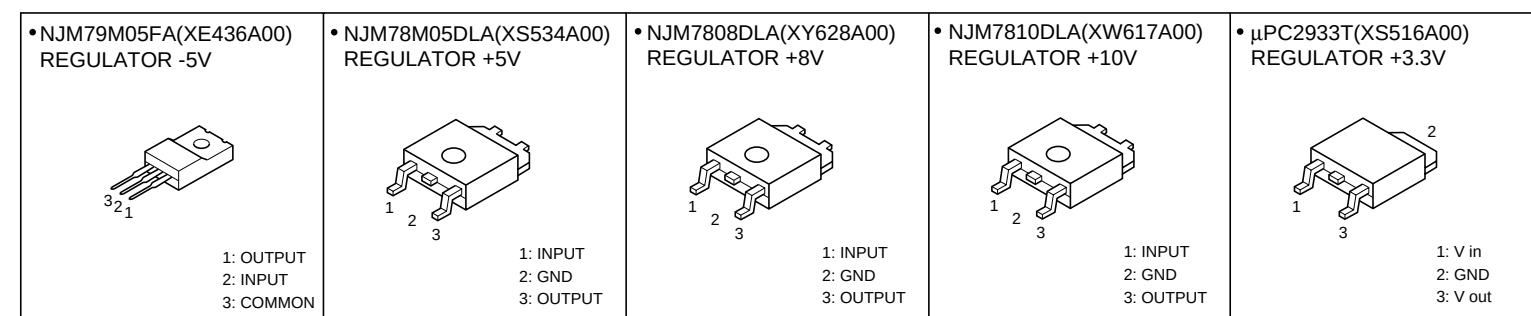


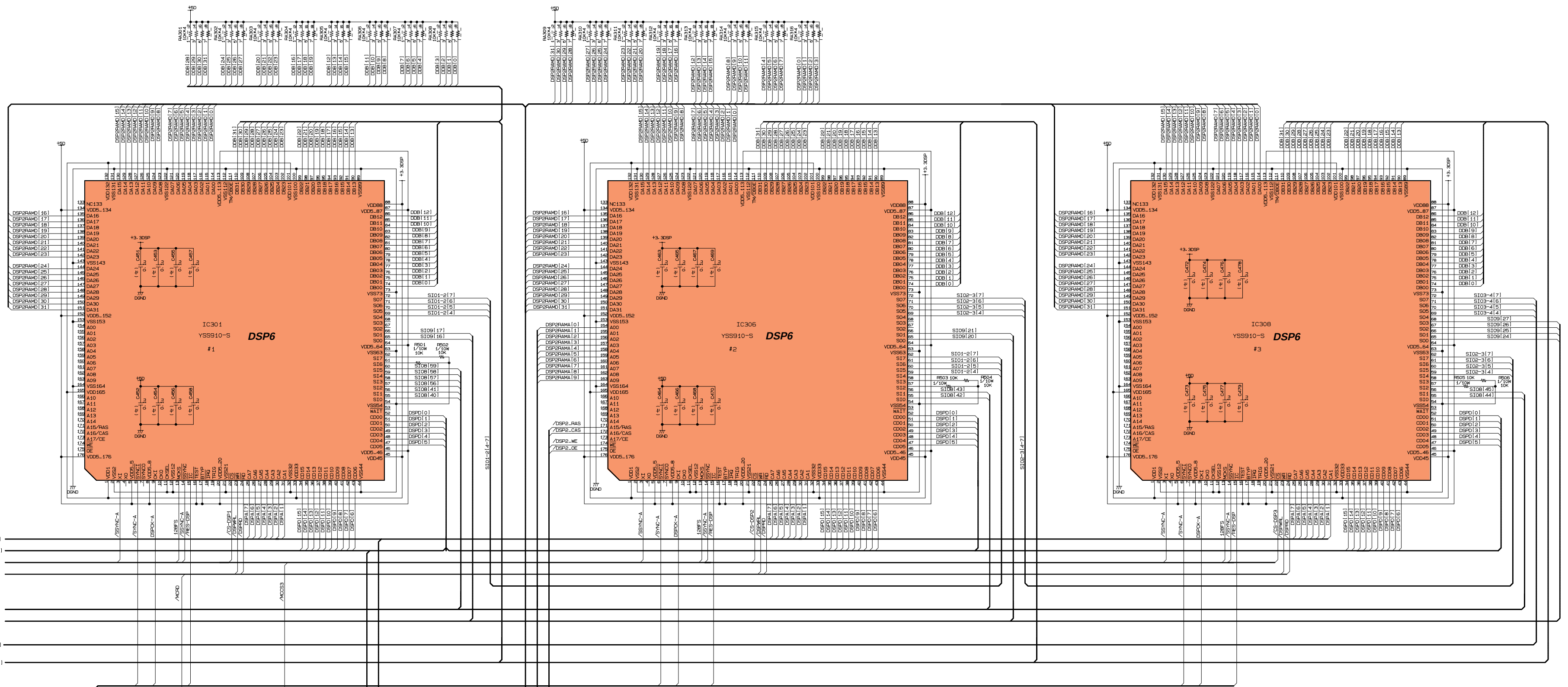


(セ): Ceramic Capacitor
金被: Metal Film Resistor
酸金: Metal Oxide Film Resistor

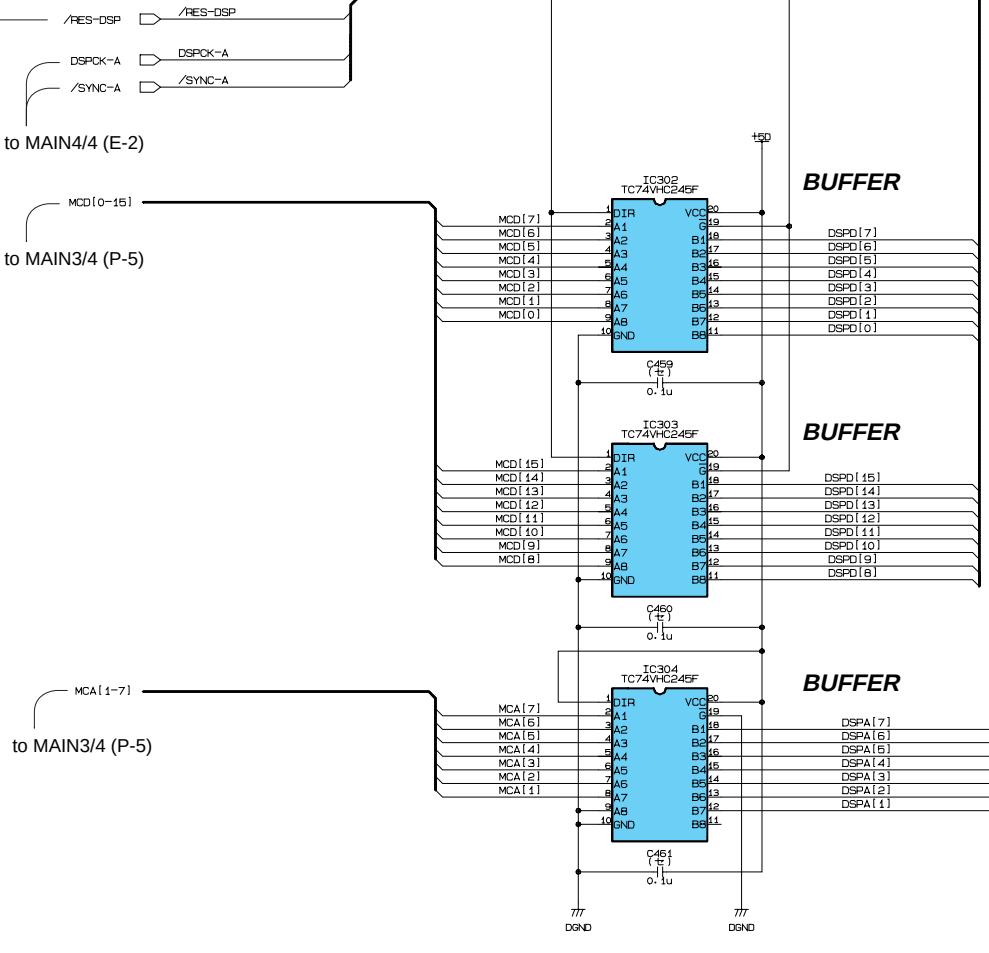


MAIN 2/4

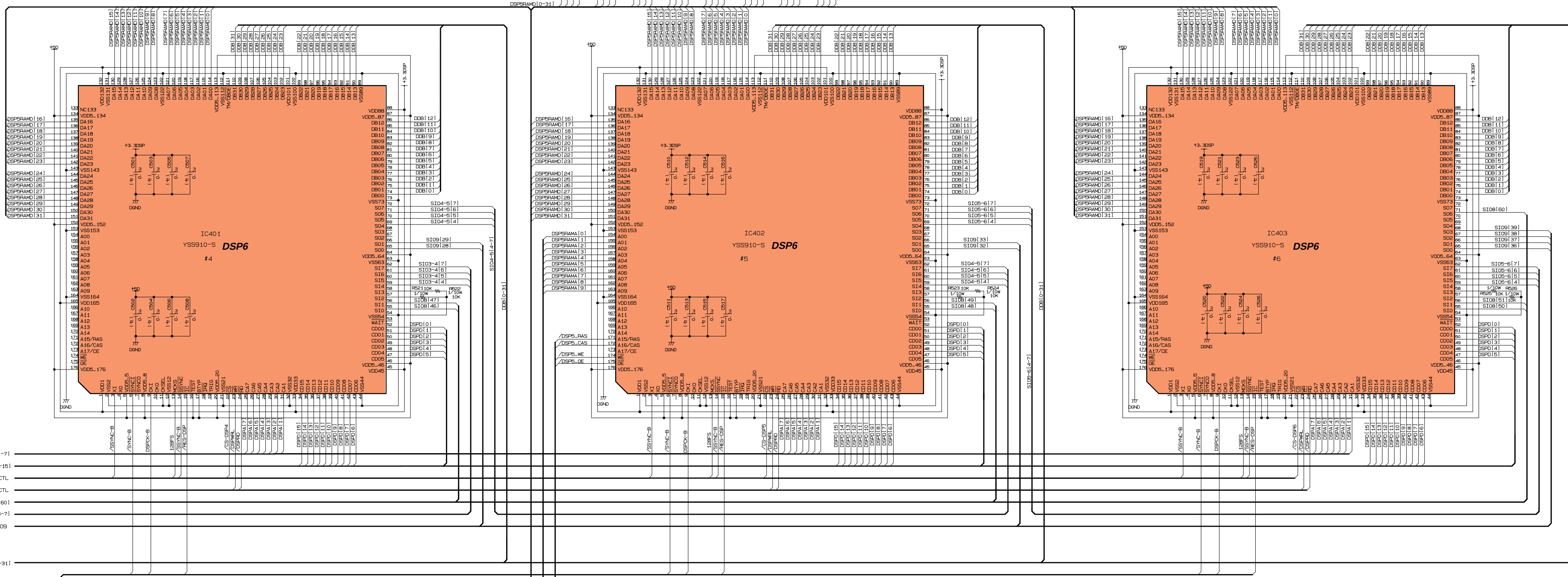
MAIN (DSP6-1)



to MAIN3/4 (E-11)



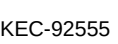
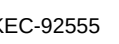
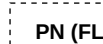
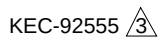
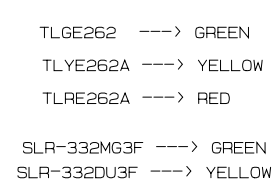
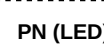
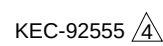
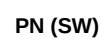
MAIN (DSP6-2)



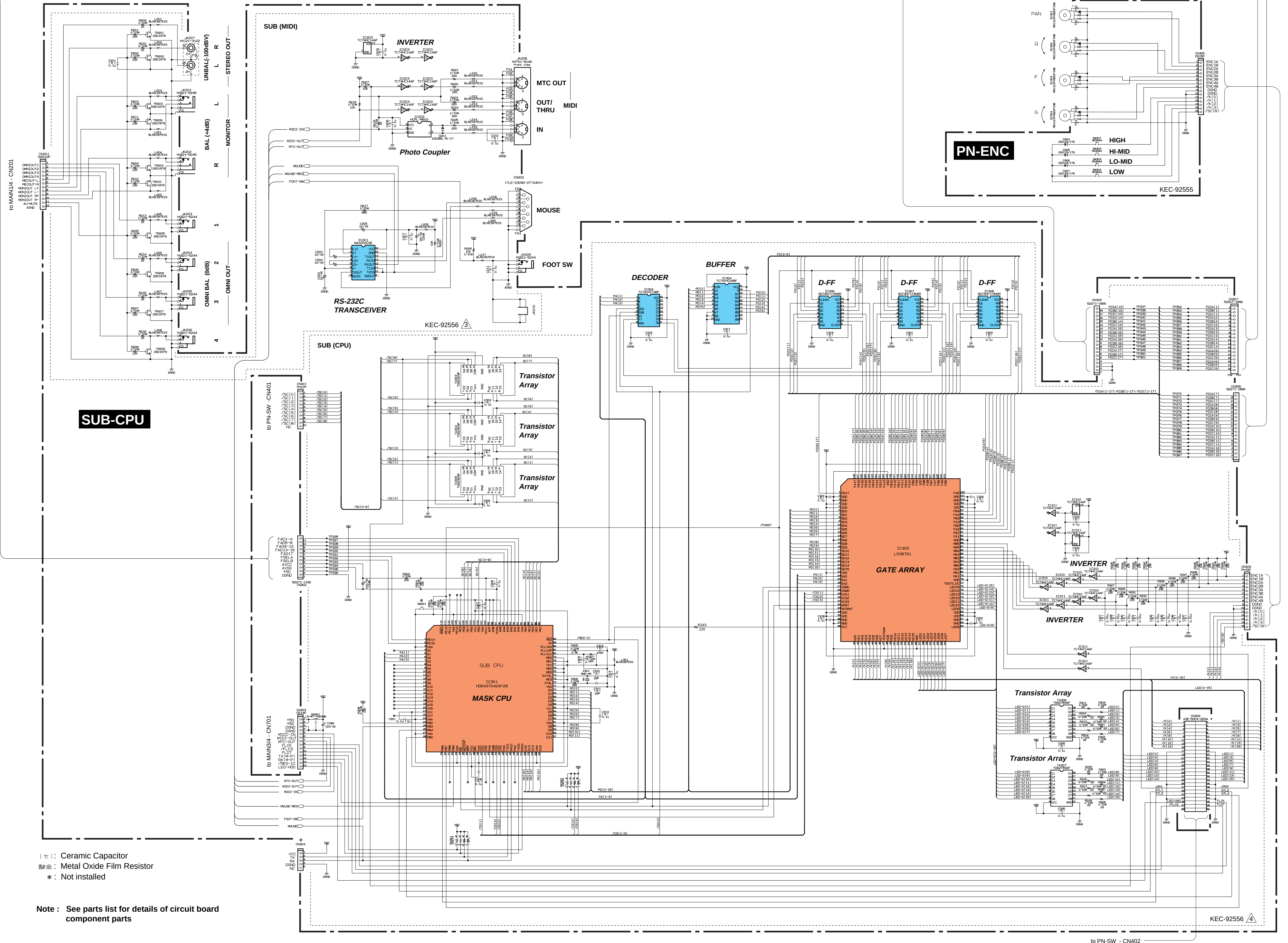
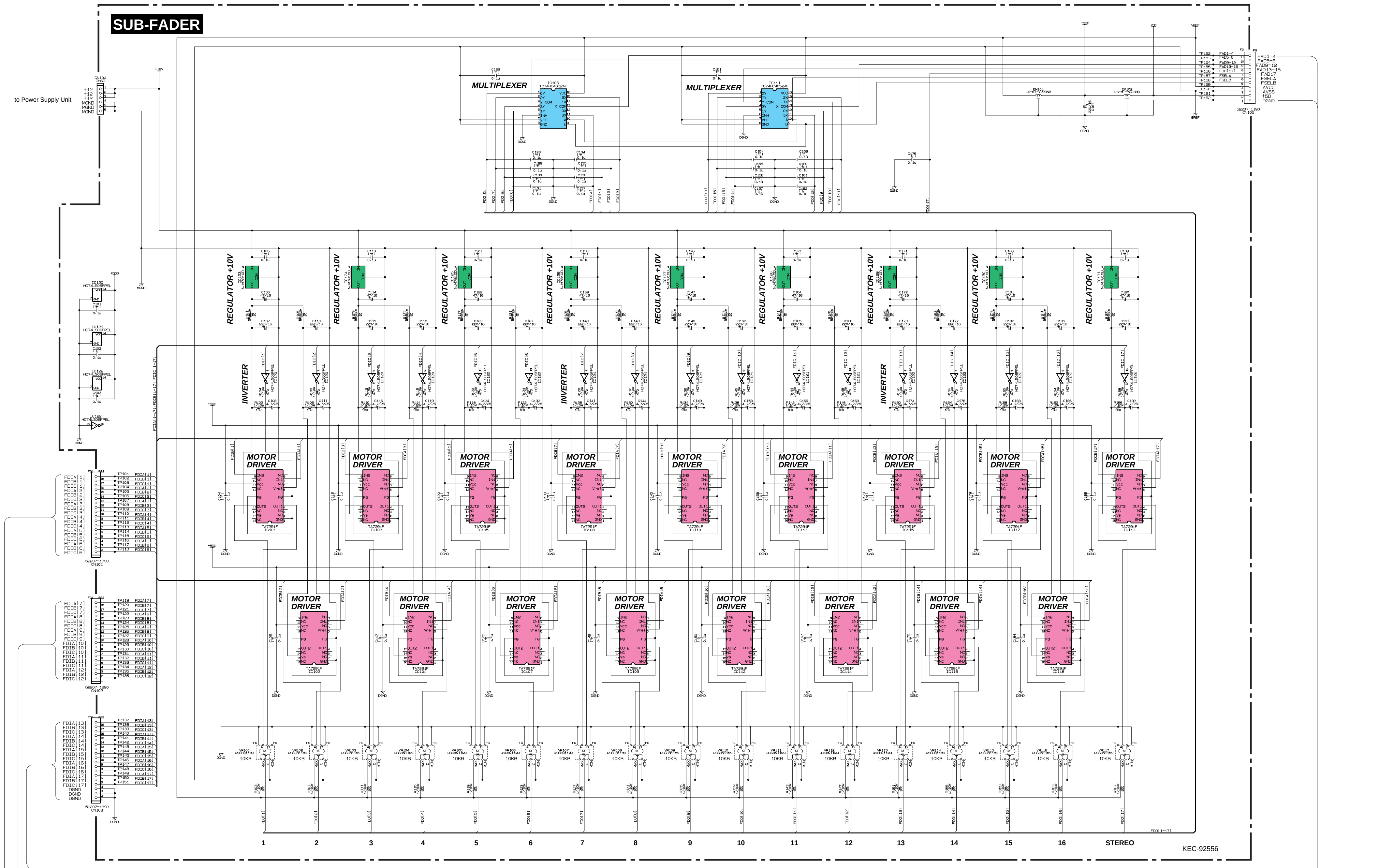
to MAIN4/4 (D-2)

(C) : Ceramic Capacitor
R : Metal Oxide Film Resistor

Note : See parts list for details of circuit board component parts



Note : See parts list for details of circuit board component parts

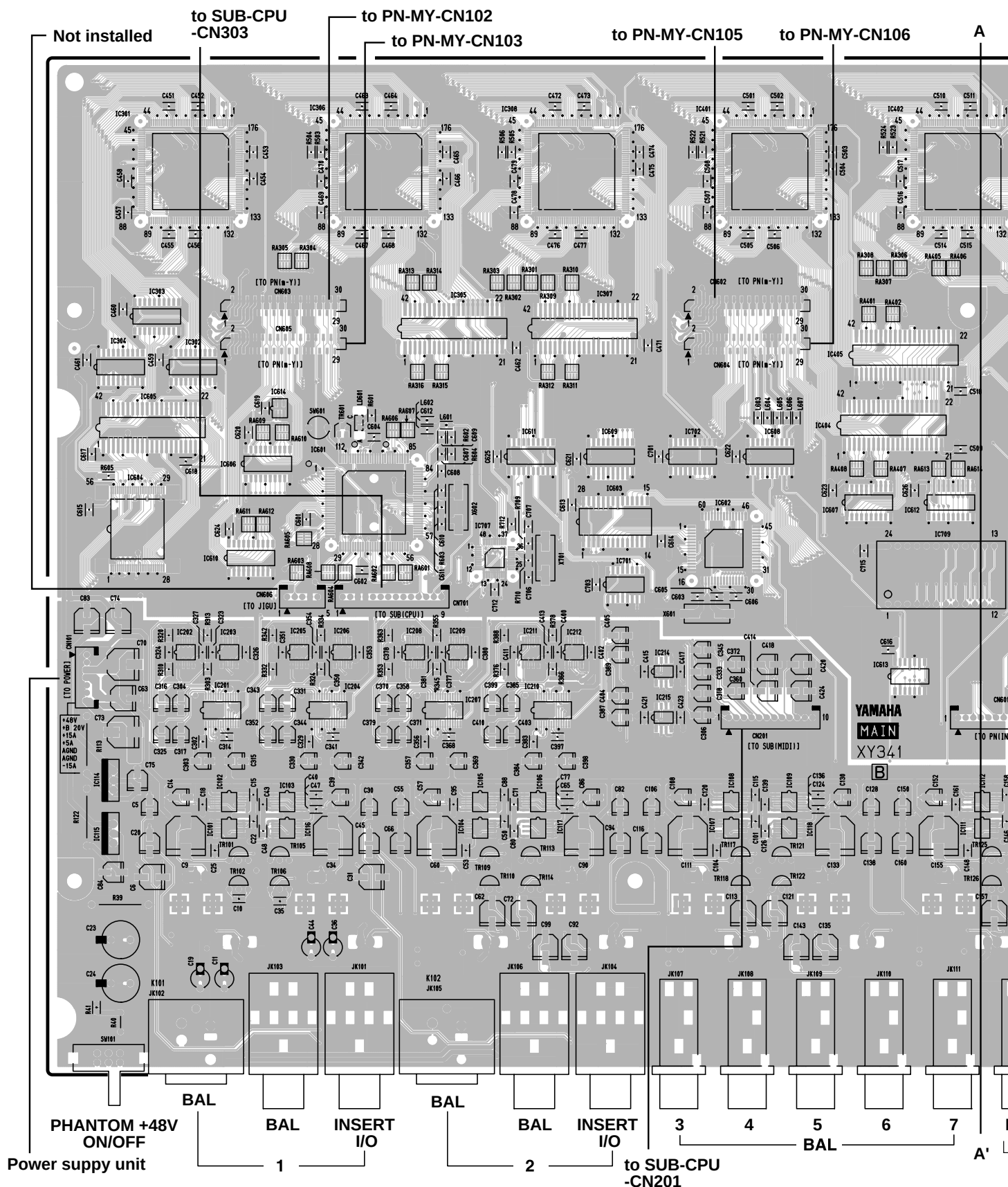


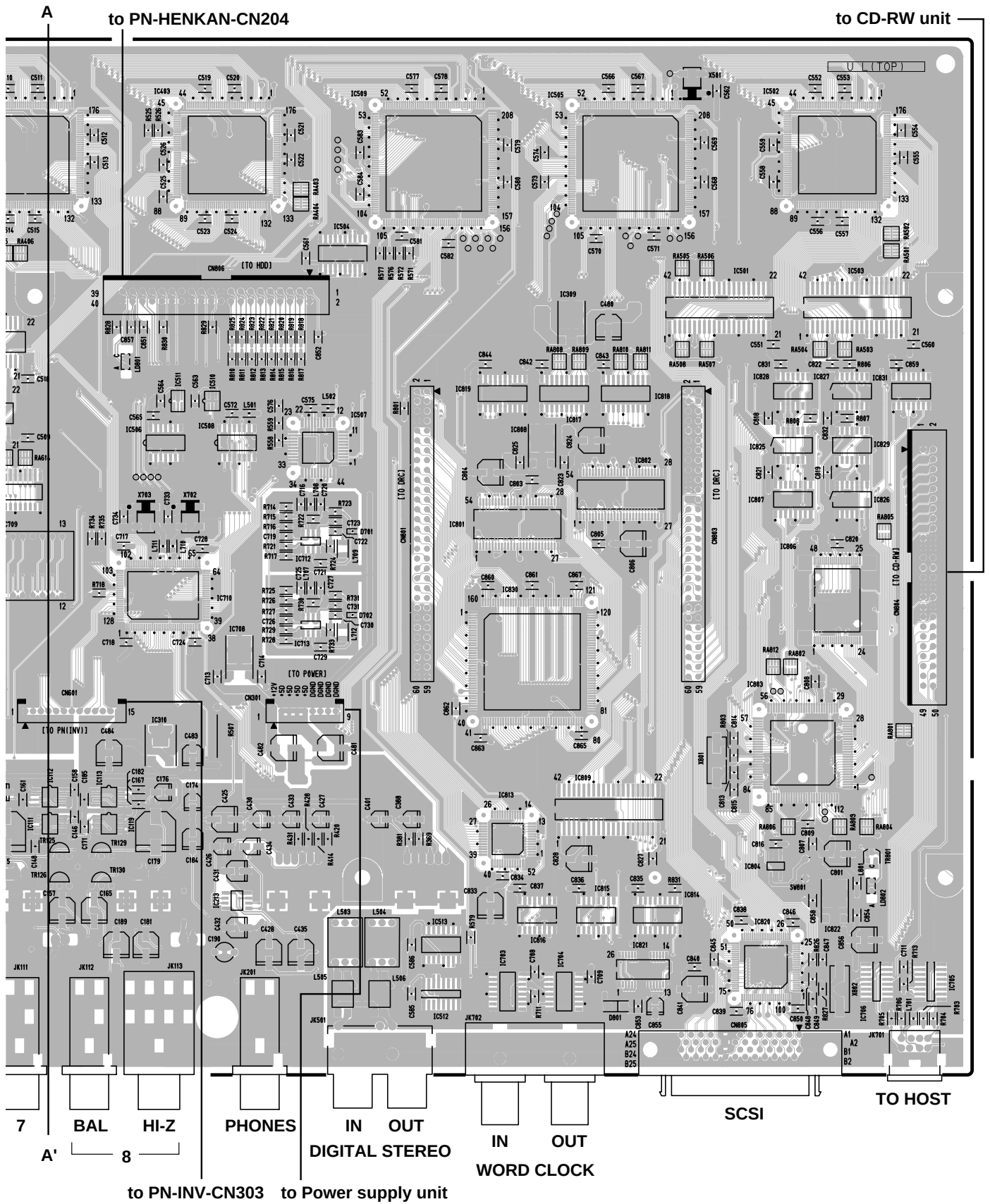
(セ): Ceramic Capacitor
膜電: Metal Oxide Film Resistor
*: Not installed

Note: See parts list for details of circuit board component parts

CIRCUIT BOARDS

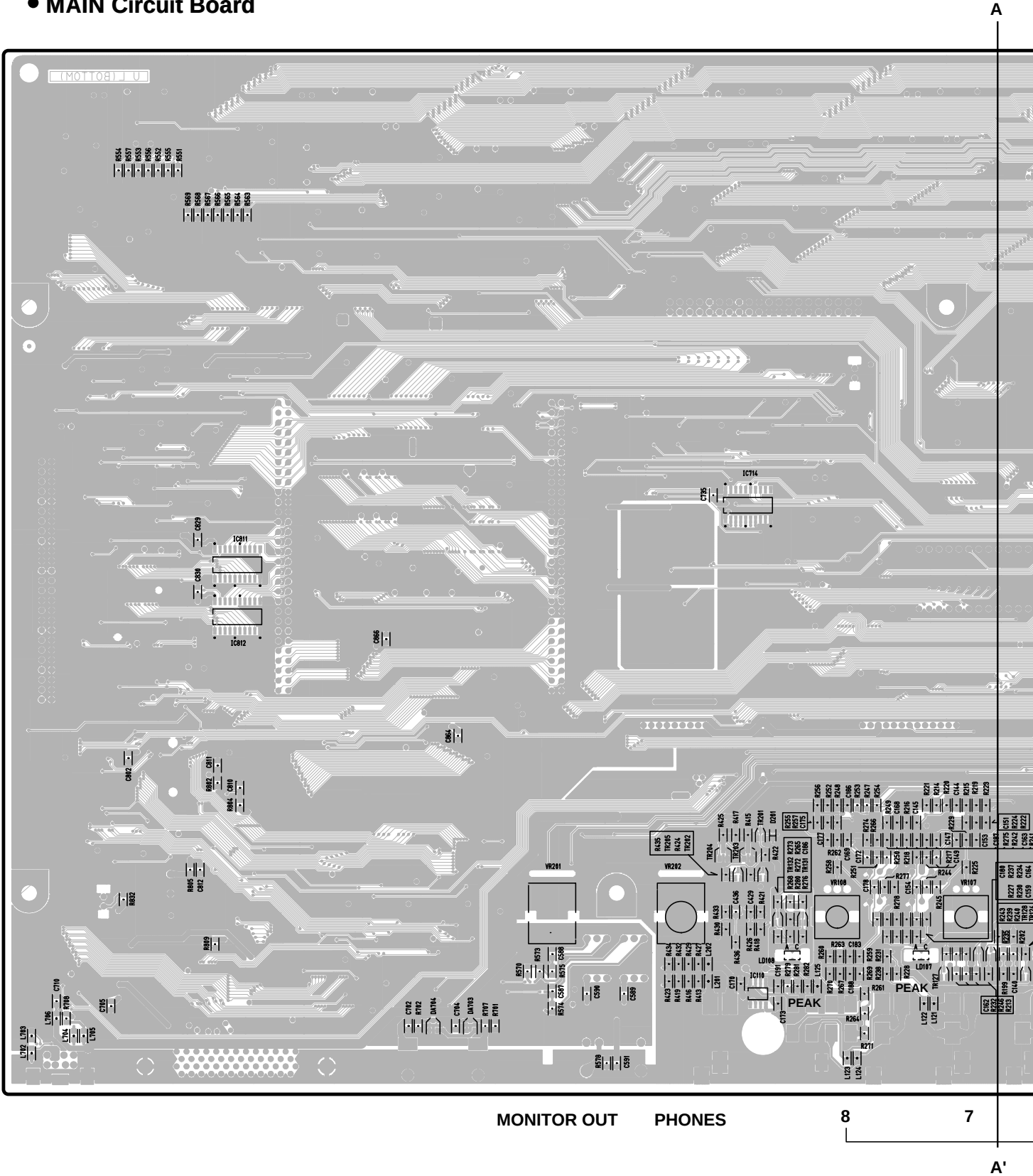
MAIN Circuit Board

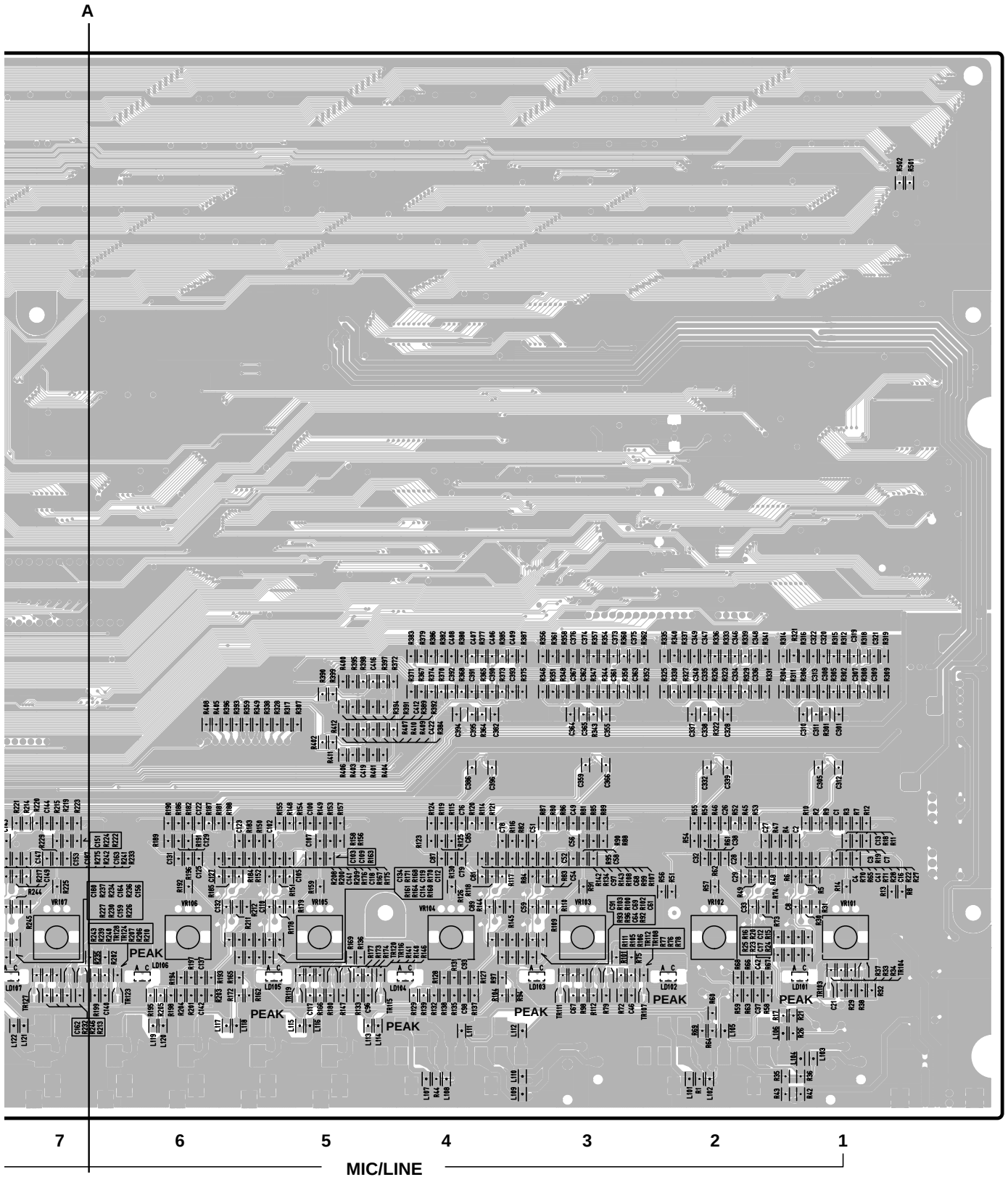




Component side

● MAIN Circuit Board

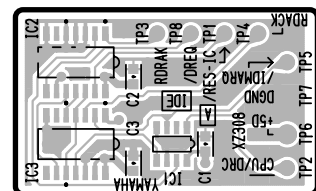




3NA-V544810-3 

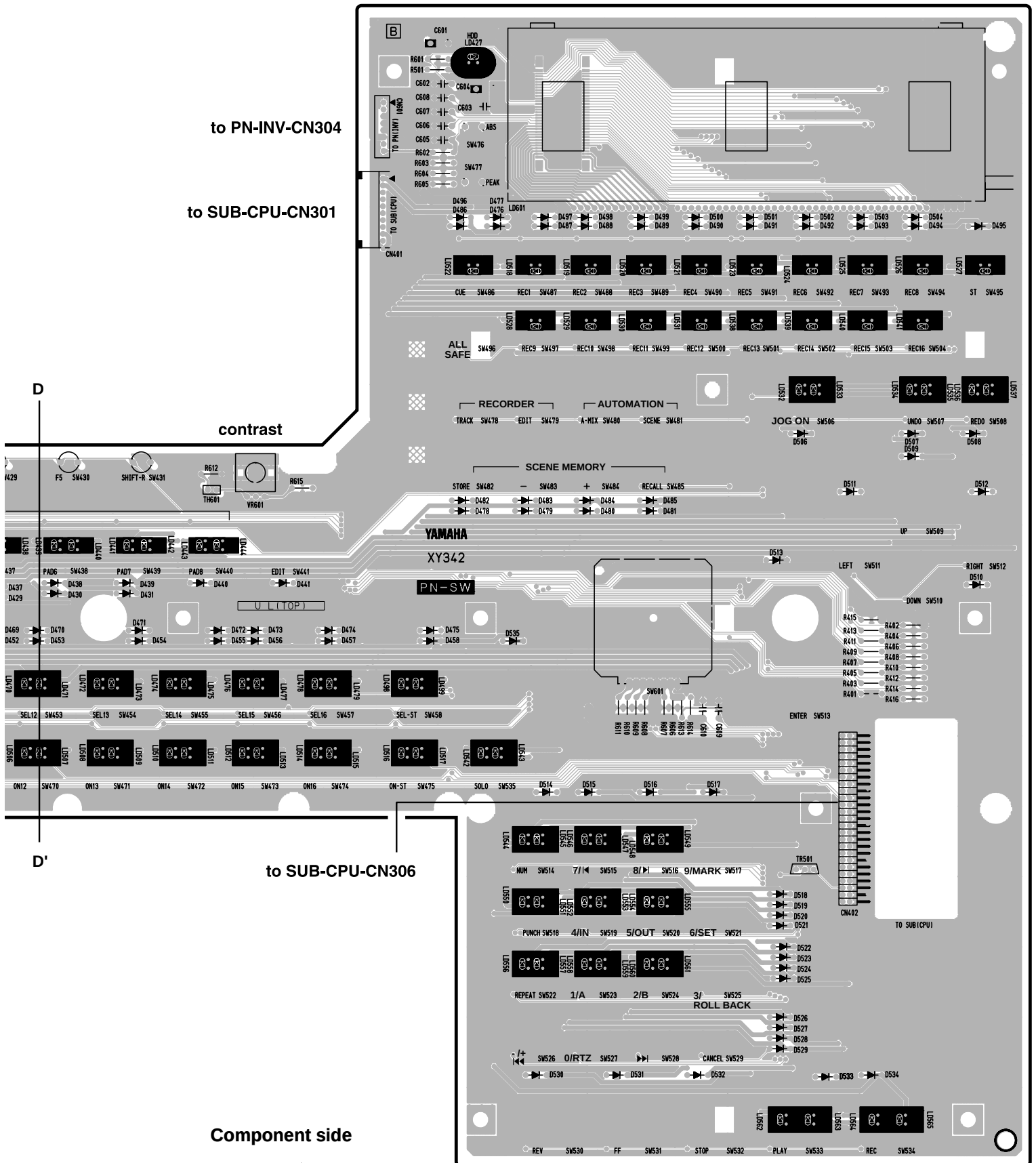
Pattern side

- **IDE Circuit Board**

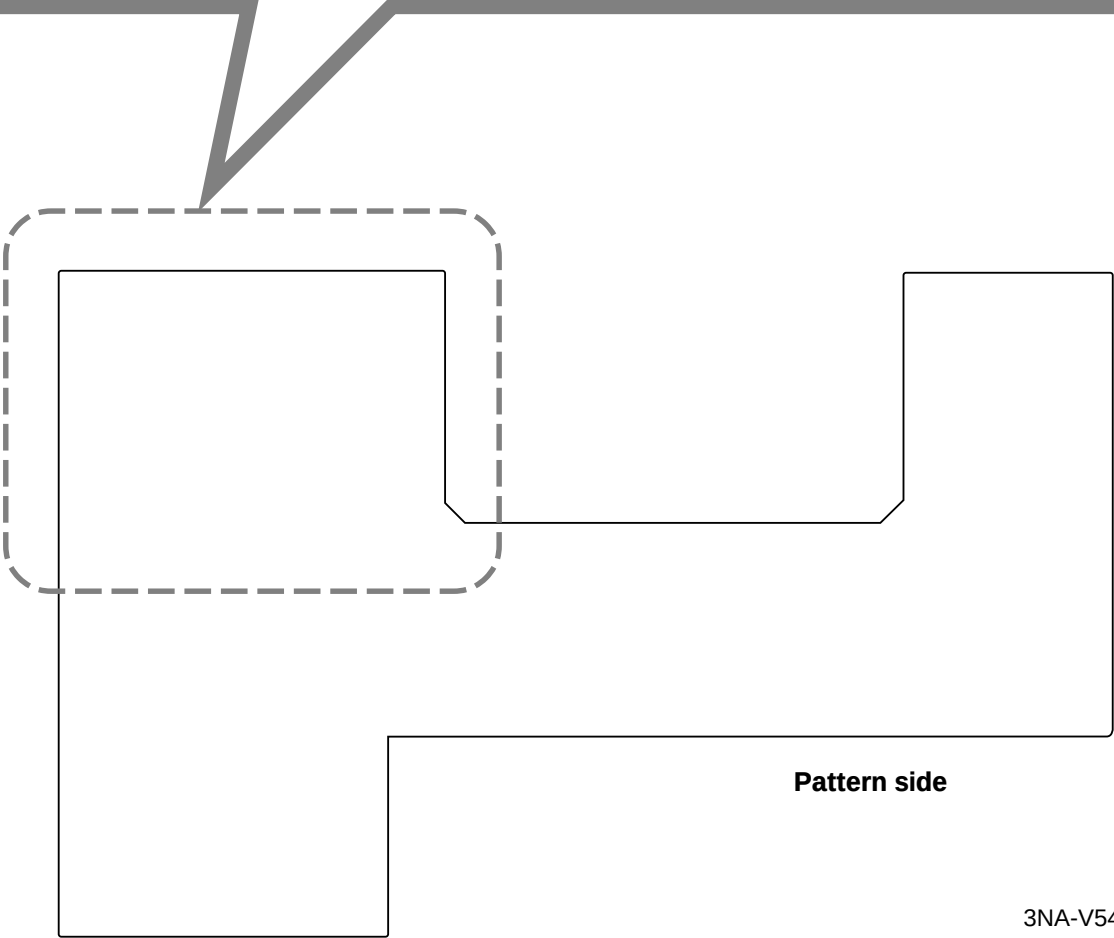
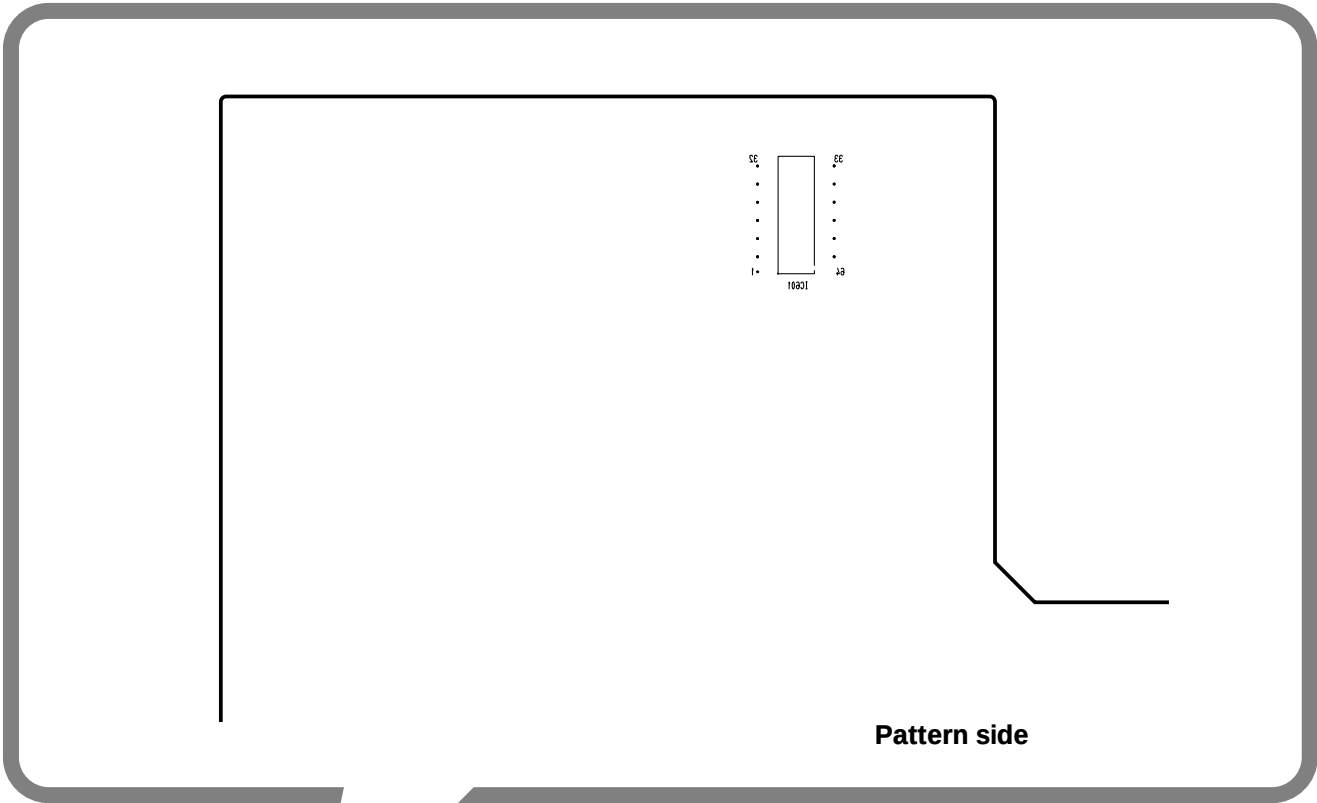


Pattern side

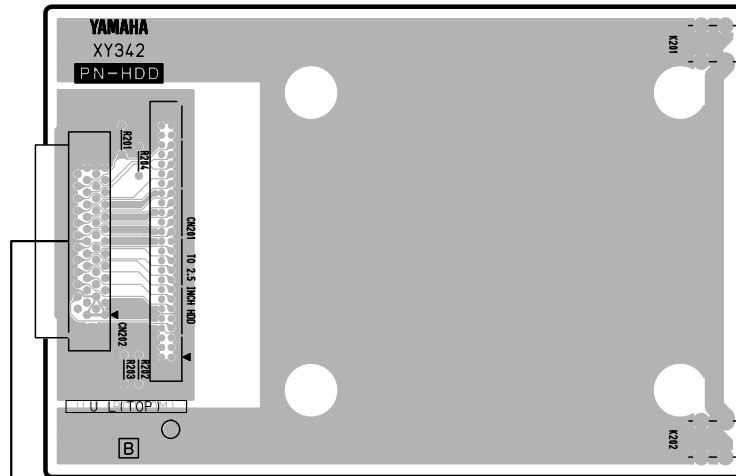
PN-SW: 3NA-V544820-2 
IDE: 3NA-V631890



● PN-SW Circuit Board

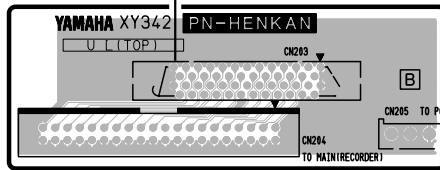


• PN-HDD Circuit Board



Component side

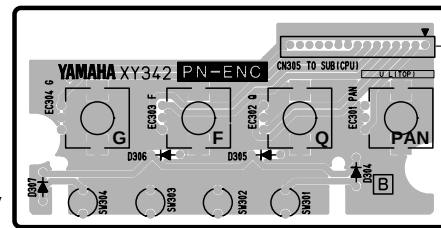
• PN-HENKAN Circuit Board



to MAIN-CN806

Component side

• PN-ENC Circuit Board

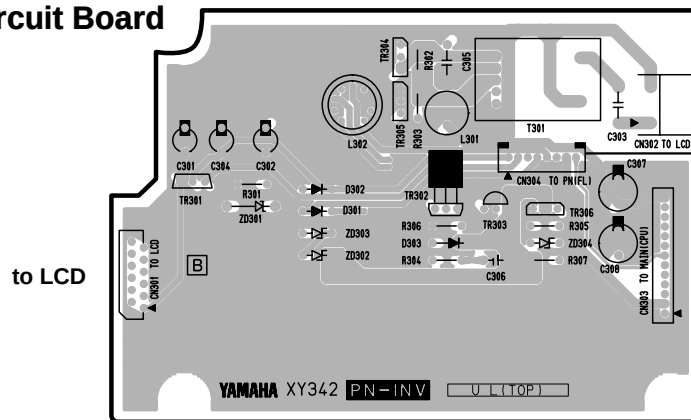


to SUB-CPU
-CN309

LOW LO -MID HI -MID HIGH
EQ

Component side

• PN-INV Circuit Board



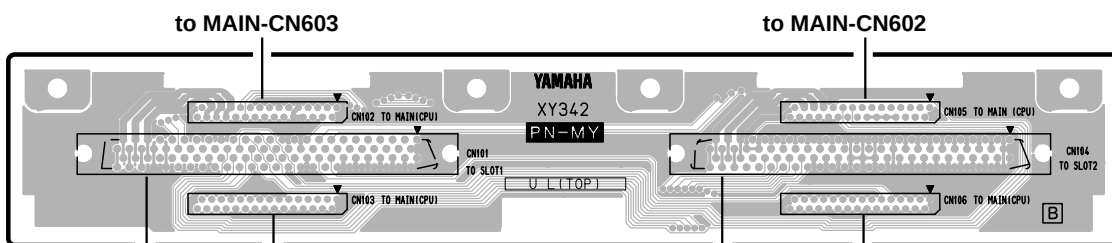
to LCD

to PN-SW-CN601

to MAIN-CN601

Component side

• PN-MY Circuit Board



to MAIN-CN603

to MAIN-CN602

to MAIN-CN605

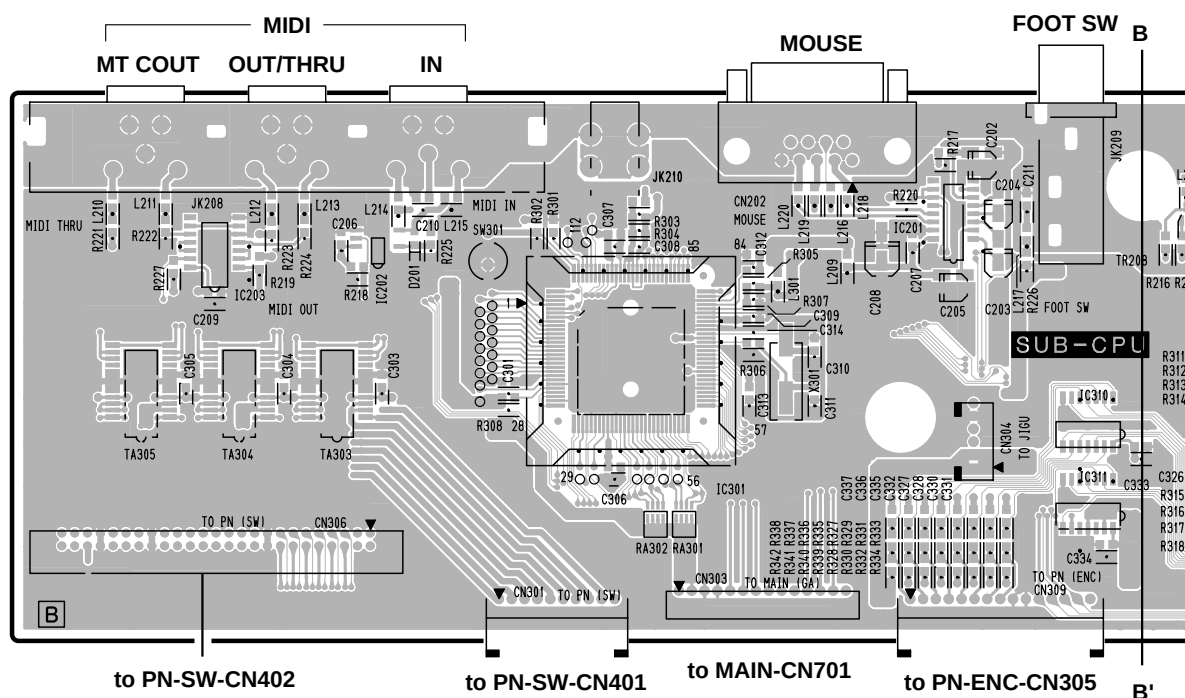
to MAIN-CN604

OPTION I/O SLOT1

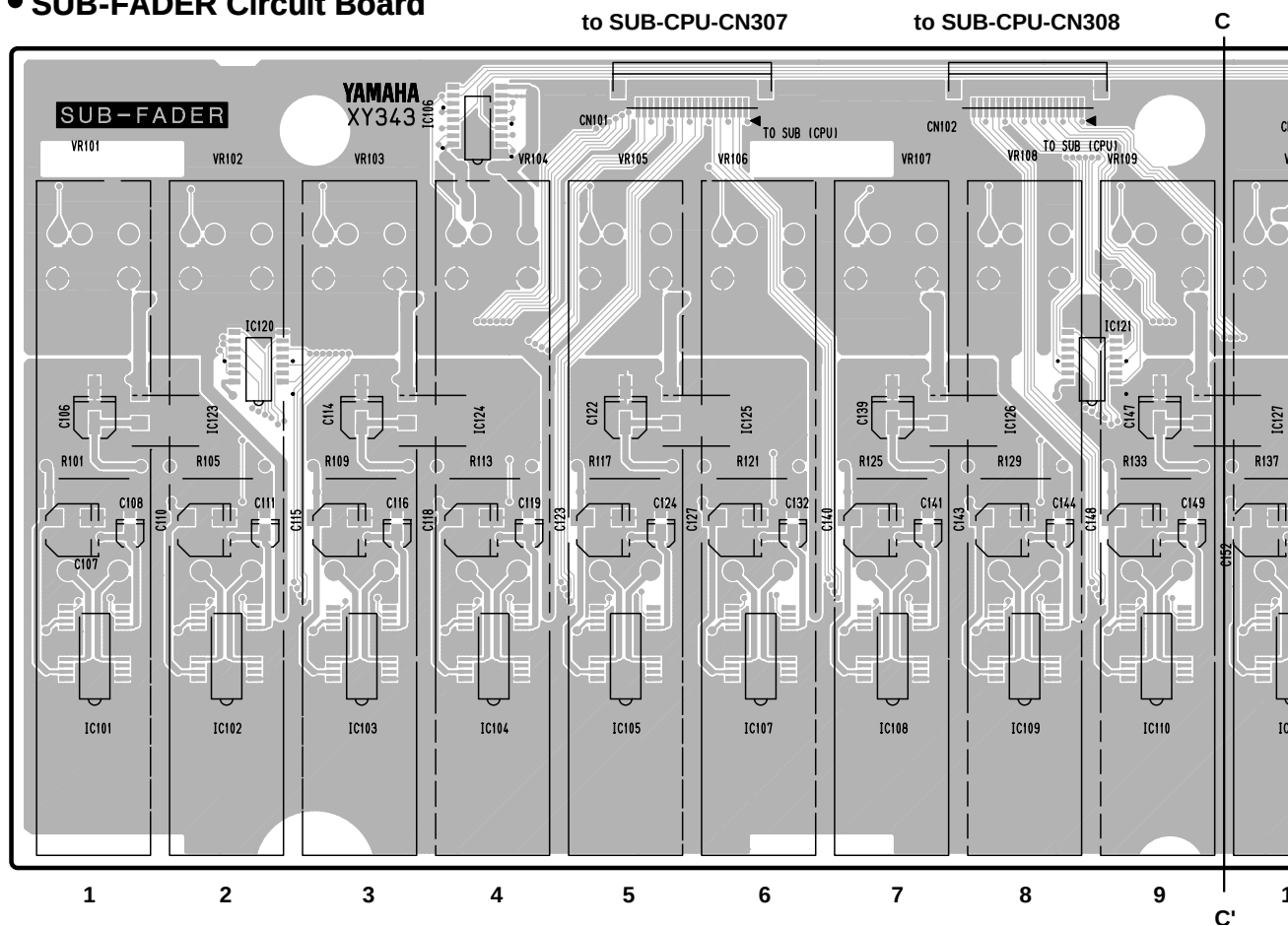
OPTION I/O SLOT2

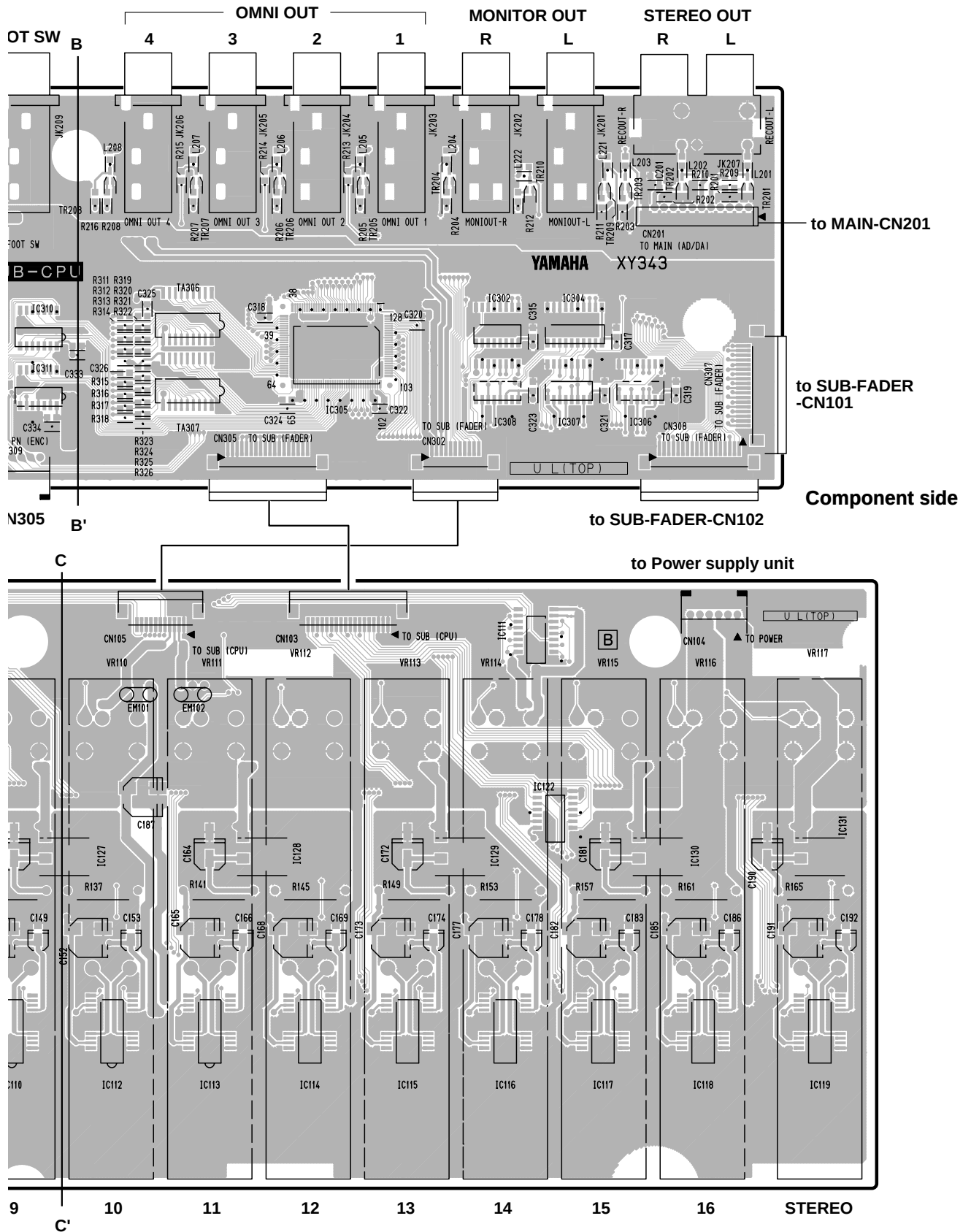
Component side

- **SUB-CPU Circuit Board**

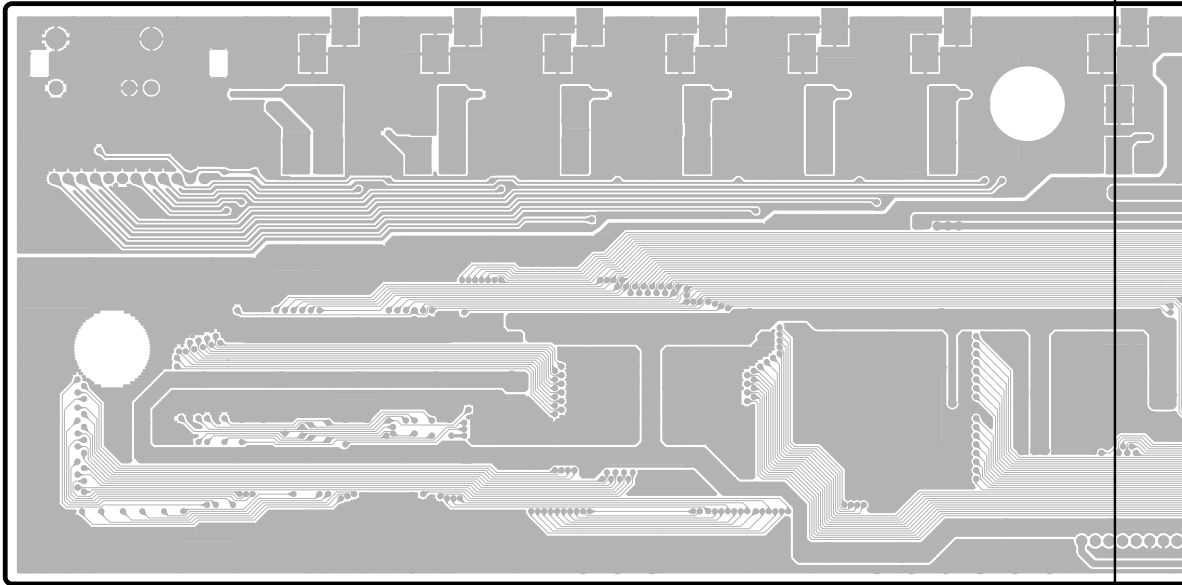


- **SUB-FADER Circuit Board**

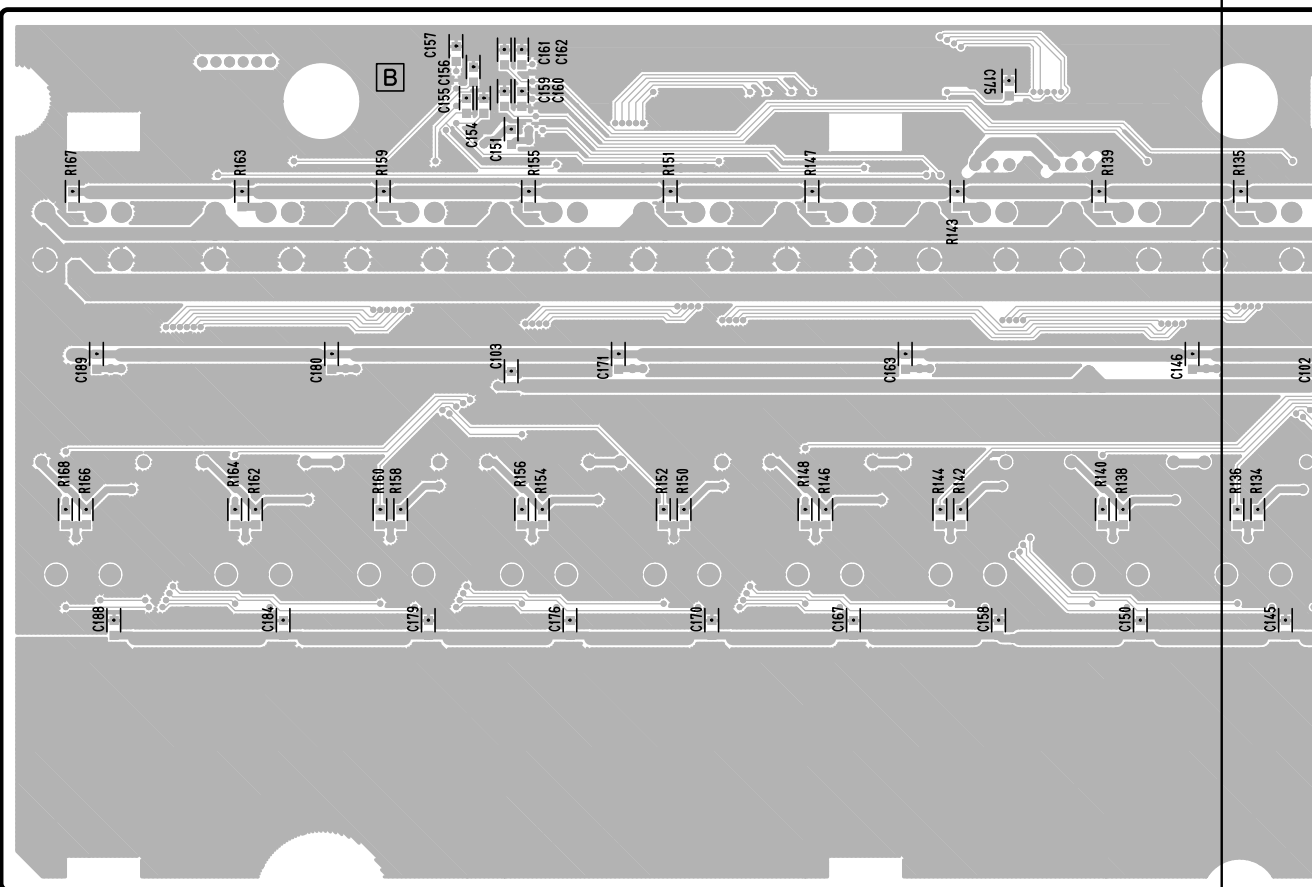


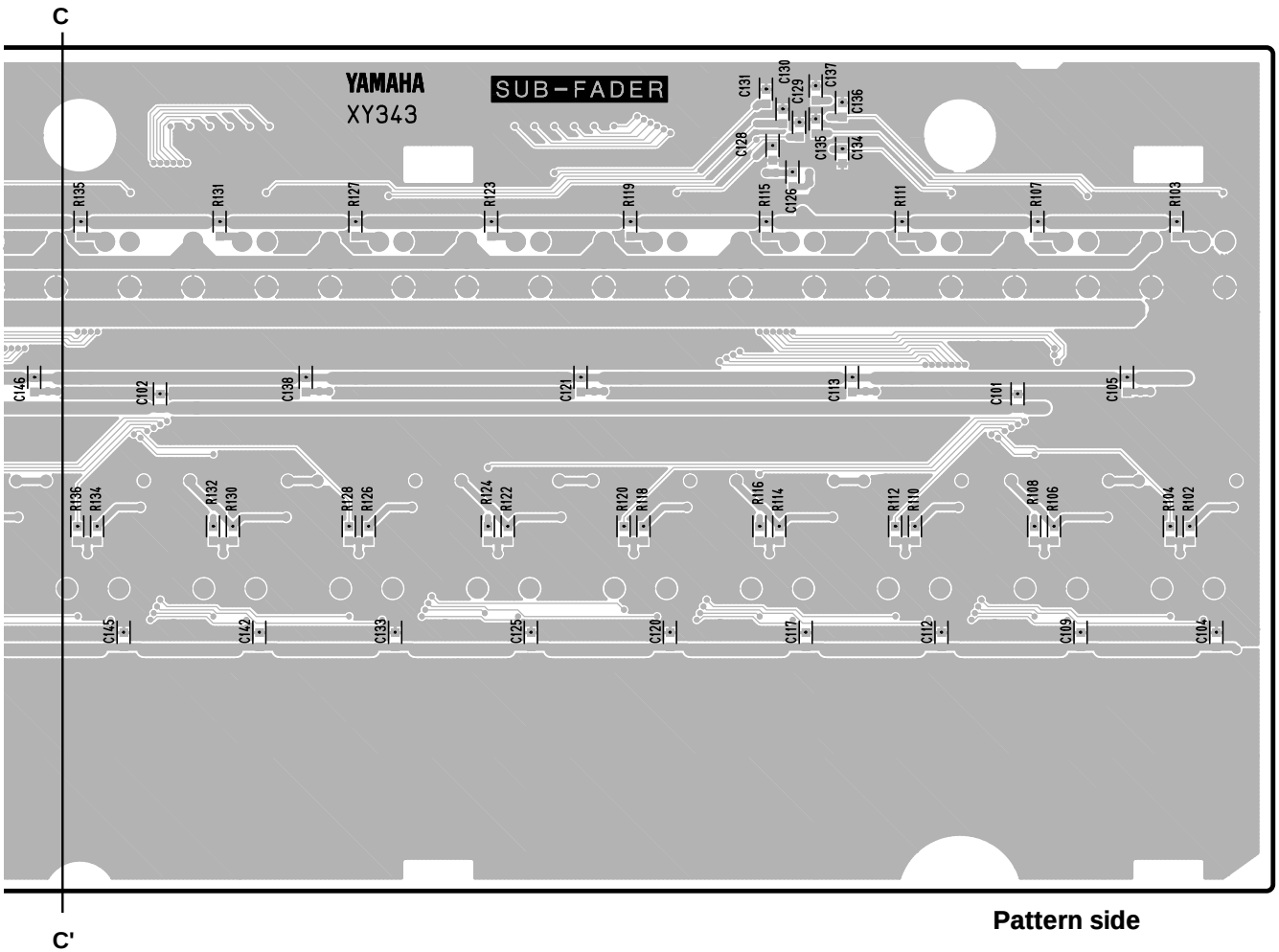
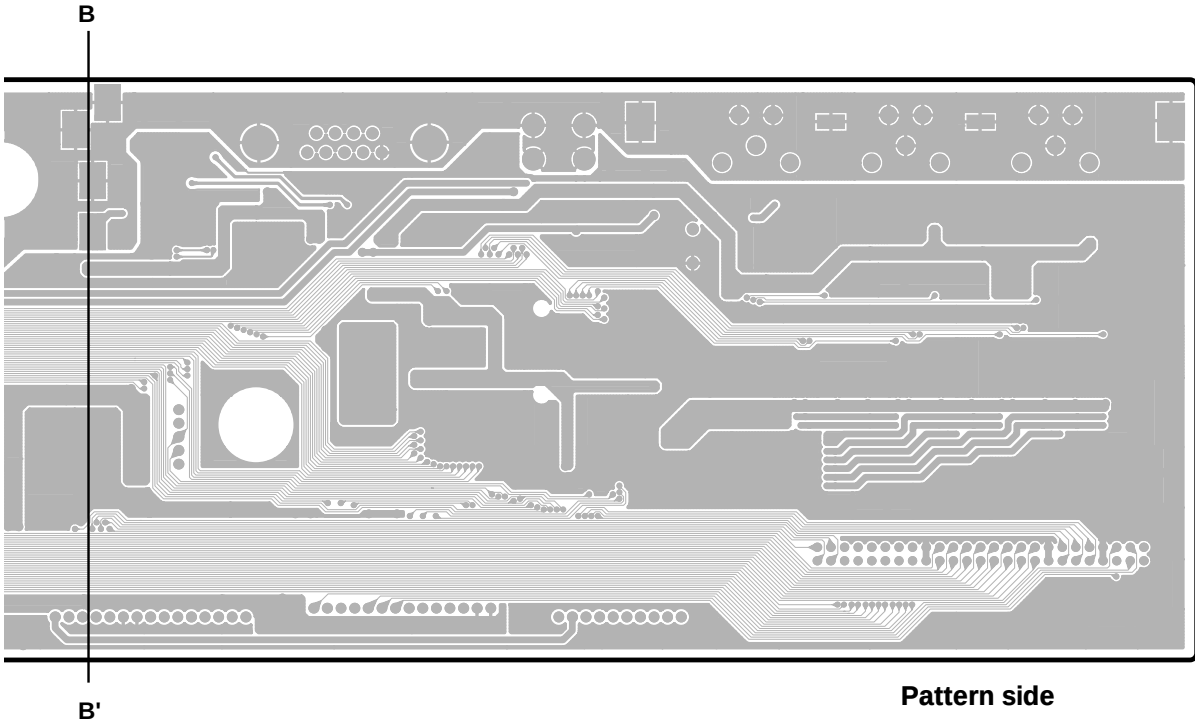


● SUB-CPU Circuit Board



● SUB-FADER Circuit Board





PROFESSIONAL AUDIO WORKSTATION

AW4416

PARTS LIST

■ CONTENTS

OVERALL ASSEMBLY	2
BOTTOM CHASSIS ASSEMBLY	5
ELECTRICAL PARTS	6

Notes : DESTINATION ABBREVIATIONS

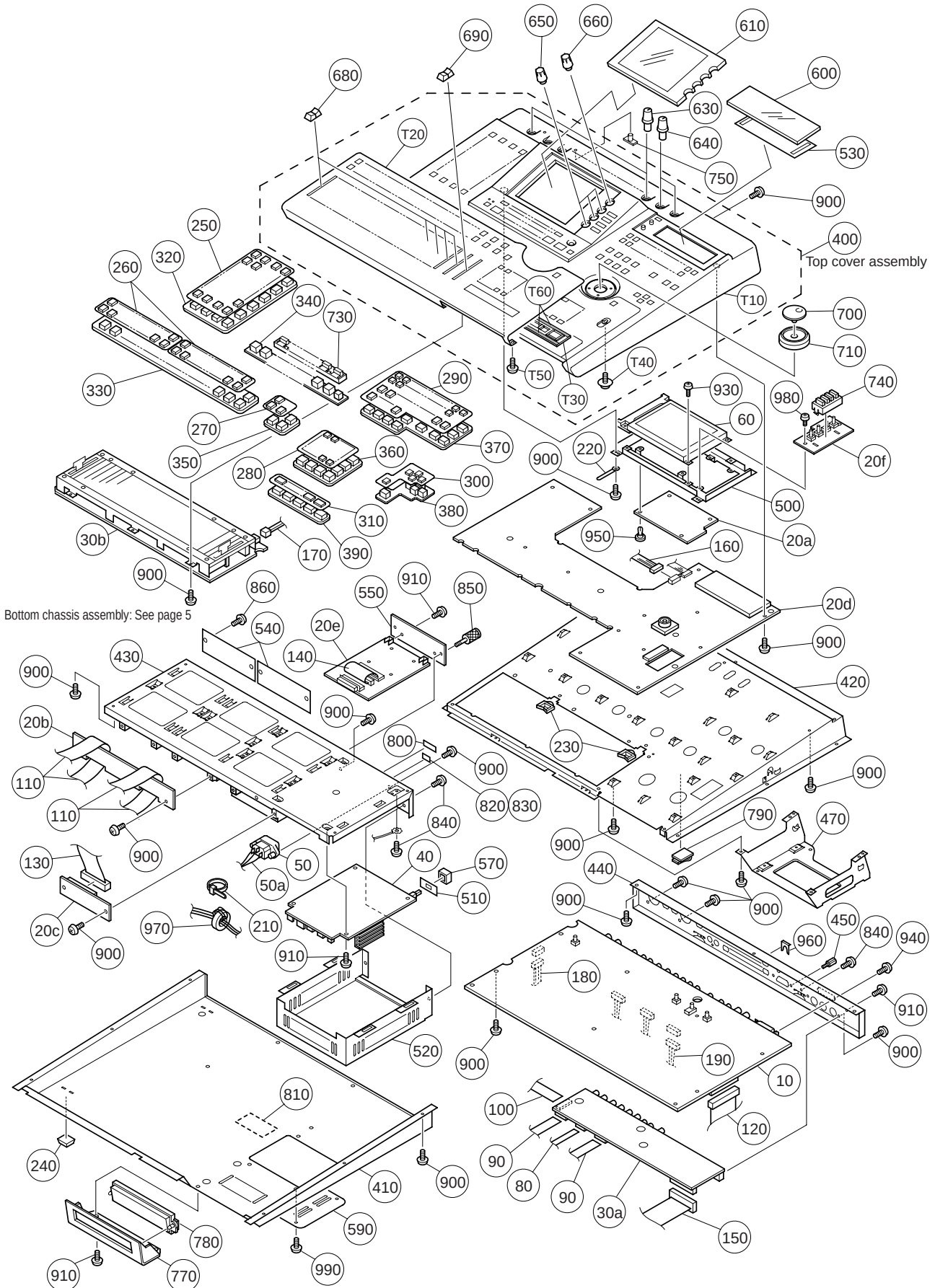
A : Australian model	M: South African model
B : British model	O : Chinese model
C : Canadian model	Q : South-east Asia model
D : German model	T : Taiwan model
E : European model	U : U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W: General export model (220)
I : Indonesian model	N,X: General export model
J : Japanese model	Y : Export model

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

- The numbers "QTY" show quantities for each unit.
- The parts with "--" in "PART NO." are not available as spare parts.
- This mark "}" in the REMARKS column means these parts are interchangeable.
- The second letter of the shaded () part number is O, not zero.
- The second letter of the shaded () part number is I, not one.

OVERALL ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	OVERALL ASSEMBLY		AW4416		
	--	Overall Assembly		J (V544780)		
	--	Overall Assembly		U,C,V (V544790)		
	--	Overall Assembly		H,B,W (V544800)		
* 10	V5448100	Circuit Board	MAIN			82
20	--	Circuit Board	PN			
* 20a	AAX14690	Circuit Board	PN-INV			11
* 20b	AAX14700	Circuit Board	PN-MY			08
* 20c	AAX14710	Circuit Board	PN-HENKAN			07
* 20d	AAX14720	Circuit Board	PN-SW			40
* 20e	AAX14730	Circuit Board	PN-HDD			08
* 20f	AAX14740	Circuit Board	PN-ENC			10
30	--	Circuit Board	SUB		(V544830)	
* 30a	AAX14750	Circuit Board	SUB-CPU			40
* 30b	AAX14760	Circuit Board	SUB-FADER			38
* 40	V5616700	Power Supply Unit	B101	J,U,C,V		26
* 40	V5616800	Power Supply Unit	B102	H,B,W		26
* 50	V5789800	AC Inlet Assembly		AC INLET		07
50a	VL785200	AC-IN Connector	AC-P01CR02			03
* 60	V5605200	LCD	LM320191			23
* 80	V5975000	Cable	11P 210mm P=1.0			
* 90	V5975100	Cable	18P 210mm P=1.0			
* 100	V5624700	Cable	18P 260mm P=1.0		2	03
* 110	MFA30120	Connector Assembly	30P 120mm P=1.0		4	02
120	--	Connector Assembly	MAIN TO CDR			
130	--	Connector Assembly	MAIN TO CDR			
140	V5580600	HDD Cable Assembly	50P 40mm			08
150	--	Connector Assembly	PN TO SUB			
160	--	Connector Assembly	PH&PH 10P 420L			
170	--	Connector Assembly	PH&PH 6P 200L			
180	--	Connector Assembly	PH&PH 7P 550L			
190	--	Connector Assembly	PH&PH 9P 300L			
210	CB069250	Cord Holder	BK-1			01
220	CB836200	Cord Binder	S-70B		2	02
230	V5678900	Saddle	EDS-1208U		2	01
* 240	V6009200	Foot	B-19		4	01
* 250	V5598500	Key Top	A DK-110236	WORK NAVIGATE,UNIT,MIXER, FADE MODE,MIXING LAYER		08
* 260	V5598600	Key Top	B DK-110237	SEL,ON (1-24)	2	07
* 270	V5602000	Key Top	D DK-110238	SEL,ON (STEREO),SOLO		05
* 280	V5598700	Key Top	E DK-110239	MUM LOCATE,7/<,8/>,9/ MARK,AUTO PUNCH,4/IN,5/ OUT,6/SET,REPEAT,1/A,2/ B,3,-/+,0/<<,ROLL BACK, CANCEL		06
* 290	V5598800	Key Top	F DK-110240	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		08
* 300	V5598900	Key Top	G DK-110241	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		06
* 310	V5599000	Key Top	H DK-110242	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		05
* 320	V5599300	Rubber Switch	A DK-110228	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		06
* 330	V5599400	Rubber Switch	B DK-110229	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		06
* 340	V5599600	Rubber Switch	C DK-110230	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		04
* 350	V5599700	Rubber Switch	D DK-110231	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		03
* 360	V5599800	Rubber Switch	E DK-110232	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		04
* 370	V5600400	Rubber Switch	F DK-110233	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		06
* 380	V5599900	Rubber Switch	G DK-110234	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		04
* 390	V5600000	Rubber Switch	H DK-110243	CUE,REC 1-16,ST,ALL SAFE, TRACK,EDIT,AUTO MIX, SCENE,STORE,-,+,RECALL SCRUB,UNDO,REDO		04
400	--	Top Cover Assembly				
* 410	V5615500	Bottom Cover			(V567650)	10
* 420	V5605000	Sub Chassis				09

*: New Parts

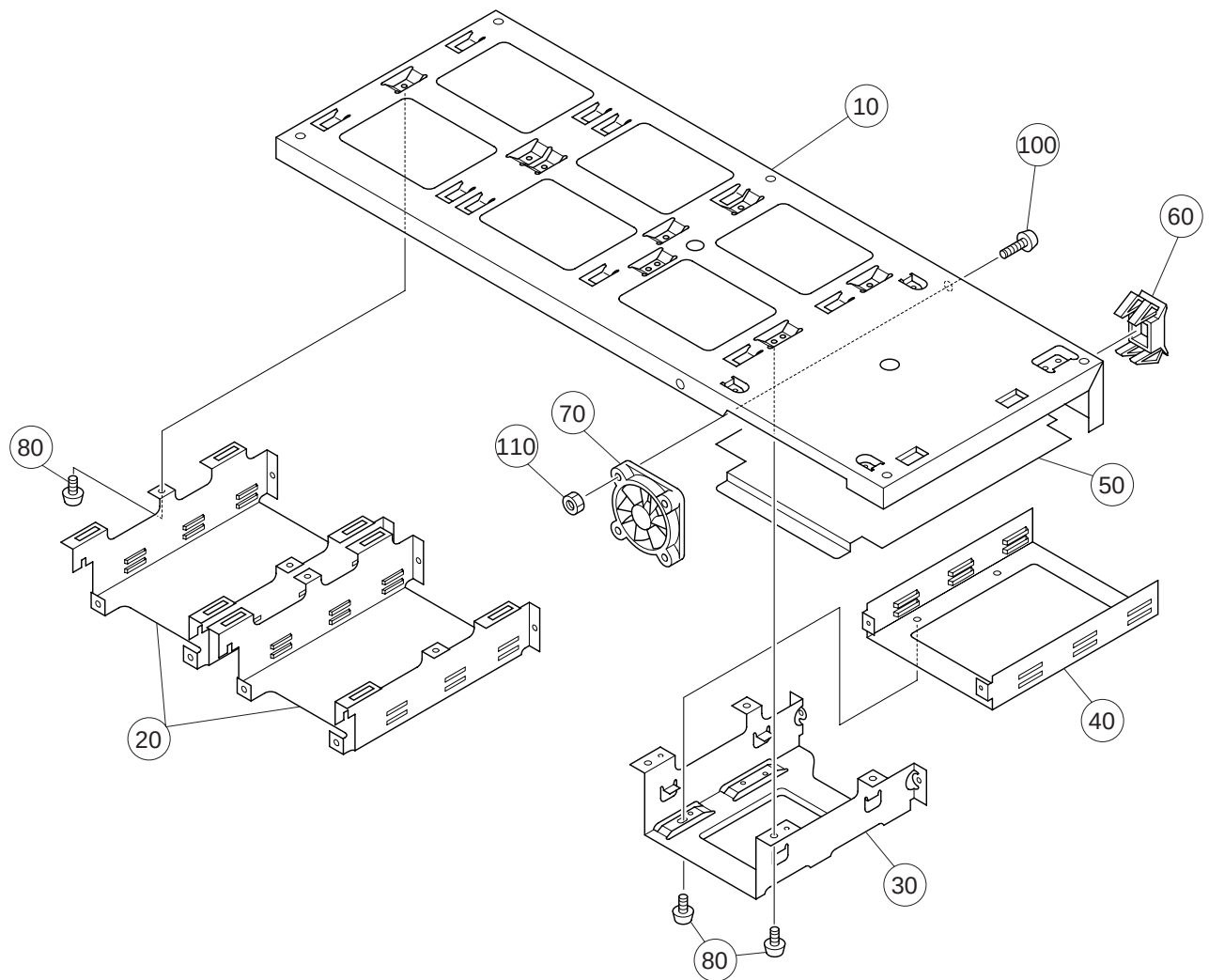
RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
430	--	Bottom Chassis Assembly		(V600690)		
* 440	V5674700	Rear Chassis				05
* 450	V6164800	Jack Socket	17L-003C3		2	04
* 470	V5623600	Holder, CD-RW				04
* 500	V5605100	Support, LCD				
* 510	--	Shield, PSW		U,C,V (V613510)		
520	V5605700	Cover, AC				05
* 530	--	Sheet, FL		U,C,V (V613550)		
540	VZ678500	IF Plate			2	05
* 550	V5369100	Plate, HDD				05
570	VL812900	Power Switch Knob		POWER ON/OFF		03
* 590	V5790300	Cover, Connector				05
* 600	V5639600	FL Cover				06
* 610	V5639700	LCD Cover				08
* 630	V5634000	Knob	D11 (G/B)	MIC/LINE 1-8	8	02
* 640	V5634100	Knob	D11 (R/B)	PHONES,MONITOR OUT	2	02
* 650	V5638500	Knob	D10 (G)	Q,F,G	3	01
* 660	V5638600	Knob	D10 (R)	PAN		01
680	VR275600	Fader Knob	BL/S-GY	1-16	16	04
690	VR282700	Fader Knob	BL/RE	STEREO		04
700	V2713700	Knob, Shuttle		SHUTTLE		06
710	V2713800	Knob, Jog		JOG		03
* 730	V5600100	Button, Function		SHIFT,F1-5,		03
* 740	V5600200	Button, EQ		HIGH,HI-MID,LO-MID,LOW		03
* 750	V5605400	Lens		PEAK 1-8	8	01
* 770	V5639800	Cover, CD-RW				05
* 780	V5641400	Plate, CD-RW				01
790	VR749700	Clamp	MFC-3000			02
800	--	Label	(J)	J (V567920)		
800	--	Label	(J) SEIKA	J (V604450)		
800	--	Label	(H)	H,B,W (V567940)		
810	--	Label	FCC-UL	U,C,V (V607300)		
820	--	Label		U,C,V (VA03930)		
830	--	Label	C-TICK	H,B,W (V321880)		
840	EG340340	Bind Head Screw	4.0X6 MFZN2BL		3	01
850	VZ743100	Screw			2	01
860	VB132700	Bind Head Screw	4.0X12 MFZN2BL		4	01
900	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		82	01
910	EP630210	Bind Head Tapping Screw-S	3.0X6 MFZN2BL		9	01
* 930	V5679500	Bind Head Tapping Screw-S	2.6X8 MFZN2Y		2	01
940	VT267800	Pan Head Screw	2.6X6 MFNI33		2	01
950	CB605620	Plastic Rivet	#1781		4	03
960	VI549000	U-shaped Holder	MET41-0191		10	01
970	VC362700	Ferrite Core	FR25/15/12-1400L			04
980	VU757900	Bind Head Tapping Screw-S	2.6X4 MFZN2Y		2	01
* 990	V6273200	Bind Head Tapping Screw-S	SP3.0X6 MFZN2BL		4	
	--	Top Cover Assembly		(V567650)		
* T10	V5559400	Top Cover				21
* T20	V5572600	Cover, Fader				12
* T30	V5605300	Escutcheon				01
* T40	V5915900	PW Head Tapping Screw-B	3.0X6-8 MFZN2BL		3	
T50	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		3	01
T60	--	Adhesive Tape	#500 W= 5	(VE36260)		
		ACCESSORIES				
* XY696A00		Magneto Optical Disk				05
* V5805500		AC Cord	DC-487-J12 2.5m	J		05
* V6190600		AC Cord	CSA	U,C,V		
* V6190700		AC Cord	VDE	H,W		
* V6190800		AC Cord	BS 3P	B		
* V6366800		Hard Disk Drive				
	--	Connector Assembly		(V625520)		
C10	V5676500	Pan Washer Head Screw	3.0X4 MFNI3-3		8	01
* C20	V5648200	Connector Assembly	8B98 VH4P	For CDRW DRIVE		07

*: New Parts

RANK: Japan only

BOTTOM CHASSIS ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	BOTTOM CHASSIS ASSEMBLY		AW4416 (V600690)		
* 10	V5605600	Bottom Chassis				12
* 20	V5414300	Support, MY			2	04
* 30	V5416700	Holder, HDD				04
* 40	V5398900	Support, HDD				03
* 50	V5679900	Shield, AC				03
60	VL813000	Escutcheon, Power Switch				03
* 70	V6124200	Fan Motor	F412R-12LLB			08
80	EP630210	Bind Head Tapping Screw-S	3.0X6 MFZN2BL		12	01
* 100	V6139500	Pan Head Screw	SW 3.0X20 MFZN2BL		2	
110	VA211900	Hexagonal Nut	3.0 MFZN2Y		2	01

*: New Parts

RANK: Japan only

ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V5448100	ELECTRICAL PARTS		AW4416		
	--	Circuit Board	MAIN	(XY341C0)		82
	AAX14690	Circuit Board	PN	(V544820)(XY342C0)		
	AAX14700	Circuit Board	PN-INV	(XY342C0)		11
	AAX14710	Circuit Board	PN-MY	(XY342C0)		08
	AAX14720	Circuit Board	PN-HENKAN	(XY342C0)		07
	AAX14730	Circuit Board	PN-SW	(XY342C0)		40
	AAX14740	Circuit Board	PN-HDD	(XY342C0)		08
	--	Circuit Board	PN-ENC	(XY342C0)		10
	AAX14750	Circuit Board	SUB	(V544830)(XY343B0)		
*	AAX14760	Circuit Board	SUB-CPU	(XY343B0)		40
	AAX14760	Circuit Board	SUB-FADER	(XY343B0)		38
	V6318900	Circuit Board	IDE	(XZ308A0)		
*	V5448100	Circuit Board	MAIN	(XY341C0)		82
	C1 UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
	C2 UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
	C3 UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
	C4 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C5 UF037100	Electrolytic Cap. (chip)	10 16V			01
	C7 UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
	C8 UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
	C9 UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
	C10 UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
	C11 VJ097400	Electrolytic Cap.-KL	10.00 50.0V			01
	C12 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C13 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C14 UF037100	Electrolytic Cap. (chip)	10 16V			01
	C15 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C16 UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
	C17 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C18 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C19 VJ097400	Electrolytic Cap.-KL	10.00 50.0V			01
	C20 UF066470	Electrolytic Cap. (chip)	4.7 50V			01
	C21 UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
	C22 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C23 UJ878100	Electrolytic Cap.	100.00 63.0V			01
	C24 UJ878100	Electrolytic Cap.	100.00 63.0V			01
	C25 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C26 UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
	C27 UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
	C28 UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
	C29 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C30 UF037100	Electrolytic Cap. (chip)	10 16V			01
	C32 UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
	C33 UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
	C34 UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
	C35 UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
	C36 VJ097400	Electrolytic Cap.-KL	10.00 50.0V			01
	C37 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C38 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C39 UF037100	Electrolytic Cap. (chip)	10 16V			01
	C40 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C41 UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
	C42 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C43 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C44 VJ097400	Electrolytic Cap.-KL	10.00 50.0V			01
	C45 UF066470	Electrolytic Cap. (chip)	4.7 50V			01
	C46 UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
	C47 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C48 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C49 UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
	C50 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C51 UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
	C52 UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
	C53 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C54 UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
	C55 UF037100	Electrolytic Cap. (chip)	10 16V			01
	C56 UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	C57 UF037100	Electrolytic Cap. (chip)	10 16V			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C58	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C59	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C60	UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
C61	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C62	UF067100	Electrolytic Cap. (chip)	10 50V			01
C63	UF038100	Electrolytic Cap. (chip)	100 16V			01
C64	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C65	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C66	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C67	UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
C68	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C69	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C70	UF148100	Electrolytic Cap. (chip)	100 25V UUR1E1			01
C71	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C72	UF067100	Electrolytic Cap. (chip)	10 50V			01
C73	UF148100	Electrolytic Cap. (chip)	100 25V UUR1E1			01
C74	UF038100	Electrolytic Cap. (chip)	100 16V			01
C76	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C77	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C78	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C79	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C80	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C81	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C82	UF037100	Electrolytic Cap. (chip)	10 16V			01
C83	UF038100	Electrolytic Cap. (chip)	100 16V			01
C85	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C86	UF037100	Electrolytic Cap. (chip)	10 16V			01
C87	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C88	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C89	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C90	UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
C91	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C92	UF067100	Electrolytic Cap. (chip)	10 50V			01
C93	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C94	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C95	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C96	UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
C97	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C98	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C99	UF067100	Electrolytic Cap. (chip)	10 50V			01
C100	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C101	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C102	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C103	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C104	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C105	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C106	UF037100	Electrolytic Cap. (chip)	10 16V			01
C107	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C108	UF037100	Electrolytic Cap. (chip)	10 16V			01
C109	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C110	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C111	UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
C112	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C113	UF067100	Electrolytic Cap. (chip)	10 50V			01
C114	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C115	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C116	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C117	UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
C118	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C119	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C120	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C121	UF067100	Electrolytic Cap. (chip)	10 50V			01
C122	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C123	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C124	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C125	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C126	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C127	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C128	UF037100	Electrolytic Cap. (chip)	10 16V			01
C129	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C130	UF037100	Electrolytic Cap. (chip)	10 16V			01
C131	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C132	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C133	UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
C134	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C135	UF067100	Electrolytic Cap. (chip)	10 50V			01
C136	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C137	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C138	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C139	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C140	UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
C141	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C142	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C143	UF067100	Electrolytic Cap. (chip)	10 50V			01
C144	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C145	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C146	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C147	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C148	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C149	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C150	UF037100	Electrolytic Cap. (chip)	10 16V			01
C151	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C152	UF037100	Electrolytic Cap. (chip)	10 16V			01
C153	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C154	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C155	UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
C156	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C157	UF067100	Electrolytic Cap. (chip)	10 50V			01
C158	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C159	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C160	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C161	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C162	UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
C163	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C164	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C165	UF067100	Electrolytic Cap. (chip)	10 50V			01
C166	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C167	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C168	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C169	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C170	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C171	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C172	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C173	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C174	UF037100	Electrolytic Cap. (chip)	10 16V			01
C175	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C176	UF037100	Electrolytic Cap. (chip)	10 16V			01
C177	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C178	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C179	UF119100	Electrolytic Cap. (chip)	1000 6.3V UUR0J1			02
C180	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C181	UF067100	Electrolytic Cap. (chip)	10 50V			01
C182	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C183	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C184	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C185	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C186	UB214470	Monolithic Ceramic Cap.	B 0.047 25V K			01
C187	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C188	UB012220	Monolithic Ceramic Cap.	B 220P 50V K			01
C189	UF067100	Electrolytic Cap. (chip)	10 50V			01
C190	UN866100	Electrolytic Cap.-BP	1.00 50.0V			01
C191	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C301	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C302	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C303	UF066220	Electrolytic Cap. (chip)	2.2 50V			01
C304	UF037100	Electrolytic Cap. (chip)	10 16V			01
C305	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C306	UF037100	Electrolytic Cap. (chip)	10 16V			01
C307	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C308	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C309	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C310	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C311	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C312	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C313	UB051560	Monolithic Ceramic Cap.	SL 56P 50V J			01
C314	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C315	UF037100	Electrolytic Cap. (chip)	10 16V			01
-318	UF037100	Electrolytic Cap. (chip)	10 16V			01
C319	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C320	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01
C321	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C322	UB051560	Monolithic Ceramic Cap.	SL 56P 50V J			01
C323	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C324	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C325	UF037100	Electrolytic Cap. (chip)	10 16V			01
C326	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-329	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C330	UF066220	Electrolytic Cap. (chip)	2.2 50V			01
C331	UF037100	Electrolytic Cap. (chip)	10 16V			01
C332	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C333	UF037100	Electrolytic Cap. (chip)	10 16V			01
C334	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C335	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01
C336	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C337	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C338	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C339	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C340	UB051560	Monolithic Ceramic Cap.	SL 56P 50V J			01
C341	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C342	UF037100	Electrolytic Cap. (chip)	10 16V			01
-345	UF037100	Electrolytic Cap. (chip)	10 16V			01
C346	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C347	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01
C348	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C349	UB051560	Monolithic Ceramic Cap.	SL 56P 50V J			01
C350	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C351	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C352	UF037100	Electrolytic Cap. (chip)	10 16V			01
C353	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-356	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C357	UF066220	Electrolytic Cap. (chip)	2.2 50V			01
C358	UF037100	Electrolytic Cap. (chip)	10 16V			01
C359	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C360	UF037100	Electrolytic Cap. (chip)	10 16V			01
C361	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C362	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01
C363	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C364	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C365	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C366	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C367	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C368	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C369	UF037100	Electrolytic Cap. (chip)	10 16V			01
-372	UF037100	Electrolytic Cap. (chip)	10 16V			01
C373	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C374	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01
C375	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C376	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C377	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C378	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C379	UF037100	Electrolytic Cap. (chip)	10 16V			01
C380	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-383	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C384	UF066220	Electrolytic Cap. (chip)	2.2 50V			01
C385	UF037100	Electrolytic Cap. (chip)	10 16V			01
C386	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C387	UF037100	Electrolytic Cap. (chip)	10 16V			01
-389	UF037100	Electrolytic Cap. (chip)	10 16V			01
C390	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C391	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C392	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C393	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C394	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C395	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C396	UB013150	Monolithic Ceramic Cap.	B 1500P 50V K			01
C397	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C398	UF037100	Electrolytic Cap. (chip)	10 16V			01
C399	UF037100	Electrolytic Cap. (chip)	10 16V			01
C400	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C401	UF037100	Electrolytic Cap. (chip)	10 16V			01
C402	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C403	UF037100	Electrolytic Cap. (chip)	10 16V			01
-405	UF037100	Electrolytic Cap. (chip)	10 16V			01
C406	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C407	UB013330	Monolithic Ceramic Cap.	B 3300P 50V K			01
C408	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C409	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C410	UF037100	Electrolytic Cap. (chip)	10 16V			01
C411	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C412	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C413	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C414	UF057100	Electrolytic Cap. (chip)	10 35V			01
C415	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C416	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C417	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C418	UF057100	Electrolytic Cap. (chip)	10 35V			01
C419	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C420	UF057100	Electrolytic Cap. (chip)	10 35V			01
C421	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C422	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C423	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C424	UF057100	Electrolytic Cap. (chip)	10 35V			01
C425	UF037470	Electrolytic Cap. (chip)	47 16V			01
C426	UF037100	Electrolytic Cap. (chip)	10 16V			01
C427	UF037100	Electrolytic Cap. (chip)	10 16V			01
C428	UF038100	Electrolytic Cap. (chip)	100 16V			01
C429	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C431	UF047100	Electrolytic Cap. (chip)	10 25V			01
C432	UF047100	Electrolytic Cap. (chip)	10 25V			01
C433	UF037100	Electrolytic Cap. (chip)	10 16V			01
C434	UF037100	Electrolytic Cap. (chip)	10 16V			01
C435	UF038100	Electrolytic Cap. (chip)	100 16V			01
C436	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C437	UR829100	Electrolytic Cap. (chip)	1000 10V			01
-439	UR829100	Electrolytic Cap. (chip)	1000 10V			01
C451	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-479	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C480	UF038100	Electrolytic Cap. (chip)	100 16V			01
-482	UF038100	Electrolytic Cap. (chip)	100 16V			01
C484	UF038100	Electrolytic Cap. (chip)	100 16V			01
C501	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-526	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C531	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C532	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C533	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C534	UB013100	Monolithic Ceramic Cap.	B 1000P 50V K			01
C535	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C536	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C537	UF066100	Electrolytic Cap. (chip)	1 50V			01
C538	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-540	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C551	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-575	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C576	VP864400	Mylar Capacitor (chip)	0.0047 16V J			01
C577	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-590	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C601	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C602	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C603	UB051180	Monolithic Ceramic Cap.	SL 18P 50V J			01
C604	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C605	UB051150	Monolithic Ceramic Cap.	SL 15P 50V J			01
C606	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-608	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C609	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C610	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C611	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C612	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-626	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C701	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C702	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C703	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C704	UB051330	Monolithic Ceramic Cap.	SL 33P 50V J			01
C705	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C706	UB051270	Monolithic Ceramic Cap.	SL 27P 50V J			01
C707	UB051270	Monolithic Ceramic Cap.	SL 27P 50V J			01
C708	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-718	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C719	UB215100	Monolithic Ceramic Cap.	B 0.100 25V K			01
C720	UB014220	Monolithic Ceramic Cap.	B 0.022 50V K			01
C721	UB013100	Monolithic Ceramic Cap.	B 1000P 50V K			01
C722	UB013100	Monolithic Ceramic Cap.	B 1000P 50V K			01
C723	UB051560	Monolithic Ceramic Cap.	SL 56P 50V J			01
C724	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C725	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C726	UB215100	Monolithic Ceramic Cap.	B 0.100 25V K			01
C727	UB014220	Monolithic Ceramic Cap.	B 0.022 50V K			01
C728	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C729	UB013100	Monolithic Ceramic Cap.	B 1000P 50V K			01
C730	UB013100	Monolithic Ceramic Cap.	B 1000P 50V K			01
C731	UB051560	Monolithic Ceramic Cap.	SL 56P 50V J			01
C733	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-735	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C801	UF038100	Electrolytic Cap. (chip)	100 16V			01
C802	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C803	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C804	UF038100	Electrolytic Cap. (chip)	100 16V			01
C805	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C806	UF038100	Electrolytic Cap. (chip)	100 16V			01
C807	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-810	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C811	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C812	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C813	UB051270	Monolithic Ceramic Cap.	SL 27P 50V J			01
C814	UB051270	Monolithic Ceramic Cap.	SL 27P 50V J			01
C815	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C816	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C818	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-823	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C824	UF038100	Electrolytic Cap. (chip)	100 16V			01
C825	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C827	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C828	UF038100	Electrolytic Cap. (chip)	100 16V			01
C829	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-832	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C833	UF038100	Electrolytic Cap. (chip)	100 16V			01
C834	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-840	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C841	UF038100	Electrolytic Cap. (chip)	100 16V			01
C842	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-846	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C847	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
C848	UB050500	Monolithic Ceramic Cap.	SL 5P 50V C			01
C849	UB050500	Monolithic Ceramic Cap.	SL 5P 50V C			01
C850	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C851	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C852	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C853	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C854	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C855	UF066220	Electrolytic Cap. (chip)	2.2 50V			01
C856	UF038100	Electrolytic Cap. (chip)	100 16V			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C857	UB051100	Monolithic Ceramic Cap.	SL 10P 50V D			01
C858	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-868	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C869	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C870	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C871	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-873	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
CN101	VB390300	Connector Base Post	PH 7P TE			01
CN201	VB390800	Connector Base Post	PH 12P TE			01
CN301	VB390500	Connector Base Post	PH 9P TE			03
CN601	VF283100	Connector Base Post	PH 13P TE			01
* CN602	V4415100	Connector, FFC/FPC	52808 30P TE			02
* -605	V4415100	Connector, FFC/FPC	52808 30P TE			02
CN701	VE352600	Connector Base Post	PH-14P TE			01
CN804	VL536600	Connector Header	HIF3FC-50PA2.54DSA			03
CN805	VT890000	SCSI Connector-L	NHS050-022-BS2	SCSI		05
CN806	VK270300	Connector Header	HIF3FC40PA-2.54DSA			05
D201	VT332900	Diode	1SS355 TE-17			01
D501	VT332900	Diode	1SS355 TE-17			01
D502	VT332900	Diode	1SS355 TE-17			01
* D701	V5616000	Diode	HVC362			01
* D702	V5616000	Diode	HVC362			01
D801	VS597600	Diode	RB160L-40 TE25			01
DA703	VD303900	Diode Array	1SS226 TE85R			01
DA704	VD303900	Diode Array	1SS226 TE85R			01
EM101	FZ006970	LC Filter	LS MT Y223NB			02
EM102	FZ006970	LC Filter	LS MT Y223NB			02
EM301	FZ006970	LC Filter	LS MT Y223NB			02
IC101	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
-109	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC110	XF291A00	IC	UPC4570G2	OP AMP		03
IC111	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
-113	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC114	XE436A00	IC	NJM79M05FA	REGULATOR -5V 0.5A		03
IC115	XE436A00	IC	NJM79M05FA	REGULATOR -5V 0.5A		03
IC116	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
-119	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
* IC201	XY624A00	IC	AK4528VF	ADC/DAC		08
IC202	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC203	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
* IC204	XY624A00	IC	AK4528VF	ADC/DAC		08
IC205	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC206	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
* IC207	XY624A00	IC	AK4528VF	ADC/DAC		08
IC208	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC209	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
* IC210	XY624A00	IC	AK4528VF	ADC/DAC		08
IC211	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC212	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC213	XQ138A00	IC	NJM4556AMT1	OP AMP		03
-215	XQ138A00	IC	NJM4556AMT1	OP AMP		03
IC301	XV988A00	IC	YSS910-S	DSP6		10
IC302	XT487A00	IC	TC74VHC245F	BUFFER		03
-304	XT487A00	IC	TC74VHC245F			03
* IC302	XY874A00	IC	74VHC245ASJX			
* -304	XY874A00	IC	74VHC245ASJX			
IC305	XV932A00	IC	MSM5118160D-60J	DRAM 16M		12
* IC305	XY072A00	IC	VG2618160CJ-6-EL10			12
IC306	XV988A00	IC	YSS910-S	DSP6		10
IC307	XV932A00	IC	MSM5118160D-60J	DRAM 16M		12
* IC307	XY072A00	IC	VG2618160CJ-6-EL10			12
IC308	XV988A00	IC	YSS910-S	DSP6		10
IC309	XS516A00	IC	UPC2933T-E1	REGULATOR +3.3V		03
* IC310	XY628A00	IC	NJM7808DLA	REGULATOR +8V		02
IC401	XV988A00	IC	YSS910-S	DSP6		10
-403	XV988A00	IC	YSS910-S	DSP6		10
IC404	XV932A00	IC	MSM5118160D-60J	DRAM 16M		12
* IC404	XY072A00	IC	VG2618160CJ-6-EL10			12
IC405	XV932A00	IC	MSM5118160D-60J			12
* IC405	XY072A00	IC	VG2618160CJ-6-EL10			12

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
IC501	XV932A00	IC	MSM5118160D-60J	DRAM 16M	12
* IC501	XY072A00	IC	VG2618160CJ-6-EL10		12
IC502	XV988A00	IC	YSS910-S	DSP6	10
IC503	XV932A00	IC	MSM5118160D-60J	DRAM 16M	12
* IC503	XY072A00	IC	VG2618160CJ-6-EL10		12
IC504	XT487A00	IC	TC74VHC245F	BUFFER	03
* IC504	XY874A00	IC	74VHC245ASJX		
IC505	XV989A00	IC	YSS904-F	DSP5 (INPUT)	11
IC506	XW875A00	IC	TC74VHC74F-EL	D-FF	01
* IC506	XY875A00	IC	74VHC74SJX		
IC507	XG948E00	IC	YM3436DK	DIR2	11
IC508	XM530A00	IC	YM3437C-F	DIT2	07
IC509	XV989A00	IC	YSS904-F	DSP5 (OUTPUT)	11
IC510	XM616A00	IC	TC7S08F	AND	01
IC511	XM182A00	IC	TC7S04F T	INVERTER	01
IC512	XU815A00	IC	DS26C32ATMX	LINE RECEIVER	06
IC513	XN919A00	IC	AM26LS31M	LINE DRIVER	05
IC513	XU996A00	IC	AM26LS31CNSR		05
* IC514	XV190A00	IC	MJM2904M	OP AMP	
IC515	XD600A00	IC	TC74HC02AF	NOR	02
IC516	XN567A00	IC	TC7WU04F	INVERTER	01
IC601	XY715A00	IC	HD6437042AF28	MASK CPU (MAIN)	10
IC601	XY721A00	IC	HD6437042AF53		10
IC602	XQ595A00	IC	SED1335F0B	LCDC	08
IC603	XV411A00	IC	W24258S-70LE-EL10	SRAM 256K	07
IC603	XW433A00	IC	CY62256LL-70SNCT		05
* IC604	XY983A00	IC	TE28F160S5-70	FLASH ROM 16M	
IC605	XV932A00	IC	MSM5118160D-60J	DRAM 16M	12
* IC605	XY072A00	IC	VG2618160CJ-6-EL10		12
IC606	XT487A00	IC	TC74VHC245F	BUFFER	03
-612	XT487A00	IC	TC74VHC245F		03
* IC606	XY874A00	IC	74VHC245ASJX		
* -612	XY874A00	IC	74VHC245ASJX		
IC613	XM332A00	IC	TC74VHC04F EL	INVERTER	01
IC613	XY871A00	IC	74VHC04SJX		
IC614	XM616A00	IC	TC7S08F	AND	01
IC701	XY877A00	IC	MM74HC4053SJX	MULTIPLEXER	
* IC701	XY879A00	IC	TC74HC4053AF(EL)		03
IC702	XT487A00	IC	TC74VHC245F	BUFFER	03
* IC702	XY874A00	IC	74VHC245ASJX		
IC703	XN976A00	IC	SN75124NS	LINE RECEIVER	05
IC703	XV930A00	IC	SN75124NSR		05
IC704	XU816A00	IC	SN75121NSR	LINE DRIVER	05
IC705	XL334A00	IC	MC26LS30D	LINR DRIVER	08
IC706	XU815A00	IC	DS26C32ATMX	LINE RECEIVER	06
IC707	XV833A00	IC	MBCG46183-129	GATE ARRAY	06
IC708	XS534A00	IC	NJM78M05DLA	REGULATOR +5V	02
IC709	XV618A00	IC	DS12887	REAL TIME CLOCK	08
* IC710	XY630A00	IC	LR38792	GATE ARRAY (MAIN)	
IC712	XN567A00	IC	TC7WU04F	INVERTER	01
IC713	XN567A00	IC	TC7WU04F	INVERTER	01
IC714	XS720A00	IC	TC74HC245AF	BUFFER	03
* IC801	XW677A00	IC	HY57V651620BTC-10P	SDRAM 64M	15
* IC801	XZ406A00	IC	HY57V651620BTC-10S		16
* IC802	XW677A00	IC	HY57V651620BTC-10P		15
* IC802	XZ406A00	IC	HY57V651620BTC-10S		16
IC803	XY715A00	IC	HD6437042AF28	MASK CPU (RECORDER)	10
IC803	XY721A00	IC	HD6437042AF53		10
IC804	XY650A00	IC	PST595CMT	SYSTEM RESET	
* IC806	XY982A00	IC	E28F800B5-B70	FLASH ROM 8M	
IC807	XT015A00	IC	TC74VHC138F	DECODER	02
* IC807	XY873A00	IC	74VHC138SJX		01
IC808	XS516A00	IC	UPC2933T-E1	REGULATOR +3.3V	03
IC809	XV932A00	IC	MSM5118160D-60J	DRAM 16M	12
* IC809	XY072A00	IC	VG2618160CJ-6-EL10		12
IC811	XT487A00	IC	TC74VHC245F	TRANSCEIVER	03
* IC811	XY874A00	IC	74VHC245ASJX		
IC812	XT487A00	IC	TC74VHC245F		03
* IC812	XY874A00	IC	74VHC245ASJX		
IC813	XV733A00	IC	CY7C136-55NC	DPRAM	10

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
IC814	XS720A00	IC	TC74HC245AF		03
* IC814	XW107A00	IC	MM74HC245ASJX		03
IC815	XT475A00	IC	TC74VHC157F(EL)		02
* IC815	XY870A00	IC	74VHC157SJX		
IC816	XT475A00	IC	TC74VHC157F(EL)		02
* IC816	XY870A00	IC	74VHC157SJX		
IC817	XT487A00	IC	TC74VHC245F		03
* IC817	XY874A00	IC	74VHC245ASJX		
IC818	XT487A00	IC	TC74VHC245F		03
* IC818	XY874A00	IC	74VHC245ASJX		
IC819	XS720A00	IC	TC74HC245AF		03
IC819	XW107A00	IC	MM74HC245ASJX		03
IC820	XY625A00	IC	SPC7214F0B		08
IC821	XV617A00	IC	BH9595FP-Y		05
IC822	XS516A00	IC	UPC2933T-E1		03
IC825	XT014A00	IC	TC74VHC08F		01
* IC825	XY872A00	IC	74VHC08SJX		
* IC826	XY306A00	IC	74VHC32SJX		01
IC826	XY537A00	IC	TC74VHC32FEL		01
IC827	XL094A00	IC	HD74HC14FPEL		02
IC827	XW104A00	IC	MM74HC14SJX		01
IC828	XT812A00	IC	TC74VHC11F(EL)		01
IC829	XW875A00	IC	TC74VHC74F-EL		01
* IC829	XY875A00	IC	74VHC74SJX		
* IC830	XY629A00	IC	CI-DRC		
IC831	XT475A00	IC	TC74VHC157F(EL)		02
* IC831	XY870A00	IC	74VHC157SJX		
IC832	XW875A00	IC	TC74VHC74F-EL		01
* IC832	XY875A00	IC	74VHC74SJX		
IC833	XN567A00	IC	TC7WU04F		01
IC834	XT812A00	IC	TC74VHC11F(EL)		01
IC835	XW875A00	IC	TC74VHC74F-EL		01
* IC835	XY875A00	IC	74VHC74SJX		
* JK101	V5866600	Phone Jack	YKB21-5312		
JK102	VS133800	XLM Connector			04
* JK103	V5866600	Phone Jack	YKB21-5312		
* JK104	V5866600	Phone Jack	YKB21-5312		
JK105	VS133800	XLM Connector			04
* JK106	V5866600	Phone Jack	YKB21-5312		
JK107	VT799400	Microphone Jack	YKB21-5245		02
-112	VT799400	Microphone Jack	YKB21-5245		02
* JK113	V5866700	Phone Jack	YKB21-5313		
JK201	VY961000	Phone Jack	YKB21-5257 BL		02
* JK501	V5715300	Pin Jack	2P YKC21-4226 OR		02
JK701	VN997100	DIN Connector	8P TCS7927		04
* JK702	V5107900	BNC Connector	2P COH2183-02		05
* K101	V5630300	Shield, XLR			01
* K102	V5630300	Shield, XLR			01
L101	VS740100	Chip Inductance	BLM21B751S 2125		03
-125	VS740100	Chip Inductance	BLM21B751S 2125		03
L201	VS740100	Chip Inductance	BLM21B751S 2125		03
L202	VS740100	Chip Inductance	BLM21B751S 2125		03
L501	VS740100	Chip Inductance	BLM21B751S 2125		03
L502	VS740100	Chip Inductance	BLM21B751S 2125		03
L503	VP246100	Pulse Transformer	P17H		07
L504	VP246100	Pulse Transformer	P17H		07
L505	VV493200	Noise Filter	ZJYS51R5-2PT		04
L506	VV493200	Noise Filter	ZJYS51R5-2PT		04
L602	VS740100	Chip Inductance	BLM21B751S 2125		03
L603	VS740100	Chip Inductance	BLM21B751S 2125		03
L605	VS740100	Chip Inductance	BLM21B751S 2125		03
L701	VQ724900	Chip Inductance	BK2125		01
-705	VQ724900	Chip Inductance	BK2125		01
L706	VS740100	Chip Inductance	BLM21B751S 2125		03
-708	VS740100	Chip Inductance	BLM21B751S 2125		03
* L709	V5615900	Chip Inductance	ELJFAR56KF2		01
L710	VS740100	Chip Inductance	BLM21B751S 2125		03
L711	VS740100	Chip Inductance	BLM21B751S 2125		03
L712	VY666800	Chip Inductance	ELJFAR47KF		01
L713	RD254100	Carbon Resistor (chip)	10.0 0.1 J		01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
L801	VS740100	Chip Inductance	BLM21B751S 2125	PEAK 1-8		03
LD101	VQ559600	LED	GL3HD44 RE			01
-108	VQ559600	LED	GL3HD44 RE			01
LD601	VU125200	LED	SLR-332VRTB7			01
LD801	VU125200	LED	SLR-332VRTB7			01
LD802	VU125200	LED	SLR-332VRTB7			01
	RD255560	Carbon Resistor (chip)	560.0 0.1 J			01
* R1	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R2	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R3	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R4	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R5	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R6	V6462100	Carbon Resistor (chip)	24K 0.1 D			
R7	RD254390	Carbon Resistor (chip)	39.0 0.1 J			01
* R8	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R9	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R10	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R11	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R12	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R13	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R14	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R15	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R16	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R17	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R18	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R19	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R20	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
* R21	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R22	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R23	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R24	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R25	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R26	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R27	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R28	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R29	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R30	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R31	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R32	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R33	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R34	V6460800	Carbon Resistor (chip)	6.8K 0.1 D			
* R35	V6460800	Carbon Resistor (chip)	6.8K 0.1 D			
R36	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R37	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
R38	HV755390	Flame Proof C. Resistor	390.0 1/4 J			01
R39	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R40	V6460800	Carbon Resistor (chip)	6.8K 0.1 D			
* R41	V6460800	Carbon Resistor (chip)	6.8K 0.1 D			
* R42	RD255560	Carbon Resistor (chip)	560.0 0.1 J			01
* R43	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R44	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R45	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R46	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R47	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R48	V6462100	Carbon Resistor (chip)	24K 0.1 D			
R49	RD254390	Carbon Resistor (chip)	39.0 0.1 J			01
* R50	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R51	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R52	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R53	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R54	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R55	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R56	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R57	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R58	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R59	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R60	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R61	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R62	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
* R63	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* R66	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R67	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R68	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R69	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R70	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R71	V6462300	Carbon Resistor (chip)	30K 0.1 D			
R72	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R73	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R74	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R75	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R76	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R77	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
R78	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R79	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R80	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R81	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R82	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R83	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R84	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R85	V6462100	Carbon Resistor (chip)	24K 0.1 D			
* R86	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R87	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R88	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R89	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R90	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R91	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R92	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R93	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R94	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R95	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R96	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R97	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
R98	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R99	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R100	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R101	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R102	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R103	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R104	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R105	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R106	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R107	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R108	V6462300	Carbon Resistor (chip)	30K 0.1 D			
R109	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R110	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R111	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R112	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
R113	VC757300	Metal Oxide Film Resistor	27.0 2W J			01
* R114	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R115	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R116	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R117	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R118	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R119	V6462100	Carbon Resistor (chip)	24K 0.1 D			
* R120	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R121	V6457500	Carbon Resistor (chip)	330 0.1 D			
R122	VC757300	Metal Oxide Film Resistor	27.0 2W J			01
* R123	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R124	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R125	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R126	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R127	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R128	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R129	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R130	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R131	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R132	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
R133	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R134	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R135	V6462800	Carbon Resistor (chip)	47K 0.1 D			

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R136	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R137	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R138	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R139	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R140	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R141	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R142	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R143	V6462300	Carbon Resistor (chip)	30K 0.1 D			
R144	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R145	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R146	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R147	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R148	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R149	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R150	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R151	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R152	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R153	V6462100	Carbon Resistor (chip)	24K 0.1 D			
* R154	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R155	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R156	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R157	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R158	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R159	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R160	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R161	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R162	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R163	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R164	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R165	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
R166	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R167	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R168	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R169	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R170	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R171	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R172	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R173	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R174	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R175	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R176	V6462300	Carbon Resistor (chip)	30K 0.1 D			
R177	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R178	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R179	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R180	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R181	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R182	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R183	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R184	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R185	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R186	V6462100	Carbon Resistor (chip)	24K 0.1 D			
* R187	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R188	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R189	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R190	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R191	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R192	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R193	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R194	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R195	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R196	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R197	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R198	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
* R199	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R200	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R201	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R202	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R203	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R204	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R205	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R206	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R207	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R208	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R209	V6462300	Carbon Resistor (chip)	30K 0.1 D			
R210	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R211	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R212	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R213	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R214	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R215	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R216	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R217	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R218	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R219	V6462100	Carbon Resistor (chip)	24K 0.1 D			
* R220	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R221	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R222	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R223	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R224	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R225	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R226	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R227	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R228	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R229	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R230	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R231	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
R232	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R233	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R234	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R235	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R236	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R237	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R238	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R239	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R240	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R241	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R242	V6462300	Carbon Resistor (chip)	30K 0.1 D			
R243	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R244	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R245	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R246	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R247	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R248	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
* R249	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R250	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R251	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R252	V6462100	Carbon Resistor (chip)	24K 0.1 D			
* R253	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R254	V6457500	Carbon Resistor (chip)	330 0.1 D			
* R255	V6459900	Carbon Resistor (chip)	3.3K 0.1 D			
R256	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R257	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R258	VI190900	Metal Film Resistor (chip)	22.0 1/10 D			01
R259	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R260	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R261	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
* R262	V6462300	Carbon Resistor (chip)	30K 0.1 D			
* R263	V6462800	Carbon Resistor (chip)	47K 0.1 D			
* R264	V6458800	Carbon Resistor (chip)	1.1K 0.1 D			
R265	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R266	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R267	V6462800	Carbon Resistor (chip)	47K 0.1 D			
R268	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R269	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R270	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R271	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R272	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R273	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
* R274	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R275	V6462300	Carbon Resistor (chip)	30K 0.1 D			

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R276	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R277	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R278	VI197200	Metal Film Resistor (chip)	8.2K 1/10 D			01
R279	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R280	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
R281	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R282	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R283	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R301	RD253470	Carbon Resistor (chip)	4.7 0.1 J			01
* R302	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R303	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R304	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
* R305	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R306	RD257220	Carbon Resistor (chip)	22.0K 0.1 J			01
R307	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R308	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R309	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R310	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R311	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R312	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R313	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R314	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
* R315	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R316	RD257220	Carbon Resistor (chip)	22.0K 0.1 J			01
R317	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R318	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R319	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R320	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R321	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
R322	RD253470	Carbon Resistor (chip)	4.7 0.1 J			01
* R323	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R324	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R325	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
* R326	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R327	RD257220	Carbon Resistor (chip)	22.0K 0.1 J			01
R328	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R329	V6456900	Carbon Resistor (chip)	180 0.1 D			
R330	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R331	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R332	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R333	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R334	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R335	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
* R336	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R337	RD257220	Carbon Resistor (chip)	22.0K 0.1 J			01
R338	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R339	V6456900	Carbon Resistor (chip)	180 0.1 D			
R340	RD256820	Carbon Resistor (chip)	8.2K 0.1 J			01
* R341	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R342	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R343	RD253470	Carbon Resistor (chip)	4.7 0.1 J			01
* R344	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R345	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R346	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
* R347	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R348	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R349	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R350	V6456900	Carbon Resistor (chip)	180 0.1 D			
R351	RD257180	Carbon Resistor (chip)	18.0K 0.1 J			01
* R352	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R353	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R354	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R355	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R356	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
* R357	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R358	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R359	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R360	V6456900	Carbon Resistor (chip)	180 0.1 D			
R361	RD257180	Carbon Resistor (chip)	18.0K 0.1 J			01
* R362	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* R363	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R364	RD253470	Carbon Resistor (chip)	4.7 0.1 J			01
* R365	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R366	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R367	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
* R368	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R369	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R370	RD257390	Carbon Resistor (chip)	39.0K 0.1 J			01
R371	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R372	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R373	V6456900	Carbon Resistor (chip)	180 0.1 D			
R374	RD257180	Carbon Resistor (chip)	18.0K 0.1 J			01
* R375	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R376	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R377	V6456900	Carbon Resistor (chip)	180 0.1 D			
* R378	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R379	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
* R380	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
R381	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R382	RD257390	Carbon Resistor (chip)	39.0K 0.1 J			01
R383	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R384	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R385	V6456900	Carbon Resistor (chip)	180 0.1 D			
R386	RD257180	Carbon Resistor (chip)	18.0K 0.1 J			01
* R387	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R388	V6460400	Carbon Resistor (chip)	4.7K 0.1 D			
* R389	V6461700	Carbon Resistor (chip)	16K 0.1 D			
R390	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
* R391	V6461200	Carbon Resistor (chip)	10K 0.1 D			
* R392	V6461300	Carbon Resistor (chip)	11K 0.1 D			
R393	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R394	V6461800	Carbon Resistor (chip)	18K 0.1 D			
* R395	V6461200	Carbon Resistor (chip)	10K 0.1 D			
R396	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R397	V6461700	Carbon Resistor (chip)	16K 0.1 D			
* R398	V6461200	Carbon Resistor (chip)	10K 0.1 D			
R399	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
* R400	V6461800	Carbon Resistor (chip)	18K 0.1 D			
* R401	V6461700	Carbon Resistor (chip)	16K 0.1 D			
R402	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
* R403	V6461200	Carbon Resistor (chip)	10K 0.1 D			
* R404	V6461300	Carbon Resistor (chip)	11K 0.1 D			
R405	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R406	V6461800	Carbon Resistor (chip)	18K 0.1 D			
* R407	V6461200	Carbon Resistor (chip)	10K 0.1 D			
R408	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
* R409	V6461700	Carbon Resistor (chip)	16K 0.1 D			
* R410	V6461200	Carbon Resistor (chip)	10K 0.1 D			
R411	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
* R412	V6461800	Carbon Resistor (chip)	18K 0.1 D			
R413	RD255360	Carbon Resistor (chip)	360.0 0.1 J			01
R414	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R415	RD258270	Carbon Resistor (chip)	270.0K 0.1 J			01
R416	RD255360	Carbon Resistor (chip)	360.0 0.1 J			01
R417	RD257330	Carbon Resistor (chip)	33.0K 0.1 J			01
R418	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R419	RD255360	Carbon Resistor (chip)	360.0 0.1 J			01
R420	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R421	RD257120	Carbon Resistor (chip)	12.0K 0.1 J			01
R422	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R423	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R424	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R425	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R426	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R427	RD255360	Carbon Resistor (chip)	360.0 0.1 J			01
R428	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R429	RD255360	Carbon Resistor (chip)	360.0 0.1 J			01
R430	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R431	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R432	RD255360	Carbon Resistor (chip)	360.0 0.1 J			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R433	RD257120	Carbon Resistor (chip)	12.0K 0.1 J			01
R434	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R435	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R436	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R501	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
-506	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R507	VC755500	Metal Oxide Film Resistor	4.7 2W J			01
R521	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
-526	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R551	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
-557	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R558	RD256330	Carbon Resistor (chip)	3.3K 0.1 J			01
R559	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R563	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
-569	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R570	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R571	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R572	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R573	RD254430	Carbon Resistor (chip)	43.0 0.1 J			01
R574	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
R575	RD254390	Carbon Resistor (chip)	39.0 0.1 J			01
R576	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R577	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R578	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
R580	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R581	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R582	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R583	RD257470	Carbon Resistor (chip)	47.0K 0.1 J			01
R584	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R585	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R586	RD257470	Carbon Resistor (chip)	47.0K 0.1 J			01
R587	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
R588	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R589	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
R590	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R591	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R601	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R602	RD256330	Carbon Resistor (chip)	3.3K 0.1 J			01
R603	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R604	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R605	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R606	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R607	RD254470	Carbon Resistor (chip)	47.0 0.1 J			01
-609	RD254470	Carbon Resistor (chip)	47.0 0.1 J			01
R701	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
R702	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R703	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R704	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R705	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R706	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R707	RD254470	Carbon Resistor (chip)	47.0 0.1 J			01
R708	RD257220	Carbon Resistor (chip)	22.0K 0.1 J			01
R709	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R710	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R711	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R712	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R713	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R714	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
R715	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R716	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R717	RD257150	Carbon Resistor (chip)	15.0K 0.1 J			01
R718	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R721	RD257150	Carbon Resistor (chip)	15.0K 0.1 J			01
R722	RD257390	Carbon Resistor (chip)	39.0K 0.1 J			01
R723	RD255560	Carbon Resistor (chip)	560.0 0.1 J			01
R724	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R725	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
R726	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R727	RD258100	Carbon Resistor (chip)	100.0K 0.1 J			01
R728	RD257150	Carbon Resistor (chip)	15.0K 0.1 J			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R729	RD257150	Carbon Resistor (chip)	15.0K 0.1 J			01
R730	RD257390	Carbon Resistor (chip)	39.0K 0.1 J			01
R731	RD255560	Carbon Resistor (chip)	560.0 0.1 J			01
R733	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R734	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R735	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R736	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
R740	HF757100	Carbon Resistor	10.0K 1/6			01
R741	RD254470	Carbon Resistor (chip)	47.0 0.1 J			01
R742	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R801	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R802	RD256330	Carbon Resistor (chip)	3.3K 0.1 J			01
R803	RD255680	Carbon Resistor (chip)	680.0 0.1 J			01
R804	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R805	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R806	RD258470	Carbon Resistor (chip)	470.0K 0.1 J			01
R807	RD258470	Carbon Resistor (chip)	470.0K 0.1 J			01
R808	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R809	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R810	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
-825	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R826	RD256680	Carbon Resistor (chip)	6.8K 0.1 J			01
R827	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R828	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R829	RD256560	Carbon Resistor (chip)	5.6K 0.1 J			01
R830	RD256560	Carbon Resistor (chip)	5.6K 0.1 J			01
R831	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R832	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R833	RD254220	Carbon Resistor (chip)	22.0 0.1 J			01
R834	RD254220	Carbon Resistor (chip)	22.0 0.1 J			01
RA301	RE047100	Resistor Array	10KX4			01
-316	RE047100	Resistor Array	10KX4			01
RA401	RE047100	Resistor Array	10KX4			01
-408	RE047100	Resistor Array	10KX4			01
RA501	RE047100	Resistor Array	10KX4			01
-508	RE047100	Resistor Array	10KX4			01
RA601	RE047100	Resistor Array	10KX4			01
-608	RE047100	Resistor Array	10KX4			01
RA609	RE046100	Resistor Array	1KX4			01
-612	RE046100	Resistor Array	1KX4			01
RA613	RE047100	Resistor Array	10KX4			01
RA614	RE047100	Resistor Array	10KX4			01
RA801	RE047100	Resistor Array	10KX4			01
-804	RE047100	Resistor Array	10KX4			01
RA805	RE047470	Resistor Array	47KX4			01
RA806	RE047100	Resistor Array	10KX4			01
RA808	RE046330	Resistor Array	3.3KX4			01
-811	RE046330	Resistor Array	3.3KX4			01
RA812	RE047100	Resistor Array	10KX4			01
SW101	VU120200	Slide Switch	SSSU122-S09N0	PHANTOM +48V ON/OFF		01
TR101	IC224030	Transistor	2SC2240 GR,BL			01
TR102	IC224030	Transistor	2SC2240 GR,BL			01
TR103	VR936300	Transistor (chip)	2SA1576AT106			01
TR104	VQ986700	Transistor (chip)	2SC4081T106			01
TR105	IC224030	Transistor	2SC2240 GR,BL			01
TR106	IC224030	Transistor	2SC2240 GR,BL			01
TR107	VR936300	Transistor (chip)	2SA1576AT106			01
TR108	VQ986700	Transistor (chip)	2SC4081T106			01
TR109	IC224030	Transistor	2SC2240 GR,BL			01
TR110	IC224030	Transistor	2SC2240 GR,BL			01
TR111	VR936300	Transistor (chip)	2SA1576AT106			01
TR112	VQ986700	Transistor (chip)	2SC4081T106			01
TR113	IC224030	Transistor	2SC2240 GR,BL			01
TR114	IC224030	Transistor	2SC2240 GR,BL			01
TR115	VR936300	Transistor (chip)	2SA1576AT106			01
TR116	VQ986700	Transistor (chip)	2SC4081T106			01
TR117	IC224030	Transistor	2SC2240 GR,BL			01
TR118	IC224030	Transistor	2SC2240 GR,BL			01
TR119	VR936300	Transistor (chip)	2SA1576AT106			01
TR120	VQ986700	Transistor (chip)	2SC4081T106			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
TR121	IC224030	Transistor	2SC2240 GR,BL			01
TR122	IC224030	Transistor	2SC2240 GR,BL			01
TR123	VR936300	Transistor (chip)	2SA1576AT106			01
TR124	VQ986700	Transistor (chip)	2SC4081T106			01
TR125	IC224030	Transistor	2SC2240 GR,BL			01
TR126	IC224030	Transistor	2SC2240 GR,BL			01
TR127	VR936300	Transistor (chip)	2SA1576AT106			01
TR128	VQ986700	Transistor (chip)	2SC4081T106			01
TR129	IC224030	Transistor	2SC2240 GR,BL			01
TR130	IC224030	Transistor	2SC2240 GR,BL			01
TR131	VR936300	Transistor (chip)	2SA1576AT106			01
TR132	VQ986700	Transistor (chip)	2SC4081T106			01
TR201	VR936300	Transistor (chip)	2SA1576AT106			01
TR202	V2993500	Transistor	2SD1979 S,T			01
TR203	VV655400	Digital Transistor	DTC114EKA TP			01
TR204	VV655400	Digital Transistor	DTC114EKA TP			01
TR205	V2993500	Transistor	2SD1979 S,T			01
TR601	VV655400	Digital Transistor	DTC114EKA TP			01
TR801	VV655400	Digital Transistor	DTC114EKA TP			01
* VR101	V5614600	Rotary Variable Resistor	T 20.0K	MIC/LINE 1-8		01
* -108	V5614600	Rotary Variable Resistor	T 20.0K			01
* VR201	V5614700	Rotary Variable Resistor	A 10.0K RK12L12C0	MONITOR OUT		02
* VR202	V5614700	Rotary Variable Resistor	A 10.0K RK12L12C0	PHONES		02
X501	VZ156100	Quartz Crystal Unit	60MHz DSO751S			06
X601	VR870700	Quartz Crystal Unit	10MHz SMD-49			04
X602	VV762900	Quartz Crystal Unit	7MHz SMD-49			03
* X701	VS486900	Quartz Crystal Unit	8MHz SMD-49			03
* X702	V4552100	Quartz Crystal Unit	45.1584MHz DSO751S			05
* X703	V4552200	Quartz Crystal Unit	49.152MHz DSO751S			05
X801	VV762900	Quartz Crystal Unit	7MHz SMD-49			03
X802	VQ274700	Quartz Crystal Unit	20MHz SMD-49			04
* --	--	Circuit Board	PN	(V544820)(XY342C0)		
* AAX14690	AAX14690	Circuit Board	PN-INV	(XY342C0)		11
* AAX14700	AAX14700	Circuit Board	PN-MY	(XY342C0)		08
* AAX14710	AAX14710	Circuit Board	PN-HENKAN	(XY342C0)		07
* AAX14720	AAX14720	Circuit Board	PN-SW	(XY342C0)		40
* AAX14730	AAX14730	Circuit Board	PN-HDD	(XY342C0)		08
* AAX14740	AAX14740	Circuit Board	PN-ENC	(XY342C0)		10
* --	--	Adhesive Tape	#541 W=20	(V568040)		
C301	UM417100	Electrolytic Cap.-KS	10.00 50.0V			01
C302	UM417100	Electrolytic Cap.-KS	10.00 50.0V			01
C303	VS147400	Ceramic Capacitor-SL	18P 3KV J			01
C304	UM417100	Electrolytic Cap.-KS	10.00 50.0V			01
C305	VP318400	Electrolytic Cap. (chip)	0.068 250 ECQE26			01
C306	UA653560	Mylar Capacitor	5600P 50V J			01
C307	UM398100	Electrolytic Cap.-KS	100.00 16.0V			01
C308	UM398100	Electrolytic Cap.-KS	100.00 16.0V			01
C601	UM417100	Electrolytic Cap.-KS	10.00 50.0V			01
C602	VZ662400	Monolithic Ceramic Cap.	100P 50V J			01
C603	VT439600	Monolithic Ceramic Cap.	0.100 50V Z			01
C604	UM397470	Electrolytic Cap.-KS	47.00 16V			01
C605	VZ662400	Monolithic Ceramic Cap.	100P 50V J			01
C606	VZ662300	Monolithic Ceramic Cap.	47P 50V J			01
-608	VZ662300	Monolithic Ceramic Cap.	47P 50V J			01
C609	VZ662500	Monolithic Ceramic Cap.	0.010 50V Z			01
C610	VZ662500	Monolithic Ceramic Cap.	0.010 50V Z			01
CN101	VU328200	Plug	PHEC 100P TE	OPTION I/O SLOT 1		05
* CN102	V5766700	Connector, FFC	52806 30P TE			01
* CN103	V5766700	Connector, FFC	52806 30P TE			01
CN104	VU328200	Plug	PHEC 100P TE	OPTION I/O SLOT 2		05
* CN105	V5766700	Connector, FFC	52806 30P TE			01
* CN106	V5766700	Connector, FFC	52806 30P TE			01
CN201	VR365200	Pin Header	A3E 50P TE	2.5 HARD DISK DRIVE		05
* CN202	V4414900	Receptacle	PHEC 50P SE			04
* CN203	V4415000	Plug	PHEC 50P TE			04
CN204	VK270300	Connector, Header	HIF3FC40PA-2.54DSA			05
* CN205	V5650300	Connector Assembly	SDN 8B98			05
CN301	VQ047300	Connector, FFC	52045 12P TE			02
CN302	LB919040	Base Post Connector	XH 4P SE			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* CN303	V5650900	Connector Assembly	DS&KR 13P 420L			05
CN304	VB390400	Connector Base Post	PH 8P TE			01
* CN305	V5650800	Connector Assembly	DS&KR 15P 450L			05
CN401	VB858900	Connector Base Post	PH 10P SE			01
* CN402	V5117600	Pin Header	A3B-50PA-2DS 50P			03
* CN601	V5650700	Connector Assembly	DS&KR 8P 160L			04
D301	VR150000	Diode	1SS83(52MM) 52			01
D302	VR150000	Diode	1SS83(52MM) 52			01
* D303	V5615700	Diode	1S2076A			01
D304	VB941200	Diode	1SS133,1SS176			01
-307	VB941200	Diode	1SS133,1SS176			01
D401	VB941200	Diode	1SS133,1SS176			01
-535	VB941200	Diode	1SS133,1SS176			01
* EC301	V5613200	Rotary Encoder	RE0121PVB20FINB1-2	PAN,Q,F,G		02
* -304	V5613200	Rotary Encoder	RE0121PVB20FINB1-2			02
IC601	XT828A00	IC	M66004FP	FL DRIVER		07
K201	BB071360	Screw Terminal	M3 8.3X13 M1698			01
K202	BB071360	Screw Terminal	M3 8.3X13 M1698			01
L301	VS587900	Coil	LH L 08TB221K 220u			01
* L302	V5149600	Inverter Transformer	12RCG			03
* LD401	V5710700	LED	GL3JV804BOPE	SOLO		
* LD403	V5710700	LED	GL3JV804BOPE	MASTER		
* LD405	V5710700	LED	GL3JV804BOPE	CD PLAY		
* LD407	V5710700	LED	GL3JV804BOPE	AUX 1		
* LD409	V5710700	LED	GL3JV804BOPE	AUX 2		
* LD411	V5710700	LED	GL3JV804BOPE	AUX 3		
* LD413	V5710700	LED	GL3JV804BOPE	AUX 4		
* LD415	V5710700	LED	GL3JV804BOPE	AUX 5		
* LD417	V5710700	LED	GL3JV804BOPE	AUX 6		
* LD419	V5710700	LED	GL3JV804BOPE	EFF 1		
* LD421	V5710700	LED	GL3JV804BOPE	EFF 2		
* LD423	V5216500	LED	TLGE262	HOME,INPUT 1-16		01
* -426	V5216500	LED	TLGE262			01
* LD427	V5710800	LED	GL3UR804BOP	HDD indicator		
* LD428	V5710700	LED	GL3JV804BOPE	AMPLING PAD 1-4		
* -435	V5710700	LED	GL3JV804BOPE			
* LD436	V5616900	LED	SLR-332MG3F	BANK A		01
* LD437	V5710700	LED	GL3JV804BOPE	AMPLING PAD 5-8		
* -444	V5710700	LED	GL3JV804BOPE			
* LD445	V5621900	LED	SLR-332DU3F	BANK B		01
* LD446	V5710700	LED	GL3JV804BOPE	SEL 1,17		
* LD448	V5710700	LED	GL3JV804BOPE	SEL 2,18		
* LD450	V5710700	LED	GL3JV804BOPE	SEL 3,19		
* LD452	V5710700	LED	GL3JV804BOPE	SEL 4,20		
* LD454	V5710700	LED	GL3JV804BOPE	SEL 5,21		
* LD456	V5710700	LED	GL3JV804BOPE	SEL 6,22		
* LD458	V5710700	LED	GL3JV804BOPE	SEL 7,23		
* LD460	V5710700	LED	GL3JV804BOPE	SEL 8,24		
* LD462	V5710700	LED	GL3JV804BOPE	INPUT/RTN 17-24		
* LD464	V5710700	LED	GL3JV804BOPE	SEL 9		
* LD466	V5710700	LED	GL3JV804BOPE	SEL 10		
* LD468	V5710700	LED	GL3JV804BOPE	SEL 11		
* LD470	V5710700	LED	GL3JV804BOPE	SEL 12		
* LD472	V5710700	LED	GL3JV804BOPE	SEL 13		
* LD474	V5710700	LED	GL3JV804BOPE	SEL 14		
* LD476	V5710700	LED	GL3JV804BOPE	SEL 15		
* LD478	V5710700	LED	GL3JV804BOPE	SEL 16		
* LD480	V5710700	LED	GL3JV804BOPE	RECORDER MONI		
* LD482	V5710700	LED	GL3JV804BOPE	ON 1,17		
* LD484	V5710700	LED	GL3JV804BOPE	ON 2,18		
* LD486	V5710700	LED	GL3JV804BOPE	ON 3,19		
* LD488	V5710700	LED	GL3JV804BOPE	ON 4,20		
* LD490	V5710700	LED	GL3JV804BOPE	ON 5,21		
* LD492	V5710700	LED	GL3JV804BOPE	ON 6,22		
* LD494	V5710700	LED	GL3JV804BOPE	ON 7,23		
* LD496	V5710700	LED	GL3JV804BOPE	ON 8,24		
* LD498	V5710700	LED	GL3JV804BOPE	SEL(STEREO)		
* LD500	V5710700	LED	GL3JV804BOPE	ON 9		
* LD502	V5710700	LED	GL3JV804BOPE	ON 10		
* LD504	V5710700	LED	GL3JV804BOPE	ON 11		

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
* LD506	V5710700	LED	GL3JV804BOPE	ON 12	
* LD508	V5710700	LED	GL3JV804BOPE	ON 13	
* LD510	V5710700	LED	GL3JV804BOPE	ON 14	
* LD512	V5710700	LED	GL3JV804BOPE	ON 15,RTN 1	
* LD514	V5710700	LED	GL3JV804BOPE	ON 16,RTN 2	
* LD516	V5710700	LED	GL3JV804BOPE	ON (STEREO)	
* LD518	V5710800	LED	GL3UR804BOP	REC TRACK SELECT 1-4	
* -521	V5710800	LED	GL3UR804BOP		
* LD522	V5710700	LED	GL3JV804BOPE	CUE	
* LD523	V5710800	LED	GL3UR804BOP	REC TRACK SELECT 5-12	
* -531	V5710800	LED	GL3UR804BOP		
* LD532	V5216500	LED	TLGE262	SCRUB	01
* LD533	V5216500	LED	TLGE262	SCRUB	01
* LD534	V5710700	LED	GL3JV804BOPE	UNDO	
* LD536	V5710700	LED	GL3JV804BOPE	REDO	
* LD538	V5710800	LED	GL3UR804BOP	REC TRACK SELECT 13-16	
* -541	V5710800	LED	GL3UR804BOP		
* LD542	V5710700	LED	GL3JV804BOPE	SOLO	
* LD544	V5216500	LED	TLGE262	NUM LOCATE	01
* LD545	V5216500	LED	TLGE262	NUM LOCATE	01
* LD546	V5710700	LED	GL3JV804BOPE	7/<	
* LD548	V5710700	LED	GL3JV804BOPE	8/>	
* LD550	V5710800	LED	GL3UR804BOP	AUTO PUNCH	
* LD552	V5710700	LED	GL3JV804BOPE	4/IN	
* LD554	V5710700	LED	GL3JV804BOPE	5/OUT	
* LD556	V5216500	LED	TLGE262	-/+	01
* LD557	V5216500	LED	TLGE262	-/+	01
* LD558	V5710700	LED	GL3JV804BOPE	0/<<	
* LD560	V5710700	LED	GL3JV804BOPE	ROLL BACK	
* LD562	V5710700	LED	GL3JV804BOPE	PLAY	
* LD563	V5710700	LED	GL3JV804BOPE	PLAY	
* LD564	V5710800	LED	GL3UR804BOP	REC	
* LD565	V5710800	LED	GL3UR804BOP	REC	
* LD601	V5127300	Display Tube	CM1947M		11
R301	HF757220	Carbon Resistor	22.0K 1/4 J		01
R302	HF756560	Carbon Resistor	5.6K 1/4 J		01
R303	HF756560	Carbon Resistor	5.6K 1/4 J		01
R304	HF755680	Carbon Resistor	680.0 1/4 J		01
R305	HF755100	Carbon Resistor	100.0 1/4 J		01
R306	HF755220	Carbon Resistor	220.0 1/4 J		01
R307	HF757220	Carbon Resistor	22.0K 1/4 J		01
R401	HF757100	Carbon Resistor	10.0K 1/4 J		01
-416	HF757100	Carbon Resistor	10.0K 1/4 J		01
R501	HF755470	Carbon Resistor	470.0 1/4 J		01
R601	HF757270	Carbon Resistor	27.0K 1/4 J		01
R602	HF757100	Carbon Resistor	10.0K 1/4 J		01
R603	HF755470	Carbon Resistor	470.0 1/4 J		01
-605	HF755470	Carbon Resistor	470.0 1/4 J		01
R606	HF757100	Carbon Resistor	10.0K 1/4 J		01
-611	HF757100	Carbon Resistor	10.0K 1/4 J		01
R612	HF757150	Carbon Resistor	15.0K 1/4 J		01
R613	HF758100	Carbon Resistor	100.0K 1/4 J		01
R614	HF758100	Carbon Resistor	100.0K 1/4 J		01
R615	HF756180	Carbon Resistor	1.8K 1/4 J		01
* S401	V5680300	LED Spacer	I=12		01
* S402	V5680300	LED Spacer	I=12		01
SW301	VV020300	Tact Switch	SKQNAA	HIGH, HI-MID,LO-MID,LOW	01
-304	VV020300	Tact Switch	SKQNAA		01
SW425	VV020300	Tact Switch	SKQNAA	SHIFT,F1-5	01
-431	VV020300	Tact Switch	SKQNAA		01
SW476	VV020300	Tact Switch	SKQNAA	ABS/REL	01
SW477	VV020300	Tact Switch	SKQNAA	PEAK HOLD	01
SW601	V2346500	Jog Shuttle	RJS-Y0003	JOG/SHUTTLE	05
T301	VT646400	Inverter Transformer	CLF16A		06
TH601	VN824100	Thermistor	10K		01
TR301	IC174070	Transistor	2SC1740S R,S		01
* TR302	V5149800	Transistor	2SC2SC3303 O,Y		02
TR303	VJ926400	Transistor	2SC1815 GR		01
TR304	VS185600	Transistor	2SD1863 TV2 82-390		01
TR305	VS185600	Transistor	2SD1863 TV2 82-390		01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* TR306	VV911900	Digital Transistor	DTC114ESA-TP	LCD CONTRAST		01
* TR501	VV911900	Digital Transistor	DTC114ESA-TP			01
VR601	V3820700	Rotary Variable Resistor	B 10K RK09K1130A5R			01
* ZD301	V5614400	Zener Diode	MA2062-B 6.2V			01
* ZD302	VP584700	Zener Diode	MTZJ18A 18.0V			01
* ZD303	VP584700	Zener Diode	MTZJ18A 18.0V			01
ZD304	VQ554100	Zener Diode	MTZJ7.5A 7.5V			01
	--	Circuit Board	SUB	(V544830)(XY343B0)		
* AAX14750		Circuit Board	SUB-CPU	(XY343B0)	26	40
* AAX14760		Circuit Board	SUB-FADER	(XY343B0)		38
	VD016900	Flat Head Screw	3.0X4			01
C101	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-105	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C106	UF037470	Electrolytic Cap. (chip)	47 16V			01
C107	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C108	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C109	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C110	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C111	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C112	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C113	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C114	UF037470	Electrolytic Cap. (chip)	47 16V			01
C115	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C116	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C117	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C118	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C119	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C120	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C121	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C122	UF037470	Electrolytic Cap. (chip)	47 16V			01
C123	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C124	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C125	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C126	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C127	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C128	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-131	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C132	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C133	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-138	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C139	UF037470	Electrolytic Cap. (chip)	47 16V			01
C140	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C141	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C142	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C143	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C144	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C145	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C146	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C147	UF037470	Electrolytic Cap. (chip)	47 16V			01
C148	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C149	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C150	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C151	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C152	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C153	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C154	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-163	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C164	UF037470	Electrolytic Cap. (chip)	47 16V			01
C165	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C166	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C167	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C168	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C169	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C170	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C171	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C172	UF037470	Electrolytic Cap. (chip)	47 16V			01
C173	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C174	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C175	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C176	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C177	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C178	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C179	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C180	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C181	UF037470	Electrolytic Cap. (chip)	47 16V			01
C182	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C183	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C184	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C185	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C186	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C187	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C188	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C189	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C190	UF037470	Electrolytic Cap. (chip)	47 16V			01
C191	UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2			01
C192	UF046470	Electrolytic Cap. (chip)	4.7 25V			01
C201	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C202	UF037100	Electrolytic Cap. (chip)	10 16V			01
-205	UF037100	Electrolytic Cap. (chip)	10 16V			01
C206	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C207	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C208	UF037220	Electrolytic Cap. (chip)	22 16V			01
C209	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-211	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C301	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C303	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-309	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C310	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C311	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
C312	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
C313	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-315	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C317	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-326	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C327	UB044100	Monolithic Ceramic Cap.	F 0.010 50V Z			01
C328	UB044100	Monolithic Ceramic Cap.	F 0.010 50V Z			01
C330	UB044100	Monolithic Ceramic Cap.	F 0.010 50V Z			01
-337	UB044100	Monolithic Ceramic Cap.	F 0.010 50V Z			01
C338	UF038100	Electrolytic Cap. (chip)	100 16V			01
C339	UF038100	Electrolytic Cap. (chip)	100 16V			01
* CN101	VV107200	Connector, FPC	52207-1890			02
* -103	VV107200	Connector, FPC	52207-1890			02
CN104	VB858500	Connector Base Post	PH 6P SE			01
CN105	V2426700	Connector	52207-1190 11P			01
* CN201	V5650500	Connector Assembly	SAN&PH 12P 150L			06
* CN202	V6164700	Connector Socket	17LE-23090-27	MOUSE		
CN301	VB858900	Connector Base Post	PH 10P SE			01
* CN302	V5117500	Connector	52271-1190			01
* CN303	V5650400	Connector Assembly	DS&KR 14P 300L			05
CN305	VQ993000	Connector	52271-1890			03
CN306	VR365200	Pin Header	A3E 50P TE			05
* CN307	VV107200	Connector, FPC	52207-1890			02
CN308	VQ993000	Connector	52271-1890			03
CN309	VK015500	Connector Base Post	PH 15P SE			01
D201	VT332900	Diode	1SS355 TE-17			01
EM101	FZ006970	LC Filter	LS MT Y223NB			02
EM102	FZ006970	LC Filter	LS MT Y223NB			02
EM301	FZ006970	LC Filter	LS MT Y223NB			02
* IC101	XW618A00	IC	TA7291F	MOTOR DRIVER		02
* -105	XW618A00	IC	TA7291F	MOTOR DRIVER		02
IC106	XS790A00	IC	TC74HC4052AF	} MULTIPLEXER		02
* IC106	XY876A00	IC	MM74HC4052SJX			
* IC107	XW618A00	IC	TA7291F	MOTOR DRIVER		02
* -110	XW618A00	IC	TA7291F	MOTOR DRIVER		02
IC111	XS790A00	IC	TC74HC4052AF	} MULTIPLEXER		02
* IC111	XY876A00	IC	MM74HC4052SJX			
* IC112	XW618A00	IC	TA7291F	MOTOR DRIVER		02
* -119	XW618A00	IC	TA7291F	MOTOR DRIVER		02
IC120	XH610A00	IC	HD74LS06FPEL	INVERTER		02

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* -122	XH610A00	IC	HD74LS06FPEL	INVERTER		02
IC123	XW617A00	IC	NJM7810DLA	REGULATOR +10V		02
* -131	XW617A00	IC	NJM7810DLA	REGULATOR +10V		02
IC201	XP113A00	IC	MAX202CSE	RS-232C TRANSCEIVER		06
IC202	VR903700	Photo Coupler	HCPL-M600			04
IC203	XL094A00	IC	HD74HC14FPEL	INVERTER		02
IC203	XW104A00	IC	MM74HC14SJX			01
* IC301	XW647A00	IC	HD6437042AF28	MASK CPU		
IC302	XT015A00	IC	TC74VHC138F	DECODER		02
* IC302	XY873A00	IC	74VHC138SJX			01
IC304	XT487A00	IC	TC74VHC245F	BUFFER		03
* IC304	XY874A00	IC	74VHC245ASJX			
* IC305	XY631A00	IC	LR38791	GATE ARRAY		
* IC306	XV610A00	IC	HD74HC174FP	D-FF		01
* -308	XV610A00	IC	HD74HC174FP			01
* IC306	XY878A00	IC	TC74HC174F(EL)			
* -308	XY878A00	IC	TC74HC174F(EL)			
IC310	XL094A00	IC	HD74HC14FPEL	INVERTER		02
IC310	XW104A00	IC	MM74HC14SJX			01
IC311	XL094A00	IC	HD74HC14FPEL			02
IC311	XW104A00	IC	MM74HC14SJX			01
JK201	VT799400	Microphone Jack	YKB21-5245	MONITOR OUT L		02
JK202	VT799400	Microphone Jack	YKB21-5245	MONITOR OUT R		02
JK203	VY695400	Phone Jack	YKB21-5244 BL	OMNI OUT 1-4		02
-206	VY695400	Phone Jack	YKB21-5244 BL			02
* JK207	V5715200	Pin Jack	2P YKC21-4206	STEREO OUT L/R		02
JK208	VI466400	DIN Connector	X3 YKF51-5046	MIDI IN,OUT/THRU,MTC		04
JK209	VY695400	Phone Jack	YKB21-5244 BL	FOOT SW		02
JK210	VI474400	Terminal Plate				01
* K101	V5611800	Support, FD-F				03
* K102	V5611900	Support, FD-R				03
L201	VS740100	Chip Inductance	BLM21B751S 2125			03
-209	VS740100	Chip Inductance	BLM21B751S 2125			03
L210	VB835000	Coil	20uH			01
-215	VB835000	Coil	20uH			01
L216	VS740100	Chip Inductance	BLM21B751S 2125			03
-222	VS740100	Chip Inductance	BLM21B751S 2125			03
L301	VS740100	Chip Inductance	BLM21B751S 2125			03
L302	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R101	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R102	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R103	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R104	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R105	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R106	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R107	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R108	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R109	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R110	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R111	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R112	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R113	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R114	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R115	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R116	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R117	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R118	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R119	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R120	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R121	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R122	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R123	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R124	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R125	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R126	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R127	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R128	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R129	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R130	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R131	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R132	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R133	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R134	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R135	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R136	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R137	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R138	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R139	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R140	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R141	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R142	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R143	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R144	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R145	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R146	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R147	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R148	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R149	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R150	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R151	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R152	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R153	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R154	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R155	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R156	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R157	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R158	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R159	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R160	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R161	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R162	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R163	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R164	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R165	VC756300	Metal Oxide Film Resistor	10.0 2W J			01
R166	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R167	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R168	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
R201	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
-208	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R209	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R210	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R211	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R212	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R213	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
-216	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R217	RD255680	Carbon Resistor (chip)	680.0 0.1 J			01
R218	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R219	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R220	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R221	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
-225	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R226	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R227	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R301	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R302	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R303	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R304	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R305	RD256330	Carbon Resistor (chip)	3.3K 0.1 J			01
R306	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R307	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R308	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R311	RD254220	Carbon Resistor (chip)	22.0 0.1 J			01
-326	RD254220	Carbon Resistor (chip)	22.0 0.1 J			01
R327	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
-342	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
SP1	VB390100	Style Pin				01
X301	VV762900	Quartz Crystal Unit	7MHz SMD-49			03
RA301	RE047100	Resistor Array	10KX4			01
R302	RE047100	Resistor Array	10KX4			01
TA303	VY703900	Transistor Array	TD62309F(EL)			04

*: New Parts

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*: New Parts

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PROFESSIONAL AUDIO WORKSTATION

AW4416

SERVICE MANUAL



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Hardware components	Destination
AW4416 only	Japanese
AW4416 + HDD	U.S.A., Canadian, North European, British, Asian & Pacific
AW4416 + HDD + CD-RW	North European, British



This document is printed on chlorine free (ECF) paper with soy ink.

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING : Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT : This presentation or sale of this manual to any individual or firm does not constitute authorization certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING : Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit (heavy gauge black wires connect to this bus.)

IMPORTANT : Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (Where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT. The wires in this main lead are coloured in accordance with the following code:
BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the main lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The BLUE wire must be connected to the terminal that is marked with the letter N (or coloured BLACK).

The BROWN wire must be connected to the terminal that is marked with the letter L (or coloured RED).

Be certain that neither core is connected to the earth terminal of the three pin plug.

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

■ SPECIFICATIONS

General Specifications

AD converter	24-bit linear, 64-times oversampling
DA converter	24-bit linear, 128-times oversampling
Internal processing	32-bit
Sampling frequency	Internal 44.1 kHz/48kHz External 44.1 kHz (−6%) to 48 kHz (+6%)
Audio input section	max. 26 channels
MIC/LINE	8 channels
DIGITAL STEREO IN	2 channels (stereo × 1)
mini YGDAI card (option)	max. 16 channels
Audio output section	max. 28 channels
STEREO OUT	2 channels (stereo × 1)
OMNI OUT	4 channels
MONITOR OUT	2 channels (stereo × 1)
PHONES	2 channels (stereo × 1)
DIGITAL STEREO OUT	2 channels (stereo × 1)
mini YGDAI card (option)	max. 16 channels
Mixing layer section	44 channels
Input channel	24 channels
Internal effect return	4 channels (stereo × 2)
Playback	16 channels (16 track direct out playback), or stereo 2 channels (stereo track playback)
Internal effects section	
Multi-effects × 2	
Bus section	20 channels
Bus	8 channels
Aux	8 channels
Stereo	2 channels (stereo × 1)
Solo	2 channels (stereo × 1)
Sampler section	
Assign to mixer section	
Playback	8 voices
Trigger pads	8 × 2 banks
Sampling time	max. 90 sec. (16-bit/44.1 kHz)
Recorder section	
Recording medium	2.5" IDE hard disk drive
Sound file format	AW4416 original format
Recording resolution	16-bit, 24-bit
Tracks	130 tracks (16 tracks × 8 virtual tracks plus stereo track)
Maximum recording time	Approx. 140 min (44.1 kHz, 16-bit, 16 tracks, 12 GB hard disk)

Power requirements	U.S.A. & Canada 120 V 80 W AC, 60 Hz Europe 230 V 80 W AC, 50 Hz
Dimensions (W × H × D)	558.0 × 147.7 × 459.7 mm (22 x 5.8 x 18.1 inches)
Weight	11.8 kg (26 lbs)
Operating temperature range	5° to 35° C
Options	Removable 2.5" hard disk adapter (ADP25H), mini YGDAI cards (MY8-AT, MY8-TD, MY8-AE, MY8-AT, MY4-AD, MY4-DA), Footswitch FC5

Mixer section

■ Input/output

MIC/LINE input	Channel 1, 2 (balanced, XLR-type, TRS phone jack)
+48 V DC phantom powering	
PEAK LED	−3 dB (clipping level)
Input impedance	3 kΩ
Nominal input level	−46 dB to +4 dB
Minimum input level	−52 dB
Maximum input level	+22 dB
Insert I/O	Channel 1, 2 (unbalanced, TRS phone jack)
Input impedance	10 kΩ
Nominal input level	0 dB
Output impedance	600Ω
Nominal output level	0 dB
MIC/LINE input	channel 3–8 (balanced, TRS phone jack)
PEAK LED	−3 dB (clipping level)
Input impedance	3 kΩ
Nominal input level	−46 dB to +4 dB
Minimum input level	−52 dB
Maximum input level	+22 dB
MIC/LINE input (Hi-Z)	channel 8 (unbalanced, phone jack)
Input impedance	500 kΩ
Nominal input level	−46 dB to +4 dB
Minimum input level	−52 dB
Maximum input level	+20 dB
STEREO OUT	L, R (unbalanced, phono)
Output impedance	1 kΩ
Nominal load impedance	10 kΩ
Nominal output level	−10 dBV
Maximum output level	+8 dBV
MONITOR OUT	L, R (balanced, TRS phone jack)
Output impedance	150Ω
Nominal load impedance	10 kΩ
Nominal output level	+4 dB
Maximum output level	+22 dB

OMNI OUT	1–4 (unbalanced, phone jack)
Output impedance	1 k Ω
Nominal load impedance	10 k Ω
Nominal output level	0 dB
Maximum output level	+18 dBV
PHONES	(unbalanced, TRS phone jack)
Nominal load impedance	8–40 Ω
Maximum output level	100 mW + 100 mW (40 Ω load)
DIGITAL STEREO I/O	Coaxial (phono)
Option card slot	Slot $\times$ 2
Digital I/O	MY-8-AT (Adat) MY-8-TD (Tascam) MY-8-AE (AES/EBU)
Analog input	MY-8-AD (TRS phone jack $\times$ 8) MY-4-AD (XLR-type $\times$ 4)
Analog output	MY-4-DA (XLR-type $\times$ 4)

■ Digital mixer

Input channel (channel 1–24, playback 1–16)	Attenuator, Phase (normal, reverse), EQ (4-band PEQ), Dynamics, Delay, On/Off, Fader (60 mm motorized), Pan, Bus assign (stereo, bus, aux, solo, direct out)
Internal effects return	Attenuator, Phase (normal, reverse), EQ (4-band PEQ), Delay, On/Off, Fader (60 mm motorized), Pan, Bus assign (stereo, bus, aux, solo)
Bus	
Stereo L, R	Attenuator, EQ (4-band PEQ), Dynamics, On/Off, Fader (60 mm motorized), Balance
Bus 1–8	Attenuator
Aux 1–8	Attenuator
Solo L, R	
Fader	60 mm motorized $\times$ 17
Frequency response	+1, –3 dB, 20 Hz–20 kHz (MIC/LINE IN to STEREO OUT)
Dynamic range (20 kHz, LPF, IHF-A)	109 dB (typical) DA converter (STEREO OUT) 104 dB (typical) AD + DA (LINE IN to STEREO OUT)
Total harmonic distortion (20 kHz, LPF)	Less than 0.02% @1 kHz (LINE IN to STEREO OUT)

Recorder section

■ General

Recording resolution	16-bit, 24-bit (set per song)
----------------------	-------------------------------

Sampling frequency 44.1 kHz, 48 kHz (set per song)

Maximum simultaneous recording tracks

• 16 bit song

Simultaneous recording tracks	Simultaneous playback tracks
0–8	16
9–16	0

• 24 bit song

Simultaneous recording tracks	Simultaneous playback tracks
0	16
1–2	14
3–4	12
5–8	8
16	0

Tracks 130 tracks (16 tracks × 8 virtual tracks plus stereo track)

■ Format

File system AW4416 original format

Internal hard disk drive 2.5" IDE
Max. hard disk capacity 64 GB (8 GB partition)
Max. songs per hard disk Approx. 30,000 songs

■ Edit

Song edit Name, comment, delete, copy, optimize, protect, fade in/out
Track edit Name, erase, copy, exchange, slip, time compression/ expansion, pitch change, import
Part edit Erase, delete, copy, move, insert, time compression/ expansion, pitch change
Region edit Erase, delete, copy, move, time compression/ expansion, pitch change, insert

■ Others

Locate Direct locate: data entry search (time, measure)
Quick locate: start, end, RTZ, A/B, last rec in/out, roll back
Punch I/O Manual punch I/O, auto punch I/O

Controls

Analog section
Input (channel 1–8) Gain (variable)
Input (channel 1, 2) +48 V (phantom switch)
Output Phones level, monitor out level

Mixer section		
WORK NAVIGATE buttons	SONG, QUICK REC, MASTERING, CD PLAY	
UNIT buttons	SETUP, FILE, UTILITY, MIDI	
MIXER buttons	VIEW, PAN, EQ, DYN	
FADER MODE buttons	AUX1, AUX2, AUX3, AUX4, AUX5, AUX6, AUX7, AUX8, HOME	
MIXING LAYER buttons	1–16, 17–24 RTN, MONI	
ON buttons, SEL buttons, Faders	1–8	channel 1–8, channel 17–24
	9–14	channel 9–14
	15	channel 15/return1
	16	channel 16/return 2
	17	stereo master
SOLO buttons		
Function buttons	SHIFT × 2, F1, F2, F3, F4, F5	
EQ buttons	HIGH, HI-MID, LO-MID, LOW	
Encoders	PAN, Q, F, G	
Sampler section		
SAMPLING PAD buttons	1, 2, 3, 4, 5, 6, 7, 8, BANK, EDIT	
Recorder section		
CUE button		
REC TRACK SELECT buttons	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, ST, ALL, SAFE	
RECORDER buttons	TRACK, EDIT	
Locate buttons	NUM LOCATE, ◀◀, ▶▶, MARK, AUTO PUNCH, IN, OUT, SET, REPEAT, A, B, ROLL BACK, ◀◀◀, RTZ, ▶▶▶, CANCEL	
Transport buttons	REW, FF, STOP, PLAY, REC	
Others		
	ABS/REL button, PEAK HOLD button, AUTOMATION button (AUTOMIX, SCENE), SCENE MEMORY button (STORE, RECALL, –, +), JOG ON button, UNDO button, REDO button, CURSOR button, (◀, ▶, ▲, ▼), DATA ENTRY button (JOG/SHUTTLE), ENTER button	
Display	320 × 240 dots graphical LCD (with contrast control), 3-color FL display	

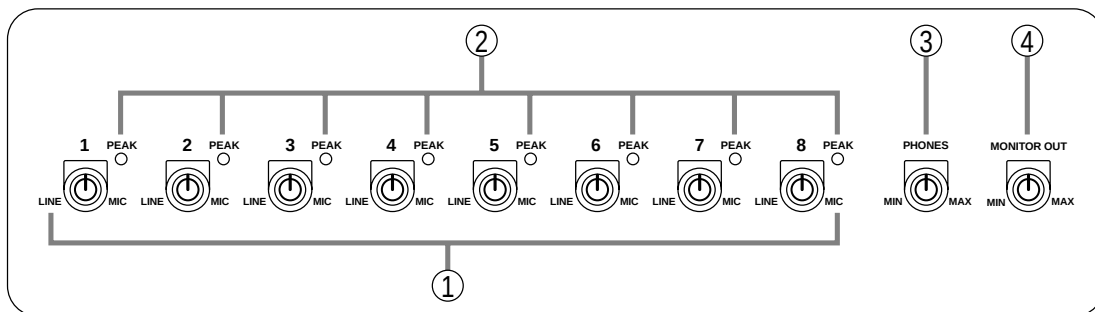
Control I/O

WORD CLOCK IN	BNC
WORD CLOCK OUT	BNC
MIDI IN	5-pin DIN
MIDI OUT/THRU	5-pin DIN
MTC OUT	5-pin DIN
TO HOST	8-pin mini DIN
SCSI	50-pin half pitch D-Sub
MOUSE	9-pin D-Sub
Foot switch	Phone jack

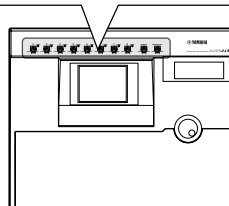
■ PANEL LAYOUT

• Top panel

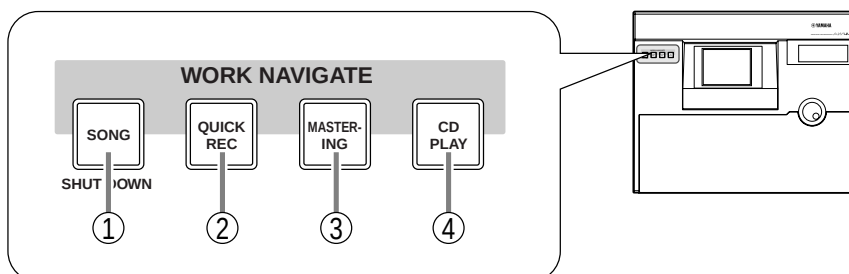
Analog input/output section



- ① [GAIN] controls
- ② PEAK indicators
- ③ [PHONES] control
- ④ [MONITOR OUT] control

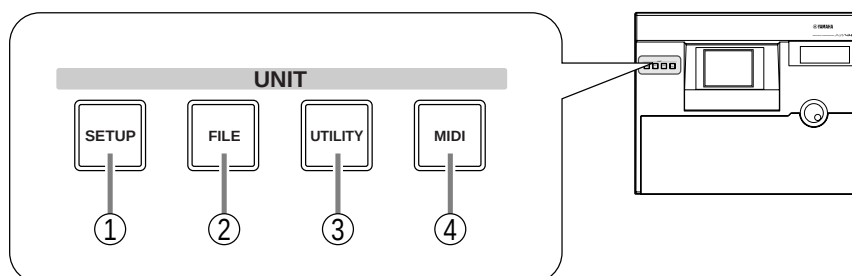


WORK NAVIGATE section



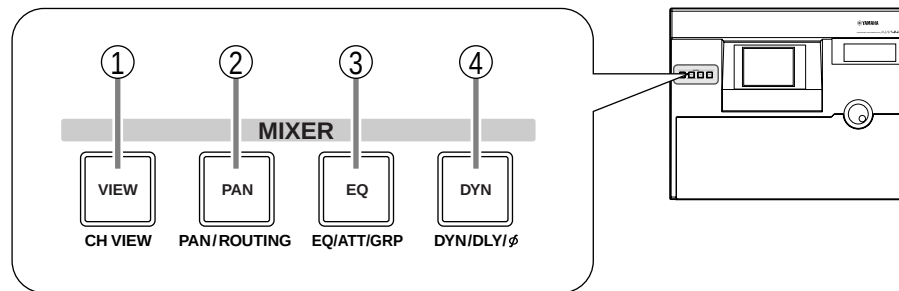
- ① [SONG] key
- ② [QUICK REC] (quick record) key
- ③ [MASTERING] key
- ④ [CD PLAY] key

UNIT section



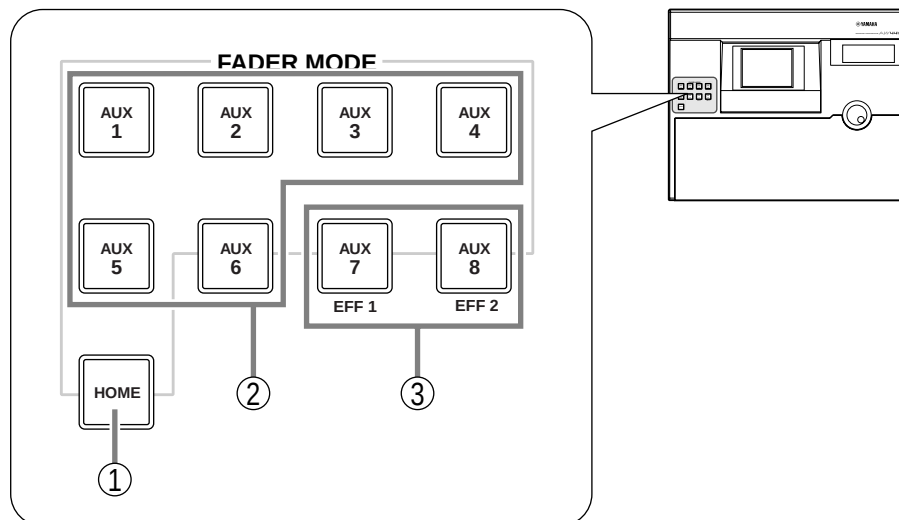
- ① [SETUP] key
- ② [FILE] key
- ③ [UTILITY] key
- ④ [MIDI] key

MIXER section



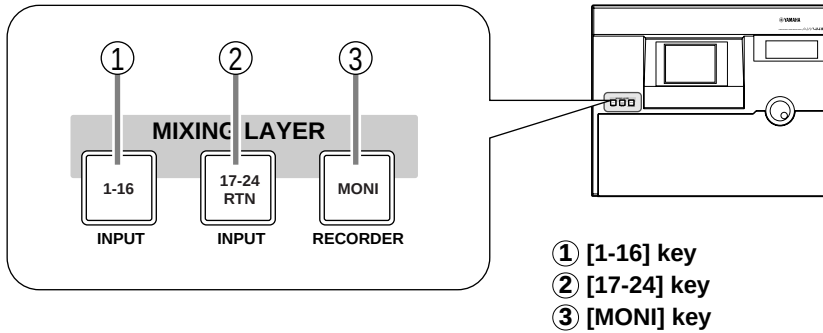
- ① [VIEW] key
- ② [PAN] key
- ③ [EQ] (equalizer) key
- ④ [DYN] key

FADER MODE section

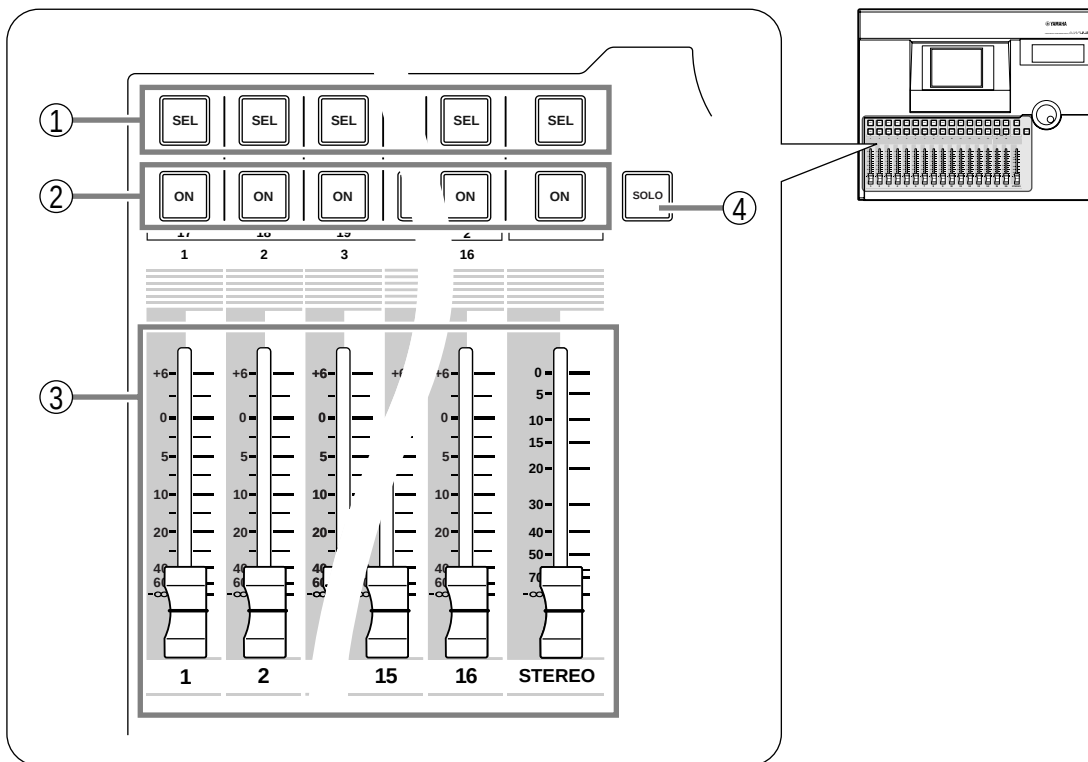


- ① [HOME] key
- ② [AUX 1]-[AUX 6] keys
- ③ [AUX 7]/[AUX 8] keys

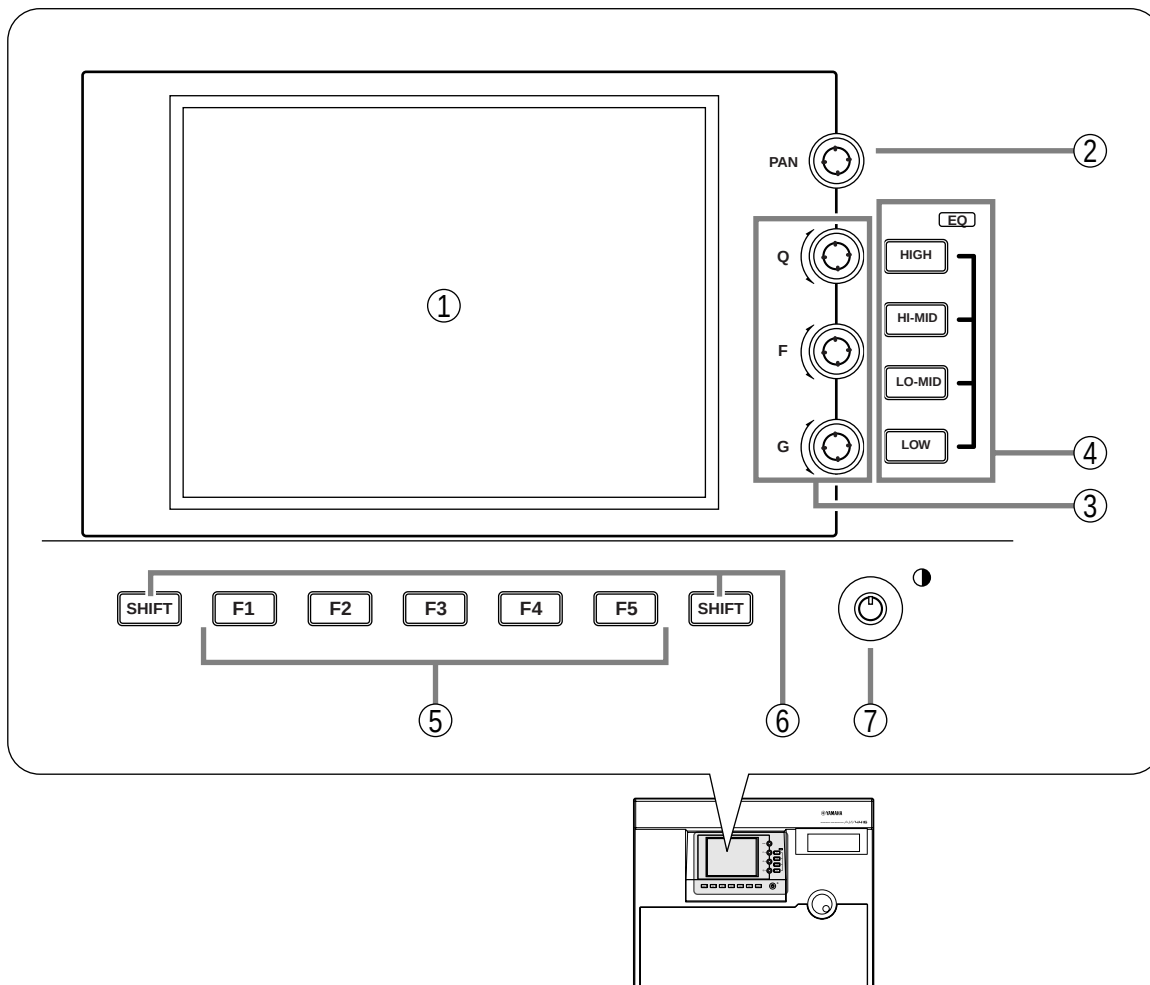
MIXING LAYER section



[SEL] keys, [ON] keys, faders

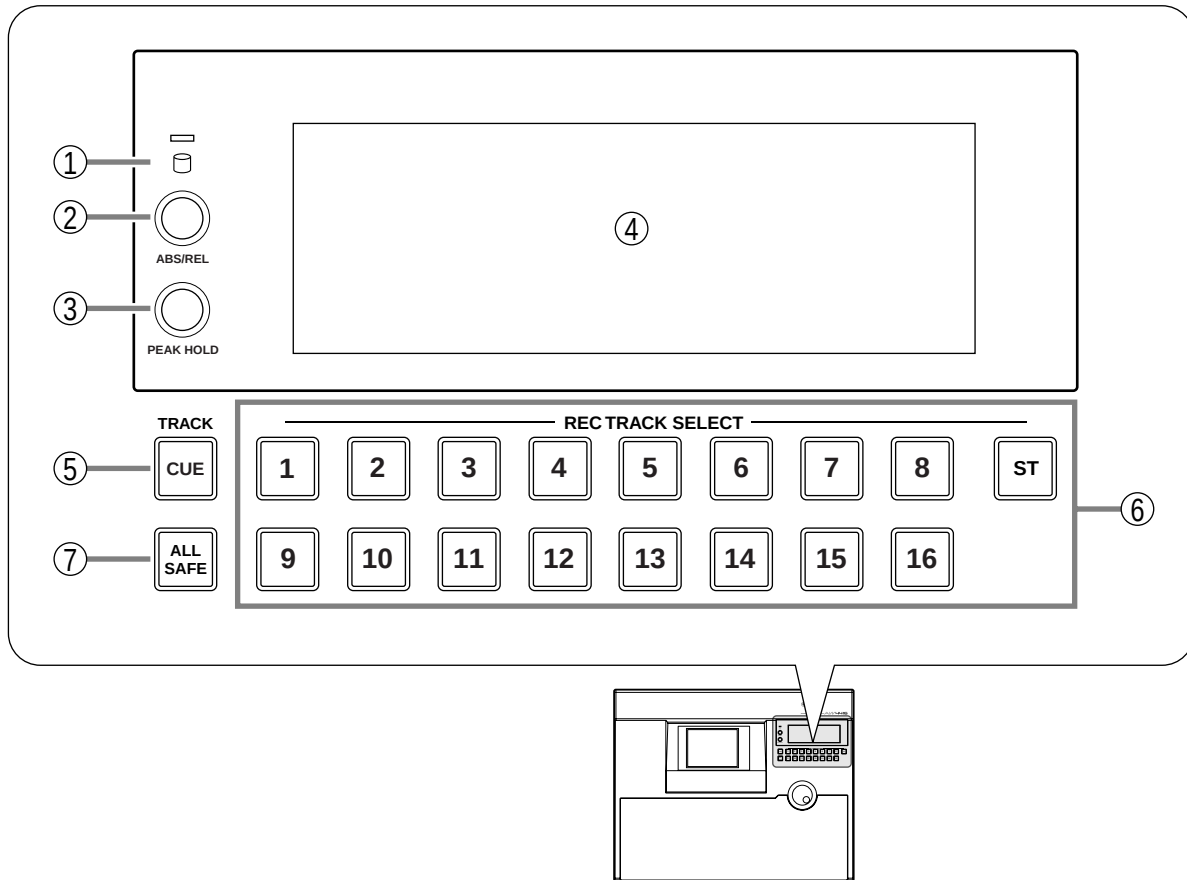


Display section

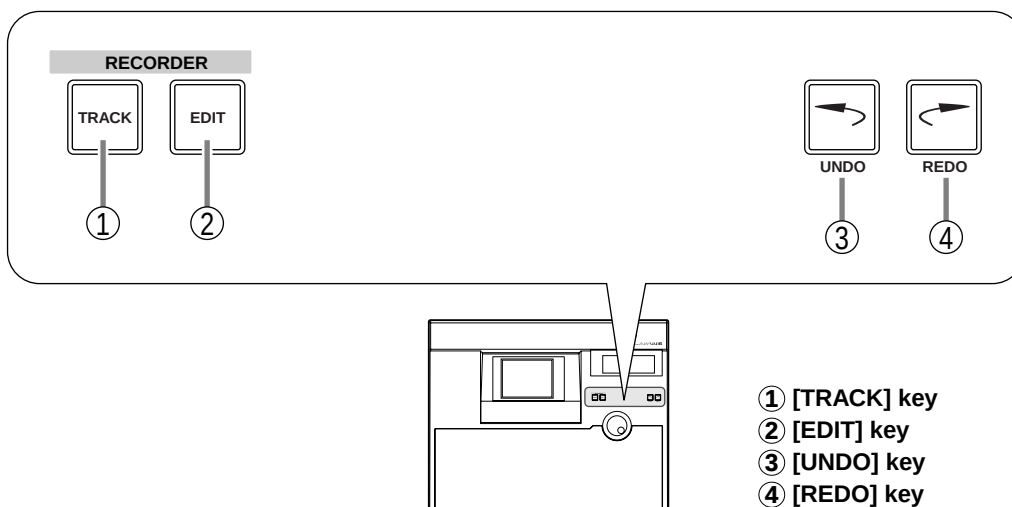
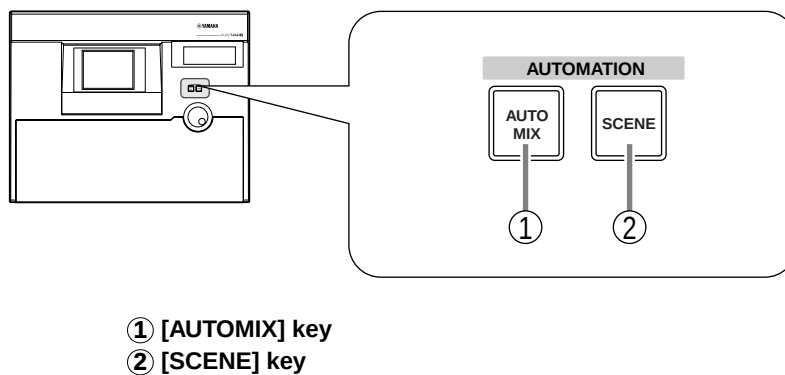
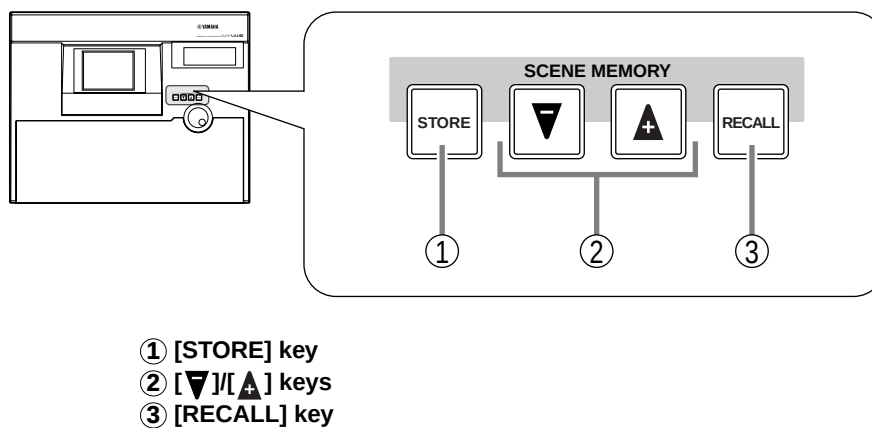


- ① Display
- ② [PAN] control
- ③ EQ [Q]/EQ [F] (EQ frequency)/EQ [G] (EQ gain) controls
- ④ EQ [HIGH]/EQ [HI-MID]/EQ [LO-MID]/EQ [LOW] keys
- ⑤ [F1]-[F5] (function 1-5) keys
- ⑥ [SHIFT] key
- ⑦ Contrast

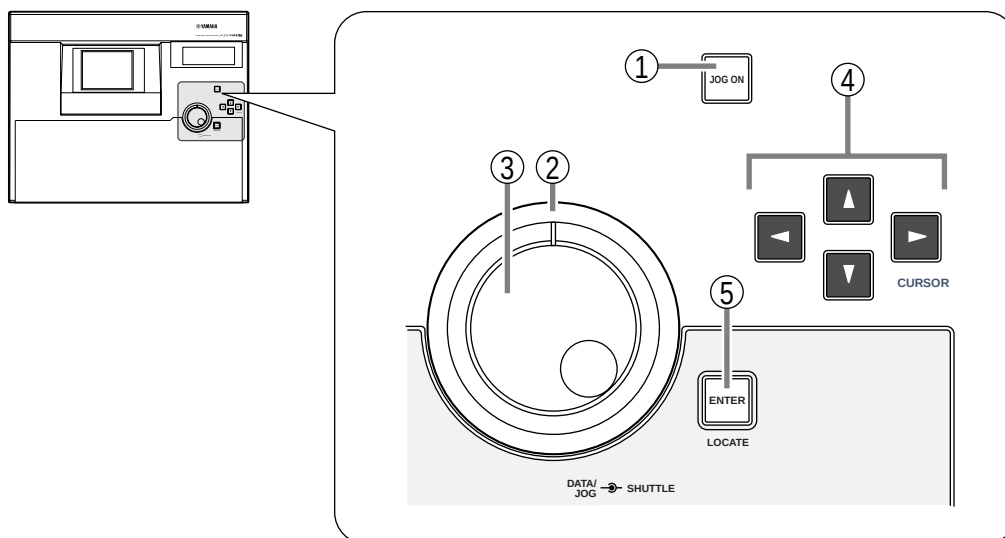
Level meter / counter section



- ① Access indicator
- ② [ABS/REL] switch
- ③ [PEAK HOLD] switch
- ④ Level meters/counter
- ⑤ TRACK [CUE] key
- ⑥ [REC TRACK SELECT] keys
- ⑦ [ALL SAFE] key

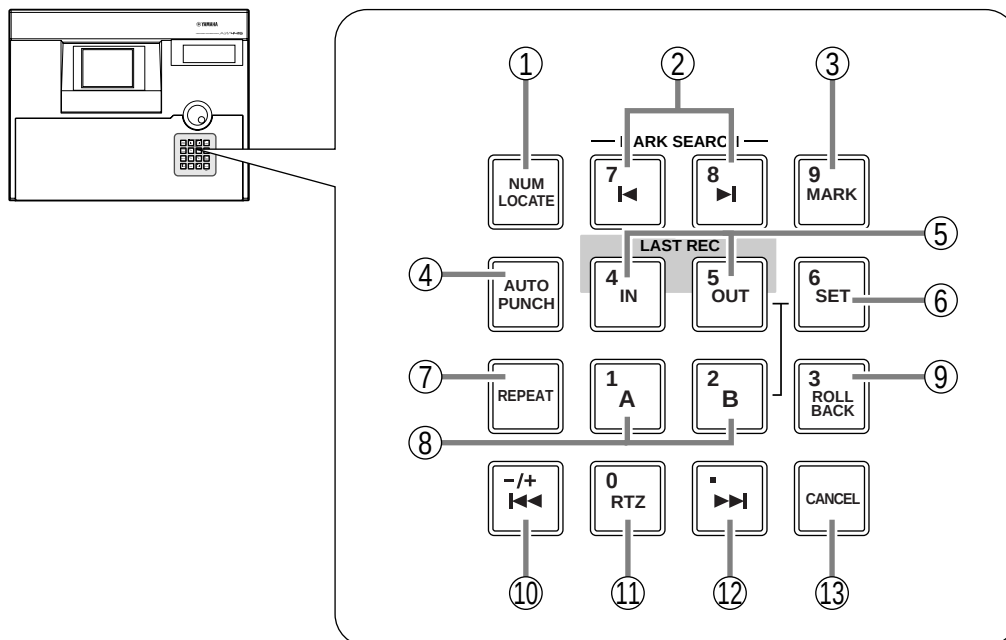
RECORDER section**AUTOMATION section****SCENE MEMORY section**

CURSOR/JOG & SHUTTLE section



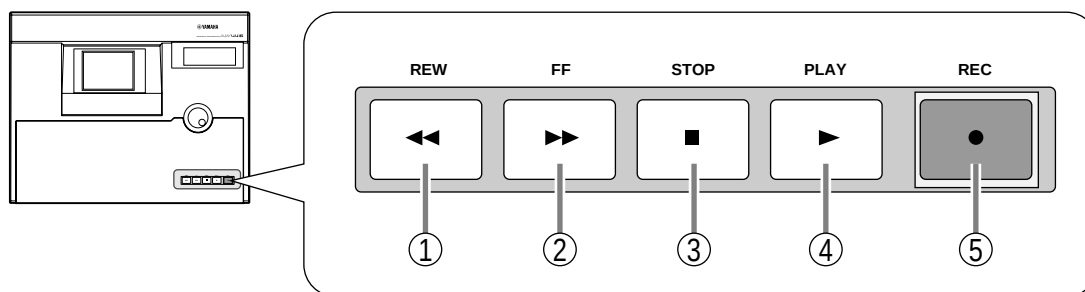
- ① [JOG ON] key
- ② [DATA/JOG] dial
- ③ [SHUTTLE] dial
- ④ CURSOR [←]/[→]/[↑]/[↓] keys
- ⑤ [ENTER] key

Locate section



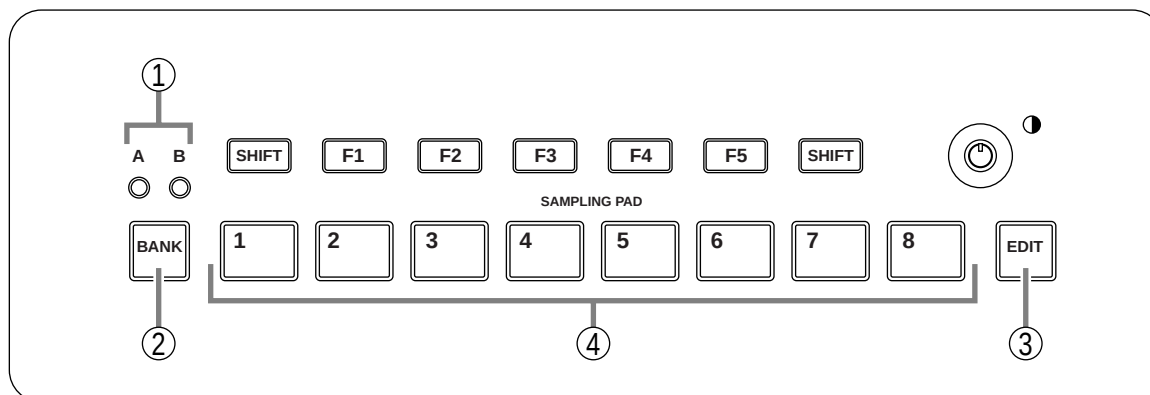
- ① [NUM LOCATE] (number locate) key
- ② MARK SEARCH [←]/[→] keys
- ③ [MARK] key
- ④ [AUTO PUNCH] key
- ⑤ LAST REC[IN]/[OUT] (last record in/out) keys
- ⑥ [SET] key
- ⑦ [REPEAT] key
- ⑧ [A]/[B] keys
- ⑨ [ROLL BACK] key
- ⑩ [←←←] key
- ⑪ [RTZ] (return to zero) key
- ⑫ [→→→] key
- ⑬ [CANCEL] key

Transport section



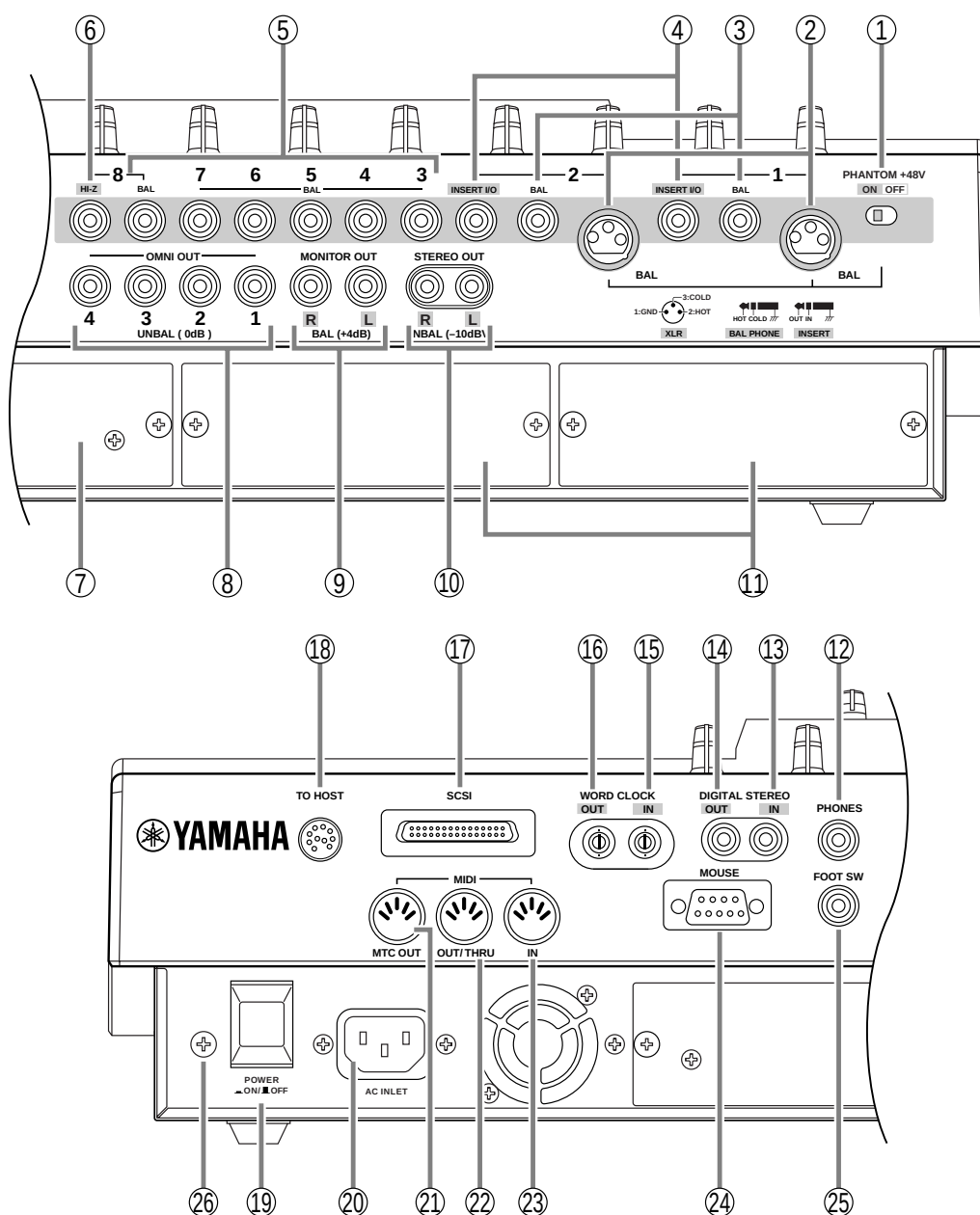
- ① [REW] (rewind) key
- ② [FF] (fast-forward) key
- ③ [STOP] key
- ④ [PLAY] key
- ⑤ [REC] key

SAMPLING PAD section



- ① A/B bank indicators
- ② [BANK] pad
- ③ [EDIT] pad
- ④ Pads 1-8

• Rear panel



① [PHANTOM +48V ON/OFF] switch

② INPUT 1/2 (XLR) jacks

③ INPUT 1/2 (phone) jacks

④ INSERT I/O 1/2 jacks

⑤ INPUT 3-8 (phone) jacks

⑥ INPUT 8 (HI-Z) jack

⑦ 2.5" HARD DISK DRIVE slot

⑧ OMNI OUT 1-4 jacks

⑨ MONITOR OUT jacks

⑩ STEREO OUT jacks

⑪ OPTION I/O slots 1/2

⑫ PHONES jack

⑬ DIGITAL STEREO IN jack

⑭ DIGITAL STEREO OUT jack

⑮ WORD CLOCK IN jack

⑯ WORD CLOCK OUT jack

⑰ SCSI connector

⑱ TO HOST connector

⑲ POWER switch

⑳ AC INLET connector

㉑ MTC OUT connector

㉒ MIDI OUT/THRU connector

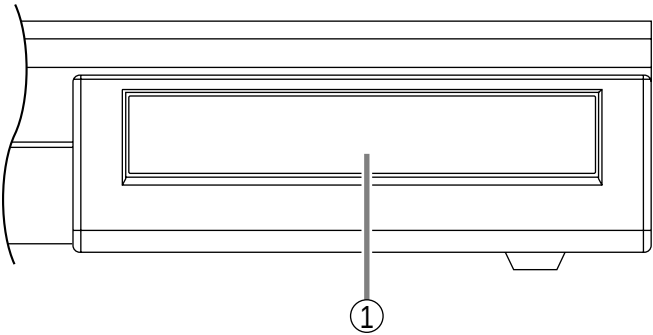
㉓ MIDI IN connector

㉔ MOUSE connector

㉕ FOOT SW jack

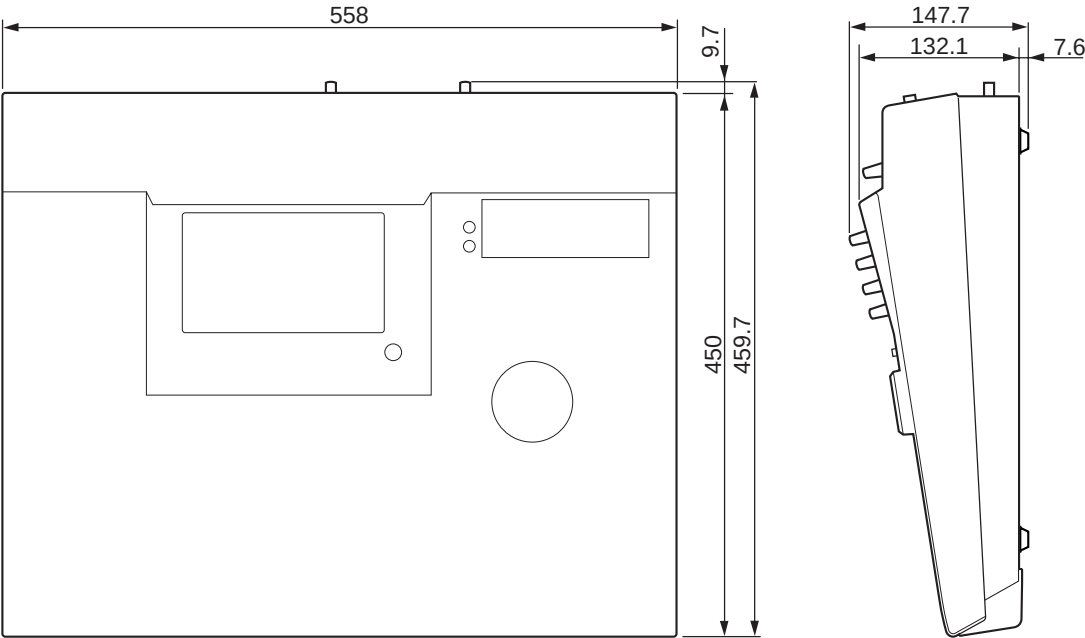
㉖ Grounding connector

• Front panel



① CD-RW drive cover

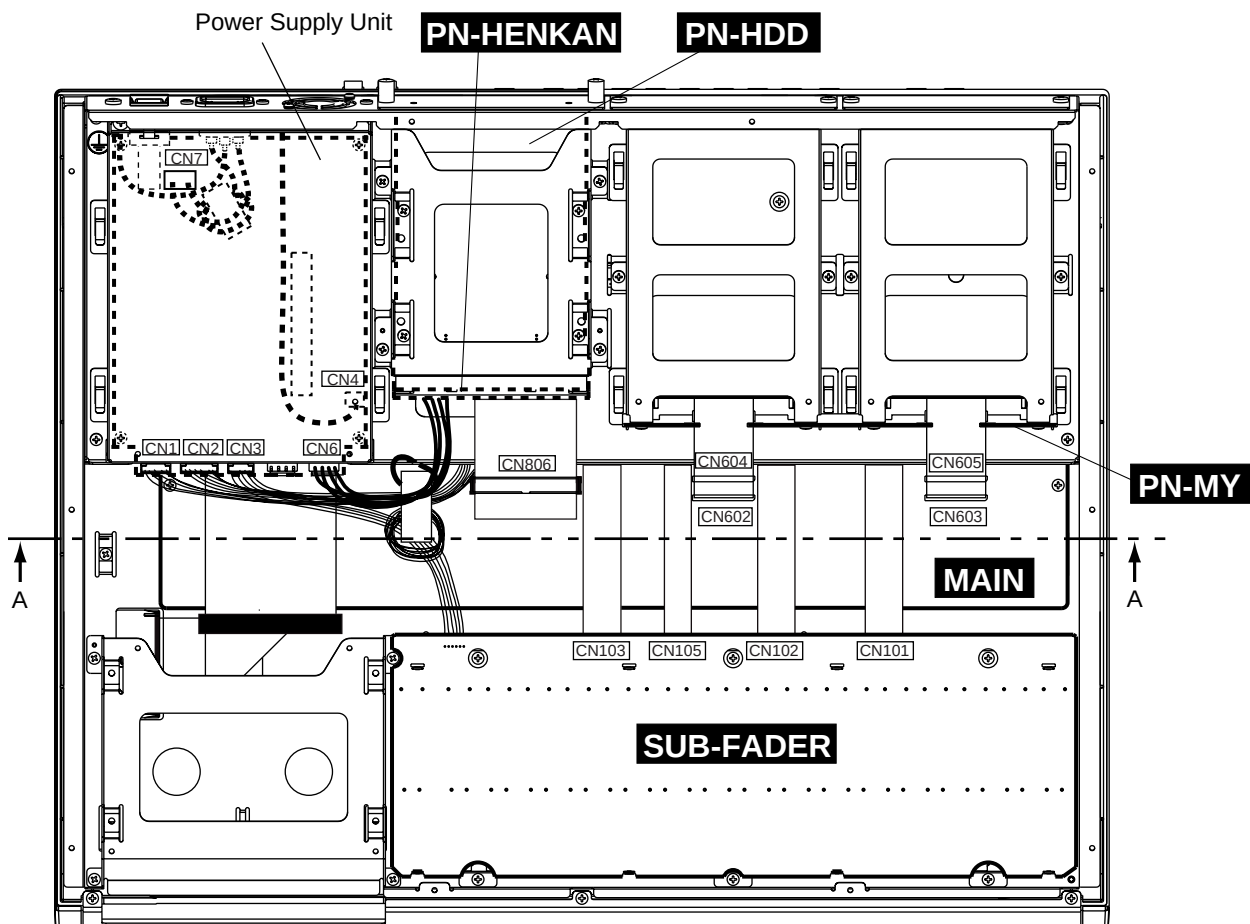
■ DIMENSIONS



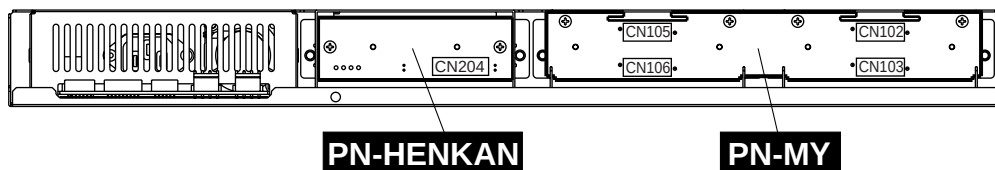
Units: mm

■ CIRCUIT BOARD LAYOUT

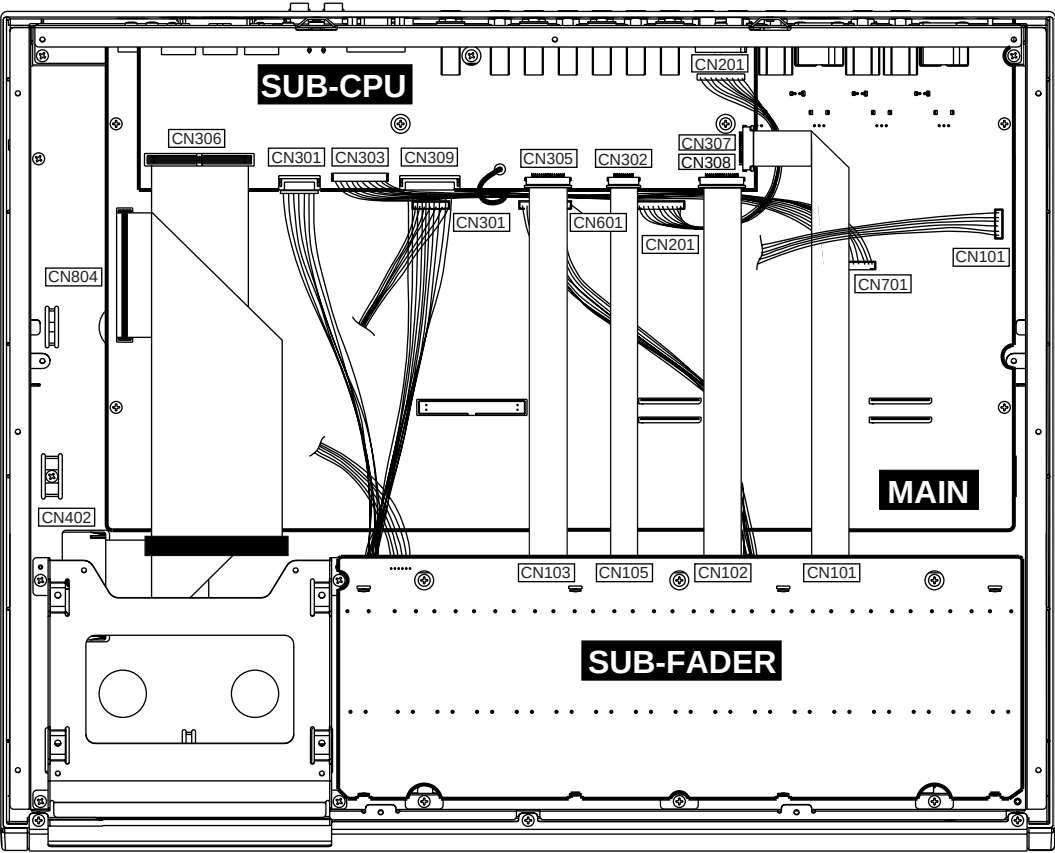
〈Bottom view〉



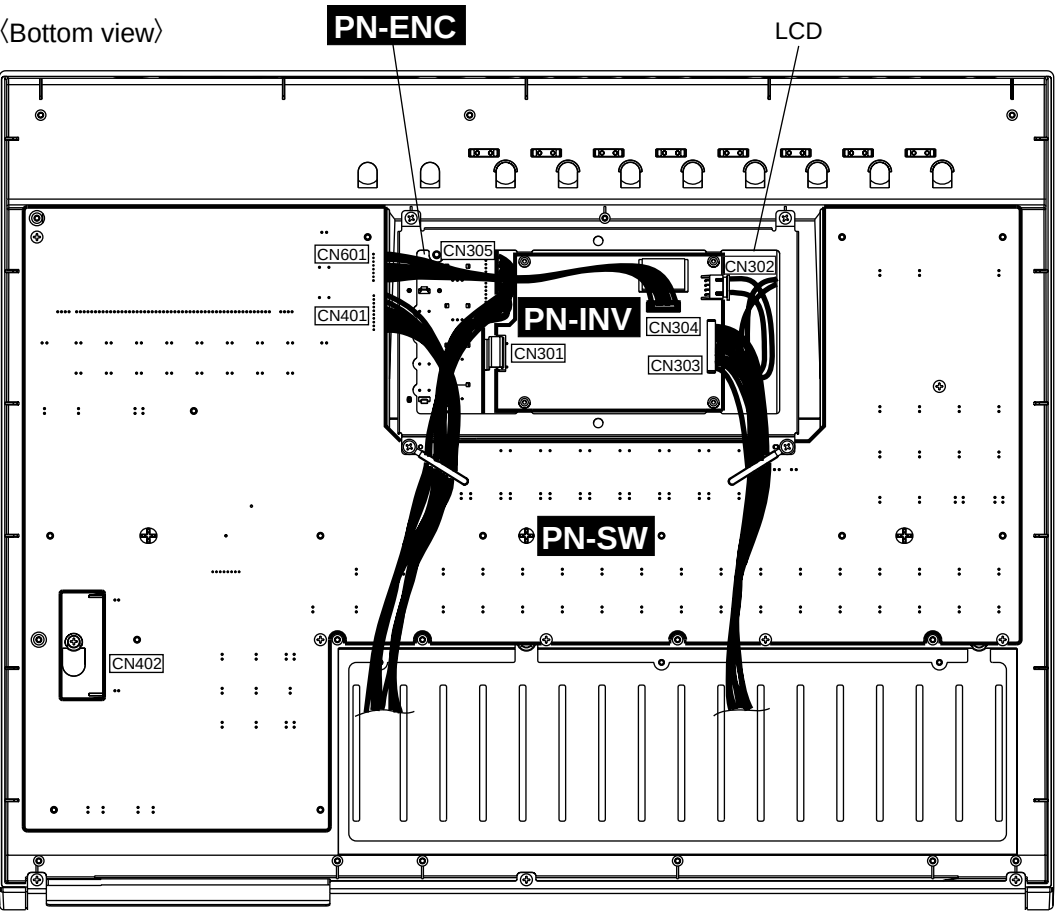
SEC A-A



〈Bottom view〉



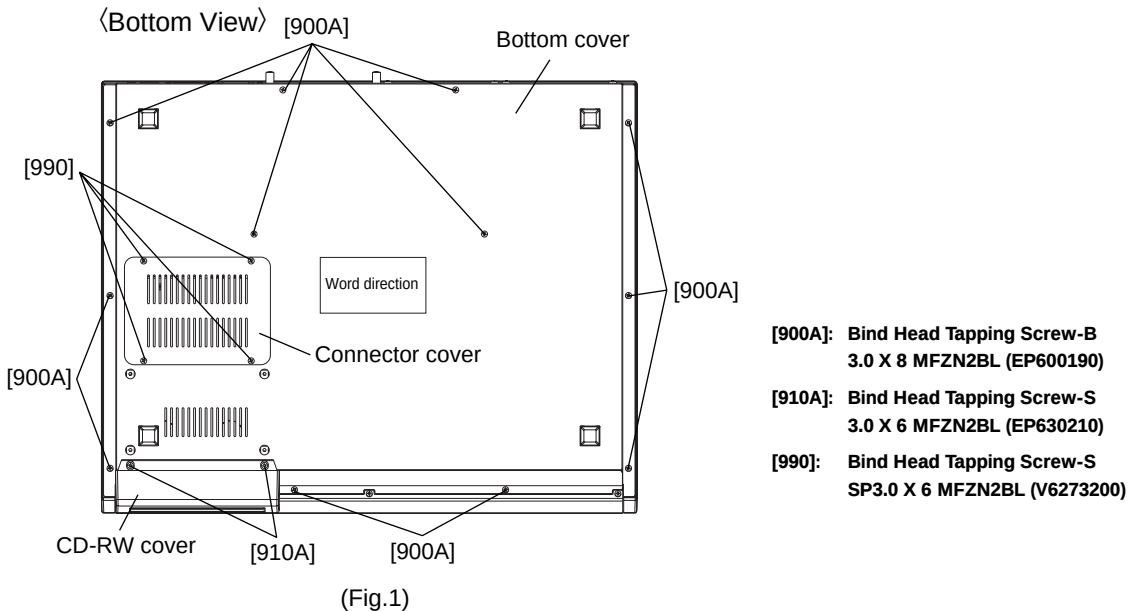
〈Bottom view〉



■ DISASSEMBLY PROCEDURE

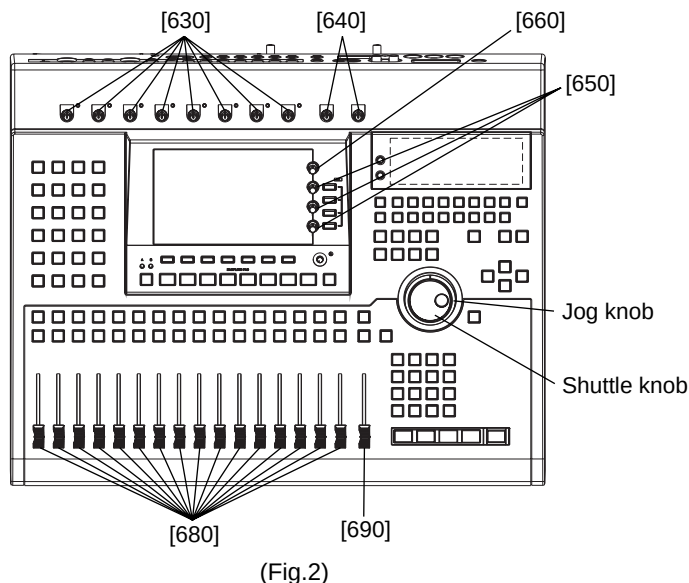
1. Bottom Cover

- 1-1 Remove the four (4) screws marked [990]. The connector cover can then be removed. (Fig.1)
- 1-2 Remove the two (2) screws marked [910A]. The CD-RW cover can then be removed. (Fig.1)
- 1-3 Remove the twelve (12) screws marked [910A]. The bottom cover can then be removed. (Fig.1)



2. SUB-FADER Circuit Board

- 2-1 Remove the sixteen (16) fader knobs marked [680] and the fader knob marked [690] in the control panel. (Fig.2)
- 2-2 Remove the bottom cover. (See procedure 1.)
- 2-3 Remove the six (6) screws marked [900B]. The SUB-FADER circuit board can then be removed. (Fig.3)



3. PN-MY, PN-HENKAN, PN-HDD Circuit Boards and Power Supply Unit

3-1 Remove the bottom cover. (See procedure 1.)

3-2 Remove the five (5) screws marked [900C]. The bottom chassis assembly can then be removed. (Fig.3)

3-3 PN-MY Circuit Board:

Remove the four (4) screws marked [900D]. The PN-MY circuit board can then be removed. (Fig.4)

3-4 PN-HENKAN Circuit Board:

Remove the two (2) screws marked [900E]. The PN-HENKAN circuit board can then be removed. (Fig.4)

3-5 PN-HDD Circuit Board:

Remove the two (2) special screws marked [850]. The PN-HDD circuit board can then be removed with the HDD plate. (Fig.4)

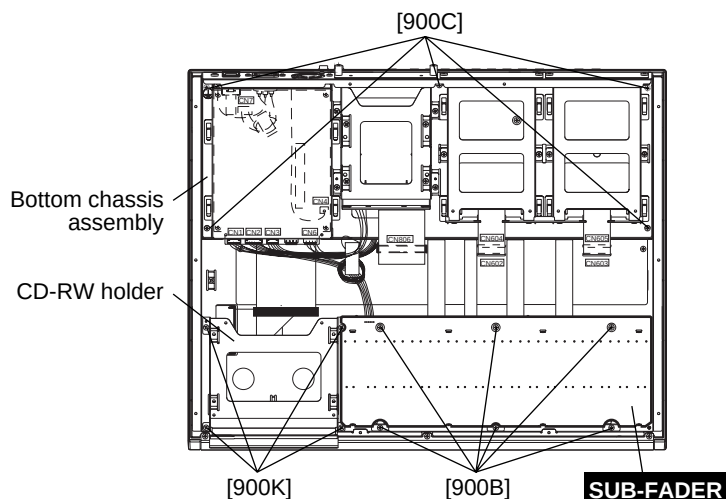
Remove the two (2) screws marked [910B], and then remove the HDD plate from the PN-HDD circuit board. (Fig.4)

3-6 Power Supply Unit:

Remove the screw marked [840A] and the screw marked [900F]. The AC cover can then be removed. (Fig.4)

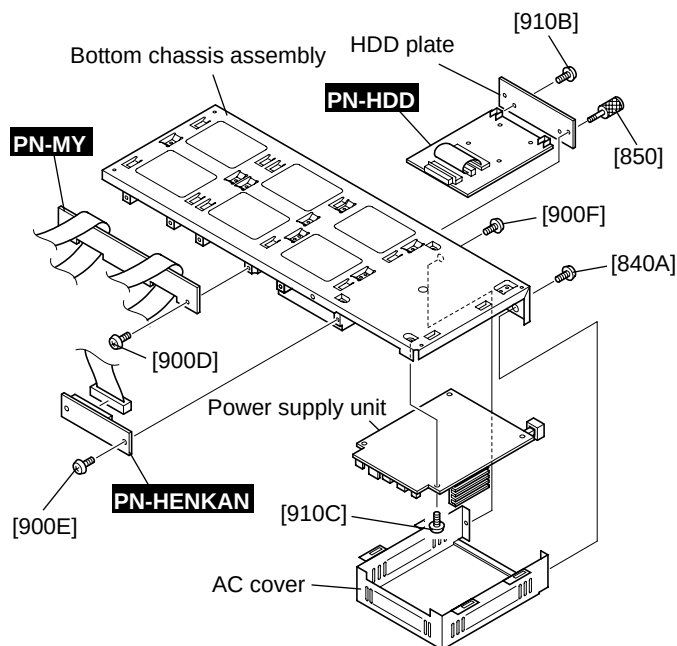
Remove the four (4) screws marked [910C], and then remove the power supply unit. (Fig.4)

*** When you assemble the power supply unit, be sure to attach the AC cover as before.**



[900]: Bind Head Tapping Screw-B
3.0 X 8 MFZN2BL (EP600190)

(Fig.3)



[840A]: Bind Head Screw
4.0 X 6 MFZN2BL (EG340340)

[850]: Screw (VZ743100)

[900]: Bind Head Tapping Screw-B
3.0 X 8 MFZN2BL (EP600190)

[910]: Bind Head Tapping Screw-S
3.0 X 6 MFZN2BL (EP630210)

(Fig.4)

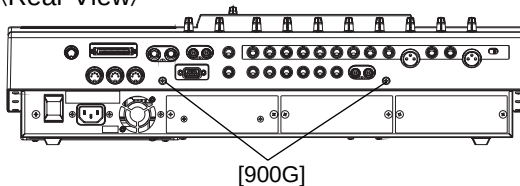
4. MAIN and SUB-CPU Circuit Boards

- 4-1 Remove the eight (8) knobs marked [630] and the two (2) knobs marked [640]. (Fig.2)
- 4-2 Remove the bottom cover. (See procedure 1.)
- 4-3 Remove the bottom chassis assembly. (See procedure 3-2.)
- 4-4 Remove the two (2) screws marked [900G] and the ten (10) screws marked [900H]. The rear chassis can then be removed with the MAIN and SUB-CPU circuit boards. (Fig.5)
- 4-5 Remove the screw marked [910D], the six (6) screws marked [900I] and the four (4) U-shaped holder marked [960A].

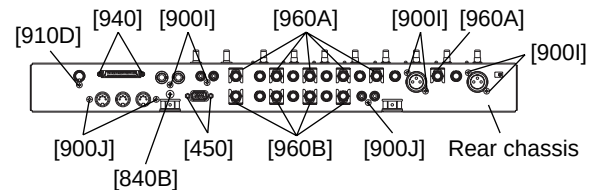
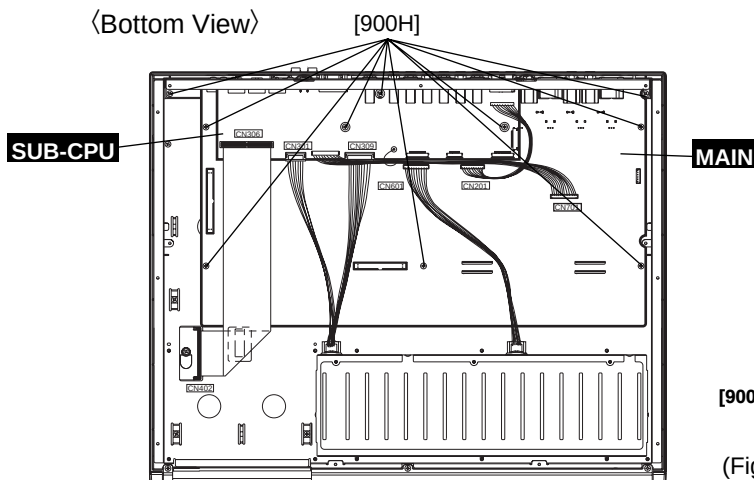
The MAIN circuit board can then be removed from the rear chassis. (Fig.6)

- 4-6 Remove the three (3) screws marked [900J], the screw marked [840B], the two (2) jack sockets marked [450] and the four (4) U-shaped holder marked [960B]. The SUB-CPU circuit board can then be removed from the rear chassis. (Fig.6)

〈Rear View〉



〈Bottom View〉



- [450]: Jack Socket 17L-003C3 (V6164800)
- [840]: Bind Head Screw 4.0 X 6 MFZN2BL (EG340340)
- [900]: Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL (EP600190)
- [910]: Bind Head Tapping Screw-S 3.0 X 6 MFZN2BL (EP630210)
- [940]: Pan Head Screw 2.6 X 6 MFNI33 (VT267800)

(Fig.6)

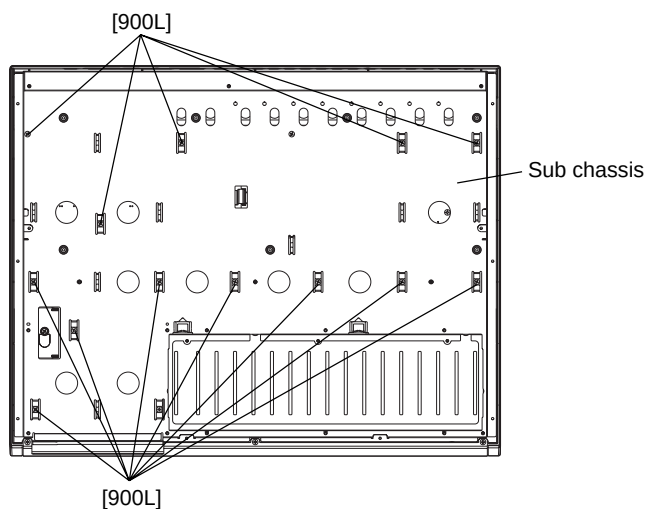
- [900]: Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL (EP600190)

(Fig.5)

5. PN-SW, PN-ENC, PN-INV Circuit Boards and LCD

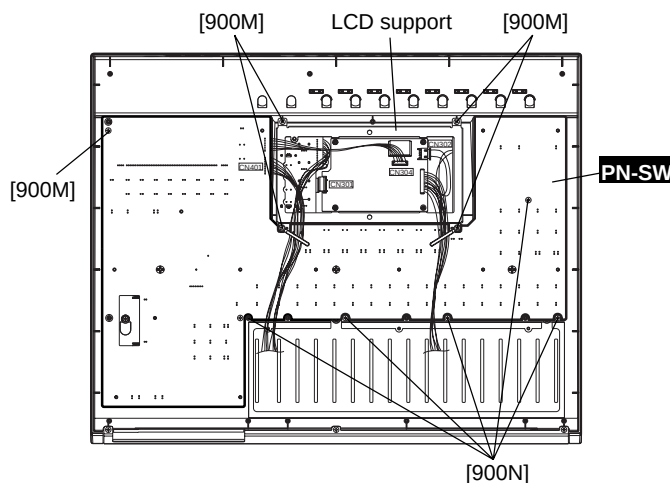
- 5-1 Remove the JOG knob, the SHUTTLE knob, the three (3) knobs marked [650] and the knob marked [660] in the control panel. (Fig.2)
- 5-2 Remove the bottom cover. (See procedure 1.)
- 5-3 Remove the SUB-FADER circuit board. (See procedure 2.)
- 5-4 Remove the bottom chassis assembly. (See procedure 3-2.)
- 5-5 Remove the rear chassis with the MAIN and SUB-CPU circuit boards. (See procedure 4-4.)

- 5-6 Remove the four (4) screws marked [900K].
The CD-RW holder can then be removed. (Fig.3)
- 5-7 Remove the fifteen (15) screws marked [900L].
The sub chassis can then be removed. (Fig.7)
- 5-8 Remove the four (4) screws marked [900M].
The LCD support can then be removed. (Fig.8)
- 5-9 **PN-SW circuit board:**
Remove the six (6) screws marked [900N].
The PN-SW circuit board can then be removed. (Fig.8)
- 5-10 **LCD:**
Remove the two (2) screws marked [930]. The LCD
can then be removed from the LCD support (Fig.9)
- 5-11 **PN-ENC circuit board:**
Remove the two (2) screws marked [980]. The PN-ENC
circuit board can then be removed from the LCD
support. (Fig.9)
- 5-12 **PN-INV circuit board:**
Remove the four (4) plastic rivets marked [950]. The
PN-INV circuit board can then be removed from the
LCD support. (Fig.9)



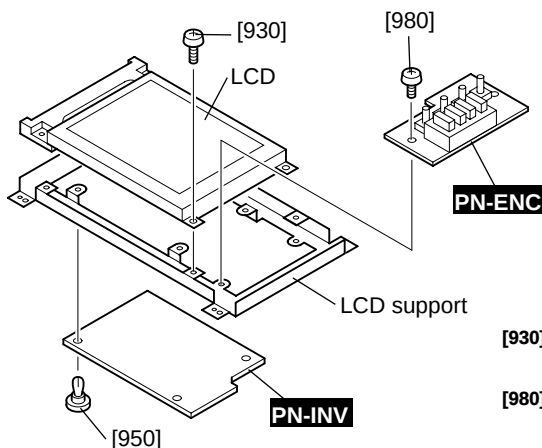
[900L]: Bind Head Tapping Screw-B
3.0 X 8 MFZN2BL (EP600190)

(Fig.7)



[900]: Bind Head Tapping Screw-B
3.0 X 8 MFZN2BL (EP600190)

(Fig.8)



[930]: Bind Head Tapping Screw-S
2.6 X 8 MFZN2Y (V5679500)

[980]: Bind Head Tapping Screw-S
2.6 X 4 MFZN2Y (VU757900)

(Fig.9)

■ HARD DISK INSTALLATION



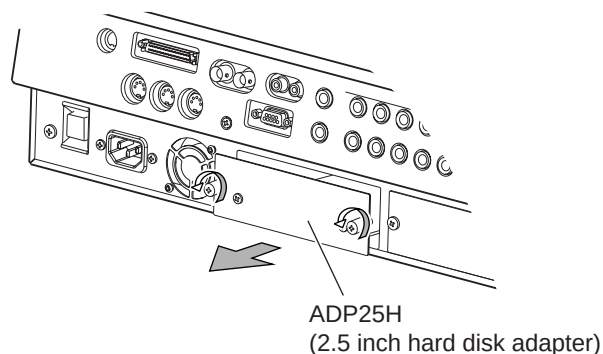
- Hard disks are precision devices. Do not subject them to physical shock or static electricity, etc.
- Do not place a hard disk nearby devices that produce a strong magnetic field, or in locations of extreme cold, heat, or moisture.
- Before you handle a hard disk, touch your hand to a grounded metallic object to release any static charge that may be present in your body or clothing. If you fail to do so, static electricity may damage the hard disk.
- Never attempt to disassemble a hard disk or apply excessive force to it.
- The AW4416 is shipped with four screws for attaching a 2.5 inch hard disk, and four screws for attaching a CD-RW drive, making a total of eight included screws of the same type.

1. You will need the following items.

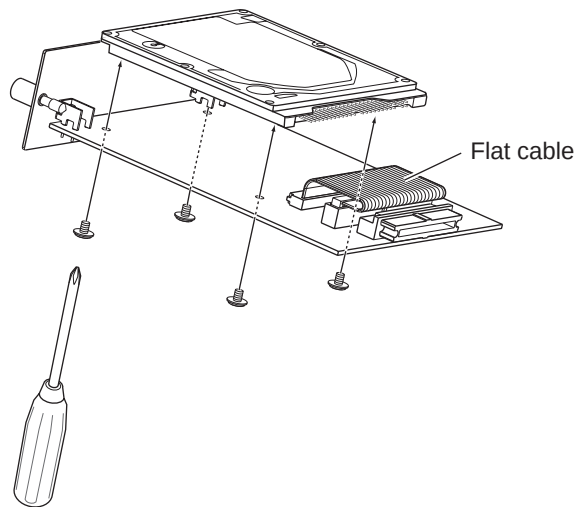
- The AW4416 itself
- A 2.5 inch IDE hard disk (sold separately) for installation
- Four screws included with the AW4416 for attaching the 2.5 inch hard disk (Pan washer head screw 3.0 X 4 VS676500)
- A philips (+) screwdriver

2. Make sure that the power of the AW4416 is turned off. For safety's sake, disconnect the power cable from the AC outlet.

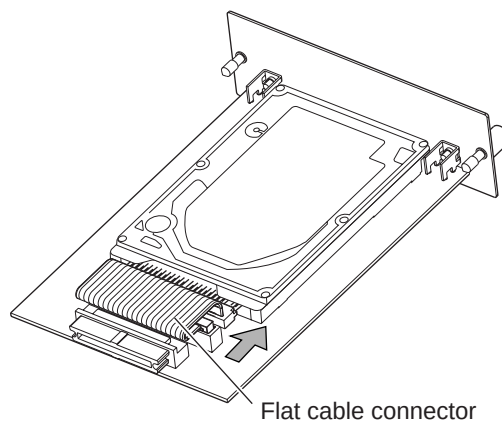
3. On the rear panel of the AW4416, remove the two screws that hold the ADP25H (PN-HDD circuit board) 2.5 inch hard disk adapter to the 2.5" HARD DISK DRIVE slot.



4. Place the hard disk on the ADP25H (PN-HDD circuit board) as shown in the diagram below, align the screw holes of the hard disk and the ADP25H (PN-HDD circuit board), and use your screwdriver to fasten the screws at the four locations shown.



5. Plug the connector of the flat cable (HDD cable assembly VS580600) extending from the ADP25H (PN-HDD circuit board) into the connector of the hard disk.



- Even if it is difficult to plug in the connector, do not use excessive pressure to force it in. This may damage the hard disk, or you may injure yourself.

6. Aligning the ADP25H (with the hard disk attached) with the rails inside the 2.5" HARD DISK DRIVE slot, push it in until it clicks into place.
7. Use the screws that you removed in step 3 to fasten the ADP25H into the 2.5" HARD DISK DRIVE slot.



If you fail to tighten the screws all the way, the hard disk may vibrate and fail to operate correctly.



- Do not turn on the power of the AW4416 until all options have been installed.
- When you turn on the power of the AW4416 after installing a new hard disk, formatting of the hard disk will begin automatically.

■ CD-RW DRIVE INSTALLATION

The SCSI ID of the CD-RW drive

- The SCSI ID of the AW4416 itself is fixed at "6." For this reason, you must set the SCSI ID of the CD-RW drive to "6" before installing it.
- In the various screens of the AW4416, the SCSI ID of the internal CD-RW drive has been set to "3" by default. For this reason, you will find it convenient to set the ID of the CD-RW to "3." (For details on setting the SCSI ID, refer to the manual for your CD-RW drive.)
- If you are installing a CD-RW drive manufactured by Yamaha, the SCSI ID will be set to "3" at the factory, and we recommend that you leave it at this setting.

Installation procedure

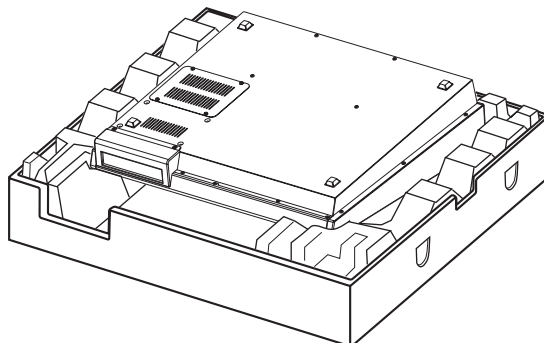
1. You will need the following items.

- The AW4416 itself
- Internal CD-RW drive (option)
- Screws (included with the AW4416) for attaching the CD-RW drive (Pan washer head screw 3.0 X 4 VS676500)
- Red and white four conductor cable for CD-RW drive (Connector assembly V564820)
- Philips (+) screwdriver
- Work surface



- *In order to install the CD-RW drive you will need to turn the AW4416 on itsback. Make sure that you have a sufficiently broad work surface.*
- *The AW4416 is shipped with four screws for attaching the 2.5 inch hard disk, and four screws for attaching the CD-RW drive, making a total of eight screws of the same type.*

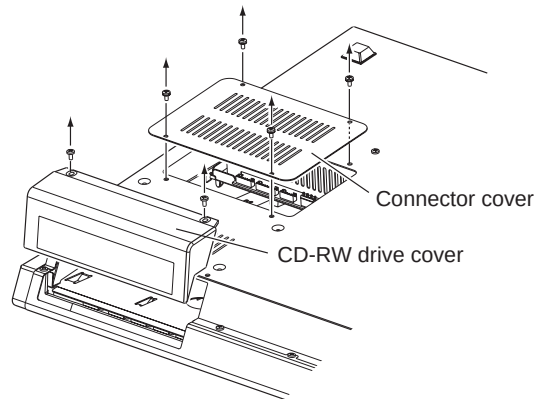
- 2. Make sure that the power of the AW4416 is turned off. For safety's sake, disconnect the power cable from the AC outlet.**
- 3. Turn the AW4416 upside down on the work surface.**



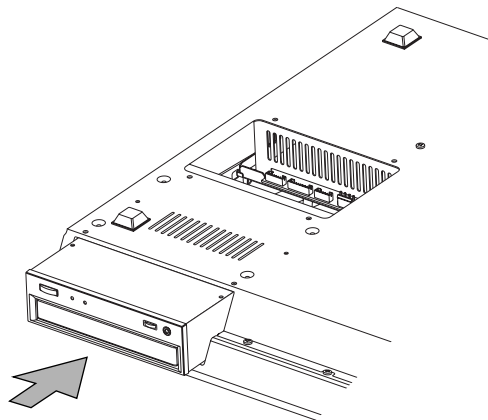


When turning the AW4416 upside down, we recommend that you use the packing foam from the AW4416's shipping carton as shown in the diagram at above, so that the controls of the top panel are not damaged. If the packing foam is not available, please spread out a soft cloth, and support each of the four corners of the AW4416 with a stack of magazines etc.

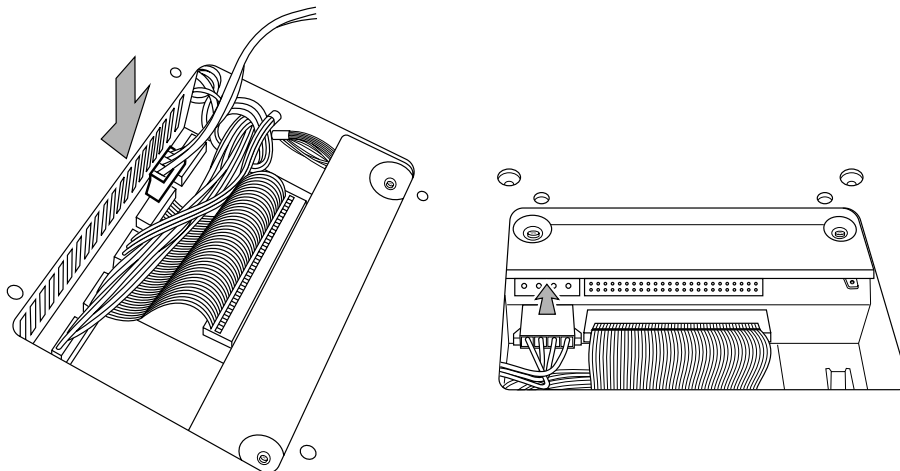
4. Remove the CD-RW drive cover from the front panel, and remove the connector cover.



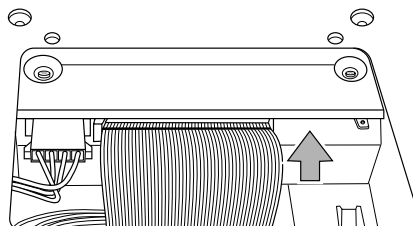
5. Turn the CD-RW drive over, and insert it little by little, stopping when the connector end of the CD-RW drive enters the opening in the bottom of the AW4416.



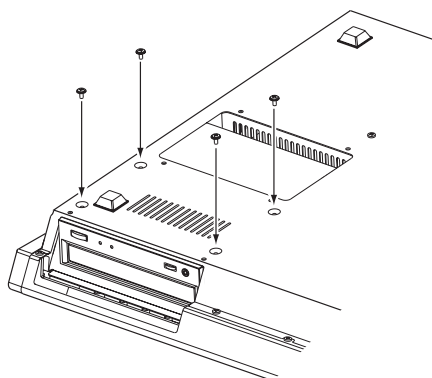
6. Connect the red and white four-conductor cable (Connector assembly V564820) included with the AW4416 to the internal connector of the AW4416 as shown in the diagram. Then connect the cable to the connector of the CD-RW drive.



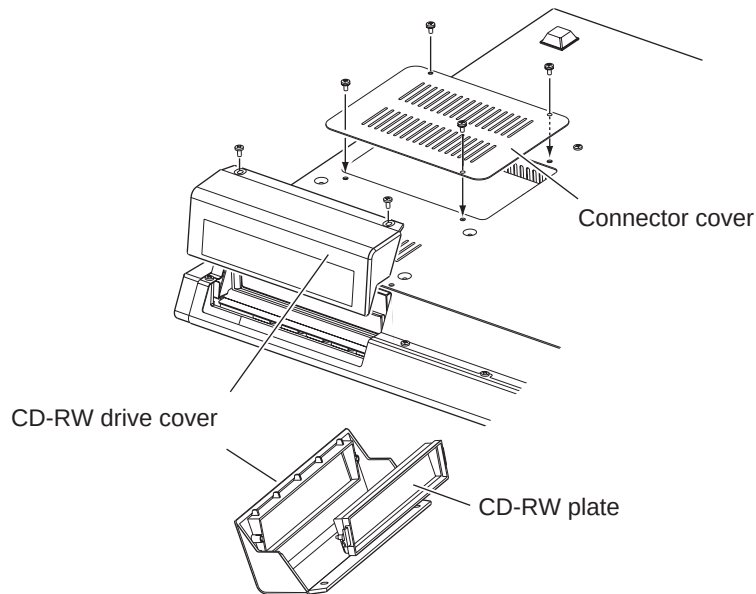
7. Plug the connector of the flat cable (Connector assembly V564700) extending from inside the AW4416 into the connector of the CD-RW drive.



8. Align the screw holes in the bottom of the CD-RW drive with the screw holes of the AW4416, and use a screwdriver to fasten the drive with the four included screws.

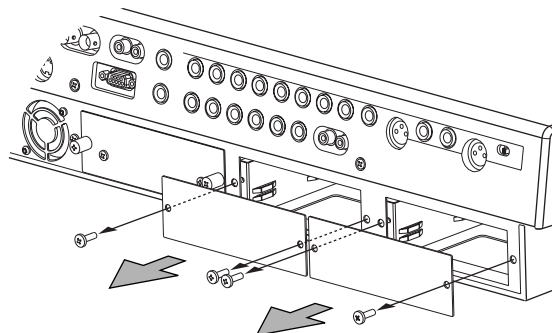


9. Re-attach the CD-RW drive cover and the connector cover that you removed in step 3. At this time, remove the CD-RW plate from the CD-RW drive cover.



■ I/O CARD INSTALLATION

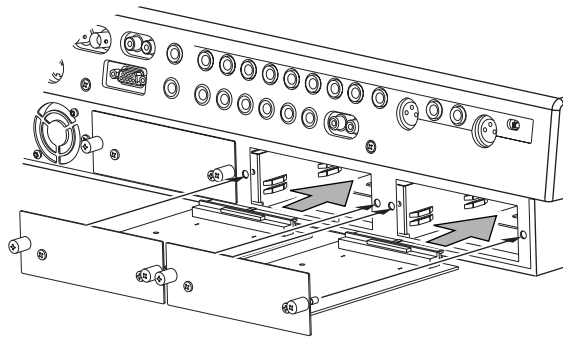
1. Make sure that the power of the AW4416 is turned off. For safety's sake, disconnect the power cable from the AC outlet.
2. From the OPTION I/O slot located on the rear panel of the AW4416, remove the two screws (Bind head screw 4.0 X 2 VB132700) that hold the cover in place.





Please keep the cover and screws you removed in a safe place.

- 3. Slide the I/O card along the rails inside the slot until it clicks into place.**
- 4. Tighten the two screws included with the I/O card to fasten the card securely.**



Please note that if the screws are loose, the card may not be grounded correctly.

■ LSI PIN DESCRIPTION

M66004FP (XT828A00) Display Driver	43
HD6437042AF28 (XY715A00) CPU	
HD6437042AF53 (XY721A00) CPU	
HD6437042AF28 (XW647A00) CPU	44
YSS904-F (XV989A00) DSP5 (Digital Signal Processor)	45
YSS910-S (XV988A00) DSP6 (Digital Signal Processor)	46
CI-DRC (XY629A00) Gate Array	47
LR38791 (XY631A00) Gate Array	48
LR38792 (XY630A00) Gate Array	49
SPC7214F0B (XY625A00) SCSI Control	50
AK4528VF (XY624A00) ADC/DAC	51
MBCG46183-129 (XV833A00) Gate Array	51
DS12887 (XV618A00) Real Time Clock.....	51
SED1335F0B (XQ595A00) LCDC (LCD Controller)	52
YM3436DK (XG948E00) DIR2 (Digital Format Interface Receiver)	52
YM3437C-F (XM530A00) DIT2 (Digital Format Interface Transmitter)	53

● M66004FP (XT828A00) Display Driver

PN-SW: IC601

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DIG11	O	Digital output	33	SEG26	O	Segment output
2	DIG10	O		34	SEG25	O	
3	DIG09	O		35	SEG24	O	
4	DIG08	O		36	SEG23	O	
5	DIG07	O		37	SEG22	O	
6	DIG06	O		38	SEG21	O	
7	DIG05	O		39	SEG20	O	
8	DIG04	O		40	SEG19	O	
9	DIG03	O		41	SEG18	O	
10	DIG02	O		42	SEG17	O	
11	DIG01	O		43	SEG16	O	
12	DIG00	O	Reset Chip selection Sift clock Serial data	44	SEG15	O	Segment output
13	/RESET	I		45	SEG14	O	
14	/CS	I		46	SEG13	O	
15	SCK	I		47	SEG12	O	
16	SDATA	I	Output port 1 Output port 0 Power supply Clock out Clock in Ground	48	SEG11	O	
17	P1	O		49	SEG10	O	
18	P0	O		50	SEG09	O	
19	Vcc1	O		51	SEG08	O	
20	XOUT	O	Segment output	52	SEG07	O	
21	XIN	I		53	SEG06	O	
22	Vss			54	SEG05	O	
23	SEG35	O		55	SEG04	O	
24	SEG34	O	Power supply	56	SEG03	O	
25	SEG33	O		57	SEG02	O	
26	SEG32	O		58	SEG01	O	
27	SEG31	O		59	SEG00	O	
28	SEG30	O	Digital output	60	Vcc2		Power supply
29	SEG29	O		61	DIG15	O	
30	SEG28	O		62	DIG14	O	
31	SEG27	O		63	DIG13	O	
32	VP		(-) Power supply	64	DIG12	O	

• **HD6437042AF28 (XY715A00) CPU**
HD6437042AF53 (XY721A00) CPU
HD6437042AF28 (XW647A00) CPU

MAIN: IC601,803 SUB-CPU: IC301

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	TIOC4/DACK0/PE14	I/O	MTU I/O / DMA acknowledge / Port E	57	D11	I/O	Data bus
2	PE15	O	Port E	58	D10	I/O	
3	VSS	I	Ground	59	D9	I/O	
4	A0	O	Address bus	60	D8	I/O	Ground
5	A1	O		61	VSS	I	
6	A2	O		62	D7	I/O	
7	A3	O		63	D6	I/O	Data bus
8	A4	O		64	D5	I/O	
9	A5	O		65	VCC	I	
10	A6	O		66	D4	I/O	Data bus
11	A7	O		67	D3	I/O	
12	A8	O		68	D2	I/O	
13	A9	O		69	D1	I/O	Power supply
14	A10	O		70	D0	I/O	
15	A11	O	Power supply	71	VSS	I	
16	A12	O		72	XTAL	I	Crystal oscillator
17	A13	O		73	MD3	I	Mode control
18	A14	O		74	EXTAL	I	Crystal oscillator
19	A15	O		75	MD2	I	Mode control
20	A16	O		76	NMI	I	Non-maskable interrupt request
21	VCC	I		77	VCC	I	Power supply
22	A17	O		78	MD1	I	Mode control
23	VSS	I		79	MD0	I	Mode control
24	/RAS/PB2	I/O	Row address strobe / Port B	80	PLLVC	I	PLL Power supply
25	/CASL/PB3	I/O	Column address strobe (low) / Port B	81	PLLCAP	I	PLL capacitor
26	/CASH/PB4	I/O	Column address strobe (high) / Port B	82	PLLVSS	I	PLL Ground
27	VSS	I	Ground	83	PA15 / CK	O	Port A / Clock
28	/RDWR / PB5	I/O	DRAM read / write / Port B	84	/RES	I	Power on reset
29	A18/BACK/PB6	I/O	Address bus / Bus acknowledge / Port B	85	PE0/DREQ0	I/O	Port E / DMA request
30	A19/BREQ/PB7	I/O	Address bus / Bus request / Port B	86	PE1/DRAK0	O	Port E / DMA acknowledge
31	A20/PB8	O	Address bus/ Port B	87	PE2	O	Port E
32	A21/PB9	O		88	PE3	O	
33	VSS	I		89	PE4	O	
34	/RD	O	Read	90	VSS	I	Ground
35	/WDTOVF	O	Watch dog timer overflow	91	PF0 / AN0	I	Port F / Analog input
36	/WRH	O	High write	92	PF1 / AN1	I	
37	VCC	I	Power supply	93	PF2 / AN2	I	
38	/WRL	O	Low write	94	PF3 / AN3	I	Analog ground
39	VSS	I	Ground	95	PF4 / AN4	I	
40	/CS1	O	Chip select	96	PF5 / AN5	I	
41	/CS0	O	Chip select	97	AVSS	I	Port F / Analog input
42	/IRQ3/TCLKD/PA9	I/O	Interrupt request / Timer clock/ Port A	98	PF6 / AN6	I	
43	TCLKC/IRQ2/PA8	I/O	Timer clock / Interrupt request / Port A	99	PF7 / AN7	I	
44	/CS3	O	Chip select	100	AVCC	I	Power supply
45	/CS2	O	Chip select	101	VSS	I	Ground
46	/IRQ1/PA5	I/O	Interrupt request / Port A	102	PE5	O	Port E
47	TXD1	O	Data transmission	103	VCC	I	Power supply
48	RXD1	I	Data reception	104	PE6	I/O	Port E
49	/IRQ0/PA2	I/O	Interrupt request / Port A	105	PE7	I/O	
50	TXD0	O	Data transmission	106	PE8	I/O	
51	RXD0	I	Data reception	107	PE9	O	Ground
52	D15	I/O	Data bus	108	PE10	O	
53	D14	I/O		109	VSS	I	
54	D13	I/O		110	PE11	O	Port E
55	VSS	I	Ground	111	PE12	O	
56	D12	I/O	Data bus	112	/MRES	I	Manual reset

● YSS904-F (XV989A00) DSP5 (Digital Signal Processor)

MAIN: IC505,509

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	NC		} Not used	105	NC		} Not used
2	NC			106	NC		
3	NC			107	NC		
4	NC			108	NC		
5	Vdd		} Ground	109	SIO28	I/O	} Serial data bus
6	Vss	I		110	SIO29	I/O	
7	XI	O		111	SIO30	I/O	
8	XO	O		112	SIO31	I/O	
9	Vdd		} Sync. signal input	113	Vss		} Power supply
10	/SYNCl	I		114	Vdd		
11	/SYNCO	O		115	SIO32	I/O	
12	Vdd			116	SIO33	I/O	
13	CKI	I	} System clock input (30 MHz)	117	SIO34	I/O	} Serial data bus
14	CKO	O		118	SIO35	I/O	
15	CKSEL	I		119	SIO36	I/O	
16	Vss			120	SIO37	I/O	
17	MCKD	I	} Serial clock input (256 fs)	121	SIO38	I/O	} Power supply
18	/SSYNCl	I		122	SIO39	I/O	
19	/IC	I		123	Vss		
20	/TEST	I		124	Vdd		
21	NC		} Not used	125	SIO40	I/O	} Serial data bus
22	NC			126	SIO41	I/O	
23	NC			127	SIO42	I/O	
24	Vdd			128	SIO43	I/O	
25	Vss		} Power supply	129	SIO44	I/O	} Serial data bus
26	/CS	I		130	SIO45	I/O	
27	/WR	I		131	SIO46	I/O	
28	/RD	I		132	SIO47	I/O	
29	CA7	I	} Read enable input	133	Vss		} Power supply
30	CA6	I		134	SIO48	I/O	
31	CA5	I		135	SIO49	I/O	
32	CA4	I		136	SIO50	I/O	
33	CA3	I	} CPU address bus	137	SIO51	I/O	} Serial data bus
34	CA2	I		138	SIO52	I/O	
35	CA1	I		139	SIO53	I/O	
36	Vss			140	SIO54	I/O	
37	Vdd		} Power supply	141	SIO55	I/O	} Power supply
38	CD15	I/O		142	Vss		
39	CD14	I/O		143	Vdd		
40	CD13	I/O		144	Vdd		
41	CD12	I/O	} CPU data bus	145	SIO56	I/O	} Serial data bus
42	CD11	I/O		146	SIO57	I/O	
43	CD10	I/O		147	SIO58	I/O	
44	CD09	I/O		148	SIO59	I/O	
45	CD08	I/O	} Power supply	149	SIO60	I/O	} Serial data bus
46	CD07	I/O		150	SIO61	I/O	
47	CD06	I/O		151	SIO62	I/O	
48	Vss			152	SIO63	I/O	
49	NC		} Not used	153	NC		} Not used
50	NC			154	NC		
51	NC			155	NC		
52	NC			156	NC		
53	NC		} Ground	157	NC		} Power supply
54	NC			158	NC		
55	NC			159	NC		
56	NC			160	NC		
57	Vdd		} Ground	161	Vss		} Parallel data bus control signal
58	Vdd			162	/POE	I	
59	CD05	I/O		163	Vss		
60	CD04	I/O		164	PIO00	I/O	} Parallel data bus
61	CD03	I/O	} CPU data bus	165	PIO01	I/O	
62	CD02	I/O		166	PIO02	I/O	
63	CD01	I/O		167	PIO03	I/O	
64	CD00	I/O	} Wait output	168	PIO04	I/O	} Power supply
65	/WAIT	O		169	PIO05	I/O	
66	Vss			170	PIO06	I/O	
67	SIO00	I/O		171	PIO07	I/O	
68	SIO01	I/O	} Serial data bus	172	Vss		} Ground
69	SIO02	I/O		173	Vdd		
70	SIO03	I/O		174	Vdd		
71	SIO04	I/O		175	PIO08	I/O	} Parallel data bus
72	SIO05	I/O	} Power supply	176	PIO09	I/O	
73	SIO06	I/O		177	PIO10	I/O	
74	SIO07	I/O		178	PIO11	I/O	
75	Vss		} Ground	179	PIO12	I/O	} Parallel data bus
76	Vdd			180	PIO13	I/O	
77	SIO08	I/O		181	PIO14	I/O	
78	SIO09	I/O		182	PIO15	I/O	
79	SIO10	I/O	} Serial data bus	183	Vss		} Power supply
80	SIO11	I/O		184	NC		
81	SIO12	I/O		185	PIO16	I/O	
82	SIO13	I/O		186	PIO17	I/O	
83	SIO14	I/O	} Power supply	187	PIO18	I/O	} Parallel data bus
84	SIO15	I/O		188	PIO19	I/O	
85	Vss			189	PIO20	I/O	
86	Vdd			190	PIO21	I/O	
87	SIO16	I/O	} Serial data bus	191	PIO22	I/O	} Power supply
88	SIO17	I/O		192	PIO23	I/O	
89	SIO18	I/O		193	Vss		
90	SIO19	I/O		194	Vdd		
91	SIO20	I/O	} Ground	195	Vdd		} Parallel data bus
92	SIO21	I/O		196	PIO24	I/O	
93	SIO22	I/O		197	PIO25	I/O	
94	SIO23	I/O		198	PIO26	I/O	
95	Vss		} Power supply	199	PIO27	I/O	} Parallel data bus
96	Vdd			200	PIO28	I/O	
97	SIO24	I/O		201	PIO29	I/O	
98	SIO25	I/O		202	PIO30	I/O	
99	SIO26	I/O	} Serial data bus	203	PIO31	I/O	} Power supply
100	SIO27	I/O		204	Vss		
101	NC			205	NC		
102	NC			206	NC		
103	NC		} Not used	207	NC		} Not used
104	NC			208	NC		

● YSS910-S (XV988A00) DSP6 (Digital Signal Processor)

MAIN: IC301,306,308,401-403,502

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	Vdd		Power supply (3.3 V)	89	Vss		Ground	
2	Vss		Ground	90	DB13	I/O	Parallel data bus	
3	XI	I	System master clock input (60 MHz or 30 MHz)	91	DB14	I/O		
4	XO	O	System master clock output (High or 30 MHz)	92	DB15	I/O		
5	Vdd		Power supply (5 V)	93	DB16	I/O		
6	/SYNCl	I	Sync. signal input	94	DB17	I/O		
7	/SYNCO	O	Sync. signal output	95	DB18	I/O		
8	Vdd		Power supply (5 V)	96	DB19	I/O	Parallel data bus	
9	CKI	I	System clock input (30 MHz)	97	DB20	I/O		
10	CKO	O	System clock output (30 MHz)	98	DB21	I/O		
11	CKSEL	I	System master clock select (0: 60 MHz, 1: 30 MHz)	99	DB22	I/O		
12	Vss		Ground	100	Vss		Ground	
13	MCKS	I	Serial I/O master clock input (128 x Fs)	101	Vdd		Power supply (3.3 V)	
14	/SSYNCl	I	Serial I/O Sync. signal output	102	DB23	I/O	Parallel data bus	
15	/IC	I	Initial clear	103	DB24	I/O		
16	/TEST	I	Test mode setting (0: Test, 1: Normal)	104	DB25	I/O		
17	BTYP	I	Data bus type select (0: 8 bit, 1: 16 bit)	105	DB26	I/O		
18	/IRQ	O	IRQ output	106	DB27	I/O		
19	TRIG	I/O	Trigger signal input/output	107	DB28	I/O		
20	Vdd		Power supply (5 V)	108	DB29	I/O	Timing signal output/ Parallel data bus output/ input	
21	Vss		Ground	109	DB30	I/O		
22	/CS	I	chip select signal input	110	DB31	I/O		
23	/WR	I	Write signal input	111	TIMO/DBOE	I/O		
24	/RD	I	Read signal input	112	Vss		Ground	
25	CA7	I/O	Address bus of internal register	113	Vdd		Power supply (5 V)	
26	CA6	I/O		114	DA00	I/O	Memory data bus	
27	CA5	I/O		115	DA01	I/O		
28	CA4	I/O		116	DA02	I/O		
29	CA3	I/O		117	DA03	I/O		
30	CA2	I/O		118	DA04	I/O	Memory data bus	
31	CA1	I/O		119	DA05	I/O		
32	Vss		Ground	120	DA06	I/O		
33	Vdd		Power supply (3.3 V)	121	DA07	I/O	Memory data bus	
34	CD15	I/O	Data bus of internal register	122	Vss		Ground	
35	CD14	I/O		123	DA08	I/O	Memory data bus	
36	CD13	I/O		124	DA09	I/O		
37	CD12	I/O		125	DA10	I/O		
38	CD11	I/O		126	DA11	I/O		
39	CD10	I/O		127	DA12	I/O		
40	CD09	I/O		128	DA13	I/O	Memory data bus	
41	CD08	I/O		129	DA14	I/O		
42	CD07	I/O	130	DA15	I/O			
43	CD06	I/O	131	Vss		Ground		
44	Vss		Ground	132	Vdd		Power supply (3.3 V)	
45	Vdd		Power supply (3.3 V)	133	(n.c)		Not used	
46	Vdd		Power supply (5 V)	134	Vdd		Power supply (5 V)	
47	CD05	I/O	Data bus of internal register	135	DA16	I/O	Memory data bus	
48	CD04	I/O		136	DA17	I/O		
49	CD03	I/O		137	DA18	I/O		
50	CD02	I/O		138	DA19	I/O		
51	CD01	I/O		139	DA20	I/O	Memory data bus	
52	CD00	I/O		140	DA21	I/O		
53	/WAIT	O	WAIT output	141	DA22	I/O		
54	Vss		Ground	142	DA23	I/O		
55	SI0	I	Serial data input	143	Vss		Ground	
56	SI1	I		144	DA24	I/O	Memory data bus	
57	SI2	I		145	DA25	I/O		
58	SI3	I		146	DA26	I/O		
59	SI4	I		147	DA27	I/O		
60	SI5	I		148	DA28	I/O	Memory data bus	
61	SI6	I		149	DA29	I/O		
62	SI7	I		150	DA30	I/O		
63	Vss		Ground	151	DA31	I/O		
64	Vdd		Power supply (5 V)	152	Vdd		Power supply (5 V)	
65	SO0	O	Serial data output	153	Vss		Ground	
66	SO1	O		154	A00	O	Memory address (SRAM, PSRAM, DRAM)	
67	SO2	O		155	A01	O		
68	SO3	O		156	A02	O		
69	SO4	O		157	A03	O		
70	SO5	O		158	A04	O	Memory address (SRAM, PSRAM)	
71	SO6	O		159	A05	O		
72	SO7	O		160	A06	O		
73	Vss		Ground	161	A07	O		
74	DB00	I/O	Parallel data bus	162	A08	O	Memory address (SRAM, PSRAM, DRAM)	
75	DB01	I/O		163	A09	O		
76	DB02	I/O		164	Vss			Ground
77	DB03	I/O		165	Vdd			Power supply (3.3 V)
78	DB04	I/O		Parallel data bus	166	A10	O	Memory address (SRAM, PSRAM, DRAM)
79	DB05	I/O			167	A11	O	
80	DB06	I/O			168	A12	O	
81	DB07	I/O			169	A13	O	
82	DB08	I/O	Power supply (5 V)	170	A14	O	Memory address (SRAM, PSRAM), /RAS (DRAM)	
83	DB09	I/O		171	A15/RAS	O		
84	DB10	I/O		172	A16/CAS	O		Memory address (SRAM, PSRAM), /CAS (DRAM)
85	DB11	I/O		173	A17/CE	O		Memory address (SRAM), /CE (PSRAM)
86	DB12	I/O		174	/WE	O	Memory write enable signal	
87	Vdd		Power supply (3.3 V)	175	/OE	O	Memory output enable signal	
88	Vdd		Power supply (3.3 V)	176	Vdd		Power supply (5 V)	

● CI-DRC (XY629A00) Gate Array

MAIN: IC830

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	GND		Ground	81	GND		Ground
2	GND			82	GND		
3	GND			83	GND		
4	NC		Not used	84	SI0	I	Serial data input
5	NC			85	SI1	I	
6	NC			86	SI2	I	
7	DD0	I/O	DRAM data bus	87	SI3	I	
8	DD1	I/O		88	GND		Ground
9	DD2	I/O		89	NC		
10	DD3	I/O		90	DA13	O	DRAM address bus
11	DD4	I/O		91	DA12	O	
12	DD5	I/O		92	DA11	O	
13	DD6	I/O		93	DA10	O	
14	DD7	I/O		94	DA9	O	
15	GND		Ground	95	DA8	O	
16	DD8	I/O		96	DA7	O	Ground
17	DD9	I/O		97	DA6	O	
18	DD10	I/O	DRAM data bus	98	GND		
19	DD11	I/O		99	DA5	O	DRAM address bus
20	V _{DD}		Power supply +3.3V	100	DA4	O	
21	DD12	I/O		101	DA3	O	
22	DD13	I/O	DRAM data bus	102	DA2	O	
23	DD14	I/O		103	DA1	O	Power supply +3.3V
24	DD15	I/O		104	DA0	O	
25	GND		Ground	105	V _{DD}		
26	DWE	O		106	NC		Not used
27	DRAS	O	DRAM row address strobe	107	TEST	I	
28	DCAS	O	DRAM column address strobe	108	SCANENB	I	Test pin
29	DQM	O	DATA MASK	109	TESTMOD0	I	
30	SDRCS0	O	DRAM chip select	110	TESTMOD1	I	Power supply +3.3V
31	SDRCS1	O		111	V _{DD}		
32	V _{DD}		Power supply +3.3V	112	GND		Ground
33	GND			113	CA1	I	
34	SDRCLK	O	DRAM clock	114	CA2	I	CPU address bus
35	NC		Not used	115	CA3	I	
36	NC			116	CA4	I	
37	V _{DD}		Power supply +3.3V	117	CA5	I	
38	GND			118	GND		Ground
39	GND		Ground	119	GND		
40	GND			120	GND		
41	V _{DD}		Power supply +5V	121	V _{DD}		Power supply +5V
42	V _{DD}			122	V _{DD}		
43	V _{DD}			123	V _{DD}		
44	XD0	I/O		124	GND		Ground
45	XD1	I/O	SCSI data bus	125	CD0	I/O	
46	XD2	I/O		126	CD1	I/O	CPU data bus
47	XD3	I/O		127	CD2	I/O	
48	XD4	I/O		128	CD3	I/O	Ground
49	XD5	I/O		129	GND		
50	XD6	I/O		130	CD4	I/O	CPU data bus
51	XD7	I/O		131	CD5	I/O	
52	XD8	I/O	Ground	132	V _{DD}		Power supply +5V
53	XD9	I/O		133	CD6	I/O	
54	GND			134	CD7	I/O	Ground
55	XD10	I/O	SCSI data bus	135	GND		
56	XD11	I/O		136	CD8	I/O	CPU data bus
57	V _{DD}		Power supply +5V	137	CD9	I/O	
58	XD12	I/O		138	CD10	I/O	
59	XD13	I/O	SCSI data bus	139	CD11	I/O	
60	XD14	I/O		140	GND		Ground
61	XD15	I/O		141	V _{DD}		
62	XDWRN	O	Write	142	CD12	I/O	CPU data bus
63	XDRDN	O	Read	143	CD13	I/O	
64	XDACKN	O	DMA acknowledge	144	CD14	I/O	
65	XDREQN	I	DMA request	145	CD15	I/O	
66	GND		Ground	146	GND		Ground
67	CK512FS	I		147	CCSN	I	
68	GND		Ground	148	CRDN	I	CPU read
69	FS	I		149	CWRN	I	
70	SO0	O	Serial data output	150	CINTN	O	CPU interrupt request
71	SO1	O		151	BACKN	I	
72	SO2	O		152	BREQN	O	Bus acknowledge
73	SO3	O		153	IDEGEN	O	
74	SO4	O		154	V _{DD}		Power supply +5V
75	SO5	O		155	GND		
76	SO6	O		156	RESETN	I	Ground
77	V _{DD}		Power supply +5V	157	GND		
78	V _{DD}			158	V _{DD}		Power supply +3.3V
79	V _{DD}			159	V _{DD}		
80	V _{DD}			160	V _{DD}		

● LR38791 (XY631A00) Gate Array

SUB-CPU: IC305

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	FB17	O	Fader control	65	LED8	O	LED control
2	GND		Ground	66	GND		Ground
3	GND			67	GND		
4	V _{DD}		Power supply	68	V _{DD}		Power supply
5	V _{DD}			69	V _{DD}		
6	SD0	I/O		70	LED9	O	
7	SD1	I/O		71	LED10	O	
8	SD2	I/O		72	LED11	O	
9	SD3	I/O	System data bus	73	LED12	O	LED control
10	SD4	I/O		74	LED13	O	
11	SD5	I/O		75	LED14	O	
12	SD6	I/O		76	LED15	O	
13	SD7	I/O		77	TESTO_DC	O	Test pin
14	GND		Ground	78	GND		Ground
15	SD8	I/O		79	RA1	I	
16	SD9	I/O		80	RB1	I	
17	SD10	I/O		81	RA2	I	
18	SD11	I/O	System data bus	82	RB2	I	
19	SD12	I/O		83	RA3	I	
20	SD13	I/O		84	RB3	I	Encoder Input
21	SD14	I/O		85	RA4	I	
22	SD15	I/O		86	RB4	I	
23	V _{DD}		Power supply	87	RA5	I	
24	SA0	I		88	RB5	I	
25	SA1	I	System address bus	89	GND		Ground
26	SA2	I		90	FA1	O	
27	XSRD	I	Read	91	FB1	O	
28	XSWR	I	Write	92	FA2	O	
29	XCS1	I		93	FB2	O	Fader control
30	XCS2	I	Chip select	94	FA3	O	
31	XCS3	I		95	FB3	O	
32	XRST	I	Reset	96	FA4	O	
33	XFDRST	I	Fader reset	97	FB4	O	
34	V _{DD}		Power supply	98	V _{DD}		Power supply
35	V _{DD}			99	V _{DD}		
36	GND		Ground	100	GND		Ground
37	GND			101	GND		
38	CKI	I	System clock input	102	FA5	O	
39	KD0	I		103	FB5	O	
40	KD1	I		104	FA6	O	
41	KD2	I		105	FB6	O	Fader control
42	KD3	I		106	FA7	O	
43	KD4	I	KEY control	107	FB7	O	
44	KD5	I		108	FA8	O	
45	KD6	I		109	FB8	O	
46	KD7	I		110	V _{DD}		Power supply
47	TESTSHM	I	Test pin	111	FA9	O	
48	KD8	I		112	FB9	O	
49	KD9	I		113	FA10	O	
50	KD10	I		114	FB10	O	Fader control
51	KD11	I	KEY control	115	FA11	O	
52	KD12	I		116	FB11	O	
53	KD13	I		117	FA12	O	
54	KD14	I		118	FB12	O	
55	KD15	I		119	GND		Ground
56	GND		Ground	120	FA13	O	
57	LED0	O		121	FB13	O	
58	LED1	O		122	FA14	O	
59	LED2	O		123	FB14	O	Fader control
60	LED3	O	LED control	124	FA15	O	
61	LED4	O		125	FB15	O	
62	LED5	O		126	FA16	O	
63	LED6	O		127	FB16	O	
64	LED7	O		128	FA17	O	

● LR38792 (XY630A00) Gate Array

MAIN: IC710

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	SA4	I	System address bus signal	65	FS128	O	Clock
2	GND		Ground	66	GND		Ground
3	GND			67	GND		
4	V _{DD}		Power supply	68	V _{DD}		Power supply
5	V _{DD}			69	V _{DD}		
6	SD0	I/O	System data bus	70	XFS64	O	Clock
7	SD1	I/O		71	FS64	O	
8	SD2	I/O		72	XSYNC	O	
9	SD3	I/O		73	ALRCK	O	
10	SD4	I/O		74	WCDIR	I	
11	SD5	I/O		75	WCMY1	I	
12	SD6	I/O		76	WCMY2	I	
13	SD7	I/O	Ground	77	WCBNC	I	Power supply
14	GND			78	V _{DD}		
15	SD8	I/O	System data bus	79	MCK0	O	Clock
16	SD9	I/O		80	XTL45I	I	Crystal oscillator
17	SD10	I/O		81	XTL49I	I	
18	SD11	I/O		82	GND		Ground
19	SD12	I/O		83	VC045I	I	VCO
20	SD13	I/O		84	PDOUT45	O	Power supply
21	SD14	I/O		85	V _{DD}		
22	SD15	I/O	Power supply	86	VC049I	I	VCO
23	V _{DD}			87	PDOUT49	O	Ground
24	MTCOUT	O	MTC out	88	GND		
25	MTCIN	I	MTC in	89	SCANEN	I	Test pin
26	FLSD	O	FL data	90	TESTMODE	I	
27	FLXCS	O	FL chip select	91	TEST0_DC	O	Chip select
28	FLSCK	O	FL clock	92	XSCS30	O	
29	GND		Ground	93	XSCS31	O	
30	PA0	I/O	Port A	94	XSCS32	O	
31	PA1	I/O		95	XSCS33	O	
32	PA2	I/O		96	XSCS34	O	
33	PA3	I/O		97	XSCS35	O	
34	V _{DD}		Power supply	98	V _{DD}		Power supply
35	V _{DD}			99	V _{DD}		
36	GND		Ground	100	GND		Ground
37	GND			101	GND		
38	PA4	I/O	Port A	102	XSCS36	O	Chip select
39	PA5	I/O		103	XSCS37A	O	
40	PA6	I/O		104	XSCS37B	O	
41	PA7	I/O		105	XSCS10	O	
42	PB0	I/O	Port B	106	XSCS11	O	
43	PB1	I/O		107	XSCS12	O	
44	PB2	I/O		108	XSCS13	O	
45	PB3	I/O		109	XSCS14	O	
46	PB4	I/O		110	XSCS15	O	
47	PB5	I/O		111	XSCS16	O	
48	PB6	I/O		112	XSCS17	O	Test pin
49	PB7	I/O	Ground	113	XTCL	I	
50	GND			114	XRST	I	Reset
51	PX0	O	Port X	115	XCS1	I	Chip select
52	PX1	O		116	XCS3	I	
53	PX2	O		117	XSCS	I	
54	PX3	O		118	XSRD	I	Read
55	PY0	I/O	Port Y	119	XSWR	I	Write
56	PY1	I/O		120	V _{DD}		Power supply
57	PY2	I/O		121	SA18	I	System address bus signal
58	PY3	I/O		122	SA19	I	
59	PY4	I/O		123	SA20	I	
60	PY5	I/O		124	SA21	I	
61	PY6	I/O		125	SA0	I	
62	PY7	I/O		126	SA1	I	
63	FS512	O	Clock	127	SA2	I	
64	FS256	O		128	SA3	I	

● SPC7214F0B (XY625A00) SCSI Control

MAIN: IC820

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	LVDD		Power supply +3.3V	51	LVDD		Power supply +3.3V
2	EXCLK	I	External clock input	52	PD11	I/O	Port DMA data bus
3	Vss		Ground	53	PD4	I/O	
4	OSCIN	I	Oscillator input	54	PD10	I/O	
5	OSCOUT	O	Oscillator output	55	PD5	I/O	
6	LVDD		Power supply +3.3V	56	PD9	I/O	
7	CLKSEL0	I	Input clock select	57	PD6	I/O	
8	CLKSEL1	I	System clock select	58	PD8	I/O	
9	VC	O	Internal VCO control	59	PD7	I/O	Ground
10	XPLLPD	I	PLL power down input	60	Vss		
11	PLLCT0	I	PLL control	61	XSIO	I/O	SCSI I/O signal (Low active)
12	PLLCT1	I		62	HVDD		Power supply +5V
13	TESTMON	O	Test monitor output	63	XSREQ	I/O	SCSI REQ signal (Low active)
14	TESTEN	I	Test input	64	Vss		Ground
15	DB0	I/O	Data bus	65	XSCD	I/O	SCSI C/D signal (Low active)
16	DB1	I/O		66	XSSEL	I/O	SCSI SEL signal (Low active)
17	DB2	I/O		67	Vss		Ground
18	DB3	I/O		68	XSMMSG	I/O	SCSI MSG signal (Low active)
19	HVDD		Power supply +5V	69	XSRST	I/O	SCSI RST signal (Low active)
20	DB4	I/O	Data bus	70	Vss		Ground
21	DB5	I/O		71	XSACK	I/O	SCSI ACK signal (Low active)
22	DB6	I/O		72	HVDD		Power supply +5V
23	DB7	I/O		73	XSBSY	I/O	SCSI BSY signal (Low active)
24	AD0	I	Address bus	74	NC		Not used
25	Vss		Ground	75	Vss		Ground
26	LVDD		Power supply +3.3V	76	HVDD		Power supply +5V
27	AD1	I	Address bus	77	XSATN	I/O	SCSI ATN signal (Low active)
28	AD2	I		78	Vss		Ground
29	AD3	I		79	XSDBP	I/O	SCSI data parity (Low active)
30	AD4	I		80	HVDD		Power supply +5V
31	XWR	I	Data write (Low active)	81	XSDB7	I/O	SCSI data bus (Low active)
32	XRD	I	Data read (Low active)	82	Vss		Ground
33	XRESET	I	System reset (Low active)	83	NC		Not used
34	XINT	O	Interrupt request (Low active)	84	XSDB6	I/O	SCSI data bus (Low active)
35	XCS	I	Chip select (Low active)	85	HVDD		Power supply +5V
36	Vss		Ground	86	XSDB5	I/O	SCSI data bus (Low active)
37	XPDAK	I/O	Port DMA acknowledge	87	Vss		Ground
38	XPRD	I/O	Port read (Low active)	88	XSDB4	I/O	SCSI data bus (Low active)
39	XPWR	I/O	Port write (Low active)	89	HVDD		Power supply +5V
40	PDREQ	I/O	Port DMA request (Low active)	90	XSDB3	I/O	SCSI data bus (Low active)
41	PD15	I/O	Port DMA data bus	91	Vss		Ground
42	PD0	I/O		92	XSDB2	I/O	SCSI data bus (Low active)
43	PD14	I/O		93	NC		Not used
44	PD1	I/O	Port DMA data bus	94	HVDD		Power supply +5V
45	HVDD			95	XSDB1	I/O	SCSI data bus (Low active)
46	PD13	I/O		96	Vss		Ground
47	PD2	I/O		97	XSDB0	I/O	SCSI data bus (Low active)
48	PD12	I/O	Ground	98	HVDD		Power supply +5V
49	PD3	I/O		99	NC		Not used
50	Vss			100	Vss		Ground

● **AK4528VF (XY624A00) ADC/DAC**

MAIN: IC201, 204, 207, 210

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VCOM	O	Common voltage output	15	CKS0	I	Master clock select
2	AINR+	I	Rch positive analog input	16	CKS1	I	
3	AINR-	I	Rch negative analog input	17	DIF	I	
4	AINL+	I	Lch positive analog input	18	DFS	I	Digital audio interface select
5	AINL-	I	Lch negative analog input	19	PDN	I	Double speed sampling mode
6	VREF	I	Voltage reference	20	DEM0	I	Power-down mode
7	AGND		Analog ground	21	DEM1	I	
8	VA		Analog power supply	22	VT		De-emphasis control
9	P/S	I	Parallel/serial mode select	23	VD		
10	MCLK	I	Master clock	24	DGND		Output buffer power supply
11	LRCK	I	Input/Output channel clock	25	AOUTL-	O	Digital power supply
12	BICK	I	Audio serial data clock	26	AOUTL+	O	Digital ground
13	SDTO	O	Audio serial data output	27	AOUTR-	O	Lch negative analog output
14	SDTI	I	Audio serial data input	28	AOUTR+	O	Lch positive analog output
							Rch negative analog output
							Rch positive analog output

● **MBCG46183-129 (XV833A00) Gate Array**

MAIN: IC707

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	D5	I/O	Data Bus	25	TX31	O	Transmit Data 31
2	D6	I/O		26	RX32	I	Receive Data 32
3	D7	I/O		27	TX32	O	Transmit Data 32
4	/IRQ0	I/O	Interrupt Request Port 0	28	RX33	I	Receive Data 33
5	/IRQ1	I/O	Interrupt Request Port 1	29	TX33	I/O	Transmit Data 33
6	Vss		Ground	30	/IC	I	Initial Clear
7	/IRQ2	I/O	Interrupt Request Port 2	31	Vss		Ground
8	/IRQ3	I/O	Interrupt Request Port 3	32	XI	I	Quartz Crystal Input
9	/RD	I	Read Signal Input	33	Vss		Ground
10	/WR	I	Write Signal Input	34	XO	I/O	Quartz Crystal Output
11	/CE	I	Chip Enable Input	35	A0	I	Address Bus
12	/ASTB	I	Address Strobe (Not used: to ground)	36	A1	I	
13	TESTSIO	I	Input with Pull-down Resistor (50k)	37	A2	I	
14	RX0	I	Receive Data 0	38	A3	I	
15	TX0	O	Transmit Data 0	39	A4	I	CPU Clock
16	RX1	I	Receive Data 1	40	A5	I	
17	TX1	O	Transmit Data 1	41	CPUCCLK	I	
18	Vss		Ground	42	Vss		
19	VDD		Power Supply	43	VDD		Ground
20	RX2	I	Receive Data 2	44	D0	I/O	Power Supply
21	TX2/BO2	O	Transmit Data 2	45	D1	I/O	
22	RX30	I	Receive Data 30	46	D2	I/O	
23	TX30	O	Transmit Data 30	47	D3	I/O	
24	RX31	I	Receive Data 31	48	D4	I/O	Data Bus

● **DS12887 (XV618A00) Real Time Clock**

MAIN: IC709

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	MOT	I	Bus type selection	13	/CS	I	Chip select
2	N.C			14	AS	I	Address strobe
3	N.C			15	R/W	I	Read / Write
4	AD0	I/O	Multiplexed address / Data bus	16	N.C		Data strobe
5	AD1	I/O		17	DS	I	
6	AD2	I/O		18	/RESET	I	
7	AD3	I/O		19	/IRQ	O	Reset
8	AD4	I/O		20	N.C		Interrupt request
9	AD5	I/O		21	N.C		
10	AD6	I/O		22	N.C		
11	AD7	I/O	Ground	23	SQW	O	Square wave
12	GND			24	Vcc		
							Power supply +5 V

● **SED1335F0B (XQ595A00) LCDC (LCD Controller)**

MAIN: IC602

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VA5	O	VRAM address bus	31	XD2	O	Data bus output for 4 bit dot
2	VA4	O		32	XD1	O	
3	VA3	O		33	XD0	O	
4	VA2	O		34	XECL	O	
5	VA1	O		35	XSCL	O	
6	VA0	O		36	Vss		Ground
7	/VWR	O	VRAM read/write	37	LP	O	X driver latch pulse
8	/VCE	O	Memory control	38	WF	O	Frame signal for X/Y driver
9	/VRD		Not used	39	YDIS	O	Power down signal for displaying off mode
10	/RES	I	Initial clear	40	YD	O	Scan start signal
11	NC		Not used	41	YSCL	O	Scan shift clock
12	NC		Not used	42	VD7	I/O	VRAM data bus
13	/RD	I	Read strobe	43	VD6	I/O	
14	/WR	I	Write strobe	44	VD5	I/O	
15	SEL2	I	Bus select	45	VD4	I/O	
16	SEL1	I	Bus select	46	VD3	I/O	
17	XG	I	Clock	47	VD2	I/O	
18	XD	O	Clock	48	VD1	I/O	VRAM address bus
19	/CS	I	Chip select	49	VD0	I/O	
20	A0	I	Data mode select	50	VA15	O	
21	VDD		Power supply	51	VA14	O	
22	D0	I/O	Data bus	52	VA13	O	
23	D1	I/O		53	VA12	O	
24	D2	I/O		54	VA11	O	
25	D3	I/O		55	VA10	O	
26	D4	I/O		56	VA9	O	
27	D5	I/O		57	VA8	O	
28	D6	I/O	Data bus output for 4 bit dot	58	VA7	O	Not used
29	D7	I/O		59	VA6	O	
30	XD3	O		60	NC		

● **YM3436DK (XG948E00) DIR2 (Digital Format Interface Receiver)**

MAIN: IC507

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DAUX	I	Auxiliary input for audio data	23	RSTN	I	System reset input
2	HDLT	O	Asynchronous buffer operation flag	24	VDDA		VCO section power (+5 V)
3	DOUT	O	Audio data output	25	CTLN	I	VCO control input N
4	VFL	O	Parity flag output	26	PCO	O	PLL phase comparison output
5	OPT	O	Fs x 1 Synchronous output signal for DAC	27	(NC)		
6	SYNC	O	Fs x 1 Synchronous output signal for DSP	28	CTLP	I	VCO control input P
7	MCC	O	Fs x 64 Bit clock output	29	VSSA		VCO section power (GND)
8	WC	O	Fs x 1 Word clock output	30	TSTN	I	Test terminal. Open for normal use
9	MCB	O	Fs x 128 Bit clock output	31	KM2	I	Clock mode switching input 2
10	MCA	O	Fs x 256 Bit clock output	32	KM0	I	Clock mode switching input 0
11	SKSY	I	Clock synchronization control input	33	FS1	O	Channel status sampling frequency display output 1
12	XI	I	Crystal oscillator connection or external clock input	34	FS0	O	Channel status sampling frequency display output 0
13	XO	O	Crystal oscillator connection	35	CSM	I	Channel status output method selection
14	P256	O	VCO oscillating clock connection	36	EXTW	I	External synchronous auxiliary input word clock
15	LOCKN	O	PLL lock flag	37	DDIN	I	EIAJ (AES/EBU) data input
16	Vss		Logic section power (GND)	38	LR	O	PLL word clock output
17	TST2	O	PLL time constant switching output	39	VDD		Logic section power (+5 V)
18	DIM1	I	Data input mode selection	40	ERR	O	Data error flag output
19	DIM0	I	Data input mode selection	41	EMP	O	Channel status emphasis control code output
20	DOM1	I	Data output mode selection	42	CDO	O	3-wire type microcomputer interface data output
21	DOM0	I	Data output mode selection	43	CCK	I	3-wire type microcomputer interface clock input
22	KM1	I	Clock mode switching input 1	44	CLD	I	3-wire type microcomputer interface load input

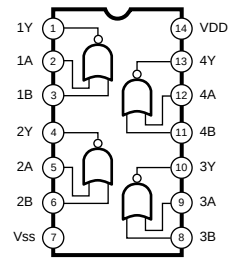
● **YM3437C-F (XM530A00) DIT2 (Digital Format Interface Transmitter)**

MAIN: IC508

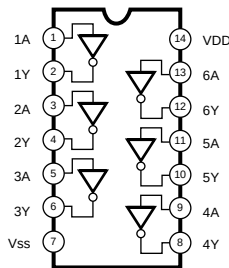
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	Vss		Ground	9	MUTE	I	Mute
2	MCLK	I	Master clock input	10	VFL	I	Validity flag
3	DM0	I	} DIN/BCLK/WCLK format select DM1,DM0=0,0 DSP,LDSP (64 bit,LSB first) DM1,DM0=0,1stereo,DSP (64 bit,MSB first) DM1,DM0=1,0 DSP2 (128 bit,MSB first) DM1,DM0=1,1 BB (64 bit,MSB first)	11	CCK/CCB	I	C,U bit clock input/C bit data input
4	DM1	I		12	CIN/UDB	I	C,U bit data input/U bit data input
5	RSTN	I	System reset	13	CLD/AUXTN	I	End of C,U bit input/16,20 bit/24 bit select
6	WCIN	I	Word clock input	14	CNTR/BLKIN	I	32 bit counter reset/Top of block
7	DIN	I	Digital audio serial data input	15	CSM	I	Channel status input mode select CSM=0 Asynchronous mode, CSM=1 Synchronous mode
8	VDD		Power supply (+5 V)	16	DOUT	O	Digital interface formatted data output

IC BLOCK DIAGRAM

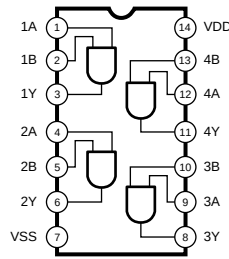
- **TC74HC02AF** (XD600A00)
Quad 2 Input NOR
MIAN: IC515



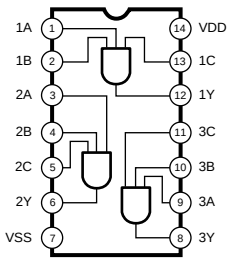
- **TC74VHC04F EL** (XM332A00)
74VHC04SJX (XY871A00)
HD74LS06FPEL (XH610A00)
Hex Inverter
MIAN: IC613
SUB-FADER: IC120-122



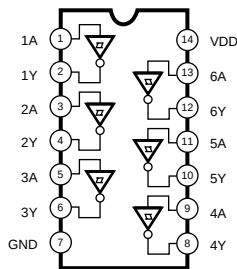
- **TC74VHC08F** (XT014A00)
74VHC08SJX (XY872A00)
Quad 2 Input AND
MIAN: IC825



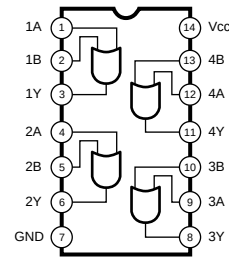
- **TC74VHC11F(EL)** (XT812A00)
Triple 3 Input AND
MIAN: IC828, 834



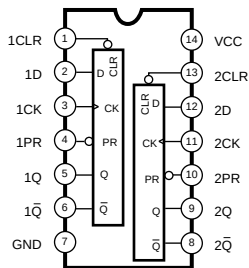
- **TC74VHC14F** (XW876A00)
HD74HC14FPEL (XL094A00)
MM74HC14SJX (XW104A00)
Hex Inverter
MIAN: IC827
SUB-CPU: IC203, 310, 311



- **74VHC32SJX** (XY306A00)
TC74VHC32FEL (XY537A00)
Quad 2 Input OR
MIAN: IC826

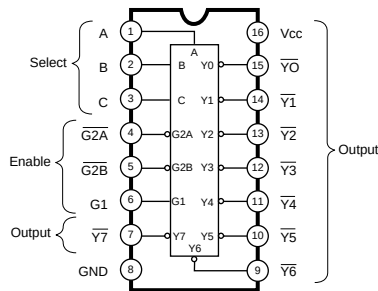


- **TC74VHC74F-EL** (XW875A00)
74VHC74SJX (XY875A00)
Dual D-Type Flip-Flop
MIAN: IC506, 829, 832, 835

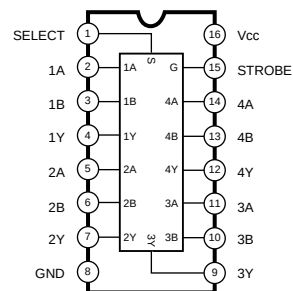


INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	f	H	H	L
H	H	f	L	L	H
H	H	L	X	Q _o	Q _o

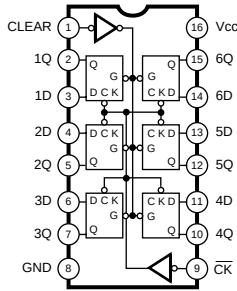
- **TC74VHC138F** (XT015A00)
74VHC138SJX (XY873A00)
3 to 8 Demultiplexer
MIAN: IC807, SUB-CPU: IC302



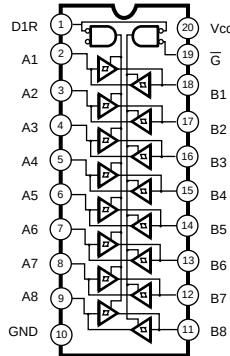
- **TC74VHC157F(EL)** (XT475A00)
74VHC157SJX (XY870A00)
Quad 2 to 1 Multiplexer
MIAN: IC815, 816, 831



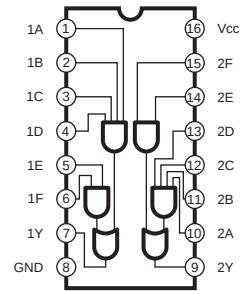
- **HD74HC174FP** (XV610A00)
TC74HC174F(EL) (XY878A00)
Hex D-Type Flip-Flop
SUB-CPU: IC306-308



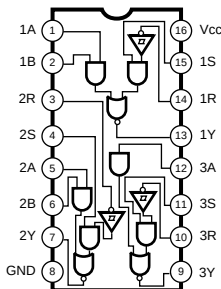
- **TC74VHC245F** (XT487A00)
74VHC245ASJX (XY874A00)
TC74HC245AF (XS720A00)
MM74HC245ASJX (XW107A00)
Octal 3-State Bus Transceiver
MAIN: IC302-304, 504, 606-612, 702, 714, 811, 821, 814, 817, 818, 819
SUB-CPU: IC304



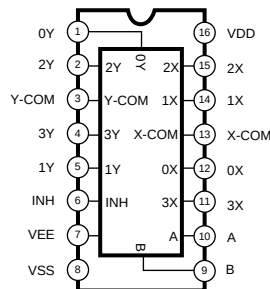
- **SN75121NSR** (XU816A00)
Dual Line Driver
MAIN: IC704



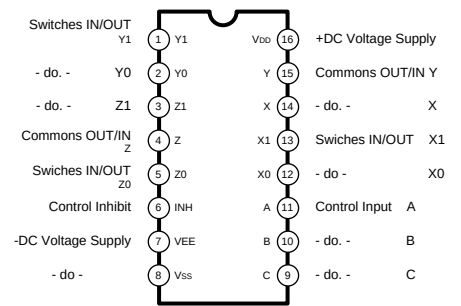
- **SN75124NS** (XN976A00)
SN75124NSR (XV930A00)
Triple Line Receiver
MAIN: IC703



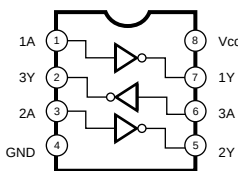
- **TC74HC4052AF** (XS790A00)
MM74HC4052SJX (XY876A00)
Differential 4-Channel Multiplexer/Demultiplexer
SUB-FADER: IC106, 111



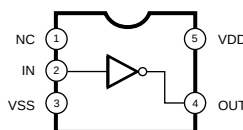
- **MM74HC4053SJX** (XY877A00)
TC74HC4053AF(EL) (XY879A00)
Triple -Channel Multiplexer/Demultiplexer
MAIN: IC701



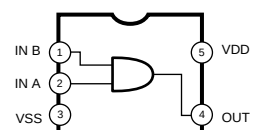
- **TC7WU04F** (XN567A00)
Triple Inverter
MAIN: IC516, 712, 713, 833



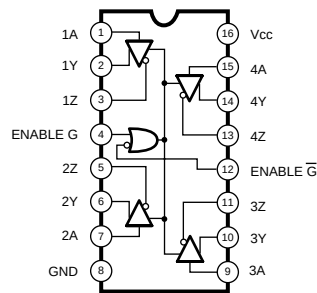
- **TC7S04F** (XJ018A00)
Inverter Gate
MAIN: IC511



- **TC7S08F** (XM616A00)
2 Input AND Gate
MAIN: IC510, 614



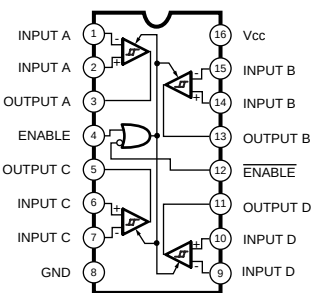
- **AM26LS31M** (XN919A00)
AM26LS31CNSR (XU996A00)
Quad Line Driver
MAIN: IC513



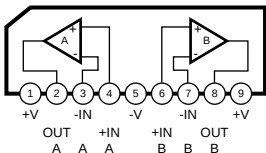
INPUT	ENABLES		OUTPUTS	
A	G	$\overline{G}$	Y	Z
H	H	X	H	L
L	H	X	L	H
H	X	L	H	L
L	X	L	L	H
X	L	H	Z	Z

H= high level
L= low level
X= irrelevant
Z= high impedance (off)

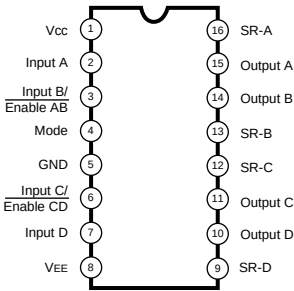
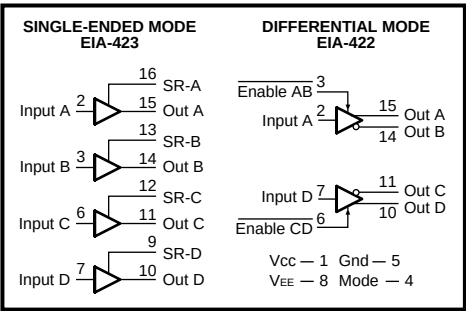
- **DS26C32ATMX** (XU815A00)
Quad Differential Line Receiver
MAIN: IC512, 706



- **NJM2068MD-T1** (XJ553A00)
μPC4570G2 (XF291A00)
NJM4556AMT1 (XQ138A00)
Dual Operational Amplifier
MAIN: IC101-113, 116-199, 202, 203, 205, 206, 208, 209, 211-215



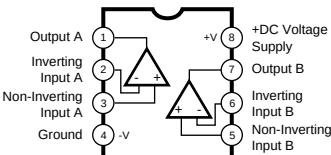
- **MC26LS30D** (XL334A00)
Linr Driver
MAIN: IC705



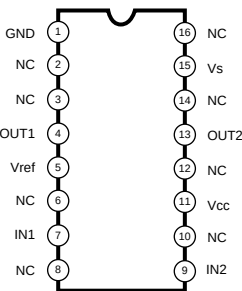
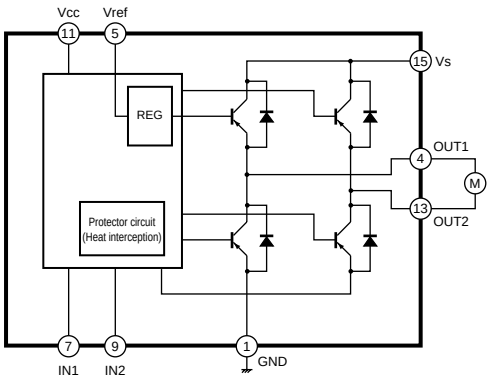
Operation	Vcc	VEE	Inputs				Outputs				
			Mode	A	B	C	D	A	B	C	D
Differential (EIA-422-A)	+5.0	GND	0	0	0	0	0	0	1	1	0
			0	1	0	0	1	1	0	0	1
			0	X	1	0	1	Z	Z	0	1
			0	1	0	0	0	1	0	1	0
			0	0	0	0	1	0	1	0	1
Single-Ended (EIA-423-A)	+5.0	-5.0	0	1	0	0	0	0	0	0	0
			1	1	0	0	0	1	0	0	0
			1	0	1	0	0	0	1	0	0
			1	0	0	1	0	0	0	1	0
			1	0	0	0	1	0	0	0	1
X	0	X	X	X	X	X	X	Z	Z	Z	Z

X = Don't Care
Z = High Impedance (Off)

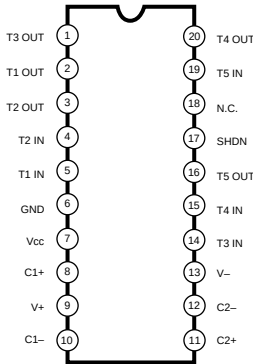
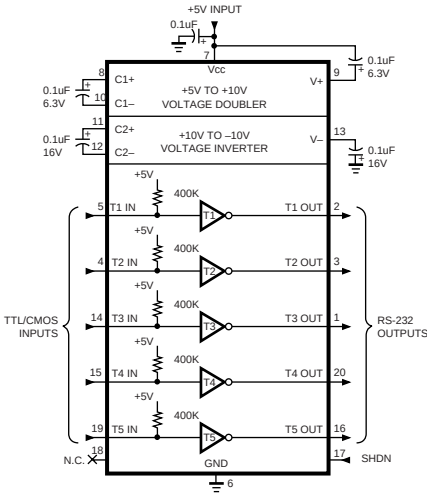
- **NJM2904M** (XV190A00)
Dual Operational Amplifier
MAIN: IC514



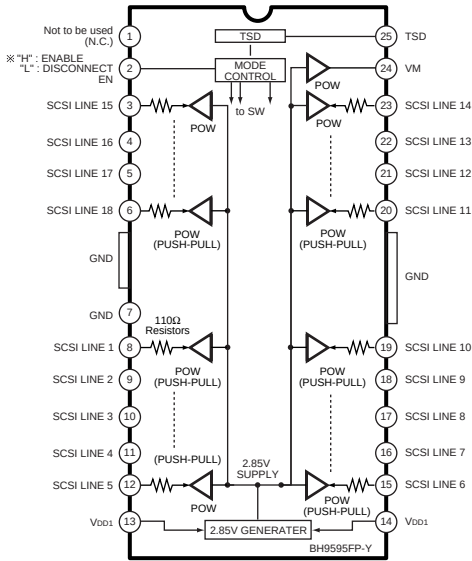
- **TA7291F** (XW618A00)
Motor Driver
SUB-FADER: IC101-105, 107-110, 112-119



● **MAX202CSE** (XP113A00)
RS-232C Transceiver
SUB-CPU: IC201



● **BH9595FP-Y** (XV617A00)
SCSI Terminator
MAIN: IC821



TEST PROGRAM

1. Getting Ready

1-1 Rear Panel

- (1) Insert slot check cards into option I/O slots 1 and 2.
- (2) Install the hard-disk drive unit for the test into the 2.5" hard drive slot.
- (3) Connect a mouse to the mouse connector (9-pin DSUB connector).
- (4) Connect an external SCSI hard drive to the SCSI connector (50-pin half-pitch connector).
 - * The external disk capacity must be at least 4GB, and the disk must already be physically formatted.
 - * The SCSI cable length should not exceed 300mm.
 - * Be sure that the external drive is terminated. (Plug a terminator into the drive's free SCSI connector.)
 - * Set the external drive's SCSI address to 0.
- (5) Using a dedicated cable, connect the 8-pin MiniDIN connector on the slot-check card in option slot 1 to the TO HOST connector (8-pin MiniDIN connector) on the AW4416.
- (6) Using a BNC cable, connect the WORDCLOCK IN terminal to the WORD CLOCK OUT terminal.
- (7) Using a pin-jack cable, connect the DIGITAL IN connector to the DIGITAL OUT connector.
- (8) Using a MIDI cable, connect the MIDI IN connector to the MIDI OUT connector.
- (9) Connect a footswitch to the FOOT SW jack.

1-2 Rear Panel

- (1) Insert the specified disc into a CD-RW drive, and install this drive in the AW4416. (Set the CD-RW drive's SCSI ID to 3.)

2. Diagnostics Program

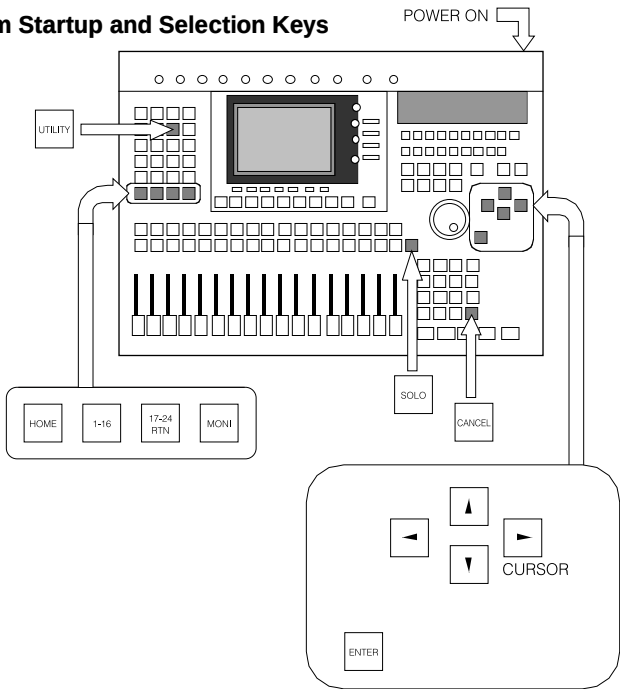
2-1 Program Modes

The installed diagnostics program runs in four different diagnostic modes, as follows.

Mode	Startup Keys	Purpose
AW4416 (full assembly) diagnostics	UTILTY + HOME	To be run after full assembly is completed.
MAIN-sheet diagnostics	UTILTY + 1-16	Tests the MAIN sheet only.
PN-sheet diagnostics	UTILTY + 17-24 RTN	Tests the PN sheet only.
SUB-sheet diagnostics	UTILTY + MONI	Tests the SUB sheet only.

Note: Key locations are shown in the following illustration.

2-2 Locations of Program Startup and Selection Keys



3. Program Startup and Test Menu Display

Start the program in the desired mode by pressing the corresponding keys, as indicated below. The program starts up, and the screen displays the test menu. The appearance of the menu screen differs somewhat according to the mode.

3-1 AW4416 (Full Assembly) Diagnostics Mode

(1) Startup

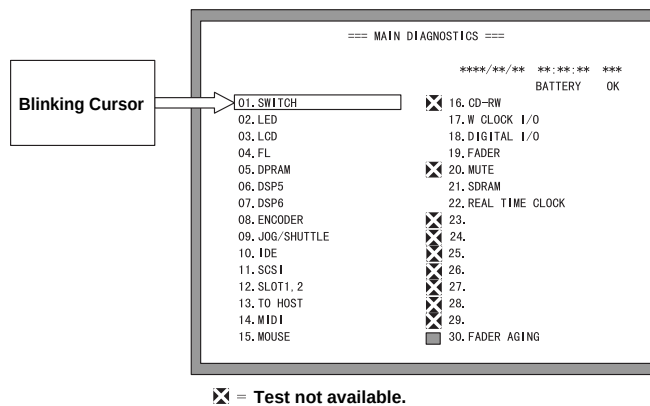
- 1) Hold down the UTILITY and HOME keys, and turn the power on.
- 2) When the following title screen appears on the display, release the keys.

```

AW4416
Copy right© 2000 YAMAHA
Mixer CPU Version: R*. **
Create date      : 2000/**/** ** : ** : **
Sub CPU Version: V*. **
    
```

- 3) The program starts up in AW4416 (full assembly) diagnostics mode, and the test menu appears on the LCD.

(2) Test Menu Display



3-2 MAIN-Sheet Diagnostics Mode

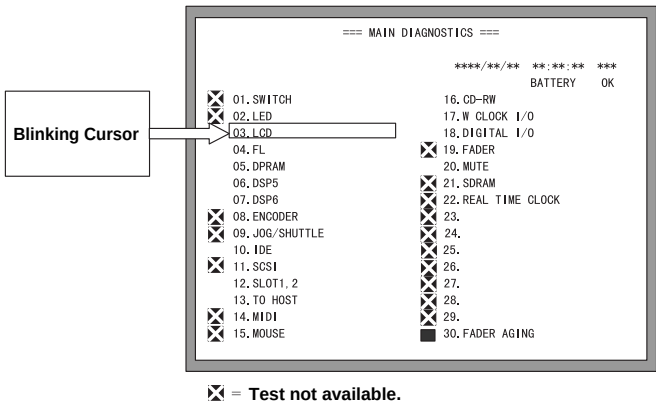
- 1) Hold down the UTILITY key and the 1-16 key, and turn the power on.
- 2) When the following title screen appears on the display, release the keys.

```

AW4416
Copy right© 2000 YAMAHA
Mixer CPU Version: R*. **
Create date      : 2000/**/** ** : ** : **
Sub CPU Version: V*. **
    
```

- 3) The program starts up in MAIN-sheet diagnostics mode, and the test menu appears on the LCD.

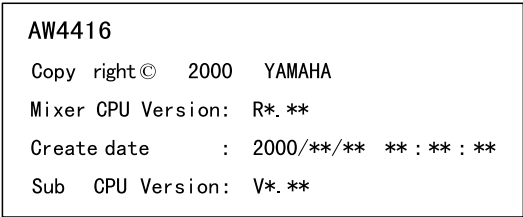
(2) Test Menu Display



3-3 PN-Sheet Diagnostics Mode

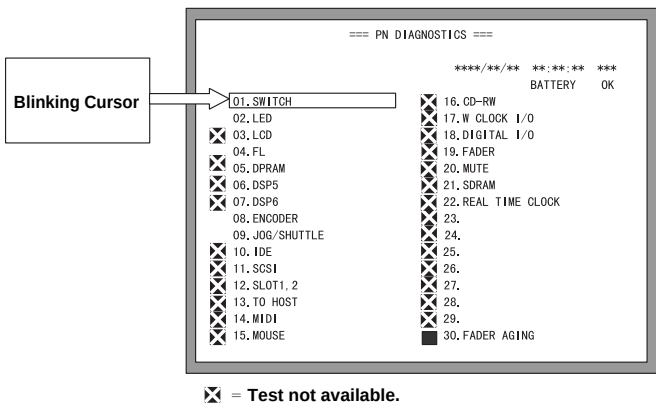
(1) Startup

- 1) Hold down the **UTILITY** key and the **17-24 RTN** key, and turn the power on.
- 2) When the following title screen appears on the display, release the keys.



- 3) The program starts up in PN-sheet diagnostics mode, and the test menu appears on the LCD.

(2) Test Menu Display



3-4 SUB-Sheet Diagnostics Mode

(1) Startup

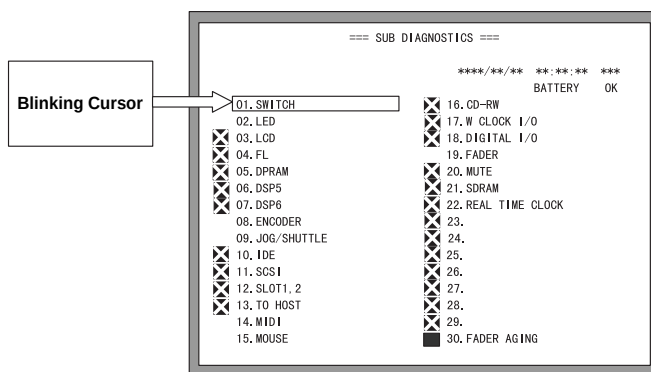
- 1) Hold down the **UTILITY** and **MONI** keys, and turn the power on.

2) When the following title screen appears on the display, release the keys.

```
AW4416
Copy right©    2000    YAMAHA
Mixer CPU Version:  R*.**
Create date      : 2000/**/**  ** : ** : **
Sub   CPU Version:  V*.**
```

3) The program starts up in SUB-sheet diagnostics mode, and the test menu appears on the LCD.

(2) Test Menu Display



X = Test not available.

4. Test Menu

4-1 Tests Available in Each Mode

No.	Test	Program Mode				No.	Test	Program Mode			
		T	M	P	S			T	M	P	S
1	SWITCH	○	×	○	○	16	CD-RW	×	○	×	×
2	LED	○	×	○	○	17	W.CLOCK I/O	○	○	×	×
3	LCD	○	○	×	×	18	DIGITAL I/O	○	○	×	×
4	FL	○	○	○	×	19	FADER	○	×	×	○
5	DPRAM	○	○	×	×	20	MUTE	×	○	×	×
6	DSP5	○	○	×	×	21	SDRAM	○	×	×	×
7	DSP6	○	○	×	×	22	REAL TIME CLOCK	○	×	×	×
8	ENCODER	○	×	○	○	23	-	-	-	-	-
9	JOG/SHUTTLE	○	×	○	○	24	-	-	-	-	-
10	IDE	○	○	×	×	25	-	-	-	-	-
11	SCSI	○	×	×	×	26	-	-	-	-	-
12	SLOT1,2	○	○	×	×	27	-	-	-	-	-
13	TO HOST	○	○	×	×	28	-	-	-	-	-
14	MIDI	○	×	×	○	29	-	-	-	-	-
15	MOUSE	○	×	×	○	30	FADER AGING	○	×	×	×

Note 1: T = AW4416 (full assembly) diagnostics mode
P = PN-sheet diagnostics mode
M = MAIN-sheet diagnostics mode
S = SUB-sheet diagnostics mode

Note 2: O = Available, X = Not available

Note 3: The SWITCH and LED tests are mode-dependent: the test content differs according to the mode. All other tests are the same regardless of the mode they are executed in.

4-2 Selecting and Executing a Test

- (1) Use the  or  key to move the cursor to the test you wish to run.
- (2) Press  to run the test.

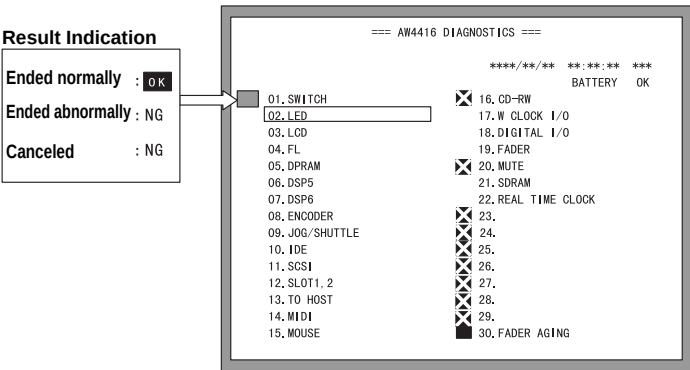
4-3 Test Result

- (1) The test result is indicated to the left of the test item in the menu (see section 4-5, “Test Result Display”, below). If the test ended normally, the screen displays **OK**. If test ended abnormally or was exited before completion, the screen displays **NG**.

4-4 Canceling a Test

- (1) You can cancel a test that is currently running test by pressing the  key.

4-5 Test Result Display

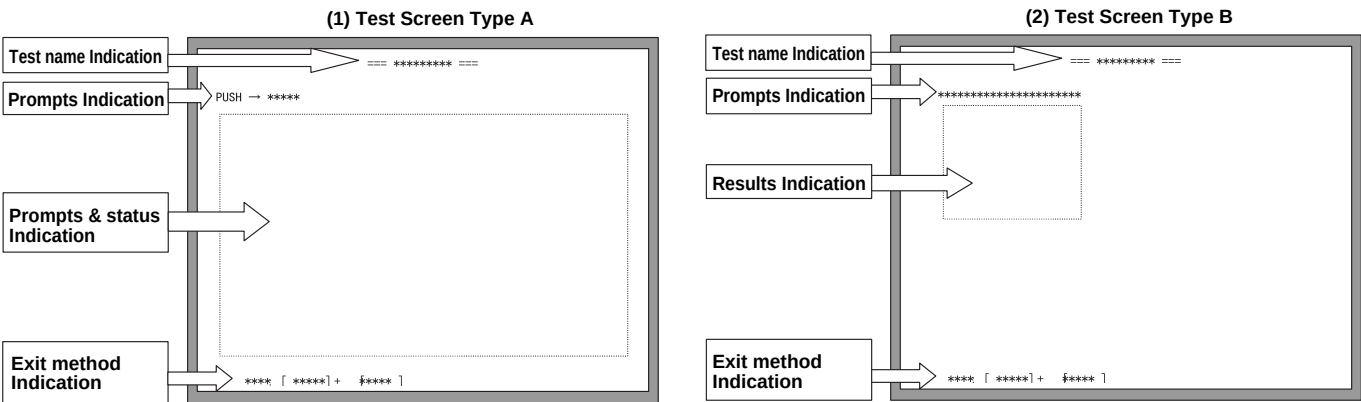


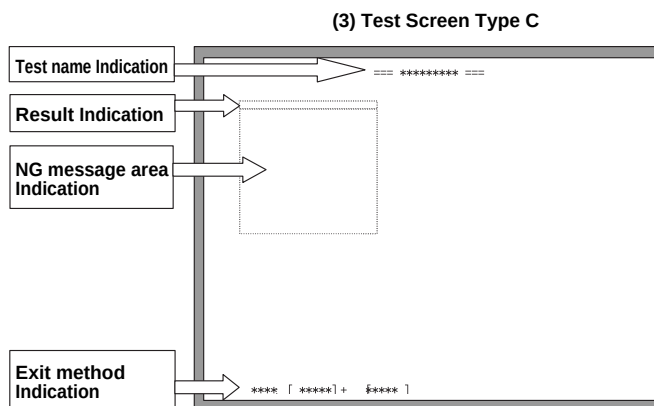
5. Tests

With the exception of the SWITCH and LED tests, all tests are the same regardless of the test mode.

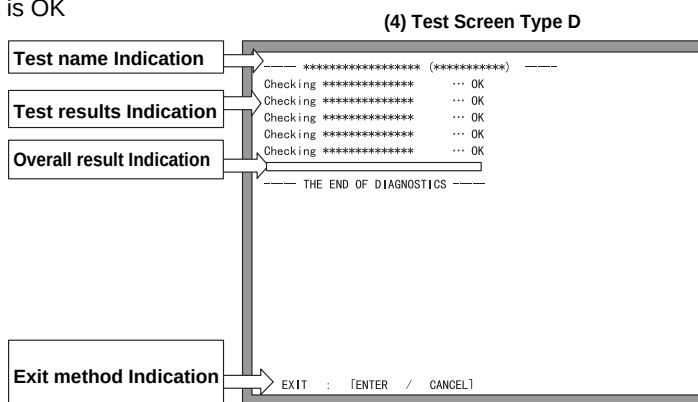
5-1 Test Runtime Screens

Test runtime screens differ according to the test. There are four basic screen types, A to D, as shown below.

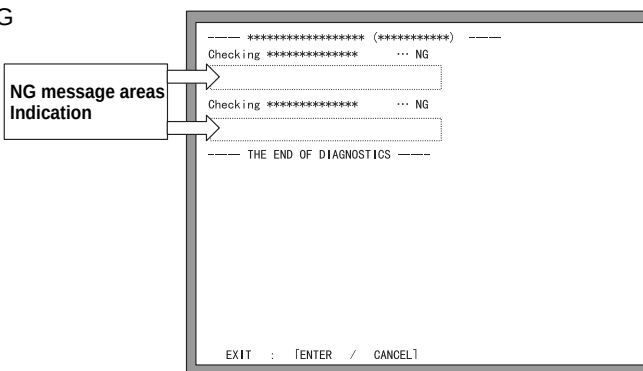




1) If result is OK



2) If result is NG



5-2 Test Descriptions

5-2-1 Switch Input Test (01 SWITCH)

(1) Display (Test Screen Type A)

1) Test name → SWITCH

(2) Test Content

- 1) This test checks the input from the control panel switches and the footswitch.
- 2) The test content varies according to the program mode, as follows.

- ① If AW4416 mode
Tests all control panel switches and the footswitch.
- ② If PN-sheet mode
Tests all control panel switches.
- ③ If SUB-sheet mode
Tests the following 16 control panel switches: SONG, VIEW, AUX5, SHIFT-L, BANK, SEL1, SEL9, ON1, ON9, ABS, CUE, SAFE, JOG ON, NUM, REPEAT, REW.
- 3) The screen's prompt area displays a layout of the switches to be tested, while the status area displays the name of the switch to be tested. Carry out the test in accordance with the screen prompts.
- 4) When a switch is tested and found to be normal, the switch indication disappears from the layout and the switch indication for the next switch to be tested begins blinking.

(3) Judgment

- 1) Exit-method area → EXIT: [SOLO] + [CANCEL]
- 2) If input from all switches is normal:
When the final switch indication disappears from the displayed layout, the test terminates. The program returns to the test menu screen, and an **OK** appears in the left column. (See section 4-5, "Test Result Display.") The cursor automatically advances to the next test in the menu.
- 3) If the result is NG or if you wish to stop the test before completion:

Hold down the SOLO key and press the CANCEL key. The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-2 LED Test (02 LED)

(1) Display (Test Screen Type A)

- 1) Test name → LED

(2) Test Content

- 1) This test checks that control-panel switch LEDs light up correctly.
- 2) The test content varies according to the program mode, as follows.
 - ① If AW4416 mode or PN-sheet mode
Tests all control panel LEDs. (See section 6, "Miscellaneous.")
 - ② If SUB-sheet mode
Tests the following 24 control panel LEDs: SONG, AUX4, SAMPLING PAD 1, SAMPLING PAD 5, SEL1, SEL9, ON1, ON5, ON9, ON13, REC1, REC5, REC9, JOG ON, SOLO, REPEAT, AUX5, AUX6, EFF1, EFF2, HOME (2 LEDs), 1-16 (2 LEDs).
 - ③ This is a visual check. Watch that the LEDs light up in order.

(3) Judgment

- 1) Exit-method area → OK: [ENTER], NG: [CANCEL]
- 2) If all tested LEDs light up normally:
If all the LEDs targeted by the selected test mode have lit up normally, exit the test by pressing ENTER. The program returns to the test menu screen, and an **OK** appears in the left column. The cursor automatically advances to the next test in the menu.
- 3) If the result is NG or if you wish to stop the test before completion:

Press the CANCEL key. The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-3 LCD Test (03 LCD)

(1) Display (Test Screen Type A)

- 1) The test-name area is blank.

(2) Test Content

- 1) This test checks the LCD dots.
- 2) This is a visual test. Check that all dots blink continuously.

(3) Judgment

- 1) Exit-method area → blank
- 2) If all dots blink correctly (based on visual check):

Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If the result is NG or if you wish to stop the test before completion:

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-4 FL Segment Test (04 FL)**(1) Display (Test Screen Type A)**

- 1) Test name → FL

(2) Test Content

- 1) This test checks that the FL segments light up correctly.
- 2) This is a visual test. Segments first blink in order, and then all the segments come on solid. Confirm that all of the segments light up.

(3) Judgment

- 1) Exit-method area → OK: [ENTER], NG: [CANCEL]
- 2) If visual check shows that operation is normal:

Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If the result is NG or if you wish to stop the test before completion:

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-5 MAIN CPU ↔ REC CPU Communication Test (05 DPRAM)**(1) Display (Test Screen Type D)**

- 1) Test name → DIAGNOSTIC for DPRAM (MIX ↔ HDR)

(2) Test Content

- 1) Runs a DP-RAM R/W test to check communication between the MAIN CPU and the REC CPU.
- 2) Tests the MAIN CPU bus, REC CPU bus, and interrupts.

(3) Judgment

- 1) Results area
 - Checking R/W ...**
 - Checking MIX CPU ↔ HDR CPU ...**

Exit-method area → EXIT: [ENTER / CANCEL]

- 2) If the results area shows that all test results are OK:

Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If a check returns an NG:

Checking R/W ... NG NG message
 NG message → MSB LSB
 OXXX XXXX

- a) Write and Read values did not match. A "0" indicates that the bit matched; an "X" indicates a mismatch.
- b) If all bits are "X", there is a problem with the CS or the Address bus.
- c) If only one bit is "X", there is a problem with the Data bus.

Checking MIX CPU <-> HDR CPU ... NG NG message

NG message → No response from HDR CPU

a) Problem with Mixer CPU or HDR CPU interrupts.

NG message → MSB LSB
0XXX XXXX

b) Problem in the CS, Address bus, or Data bus at the Mixer CPU or HDR CPU.

To exit, press the CANCEL key. The program returns to the test menu screen, and an **NG** appears in the left column.
The cursor does not advance.

5-2-6 DSP5 Function Test (06 DSP5)

(1) Display (Test Screen Type D)

1) Test name → DIAGNOSTIC for DSP5

(2) Test Content

- 1) Checks the MAIN CPU / DSP5 interface.
- 2) Checks the DSP5 bus connection and serial I/O and parallel I/O connections.

(3) Judgment

- 1) Results area →
- | | |
|-----------------------------------|-----------|
| 1: Initialize all DSP5 | ... ** |
| 2: CPU Interface | |
| IC505 ERR = 0/10000 | ... ** |
| IC509 ERR = 0/10000 | ... ** |
| 3: SIO Connection [DSP6 -> DSP5] | ... ** |
| 4: SIO Connection [DSP5 -> DSP6] | ... ** |
| 5: SIO Connection [DSP5 -> DSP5] | ... ** |
| 6: PIO Connection [DSP6 <-> DSP5] | ... skip! |
| ALL TEST ARE OK! | |

Exit-method area → EXIT: [ENTER / CANCEL]

2) If all tests are OK (if the overall result area displays the ALL TESTS ARE OK message):

Press ENTER to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

3) If a check returns an NG:

- 1: Initialize all DSP5 ... NG
NG message → TRANS ERROR
a) DSP5 initialization problem.
- 2: CPU Interface
NG message → IC505 ERR = 0/10000 ... OK
IC509 ERR = 10000/10000 ... NG
- | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|
| | MSB | 28 | 24 | 20 | 16 | 12 | 8 | LSB |
| | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX |
- a) Connection problem with IC509 Data bus, Address bus, R/W, or CS.
- 3: SIO Connection [DSP6 -> DSP5] ... NG
NG message → NG: IC301 SIO[0] -> IC509 SIO[16]
a) IC301 SIO[0] -> IC509 SIO[16] connection problem.
- 4: SIO Connection [DSP5 -> DSP6] ... NG
NG message → NG: IC505 SIO[40] -> IC301 SI[0]
a) IC505 SIO[40] -> IC301 SI[0] connection problem.
- 5: SIO Connection [DSP5 -> DSP5] ... NG
NG message → NG: IC505 SIO[0] -> IC509 SIO[0]
a) IC505 SIO[0] -> IC509 SIO[0] connection problem.
- 6: PIO Connection [DSP5 -> DSP5] ... skip! ← not tested.

To exit, press CANCEL. The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-7 DSP6 Function Test (07 DSP6)

(1) Display (Test Screen Type D)

1) Test name → DIAGNOSTIC for DSP6

(2) Test Content

1) Checks the MAIN CPU ⇔ DSP6 interface (DRAM).

2) Checks the DSP5 bus connection and serial I/O and parallel I/O connections.

(3) Judgment

1) Results area →

1: CPU Interface (Data bus)	... **
2: CPU Interface (Data bus)	... **
3: CPU Interface (Chip Select, TXB)	... **
4: CPU Interface (Address bus)	... **
5: CPU Interface (BUS, W/R, Reg)	... **
6: DRAM Interface (Data bus)	... **
7: DRAM Interface (Address bus)	... **
8: DRAM Interface (Address bus & MPR)	... **
9: SIO Connection	... **
10: PIO Connection	... **
ALL TEST ARE OK!	

Exit-method area → EXIT: [ENTER / CANCEL]

2) If all tests are OK (if the overall result area displays the ALL TESTS ARE OK message):

Press ENTER to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

3) If a check returns an NG:

1: CPU Interface (Data bus) ... NG
 NG message → IC301 TXBusy Error

2: CPU Interface (Data bus) ... NG
 NG message → IC301 MSB 28 24 20 16 8 LSB
 XXXX XXXX XXXX XXXX XXXX XXXX XXXX
 a) Message shows "0" in bit positions where Write and Read bit values matched.

3: CPU Interface (Chip Select, TXB) ... NG
 NG message → IC301 CS Error

4: CPU Interface (Address bus) ... NG
 NG message → IC301 MSB 28 24 20 16 8 LSB
 0000 XXXX XXXX XXXX XXXX XXXX XXXX
 a) Message shows "0" in bit positions where Write and Read bit values matched.

5: CPU Interface (BUS, W/R, Reg) ... NG
 NG message → IC301 MSB 28 24 20 16 8 LSB
 X000 XXXX XXXX XXXX XXXX XXXX XXXX
 a) Message shows "0" in bit positions where Write and Read bit values matched.

6: DRAM Interface (Data bus) ... NG
 NG message → IC306 MSB 28 24 20 16 8 LSB
 X000 XXXX XXXX XXXX XXXX XXXX XXXX
 a) Message shows "0" in bit positions where Write and Read bit values matched.

7: DRAM Interface (Address bus) ... NG
 NG message → IC306 MSB 28 24 20 16 8 LSB
 X000 XXXX XXXX XXXX XXXX XXXX XXXX
 a) Message shows "0" in bit positions where Write and Read bit values matched.

8: DRAM Interface (Address bus & MPR) ... NG
 NG message → IC301 MSB 28 24 20 16 8 LSB
 X000 XXXX XXXX XXXX XXXX XXXX XXXX
 a) Message shows "0" in bit positions where Write and Read bit values matched.

9: SIO Connection ... NG
 NG message → IC301 SIO[4] → IC306 SIO[4]
 10: PIO Connection ... NG
 NG message → NG: IC301 → IC302
 MSB 28 24 20 16 8 LSB
 0000 X000 0000 0000 0000 0000 0000

a) Message shows "0" for PIO-bus bits that are OK.

To exit, press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-8 Encoder Function Test (08 ENCODER)

(1) Display (Test Screen Type A)

1) Test name → ENCODER

(2) Test Content

- 1) Checks the function of the PAN, EQ-Q, EQ-F, and EQ-G rotary encoders.
- 2) The prompt area on the display shows encoder images and operating instructions. Carry out the test according to these instructions.

(3) Judgment

- 1) Exit-method area → EXIT: [CANCEL]
- 2) If all encoders have functioned correctly:

When the test terminates, the program returns to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If the result is NG or if you wish to stop the test before completion:

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-9 Jog/Shuttle Function Test (09 JOG/SHUTTLE)

(1) Display (Test Screen Type A)

1) Test name → JOG/SHUTTLE

(2) Test Content

- 1) Checks jog/shuttle functions (data and cursor functions).
- 2) The screen's prompt area displays jog/shuttle graphics and operational instructions. Carry out the tests according to the displayed instructions.

(3) Judgment

- 1) Exit-method area → EXIT: [CANCEL]
- 2) If all functions operate correctly:

When the test terminates, the program returns to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If the result is NG or if you wish to stop the test before completion:

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-10 Internal HDD Test (10 IDE)

(1) Display (Test Screen Type C)

1) Test name → IDE

(2) Test Content

- 1) Checks connection and operation of the internal (IDE) hard disk.
- 2) You should also check that the HDD access LED blinks correctly. (See section 6-(1), "Miscellaneous" for more information.)

(3) Judgment

- 1) Exit-method area → EXIT: [ENTER / CANCEL]
- 2) If the disk operates correctly (if the upper right of the screen → ... OK):
 Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.
- 3) If there is a problem, the corresponding NG message will appear.
 NG message → IDE Timeout (Check CPU <-> IDE)
 a) Error in communication between the CPU and the (IDE) HDD.
 NG message → IDE HDD (Check IDE <-> HDD)
 a) Error in reading or writing to the HDD.
 Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-11 External SCSI Device Connection Test (11 SCSI)

(1) Display (Test Screen Type C)

- 1) Test name → SCSI

(2) Test Content

- 1) Checks connection and operation of the external SCSI device.

(3) Judgment

- 1) Exit-method area → EXIT: [ENTER / CANCEL]
- 2) If the disk operates correctly (if the upper right of the screen → ... OK):
 Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.
- 3) If there is a problem, the NG message appears.
 NG message → NG EXTERNAL SCSI
 a) Bad connection with external SCSI device.
 Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-12 Option I/O Slots 1 & 2-Connection Test (12 Slot 1/2)

(1) Display (See illustration below)

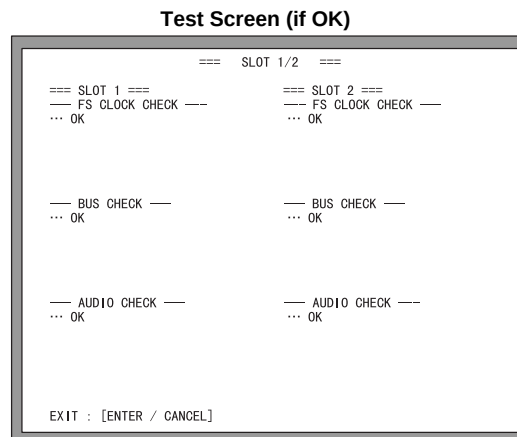
- 1) Test name → Slot 1/2

(2) Test Content

- 1) Checks connection of option I/O slots 1 and 2.

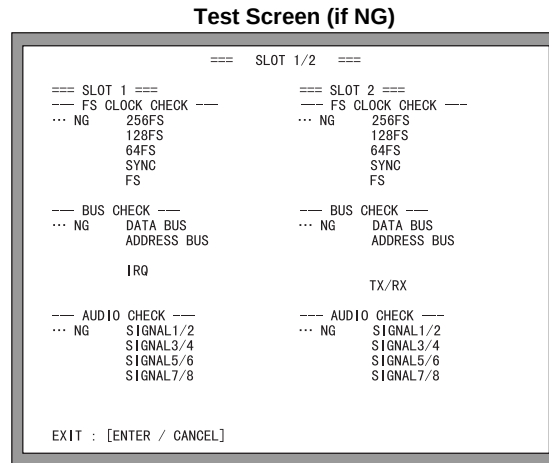
(3) Judgment

- 1) Exit-method area → EXIT: [ENTER / CANCEL]
- 2) If slots connect and operate correctly:



Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

3) If there is a problem, the screen displays the appropriate NG messages.



NG message → 256FS

a) 256FSMY, WCMY [SLOT 1, SLOT 2] connection problem.

NG message → 128FS

a) 128FSMY, WCMY [SLOT 1, SLOT 2] connection problem.

NG message → 64FS

a) 64FSMY, WCMY [SLOT 1, SLOT 2] connection problem.

NG message → SYNC

a) SYNCMY, WCMY [SLOT 1, SLOT 2] connection problem.

NG message → FS

a) FSMY, WCMY [SLOT 1, SLOT 2] connection problem.

NG message → DATA BUS

a) Data bus (YD[0] to YD[15]) connection problem.

NG message → ADDRESS BUS

a) Address bus (YA[1] to YA[10]) connection problem.

b) /CSMY[1,2], /RDMY, /WRLMY, /WRHMY connection problem.

NG message → IRQ

a) IRQMY (SLOT 1) connection problem.

NG message → TX/RX

a) TXMY2, RXMY2 (SLOT 2) connection problem.

NG message → SIGNAL1/2

a) S[1/2]IN-1/2, S[1/2]OUT-1/2 connection problem.

NG message → SIGNAL3/4

a) S[1/2]IN-3/4, S[1/2]OUT-3/4 connection problem.

NG message → SIGNAL5/6

a) S[1/2]IN-5/6, S[1/2]OUT-5/6 connection problem.

NG message → SIGNAL7/8

a) S[1/2]IN-7/8, S[1/2]OUT-7/8 connection problem.

To exit, press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-13 TO HOST Function Test (13 TO HOST)**(1) Display (Test Screen Type B)**

- 1) Test name → TO HOST

(2) Test Content

- 1) Checks the host interface.

(3) Judgment

- 1) Prompt area → MAKE TEST LOOP AND PRESS ENTER
Exit-method area → EXIT: [ENTER / CANCEL]

Start the test by pressing .

- 2) If result area → ...OK

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If result area → ...NG NG message

NG message → MAIN Tx/Rx

- a) SIO4 (IC707) TX1, RX1 signal error.

NG message → CLOCK

- a) SIO4 (IC707) TX2 signal error.

NG message → REC Tx/Rx

- a) REC CPU (IC803) TXD1, RXD1 signal error.

To exit, press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-14 MIDI Function Test (14 MIDI)**(1) Display (Test Screen Type B)**

- 1) Test name → MIDI

(2) Test Content

- 1) Checks the MIDI interface and MTC functions.

(3) Judgment

- 1) Prompt area → --- MIDI CHECK ---
MAKE TEST LOOP AND PRESS ENTER
Exit-method area → EXIT: [ENTER / CANCEL]

Start the MIDI test by pressing .

- 2) MIDI test result area → ...OK <or> ...NG NG message

MTC prompt area → --- MTC CHECK ---

MAKE TEST LOOP AND PRESS ENTER

At the rear panel, disconnect the MIDI cable from the OUT/THRU connector, and connect it to the MTC connector immediately to the left.

Start the MTC test by pressing .

- 3) MTC test result area → ...OK <or> ...NG

- 4) If both tests return OK:

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 5) If either or both tests return NG:

MIDI-test NG message → MIDI Tx/Rx

- a) SIO4 (IC707) TX0, RX0 signal error.

MIDI-test NG message → THRU SELECT

a) MAIN CPU (IC601) Port E8 signal error.

To exit, press . The program returns to the test menu screen, and an **NG** appears in the left column.

The cursor does not advance.

5-2-15 Mouse Interface Test (15 MOUSE)

(1) Display (Test Screen Type A)

1) Test name → MOUSE

(2) Test Content

1) Tests the mouse interface.

(3) Judgment

1) Exit-method area → EXIT: [CANCEL]

The “prompts & status” area displays graphics and check items. Operate the mouse as indicated (moving the mouse in all four directions and clicking both of the mouse buttons) and confirm that an OK appears to the right of the corresponding items on the display.

Check Item	Confirm that...
MOVE LEFT	* ← Value changes and then OK appears.
MOVE UP	* ← Value changes and then OK appears.
MOVE RIGHT	* ← Value changes and then OK appears.
MOVE DOWN	* ← Value changes and then OK appears.
SWITCH LEFT	* ← On single click, OK appears.
SWITCH RIGHT	* ← On single click, OK appears.

2) If all items are OK:

The test terminates when the OK is returned for the final item (SWITCH RIGHT). The program returns to the test menu screen, and an **OK** appears in the left column. The cursor advances to the next test in the menu.

3) If the test returns an NG:

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-16 CD-RW Drive-Connection Test (16 CD-RW)

(1) Display (Test Screen Type C)

1) Test name → CD-RW

(2) Test Content

1) Checks the internal (SCSI) CD-RW drive interface.

(3) Judgment

1) Exit-method area → EXIT: [ENTER / CANCEL]

Result area → ... OK

Press to return to the test menu screen. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

2) Result area → ... NG NG message

NG message → INTERNAL SCSI

a) Problem accessing the internal CD-RW drive.

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-17 Word-Clock I/O Test (17 W.CLK I/O)

(1) Display (Test Screen Type B)

1) Test name → W.CLK I/O

(2) Test Content

1) Checks the word-clock generator functions (X'tal OSC, VCI, I/O).

(3) Judgment

- 1) Prompt area → MAKE TEST LOOP AND PRESS ENTER
 Exit-method area → EXIT: [ENTER / CANCEL]

Start the test by pressing .

- 2) If result area → OK

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If result area → ...NG NG message

NG message → 48k INTERNAL CLOCK

a) Oscillation error in 48K word clock. (X703 is defective.)

NG message → 44.1k INTERNAL CLOCK

a) Oscillation error in 44.1k word clock. (X702 is defective.)

NG message → 48k 0% VARI

a) Error in 48k oscillation. (VCO49 or IC710 is defective.)

NG message → 48k +7% VARI

a) Error in 48k+7% oscillation. (VCO49 or IC710 is defective.)

NG message → 48k -7% VARI

a) Error in 48k-7% oscillation. (VCO49 or IC710 is defective.)

NG message → 44.1k 0% VARI

a) Error in 44.1k oscillation. (VCO45 or IC710 is defective.)

NG message → 44.1k +7% VARI

a) Error in 44.1k+7% oscillation. (VCO45 or IC710 is defective.)

NG message → 44.1k -7% VARI

a) Error in 44.1k-7% oscillation. (VCO45 or IC710 is defective.)

NG message → WC I/O (48k INT)

a) ALRCK or WCKIN signal error

To exit, press . The program returns to the test menu screen, and an **NG** appears in the left column.

The cursor does not advance.

5-2-18 Digital-I/O Function Test (18 Digital I/O)**(1) Display (Test Screen Type B)**

- 1) Test name → DIGITAL I/O

(2) Test Content

- 1) Checks digital I/O (SPDIF) signal sending and receiving.
 2) Checks digital audio signals.

(3) Judgment

- 1) Prompt area → MAKE TEST LOOP AND PRESS ENTER
 Exit-method area → EXIT: [ENTER / CANCEL]

Start the test by pressing the key.

- 2) If result area → --- STATUS CHECK ---
 ...OK
 --- AUDIO CHECK ---
 ...OK

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If result area → --- STATUS CHECK ---
 ...NG NG message
 --- AUDIO CHECK ---
 ...NG

NG message → STATUS

- a) Bad status bit in digital audio signal.

NG message → EMPHASIS

- a) Bad emphasis data in digital audio signal.
 b) DIR2 (IC507) DIREMP signal is bad.

NG message → DIR LOCK

- a) DIT (IC508) /RES-DIT signal is bad.
 b) DIT (IC507) LOCK signal is bad.
 c) Digital-audio signal is bad.

NG message → DIR SPDWCK

- a) DIT (IC508) 128FS signal is bad.
 b) DIT (IC507) SPDWCK signal is bad.
 c) Digital-audio signal is bad.

To exit, press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-19 Fader Test (19 FADER)

(1) Display (Test Screen Type B)

- 1) Test name → FADER

(2) Test Content

- 1) Checks the fader operation. This is a visual check.

(3) Judgment

- 1) Prompt area → PUSH [SONG] [QUICK REC]
 [MASTERING] [CD PLAY]

Exit-method area → OK: [ENTER], NG: [CANCEL]

Press and confirm that all faders move to the ∞ display position.

Press and confirm that all faders move to the +6 (0) display.

Press and confirm that all faders move near to the 7.5 (25) position.

Press and confirm that all faders move near to the 0 (10) position.

(Values in parentheses are for stereo faders.)

- 2) If all faders have moved correctly (based on visual check):

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

- 3) If there was an error in fader movement (based on visual check):

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-20 Mute Function Test (20 MUTE)**(1) Display (Test Screen Type B)**

1) Test name → MUTE

(2) Test Content

1) Checks the operation of the analog-output mute.

(3) Judgment

1) Prompt area → --- A/D -> D/A Mute off ---
NEXT CHECK PRESS ENTER

Exit-method area → OK: [ENTER], NG: [CANCEL]

Confirm that analog input is played out as analog output (mute off).

2) Press the key and confirm that the mute comes on.

Prompt area → --- A/D -> D/A Mute off ---
NEXT CHECK PRESS ENTER
→ --- A/D -> D/A Mute on ---

3) If result is OK:

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

4) If result is NG:

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-21 SDRAM (DRC) Function Test (21 SDRAM)**(1) Display (Test Screen Type C)**

1) Test name → SDRAM (DRC)

(2) Test Content

1) Tests DRCNI connections.

(3) Judgment

1) Exit-method area → EXIT: [ENTER / CANCEL]

2) If all connections are OK:

Result area: →	DRC - SDRAM	...OK
	IDE - DRC - SDRAM	...OK
	SCSI - DRC - SDRAM	...OK

Press to return to the test menu. An **OK** appears in the left column, and the cursor advances to the next test in the menu.

3) If connection is NG:

Result area: → ... NG	DRC - SDRAM	(check CPU -> DRC -> SDRAM)
	IDE - DRC - SDRAM	(check IDE -> DRC -> SDRAM)
	SCSI - DRC - SDRAM	(check SCSI -> DRC -> SDRAM)

NG message → (check CPU -> DRC -> SDRAM)

a) REC CPU (IC803) - DRC (IC830) - SDRAM (IC801, IC802) connection problem.

NG message → (check IDE -> DRC -> SDRAM)

a) Internal HDD - DRC (IC830) - SDRAM (IC801, IC802) connection problem.

NG message → (check SCSI -> DRC -> SDRAM)

a) External HDD - DRC (IC830) - SDRAM (IC801, IC802) connection problem.

Press . The program returns to the test menu screen, and an **NG** appears in the left column. The cursor does not advance.

5-2-22 Realtime Clock Test (22 REAL TIME CLOCK)

(1) Display (Test Screen Type B)

1) Test name → REAL TIME CLOCK

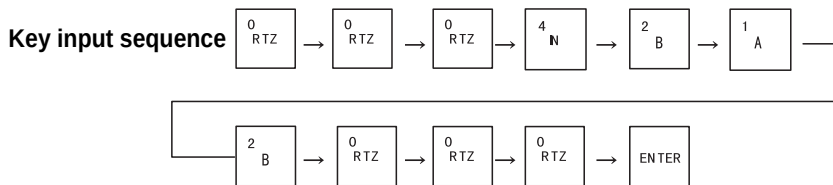
(2) Test Content

- 1) Set the internal clock (RTC) date and time.
- 2) Check that the clock starts correctly.
- 3) Check the battery.

(3) Judgment

- 1) Prompt area → SET TIME BY TEN-KEY AND ENTER
Center of display → 2000/01/01 00:00:00 Mon
Exit-method area → EXIT: [CANCEL]
- 2) Enter the date and time with the numeric keypad.
For the year, set last two digits. Example: 2000 → 00
Set two-digit values for month and day. Example: April → 04; 2nd day of month → 02
Set hour using 1 - 24 system. Example: 8 PM → 20.
Set two-digit values for hour and minute. Examples: 5AM → 05; 7 minutes after the hour: → 07
Do not set the seconds. The seconds count always starts from 00.

Example: To set the date to April 21, 2000 and the time to 20:00:00, key in the numbers as follows.



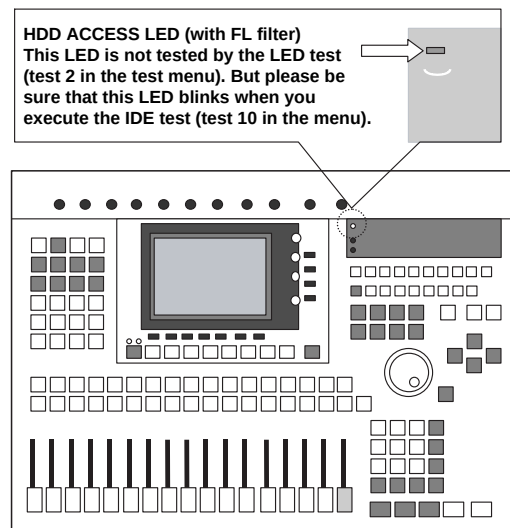
3) Check

When you press the  key, the program returns to the test menu screen. Check the time and battery information at the top right of the screen.

2000/04/21 20:00:00 Fri ← Date and time that you just set.
BATTERY OK ← Battery check

6. Miscellaneous

- (1) Not all switches include LEDs. In the following illustration, non-LED switches are indicated in gray . Note that these switches are not supposed to light up during the LED test (test 2 on the test menu).



- (2) The FADER AGING test (test 30 in the menu) generates a series of fader operations. This is a special test that places the AW4416 into a special mode. Fader operation itself is tested by the FADER test (test 19 in the test menu). Note that at test program startup the test menu automatically shows an **OK** for the FADER AGING test.

Note also that you can move the faders using the

,

,

, and

 buttons regardless of the test type.

■ DISPLAY MESSAGE LIST

Messages

AUTOMIX DISABLED.	Automix is not enabled, and cannot be recorded.
AUTOMIX MEMORY FULL!	Automix memory has no free area.
AUTOMIX NOT RUNNING.	Automix has been stopped, so recording is not possible. Pause the recorder, and then playback.
AUTOMIX REC ABORTED.	Automix recording was stopped, and the data was discarded.
AUTOMIX RECORDING.	The operation cannot be executed since automix is being recorded.
AUTOMIX RUNNING.	The operation cannot be executed since automix is being recorded or played.
BANK A SELECTED	Since sampling pad bank A is selected, muting cannot be defeated for this pad.
BANK B SELECTED	Since sampling pad bank B is selected, muting cannot be defeated for this pad.
CANNOT ASSIGN DIGITAL-ST-IN.	DIGITAL STEREO IN cannot be assigned to the stereo bus cascade.
CANNOT CHANGE THE MUTE	Muting cannot be defeated since this would exceed the number of simultaneously playable tracks.
CANNOT PLAY THIS PAGE	Playback is not possible in this page.
CANNOT RECALL AUTOMIX	Recall is not possible, since automix data has not been stored.
CANNOT REDO	Redo (re-execution of an operation) is not possible.
CANNOT SELECT (MTC SLAVE)	Since the AW4416 is set to be the MTC slave, the external word clock cannot be selected as the word clock source.
CANNOT SELECT (WC EXTERNAL)	Since the external word clock is selected as the word clock source, the AW4416 cannot be set as the MTC slave.
CANNOT SET MARK	It is not possible to specify a mark at an already-specified position.
CANNOT UNDO	Undo (cancellation of an operation) is not possible.
CANNOT USE BOTH SLOTS!	OPTION I/O slot 1 and slot 2 cannot be used simultaneously.
CD PLAY MODE NOW.	Since the AW4416 is in CD Play mode, this operation is not possible.
DIFFERENT TC FRAME TYPE	MTC of a different frame type than the internal setting is being received.
DIGITAL-ST-IN REC PROHIBIT.	Recording is prohibited for the signal being input from DIGITAL STEREO IN.
DIGITAL-ST-IN SYNC ERROR!	The signal being input from DIGITAL STEREO IN is not synchronized to the word clock master.
DIN TO STEREO BUS REFUSE.	Since the signal was interrupted, cascading from DIGITAL STEREO IN to the stereo bus has been defeated.
EFF1 INSERT RELEASED	Effect 1 has been released from insertion because a patch library was recalled.
EFF2 INSERT RELEASED	Effect 2 has been released from insertion because a patch library was recalled.
FOR EFFECT2 ONLY.	The selected effect program can be used only with effect 2.
IN/OUT POINTS TOO CLOSE	The auto punch-in/out interval is too short. It cannot be set less than approximately 100 msec.

INT.EFF NOW SELECTED AUX.	The internal effect is connected to the AUX send, and cannot be inserted.
LOW BATTERY!!	The internal battery is running down.
MAKE NEW MIX.	There are no events to be edited. Please create a new mix.
MARK ERASED	The mark has been erased.
MARK SET	The mark has been set.
MIDI IN: DATA FRAMING ERROR!	Invalid data may have been received at the MIDI IN connector.
MIDI IN: DATA OVERRUN!	Invalid data may have been received at the MIDI IN connector.
MIDI: RX BUFFER FULL!	The AW4416 is receiving more MIDI data than it can handle.
MIDI: TX BUFFER FULL!	The AW4416 is attempting to transmit more MIDI data than it can handle.
NO CURRENT AUTOMIX.	There is no valid automix data. Please create a new mix.
NO DATA TO RECALL.	Since data has not been stored, it cannot be recalled.
NO MARK LEFT	The allowable number of marks has been exceeded.
PLAY TRACK MUTE IS ON	Playback tracks were muted because the allowable number of simultaneously recorded/played tracks was exceeded.
RECORDER BUSY	The operation cannot be executed because the recorder is operating.
RECORDER RUNNING	The operation cannot be executed because the recorder is recording or playing.
REDO COMPLETE	Redo (re-execution of the previous operation) has been completed.
REPEAT POINTS TOO CLOSE	The repeat interval is too short. It cannot be set to less than one second.
SELECTED AREA HAS NO DATA.	The selected area contains no trigger data.
SELECTED AREA HAS NO REGION.	The selected area contains no region.
SELECTED CH IS NONE.	The selected channel cannot be selected since it does not exist.
SELECTED CH ONLY MODE.	The channel cannot be changed, since the display mode is set to SELECTED CH ONLY.
SELECTED PAD NOT ASSIGNED.	No sample is assigned to the selected sampling pad.
SELECTED SONG HAS NO REGION.	The selected song does not contain a region.
SELECTED TRACK HAS NO REGION.	The selected track does not contain a region.
SELECTED TRACK NOT RECORDED.	The selected track does not contain recorded data.
SLOT1 INPUT SYNC ERROR!	The signal being input to the input jack of a card installed in OPTION I/O slot 1 is not synchronized to the word clock master.
SLOT1,2 INPUT SYNC ERROR!	The signal being input to the input jack of a card installed in an OPTION I/O slot is not synchronized to the word clock master.
SLOT2 INPUT SYNC ERROR!	The signal being input to the input jack of a card installed in OPTION I/O slot 2 is not synchronized to the word clock master.
SOLO READY.	The Solo function is ready. Use the [SEL] keys to select the solo channel.
SOLO SLAVE.	The Solo status cannot be changed when the AW4416 is functioning as a cascade slave. Press the Solo key on the master console.
SONG NUMBER FULL.	The maximum number of songs has been reached.
SONG TOP/END OUT OF RANGE	You located outside the top/end range of the song.
STEREO PAIRED.	You are attempting to defeat ST LINK for the dynamics of paired channels.

STEREO TRACK MUTE IS OFF	Since muting is off for the stereo track, track muting cannot be turned off.
THIS SONG IS PROTECTED.	This song is protected, and cannot be edited or recorded.
TO HOST: DATA FRAMING ERROR!	Invalid data may have been received at the TO HOST connector.
TO HOST: DATA OVERRUN!	Invalid data may have been received at the TO HOST connector.
TO HOST: DATA PARITY ERROR!	Invalid data may have been received at the TO HOST connector.
TO HOST: RX BUFFER FULL!	Excessive amounts of data may have been received at the TO HOST connector.
TO HOST: TX BUFFER FULL!	The AW4416 may be attempting to transmit excessive amounts of data from the TO HOST connector.
TRIGGER LIST RECORDING	A sampling pad trigger list is being recorded.
UNDO COMPLETE	Undo (cancellation of the previous operation) has been executed.
WRONG WORD CLOCK!!	The word clock from a connected device selected by the AW4416 for synchronization is not appropriate.

Popup messages

CD Access Error!	A error occurred when accessing the CD.
CD Size Full!	Data exceeding the recordable length of the CD cannot be added.
CD Track Over!	The maximum number of tracks has been reached, and further addition is not possible.
Can't Copy This Parameter!	This parameter cannot be copied.
Can't Create Image File!	Since the disk is full, a CD image file cannot be created.
Can't Delete Current Song!	The currently loaded song cannot be deleted.
Can't Delete Protected Song!	A protected song cannot be deleted.
Can't Edit Multiple Songs!	This editing operation cannot be executed on multiple songs simultaneously.
Can't Optimize Protected Song!	Optimize cannot be executed on a protected song.
Can't REDO	Redo is not possible.
Can't Select Current Song!	The currently loaded song cannot be edited.
Can't UNDO	Undo is not possible.
Can't Write CD-RW by Track At Once!	A CD-RW cannot be written using Track At Once.
Change Media, Invalid Order.	Please exchange the media. The order of media volumes is incorrect.
Change Media, Not 1st Media	Please exchange the media. This is not the first media volume.
Change Media, Not TYPE 1 Backup.	Please exchange the media. This media was not backed up as TYPE 1.
Change Media, Not TYPE 2 Backup.	Please exchange the media. This media was not backed up as TYPE 2.
Change Media, Please	The media is an incorrect type. Please exchange it.
Device Error!	A problem has occurred with the SCSI device.
Directory Name Too Long!	The directory name is too long and cannot be displayed.
Directory Not Found!	The specified directory cannot be found.
Disk Full!	The disk has no free capacity.
File System Error!	An error has occurred in the file system of the internal hard disk.
Finalized Media!	The media has already been finalized.
Invalid Parameter!	The parameter setting exceeds the allowable range.

Media Error!	A problem has occurred on the media.
Media Full!	The media has no free space.
Media Protected!	The media is write-protected.
Memory Full!	There is no free space in the sampling pad memory.
No Song to Backup!	There is no song to backup.
No Song to Edit!	There is no song to edit.
No Song to Load!	There is no song to load.
No Song to Restore!	There is no song to restore.
No Song to Save!	There is no song to save.
No Song to Write!	No songs to write to the CD have been selected.
No Song!	No songs can be found.
No Stereo Track!	There is no stereo track.
No Track to Open Wave Display!	There is no track data for waveform display.
Not WAV Drive!	The selected drive contains no WAV files.
Not WAV File!	The file is not a WAV file.
Partition Not Found!	The specified partition was not found.
Recall Channel Data Conflict!	The specified channel library cannot be loaded into this channel.
SCSI Error!	An error has occurred in the SCSI connection.
Selected Drive is not CD Drive!	The drive of the selected SCSI ID is not a CD drive.
Selected Drive is not Connected!	The drive of the selected SCSI ID is not connected.
Selected Preset is Effect2 Only!	The selected preset can be used only by effect 2.
Selected Song Status Conflict!	The track cannot be imported, since it is from a song with a different sampling frequency or quantization (bit length).
Selected Track is not Recorded!	The selected track is not recorded.
Too Many Regions!	There are too many regions.
Too Small Region!	Time compression/expansion cannot be executed since the region is too small.

YAMAHA [PROFESSIONAL AUDIO WORKSTATION]

Date: 18 Feb. 2000

Model: AW4416

MIDI Implementation Chart

Version: 1.0

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	Memorized Memorized
Mode	Default Messages Altered	X X *****	OMNI off/OMNI on X X	Memorized
Note Number	:True Voice	X *****	0-127 X	
Velocity	Note On Note Off	X X	X X	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change		X	X	
Prog Change	:True#	0-127 *****	0-127 0-96	
System Exclusive		X	0	*1
System Common	:Song Pos :Song Sel :Tune	0 X X	X X X	*2
System Real Time	:Clock :Commands	0 0	X X	*2 *2
Aux Messages	:Local ON/OFF :All Notes OFF :Active Sense :Reset	X X X X	X X 0 0	
Notes		MTC quarter frame message is transmitted. (When MTC Sync mode) MTC quarter frame message is recognized. (When MTC Sync mode) *1: MMC *2: When MCLK Sync mode		

Mode 1: OMNI ON, POLY

Mode 2: OMNI ON, MONO

0: Yes

Mode 4: OMNI OFF, MONO

X: No

■ MIDI DATA FORMAT

1. Functions

1.1 MIDI-SETUP

There are two types of serial connector: the MIDI connectors and the TO HOST. They have the same functionality, and you can select which type to use as appropriate for the connection destination. Both types use the MIDI format for communication.

In the case of the TO HOST connector, the transmission method must be selected appropriate for the other device. The available methods are listed below.

Regardless of which method is selected, MTC is transmitted from the dedicated MTC OUT connector.

You can select either THRU or OUT as the function of the MIDI THRU/OUT connector. If THRU is selected, messages received at the MIDI IN connector will be retransmitted without change from the MIDI OUT/THRU connector.

Name	Connector	Transmission speed	Destination
MIDI	MIDI	31.25k	for MIDI
PC1	ToHost	31.25k	for NEC PC9800series
PC2	ToHost	38.4k	for DOS/V
Mac	ToHost	31.25k	for Macintosh (contain CLOCK)

1.2 SCENE CHANGE

When a program change message is received, a scene will be recalled as specified by the [MIDI Program Change Assign Table].

Program change messages are transmitted with the program number specified by the [MIDI Program Change Assign Table]. If multiple program numbers are assigned to that memory number, the lowest-numbered program change will be transmitted.

1.3 MMC CONTROL

Basic recorder operations such as stop/play/rec/locate can be controlled.

If you select MMC MASTER from the MIDI SETUP menu, MMC commands will be transmitted according to operations of the transport. If you select MMC SLAVE, the internal recorder will operate according to the MMC commands that are received.

1.4 EFFECT CONTROL

Depending on the effect type, note on/off messages can be received for control.

These settings are made by the parameters of the corresponding effect.

1.5 MIDI CLOCK transmission

If you select MIDI CLOCK transmission from the MIDI SETUP menu, MIDI clock messages will be transmitted during playback and recording.

When the AW4416 is in MIDI clock transmission mode, Start/Stop/Continue commands will be transmitted by the corresponding operations, and MIDI Clock and Song Position Pointer messages will be transmitted according to the MIDI Tempo Map.

1.6 MTC master

If you select MTC transmission from the MIDI SETUP menu, MTC will be transmitted during playback and recording.

1.7 MTC slave synchronization

If you select SLAVE operation from the MIDI SETUP menu, the AW4416's internal recorder will operate in synchronization with the MTC messages received from the MIDI IN or TO HOST connector.

2. Internal settings and operations

2.1 MIDI-SETUP

2.1.1 MIDI Channel

2.1.1.1 Transmit channel

Select the MIDI channel used for transmission.

However, transmissions in response to requests are transmitted on the Receive Channel in order to specify the transmitting device.

2.1.1.2 Receive channel

Specify the MIDI channel used for reception. In general, MIDI messages are received only if the MIDI channel matches, but this is not the case if OMNI is turned on.

2.1.2 ON/OFF

2.1.2.1 Program change

Reception and transmission can be enabled or disabled. If OMNI is turned on, program changes will be received regardless of their MIDI channel. If ECHO is on, they will be echoed regardless of the channel.

2.1.2.2 Control change

If ECHO is on, these messages will be echoed regardless of the channel.

2.1.3 MMC Device ID

Specify the ID number used when transmitting and receiving MMC commands.

2.1.4 PORT

Select whether serial communication will use the MIDI IN/OUT connectors or the TO HOST connector.

(MTC is always transmitted from the MTC OUT connector.) If the TO HOST connector is selected, you must also select one of three settings as appropriate for the other device.

2.1.5 THRU

You can select whether the MIDI OUT/THRU connector will function as OUT or THRU.

If THRU is selected, messages received at the MIDI IN connector will be retransmitted without change from the MIDI OUT/THRU connector.

If MIDI THRU is selected, the connector will function as THRU regardless of the PORT setting. In order to function as MIDI OUT, the PORT setting must be set to MIDI IN/OUT.

2.2 MIDI program change assign table

The correspondence between program change numbers and scene numbers can be set freely.

This conversion is applied to both transmission and reception.

3. MIDI message formats

3.1 CHANNEL MESSAGE

command	rx/tx	function
8n NOTE OFF	rx	Control internal effects
9n NOTE ON	rx	Control internal effects
Bn CONTROL CHANGE		Only echoed
Cn PROGRAM CHANGE	rx/tx	Select scene memories (using the Program Change Table)

3.2 SYSTEM COMMON MESSAGE

command	rx/tx	function
F1 MIDI TIME CODE	rx/tx	MTC transmission (when MTC master), MTC reception (when MTC slave)
F2 SONG POSITION POINTER	tx	SPP transmission (when using MIDI Clock)

3.3 SYSTEM REAL TIME MESSAGE

command	rx/tx	function
F8 TIMING CLOCK	tx	MIDI Clock reception (when using MIDI Clock)
FA START	tx	Start command transmission (when using MIDI Clock)
FB CONTINUE	tx	Continue command transmission (when using MIDI Clock)
FC STOP	tx	Stop command transmission (when using MIDI Clock)
FE ACTIVE SENSING	rx	MIDI cable connection checking
FF RESET	rx	Clear running status

3.4 SYSTEM EXCLUSIVE MESSAGE

3.4.1 Real Time System Exclusive

3.4.1.1 MMC

command	rx/tx	function
01 STOP	rx/tx	Transport Stop
02 PLAY	rx	Transport Play
03 DEFERRED PLAY	rx/tx	Transport Play
04 FAST FOWARD	rx/tx	Transport Fast-forward
05 REWIND	rx/tx	Transport Rewind
06 RECORD STROBE	rx	Transport Record/Punch-in
07 RECORD EXIT	rx	Transport Punch-out
0F RESET	rx/tx	MMC Reset
40 WRITE	rx	Write Information Field
44 LOCATE	rx/tx	Transport Locate

4. MIDI format details

4.1 NOTE OFF (8n)

< Reception >

Received if [Rx CH] matches.

Used to control effects. See below for details.

STATUS	1000nnnn	8n	Note Off Message
DATA	0nnnnnnn	nn	Note No.
	0vvvvvvv	vv	Velocity (ignored)

4.2 NOTE ON (9n)

< Reception >

Received if [Rx CH] matches.

Used to control effects. See below for details.

If velocity is 0x00, same as note-off.

STATUS	1001nnnn	9n	Note On Message
DATA	0nnnnnnn	nn	Note No.
	0vvvvvvv	vv	Velocity (1-127:0n, 0:off)

* Notes used to control effects.

1: Dynamic Flange / Dynamic Phase / Dynamic Filter

If the SOURCE parameter is set to MIDI, velocity will control the width of frequency modulation for both note-on and note-off.

4.3 CONTROL CHANGE (Bn)

< Reception >

Echoed if [Control Change ECHO] is on.

< Transmission >

If [Control Change ECHO] is on, this is merged with the AW4416's own output while taking advantage of running status.

4.4 PROGRAM CHANGE (Cn)

< Reception >

Received if [Program Change RX] is on and [Rx CH] matches. However if [OMNI] is on, this is received regardless of the channel.

This is echoed if [Program Change ECHO] is on.

A scene memory will be recalled according to the [Program change table].

< Transmission >

If [Program Change TX] is on, a recall operation will cause a program change to be transmitted on the [Tx CH] according to the settings of the [Program change table].

If more than one program number is assigned to the memory number that was recalled, the lowest-numbered program will be transmitted.

If [Program Change ECHO] is on, program changes will be echoed.

(If a memory number is recalled for which there is no setting in the [MIDI Program Change Assign Table], no program change will be transmitted.)

STATUS	1100nnnn	Cn	Program Change
DATA	0nnnnnnn	nn	Program No. (0-127)

4.5 MIDI TIME CODE QUARTER FRAME (F1)

< Transmission >

When MTC transmission is selected and the recorder is in PLAY or REC status, Quarter Frame messages will be transmitted according to the time code operation of the recorder.

< Reception >

These messages are received if the AW4416 is operating as a MTC slave. Quarter Frame messages received in realtime are assembled internally to create time code values that control the recorder.

STATUS	11110001 F1	Quarter Frame Message
DATA	0nnnnddd dd	nnn = message type (0-7) ddd = data

4.6 SONG POSITION POINTER (F2)

< Transmission >

If MIDI Clock is being transmitted, Song Position Pointer messages will be transmitted when the recorder stops or locates, in order to indicate the song position at which playback should begin for the next Start/Continue.

STATUS	11110010 F2	Song Position Pointer
DATA	0ddddd dd0	data (H) high 7 bits of 14 bits data
	0ddddd dd1	data (L) low 7 bits of 14 bits data

4.7 TIMING CLOCK (F8)

< Transmission >

If MIDI Clock is being transmitted, Timing Clock messages are transmitted according to the MIDI tempo map whenever the recorder is playing or recording (until it stops).

STATUS	11111000 F8	Timing Clock
--------	-------------	--------------

4.8 START (FA)

< Transmission >

If MIDI Clock is being transmitted, this message is transmitted when the recorder begins playback or recording from the first measure.

STATUS	11111010 FA	Start
--------	-------------	-------

4.9 CONTINUE (FB)

< Transmission >

If MIDI Clock is being transmitted, this message is transmitted when the recorder begins playback or recording from a location other than the first measure.

STATUS	11111011 FB	Continue
--------	-------------	----------

4.10 STOP (FC)

< Transmission >

If MIDI Clock is being transmitted, this message is transmitted when the recorder stops.

STATUS	11111100 FC	Stop
--------	-------------	------

4.11 ACTIVE SENSING (FE)

< Reception >

Once this message has been received, an interval of 300 ms in which no message has been received will cause MIDI communications to be initialized by clearing the running status, etc.

STATUS	11111110 FE	Active Sensing
--------	-------------	----------------

4.12 RESET

< Reception >

If a Reset message is received, MIDI communications will be initialized by clearing the running status, etc.

STATUS	11111111 FF	Reset
--------	-------------	-------

4.13 EXCLUSIVE MESSAGES (F0-F7)

4.13.1 MMC STOP

< Transmission >

Transmitted with a device number of 7F when the STOP key is pressed.

< Reception >

If the AW4416 is operating as the MMC SLAVE, it will stop when this message is received if the device number matches or is 7F.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	0ddddd dd	Destination (00-7E, 7F:all call)

Command	00000110 06	Machine Control Command (mcc) sub-id
	00000001 01	Stop (MCS)
EOX	11110111 F7	End Of Exclusive

4.13.2 MMC PLAY

< Reception >

If the AW4416 is operating as the MMC SLAVE, it will begin playback when this message is received if the device number matches or is 7F.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	0ddddd dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00000010 02	Play (MCS)
EOX	11110111 F7	End Of Exclusive

4.13.3 MMC DEFERRED PLAY

< Transmission >

Transmitted with device number 7F when the PLAY key is pressed.

< Reception >

If the AW4416 is operating as the MMC SLAVE, it will begin playback when this message is received if the device number matches or is 7F.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	0ddddd dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00000011 03	Deferred play (MCS)
EOX	11110111 F7	End Of Exclusive

4.13.4 MMC FAST FORWARD

< Transmission >

Transmitted with device number 7F when the FF key is pressed, or when the shuttle is rotated toward the right to enter Cue mode.

< Reception >

If the AW4416 is operating as the MMC SLAVE, it will begin fast-forward when this message is received if the device number matches or is 7F.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	0ddddd dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00000110 04	Fast Forward (MCS)
EOX	11110111 F7	End Of Exclusive

4.13.5 MMC REWIND

< Transmission >

Transmitted with device number 7F when the REWIND key is pressed, or when the shuttle is rotated toward the left to enter Review mode.

< Reception >

If the AW4416 is operating as the MMC SLAVE, it will begin rewind when this message is received if the device number matches or is 7F.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	0ddddd dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00000101 05	Rewind (MCS)
EOX	11110111 F7	End Of Exclusive

4.13.6 MMC RECORD STROBE

< Reception >

If the AW4416 is operating as the MMC SLAVE and the device number of the message matches or is 7F, it will begin recording if stopped, or punch-in if playing.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	00000000 dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00000110 06	Record strobe
EOX	11110111 F7	End Of Exclusive

4.13.7 MMC RECORD EXIT

< Reception >

If the AW4416 is operating as the MMC SLAVE and the device number of the message matches or is 7F, the AW4416 will punch-out if it had been recording.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	00000000 dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00000111 07	Record Exit
EOX	11110111 F7	End Of Exclusive

4.13.8 MMC RESET

< Transmission >

Transmitted with a device number of 7F when song loading is completed.

< Reception >

If the AW4416 is operating as the MMC SLAVE and the device number of the message matches or is 7F, internal MMC-related settings will be reset to the power-on state.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	00000000 dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	00001101 0D	Reset
EOX	11110111 F7	End Of Exclusive

4.13.9 MMC WRITE

< Reception >

If the AW4416 is operating as the MMC SLAVE and the device number of the message matches or is 7F, data will be written to the specified information field.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	00000000 dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	01000000 40	Write
	00000000 cc	Byte Count
	00000000 nn	Writeable Information Field name
	00000000 dd	Format defined by the Information Filed name
	:	:
	00000000 nn	More nn dd... pairs as required..
EOX	11110111 F7	End Of Exclusive

4.13.9.1 MMC INFORMATION FIELD - TRACK RECORD READY

< Reception >

If the AW4416 is operating as the MMC SLAVE and the device number of the message matches, REC SELECT for the recorder tracks will be switched on/off according to the data of the standard track bitmap.

01001111 4F	Track Record Ready (Information Field name)
00000000 nn	Data Length (0:all track off, 3:record track on)
00000000 aa	1-2tr rec track On(Standard Track Bitmap)
00000000 bb	3-9tr rec track On
00000000 cc	10-16tr rec track On

4.13.10 MMC LOCATE (TARGET)

< Transmission >

This message will be transmitted with a device number of 7F when a locate-related key such as MARK SEARCH/IN/OUT is pressed, when a FF/REW/shuttle operation is performed, when returning to the auto-punch pre-roll point, or when repeating.

< Reception >

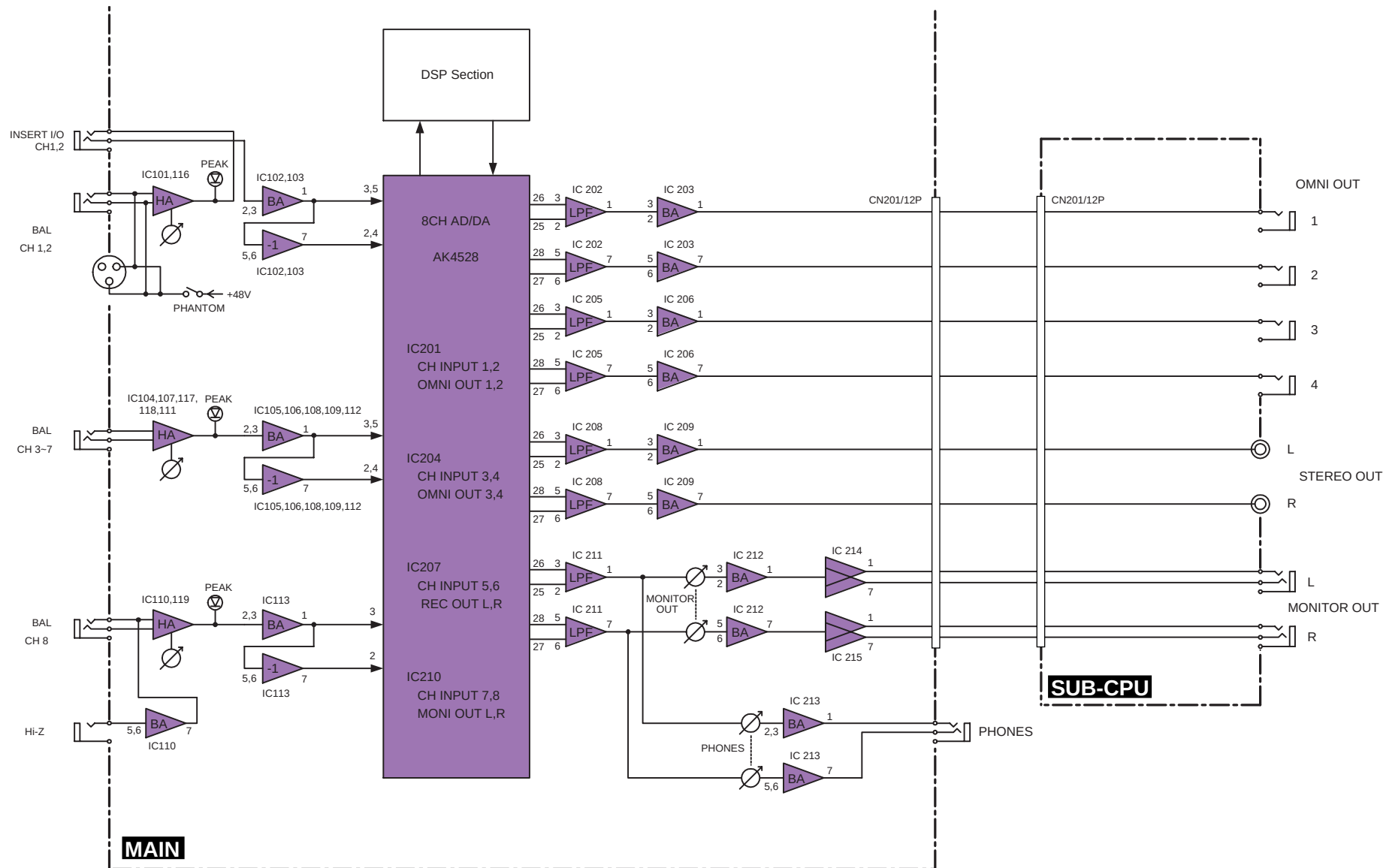
If the AW4416 is operating as the MMC SLAVE and the device number of the message matches, the AW4416 will locate to the time code location specified by the command data of the message.

STATUS	11110000 F0	System Exclusive Message
ID No.	01111111 7F	Real Time System Exclusive
Device ID	00000000 dd	Destination (00-7E, 7F:all call)
Command	00000110 06	Machine Control Command (mcc) sub-id
	01000100 44	Locate
	00000110 06	byte count
	00000001 01	"target" sub command
	00000000 hh	hour(Standard Time Code)
	00000000 mm	minute
	00000000 ss	second
	00000000 ff	frame
	00000000 ss	sub-frame
EOX	11110111 F7	End Of Exclusive

BLOCK DIAGRAM (ブロックダイアグラム)

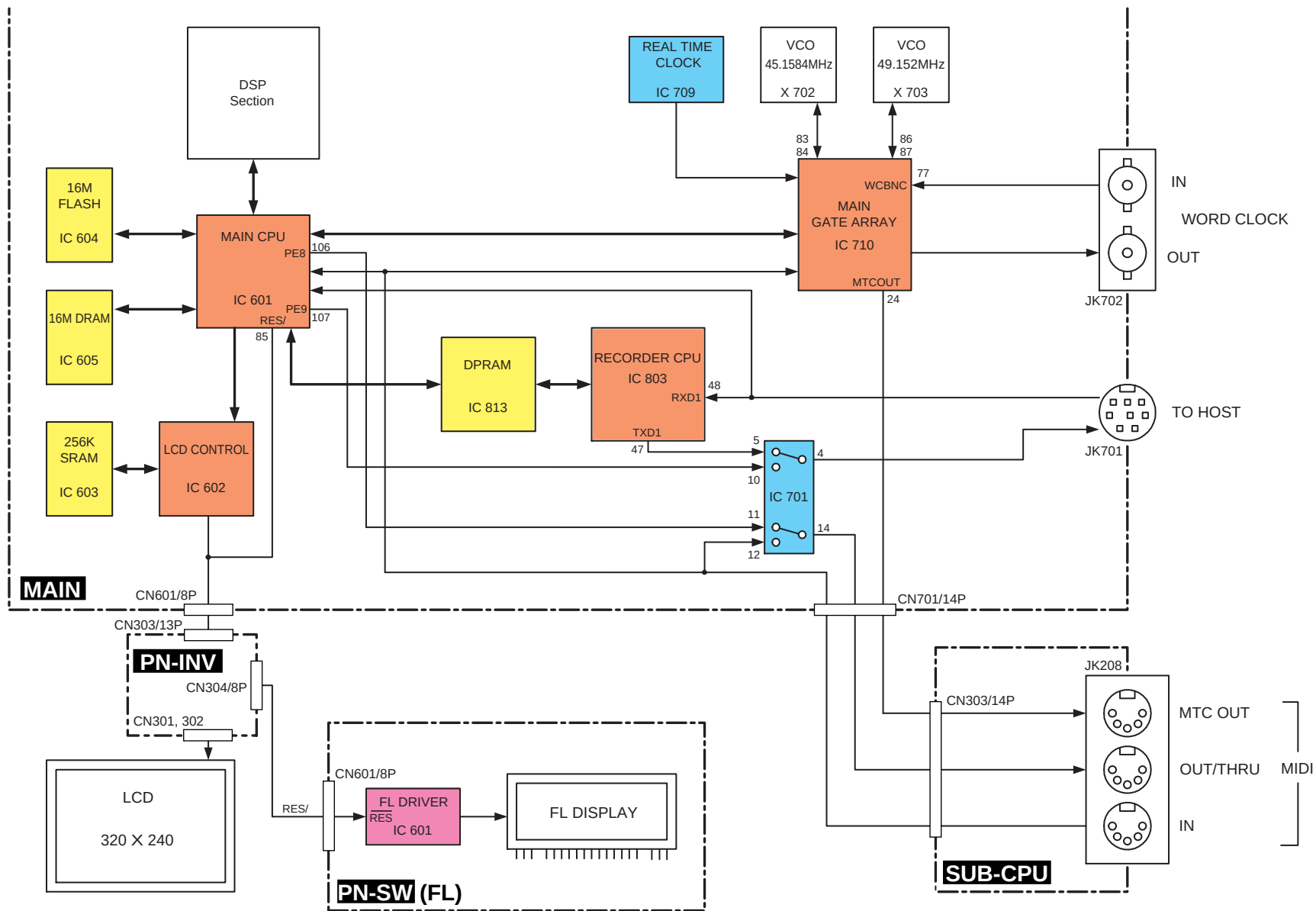
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(ANALOG Section)

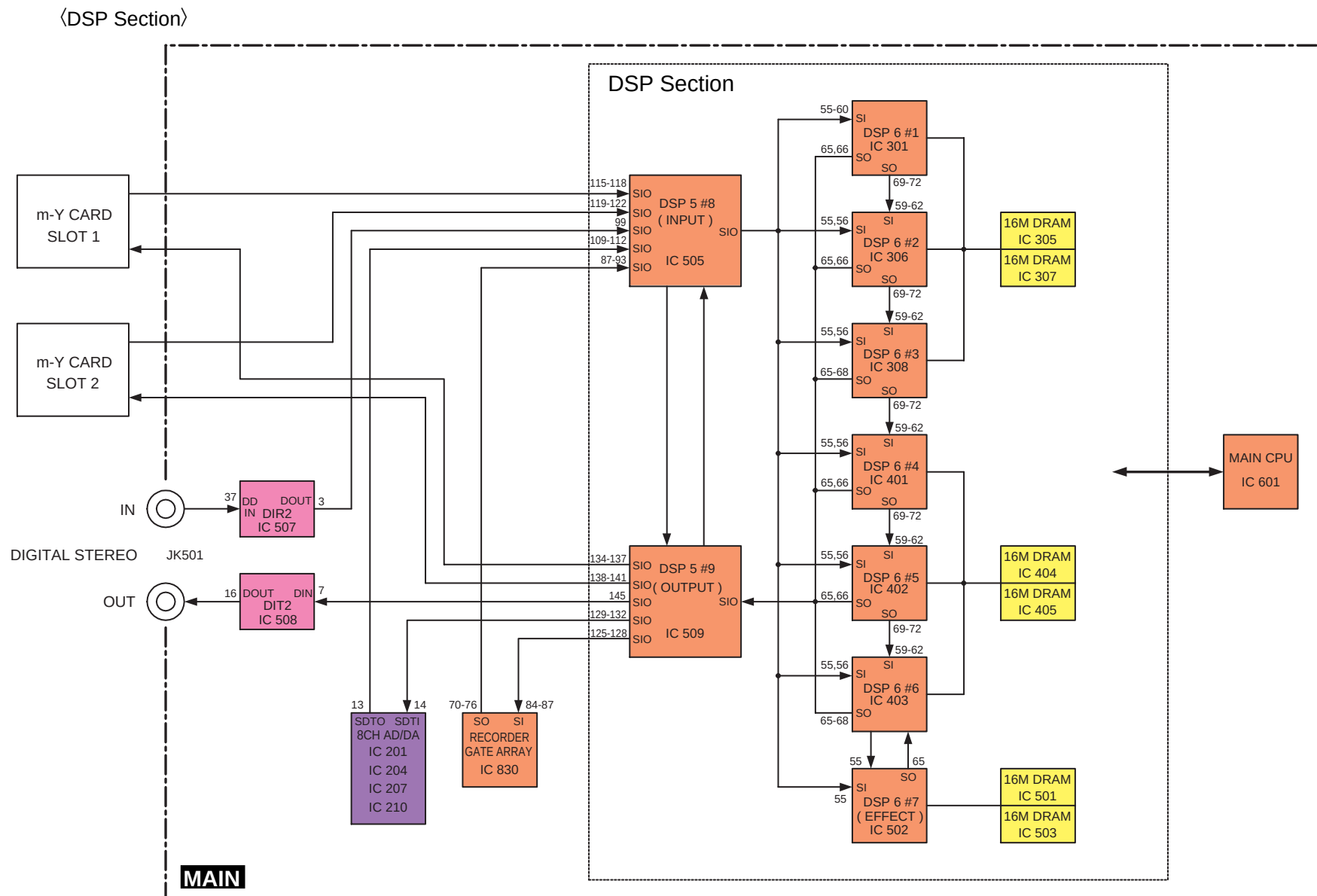


KEC-92553-2

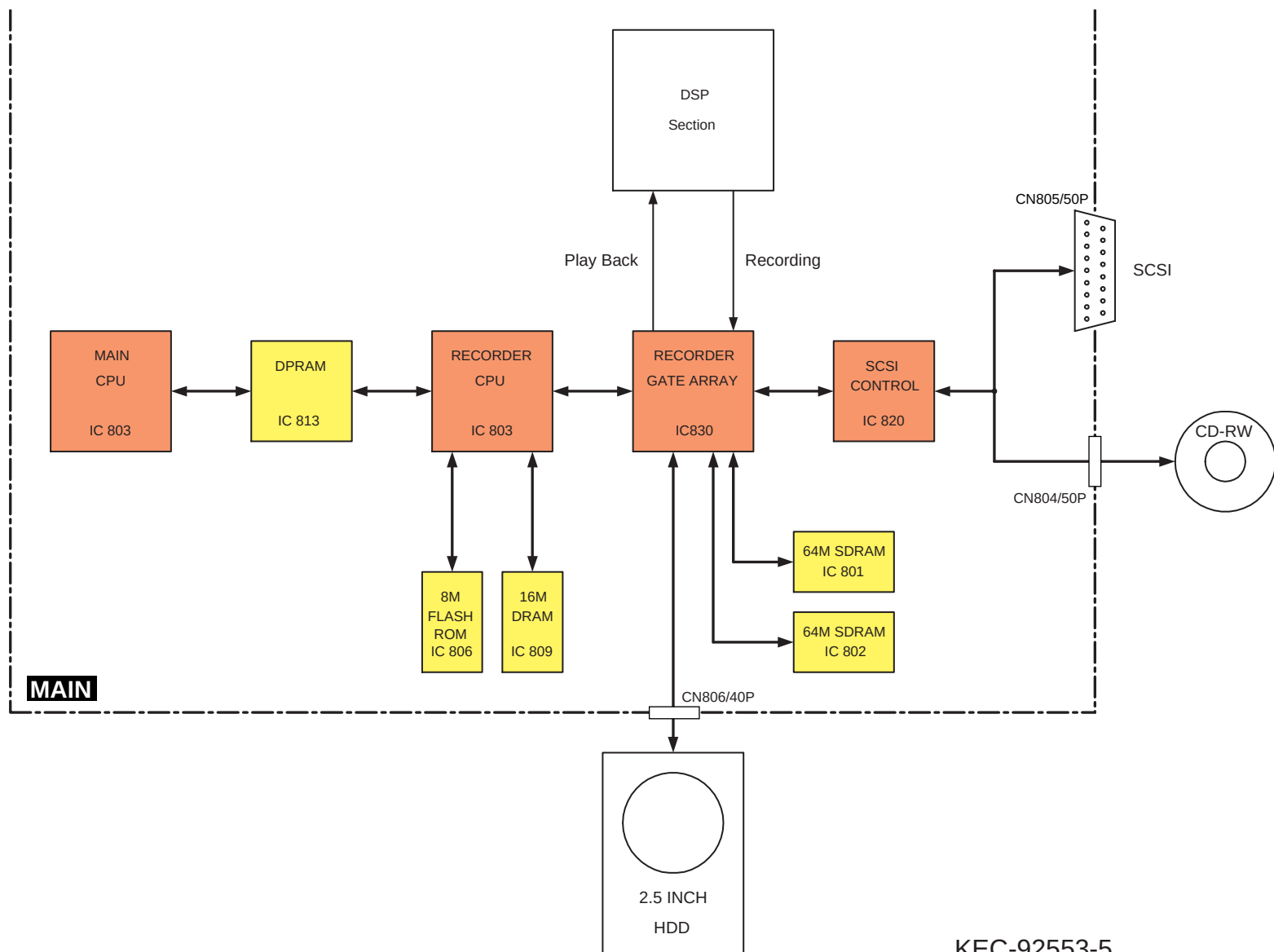
〈MAIN CPU Section〉



KEC-92553-3

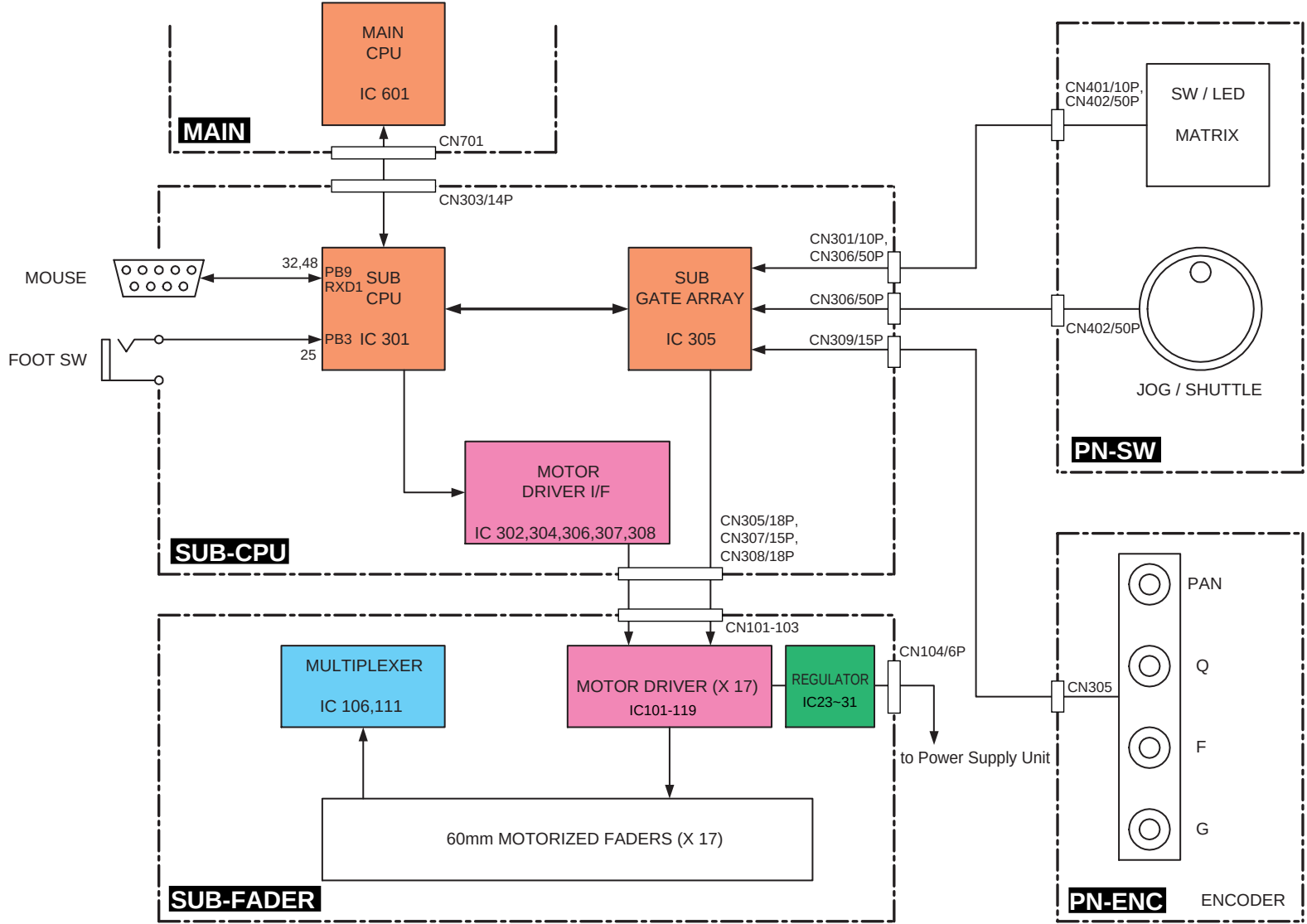


〈RECORDER CPU Section〉



KEC-92553-5

〈SUB CPU Section〉



KEC-92553-6