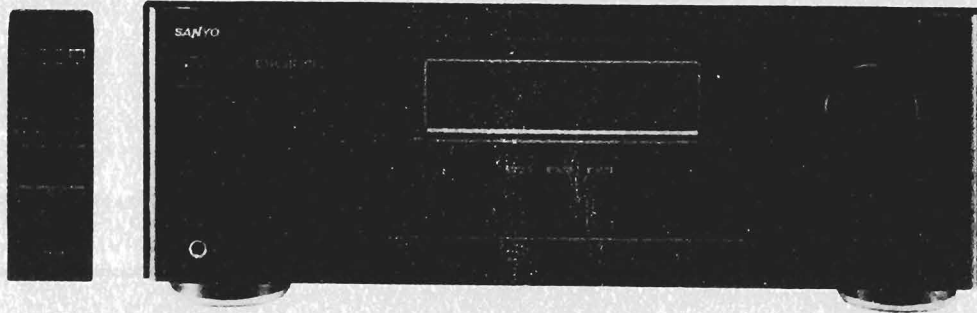


Service Manual

Stereo Integrated Amplifier

JA8500 (EUROPE)
(SPAIN)
(WEST GERMANY)
(ITALY)



Specifications

Note:

The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

Amplifier Section

Continuous output power 100 W x 2 (at 8 ohms, 0.08% distortion)

Input sensitivity and impedance PHONO:
2.5 mV/47 kohms
TAPE PLAY/DAT
PLAY/AUX/CD/
TUNER/VIDEO/
PROCESSOR IN:
150 mV/47 kohms
Output level TAPE REC/DAT
REC/PROCESSOR
OUT: 150 mV

Frequency response 10 Hz – 55 kHz
(CD, –3 dB)

Tone control response (VOLUME:
–30 dB) BASS +/- 8 dB
(at 100 Hz)
TREBLE +/- 8 dB
(at 10 kHz)

Loudness control response (VOLUME:
–30 dB) +8 dB/+4 dB
(100 Hz/10 kHz)

Signal to noise ratio 95 dB (CD)

DA Converter Section

Data format Digital audio interface format

Digital optical inputs/output DIGITAL-1 OPTICAL
IN/DAT OPTICAL IN:
–24 to –15 dB m
DAT OPTICAL OUT:
–21 to –15 dB m

Digital coaxial input DIGITAL-2 COAXIAL
IN: 0.5 Vp-p/75-ohm
Audio signal Distortion 0.005%
(1 kHz)
S/N ratio 103 dB
(1 kHz)

General Power

requirements AC: 220 V, 50 Hz
AC outlets (SWITCHED) 50 W max. x 3

Dimensions (W x D x H) Approx. 420 x 375
x 155 mm

RB 8500 REMOTE CONTROLLER

Power requirements DC: 3 V, "AA/SUM-3/
R6" battery x 2

Dimensions (W x D x H) Approx. 60 x 18
x 188 mm

PRODUCT CODE No.

129 322 00 (Europe)
129 322 01 (Spain)
129 322 02 (W. Germany)
129 322 03 (Italy)

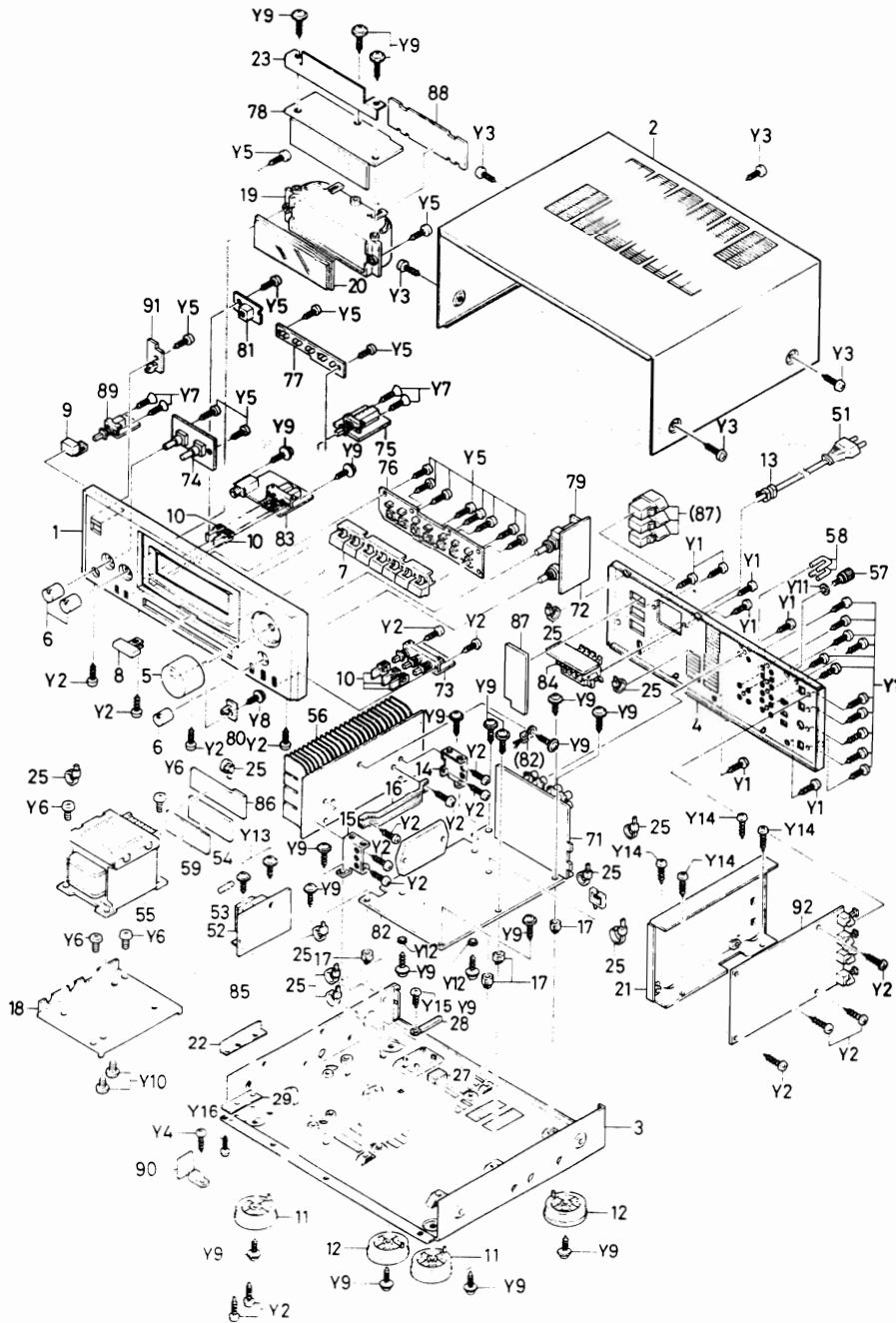
Specifications subject to change without notice.

Note:

The stand by (power) switch is mounted on the secondary side. The unit is not disconnected from AC-power, even when switched off.

REFERENCE No. WM-580234

EXPLODED VIEW



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION: Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 212 1047	INNER CARTON (SPAIN)
	614 212 1054	INNER CARTON (W.GERMANY)
	614 212 1061	INNER CARTON (ITALY)
	614 207 3643	INNER CARTON (EUROPE)
	614 207 3667	PAD, LEFT
	614 207 3674	PAD, RIGHT
	614 176 9684	INNER POLY LAMINA COVER, SET
	614 176 2746	INNER POLY COVER, ACCESSORY
	614 212 1092	INSTRUCTION MANUAL (SPAIN)
	614 212 1108	INSTRUCTION MANUAL (W.GERMANY)
	614 212 1115	INSTRUCTION MANUAL (ITALY)
	614 207 3681	INSTRUCTION MANUAL (EUROPE)
	614 186 2682	NOTICE (W.GERMANY)
	149 508 00	REMOTE CONTROLLER, RBB500/SS
	614 036 7270	SOCKET, 4P, 700MM, TUNER (NO ITALY)
	614 036 7324	SOCKET, 6P, 700MM, DECK (NO ITALY)
	614 212 2099	SOCKET, 6P, 1000MM, CD
	614 106 4079	STAND, HIGHT CHANGE (ITALY NO-USED)

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 208 3147	ASSY, PANEL, FRONT
2	614 213 4115	CABINET ASSY
3	614 207 3353	CABINET, BOTTOM
4	614 212 1184	BACK PANEL (SPAIN)
	614 212 1191	BACK PANEL (W.GERMANY)
	614 212 1207	BACK PANEL (ITALY)
	614 207 3797	BACK PANEL (EUROPE)
5	614 207 3438	KNOB, ROTARY, VOLUME
6	614 207 3421	KNOB, ROTARY, BASS-TREBLE-BALANCE
7	614 207 3476	BUTTON, FUNCTION
8	614 207 3469	BUTTON, DIGITAL DIRECT
9	614 207 3445	BUTTON, STAND-BY
10	614 207 3452	BUTTON, SPEAKER A/B-LOUDNESS-MODE-MUTING
11	614 210 3968	ASSY, FOOT, FRONT
12	614 210 3975	ASSY, FOOT, BACK
13	614 129 1901	FIXER, AC CORD
14	614 114 5211	BACKET, HEAT SINK, RIGHT
15	614 114 5273	BACKET, HEAT SINK, LEFT
16	614 207 3513	BACKET-E, IC FIXING
17	614 107 2791	BACKET, PCB STAND
18	614 116 1464	REINFORCEMENT, P.T
19	614 207 3599	REFLECTOR, LCD
20	614 207 3582	FILTER, LCD
21	614 207 3568	SHIELD, DAC
22	614 213 8694	REINFORCEMENT, BOTTOM MTG.
23	614 208 3208	SHIELD, LCD
24	614 213 4054	INSULATOR, SP TERMINAL
25	614 129 3509	FIXER, LEAD RETAINER
26	614 213 7796	SPACER, FRONT
27	614 213 8427	CUSHION, RUBBER
28	614 129 9181	LUG, LEAD RETAINER
29	614 213 8717	SHEET, FIBER, BOTTOM MTG.

FIXING PARTS

Ref. No.	Part No.	Description
Y1	412 004 2902	SPECIAL SCREW 3X8
Y2	411 021 6405	SCR S-TPG BIN 3X8
Y3	411 021 6603	SCR S-TPG BIN 3X8
Y4	411 027 3101	SCR S-TPG BIN 3X8
Y5	411 021 3503	SCR S-TPG BIN 3X10
Y6	411 001 4209	SCR S-TPG BIN 4X8
Y7	411 022 4608	SCR S-TPG FLT 3X8
Y8	411 024 3807	SCR S-TPG PAN + FLG 2X8
Y9	411 020 9902	SCR S-TPG BRZ + FLG 3X8
Y10	411 021 9604	SCR S-TPG BIM 4X8
Y11	411 105 9704	WASHER Z 3X10X1
Y12	411 008 0402	WASHER OUT TW 3
Y13	411 020 9803	SCR S-TPG BRZ + FLG 3X6
Y14	411 021 5705	SCR S-TPG BIN 3X6
Y15	411 021 5101	SCR S-TPG BIN 3X4
Y16	411 023 0203	SCR S-TPG PAN 2.3X6

ELECTRICAL PARTS

Ref. No.	Part No.	Description
51	Δ 614 023 3100	POWER CORD
or	Δ 614 203 0493	POWER CORD
52	Δ 614 208 4595	POWER TRANSFORMER, SUB
53	Δ 423 006 3002	FUSE 250V 2.5A, F901
54	Δ 614 209 2033	PCB, P.T PRIMARY
55	Δ 614 208 4588	POWER TRANSFORMER, MAIN
56	614 208 4007	HEAT SINK
57	614 211 0287	TERMINAL, PHONO GND
58	614 017 4243	PLUG, SHORT BAR
59	Δ 614 211 8160	PCB, INSULATOR
60	Δ 614 209 1999	PCB, AC OUTLET
61	Δ 614 035 4645	SOCKET, 6P, AC OUTLET
62	614 051 9785	LUG, EARTH

PRE-AMPLIFIER P.C.BOARD ASSY

Ref. No.	Part No.	Description
71	614 209 1173	ASSY, PCB, PRE-AMP & PIN <RCA> (EUROPE-SPAIN)
	614 212 8480	ASSY, PCB, PRE-AMP & PIN <RCA> (W.GERMANY-ITALY)
	614 208 4502	JACK, 4P (RCA), PHONO-TAPE-REC
	614 208 4533	JACK, 6P (RCA), TAPE-PLAY-DAT-REC/PLAY
	614 208 4519	JACK, 4P (RCA), AUX-CD
	614 208 4519	JACK, 4P (RCA), TUNER-VIDEO
	614 208 4519	JACK, 4P (RCA)
	614 208 4656	PROCESSOR-OUT/IN
	614 016 8280	SWITCH, SLIDE, INPUT SELECTOR
	614 016 8303	PLUG, 9P, POWER-AMP
	614 016 8303	PLUG, 11P, POWER-AMP
IC920	409 109 5105	IC LC7821
IC922	409 018 4503	IC LA6458DS
IC923	409 018 4503	IC LA6458DS
IC925	409 018 4503	IC LA6458DS
Q702	405 022 5604	TR 2SD1468-S

PARTS LIST

Ref. No.	Part No.	Description
Q802	405 022 5604	TR 2SD1468-S
D960	407 053 6704	ZENER DIODE MTZ5.6B
C725	403 086 2607	NP-ELECT 1U M 50V
C825	403 086 2607	NP-ELECT 1U M 50V

VOLUME-BALANCE VR P.C.BOARD ASSY

Ref. No.	Part No.	Description	
72	614 209 1180	ASSY, PCB, MAIN-VR	
	614 208 4618	VR, ROTARY, VOLUME	
	614 208 4649	VR, ROTARY, BALANCE	
	614 035 4911	SOCKET, 2P, MOTOR	
	614 020 1222	SOCKET, 3P, POWER-AMP	
	614 035 9275	SOCKET, 3P, W/LEAD, POWER-AMP	
	614 035 5956	SOCKET, 4P, DAC-MUTING LED	
	614 020 1260	SOCKET, 7P, DIRECT SW	
	614 035 4966	SOCKET, 7P, POWER-AMP	
	IC924	409 114 4803	IC LB1541
	Q703	405 022 5604	TR 2SD1468-S
	Q803	405 022 5604	TR 2SD1468-S
D900	407 050 3706	ZENER DIODE GZA4.7Y	
D961	407 007 9904	DIODE GMA01	
C962	403 057 3800	POLYESTER 0.1U M 50V	
C986	403 085 5203	NP-ELECT 22U M 16V	

MUTING-LOUDNESS-MODE SWITCH P.C.B ASSY

Ref. No.	Part No.	Description	
73	614 209 1197	ASSY, PCB, 3-SW	
	614 208 4670	SWITCH, PUSH, MUTING-LOUDNESS-MODE	
	614 035 4911	SOCKET, 2P, POWER-AMP	
	614 020 1222	SOCKET, 3P, POWER-AMP	
	614 035 9602	SOCKET, 3P, W/LEAD, POWER-AMP	
	614 020 1260	SOCKET, 7P, TONE VR-DIRECT SW	
	C730	403 063 0008	POLYESTER 6800P K 50V
	C731	403 060 8205	POLYESTER 0.033U K 50V
	C830	403 063 0008	POLYESTER 6800P K 50V
	C831	403 060 8205	POLYESTER 0.033U K 50V

BASS-TREBLE VR P.C.BOARD ASSY

Ref. No.	Part No.	Description
74	614 209 1203	ASSY, PCB, TONE-VR
	614 208 4625	VR, ROTARY, BASS
	614 208 4632	VR, ROTARY, TREBLE
	614 020 1260	SOCKET, 7P, 3-SW
	C740	403 058 3205
C741	403 002 3305	MT-COMPO 0.1U J 50V
C742	403 058 3205	POLYESTER 0.015U K 50V
C743	403 062 0306	POLYESTER 0.047U K 50V
C840	403 058 3205	POLYESTER 0.015U K 50V
C841	403 002 3305	MT-COMPO 0.1U J 50V
C842	403 058 3205	POLYESTER 0.015U K 50V
C843	403 062 0306	POLYESTER 0.047U K 50V

DIGITAL DIRECT SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
75	614 209 1210	ASSY, PCB, DIRECT SW
	614 211 0317	SWITCH, PUSH, DIGITAL DIRECT
	614 035 4911	SOCKET, 2P, MUTING LED
	614 017 4267	PLUG, 3P, POWER-AMP
	614 020 1260	SOCKET, 7P, MAIN-VR-3-SW

FUNCTION SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description	
76	614 209 1227	ASSY, PCB, FUNCTION SW	
	614 018 9056	SWITCH, FUNCTION (7 USED)	
	614 119 9399	SPACER, LED STAND (7 USED)	
	614 035 4959	SOCKET, 6P, POWER-AMP	
	614 035 4980	SOCKET, 9P, POWER-AMP	
	614 036 3852	SOCKET, 9P, W/LEAD, POWER-AMP	
	Q961	405 004 5103	TR 2SA608-G-SPA
	Q962	405 004 5103	TR 2SA608-G-SPA
	Q963	405 004 5103	TR 2SA608-G-SPA
	Q964	405 004 5103	TR 2SA608-G-SPA
	Q965	405 004 5103	TR 2SA608-G-SPA
	Q966	405 004 5103	TR 2SA608-G-SPA
Q967	405 004 5103	TR 2SA608-G-SPA	
D971	407 038 4404	LED SLP-2658-50-B, PHONO	
D972	407 038 4404	LED SLP-2658-50-B, VIDEO	
D973	407 038 4404	LED SLP-2658-50-B, TUNER	
D974	407 038 4404	LED SLP-2658-50-B, TAPE	
D975	407 038 4404	LED SLP-2658-50-B, AUX	
D976	407 038 4404	LED SLP-2658-50-B, CD	
D977	407 038 4404	LED SLP-2658-50-B, DAT	

MUTING LED P.C.BOARD ASSY

Ref. No.	Part No.	Description	
77	614 209 1234	ASSY, PCB, MUTING LED	
	614 035 4911	SOCKET, 2P, DIRECT SW	
	614 035 4928	SOCKET, 3P, POWER-AMP	
	614 035 4935	SOCKET, 4P, MAIN-VR	
	D920	408 010 0209	LED SLR-56YC70F130, 32.0KHZ
	D921	408 010 0209	LED SLR-56YC70F130, 32.0KHZ
	D922	408 010 0209	LED SLR-56YC70F130, 44.1KHZ
	D923	408 010 0209	LED SLR-56YC70F130, 44.1KHZ
	D924	408 010 0209	LED SLR-56YC70F130, 48.0KHZ
	D925	408 010 0209	LED SLR-56YC70F130, 48.0KHZ
	D926	408 010 0209	LED SLR-56YC70F130, DIGITAL DIRECT
	D927	408 010 0209	LED SLR-56YC70F130, DIGITAL DIRECT
D928	408 008 9009	LED SLR-56YC70F130-M, MUTING	
or	408 008 9108	LED SLR-56YC70F130-N, MUTING	
or	408 008 9207	LED SLR-56YC70F130-P, MUTING	

LIQUID CRYSTAL DISPLAY P.C.BOARD ASSY

Ref. No.	Part No.	Description	
78	614 209 1265	ASSY, PCB, LCD	
	614 209 4655	LCD	
	614 035 4959	SOCKET, 6P, POWER-AMP	
	IC970	409 088 6209	IC LC7582
	D970	407 053 6704	ZENER DIODE MTZ5.6B

MOTOR P.C.BOARD ASSY

Ref. No.	Part No.	Description	
79	614 209 1272	ASSY, PCB, VOLUME MOTOR	
	614 035 4911	SOCKET, 2P, MAIN-VR	
	614 027 6206	CHOKE COIL	
	C963	403 057 3503	POLYESTER 0.1U K 50V

VOLUME LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
80	614 209 1289	ASSY, PCB, VOLUME LED
	614 119 9399	SPACER, LED STAND
	407 027 7904	LED SLP-1548-50, VOLUME

PARTS LIST

INFRARED RAYS P.C.BOARD ASSY

Ref. No.	Part No.	Description
81	614 209 1296	ASSY, PCB, IR
	614 203 1193	OPTO CONNECTOR, REMOCON RECEIVE
	614 035 4928	SOCKET, 3P, POWER-AMP

POWER AMPLIFIER P.C.BOARD ASSY

Ref. No.	Part No.	Description
82	614 213 9813	ASSY, PCB, POWER-AMP (W.GERMANY-ITALY)
	614 209 1302	ASSY, PCB, POWER-AMP (EUROPE-SPAIN)
	614 016 8235	PLUG, 4P, TUNER
	614 016 8242	PLUG, 5P, DAT-DECK
	614 016 8259	PLUG, 6P, CD
	614 035 5932	SOCKET, 2P (V), 3-SW
	614 023 6548	SOCKET, 2P, SUB-P.T-REGULATOR
	614 035 5949	SOCKET, 3P (V), MUTING LED-DAC-IR
	614 023 1222	SOCKET, 3P, DIRECT SW
	614 035 9602	SOCKET, 3P, W/LEAD, DIRECT SW
	614 035 4935	SOCKET, 4P, STAND-BY SW
	614 020 1239	SOCKET, 4P, SP SW
	614 020 1246	SOCKET, 5P, P.T. SECONDARY
	614 035 5970	SOCKET, 6P (V), LCD
	614 035 5987	SOCKET, 7P, MAIN-VR
	614 035 8834	SOCKET, 9P, PRE-AMP
	614 035 8858	SOCKET, 11P, PRE-AMP
	614 017 4267	PLUG, 3P, DAC-3-SW-MAIN-VR
	614 017 4274	PLUG, 4P, DAC
	614 017 4328	PLUG, 9P, FUNCTION LED
	614 121 6829	HEAT SINK, FOR IC902
	614 121 6829	HEAT SINK, FOR IC903
	614 002 5606	POSISTOR 110° C
	614 012 8482	RELAY, 24V, SPEAKER
614 012 8758	RELAY, 24V, SPEAKER	
614 211 7613	RELAY, 24V, SPEAKER	
614 034 8712	VHF COIL	
614 034 8712	VHF COIL	
614 027 6206	CHOCK COIL (W.GERMANY-ITALY)	
614 035 1613	CERAMIC RESONATOR, 4MHZ	
614 209 3689	RESISTOR, 10K X8	
IC901	IC STK4234MK5	
IC902	IC LM7815CT	
or	IC NJM7815A	
IC903	IC NJM7915A	
IC906	IC L7812	
IC930	IC HD614042SJ83	
IC931	IC BA6138	
IC932	IC HA17939	
Q701	TR 2SD1468-S	
Q801	TR 2SD1468-S	
Q901	TR 2SA608-G-NP	
Q910	TR 2SD400-F-MP	
Q911	TR 2SC3331-T	
Q912	TR 2SC3331-T	
Q913	TR 2SC3331-T	
Q914	TR 2SC3331-T	
Q915	TR 2SC3331-T	
Q917	TR 2SC3331-T	
Q918	TR 2SC3331-T	
Q919	TR 2SC3331-T	
Q924	TR 2SC3331-T	
Q925	TR 2SC3331-T	
D901	DIODE DBA60C-K15	
D902	DIODE GP150-L	
D903	DIODE GP150-L	
D904	DIODE GP150-L	
D905	DIODE GP150-L	
D915	DIODE DS442X	
D917	DIODE GMA01	

Ref. No.	Part No.	Description
D918	407 005 4505	DIODE DS442X
D919	407 005 4505	DIODE DS442X
D930	407 053 7206	ZENER DIODE MTZ6.2C
D932	407 053 6704	ZENER DIODE MTZ5.6B
D933	407 007 9904	DIODE GMA01
D934	407 007 9904	DIODE GMA01
D935	407 007 9904	DIODE GMA01
D936	407 005 4505	DIODE DS442X
D937	407 049 9009	ZENER DIODE GZA2.4Z
D940	407 007 9904	DIODE GMA01
D941	407 005 4505	DIODE DS442X
D942	407 005 4505	DIODE DS442X
D943	407 007 9904	DIODE GMA01
D963	407 049 9009	ZENER DIODE GZA2.4Z
C705	403 062 1105	POLYESTER 0.047U M 50V
C706	403 057 3800	POLYESTER 0.1U M 50V
C707	403 057 3800	POLYESTER 0.1U M 50V
C805	403 062 1105	POLYESTER 0.047U M 50V
C806	403 057 3800	POLYESTER 0.1U M 50V
C807	403 057 3800	POLYESTER 0.1U M 50V
C903	404 033 2701	ELECT 6800U M 80V
C904	404 033 2701	ELECT 6800U M 80V
C905	403 052 9203	ELECT 1000U M 35V
C906	403 052 9203	ELECT 1000U M 35V
C909	404 029 3804	POLYPRO 0.022U M 200V
C910	404 029 3804	POLYPRO 0.022U M 200V
C930	404 001 7202	ELECT 100U M 100V
C931	404 001 7202	ELECT 100U M 100V
C964	403 057 3800	POLYESTER 0.1U M 50V
C978	403 039 0902	ELECT 3300U M 6.3V
R701	401 041 1702	MT-FILM 1K FD 1/4W
R703	401 049 7003	MT-FILM 560 FD 1/4W
R704	401 049 8109	MT-FILM 56K FD 1/4W
R705	401 058 1108	OXIDE-MT 10 JA 1W
R706	401 062 3907	OXIDE-MT 5.6 JA 1W
R801	401 041 1702	MT-FILM 1K FD 1/4W
R803	401 049 7003	MT-FILM 560 FD 1/4W
R804	401 049 8109	MT-FILM 56K FD 1/4W
R805	401 058 1108	OXIDE-MT 10 JA 1W
R806	401 062 3907	OXIDE-MT 5.6 JA 1W
R912	402 023 1703	FUSIBLE RES 100 J-1/4W
R913	402 023 1703	FUSIBLE RES 100 J-1/4W
R940	402 023 1703	FUSIBLE RES 100 J-1/4W

SPEAKER SWITCH & PHONES SOCKET P.C.B ASSY

Ref. No.	Part No.	Description
83	614 212 8503	ASSY, PCB SP SW (W.GERMANY-ITALY)
	614 209 1319	ASSY, PCB, SP SW (EUROPE-SPAIN)
R707	614 208 4687	SWITCH, PUSH, SPEAKER A/B
	614 212 6905	SOCKET, PHONES
	614 020 1239	SOCKET, 4P, POWER-AMP
	614 020 1253	SOCKET, 6P, SP TERMINAL
	401 067 5302	OXIDE-MT 330 JA 2W
R807	401 067 5302	OXIDE-MT 330 JA 2W

PARTS LIST

SPEAKER TERMINAL P.C.BOARD ASSY

Ref. No.	Part No.	Description
84	614 212 8527	ASSY, PCB SP TERMINAL (W.GERMANY-ITALY)
	614 209 1326	ASSY, PCB, SP TERMINAL (EUROPE-SPAIN)
	614 017 6964	TERMINAL BOARD, 1P, WRAPPER PIN
	614 017 8371	TERMINAL BOARD, 8P, SPEAKER
	614 020 1253	SOCKET, 6P, SP-SW
C50	403 057 1202	POLYESTER 0.01U M 50V (W.GERMANY)
C51	403 057 1202	POLYESTER 0.01U M 50V (W.GERMANY)
C54	403 057 1202	POLYESTER 0.01U M 50V (W.GERMANY)
C55	403 057 1202	POLYESTER 0.01U M 50V (W.GERMANY)
C52.53	403 062 5905	POLYESTER 0.0056U M 50V (W.GERMANY)

SUB P.T P.C.BOARD ASSY

Ref. No.	Part No.	Description
85	△ 614 209 1333	ASSY, PCB, SUB P.T
	△ 614 123 2089	TERMINAL, AC-IN
	△ 614 123 0023	BRACKET FUSE, FOR F901
	△ 614 012 8857	RELAY, POWER, 12V
or	△ 614 211 7606	RELAY, POWER, 12V
	614 035 4911	SOCKET, 2P, POWER-AMP
	614 035 4928	SOCKET, 3P, STAND-BY SW
D910	△ 407 004 9105	DIODE DSF10C
D911	△ 407 004 9105	DIODE DSF10C
D912	△ 407 004 9105	DIODE DSF10C
D913	△ 407 004 9105	DIODE DSF10C
D916	407 005 4505	DIODE DS442X
C901	△ 404 000 1607	CERAMIC 0.01U F 400V
or	△ 404 033 3302	CERAMIC 0.01U M -
or	△ 404 033 3401	CERAMIC 0.01U Z -
R908	401 059 6706	OXIDE-MT 180 JA 1W

P.T SECONDARY P.C.BOARD ASSY

Ref. No.	Part No.	Description
86	△ 614 209 1340	ASSY, PCB, P.T SECONDARY
	614 017 4250	PLUG, 2P, DAC
	614 020 124E	SOCKET, 5P, POWER-AMP
C913	403 057 1202	POLYESTER 0.01U M 50V
R901	△ 401 057 4100	OXIDE-MT 0.33 JA 1W
R902	△ 401 057 4100	OXIDE-MT 0.33 JA 1W
R905	△ 402 004 3801	FUSIBLE RES 1 J- 1/4W

LCD LAMP P.C.BOARD ASSY

Ref. No.	Part No.	Description
88	614 209 1364	ASSY, PCB, LCD LAMP
	614 045 9647	LAMP, 12V 100MM
	614 020 654E	SOCKET, 2P, REGULATOR
R900	401 061 070E	OXIDE-MT 3.9 JA 1W

STAND-BY SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
89	614 209 1377	ASSY, PCB, STAND-BY SW
	614 019 066E	SWITCH, STAND-BY
	614 035 4911	SOCKET, 2P, STAND-BY LED
	614 035 492E	SOCKET, 3P, SUB-P.T
	614 035 493E	SOCKET, 4P, POWER-AMP
Q980	405 018 0101	TR 25C3331-T

REGULATOR P.C.BOARD ASSY

Ref. No.	Part No.	Description
90	△ 614 209 1388	ASSY, PCB, REGULATOR
	614 020 6548	SOCKET, 2P, LCD LAMP
IC907	△ 409 057 8203	IC UPC7912H

STAND-BY LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
91	614 212 1344	ASSY, PCB, STAND-BY LED
	614 119 9399	SPACER, LED STAND
	614 035 4911	SOCKET, 2P, STAND-BY SW
D990	407 037 3101	LED SLP-165B-50-B, STAND-BY

DIGITAL ANALOGUE CONVERTER P.C.B ASSY

Ref. No.	Part No.	Description
92	614 211 7361	ASSY, PCB, DAC
	614 020 6548	SOCKET, 2P, P.T SECONDARY
	614 213 0261	SOCKET, 2P, W/LEAD, P.T SECONDARY
	614 035 4928	SOCKET, 3P, POWER-AMP
	614 020 1222	SOCKET, 3P, POWER-AMP
	614 035 9602	SOCKET, 3P, W/LEAD, POWER-AMP
	614 035 4935	SOCKET, 4P, MAIN-VR
	614 020 6562	SOCKET, 4P, POWER-AMP
	614 036 0233	SOCKET, 4P, W/LEAD, POWER-AMP
	614 116 5349	SHIELD PLATE, PCB, PARTS SIDE
VC360	407 119 7706	VARIABLE CAP. SVC203SP-A
L360	614 210 9816	COIL, FERITE
L650	614 028 4096	FILTER, 4.7UH
L651	614 028 4171	FILTER, 22UH
L670	614 028 4171	FILTER, 22UH
L671	614 028 4171	FILTER, 22UH
L678	614 028 4171	FILTER, 22UH
L680	614 028 4171	FILTER, 22UH
L681	614 028 4171	FILTER, 22UH
L685	614 028 4218	FILTER, 47UH
L686	614 028 4218	FILTER, 47UH
CN300	614 211 4049	OPTO CONNECTOR, DIGITAL-1, OPTICAL-IN
CN301	614 211 4049	OPTO CONNECTOR, DAT, OPTICAL-IN
CN302	614 211 4056	OPTO CONNECTOR, DAT, OPTICAL-OUT
CN303	614 209 5942	SOCKET, DIGITAL-2, COAXIAL IN
IC300	409 022 0805	IC LC74HC04
IC301	409 022 1000	IC LC74HC02
IC303	409 183 4605	IC PD0037
IC304	409 186 2202	IC MN6471M
IC500	409 036 7005	IC M5218P
IC501	409 036 7005	IC M5218P
IC502	409 036 7005	IC M5218P
or	409 036 7005	IC M5218P
IC503	409 036 7005	IC M5218P
or	409 036 7005	IC M5218P
IC504	409 036 7005	IC M5218P
or	409 036 7005	IC M5218P
IC505	409 018 4305	IC LA6458D
IC550	409 036 7005	IC M5218P
IC551	409 036 7005	IC M5218P
IC552	409 036 7005	IC M5218P
IC553	409 036 7005	IC M5218P
IC554	409 036 7005	IC M5218P
Q320	405 003 5302	TR 2SA1317-T
Q335	405 017 9600	TR 2SC3330-T
Q336	405 017 9600	TR 2SC3330-T
Q340	405 003 5302	TR 2SA1317-T
Q341	405 017 9600	TR 2SC3330-T
Q342	405 017 9600	TR 2SC3330-T
Q360	405 017 9600	TR 2SC3330-T
Q361	405 003 5302	TR 2SA1317-T

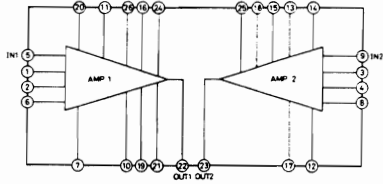
PARTS LIST

Ref. No.	Part No.	Description
Q362	405 075 6009	TR 25C930-E-CONV
Q363	405 026 8700	TR 25K212-F-SPA
Q364	405 003 5302	TR 2SA1317-T
Q385	405 017 9600	TR 25C3330-T
Q386	405 017 9600	TR 25C3330-T
Q390	405 018 0101	TR 25C3331-T
Q500	405 021 0600	TR 25D1012-G-SPA
Q501	405 017 9600	TR 25C3330-T
Q550	405 021 0600	TR 25D1012-G-SPA
Q551	405 017 9600	TR 25C3330-T
Q600	405 018 0101	TR 25C3331-T
Q610	405 003 5708	TR 2SA1318-T
Q630	405 018 0101	TR 25C3331-T
Q635	405 003 5708	TR 2SA1318-T
Q636	405 003 5708	TR 2SA1318-T
Q650	405 043 3306	TR 2SD1681-S
Q651	405 018 0101	TR 25C3331-T
Q690	405 018 0101	TR 25C3331-T
D355	407 007 9904	DIODE GMA01
D356	407 007 9904	DIODE GMA01
D357	407 007 9904	DIODE GMA01
D360	407 008 7602	DIODE MA856
D381	407 007 9904	DIODE GMA01
D390	407 007 9904	DIODE GMA01
D391	407 007 9904	DIODE GMA01
D392	407 007 9904	DIODE GMA01
D393	407 007 9904	DIODE GMA01
D600	407 051 6706	ZENER DIODE GZS5.1Y-BT
D610	407 051 6706	ZENER DIODE GZS5.1Y-BT
D650	407 004 9105	DIODE DSF10C
D651	407 004 9105	DIODE DSF10C
D652	407 004 9105	DIODE DSF10C
D653	407 004 9105	DIODE DSF10C
D654	407 051 7208	ZENER DIODE GZS6.2Y-BT
C503	403 060 5204	POLYESTER 3300P J 50V
C504	403 060 5204	POLYESTER 3300P J 50V
C505	403 060 5204	POLYESTER 3300P J 50V
C506	403 060 5204	POLYESTER 3300P J 50V
C507	403 060 5204	POLYESTER 3300P J 50V
C508	403 085 4008	NP-ELECT 10U M 16V
C509	403 061 6101	POLYESTER 470P J 50V
C510	403 060 7406	POLYESTER 0.033U J 50V
C553	403 060 5204	POLYESTER 3300P J 50V
C554	403 060 5204	POLYESTER 3300P J 50V
C555	403 060 5204	POLYESTER 3300P J 50V
C556	403 060 5204	POLYESTER 3300P J 50V
C557	403 060 5204	POLYESTER 3300P J 50V
C558	403 085 4008	NP-ELECT 10U M 16V
C559	403 061 6101	POLYESTER 470P J 50V
C560	403 060 7406	POLYESTER 0.033U J 50V
R500	401 049 3203	MT-FILM 51K FD 1/4W
R501	401 049 3203	MT-FILM 51K FD 1/4W
R502	401 051 5400	MT-FILM 8.2K FD 1/4W
R503	401 051 5400	MT-FILM 8.2K FD 1/4W
R504	401 041 3102	MR-FILM 10K FD 1/4W
R505	401 041 3102	MR-FILM 10K FD 1/4W
R506	401 045 9407	MT-FILM 2.7K FD 1/4W
R507	401 042 1008	MT-FILM 1.2K FD 1/4W
R508	401 042 1008	MT-FILM 1.2K FD 1/4W
R509	401 046 3909	MT-FILM 3K FD 1/4W
R510	401 046 3909	MT-FILM 3K FD 1/4W
R511	401 042 1008	MT-FILM 1.2K FD 1/4W
R512	401 042 1008	MT-FILM 1.2K FD 1/4W
R513	401 044 9705	MT-FILM 2.2K FD 1/4W
R514	401 052 0602	MT-FILM 910 FD 1/4W
R518	401 041 3102	MR-FILM 10K FD 1/4W
R519	401 048 7004	MT-FILM 4.7K FD 1/4W
R520	401 042 1008	MT-FILM 1.2K FD 1/4W
R521	401 047 7302	MT-FILM 390 FD 1/4W
R523	401 041 3102	MR-FILM 10K FD 1/4W
R550	401 049 3203	MT-FILM 51K FD 1/4W

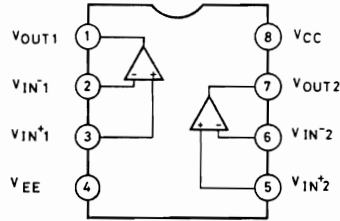
Ref. No.	Part No.	Description
R551	401 049 3203	MT-FILM 51K FD 1/4W
R552	401 051 5400	MT-FILM 8.2K FD 1/4W
R553	401 051 5400	MT-FILM 8.2K FD 1/4W
R554	401 041 3102	MR-FILM 10K FD 1/4W
R555	401 041 3102	MR-FILM 10K FD 1/4W
R556	401 045 9407	MT-FILM 2.7K FD 1/4W
R557	401 042 1008	MT-FILM 1.2K FD 1/4W
R558	401 042 1008	MT-FILM 1.2K FD 1/4W
R559	401 046 3909	MT-FILM 3K FD 1/4W
R560	401 046 3909	MT-FILM 3K FD 1/4W
R561	401 042 1008	MT-FILM 1.2K FD 1/4W
R562	401 042 1008	MT-FILM 1.2K FD 1/4W
R563	401 044 9705	MT-FILM 2.2K FD 1/4W
R564	401 052 0602	MT-FILM 910 FD 1/4W
R568	401 041 3102	MR-FILM 10K FD 1/4W
R569	401 048 7004	MT-FILM 4.7K FD 1/4W
R570	401 042 1008	MT-FILM 1.2K FD 1/4W
R571	401 047 7302	MT-FILM 390 FD 1/4W
R573	401 041 3102	MR-FILM 10K FD 1/4W

C BLOCK DIAGRAM

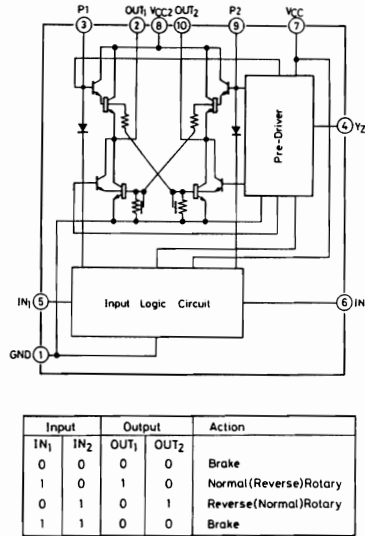
IC901 STK4234MK5 (2-ch AF Power Amplifier)



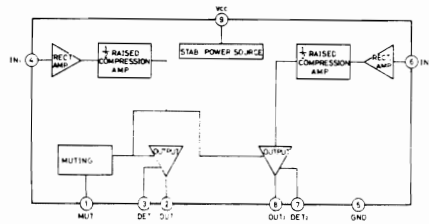
IC922, 923, 925 IC505 LA6458DS (Dual Operational Amplifier)



IC924 LB1641 (Motor Driver)

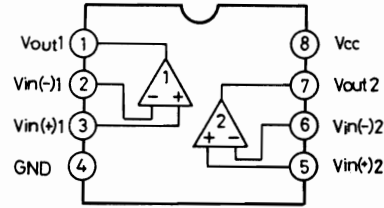


IC931 BA6138 (2-ch 1/2 Raised Compression Amplifier)

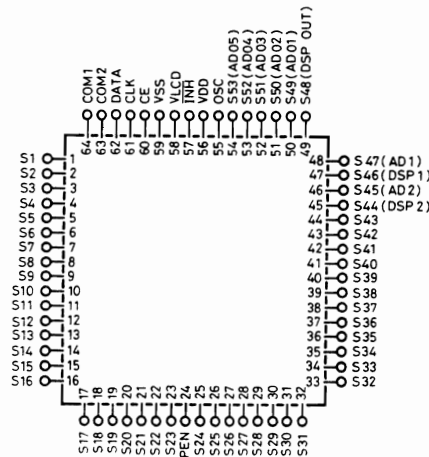
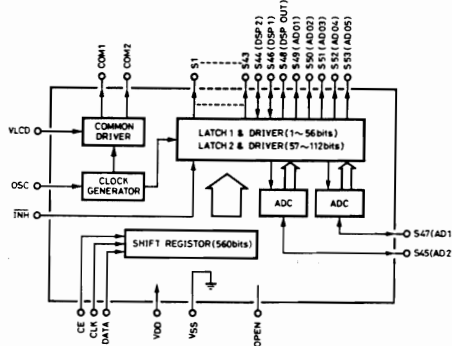


IC BLOCK DIAGRAM

IC932 HA17393 (Dual Operational Amplifier)



IC970 LC7582 (LCD Driver)

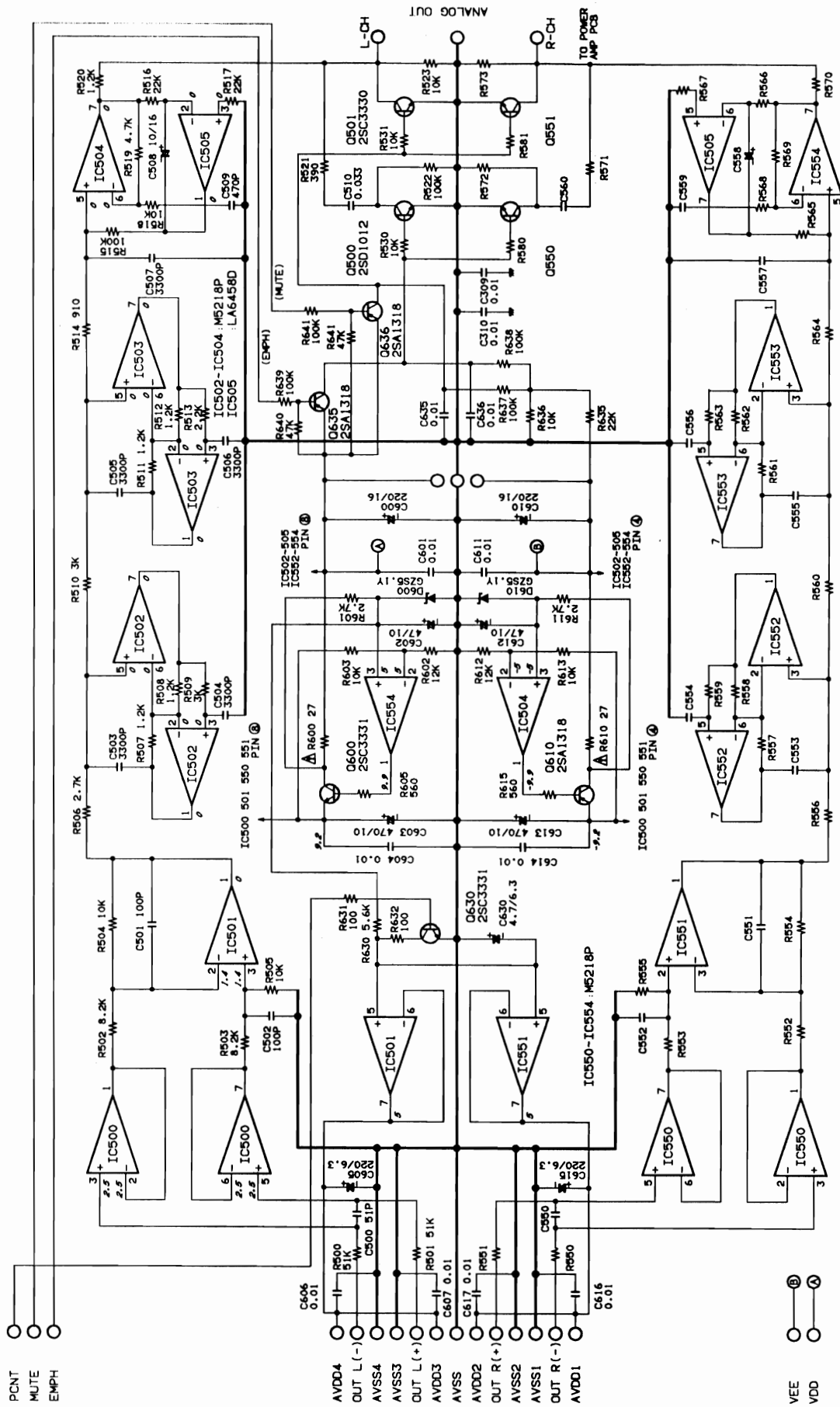


IC930 HD614042SJ83 (Micro Processor)

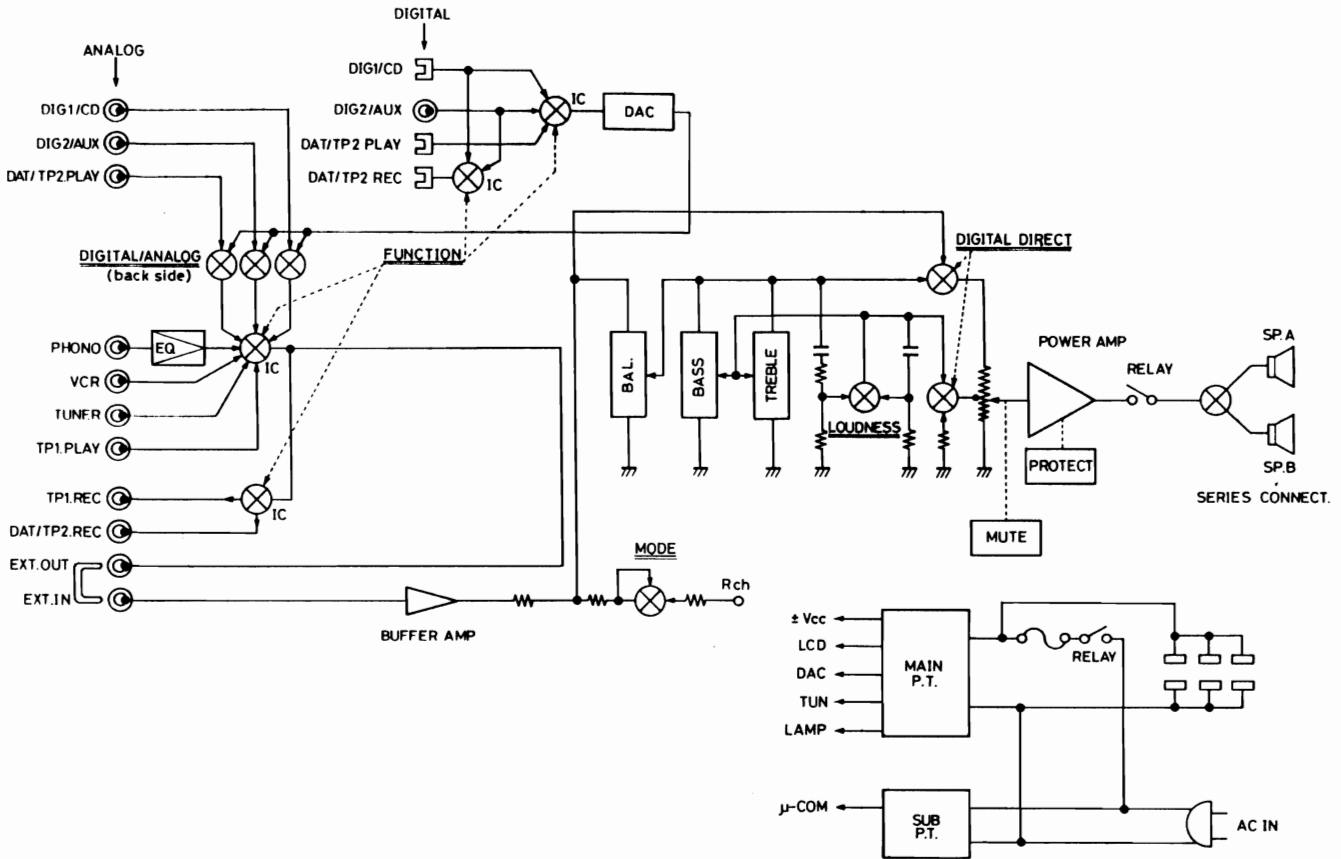
Pin Name & Functions

No	NAME	FUNCTION	ACTIVE	IO
01	DATA1	DATA FOR LC7821(FUNCTION IC)	HIGH	0
02	CLK1	CLOCK FOR LC7821(FUNCTION IC)	HIGH	0
03	INIDSP	SET INITIAL DISPLY FOR LCD POWER ON	LOW	1
04	LCHIN	COMPARATOR INPUT OF AUDIO SIGNAL(L-CH)		1
05	RCHIN	COMPARATOR INPUT OF AUDIO SIGNAL(R-CH)		1
06	PORY	OUTPUT FOR POWER RELAY ON/OFF	HIGH	0
07	SPRY	OUTPUT FOR SPEAKER RELAY ON/OFF	HIGH	0
08	INH	INHIBIT FOR LC7582(LCD IC)	LOW	0
08	OPEN	CONNECT VCC		
10	PT0	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
11	PT1	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
12	PT2	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
13	PT3	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
14	PT4	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
15	PT5	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
16	PT6	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
17	PT7	PATTERN OUTPUT FOR A/D CONVERSION	HIGH	0
18	DPW	INPUT OF ELECTRICITY FAILURE DETECTION	LOW	1
18	Vd1sp	CONNECT GND		
20	DAT0FS	SET DIGITAL FUNCTION(DAT)	LOW	0
21	CD0FS	SET DIGITAL FUNCTION(CD)	LOW	0
22	AUX0FS	SET DIGITAL FUNCTION(AUX)	LOW	0
23	IRIN	INPUT FOR REMOON & SET INITIAL STAND-BY	LAN	1
24	DATAF	INPUT FOR AUTO FUNCTION SIGNAL FROM DAT	HIGH	1
25	CDAF	INPUT FOR AUTO FUNCTION SIGNAL FROM CD	HIGH	1
26	TPAF	INPUT FOR AUTO FUNCTION SIGNAL FROM DECK	HIGH	1
27	TUAF	INPUT FOR AUTO FUNCTION SIGNAL FROM TUNER	HIGH	1
28	DATSTP	SEND START/STOP PULSE TO DAT	HIGH	0
28	CDSTP	SEND START/STOP PULSE TO CD	HIGH	0
30	TPSTP	SEND START/STOP PULSE TO DECK	HIGH	0
31	OPDN	CONNECT GND		
32	VCC	POWER SOURCE		
33	CLK2	CLOCK FOR LC7822(LCD IC)	HIGH	0
34	CE1	CE FOR LC7821(FUNCTION IC)	HIGH	0
35	DATA2	DATA FOR LC7822(LCD IC)	HIGH	0
36	CE2	CE FOR LC7822(LCD IC)	HIGH	0
37	DATFS	LED DRIVER OF FUNCTION SET DISPLAY(DAT)	LOW	0
38	CDFS	LED DRIVER OF FUNCTION SET DISPLAY(CD)	LOW	0
38	AUXFS	LED DRIVER OF FUNCTION SET DISPLAY(AUX)	LOW	0
40	TU	LED DRIVER OF TAPE MONITOR SET DISPLAY(DECK)	LOW	0
41	TUFS	LED DRIVER OF FUNCTION SET DISPLAY(TUNER)	LOW	0
42	VCRFS	LED DRIVER OF FUNCTION SET DISPLAY(VCR)	LOW	0
43	TUFS	LED DRIVER OF FUNCTION SET DISPLAY(TURN TABLE)	LOW	0
44	DATREC	REC MUTE FOR DAT FUNCTION	HIGH	0
45	K10	INPUT FROM KEY MATRIX	HIGH	1
46	K11	INPUT FROM KEY MATRIX	HIGH	1
47	K12	INPUT FROM KEY MATRIX	HIGH	1
48	K13	INPUT FROM KEY MATRIX	HIGH	1
48	RESET	RESET	HIGH	1
50	TEST	CONNECT VCC		1
51	OSC1	OSCILLATOR		1
52	OSC2	OSCILLATOR		0
53	GND	GND		
54	TUOT	SEND DATA TO TUNER	HIGH	0
55	TIMER	POWER ON/OFF CONTROL FROM TUNER TIMER(OFF-LOW)		1
56	MUTEIN	SET -20dB MUTING		1
57	MUTE1	--dB MUTING	HIGH	0
58	MUTE2	-20dB MUTING	HIGH	0
58	VUP	UP SIGNAL TO VOLUME	HIGH	0
60	VDOWN	DOWN SIGNAL TO VOLUME	HIGH	0
61	VEIND	POWER ON/OFF CONTROL FROM TUNER OPERATION = FLASHING	HIGH	0
62	TPSTP	INITIAL SET FOR VOLUME OPERATION	HIGH	1
63	K100	OUTPUT TO KEY MATRIX	LOW	0
64	K101	OUTPUT TO KEY MATRIX	LOW	0

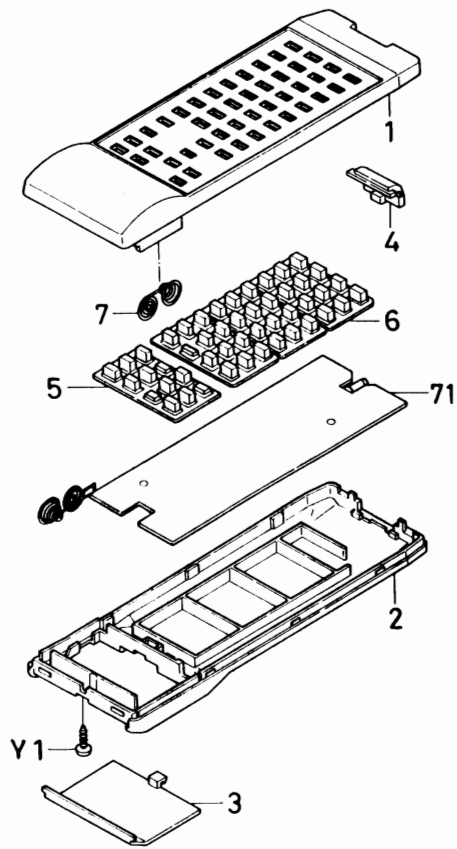
SCHEMATIC DIAGRAM (DAC 2)



BLOCK DIAGRAM



EXPLODED VIEW & PARTS LIST (REMOTE CONTROLLER)



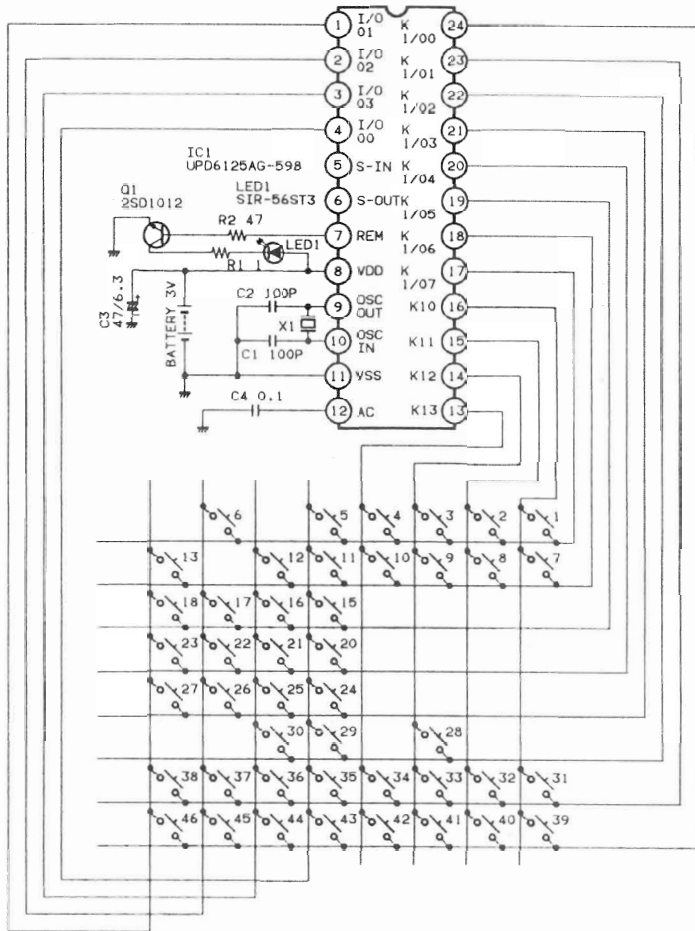
CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 213 5334	ASSY, CABINET, TOP
2	614 213 5358	CABINET, BOTTOM
3	614 213 5365	LID, BATTERY
4	614 213 5389	WINDOW, IR TRANSMIT
5	614 213 5402	BUTTON, SMALL
6	614 213 5396	BUTTON, LARGE
7	614 213 5631	SPRING, BATTERY TERMINAL (+)
Y1	411 022 7906	SCR TPG PAN 2X6

REMOCON (TRANSMIT) P.C.BOARD ASSY

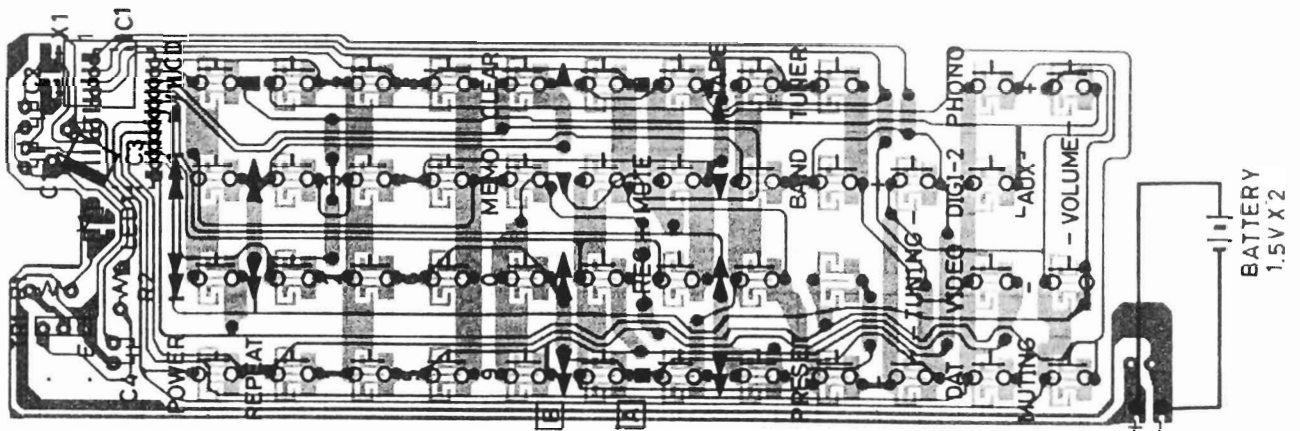
Ref. No.	Part No.	Description
71	614 213 5303	ASSY, PCB, REMOCON
	614 213 5419	SPRING, COIL, BATTERY TERMINAL (+)
	614 213 5426	SPRING, COIL, BATTERY TERMINAL (-)
X1	614 213 5327	SERAMIC RESONATOR, CSB455E
IC1	410 070 4608	IC UPD6125AG-598
Q1	405 021 0907	TR 2SD1012H-SPA
LED1	408 010 4207	LED SIR-56ST3

SCHEMATIC DIAGRAM (REMOTE CONTROLLER)

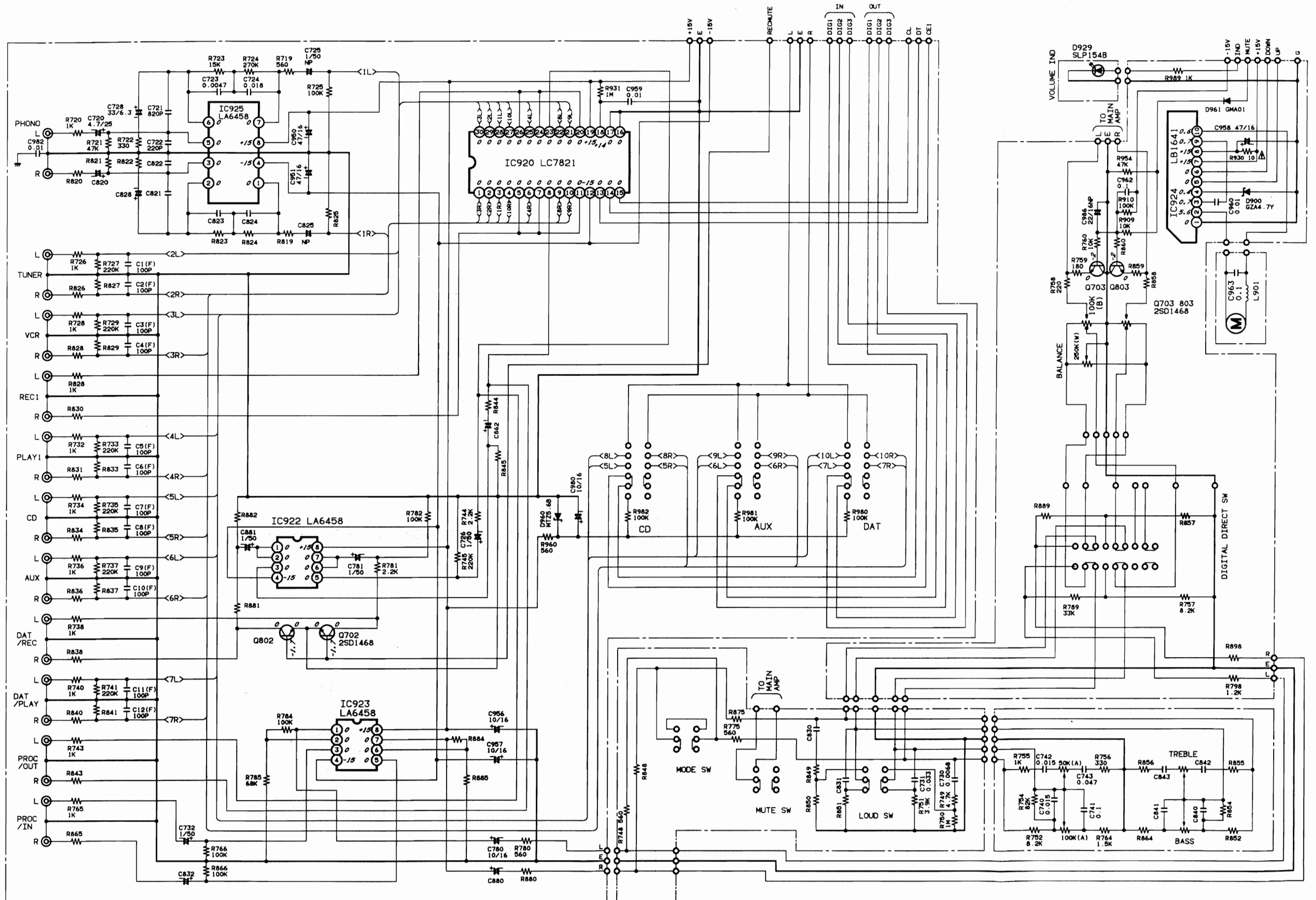


KEY NO	FUNCTION	KEY NO	FUNCTION
1	VIDEO	24	◀ (TAPE A)
2	DIGI-2 AUX	25	□ (TAPE A)
3	PHONO	26	▷ (TAPE A)
4	DAT	27	▷▷ (TAPE A)
5	BAND	28	CLEAR (CD)
6	TUNER	29	9 (CD)
7	POWER	30	0 (CD)
8	VOL+	31	MEMO (CD)
9	VOL-	32	▷/00 (CD)
10	MUTING	33	▷◁ (CD)
11	TUN+	34	KK (CD)
12	TUN-	35	5 (CD)
13	PRESET	36	6 (CD)
14		37	7 (CD)
15	▷▷ (TAPE B)	38	8 (CD)
16	◀◀ (TAPE B)	39	REPEAT (CD)
17	◻ REC- (TAPE B)	40	◀◀ (CD)
18	◀ (TAPE B)	41	▷▷ (CD)
19		42	◻ (CD)
20	◀◀ (TAPE A)	43	1 (CD)
21	◻ (TAPE B)	44	2 (CD)
22	-MUTE(TAPE B)	45	3 (CD)
23	▷ (TAPE B)	46	4 (CD)

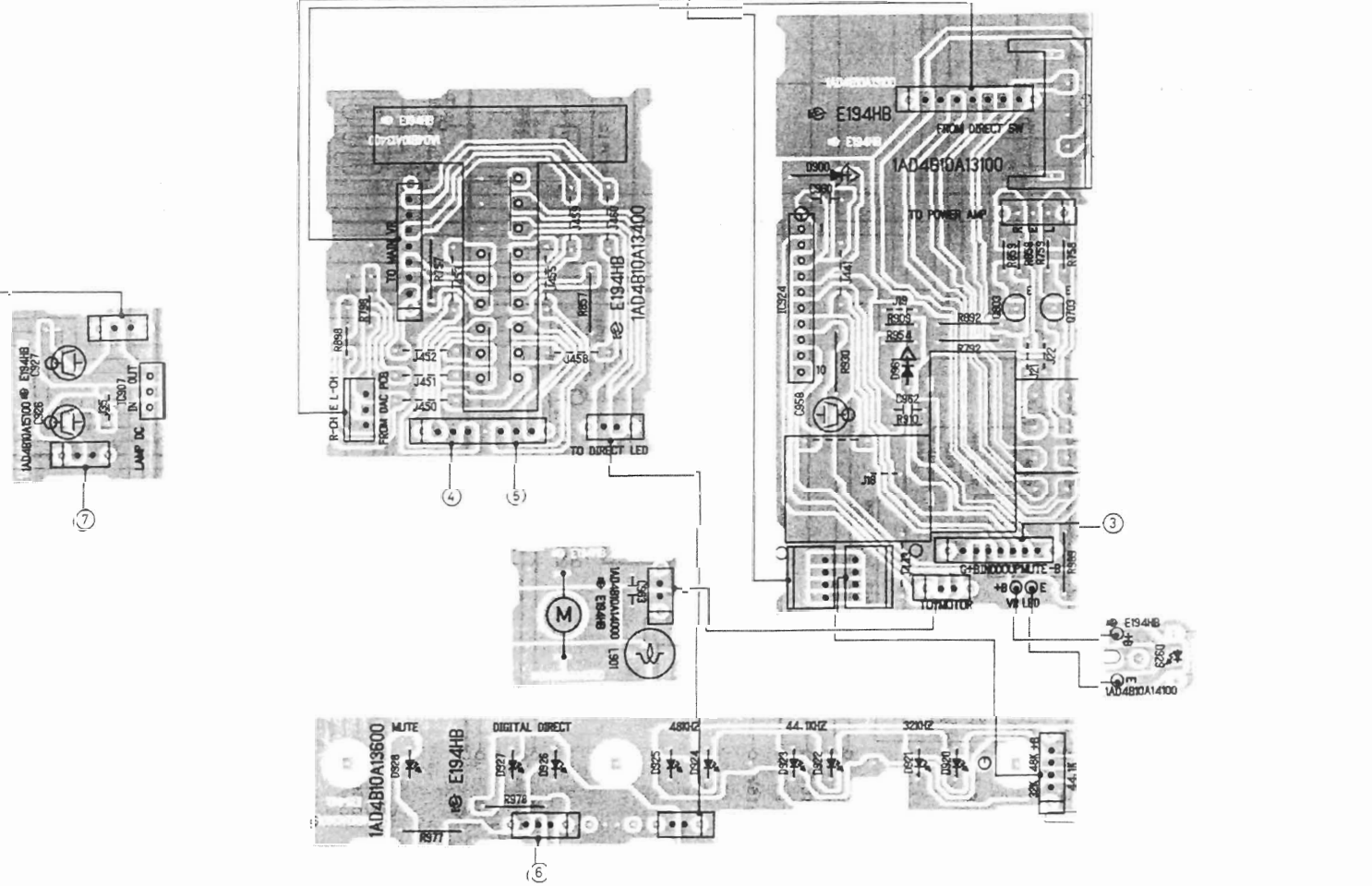
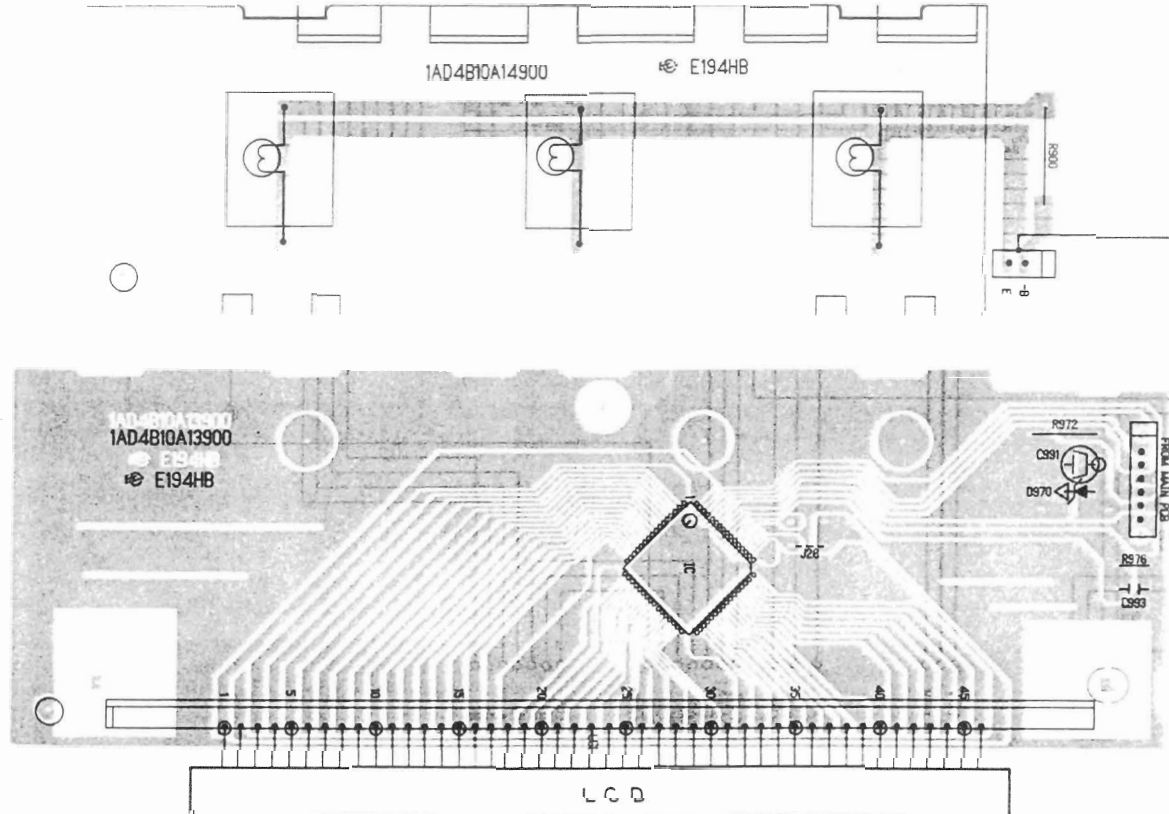
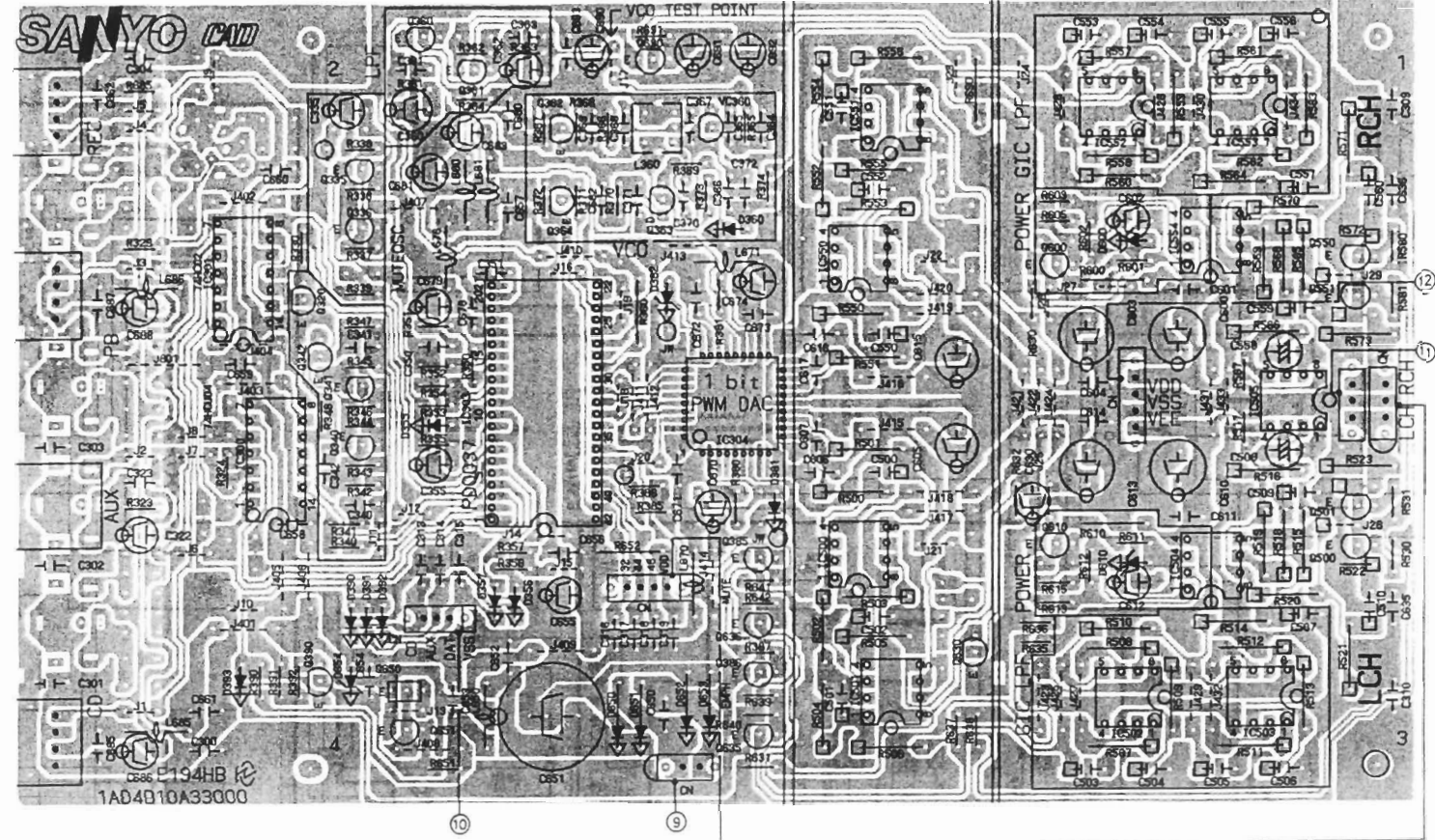
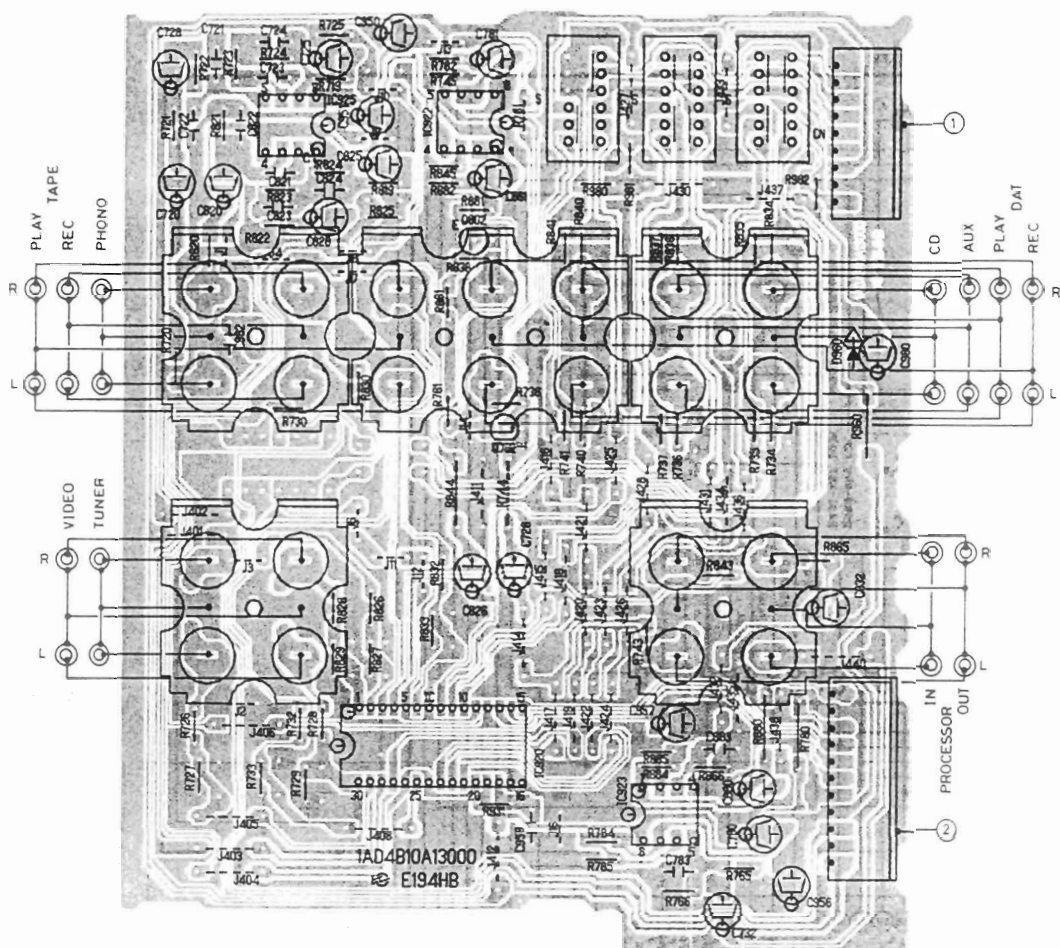
WIRING DIAGRAM (REMOTE CONTROLLER)



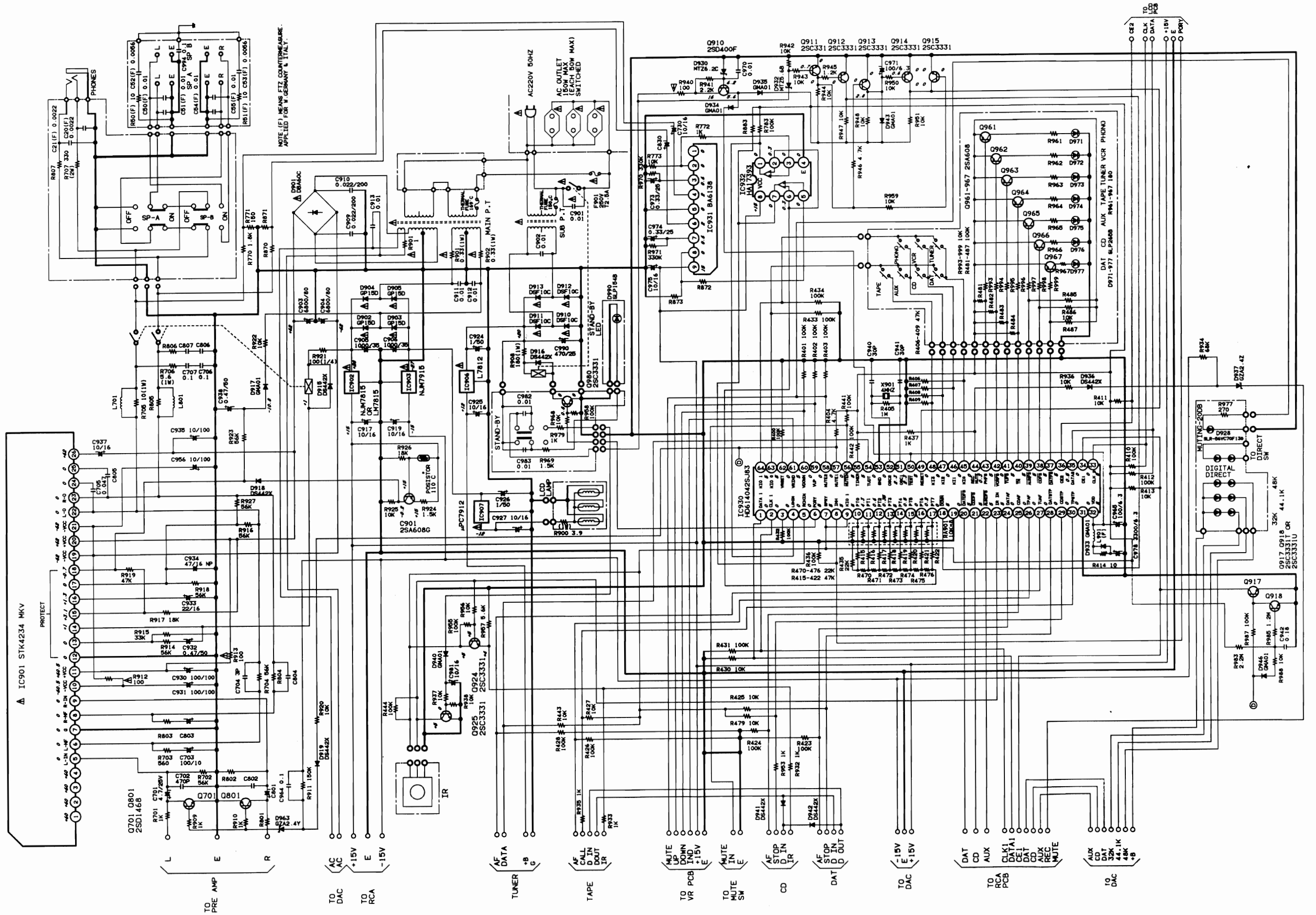
SCHEMATIC DIAGRAM (PRE-AMP)



*(F) MEANS FTZ COUNTERMEASURE. APPLIED FOR W.GERMANY & ITALY.

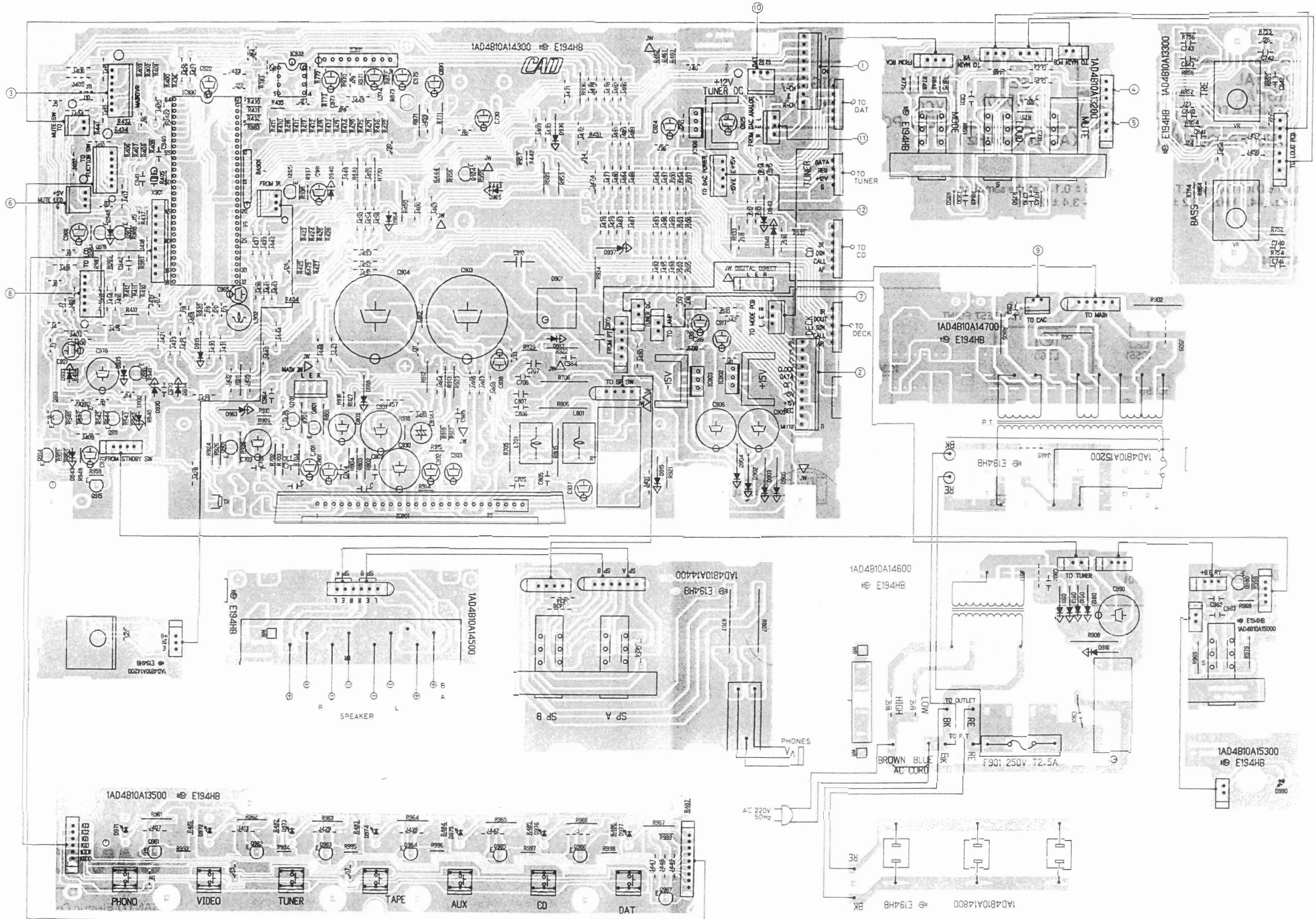


SCHEMATIC DIAGRAM (MAIN-AMP)



PRODUCT SAFETY NOTICE

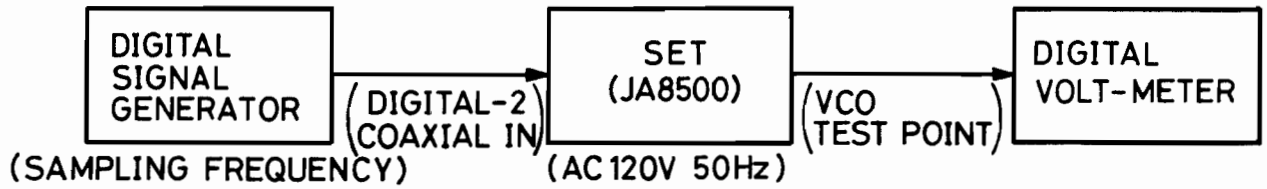
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.



ADJUSTMENT

PLL IN DAC

• CONNECTION



- Adjust L360 to the DIGITAL VOLT-METER shows 5 ± 0.1 V at the sampling frequency 48 kHz. (44.1 kHz – 3.2 ± 0.2 V, 32 kHz – 3.4 ± 0.1 V)

• PARTS LOCATION

