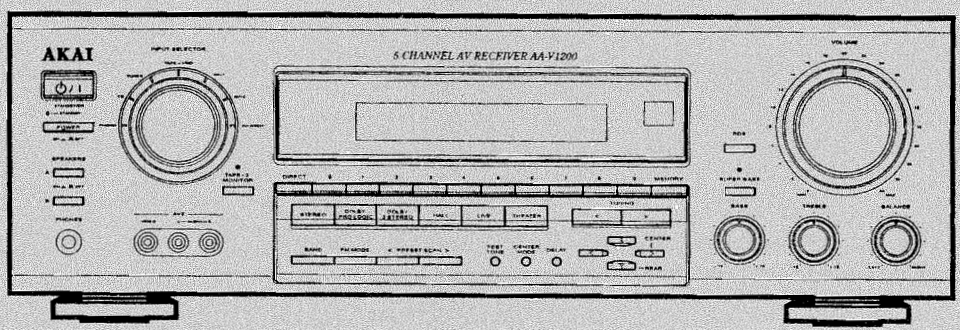
AKAI SERVICE MANUAL



5 CHANNEL AV RECEIVER

SPECIFICATIONS MODEL AA-V1200

AMPLIFIER

1 When SURROUND is "OFF"
Sensitivity and impedance
PHONO : 2.8mV/47kΩ
CD, TAPE, AV 1/2 : 200mV/47kΩ
Frequency Response
PHONO(RIAA STANDARD CURVE)
: 50Hz~15kHz(±1dB)
CD, TAPE, AV 1/2 : 10Hz~60kHz
S/N Ratio
PHONO(IHF-A) : 65dB
CD, TAPE, AV 1/2(IHF-A) : 90dB
Power Output
130W+130W
(at 1kHz, 8ohm, THD 0.05%)
Tone control
Treble : ±10dB (10kHz)
Bass : ±10dB (100Hz)

2 When SURROUND is "ON"
(4 ch surround mode)
Power Output (at 1ch Drived)
Front : 100W+100W (1kHz, 0.1% THD, 8ohm)
Rear : 100W+100W (1kHz, 0.5% THD, 8ohm)

3 When Dolby Pro Logic is "ON"/ DVD IN
Power Output (at 1ch Drived)
Front : 100W+100W (1kHz, 0.1% THD, 8ohm)
Center : 100W (1kHz, 0.1% THD, 8ohm)
Rear : 100W+100W (1kHz, 0.5% THD, 8ohm)

TUNER

1 FM SECTION
Frequency Range : 87.50MHz to 108.00MHz
(50kHz step)
Sensitivity (S/N 30dB) : 3.0μV
Total Harmonic Distortion
MONO : 0.3%
STEREO : 0.5%
Signal to Noise Ratio
MONO : 70dB
STEREO : 65dB
Frequency Response : 20Hz~15kHz
Image Rejection : 60dB
Stereo Separation (1kHz) : 30dB

2 MW SECTION
Frequency Range : 522kHz to 1620kHz
(9kHz step)
Sensitivity (S/N 20dB) : 55dB
Total Harmonic Distortion : 1.5%
Signal to Noise Ratio : 40dB
Image Rejection : 35dB

3 LW SECTION
Frequency Range : 146kHz ~ 290kHz
(1kHz step)
Sensitivity (S/N 20dB) : 60dB

GENERAL

Power consumption : 400W
(At 1/8 POWER 6% OVER VOLTAGE)
Power supply : AC 230V, 50Hz
Dimension (W× H× D) : 430× 142×355mm
Weight : 10.1kg (net)

Standard accessories

Remote control uint..... 1
Operator's manual 1

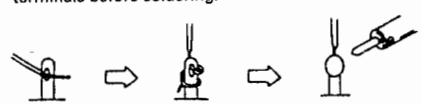
* For improvement purposes, specifications and design are subject to change without notice.

CONTENTS

SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identifide by the ⚠ (*)symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specifide replacements.
   Examples :RF converters, tuner units, antenna selectswitches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially :
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers(insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Make sure that wires to do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot. All other household batteries can be thrown out with the household waste.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

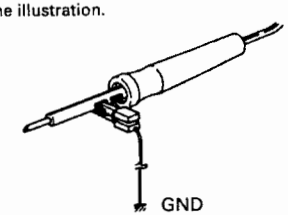
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions.

The leakage-current should be less than 0.5mA rms AC. The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2M Ohms.

PRECAUTIONS IN REPAIRING

When repairing or adjusting the unit, please note the following points.

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair adjustment, make sure that there are no metal obiects in the narrow gap between the P. C. board or the mecha parts and the base
3. The Micro-Computer and the CD signal processing ICs can be damaged by static electricity or leakage from a soldering iron during repairing. While soldering, please take the precautions against leakage as in the illustration.



4. Do not loosen any screws in the pick-up block. When handing the pick-up block, please refer to the points to NOTE when replacing the pick-up block.
5. Keep safety for hazardous invisible Laser Radiation, DO NOT watch the Laser Beam (Objective lens) directly.
6. Models for some countries, laser warning labels are affixed on the unit and inside of the unit, as shown below. Read it carefully for your safety, when repairing or adjusting the unit.

INFORMATION

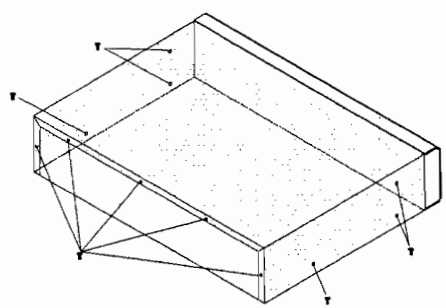
SYMBOLS FOR PRIMARY DESTINATION

Primary destination of units are indicated with the following alphabet.

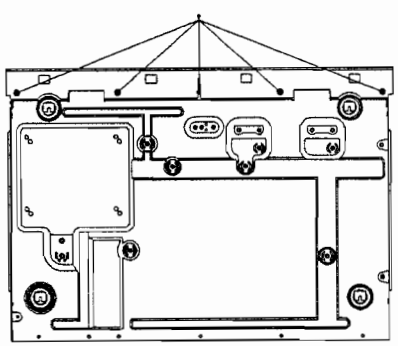
Symbols	Principal Destinations
B	UK
E	*Europe (except UK)*
S	Australia
U	Universal Area
Y*	Custom version

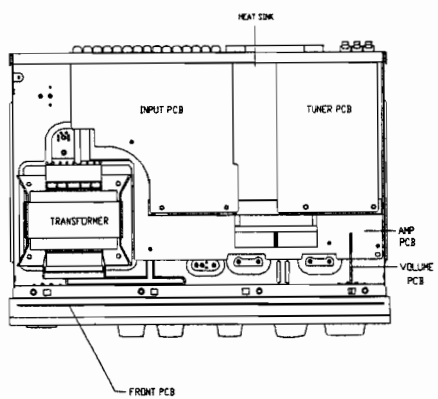
DISASSEMBLY

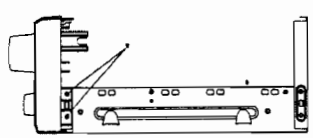
1)REMOVAL OF TOP COVER



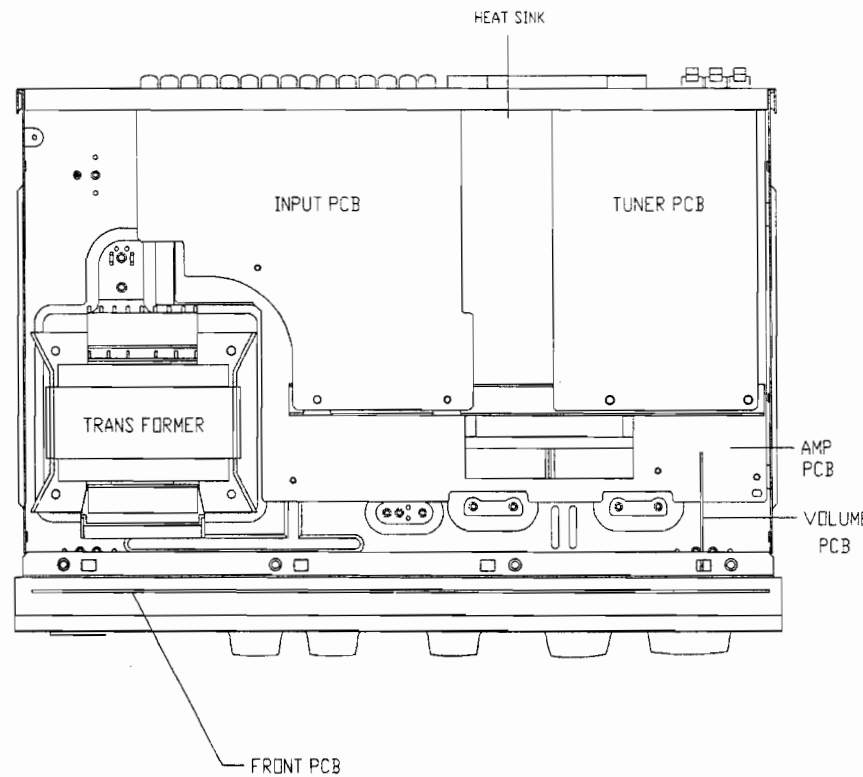
2)REMOVAL OF FRONT PANEL



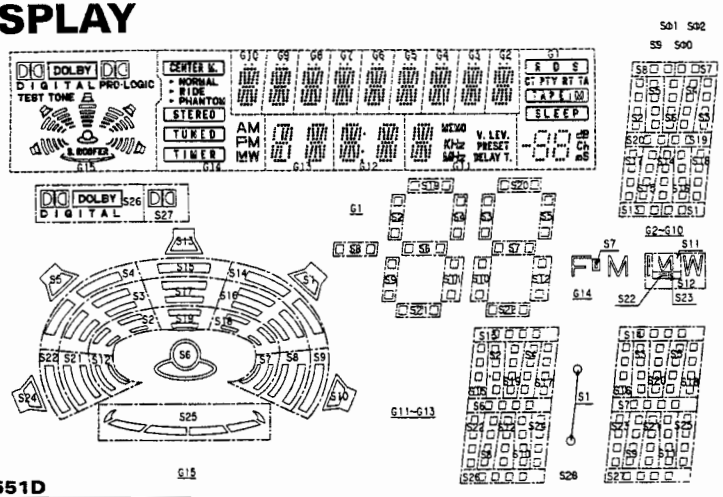




PRINCIPAL PARTS LOCATION



FIP DISPLAY

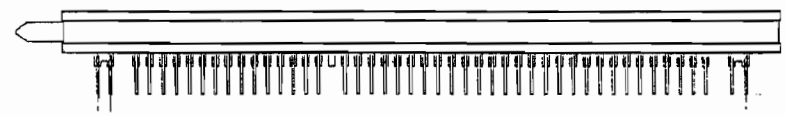


TYPE :CM1551D

ANODE & GRUD ASSIGNMENT

	G1	G2~G10	G11	G12	G13	G14	G15
S1	RDS	S1		S1		STEREO	S1
S2	S2	S2	S2	S2		NORMAL	S2
S3	S3	S3		S3	S3		S3
S4	S4	S4	S4	S4	S4	▷(NORMAL)	S4
S5	S5	S5	KHz	S5	S5		S5
S6	S6	S6	S6	S6	S6	FM	S6
S7	S7	S7	DELAY T	S7	S7	S7	S7
S8	S8	S8	S8	S8	S8		S8
S9	S9	S9	MHZ	S9	S9	CENTER M.	S9
S10	S10	S10	S10	S10		TIMER	S10
S11	S11	S11		S11	S11	S11	TEST TONE
S12	S12	S12	S12	S12	S12	S12	S12
S13	CT	S13	S13	S13	S13	PHANTOM	S13
S14	PTY	S14	MEMO	S14	S14		S14
S15	RT	S15	S15	S15	S15	▷(PHANTOM)	S15
S16	TA	S16	V. (LEV.)	S16	S16	AM	S16
S17	TAPE M	S17	S17	S17	S17	WIDE	S17
S18	SLEEP	S18	(V.) LEV.	S18	S18		S18
S19	S19	S19	S19	S19	S19	▷ (WIDE)	S19
S20	S20	S20	PRESET	S20	S20	TUNED	PRO. LOGIC
S21	S21			S21	S21		S21
S22	S22		S22	S22	S22	S22	S22
S23	ms			S23	S23	S23	S. WOOFER
S24	ch		S24	S24	S24		S24
S25				S25	S25		S25
S26			S26	S26	S26		S26
S27				S27	S27		S27
S28				S28			

PIN CONNECTION



PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Assignment	F1	F1	NP	G15	G14	G13	G12	G11	G10	G9	G8	G7	G6	G5	G4

Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Assignment	G3	G2	G1	NL	S28	S27	S26	S25	S24	S23	S22	S21	S20	S19	S18

Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Assignment	S17	S16	S15	S14	S13	S12	S11	S10	S9	S8	S7	S6	S5	S4	S3

Pin No.	46	47	48	49	50
Assignment	S2	S1	NP	F2	F2

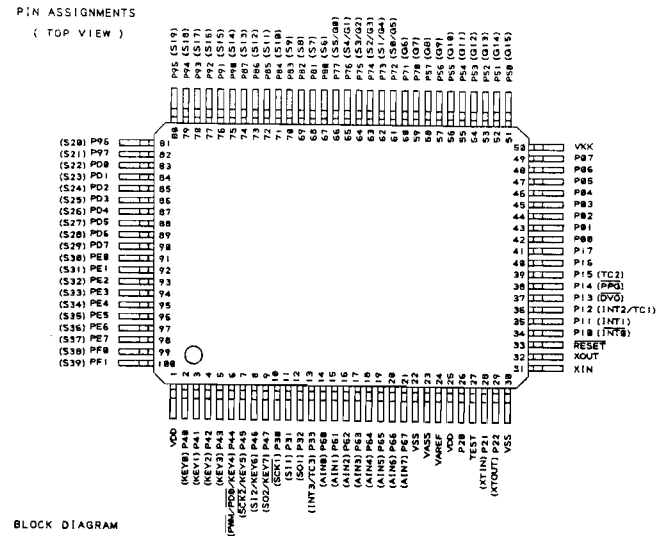
IC PIN FUNCTION (IC :ANAM 1228AT)

NO.	NAME	I/O	DESCRIPTION
1, 25	VDD	-	POWER SUPPLY (+5V)
2	CLOCK	O	NJU 7313 AND NJW1103 CONTROL PORT
3	DATA	O	NJU 7313 AND NJW1103 CONTROL PORT
4	REQUST	O	NJW1103 CONTROL PORT
5	STROBE1	O	NJU7313 CONTROL PORT
6	POWER ON/OFF	O	POWER ON/OFF CONTROL OUTPUT
7	CE	O	PLL IC (LM 7001) CONTROL OUTPUT
8	CLOCK	O	
9	DATA	O	
10	FM(L)		WHEN "FM" IS "L"
11	MONO		MONO CONTROL OUTPUT
12	DATA	O	RDS IC (TDA 7330B) CONTROL PORT
13	CLOCK	O	
14	STEREO IN	I	STEREO IN CONTROL INPUT
15	TUNED	I	TUNED CONTROL INPUT
16	HEADPHONE IN	I	
17~21	KEY MATRIX	I	KEY MATRIX PORTS
22,23,27,30	VSS	-	GND
24	VAREF	-	A/D CONVERTOR REFERENCE VOLTAGE
26	BACK UP	I	BACK-UP MODE CONTROL INPUT
28,29	FUNCTION SELECTOR	I	ENCODER DATA INPUT
31	X IN	I	8MHz CRYSTAL CONNECTING TERMINAL
32	X OUT	O	
33	RESET	I	SYSTEM RESET PULSE INPUT
34	REMOTE IN	I	REMOTE CONTROL SIGNAL INPUT
35	BUS IN	I	SYSTEM CONTROL SIGNAL INPUT
36	BUS OUT	O	SYSTEM CONTROL SIGNAL OUTPUT
38	TUNER MUTE	O	TUNER MUTE ON/OFF CONTROL OUTPUT
39	SURROUND ON/OFF	O	SURROUND ON/OFF CONTROL OUTPUT
40	VOLUME DN	O	MASTER VOLUME UP/DOWN CONTROL OUTPUT
41	VOLUME UP	O	
42	AV1 MUTE	O	AV1 REC MUTE ON/OFF CONTROL OUTPUT
43	TAPE MUTE	O	TAPE REC MUTE ON/OFF CONTROL OUTPUT
44	FUNCTION MUTE	O	FUNTION MUTE ON/OFF CONTROL OUTPUT
45	VIDEO	O	VIDEO CONTROL (NJM 2279D) CONTROL OUTPUT
46	VIDEO	O	
47	STROBE 3	O	FUNCTION LED IC (NJU 3713D) CONTROL OUTPUT
48	DATA3	O	
49	CLOCK	O	
50	VFLP		(-33V) NEGATIVE POWER SUPPLY FOR FIP BLINKING
51~65	GRID	O	FIP GRID CONTROL OUTPUTS
66~94	SEGMENT	O	FIP SEGMENT CONTROL OUTPUTS
95	OPTION A	I	AREA OPTION PORT
96	OPTION B	I	
97	OPTION C	I	
98	OPTION D	I	
99	PROTECT IN	I	INPUT FROM PROTECTION CIRCULT
100	POWER MUTE	O	POWER MUTE CONTROL OUTPUT

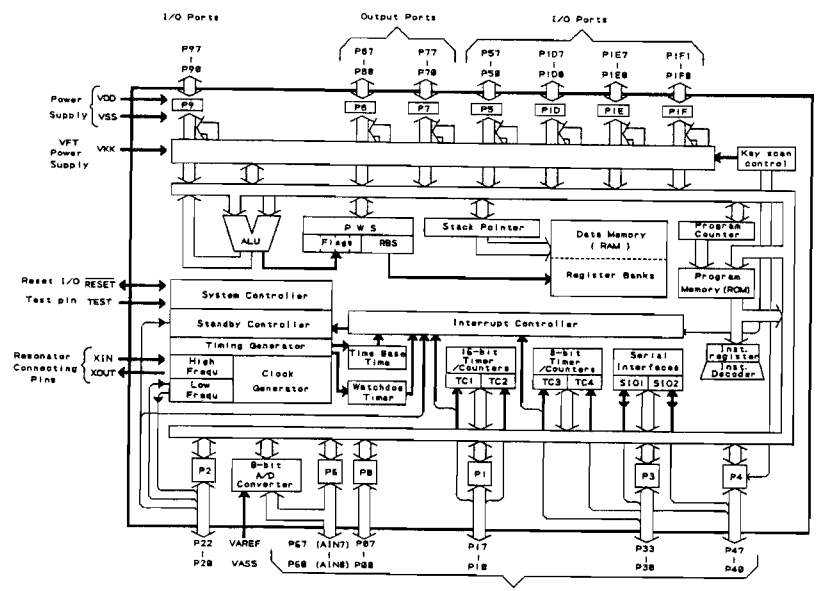
[U-COM FUNCTION : BV[ANAM1228AT]

PIN ASSIGNMENTS

(TOP VIEW)

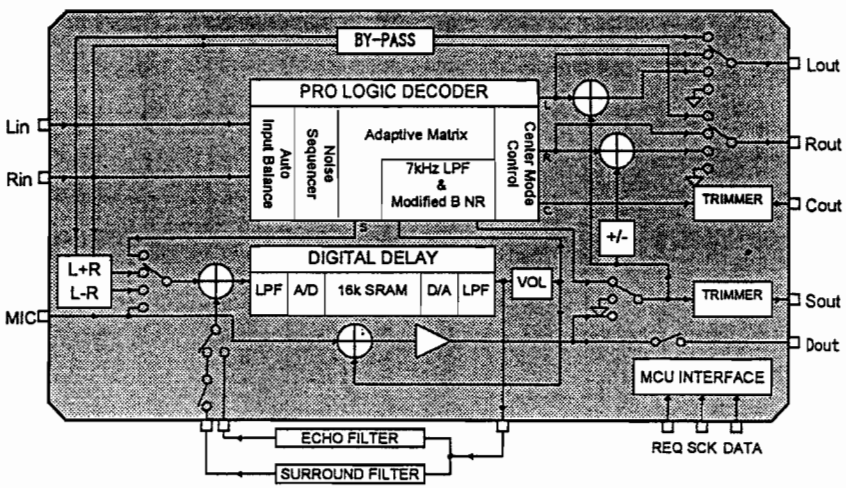


BLOCK DIAGRAM

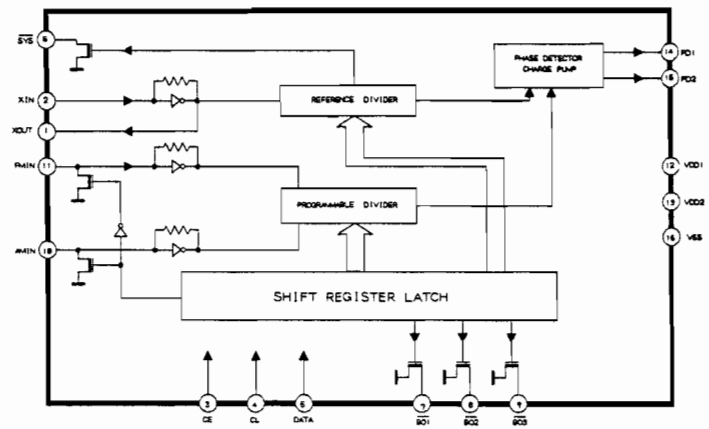


IC BLOCK DIAGRAM (NJW1103)

■SYSTEM BLOCK DIAGRAM



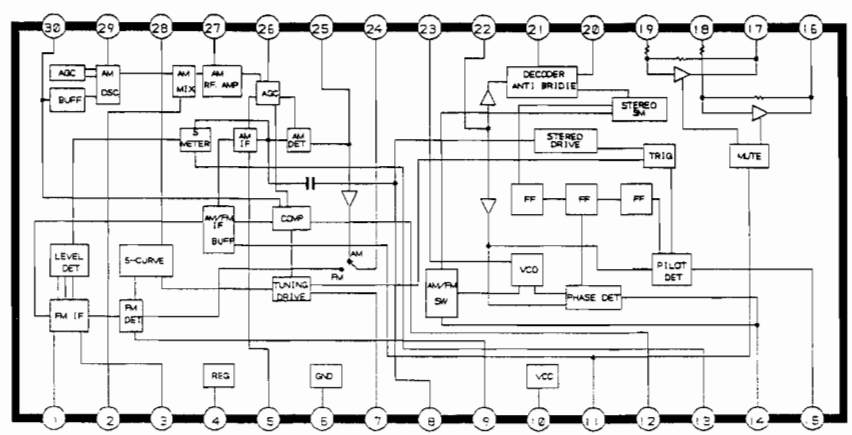
IC11 (TUNER) LM7001 (PLL SYNTHESIZER)



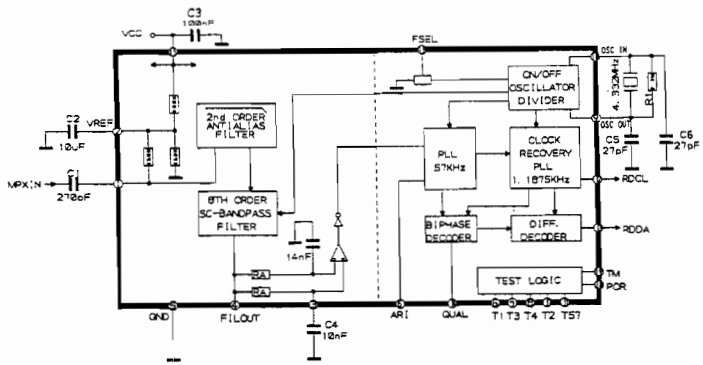
■ PIN CONNECTION

No.	Name	No.	Name	No.	Name	No.	Name
1	NGC1	21	XIN	41	VOL OUT	61	RLC4
2	LOUT	22	XOUT	42	DELAYSIG IN	62	RLC7
3	ROUT	23	DVSS	43	DELAYSIG OUT	63	RLC3
4	CT	24	AVSS	44	FBIN EC	64	RLC8
5	COUT	25	AVDD	45	FBIN SU	65	RLC6
6	ST	26	VREFD	46	S'OUT	66	LLI
7	SOUT	27	MIX OUT	47	DBIN	67	LBPF
8	CMC	28	DELAY IN	48	LPIN	68	RLI
9	SMRO	29	LPF1 IN1	49	DBC1	69	RBPF
10	SMRI	30	LPF1 IN2	50	DBC2	70	LT
11	AGND	31	LPF1 OUT	51	DBC3	71	RT
12	MIC IN	32	AD INT IN	52	PCS3	72	LIN
13	DVDD	33	AD INT OUT	53	PCS6	73	RIN
14	TEST CNT	34	AD CONT	54	PCS2	74	HOLDC
15	DATA	35	DA CONT	55	PCS5	75	AVCC
16	SCK	36	DA INT IN	56	PCS1	76	VREFA
17	REQ	37	DA INT OUT	57	PCS4	77	VREFG
18	LO1	38	LPF2 IN1	58	RLC5	78	IREF
19	LO2	39	LPF2 IN2	59	RLC2	79	NGC3
20	LO3	40	LPF2 OUT	60	RLC1	80	NGC2

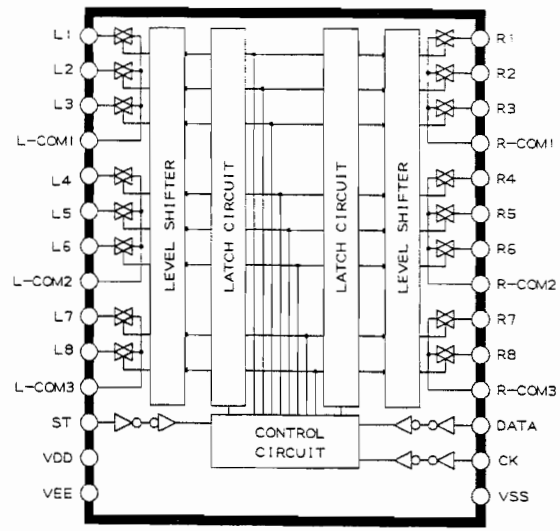
IC12 (TUNER) LA1836M (MPX + IF)



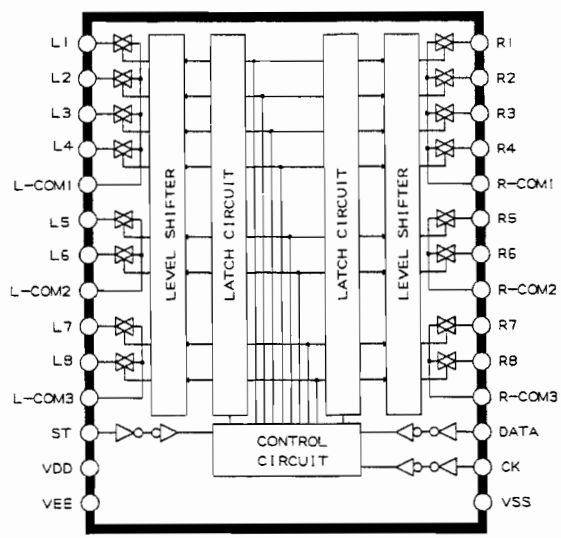
IC18 (TUNER) TDA7330BD (RDS DECODER)



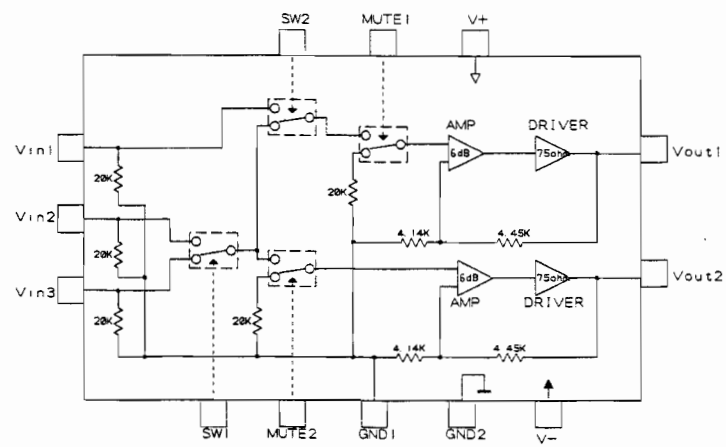
IC22 (INPUT) NJU7312 (FUNCTION SEL)



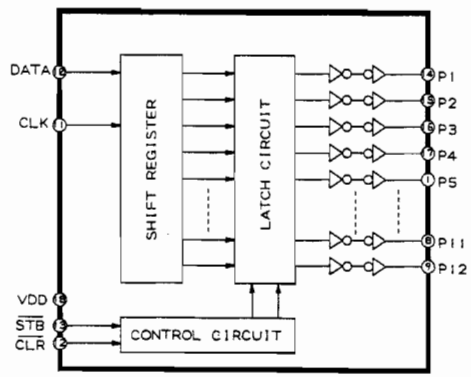
IC23 (INPUT) NJU7313 (FUNCTION SEL)



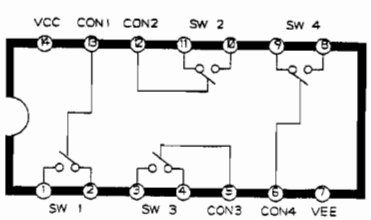
IC48 (INPUT) NJM2279D (VIDEO CONTROL)



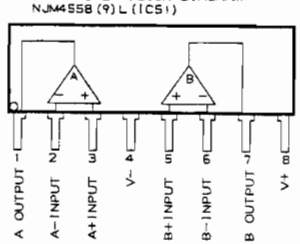
IC82 (FRONT) NJU3713 (DATA CONVERTER)



IC22 (INPUT) LC4966(AUDIO CONTROL)



IC21/25/32/33 (INPUT)
IC51/52/61/62 (AMP)
IC71/71/73/74 (FRONT)
NJM4556AL BLOCK DIAGRAM
NJM4558 (9) L (IC51)



TRANSISTOR BLOCK DIAGRAM

TO-92L 1. Emitter 2. Collector 3. Base KSA1175Y KSB811Y KSD1021Y KSAC2785Y KTA114Y KTA144E KTC114Y KTC144T KTC3192 KTA1271Y	TO-92 1. Emitter 2. Collector 3. Base KTD1302T KTC3228Y KTC3200GR	TO-92L 1. Emitter 2. Collector 3. Base KSA916Y KSC2316Y
TO-220 1. Emitter 2. Collector 3. Base KTA1659AY KTC4370AY 2SD2058	TO-220 1. Emitter 2. Collector 3. Base KSA614Y MC7812C KSD288Y MC7912C	TO-3P 1. Emitter 2. Collector 3. Base 2SC3856 2SC4468 2SA1492 2SA1695

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTIONS

EQUIPMENT NEEDED:

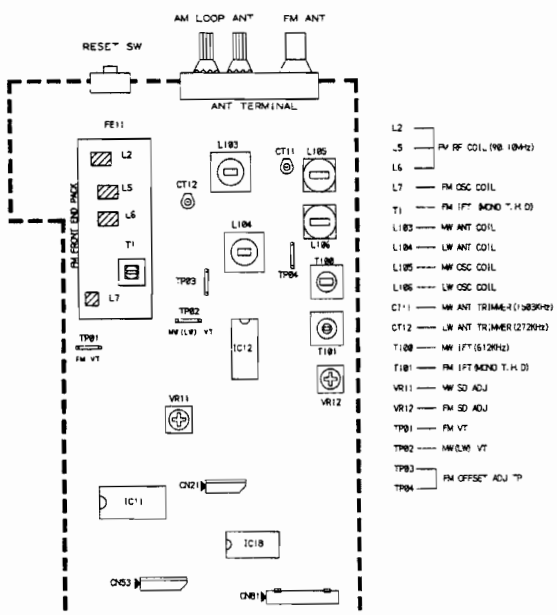
MW(AM) Signal Generator
FM Signal Generator
Oscilloscope
VTVM(AC, DC)
Test loop antenna (MW Adjustment)
Dummy antenna (FM Adjustment)
Stereo signal modulator (RDS IN)
Frequency counter
Distortion analyser

IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band aligned.
3. Keep the signal input as low as possible to adjust accurately.
4. Modulation and modulation frequency.

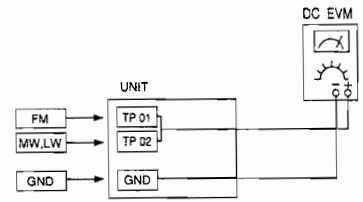
Item / Band	Modulation	Modulation frequency
MW/LW	30%	400Hz
FM	100%(75KHz Dev.)	400Hz

■ ADJUSTMENT POINT



1. TUNING FREQUENCY RANGE ADJUSTMENTS

(FM) DC VOLTMETER ·····CONNECT TO TEST POINT TP01 and GND
(MW, LW) DC VOLTMETER ·····CONNECT TO TEST POINT TP02 and GND

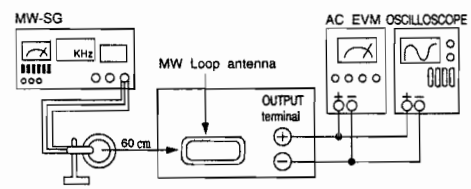


No	Band	Frequency	Adjust for	Adjustment
1	FM	87.50MHz	1.6V	L7
2	MW	522KHz	1V	L105
3	LW	146KHz	1.3V	L106

2. MW/LW TRACKING ADJUSTMENT

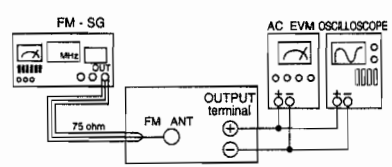
Signal Generator ·····Connects to the MW Ant. Coil through the loop antenna.
Adjust for the indication of VTVM of the wave form of scope to be maximum.

Band	Step	Frequency	Adjust for	Adjustment
MW (AM)	1	612KHz	Maximum sensitivity	T100, L103
	2	1503KHz	Maximum sensitivity	CT11, T100
	3	Repeat steps 1 and 2 several times		
LW	1	164KHz	Maximum sensitivity	L104
	2	272KHz	Maximum sensitivity	CT12
	3	Repeat steps 1 and 2 several times		



3. FM-RF ADJUSTMENT

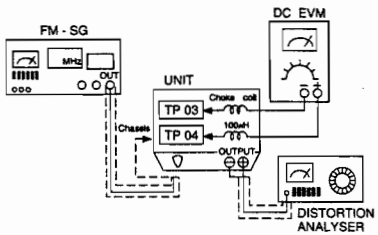
Signal Generator·····Connect to FM ANT JACK (FM IN) through the dummy.



No	Frequency	Adjust for	Adjustment
1	90.10MHz	Maximum Sensitivity	L2, L5, L6
2	Repeat step 1 several times		

4. FM MONO DISTORTION ADJUSTMENT

DC VOLT METER ·····Connect to TP03(-), TP04(+) Through the choke coil(100μH)
Signal Generator ·····Connect to FM ANT JACK(FM IN) through the dummy.
Distortion Meter ·····Connect to the output



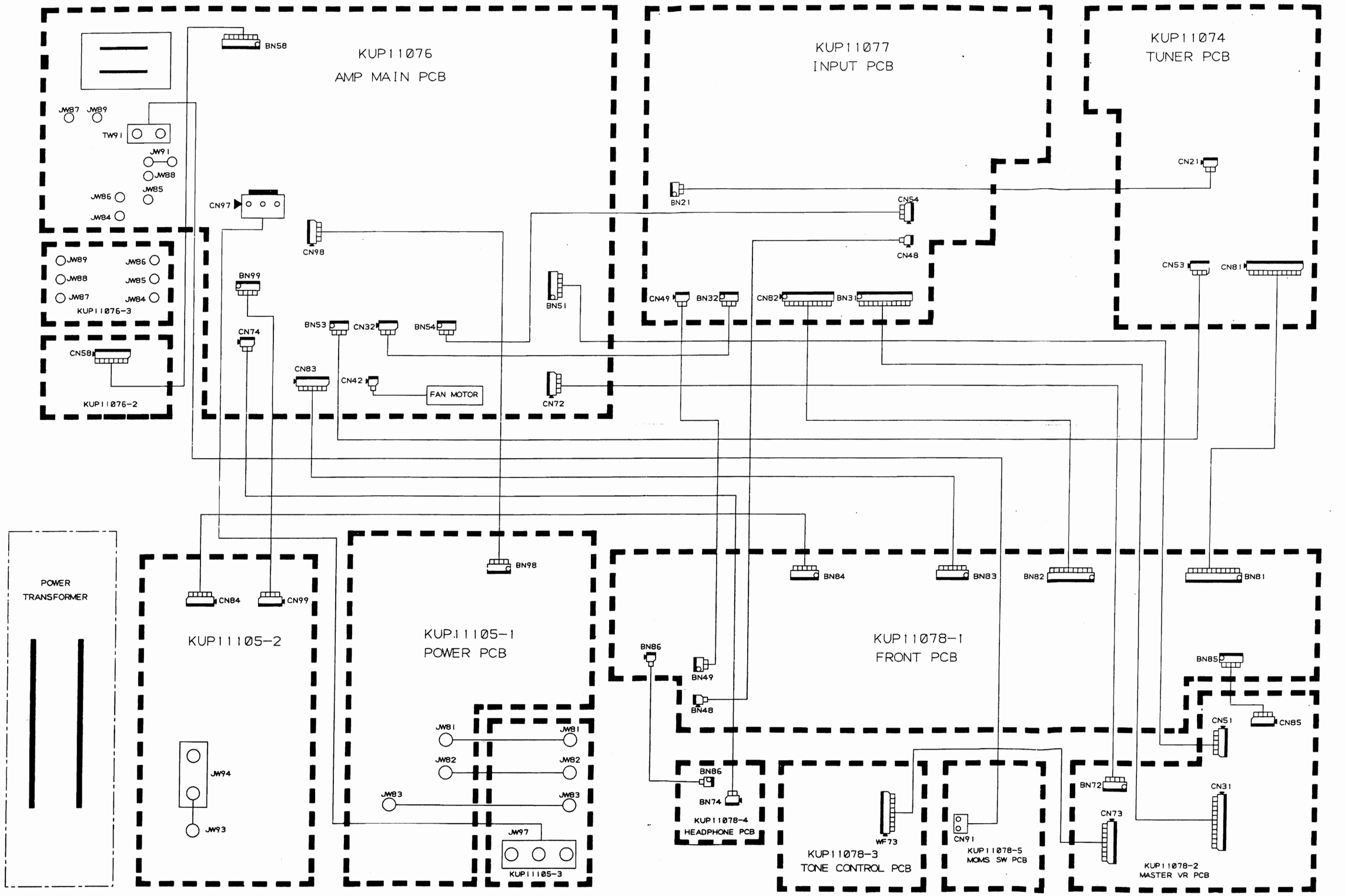
No	Frequency	Adjust for	Adjustment
1	100.50MHz	DC Voltmeter 0V	T101
2	100.50MHz	Minimum T. H. D	T101
3	Repeat steps 1 and 2 Several times.		

5. FM/MW(LW) AUTO STOP LEVEL ADJUSTMENT

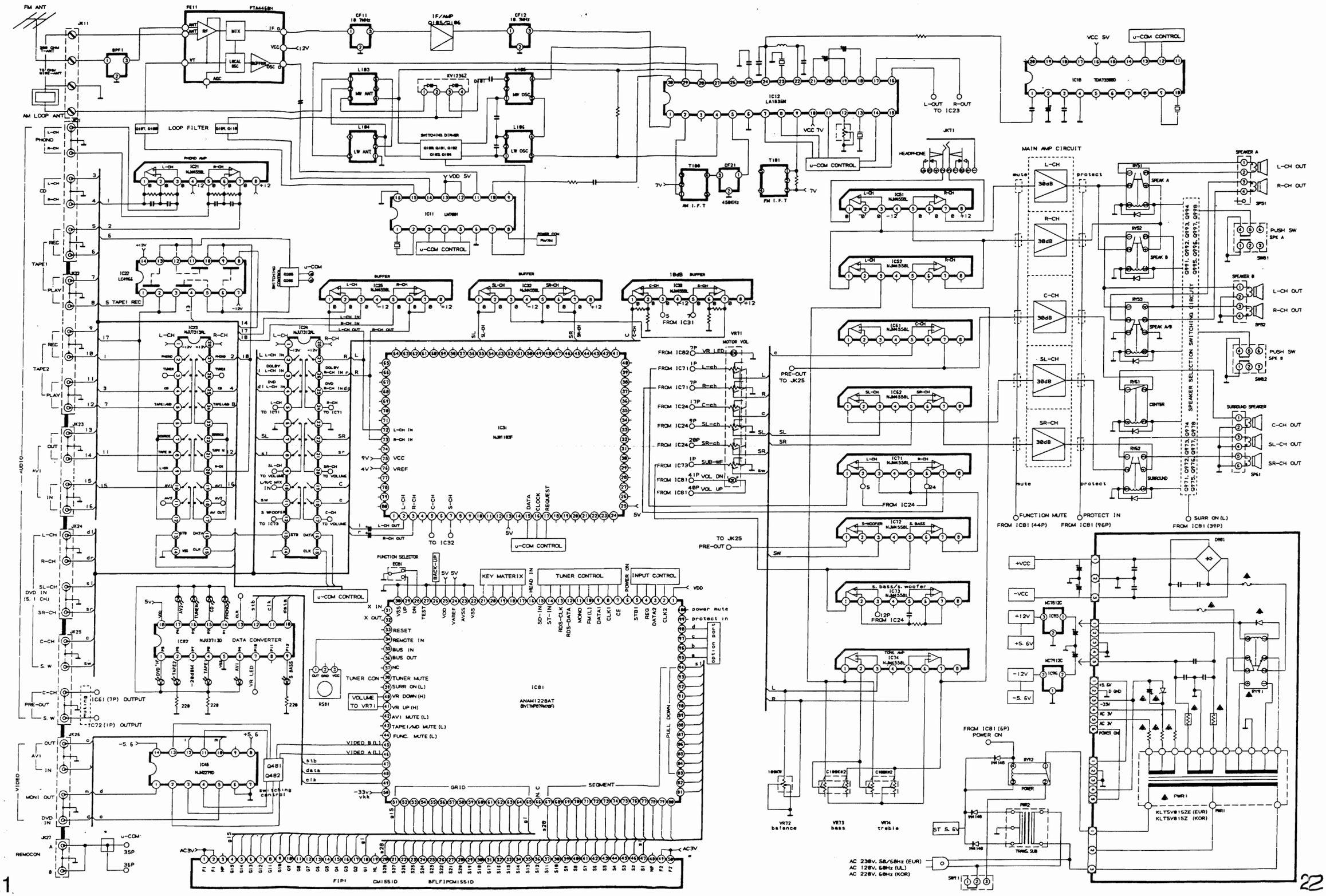
FM SIGNAL GENERATOR·····Connect to FM ANT JACK(FM IN) through the dummy.
(MW, LW)SIGNAL GENERATOR·····Connect to FM ANT. Coil through the Loop antenna

Band	Step	Signal Generator	Adjust for	Adjustment
MW/LW	1	990KHz 88dB	TUNED Display OFF	VR12
	2	990KHz 88dB	TUNED Display ON	VR12
FM	1	100.1MHz 32dB	TUNED Display OFF	VR11
	2	100.1MHz 32dB	TUNED Display ON	VR11

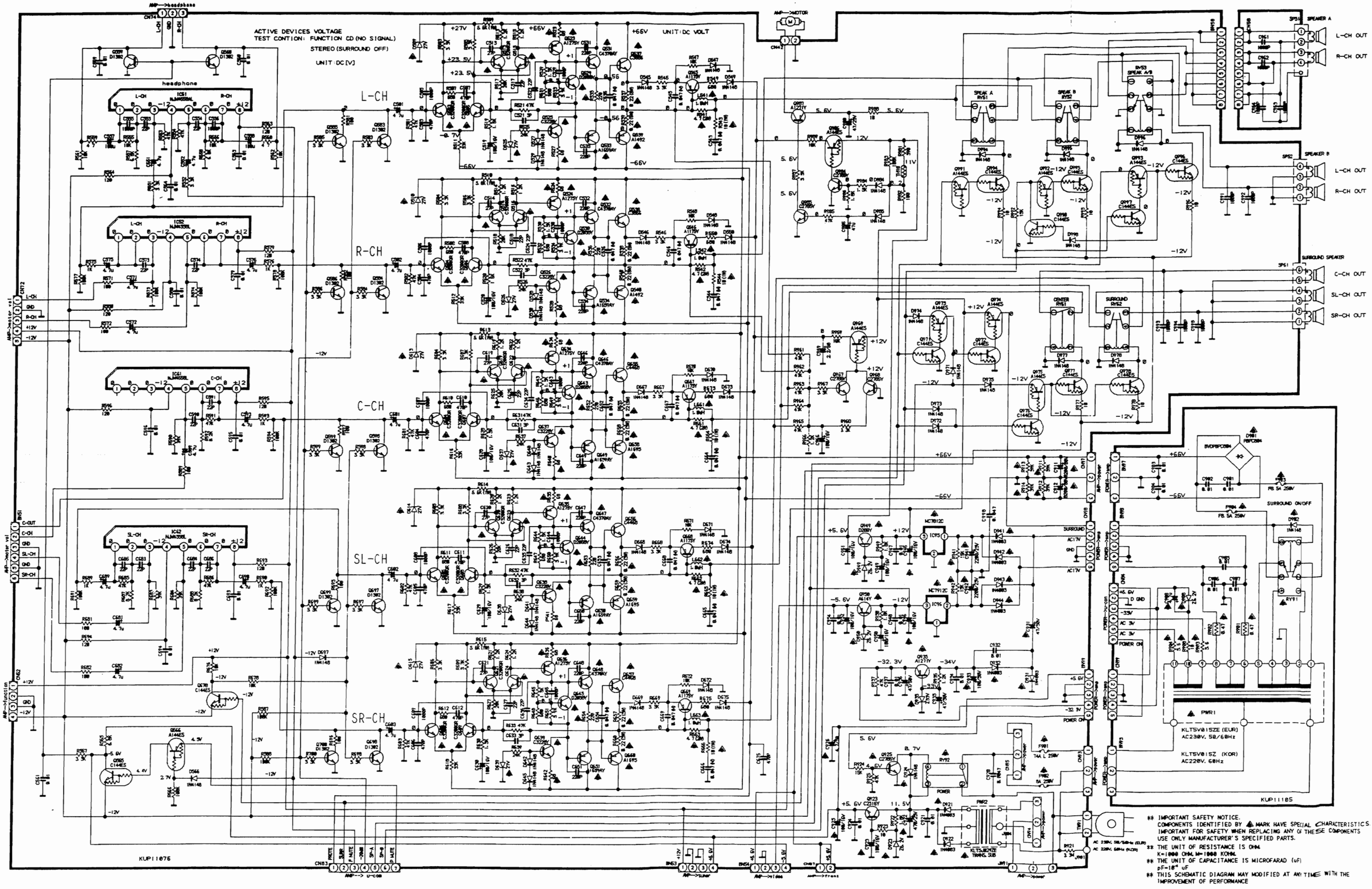
WIRING DIAGRAM



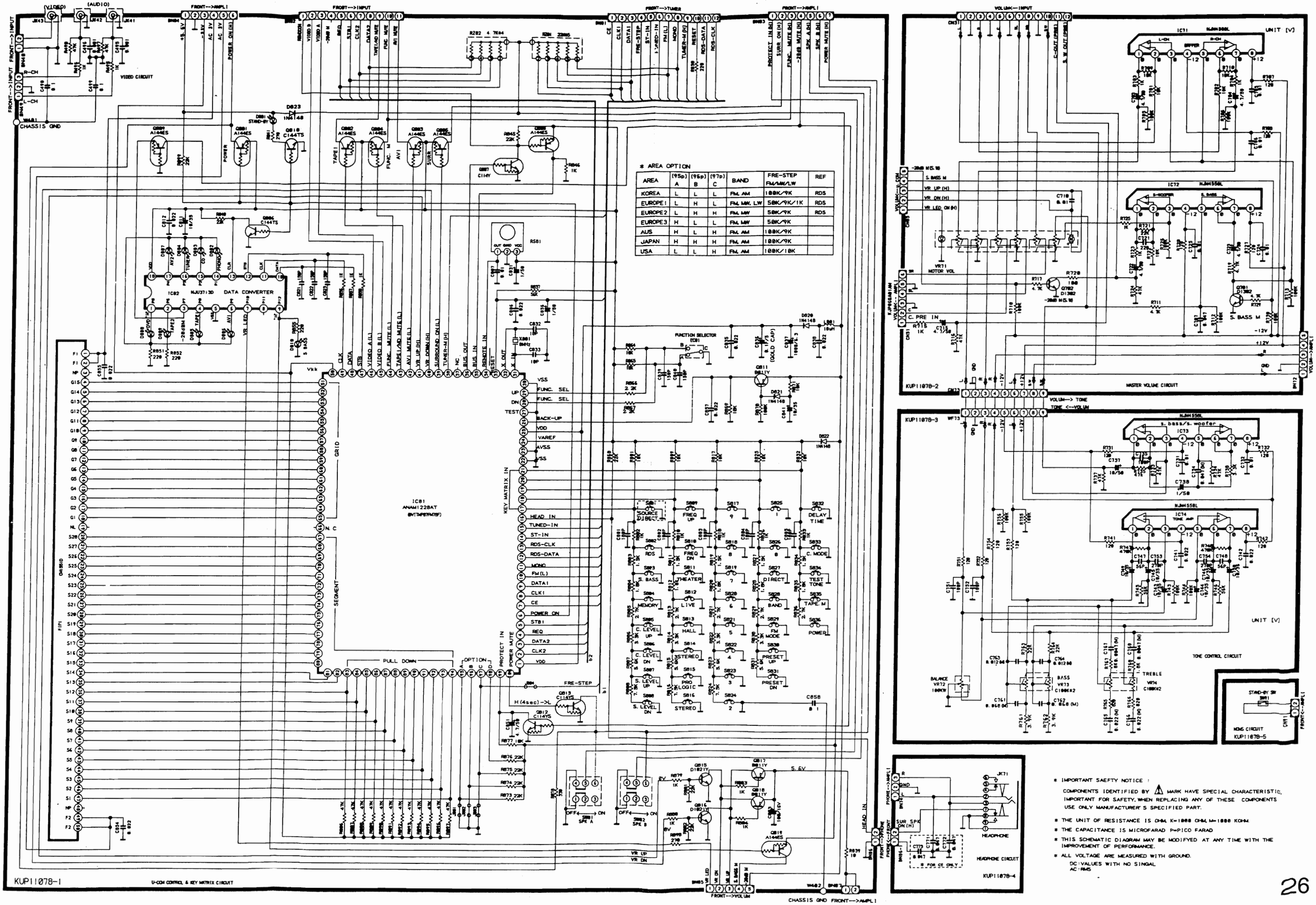
BLOCK DIAGRAM



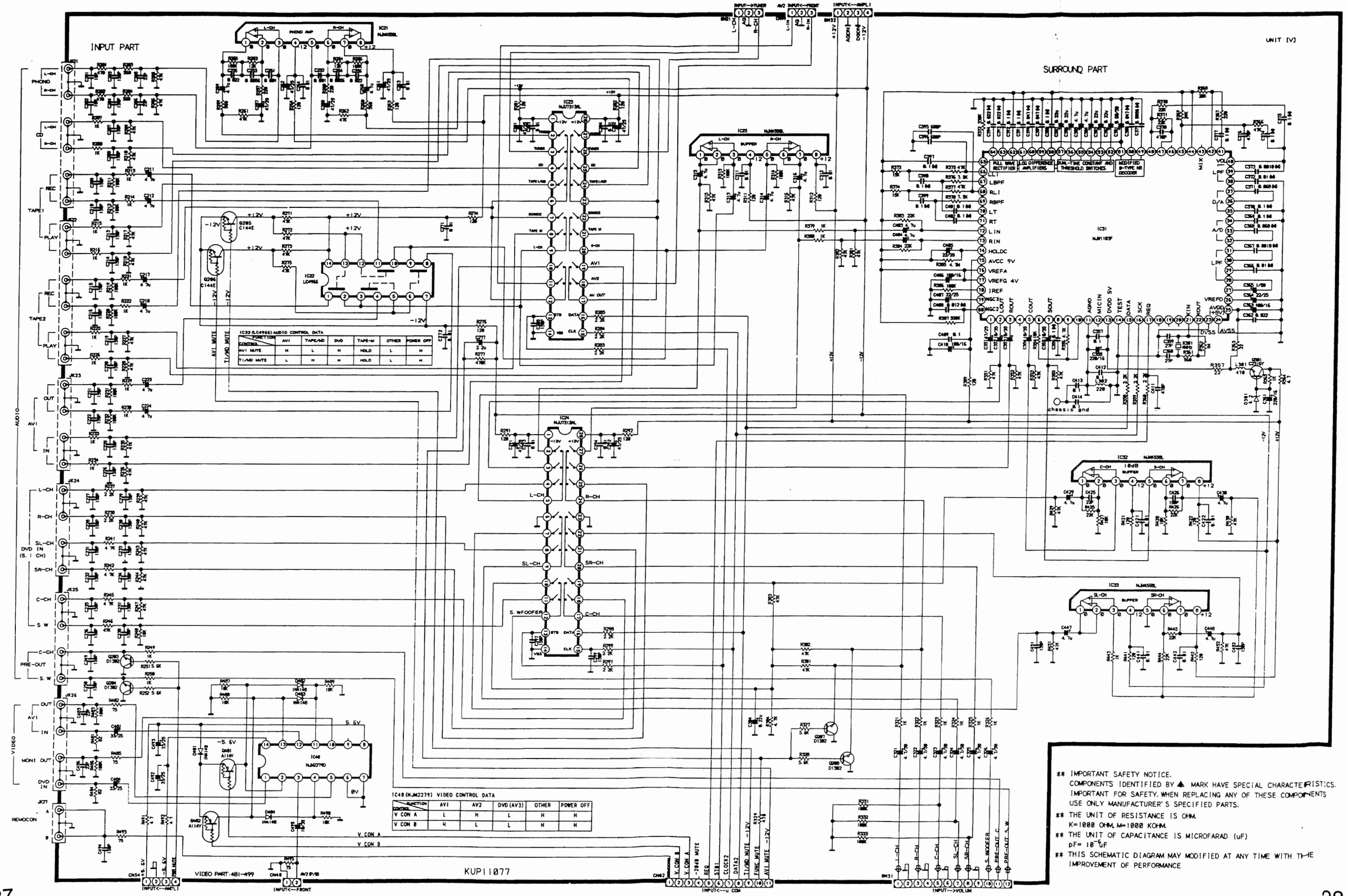
SCHEMATIC DIAGRAM



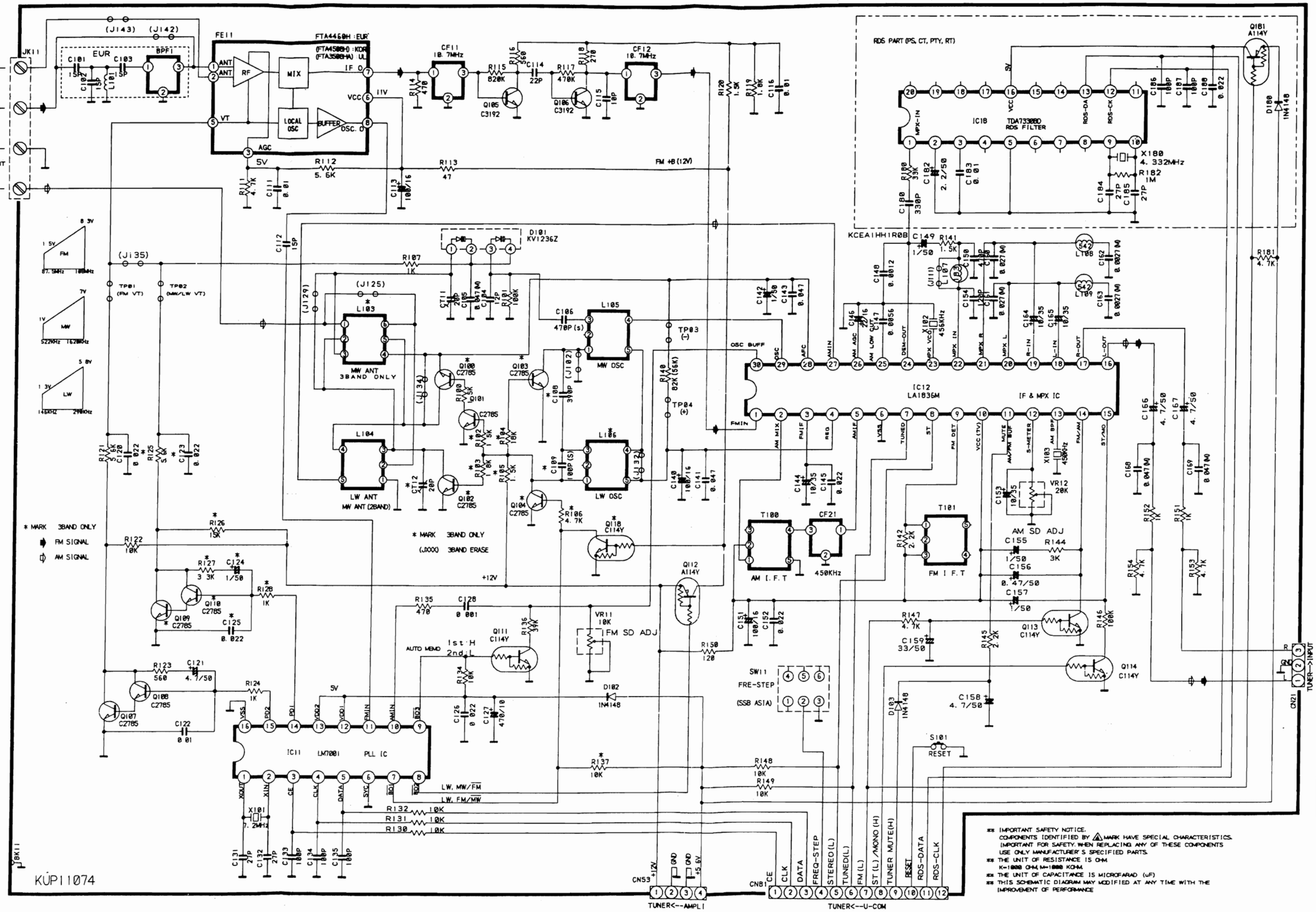
AA-V1200 FRONT SCHEMATIC DIAGRAM



AA-V1200 INPUT SCHEMATIC DIAGRAM



AA-V1200 TUNER SCHEMATIC DIAGRAM



TDA7330BD (IC18)	FM ONLY
pin	UNIT [V]
1	2.4
2	2.4
3	1.7
4	1.7
5	0
6	2.9
7	2.6
8	2.7
9	2.6
10	2.6
11	0
12	0
13	0
14	0
15	5
16	5
17	0
18	2.3
19	2.6
20	2.7

UNIT [V]

LA1836M (IC12)			
pin \ band	FM	MW	LW
1	3.6	3.6	3.6
2	7.3	8	8
3	3.6	3.6	3.6
4	3.6	3.6	3.6
5	3.6	3.6	3.6
6	0	0	0
7	0	0	0
8	0	5.2	5.2
9	7.3	8	8
10	7.3	8	8
11	0	0	0
12	4.3	4.2	4.2
13	1.7	1.6	1.6
14	5.7	0	0
15	6.2	6.7	6.6
16	3.6	3.6	3.6
17	3.6	3.6	3.6
18	3.6	3.6	3.6
19	3.6	3.6	3.6
20	3.5	3.5	3.5
21	3.5	3.5	3.5
22	2.8	2.8	2.8
23	4.5	1.4	1.2
24	2.5	3.5	4.0
25	2.8	3.4	3.9
26	0	1.3	1.3
27	3.5	3.2	3.2
28	3.5	3.2	3.6
29	3.6	3.6	3.6
30	1.6	1.3	1.3

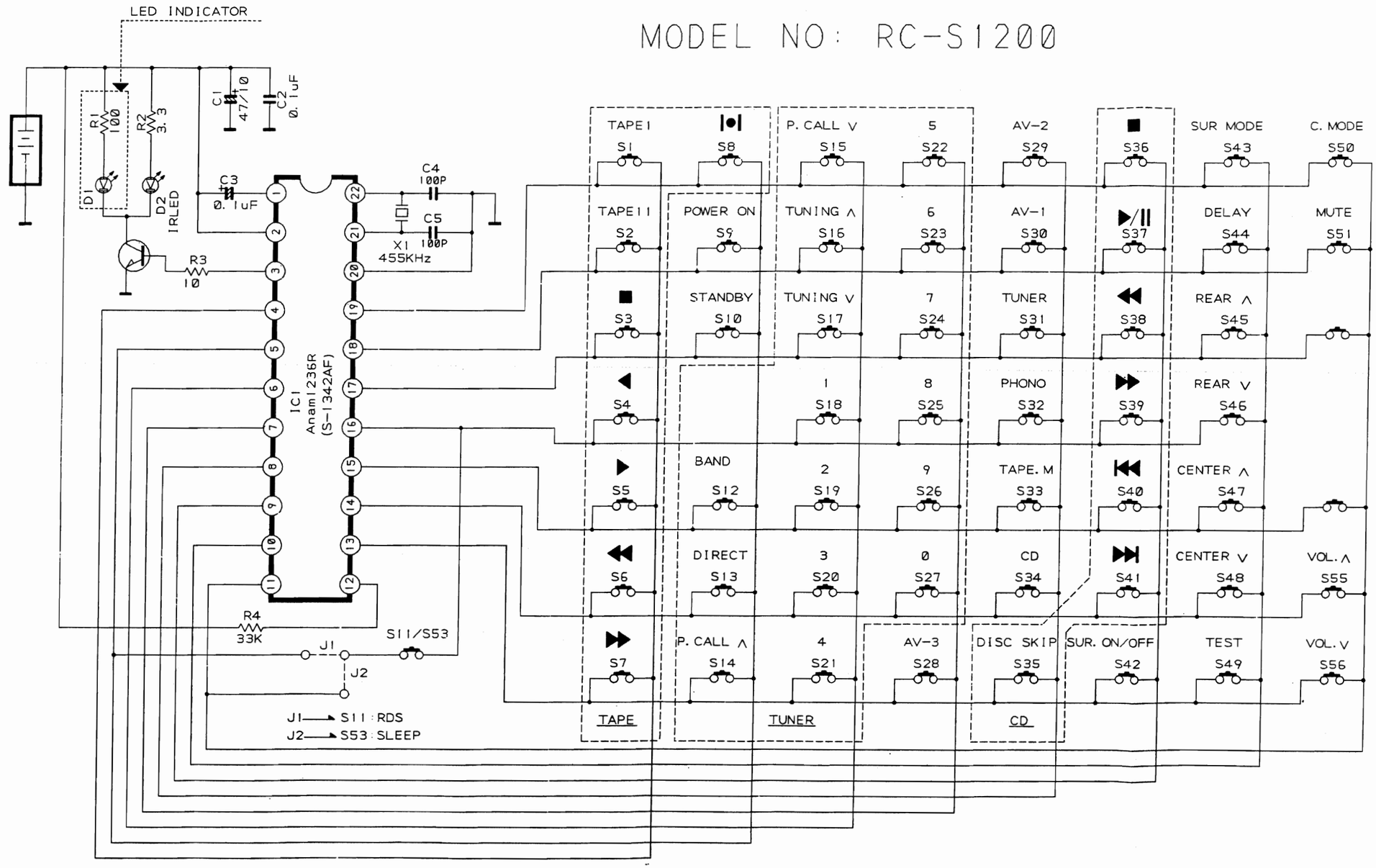
UNIT [V]

LM7001 (IC11)			
pin \ band	FM	MW	LW
1	1.3	1.6	1.3
2	1.6	1.6	1.6
3	0	0	0
4	0	0	0
5	5.2	0	0
6	0	0	0
7	1.8	0	2.2
8	0	2	12
9	0	0	0
10	0	1.8	1.8
11	2.8	0	0
12	4.7	4.7	4.7
13	4.7	4.7	4.7
14	1.1	0	1.1
15	1	1.1	1.1
16	0	0	0

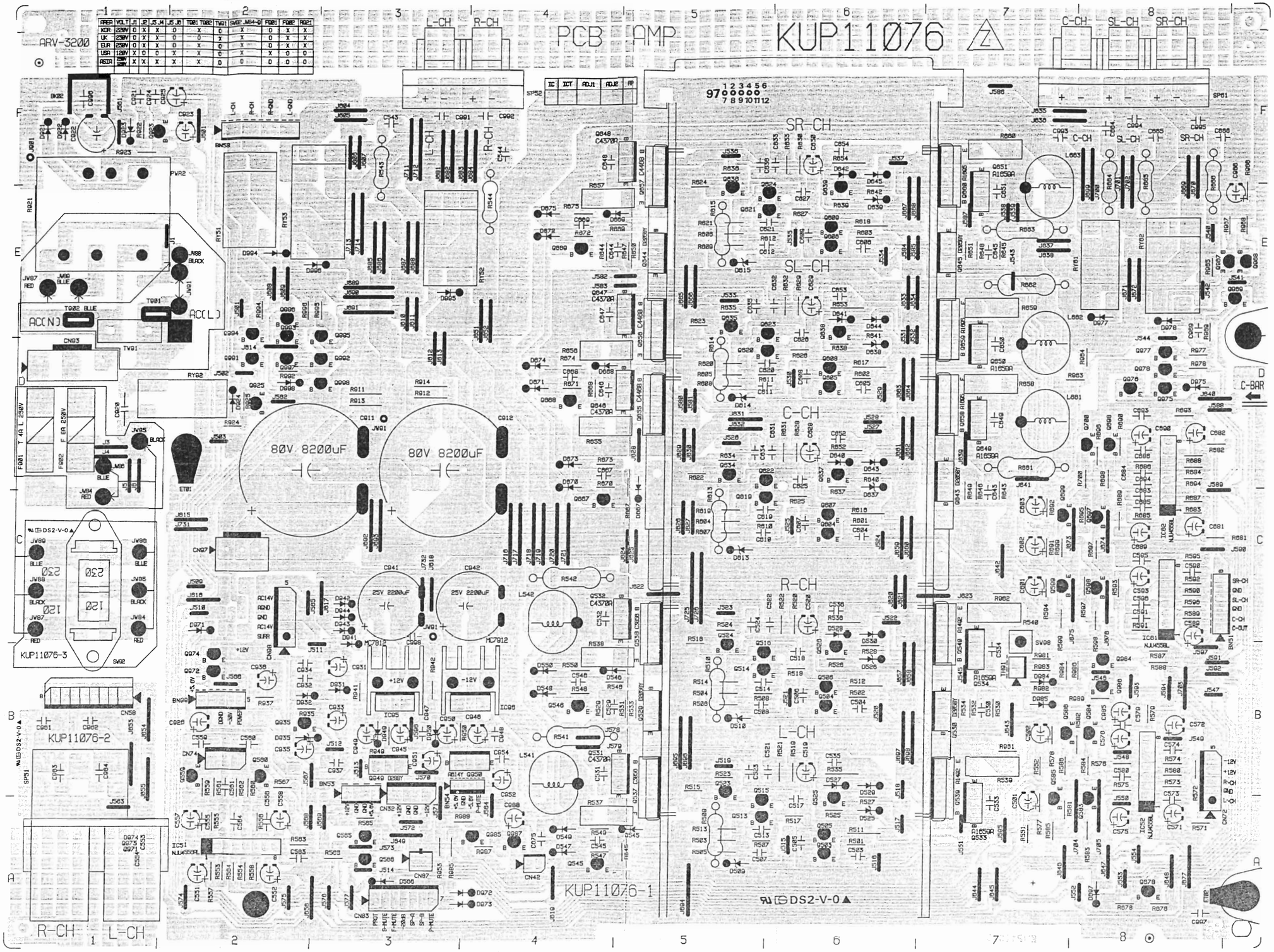
** IMPORTANT SAFETY NOTICE.
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS.
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY MANUFACTURER'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM, M=1000 KOHM.
** THE UNIT OF CAPACITANCE IS MICROFARAD (uF)
** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE
IMPROVEMENT OF PERFORMANCE

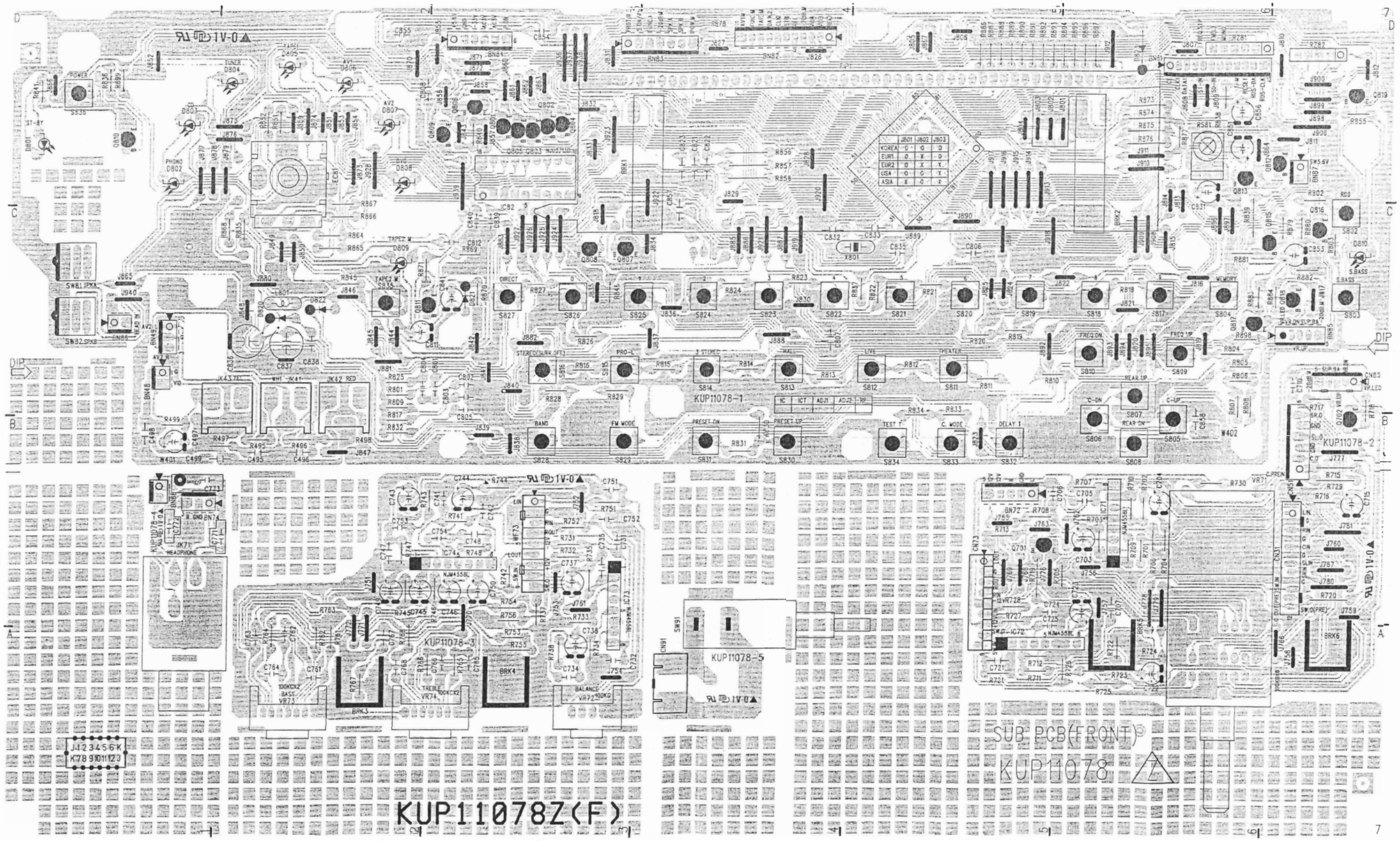
REMOTE CONTROL SCHEMATIC DIAGRAM

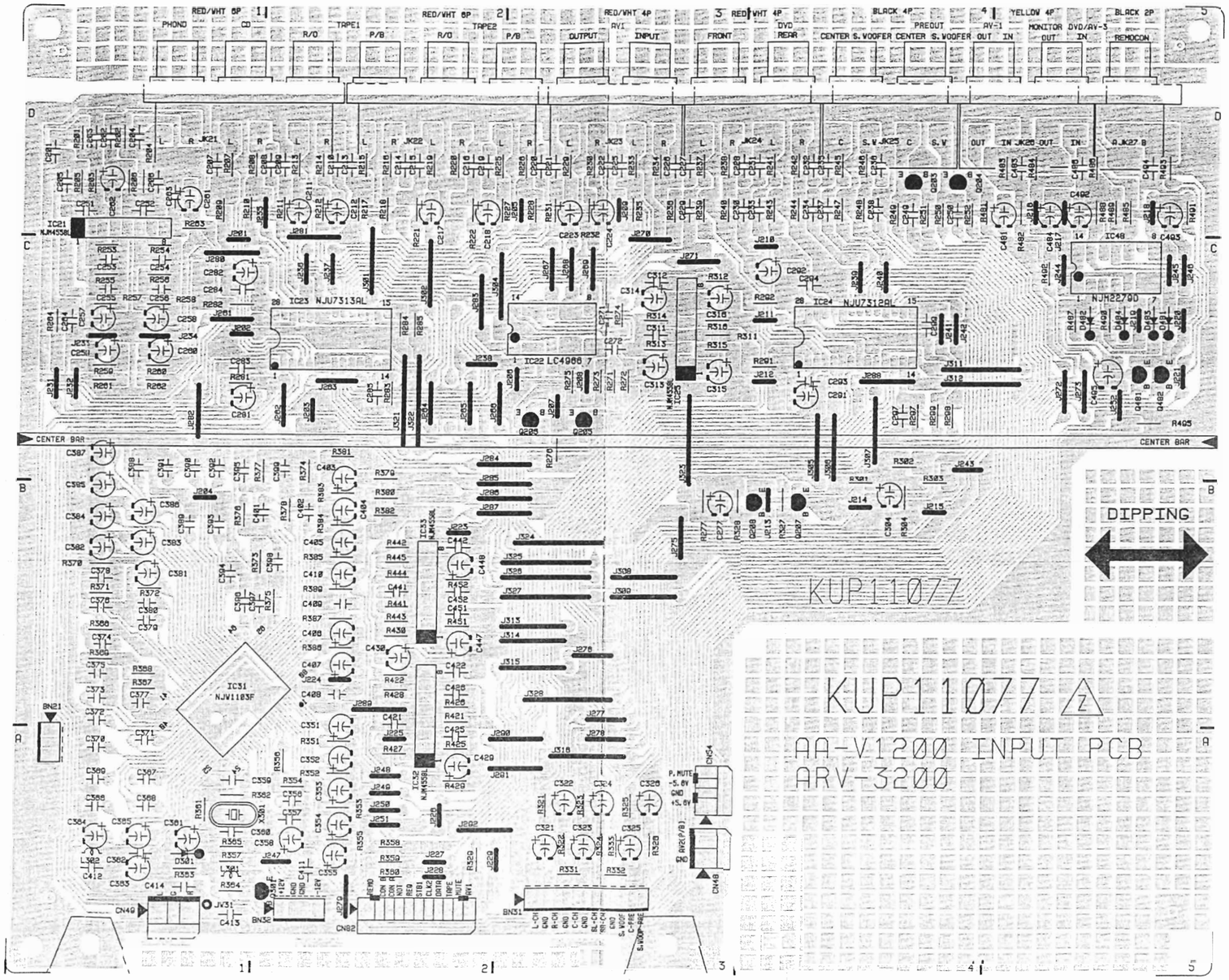
MODEL NO: RC-S1200



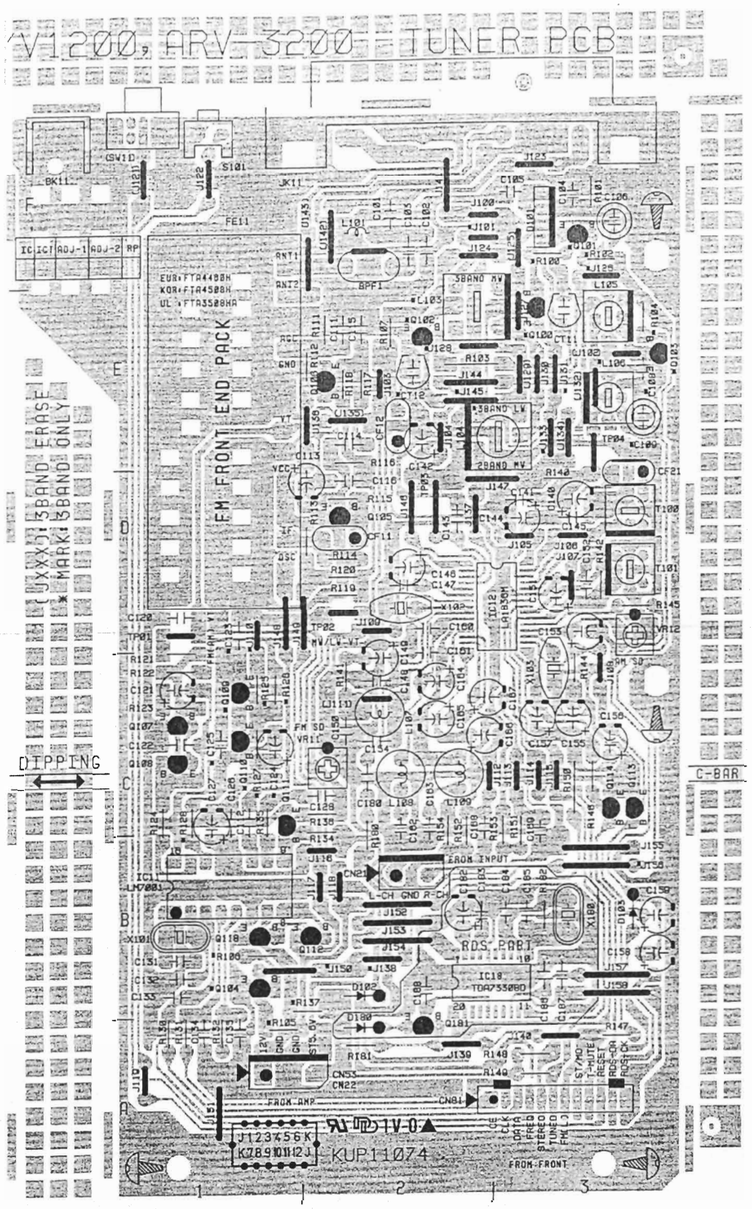
PRINTED CIRCUIT BOARDS



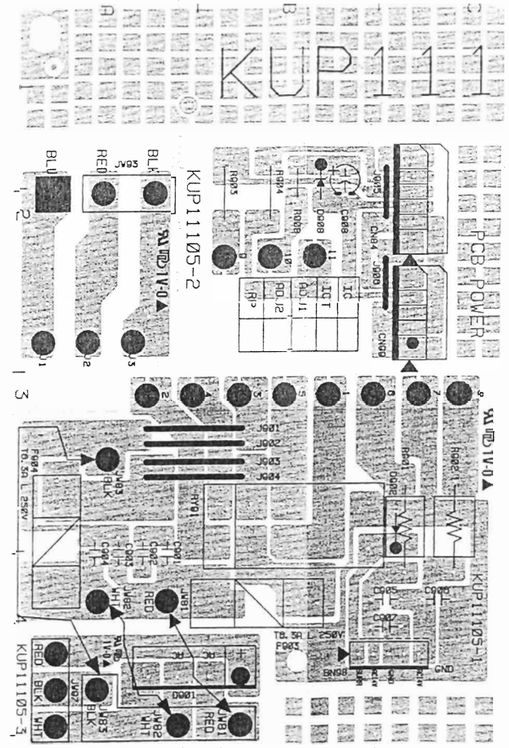

KUP11078-1
KUP11078-2
KUP11078-3
KUP11078-4
KUP11078-5
KUP11078Z(F)
SUB PCB(FRONT)
KUP11078


RED/WHT 6P
PHONO
CD
RED/WHT 6P
TAPE1
RED/WHT 6P
TAPE2
RED/WHT 4P
OUTPUT
AV1
INPUT
RED/WHT 4P
FRONT
DVD
REAR
BLACK 4P
CENTER S.WOOFER
PREOUT
CENTER S.WOOFER
AV-1
OUT
IN
YELLOW 4P
MONITOR DVD/AV-3
OUT
IN
BLACK 2P
REMOCON
IC21 NJM4558
IC23 NJU7313AL
IC22 LC4966
IC24 NJU7312AL
NJM2270D
IC31 NJV1103F
IC33 NJM4558
IC32 NJM4558
CENTER BAR
CENTER BAR
DIPPING
KUP11077
KUP11077 Z
AA-V1200 INPUT PCB
ARV-3200

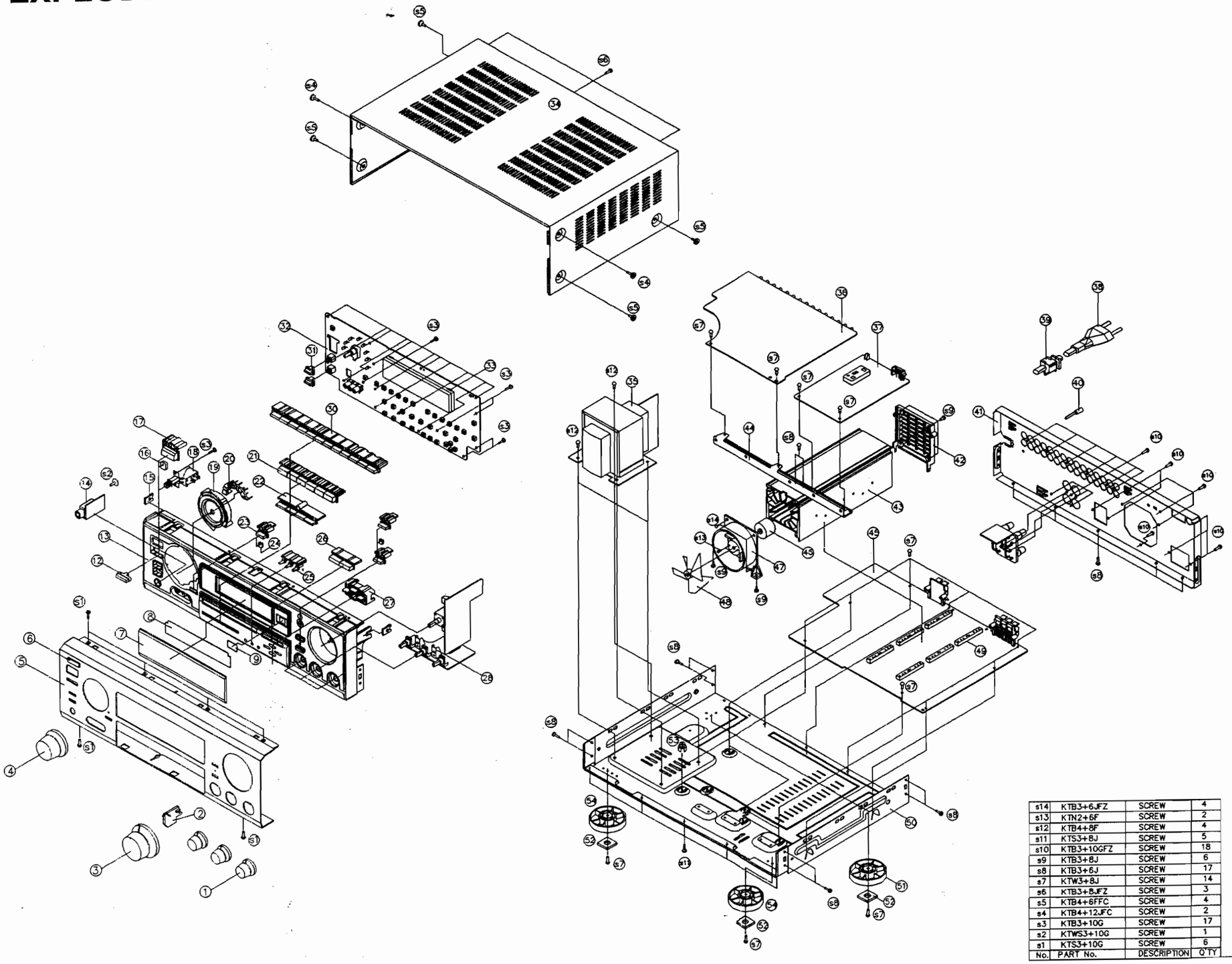
V1200, ARV-3200 TUNER PCB



KUP111



EXPLODED VIEW



No.	PART No.	DESCRIPTION	Q'TY
s14	KTB3+6JFZ	SCREW	4
s13	KTN2+6F	SCREW	2
s12	KTB4+8F	SCREW	4
s11	KTS3+8J	SCREW	5
s10	KTB3+10GFZ	SCREW	18
s9	KTB3+8J	SCREW	6
s8	KTB3+6J	SCREW	17
s7	KTW3+8J	SCREW	14
s6	KTB3+8JFZ	SCREW	3
s5	KTB4+6FFC	SCREW	4
s4	KTB4+12JFC	SCREW	2
s3	KTB3+10G	SCREW	17
s2	KTWS3+10G	SCREW	1
s1	KTS3+10G	SCREW	6

No.	PART No.	DESCRIPTION	Q'TY
54	KKL1A048H7	FRONT FOOT	2
53	KHE170	PCB HOLDER	2
52	KHC1A084	CHSUION FOOT	4
51	KKL1A048	FOOT(REAR)	2
50	KUA1A148	BOTTOM CHASSIS	1
49	KMH1A069	TR SUPPORT	6
48	KDD1A013	FAN	1
47	KGP1A016	FRAME FAN	1
46	BVVFB02A104E	MOTOR	1
45	KOP11076B	MAIN PCB ASS'Y	1
44	KMD1A348	SUB BRACKET	1
43	KMY1A123	HEAT SINK	1
42	KGP1A015	HEAT SINK COVER	1
41	KKF1A145Z	REAR PANEL	1
40	KMA2A001	GROUND TERMINAL	1
39	KHR1A030	CORD BUSHING	1
38	BJA2B033Z	POWER CORD	1
37	KOP11074B	TUNER PCB ASS'Y	1
36	KOP11077B	FUNCTION PCB ASS'Y	1
35	KLT5V015ZE	TRANS	1
34	KKC1B085S21	TOP CABINET	1
33	KMD1A209	FLT BRACKET	2
32	KUP11078Z	FRONT PCB ASS'Y	1
31	KBC1A093M7K73	SPEAKER KNOB	2
30	KBT1A463M7K73	MENORY KNOB	1
29			
28	KMD1A081	PCB BRACKET	2
27	KBT1A477M7ZK73	LEVEL KNOB	1
26	KBT1A469M7ZK73	TUNING KNOB	1
25	KBT1A461M7K73	MODE KNOB	1
24	KGL1A130	INDICATOR	2
23	KBT1A462M7K73	MONITOR KNOB	3
22	KBT1A470M7K73	BAND KNOB	1
21	KBT1A468M7K73	STEREO KNOB	1
20	KGL1A131	FUNCTION INDICATOR	1
19	KGR1A123M7K73	FUNCTION ORNAMENT	1
18	KJP02GA89ZM	WAFER	1
17	KBT1A475M7K73	POWER KNOB	1
16	KGL1A039	INDICATOR FLAT	1
15	KNE4060	U-NUT	2
14	BJJ02GA89ZM	HEAD JACK	1
13	KGW1A209M8ZK73	SUB PANEL	1
12	KBC1A094M7K73	POWER KNOB	1
11			
10			
9	KGU1A026	REMOCON FILTER	1
8	KMZ1A064	FIP FILTER	1
7	KGU1A166	FIP WINDOW	1
6	KGB1A045Z	BADGE	1
5	KKM2A066ZC16	FRONT PANEL	1
4	KBN1A078M7K73	FUNCTION KNOB	1
3	KBN1A077M7K73	VOLUME KNOB	1
2	KGL1A132	VOL INDICATOR	1
1	KBN1A075M7K73	ROTARY KNOB	3

PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
3. How to read the Parts List.

■ Resistor and Capacitor

Notes : · Part numbers are indicated for most mechanical parts.
Please use this part number for parts order.
· IMPORTANT SAFETY NOTICE.
Components identified by △ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.
· The unit of resistance is OHM(Ω)
K=1000(Ω), M=1000(KΩ)
· The unit of capacitance is MICROFARAD(μF).
· P=10⁻⁶μF

■ Numbering System of Resistor

Example

KRD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
KRD:Carbon	20:1/5W	F:=±1%
KRG:Metal Oxide	25:1/4W	J:=±5%
	50:1/2W	K:=±10%
	1:1W	
KRF:Metal Cement	2:2W	
	3:3W	

■ Numbering System of Capacitor

Example

KCKT	1H	101	K	B
Type	Voltage	Value	Tolerance	Peculiarity

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
KCB:Ceramic	OJ:6.3V	1H:50V DC	C:±0.25pF
KCC:Ceramic	1A:10V	1:125V DC	G:±2%
KCK:Ceramic	1C:16V	KC:400V AC	J:±5%
KCFR:Semiconductor	1E:25V		K:±10%
KCQI:Polyester	1H:50V		Z:+80%, -20%
KCQP:Polypropylene	1V:35V		
KCQS:Polystyrol			

WARNING

△ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

△ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

■ ELECTRICAL PARTS LIST

REF NO.	PART NO.	DESCRIPTION
	P. C BOARD BLOCK PART NO.	
	Part No.	Description
	1. KOP11078	FRONT PCB ASS'Y
	2. KOP11077	INPUT PCB ASS'Y
	3. KOP11074	TUNER PCB ASS'Y
	4. KOP11076	AMP PCB ASS'Y
	5. KOP11105	POWER PCB ASS'Y
	6. KOP11106	REMOCON PCB ASS'Y
FRONT PCB BLOCK CONSISTS FOLLOWING P.C.B		
	· μ - COM P. C. BOARD	
	· SP SWITCH P. C. BOARD	
	· TONE CONTROL P. C. BOARD	
	· MASTER VR P. C. BOARD	
	· AV2 INPUT P. C. BOARD	
	· POWER SWITCH P. C. BOARD	
INOUT PCB BLOCK CONSISTS FOLLOWING P. C. B		
	· INPUT & C/S AMP P. C. BOARD	
TUNER PCB BLOCK CONSISTS FOLLOWING P. C. B		
	· TUNER AMP P. C. BOARD	
AMP PCB BLOCK CONSISTS FOLLOWING P. C. B		
	· POWER & L/R AMP BOARD	
	· VIDEO CONTROL P. C. BOARD	
	· POWER SUPPLY P. C. BOARD	
	· C/S SPEAKER P. C. BOARD	
	1. FRONT PCB ASS'Y	
IC71~IC74	BVINJM4558L	IC, OP AMP
IC81	BVIANAM1228MT	IC, μ-COM
IC82	BVINJU3713D	IC DECODER
Q701, 702	KVTKTD1302T	T.R
Q801~ Q805	KVTDTA144EST	T.R
Q806, Q807	KVTDTC144TST	T.R
Q808, Q809	KVTDTA144EST	T.R
Q810	KVTDTC144TST	T.R
Q811	KVTKSB811YT	T.R
Q812, 813	KVTDTC114YST	T.R
Q815, 816	KVTKSD1021T	T.R
Q817, 818	KVTKSB811YT	T.R
Q819	KVTDTA144EST	T.R
D801	KVD342VCF02T085	L. E. D GREEN
D802~810	KVD342MCF02T085	L. E. D RED
D820, 821	KVD1N4148MT	DIODE
BN48	KWZAAV1200BN48	WIRE ASS'Y
BN49	KWZAAV1200BN49	WIRE ASS'Y
BN72	KWZAAV1200BN72	WIRE ASS'Y
BN74	KWZAAV1200BN74	WIRE ASS'Y
BN81	KWZAAV1100BN81	WIRE ASS'Y
BN82	KWZAAV1200BN82	WIRE ASS'Y
BN83	KWZAAV1200BN83	WIRE ASS'Y
BN84	KWZAAV1200BN84	WIRE ASS'Y
BN85	KWZAAV1200BN85	WIRE ASS'Y
BN86	KWZAAV1200BN86	WIRE ASS'Y
BN87	KWZAAV1200BN87	WIRE ASS'Y
CN31	KJP12GA19ZM	WAFER
CN51	KJP05GA01ZM	WAFER
CN73	KJP09HB60ZY	WAFER
CN85	KJP05GA01ZM	WAFER
CN91	KJP02GA89ZM	WAFER
C836	BCES5R5V104	CAP, GOLD
C837	⚠ KCEA0JH102T	CAP, ELECT
EC81	BSR2A006Z	VR, ENCODER
FIP1	BFLFIPCMI551D	F. I. P
JK41	KJJ4M013Z	JACK, VCR
JK42	KJJ4M012Z	JACK, VCR
JK43	KJJ4M014Z	JACK, VCR
JK71	BJJ2E020Z	JACK, PHONE
RS81	BRVPNA4612M00HB	SENSOR, REMOCON
RZ81	KRGSN5X 223J	RES, NETWORK
RZ82	KRGSN5X 103J	RES, NETWORK
SW81, 82	KSH2B003Z	SW, PUSH
SW91	KSH1A001ZV	SW, PUSH
VR71	BVVFB02A104Z	VR, MOTOR
VR72	BVV1T01W104Y	RES, VARIABLE
VR73, 74	BVV2W01C104Y	RES, VARIABLE
WF73	KJP09GA63ZY	WAFER
W401	KWZAV350077	WIRE ASS'Y
X801	BOX08000E200C	CRYSTAL
	2. INPUT PCB ASS'Y	
IC21	BVINJM4558L	IC, OP AMP
IC22	BVINJU7313L	IC, FUNC, SEL
IC23	BVINJU7312L	IC, FUNC, SEL
IC25	BVINJM4558L	IC, OP AMP
IC31	BVINJW1103F	IC, DOLBY
IC32, 33	BVINJM4558L	IC, OP AMP
IC48	BVINJM2279D	IC, VIDEO
Q203, 204	KVTKTD1302T	T.R
Q205, 206	KVTDTC144EST	T.R
Q207, 208	KVTKTD1302T	T.R
Q301	KVTKSC2316YT	T.R
Q481, 482	KVTDTA114YST	T.R
D481~D484	KVD1N4148MT	T.R

REF NO.	PART NO.	DESCRIPTION
BN21	KWZAAV1100BN21	WIRE ASS'Y
BN31	KWZAAV1200BN31	WIRE ASS'Y
BN32	KWZAAV1200BN32	WIRE ASS'Y
JK21, 22	KJJ4R015Z	JACK, IN/OUT
JK23, 24	KJJ4P024Z	JACK, IN/OUT
JK25	KJJ4P023Z	JACK, IN/OUT
JK26	KJJ4P020Z	JACK, IN/OUT
JK27	KJJ4N026Z	JACK, IN/OUT
X301	BVFZTA4. 00MG	RESONATOR
	3. TUNER PCB ASS'Y	
IC11	BVILM70001	IC, PLL
IC12	BVILA1836M	IC, IF/MPX
IC18	BVITDA7330BD	IC, DECODER
BPF1	KVFBPMB8	B.P.F
CF11, 12	BVFE107MSHAT	FILTER, CERAMIC
CF21	KVFSBF450BL	FILTER, CERAMIC
Q100~Q104	KVTKSC2785YT	T.R
Q105, 106	KVTKTC3192OT	T.R
Q107~Q110	KVTKSC2785YT	T.R
Q111	KVTDTC114YST	T.R
Q112	KVTDTA114YST	T.R
Q113, 114	KVTDTC114YST	T.R
Q118		
Q181	KVTDTA114YST	T.R
D102, 103	KVD1N4148MT	DIODE
D180		
CN21	KJF03GA01ZM	WAFER
CN53	KJP04GA01ZM	WAFER
CN81	KJP12GA19ZM	WAFER
CT11,12	KCRA020S12	CAP, VARIABLE
C106	KCQS1H471JZ	CAP, STYROLE
C109	KCQS1H101JZ	CAP, STYROLE
D101	KVDKV1236Z	DIODE, VARACTOR
FE11	KNVFTA4460H	TUNER PACK
JK11	KJJ3S006Z	TERMINAL, ANT
BK11	KMD1A081	BRACKET, PCB
L101	KLA4Y106Z	COIL, FILTER
L103	KLA2C004	COIL, AM ANT
L104	KLA1B005	COIL, LW ANT
L105	KLO2B008Z	COIL, AM OSC
L106	KLO1B002	COIL, LW OSC
L107	KLQA183KWCZ	COIL FILTER
L108, 109	KLQB542KLZ	COIL
S101	KST1A010Z	SW, TACT
T100	KLI2B103-G	I. F. T, AM
T101	KLI3B028Z	I. F. T, FM
X101	BOX07200D320C	CRYSTAL
X102	BVFZTB456F11	RESONATOR
X103	BVFLZU450C4N	FILTER, CERAMIC
X180	BOX04332A200C	CRYSTAL
	4. AMP PCB ASS'Y	
IC51	BVINJM4556AL	IC, OP AMP
IC52	BVINJM4558L	IC, OP AMP
IC61, 62	BVINJM4558L	IC, OP AMP
Q503~Q505	⚠ KVTKTC3200GRT	T.R
Q513~Q516	⚠	
Q523, 524	⚠ KVTKTA1275YT	T.R
Q525, 526	⚠ KVTKTC3228YT	T.R
Q531, 532	⚠ KVTKTC4370AY	T.R
Q533, 534	⚠ KVTKTA1659AY	T.R
Q545, 546	⚠ KVTKTA1275YT	T.R
Q559, 560	KVTKTD1302T	T.R
Q565	KVTDTC144EST	T.R
Q566	KVTKTA144EST	T.R
Q583~Q586	KVTKTD1302T	T.R
Q598, 599		
Q604~Q609	⚠ KVTKTC3200GRT	T.R
Q619~Q624	⚠	
Q634~Q636	⚠ KVTKTA1275YT	T.R
Q637~Q639	⚠ KVTKTC3228YT	T.R
Q646~Q648	⚠ KVTKTC4370AY	T.R
Q649~Q651	⚠ KVTKTA1659AY	T.R
Q667~Q669	KVTKSA1175YT	T.R
Q678	KVTDTC144EST	T.R
Q697~Q700	KVTKTD1302T	T.R
Q923	⚠ KVTKSC2316YT	T.R
Q925	KVTKSC2785YT	T.R
Q935	⚠ KVTKTA1271YT	T.R
Q949	⚠ KVTKSD288Y	T.R
Q950	⚠ KVTKSA614Y	T.R
Q967, 968	KVTKSC2785YT	T.R
Q969	KVTDTA144EST	T.R
Q973~Q975		
Q976~Q978	KVTDTC144TST	T.R
Q984, 985	KVTKSC2785YT	T.R
Q986	KVTDTA144EST	T.R
Q987	KVTKTA1271YT	T.R
Q991~Q993	KVTDTA144EST	T.R
Q994~Q998	KVTDTC144EST	T.R
D509, 510	⚠ KVDMTZJ27BT	DIODE, ZENER
D525, 526	⚠	
D527~D530	KVD1N4148MT	DIODE
D545~D550		
D566		
D613~D615	⚠ KVDMTZJ27BT	DIODE, ZENER
D637~D639	⚠	
D640~D645	KVD1N4148MT	DIODE

REF NO.		PART NO.	DESCRIPTION
D667~D675		KVD1N4148MT	DIODE
D697			
D921, 922	⚠	KVD1N4003SRT	DIODE, RECT
D923		KVDMTZJ6.2BT	DIODE, ZENER
D924	⚠	KVD1N4148MT	DIODE
D931, 932	⚠	KVD1N4003SRT	DIODE, RECT
D935	⚠	KVDMTZJ33BT	DIODE, ZENER
D941, 944	⚠	KVD1N4003SRT	DIODE, RECT
D949, 950	⚠	KVDMTZJ6.2BT	DIODE, ZENER
D971~D973		KVD1N4148MT	DIODE
D975			
D977, 978			
D984, 985			
D994~D996			
D998			
BN51		KWZAAV1100BN51	WIRE ASS'Y
BN53		KWZAAV1200BN53	WIRE ASS'Y
BN54		KWZAAV1200BN54	WIRE ASS'Y
BN58		KWZAAV1200BN58	WIRE ASS'Y
BN99		KWZAAV1200BN99	WIRE ASS'Y
CN42		KJP02GA01ZM	WAFER
CN52		KJP04GA01ZM	WAFER
CN58		KJP08GB03ZM	WAFER
CN72		KJP05GA01ZM	WAFER
CN74		KJP03GA01ZM	WAFER
CN83		KJP07GA01ZM	WAFER
CN87		KJP02GA19ZM	WAFER
CN93		KJP03GA89ZM	WAFER
CN97		KJP03GA90ZM	WAFER
CN98		KJP05GA01ZM	WAFER
C911, 912	⚠	KCET80V822N	CAP, ELECT
C920	⚠	BCKWKC472MF	CAP, CERAMIC
C941, 942	⚠	KCEA2EH222E	CAP, ELECT
JW91		KWZAAV1200JW91	WIRE ASS'Y
L541, 542	⚠	KLR9Y004Z	COIL, SPEAKER
L661~L663	⚠		
PWR2		KLT5J029ZW	TRANS, SUB
RY51, 52	⚠	BSL4A004ZU	RELAY
RY53	⚠	KSL4B003ZW	RELAY
RY61	⚠	KSL1A007ZE	RELAY
RY62	⚠	BSL4A004ZU	RELAY
RY92		KSL1A007ZE	RELAY
R509, 510	⚠	KRG1AN562H	RES, MATAL
R537~R540	⚠	KRF5EKR22	RES, MATAL
R541, 542	⚠	KRG1AN4R7H	RES, MATAL
R613~R615	⚠	KRG1AN100H	RES, MATAL
R541, 542	⚠	KRG1AN562H	RES, MATAL
R655~R660	⚠	KRF5EKR22	RES, MATAL
R661~R663	⚠	KRG1AN4R7H	RES, MATAL
R664~R666	⚠	KRG1AN100H	RES, MATAL

REF NO.		PART NO.	DESCRIPTION
SP51		KJJ5P012Z	TERMINAL, SP
SP52		KJJ5P005Z	TERMINAL, SP
SP61		KJJ5R004Z	TERMINAL, SP
TH91	⚠	KRTNTC5D103	THRMISTER
TW91		KJP02GA61ZP	WAFER

5. POWER PCB ASS'Y

BN98		KWZAAV1200BN98	WIRE ASS'Y
CN84		KJP06GA03ZM	WAFER
CN99		KJP05GA03ZM	WAFER
D901	⚠	BVDKBU804F	DIODE, BRIDGE
JW81		KWE8212120VV	WIRE, RED
JW82		KWE8215120VV	WIRE, WHITE
JW93		KWZAAV1200JW93	WIRE ASS'Y
JW97		KWZAAV1200JW97	WIRE ASS'Y
RY53	⚠	KSL1A003ZW	RELAY
R901, 902	⚠	KRG1AJ4R7H	RES, FUSE

6. REMOCON PCB ASS'Y

IC10		BVIANAM1236R	IC, REMOCON
C101		KCEA1EH470T	CAP, ELECT
C102, 103		KCBS1H104ZFT	CAP, CERAMIC
C104, 105		KCBS1H101KBT	CAP, CERAMIC
D101		KVDAL131RD	L.E.D
D102		KVDAFHP52	L.E.D
Q101		KVTKTC3203YT	T.R
R101		KRD20TJ101T	RES, CARBON
R102		KRD20TJ3R3T	RES, CARBON
R103		KRD20TJ100T	RES, CARBON
R104		KRD20TJ333T	RES, CARBON
X101		BSB455EB1	RESONATOR, CERAMIC

7.MISCELLANEOUS

		KSA1A007	AM LOOP ANT ASS'Y
		KSA1A008Z	ANT, FM WIRE
	⚠	KLT5V015ZE	TRANS, MAIN
F901	⚠	KBA2C4000TLE	FUSE(T4A, 250V)
F903, 904	⚠	KBA2C8500NMU	FUSE(8.5A, 250V)
		KRE1A037	LOCKER
		KUR038ANA (RC-S1200)	REMOTE TRANSMITTER ASS'Y