CVCC18	96	XTALVCC
25	CVCC18	97	REGVCC
26	CSDA	98	RSVDNC
27	CSCL	99	RSVDL
28	DSDA1	100	RESET#
29	DSCL1	101	SCDT
30	R1PWR5V	102	INT
31	IOGND	103	IOGND
32	IOVCC33	104	IOVCC33
33	DSDA0	105	CI2CA
34	DSCL0	106	CGND
35	R0PWR5V	107	CVCC18
36	AGND	108	Q35
37	AVCC18	109	Q34
38	AVCC33	110	Q33
39	R0XC-	111	Q32
40	R0XC+	112	IOGND
41	AGND	113	OVCC33
42	AVCC33	114	Q31
43	R0X0-	115	Q30
44	R0X0+	116	Q29
45	AGND	117	Q28
46	AVCC33	118	GND
47	R0X1-	119	CVCC1
48	R0X1+	120	Q27
49	AGND	121	Q26
50	AVCC33	122	Q25
51	R0X2-	123	Q24
52	R0X2+	124	IOGND
53	AGND	125	OVCC33
54	AVCC18	126	Q23
55	RSVDNC	127	Q22
56	AVCC33	128	Q21
57	R1XC-	129	Q20
58	R1XC+	130	GND
59	AGND	131	CVCC18
60	AVCC33	132	Q19
61	R1X0-	133	Q18
62	R1X0+	134	Q17
63	AGND	135	Q16
64	AVCC33	136	IOGND
65	R1X1-	137	OVCC33
66	R1X1+	138	Q15
67	AGND	139	Q14
68	AVCC33	140	Q13
69	R1X2-	141	Q12
70	R1X2+	142	CGND
71	AGND	143	CVCC18
72	AVCC18	144	Q11

Figure 2. Pin Diagram

Individual pin functions are described beginning on page 32.

SiI9135/9135A HDMI Receiver with Enhanced Audio and Deep Color Outputs

Data Sheet

Silicon Image, Inc.

System Applications

The SiI9135 receiver is designed for AV receivers that require support for HDMI Deep Color and the latest audio technologies: DTS-HD and Dolby TrueHD. The receiver supports the HDMI 1.3a specification and allows receipt of 10/12-bit color depth up to 1080p resolutions. A single device provides two HDMI input ports. The video output goes to a video processor or HDMI transmitter. Besides DTS-HD and Dolby TrueHD, the device supports full surround sound audio including DVD-Audio and SACD. The audio output can go directly to an audio DAC or an audio digital signal processor for further processing, as shown in Figure 3.

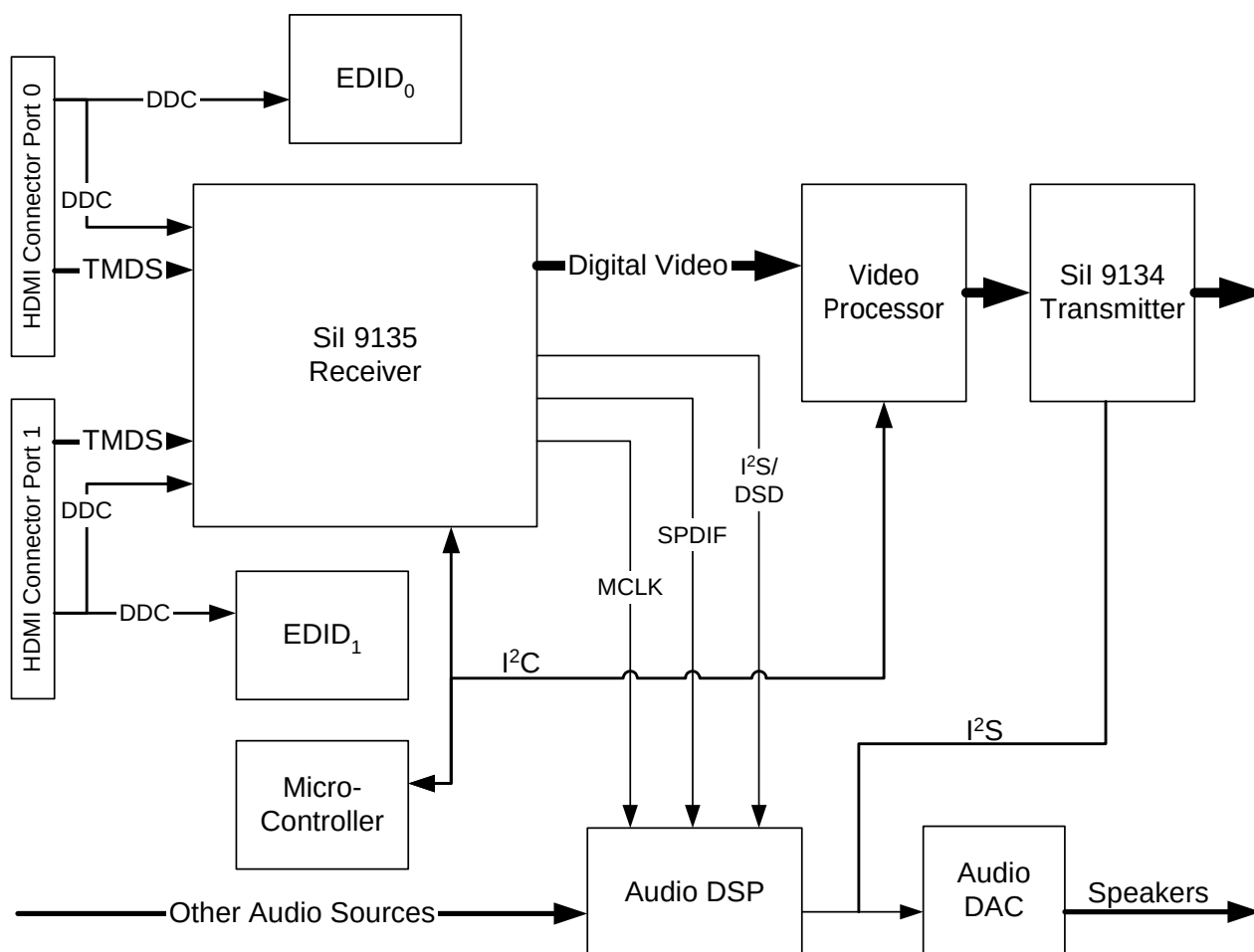
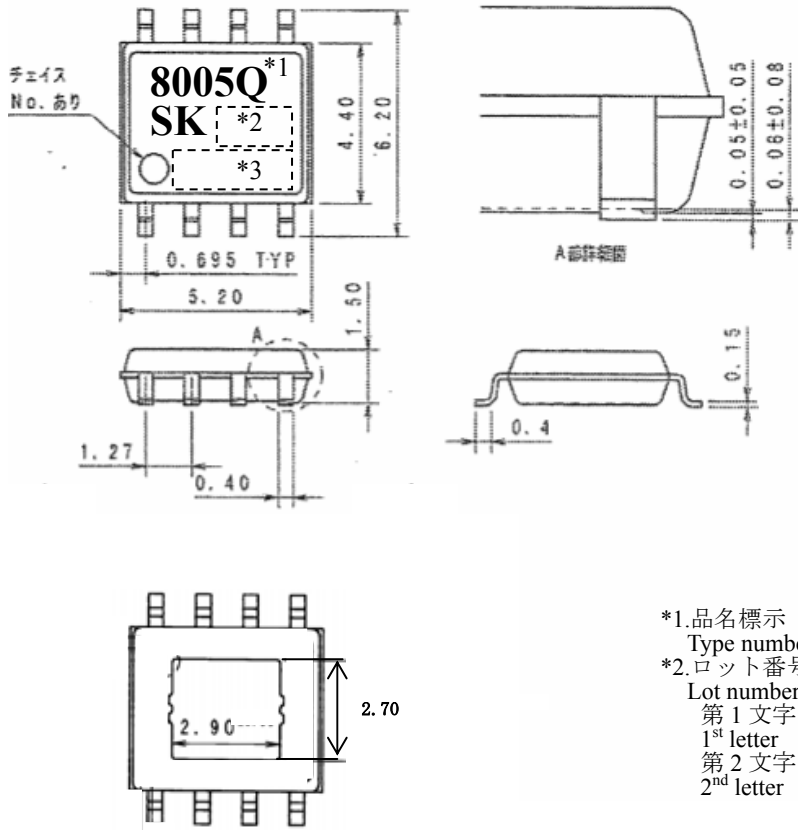


Figure 3. Digital Television Receiver Block Diagram

6 外形
Package information
6-1外形、寸法
Package type, physical dimensions



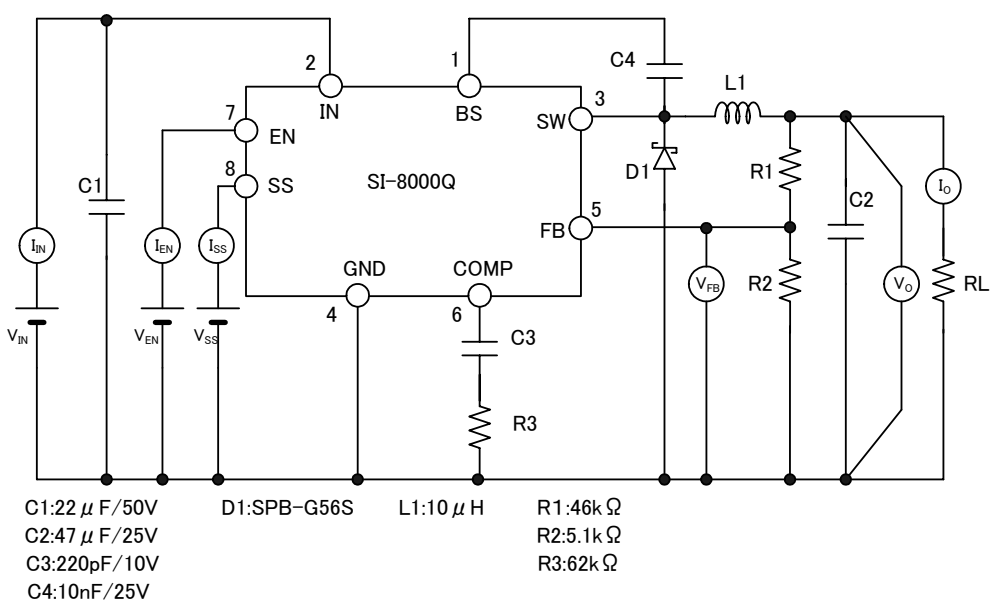
- 端子配列
PIN Assignment
- 1.BS
 - 2.IN
 - 3.SW
 - 4.GND
 - 5.FB
 - 6.COMP
 - 7.EN
 - 8.SS

- *1.品名標示
Type number
- *2.ロット番号(3桁)
Lot number (three digit)
 - 第1文字 西暦年号下一桁
1st letter The last digit of year
 - 第2文字 月
2nd letter Month
 - 1～9月：アラビア数字
 - 10月：O
 - 11月：N
 - 12月：D
 - (1 to 9 for Jan. to Sept.,
O for Oct. N for Nov. D for Dec.)
 - 第3,4文字 製造週
3rd & 4th letter week
 - 01～05：アラビア数字
 - Arabic Numerical
- *3.管理番号(4桁)
Control number (four digit)

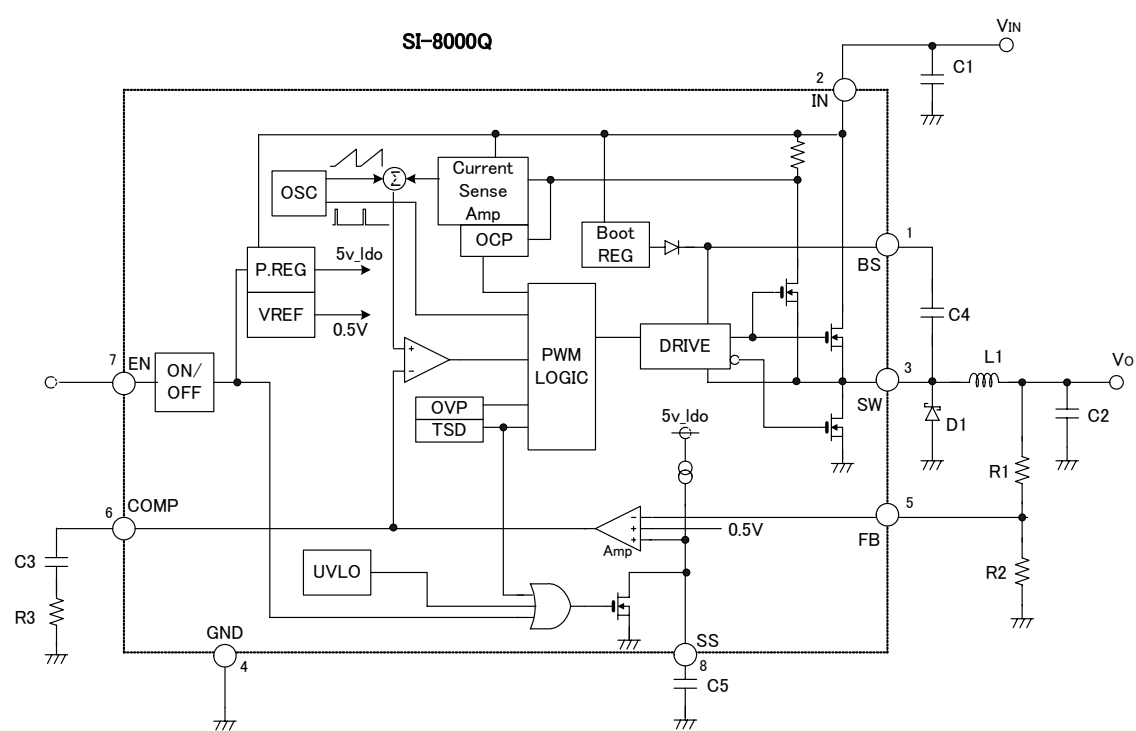
6-2外観
Appearance
本体は、汚れ、傷、亀裂等なく綺麗であること。
The body shall be clean and shall not bear any stain, rust or flaw.

6-3標示
Marking
標示は本体に、品名及びロット番号を明瞭、かつ容易に消えぬようレーザーで捺印すること。
The type number and lot number shall be marked on the body by leaser which shall not be unreadable easily.

4-3測定回路図
Measurement circuit diagram



4-4 ブロックダイアグラム
Block diagram





NJW1298

8-CHANNEL ELECTRONIC VOLUME WITH INPUT SELECTOR

■ GENERAL DESCRIPTION

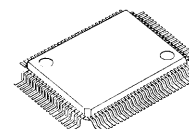
The **NJW1298** is a 8-channel electronic volume with Input Selector. It includes 13-in 4-out stereo audio selector, REC Output and Multi-channel inputs.

The **NJW1298** performs low noise and low distortion characteristics with resistance ladder circuit.

All of functions are controlled via three-wired serial bus. Selectable 2-Chip address is available for using two chips on same serial bus line.

The **NJW1298** is suitable for multi-channel audio system, such as AV amplifier, DVD receiver, and others.

■ PACKAGE OUTLINE

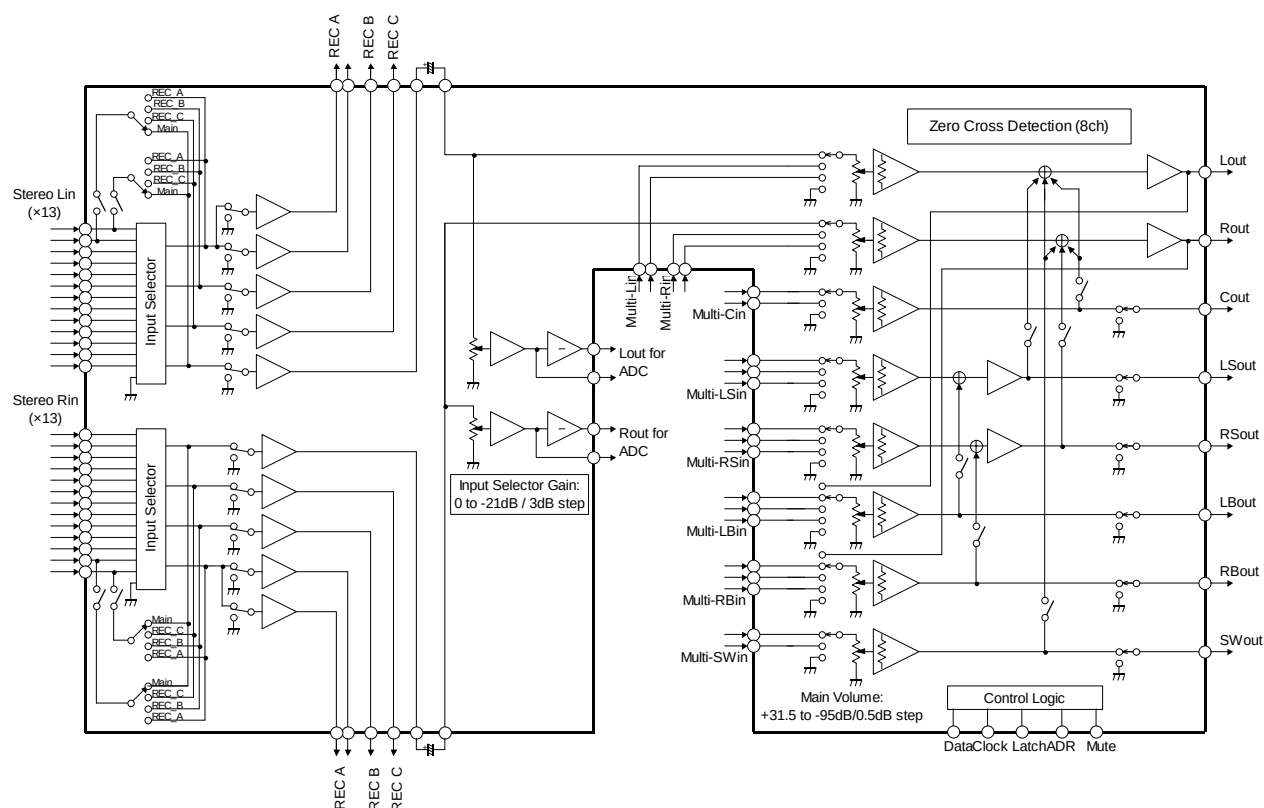


NJW1298FU1

■ FEATURES

- Operating Voltage ± 4.5 to ± 7.5 V
- 3-Wired Serial Control Chip Address Select Function
- 13-input 4-output stereo selector
- Multi-Channel input (8ch x 2)
- Input Selector Gain Control Gain : 0 to -21dB / 3dB step
- Volume +31.5 to -95dB / 0.5dB step, Mute
- SWch, Cch, LS/RSch output addition to L/R ch output
- LB/RBch output addition to LS/RS ch output
- Zero Cross Detection
- Bi-CMOS Technology
- Package Outline QFP100-U1

■ BLOCK DIAGRAM





NJM2505A

SINGLE ISOLATION AMPLIFIER

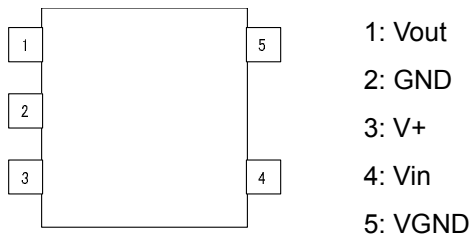
■ GENERAL DESCRIPTION

NJM2505A is the single isolation amplifier developed by the video signal. It can remove the noise of a signal with isolation amplifier and carries in the small package (MTP5), it is suitable for the interface of the video signal of a car AV system.

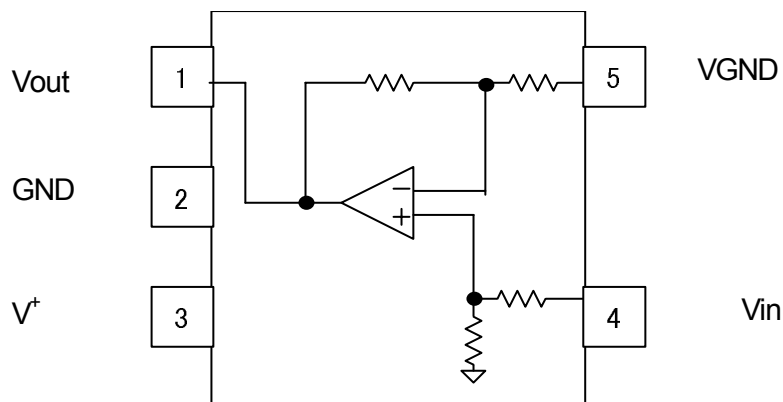
■ FEATURES

- Operating Voltage 4.5 to 9.0V
- Input: Sync-tip Clamp
- Common Mode Noise Rejection Ratio -55dBtyp.
- Voltage Gain 0dBtyp.
- Frequency Characteristics $0\text{dBtyp.at } 10\text{MHz}$
- Bipolar Technology
- Package MTP5

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



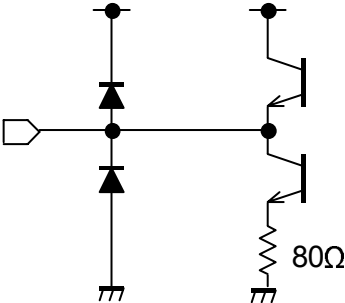
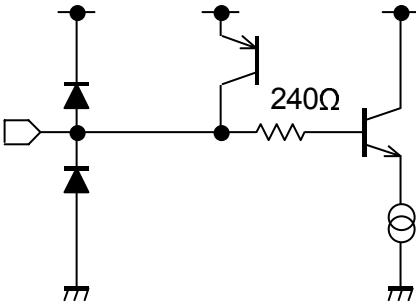
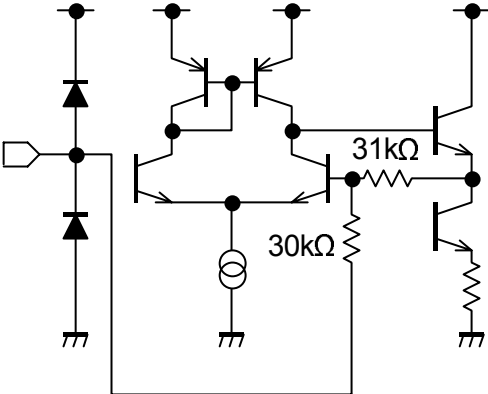
■ PACKAGE OUTLINE



NJM2505AF

NJM2505A

■ EQUIVALENT CIRCUIT

Pin.No	Symbol	Inside Equivalent Circuit	Voitage
1	Vout		0.92V
2	GND	-	-
3	V ⁺	-	-
4	Vin		1.67V
5	VGND		1.67V



FLI30336

Single-chip enhanced LCD TV controller

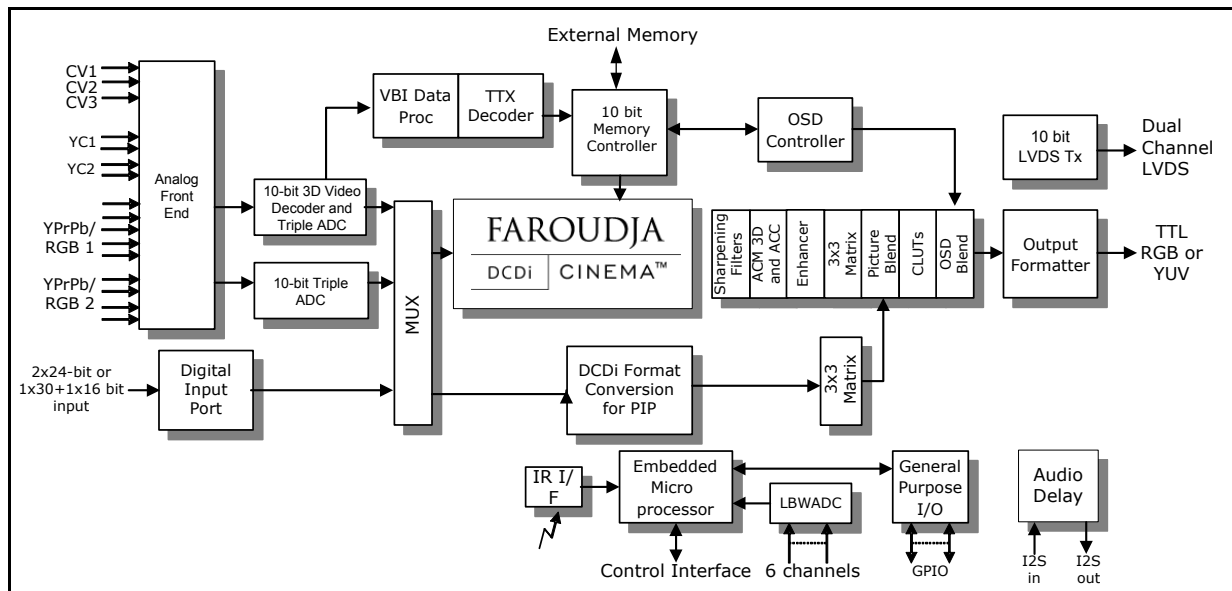
Data Brief

Features

- Integrated 3D video decoder
- Flexible digital capture up to 165 MHz and analog capture up to 162 MHz
- VBI signal processing including WST version 2.5 support
- Flexible DDR memory interface
- Faroudja® TrueLife™ video enhancer
- Advanced Picture-in-Picture (PIP) features
- Advanced Color Management (ACM-3D) and Adaptive Contrast Control (ACC)
- On-chip microprocessor
- Advanced bitmapped OSD controller
- LCD overdrive
- Embedded 10-bit dual-channel LVDS for 1080p and WUXGA panel support
- Package: 416 PBGA

Applications

- LCD and PDP TV
- DLP®, LCD, and LCOS front and rear projection



Description

FLI30336

1 Description

The FLI30336 offers high integration for advanced applications of Picture-in-Picture (PIP) and Picture-by-Picture (PBP) with an integrated video decoder and a 3D comb filter. The FLI30336 can power up to 1080p/WUXGA displays with the proven Faroudja DCDi Cinema branded technology.

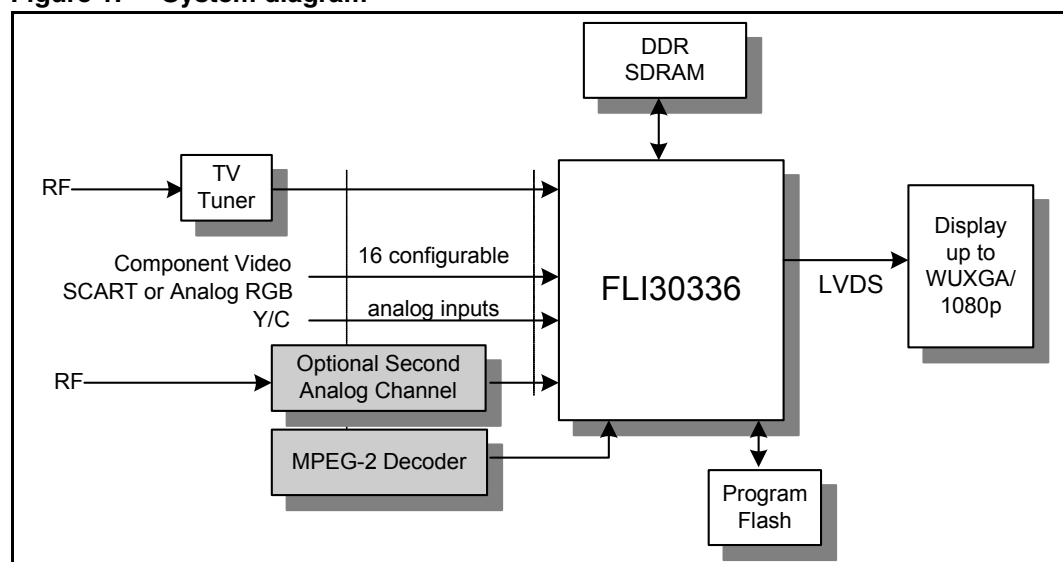
Special performance features such as the Faroudja DCDi Cinema video format converter, 10-bit performance in the device, and the Advanced Color Management (ACM-3D) provide exceptional video quality. This exclusive level of video quality technology only seen on Faroudja Home Theater Systems is now available in a single-chip solution.

The FLI30336 also comprises an integrated Analog Front-End (AFE) that includes triple ADCs and an integrated cross-point switch. The flexible AFE ensures simple PCB design with direct connections to TV tuners and input video connectors. In essence, the FLI30336 is the only device needed for a single LCD TV chassis supporting worldwide standards. For regional variations, only connector and firmware changes are required.

The integrated VBI dataslicer and decoder remove the need for external components resulting in significant cost reduction. The FLI30336 supports many worldwide VBI standards for applications of Teletext, Closed Captioning, V-Chip, and other VBI services.

The FLI30336 can be used in digital TV solutions requiring Faroudja DCDi Cinema video performance levels. An embedded microprocessor and a versatile OSD in a single device will facilitate rapid development of a reliable and attractive product. The FLI30336 utilizes the common Cortez family firmware for easy and effortless migration across different hardware platforms within this family.

Figure 1. System diagram



2 Feature attributes

- Flexible digital and analog capture
 - 16 configurable analog inputs
 - Direct connection from tuner or connector to analog input pin
 - Supports analog RGB/YUV capture up to 162 MHz and digital input capture up to 165 MHz
 - Full SCART support including RGB fast blank
 - 4:4:4/4:2:2/CCIR656/601 8/16/24/30-bit digital input port
 - Simple connection to JPEG and MPEG processors with a 8-bit bi-directional media port
- Integrated 3D video decoder
 - Faroudja IntelliComb™ technology
 - 3D adaptive comb filters for luma–chroma separation
 - Supports Composite, S-Video, and Component (including High Definition) video input signals
 - Supports all broadcast TV video standards—NTSC (North America and Japan), PAL (I, B, G, H, M, D, N), SECAM (D, K, L, B, G)
 - Supports playback video standards—NTSC443 and PAL-60
 - Macrovision™ and VCR trick mode support
- VBI signal processing
 - Multi-standard digital VBI dataslicer
 - WST FastText page support access with > 2048 page cache
 - Supports WST level 2.5
 - V-chip, VPS, Closed Captioning, XDS, CGMS, and WSS decoder
 - Supports VBI frame freeze
- Faroudja DCDI Cinema format conversion
 - Low angle de-interlacing processing
 - Per pixel Motion Adaptive De-interlacing (MADi) up to 1080i format
 - Format conversion up to WUXGA resolutions
 - Panoramic and anamorphic non-linear scaling
 - Adaptive media display processing for 3:2 and 2:2 video content
 - Special 2:2 and 3:3 film mode for improved film processing
 - Adaptive 3D/TNR noise reduction
 - Media noise reduction for MPEG inputs
- On-chip microprocessor
 - Integrated x186-based microprocessor with rich function library
 - General Purpose Inputs/Outputs (GPIOs) available for managing system devices (keypad, backlight, NVRAM, etc.)
 - Advanced power control for low power stand-by mode
 - 2-wire serial master bus interface for external device control

Feature attributes

FLI30336

- Faroudja TrueLife video enhancer
 - High performance and programmable sharpening filters with noise coring
 - Programmable main channel horizontal and vertical filter coefficients
 - Non-linear chroma and luma enhancement
 - Removal of the DVD Chroma Upsampling Error (CUE) introduced by some DVD sources
- Advanced Color Management (ACM-3D)
 - ACM-3D allows flexible flesh-tone compensation, blue stretch, and other image enhancements
 - ACM-3D provides flexible programming, polar coordinate representation, and six-axis color control
 - ACC ensures full dynamic range is used in video content
- Picture-in-Picture (PIP)
 - Programmable PIP channel horizontal and vertical filter coefficients
 - Supports high performance programmable sharpening filters with noise coring
 - Video PIP over full screen graphics and video backgrounds
 - Supports graphics and video PIP (CVBS/S-Video/Component ED/HD) over full screen video background (CVBS/S-Video)
 - Side-by-side window support
 - PIP zoom support
 - DCDi Edge® processing for second channel window
- Output formats
 - Dual-channel 8-bit wide TTL output
 - Dual-channel 10-bit LVDS transmitters for direct connection to LCD modules
 - 30-bit single-wide TTL output; 24-bit 4:2:2 YUV TTL output—12 bits per color 1080p panel support
 - 120 Hz WXGA panel support using FRC and Black Frame Insertion (BFI) technique
- Other features
 - Integrated infrared decoder
 - Integrated low bandwidth ADC with 6 input channels
 - 4 integrated PWM outputs for LCD backlight control
 - Integrated I2S audio delay to exact audio and video synchronization
 - I2S channel MUX to support two I2S input streams
 - Supports DDR1-500 memory devices and 512 Mb
 - Reduce LCD video smearing artifacts
 - Advanced bitmapped OSD controller

32 Mbit (4M x 8/2M x 16) 3V Only CMOS Flash Memory

1. FEATURES

- Single supply voltage 2.7V-3.6V
- Fast access time: 70/90 ns
- 4,194,304x8 / 2,097,152x16 switchable by $\overline{\text{BYTE}}$ pin
Compatible with JEDEC standard
 - Pin-out, packages and software commands compatible with single-power supply Flash
- Low power consumption
 - 20mA typical active current
 - 25uA typical standby current
- 100,000 program/erase cycles typically
- 20 Years Data Retention
- Command register architecture
 - Byte Word Programming (9 μ s/11 μ s typical)
 - Byte Mode : eight 8KB, sixty three 64KB sectors.
 - Word Mode : eight 4K word, sixty-three 32 K word sectors.
- Auto Erase (chip & sector) and Auto Program
 - Any combination of sectors can be erased concurrently; Chip erase also provided.
 - Automatically program and verify data at specified address
- Erase Suspend/Erase Resume
 - Suspend or Resume erasing sectors to allow the read/program in another sector
- Secured Silicon Sector
 - 128word sector for permanent, secure identification through an 8- word random Electronic Serial Number
 - May be programmed and locked at the factory or by the customer
 - Accessible through a command sequence.
- Ready/Busy (RY/ $\overline{\text{BY}}$)
 - RY/ $\overline{\text{BY}}$ output pin for detection of program or erase operation completion
- End of program or erase detection
 - Data polling
 - Toggle bits
- Hardware reset
 - Hardware pin ($\overline{\text{RESET}}$) resets the internal state machine to the read mode
- Sector Protection /Unprotection
 - Hardware Protect/Unprotect any combination of sectors from a program or erase operation.
- Low V_{CC} Write inhibit is equal to or less than 2.0V
- Boot Sector Architecture
 - U = Upper Boot Block
 - B = Bottom Boot Block
- Packages available:
 - 48-pin TSOP1
 - All Pb-free products are RoHS-Compliant
- CFI (Common Flash Interface) complaint
 - Provides device-specific information to the system, allowing host software to easily reconfigure to different Flash devices.

2. ORDERING INFORMATION

Part No	Boot	Speed	Package	Comments	Part No	Boot	Speed	Package	Comments
F49L320UA-70TG	Upper	70 ns	TSOP1	Pb-free	F49L320UA-90TG	Upper	90 ns	TSOP1	Pb-free
F49L320BA-70TG	Bottom	70 ns	TSOP1	Pb-free	F49L320BA-90TG	Bottom	90 ns	TSOP1	Pb-free

3. GENERAL DESCRIPTION

The F49L320UA/F49L320BA is a 32 Megabit, 3V only CMOS Flash memory device organized as 4M bytes of 8 bits or 2M words of 16bits. This device is packaged in standard 48-pin TSOP. It is designed to be programmed and erased both in system and can in standard EPROM programmers.

With access times of 70 ns and 90 ns, the F49L320UA/F49L320BA allows the operation of high-speed microprocessors. The device has separate chip enable $\overline{\text{CE}}$, write enable $\overline{\text{WE}}$, and output enable $\overline{\text{OE}}$ controls. ESMT's memory devices reliably store memory data even after 100,000 program and erase cycles.

The F49L320UA/F49L320BA is entirely pin and command set compatible with the JEDEC standard for 32 Megabit Flash memory devices. Commands are written to

The F49L320UA/F49L320BA features a sector erase architecture. The device array is divided into eight 8KB, sixty-three 64KB for

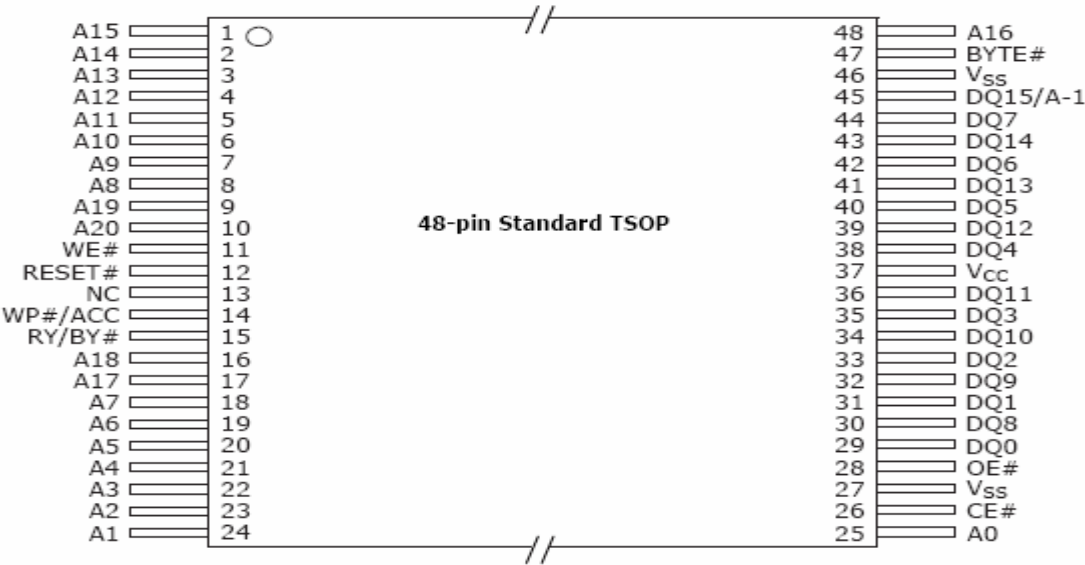
byte mode. The device memory array is divided into eight 4K word, sixty-three 32K word sectors for word mode. Sectors can be erased individually or in groups without affecting the data in other sectors. Multiple-sector erase and whole chip erase capabilities provide the flexibility to revise the data in the device.

The sector protect/unprotect feature disables both program and erase operations in any combination of the sectors of the memory. This can be achieved in-system or via programming equipment.

A low V_{CC} detector inhibits write operations on loss of power. End of program or erase is detected by the Ready/Busy status pin, Data Polling of DQ7, or by the Toggle Bit I feature on DQ6. Once the program or erase cycle has been successfully completed, the device internally resets to the Read mode. The command register using standard microprocessor write timings.

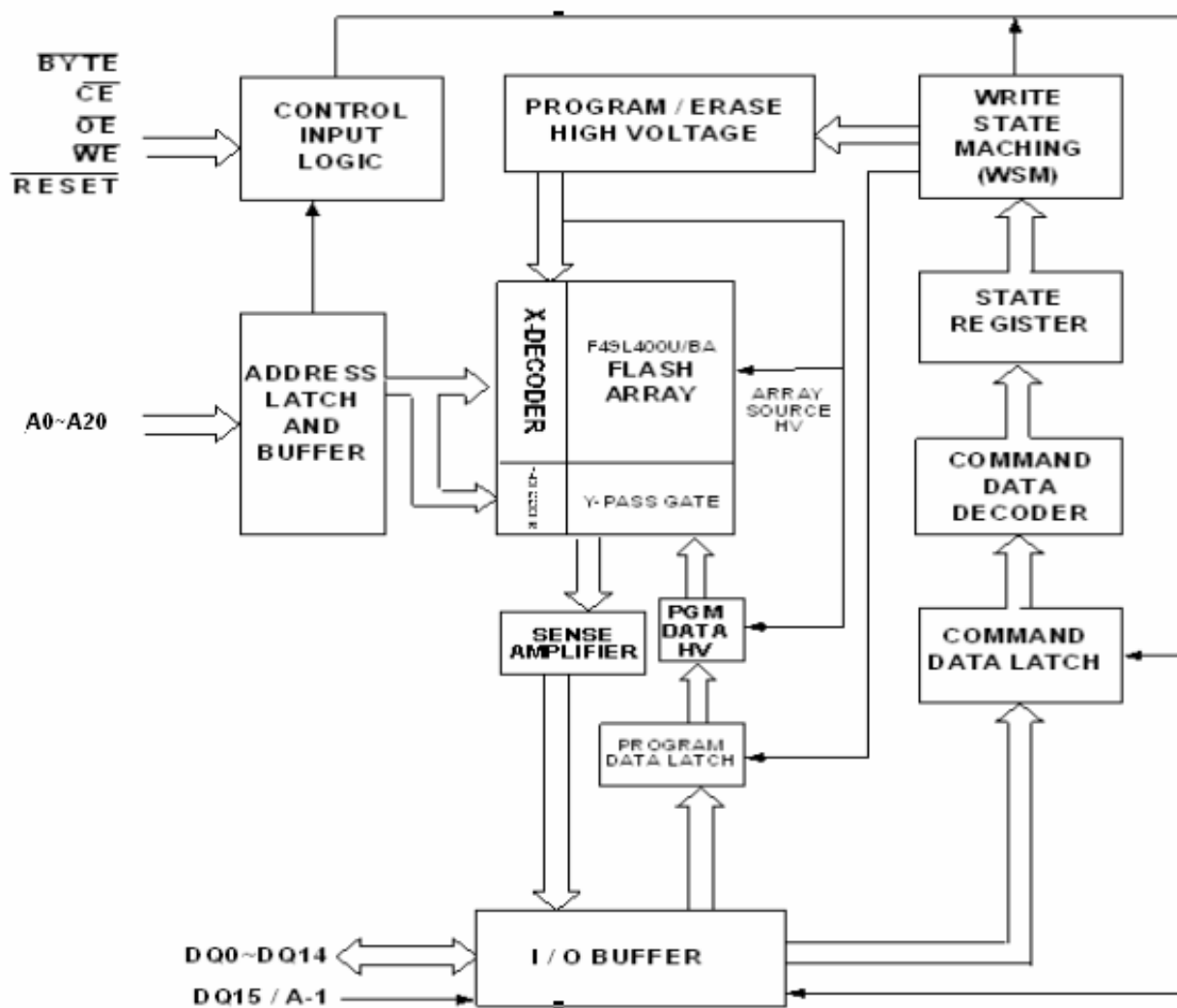
4. PIN CONFIGURATIONS

4.1 48-pin TSOP



4.2 Pin Description

Symbol	Pin Name	Functions
A0~A20	Address Input	To provide memory addresses.
DQ0~DQ14	Data Input/Output	To output data when Read and receive data when Write. The outputs are in tri-state when $\overline{OE}$ or $\overline{CE}$ is high.
DQ15/A-1	Q15 (Word mode) / LSB addr (Byte Mode)	To bi-direction date I/O when $\overline{BYTE}$ is High To input address when $\overline{BYTE}$ is Low
$\overline{CE}$	Chip Enable	To activate the device when $\overline{CE}$ is low.
$\overline{OE}$	Output Enable	To gate the data output buffers.
$\overline{WE}$	Write Enable	To control the Write operations.
$\overline{RESET}$	Reset	Hardware Reset Pin/Sector Protect Unprotect
$\overline{BYTE}$	Word/Byte selection input	To select word mode or byte mode
RY/ $\overline{BY}$	Ready/Busy	To check device operation status
Vcc	Power Supply	To provide power
GND	Ground	
NC	No connection	

6. FUNCTIONAL BLOCK DIAGRAM

ESMT**F25L008A****8Mbit (1Mx8)****3V Only Serial Flash Memory****■ FEATURES**

- Single supply voltage 2.7~3.6V
- Speed
 - Read max frequency : 33MHz
 - Fast Read max frequency : 50MHz, 100MHz
- Low power consumption
 - typical active current
 - 15 μ A typical standby current
- Reliability
 - 100,000 typical program/erase cycles
 - 20 years Data Retention
- Program
 - Byte program time 7 μ s (typical)
- Erase
 - Chip erase time 8s (typical)
 - block erase time 1sec (typical)
- Sector erase time 60ms (typical),
- Auto Address Increment (AAI) WORD Programming
 - Decrease total chip programming time over Byte-Program operations
- SPI Serial Interface
 - SPI Compatible : Mode 0 and Mode3
- End of program or erase detection
- Write Protect ($\overline{WP}$)
- Hold Pin ($\overline{HOLD}$)
- Package available
 - 8-pin SOIC 200-mil

ORDERING INFORMATION

Part No.	Speed	Package		COMMENTS
F25L008A –50PAG	50MHz	8 lead SOIC	200mil	Pb-free
F25L008A –100PAG	100MHz	8 lead SOIC	200mil	Pb-free
F25L008A –50DG	50MHz	8 lead PDIP	300mil	Pb-free
F25L008A –100DG	100MHz	8 lead PDIP	300mil	Pb-free

GENERAL DESCRIPTION

The F25L008A is a 8Megabit, 3V only CMOS Serial Flash memory device organized as 1M bytes of 8 bits. This device is packaged in 8-lead SOIC 200mil. ESMT's memory devices reliably store memory data even after 100,000 program and erase cycles.

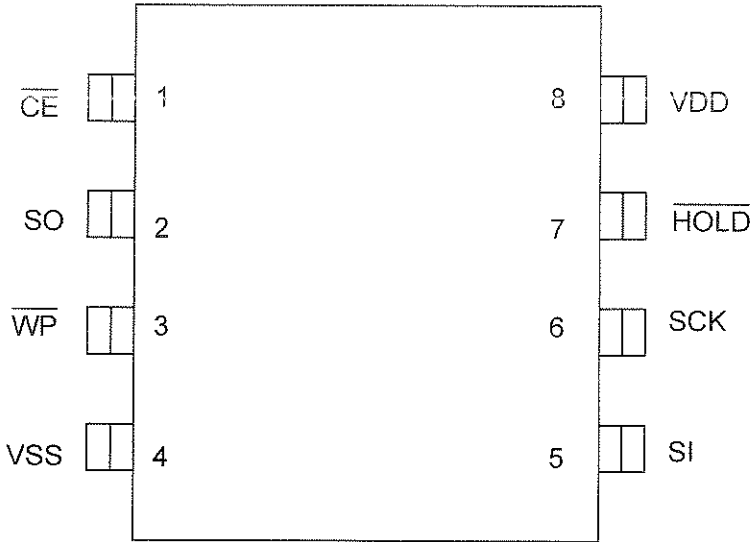
The F25L008A features a sector erase architecture. The device memory array is divided into 256 uniform sectors with 4K byte each ; 16 uniform blocks with 64K byte each. Sectors can be

erased individually without affecting the data in other sectors. Blocks can be erased individually without affecting the data in other blocks. Whole chip erase capabilities provide the flexibility to revise the data in the device.

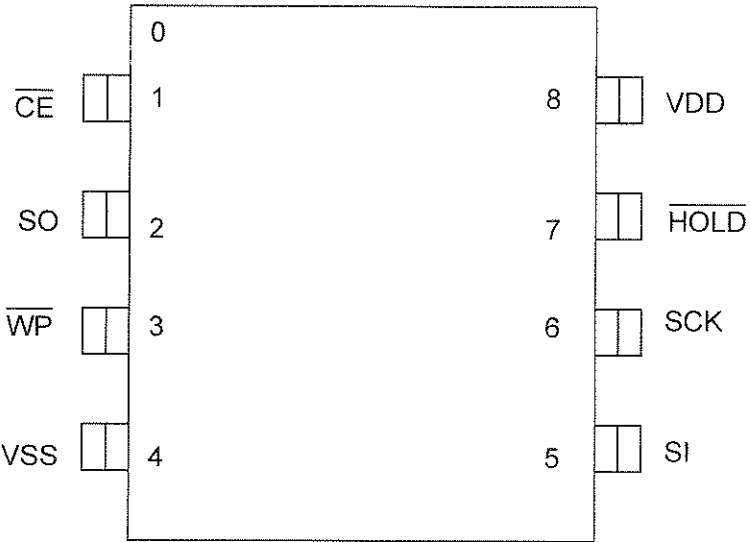
The sector protect/unprotect feature disables both program and erase operations in any combination of the sectors of the memory.

PIN CONFIGURATIONS

8-PIN SOIC



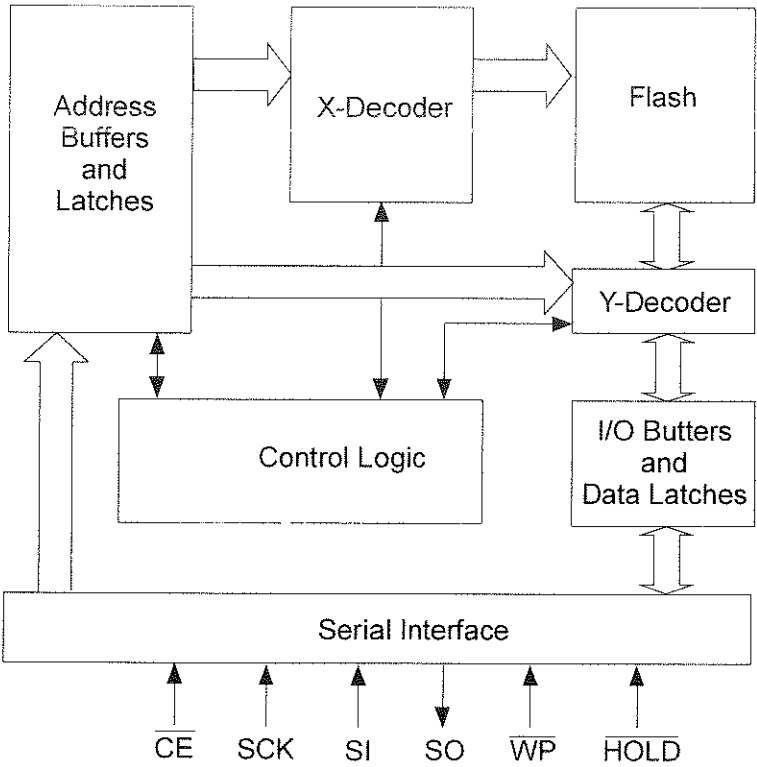
8-PIN PDIP



ESMT**F25L008A****PIN Description**

Symbol	Pin Name	Functions
SCK	Serial Clock	To provide the timing for serial input and output operations
SI	Serial Data Input	To transfer commands, addresses or data serially into the device. Data is latched on the rising edge of SCK.
SO	Serial Data Output	To transfer data serially out of the device. Data is shifted out on the falling edge of SCK.
$\overline{\text{CE}}$	Chip Enable	To activate the device when $\overline{\text{CE}}$ is low.
$\overline{\text{WP}}$	Write Protect	The Write Protect ($\overline{\text{WP}}$) pin is used to enable/disable BPL bit in the status register.
$\overline{\text{HOLD}}$	Hold	To temporality stop serial communication with SPI flash memory without resetting the device.
VDD	Power Supply	To provide power.
VSS	Ground	

FUNTIONAL BLOCK DIAGRAM



ESMT**F25L004A****4Mbit (512Kx8)****3V Only Serial Flash Memory****■ FEATURES**

- Single supply voltage 2.7~3.6V
- Speed
 - Read max frequency : 33MHz
 - Fast Read max frequency : 50MHz; 75MHz; 100MHz
- Low power consumption
 - typical active current
 - 15 μ A typical standby current
- Reliability
 - 100,000 typical program/erase cycles
 - 20 years Data Retention
- Program
 - Byte program time 7 μ s (typical)
- Erase
 - Chip erase time 4s (typical)
 - Sector erase time 60ms (typical),
block erase time 1sec (typical)
- Auto Address Increment (AAI) WORD Programming
 - Decrease total chip programming time over
Byte-Program operations
- SPI Serial Interface
 - SPI Compatible : Mode 0 and Mode3
- End of program or erase detection
- Write Protect ($\overline{\text{WP}}$)
- Hold Pin ($\overline{\text{HOLD}}$)
- Package available
 - 8-pin SOIC 150-mil
 - 8-pin SOIC 200-mil

ORDERING INFORMATION

Part No.	Speed	Package		COMMENTS
F25L004A -50PG	50MHz	8 lead SOIC	150 mil	Pb-free
F25L004A -100PG	100MHz	8 lead SOIC	150 mil	Pb-free
F25L004A -50PAG	50MHz	8 lead SOIC	200 mil	Pb-free

Part No.	Speed	Package		COMMENTS
F25L004A -100PAG	100MHz	8 lead SOIC	200 mil	Pb-free
F25L004A -50DG	50MHz	8 lead PDIP	300 mil	Pb-free
F25L004A -100DG	100MHz	8 lead PDIP	300 mil	Pb-free

GENERAL DESCRIPTION

The F25L004A is a 4Megabit, 3V only CMOS Serial Flash memory device organized as 512K bytes of 8 bits. This device is packaged in 8-lead SOIC 200mil. ESMT's memory devices reliably store memory data even after 100,000 program and erase cycles.

The F25L004A features a sector erase architecture. The device memory array is divided into 128 uniform sectors with 4K byte each ; 8 uniform blocks with 64K byte each. Sectors can be

erased individually without affecting the data in other sectors. Blocks can be erased individually without affecting the data in other blocks. Whole chip erase capabilities provide the flexibility to revise the data in the device.

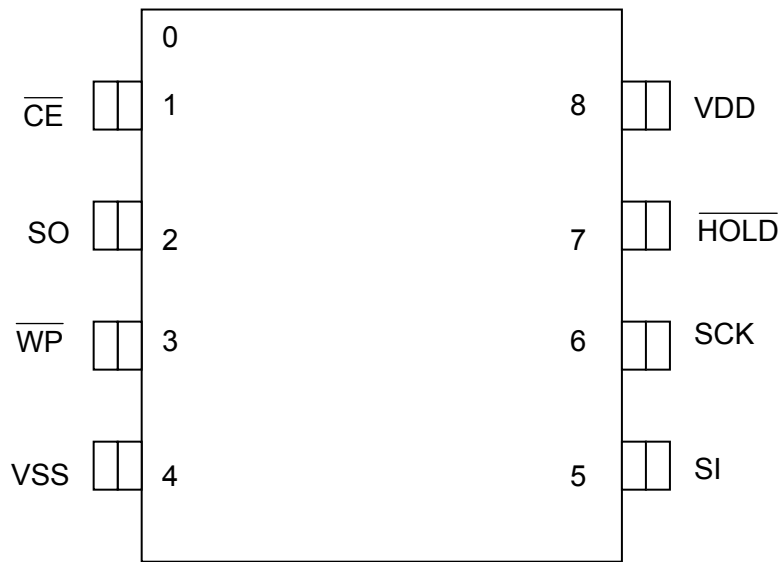
The sector protect/unprotect feature disables both program and erase operations in any combination of the sectors of the memory.

ESMT

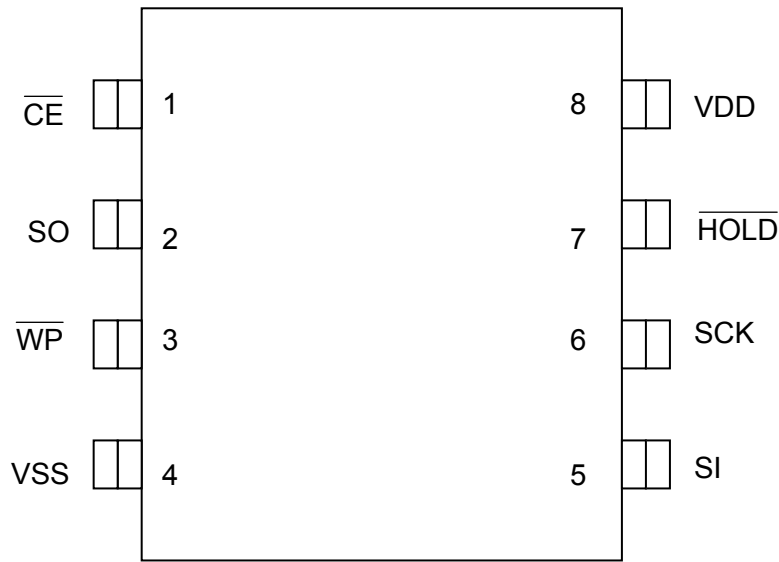
F25L004A

PIN CONFIGURATIONS

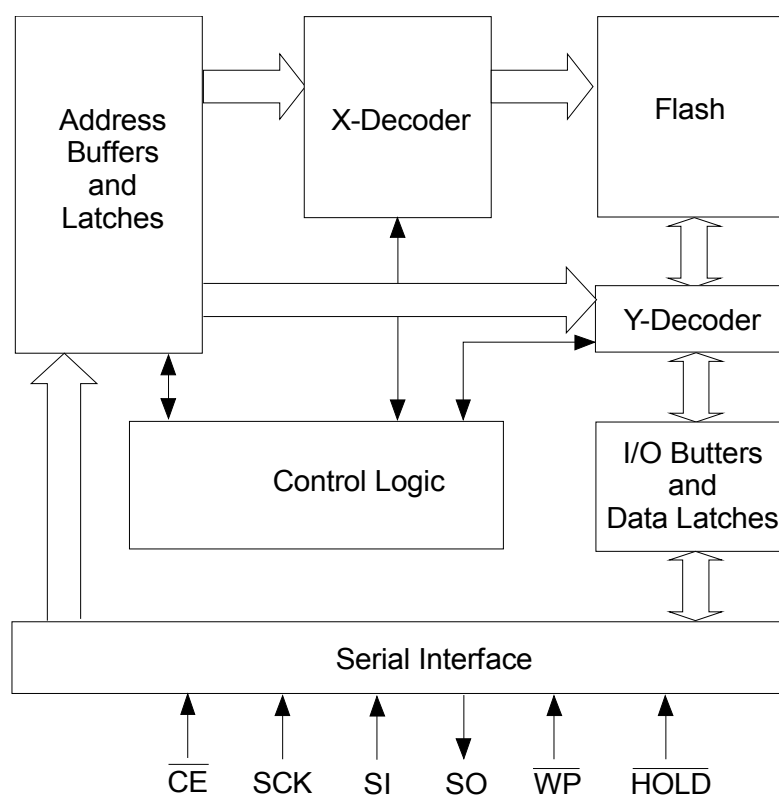
8-PIN SOIC



8-PIN PDIP



FUNCTIONAL BLOCK DIAGRAM

**PIN Description**

Symbol	Pin Name	Functions
SCK	Serial Clock	To provide the timing for serial input and output operations
SI	Serial Data Input	To transfer commands, addresses or data serially into the device. Data is latched on the rising edge of SCK.
SO	Serial Data Output	To transfer data serially out of the device. Data is shifted out on the falling edge of SCK.
$\overline{\text{CE}}$	Chip Enable	To activate the device when $\overline{\text{CE}}$ is low.
$\overline{\text{WP}}$	Write Protect	The Write Protect ($\overline{\text{WP}}$) pin is used to enable/disable BPL bit in the status register.
$\overline{\text{HOLD}}$	Hold	To temporality stop serial communication with SPI flash memory without resetting the device.
VDD	Power Supply	To provide power.
VSS	Ground	



CS49DV8C Data Sheet

FEATURES

- 32-bit Post-Processor Audio DSP supports Multichannel Dolby® Volume
- Programmable through DSP Composer™
- CS49DV8, supports up to 7.1 Channels of Dolby Volume processing at 48 kHz, 44.1 kHz or 32 kHz.
 - Input Configurable for all input/output digital audio types (I²S, LJ/RJ, and TDM)
 - 32-bit data path delivers uncompromised dynamic range
 - 192 kHz capable integrated S/PDIF transmitter
 - DAO can operate in master or slave mode (SCLK & LRCLK)
- Integrated Clock Manager/PLL
 - Capable of operating from a wide variety of external crystals or external oscillators
- Input Fs Auto Detection, Reporting and Handling
- Sample rate conversion.
- Master & Slave Host Boot Capability via Serial Interface
- SPI interface capable of running up to 25 MHz during run time
- 1.8V Core and a 3.3V I/O that is tolerant to 5V input

32-bit Dual Audio DSP Engine featuring Multichannel Dolby® Volume

The new CS49DV8C is the fastest time-to-market, mass-production ready Multichannel Dolby Volume solution available. The target applications for the CS49DV8C DSP are:

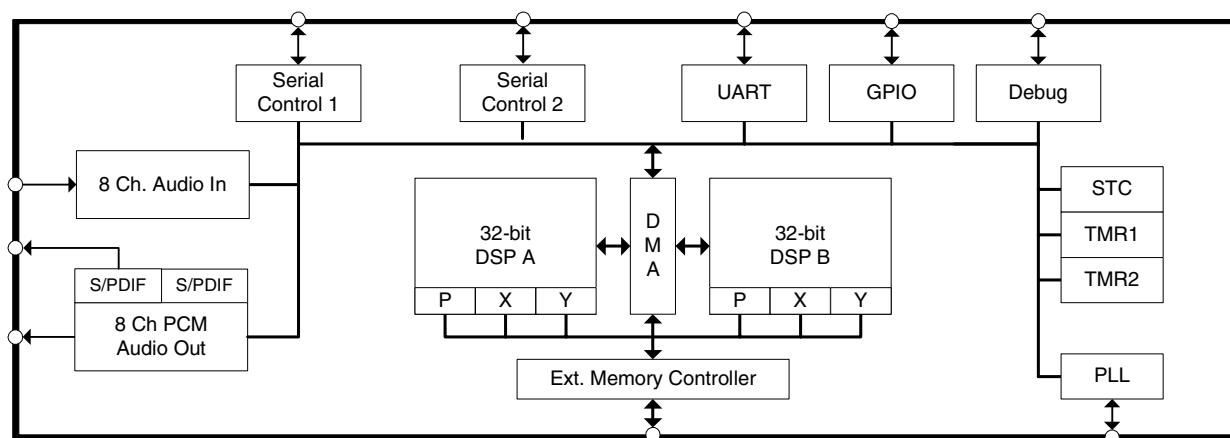
- Soundbars
- DTVs with Integrated Soundbars
- HDTV Stands/Furniture with Integrated Soundbars
- Automotive Head Units
- Automotive Outboard Amplifiers
- Blu-ray Disc® & DVD Receivers / HTiBs

All of these applications and many more that use volume control and are subject to playback from sources that do not have consistent volume levels will benefit from the CS49DV8C Dolby Volume solution.



Ordering Information

See [page 27](#) for ordering information.



Preliminary Product Information

This document contains information for a new product. Cirrus Logic reserves the right to modify this product without notice.

8. Device Pin-Out Diagram

CS49DV8C Data Sheet
32-bit Audio DSP Family



8.1 128-Pin LQFP Pin-Out Diagram

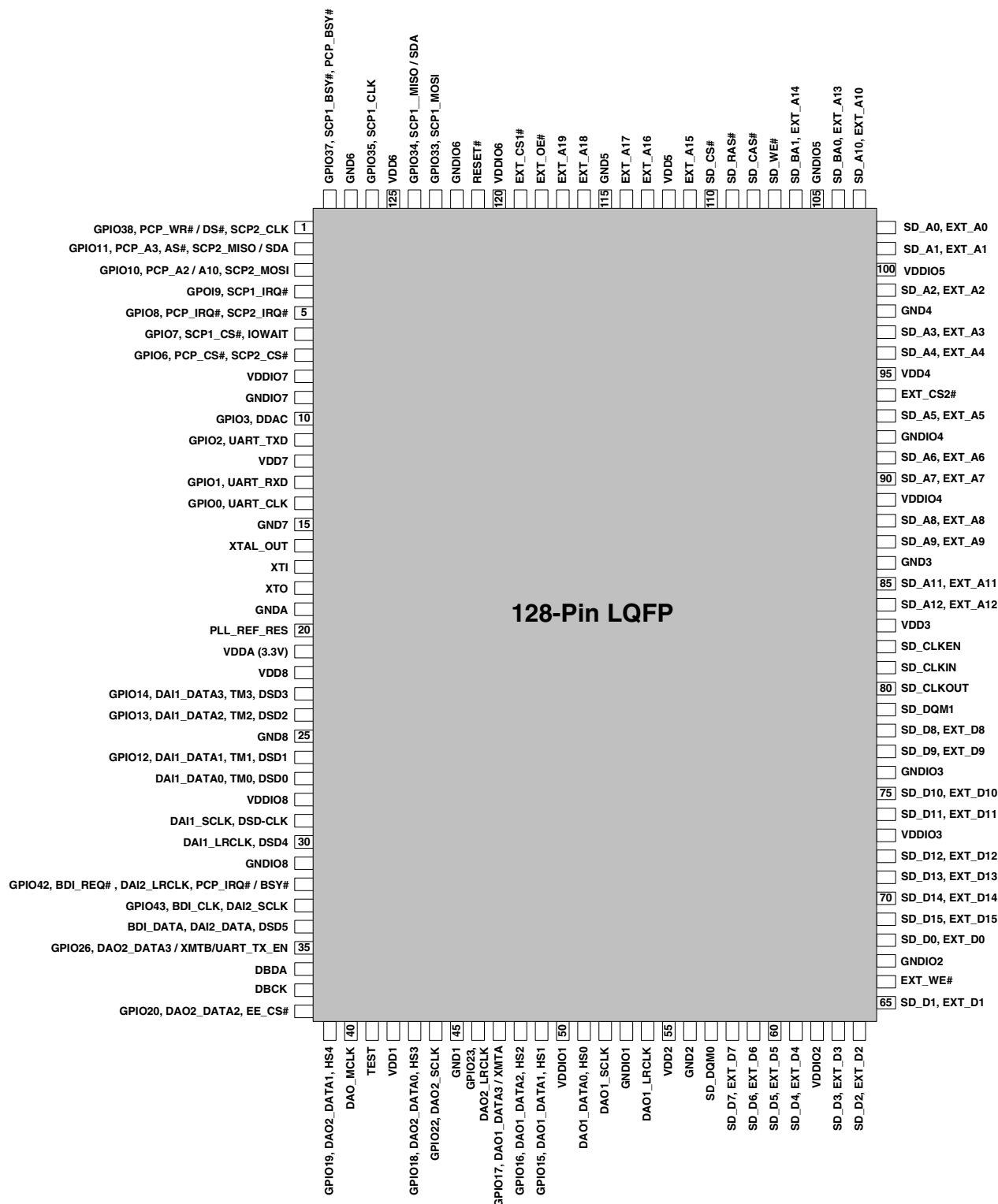


Figure 15. 128-Pin LQFP Pin-Out

Features

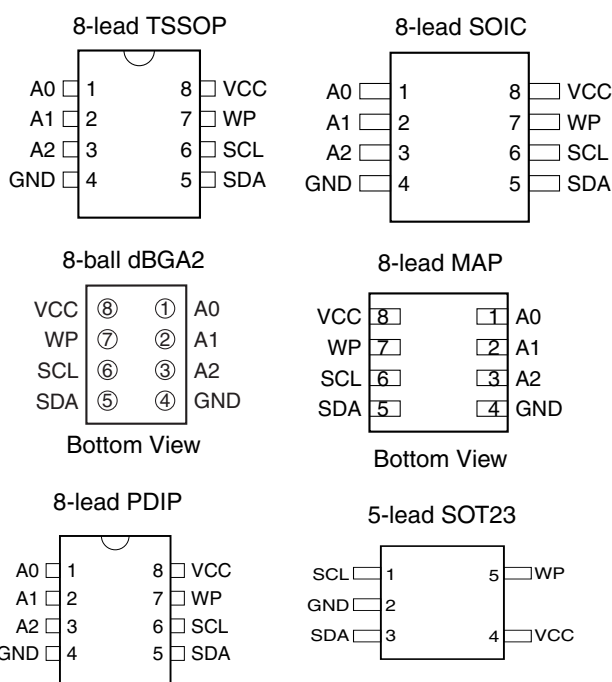
- Low-voltage and Standard-voltage Operation
 - 2.7 ($V_{CC} = 2.7V$ to 5.5V)
 - 1.8 ($V_{CC} = 1.8V$ to 5.5V)
- Internally Organized 128 x 8 (1K), 256 x 8 (2K), 512 x 8 (4K), 1024 x 8 (8K) or 2048 x 8 (16K)
- Two-wire Serial Interface
- Schmitt Trigger, Filtered Inputs for Noise Suppression
- Bidirectional Data Transfer Protocol
- 100 kHz (1.8V) and 400 kHz (2.7V, 5V) Compatibility
- Write Protect Pin for Hardware Data Protection
- 8-byte Page (1K, 2K), 16-byte Page (4K, 8K, 16K) Write Modes
- Partial Page Writes Allowed
- Self-timed Write Cycle (5 ms max)
- High-reliability
 - Endurance: 1 Million Write Cycles
 - Data Retention: 100 Years
- Automotive Grade and Lead-free/Halogen-free Devices Available
- 8-lead PDIP, 8-lead JEDEC SOIC, 8-lead MAP, 5-lead SOT23, 8-lead TSSOP and 8-ball dBG2 Packages
- Die Sales: Wafer Form, Waffle Pack and Bumped Wafers

Description

The AT24C01A/02/04/08A/16A provides 1024/2048/4096/8192/16384 bits of serial electrically erasable and programmable read-only memory (EEPROM) organized as 128/256/512/1024/2048 words of 8 bits each. The device is optimized for use in many industrial and commercial applications where low-power and low-voltage operation are essential. The AT24C01A/02/04/08A/16A is available in space-saving 8-lead PDIP, 8-lead JEDEC SOIC, 8-lead MAP, 5-lead SOT23 (AT24C01A/AT24C02/AT24C04), 8-lead TSSOP, and 8-ball dBG2 packages and is accessed via a Two-wire serial interface. In addition, the entire family is available in 2.7V (2.7V to 5.5V) and 1.8V (1.8V to 5.5V) versions.

Table 1. Pin Configuration

Pin Name	Function
A0 - A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock Input
WP	Write Protect
NC	No Connect
GND	Ground
VCC	Power Supply



Two-wire Serial EEPROM

1K (128 x 8)

2K (256 x 8)

4K (512 x 8)

8K (1024 x 8)

16K (2048 x 8)

AT24C01A

AT24C02

AT24C04

AT24C08A

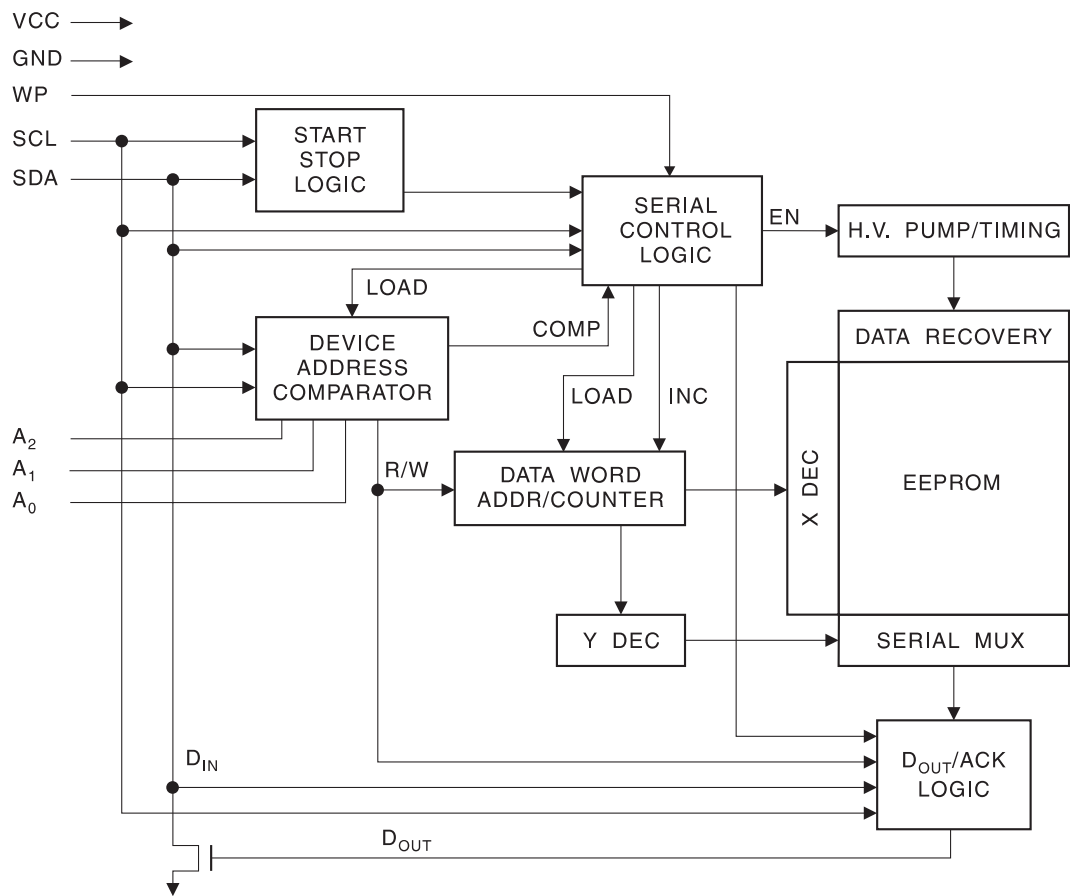
AT24C16A

Absolute Maximum Ratings

Operating Temperature	–55°C to +125°C
Storage Temperature	–65°C to +150°C
Voltage on Any Pin with Respect to Ground	–1.0V to +7.0V
Maximum Operating Voltage	6.25V
DC Output Current.....	5.0 mA

*NOTICE: Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Figure 1. Block Diagram



AT24C01A/02/04/08A/16A

Pin Description

SERIAL CLOCK (SCL): The SCL input is used to positive edge clock data into each EEPROM device and negative edge clock data out of each device.

SERIAL DATA (SDA): The SDA pin is bidirectional for serial data transfer. This pin is open-drain driven and may be wire-ORed with any number of other open-drain or open-collector devices.

DEVICE/PAGE ADDRESSES (A2, A1, A0): The A2, A1 and A0 pins are device address inputs that are hard wired for the AT24C01A and the AT24C02. As many as eight 1K/2K devices may be addressed on a single bus system (device addressing is discussed in detail under the Device Addressing section).

The AT24C04 uses the A2 and A1 inputs for hard wire addressing and a total of four 4K devices may be addressed on a single bus system. The A0 pin is a no connect.

The AT24C08A only uses the A2 input for hardwire addressing and a total of two 8K devices may be addressed on a single bus system. The A0 and A1 pins are no connects.

The AT24C16A does not use the device address pins, which limits the number of devices on a single bus to one. The A0, A1 and A2 pins are no connects.

WRITE PROTECT (WP): The AT24C01A/02/04/08A/16A has a Write Protect pin that provides hardware data protection. The Write Protect pin allows normal Read/Write operations when connected to ground (GND). When the Write Protect pin is connected to V_{CC} , the write protection feature is enabled and operates as shown in Table 2.

Table 2. Write Protect

WP Pin Status	Part of the Array Protected				
	24C01A	24C02	24C04	24C08A	24C16A
At V_{CC}	Full (1K) Array	Full (2K) Array	Full (4K) Array	Full (8K) Array	Full (16K) Array
At GND	Normal Read/Write Operations				

Memory Organization

AT24C01A, 1K SERIAL EEPROM: Internally organized with 16 pages of 8 bytes each, the 1K requires a 7-bit data word address for random word addressing.

AT24C02, 2K SERIAL EEPROM: Internally organized with 32 pages of 8 bytes each, the 2K requires an 8-bit data word address for random word addressing.

AT24C04, 4K SERIAL EEPROM: Internally organized with 32 pages of 16 bytes each, the 4K requires a 9-bit data word address for random word addressing.

AT24C08A, 8K SERIAL EEPROM: Internally organized with 64 pages of 16 bytes each, the 8K requires a 10-bit data word address for random word addressing.

AT24C16A, 16K SERIAL EEPROM: Internally organized with 128 pages of 16 bytes each, the 16K requires an 11-bit data word address for random word addressing.

IDT74FCT38072
3.3V CMOS 1-TO-2 CLOCK DRIVER

INDUSTRIAL TEMPERATURE RANGE



3.3V CMOS 1-TO-2 CLOCK DRIVER

IDT74FCT38072

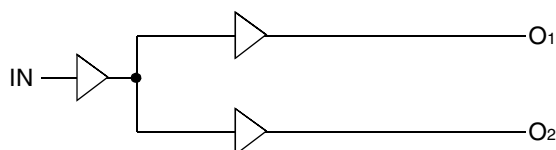
FEATURES:

- Advanced CMOS Technology
- Guaranteed low skew < 100ps (max.)
- Very low duty cycle distortion < 350ps (max.)
- High speed propagation delay < 3ns (max.)
- Very low CMOS power levels
- TTL compatible inputs and outputs
- 1:2 fanout
- Maximum output rise and fall time < 1ns (max.)
- Low input capacitance: 3pF typical
- $V_{CC} = 3.3V \pm 0.3V$
- Inputs can be driven from 3.3V or 5V components
- Operating frequency up to 166MHz
- Available in SOIC package

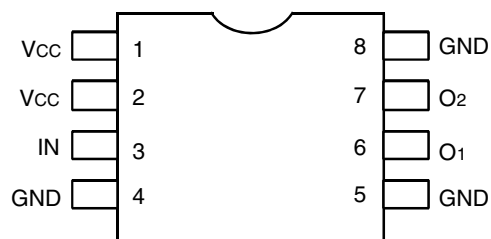
DESCRIPTION:

The FCT38072 is a 3.3V clock driver built using advanced CMOS technology. This low skew clock driver offers 1:2 fanout. The large fanout from a single input reduces loading on the preceding driver and provides an efficient clock distribution network. Multiple power and grounds reduce noise. Typical applications are clock and signal distribution.

FUNCTIONAL BLOCK DIAGRAM



PIN CONFIGURATION



SOIC
TOP VIEW

32-bit RISC Microcontroller – TX03 Series T5CN5

1. Overview and Features

The TX03 series is a 32-bit RISC microcontroller series with an ARM Cortex™-M3 microcontroller core.

Features of the T5CN5 is as follows:

1.1 Features

(1) ARM Cortex-M3 microcontroller core

1) Improved code efficiency has been realized through the use of Thumb2 instruction

- New 16-bit Thumb instructions for improved program flow
- New 32-bit Thumb instructions for improved performance
- Auto-switching between 32-bit instruction and 16-bit instruction is executed by compiler.

2) Both high performance and low power consumption have been achieved.

-High performance

- A 32-bit multiplication ($32 \times 32 = 32$ bit) can be executed with one clock.
- Division takes between 2 and 12 cycles depending on dividend and divisor

-Low power consumption

- Optimized design using a low power consumption library
- Standby function that stops the operation of the microcontroller core

3) High-speed interrupt response suitable for real-time control

- An interruptible long instruction.
- Stack push automatically handled by hardware.

- (2) On Chip program memory and data memory

Product name	On chip Flash ROM	On chip RAM
T5CN5	512Kbyte	32Kbyte

- (3) 16-bit timer : 10 channels
- 16-bit interval timer mode
 - 16-bit event counter mode
 - 16-bit PPG output
 - Input capture function
- (4) Real time clock (RTC) : 1 channel
- Clock (hour, minute and second)
 - Calendar (Month, week, date and leap year)
 - Time correction + or - 30 seconds (by software)
 - Alarm (Alarm output)
 - Alarm interrupt
- (5) Watchdog timer : 1 channel
- 26 cycles of binary counter
 - Watchdog timer out
- (6) General-purpose serial interface : 3 channels
- Either UART mode or synchronous mode can be selected (4byte FIFO equipped)
- (7) Serial bus interface : 3 channels
- Either I²C bus mode or synchronous mode can be selected.
- (8) CEC : 1 channel
- Transmission and reception per 1 byte.
- (9) Remote control signal preprocessor : 2 channels
- Can receive up to 72bit data at a time
- (10) 10-bit A/D converter : 12 channels
- Start by an internal or external timer trigger
 - Fixed channel/scan mode
 - Single/repeat mode
 - AD monitoring 2ch
 - Conversion speed 1.15μsec(@f_{sys} = 40MHz)
- (11) Interrupt source
- Internal: 42 factors...The order of precedence can be set over 7 levels (except the watchdog timer interrupt).
 - External: 8 factors...The order of precedence can be set over 7 levels.
- (12) Input/ output ports
- 79 pins

- (13) Standby mode
 - Standby modes :IDLE, SLOW, SLEEP, STOP
 - Sub clock operation(32.768kHz) :SLOW, SLEEP
- (14) Clock generator
 - On-chip PLL (quadrupled)
 - Clock gear function: The high-speed clock can be divided into 1/1, 1/2, 1/4 or 1/8.
- (15) Endian
 - Little endian
- (16) Maximum operating frequency
 - 40MHz
- (17) Operating voltage range
 - 2.7V~3.6V (with on-chip regulator)
- (18) Temperature range
 - -20~85 degrees (except during Flash writing/ erasing)
 - 0~70 degrees (during Flash writing/ erasing)
- (19) Package
 - LQFP100-P-1414-0.5H (14mm × 14mm, 0.5mm pitch)

1.2 Block Diagram

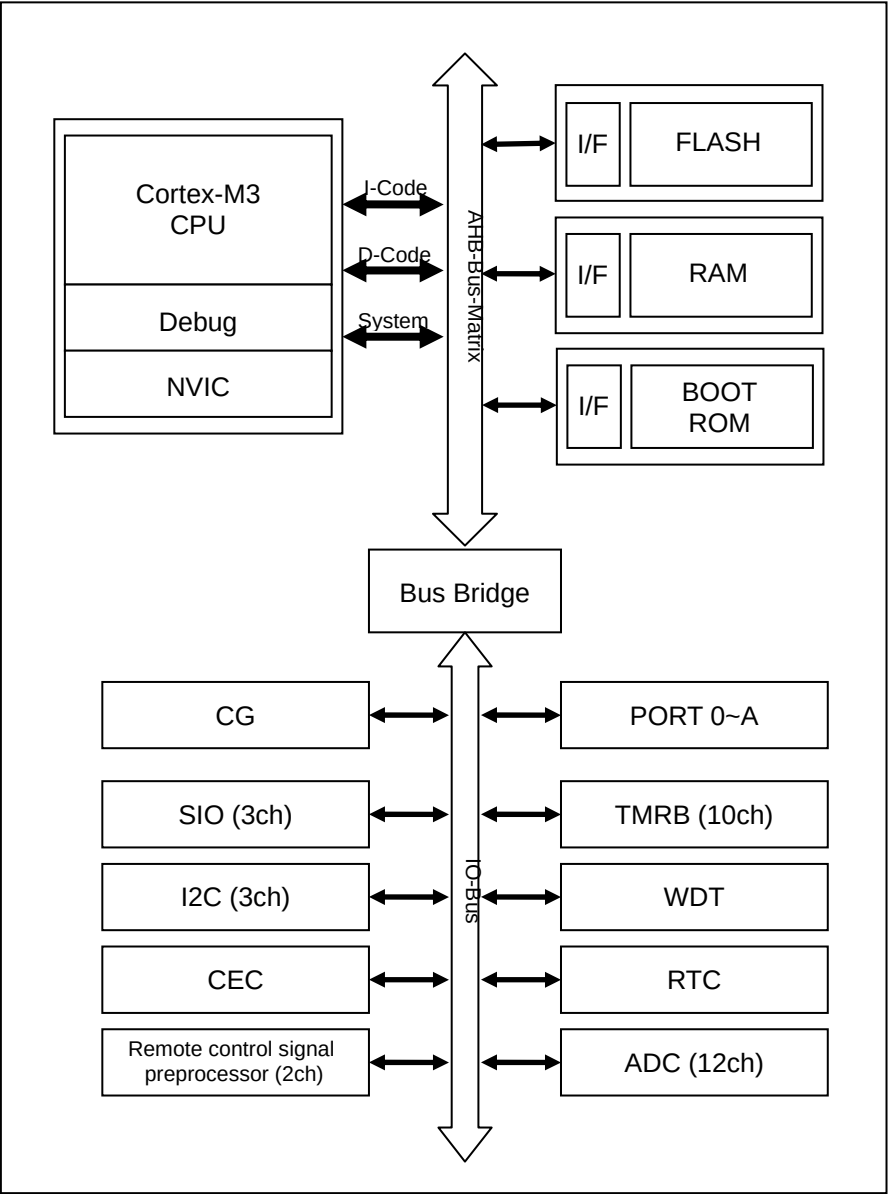


Fig. 1.1 T5CN5 Block Diagram

2. Pin Layout and Pin Functions

This chapter describes the pin layout, pin names and pin functions of T5CN5.

2.1 Pin Layout (Top view)

Fig. 2-1 shows the pin layout of T5CN5.

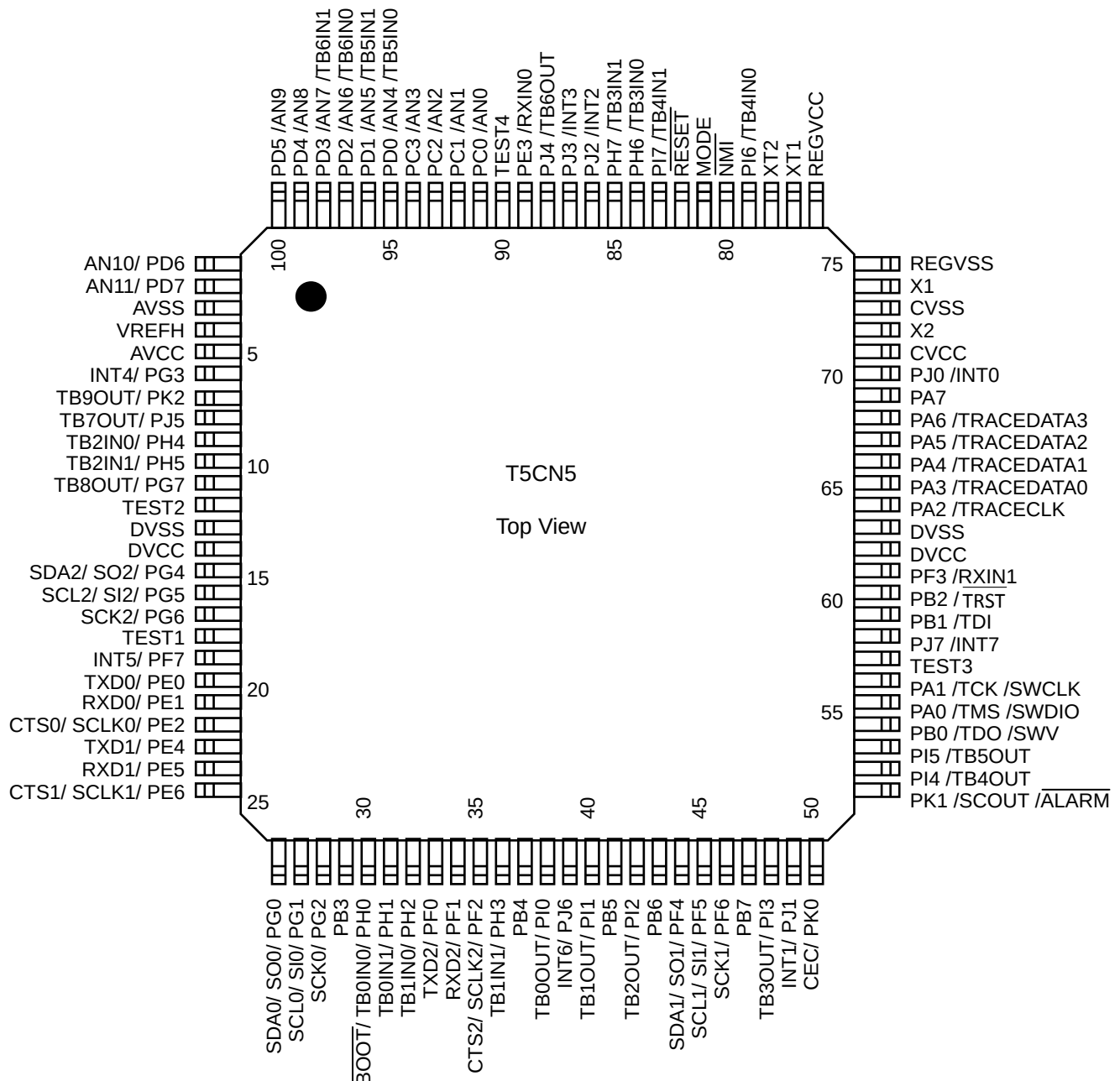


Fig. 2.1 Pin Layout (LQFP100)

Table 2.1 Pin Numbers and Names (1/2)

Pin No.	Pin name	Pin No.	Pin name
1	PD6, AN10	26	PG0, SO0, SDA0
2	PD7, AN11	27	PG1, SI0, SCL0
3	AVSS	28	PG2, SCK0
4	VREFH	29	PB3
5	AVCC	30	PH0, TB0IN0, $\overline{\text{BOOT}}$
6	PG3, INT4	31	PH1, TB0IN1
7	PK2, TB9OUT	32	PH2, TB1IN0
8	PJ5, TB7OUT	33	PF0, TXD2
9	PH4, TB2IN0	34	PF1, RXD2
10	PH5, TB2IN1	35	PF2, SCLK2, CTS2
11	PG7, TB8OUT	36	PH3, TB1IN1
12	TEST2	37	PB4
13	DVSS	38	PI0, TB0OUT
14	DVCC	39	PJ6, INT6
15	PG4, SO2, SDA2	40	PI1, TB1OUT
16	PG5, SI2, SCL2	41	PB5
17	PG6, SCK2	42	PI2, TB2OUT
18	TEST1	43	PB6
19	PF7, INT5	44	PF4, SO1, SDA1
20	PE0, TXD0	45	PF5, SI1, SCL1
21	PE1, RXD0	46	PF6, SCK1
22	PE2, SCLK0, CTS0	47	PB7
23	PE4, TXD1	48	PI3, TB3OUT
24	PE5, RXD1	49	PJ1, INT1
25	PE6, SCLK1, CTS1	50	PK0, CEC

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Table 2.1 Pin Numbers and Names (2/2)

Pin No.	Pin name	Pin No.	Pin name
51	PK1, SCOUT, $\overline{\text{ALARM}}$	76	REGVCC
52	PI4, TB4OUT	77	XT1
53	PI5, TB5OUT	78	XT2
54	PB0, TDO, SWV	79	PI6, TB4IN0
55	PA0, TMS, SWDIO	80	$\overline{\text{NMI}}$
56	PA1, TCK, SWCLK	81	MODE
57	TEST3	82	$\overline{\text{RESET}}$
58	PJ7, INT7	83	PI7, TB4IN1
59	PB1, TDI	84	PH6, TB3IN0
60	PB2, $\overline{\text{TRST}}$	85	PH7, TB3IN1
61	PF3, RXIN1	86	PJ2, INT2
62	DVCC	87	PJ3, INT3
63	DVSS	88	PJ4, TB6OUT
64	PA2, TRACECLK	89	PE3, RXIN0
65	PA3, TRACEDATA0	90	TEST4
66	PA4, TRACEDATA1	91	PC0, AN0
67	PA5, TRACEDATA2	92	PC1, AN1
68	PA6, TRACEDATA3	93	PC2, AN2
69	PA7	94	PC3, AN3
70	PJ0, INT0	95	PD0, AN4, TB5IN0
71	CVCC	96	PD1, AN5, TB5IN1
72	X2	97	PD2, AN6, TB6IN0
73	CVSS	98	PD3, AN7, TB6IN1
74	X1	99	PD4, AN8
75	REGVSS	100	PD5, AN9

2.2 Pin names and Functions

Table 2.2 and Table 2.3 sort the input and output pins of the T5CN5 by pin or port. Each table includes alternate pin names and functions for multi-function pins.

3.1.1 Sorted by Pin

Table 2.2 Pin Names and Functions Sorted by Pin (1/5)

Type	# of Pins	Pin Name	Input/ Output	Function	Programma ble Pull up/ Pull down	Schmitt trigger	Programm able Open Drain Output
Function	1	PD6 AN10	I I	Input port Analog input	Pull up	-	-
	2	PD7 AN11	I I	Input port Analog input	Pull up	-	-
PS	3	AVSS	I	A/D converter: GND pin (0V) Tie AVSS to power supply even if the A/D converter is not used.	-	-	-
	4	VREFH	I	Supplying the A/D converter with a reference power supply. Tie VREFH to power supply even if the A/D converter is not used.	-	-	-
	5	AVCC	I	Supplying the A/D converter with a power supply. Tie AVCC to power supply even if the A/D converter is not used.	-	-	-
Function	6	PG3 INT4	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○
	7	PK2 TB9OUT	I/O O	I/O port Timer B output	Pull up	-	-
	8	PJ5 TB7OUT	I/O I	I/O port Timer B output	Pull up	-	-
	9	PH4 TB2IN0	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	10	PH5 TB2IN1	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	11	PG7 TB8OUT	I/O O	I/O port Timer B output	Pull up	-	○
Test	12	TEST2	-	TEST pin: Not connected.	-	-	-
PS	13	DVSS	-	GND pin	-	-	-
	14	DVCC	-	Power supply pin	-	-	-
Function	15	PG4 SDA2/ SO2	I/O I/O O	I/O port If the serial bus interface operates -in the I2C mode : data pin -in the SIO mode: data pin	Pull up	○	○
	16	PG5 SCL2/ SI2	I/O I/O I	I/O port If the serial bus interface operates -in the I2C mode : clock pin -in the SIO mode: data pin	Pull up	○	○
	17	PG6 SCK2	I/O I/O	I/O port Inputting and outputting a clock if the serial bus interface operates in the SIO mode.	Pull up	○	○
Test	18	TEST1	-	TEST pin: Not connected.	-	-	-
Function	19	PF7 INT5	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○

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Table 2.2 Pin Names and Functions Sorted by Pin (2/5)

Type	# of Pins	Pin Name	Input/Output	Function	Programmable Pull-up/Pull down	Schmitt trigger	Programmable Open Drain Output
Function	20	PE0 TXD0	I/O O	I/O port Sending serial data	Pull up	-	○
	21	PE1 RXD0	I/O I	I/O port Receiving serial data	Pull up	○	○
	22	PE2 SCLK0 CTS0	I/O I I	I/O port Serial clock input/ output Handshake input pin	Pull up	○	○
	23	PE4 TXD1	I/O O	I/O port Sending serial data	Pull up	-	○
	24	PE5 RXD1	I/O I	I/O port Receiving serial data	Pull up	○	○
	25	PE6 SCLK1 CTS1	I/O I I	I/O port Serial clock input/ output Handshake input pin	Pull up	○	○
	26	PG0 SDA0/ SO0	I/O I/O O	I/O port If the serial bus interface operates -in the I2C mode : data pin -in the SIO mode: data pin	Pull up	○	○
	27	PG1 SCL0/ SI0	I/O I/O I	I/O port If the serial bus interface operates -in the I2C mode : clock pin -in the SIO mode: data pin	Pull up	○	○
	28	PG2 SCK0	I/O I/O	I/O port Inputting and outputting a clock if the serial bus interface operates in the SIO mode.	Pull up	○	○
	29	PB3	I/O	I/O port	Pull up	-	-
Function/ Control	30	PH0 TB0IN0 <u>BOOT</u>	I/O I I	I/O port Inputting the timer B capture trigger Setting a single boot mode: This pin goes into single boot mode by sampling "L" at the rise of a reset signal.	Pull up	○	-
Function	31	PH1 TB0IN1	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	32	PH2 TB1IN0	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	33	PF0 TXD2	I/O O	I/O port Sending serial data	Pull up	-	○
	34	PF1 RXD2	I/O I	I/O port Receiving serial data	Pull up	○	○
	35	PF2 SCLK2 CTS2	I/O I I	I/O port Serial clock input/ output Handshake input pin	Pull up	○	○
	36	PH3 TB1IN1	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	37	PB4	I/O	I/O port	Pull up	-	-
	38	PI0 TB0OUT	I/O O	I/O port Timer B output	Pull up	-	-
	39	PJ6 INT6	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○

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T5CN5

Table 2.2 Pin Names and Functions Sorted by Pin (3/5)

Type	# of Pins	Pin Name	Input/Output	Function	Programmable Pull-up/Pull down	Schmitt trigger	Programmable Open Drain Output
Function	40	PI1 TB1OUT	I/O O	I/O port Timer B output	Pull up	-	-
	41	PB5	I/O	I/O port	Pull up	-	-
	42	PI2 TB2OUT	I/O O	I/O port Timer B output	Pull up	-	-
	43	PB6	I/O	I/O port	Pull up	-	-
	44	PF4 SDA1/ SO1	I/O O	I/O port If the serial bus interface operates -in the I2C mode : data pin -in the SIO mode: data pin	Pull up	○	○
	45	PF5 SCL1/ SI1	I/O I	I/O port If the serial bus interface operates -in the I2C mode : clock pin -in the SIO mode: data pin	Pull up	○	○
	46	PF6 SCK1	I/O I/O	I/O port Inputting and outputting a clock if the serial bus interface operates in the SIO mode.	Pull up	○	○
	47	PB7	I/O	I/O port	Pull up	-	-
	48	PI3 TB3OUT	I/O O	I/O port Timer B output	Pull up	-	-
	49	PJ1 INT1	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○
	50	PK0 CEC	I/O I/O	I/O port CEC pin	-	○	● (Note 4)
	51	PK1 SCOUT ALARM	I/O O O	I/O port System clock output Alarm output	Pull up	-	-
	52	PI4 TB4OUT	I/O O	I/O port Timer B output	Pull up	-	-
	53	PI5 TB5OUT	I/O O	I/O port Timer B output	Pull up	-	-
Function/ Debug	54	PB0 TDO/SWV	I/O O	I/O port Debug pin	Pull up	-	-
	55	PA0 TMS/SWDIO	I/O I/O	I/O port Debug pin	Pull up	○	-
	56	PA1 TCK/ SWCLK	I/O I	I/O port Debug pin	Pull up	-	-
Test	57	TEST3	-	TEST pin: Not connected.	-	-	-
Function	58	PJ7 INT7	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○
Function/ Debug	59	PB1 TDI	I/O I	I/O port Debug pin	Pull up	-	-
	60	PB2 TRST	I/O I	I/O port Debug pin	Pull up	○	-
Function	61	PF3 RXIN1	I/O I	I/O port Inputting signal to remote controller	Pull up	○	○
PS	62	DVCC	-	Power supply pin	-	-	-
	63	DVSS	-	GND pin	-	-	-

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T5CN5

Table 2.2 Pin Names and Functions Sorted by Pin (4/5)

Type	# of Pins	Pin Name	Input/Output	Function	Programmable Pull-up/Pull down	Schmitt trigger	Programmable Open Drain Output
Function/Debug	64	PA2 TRACECLK	I/O O	I/O port Debug pin	Pull up	-	-
	65	PA3 TRACEDATA0	I/O O	I/O port Debug pin	Pull up	-	-
	66	PA4 TRACEDATA1	I/O O	I/O port Debug pin	Pull up	-	-
	67	PA5 TRACEDATA2	I/O O	I/O port Debug pin	Pull up	-	-
	68	PA6 TRACEDATA3	I/O O	I/O port Debug pin	Pull up	-	-
Function	69	PA7	I/O	I/O port	Pull up		
	70	PJ0 INT0	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○
PS	71	CVCC	-	Power supply pin	-	-	-
Clock	72	X2	O	Connected to a high-speed oscillator.	-	-	-
PS	73	CVSS	-	GND pin	-	-	-
Clock	74	X1	I	Connected to a high-speed oscillator.	-	○	-
PS	75	REGVSS	-	GND pin	-	-	-
	76	REGVCC	-	Power supply pin	-	-	-
Clock	77	XT1	I	Connected to a low-speed oscillator.	-	○	-
	78	XT2	O	Connected to a low-speed oscillator.	-	-	-
Function	79	PI6 TB4IN0	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	80	NMI	I	Non-maskable interrupt	-	○ w/ noise filter	-
Control	81	MODE	I	Mode pin: Tied to GND pin	-	○	-
Function	82	RESET	I	Reset input pin	Tied to Pull up	○ w/ noise filter	-
	83	PI7 TB4IN0	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	84	PH6 TB3IN0	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	85	PH7 TB3IN1	I/O I	I/O port Inputting the timer B capture trigger	Pull up	○	-
	86	PJ2 INT2	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○
	87	PJ3 INT3	I/O I	I/O port Interrupt request pin	Pull up	○ w/ noise filter	○
	88	PJ4 TB6OUT	I/O O	I/O port Timer B output	Pull up	-	-
	89	PE3 RXIN0	I/O I	I/O port Inputting signal to remote controller	Pull up	○	○
Test	90	TEST4	-	TEST pin: Not connected.	-	-	-

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T5CN5

Table 2.2 Pin Names and Functions Sorted by Pin (5/5)

Type	# of Pins	Pin Name	Input/Output	Function	Programmable Pull-up/Pull down	Schmitt trigger	Programmable Open Drain Output
Function	91	PC0 AN0	I I	Input port Analog input	Pull up	-	-
	92	PC1 AN1	I I	Input port Analog input	Pull up	-	-
	93	PC2 AN2	I I	Input port Analog input	Pull up	-	-
	94	PC3 AN3	I I	Input port Analog input	Pull up	-	-
	95	PD0 AN4 TB5IN0	I I I	Input port Analog input Inputting the timer B capture trigger	Pull up	-	-
	96	PD1 AN5 TB5IN1	I I I	Input port Analog input Inputting the timer B capture trigger	Pull up	-	-
	97	PD2 AN6 TB6IN0	I I I	Input port Analog input Inputting the timer B capture trigger	Pull up	-	-
	98	PD3 AN7 TB6IN1	I I I	Input port Analog input Inputting the timer B capture trigger of	Pull up	-	-
	99	PD4 AN8	I I	Input port Analog input	Pull up	-	-
	100	PD5 AN9	I I	Input port Analog input	Pull up	-	-

- (Note 1)

TEST1 through 4 must be left unconnected.
- (Note 2)

Be sure to tie MODE to GND.
- (Note 3)

Tie VREFH/ AVCC to power supply and AVSS to GND even if the A/D converter is not used.
- (Note 4)

Nch open drain port.

2.3 Pin Names and Power Supply Pins

Table 2.4 Pin Names and Power Supplies

Pin name	Power supply
PA	DVCC
PB	DVCC
PC	AVCC
PD	AVCC
PE	DVCC
PF	DVCC
PG	DVCC
PH	DVCC
PI	DVCC
PJ	DVCC
PK	DVCC
X1, X2	CVCC
XT1, XT2	DVCC
$\overline{\text{RESET}}$	DVCC
$\overline{\text{NMI}}$	DVCC
MODE	DVCC

2.4 Pin Numbers and Power Supply Pins

Table 2.5 Pin Numbers and Power Supplies

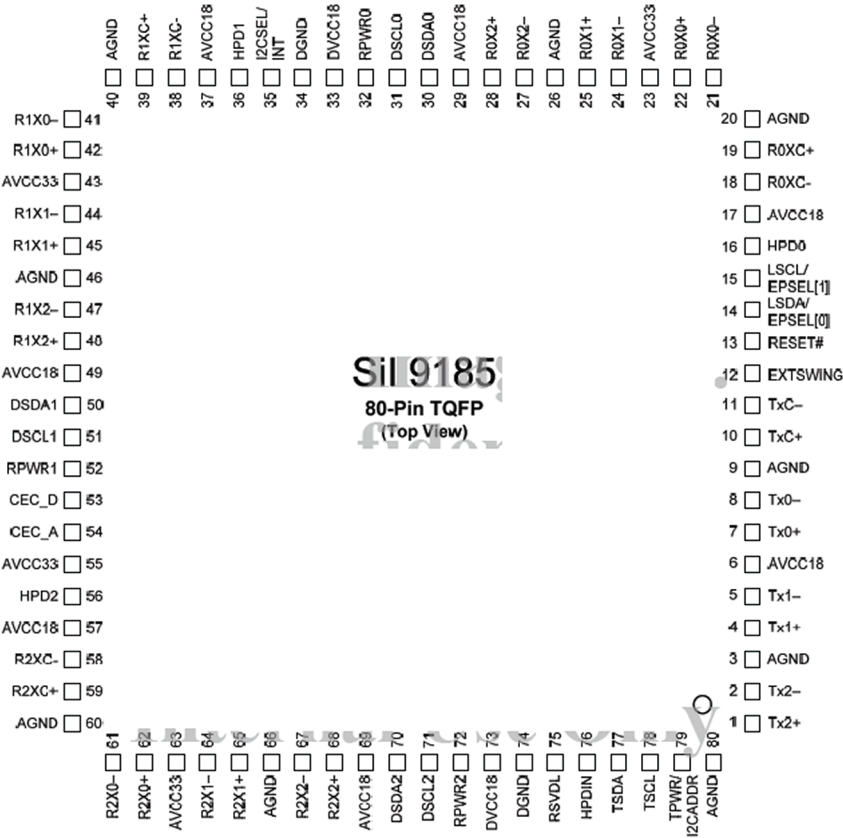
Power supply	Pin number	Voltage range
DVCC	14, 62	2.7V~3.6V
AVCC	5	
REGVCC	76	
CVCC	71	



Sil 9185
Three Input, Single Output Deep Color
HDMI Switch

Data Sheet Silicon Image, Inc.

Sil 9185 Pin Mapping



Sil 9185 Three Input, Single Output Deep Color HDMI Switch
Data Sheet

Silicon Image, Inc.

Block Level Functionality

The Sil 9185 Three Input, Single Output Deep Color HDMI Switch is used to select a single set of HDMI/DVI signals from one of three HDMI/DVI receiver-ports, and to generate a fully compliant HDMI/DVI stream as an output. It also provides DDC/HDCP, HPD, and +5V switching to allow full compliance to the HDMI/DVI Specification.

The combination of programmable equalizer and state-of-the-art DPLL can overcome signal distortion due to the long lengths of HDMI/DVI cables. Sil 9185-based switches can be cascaded many times to regenerate TMDS and HDCP signals.

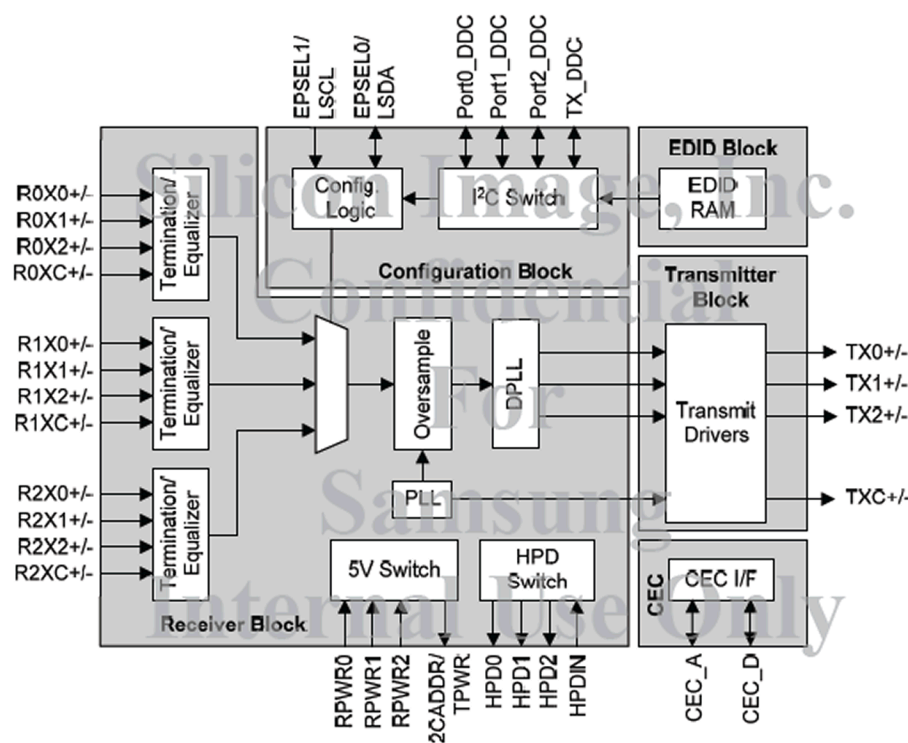


Figure 3. Functional Block Diagram

As shown in Figure 3, the Sil 9185 consists of five major blocks:

- Receiver block
- Transmitter block
- CEC Interface block
- EDID RAM block
- Configuration Block

Data Sheet

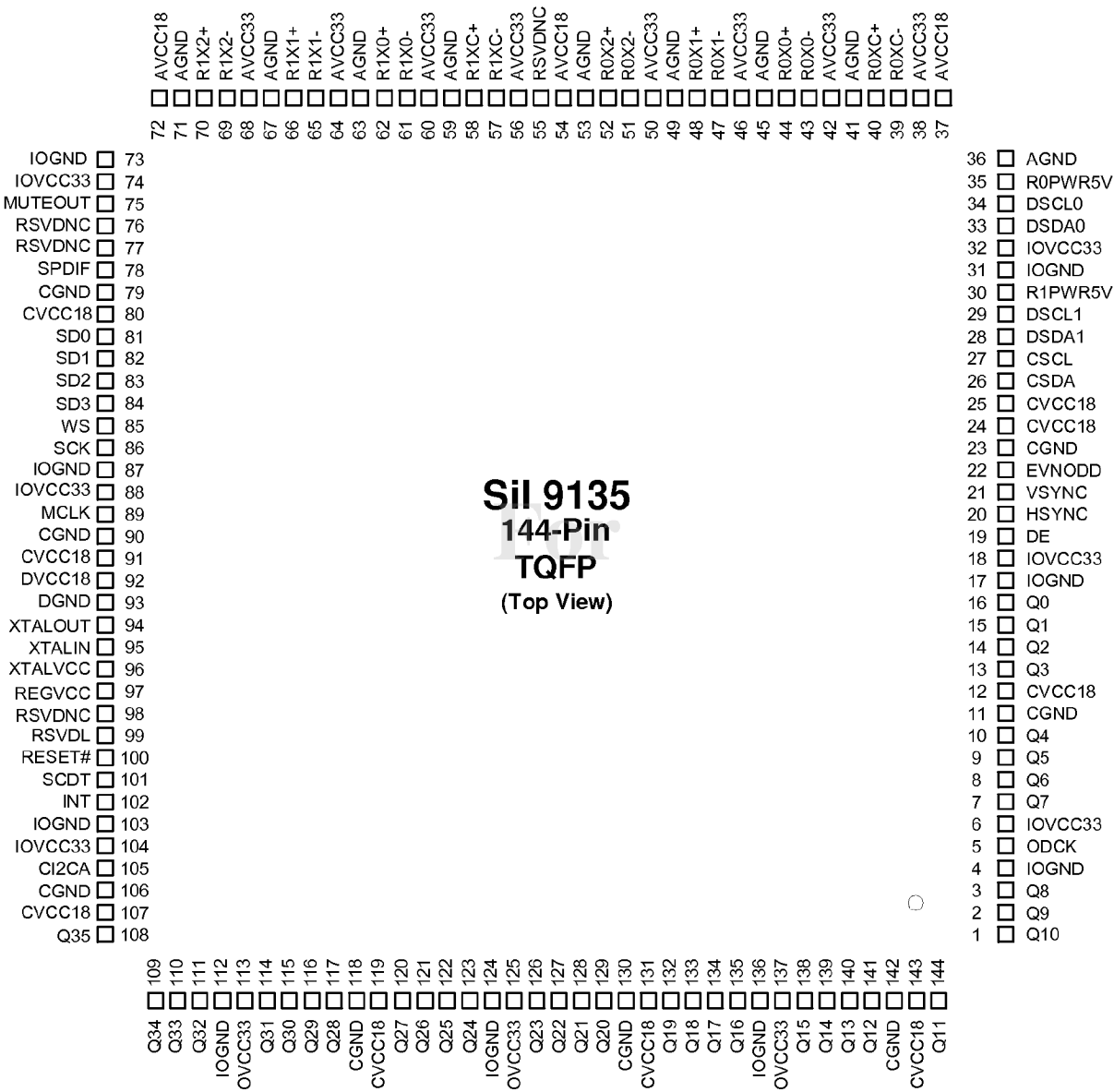
Sil 9135 HDMI Receiver with Enhanced Audio and Deep Color Outputs

Sil 9135 HDMI Receiver with Enhanced Audio and Deep Color Outputs
Data Sheet

Silicon Image, Inc.

Pin Diagram

Figure 1 shows the pin connections for the Sil 9135 in the 144-pin TQFP package.



Sil 9135

144-Pin

TQFP

(Top View)

Q34

Q33

Q32

IOGND

IOVCC33

Q31

Q30

Q29

Q28

CGND

CVCC18

Q27

Q26

Q25

Q24

IOGND

IOVCC33

Q23

Q22

Q21

Q20

CGND

CVCC18

Q19

Q18

Q17

Q16

IOGND

IOVCC33

Q15

Q14

Q13

Q12

CGND

CVCC18

Q11

Q10

Sil 9135 HDMI Receiver with Enhanced Audio and Deep Color Outputs Data Sheet

- Silicon Image, Inc.

Functional Description

The SiI 9135 provides a complete solution for receiving HDMI-compliant digital audio and video. Specialized audio and video processing is available within the HDMI Receiver to add HDMI capability to consumer electronics such as AV Receivers. Figure 3 shows the functional blocks of the chip.

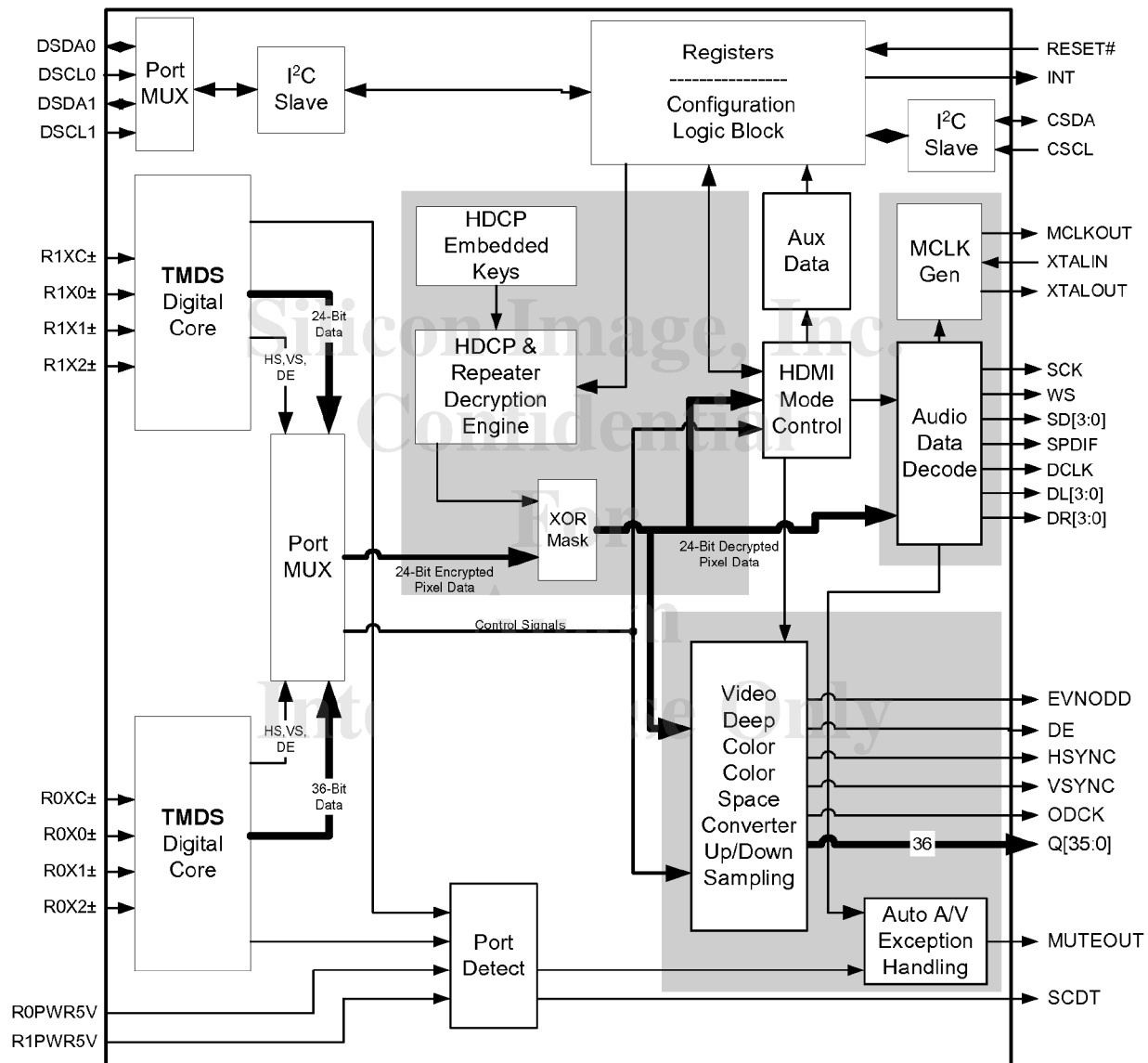


Figure 3. Functional Block Diagram

The Sil 9135 supports two HDMI input ports. Only one port can be active at any time.



Data Sheet

Sil 9134 HDMI Transmitter with Enhanced Audio and 10/12 Bit Deep Color Video Support

Data Sheet

Sil 9134 Pin Diagram

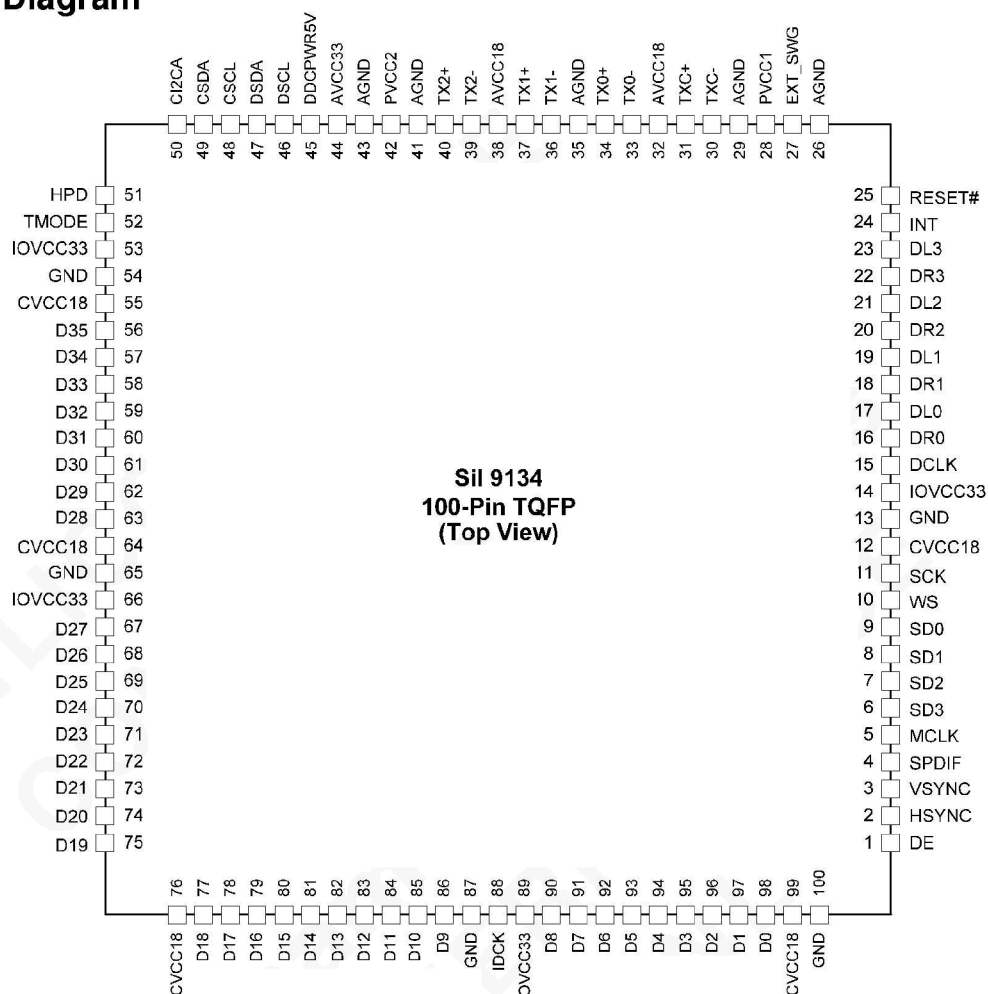


Figure 1. 100-Pin TQFP Pinout Diagram

Functional Description

The Sil 9134 provides a complete solution for transmitting HDMI compliant digital audio/video. Specialized audio/video processing available within the Sil 9134 easily and cost effectively adds HDMI capability to consumer electronics devices. Figure 2 shows the functional blocks of the device. Pin descriptions begin on page 35.

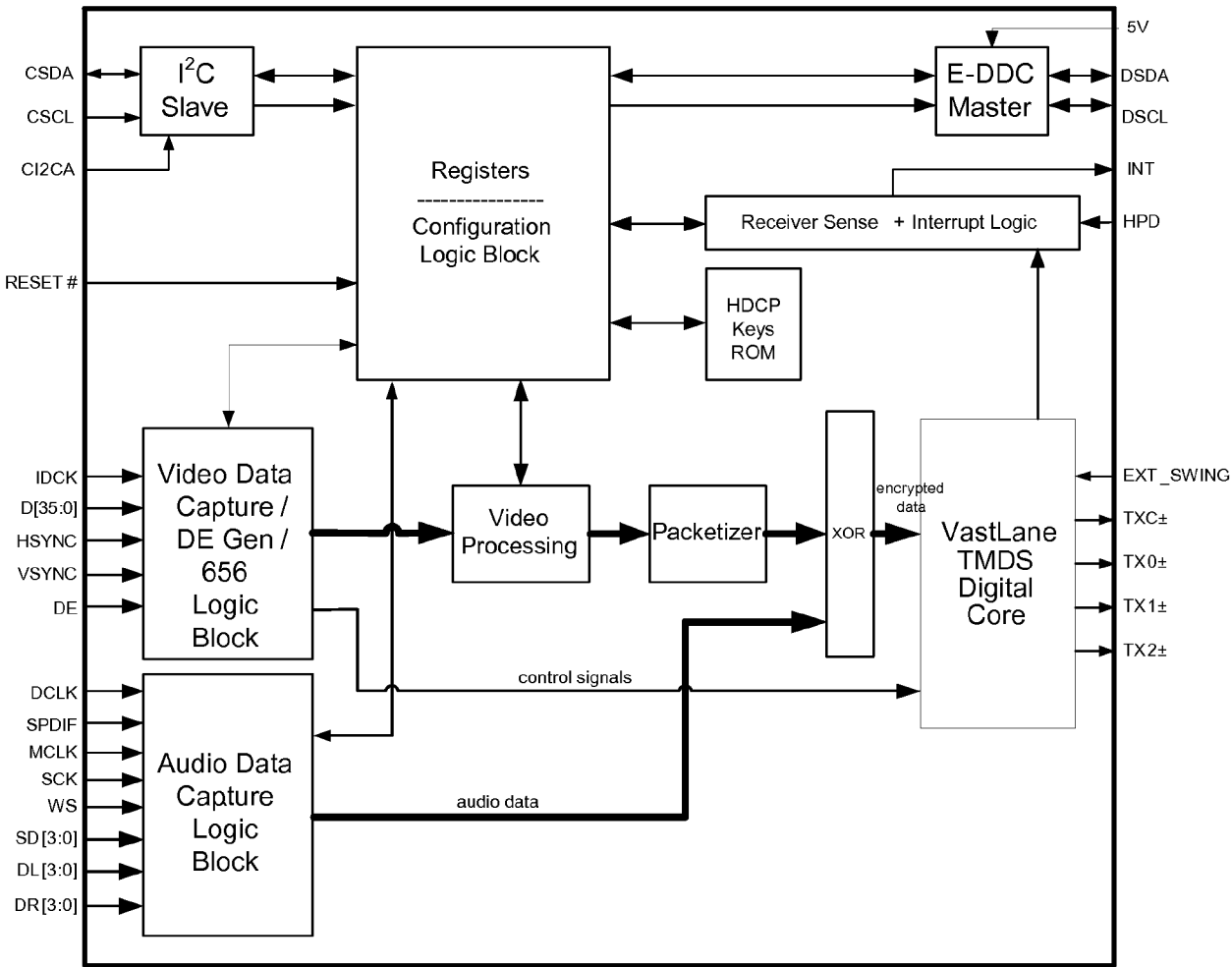
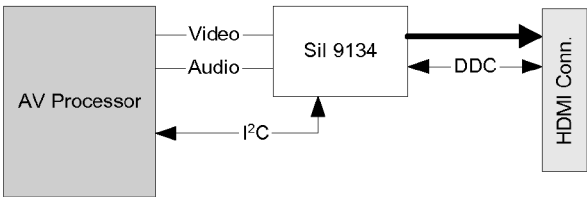


Figure 2. Functional Block Diagram



256Mb DDR SDRAM Specification

A3S56D30ETP

A3S56D40ETP



A3S56D30ETP

A3S56D40ETP

256M Double Data Rate Synchronous DRAM

DESCRIPTION

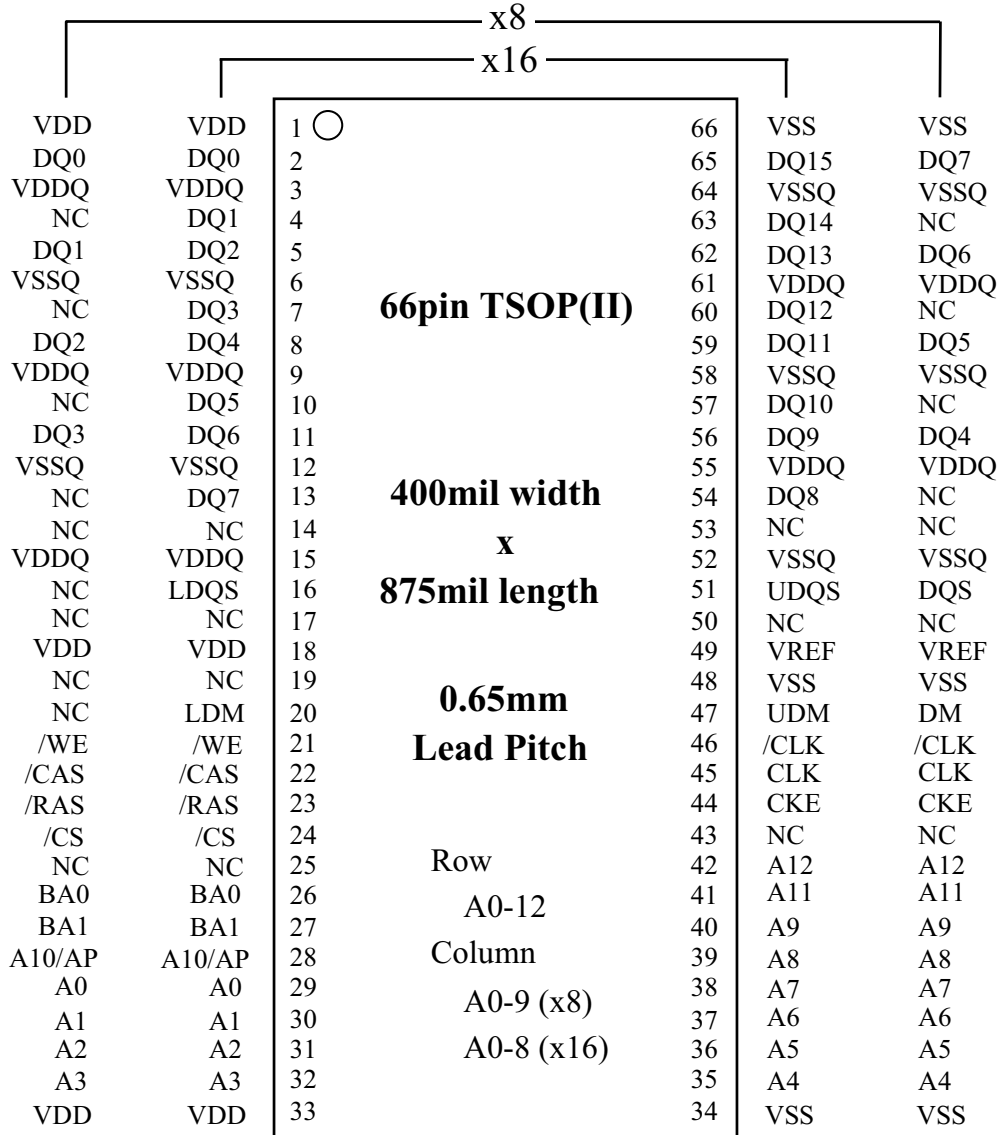
A3S56D30ETP is a 4-bank x 8,388,608-word x 8bit, A3S56D40ETP is a 4-bank x 4,194,304-word x 16bit double data rate synchronous DRAM , with SSTL_2 interface. All control and address signals are referenced to the rising edge of CLK. Input data is registered on both edges of data strobe ,and output data and data strobe are referenced on both edges of CLK. The A3S56D30/40ETP achieves very high speed clock rate up to 200 MHz .

FEATURES

- $V_{dd}=V_{ddq}=2.5V \pm 0.2V$ (-5E, -5, -6)
- Double data rate architecture ; two data transfers per clock cycle.
- Bidirectional , data strobe (DQS) is transmitted/received with data
- Differential clock input (CLK and /CLK)
- DLL aligns DQ and DQS transitions with CLK transitions edges of DQS
- Commands entered on each positive CLK edge ;
- Data and data mask referenced to both edges of DQS
- 4 bank operation controlled by BA0 , BA1 (Bank Address)
- /CAS latency - 2.0 / 2.5 / 3.0 (programmable) ;
- Burst length - 2 / 4 / 8 (programmable)
- Burst type - Sequential / Interleave (programmable)
- Auto precharge / All bank precharge controlled by A10
- Support concurrent auto-precharge
- 8192 refresh cycles / 64ms (4 banks concurrent refresh)
- Auto refresh and Self refresh
- Row address A0-12 / Column address A0-9(x8) /A0-8(x16)
- SSTL_2 Interface
- Package 400-mil, 66-pin Thin Small Outline Package (TSOP II) with 0.65mm lead pitch

**A3S56D30ETP****A3S56D40ETP**

256M Double Data Rate Synchronous DRAM

Pin Assignment (Top View) 66-pin TSOP

CLK, /CLK	: Master Clock	A0-12	: Address Input
CKE	: Clock Enable	BA0,1	: Bank Address Input
/CS	: Chip Select	Vdd	: Power Supply
/RAS	: Row Address Strobe	VddQ	: Power Supply for Output
/CAS	: Column Address Strobe	Vss	: Ground
/WE	: Write Enable	VssQ	: Ground for Output
DQ0-15	: Data I/O (x16)		
DQ0-7	: Data I/O (x8)		
UDM, LDM	: Write Mask (x16)		
DM	: Write Mask (x8)		
UDQS, LDQS	: Data Strobe (x16)		
DQS	: Data Strobe (x8)		



A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM

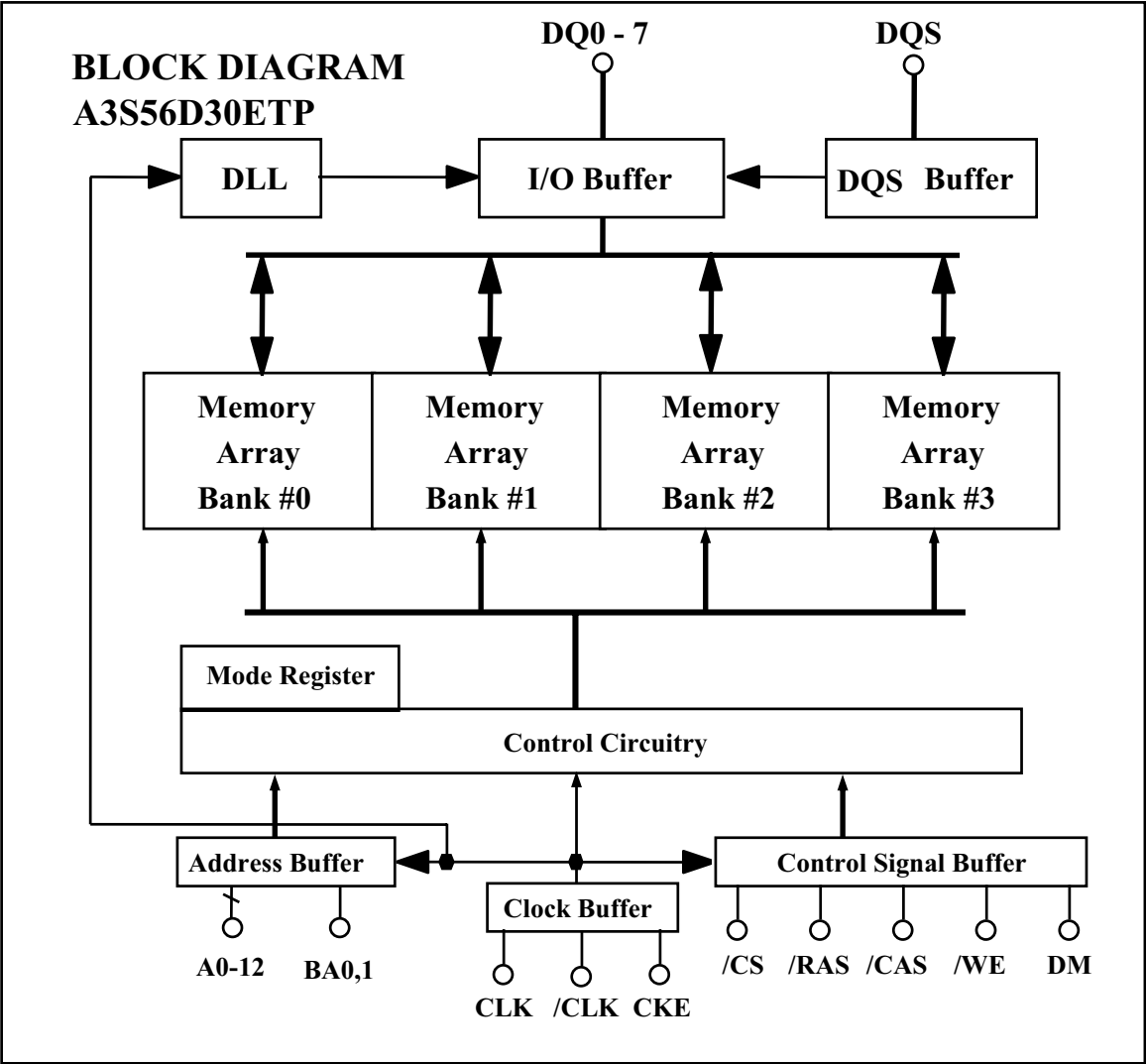
PIN FUNCTION

SYMBOL	TYPE	DESCRIPTION
CLK, /CLK	Input	Clock: CLK and /CLK are differential clock inputs. All address and control input signals are sampled on the crossing of the positive edge of CLK and negative edge of /CLK. Output (read) data is referenced to the crossings of CLK and /CLK (both directions of crossing).
CKE	Input	Clock Enable: CKE controls internal clock. When CKE is low, internal clock for the following cycle is ceased. CKE is also used to select auto / self refresh. After self refresh mode is started, CKE becomes asynchronous input. Self refresh is maintained as long as CKE is low.
/CS	Input	Chip Select: When /CS is high, any command means No Operation.
/RAS, /CAS, /WE	Input	Combination of /RAS, /CAS, /WE defines basic commands.
A0-12	Input	A0-12 specify the Row / Column Address in conjunction with BA0,1. The Row Address is specified by A0-12. The Column Address is specified by A0-9(x8) and A0-8(x16). A10 is also used to indicate precharge option. When A10 is high at a read / write command, an auto precharge is performed. When A10 is high at a precharge command, all banks are precharged.
BA0,1	Input	Bank Address: BA0,1 specifies one of four banks to which a command is applied. BA0,1 must be set with ACT, PRE, READ, WRITE commands.
DQ0-7 (x8), DQ0-15 (x16),	Input / Output	Data Input/Output: Data bus
DQS (x8) UDQS, LDQS (x16)	Input / Output	Data Strobe: Output with read data, input with write data. Edge-aligned with read data, centered in write data. Used to capture write data. For the x16, LDQS corresponds to the data on DQ0-DQ7; UDQS correspond to the data on DQ8-DQ15
DM (x8) UDM, LDM (x16)	Input	Input Data Mask: DM is an input mask signal for write data. Input data is masked when DM is sampled HIGH along with that input data during a WRITE access. DM is sampled on both edges of DQS. Although DM pins are input only, the DM loading matches the DQ and DQS loading. For the x16, LDM corresponds to the data on DQ0-DQ7; UDM corresponds to the data on DQ8-DQ15.
Vdd, Vss	Power Supply	Power Supply for the memory array and peripheral circuitry.
VddQ, VssQ	Power Supply	VddQ and VssQ are supplied to the Output Buffers only.
Vref	Input	SSTL_2 reference voltage.



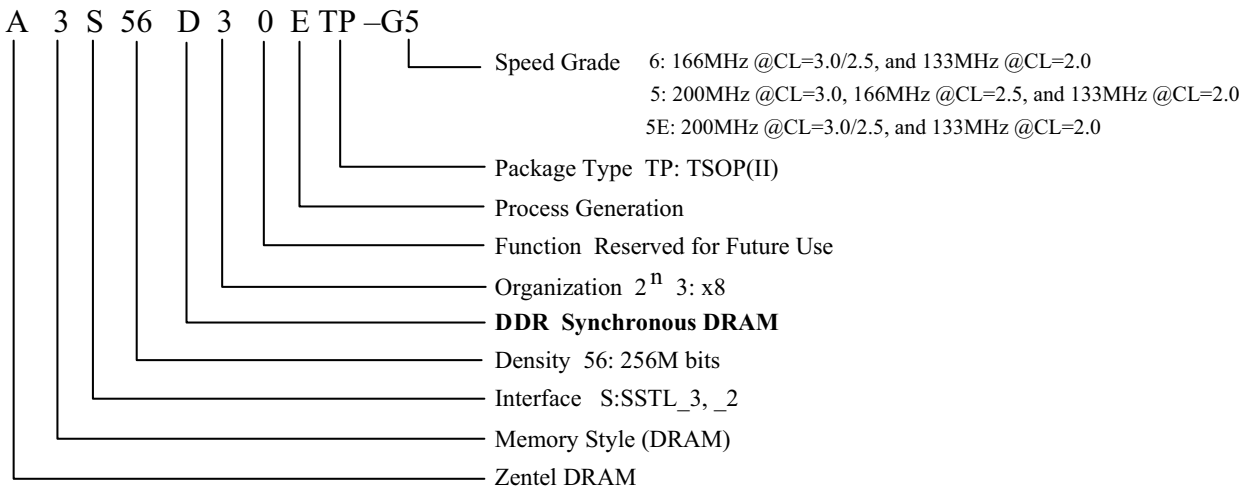
A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM



Type Designation Code

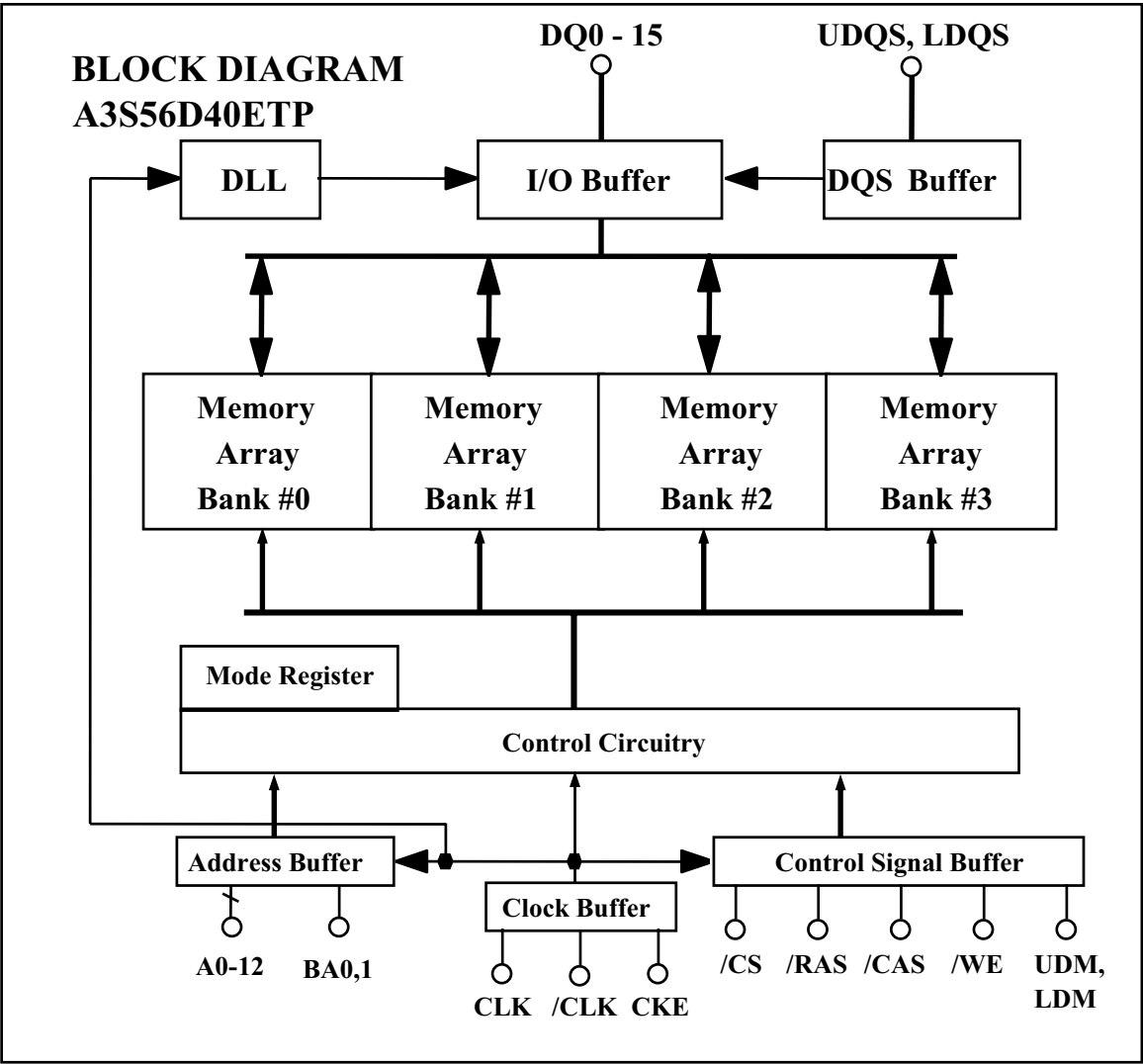
This rule is applied to only Synchronous DRAM family.





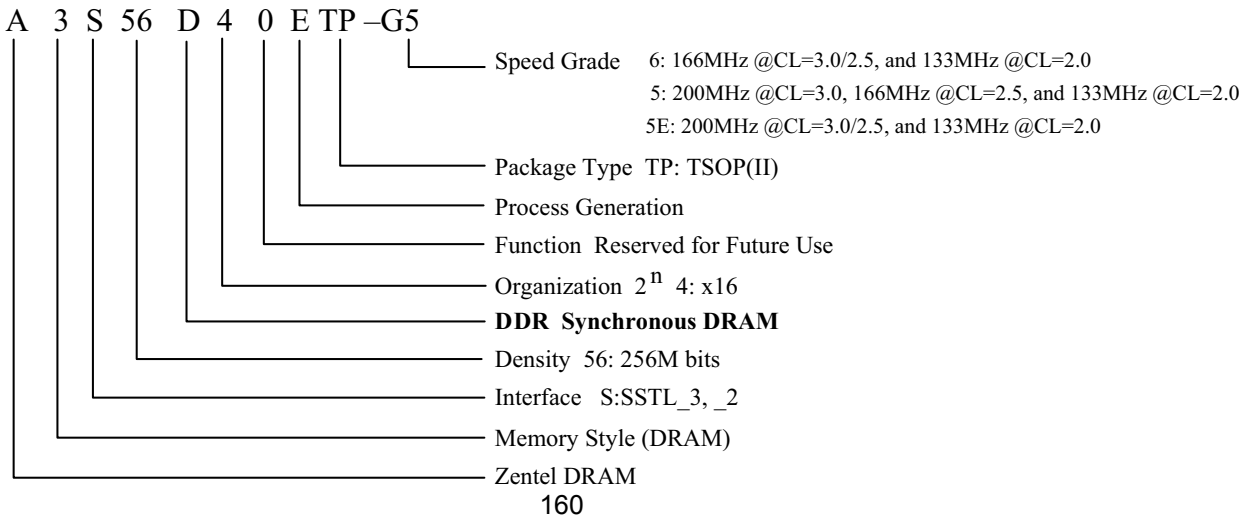
A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM



Type Designation Code

This rule is applied to only Synchronous DRAM family.



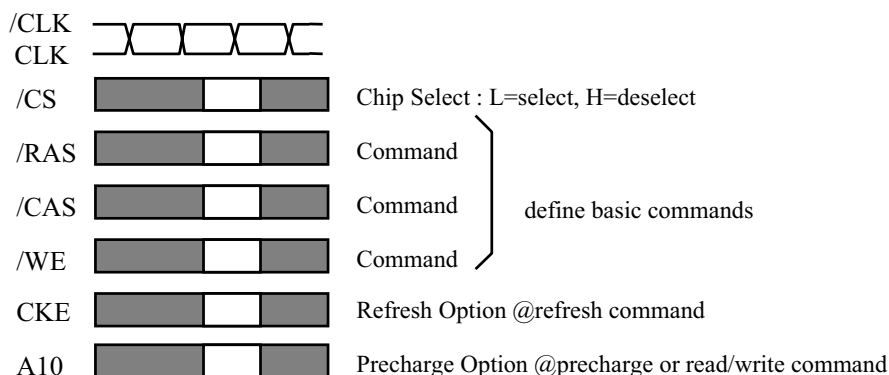


A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM

BASIC FUNCTIONS

The A3S56D30/40ETP provides basic functions, bank (row) activate, burst read / write, bank (row) precharge, and auto / self refresh. Each command is defined by control signals of /RAS, /CAS and /WE at CLK rising edge. In addition to 3 signals, /CS, CKE and A10 are used as chip select, refresh option, and precharge option, respectively. To know the detailed definition of commands, please see the command truth table.



Activate (ACT) [/RAS =L, /CAS =/WE =H]

ACT command activates a row in an idle bank indicated by BA.

Read (READ) [/RAS =H, /CAS =L, /WE =H]

READ command starts burst read from the active bank indicated by BA. First output data appears after /CAS latency. When A10 =H at this command, the bank is deactivated after the burst read (auto-precharge, **READA**)

Write (WRITE) [/RAS =H, /CAS =/WE =L]

WRITE command starts burst write to the active bank indicated by BA. Total data length to be written is set by burst length. When A10 =H at this command, the bank is deactivated after the burst write (auto-precharge, **WRITEA**)

Precharge (PRE) [/RAS =L, /CAS =H, /WE =L]

PRE command deactivates the active bank indicated by BA. This command also terminates burst read /write operation. When A10 =H at this command, all banks are deactivated (precharge all, **PREA**).

Auto-Refresh (REFA) [/RAS =/CAS =L, /WE =CKE =H]

REFA command starts auto-refresh cycle. Refresh address including bank address are generated internally. After this command, the banks are precharged automatically.



A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM

COMMAND TRUTH TABLE

COMMAND	MNEMONIC	CKE _{n-1}	CKE _n	/CS	/RAS	/CAS	/WE	BA0,1	A10 /AP	A0-9, 11-12	note
Deselect	DESEL	H	X	H	X	X	X	X	X	X	
No Operation	NOP	H	X	L	H	H	H	X	X	X	
Row Address Entry & Bank Activate	ACT	H	H	L	L	H	H	V	V	V	
Single Bank Precharge	PRE	H	H	L	L	H	L	V	L	X	
Precharge All Banks	PREA	H	H	L	L	H	L	X	H	X	
Column Address Entry & Write	WRITE	H	H	L	H	L	L	V	L	V	
Column Address Entry & Write with Auto-Precharge	WRITEA	H	H	L	H	L	L	V	H	V	
Column Address Entry & Read	READ	H	H	L	H	L	H	V	L	V	
Column Address Entry & Read with Auto-Precharge	READA	H	H	L	H	L	H	V	H	V	
Auto-Refresh	REFA	H	H	L	L	L	H	X	X	X	
Self-Refresh Entry	REFS	H	L	L	L	L	H	X	X	X	
Self-Refresh Exit	REFSX	L	H	H	X	X	X	X	X	X	
		L	H	L	H	H	H	X	X	X	
Burst Terminate	TERM	H	H	L	H	H	L	X	X	X	1
Mode Register Set	MRS	H	H	L	L	L	L	L	L	V	2

H=High Level, L=Low Level, V=Valid, X=Don't Care, n=CLK cycle number

NOTE:

1. Applies only to read bursts with autoprecharge disabled; this command is undefined (and should not be used) for read bursts with autoprecharge enabled, and for write bursts.
2. BA0-BA1 select either the Base or the Extended Mode Register (BA0 = 0, BA1 = 0 selects Mode Register; BA0=1 , BA1 = 0 selects Extended Mode Register; other combinations of BA0-BA1 are reserved; A0-A12 provide the op-code to be written to the selected Mode Register.

**A3S56D30ETP****A3S56D40ETP****256M Double Data Rate Synchronous DRAM****FUNCTION TRUTH TABLE**

Current State	/CS	/RAS	/CAS	/WE	Address	Command	Action	Notes
IDLE	H	X	X	X	X	DESEL	NOP	
	L	H	H	H	X	NOP	NOP	
	L	H	H	L	BA	TERM	ILLEGAL	2
	L	H	L	X	BA, CA, A10	READ / WRITE	ILLEGAL	2
	L	L	H	H	BA, RA	ACT	Bank Active, Latch RA	
	L	L	H	L	BA, A10	PRE / PREA	NOP	4
	L	L	L	H	X	REFA	Auto-Refresh	5
	L	L	L	L	Op-Code, Mode-Add	MRS	Mode Register Set	5
ROW ACTIVE	H	X	X	X	X	DESEL	NOP	
	L	H	H	H	X	NOP	NOP	
	L	H	H	L	BA	TERM	ILLEGAL	
	L	H	L	H	BA, CA, A10	READ / READA	Begin Read, Latch CA, Determine Auto-Precharge	
	L	H	L	L	BA, CA, A10	WRITE / WRITEA	Begin Write, Latch CA, Determine Auto-Precharge	
	L	L	H	H	BA, RA	ACT	Bank Active / ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	Precharge / Precharge All	
	L	L	L	H	X	REFA	ILLEGAL	
READ(Auto-Precharge Disabled)	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	
	H	X	X	X	X	DESEL	NOP (Continue Burst to END)	
	L	H	H	H	X	NOP	NOP (Continue Burst to END)	
	L	H	H	L	BA	TERM	Terminate Burst	
	L	H	L	H	BA, CA, A10	READ / READA	Terminate Burst, Latch CA, Begin New Read, Determine Auto-Precharge	3
	L	H	L	L	BA, CA, A10	WRITE / WRITEA	ILLEGAL	
	L	L	H	H	BA, RA	ACT	Bank Active / ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	Terminate Burst, Precharge	
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	



A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM

FUNCTION TRUTH TABLE (continued)

Current State	/CS	/RAS	/CAS	/WE	Address	Command	Action	Notes
WRITE(Auto-Precharge Disabled)	H	X	X	X	X	DESEL	NOP (Continue Burst to END)	
	L	H	H	H	X	NOP	NOP (Continue Burst to END)	
	L	H	H	L	BA	TERM	ILLEGAL	
	L	H	L	H	BA, CA, A10	READ / READA	Terminate Burst, Latch CA, Begin Read, Determine Auto-Precharge	3
	L	H	L	L	BA, CA, A10	WRITE / WRITEA	Terminate Burst, Latch CA, Begin Write, Determine Auto-Precharge	3
	L	L	H	H	BA, RA	ACT	Bank Active / ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	Terminate Burst, Precharge	
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	
READ with Auto-Precharge	H	X	X	X	X	DESEL	NOP (Continue Burst to END)	
	L	H	H	H	X	NOP	NOP (Continue Burst to END)	
	L	H	H	L	BA	TERM	ILLEGAL	
	L	H	L	H	BA, CA, A10	READ / READA	Support Concurrent Auto-Precharge	
	L	H	L	L	BA, CA, A10	WRITE / WRITEA	Support Concurrent Auto-Precharge	
	L	L	H	H	BA, RA	ACT	Bank Active / ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	Precharge / ILLEGAL	2
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	
WRITE with Auto-Precharge	H	X	X	X	X	DESEL	NOP (Continue Burst to END)	
	L	H	H	H	X	NOP	NOP (Continue Burst to END)	
	L	H	H	L	BA	TERM	ILLEGAL	
	L	H	L	H	BA, CA, A10	READ / READA	Support Concurrent Auto-Precharge	
	L	H	L	L	BA, CA, A10	WRITE / WRITEA	Support Concurrent Auto-Precharge	
	L	L	H	H	BA, RA	ACT	Bank Active / ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	Precharge / ILLEGAL	2
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	

**A3S56D30ETP****A3S56D40ETP**

256M Double Data Rate Synchronous DRAM

FUNCTION TRUTH TABLE (continued)

Current State	/CS	/RAS	/CAS	/WE	Address	Command	Action	Notes
PRE-CHARGING	H	X	X	X	X	DESEL	NOP (Idle after tRP)	
	L	H	H	H	X	NOP	NOP (Idle after tRP)	
	L	H	H	L	BA	TERM	ILLEGAL	2
	L	H	L	X	BA, CA, A10	READ / WRITE	ILLEGAL	2
	L	L	H	H	BA, RA	ACT	ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	NOP (Idle after tRP)	4
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	
ROW ACTIVATING	H	X	X	X	X	DESEL	NOP (Row Active after tRCD)	
	L	H	H	H	X	NOP	NOP (Row Active after tRCD)	
	L	H	H	L	BA	TERM	ILLEGAL	2
	L	H	L	X	BA, CA, A10	READ / WRITE	ILLEGAL	2
	L	L	H	H	BA, RA	ACT	ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	ILLEGAL	2
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	
WRITE RECOVERING	H	X	X	X	X	DESEL	NOP	
	L	H	H	H	X	NOP	NOP	
	L	H	H	L	BA	TERM	ILLEGAL	2
	L	H	L	X	BA, CA, A10	READ / WRITE	ILLEGAL	2
	L	L	H	H	BA, RA	ACT	ILLEGAL	2
	L	L	H	L	BA, A10	PRE / PREA	ILLEGAL	2
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	



A3S56D30ETP
A3S56D40ETP

256M Double Data Rate Synchronous DRAM

FUNCTION TRUTH TABLE (continued)

Current State	/CS	/RAS	/CAS	/WE	Address	Command	Action	Notes
REFRESHING	H	X	X	X	X	DESEL	NOP (Idle after tRC)	
	L	H	H	H	X	NOP	NOP (Idle after tRC)	
	L	H	H	L	BA	TERM	ILLEGAL	
	L	H	L	X	BA, CA, A10	READ / WRITE	ILLEGAL	
	L	L	H	H	BA, RA	ACT	ILLEGAL	
	L	L	H	L	BA, A10	PRE / PREA	ILLEGAL	
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	
MODE REGISTER SETTING	H	X	X	X	X	DESEL	NOP (Row Active after tRSC)	
	L	H	H	H	X	NOP	NOP (Row Active after tRSC)	
	L	H	H	L	BA	TERM	ILLEGAL	
	L	H	L	X	BA, CA, A10	READ / WRITE	ILLEGAL	
	L	L	H	H	BA, RA	ACT	ILLEGAL	
	L	L	H	L	BA, A10	PRE / PREA	ILLEGAL	
	L	L	L	H	X	REFA	ILLEGAL	
	L	L	L	L	Op-Code, Mode-Add	MRS	ILLEGAL	

ABBREVIATIONS:

H=High Level, L=Low Level, X=Don't Care

BA=Bank Address, RA=Row Address, CA=Column Address, NOP=No Operation

NOTES:

1. All entries assume that CKE was High during the preceding clock cycle and the current clock cycle.
2. ILLEGAL to bank in specified state; function may be legal in the bank indicated by BA, depending on the state of that bank.
3. Must satisfy bus contention, bus turn around, write recovery requirements.
4. NOP to bank precharging or in idle state. May precharge bank indicated by BA.
5. ILLEGAL if any bank is not idle.

ILLEGAL = Device operation and/or data-integrity are not guaranteed.

ESMT

M12L16161A

SDRAM

512K x 16Bit x 2Banks

Synchronous DRAM

FEATURES

- JEDEC standard 3.3V power supply
- LVTTTL compatible with multiplexed address
- Dual banks operation
- MRS cycle with address key programs
 - CAS Latency (2 & 3)
 - Burst Length (1, 2, 4, 8 & full page)
 - Burst Type (Sequential & Interleave)
- All inputs are sampled at the positive going edge of the system clock
- Burst Read Single-bit Write operation
- DQM for masking
- Auto & self refresh
- 32ms refresh period (2K cycle)

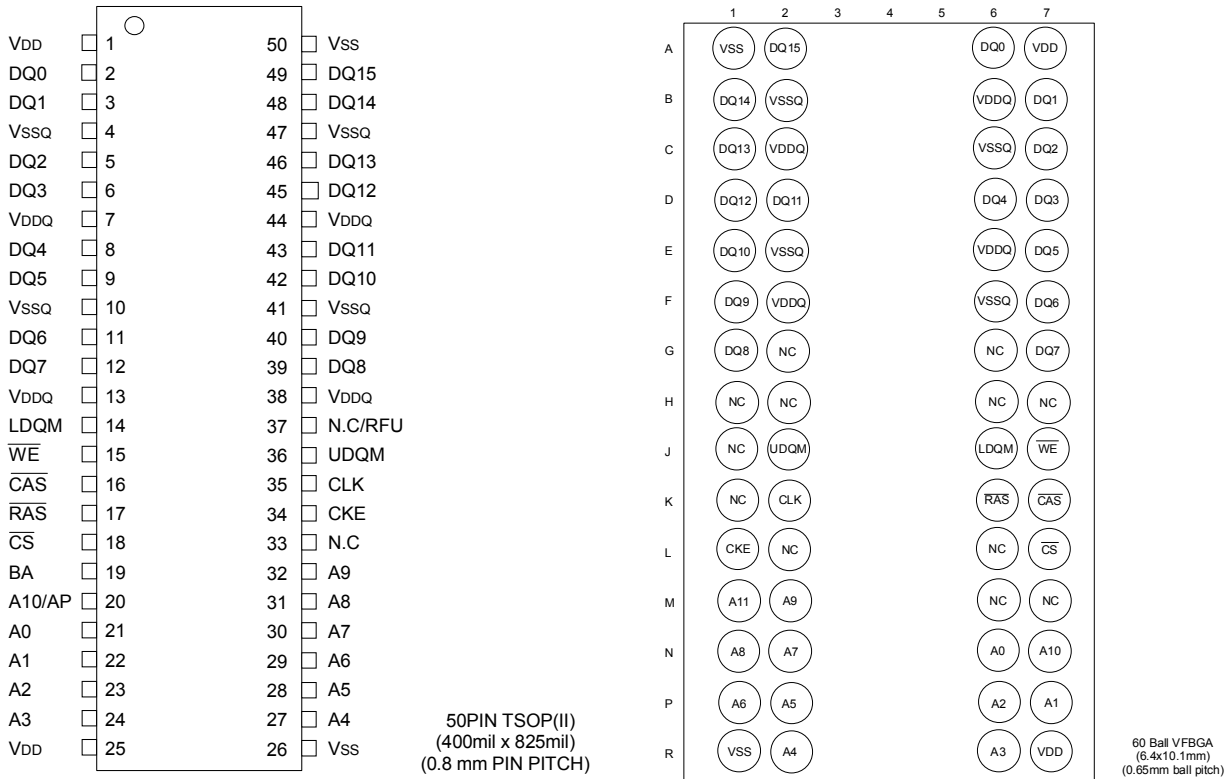
GENERAL DESCRIPTION

The M12L16161A is 16,777,216 bits synchronous high data rate Dynamic RAM organized as 2 x 524,288 words by 16 bits, fabricated with high performance CMOS technology. Synchronous design allows precise cycle control with the use of system clock I/O transactions are possible on every clock cycle. Range of operating frequencies, programmable burst length and programmable latencies allow the same device to be useful for a variety of high bandwidth, high performance memory system applications.

ORDERING INFORMATION

Part NO.	MAX Freq.	PACKAGE	COMMENTS
M12L16161A-5TG	200MHz	TSOP(II)	Pb-free
M12L16161A-7TG	143MHz	TSOP(II)	Pb-free
M12L16161A-7BG	143MHz	VFGBGA	Pb-free

PIN CONFIGURATION (TOP VIEW)



M12L16161A

The diagram illustrates the internal architecture of the 25C0200 16Kbit EPROM. It shows the flow of data and control signals between various components:

- Timing Register:** Receives external signals: CLK, CKE, CS, RAS, CAS, WE, L(U)DQM. It outputs LRAS, LCBR, LWE, LCAS, and LWCBR to other components.
- Address Register:** Receives ADD and CLK. It outputs to the Bank Select and the Row Buffer Refresh Counter.
- Bank Select:** Outputs to the Row Decoder.
- Row Buffer Refresh Counter:** Receives LCBR and outputs to the Row Decoder.
- Row Decoder:** Outputs to the 512K x 16 memory array.
- Col. Buffer:** Receives LCAS and outputs to the Column Decoder.
- Column Decoder:** Outputs to the 512K x 16 memory array.
- 512K x 16 Memory Array:** Consists of two 512K x 16 blocks. It outputs to the Sense AMP.
- Sense AMP:** Outputs to the Output Buffer.
- Output Buffer:** Outputs to the I/O Control. It also receives signals from the Latency & Burst Length and the Programming Register.
- I/O Control:** Receives LDQM and outputs DQi. It also outputs to the Data Input Register.
- Data Input Register:** Receives data from the I/O Control and outputs to the 512K x 16 memory array.
- Programming Register:** Receives LWCBR and outputs to the Latency & Burst Length.
- Latency & Burst Length:** Outputs to the Column Decoder.

Pin	Name	Input Function
CLK	System Clock	Active on the positive going edge to sample all inputs.
$\overline{\text{CS}}$	Chip Select	Disables or enables device operation by masking or enabling all inputs except CLK, CKE and L(U)DQM.
CKE	Clock Enable	Masks system clock to freeze operation from the next clock cycle. CKE should be enabled at least one cycle prior to new command. Disable input buffers for power down in standby.
A0 ~ A10/AP	Address	Row / column addresses are multiplexed on the same pins. Row address : RA0 ~ RA10, column address : CA0 ~ CA7
BA	Bank Select Address	Selects bank to be activated during row address latch time. Selects bank for read/write during column address latch time.
$\overline{\text{RAS}}$	Row Address Strobe	Latches row addresses on the positive going edge of the CLK with $\overline{\text{RAS}}$ low. Enables row access & precharge.
$\overline{\text{CAS}}$	Column Address Strobe	Latches column addresses on the positive going edge of the CLK with $\overline{\text{CAS}}$ low. Enables column access.
$\overline{\text{WE}}$	Write Enable	Enables write operation and row precharge. Latches data in starting from $\overline{\text{CAS}}$, $\overline{\text{WE}}$ active.
L(U)DQM	Data Input / Output Mask	Makes data output Hi-Z, tSHZ after the clock and masks the output. Blocks data input when L(U)DQM active.
DQ0 ~ 15	Data Input / Output	Data inputs/outputs are multiplexed on the same pins.
VDD/VSS	Power Supply/Ground	Power and ground for the input buffers and the core logic.
VDDQ/VSSQ	Data Output Power/Ground	Isolated power supply and ground for the output buffers to provide improved noise immunity.
N.C/RFU	No Connection/ Reserved for Future Use	This pin is recommended to be left No Connection on the device.



CS4970x4 Data Sheet

FEATURES

- ❑ Multi-standard 32-bit High Definition Audio Decoding plus Post Processing
- ❑ Supports high-definition audio formats including:
 - Dolby Digital® Plus
 - Dolby® TrueHD
 - DTS-HD™ High Resolution Audio
 - DTS-HD™ Master Audio
 - DSD®
- ❑ Additional Applications Library
 - Dolby Digital® EX, Dolby® Pro Logic® IIx, Dolby Headphone®, Dolby® Virtual Speaker®
 - DTS-ES 96/24™, DTS-ES™ Discrete 6.1, DTS-ES™ Matrix 6.1
 - AAC™ Multichannel 5.1
 - SRS® CS2® and TSXT®
 - THX® Ultra2™, THX® ReEQ™
 - Crossbar Mixer, Signal Generator
 - Advanced Post-Processor including: 7.1 Bass Manager, Tone Control, 11- Band Parametric EQ, Delay, 1:2 Upsampler
 - Microsoft® HDCD®
 - Thomson MP3 Surround, DTS:Neo6™, DSD-to-PCM Conversion, Neural Surround, Cirrus Original Multi-Channel Surround 2 (COMS2), and more. Please contact your local FAE for more information on available applications.
- ❑ Up to 12 Channels of 32-bit Serial Audio Input

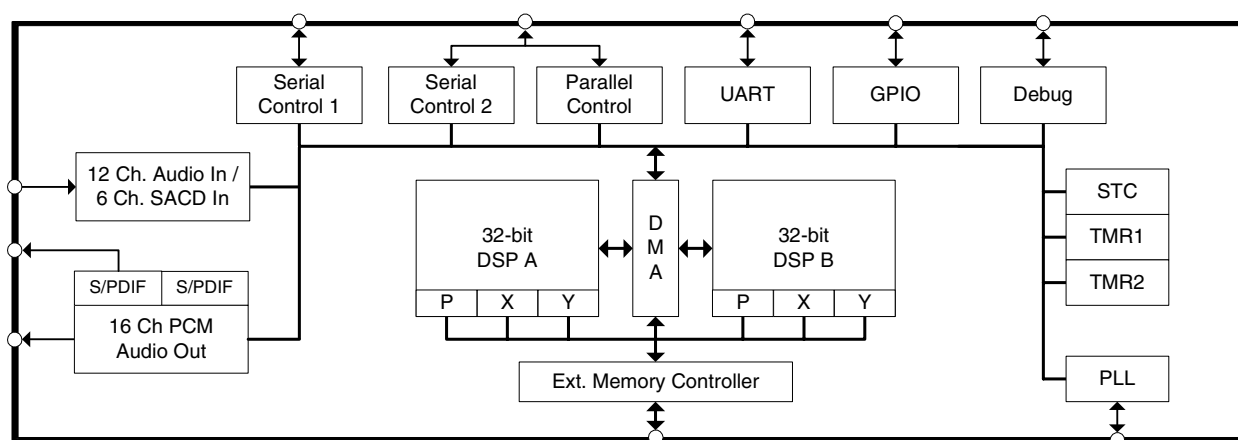
32-bit High Definition Audio Decoder DSP Family with Dual DSP Engine Technology

- ❑ Customer Software Security Keys
- ❑ 6 Channel DSD® Input
- ❑ 16 Ch x 32-bit PCM Out with Dual 192 kHz SPDIF Tx
- ❑ Two SPI™/I²C®, One Parallel and One UART Port
- ❑ Large On-chip X, Y, and Program RAM & ROM
- ❑ SDRAM and Serial Flash Memory Support

The CS4970x4 DSP family is an enhanced version of the CS4953x DSP family with higher overall performance. In addition to all the mainstream audio processing codes in on-chip ROM that the CS4953x DSP offers, the CS4970x4 device family also supports the decoding of major high-definition audio formats. Additionally, the CS4970x4, a dual-core device, performs the high-definition audio decoding on the first core, leaving the second core available for audio post-processing and audio enhancement. The CS4970x4 device will support the most demanding audio post processing requirements. It is also designed as an easy upgrade path to systems currently using the CS495xx or CS4953x device with minor hardware and software changes.

Ordering Information

See [page 30](#) for ordering information.



Preliminary Product Information

This document contains information for a new product. Cirrus Logic reserves the right to modify this product without notice.



8. Device Pin-Out Diagram

8.1 128-Pin LQFP Pin-Out Diagram

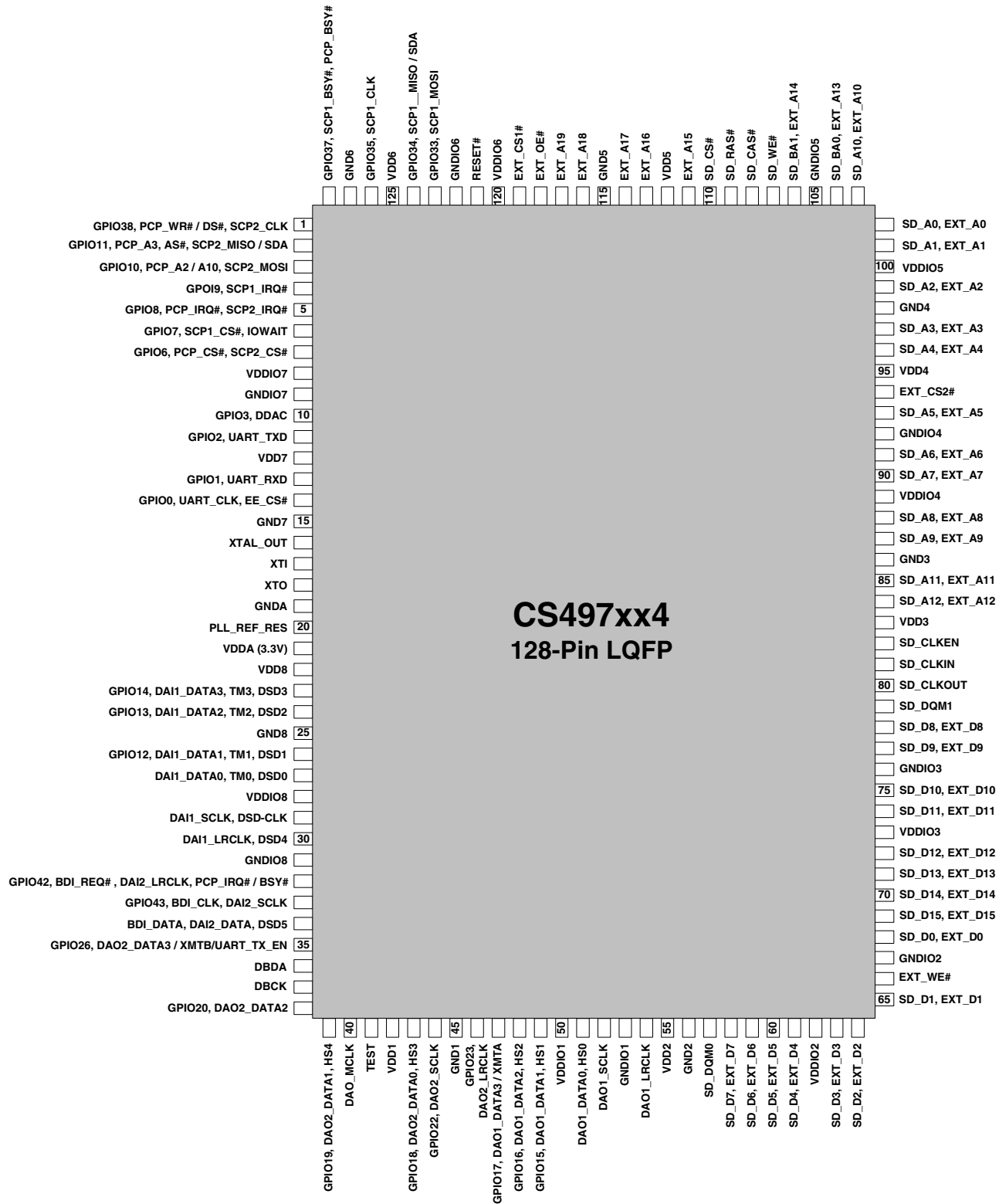


Figure 20. 128-Pin LQFP Pin-Out Diagram

CS4970x4 Data Sheet
32-bit High Definition Audio Decoder DSP Family



8.2 144-Pin LQFP Pin-Out Diagram

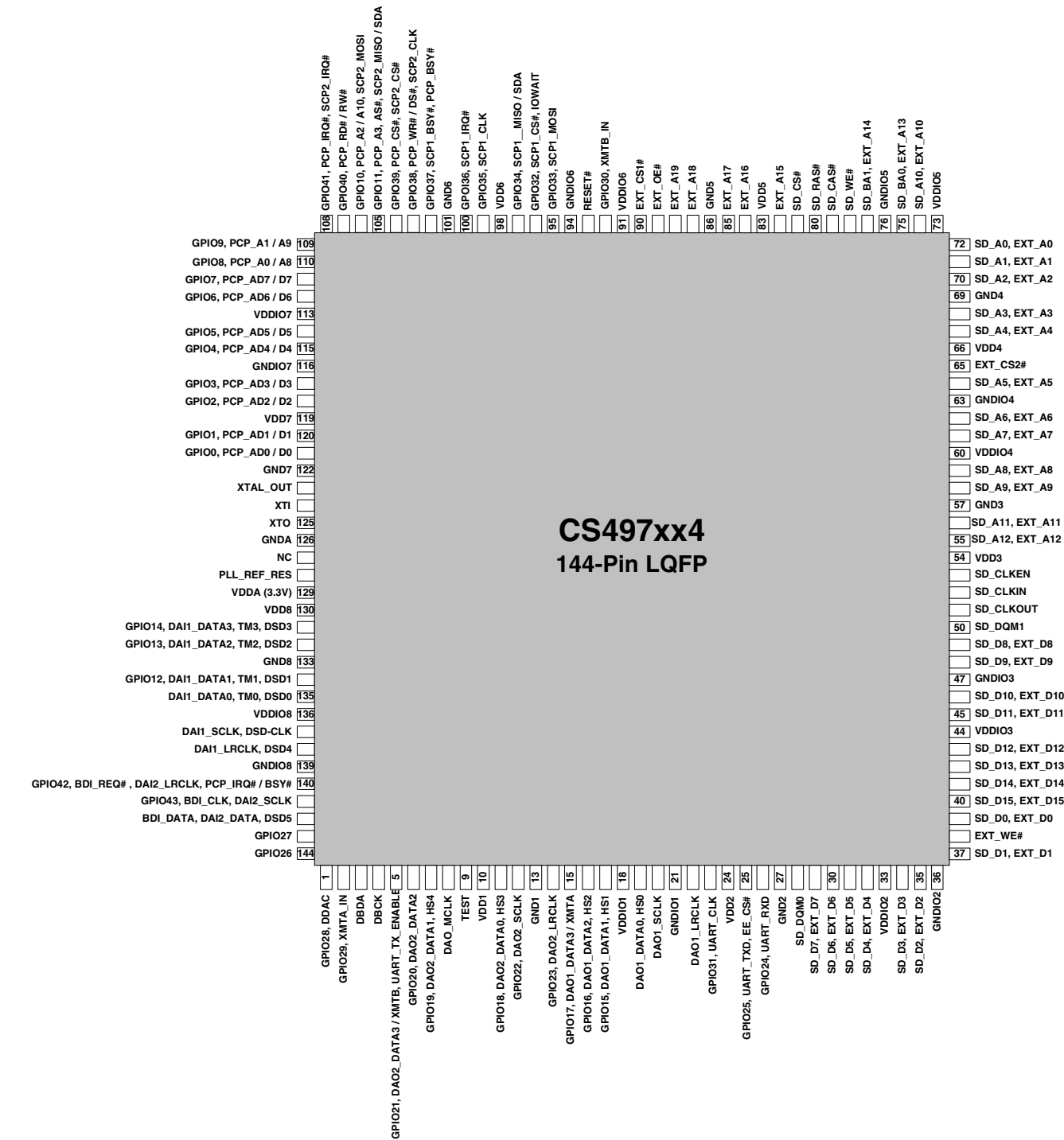


Figure 21. 144-Pin LQFP Pin-Out Diagram



MK2302S-01

Multiplier and Zero Delay Buffer

Description

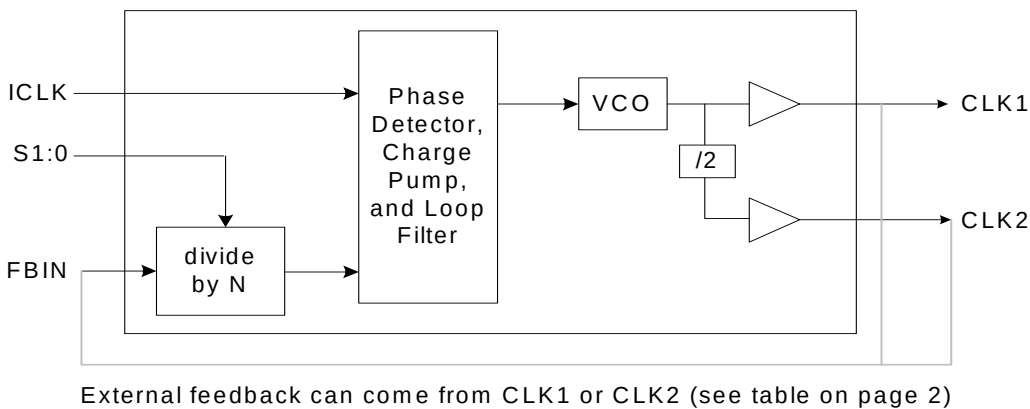
The MK2302S-01 is a high performance Zero Delay Buffer (ZDB) which integrates ICS' proprietary analog/digital Phase Locked Loop (PLL) techniques. The chip is part of ICS' ClockBlocks™ family and was designed as a performance upgrade to meet today's higher speed and lower voltage requirements. The zero delay feature means that the rising edge of the input clock aligns with the rising edges of both output clocks, giving the appearance of no delay through the device. There are two outputs on the chip, one being a low-skew divide by two of the other output.

The MK2302S-01 is ideal for synchronizing outputs in a large variety of systems, from personal computers to data communications to graphics/video. By allowing off-chip feedback paths, the device can eliminate the delay through other devices.

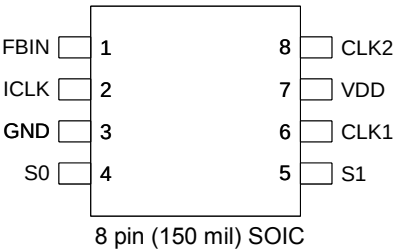
Features

- 8 pin SOIC package
- Low input to output skew of 250ps max
- Absolute jitter ± 500 ps
- Propagation Delay ± 350 ps
- Ability to choose between different multipliers from 0.5X to 16X
- Output clock frequency up to 133 MHz at 3.3V
- Can recover degraded input clock duty cycle
- Output clock duty cycle of 45/55
- Full CMOS clock swings with 25mA drive capability at TTL levels
- Advanced, low power CMOS process
- Operating voltage of 3.3V or 5V
- Industrial temperature version available

Block Diagram



Pin Assignment



Clock Multiplier Decoding Table 1
(Multiplies Input clock by shown amount)

FBIN	S1	S0	CLK1	CLK2
CLK1	0	0	2 X ICLK	ICLK
CLK1	0	1	4 X ICLK	2 X ICLK
CLK1	1	0	ICLK	ICLK/2
CLK1	1	1	8 X ICLK	4 X ICLK
CLK2	0	0	4 X ICLK	2 X ICLK
CLK2	0	1	8 X ICLK	4 X ICLK
CLK2	1	0	2 X ICLK	ICLK
CLK2	1	1	16 X ICLK	8 X ICLK

Pin Descriptions

Pin Number	Pin Name	Pin Type	Pin Description
1	FBIN	Input	Feedback clock input.
2	ICLK	Input	Reference clock input.
3	GND	Power	Connect to ground.
4	S0	Input	Select 0 for output clock per decoding table above. Pull-up.
5	S1	Input	Select 1 for output clock per decoding table above. Pull up.
6	CLK1	Output	Clock output per table above.
7	VDD	Power	Connect to +3.3V or +5.0V.
8	CLK2	Output	Clock output per table above. Low skew divide by two of pin 6 clock.



Multiformat Video Encoder

Six, 11-Bit, 297 MHz DACs

ADV7342/ADV7343

FEATURES

74.25 MHz 20-/30-bit high definition input support

Compliant with SMPTE 274M (1080i), 296M (720p), and 240M (1035i)

6, 11-bit, 297 MHz video DACs

16× (216 MHz) DAC oversampling for SD

8× (216 MHz) DAC oversampling for ED

4× (297 MHz) DAC oversampling for HD

37 mA maximum DAC output current

NTSC M, PAL B/D/G/H/I/M/N, PAL 60 support

NTSC and PAL square pixel operation (24.54 MHz/29.5 MHz)

Multiformat video input support

4:2:2 YCrCb (SD, ED, and HD)

4:4:4 YCrCb (ED and HD)

4:4:4 RGB (SD, ED, and HD)

Multiformat video output support

Composite (CVBS) and S-Video (Y/C)

Component YPrPb (SD, ED, and HD)

Component RGB (SD, ED, and HD)

Macrovision® Rev 7.1.L1 (SD) and Rev 1.2 (ED) compliant

Simultaneous SD and ED/HD operation

EIA/CEA-861B compliance support

Programmable features

Luma and chroma filter responses

Vertical blanking interval (VBI)

Subcarrier frequency (F_{sc}) and phase

Luma delay

Copy generation management system (CGMS)

Closed captioning and wide screen signaling (WSS)

Integrated subcarrier locking to external video source

Complete on-chip video timing generator

On-chip test pattern generation

On-board voltage reference (optional external input)

Serial MPU interface with dual I²C® and SPI® compatibility

3.3 V analog operation

1.8 V digital operation

3.3 V I/O operation

Temperature range: -40°C to +85°C

APPLICATIONS

DVD recorders and players

High definition Blu-ray DVD players

HD-DVD players

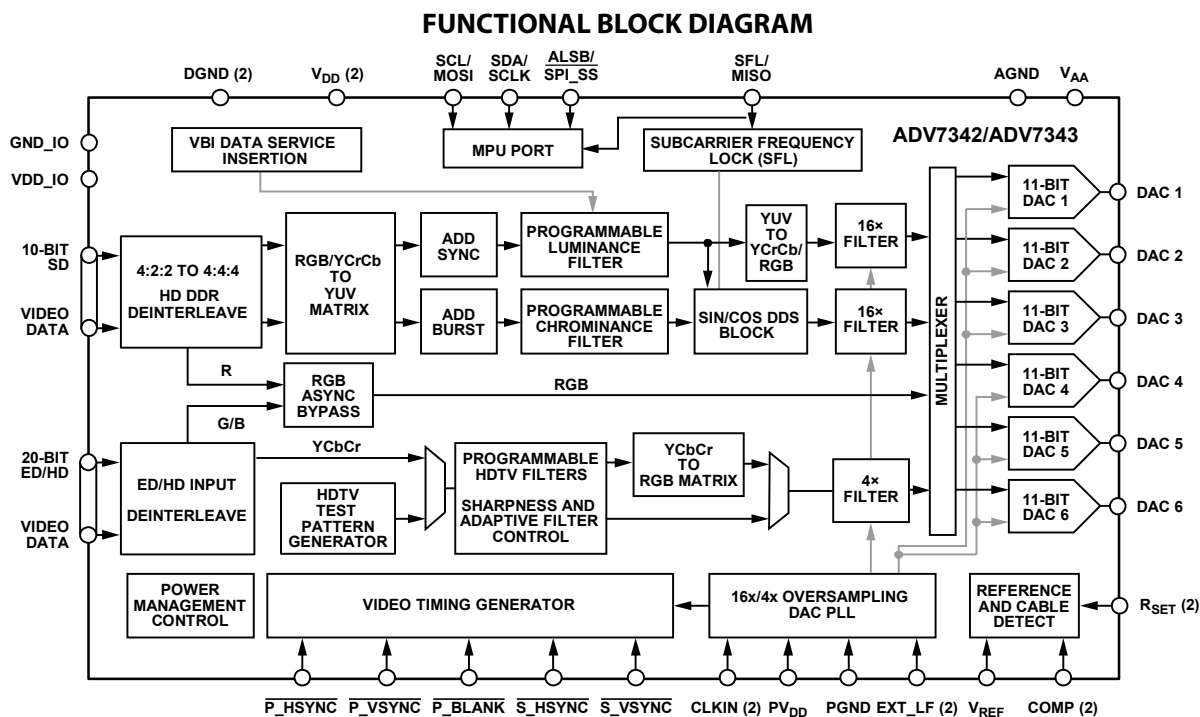


Figure 1.

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Protected by U.S. Patent Numbers 4,631,603, 4,577,216, 4,819,098 and other intellectual property rights.

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ADV7342/ADV7343

PIN CONFIGURATION AND FUNCTION DESCRIPTIONS

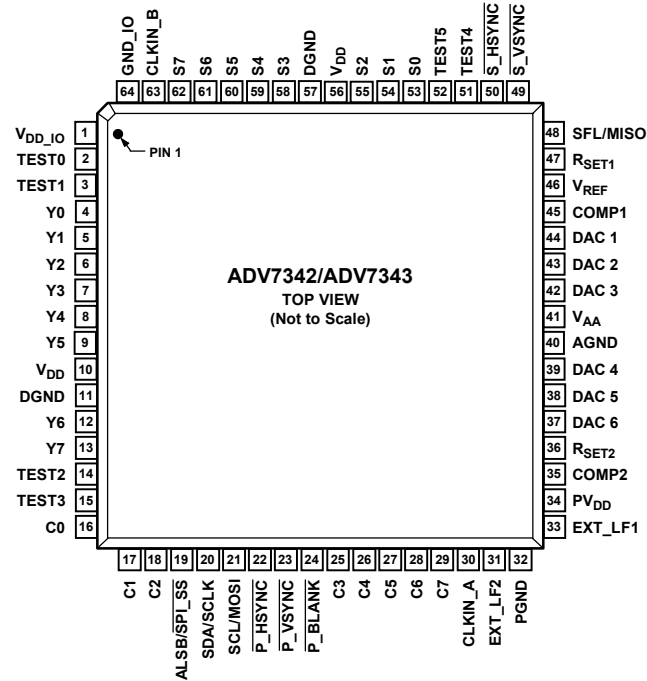


Figure 21. Pin Configuration

Table 13. Pin Function Descriptions

Pin No.	Mnemonic	Input/ Output	Description
13, 12, 9 to 4	Y7 to Y0	I	8-Bit Pixel Port. Y0 is the LSB. Refer to Table 31 for input modes.
29 to 25, 18 to 16	C7 to C0	I	8-Bit Pixel Port. C0 is the LSB. Refer to Table 31 for input modes.
62 to 58, 55 to 53	S7 to S0	I	8-Bit Pixel Port. S0 is the LSB. Refer to Table 31 for input modes.
52, 51, 15, 14, 3, 2	TEST5 to TEST0	I	Unused. These pins should be connected to DGND.
30	CLKIN_A	I	Pixel Clock Input for HD Only (74.25 MHz), ED ¹ Only (27 MHz or 54 MHz) or SD Only (27 MHz).
63	CLKIN_B	I	Pixel Clock Input for Dual Modes Only. Requires a 27 MHz reference clock for ED operation or a 74.25 MHz reference clock for HD operation.
50	$\overline{S_HSYNC}$	I/O	SD Horizontal Synchronization Signal. This pin can also be configured to output an SD, ED, or HD horizontal synchronization signal. See the External Horizontal and Vertical Synchronization Control section.
49	$\overline{S_VSYNC}$	I/O	SD Vertical Synchronization Signal. This pin can also be configured to output an SD, ED, or HD vertical synchronization signal. See the External Horizontal and Vertical Synchronization Control section.
22	$\overline{P_HSYNC}$	I	ED/HD Horizontal Synchronization Signal. See the External Horizontal and Vertical Synchronization Control section.
23	$\overline{P_VSYNC}$	I	ED/HD Vertical Synchronization Signal. See the External Horizontal and Vertical Synchronization Control section.
24	$\overline{P_BLANK}$	I	ED/HD Blanking Signal. See the External Horizontal and Vertical Synchronization Control section.
48	SFL/MISO	I/O	Multifunctional Pin: Subcarrier Frequency Lock (SFL) Input/SPI Data Output. The SFL input is used to drive the color subcarrier DDS system, timing reset, or subcarrier reset.
47	RSET1	I	This pin is used to control the amplitudes of the DAC 1, DAC 2, and DAC 3 outputs. For full-drive operation (for example, into a 37.5 Ω load), a 510 Ω resistor must be connected from RSET1 to AGND. For low drive operation (for example, into a 300 Ω load), a 4.12 k Ω resistor must be connected from RSET1 to AGND.

ADV7342/ADV7343

Pin No.	Mnemonic	Input/ Output	Description
36	R _{SET2}	I	This pin is used to control the amplitudes of the DAC 4, DAC 5, and DAC 6 outputs. A 4.12 k Ω resistor must be connected from R _{SET2} to AGND.
45, 35	COMP1, COMP2	O	Compensation Pins. Connect a 2.2 nF capacitor from both COMP pins to V _{AA} .
44, 43, 42	DAC 1, DAC 2, DAC 3	O	DAC Outputs. Full and low drive capable DACs.
39, 38, 37	DAC 4, DAC 5, DAC 6	O	DAC Outputs. Low drive only capable DACs.
21	SCL/MOSI	I	Multifunctional Pin: I ² C Clock Input/SPI Data Input.
20	SDA/SCLK	I/O	Multifunctional Pin: I ² C Data Input/Output. Also, SPI clock input.
19	ALSB/ $\overline{\text{SPI_SS}}$	I	Multifunctional Pin: This signal sets up the LSB ² of the MPU I ² C address. Also, SPI slave select.
46	V _{REF}		Optional External Voltage Reference Input for DACs or Voltage Reference Output.
41	V _{AA}	P	Analog Power Supply (3.3 V).
10, 56	V _{DD}	P	Digital Power Supply (1.8 V). For dual-supply configurations, V _{DD} can be connected to other 1.8 V supplies through a ferrite bead or suitable filtering.
1	V _{DD_IO}	P	Input/Output Digital Power Supply (3.3 V).
34	PV _{DD}	P	PLL Power Supply (1.8 V). For dual-supply configurations, PV _{DD} can be connected to other 1.8 V supplies through a ferrite bead or suitable filtering.
33	EXT_LF1	I	External Loop Filter for On-Chip PLL 1.
31	EXT_LF2	I	External Loop Filter for On-Chip PLL 2.
32	PGND	G	PLL Ground Pin.
40	AGND	G	Analog Ground Pin.
11, 57	DGND	G	Digital Ground Pin.
64	GND_IO	G	Input/Output Supply Ground Pin.

¹ ED = enhanced definition = 525p and 625p.

² LSB = least significant bit. In the ADV7342, setting the LSB to 0 sets the I²C address to 0xD4. Setting it to 1 sets the I²C address to 0xD6. In the ADV7343, setting the LSB to 0 sets the I²C address to 0x54. Setting it to 1 sets the I²C address to 0x56.

TOSHIBA

TC74HCU04AP/AF/AFN

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74HCU04AP, TC74HCU04AF, TC74HCU04AFN

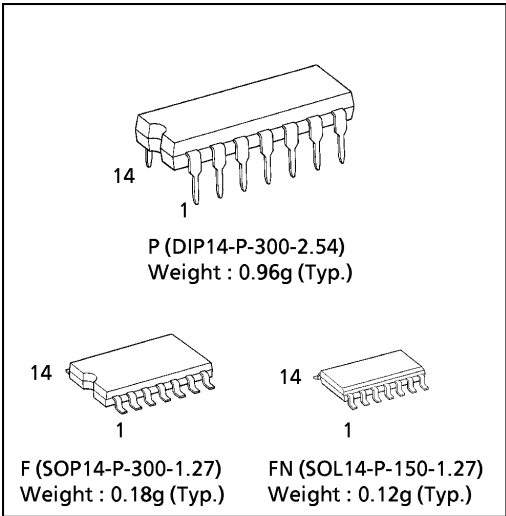
HEX INVERTER

The TC74HCU04A is a high speed CMOS INVERTER fabricated with silicon gate C²MOS technology. It achieves the high speed operation similar to equivalent LSTTL while maintaining the CMOS low power dissipation. Since the internal circuit is composed of a single stage inverter, it can be used in analog applications such as crystal oscillators. All inputs are equipped with protection circuits against static discharge or transient excess voltage.

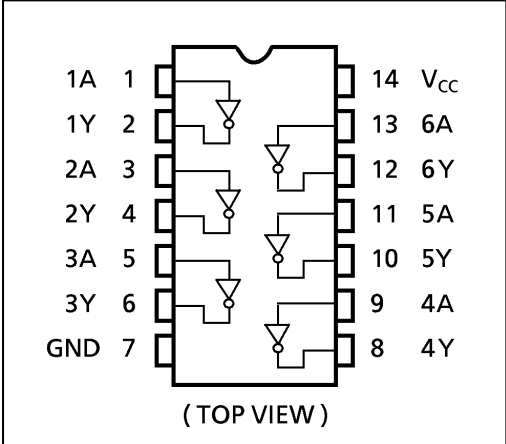
FEATURES :

- High Speed..... $t_{pd} = 4\text{ns}(\text{typ.})$ at $V_{CC} = 5\text{V}$
- Low Power Dissipation..... $I_{CC} = 1\mu\text{A}(\text{Max.})$ at $T_a = 25^{\circ}\text{C}$
- High Noise Immunity..... $V_{NIH} = V_{NIH} = 10\%V_{CC}$ (Min.)
- Output Drive Capability..... 10 LSTTL Loads
- Symmetrical Output Impedance... $|I_{OH}| = I_{OL} = 4\text{mA}(\text{Min.})$
- Balanced Propagation Delays..... $t_{pLH} \approx t_{pHL}$
- Wide Operating Voltage Range... $V_{CC}(\text{opr.}) = 2\text{V} \sim 6\text{V}$
- Pin and Function Compatible with 74LS04

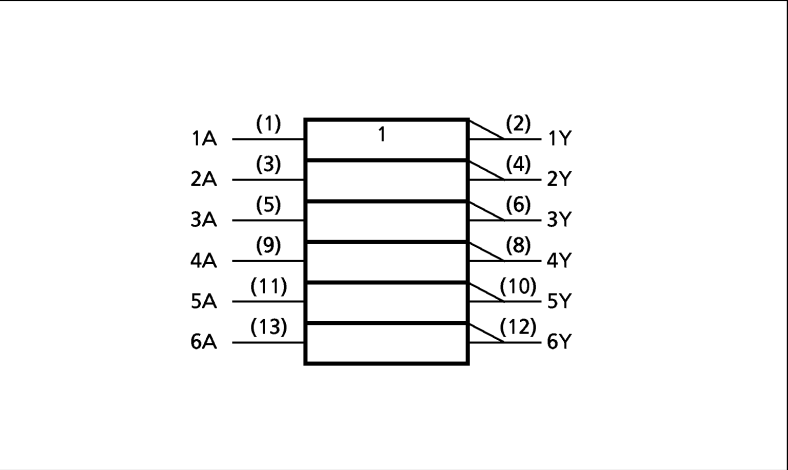
(Note) The JEDEC SOP (FN) is not available in Japan.



PIN ASSIGNMENT



IEC LOGIC SYMBOL



TRUTH TABLE

A	Y
L	H
H	L

961001EBA2



NJM2566A

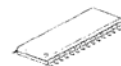
6CH VIDEO AMPLIFIER WITH SD/ HD LPF

■ GENERAL DESCRIPTION

The NJM2566A is a single supply voltage 6ch Video amplifier. It includes LPF, Y/C MIX circuit and SDC interface. LPF for the component signal can select SD/HD.

The NJM2566A is suitable for DVD recorder, set top box and the high quality AV systems with the SD/HD output.

■ PACKAGE OUTLINE

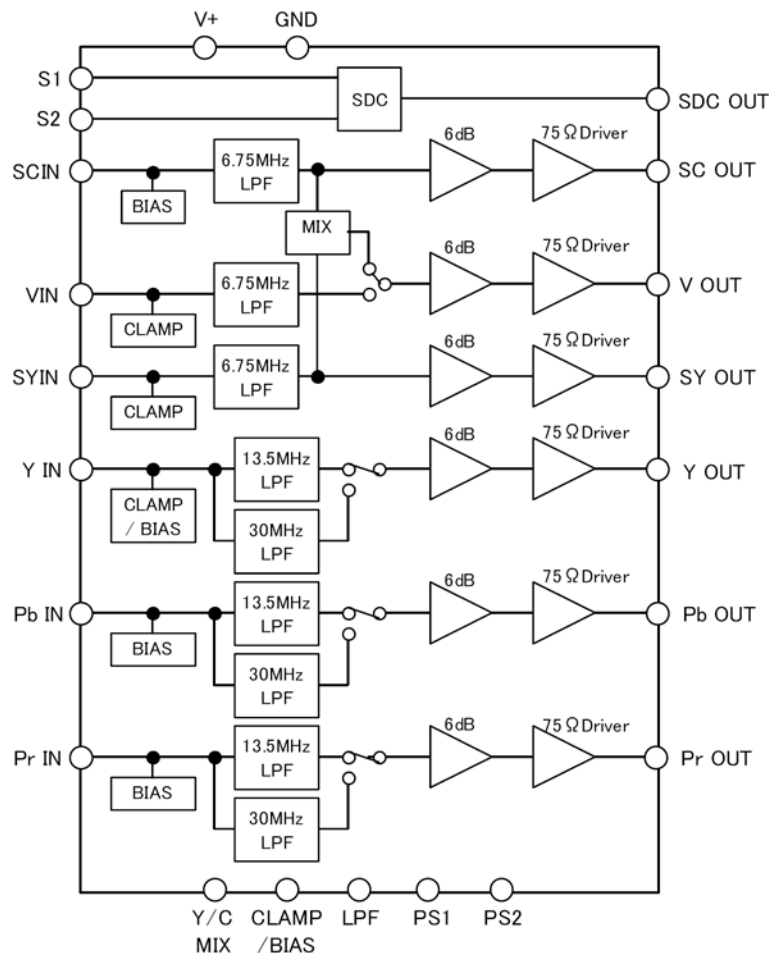


NJM2566AV

■ FEATURES

- Operating Voltage 4.5 to 5.5V
- 6dB amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Internal LPF V,SY,SC 6.75MHz
Y,Pb,Pr 13.5MHz (Progressive)
30MHz (HD)
- Y/C MIX Circuit
- SDC Interface (S1/ S2)
- CLAMP/ BIAS Select (Y,Pb,Pr/ RGB)
- Power Save Circuit
- Bipolar Technology
- Package Outline SSOP32

■ BLOCK DIAGRAM





NJM2566A

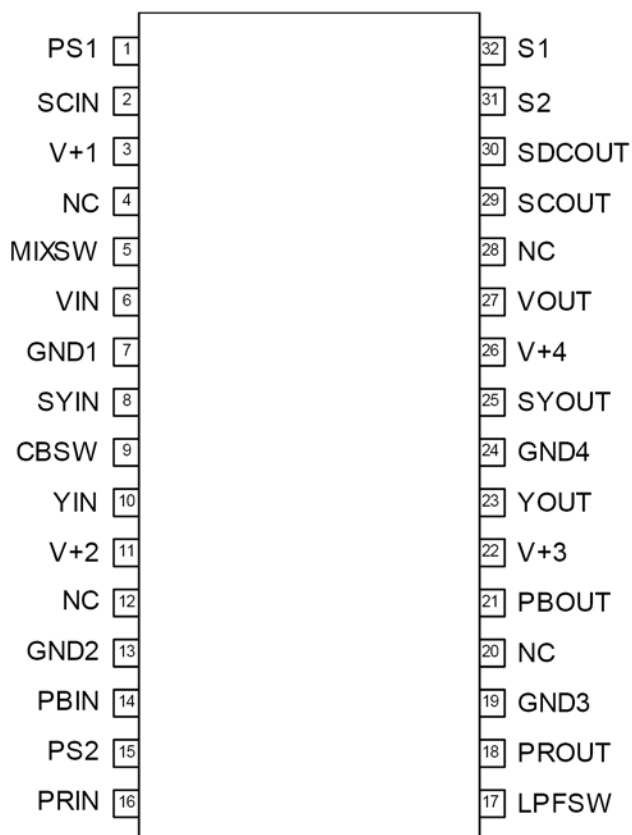
■ CONTROL TERMINAL

PARAMETER	STATUS	NOTE
PS1 (Power Save1)	H	(SYOUT, VOUT, SCOUT) Power Save: OFF
	L	(SYOUT, VOUT, SCOUT) Power Save: ON
	OPEN	(SYOUT, VOUT, SCOUT) Power Save: ON
PS2 (Power Save2)	H	(YOUT, PbOUT, PrOUT) Power Save: OFF
	L	(YOUT, PbOUT, PrOUT) Power Save: ON
	OPEN	(YOUT, PbOUT, PrOUT) Power Save: ON
MIX SW (Y/C MIX)	H	M/C MIX ON
	L	M/C MIX OFF
	OPEN	M/C MIX OFF
C/B SW (CLAMP/BIAS)	H	BIAS (RGB)
	L	CLAMP (Y,Pb,Pr)
	OPEN	CLAMP (Y,Pb,Pr)
LPF SW (LPF)	H	30MHz LPF
	L	13.5MHz LPF
	OPEN	13.5MHz LPF

■ SDC OUT

S1	S2	SDC OUT	
L (OPEN)	L (OPEN)	0V	4:3 Normal
L (OPEN)	H	2.1V	4:3 Letter box
H	H	2.1V	4:3 Letter box
H	L (OPEN)	4.6V	16:9 Squeeze

■ PIN CONFIGURATION





NJM2566A

■ TERMINAL FUNCTION

PIN No.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT	DC VOLTAGE
1	PS1	(SY, V, SC, SDC) Power save		-
5	MIXSW	Y/C MIX control		
9	CBSW	CLAMP/ BIAS control		
15	PS2	(Y, Pb, Pr) Power save		
17	LPFSW	(Y, Pb, Pr) LPF control		
31	S2	SDC control		
32	S1	SDC control		
2	SCIN	Chroma signal input		2.5V
14	PBIN	Component signal(Pb), R input		
16	PRIN	Component signal(Pr), B input		
6	VIN	Composite video signal input		1.7V
8	SYIN	Y signal input		
10	YIN	Component signal(Y), G input (Note) Y signal: CLAMP G signal: BIAS		(CLAMP) 1.7V (BIAS) 2.5V



NJM2566A

PIN No.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT	DC VOLTAGE
18 21 29	PROUT PBOUT SCOUT	Component signal(Cr) output Component signal(Cb) output Chroma signal output		2.5V
23 25 27	YOUT SYOUT VOUT	Component signal(Y) output Y signal output Composite video signal output		1.3V (Note) YOUT BIAS: 2.5V
30	SDCOUT	SDC output		-

M24C64

M24C32

64Kbit and 32Kbit Serial I²C Bus EEPROM

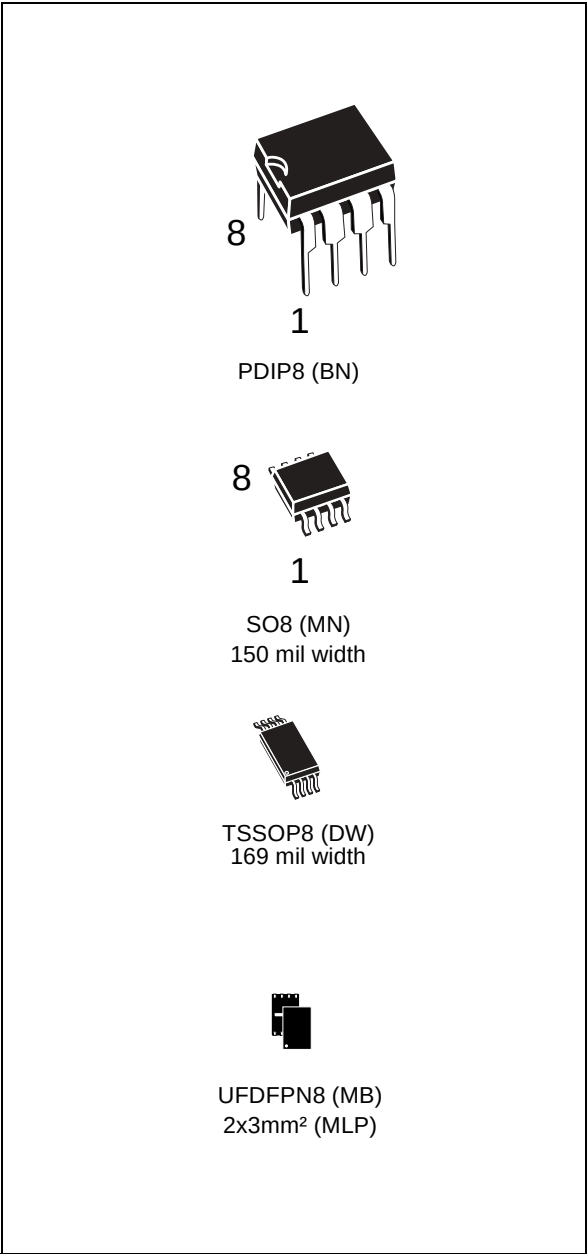
FEATURES SUMMARY

- Two-Wire I²C Serial Interface
Supports 400kHz Protocol
- Single Supply Voltage:
 - 4.5 to 5.5V for M24Cxx
 - 2.5 to 5.5V for M24Cxx-W
 - 1.8 to 5.5V for M24Cxx-R
- Write Control Input
- BYTE and PAGE WRITE (up to 32 Bytes)
- RANDOM and SEQUENTIAL READ Modes
- Self-Timed Programming Cycle
- Automatic Address Incrementing
- Enhanced ESD/Latch-Up Protection
- More than 1 Million Erase/Write Cycles
- More than 40-Year Data Retention

Table 1. Product List

Reference	Part Number
M24C64	M24C64
	M24C64-W
	M24C64-R
M24C32	M24C32
	M24C32-W
	M24C32-R

Figure 1. Packages

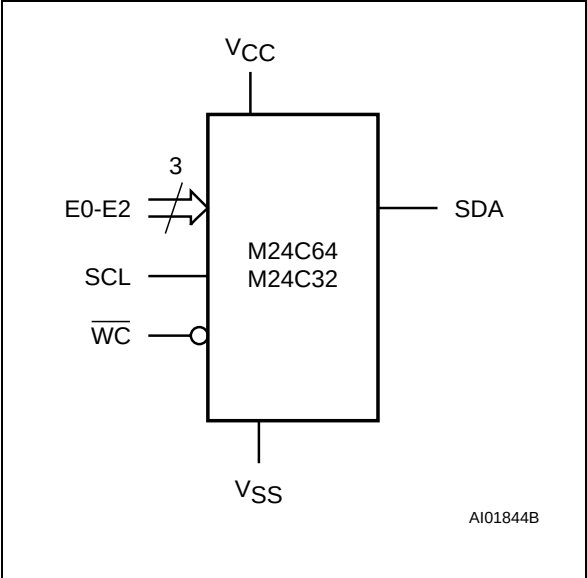


M24C64, M24C32

SUMMARY DESCRIPTION

These I²C-compatible electrically erasable programmable memory (EEPROM) devices are organized as 8192 x 8 bits (M24C64) and 4096 x 8 bits (M24C32).

Figure 2. Logic Diagram



I²C uses a two-wire serial interface, comprising a bi-directional data line and a clock line. The devices carry a built-in 4-bit Device Type Identifier code (1010) in accordance with the I²C bus definition. The device behaves as a slave in the I²C protocol, with all memory operations synchronized by the serial clock. Read and Write operations are initiated by a Start condition, generated by the bus master. The Start condition is followed by a Device Select Code and Read/Write bit (RW) (as described in Table 3.), terminated by an acknowledge bit. When writing data to the memory, the device inserts an acknowledge bit during the 9th bit time, following the bus master's 8-bit transmission. When data is read by the bus master, the bus master acknowledges the receipt of the data byte in the same way. Data transfers are terminated by a Stop condition after an Ack for Write, and after a NoAck for Read.

Table 2. Signal Names

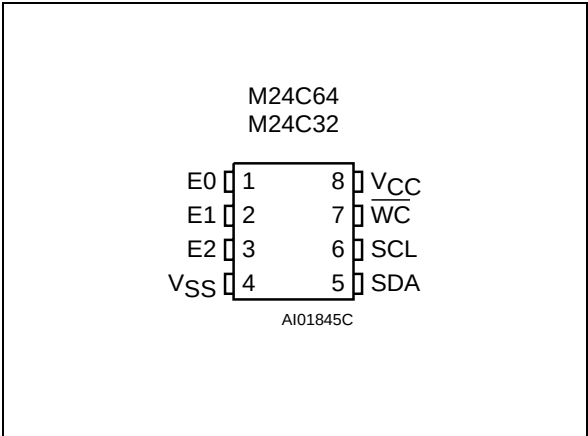
E0, E1, E2	Chip Enable
SDA	Serial Data
SCL	Serial Clock
$\overline{WC}$	Write Control
VCC	Supply Voltage
VSS	Ground

Power On Reset: V_{CC} Lock-Out Write Protect

In order to prevent data corruption and inadvertent Write operations during Power-up, a Power On Reset (POR) circuit is included. At Power-up, the internal reset is held active until V_{CC} has reached the Power On Reset (POR) threshold voltage, and all operations are disabled – the device will not respond to any command. In the same way, when V_{CC} drops from the operating voltage, below the Power On Reset (POR) threshold voltage, all operations are disabled and the device will not respond to any command.

A stable and valid V_{CC} (as defined in Table 9. and Table 10.) must be applied before applying any logic signal.

Figure 3. DIP, SO, TSSOP and UFDFPN Connections



Note: See PACKAGE MECHANICAL section for package dimensions, and how to identify pin-1.





SEMICONDUCTOR
TECHNICAL DATA

KIC7SZ08FU
SILICON MONOLITHIC CMOS
DIGITAL INTEGRATED CIRCUIT

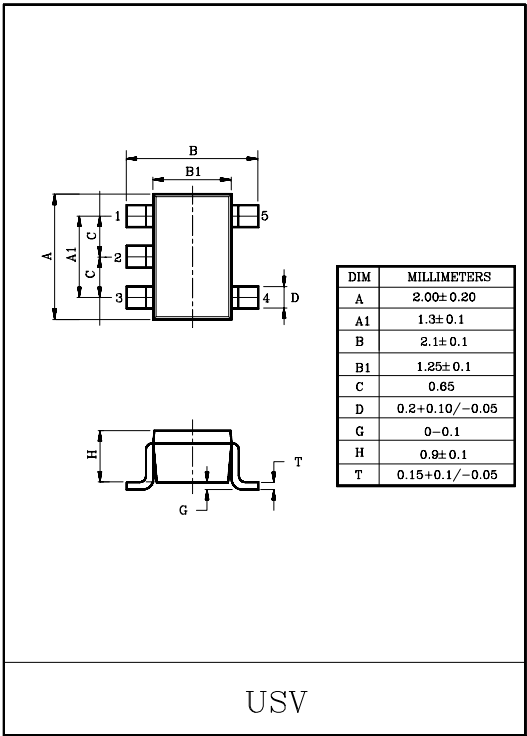
2 INPUT AND GATE

FEATURES

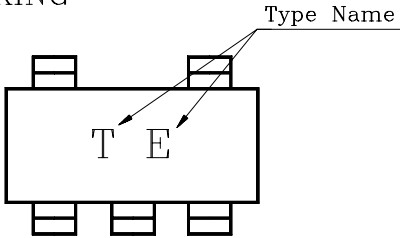
- High Output Drive : $\pm 24\text{mA}$ (Typ.)
@ $V_{CC}=3\text{V}$
- Super High Speed Operation : $t_{PD}=2.7\text{ns}$ (Typ.)
@ $V_{CC}=5\text{V}$, 50pF
- Operation Voltage Range : $V_{CC(opr)}=1.8\sim 5.5\text{V}$.
- Supply Voltage Data Retention : $V_{CC}=1.5\sim 5.5\text{V}$.
- 5V Tolerant Function

MAXIMUM RATINGS

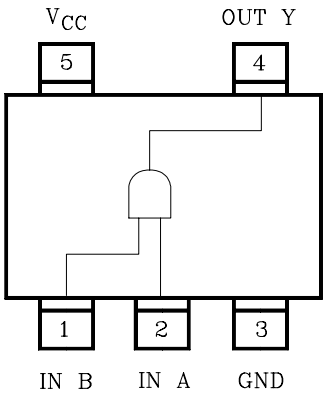
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	$-0.5\sim 6$	V
DC Input Voltage	V_{IN}	$-0.5\sim 6$	V
DC Output Voltage	V_{OUT}	$-0.5\sim 6$	V
Input Diode Current	I_{IK}	± 20	mA
Output Diode Current	I_{OK}	± 20	mA
DC Output Current	I_{OUT}	± 50	mA
DC V_{CC} /Ground Current	I_{CC}	± 50	mA
Power Dissipation	P_D	200	mW
Storage Temperature	T_{stg}	$-65\sim 150$	$^{\circ}\text{C}$
Lead Temperature (10s)	T_L	260	$^{\circ}\text{C}$



MARKING



PIN CONNECTION(TOP VIEW)





NJM2845/46

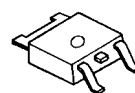
LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

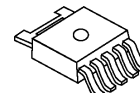
The NJM2845 is low dropout voltage regulator. Advanced Bipolar technology achieves low noise, high ripple rejection and low quiescent current.

NJM2845 is 3 terminal type and NJM2846 is ON/OFF control built in type. These product can be selected according to the applications.

■ PACKAGE OUTLINE



NJM2845DL1

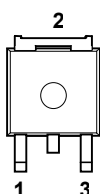


NJM2846DL3

■ FEATURES

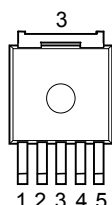
- High Ripple Rejection 75dB typ. (f=1kHz, 3V Version)
- Output Noise Voltage $V_{no}=45\mu V_{rms}$ typ. ($V_o=3V$ Version)
- Output capacitor with 2.2 μF ceramic capacitor ($V_o\geq 2.6V$)
- Output Current $I_o(max.)=800mA$
- High Precision Output $V_o\pm 1.0\%$
- Low Dropout Voltage 0.18V typ. ($I_o=500mA$)
- ON/OFF Control (NJM2846)
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline TO-252-3 (NJM2845DL1), TO-252-5 (NJM2846DL3)

■ PIN CONFIGURATION



NJM2845DL1

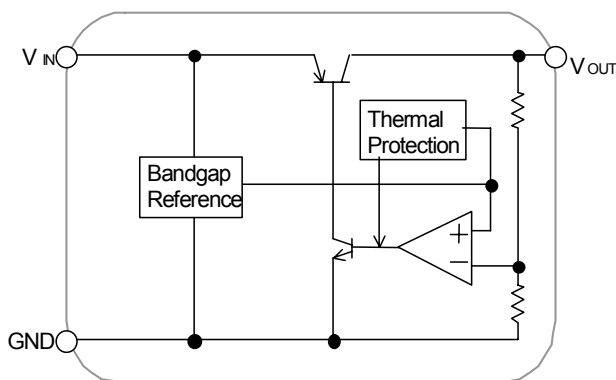
1. V_{IN}
2. GND
3. V_{OUT}



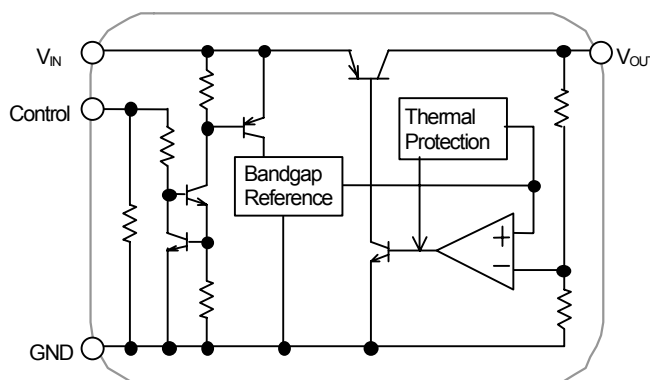
NJM2846DL3

1. CONTROL
2. V_{IN}
3. GND
4. V_o
5. NC

■ EQUIVALENT CIRCUIT



NJM2845DL1



NJM2846DL3

TOSHIBA**TC74VHC157F/FN/FT**

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74VHC157F, TC74VHC157FN, TC74VHC157FT**QUAD 2-CHANNEL MULTIPLEXER**

The TC74VHC157 is an advanced high speed CMOS QUAD 2-CHANNEL MULTIPLEXER fabricated with silicon gate C²MOS technology.

It achieves the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation.

It consists of four 2-input digital multiplexers with common select and strobe inputs.

When the STROBE input is held "H" level, selection of data is inhibited and all the outputs become "L" level.

The SELECT decoding determines whether the A or B inputs get routed to their corresponding Y outputs.

An Input protection circuit ensures that 0 to 5.5V can be applied to the input pins without regard to the supply voltage. This device can be used to interface 5V to 3V systems and on two supply systems such as battery back up. This circuit prevents device destruction due to mismatched supply and input voltages.

FEATURES:

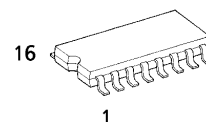
- High Speed..... $t_{pd} = 4.1\text{ns}(\text{typ.})$ at $V_{CC} = 5\text{V}$
- Low Power Dissipation..... $I_{CC} = 4\mu\text{A}(\text{Max.})$ at $T_a = 25^\circ\text{C}$
- High Noise Immunity..... $V_{NIH} = V_{NIL} = 28\% V_{CC}(\text{Min.})$
- Power Down Protection is provided on all inputs.
- Balanced Propagation Delays..... $t_{pLH} \approx t_{pHL}$
- Wide Operating Voltage Range..... $V_{CC}(\text{opr}) = 2\text{V} \sim 5.5\text{V}$
- Low Noise..... $V_{OLP} = 0.8\text{V}(\text{Max.})$
- Pin and Function Compatible with 74ALS157

TRUTH TABLE

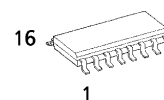
INPUTS				OUTPUT
$\overline{ST}$	SELECT	A	B	
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X: Don't Care

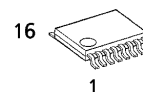
(Note) The JEDEC SOP (FN) is not available in Japan.



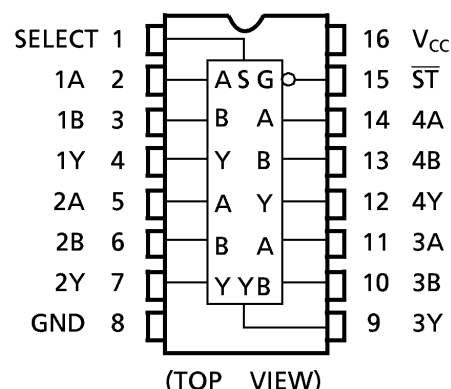
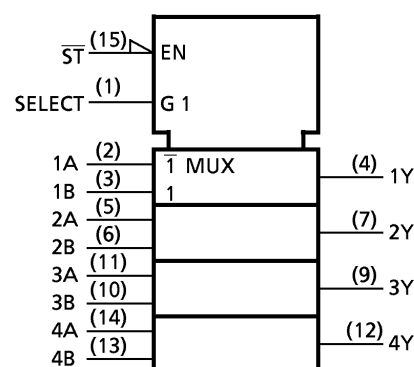
F (SOP16-P-300-1.27)
Weight : 0.18g (Typ.)



FN (SOL16-P-150-1.27)
Weight : 0.13g (Typ.)



FT (TSSOP16-P-0044-0.65)
Weight : 0.06g (Typ.)

PIN ASSIGNMENT**IEC LOGIC SYMBOL**

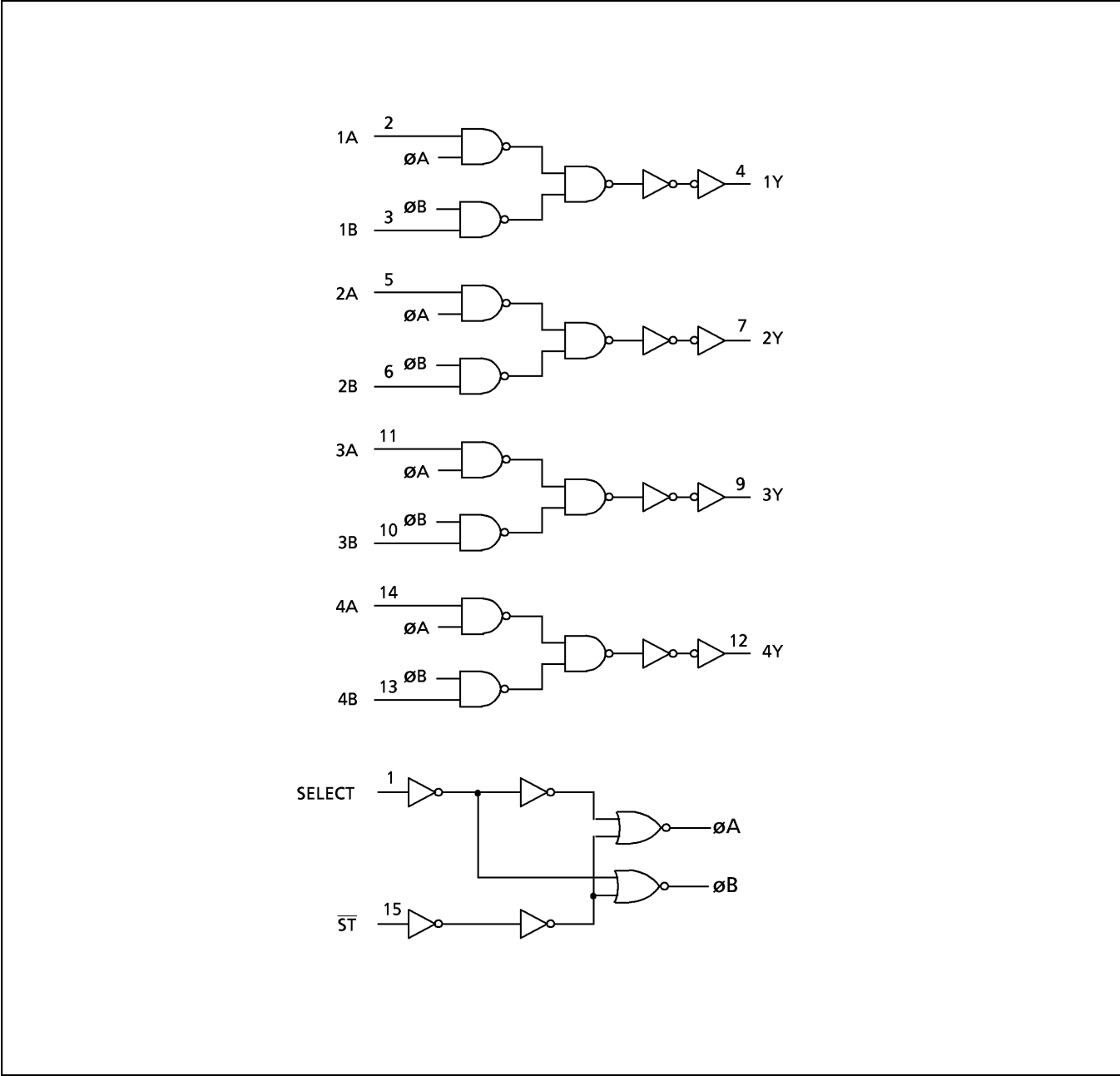
980910EBA2

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TOSHIBA

TC74VHC157F/FN/FT

SYSTEM DIAGRAM



980910EBA2'

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- The information contained herein is subject to change without notice.

TOSHIBA**TC74LCX541F/FW/FT**

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74LCX541F, TC74LCX541FW, TC74LCX541FT**LOW VOLTAGE OCTAL BUS BUFFER
WITH 5V TOLERANT INPUTS AND OUTPUTS**

The TC74LCX541 is a high performance CMOS OCTAL BUS BUFFER. Designed for use in 3.3 Volt systems, it achieves high speed operation while maintaining the CMOS low power dissipation.

The device is designed for low-voltage (3.3V) V_{CC} applications, but it could be used to interface to 5V supply environment for both inputs and outputs.

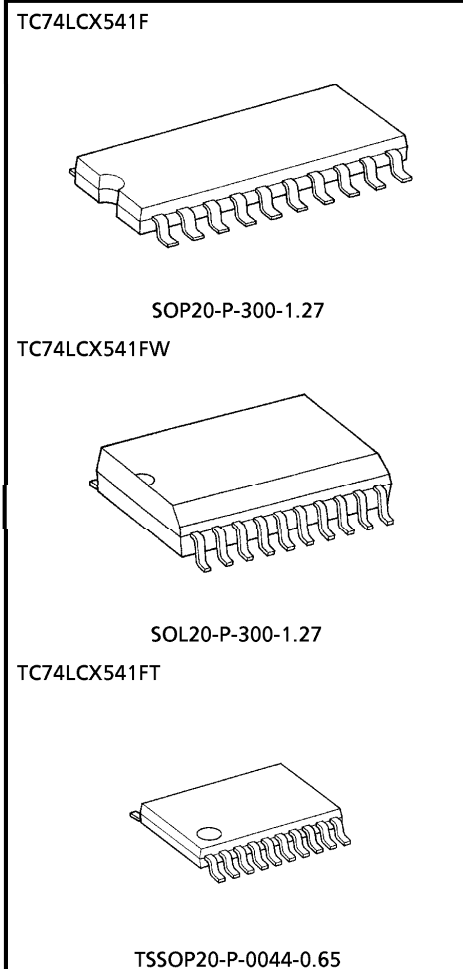
The 74LCX541 is a non-inverting 3-state buffer having two active-low output enables. When either $\overline{OE}1$ or $\overline{OE}2$ are high, the terminal outputs are in the high-impedance state. This device is designed to be used with 3-state memory address drivers, etc.

All inputs are equipped with protection circuits against static discharge.

FEATURES

- Low voltage operation : $V_{CC} = 2.0 \sim 3.6V$
- High speed operation : $t_{pd} = 6.5ns$ (Max.)
($V_{CC} = 3.0 \sim 3.6V$)
- Output current : $|I_{OH}| / I_{OL} = 24mA$ (Min.)
($V_{CC} = 3.0V$)
- Latch-up performance : $\pm 500mA$
- Available in JEDEC SOP, EIAJ SOP and TSSOP
- Power down protection is provided on all inputs and outputs.
- Pin and function compatible with the 74 series (74AC/VHC/HC/F/ALS/LS etc.) 541 type.

(Note) The JEDEC SOP (FW) is not available in Japan.

**Weight**

SOP20-P-300-1.27	: 0.22g (Typ.)
SOL20-P-300-1.27	: 0.46g (Typ.)
TSSOP20-P-0044-0.65	: 0.08g (Typ.)

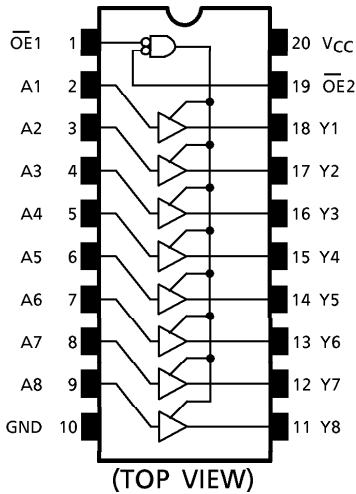
961001EBA2

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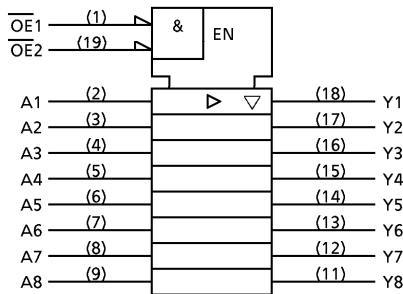
TOSHIBA

TC74LCX541F/FW/FT

PIN ASSIGNMENT



IEC LOGIC SYMBOL



TRUTH TABLE

INPUTS			OUTPUTS
OE1	OE2	An	
H	X	X	Z
X	H	X	Z
L	L	H	H
L	L	L	L

X : Don't Care
Z : High Impedance

MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage Range	V _{CC}	− 0.5~7.0	V
DC Input Voltage	V _{IN}	− 0.5~7.0	V
DC Output Voltage	V _{OUT}	− 0.5~7.0 (Note 1)	V
		− 0.5~V _{CC} + 0.5 (Note 2)	
Input Diode Current	I _{IK}	− 50	mA
Output Diode Current	I _{OK}	± 50 (Note 3)	mA
DC Output Current	I _{OUT}	± 50	mA
Power Dissipation	P _D	180	mW
DC V _{CC} /Ground Current	I _{CC} /I _{GND}	± 100	mA
Storage Temperature	T _{stg}	− 65~150	°C

(Note 1) Output in Off-State
(Note 2) High or Low State. I_{OUT} absolute maximum rating must be observed.
(Note 3) V_{OUT}<GND, V_{OUT}>V_{CC}

961001EBA2'

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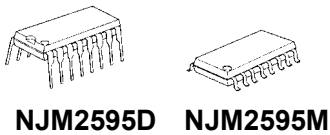
NJM2595

5-INPUT 3-OUTPUT VIDEO SWITCH

GENERAL DESCRIPTION

The **NJM2595** is a 5-input 3-output video switch. Its switches select one from five signals received from VTR,TV,DVD, TV-GAME and others.
The NJM2595 is designed for audio items, such as AV amplifier and others.

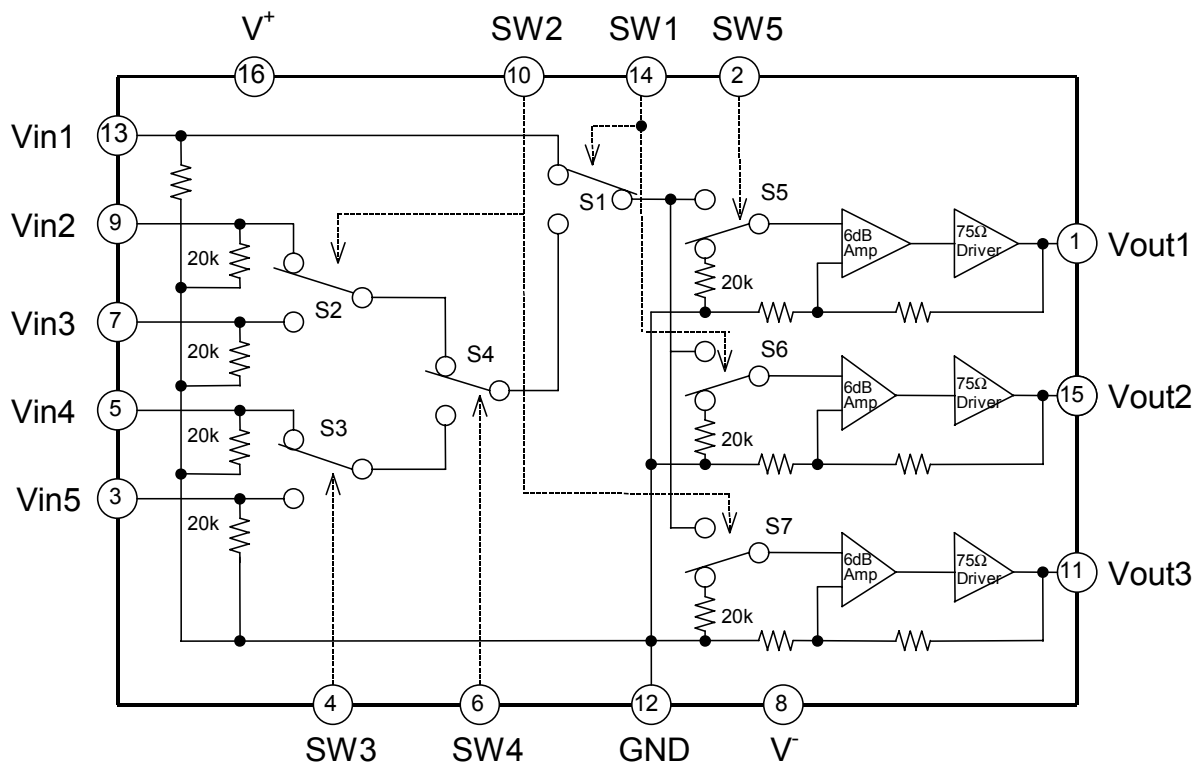
PACKAGE OUTLINE



FEATURES

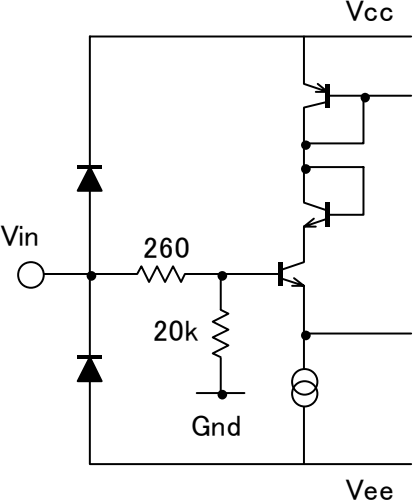
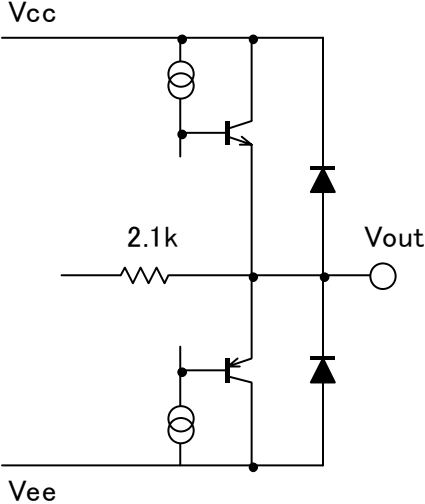
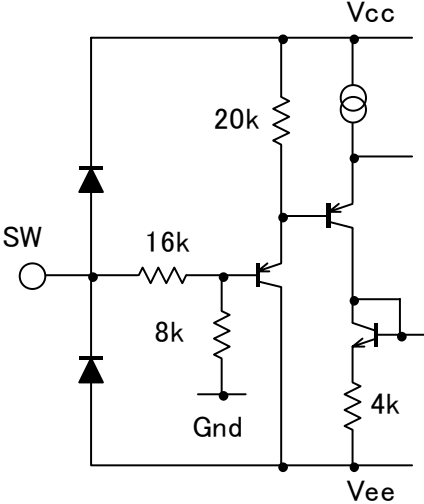
- 5-input 3-output
- Operating Voltage ± 4.0 to $\pm 6.5V$
- Operating current $\pm 15mA$ typ. at $V_{CC} = \pm 5V$
- Crosstalk $-65dB$ typ.
- Internal 6dB Amplifier
- Internal 75Ω Driver
- Bipolar Technology
- Package Outline DIP16,DMP16

PIN CONFIGURATION and BLOCK DIAGRAM



NJM2595

■ EQUIVALENT CIRCUIT

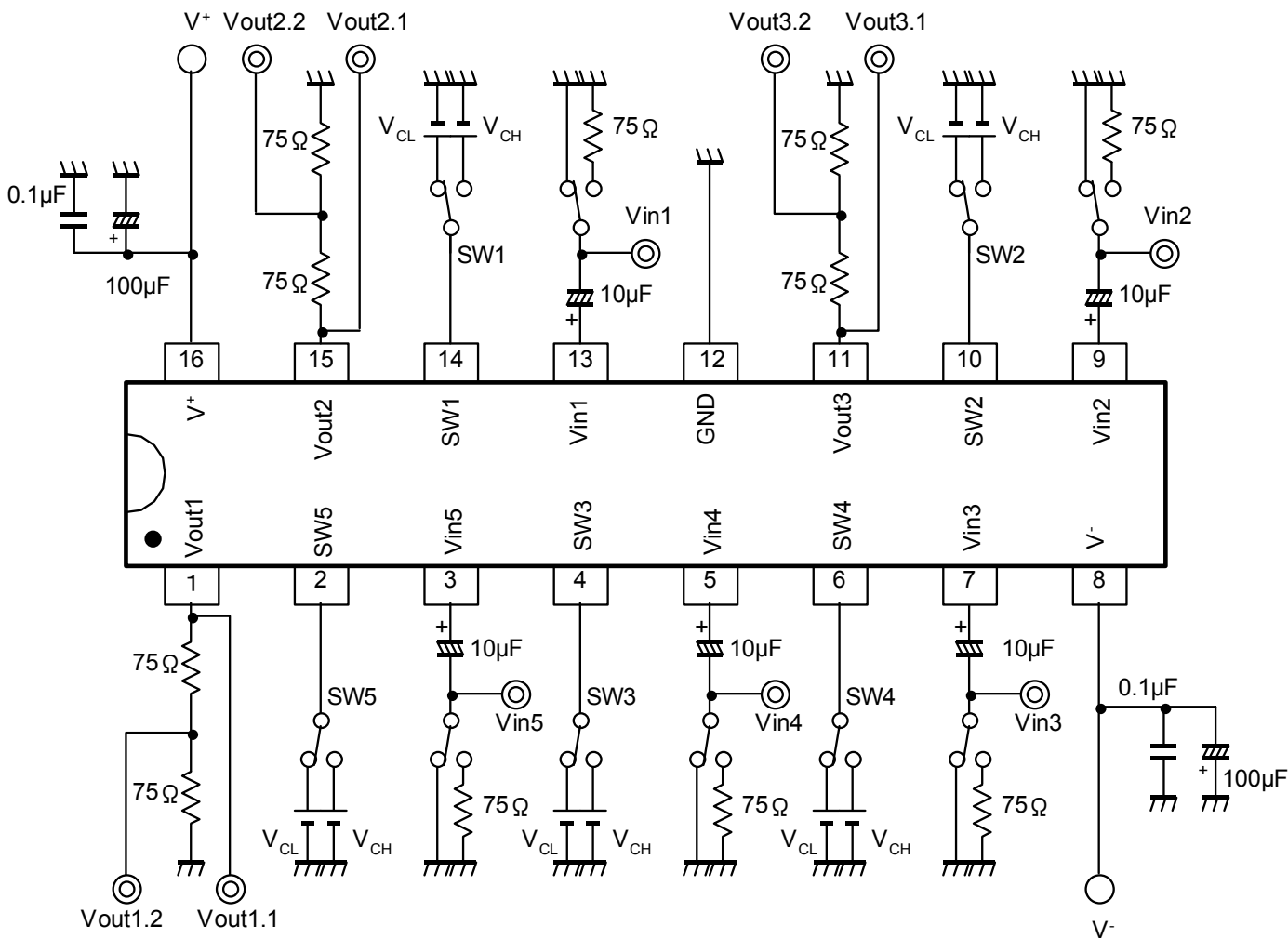
PIN No.	PIN NAME	INSIDE EQUIVALENT CIRCUIT	VOLTAGE
16	V ⁺		5V
8	V ⁻		-5V
12	GND		-
13 9 7 5 3	Vin1 Vin2 Vin3 Vin4 Vin5		0V
1 15 11	Vout1 Vout2 Vout3		0V
4 6 2	SW3 SW4 SW5		-

NJM2595

■ EQUIVALENT CIRCUIT

PIN No.	PIN NAME	INSIDE EQUIVALENT CIRCUIT	VOLTAGE
14 10	SW1 SW2		-

■ TEST CIRCUIT



NJM2068M (OP - AMP)



NJM2068

LOW-NOISE DUAL OPERATIONAL AMPLIFIER

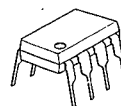
■ GENERAL DESCRIPTION

The NJM2068 is a high performance, low noise dual operational amplifier. This amplifier features popular pin-out, superior noise performance, and superior total harmonic distortion. This amplifier also features guaranteed noise performance with substantially higher gain-bandwidth product and slew rate which far exceeds that of the 4558 type amplifier. The specially designed low noise input transistors allow the NJM2068 to be used in very low noise signal processing applications such as audio preamplifiers and servo error amplifier.

■ FEATURES

- Operating Voltage $(\pm 4V \sim \pm 18V)$
- Low Total Harmonic Distortion $(0.001\% \text{ typ.})$
- Low Noise Voltage $(\text{FLAT+JISA}, 0.56 \mu\text{V typ.})$
- High Slew Rate $(6V/\mu\text{s typ.})$
- Unity Gain Bandwidth $(27\text{MHz @ } f=10\text{kHz})$
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ PACKAGE OUTLINE



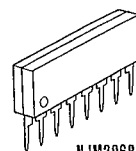
NJM2068D



NJM2068M

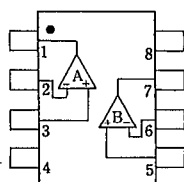


NJM2068V

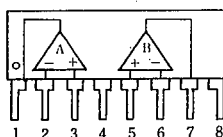


NJM2068L

■ PIN CONFIGURATION



NJM2068D
NJM2068M
NJM2068V

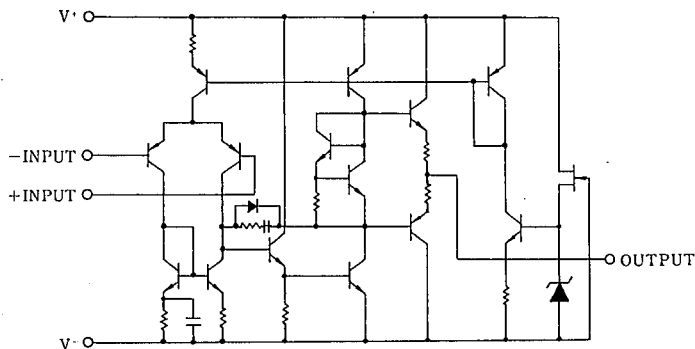


NJM2068L

PIN FUNCTION

1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V+

■ EQUIVALENT CIRCUIT (1/2 Shown)





NJM4556A

DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

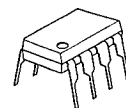
The NJM4556A integrated circuit is a high-gain, high output current dual operational amplifier capable of driving $\pm 70\text{mA}$ into $150\ \Omega$ loads ($\pm 10.5\text{V}$ output voltage), and operating low supply voltage ($V^+/V^- = \pm 2\text{V} \sim$).

The NJM4556A combines many of the fetures of the popular NJM4558 as well as having the capability of driving $150\ \Omega$ loads. In addition, the wide band-width, low noise, high slew rate and low distortion of the NJM4556A make it ideal for many audio, telecommunications and instrumentation applications.

■ FEATURES

- Operating Voltage $(\pm 2\text{V} \sim \pm 18\text{V})$
- High Output Current ($I_o = 70\text{mA}$)
- Slew Rate ($3\text{V}/\mu\text{s}$ typ.)
- Gain Band Width Product (8MHz typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

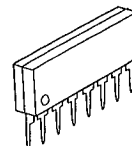
■ PACKAGE OUTLINE



NJM4556AD



NJM4556AM

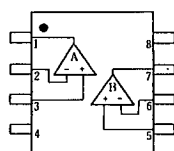


NJM4556AL

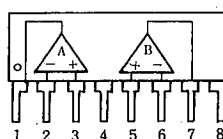


NJM4556AV

■ PIN CONFIGURATION



NJM4556AD
NJM4556AM
NJM4556AV

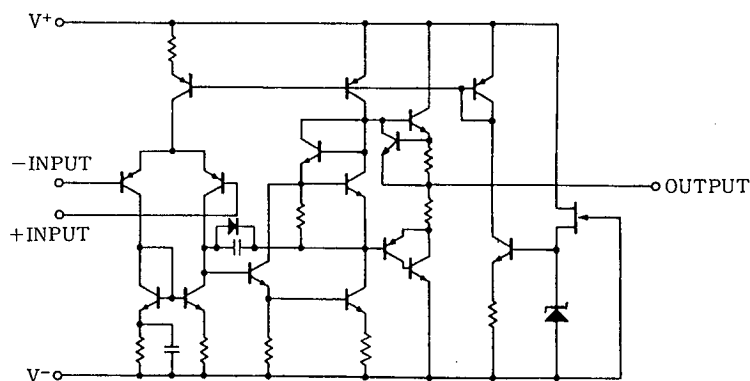


NJM4556AL

PIN FUNCTION

1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V^-
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V^+

■ EQUIVALENT CIRCUIT (1/2 Shown)



TOSHIBA

TC74HC4094AP/AF/AFN

TOSHIBA CMOS Digital Integrated Circuit Silicon Monolithic

TC74HC4094AP,TC74HC4094AF,TC74HC4094AFN

8-Bit Shift and Store Register (3-state)

The TC74HC4094A is a high speed CMOS 8-BIT SHIFT AND STROBE REGISTER fabricated with silicon gate C²MOS technology.

It achieves the high speed operation similar to equivalent LSTTL while maintaining the CMOS low power dissipation.

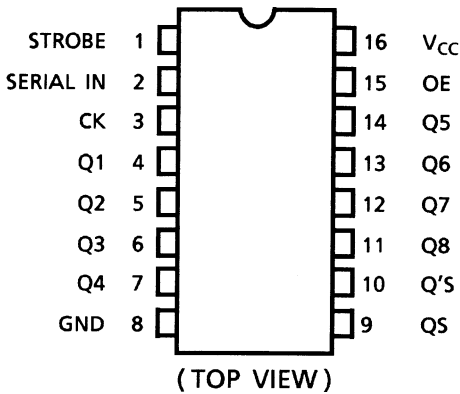
It consists of an 8-bit shift register and an 8-bit latch with 3-state output buffers. Data is shifted serially though the shift register on the positive going transition of the CK input. The output of the last stage (Qs) can be used to cascade several devices. Data on the Qs output is transferred to a second output (Q's) on the following negative transition of the CK input. The data in each stage of the shift register is provided to a corresponding latch, on the negative going transition of the STROBE input. When STROBE is held high, data propagates through the latch to a 3-state output buffer. This buffer is enabled when OUTPUT ENABLE input is set high.

All inputs are equipped with protection circuits against static discharge or transient excess voltage.

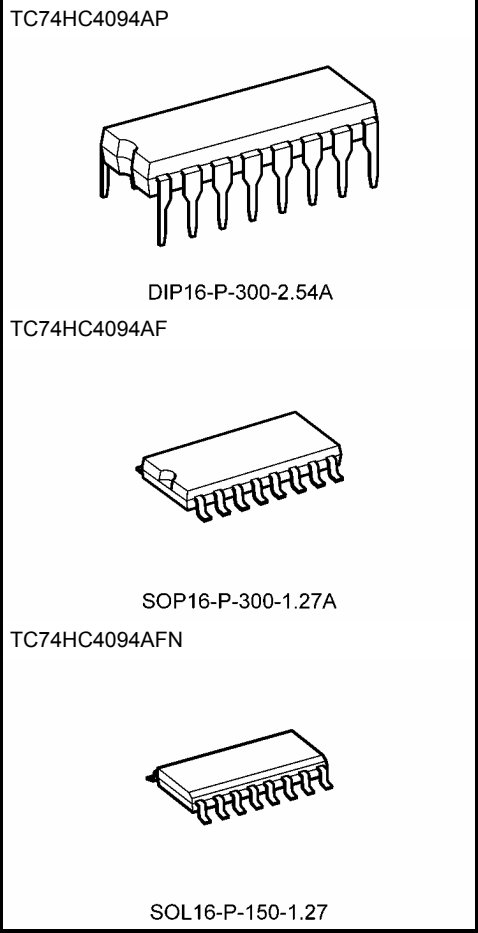
Features

- High speed: f_{max} = 73 MHz (typ.) at V_{CC} = 5 V
- Low power dissipation: I_{CC} = 4 μA (max) at Ta = 25°C
- High noise immunity: V_{NIH} = V_{NIL} = 28% V_{CC} (min)
- Output drive capability: 10 LSTTL loads
- Symmetrical output impedance: |I_{OH}| = I_{OL} = 4 mA (min)
- Balanced propagation delays: t_{pLH} ≈ t_{pHL}
- Wide operating voltage range: V_{CC} (opr) = 2 to 6 V
- Pin and function compatible with 4094B

Pin Assignment



Note: xxxFN (JEDEC SOP) is not available in Japan.

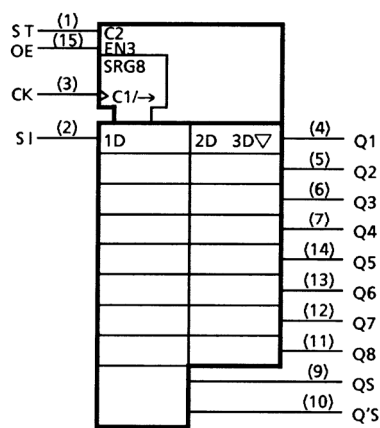


Weight	
DIP16-P-300-2.54A	: 1.00 g (typ.)
SOP16-P-300-1.27A	: 0.18 g (typ.)
SOL16-P-150-1.27	: 0.13 g (typ.)

TOSHIBA

TC74HC4094AP/AF/AFN

IEC Logic Symbol

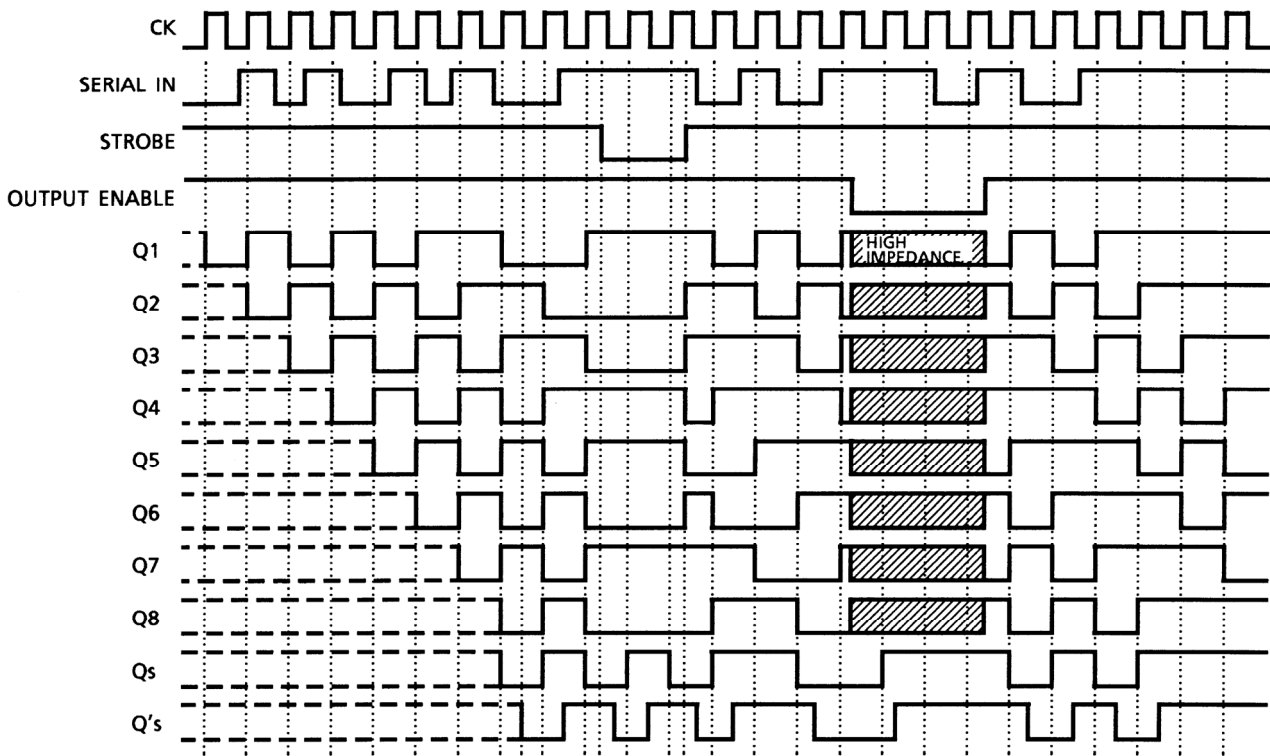


Truth Table

CK	OE	ST	SI	Para. Out		Seri. Out	
				Q1	Qn	Qs	Q's
	H	H	L	L	Qn - 1	Q7	NC
	H	H	H	H	Qn - 1	Q7	NC
	H	L	*	NC	NC	Q7	NC
	L	*	*	Z	Z	Q7	NC
	H	*	*	NC	NC	NC	Qs
	L	*	*	Z	Z	NC	Qs

X: Don't care
NC: No change
Z: High impedance

Timing Chart



SN74ALVCH16827
20-BIT BUFFER/DRIVER
WITH 3-STATE OUTPUTS

SCES041C – JULY 1995 – REVISED FEBRUARY 1999

- Member of the Texas Instruments *Widebus*™ Family
- *EPIC*™ (Enhanced-Performance Implanted CMOS) Submicron Process
- ESD Protection Exceeds 2000 V Per MIL-STD-883, Method 3015; Exceeds 200 V Using Machine Model (C = 200 pF, R = 0)
- Latch-Up Performance Exceeds 250 mA Per JESD 17
- Bus Hold on Data Inputs Eliminates the Need for External Pullup/Pulldown Resistors
- Package Options Include Plastic 300-mil Shrink Small-Outline (DL) and Thin Shrink Small-Outline (DGG) Packages

description

This 20-bit noninverting buffer/driver is designed for 1.65-V to 3.6-V V_{CC} operation.

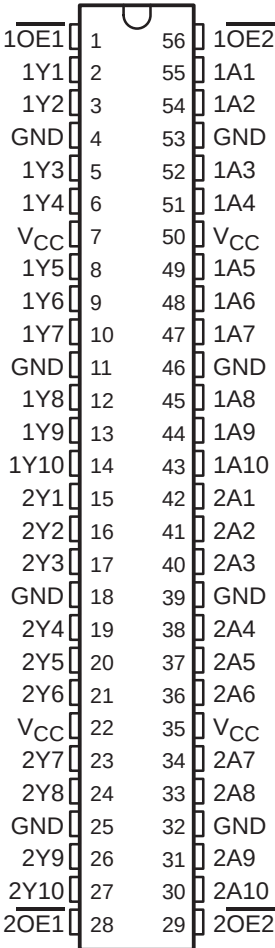
The SN74ALVCH16827 is composed of two 10-bit sections with separate output-enable signals. For either 10-bit buffer section, the two output-enable ($\overline{1OE1}$ and $\overline{1OE2}$ or $\overline{2OE1}$ and $\overline{2OE2}$) inputs must both be low for the corresponding Y outputs to be active. If either output-enable input is high, the outputs of that 10-bit buffer section are in the high-impedance state.

To ensure the high-impedance state during power up or power down, $\overline{OE}$ should be tied to V_{CC} through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

Active bus-hold circuitry is provided to hold unused or floating data inputs at a valid logic level.

The SN74ALVCH16827 is characterized for operation from -40°C to 85°C .

DGG OR DL PACKAGE
(TOP VIEW)



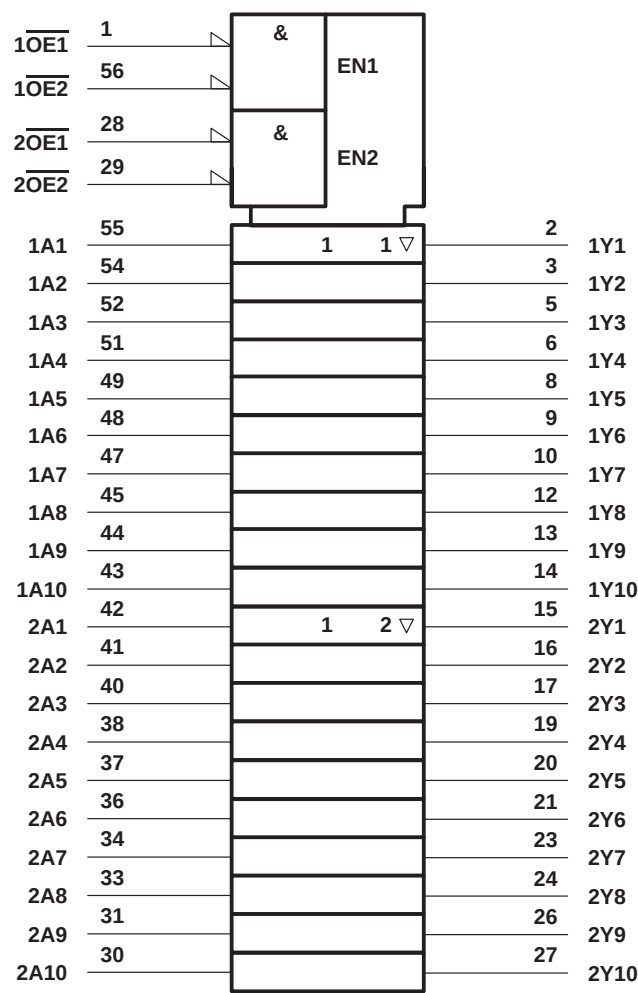
SN74ALVCH16827
20-BIT BUFFER/DRIVER
WITH 3-STATE OUTPUTS

SCES041C – JULY 1995 – REVISED FEBRUARY 1999

FUNCTION TABLE
(each 10-bit section)

INPUTS			OUTPUT
OE1	OE2	A	Y
L	L	L	L
L	L	H	H
H	X	X	Z
X	H	X	Z

logic symbol†



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

R5VT

PIN CONFIGURATION

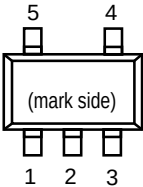
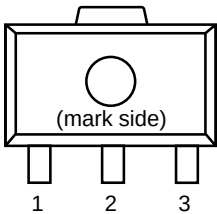
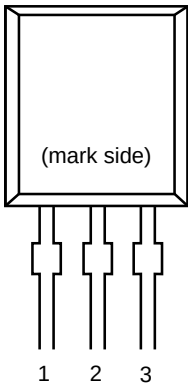
RE5VT28CATZ

RH5VT28C

• TO-92

• SOT-89

• SOT-23-5



PIN DESCRIPTION

• TO-92

• SOT-89

• SOT-23-5

Pin No.	Symbol
1	OUT
2	VDD
3	GND

Pin No.	Symbol
1	OUT
2	VDD
3	GND

Pin No.	Symbol
1	OUT
2	VDD
3	GND
4	NC
5	NC



74LCX32

LOW VOLTAGE CMOS QUAD 2-INPUT OR GATE WITH 5V TOLERANT INPUTS

- 5V TOLERANT INPUTS
- HIGH SPEED:
 $t_{PD} = 5.2\text{ns (MAX.) at } V_{CC} = 3\text{V}$
- POWER DOWN PROTECTION ON INPUTS AND OUTPUTS
- SYMMETRICAL OUTPUT IMPEDANCE:
 $|I_{OH}| = I_{OL} = 24\text{mA (MIN) at } V_{CC} = 3\text{V}$
- PCI BUS LEVELS GUARANTEED AT 24 mA
- BALANCED PROPAGATION DELAYS:
 $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
 $V_{CC(OPR)} = 2.0\text{V to } 3.6\text{V (1.5V Data Retention)}$
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 32
- LATCH-UP PERFORMANCE EXCEEDS 500mA (JESD 17)
- ESD PERFORMANCE:
 $\text{HBM} > 2000\text{V (MIL STD 883 method 3015);}$
 $\text{MM} > 200\text{V}$

DESCRIPTION

The 74LCX32 is a low voltage CMOS QUAD 2-INPUT OR GATE fabricated with sub-micron silicon gate and double-layer metal wiring C²MOS

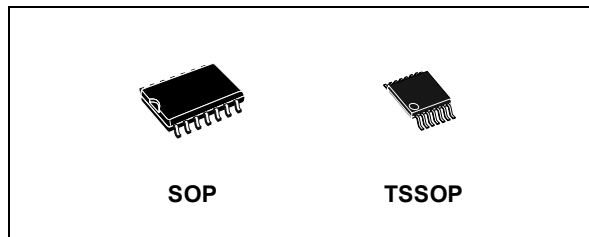


Table 1: Order Codes

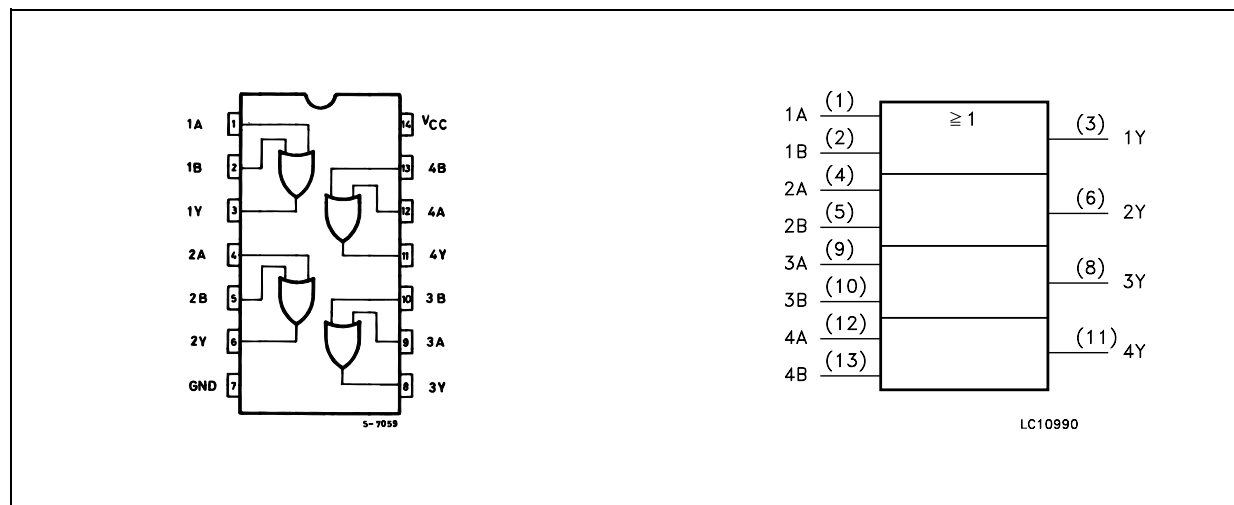
PACKAGE	T & R
SOP	74LCX32MTR
TSSOP	74LCX32TTR

technology. It is ideal for low power and high speed 3.3V applications; it can be interfaced to 5V signal environment for inputs.

It has same speed performance at 3.3V than 5V AC/ACT family, combined with a lower power consumption.

All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

Figure 1: Pin Connection And IEC Logic Symbols



74LCX32

Figure 2: Input And Output Equivalent Circuit

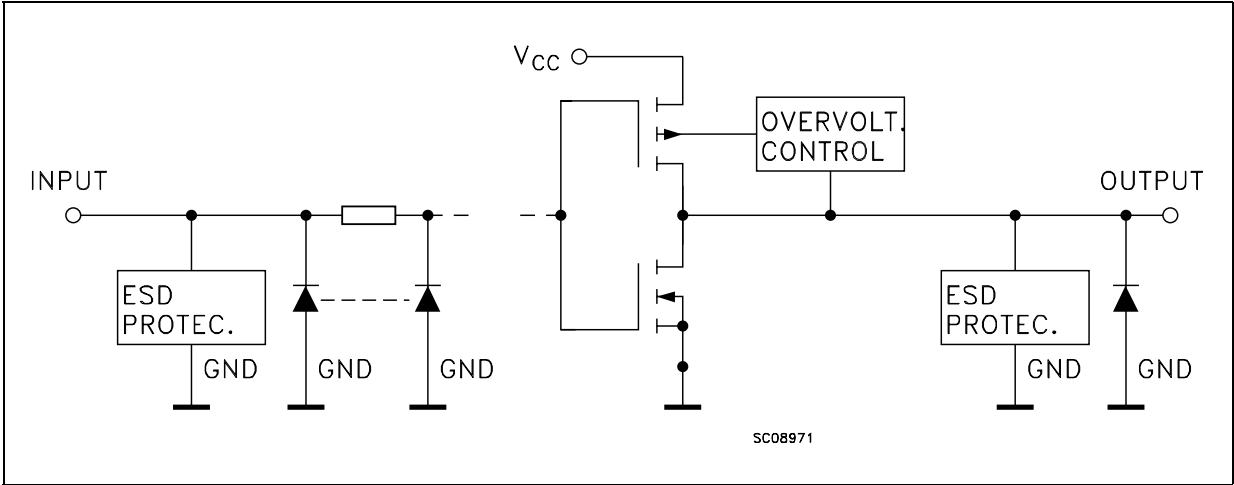


Table 2: Pin Description

PIN N°	SYMBOL	NAME AND FUNCTION
1, 4, 9, 12	1A to 4A	Data Inputs
2, 5, 10, 13	1B to 4B	Data Inputs
3, 6, 8, 11	1Y to 4Y	Data Outputs
7	GND	Ground (0V)
14	V _{CC}	Positive Supply Voltage

Table 3: Truth Table

A	B	Y
L	L	L
L	H	H
H	L	H
H	H	H

Table 4: Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	-0.5 to +7.0	V
V _I	DC Input Voltage	-0.5 to +7.0	V
V _O	DC Output Voltage (V _{CC} = 0V)	-0.5 to +7.0	V
V _O	DC Output Voltage (High or Low State) (note 1)	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	- 50	mA
I _{OK}	DC Output Diode Current (note 2)	- 50	mA
I _O	DC Output Current	± 50	mA
I _{CC}	DC Supply Current per Supply Pin	± 100	mA
I _{GND}	DC Ground Current per Supply Pin	± 100	mA
T _{stg}	Storage Temperature	-65 to +150	°C
T _L	Lead Temperature (10 sec)	300	°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these conditions is not implied
1) I_O absolute maximum rating must be observed
2) V_O < GND



74ACT04

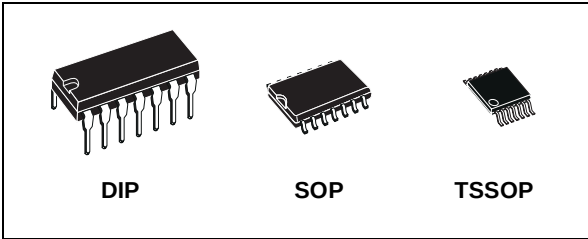
HEX INVERTER

- HIGH SPEED: $t_{PD} = 5.0ns$ (TYP.) at $V_{CC} = 5V$
- LOW POWER DISSIPATION:
 $I_{CC} = 2\mu A$ (MAX.) at $T_A=25^{\circ}C$
- COMPATIBLE WITH TTL OUTPUTS
 $V_{IH} = 2V$ (MIN.), $V_{IL} = 0.8V$ (MAX.)
- 50Ω TRANSMISSION LINE DRIVING CAPABILITY
- SYMMETRICAL OUTPUT IMPEDANCE:
 $|I_{OH}| = I_{OL} = 24mA$ (MIN)
- BALANCED PROPAGATION DELAYS:
 $t_{PLH} \approx t_{PHL}$
- OPERATING VOLTAGE RANGE:
 V_{CC} (OPR) = 4.5V to 5.5V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 04
- IMPROVED LATCH-UP IMMUNITY

DESCRIPTION

The 74ACT04 is an advanced high-speed CMOS HEX INVERTER fabricated with sub-micron silicon gate and double-layer metal wiring C²MOS technology.

The internal circuit is composed of 3 stages including buffer output, which enables high noise immunity and stable output.



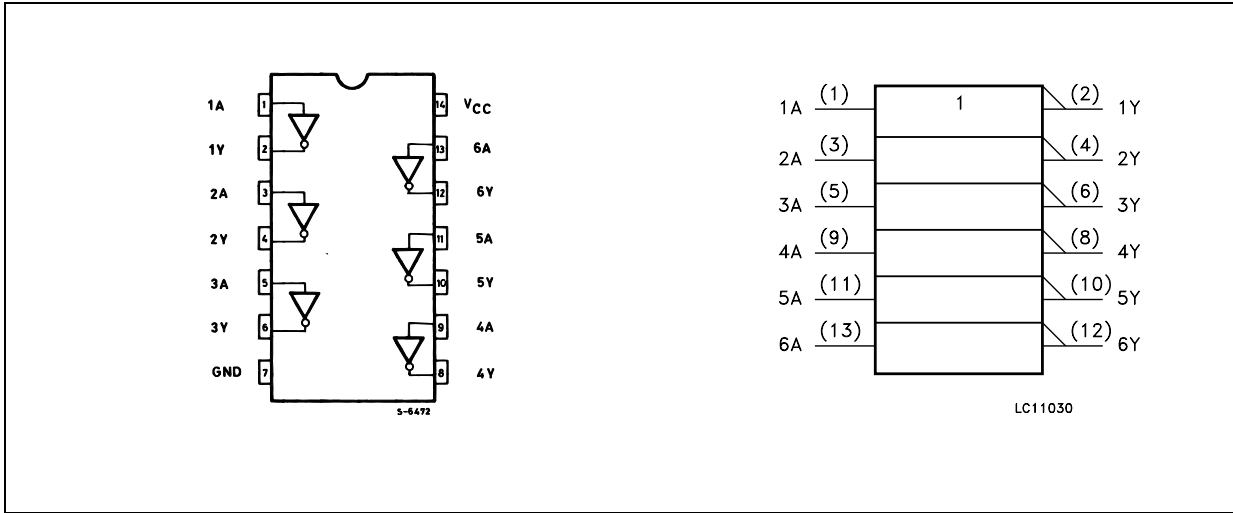
ORDER CODES

PACKAGE	TUBE	T & R
DIP	74ACT04B	
SOP	74ACT04M	74ACT04MTR
TSSOP		74ACT04TTR

The device is designed to interface directly High Speed CMOS systems with TTL, NMOS and CMOS output voltage levels.

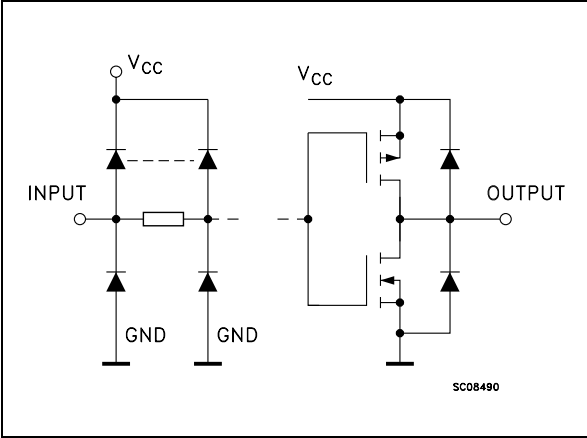
All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

PIN CONNECTION AND IEC LOGIC SYMBOLS



74ACT04

INPUT AND OUTPUT EQUIVALENT CIRCUIT



PIN DESCRIPTION

PIN No	SYMBOL	NAME AND FUNCTION
1, 3, 5, 9, 11, 13	1A to 6A	Data Inputs
2, 4, 6, 8, 10, 12	1Y to 6Y	Data Outputs
7	GND	Ground (0V)
14	V _{CC}	Positive Supply Voltage

TRUTH TABLE

A	Y
L	H
H	L

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	-0.5 to +7	V
V _I	DC Input Voltage	-0.5 to V _{CC} + 0.5	V
V _O	DC Output Voltage	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	± 20	mA
I _{OK}	DC Output Diode Current	± 20	mA
I _O	DC Output Current	± 50	mA
I _{CC} or I _{GND}	DC V _{CC} or Ground Current	± 200	mA
T _{stg}	Storage Temperature	-65 to +150	°C
T _L	Lead Temperature (10 sec)	300	°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these conditions is not implied.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	4.5 to 5.5	V
V _I	Input Voltage	0 to V _{CC}	V
V _O	Output Voltage	0 to V _{CC}	V
T _{op}	Operating Temperature	-55 to 125	°C
dt/dv	Input Rise and Fall Time V _{CC} = 4.5 to 5.5V (note 1)	8	ns/V

1) V_{IN} from 0.8V to 2.0V





CS42528

114 dB, 192 kHz 8-Ch Codec with S/PDIF Receiver

Features

- Eight 24-bit D/A, two 24-bit A/D Converters
- 114 dB DAC / 114 dB ADC Dynamic Range
- -100 dB THD+N
- System Sampling Rates up to 192 kHz
- S/PDIF Receiver Compatible with EIAJ CP1201 and IEC-60958
- Recovered S/PDIF Clock or System Clock Selection
- 8:2 S/PDIF Input MUX
- ADC High-pass Filter for DC Offset Calibration
- Expandable ADC Channels and One-line Mode Support
- Digital Output Volume Control with Soft Ramp
- Digital +/-15dB Input Gain Adjust for ADC
- Differential Analog Architecture
- Supports logic levels between 5 V and 1.8 V.

General Description

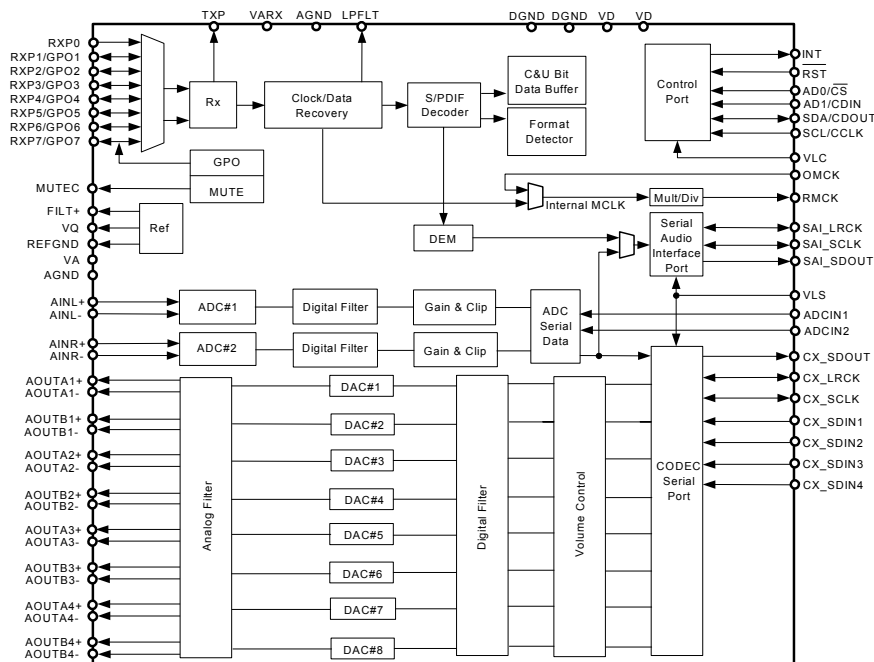
The CS42528 codec provides two analog-to-digital and eight digital-to-analog delta-sigma converters, as well as an integrated S/PDIF receiver, in a 64-pin LQFP package.

The CS42528 integrated S/PDIF receiver supports up to eight inputs, clock recovery circuitry and format auto-detection. The internal stereo ADC is capable of independent channel gain control for single-ended or differential analog inputs. All eight channels of DAC provide digital volume control and differential analog outputs. The general purpose outputs may be driven high or low, or mapped to a variety of DAC mute controls or ADC overflow indicators.

The CS42528 is ideal for audio systems requiring wide dynamic range, negligible distortion and low noise, such as A/V receivers, DVD receivers, digital speaker and automotive audio systems.

ORDERING INFORMATION

CS42528-CQZ	-10° to 70° C	64-pin LQFP	Lead Free
CS42528-DQZ	-40° to 85° C	64-pin LQFP	Lead Free
CDB42528	Evaluation Board		

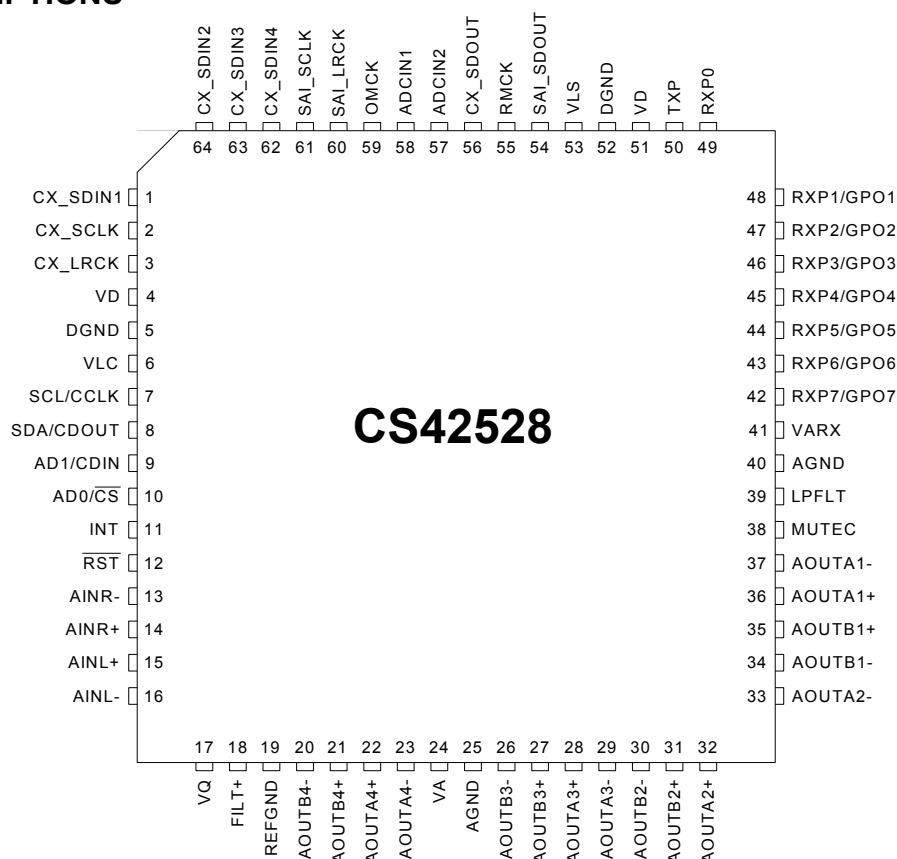


Preliminary Product Information

Cirrus Logic, Inc.
<http://www.cirrus.com>

CS42528

2. PIN DESCRIPTIONS



Pin Name	#	Pin Description
CX_SDIN1	1	Codec Serial Audio Data Input (Input) - Input for two's complement serial audio data.
CX_SDIN2	64	
CX_SDIN3	63	
CX_SDIN4	62	
CX_SCLK	2	CODEC Serial Clock (Input/Output) - Serial clock for the CODEC serial audio interface.
CX_LRCK	3	CODEC Left Right Clock (Input/Output) - Determines which channel, Left or Right, is currently active on the CODEC serial audio data line.
VD	4 51	Digital Power (Input) - Positive power supply for the digital section.
DGND	5 52	Digital Ground (Input) - Ground reference. Should be connected to digital ground.
VLC	6	Control Port Power (Input) - Determines the required signal level for the control port.
SCL/CCLK	7	Serial Control Port Clock (Input) - Serial clock for the serial control port. Requires an external pull-up resistor to the logic interface voltage in I ² C mode as shown in the Typical Connection Diagram.
SDA/CDOUT	8	Serial Control Data (Input/Output) - SDA is a data I/O line in I ² C mode and requires an external pull-up resistor to the logic interface voltage, as shown in the Typical Connection Diagram. CDOUT is the output data line for the control port interface in SPI mode.
AD1/CDIN	9	Address Bit 1 (I²C)/Serial Control Data (SPI) (Input) - AD1 is a chip address pin in I ² C mode; CDIN is the input data line for the control port interface in SPI mode.

CS42528

AD0/$\overline{\text{CS}}$	10	Address Bit 0 (I²C)/Control Port Chip Select (SPI) (Input) - AD0 is a chip address pin in I ² C mode; $\overline{\text{CS}}$ is the chip select signal in SPI mode.
INT	11	Interrupt (Output) - The CS42528 will generate an interrupt condition as per the Interrupt Mask register. See "Interrupts" on page 40 for more details.
RST	12	Reset (Input) - The device enters a low power mode and all internal registers are reset to their default settings when low.
AINR- AINR+	13 14	Differential Right Channel Analog Input (Input) - Signals are presented differentially to the delta-sigma modulators via the AINR+/- pins.
AINL+ AINL-	15 16	Differential Left Channel Analog Input (Input) - Signals are presented differentially to the delta-sigma modulators via the AINL+/- pins.
VQ	17	Quiescent Voltage (Output) - Filter connection for internal quiescent reference voltage.
FILT+	18	Positive Voltage Reference (Output) - Positive reference voltage for the internal sampling circuits.
REFGND	19	Reference Ground (Input) - Ground reference for the internal sampling circuits.
AOUTA1 +,- AOUTB1 +,- AOUTA2 +,- AOUTB2 +,- AOUTA3 +,- AOUTB3 +,- AOUTA4 +,- AOUTB4 +,-	36,37 35,34 32,33 31,30 28,29 27,26 22,23 21,20	Differential Analog Output (Output) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
VA VARX	24 41	Analog Power (Input) - Positive power supply for the analog section.
AGND	25 40	Analog Ground (Input) - Ground reference. Should be connected to analog ground.
MUTEC	38	Mute Control (Output) - The Mute Control pin outputs high impedance following an initial power-on condition or whenever the PDN bit is set to a '1', forcing the codec into power-down mode. The signal will remain in a high impedance state as long as the part is in power-down mode. The Mute Control pin goes to the selected "active" state during reset, muting, or if the master clock to left/right clock frequency ratio is incorrect. This pin is intended to be used as a control for external mute circuits to prevent the clicks and pops that can occur in any single supply system. The use of external mute circuits are not mandatory but may be desired for designs requiring the absolute minimum in extraneous clicks and pops.
LPFLT	39	PLL Loop Filter (Output) - An RC network should be connected between this pin and ground.
RXP7/GPO7 RXP6/GPO6 RXP5/GPO5 RXP4/GPO4 RXP3/GPO3 RXP2/GPO2 RXP1/GPO1	42 43 44 45 46 47 48	S/PDIF Receiver Input/ General Purpose Output (Input/Output) - Receiver inputs for S/PDIF encoded data. The CS42528 has an internal 8:2 multiplexer to select the active receiver port, according to the Receiver Mode Control 2 register. These pins can also be configured as general purpose output pins, ADC Overflow indicators or Mute Control outputs according to the RXP/General Purpose Pin Control registers.
RXP0	49	S/PDIF Receiver Input (Input) - Dedicated receiver input for S/PDIF encoded data.
TXP	50	S/PDIF Transmitter Output (Output) - S/PDIF encoded data output, mapped directly from one of the receiver inputs as indicated by the Receiver Mode Control 2 register.
VLS	53	Serial Port Interface Power (Input) - Determines the required signal level for the serial port interfaces.
SAI_SDOUT	54	Serial Audio Interface Serial Data Output (Output) - Output for two's complement serial audio PCM data from the S/PDIF incoming stream. This pin can also be configured to transmit the output of the internal and external ADCs.
RMCK	55	Recovered Master Clock (Output) - Recovered master clock output from the External Clock Reference (OMCK, pin 59) or the PLL which is locked to the incoming S/PDIF stream or CX_LRCK.

CS42528

CX_SDOUT	56	CODEC Serial Data Output (<i>Output</i>) - Output for two's complement serial audio data from the internal and external ADCs.
ADCIN1	58	External ADC Serial Input (<i>Input</i>) - The CS42528 provides for up to two external stereo analog to digital converter inputs to provide a maximum of six channels on one serial data output line when the CS42528 is placed in One Line mode.
ADCIN2	57	
OMCK	59	External Reference Clock (<i>Input</i>) - External clock reference that must be within the ranges specified in the register "OMCK Frequency (OMCK Freqx)" on page 54.
SAI_LRCK	60	Serial Audio Interface Left/Right Clock (<i>Input/Output</i>) - Determines which channel, Left or Right, is currently active on the serial audio data line.
SAI_SCLK	61	Serial Audio Interface Serial Clock (<i>Input/Output</i>) - Serial clock for the Serial Audio Interface.



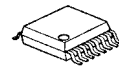
NJW1159

2-CHANNEL ELECTRONIC VOLUME

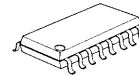
■ GENERAL DESCRIPTION

NJW1159 is a two channel electronic volume IC. It is included output buffer amplifier and also resistor output terminal for using external amplifier to customize for your application. These functions are controlled by three-wired serial data. And the chip selector is available for using four chips on same serial bus line. It's available for two-channel stereo and or multi-channel audio volume.

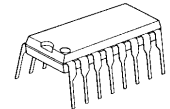
■ PACKAGE OUTLINE



NJW1159V



NJW1159M



NJW1159D

■ FEATURES

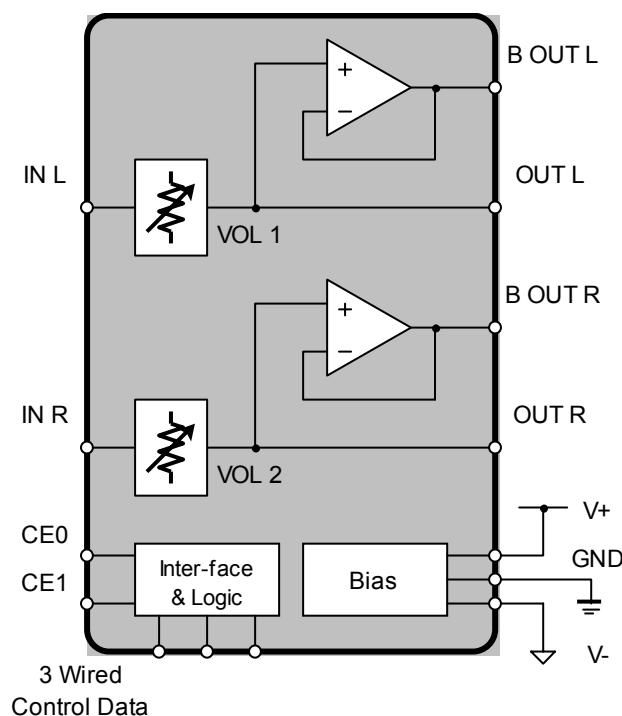
- Operating Voltage
- Three-Wired Serial Data Control
- Chip Selector
- Volume
- Bi-CMOS Technology
- Package Outline

± 4.5 to ± 7.5 V

available for using four chips on same serial bus line.
0 to -95dB/1dBstep, MUTE

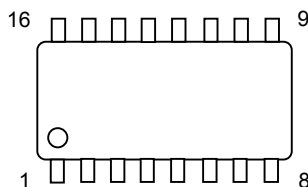
SSOP16, DMP16, DIP16

■ BLOCK DIAGRAM



NJW1159

PIN ASSIGNMENT



No.	Symbol	Function
1	OUTL	Lch External Opamp Input Connection Terminal
2	BOU TL	Lch Output
3	VDD_OUT	Internal VDD Noise Rejection Capacitor Terminal
4	BOU TR	Rch Output
5	OUTR	Rch External Opamp Input Connection Terminal
6	VSS_OUT	Internal VSS Noise Rejection Capacitor Terminal
7	V+	+ Power supply voltage input
8	V-	- Power supply voltage input
9	INL	Lch Input
10	INR	Rch Input
11	CE0	Chip Enable Terminal 0
12	CE1	Chip Enable Terminal 1
13	DATA	Control data signal input
14	CLOCK	Clock signal input
15	LACTH	Latch signal input
16	GND	Ground

ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Power Supply Voltage	V^+/V^-	+8/-8	V
Maximum Input Voltage	V_{IM}	$V^+/V^-^{(*)}$	V
Power Dissipation	P_D	SSOP16 ; 300 DMP16 ; 300 DIP16 ; 500	mW
Operating Temperature Range	T_{opr}	-40 to +85	°C
Storage Temperature Range	T_{stg}	-40 to +125	°C

(*) For the maximum input voltage less than V^+/V^-

ELECTRICAL CHARACTERISTICS (Ta=25°C, $V^+/V^- = +7V/-7V$, $R_L=47k\Omega$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
◆ Power Supply						
Operating Voltage 1	V+		4.5	7.0	7.5	V
Operating Voltage 2	V-		-7.5	-7.0	-4.5	V
Supply Current 1	I_{CC}	No signal	-	4.5	9.0	mA
Supply Current 2	I_{EE}	No signal	-	4.5	9.0	mA
◆ Input/Output Characteristics (BOU TL : 2pin, BOU TR : 4pin)						
Maximum Output Voltage	V_{OM}	f=1kHz, THD=1% Volume=0dB	3.0	4.0	-	Vrms
Voltage Gain	G_V	$V_{IN}=1V_{rms}$, f=1kHz Volume=0dB	-0.5	0	0.5	dB
Channel Gain Balance 1	ΔG_{V1}	$V_{IN}=1V_{rms}$, f=1kHz Volume=0dB	-0.5	0	0.5	dB
Channel Gain Balance 2	ΔG_{V2}	$V_{IN}=1V_{rms}$, f=1kHz Volume=-60dB	-1.0	0	1.0	dB
Maximum Attenuation	A_{TT}	$V_{IN}=1V_{rms}$, f=1kHz Volume=-95dB, A-weight	-	-95	-	dB
Mute Level	Mute	$V_{IN}=1V_{rms}$, f=1kHz Volume=Mute, A-weight	-	-110	-	dB
Output Noise Voltage	V_{NO}	Volume=0dB, $R_g=0\Omega$, A-weight	-	-105 (5.6 μ)	-95 (17.8 μ)	dBV (Vrms)
Total Harmonic Distortion	THD	$V_o=1V_{rms}$, f=1kHz, Volume=0dB, BW=400-30kHz	-	0.005	0.05	%
Channel Separation	CS	$V_o=1V_{rms}$, f=1kHz, A-weight Volume=0dB, $R_g=0\Omega$	-	-100	-90	dB



KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KIA78R05PI~
KIA78R15PI

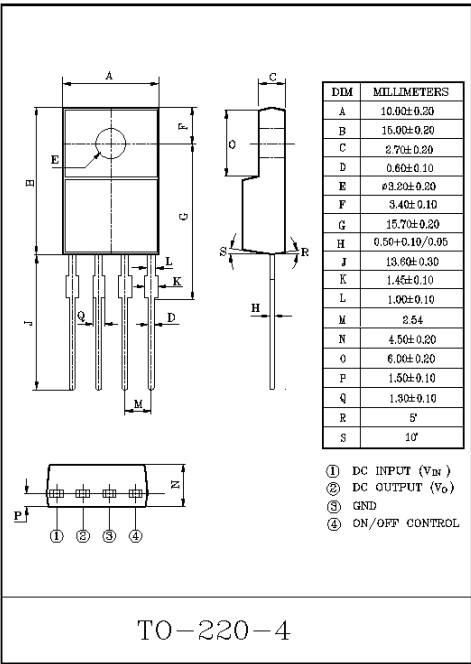
BIPOLAR LINEAR INTEGRATED CIRCUIT

4 TERMINAL LOW DROP VOLTAGE REGULATOR

The KIA78R×× Series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.

FEATURES

- 1.0A Output Low Drop Voltage Regulator.
- Built in ON/OFF Control Terminal.
- Built in Over Current Protection, Over Heat Protection Function.



MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V _{IN}	35	V	-
ON/OFF Control Voltage	V _C	35	V	-
Output Current	I _O	1	A	-
Power Dissipation 1	P _{d1}	1.5	W	No heatsink
Power Dissipation 2	P _{d2}	15	W	with heatsink
Junction Temperature	T _j	125	℃	-
Operating Temperature	T _{opr}	-20~80	℃	-
Storage Temperature	T _{stg}	-30~125	℃	-
Soldering Temperature (10sec)	T _{sol}	260	℃	-

KEC

SEMICONDUCTOR
TECHNICAL DATA

KIA278R05PI~KIA278R15PI
BIPOLAR LINEAR INTEGRATED CIRCUIT

4 TERMINAL 2A OUTPUT LOW DROP
VOLTAGE REGULATOR

The KIA278R × × Series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.

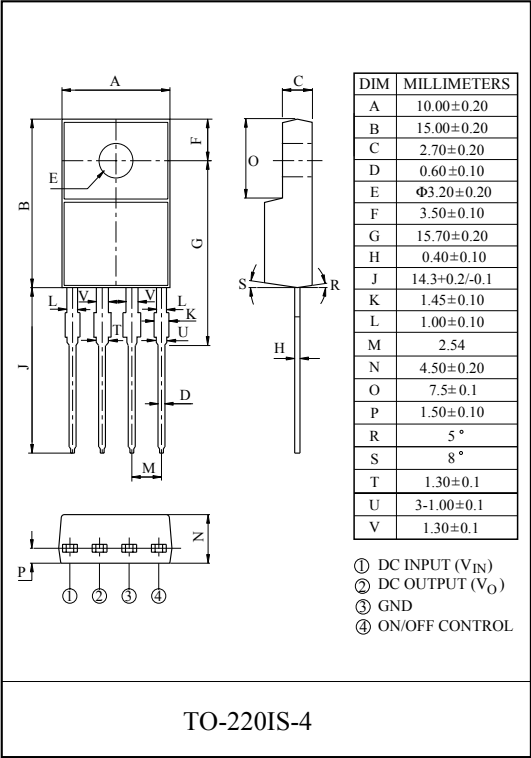
FEATURES

- 2.0A Output Low Drop Voltage Regulator.
- Built in ON/OFF Control Terminal.
- Built in Over Current Protection, Over Heat Protection Function.

LINE UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
KIA278R05PI	5	V
KIA278R06PI	6	
KIA278R08PI	8	
KIA278R09PI	9	
KIA278R10PI	10	
KIA278R12PI	12	
* KIA278R15PI	15	

* Note) * : Under Development.



MAXIMUM RATING (Ta=25℃)

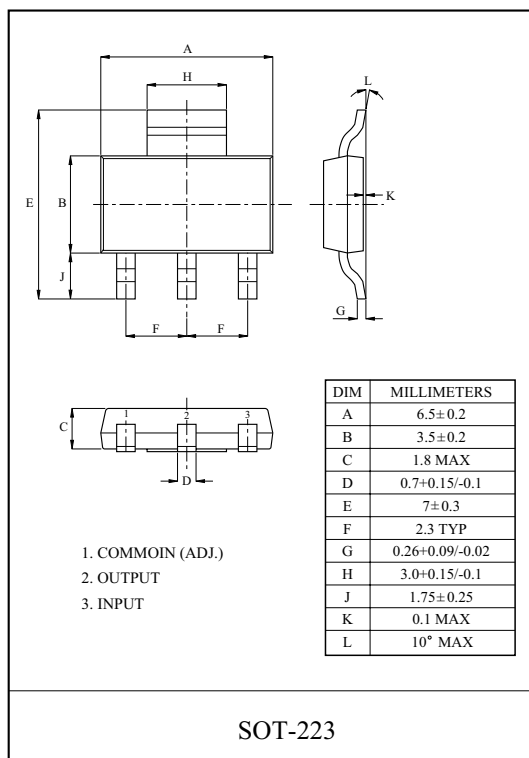
CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V _{IN}	35	V	-
ON/OFF Control Voltage	V _C	35	V	-
Output Current	I _O	2	A	-
Power Dissipation 1	P _{d1}	1.5	W	No heatsink
Power Dissipation 2	P _{d2}	15	W	with heatsink
Junction Temperature	T _j	125	℃	-
Operating Temperature	T _{opr}	-20 ~ 80	℃	-
Storage Temperature	T _{stg}	-30 ~ 125	℃	-
Soldering Temperature (10sec)	T _{sol}	260	℃	-

KEC**SEMICONDUCTOR
TECHNICAL DATA****KIA1117S/F00~
KIA1117S/F50****BIPOLAR LINEAR INTEGRATED CIRCUIT****LOW DROP FIXED AND ADJUSTABLE
POSITIVE VOLTAGE REGULATOR**

The KIA1117S/F $\times \times$ is a Low Drop Voltage Regulator able to provide up to 1A of output current, available even in adjustable version ($V_{ref}=1.25V$)

FEATURES

- Low Dropout Voltage : 1.1V/Typ. ($I_{out}=1.0A$)
- Very Low Quiescent Current : 4.2mA/Typ.
- Output Current up to 1A
- Fixed Output Voltage of 1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 5.0V
- Adjustable Version Availability : $V_{ref}=1.25V$
- Internal Current and Thermal Limit
- Only 10 μF for stability
- Available in $\pm 2\%$ (at 25 $^{\circ}C$) and 4% in full Temperature range
- High Ripple Rejection : 80dB/Typ
- Temperature Range : 0 $^{\circ}C \sim 125^{\circ}C$

**LINE UP**

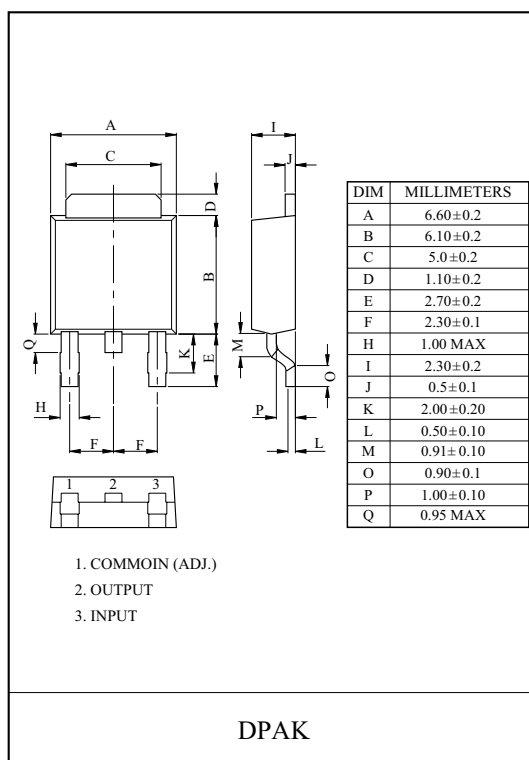
ITEM	OUTPUT VOLTAGE (V)	PACKAGE
KIA1117S/F00	Adjustable (1.25~10V)	S : SOT-223 F : DPAK
KIA1117S/F15	1.5	
KIA1117S/F18	1.8	
KIA1117S/F25	2.5	
KIA1117S/F28	2.85	
KIA1117S/F33	3.3	
KIA1117S/F50	5.0	

MAXIMUM RATINGS ($T_a=25^{\circ}C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage		V_{IN}	10	V
Output Current	S/F	I_{OUT}	1.0	A
Power Dissipation 1 (No heatsink)	S (Note)	P_{D1}	1.0	W
	F		1.3	
Power Dissipation 2 (Without heatsink)	S	P_{D2}	8.3	W
	F		13	
Operating Temperature		T_{opr}	0 $\sim$ 125	$^{\circ}C$
Storage Temperature		T_{stg}	-55 $\sim$ 150	$^{\circ}C$

Note) Package Mounted on FR-4 PCB 36 $\times$ 18 $\times$ 1.5 mm.

: mounting pad for the GND Lead min. 6mm²



SI-8005Q

Step-Down Switching Regulator with Current-Mode Control

Features and Benefits

- Current-mode control system employed
- Excellent line regulation (60 mV maximum)
- 165 m Ω maximum on-resistance of built-in MOSFET
- Output current 3.5 A
- Wide range of input voltages (4.75 to 28 V), supports 24 V direct drive
- Output voltage 0.5 to 24 V, compatible with various IC power supply voltages, through low V_{REF} of 0.5 V.
- High efficiency, 94% maximum at $V_{IN} = 8$ V, $V_O = 5$ V, and $I_O = 0.5$ A
- Operating frequency 500 kHz, supports downsizing of smoothing choke coil
- Soft start and output on/off functions built-in
- Built-in protection:
 - Drooping overcurrent protection
 - Overtemperature protection
 - Undervoltage lockout (UVLO)

Package: HSOP8 surface mount with exposed thermal pad



Not to scale

Description

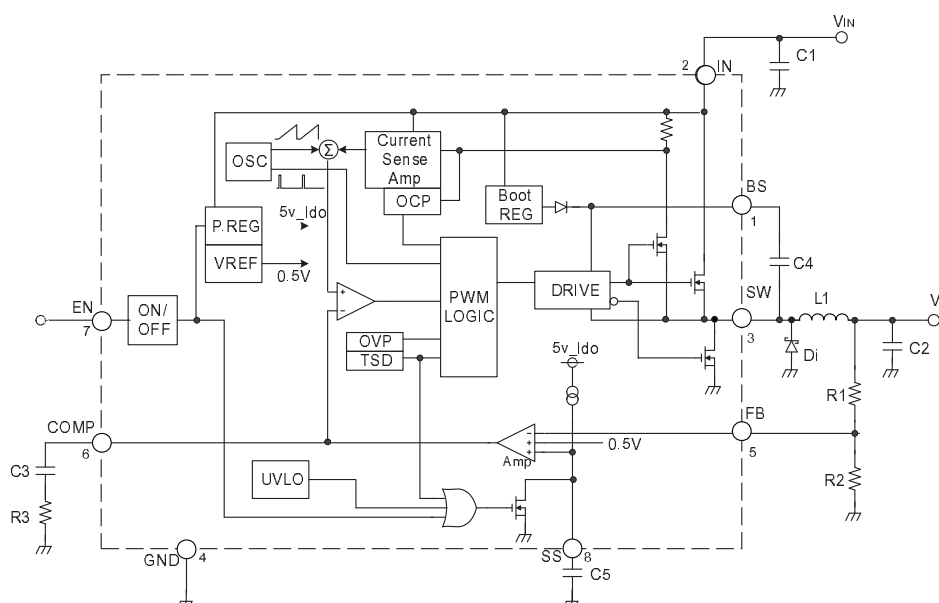
The SI-8005Q is a step-down switching regulator IC, designed as an output voltage regulator at the secondary stage of switch mode power supplies. The current-mode control system permits small ceramic capacitors to be used as output capacitors. Together with the compact HSOP8 package, this allows reduction of regulator circuitry area on the PCB by approximately 50% in comparison with conventional topologies.

Designed to save power, losses in the SI-8005Q are reduced by controlling the maximum on-resistance of a built-in output MOSFET to as low as 165 m Ω . Furthermore, die miniaturization has been accomplished through a proprietary BCD process.

The SI-8005Q supplies an output current of 3.5 A and an output voltage that is variable from 0.5 to 24 V, which is easily set to a voltage compatible with the diverse reduced power supply voltages required by signal processing ICs. Accepting a wide input voltage range, from 4.75 to 28 V, the SI-8005Q can be driven directly by a 24 V power supply.

Applications include power supplies for signal processing ICs for memories and microcomputers used in plasma display panel (PDP) TVs, liquid crystal display (LCD) TVs, computer hard drives, and DVD recorders.

Functional Block Diagram



KEC

SEMICONDUCTOR
TECHNICAL DATA

KTC812T
EPITAXIAL PLANAR NPN TRANSISTOR

FOR MUTING AND SWITCHING APPLICATION.

FEATURES

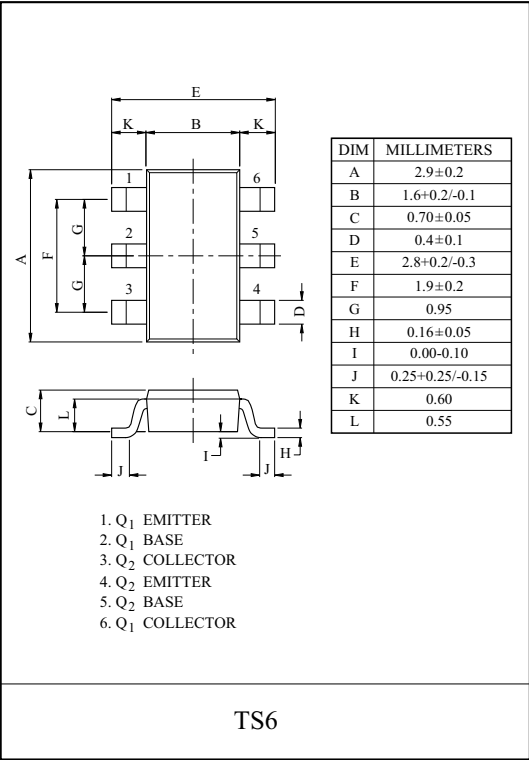
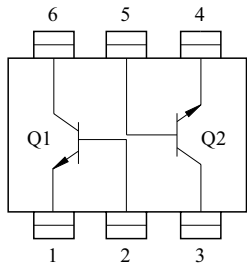
- High Emitter-Base Voltage : $V_{EBO}=25V(\text{Min.})$
- High Reverse h_{FE}
: Reverse $h_{FE}=150(\text{Typ.})$ ($V_{CE}=-2V, I_C=-4mA$)
- Low on Resistance : $R_{ON}=1\ \Omega$ (Typ.), ($I_B=5mA$)

MAXIMUM RATING (Ta=25℃)

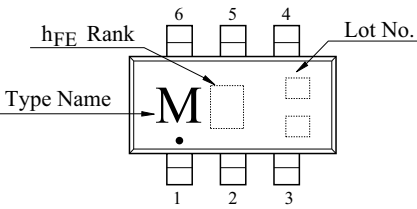
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	25	V
Collector Current	I_C	300	mA
Base Current	I_B	60	mA
Collector Power Dissipation	P_C^*	0.9	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 ~ 150	℃

* Package mounted on a ceramic board (600mm²×0.8mm)

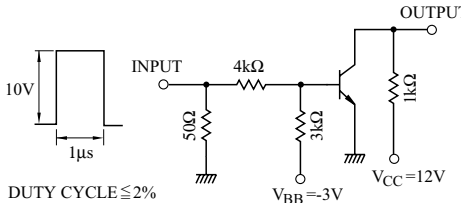
EQUIVALENT CIRCUIT (TOP VIEW)



Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

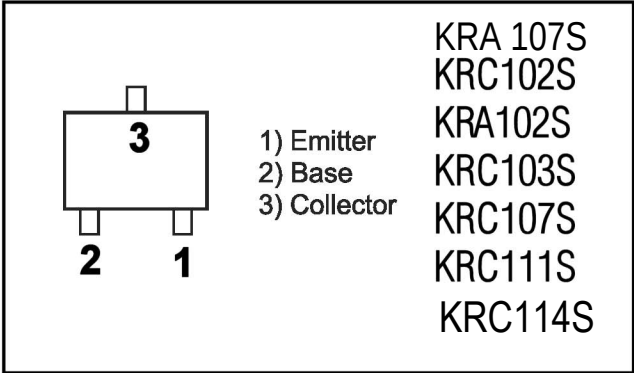
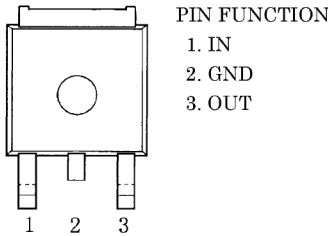
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=50V, I_E=0$	-	-	0.1	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=25V, I_C=0$	-	-	0.1	μA
DC Current Gain		h_{FE}	$V_{CE}=2V, I_C=4mA$	350	-	1200	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=30mA, I_B=3mA$	-	0.042	0.3	V
Base-Emitter Voltage		V_{BE}	$V_{CE}=2V, I_C=4mA$	-	0.61	-	V
Transition Frequency		f_T	$V_{CE}=6V, I_C=4mA$	-	30	-	MHz
Collector Output Capacitance		C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	-	4.8	7	pF
Switching Time	Turn-on Time	t_{on}		-	160	-	nS
	Storage Time	t_{stg}		-	500	-	
	Fall Time	t_f		-	130	-	

Note : h_{FE} Classification B: 350 ~ 1200

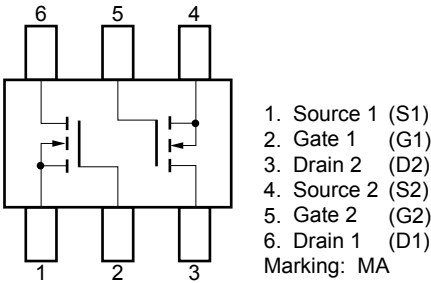
TRANSISTOR, REGULATOR IC BLOCK DIAGRAM

TO-92M  123 1. Emitter 2. Collector 3. Base KTC2874B KSC2785Y KRA107M KRC107M KRA104MT KRC104M KTA1267 KTC 1027	TO-92  123 1. Emitter 2. Collector 3. Base KTD1302T KTA1268GR KTC3200GR KTC3198Y KTA1271Y KSA1175YT KTC 3199	TO-220  123 1. GND 2. INPUT 3. OUTPUT MCNJM7905 MC7915C NJM7908 L7905 KIA 7908 L7915 KIA7915 KIA7905	TO-92L  123 1. Emitter 2. Collector 3. Base KTA1024Y KSC2316Y
TO-126  123 1. Emitter 2. Collector 3. Base KTD600KG KTA 1360 KTC 3423	TO-92  123 1. Emitter 2. Base 3. Collector KSA733CYT	TO-220  123 1. INPUT 2. GND 3. OUTPUT MC7815C MC7805C MC7809 L7805 NJM7824 L7815 L7812 KIA 7808 L7808 KIA7805	TO-3P  1 2 3 1. Base 2. Collector 3. Emitter 2SB1560 2SC3423O 2SD2390 2SA1360 2SB1647 2SD2560

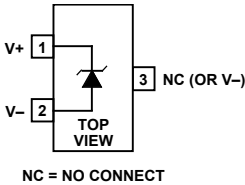
NJM2391DL1-25 NJM2391DL1-33
LOW DROPOUT VOLTAGE REGULATOR



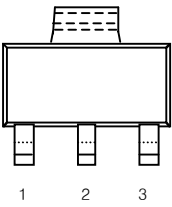
N-CHANNEL MOS FET ARRAY
μPA672T



PIN CONFIGURATION
SOT-23 Package
AD1580



SOT-223 PKG (FRONT VIEW)

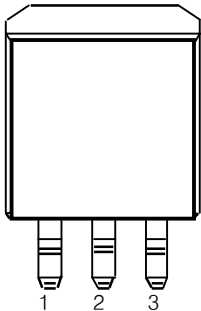


LM1117
REGULATOR

PIN FUNCTION

1. Adj/Gnd
2. Vout
3. Vin

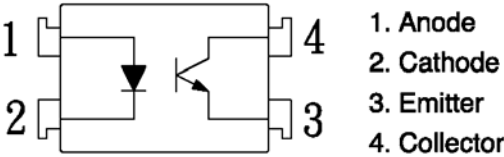
TO-263 (D2 PKG, FRONT VIEW)



PIN FUNCTION

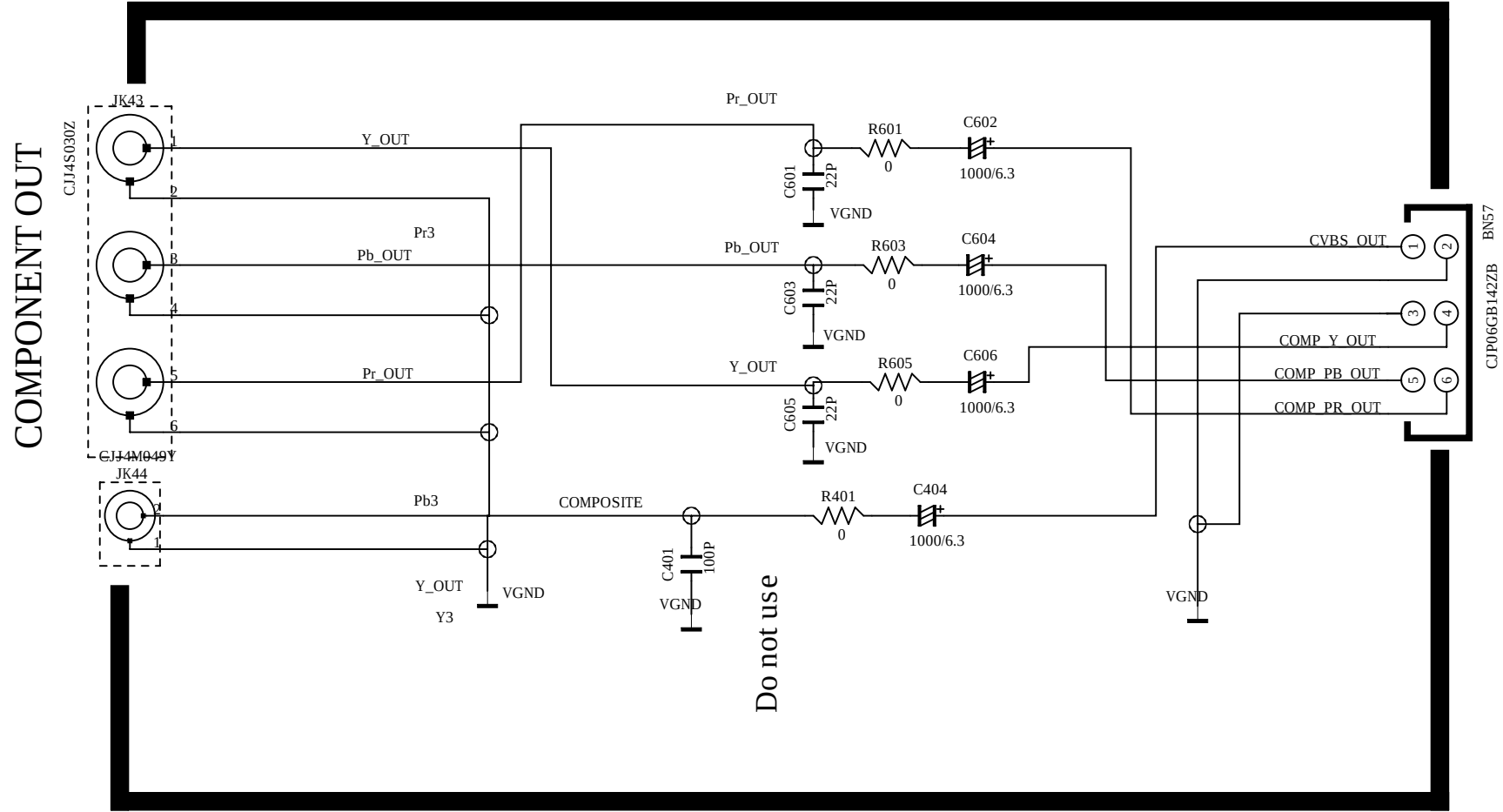
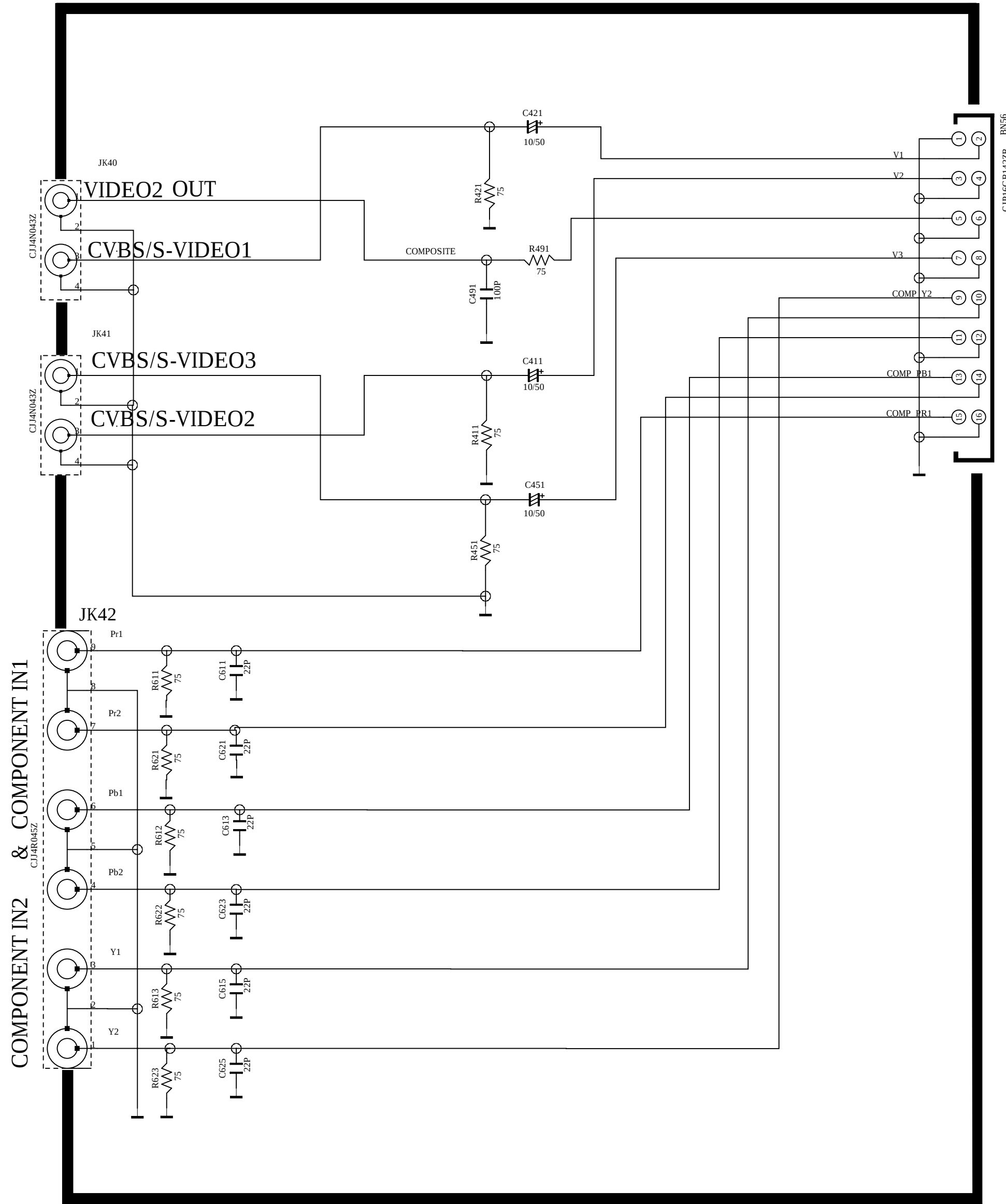
1. Adj/Gnd
2. Vout
3. Vin

KP1010 photocoupler



AVR3600

harman/kardon



*NJM2595M OPTION
==>V_MUTE "LOW" ACTIVE

FUNC.	SW1	SW2	SW3	SW4	SW5
CVBS/S-V1	H	L	L	L	H
CVBS/S-V2	L	H	L	L	H
CVBS/S-V3	H	L	L	H	H
FRONT CVBS/S-V	H	H	L	L	H
IPOD	H	L	H	H	H



DPP

REVISION		2		4		6	
1		3		5		7	
SCHEMATIC DIAGRAM							SHEET
MODEL	AVR2600 /3600						1 2
DESIGN	CHECK	APPROVE	DRAWING NO				
Y.K.Y	W.Y.Y	K.S.W	2145SCEZ				
08.	08.	08.	(VIDEO)				

CUP12177*

AVR3600

harman/kardon

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T REG R

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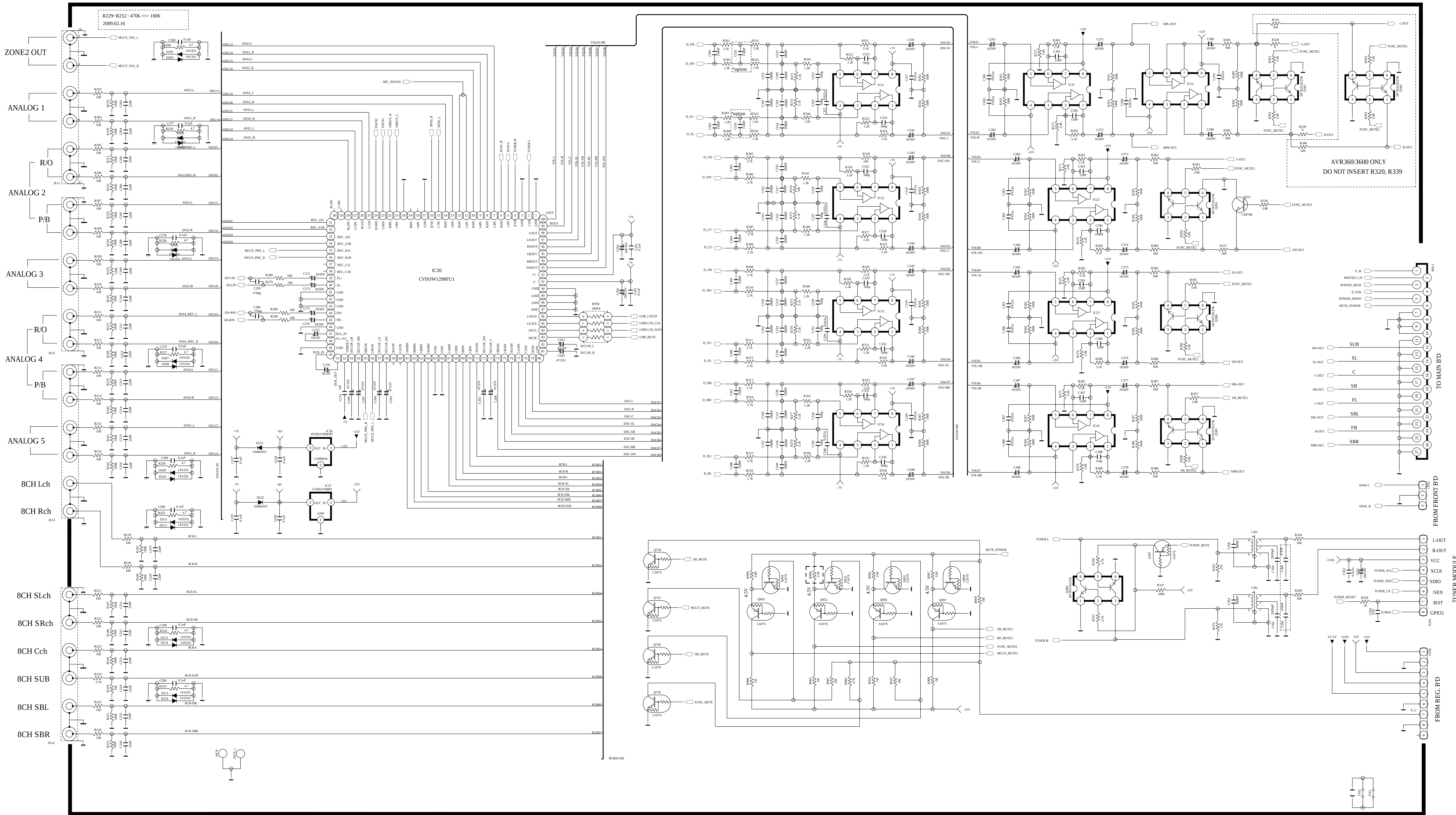
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** IMPORTANT SAFETY NOTICES.

COMPONENTS IDENTIFIED BY MARK HAVE SPECIAL CHARACTERISTICS.

IMPORTANT FOR SAFETY, WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY MANUFACTURER'S SPECIFIED PARTS.

** THE UNIT OF RESISTANCE IS OHM.

K=1000 OHM, M=1000 KOHM

** THE UNIT OF CAPACITANCE IS MICROFARAD. (uF)

pF=10 pF

** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE
IMPROVEMENT OF PERFORMANCE.

LPP

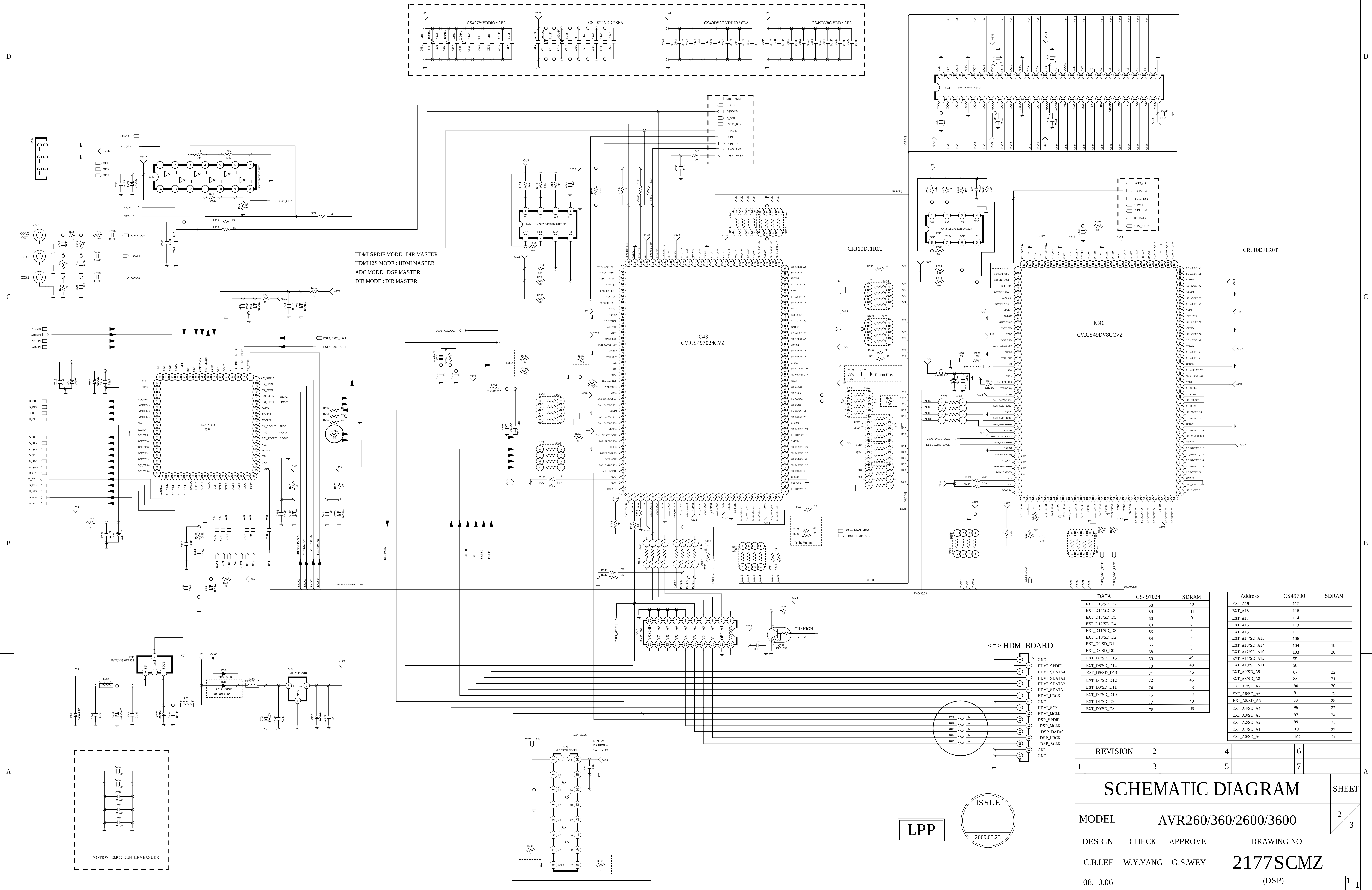


REVISION		2	4	6
1		3	5	7
SCHEMATIC DIAGRAM				SHEET
MODEL	AVR260/360/2600/3600			1 3
DESIGN	C.B.LEE	CHECK	W.Y.YANG	APPROVE
08.10.06				
DRAWING NO				2177SCMZ
				(INPUT)

CUP12177*

AVR3600

harman/kardon



AVR3600

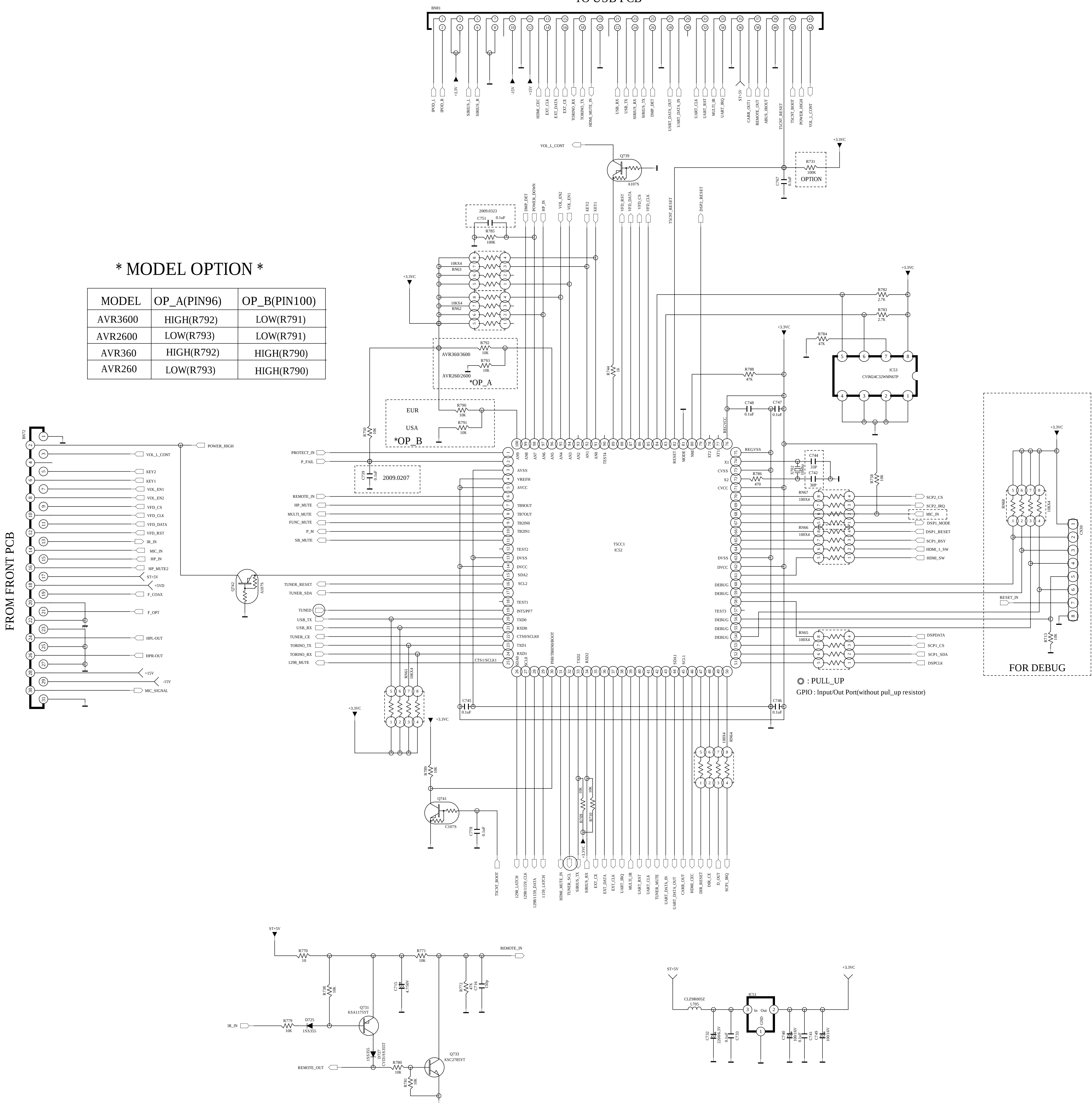
harman/kardon

CUP12177*

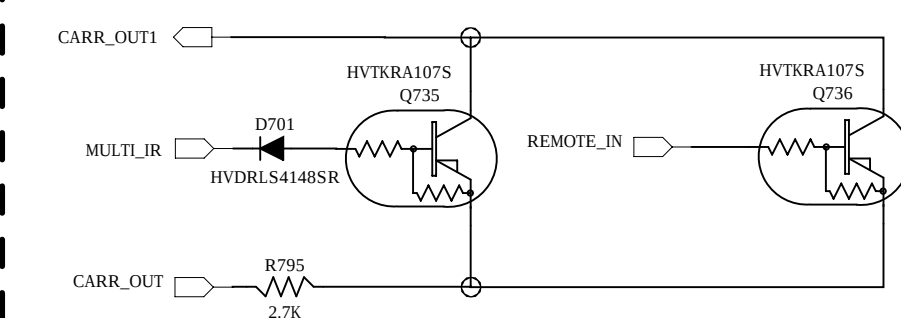
TO USB PCB

* MODEL OPTION *

MODEL	OP_A(PIN96)	OP_B(PIN100)
AVR3600	HIGH(R792)	LOW(R791)
AVR2600	LOW(R793)	LOW(R791)
AVR360	HIGH(R792)	HIGH(R790)
AVR260	LOW(R793)	HIGH(R790)

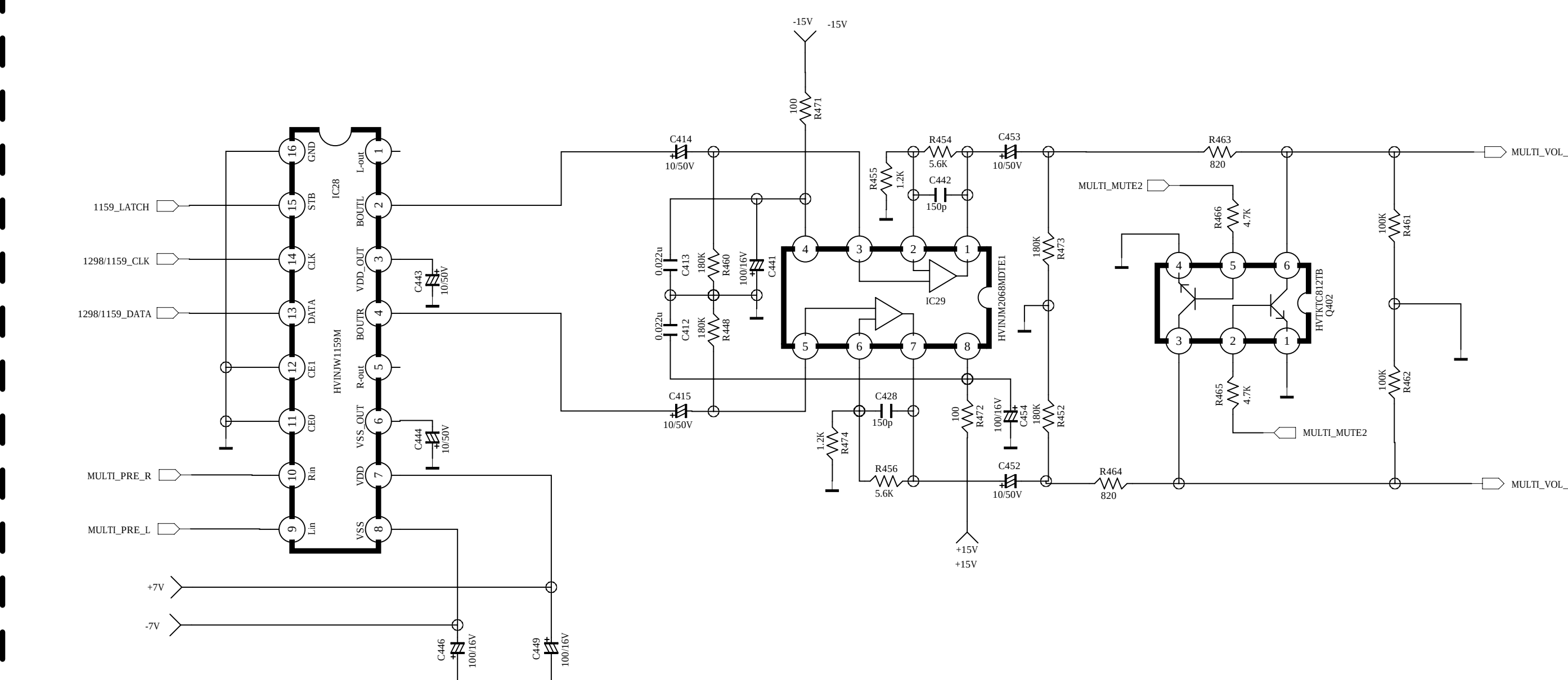


Carr. Out



AVR360/3600 ONLY

A-BUS PART : ONLY FOR AVR360/3600



MULTI ROOM VOLUME : AVR360/3600



REVISION		2	4	6
1	3	5	7	
SCHEMATIC DIAGRAM				
MODEL	AVR260/360/2600/3600			
DESIGN	C.B.LEE	W.Y.YANG	G.S.WEY	DRAWING NO
08.10.06				2177SCMZ (CPU)

CUP12179Z

AVR3600 harman/kardon

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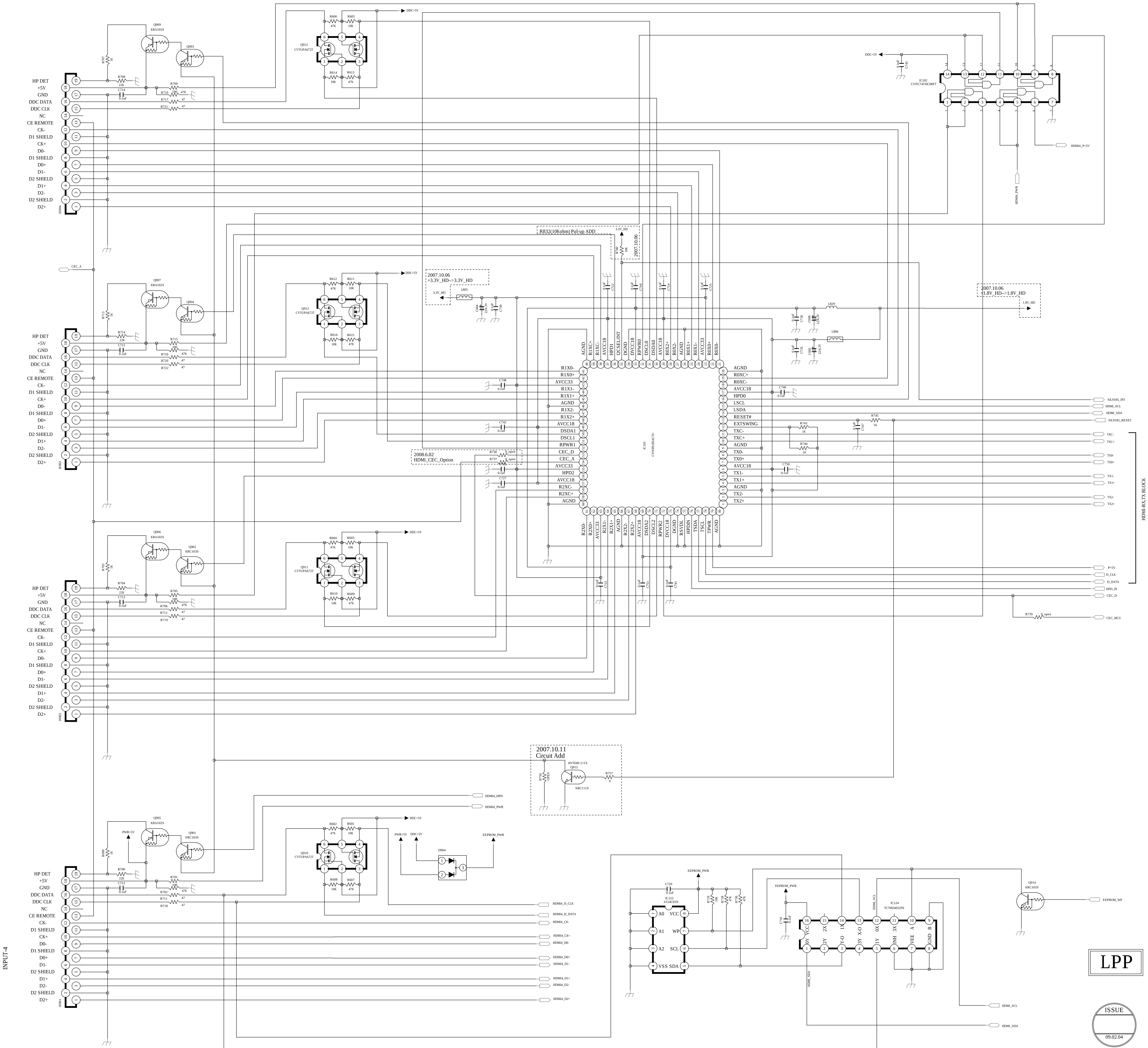
B

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INPUT-1

INPUT-2

INPUT-3



LPP

ISSUE
09.02.04

REVISION		2	4	6
1		3	5	7
SCHEMATIC DIAGRAM				SHEET
MODEL	AVR260/360			1/5
DESIGN	CHECK	APPROVE	DRAWING NO	
S. KIM	W.Y YANG	G.S WEY	CUP12179Z	
09.02.04	09.02.04	09.02.04	(HDMI-INPUT)	

CUP12179Z

AVR3600 harman/kardon

REVISION		2	4	6
1		3	5	7
SCHEMATIC DIAGRAM				
MODEL	AVR 260/360			
DESIGN	CHECK	APPROVE	DRAWING NO	
M.S KIM	W.Y YANG	G.S WEY	CUP12179Z	
09.02.04	09.02.04	09.02.04	(TORINO)	

LPP

ISSUE
09.02.04

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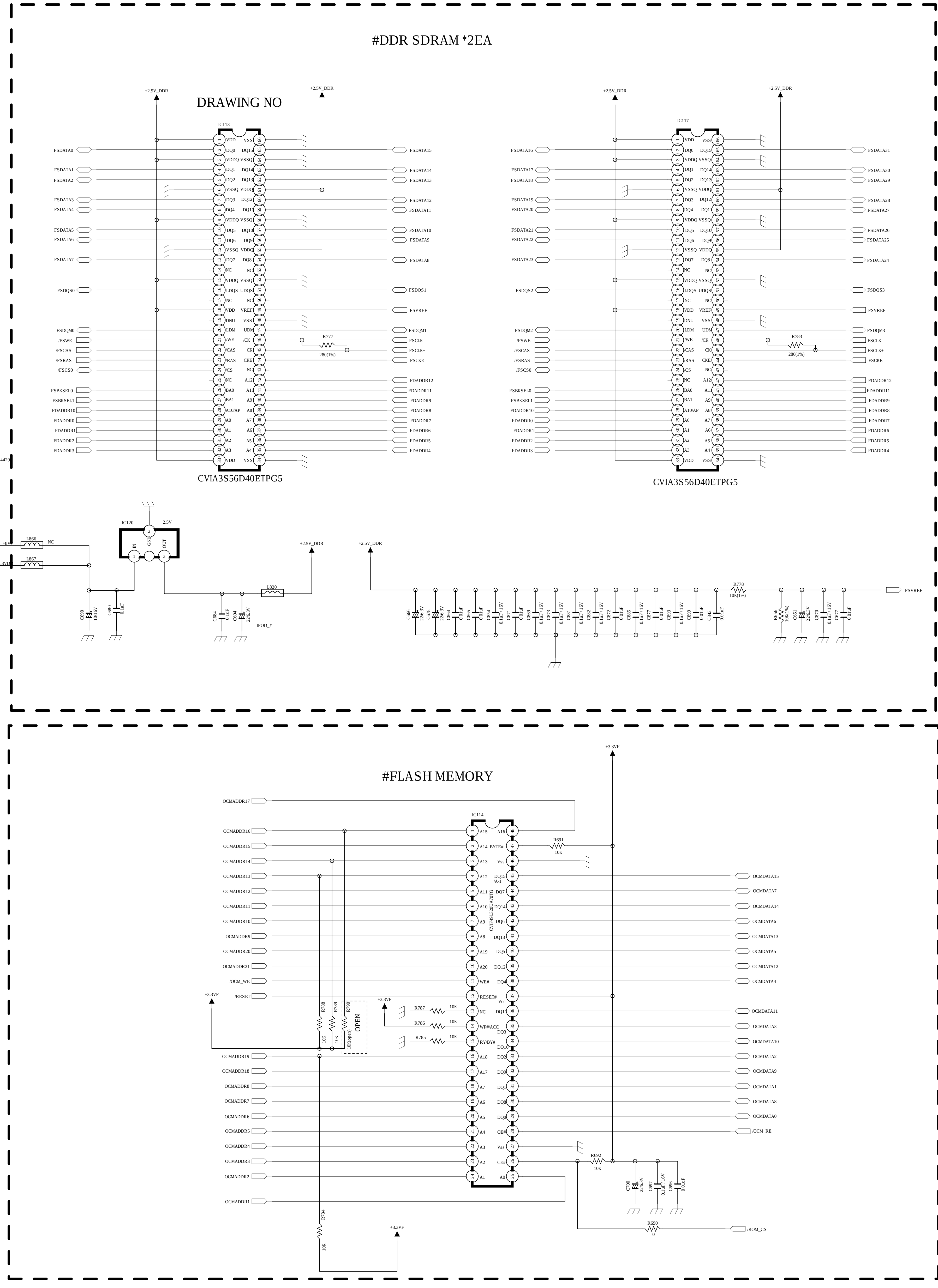
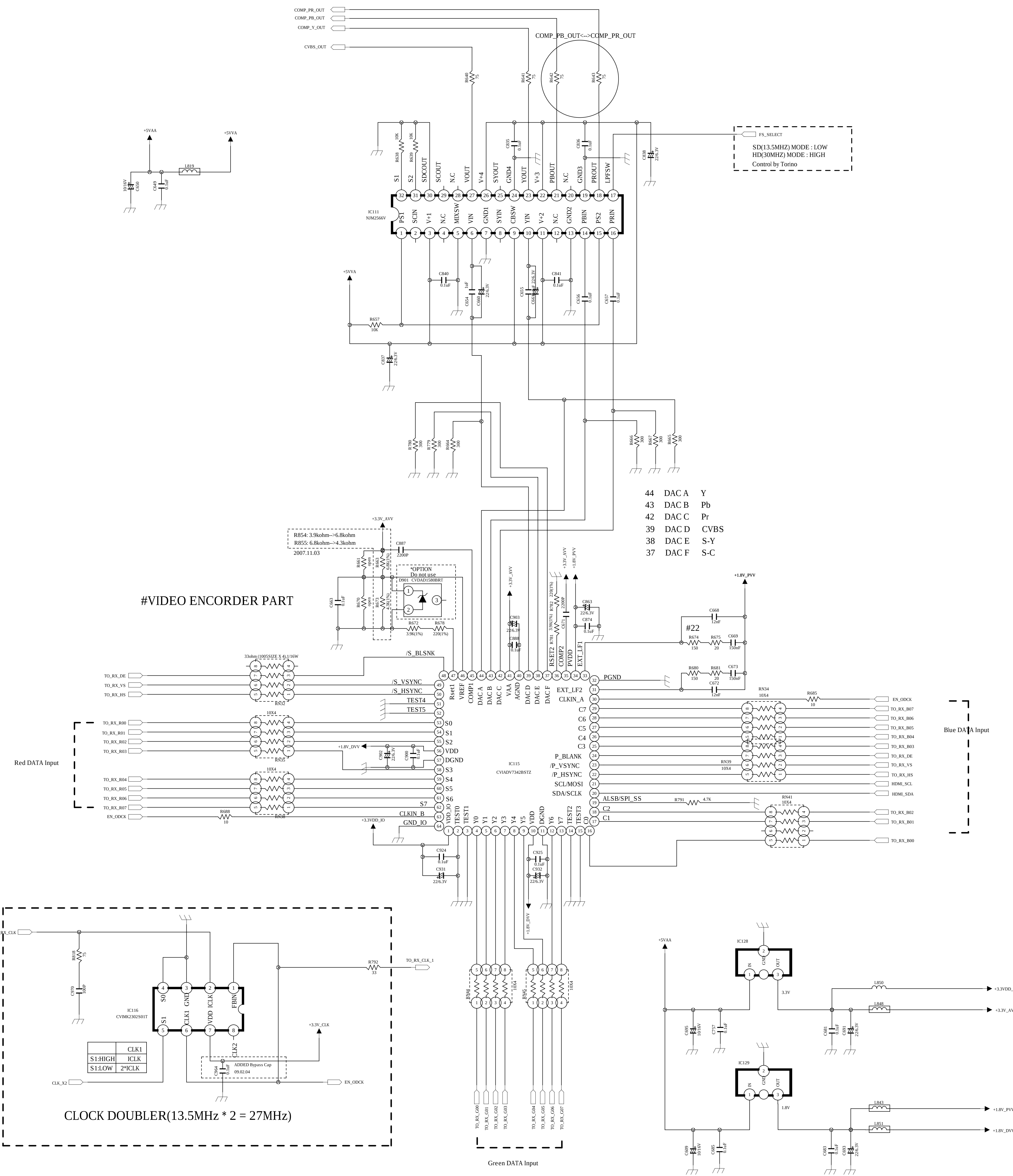
B

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AVR3600

CUP12179Z

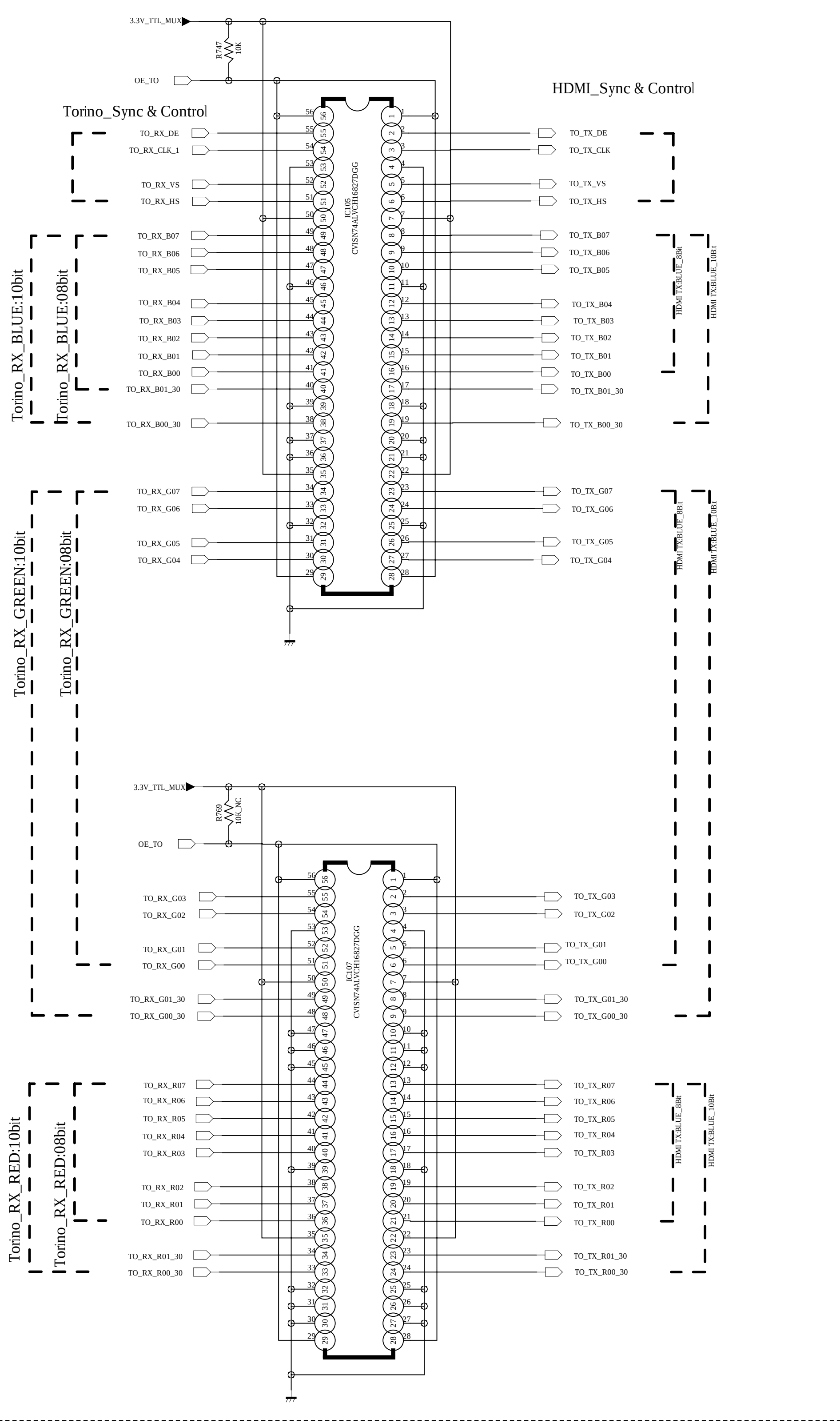
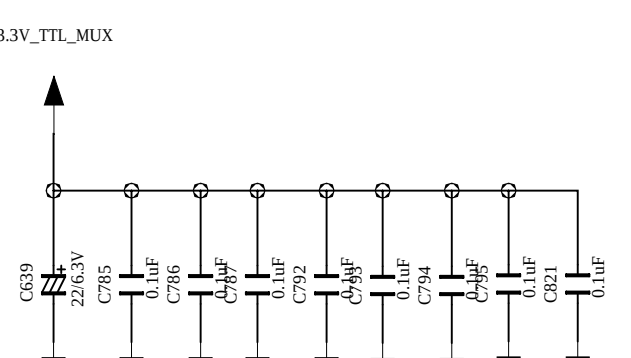
harman/kardon



REVISION		2	4	6
1		3	5	7
SCHEMATIC DIAGRAM				
MODEL	AVR260/360			
DESIGN	CHECK	APPROVE	DRAWING NO	
S. KIM	W.Y YANG	G.S WEY	CUP12179Z	
09.02.04	09.02.04	09.02.04	(ADV7342+MEM.)	

LPP

ISSUE
09.02.04



	REVISION	2		4		6	
1		3		5		7	
SCHEMATIC DIAGRAM							SHEET
MODEL	AVR260/360					5 5	
DESIGN	CHECK	APPROVE	DRAWING NO				
S. KIM	W.Y YANG	G.S WEY	CUP12179Z (Buffer&Connector.)				
09.02.04	09.02.04	09.02.04					
			1 1				

AVR3600

harman/kardon

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02/R180/C162 DELETE

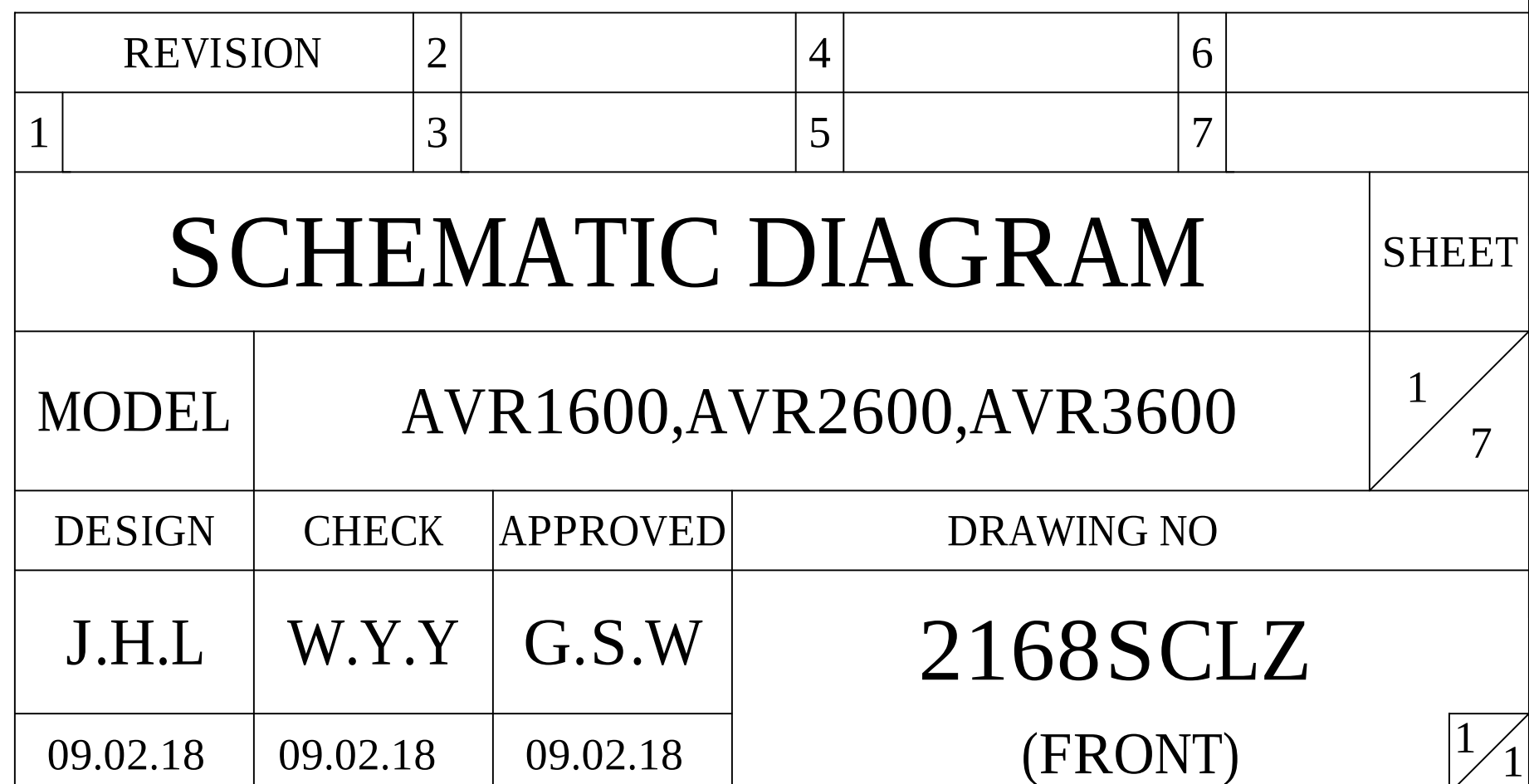
ACND

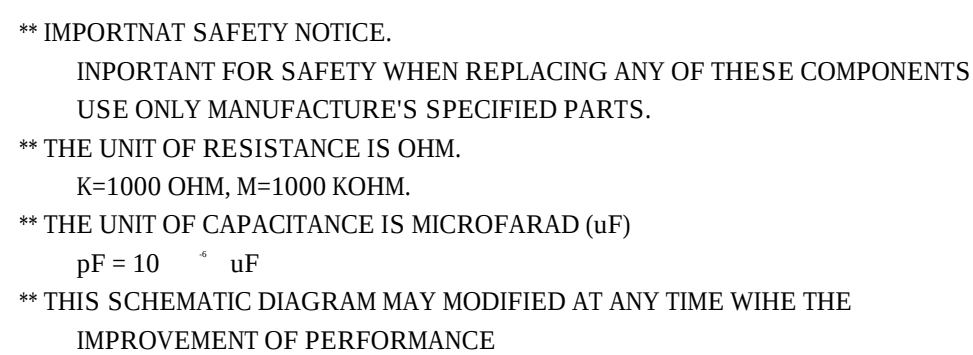
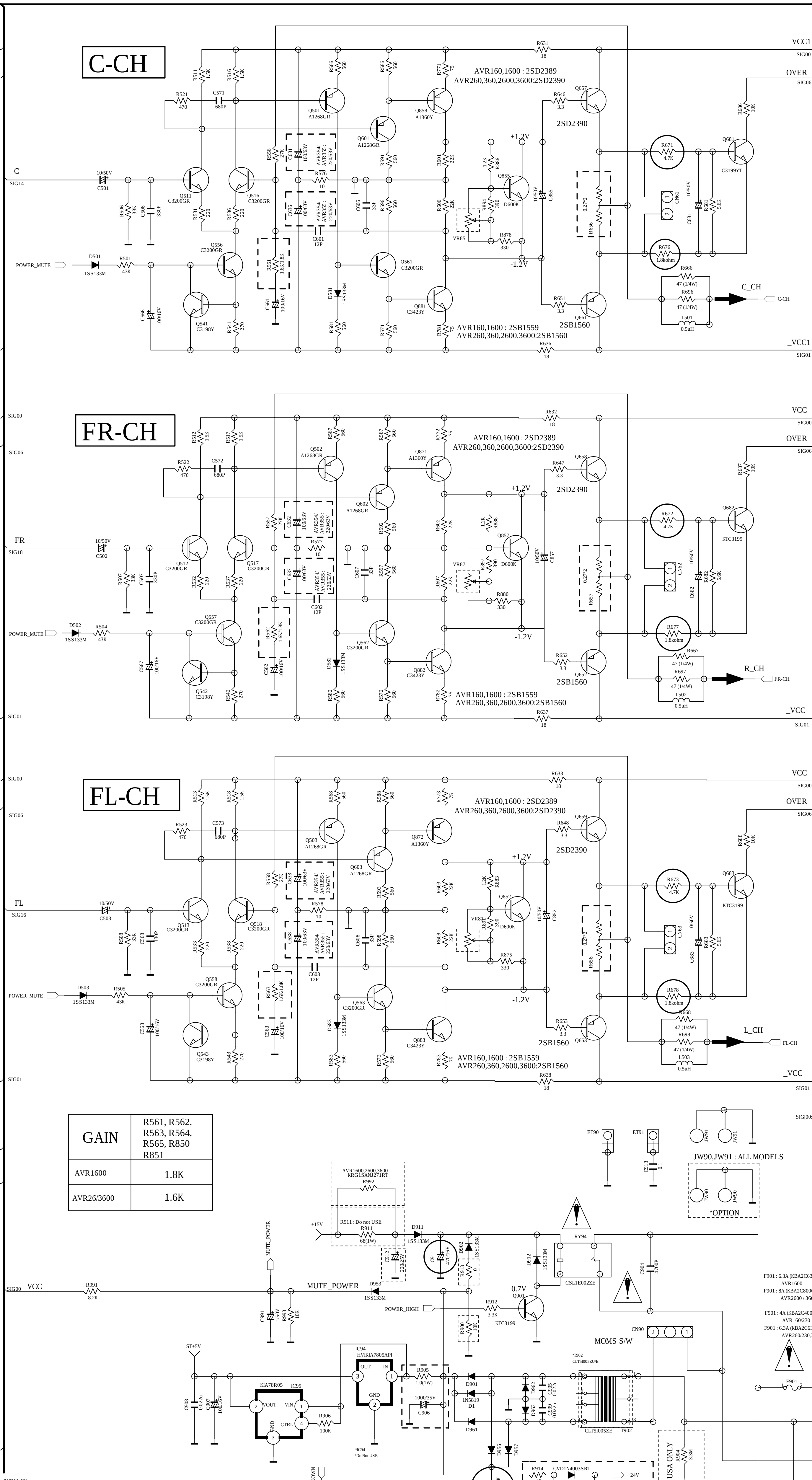
A

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I-POD PART

REVISION		2	4	6
1		3	5	7
SCHEMATIC DIAGRAM				
MODEL	AVR2600/3600			
DESIGN	J.H.L	W.Y.Y	K.S.W	DRAWING NO
09.05.13	09.05.13	09.05.13	2169SCMZ	
USB/IPOD/SIRIUS				SHEET
				1





MP

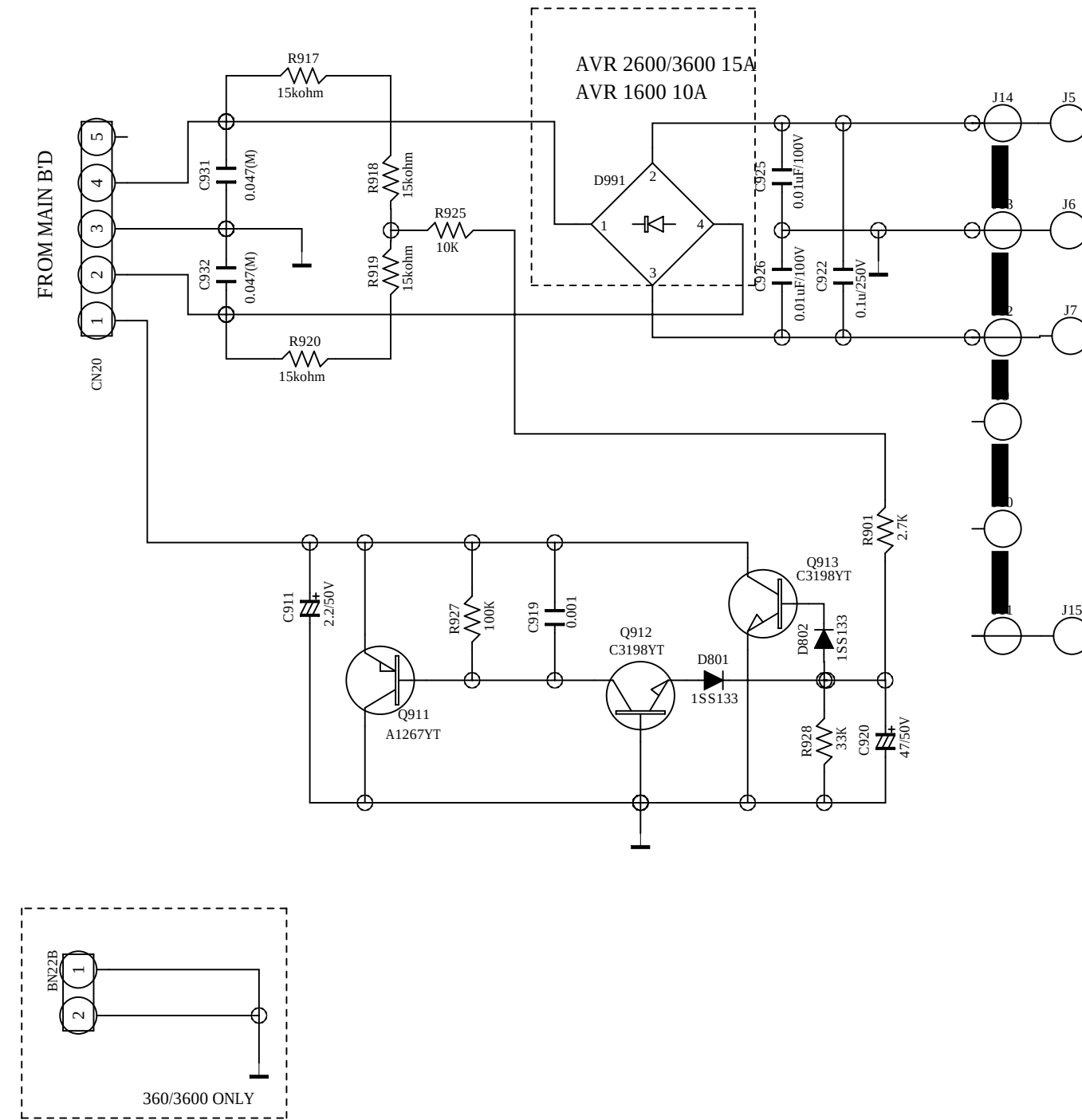
ISSUE

 2007.09.10

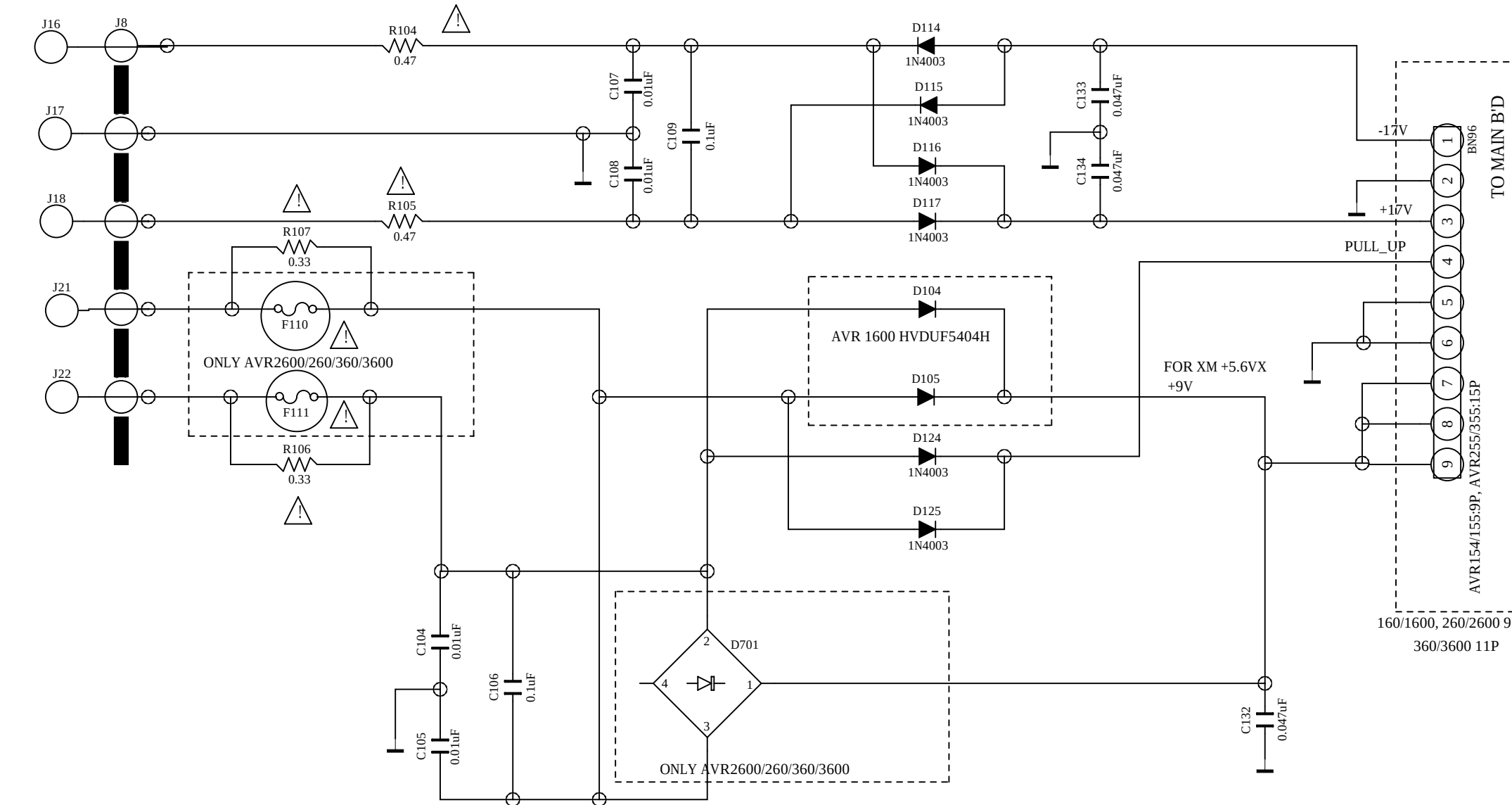
AVR3600

harman/kardon

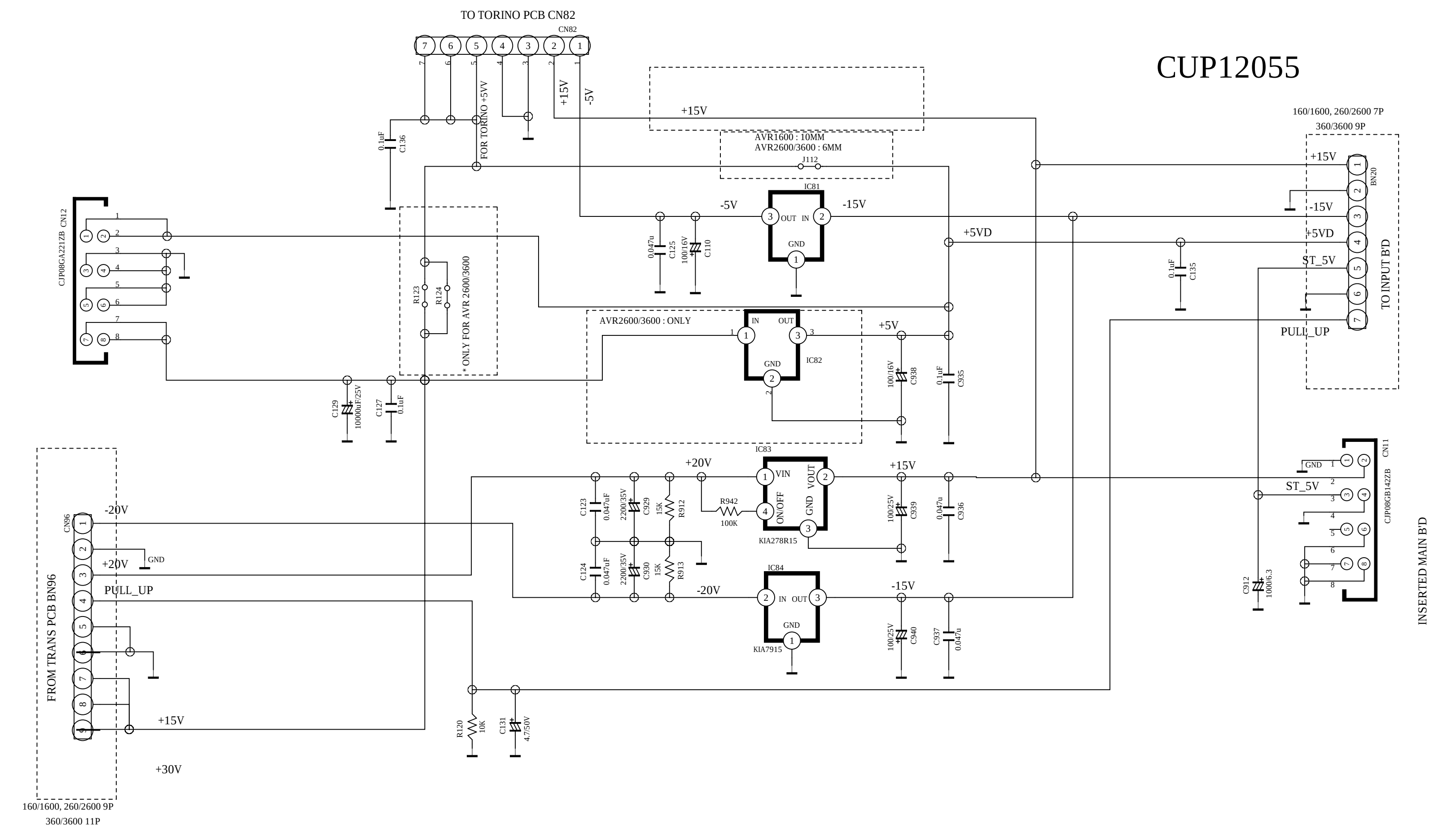
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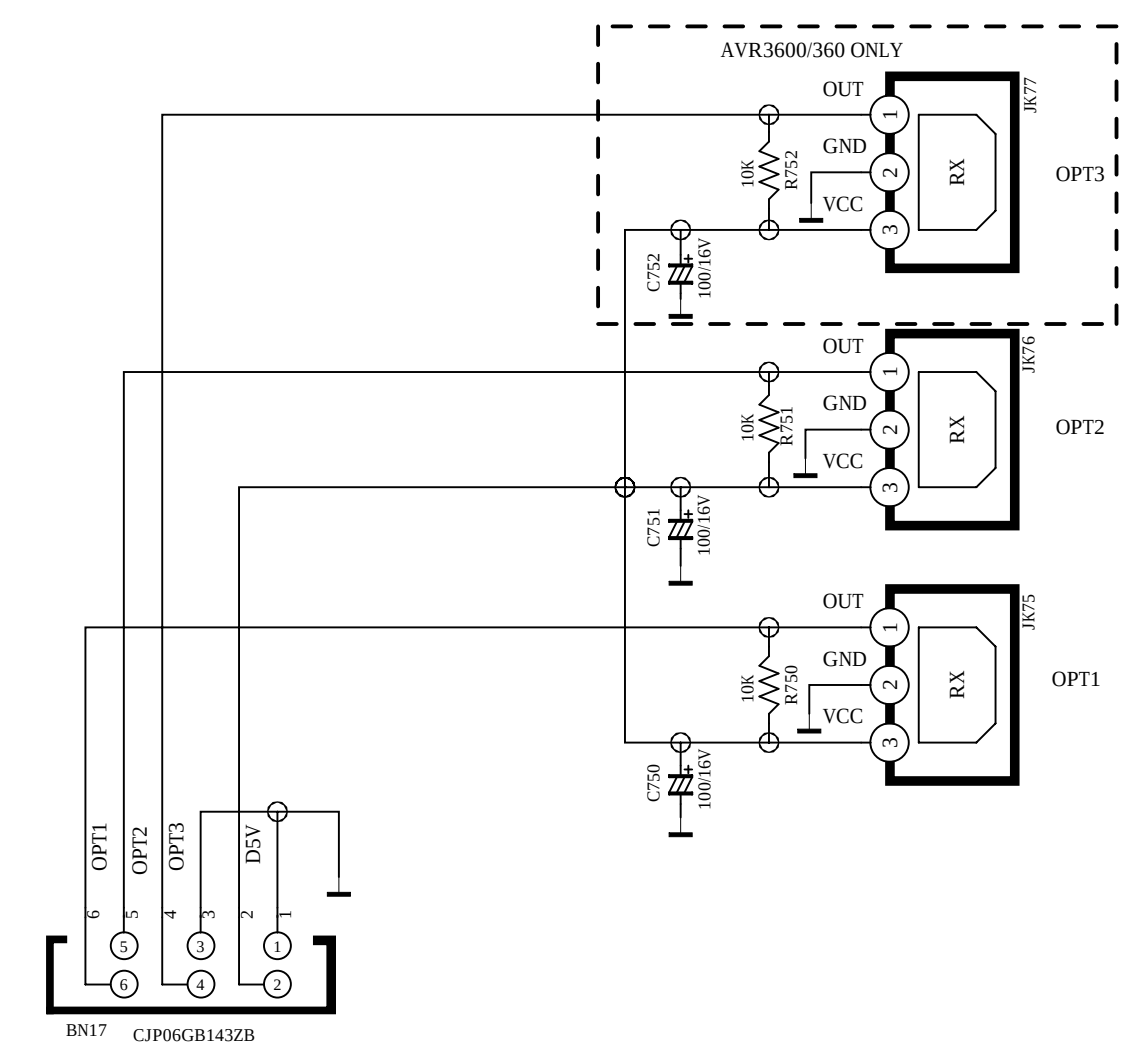
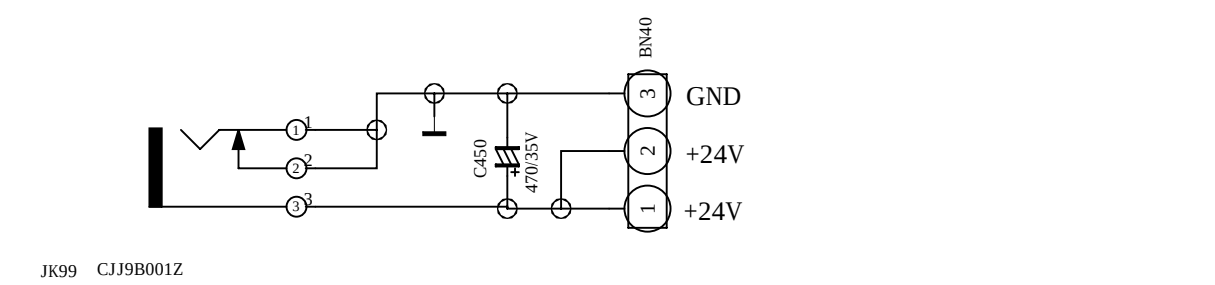
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< REGULATOR PCB >



< OPTICAL PCB >



CUP12027-3

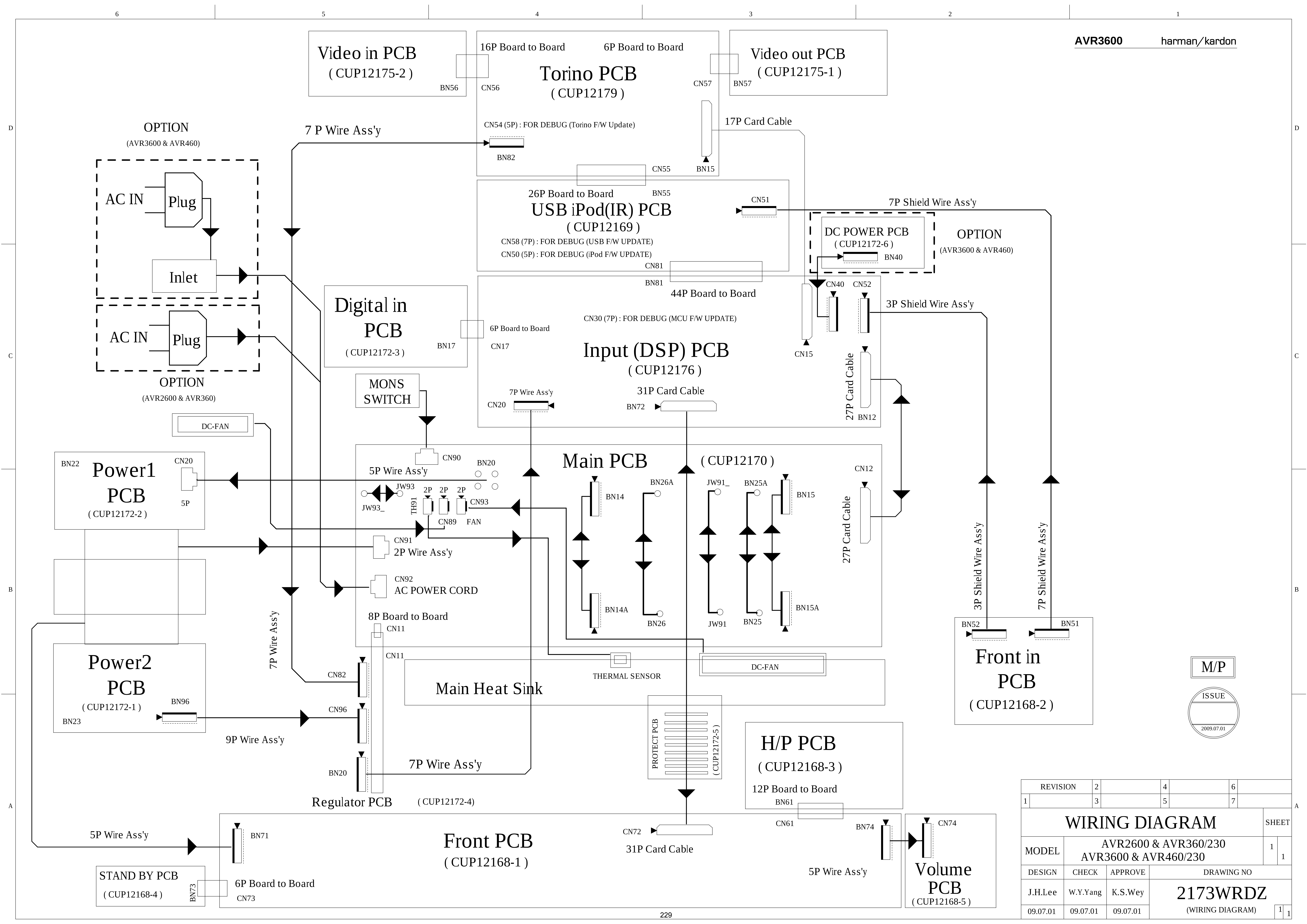
CUP12027-5

LPP

ISSUE

2008.11.01

REVISION		2	4		6		
1		3	5		7		
SCHEMATIC DIAGRAM							SHEET
MODEL	AVR x600/x60					1 1	
DESIGN	CHECK	APPROVE	DRAWING NO				
J.T.B	Y.Y.W	K.S.W	CUP12xxxY (POWER)				
08.02.11							



M/P

ISSUE
2009.07.01

REVISION		2	4	6
1		3	5	7
WIRING DIAGRAM				
MODEL	AVR2600 & AVR360/230 AVR3600 & AVR460/230			
DESIGN	CHECK	APPROVE	DRAWING NO	
J.H.Lee	W.Y.Yang	K.S.Wey	2173WRDZ	
09.07.01	09.07.01	09.07.01	(WIRING DIAGRAM)	
				1 1