

C 420

**STEREO
AM/FM TUNER**

C 420

**STEREO
AM/FM TUNER**

SERVICE MANUAL



SERVICE SAFETY PRECAUTIONS

1. Safety check out

(Only U.S.A. model)

Before returning the product to the customer, make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit.

Parts marked with the symbol \triangle are critical with regard to the risk of fire and electric shock. Replace only with parts recommended by the manufacturer.

CONTENTS

DESCRIPTION	PAGE
SPECIFICATIONS .....	.3
REAR PANEL / FRONT PANEL .....	.4
DISASSEMBLY INSTRUCTIONS .....	.5
BLOCK DIAGRAM .....	.6
WIRING DIAGRAM .....	.7
ADJUSTMENT POINTS DIAGRAM .....	.8
INSTRUMENT SETUP .....	.9
ALIGNMENT PROCEDURES .....	.10
PCB LAYOUT .....	.11-12
SCHEMATIC DIAGRAM .....	.13-16
IC BLOCK DIAGRAM .....	.17-19
ELECTRICAL PARTS LIST .....	.20-25
EXPLODED VIEW .....	.26
EXPLODED VIEW PARTS LIST .....	.27
PACKING DIAGRAM .....	.28

SPECIFICATIONS

AM TUNER SECTION

Input level is expressed as the reading in open-circuit of 75-ohm source impedance signal generator

Usable Sensitivity (999/1000kHz)		≤30dBμ
S/N Ratio (5mV in)		≥38dB
THD (5mV in)		≤3%
IF Rejection (450kHz)		≥36dB
Image Rejection (F+2xIF)		≥28dB
Selectivity		≥17dB
Output		130 +/-20mV
Loop Sensitivity (20dB S/N)		
	999/1000 kHz	≤66 dB
	603/600 kHz	≤66 dB
	1404/1400 kHz	≤66 dB
Frequency response (100 - 2.3 kHz, 5mV)		±6 dB

FM TUNER SECTION

Input level is expressed as the reading in open-circuit of 75-ohm source impedance signal generator

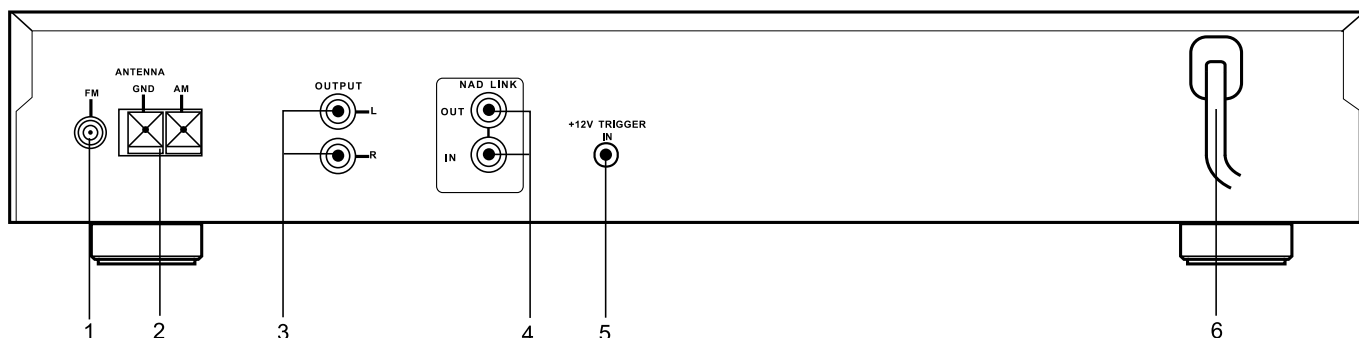
		<u>*C</u>	<u>*AH</u>
Usable Sensitivity (98 MHz)		≤13 dBμ	≤13 dBμ
Signal / Noise Ratio	Mono	≥72 dB	≥72 dB
(60 dBμ, IHF wtd)	Stereo	≥66 dB	≥66 dB
Frequency Response (20 Hz - 15 kHz, 60 dBμ)		0±1.0 dB	0±1.0 dB
Channel Separation (60 dBμ)	30 Hz	≥33 dB	≥33 dB
	1 kHz	≥42 dB	≥42 dB
	10 kHz	≥32 dB	≥32 dB
Alternate Channel Sensitivity			
(40 dBμ, ±400 kHz)		≥60 dB	≥45 dB
Capture Ratio (40 dBμ)		≤3 dB	≤3 dB
AM Suppression			
(60 dBμ, 100% Mod.FM, 30% Mod AM)		≥65 dB	≥65 dB
Image Rejection (119.4 MHz)		≥85 dB	≥85 dB
I.F. Rejection (10.7 MHz)		≥78 dB	≥78 dB
Pilot Suppression (60 dBμ)		≥60 dB	≥60 dB
THD (60 dBμ, L=R 75 kHz for AH, 40 kHz Dev for C)			
	Mono	≤0.25%	≤0.25%
	Stereo	≤0.35%	≤0.35%
Auto-Search sensitivity	On	≥24 dBμ	≥24 dBμ
	Off	≤15 dBμ	≤15 dBμ
RDS Decode Sensitivity		≤26 dBμ	≤26 dBμ

PHYSICAL SPECIFICATIONS

Dimensions (Width x Height x Depth)	435 x 80 x 285 mm
Net weight	4 kg (8.8 lbs)
Shipping weight	5.1 kg (11.22 lbs)

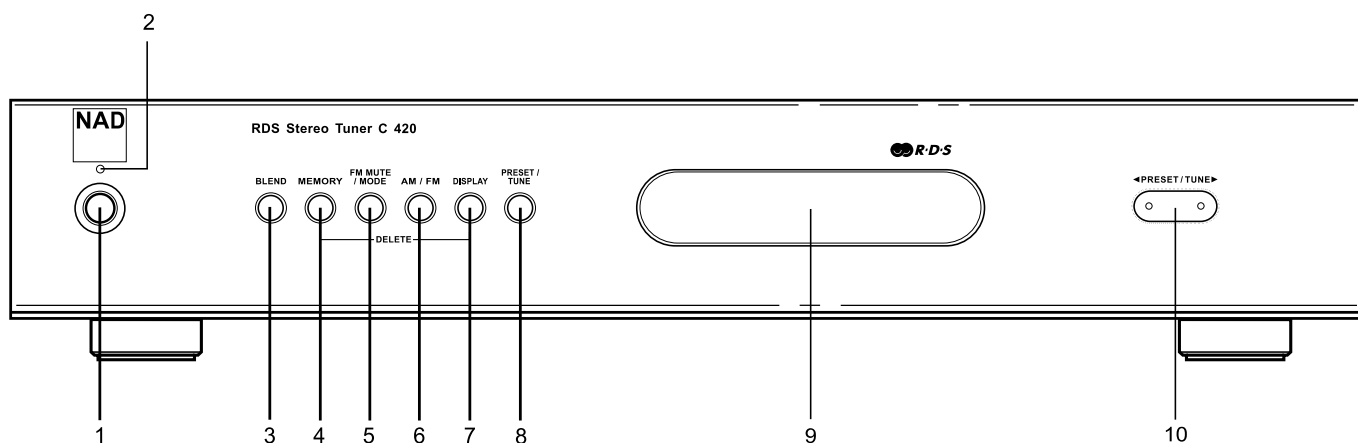
REAR PANEL / FRONT PANEL

REAR PANEL



- | | |
|---------------|--------------------|
| 1. FM ANTENNA | 4. NAD-LINK IN/OUT |
| 2. AM ANTENNA | 5. 12V TRIGGER IN |
| 3. OUTPUT | 6. AC LINE CORD |

FRONT PANEL



- | | |
|-------------------|---------------------------|
| 1. POWER ON / OFF | 6. AM / FM |
| 2. STAND-BY LED | 7. DISPLAY |
| 3. BLEND | 8. PRESET / TUNE |
| 4. MEMORY | 9. DISPLAY AREA |
| 5. FM MUTE / MODE | 10. PRESET / TUNE ◀ AND ▶ |

IMPORTANT NOTES

1. Show the software version

Press "PRESET/TUNE" and "TUNE UP" (▶).

2. Light UP all the icon on the VFL

Press "PRESET/TUNE" and "TUNE DOWN" (◀).

3. CPU Resets

Press "PRESET/TUNE" and "TUNE DOWN" (◀) and any one key.

4. AM Step 10K/9K Change

Add D206: 10KHz / Delete D206: 9KHz.

DISASSEMBLY INSTRUCTIONS

1. Remove machine screws M 4.0 x 6.0 (① to ④) from the side panels.
Remove tapping screw 3.0 x 8.5 (⑤) from the back panel.
Refer to **Figure No.1**.

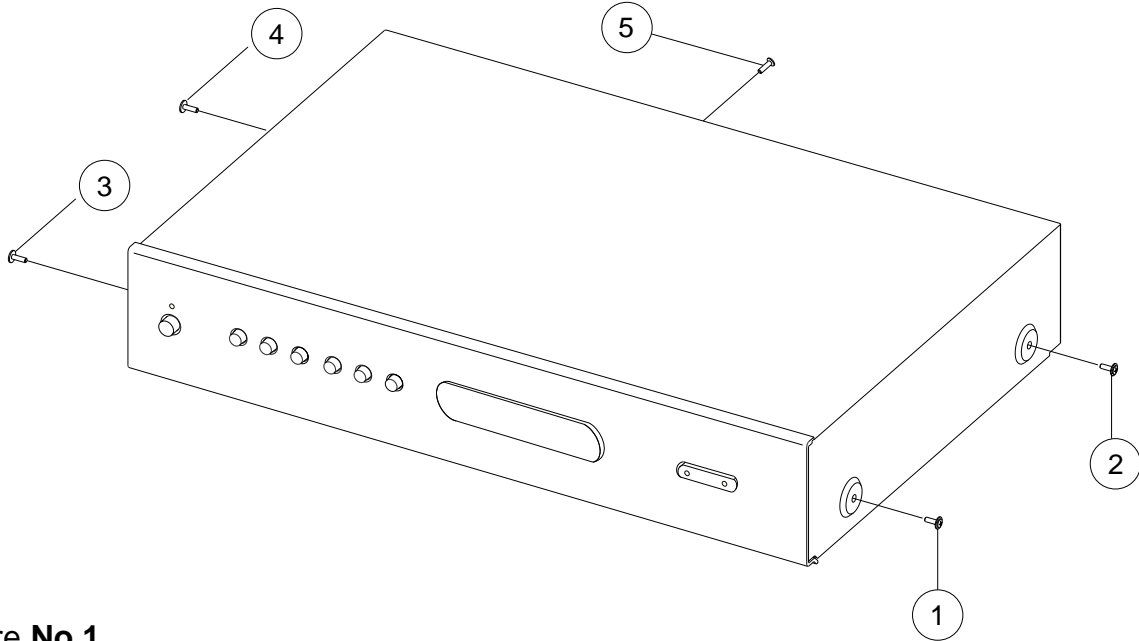


Figure No.1

2. Pull both sides of the TOP COVER slightly outwards (⑥) and tilt approx. 35° and then remove in the direction as indicated by the arrow (⑦). Refer to **Figure No.2**.

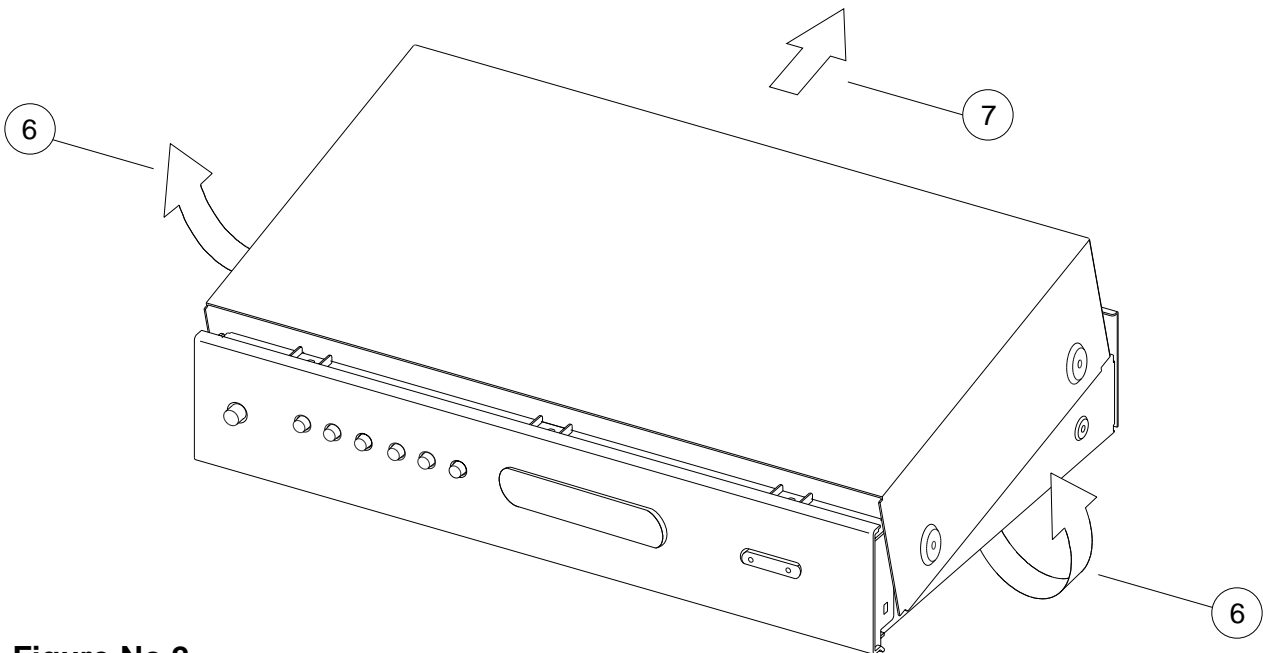
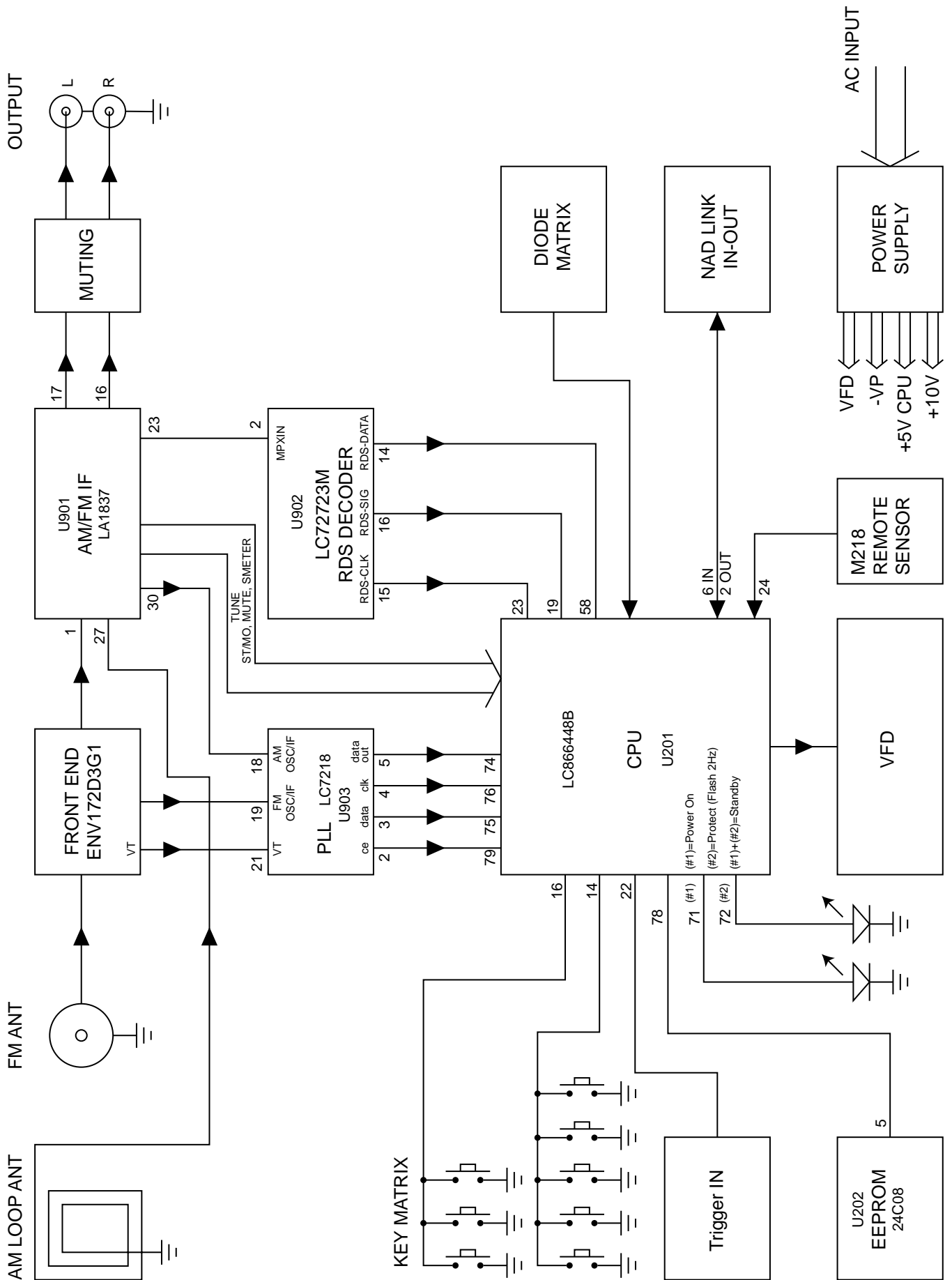


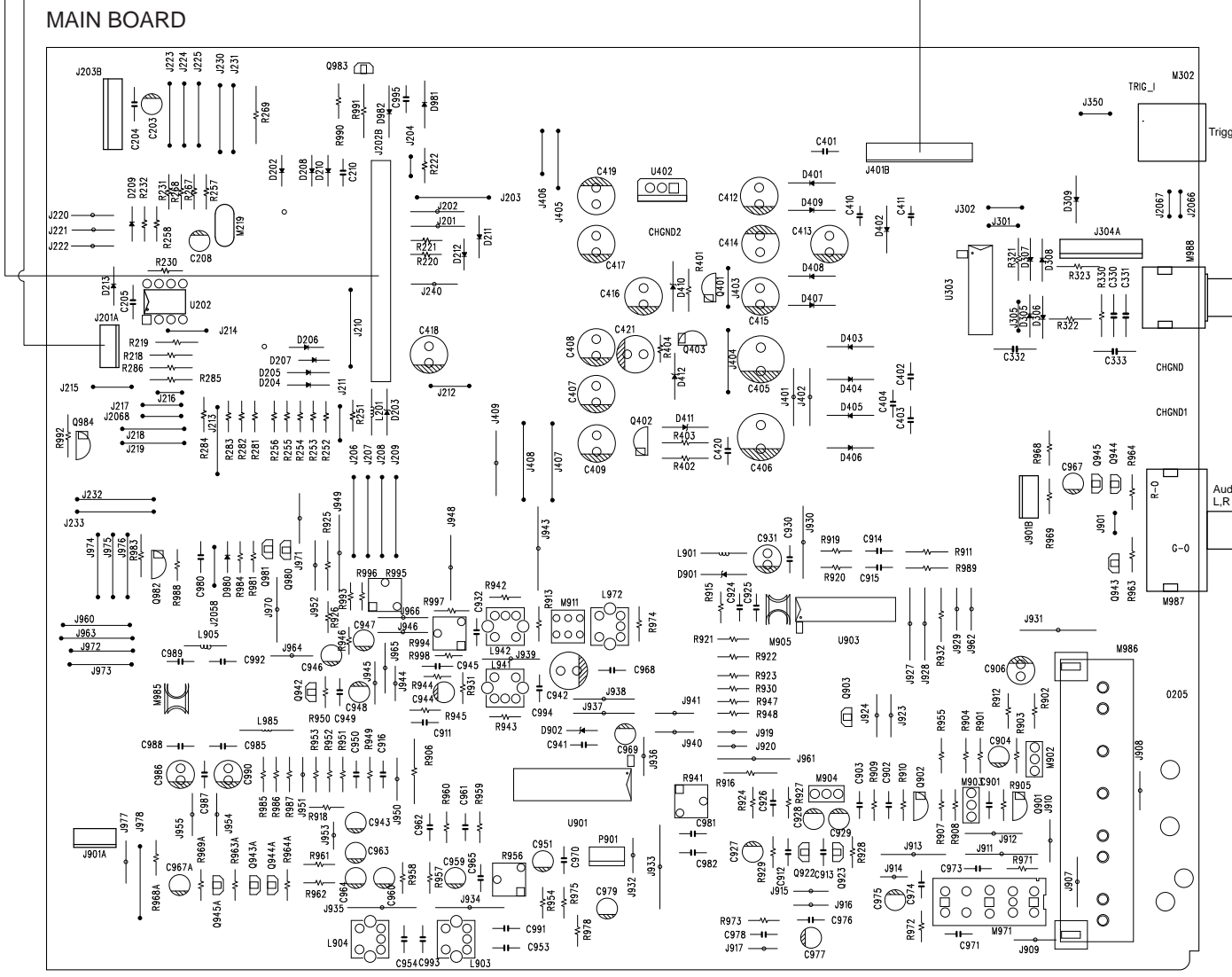
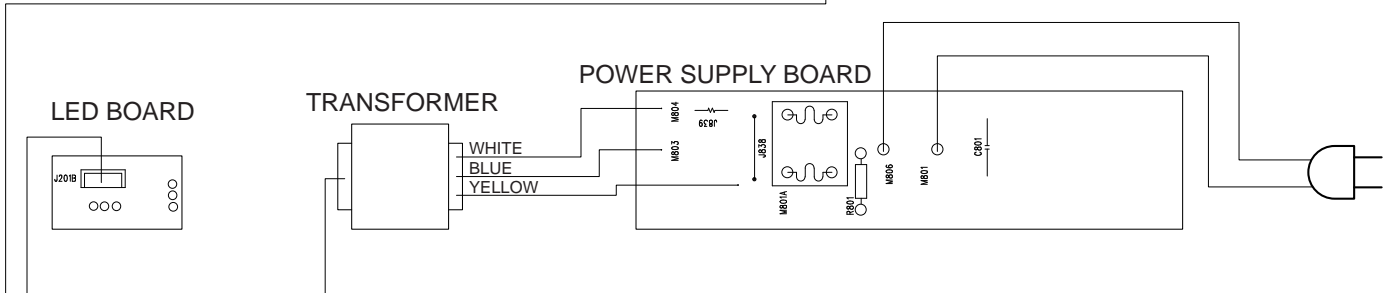
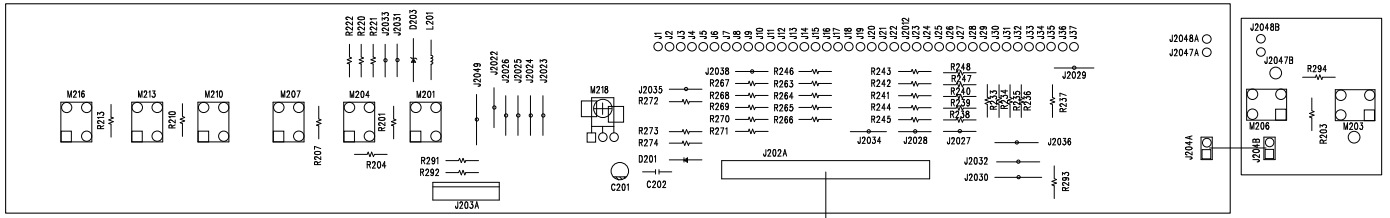
Figure No.2.

BLOCK DIAGRAM

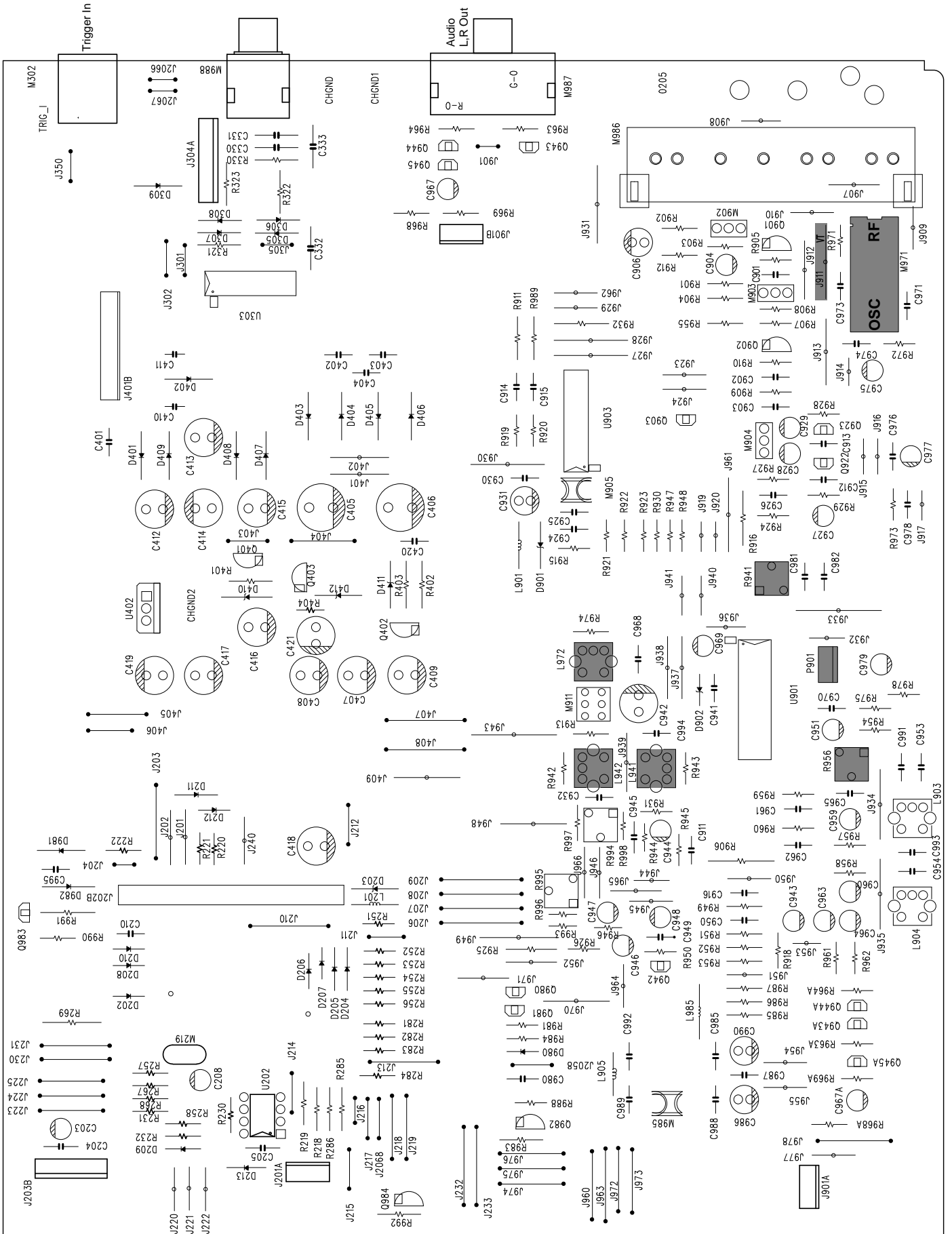


WIRING DIAGRAM

KEY BOARD



ADJUSTMENT POINTS DIAGRAM



INSTRUMENT SETUP

1. FM MEASUREMENT

Fig. 1

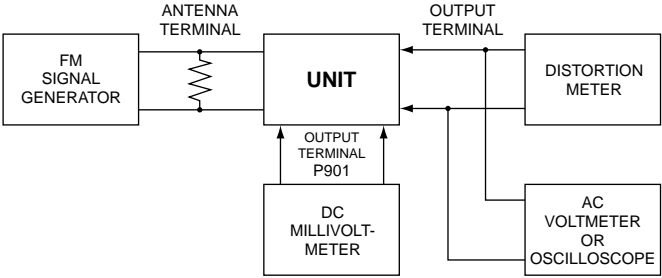
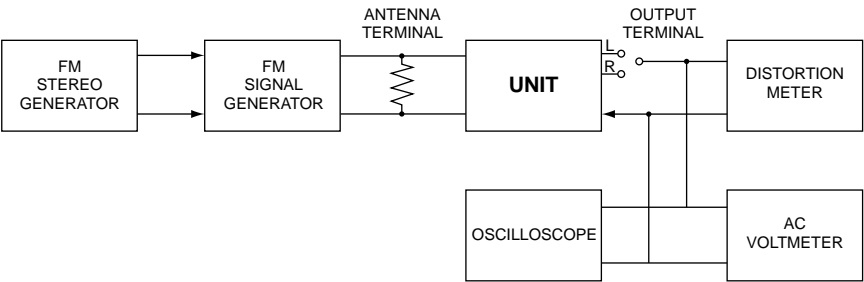
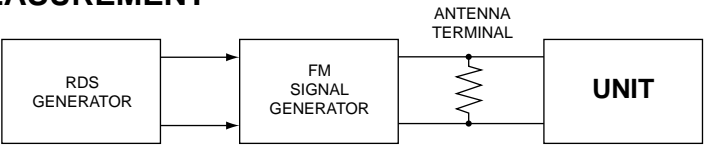


Fig. 2



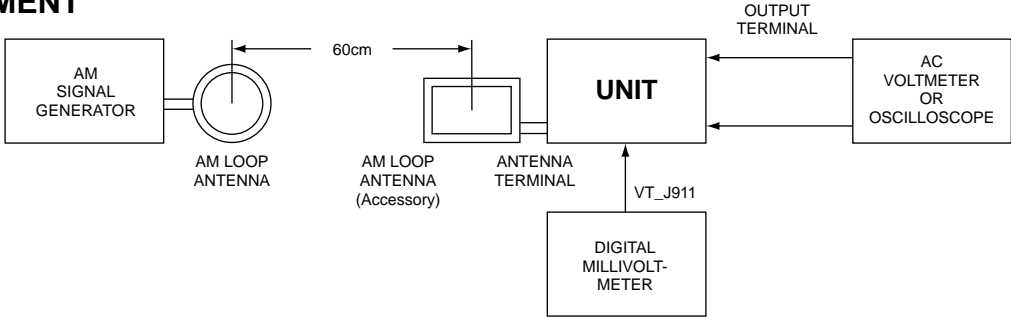
2. RDS MEASUREMENT

Fig. 3



3. AM MEASUREMENT

Fig. 4



ALIGNMENT PROCEDURES

FM/RDS SECTION

- FM mono: 1kHz, 75kHz devi., 60dB/μV
- FM stereo: 1kHz, 67.5kHz devi., 60dB/μV
Pilot signal 19kHz 7.5kHz devi.

OUTPUTS

- Connect the 47Kohm resistor unless otherwise noted.

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±70mV	FM MUTE/MODE switch: ON/AUTO Repeat the steps 1 to 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L942	Minimum	
Stereo Distortion		Fig.2	99.0MHz Ext. mod. 65dBf (60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFT 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	R941	Maximum separation	Repeat stereo distortion and stereo separation alignment until THD at minimum and separation at maximum.
						Distortion Meter		Minimum	
Mute Level		Fig.1	99.0MHz 18dB	-	99.0MHz	Oscilloscope	R956	Signal output	
RDS		Fig.3	99.0MHz Ext. mod. 65dBf (60dB) RDS 2% MOD	-	99.0MHz	-	-	-	Decode the RDS-Program station

AM SECTION

AF Modulation: 400Hz, 30%

For AH Version

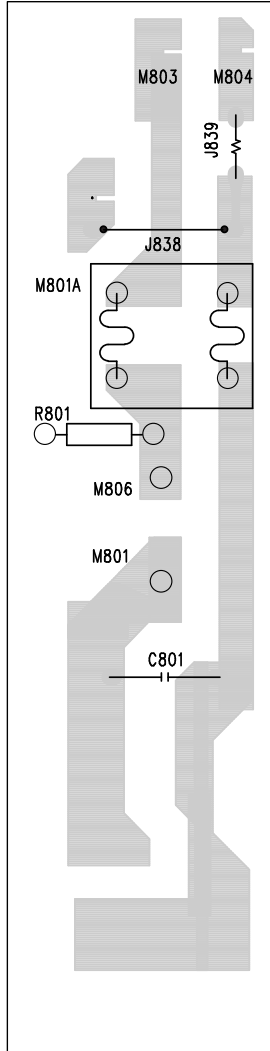
Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1	-	530kHz	Digital DC voltmeter	OSC coil on RF block M971	1.35±0.2V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block M971	Maximum
3	600kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L972	Maximum

For C Version

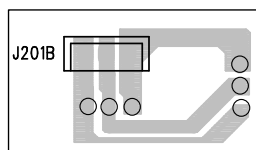
Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1	-	522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block M971	1.3±0.2V (522kHz) 1.35±0.2V (531kHz)
2	600kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block M971	Maximum
3	600kHz 400Hz 30% mod. 60dB/m	999kHz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

PCB LAYOUT

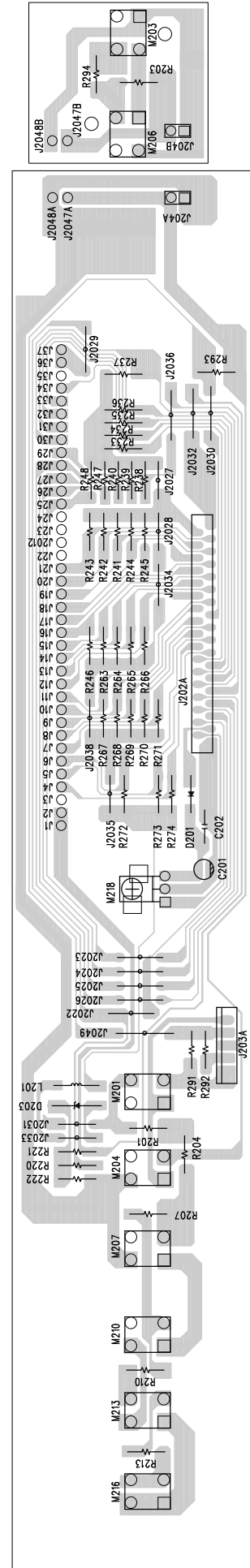
POWER SUPPLY BOARD



LED BOARD

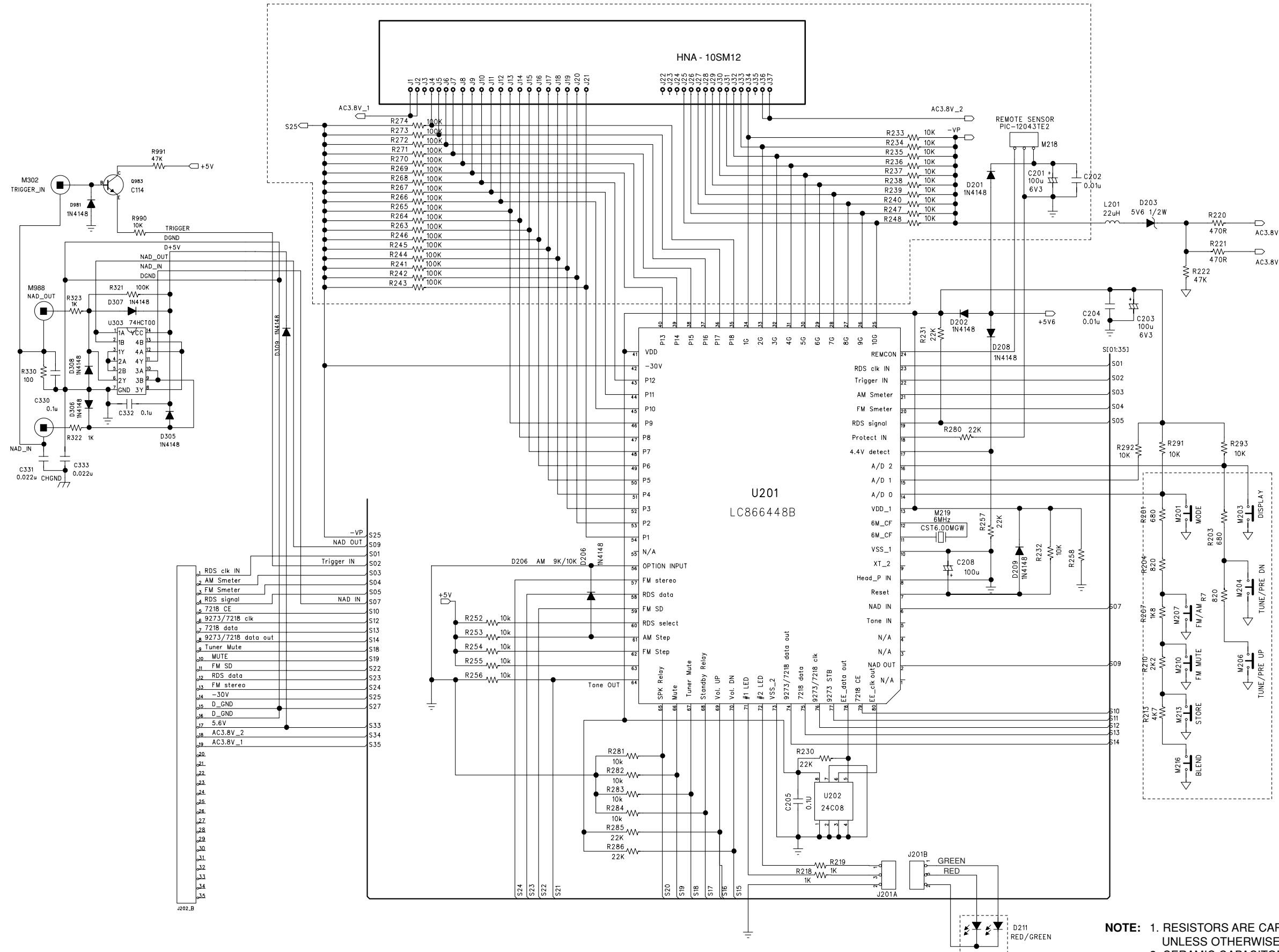


KEY BOARD



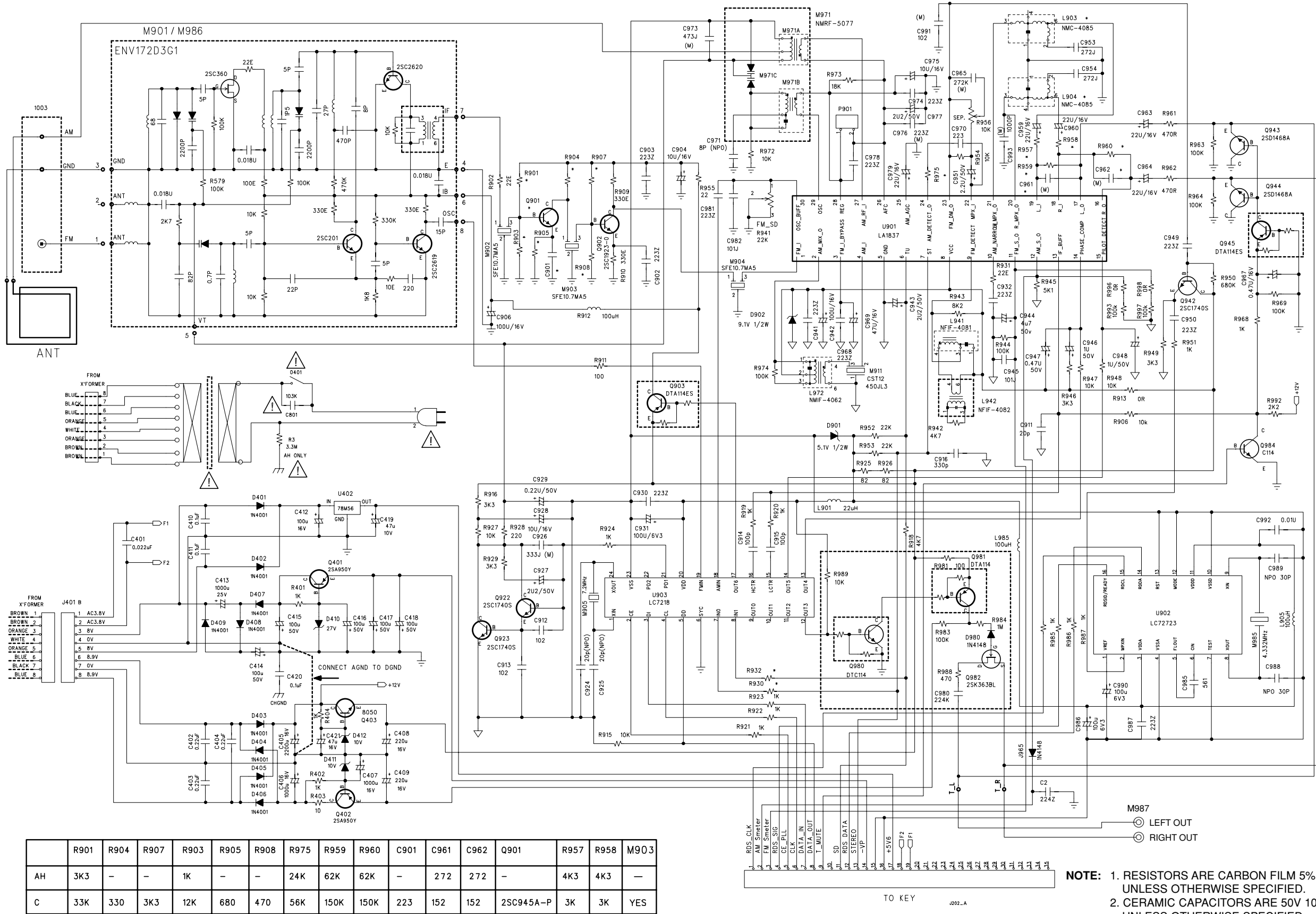
SCHEMATIC DIAGRAM

KEYBOARD / CPU



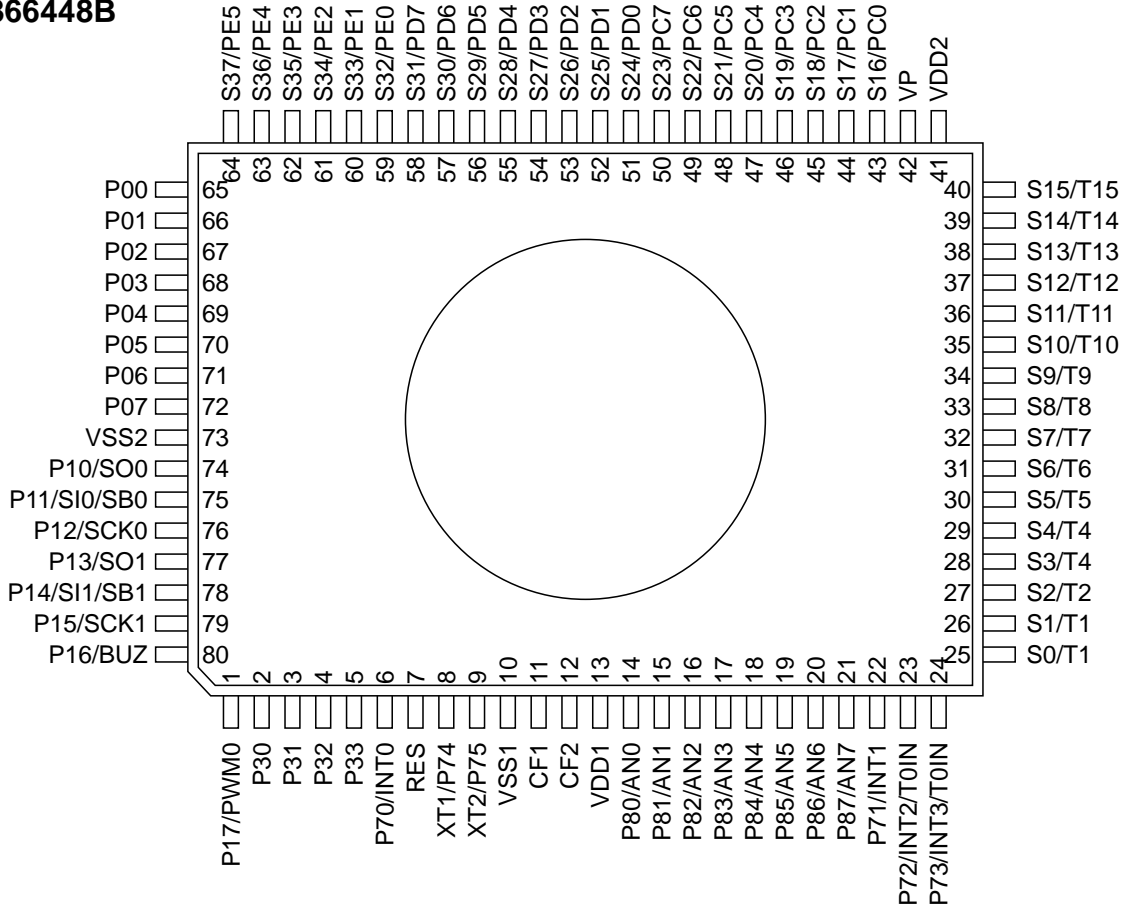
NOTE: 1. RESISTORS ARE CARBON FILM 5% 1/8W UNLESS OTHERWISE SPECIFIED.
2. CERAMIC CAPACITORS ARE 50V 10% UNLESS OTHERWISE SPECIFIED.

TUNER

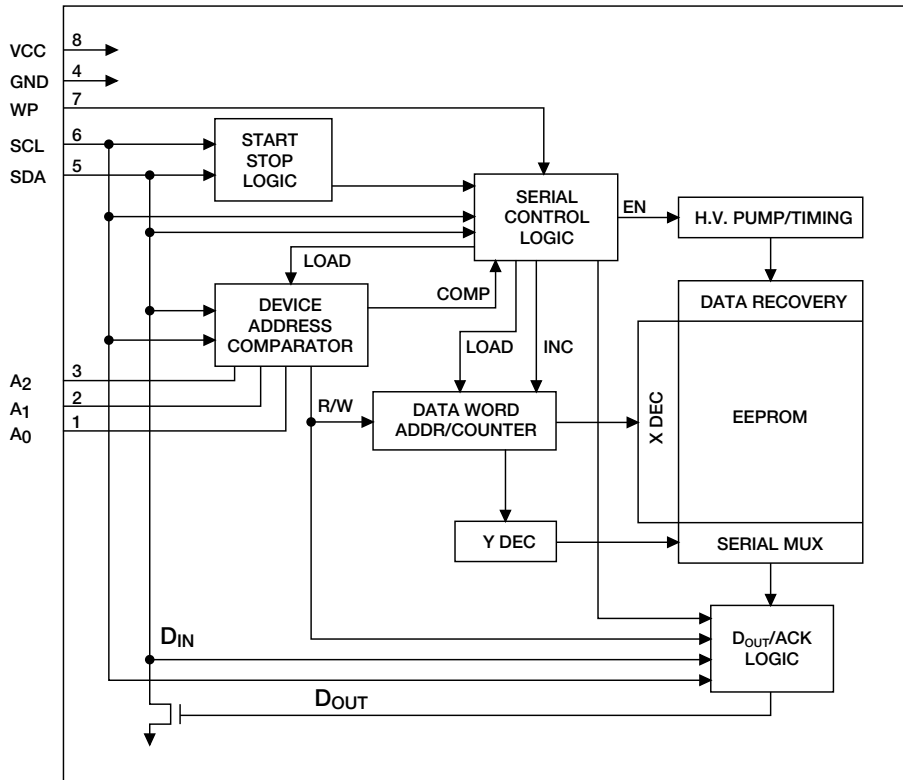


IC BLOCK DIAGRAM

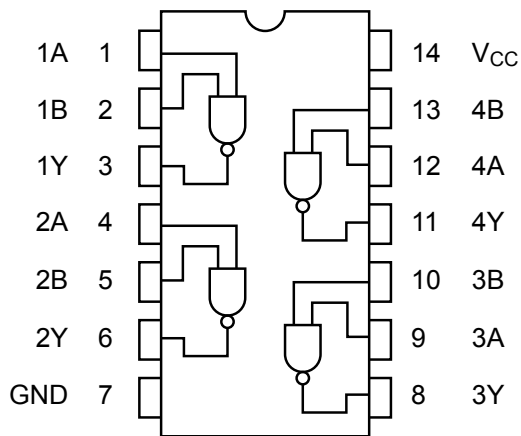
U201: LC866448B



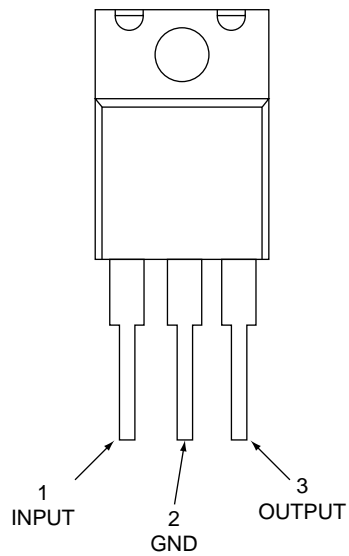
U202: 24C08



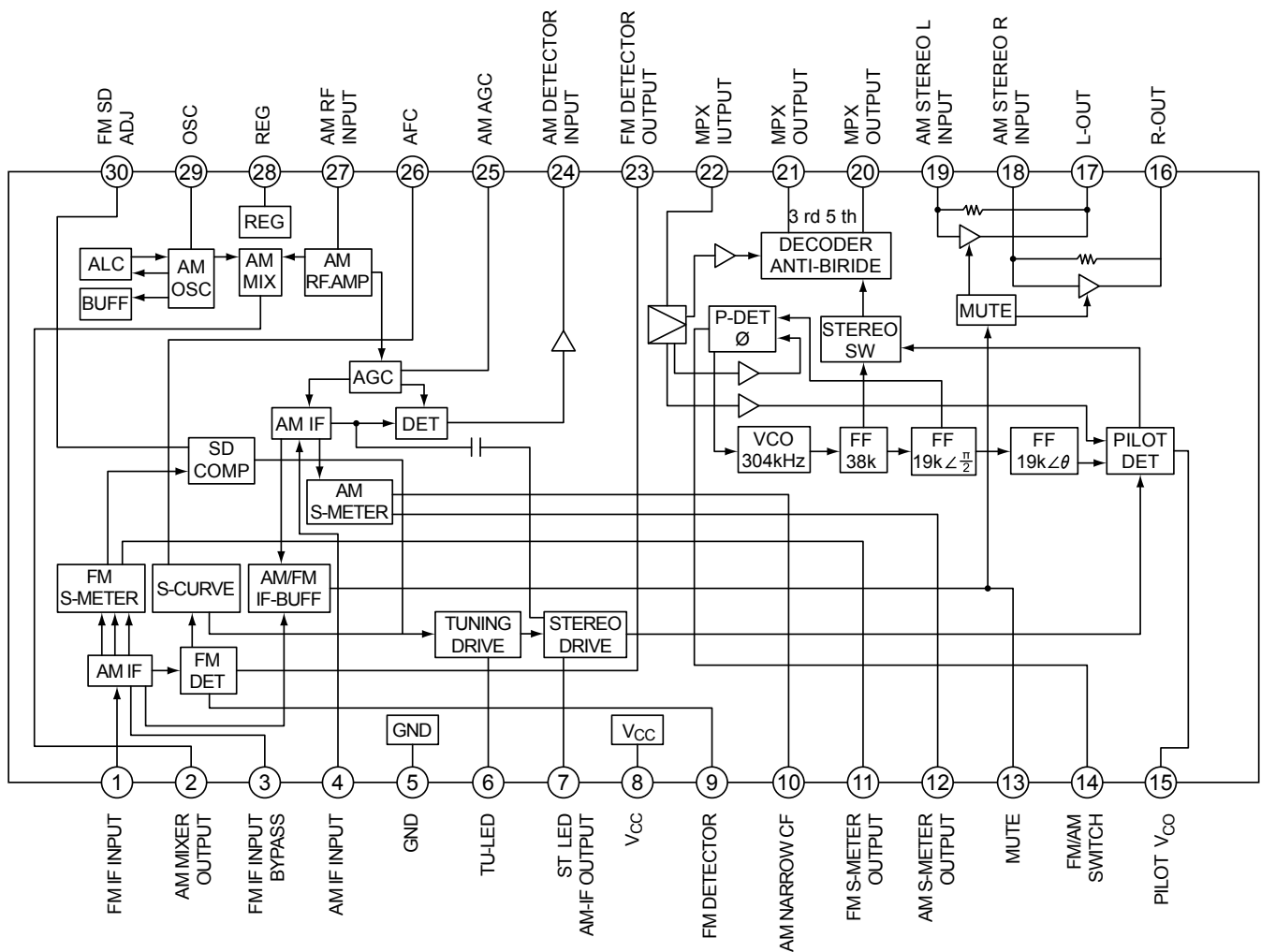
U303: 74HCT00



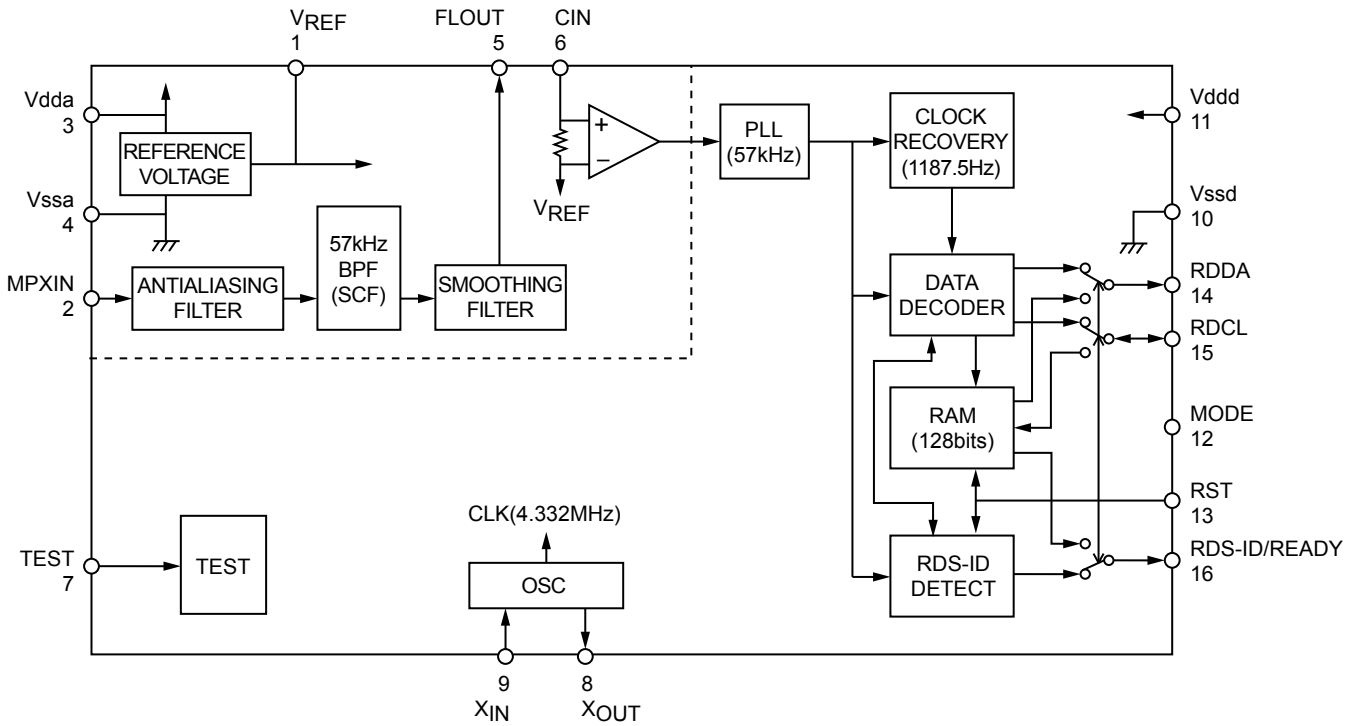
U402: NJM78M56FA



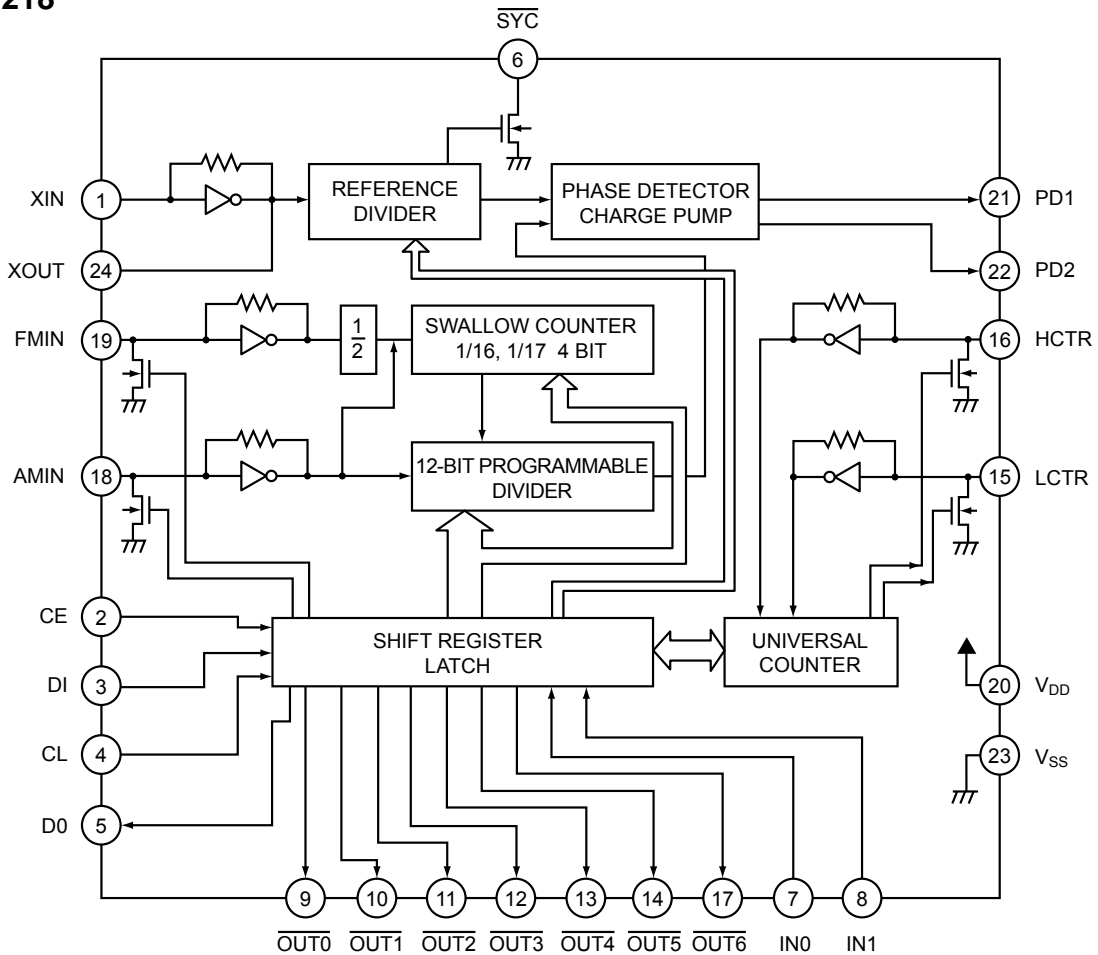
U901: LA1837



U902: LC72723M



U903: LC7218



ELECTRICAL PARTS LIST

<u>Reference No.</u>	<u>Part No.</u>	<u>Description</u>
<u>KEYBOARD ASSEMBLY</u> <u>PC BOARD</u> 3000	PCB-N0930C-KEY	KEY PCB ASSY C420
<u>VFD</u> 0303	2460-1960-0	VFD SAMSUNG HNA-105M12
<u>CAPACITORS</u> C201 C202	157B-107M-5-KMK 153F-103J-5-KM	CE 6.3V 100 μ F 20% RL 6x7 ELNA CM 50V 0.01 μ F 5% RL 6.0x7.0
<u>DIODES</u> D201 D206 *C	4804-1480-C 4804-1480-C	DIODE 1N4148 ATS DIODE 1N4148 ATS
<u>CONNECTORS</u> J202A J203A J204A J204B	2101-1581-0 7705-1150-2004 7702-1075-2004 2102-021R-004	FLEXIBLE CONN. 35P P1.25 SIDE ENTRY 5P CONN WIRE ASSY L=150 26AWG CONN.ASSY 2P P2.5 L=75 AWG26 WAFER 2P P2.5 RIGHT
<u>SWITCHES</u> M201, M203, M204, M206, M207, M210, M213, M216	5200-3538-0	SWITCH, TACT SKHHBY 7mm HIGH
<u>INFRA-RED SENSOR</u> M218	4814-3TE2-3	IR SENSOR PIC-12043TE2
<u>RESISTORS</u> R201 R203, R204 R207 R210 R213 R220, R221 R222 R233-R240 R241-R246 R247, R248 R263-R274 R291-R293 R294	4701-681J-C 4701-122J-C 4701-182J-C 4701-222J-C 4701-472J-C 4701-471J-C 4701-473J-C 4701-103J-C 4701-104J-C 4701-103J-C 4701-104J-C 4701-103J-C 4701-104J-C 4701-122J-C	RCF 1/8W 680R 5% ATS RCF 1/8W 1.2K 5% ATS RCF 1/8W 1.8K 5% ATS RCF 1/8W 2.2K 5% ATS RCF 1/8W 4.7K 5% ATS RCF 1/8W 470R 5% ATS RCF 1/8W 47K 5% ATS RCF 1/8W 10K 5% ATS RCF 1/8W 100K 5% ATS RCF 1/8W 10K 5% ATS RCF 1/8W 100K 5% ATS RCF 1/8W 10K 5% ATS RCF 1/8W 100K 5% ATS RCF 1/8W 1.2K 5% ATS
<u>LED ASSEMBLY</u> <u>PC BOARD</u> 5000	PCB-N0930C-LED	PCB ASSY LED N093xC
<u>LED</u> D211	3700-3517-RG	LED RED/GREEN (L-469HGW)
<u>CONNECTOR WIRE</u> J201B	7703-1320-2004	3P CONN WIRE ASSY L=320 26AWG

<u>Reference No.</u>	<u>Part No.</u>	<u>Description</u>
<u>POWER SUPPLY ASSEMBLY</u>		
<u>PC BOARD</u>		
4000 *AH	PCB-N0930C-PSU	POWER SUPPLY PCB ASSY C420AH
4000 *C	PCB-N0931C-PSU	POWER SUPPLY PCB ASSY C420C
<u>SWITCH</u>		
0401 △	5200-3151-0-01	POWER SWITCH
<u>CAPACITOR</u>		
C801 △	8910-0049-0	CAP400V 4700P DE7150F472MVA1KC
<u>RESISTOR</u>		
R801 *AH △	4717-335J-2-S	RMF 1/2W 3.3M 5% AT UL APPROVED
<u>MAIN BOARD ASSEMBLY</u>		
<u>PC BOARD</u>		
2000 *AH	PCB-N0930C-TUN	PCB ASSY TUNER (AH) N0930C
2000 *C	PCB-N0931C-TUN	PCB ASSY TUNER (C) N0931C
<u>JACKS</u>		
M987	2113-1300-0	2P RCA JACK W/R AU W/SHIELD
M988	2113-1121-0	2P RCA JACK Y/Y AU HSP-242V-22
M302	2113-1179-0	PHONE JACK D3.5 BK JY-3537-01-140
<u>CAPACITORS</u>		
C203	157B-107M-5-KMK	CE 6.3V 100µF 20% RL 6x7 ELNA
C204	153F-103J-5-IM	CM 50V 0.01µF 5% RL 5x7
C205	150F-104Z-5-IU	CC 50V 0.1µF +80/-20% RL 5x11
C208	157D-476M-5-IUK	CE 16V 47µF 20% RL 5x11 ELNA
C210	153F-103J-5-IM	CM 50V 0.01µF 5% RL 5x7
C330	150F-104K-2-FC	CC 50V 0.1µF 10% AT 3.5x2
C331	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C332	150F-104K-5-II	CC 50V 0.1µF 10% RL 5x5
C333	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C401-C404	153F-224J-5-MIB	CM 50V 0.22µF 5% RL 7x5
C405	157D-228M-5-x9E	CE 16V 2200µF 20% RL 12.5x20 ELNA
C406, C407	157D-108M-5-S9K	CE 16V 1000µF 20% RL 10x20 ELNA
C408, C409	157D-227M-5-OMK	CE 16V 220µF 20% RL 8x7 ELNA
C410, C411	150F-104K-5-II	CC 50V 0.1µF 10% RL 5x5
C412	157D-107M-5-KUK	CE 16V 100µF 20% RL 6.3x11 ELNA
C413	157E-108M-5-S9E	CE 25V 1000µF 20% RL 10x20 ELNA
C414-C418	157F-107M-5-KUK	CE 50V 100µF 20% RL 6.3x11 ELNA
C419	157C-476M-5-IMK	CE 10V 47µF 20% RL 5x7 ELNA
C420	150F-104K-5-II	CC 50V 0.1µF 10% RL 5x5
C421	157E-107M-5-KUK	CE 25V 100µF 20% RL 6.3x11 ELNA
C901 *C	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C902, C903	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C904	157D-106M-5-GM	CE 16V 10µF 20% RL 4x7
C906	157D-107M-5-KUK	CE 16V 100µF 20% RL 6.3x11 ELNA
C911	150F-200J-2-FC	CC 50V 20pF 5% AT 3.5x2
C912, C913	150F-102K-2-FC	CC 50V 1000pF 10% AT 3.5x2
C914, C915	150F-101K-2-FC	CC 50V 100pF 10% AT 3.5x2
C916	150F-331K-2-FC	CC 50V 330pF 10% AT 3.5x2
C924	15CH-270J-5-GG	CTC 0/60 27pF 5% RL 4x4
C925	15CH-200J-5-GG	CTC 0/60 20pF 5% RL 4x4
C926	153F-333J-5-NLM	CM 50V 0.033µF 5% RL 7.5 x6.5 Metalzd
C927	157F-225M-5-GM	CE 50V 2.2µF 20% RL 4x7
C928	157D-106M-5-GM	CE 16V 10µF 20% RL 4x7
C929	157F-224M-5-GM	CE 50V 0.22µF 20% RL 4x7
C930	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2

Reference No.	Part No.	Description
C931	157B-107M-5-KM	CE 6.3V 100µF 20% RL 6x7
C932, C941	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C942	157D-107M-5-KUK	CE 16V 100µF 20% RL 6.3x11 ELNA
C943	157F-225M-5-GM	CE 50V 2.2µF 20% RL 4x7
C944	157F-475M-5-GM	CE 50V 4.7µF 20% RL 4x7
C945	150F-101K-2-FC	CC 50V 100pF 10% AT 3.5x2
C946	157F-105M-5-GM	CE 50V 1µF 20% RL 4x7
C947	157F-474M-5-GM	CE 50V 0.47µF 20% RL 4x7
C948	157F-105M-5-GM	CE 50V 1µF 20% RL 4x7
C949, C950	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C951	157F-225M-5-GM	CE 50V 2.2µF 20% RL 4x7
C953, C954	150D-272K-2-FC	CC 16V 2700pF 10% AT 3.5x2
C959, C960	157D-226M-5-GM	CE 16V 22µF 20% RL 4x7
C961, C962 *AH	153F-272J-5-JM	CM 50V 2700PF 5% RL 5.5x7
C961, C962 *C	153F-152J-5-KW	CM 50V 1500pF 5% RL 6x12
C963, C964	157D-226M-5-GM	CE 16V 22µF 20% RL 4x7
C965	150D-272K-2-FC	CC 16V 2700pF 10% AT 3.5x2
C967	157D-474M-5-II	CE 16V 0.47µF 20% RL 5x5
C968	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C969	157D-476M-5-IM	CE 16V 47µF 20% RL 5x7
C970	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C971	15CH-080D-5-GG	CTC 0/60 8pF 0.5pF RL 4x4
C973	153F-473J-5-NLM	CM 50V 0.047µF 5% RL 7.5 x6.5 Metalzd
C974	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C975	157D-106M-5-GM	CE 16V 10µF 20% RL 4x7
C976	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C977	157F-225M-5-GM	CE 50V 2.2µF 20% RL 4x7
C978	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C979	157D-226M-5-GM	CE 16V 22µF 20% RL 4x7
C980	153F-224J-5-MIB	CM 50V 0.22µF 5% RL 7x5
C981	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C982	150F-101K-2-FC	CC 50V 100pF 10% AT 3.5x2
C985	150F-561K-2-FC	CC 50V 560pF 10% AT 3.5x2
C986	157B-107M-5-KM	CE 6.3V 100µF 20% RL 6x7
C987	150F-223K-2-FD	CC 50V 0.022µF 10% AT 3.2x2.2
C988, C898	15CH-300J-5-IG	CTC 0/60 30pF 5% RL 5x4
C990	157B-107M-5-KM	CE 6.3V 100µF 20% RL 6x7
C991	150F-102K-2-FC	CC 50V 1000pF 10% AT 3.5x2
C992	150F-103K-2-FC	CC 50V 0.01µF 10% AT 3.5x2
R995	150F-224M-N-II	CC 50V 0.22µF 20% RLF MONO
DIODES		
D202	4804-1480-C	DIODE 1N4148 ATS
D203	4837-5V61-2	DZ 1/2W 5.6V ROHM AT
D208-D211	4804-1480-C	DIODE 1N4148 ATS
D213, D305-D309		
D206 *AH	4804-1480-C	DIODE 1N4148 ATS
D401-D409	4804-0010-2	DIODE 1N4001 AT
D410	4837-27V0-2	DZ 1/2W 27V(26.2-27.6)AT
D411 *AH	4837-1001-2	DZ 1/2W 10V ROHM AT
D411 *C	4837-10D1-2	DZ 1/2W 9.94-10.44V ROHM
D412	4837-10D1-2	DZ 1/2W 9.94~10.44V ROHM AT (MTZJ10D)
D901	4837-4C20-2	DZ 1/2W 5.0-5.2V AT
D902	4837-7C20-2	DZ 1/2W 9.1-9.5V AT
D980, D981	4804-1480-C	DIODE 1N4148 ATS
J213	4837-3A31-2	DZ 1/2W 3.16~3.38V ROHM AT (MTZJ3.3A)
J965	4804-1480-C	DIODE 1N4148 ATS
WAFERS		
J201A	2102-031S-004	3 PIN ST. WAFER P=2.5 COULOMB

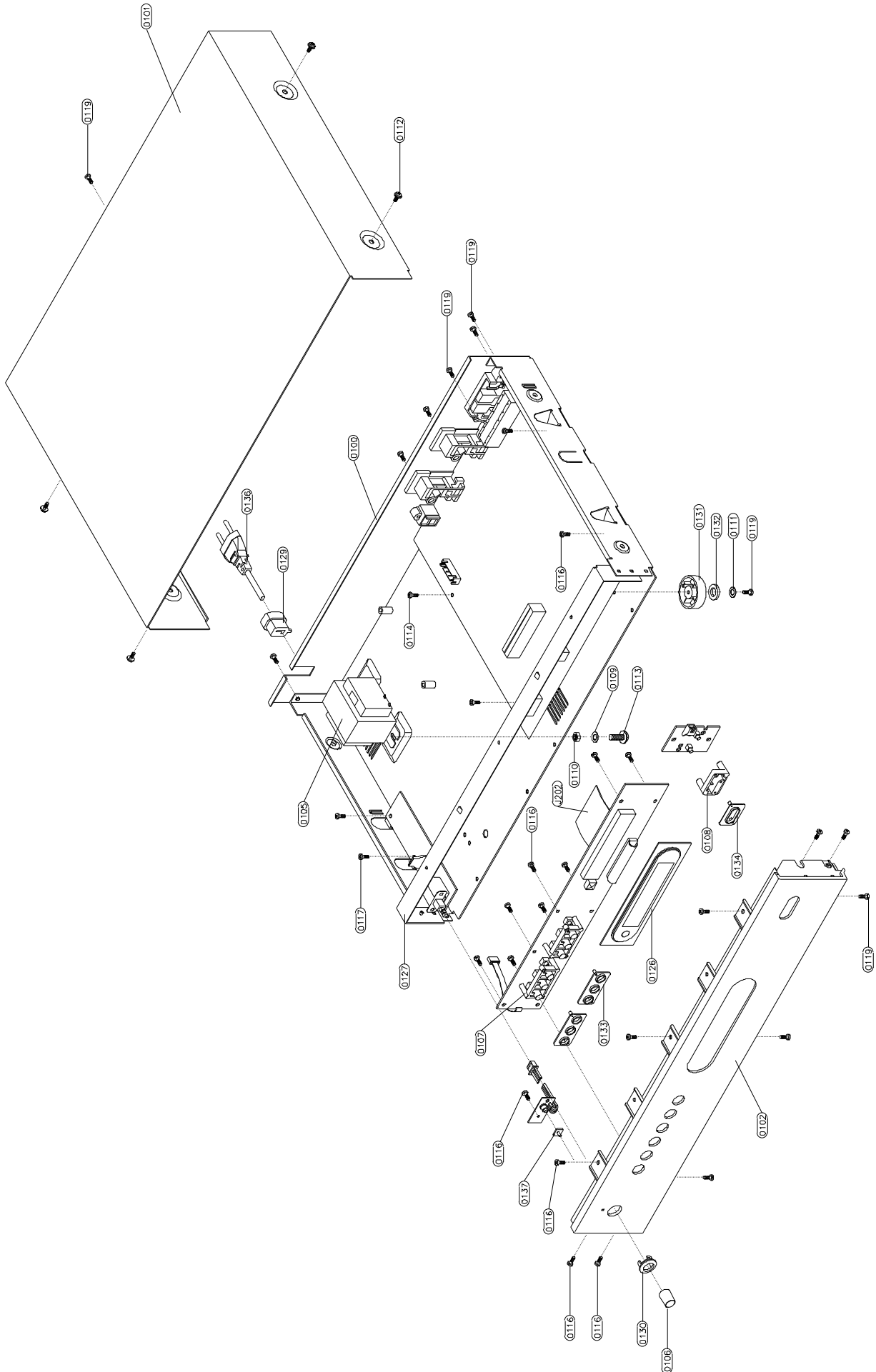
Reference No.	Part No.	Description
J202B J203B J401B P901	2101-1591-0 2102-051S-004 2102-081S-004 2113-1160-0	FLEXIBLE CONN. 35P P1.25 TOP ENTRY 5P ST.WAFER P=2.5 COULOMB WAFER 8P P2.5 ST. WAFER 2P ST. P=2.5 NH (JST)
COILS		
L201, L901 L903, L904 L905 L941 L942 L971 L972 L985 R912	1801-220K-M 5600-3386-S 1801-101K-M 5600-3396-S 5600-3406-S 5600-3280-G 5600-3416-S 1801-101K-M 1801-101K-M	COIL 22μH 10% AL BL7 COIL MPx LPF NMC-4085 COIL 100μH 10% COIL FM DET-1 10.7MHZ NFIF-4081 COIL FM DET-2 10.7MHZ NFIF-4082 COIL MW RF BLOCK NMRF-5077 COIL AM IFT NMIF-4062 COIL 100μH 10% COIL 100μH 10%
TUNER		
M901 / M986	1300-0726-0	TUNER ENV172D3G1 PANASONIC
CERAMIC FILTERS		
M902, M904 M903 *C M911	2701-0010-1 2701-0010-1 2701-0680-0	CF10.7 +-30 SFE10.7MA5-A CF10.7 +-30 SFE10.7MA5-A CF 450 +-1 SFZ450JL3 MURATA
CRYSTALS		
M219 M905 M985	2703-0200-0 2300-0440-0 2300-1220-0	CR 6MHZ CST6.00MGW MURATA CRYSTAL 7.2MHZ 20PPM CRYSTAL 4.332MHZ
TRANSISTORS		
Q401, Q402 Q403 Q901 *C Q902 Q903 Q922, Q923, Q942 Q943, Q944 Q945 Q980 Q981 Q982 Q983, Q984	485A-950Y-5 4860-0050-5 485C-945P-5 4851-9230-5 485A-114E-5 4860-1590-5 4860-8120-0 485A-114E-5 485C-114E-5 485A-114E-5 4853-63BL-5 485C-114E-5	TR 2SA950-Y HFE 100-200 TR SS8050 C/D SAMSUNG RL TR 2SC945P HFE 200-400 TR 2SC1923-0 HFE 70-140 TR DTA114ESA ROHM TR 2SC1740S (R) HFE180-390 TR 2SD 1468 S TR DTA114ESA ROHM TR DTC114ES TR DTA114ESA ROHM TR N-JFET 2SK-363BL TR DTC114ES
RESISTORS		
R218, R219 R230, R231 R232, R252-R256 R257, R267 R281-R284 R285, R286 R321 R322, R323 R330 R401, R402 R403 R404 R901 *A R901 *C R902 R903 *AH	4701-102J-C 4701-223J-C 4701-103J-C 4701-223J-C 4701-103J-C 4701-223J-C 4701-104J-C 4701-102J-C 4701-101J-C 4701-102J-C 4701-100J-C 4701-102J-C 4701-332J-C 4701-333J-C 4701-220J-C 4701-102J-C	RCF 1/8W 1K 5% ATS RCF 1/8W 22K 5% ATS RCF 1/8W 10K 5% ATS RCF 1/8W 22K 5% ATS RCF 1/8W 10K 5% ATS RCF 1/8W 22K 5% ATS RCF 1/8W 100K 5% ATS RCF 1/8W 1K 5% ATS RCF 1/8W 100R 5% ATS RCF 1/8W 1K 5% ATS RCF 1/8W 10R 5% ATS RCF 1/8W 1K 5% ATS RCF 1/8W 3.3K 5% ATS RCF 1/8W 33K 5% ATS RCF 1/8W 22R 5% ATS RCF 1/8W 1K 5% ATS

<u>Reference No.</u>	<u>Part No.</u>	<u>Description</u>
R903 *C	4701-123J-C	RCF 1/8W 12K 5% ATS
R904 *C	4701-331J-C	RCF 1/8W 330R 5% ATS
R905 *C	4701-681J-C	RCF 1/8W 680R 5% ATS
R906	4701-103J-C	RCF 1/8W 10K 5% ATS
R907 *C	4701-332J-C	RCF 1/8W 3.3K 5% ATS
R908 *C	4701-471J-C	RCF 1/8W 470R 5% ATS
R909, R910	4701-331J-C	RCF 1/8W 330R 5% ATS
R911	4701-101J-C	RCF 1/8W 100R 5% ATS
R915	4701-103J-C	RCF 1/8W 10K 5% ATS
R916	4701-102J-C	RCF 1/8W 1K 5% ATS
R918	4701-472J-C	RCF 1/8W 4.7K 5% ATS
R919, R920	4701-102J-C	RCF 1/8W 1K 5% ATS
R921, R922	4701-222J-C	RCF 1/8W 2.2K 5% ATS
R923, R924	4701-102J-C	RCF 1/8W 1K 5% ATS
R925, R926	4701-820J-C	RCF 1/8W 82R 5% ATS
R927	4701-103J-C	RCF 1/8W 10K 5% ATS
R928	4701-221J-C	RCF 1/8W 220R 5% ATS
R929	4701-222J-C	RCF 1/8W 2.2K 5% ATS
R931	4701-220J-C	RCF 1/8W 22R 5% ATS
R941	4756-2236-3-06	SVR 22K H3 7x7.6 RH0615C
R942	4701-472J-C	RCF 1/8W 4.7K 5% ATS
R943	4701-822J-C	RCF 1/8W 8.2K 5% ATS
R944	4701-104J-C	RCF 1/8W 100K 5% ATS
R945	4701-512J-C	RCF 1/8W 5.1K 5% ATS
R946	4701-332J-C	RCF 1/8W 3.3K 5% ATS
R947, R948	4701-103J-C	RCF 1/8W 10K 5% ATS
R949	4701-332J-C	RCF 1/8W 3.3K 5% ATS
R950	4701-684J-C	RCF 1/8W 680K 5% ATS
R951	4701-102J-C	RCF 1/8W 1K 5% ATS
R952, R953	4701-223J-C	RCF 1/8W 22K 5% ATS
R954	4701-103J-C	RCF 1/8W 10K 5% ATS
R955	4701-220J-C	RCF 1/8W 22R 5% ATS
R956	4756-1036-3-06	SVR 10K H3 7x7.6 RH0615C
R957, R958 *AH	4701-432J-2	RCF 1/8W 4.3K 5% AT
R957, R958 *C	4701-302J-C	RCF 1/8W 3K 5% ATS
R959, R960 *AH	4701-623J-2	RCF 1/8W 62K 5% AT
R959, R960 *C	4701-154J-C	RCF 1/8W 150K 5% ATS
R961, R962	4701-471J-C	RCF 1/8W 470R 5% ATS
R963, R964	4701-104J-C	RCF 1/8W 100K 5% ATS
R968	4701-102J-C	RCF 1/8W 1K 5% ATS
R969	4701-104J-C	RCF 1/8W 100K 5% ATS
R972	4701-103J-C	RCF 1/8W 10K 5% ATS
R973	4701-183J-C	RCF 1/8W 18K 5% ATS
R974	4701-104J-C	RCF 1/8W 100K 5% ATS
R975 *AH	4701-243J-C	RCF 1/8W 24K 5% ATS
R975 *C	4701-563J-C	RCF 1/8W 56K 5% ATS
R978	4701-105J-C	RCF 1/8W 1M 5% ATS
R981	4701-101J-C	RCF 1/8W 100R 5% ATS
R983	4701-104J-C	RCF 1/8W 100K 5% ATS
R984	4701-105J-C	RCF 1/8W 1M 5% ATS
R985-R987	4701-102J-C	RCF 1/8W 1K 5% ATS
R988	4701-471J-C	RCF 1/8W 470R 5% ATS
R989	4701-103J-C	RCF 1/8W 10K 5% ATS
R990	4701-473J-C	RCF 1/8W 47K 5% ATS
R991	4701-103J-C	RCF 1/8W 10K 5% ATS
R992	4701-472J-C	RCF 1/8W 4.7K 5% ATS
R993	4701-104J-C	RCF 1/8W 100K 5% ATS
R997	4701-104J-C	RCF 1/8W 100K 5% ATS

<u>Reference No.</u>	<u>Part No.</u>	<u>Description</u>
ICS		
U201	3131-9750-1	IC LC866448B 8 BIT SINGLE CHIP MCU MASKED
U202	3131-7250-0	IC 24C08 8K EEPROM
U303	3130-7370-0	IC 74HCT00 NAND GATE
U402	3130-8190-0	IC NJM78M56FA 5.6V REGULATOR
U901	3130-8180-0	IC LA1837 AM/FM IF
U902	3131-9040-0	IC LC72723M RDS DEMODULATOR MFP16
U903	3131-3760-0	IC LC7218 PLL FREQ SYNTHESIZER SANYO

- NOTE:**
- The components identified by \triangle mark are critical for risk of fire and electrical shock.
Replace only with part number specified.
 - <*AH > : USA, Canadian model only.
 - <*C > : European model only.
 - Capacitors : CP-Polystyrene, CM-Mylar, CE-Electrolytic, CC-Ceramic, CTC-NPO.
 - Resistors : RMF-Metal Film, RCF-Carbon Film.

EXPLODED VIEW

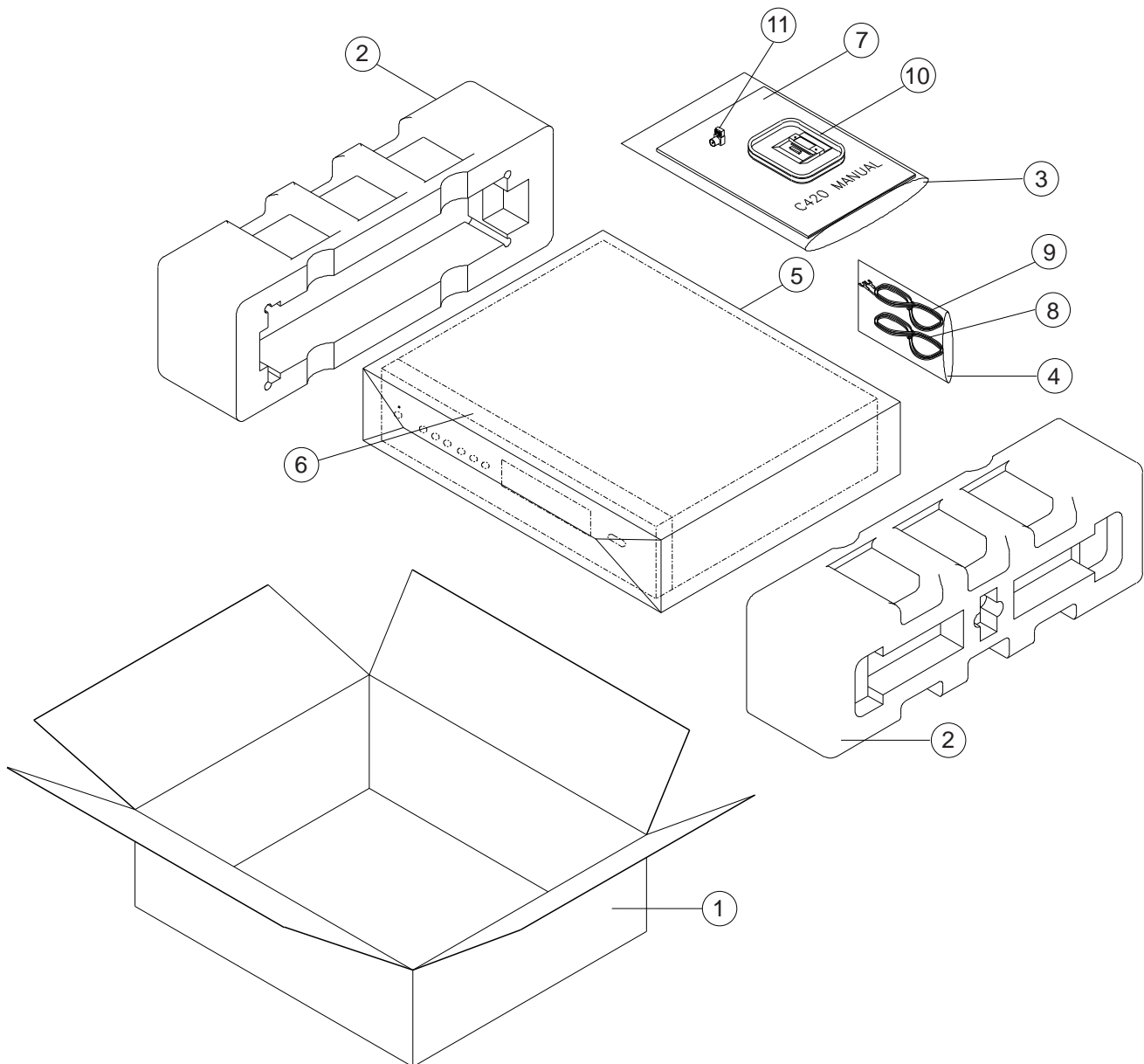


EXPLODED VIEW PARTS LIST

<u>ITEM</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty</u>
0100 *AH	1402-3515-1	CHASSIS C420 AH W/SS-PAINT	1
0100 *C	1402-3514-1	CHASSIS C420 C W/SS-PAINT	
0101	1402-3530-0	COVER	1
0102	1403-7120-1	FASCIA	1
0105 △	1806-3541-0	X'FORMER 120/230V I/P	1
0106	2442-1000-0	POWER BUTTON	1
0107	2444-1201-0	BUTTON TRIO	2
0108	2444-1301-1	BUTTON RACKER	1
0109	2600-4008-0973	FLAT WASHER M4X0.8X9.7 BZ	2
0110	2640-4030-0703	M4 NUT (BLK)	2
0111	2842-3367-0	METAL WASHER ID=3.3 OD=6.7	5
0112	2900-4006-3010	M4X0.5PX6MM W/FLAT WASHER	4
0113	2900-4010-3030	PH W/WASHER M4X10 BL ZN	2
0114	2904-3006-0000	SCREW M3X6	3
0116	2954-3008-0000	TAPPING 3X8MM B-TITE (YEL.ZN)	20
0117	2954-3006-0000	3X6MM B-TITE (YEL.ZN)	2
0119	2954-3008-3000	T3X8MM SELF TAPPING	14
0126	3716-4314-0	WINDOW LENS W/SS	1
0127	1402-3782-1	STRAP	1
0129 △	4152-3851-0	SQ. STRAIN RELIEF BUSHING	1
0130	4152-4331-0	POWER BUTTON BEZEL	1
0131	4152-4631-0	RUBBER FOOT 14MM HIGH	4
0132	4152-4641-0	CUSHION FOOT	4
0133	4154-0031-0	BEZEL TRIO	2
0134	4154-0091-0	BEZEL RACKER	1
0136 *AH △	7009-3100-2	AC CORD 18AWGX2 SPT-2 UL/CSA D.INSULATED	1
0136 *C △	7009-3110-0	AC CORD (SEMKO)	1
0137	3714-5706-0	LED LENS CLEAR SAN	1
J202C	7012-5260-0	FLEXIBLE CABLE 35P L=150	1

- NOTE:**
- The components identified by △ mark are critical for risk of fire and electrical shock. Replace only with part number specified.
 - <*AH > : USA, Canadian model only.
 - <*C > : European model only.

PACKING DIAGRAM



ITEM	PART NO.	DESCRIPTION	Q'TY
1	1408-0202-0	CARTON BOX	1
2	1490-1783-0	POLYFORM ENDCAP	2
3	1497-1062-0	POLYBAG MANUAL	1
4	1497-1302-0	POLYBAG ACCESSORY	1
5	1497-1332-1	POLYBAG UNIT	1
6	1497-1432-0	FASCIA COVER	1
7	4301-4868-1	INSTRUCTION MANUAL	1
8	2103-7302-1	RCA CABLE	1
9	2107-0661-1	300-OHM T ANTENNA	1
10	2113-1155-0	AM LOOP ANTENNA	1
11	2103-6101-0	RF CONNECTION PLUG	1

Proprietary information for servicing purposes only. The information herein may not be used commercially without the prior written agreement of NAD Electronics International, Toronto, Canada.

SERVICE MANUAL

C 420

STEREO
AM/FM TUNER

© NAD 2001

NAD ELECTRONICS INTERNATIONAL
TORONTO