

Quality Uncompromised

ROTEL®

Technical Manual

STEREO CONTROL AMPLIFIER

RC-990BX

REMOTE HANDUNIT

RR-909

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Specifications

Total Harmonic Distortion.....	No more than 0.004%
(CD/TUNER, 20 Hz to 20 kHz)	
Intermodulation Distortion	No more than 0.004%
(CD/TUNER, 60 Hz : 7 kHz = 4:1)	
Output (Headphones).....	8 to 2,000 ohms
Input Sensitivity/Impedance ..	PHONO: MC 250 μ V/ 100 ohms
	PHONO: MM 2.5 mV/ 47 kohms
	CD, TUNER: 150 mV/ 18 kohms
	AUX, TAPE1/2: 150 mV/ 18 kohms
Output Sensitivity/ Impedance.....	1.0 V / 100 ohms
Overload Level	
(THD 0.5 %, 1 kHz).....	PHONO: MC 16 mV PHONO: MM 160 mV CD, TUNER: 5 V AUX, TAPE1/2: 5 V
Frequency Response	PHONO: 20 Hz to 20 kHz, ± 0.2 dB (RIAA STD) CD, TUNER: 4 to 100kHz, ± 0.5 dB AUX, TAPE1/2: 4 to 100kHz, ± 0.5 dB

Signal to Noise Ratio

(IHF, A network).....	PHONO: MC 70 dB
	PHONO: MM 75 dB
	CD, TUNER: 100 dB
	AUX, TAPE1/2: 100 dB

Power Requirement	120 V/60 Hz, 230 V/50 Hz, 240 V/50 Hz, 100V/50-60 Hz (depending on destination)
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Power Consumption.....	13 watts (2.4 watts during standby)
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Dimension (overall)	440(W) $\times$ 70(H) $\times$ 325(D) mm 17-1/3" (W) $\times$ 2-3/4" (H) $\times$ 12-4/5" (D)
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Weight (net)	5.4 kg / 11.9 lbs
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NOTE: Specifications and design are subject to possible modification without notice.

Serial No.
Beginning

THE ROTEL CO., LTD.
ROTEL ELECTRONICS CO., LTD.

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN
3RD FLOOR, ROTEL BLDG., NO. 35 FUSHING, NORTH
ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

Parts List

SYMBOL	PARTS NO.	DESCRIPTION
<u>X-1203-01T PCB ASSEMBLY</u>		
C400	043 50VZF473	CAP, CERA. 50V0. 01UF
C401, 402	044 FKP2-100V101H	CAP, P. P 100V100pF
C403, 404	044 FSC160V331H	CAP, STYROL 160V330pF
C405, 406	044 FSC160V220H	CAP, STYROL 160V22pF
C407, 408	044 FKP2-100V102F	CAP, P. P 100V1000pF
C409, 410	041 50BGF10M	CAP, ELEC. 50V10UF
C411, 412	044 S160V6800F	CAP, STYROL 160V6800pF
C413, 414	044 MKT18-100V104K	CAP, M. P 100V0. 1UF
C415, 416	044 MKT18-100V104K	CAP, M. P 100V0. 1UF
C417, 418	041 25BGF100M	CAP, ELEC. 25V100UF
C419, 420	041 25BGF100M	CAP, ELEC. 25V100UF
C421, 422	044 MKT18-100V104K	CAP, M. P 100V0. 1UF
C423, 424	044 MKT18-100V104K	CAP, M. P 100V0. 1UF
C425, 426	041 25BGF100M	CAP, ELEC. 25V100UF
C427, 428	041 25BGF100M	CAP, ELEC. 25V100UF
C429, 430	041 50BGF10M	CAP, ELEC. 50V10UF
C431, 432	041 ECEA1EF471	CAP, ELEC. 25V470UF
C433, 434	041 ECEA1EF471	CAP, ELEC. 25V470UF
C501, 502	041 25BGF47M	CAP, ELEC. 25V47UF
C503, 504	044 FKP2-100V101H	CAP, P. P 100V100pF
C505, 506	041 50BGF010M	CAP, ELEC 50V1UF
C507, 508	041 25BGF47M	CAP, ELEC 25V47UF
C509, 510	044 MKT18-100V104K	CAP, M. P 100V0. 1UF
C511, 512	044 MKT18-100V104K	CAP, M. P 100V0. 1UF
C513, 514	041 35BGF100M	CAP, ELEC 35V100UF
C515, 516	041 35BGF100M	CAP, ELEC 35V100UF
C517, 518	041 35BGF470M	CAP, ELEC 35V470UF
C519, 520	041 35BGF470M	CAP, ELEC 35V470UF
C521, 522	044 FSC160V470H	CAP, STYROL 160V47pF
C601, 602	041 U50V4R7	CAP, ELEC 50V4. 7UF
C901, 902	041 LGS1H472MHS	CAP, ELEC 50V4700UF
C903, 904	041 LGS1H472MHS	CAP, ELEC 50V4700UF
C905, 906	041 U50V010	CAP, ELEC 50V1UF
C907, 908	041 U50V010	CAP, ELEC 50V1UF
C909, 910	043 500VZF103	CAP, CERA. 500V0. 01UF
C911	043 500VZF103	CAP, CERA. 500V0. 01UF
C001	043 50VZF103	CAP, CERA. 50V0. 01UF
D401, 402	034 1N4148	DIODE
D403, 404	034 1N4148	DIODE
D405	034 RD18EB	ZENER DIODE
D407	034 RD18EB	ZENER DIODE
D501, 502	034 1N4148	DIODE
D503, 504	034 1N4148	DIODE
D505, 506	034 1N4148	DIODE
D507, 508	034 1N4148	DIODE
D509, 510	034 MA27W-A	VARISTOR DIODE
D511	034 E562	C, R, DIODE
D512	034 RD24EB	ZENER DIODE
D513	034 E562	C, R, DIODE

SYMBOL	PARTS NO.	DESCRIPTION
D514	034 RD24EB	ZENER DIODE
D751, 752	034 1N4148	DIODE
D901, 902	034 BR84	BRIDGE DIODE
D903	034 1N4148	DIODE
D904	034 1N4148	DIODE
D905	034 1N4148	DIODE
D906	034 1N4148	DIODE
IC401, 402	031 TL071CP	IC
IC403, 404	031 NE5534AN	IC
IC901	031 NJM78M15A	IC
IC902	031 NJM79M15A	IC
Q401, 402	032 2SD786-RS	TRANSISTOR
Q403, 404	032 2SD786-RS	TRANSISTOR
Q405, 406	032 2SC2362K-FG	TRANSISTOR
Q407, 408	033 2SD600K-EF	TRANSISTOR
Q409, 410	033 2SB631K-EF	TRANSISTOR
Q501, 502	033 2SC2362K-FG	TRANSISTOR
Q503, 504	033 2SC2362K-FG	TRANSISTOR
Q505, 506	033 2SA1016K-FG	TRANSISTOR
Q507, 508	033 2SA1016K-FG	TRANSISTOR
Q509, 510	033 2SC2362K-FG	TRANSISTOR
Q511, 512	033 2SA1016K-FG	TRANSISTOR
Q513, 514	033 2SA1016K-FG	TRANSISTOR
Q515, 516	033 2SC2362K-FG	TRANSISTOR
Q517, 518	033 2SC2682-P	TRANSISTOR
Q519, 520	033 2SA1142-P	TRANSISTOR
Q521, 522	033 2SB631K-EF	TRANSISTOR
Q523, 524	033 2SD600K-EF	TRANSISTOR
Q525, 526	033 2SC536K-FG	TRANSISTOR
Q527, 528	033 2SA608K-FG	TRANSISTOR
Q751	032 2SC536K-FG	TRANSISTOR
Q752	032 2SC2274-EF	TRANSISTOR
R401, 402	054 MK247K5FECZ	R, METAL 1% 47. 5K
R403, 404	054 MK2100RFECZ	R, METAL 1% 100R
R405, 406	054 MK2010RFECZ	R, METAL 1% 10R
R407, 408	054 MK2562RFECZ	R, METAL 1% 562R
R409, 410	054 MK247R5FECZ	R, METAL 1% 47. 5R
R411, 412	054 MK25K62FECZ	R, METAL 1% 5. 62K
R413, 414	054 MK25K62FECZ	R, METAL 1% 5. 62K
R415, 416	054 MK2475RFECZ	R, METAL 1% 475R
R417, 418	054 MK222K1FECZ	R, METAL 1% 22. 1K
R419, 420	054 MK2274RFECZ	R, METAL 1% 274R
R421, 422	054 MK22K74FECZ	R, METAL 1% 2. 74K
R423, 424	054 MK2075KFECZ	R, METAL 1% 75K
R425, 426	054 MK24K75FECZ	R, METAL 1% 4. 75K
R427, 428	054 MK2475kFECZ	R, METAL 1% 475K
R429, 430	054 MK2100RFECZ	R, METAL 1% 100R
R431, 432	054 MK2100KFECZ	R, METAL 1% 100k
R434	054 MK201K5FECZ	R, METAL 1% 1. 5K
R436	054 MK201K5FECZ	R, METAL 1% 1. 5K

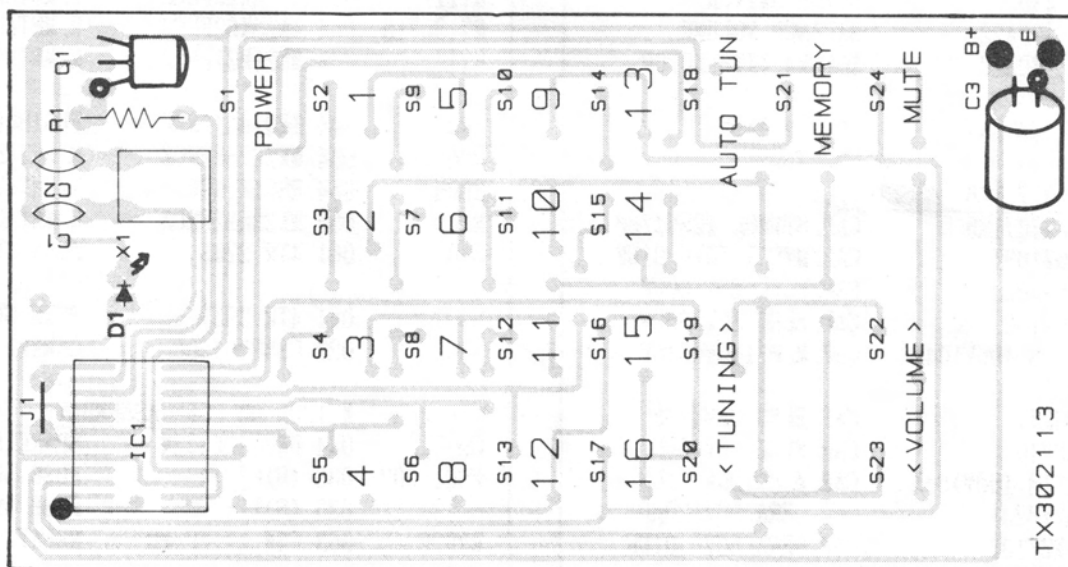
SYMBOL	PARTS NO.	DESCRIPTION
R437, 438	054 MK247K5FECZ	R, METAL 1% 47.5K
R451, 452	054 MK2001KFECZ	R, METAL 1% 1K
R453, 454	054 MK2001KFECZ	R, METAL 1% 1K
R501, 502	054 MK2100RFECZ	R, METAL 1% 100R
R503, 504	054 MK239K2FECZ	R, METAL 1% 39.2k
R505, 506	054 MK21K21FECZ	R, METAL 1% 1.21K
R507, 508	054 MK21K21FECZ	R, METAL 1% 1.21K
R509, 510	054 MK21K21FECZ	R, METAL 1% 1.21K
R511, 512	054 MK21K21FECZ	R, METAL 1% 1.21K
R513, 514	054 MK2274RFECZ	R, METAL 1% 274R
R515, 516	054 MK2274RFECZ	R, METAL 1% 274R
R517, 518	054 MK222K1FECZ	R, METAL 1% 22.1K
R519, 520	054 MK2475RFECZ	R, METAL 1% 475R
R521, 522	054 MK2475RFECZ	R, METAL 1% 475R
R523, 524	054 MK2221RFECZ	R, METAL 1% 221R
R525, 526	054 MK23K32FECZ	R, METAL 1% 3.32K
R527, 528	054 MK218K2FECZ	R, METAL 1% 18.2K
R529, 530	054 MK2010RFECZ	R, METAL 1% 10R
R531, 532	054 MK2010RFECZ	R, METAL 1% 10R
R533, 534	054 MK2100RFECZ	R, METAL 1% 100R
R535, 536	054 MK247K5FECZ	R, METAL 1% 47.5K
R609, 610	054 MK247K5FECZ	R, METAL 1% 47.5K
R751	054 MK2221KFECZ	R, METAL 1% 221K
R752	054 MK247K5FECZ	R, METAL 1% 47.5K
R753	054 MK2100KFECZ	R, METAL 1% 100K
R901, 902	054 RSS2X-100F	R, METAL 2W 100R
R903	054 RSS1X-120F	R, METAL 1W 120R
R904	054 RSS1X-180F	R, METAL 1W 180R
R905, 906	054 MK2475RFECZ	R, METAL 1% 475R
RY501, 502	063 RY24WK-J	RELAY
RY901	063 DH24D2-0	RELAY
S401	061 4TR-2783	PUSH SWITCH MM/MC
S501, 502	064 C-3440	SLIDE SWITCH
VR501	051 C-4170A22	BALANCE VOLUME
VR502	051 C-4170A20	VOLUME WITH MOTOR
	066 4TR-2672#3	4P PIN JACK
<u>X-1203-02T PCB ASSEMBLY</u>		
C603, 604	044 SRA470J125	CAP, STYROL 125V47pF
C605, 606	042 P50V103J	CAP, MYLAR 50V0.01UF
C607, 608	041 U25V100	CAP, ELEC. 25V100UF
C701	041 U16V100	CAP, ELEC. 16V100UF
C702	044 MKT18-100V104K	CAP, M. P 100V0.1UF
C703	041 U25V47	CAP, ELEC. 25V47UF
C704	041 U50V10	CAP, ELEC. 50V10UF
C705	044 MKT18-100V104K	CAP, M. P 100V0.1UF
C706, 707	043 50VYB221	CAP, CERA. 50V220pF
C708	043 50VZF103	CAP, CERA. 50V0.01UF
C912	043 500VZF103	CAP, CERA. 500V0.01UF
C913	041 U35V1000	CAP, ELEC. 35V1000UF
C914	041 U35V100	CAP, ELEC. 35V100UF

SYMBOL	PARTS NO.	DESCRIPTION
C915	041 U16V100	CAP, ELEC. 16V100UF
C916	041 U16V220	CAP, ELEC. 16V220UF
D701	034 1N4148	DIODE
D702	034 RD5.6EB	ZENER DIODE
D703	034 1N4148	DIODE
D907	034 W02	BRIDGE DIODE
D908	034 RD12EB	ZENER DIODE
HJ601	065 C-3399#3	PHONE JACK
IC601	031 NJM4556D	IC
IC701	031 IS1U60	IC
IC702	031 LC6522C-3433	IC
IC703	031 LB1641	IC
IC903	031 L7806	IC
Q701	032 2SC536K-FG	TRANSISTOR
Q702	032 2SC536K-FG	TRANSISTOR
Q703	032 2SC536K-FG	TRANSISTOR
Q704	032 2SC536K-FG	TRANSISTOR
Q901	032 2SD863-EF	TRANSISTOR
R601, 602	054 MK2100KFECZ	R, METAL 1% 100K
R603, 604	054 MK2332KFECZ	R, METAL 1% 332K
R605, 606	054 MK233K2FECZ	R, METAL 1% 33.2K
R607, 608	054 MK2150RFECZ	R, METAL 1% 150R
R701	054 MK247K5FECZ	R, METAL 1% 47.5K
R702	054 MK247K5FECZ	R, METAL 1% 47.5K
R703	054 MK247K5FECZ	R, METAL 1% 47.5K
R704	054 MK247K5FECZ	R, METAL 1% 47.5K
R705	054 MK247K5FECZ	R, METAL 1% 47.5K
R706	054 MK2100KFECZ	R, METAL 1% 100K
R707	054 MK2100RFECZ	R, METAL 1% 100R
R708	054 MK2010RFECZ	R, METAL 1% 10R
R709	054 MK2010KFECZ	R, METAL 1% 10K
R710	054 MK222K1FECZ	R, METAL 1% 22.1K
R711	054 MK2221KFECZ	R, METAL 1% 221K
R712, 713	054 MK25K62FECZ	R, METAL 1% 5.62K
R714	054 MK21K21FECZ	R, METAL 1% 1.21K
R907	054 ERQ14AJ2R2P	FUSIBLE RESISTOR
R908	054 MK2825RFECZ	R, METAL 1% 825R
R909	054 RSS1X-68F	R, METAL 1W 68R
R910	054 MK23K32FECZ	R, METAL 1% 3.32K
S701	061 4TR-2763	PUSH SWITCH POWER
S702	061 4TR-2947	PUSH SWITCH MUTING
X701	023 CSB800J500	CERAMIC FILTER
<u>X-1203-03 PCB ASSEMBLY</u>		
C917	044 DE7150F472M	SPARK KILLER
F901, 902	036 (U)F2.5A	FUSE 5MF2.5
	036 (S)T1A	FUSE 5ST1
RY902	063 G4W-1112P-VD	RELAY

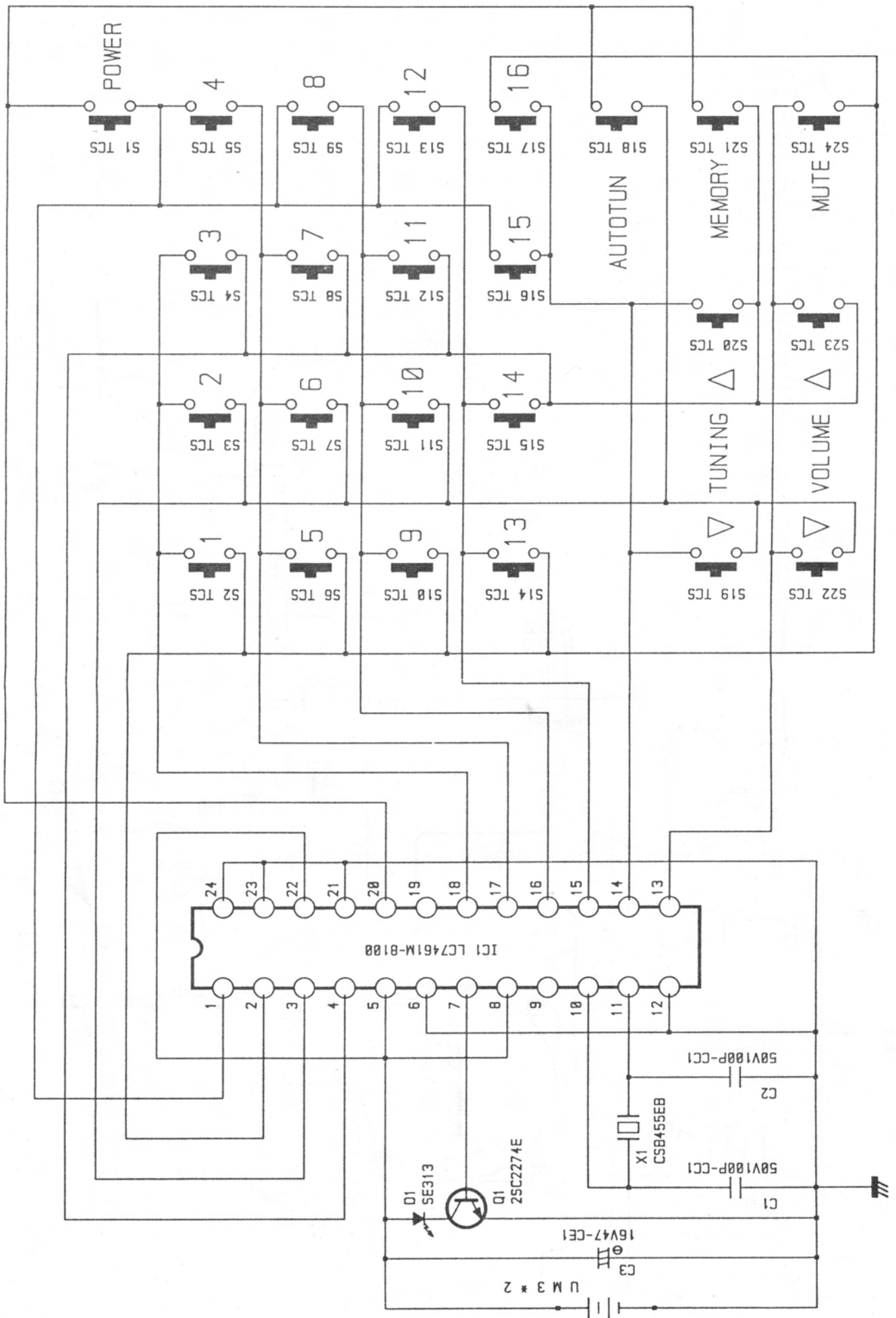
SYMBOL	PARTS NO.	DESCRIPTION
<u>OTHERS</u>		
011	TFP-689	FRONT PANEL
012	4TQT-6	KNOB PUSH MUTING
012	3TQU-5	KNOB VOLUME
012	4TQF-15	KNOB PUSH POWER
012	4TQF-18	KNOB BALANCE
012	4TQF-19	KNOB SELECTOR
014	3TTE-6#4	UPPER COVER
014	QJ3-05A00T	BOTTOM BOARD
015	TRP-625	PRINTED REAR CHASSIS
019	PR4-07A00T	KNOB PUSH MM/MC
019	4TSH-19#2	FOOT
022	T1041S03	POWER TRANSFORMER
034	SEL1124R	LED
062	C-4175A13	ROTALY FLEX (LISTENING)
062	C-4175A14	ROTALY FLEX (RECORDING)

SYMBOL	PARTS NO.	DESCRIPTION
069	C-4372A00	AC OUTLET
069	S-I6536#1	AC OUTLET
069	S2-741T-110	AC OUTLET
072	4TR-2875	RCA PIN PLUG CORD
072	C-2504#3	AC CORD for UK
072	C-3675	AC CORD for EUROPA
072	C-3763B01	AC CORD for AUSTRALIA
072	4TR-670#5	AC CORD for STD
081	QJ4-11A00	INSIDE CARTON
RR-909		REMOTE HANDSET
TX302113 PCB ASSEMBLY		
IC1	IC00001840	IC
D1	DD40001178	LED
Q1	TR30000121	TRANSISTOR
X1	LF00000312	CERAMIC FILTER
C1	CC31011435	CAP, CERA 50V100pF
C2	CC31011435	CAP, CERA 50V100pF
C3	CE04706168	CAP, ELEC. 16V47UF

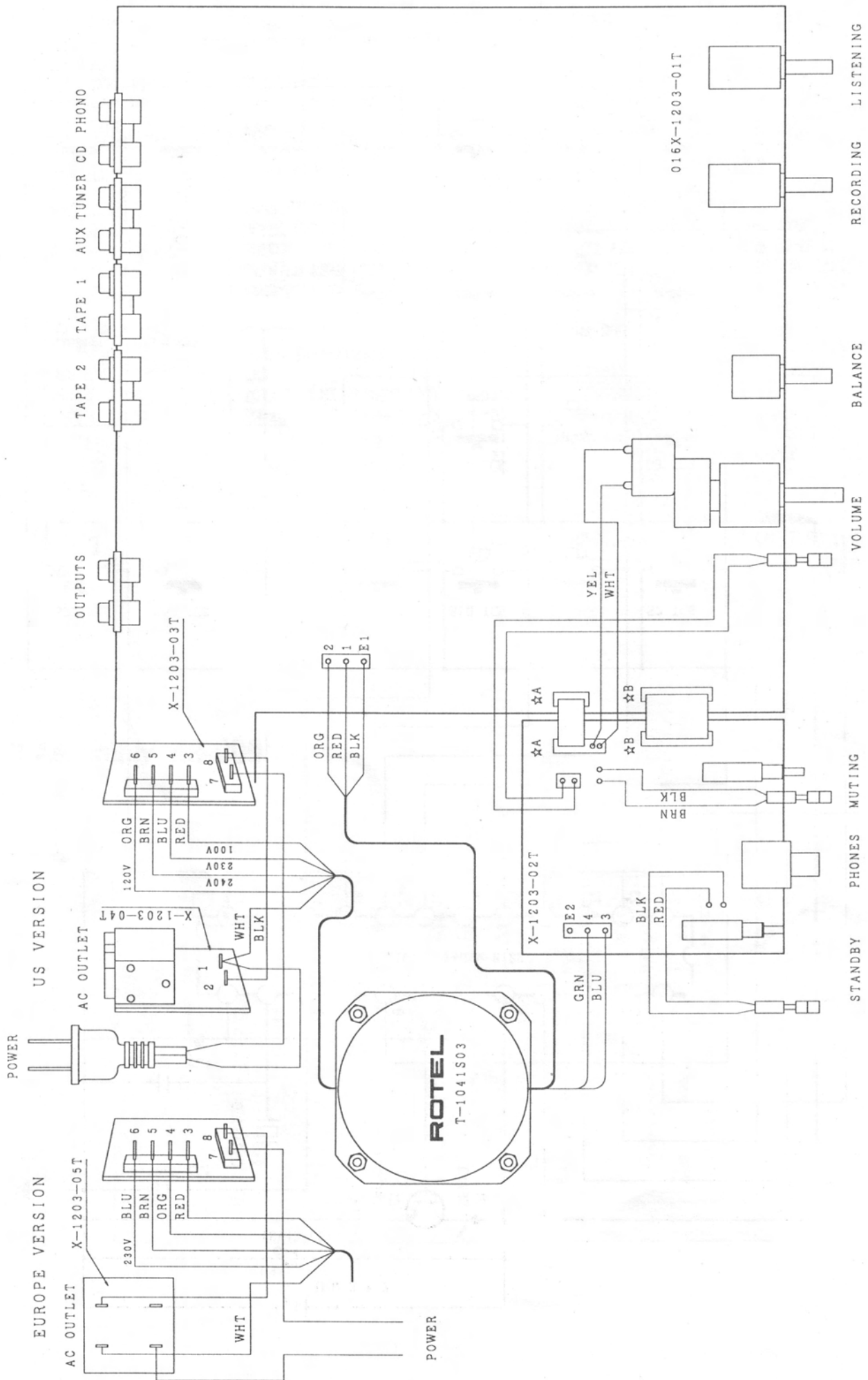
PCB Assembly RR-909



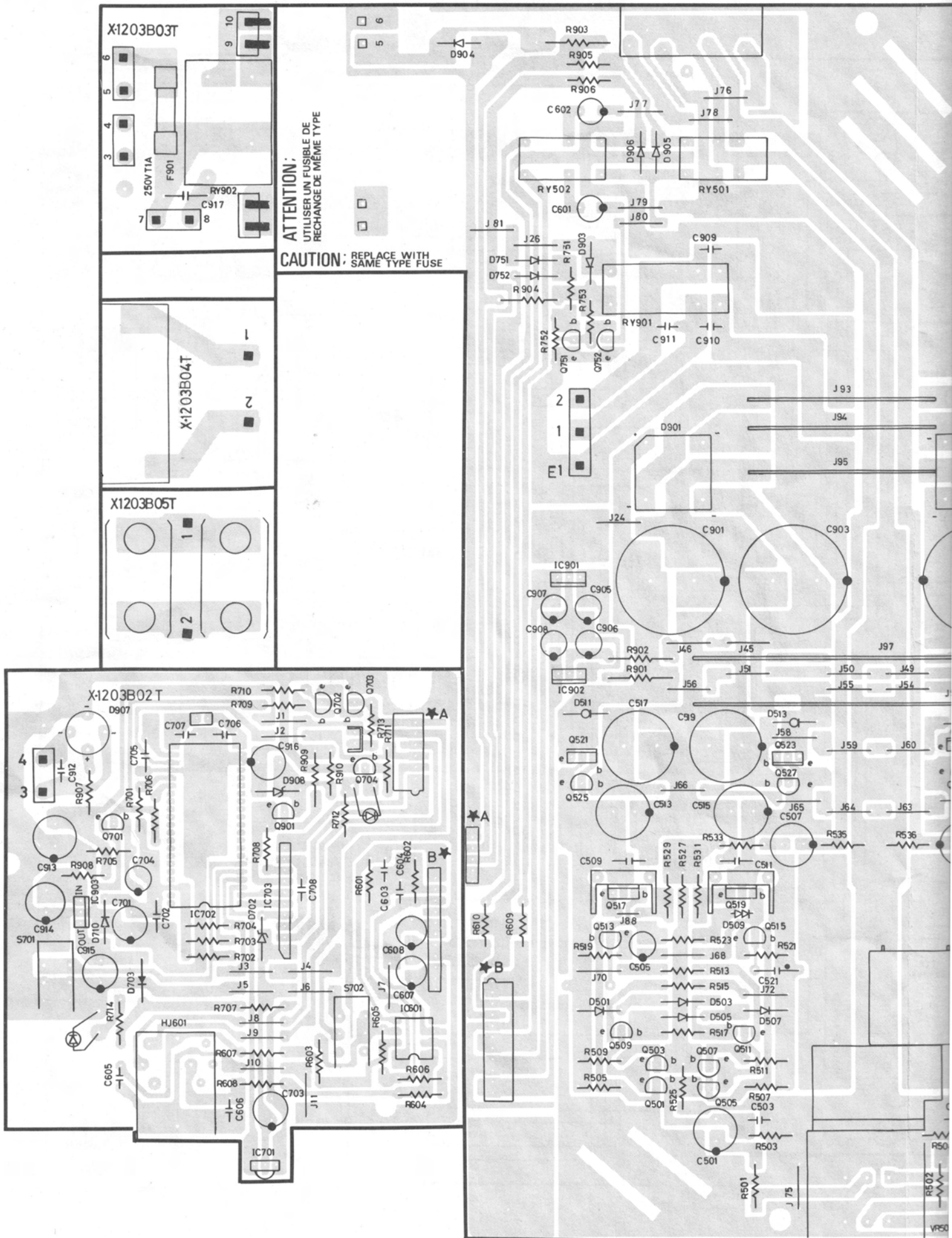
Schematic Diagram RR-909

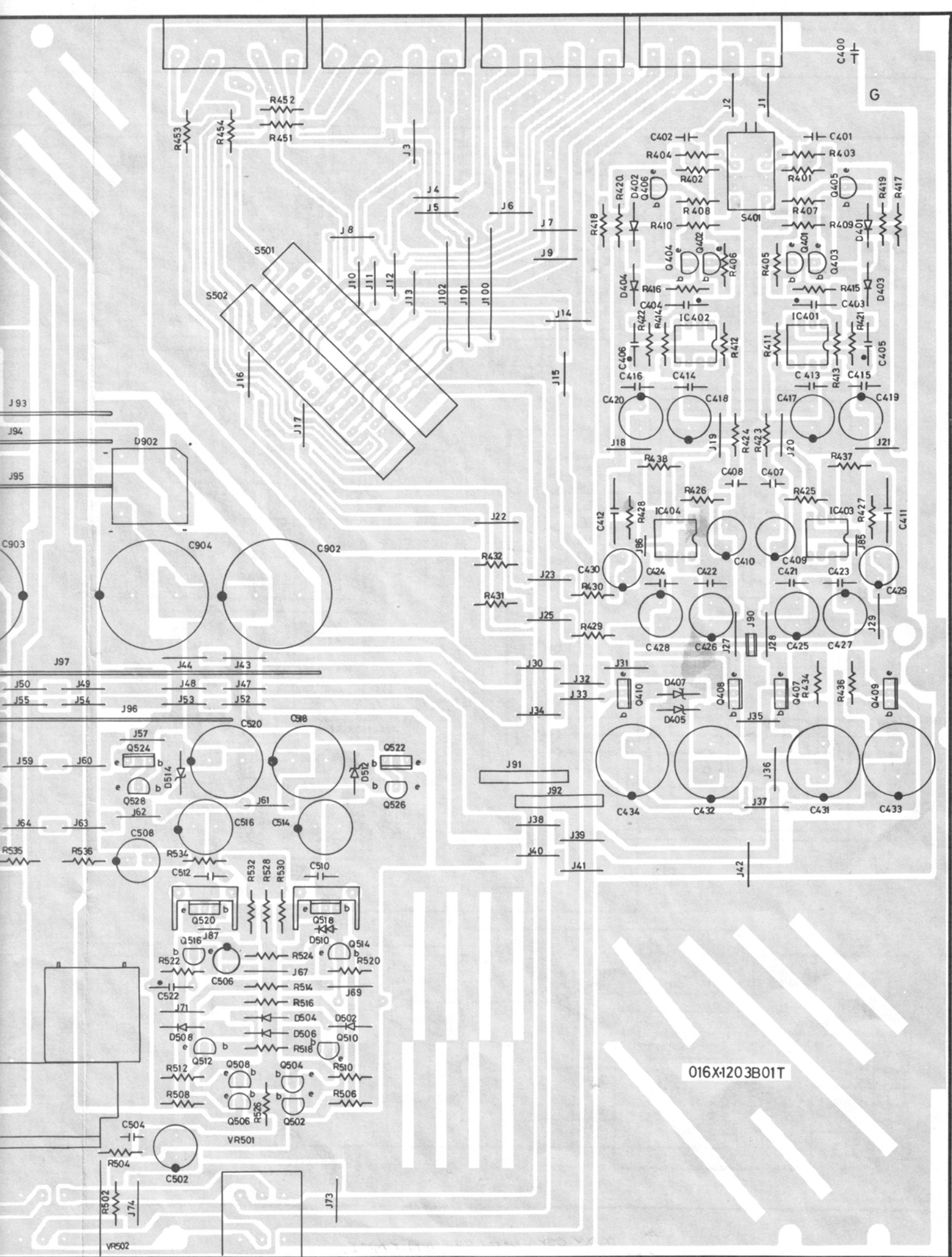


Wiring Diagram RC-990BX



PCB Assembly RC-990BX





Schematic Diagram RC-990BX

