

SERVICE MANUAL



STEREO TUNER PRE-AMPLIFIER

GTP-502

TABLE OF CONTENTS

Adjustment	2-3
Parts List	4-14
IC Block Diagram	15-18
Wiring Diagram	19-20
PCB Layout	21-28
Schematic Diagram	29-42
Technical Specification	43-44

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Preparation

1. INPUT

- FM mono: 1kHz, 75kHz devi., 60dB/μV
- FM stereo: 1kHz, 67.5kHz devi., 60dB/μV
Pilot signal 19kHz 7.5kHz devi.
- AM: 400Hz, 30%mod.

2. OUTPUTS

- Connect the non-inductive type resistor of 8 ohms to all speaker terminals otherwise noted.

1. FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.0MHz 1kHz 75kHz devi. 65dBf (60dB)	-	99.0MHz	DC voltmeter	L941	0±100mV	FM MUTE/MODE switch: ON/AUTO Repeat the steps 1 to 3 until no further adjustment is necessary.
	AC voltmeter					IFT on the front end	Maximum		
	Distortion analyzer					L942	Minimum		
Stereo Distortion		Fig.2	99.0MHz Ext. mod. 65dBf (60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFE on the front end	Minimum	FM MUTE/MODE switch: ON/AUTO Don't turn more than +/-180°
Stereo Separation		Fig.2	99.0MHz Ext. mod. 65dBf (60dB)	Channel L or R 1kHz	99.0MHz	Oscilloscope	R956	Maximum	Repeat stereo distortion and stereo separation alignment until THD at minimum and separation at maximum.
Muting Level		Fig.1	99.0MHz 18dB	-	99.0MHz	Oscilloscope	R941	Signal output	Adjust such that output just unmute
Pilot Suppression		Fig.2	99.0MHz mod.65dBf (60dB)	Channel L or R pilot on signal	99.0MHz	VTVM	L903 FOR L L904 FOR R	Minimum	
Signal Strength Indicator		Fig.1	99.0MHz 1KHz 75KHz devi 33dBμ	-	99.0MHz	VFD Signal Bars	R951	8 bars just lit	

2. AM ADJUSTMENT

120V model

Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1	-	530kHz	Digital DC voltmeter	OSC coil on RF block M971	1.35±0.2V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	OSC coil on RF block M971	Maximum
3	600kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L972	Maximum

Reference Specification

FM tuned voltage: 87.5MHz-108.00MHz
More than 1.2v-Less than 10v
AM tuned voltage: 530KHz-1710KHz
1.3±0.2-Less than 9.0v

230V model and worldwide models

Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1	-	522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block M971	1.3±0.2V (522kHz) 1.35±0.2V (531kHz)
2	600kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	OSC coil on RF block M971	Maximum
3	600kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L972	Maximum

Reference Specification

FM tuned voltage: 87.5MHz-108.00MHz
More than 1.2v-Less than 10v
AM tuned voltage: 522KHz-1611KHz
1.3±0.2-Less than 9.0v
(230V model)

AM tuned voltage: 531KHz-1602KHz
1.3±0.2-Less than 9.0v
(Worldwide model)

3. FM MEASUREMENT

Fig. 1

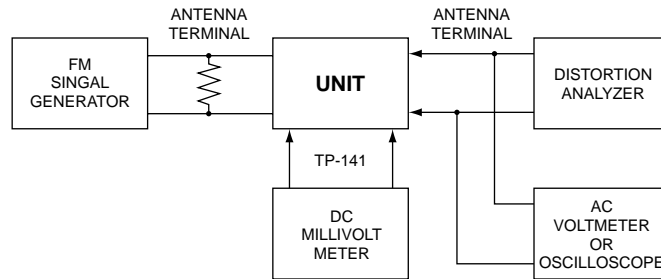
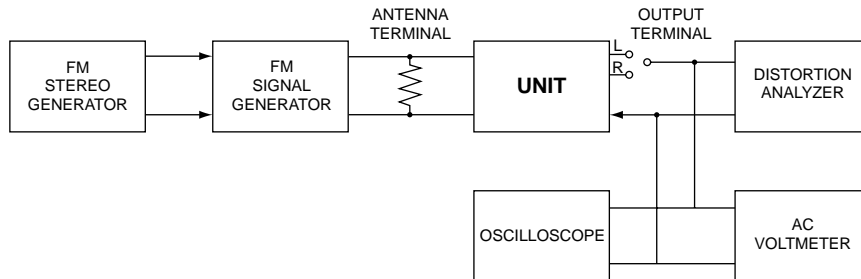
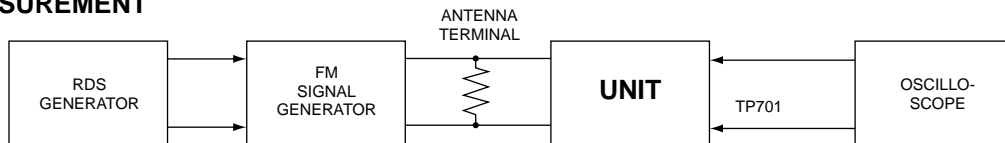


Fig. 2



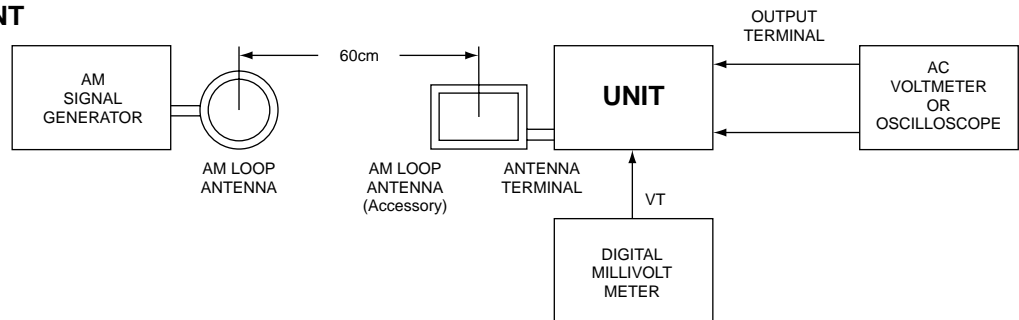
4. RDS MEASUREMENT

Fig. 3

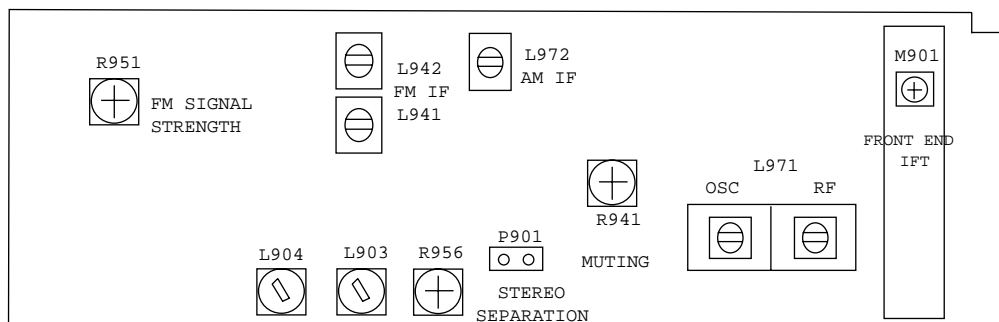


5. AM MEASUREMENT

Fig. 4



6. ADJUSTMENT POINTS



REF NO.	DESCRIPTION	PART NO.
<u>IR ASSEMBLY</u>		
1200	IR ASSEMBLY	PCB-A0180C-IR
PCB BOARD		
1201	PCB KEYBOARD/RM1/TUNER/MISC	1724-670A-0002
METAL MATERIAL		
1202	ME 2*8 4.0MM BK/RH JHC023-00	2954-2008-3000
WAFER		
J501A	5P ST.WAFER P=2.5 COULOMB	2102-051S-004
JACKS/SOCKET		
M501	DIN 5P 180DEG SOCKET	2113-1682-0
<u>ROOM 1 ASSEMBLY</u>		
2200	ROOM 1 ASSEMBLY	PCB-A0180C-RM1
PCB BOARD		
2201	PCB KEYBOARD/RM1/TUNER/MISC	1724-670A-0002
CAPACITORS		
C201,C202	CC 16V 0.22 20% CM 0805 1.2X2.0	150D-224M-J-BD
C213,C214	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C215,C216	CE 50V 10μF 20% RL 4x7	157F-106M-5-GM
c217,c218	CC 16V 0.47 10% 0805/2012 1.5X2.5	150D-474K-J-BDL
C219,c220	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C221,C222	CC 50V 22pF 5% 0805 1.2x2.0	150F-220J-J-BD
C223-C226	CE 50V 10μF 20% RL 4x7	157F-106M-5-GM
C227,C228	CE 25V 4.7μF 20% RL 4x7	157E-475M-5-GM
C229,C230	CM 50V 4700pF 10% RL 5x5	153F-472K-5-II
C231-C234	CM 50V 0.056μF 5% RL7.5X9.5	153F-563J-5-NR
C236,C236	CM 50V 4700pF 10% RL 5x5	153F-472K-5-II
C237,C238	CP 50V 47pF 5% RL 5.5x10	158F-470J-5-JS
C241,C242	CE 50V 10μF 20% RL 4x7	157F-106M-5-GM
C323,C324	CC 16V 0.22 20% CM 0805 1.2X2.0	150D-224M-J-BD
DIODES		
D211,D309	RLS-73 DIODE	4840-1080-3
WAFERS/SOCKETS		
J131B	WAFER 8P P2.5 ST.	2102-081S-004
J132A	6P ST. WAFER P=2.5 COULOMB	2102-061S-004
J210A,J224A	4P ST.WAFER P=2.5 COULOMB	2102-041S-004
J320A	SOCKET (PCB/PCB) 16P P2.0 RA	2101-1601-0
J321A	SOCKET (PCB/PCB) 4P P2.0 RA	2101-1671-0
J322A,J323A	4P ST.WAFER P=2.5 COULOMB	2102-041S-004
RELAYS		
M225,M226	RELAY V23105-A5303-A201 SIEMENS	4500-0920-0
TRANSISTORS		
Q209	TR KTC3875Y	4853-875Y-3
Q210	TR KTA1504Y	4851-504Y-3
Q214,Q215	TR 2SC2878 (A,B) RL	4860-0770-5
Q218,Q219	TR 2SD1012F/G HFE 160-560	4851-012F-5
Q310	TR FET J112	4860-8770-0
Q313,Q314	TR 2SC2878 (A,B) RL	4860-0770-5
RESISTORS		
R235,R236	RMG 1/10W 1K 1% 0805	4720-102A-J
R237,R238	RMG 1/10W 56K 1% 0805	4720-563A-J
R239	RMG 1/10W 10K 1% 0805	4720-103A-J
R240	RMG 1/10W 7.5K 1% 0805	4720-752A-J
R241,R242	RMG 1/10W 15K 5% 0805	4720-153J-J
R243,R244	RMG 1/10W 2.2K 1% 0805	4720-222A-J
R245,R246	RMG 1/10W 0R 5% 0805	4720-000J-J
R247,R248	RMG 1/10W 1M 1% 0805	4720-105A-J
R249,R250	RMG 1/10W 3.9K 1% 0805	4720-392A-J



REF NO.	DESCRIPTION	PART NO.
R251,R252	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R253-R256	RMG 1/10W 7.5K 1% 0805	4720-752A-J
R257,R258	RMG 1/10W 1K 1% 0805	4720-102A-J
R259	RMG 1/10W 220K 5% 0805	4720-224J-J
R260	RMG 1/10W 680K 5% 0805	4720-684J-J
R261-R264	RMG 1/10W 6.8K 1% 0805	4720-682A-J
R265-R268	RMG 1/10W 1K 1% 0805	4720-102A-J
R269,R270	RMG 1/10W 6.8K 1% 0805	4720-682A-J
R271,R272	RMG 1/10W 100R 1% 0805	4720-101A-J
R273,R274	RMG 1/10W 220K 1% 0805	4720-224A-J
R275,R276	RMG 1/10W 10K 5% 0805	4720-103J-J
R277-R279	RMG 1/10W 0R 5% 0805	4720-000J-J
R280	RMG 1/10W 220K 5% 0805	4720-224J-J
R281,R282	RMG 1/10W 10K 5% 0805	4720-103J-J
R283	RMG 1/10W 680K 5% 0805	4720-684J-J
R284,R285	RMG 1/10W 220K 5% 0805	4720-224J-J
R286,R287	RMG 1/10W 0R 5% 0805	4720-000J-J
R295,R296	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R297	RMG 1/10W 10K 5% 0805	4720-103J-J
R298,R299,R322	RMG 1/10W 100K 5% 0805	4720-104J-J
R323	RMG 1/10W 10M 5% 0805	4720-106J-J
R365	RMG 1/10W 10K 5% 0805	4720-103J-J
R366,R367	RMG 1/10W 100R 1% 0805	4720-101A-J
R368	RMG 1/10W 10K 5% 0805	4720-103J-J
R451,R452	RMG 1/10W 2.2K 5% 0805	4720-222J-J
R455	RCF 1/4W 150R 5% AT	4705-151J-2
R801-R816	RMG 1/10W 1.2K 1% 0805	4720-122A-J
R817-R832	RMG 1/10W 3.3K 1% 0805	4720-332A-J
R833-R848	RMG 1/10W 1.2K 1% 0805	4720-122A-J
R849-R864	RMG 1/10W 3.3K 1% 0805	4720-332A-J
R865,R866	RMG 1/10W 1.2K 1% 0805	4720-122A-J
R867,R868	RMG 1/10W 3.3K 1% 0805	4720-332A-J
R869,R870	RMG 1/10W 1.2K 1% 0805	4720-122A-J
R871,R872	RMG 1/10W 3.3K 1% 0805	4720-332A-J
R873,R874	RMG 1/10W 100R 1% 0805	4720-101A-J
R875,R876	RMG 1/10W 22K 1% 0805	4720-223A-J
R877	RMG 1/10W 10K 1% 0805	4720-103A-J
R878	RMG 1/10W 7.5K 1% 0805	4720-752A-J
ICs		
U202-U205	IC 7AA HIGH SPEED OP AMP	3130-7430-0
U206,U207	IC TC9273F-004 ANALOGUE SWITCH (FLAT-PACK)	3131-6790-0
U307,U333	IC TC9273F-004 ANALOGUE SWITCH (FLAT-PACK)	3131-6790-0
<u>KEYBOARD ASSEMBLY</u>		
*US	KEYBOARD ASSEMBLY	PCB-A0180C-KEY
*CE	KEYBOARD ASSEMBLY	PCB-A0181C-KEY
METAL MATERIALS		
1101	HOLDER LED	4132-6601-0
1103	WSER FIBRA 1103A D3.3	2848-0032-0
PCB BOARD		
1102	PCB KEYBOARD/RM1/TUNER/MISC	1724-670A-0002
CAPACITORS		
C601-C604	CC 50V 470pF 5% 0805 1.2X2.0	150F-471J-J-BD
C605	CE 50V 10µF 20% RL 4x7	157F-106M-5-GM
C606	CC 50V 0.1µF 20% 0805 1.2X2.0	150F-104M-J-BD
C607	CTC 0/30 22pF 5% 0805 1.2X2.5	15CG-220J-J-BD
C608	CE 6.3V 47µF 20% RL 4x7	157B-476M-5-GM
C609	CE 50V 10µF 20% RL 4x7	157F-106M-5-GM
C613	CC 50V 0.1µF 20% 0805 1.2X2.0	150F-104M-J-BD
C614	CC 50V 470pF 5% 0805 1.2X2.0	150F-471J-J-BD
DIODES		
D601	RLS-73 DIODE	4840-1080-3
D619	DZ 1/2W 5.0-5.2V AT	4837-4C20-2

REF NO.	DESCRIPTION	PART NO.
LEDS		
D603-D605	LED SP 3X5.5 L0.5 RD	3700-2380-R
D607-D609	LED SP 3X5.5 L0.5 RD	3700-2380-R
D611	LED SP 3X5.5 L0.5 RD	3700-2380-R
D614	LED SP 3X5.5 L0.5 RD	3700-2380-R
D616-D618	LED RT 5X2X7MM RED	3700-5577-R
WAFERS		
J601A	FLEXIBLE CONN. 35P P1.25 TOP ENTEY	2101-1591-0
J602	2P ST.WAFER P=2.5 COULOMB	2102-021S-004
J609	6P ST. WAFER P=2.5 COULOMB	2102-061S-004
M627	6 PIN HEADER SINGLE ROW 827312-6 AMP	2101-2350-0
COIL		
L602	IND FXD LAL03A 220U PM10	1801-221K-M
SWITCHES		
M603-M613	SWITCH, TACT SKHHBY 7MM HIGH	5200-3538-0
M615-M618	SWITCH, TACT SKHHBY 7MM HIGH	5200-3538-0
M621-M624	SWITCH, TACT SKHHBY 7MM HIGH	5200-3538-0
LED DISPLAY		
M626	VFD BJ740GNK FUTABA (GTP506)	2460-1910-0
M629-M632	TACT SWITCH (RIGHT ANGLE)	5200-4721-0
IR SENSOR		
M627	IR SENSOR PIC-26043TM2 KODENSHI	4816-043T-3
TRANSISTORS		
Q602-Q604	TR KTC3875Y	4853-875Y-3
Q606-Q610	TR KTC3875Y	4853-875Y-3
Q612	TR KTA1504Y	4851-504Y-3
Q613-Q617	TR KTC3875Y	4853-875Y-3
VOLUME		
R245	VR (BALANCE)	4750-9665-0
RESISTORS		
R602	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R603	RMG 1/10W 2.2K 5% 0805	4720-222J-J
R604	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R605	RMG 1/10W 820R 5% 0805	4720-821J-J
R606	RMG 1/10W 470R 5% 0805	4720-471J-J
R607,R608	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R609	RMG 1/10W 470R 5% 0805	4720-471J-J
R610	RMG 1/10W 820R 5% 0805	4720-821J-J
R611	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R612	RMG 1/10W 2.2K 5% 0805	4720-222J-J
R613	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R614	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R615	RMG 1/10W 0R 5% 0805	4720-000J-J
R616	RMG 1/10W 470R 5% 0805	4720-471J-J
R617	RMG 1/10W 820R 5% 0805	4720-821J-J
R618	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R620	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R621	RMG 1/10W 0R 5% 0805	4720-000J-J
R622	RMG 1/10W 470R 5% 0805	4720-471J-J
R623	RMG 1/10W 820R 5% 0805	4720-821J-J
R624	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R626-R629	RMG 1/10W 470R 5% 0805	4720-471J-J
R630	RMG 1/10W 10K 5% 0805	4720-103J-J
R631	RMG 1/10W 470R 5% 0805	4720-471J-J
R632	RMG 1/10W 100K 5% 0805	4720-104J-J
R635	RMG 1/10W 10K 5% 0805	4720-103J-J
R636	RMG 1/10W 390R 5% 0805	4720-391J-J
R637	RMG 1/10W 10K 5% 0805	4720-103J-J
R638	RMG 1/10W 390R 5% 0805	4720-391J-J
R639	RMG 1/10W 10K 5% 0805	4720-103J-J
R640	RMG 1/10W 390R 5% 0805	4720-391J-J

REF NO.	DESCRIPTION	PART NO.
R643	RMG 1/10W 10K 5% 0805	4720-103J-J
R644	RMG 1/10W 390R 5% 0805	4720-391J-J
R645	RMG 1/10W 10K 5% 0805	4720-103J-J
R646	RMG 1/10W 390R 5% 0805	4720-391J-J
R647	RMG 1/10W 10K 5% 0805	4720-103J-J
R648	RMG 1/10W 390R 5% 0805	4720-391J-J
R649	RMG 1/10W 10K 5% 0805	4720-103J-J
R650	RMG 1/10W 100K 5% 0805	4720-104J-J
R652,R661	RMG 1/10W 390R 5% 0805	4720-391J-J
R662	RMG 1/10W 10K 5% 0805	4720-103J-J
R663,R664,R668	RMG 1/10W 390R 5% 0805	4720-391J-J
R669	RMG 1/10W 10K 5% 0805	4720-103J-J
R670	RMG 1/10W 390R 5% 0805	4720-391J-J
R671	RMG 1/10W 10K 5% 0805	4720-103J-J
R672	RMG 1/10W 390R 5% 0805	4720-391J-J
R673	RMG 1/10W 10K 5% 0805	4720-103J-J
R686	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R687	RMG 1/10W 470R 5% 0805	4720-471J-J
R688	RMG 1/10W 820R 5% 0805	4720-821J-J
R689	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R690-R692	RMG 1/10W 0R 5% 0805	4720-000J-J
R693,R694	RMG 1/10W 10K 5% 0805	4720-103J-J
ICs		
U601	IC M35500AFP VFD CONTROLLER MITSUBISHI	3131-6760-0
<u>MAIN ASSEMBLY</u>		
*US	MAIN ASSEMBLY	PCB-A0180C-MAIN
*CE	MAIN ASSEMBLY	PCB-A0181C-MAIN
PCB BOARD		
1009	PCB MAIN A0190C	1724-680A-0003
CAPACITORS		
C1001,C101	CE 16V 10 μ F 20% RL 4x7	157D-106M-5-GM
C102,C103	CE 25V 220 μ F 20% RL 8.5X11	157E-227M-5-PU
C104,C105	CE 35V 2200 μ F 20% RL 16X25	157Q-228M-5-5&
C121	CE 25V 220 μ F 20% RL 8.5X11	157E-227M-5-PU
C122	CE 25V 1000 μ F 20% RL 12.5X25	157E-108M-5-X&
C125	CE 25V 100 μ F 20% RL 6x12	157E-107M-5-KW
C127,C129	CE 10V 220 μ F 20% RL 6x12	157C-227M-5-KW
C130	CE 25V 1000 μ F 20% RL 12.5X25	157E-108M-5-X&
C133,C134	CE 50V 1 μ F 20% RL 5x11	157F-105M-5-IU
C135	CE 50V 100 μ F 20% RL 8x12	157F-107M-5-OW
C136,C137	CE 25V 47 μ F 20% RL 5x11	157E-476M-5-IU
C201-C204	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C205-C208	CE 50V 10 μ F 20% RL 4x7	157F-106M-5-GM
C209-C212	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C247-C250	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C321,C322	CE 25V 4.7 μ F 20% RL 4x7	157E-475M-5-GM
C501	CE 50V 1 μ F 20% RL 5x11	157F-105M-5-IU
C502	CE 50V 3.3 μ F 20% RL 5x11	157F-335M-5-IU
C503	CC 50V 330pF 10% 0805 1.2X2.0	150F-331K-J-BD
C611,C612	CTC 0/30 22pF 5% 0805 1.2X2.5	15CG-220J-J-BD
C620	CE 16V 2200 μ F 20% RL 12X20	157D-228M-5-W9
C621	CE 25V 22 μ F 20% RL 4X7	157E-226M-5-GM
C800	CE 50V 2.2 μ F 20% RL 4x7 ELNA	157F-225M-5-GMK
C946	CE 16V 220 μ F 20% RL 6x12	157D-227M-5-KW
DIODES		
D1001	RLS-73 DIODE	4840-1080-3
D101,D104,D105	BRIDGE RECTIFIER RB152 100V 1.5A	4840-0490-0
D108	DZ 1/2W 12V 5% TEMIC AT	4837-12V6-2
D109	DZ 1/2W +-5% 3.3V TEMIC AT	4837-3V36-2
D116,D119	RLS-73 DIODE	4840-1080-3
D123-D125	SMD DIODE 1SR154-400	4840-1150-0
D126	ZD 1/2W 21.52-22.63V AT	4840-0850-0
D201	RLS-73 DIODE	4840-1080-3
D203-D206	RLS-73 DIODE	4840-1080-3

REF NO.	DESCRIPTION	PART NO.
D501-D503	RLS-73 DIODE	4840-1080-3
D510,D619	SMD DIODE 1SR154-400	4840-1150-0
D620	RLS-73 DIODE	4840-1080-3
D800	DZ 1/2W 6.2V TEMIC AT	4837-6V26-2
WAFER/JACKS		
J130B	4P ST.WAFER P=2.5 COULOMB	2102-041S-004
J134	9 PIN WAFER P=3.96	2113-1681-0
J314B	4P ST.WAFER P=2.5 COULOMB	2102-041S-004
J320B	WAFER (PCB/PCB) 16P P2.0 ST	2101-1641-0
J321B	WAFER (PCB/PCB) 4P P2.0 ST	2101-1651-0
J322B,J323b	4P ST.WAFER P=2.5 COULOMB	2102-041S-004
J501B	5P ST.WAFER P=2.5 COULOMB	2102-051S-004
J601B	FLEXIBLE CONN. 35P P1.25 TOP ENTRY	2101-1591-0
J910B	WAFER (PCB/PCB) 16P P2.0 ST	2101-1641-0
M130,M131	2-PIN PHONE JACK	2113-1674-0
M201	6P RCA JACK R/W (GOLD PLATE, GROUND PLATE)	2113-1666-0
M202,M203	4P RCA JACK R/W (GOLD PLATE, GROUND PLATE)	2113-1665-0
M217	4P RCA JACK R/W (GOLD PLATE, GROUND PLATE)	2113-1665-0
COIL		
L601	COIL 100μH 10%	1801-101K-M
RELAYS		
M101	RELAY 12VDC, 125VA 3A DPST	4500-0950-0
M104	RELAY 12VDC,250VAC,10A SDT-SS-112DM OEG	4500-0890-0
M211-M216	RELAY 12VDC, 125VA 3A DPST	4500-0950-0
TRANSISTORS		
Q101,Q102,Q106	TR KTC3875Y	4853-875Y-3
Q107	TR 2SA950-Y HFE 100-200	485A-950Y-5
Q201	TR KTC3875Y	4853-875Y-3
Q203-Q208	TR KTC3875Y	4853-875Y-3
Q212	TR KTC3875Y	4853-875Y-3
Q213,Q501,Q502	TR KTA1504Y	4851-504Y-3
Q800	TR SS8050 C/D SAMSUNG RL	4860-0050-5
Q801	TR SS8550 C/D SAMSUNG RL	4860-0060-5
Q802	TR SS8050 C/D SAMSUNG RL	4860-0050-5
RESISTORS		
j230-j234	RCF 1/4W 0R 5% AT	4705-000J-2
j239,j250,j251	RCF 1/4W 0R 5% AT	4705-000J-2
J254	RCF 1/4W 150R 5% AT	4705-151J-2
R101,R102	RMG 1/10W 100R 5% 0805	4720-101J-J
R108,R112	RMG 1/10W 10K 5% 0805	4720-103J-J
R118	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R119	RMG 1/10W 10K 5% 0805	4720-103J-J
R120	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R201	RMG 1/10W 1K 1% 0805	4720-102A-J
R202	RMG 1/10W 47K 1% 0805	4720-473A-J
R203	RMG 1/10W 1K 1% 0805	4720-102A-J
R204	RMG 1/10W 47K 1% 0805	4720-473A-J
R205	RMG 1/10W 1K 1% 0805	4720-102A-J
R206	RMG 1/10W 47K 1% 0805	4720-473A-J
R207	RMG 1/10W 1K 1% 0805	4720-102A-J
R208	RMG 1/10W 47K 1% 0805	4720-473A-J
R209	RMG 1/10W 470R 1% 0805	4720-471A-J
R209A	RMG 1/10W 100R 5% 0805	4720-101J-J
R210	RMG 1/10W 120K 5% 0805	4720-124J-J
R211,R212	RMG 1/10W 47K 1% 0805	4720-473A-J
R213	RMG 1/10W 470R 1% 0805	4720-471A-J
R213A	RMG 1/10W 100R 5% 0805	4720-101J-J
R214	RMG 1/10W 120K 5% 0805	4720-124J-J
R215	RMG 1/10W 1K 1% 0805	4720-102A-J
R216	RMG 1/10W 47K 1% 0805	4720-473A-J
R217	RMG 1/10W 1K 1% 0805	4720-102A-J
R218	RMG 1/10W 47K 1% 0805	4720-473A-J
R219	RMG 1/10W 1K 1% 0805	4720-102A-J
R220	RMG 1/10W 47K 1% 0805	4720-473A-J




REF NO.	DESCRIPTION	PART NO.
R221	RMG 1/10W 1K 1% 0805	4720-102A-J
R222	RMG 1/10W 47K 1% 0805	4720-473A-J
R223	RCF 1/4W 150R 5% AT	4705-151J-2
R225-R228	RCF 1/4W 150R 5% AT	4705-151J-2
R229	RMG 1/10W 10K 5% 0805	4720-103J-J
R231-R234	RMG 1/10W 10K 5% 0805	4720-103J-J
R291-R294	RMG 1/10W 1K 1% 0805	4720-102A-J
R369	RMG 1/10W 51K 5% 0805	4720-513J-J
R501	RCF 1/4W 4.7R 5% RL	4705-4R7J-5
R502	RMG 1/10W 180K 5% 0805	4720-184J-J
R503	RMG 1/10W 22K 5% 0805	4720-223J-J
R504,R505	RMG 1/10W 1K 5% 0805	4720-102J-J
R506	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R507	RMG 1/10W 1.5K 5% 0805	4720-152J-J
R562,R563	RMG 1/10W 10K 5% 0805	4720-103J-J
R563	RMG 1/10W 10K 5% 0805	4720-103J-J
R564-R567	RMG 1/10W 100K 5% 0805	4720-104J-J
R659	RMG 1/10W 100K 5% 0805	4720-104J-J
R660-R662	RMG 1/10W 1K 5% 0805	4720-102J-J
R684	RMG 1/10W 0R 5% 0805	4720-000J-J
R685	RMG 1/10W 100K 5% 0805	4720-104J-J
R800	RCF 1/8W 1K 5% ATS	4701-102J-C
R801	RCF 1/8W 10K 5% ATS	4701-103J-C
R802	RCF 1/8W 2.2K 5% ATS	4701-222J-C
R803,R804	RCF 1/8W 3.3K 5% ATS	4701-332J-C
R805	RCF 1/8W 100K 5% ATS	4701-104J-C
R880	RMG 1/10W 10K 5% 0805	4720-103J-J
R895-R902	RMG 1/10W 10K 5% 0805	4720-103J-J
R907	RMG 1/10W 10K 5% 0805	4720-103J-J
R913-R916	RMG 1/10W 10K 5% 0805	4720-103J-J
R919-R921	RMG 1/10W 10K 5% 0805	4720-103J-J
R922,R927	RMG 1/10W 100K 5% 0805	4720-104J-J
R928	RMG 1/10W 120K 5% 0805	4720-124J-J
R929,R930	RMG 1/10W 0R 5% 0805	4720-000J-J
ICs		
U1001	IC NJM78L05A 826	3130-0640-0
U101	IC 7815 FA REGULATOR	3130-3030-1
U102	IC LM7915CT REGULATOR	3130-3020-0
U111	IC 7812H 12V REG, T0220F	3130-2520-2
U114	IC NJM78M56FA 5.6V REGULATOR	3130-8190-0
U114-1	SHEET-PVC 4X5X0.4	3100-1311-0
U115	IC 7805 REG 5V 1.5A	3130-2020-3
U116	IC LB1642 MOTOR DRIVER SANYO	3130-3410-0
U201	IC NJM4558M OP AMP	3130-6060-0
U501	IC KA2184D REMOTE CONTROL PREAMP	3130-8990-0
U504	IC LM2901N DIP QUAD COMPARATOR SGS	3130-7160-0
U602	IC UPD78P058 8-BIT MCU OTP	3131-9130-0
U606	IC EEPROM 24C02 2KBIT 8PIN DIP	3131-3920-0
METAL MATERIALS		
1010	SCREW M3X8 (BLK)	2904-3008-3000
1011	T3X8MM SELF TAPPING	2954-3008-3000
1012	SCREW BH 2.6X6 BLACK	2954-2606-3000
J320B-1	FIBRE WASHER M3X0.4X8 NA	2601-3004-0801
M111-M114	FUSE HOLDER	4132-1011-0
U101	HEAT SINK FOR 78052438-17 (BLACK)	5400-9131-0
U102	FIBRE WASHER M3X0.4X8 NA	2601-3004-0801
U102	HEAT SINK FOR	5400-9131-0
U111	HEATSINK 23.5X17X50	5400-1702-0
U114	HEAT SINK FOR	5400-9131-0
U115	HEATSINK 23.5X17X50	5400-1702-0
CRYSTAL		
X101	X'TAL 5.0MHZ +/-20PPM HC49U	2300-3100-0
SWITCH ASSEMBLY		
1800	SWITCH ASSEMBLY	PCB-A0190C-SW


REF NO.	DESCRIPTION	PART NO.
PCB BOARD		
1801	PCB KEYBOARD/RM1/TUNER/MISC	1724-670A-0002
LED		
D610	LED DUAL COLORS	3700-2500-RG
HOUSING WIRE		
J602A	CONN.ASSY 2P P2.5 L60 AWG26	7702-1060-2004
SWITCH		
M502	SWITCH, PUSH 2P2T UNLOCK SPPJ2-EN-PLB	5200-3539-0
<u>VOLUME ASSEMBLY</u>		
2100	VOLUME ASSEMBLY	PCB-A0190C-VOL
PCB BOARD		
2101	PCB KEYBOARD/RM1/TUNER/MISC	1724-670A-0002
WAFERS		
J130A	4P ST.WAFER P=2.5 COULOMB	2102-041S-004
J131A	WAFER 8P P2.5 ST.	2102-081S-004
VOLUME		
R245	VR RK16312 50K MCL VOL.B ALPS	4750-9906-0
RESISTOR		
R246	RCF 1/2W 220R 5% AT	4707-221J-2
<u>POWER SWITCH ASSEMBLY</u>		
1900	POWER SWITCH ASSEMBLY	PCB-A0191C-PSW
POWER SWITCH		
1601 	POWER SWITCH	5200-3151-0-01
PCB BOARD		
1602	POWER SWITCH PCB A0191C/A0181C	1725-110A-0000
<u>POWER ASSEMBLY</u>		
*US	POWER ASSEMBLY	PCB-A0190C-PWR
*CE	POWER ASSEMBLY	PCB-A0191C-PWR
PCB BOARD		
1501	PCB KEYBOARD/RM1/TUNER/MISC	1724-670A-0002
CAPACITOR		
C131 	CAP400V 4700P DE7150F472MVA1KC	8910-0049-0
METAL MATERIALS		
J806,J813	TERMINAL WRAP	4131-9321-0
J819,J820	TERMINAL WRAP	4131-9321-0
<u>TUNER ASSEMBLY</u>		
*US	TUNER ASSEMBLY	PCB-A0190C-TUN
*CE	TUNER ASSEMBLY	PCB-A0191C-TUN
PCB BOARD		
2001	PCB RM2/RM3/TUNER/MISC.	1724-660A-0001
CAPACITORS		
C901-C903	CC 50V 0.022 μ 10% 0805 1.2X2.0	150F-223K-J-BD
C904	CE 16V 10 μ F 20% RL 4x7 ELNA	157D-106M-5-GMK
C906	CE 16V 100 μ F 20% RL 5x11	157D-107M-5-IU
C911	CC 50V 20pF 5% 0805 1.2x2.0	150F-200J-J-BD
C912,C913	CTC 0/30 1000pF 5% 0805 1.2X2.5	15CG-102J-J-BD
C914,C915	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C916	CC 50V 330pF 10% 0805 1.2X2.0	150F-331K-J-BD
C924	CTC 0/30 30pF 5% 0805 1.2X2.5	15CG-300J-J-BD
C925	CTC 0/30 20pF 5% 0805 1.2X2.5	15CG-200J-J-BD

REF NO.	DESCRIPTION	PART NO.
C926	CM 50V 0.033 μ F 5% RL 7.5X6.5 METALZD	153F-333J-5-NLM
C927	CE 50V 2.2 μ F 20% RL 4x7 ELNA	157F-225M-5-GMK
C928	CE 16V 10 μ F 20% RL 4x7 ELNA	157D-106M-5-GMK
C929	CE 50V 0.22 μ F 20% RL 4X7 ELNA	157F-224M-5-GMK
C930	CC 50V 0.022 μ F 10% 0805 1.2X2.0	150F-223K-J-BD
C931	CE 6.3V 100 μ F 20% RL 6X7 ELNA	157B-107M-5-KMK
C932,C941	CC 50V 0.022 μ F 10% 0805	150F-223K-J-BD
C942	CE 16V 100 μ F 20% RL 6.3X11 ELNA	157D-107M-5-KUK
C943	CE 50V 2.2 μ F 20% RL 4x7	157F-225M-5-GMK
C944	CE 50V 4.7 μ F 20% RL 4X7 ELNA	157F-475M-5-GMK
C945	CC 50V 100pF 5% 0805 1.2X2.0	150F-101J-J-BD
C946	CE 50V 1 μ F 20% RL 4x7 ELNA	157F-105M-5-GMK
C947	CE 16V 0.47 μ F 20% RL 5x5	157D-474M-5-II
C948	CE 50V 1 μ F 20% RL 4x7	157F-105M-5-GMK
C951	CE 50V 2.2 μ F 20% RL 4x7	157F-225M-5-GMK
C953,C954	CC 50V 2700pF 10% 0805 1.2X2.0	150F-272K-J-BD
C959,C960	CE 16V 22 μ F 20% RL 4X7 ELNA	157D-226M-5-GMK
C961,C962	CC 50V 1500pF 10% 0805 1.2X2.0	150F-152K-J-BD
C963,C964	CE 16V 22 μ F 20% RL 4X7 ELNA	157D-226M-5-GMK
C965	CC 50V 2700pF 10% 0805	150F-272K-J-BD
C967	CE 16V 0.47 μ F 20% RL 5x5	157D-474M-5-II
C968	CC 50V 0.022 μ F 10% 0805 1.2X2.0	150F-223K-J-BD
C969	CE 16V 47 μ F 20% RL 5X7 ELNA	157D-476M-5-IMK
C970	CC 50V 0.022 μ F 10% 0805	150F-223K-J-BD
C971	CTC 0/30 10pF 5% 0805 1.2X2.5	15CG-100J-J-BD
C973	CC 50V 0.047 μ F 20% 0805 1.2X2.0	150F-473M-J-BD
C974	CC 50V 0.022 μ F 10% 0805	150F-223K-J-BD
C975	CE 16V 10 μ F 20% RL 4x7 ELNA	157D-106M-5-GMK
C976	CC 50V 0.022 μ F 10% 0805 1.2X2.0	150F-223K-J-BD
C977	CE 50V 1 μ F 20% RL 4x7	157F-105M-5-GM
C978	CC 50V 0.022 μ F 10% 0805	150F-223K-J-BD
C979	CE 16V 22 μ F 20% RL 4X7 ELNA	157D-226M-5-GMK
C980	CC 50V 0.01 μ F 10% 0805 1.2X2.0	150F-103K-J-BD
C981	CC 50V 0.022 μ F 10% 0805	150F-223K-J-BD
C982	CTC 0/30 100pF 5% 0805 1.2X2.5	15CG-101J-J-BD
C991	CC 50V 1000pF 10% 0805 1.2X2.0	150F-102K-J-BD
DIODES		
D901	DZ 1/2W 5.0-5.2V AT	4837-4C20-2
D902	DZ 1/2W 9.1-9.5V AT	4837-7C20-2
D980	DIODE 1N4148 ATS	4804-1480-C
METAL MATERIALS		
FM-ANT	SHIELD WIRE RG174/U UL 1354 45MM	8110-0457-1
J902-1	ANTENNA WASHER	4131-7701-0
J903,J904	ANTENNA WASHER	4131-7701-0
SOCKET/WAFER		
J704B	SOCKET (PCB/PCB) 16P P2.0 RA	2101-1601-0
M912	4P TERMINAL FM/AM ANTENNA	2113-1667-0
P901	WAFER 2P ST. P=2.5 NH (JST)	2113-1160-0
COILS		
L901	COIL 22 μ H 10% AL BL7	1801-220K-M
L903,L904	COIL MPX LPF NMC-4085	5600-3386-S
L941	COIL FM DET-1 10.7MHZ NFIF-4801	5600-3396-S
L942	COIL FM DET-2 10.7MHZ NFIF-4082	5600-3406-S
L971	COIL MW RF BLOCK NMRF-5077	5600-3280-G
L972	COIL AM IFT NMIF-4062	5600-3416-S
TRANSFORMER		
L905	BALUN TRANSFORMER 300 TO 75 OHM	1806-2201-0
TUNER		
M901	TUNER ENV172D3G1 PANASONIC	1300-0726-0
CERAMIC FILTERS		
M902	CF10.7 +-30 SFE10.7MA5-A	2701-0010-1
M903	CF10.7 +-30 SFE10.7MA5-A	2701-0010-1

REF NO.	DESCRIPTION	PART NO.
M904	CF10.7 +-30 SFE10.7MA5-A	2701-0010-1
M911	CF 450 +-1 SFZ450JL3 MURATR	2701-0680-0
CRYSTAL		
M905	CRYSTAL 7.2MHZ 20PPM	2300-0440-0
TRANSISTORS		
Q901	TR 2SC945P HFE 200-400	485C-945P-5
Q902	TR 2SC1923-0 HFE 70-140	4851-9230-5
Q903	TR DTA114ESA ROHM	485A-114E-5
Q922,Q923	TR 2SC1740S (R) HFE180-390	4860-1590-5
Q943,Q944	TR 2SD 1468 S	4860-8120-0
Q945	TR DTA114ESA ROHM	485A-114E-5
Q980	TR 2SC1740S (R) HFE180-390	4860-1590-5
Q981	TR 2SA1015-Y HFE120-240	4851-015Y-5
Q982	TR N-JEET 2SK-363BL	4853-63BL-5
RESISTORS		
R901	RMG 1/10W 33K 5% 0805	4720-333J-J
R902	RMG 1/10W 22R 5% 0805	4720-220J-J
R903	RMG 1/10W 12K 5% 0805	4720-123J-J
R904	RMG 1/10W 330R 5% 0805	4720-331J-J
R905	RMG 1/10W 680R 5% 0805	4720-681J-J
R906	RMG 1/10W 10K 5% 0805	4720-103J-J
R907	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R908	RMG 1/10W 470R 5% 0805	4720-471J-J
R909,R910	RMG 1/10W 330R 5% 0805	4720-331J-J
R911	RMG 1/10W 100R 5% 0805	4720-101J-J
R912	RMG 1/10W 22R 5% 0805	4720-220J-J
R913	RMG 1/10W 33R 5% 0805	4720-330J-J
R915	RMG 1/10W 10K 5% 0805	4720-103J-J
R916	RMG 1/10W 1K 5% 0805	4720-102J-J
R918	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R919-R924	RMG 1/10W 1K 5% 0805	4720-102J-J
R925,R926	RMG 1/10W 82R 5% 0805	4720-820J-J
R927	RMG 1/10W 10K 5% 0805	4720-103J-J
R928	RMG 1/10W 220R 5% 0805	4720-221J-J
R929	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R931	RMG 1/10W 22R 5% 0805	4720-220J-J
R942	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R943	RMG 1/10W 8.2K 5% 0805	4720-822J-J
R944	RMG 1/10W 100K 5% 0805	4720-104J-J
R945	RMG 1/10W 3.9K 5% 0805	4720-392J-J
R946	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R947,R948	RMG 1/10W 10K 5% 0805	4720-103J-J
R952,R953	RMG 1/10W 22K 5% 0805	4720-223J-J
R954	RMG 1/10W 10K 5% 0805	4720-103J-J
R955	RMG 1/10W 22R 5% 0805	4720-220J-J
R957,R958	RMG 1/10W 2.7K 5% 0805	4720-272J-J
R959,R960	RMG 1/10W 330K 5% 0805	4720-334J-J
R961,R962	RMG 1/10W 6.8K 5% 0805	4720-682J-J
R963,R964	RMG 1/10W 100K 5% 0805	4720-104J-J
R968	RMG 1/10W 1K 5% 0805	4720-102J-J
R970	RMG 1/10W 0R 5% 0805	4720-000J-J
R971	RMG 1/10W 3.3K 5% 0805	4720-332J-J
R972	RMG 1/10W 10K 5% 0805	4720-103J-J
R973	RMG 1/10W 30K 5% 0805	4720-303J-J
R974	RMG 1/10W 100K 5% 0805	4720-104J-J
R975	RMG 1/10W 56K 5% 0805	4720-563J-J
R977	RMG 1/10W 0R 5% 0805	4720-000J-J
R980	RMG 1/10W 10K 5% 0805	4720-103J-J
R981-R983	RMG 1/10W 100K 5% 0805	4720-104J-J
R984	RMG 1/10W 1M 5% 0805	4720-105J-J
R985	RMG 1/10W 470R 5% 0805	4720-471J-J
R986	RMG 1/10W 10K 5% 0805	4720-103J-J
R987	RMG 1/10W 100K 5% 0805	4720-104J-J
R988	RMG 1/10W 0R 5% 0805	4720-000J-J
R989	RMG 1/10W 1M 5% 0805	4720-105J-J
R991	RMG 1/10W 0R 5% 0805	4720-000J-J

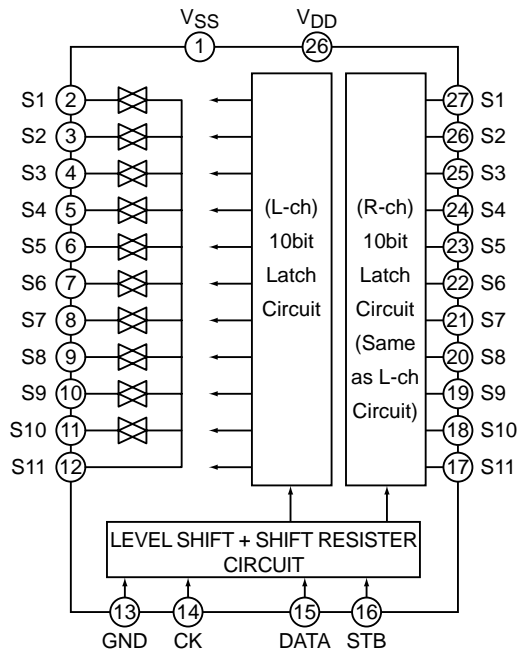
REF NO.	DESCRIPTION	PART NO.
SEMI FIXED		
R941	SVR 22K H3 7X7.6 RH0615C	4756-2236-3-06
R951	SVR 100K H3 6.7X 6.3EVN-D8A A02	4756-1046-3-03
R956	SVR 10K H3 7X7.6 RH0615C	4756-1036-3-06
ICs		
U901	IC LA1837 AM/FM IF	3130-8180-0
U903	IC LC7218 PLL FREQ SYNTHESIZER SANYO	3131-3760-0
PACKING MATERIALS		
3001	GIFT BOX,502	1477-2813-0
3002	POLYFOAM	1490-1753-2
3005	POLYBAG UNIT 450X650	1497-1392-1
3006	DATE CODE LABEL	3000-3544-0
3007	*US S/N LABEL SET A0180C	3000-8913-0
3007	*CE SERIAL NO. LBL A0181C	3000-9020-0
3008	GP ALKALINE BATTERY 1.5V 2A (15A)	4060-0710-0
3009	REMOTE HANDSET GTP506	8900-9270-0
3010	POLYBAG 240X100X0.05X5	1497-0152-0
3011	POLYBAG 260X130X0.1 OPEN END	1497-0672-0
3012	POLYBAG 255X180X0.1X8 (RECY)	1497-1312-0
3013	300-OHM T ANTENNA	2107-0661-1
3014	AM LOOP ANTENNA	2113-1155-0
3016	RCA CABLE W/R AU L=1.0M (2P)	7010-2020-0
3020	LABEL- YELLOW	3000-3724-0
PACK	CARTON SHT-PALLET 1000X1200	1450-1351-0
PACK	ANGLE BOARD (L=1000MM)	1450-1891-0
PACK	CARD BOARD 1230X1130 DW	1450-5430-0
PACK	PAPER PALLET (1200X1100X120MM)-WATER PROOF	1450-7350-0
	RIBBON 60MMX300M	3005-0360-1
	MODEL LABEL SET,BLANK APPLE SERIES	3005-0512-0
CASING MATERIALS		
0101	*US REAR PANEL	1403-5212-0
0101	*CE REAR PANEL	1403-5213-0
0102	TOP COVER 502/506	1402-3572-0
0103	BOTTOM CHASSIS	1403-5201-0
0104	*US FRONT BKT (SUBFASCIA)	1403-5230-0
0104	*CE FRONT BRACKET,CE	1403-5231-0
0105	*US FRONT PANEL GTP502	1403-5221-0
0105	*CE FRONT PANEL,502CE	1403-5223-0
0106	METAL WASHER M3X0.4X8 BZ	2600-3004-0803
0107	PLASTIC FOOT	4152-0481-0
0108	T3X8MM SELF TAPPING	2954-3008-3000
0109	T3X8MM SELF TAPPING	2954-3008-3000
0111	T3X8MM SELF TAPPING	2954-3008-3000
0112	*US AC CORD 18AWGX2	7009-3100-2
0113	T3X8MM SELF TAPPING	2954-3008-3000
0114	M3X8 C'SINK B-TITE FH,BK	2951-3008-3000
0115	SCREW M3X6 BINDING (BLK)	2904-3006-3000
0116	M3X8 C'SINK B-TITE FH,BK	2951-3008-3000
0117	T3X8MM SELF TAPPING	2954-3008-3000
0120	*US FUSE HOLDER (PANEL MOUNT)	4152-0491-0
0120	*CE M3X8 C'SINK B-TITE FH,BK	2951-3008-3000
0121	*US STRAIN RELIEF BUSHING	4151-9461-0
0122	RUBBER PIN	4152-0501-0
0123	FOAM STRIP 80X10X1MM	4152-0661-0
0124	DISPLAY BEZEL	4154-0511-0
0125	VFD LENS	3716-5011-0
0126	LENS,VOLUME GTP-740	3715-4100-0
0127	LENS BUTTON ACTUATOR	3715-4800-0
0128	POWER KNOB LENS	3714-4906-0
0130	*US AC INLET 2 PIN 15A	2113-1662-0
0130	*CE AC INLET SOCKET	2113-0300-0
0131	*US F CONNECTOR	2113-1172-0
0131	*CE ANTENNA JACK, DIN TYPE	2107-1111-0
0132	POWER KNOB	2438-8301-0
0133	POWER KNOB HOLDER	2438-8401-0

REF NO.	DESCRIPTION	PART NO.
0134	POWER KNOB-LED CAP	2438-8501-0
0135	KNOB,VOLUME GTP-740	2441-8200-0
0136	FUNCTION KNOB W/O LIGHT	2441-9600-0
0137	KNOB SPACER	2441-9500-0
0138	FUNCTION KNOB W/ LIGHT	2441-9700-0
0139	SPRING	2510-2031-0
0140	BALANCE KNOB	2444-3711-0
0142	LENS LEDX4	3715-5000-0
0143	3X6MM B-TITE (BLK.ZN)	2954-3006-3000
0144	SCREW M3X8 (BLK)	2904-3008-3000
0145	SCREW M3X8 (BLK)	2904-3008-3000
0146	SCREW M3X8 (BLK)	2904-3008-3000
0147	CONN. ASSY 4P 2.5P L=50	7010-1510-0
0148	CONN.ASSY 8P P=2.5 L=280MM (SH)	7012-5230-0
0149	CONN.ASSY 4P P=2.5 L=320MM (SH)	7012-5240-0
0153	FLEXIBLE CABLE 35P L=150 P1.25	7012-5260-0
0156	CONN.ASSY 5P P2.5 L=120MM	7012-5610-0
0157	CONN.ASSY 4P P=2.5 L=100MM (SH)	7012-5340-0
0158	CONN.ASSY 6P P=2.5 L=200MM (SH)	7012-5350-0
0161-0162	*US CONN.ASSY 4P P=2.5	7012-5340-0
0163	*US CONN.ASSY 2P P=2.5	7012-5370-0
0164	SHRINKAGE TUBE ID=5 UL/CSA	1660-0620-0
0165	L-BRACKET	4152-0451-0
0169	BASS KNOB	2444-3611-0
0170	BASS KNOB COVER	2444-3811-0
0171	BASS KNOB SPACER	2444-3911-0
0173	BASS KNOB SPRING	4134-9281-1
0174	T3X8MM SELF TAPPING	2954-3008-3000
0175	SCREW M3X6 BINDING (BLK)	2904-3006-3000
0176	T3X8MM SELF TAPPING	2954-3008-3000
0177	LABEL MATT BLACK	3000-4749-0
0180	TOROIDAL X'FORMER I/P	1806-3524-0
0181	ME 2*8 4.0MM BK/RH JHC023-00	2954-2008-3000
0183	T3X8MM SELF TAPPING	2954-3008-3000
0184	SHEET-PVC 4X5X0.4	3100-1311-0
0189	ANTENNA WASHER	4131-7701-0
0190	M/C SCREW M3X8, CS SMALL HEAD	2901-3008-3001
0192	BRASS STUD M3 L=15.7mm	4154-2151-0
0193	*US SHIELD PLATE FOR TUNER	4135-0031-0
0194	BLUE FILTER	3716-5041-1
0196	*US CONN ASSY 3P P2.5 L=90MM	7010-1580-0
0197	FELT PAPER 07X30	1454-2350-0
0198	SHIELD PLATE	4134-9771-0
0199	SCREW M3X8 (BLK)	2904-3008-3000
M111-M114	*US FU 2000MA 5X20MM	5100-2020-1
M111-M114	*CE  FUZE T2A 250V 5X20MM SEMKO/VDE	5120-0065-0
FUZE	*US  FUZE T1A 250V 6.4X31.8MM	5120-0205-0
PWR	*CE  FU T1A 250V SEMKO/UDE 5X20MM	5120-0018-0
	SHRINKAGE TUBE ID=5 UL/CSA	1660-0620-0
	SHRINKAGE TUBE ID=2 UL1226	1660-0740-0
	SHRINKAGE TUBE ID=4MM UL	1660-0870-0

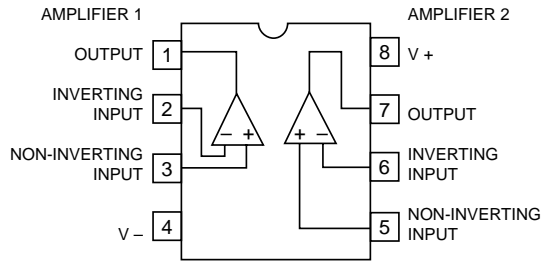
NOTE: - The components identified by  mark are critical for risk of fire and electrical shock.

- Replace only with part number specified.
- US : USA model only.
- CE : European model only.
- Capacitors : CP-Polystyrere, CM-Mylar,
- CE-Electrolytic, CC-Ceramic.
- Resistors : RMF-Metal Film.

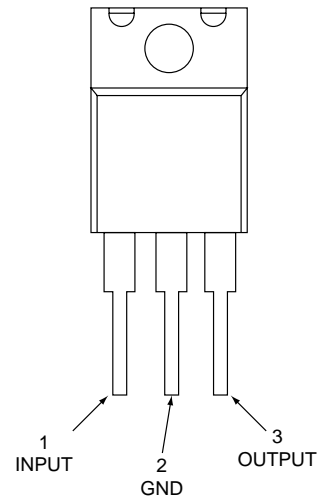
U206-U207, U307, U333: TC9273F-004



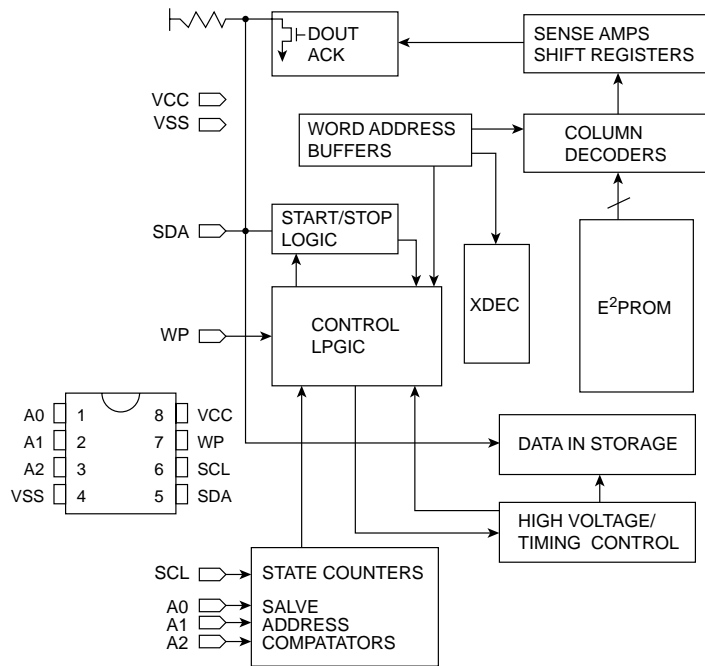
U202-U205: 7AA



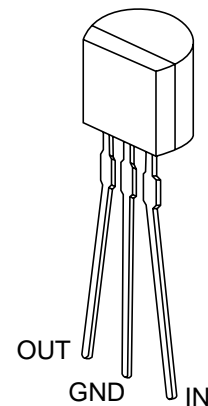
U114: NJM78M56FA



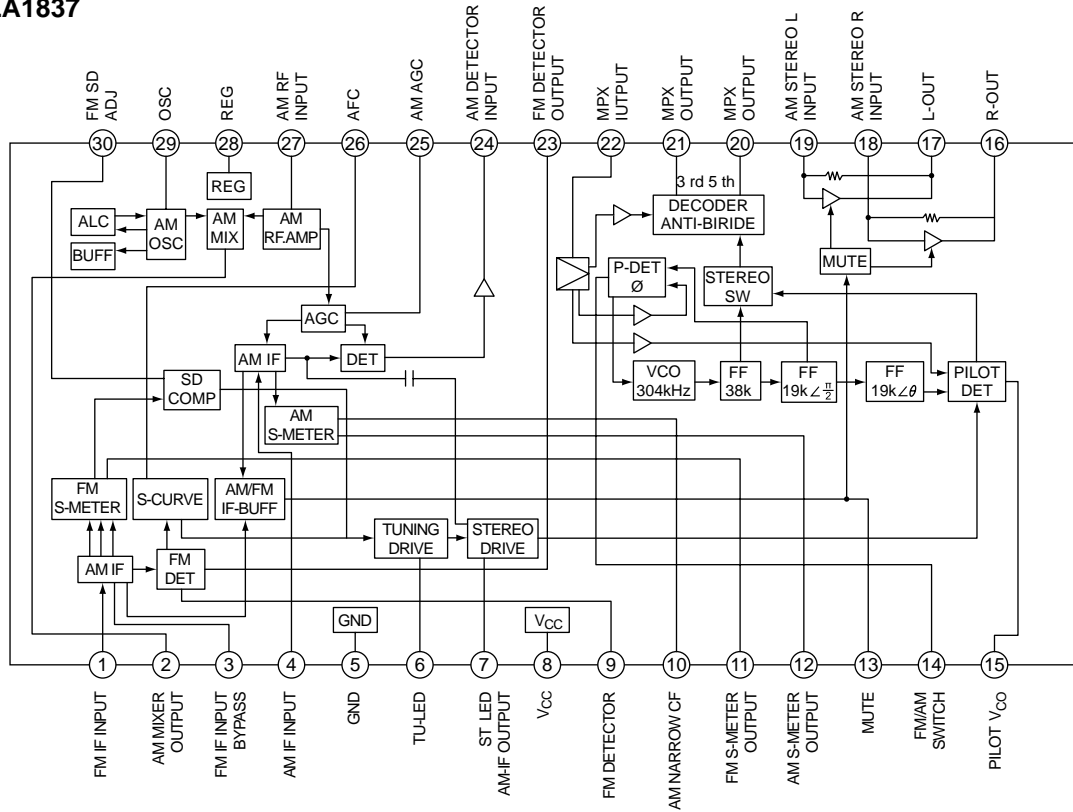
U606: EEPROM 24C02



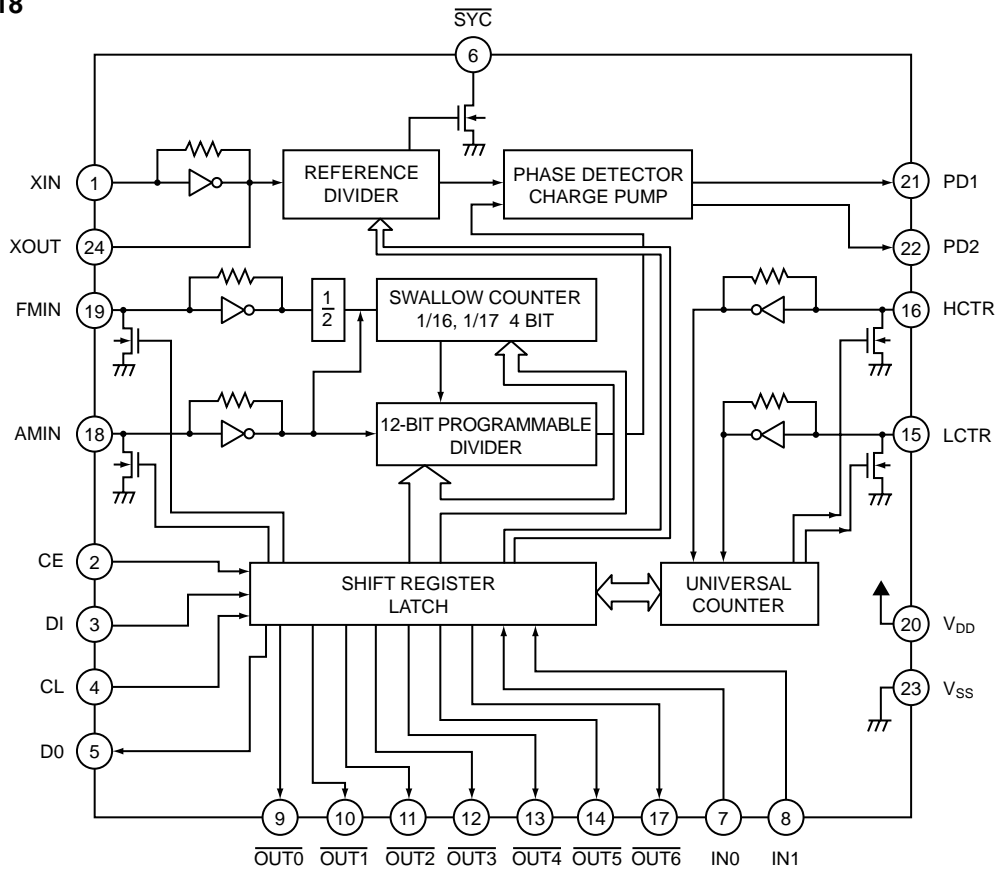
U1001: NJM78L05A



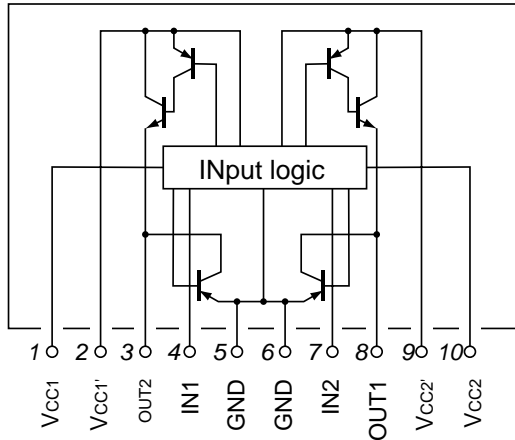
U901: LA1837



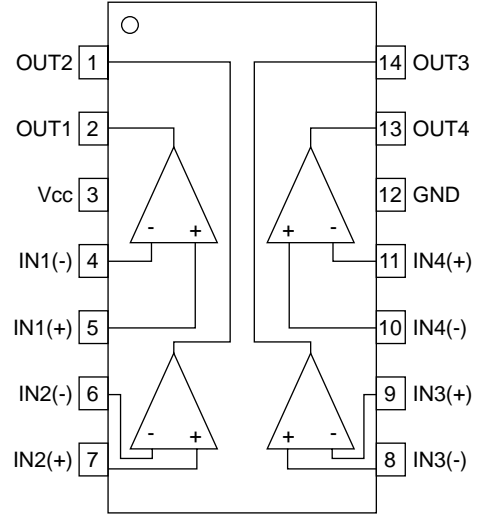
U903: LC7218



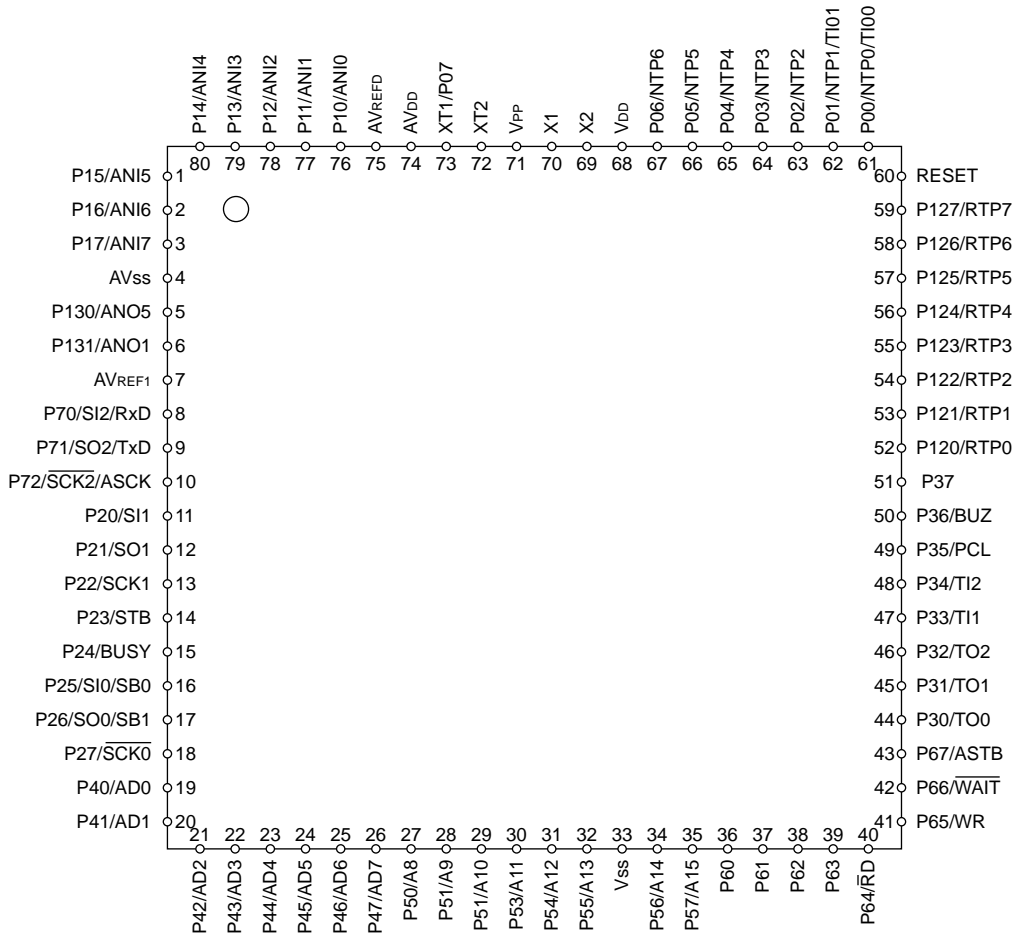
U116: LB1642



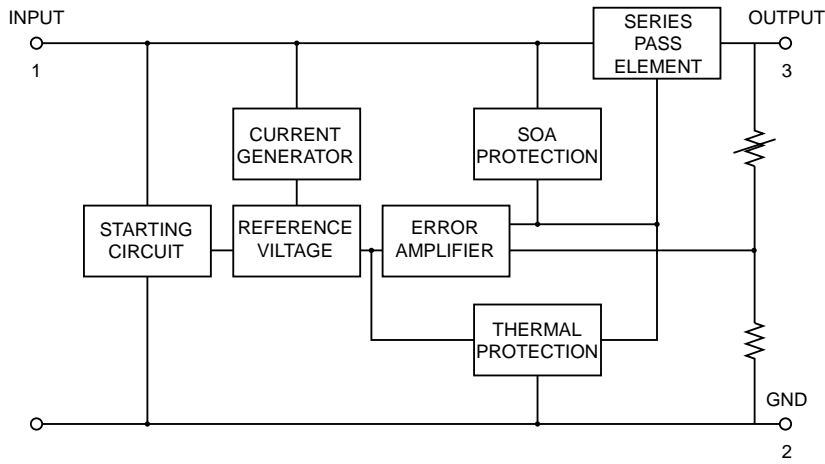
U504: LM2901N



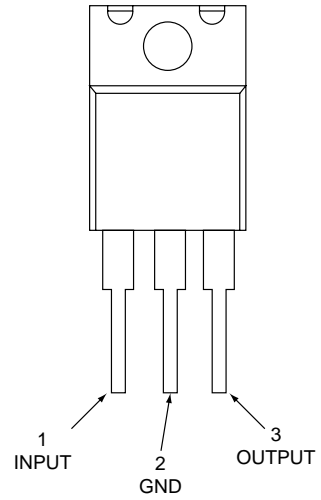
U602: UPD78P058



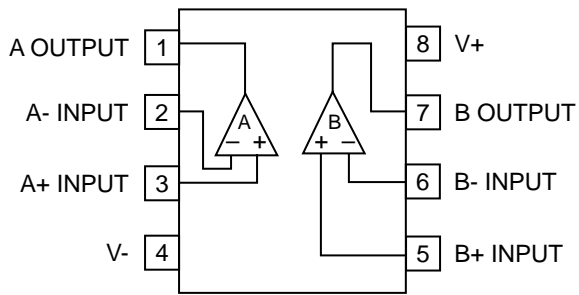
U101: 7815 FA



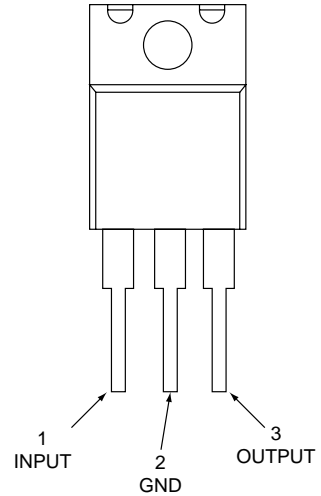
U111: 7812H



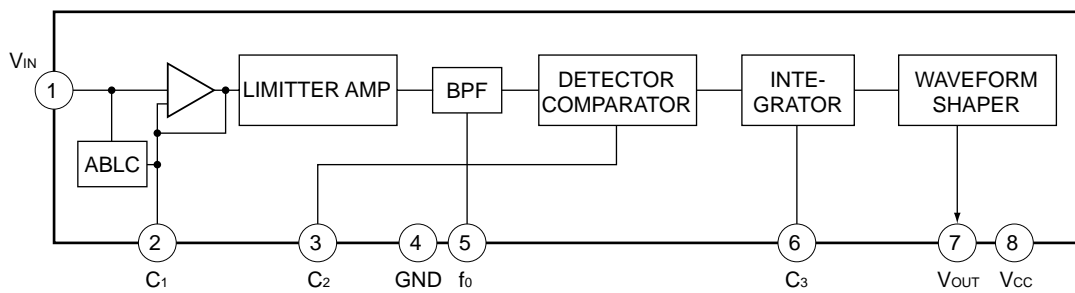
U201: NJM4558M

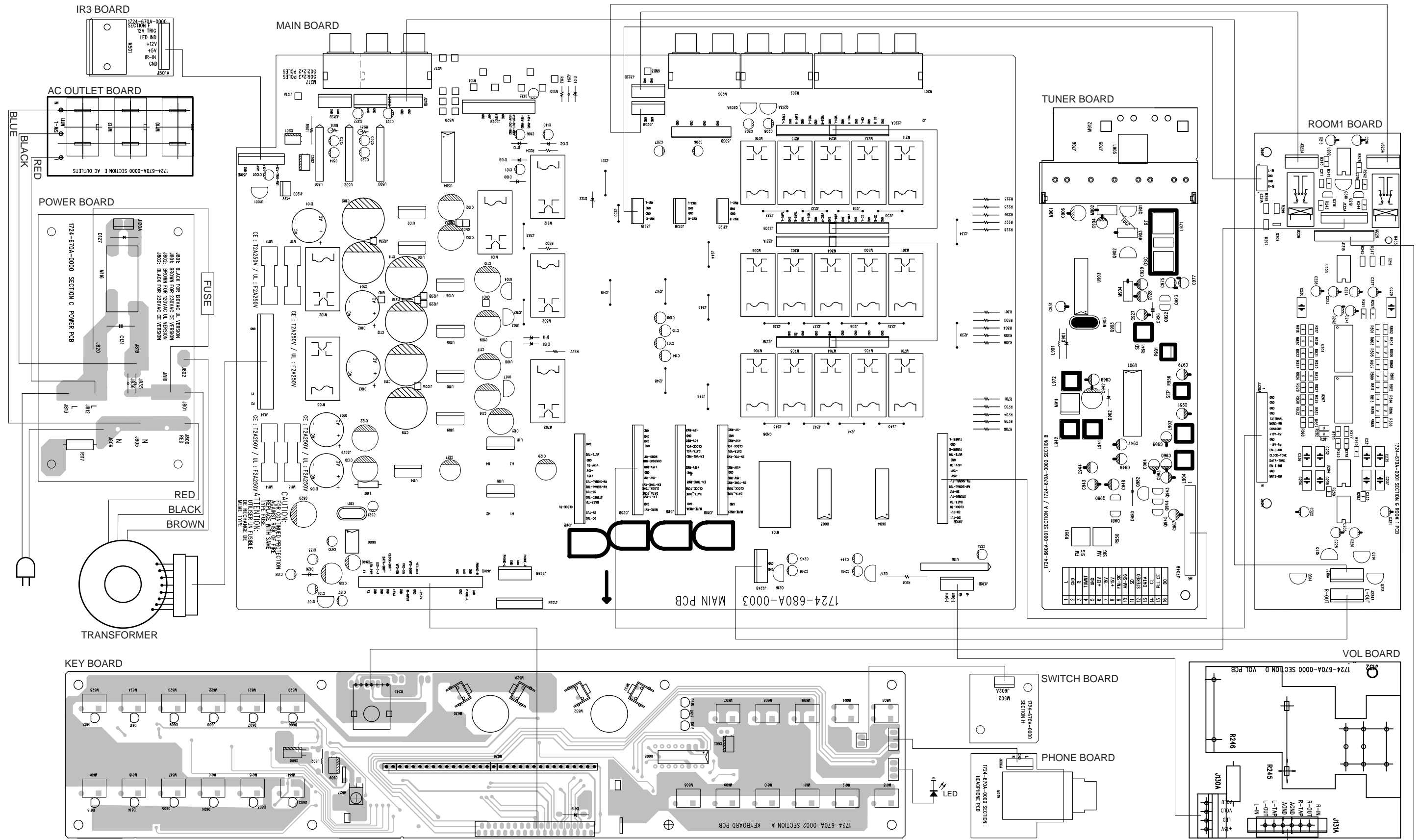


U115: 7805

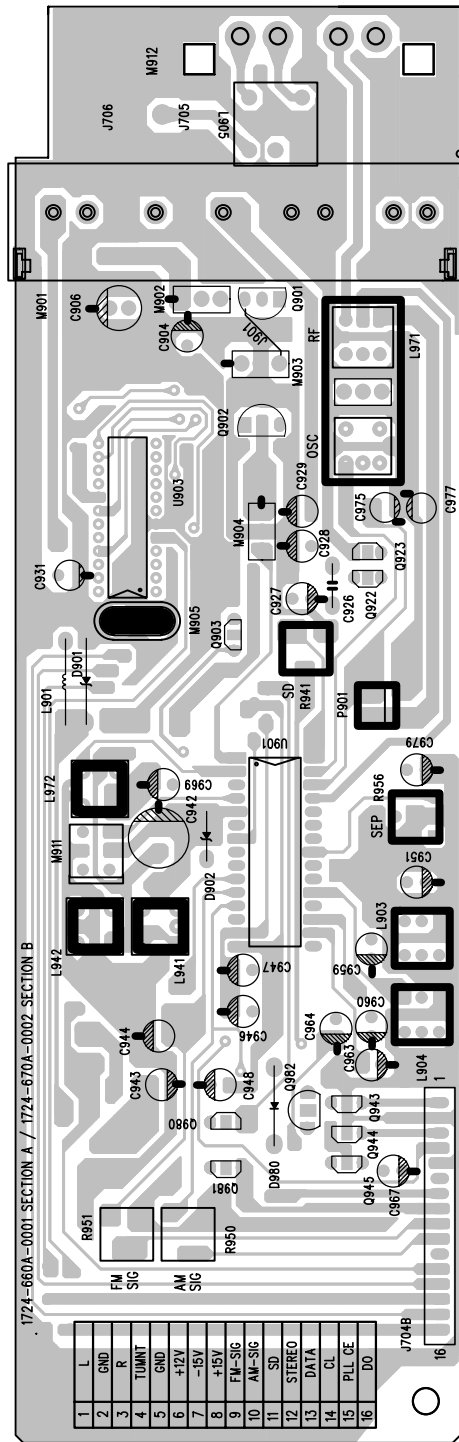


U501: KA2184D

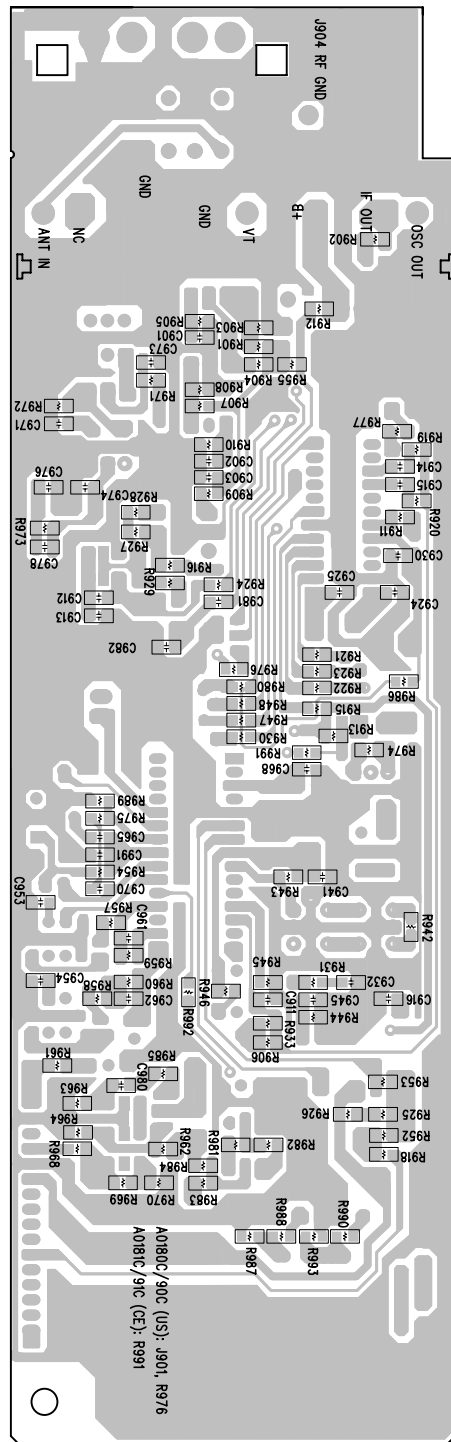




TUNER BOARD

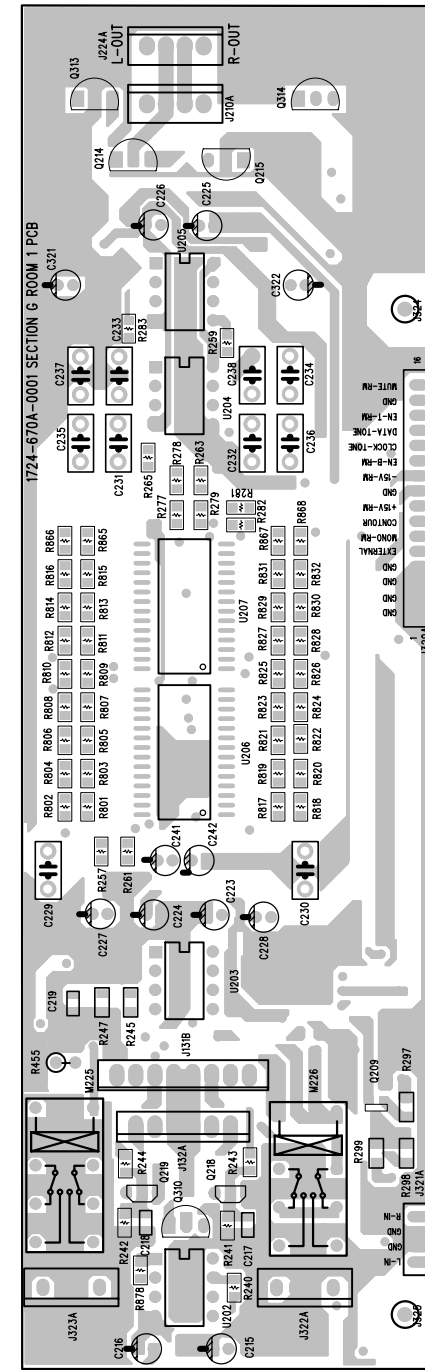


Top View

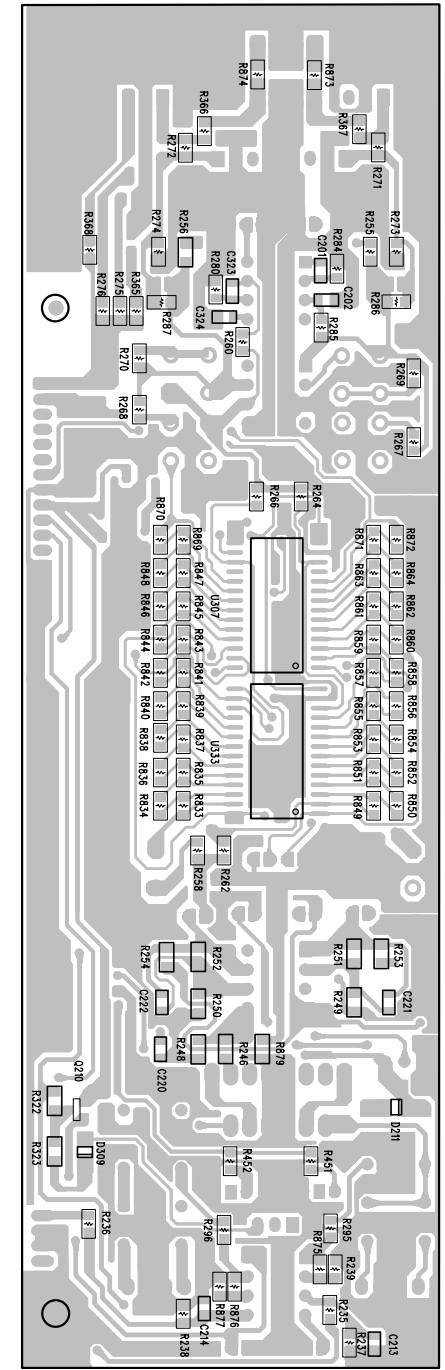


Bottom View

ROOM1 BOARD

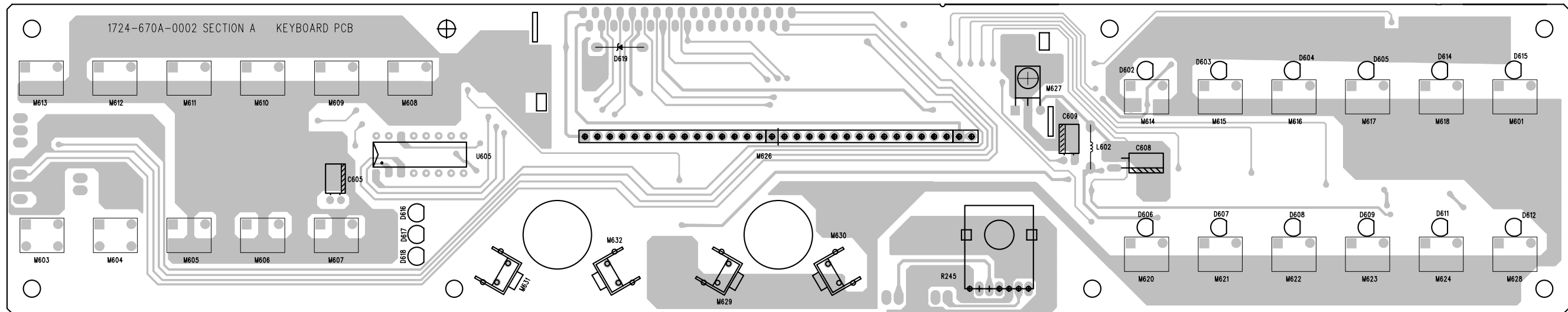


Top View

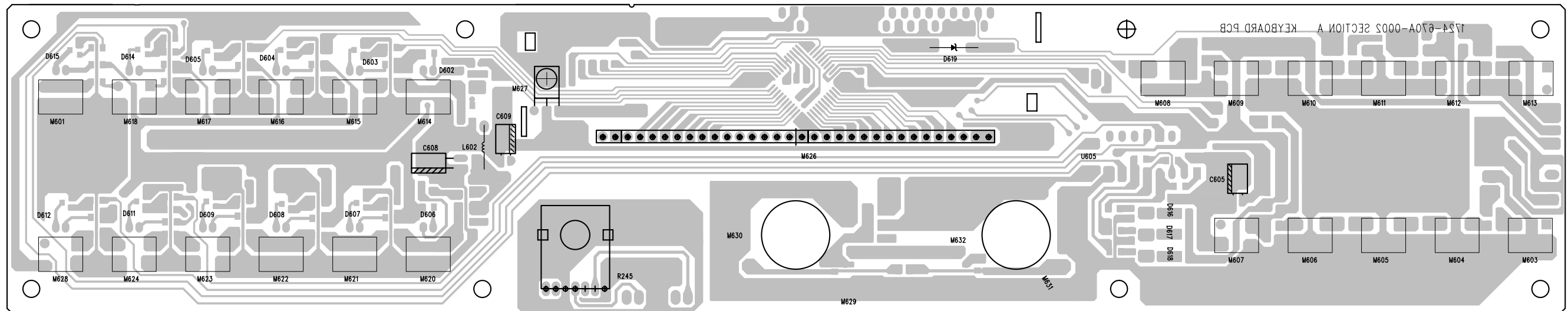


Bottom View

KEY BOARD

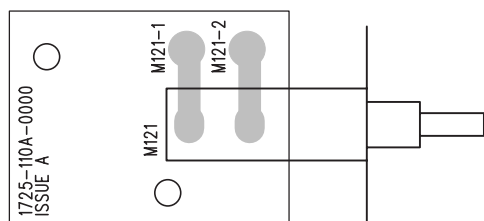


Top View

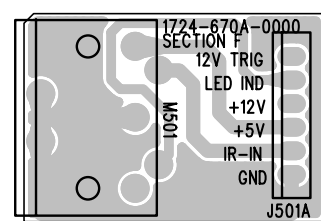


Bottom View

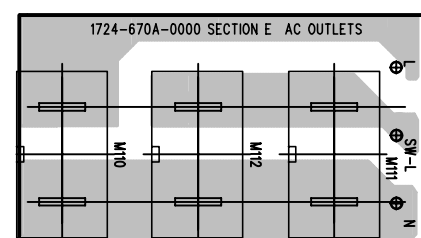
POWER SWITCH BOARD



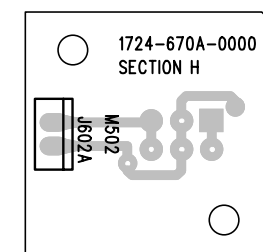
IR3 BOARD



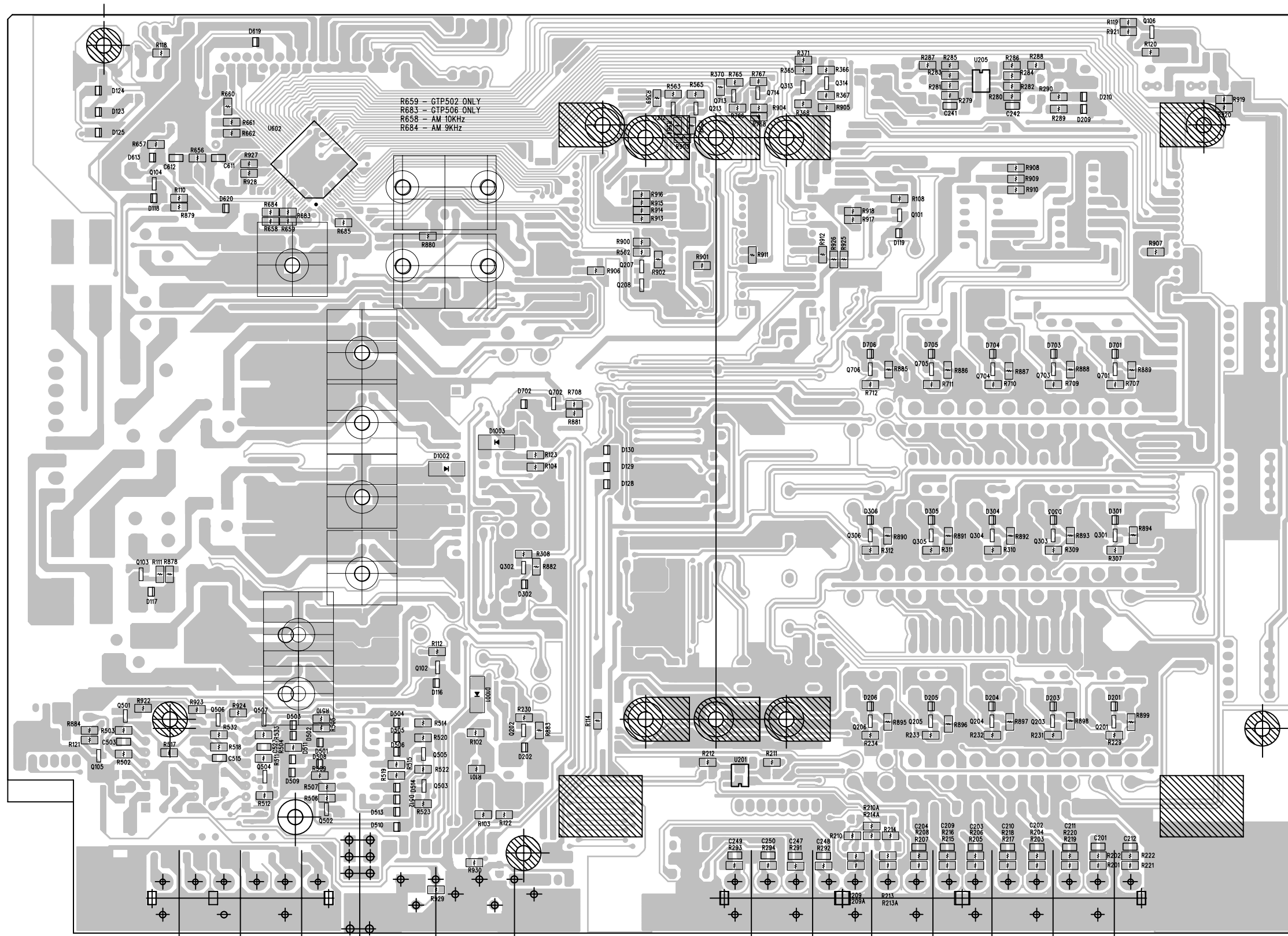
AC OUTLET BOARD
(UL Only)



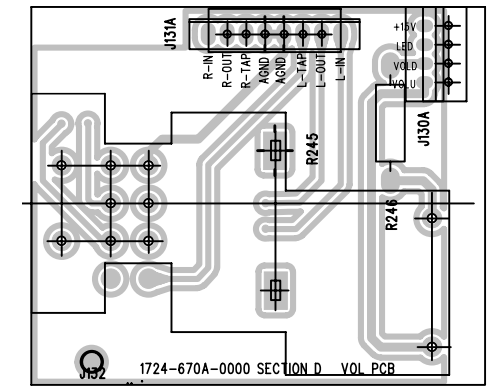
SWITCH BOARD



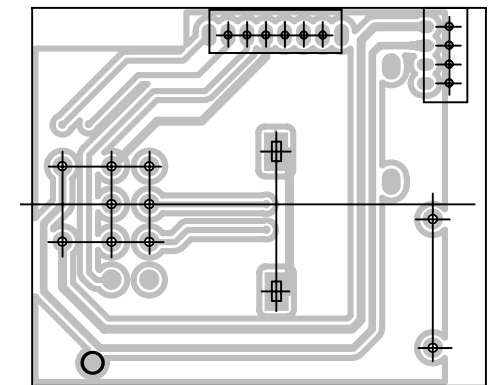
MAIN BOARD (Bottom View)



VOL BOARD

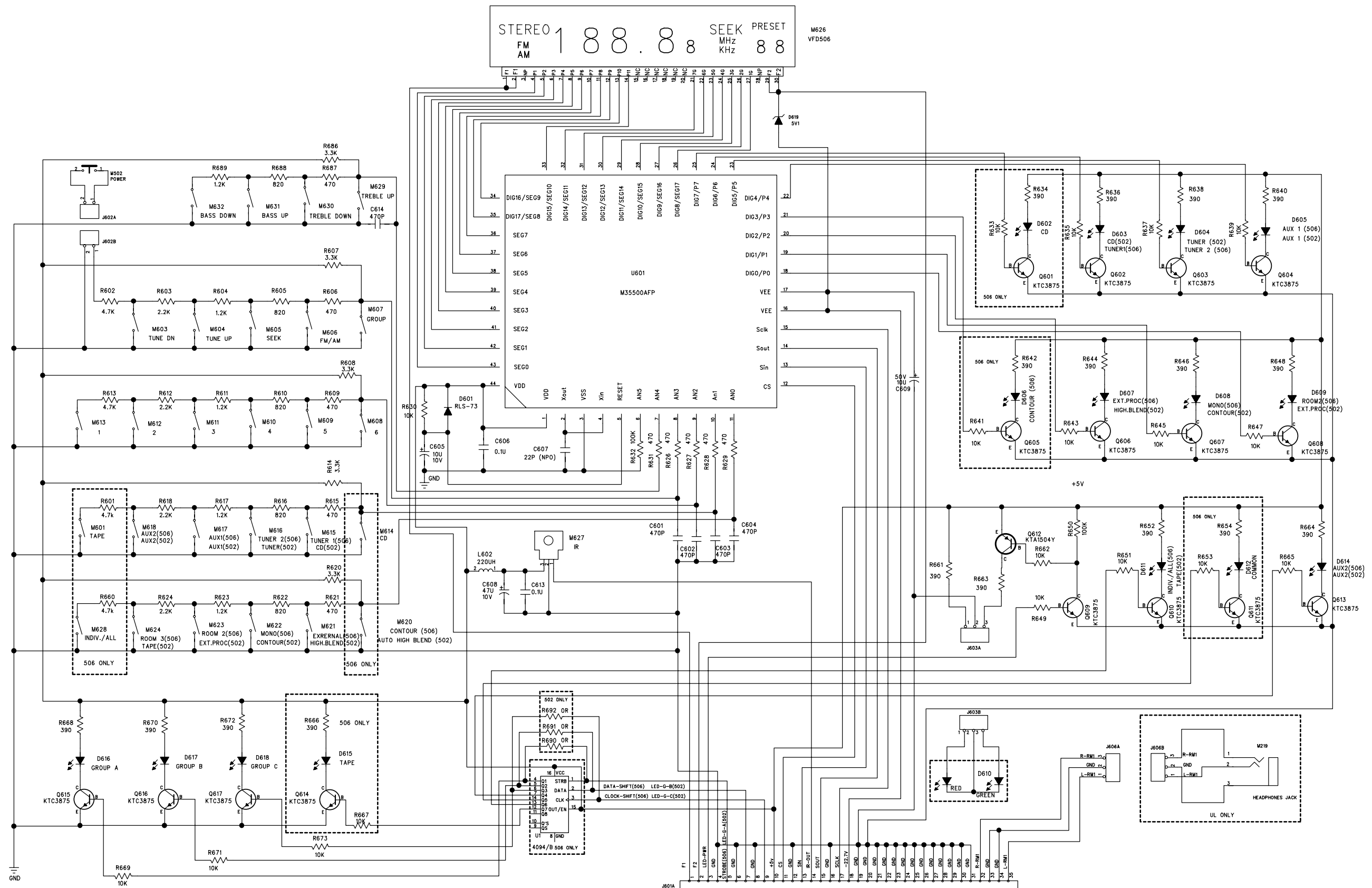


Top View

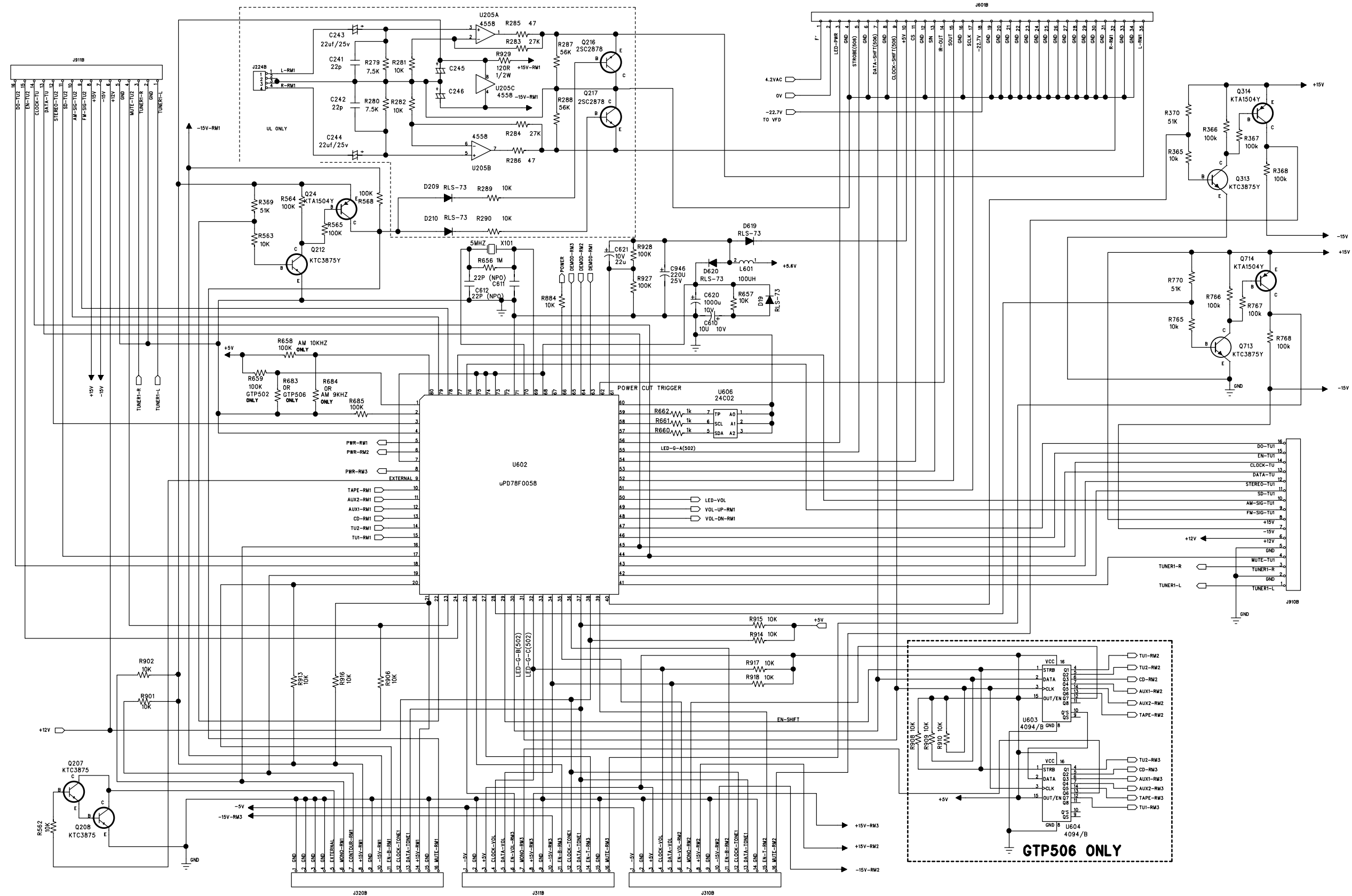


Bottom View

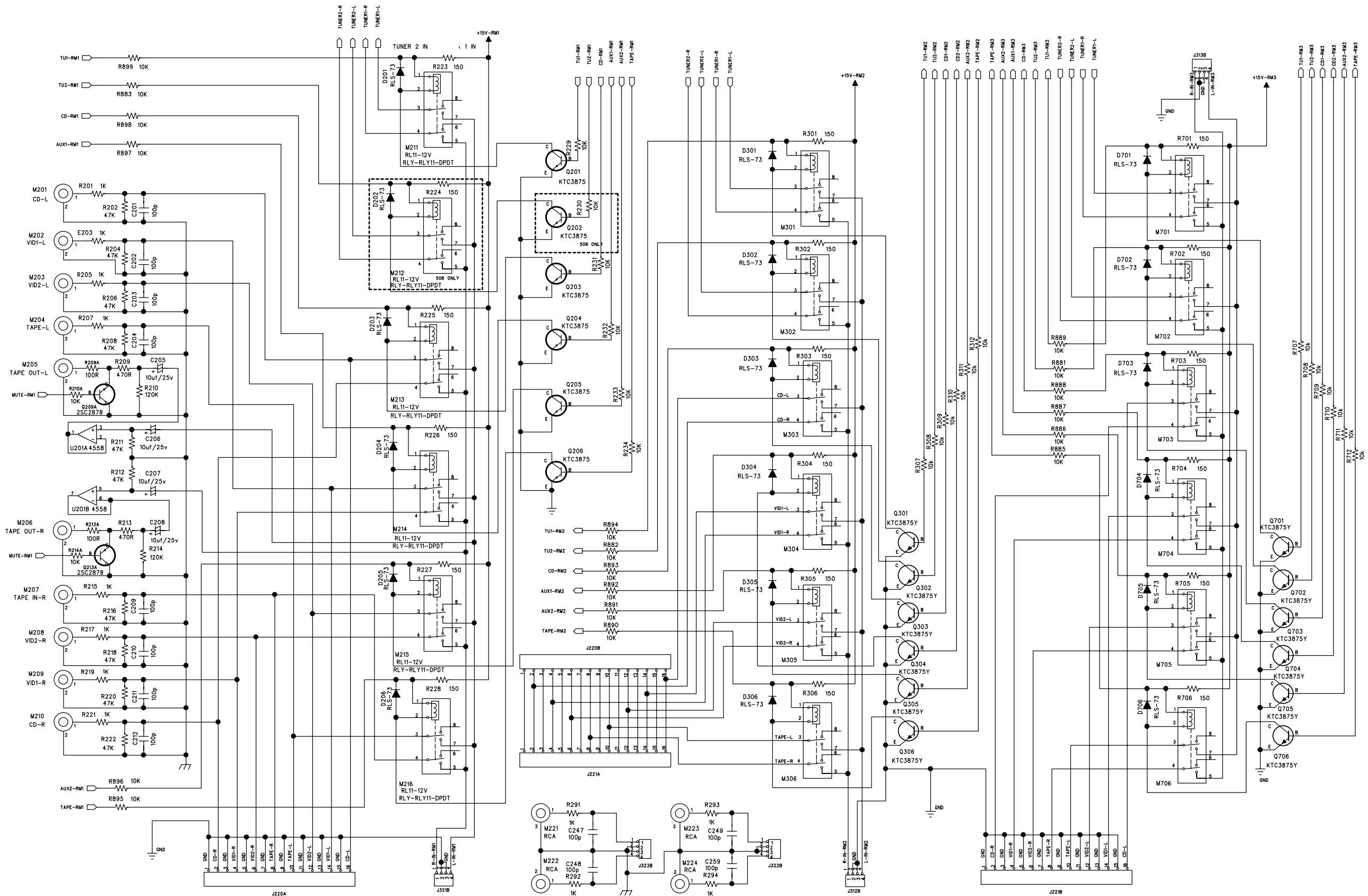
KEY



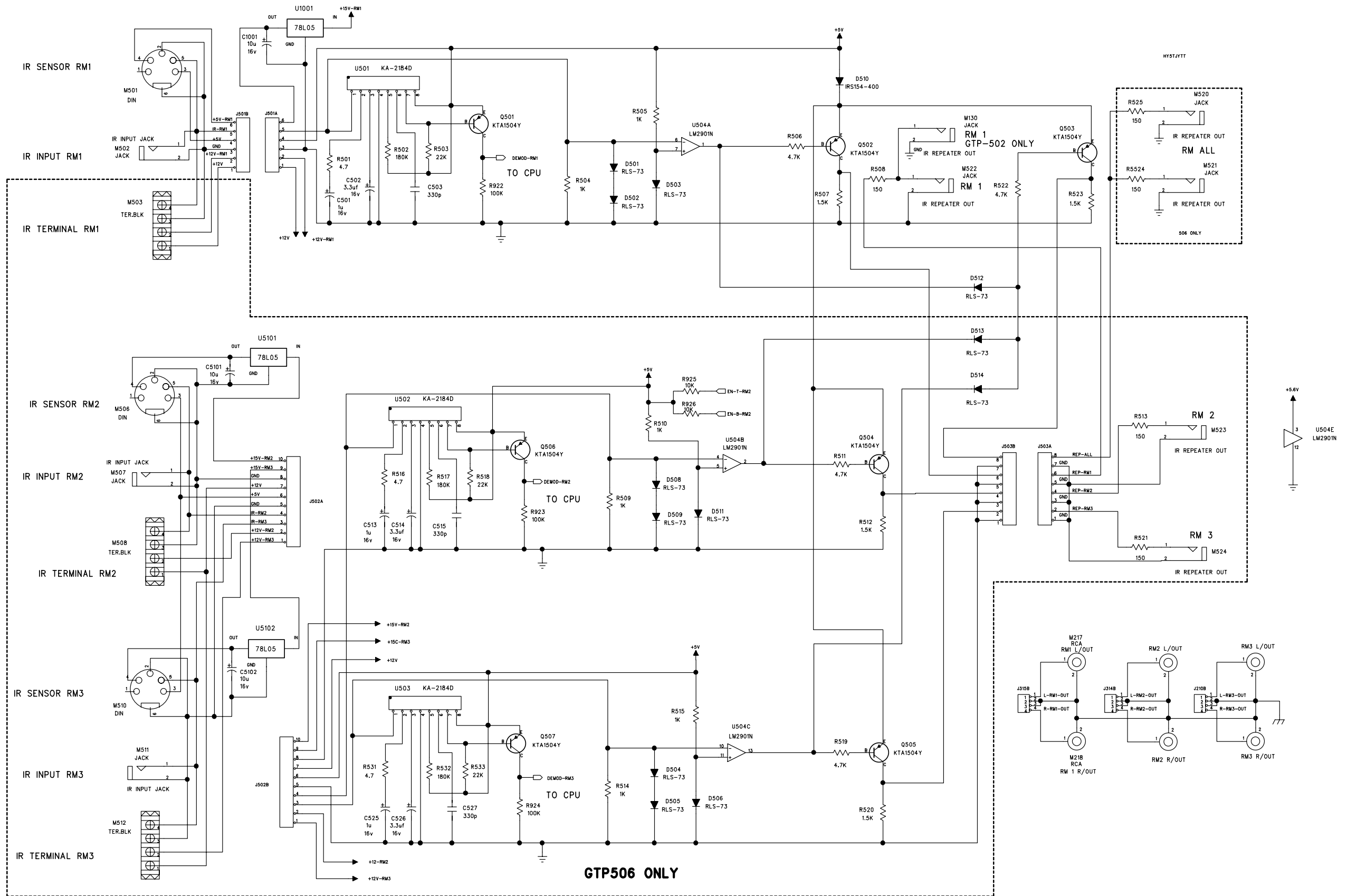
MAIN CPU



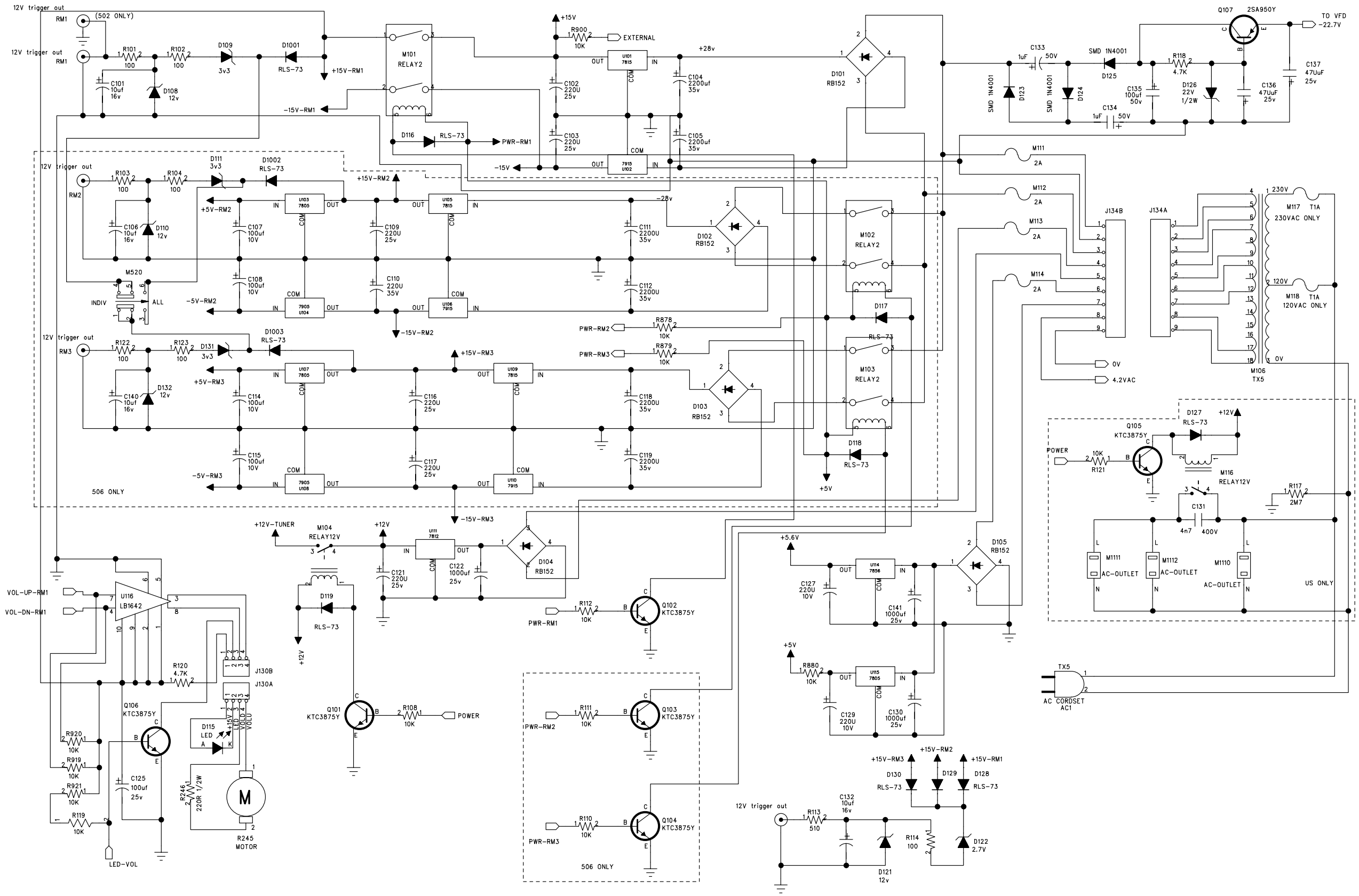
MAIN INP



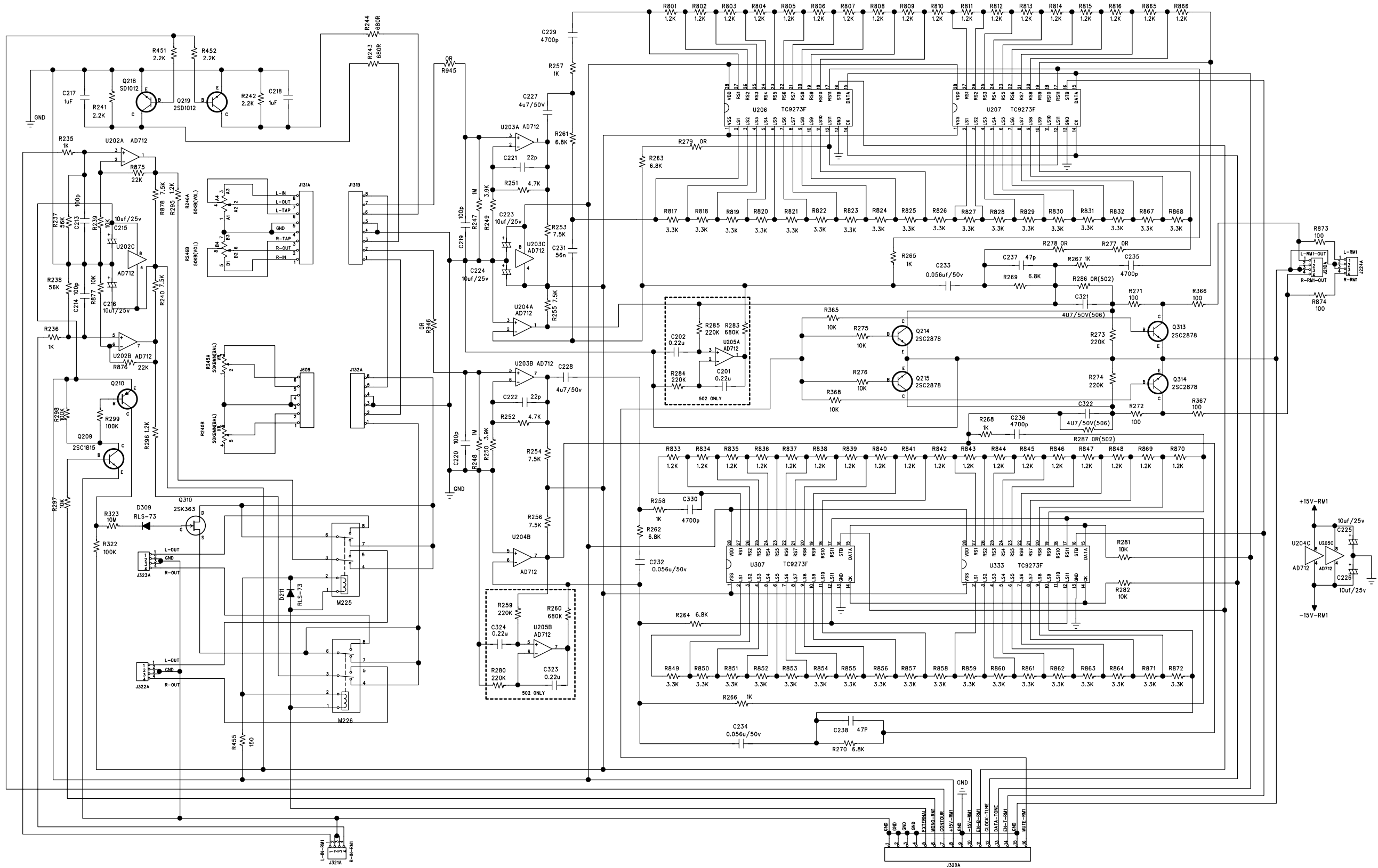
MAIN REP



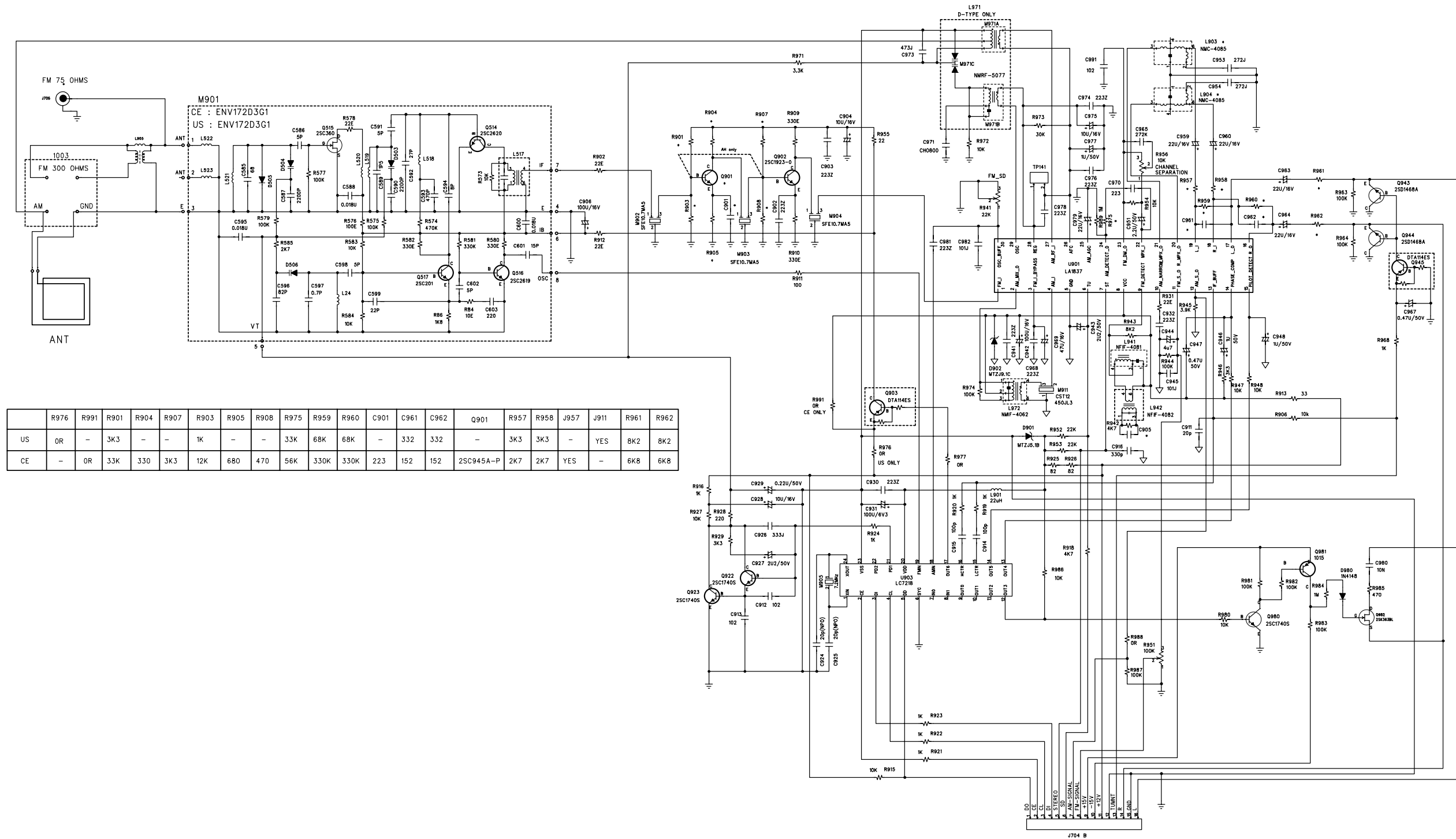
PSU



ROOM 1



TUNER



GENERAL AUDIO SPECIFICATION

	Specification Details	Units	Nom.	Lim./Tol.	Remark
1.	Headphone output at 0.1% THD with CD IN 500mV at 1 KHz, (600 ohm load, Audio LPF)	Vp-p	10	>9	
2.	Headphone Freq. Response CD IN 500mV at 1 KHz for ref. (2V output, 600 ohm load, Audio LPF) (20Hz - 20KHz)	dB	0	+/- 0.8	
3.	Remote control (30 max) 6	meter	8		

AM BAND SPECIFICATION

Frequency Range:

	US	530 - 1710 KHz	Step	10 KHz		
	EUROPE	522 - 1611 KHz	Step	9 KHz		
			FREQ	UNIT	LIMIT	
			KHz			
1.	Usable sensitivity (400Hz, -20dB, direct input)	999 / 1000		dBμV	≤ 30	
2.	S/N RATIO (5mV input)	999 / 1000		dB	≥ 40	
3.	THD (5mV input)	999 / 1000		%	≤1.8	
4.	IF Rejection (450KHz) (ref. to item 8)	603 / 600		dB	≥ 36	
5.	Image Rejection (F+2xIF) (ref. to item 8)	1404 / 1400		dB	≥ 28	
6.	Selectivity (ref. to item 8)	999 / 1000		dB	≥ 17	
7.	Output (30%, 10mV)	999 / 1000		mV	130 +/- 20	
8.	Loop sensitivity 20dB S/N	999 / 1000		dB	≥ 60	
		603 / 600		dB	≥ 63	
		1404 / 1400		dB	≥ 63	
9.	Frequency response 100 - 2.3KHz (400 Hz, 2mV)	999 / 1000		dB	+/- 6dB	

FM BAND SPECIFICATION

Frequency Range:

	87.5 - 108 MHz	step	Europe:	25kHz		
			US:	100kHz		
				FREQ	UNIT	LIMIT
1.	Usable sensitivity IHF		MONO	98MHz	dBμ	≤ 15
2.	S/N RATIO (60dBμ IHF wtd)		MONO	98MHz	dB	≥ 73
			STEREO	98MHz	dB	≥ 67
3.	THD (60dBμ IHF wtd)		MONO	98MHz	%	≤ 0.25
			STEREO	98MHz	%	≤ 0.35
	L only, R only					
4.	IF Rejection (10.7MHz) (refer to item 1)			98MHz	dB	≥ 70
5.	Image Rejection (119.4 MHz) (refer to item 1)		US	98MHz	dB	≥ 38
			EUROPE	98MHz	dB	≥ 85
6.	Capture ratio (40dBμ)				dB	≤ 3

7.	AM Suppression @ 60dB μ 100% mod FM, 30% mod AM		98MHz	dB	≥ 48
8.	Pilot suppression	L	98 MHz	dB	≥ 60
		R	98 MHz	dB	≥ 60
9.	Frequency response (1KHz Ref) US = 75uS, EUROPE = 50uS	In between	20Hz & 15KHz	dB	0 ± 1.5
10.	Channel Separation (60dB μ IHF wtd)	@ 100 Hz		dB	≥ 30
		1KHz	US	dB	≥ 42
		1KHz	EUROPE	dB	≥ 38
		10KHz		dB	≥ 30
11.	Alternate channel selectivity : +/-400KHz, IHF			dB	≥ 50
12.	Muting level			dB μ	$18 +3/-3.$
13.	Output	US	98MHz	mV	$500 \pm 15\%$
		EUROPE	98MHz	mV	$750 \pm 15\%$
14.	Auto-search sensitivity	ON		dB μ	≤ 15
		OFF		dB μ	≥ 24

PRE-AMPLIFIER SECTION:

			<u>UNIT</u>	<u>LIMIT</u>
1.	Output level : (Rated OUTPUT is 2Vp-p)	Max. OUTPUT	Vp-p	≥ 9
2.	Frequency response : (INPUT: 200mV, Volume at maximum, No loading)	20Hz - 85KHz		$\pm 0.8dB$
3.	THD with 30kHz LPF : (INPUT: 500mV, OUTPUT: 2V, 47k load)	20Hz - 20KHz	%	$\leq 0.01\%$
4.	Signal to noise ratio : (INPUT: 500mV, OUTPUT: 2V, A-Weighted)	kHz	dB	$\geq 100dB$
5.	Input sensitivity : (OUTPUT: 2V, Volume at maximum)		mV	400 ± 30
6.	Cross-talk 1kHz : (INPUT: 500mV, A-weighted, Volume at max.)		dB	$\geq 85dB$
7.	Tone Control Response: (INPUT: 500mV, OUTPUT: 2V)	BASS Boost (100Hz)	dB	$+ 6 \pm 2$
		BASS Cut (100Hz)	dB	$- 6 \pm 2$
		TREBLE Boost (10kHz)	dB	$+6 \pm 2$
		TREBLE Cut (10kHz)	dB	$- 6 \pm 2$

GENERAL ITEMS

1. Destination AC Voltage:
USA : 120V - 60 Hz
Europe : 230V - 50 Hz
2. Operating voltage in range from AC voltage +10 / -15%.
3. Dimensions:
width x height x depth : W (432mm) x H (76mm) x D (292mm)
4. Operating Temperature : -5 to +45 °C.
5. Standard input :

FM	75 KHz	Deviation
AM	30%	Modulation
Pilot	9%	Deviation.