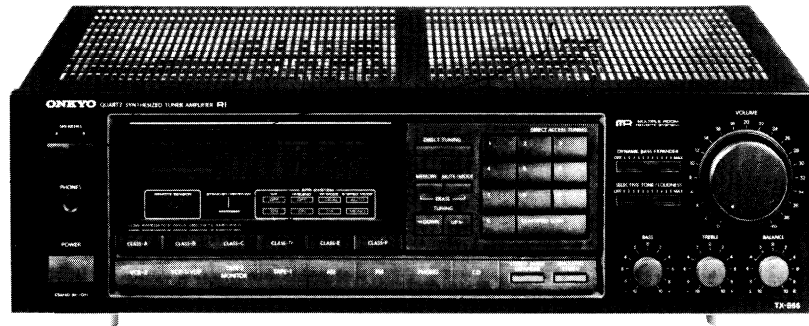


ONKYO SERVICE MANUAL

QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL TX-866



Black model

BHUD, BHUDN, BHUDC	120V AC, 60Hz
BHUG	220V AC, 50Hz
BHUW	120/220V AC, 50/60Hz
BHUQA, BHUQB	240V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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SPECIFICATIONS

AMPLIFIER SECTION

	-220V/Worldwide models-	-120V model-
Power output:	70 watts per channel, min, RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.04% total harmonic distortion.	80 watts per channel, min, RMS, at 8 ohms both channels driven, from 20Hz to 20kHz, with no more than 0.04% total harmonic distortion.
Musical Power Output:	2×180 watts at 4 ohms, 1kHz (DIN) 2×120 watts at 8 ohms, 1kHz (DIN)	
Continuous Power Output:	2×105 watts at 4 ohms, 1kHz (DIN) 2×77 watts at 8 ohms, 1kHz (DIN)	
Total Harmonic Distortion:	0.04% at rated power 0.04% at 1 watts output	0.04% at rated power
IM Distortion:	0.04% at rated power 0.04% at 1 watts output	0.04% at rated power
Damping Factor:	60 at 8 ohms	60 at 8 ohms
Frequency Response:	20–30,000Hz ±1dB	20–30,000Hz ±1dB
RIAA Diviation:	20–20,000Hz ±0.8dB	20–20,000Hz ±0.8dB
Sensitivity and Impedance:	Phono: 2.5mV/50 kohms CD: 150mV/50 kohms Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.5 kohms	Phono: 2.5mV/50 kohms CD: 150mV/50 kohms Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.5 kohms
Phono Overload (MM):	120mV RMS at 1kHz, 0.04% THD.	120mV RMS at 1kHz, 0.04% THD.
Signal-to-Noise Ratio:	Phono: 80dB (at 5mV input, IIF-A) CD/Tape: 102dB (IHF A)	Phono: 80dB (at 5mV input, IHF-A) CD/Tape: 100dB (IHF A)
Tone controls:	Bass: ±10dB at 100Hz Treble: ±10dB at 10kHz	Bass: ±10dB at 100Hz Treble: ±10dB at 10kHz
Muting	–∞	–∞

TUNER SECTION

FM:

Tuning Range:	87.50–108.00MHz (50kHz steps) 87.50–108.00MHz (50kHz steps) or 87.9–107.9kHz (200kHz steps) (Worldwide model)	87.9–107.9MHz (200kHz steps)
Usable Sensitivity:	Mono: 11.2dBf, 1.0μV, 75 ohms 0.9μV (S/N 26dB, 40kHz Devi.) 75ohms DIN Stereo: 18.0dBf, 2.2μV, 75ohms 23μV (S/N 46dB, 40kHz Devi.) 75ohms DIN	Mono: 10.8dBf, 1.9μV Stereo: 17.2dBf, 4.0μV
50dB Quieting Sensitivity:	Mono: 18.0dBf, 2.2μV, 75ohms Stereo: 37.2dBf, 20μV, 75ohms	Mono: 17.2dBf, 4.0μV Stereo: 37.2dBf, 40μV
Capture Ratio:	1.5dB	1.5dB
Image Rejection Ratio:	85dB	40dB
IF Rejection Ratio:	90dB	90dB
Signal-to-Noise Ratio:	Mono: 73dB Stereo: 67dB	Mono: 73dB Stereo: 67dB
Alternate Channel Attenuation:		55dB
Selectivity:	50dB DIN (±300kHz, 40kHz, dev.)	
AM suppression Ratio:	50dB	50dB
Harmonic Distortion:	Mono: 0.15% Stereo: 0.25%	Mono: 0.15% Stereo: 0.25%
Frequency Response:	30–15,000Hz ±1.5dB	30–15,000Hz ±1.5dB
Stereo Separation:	45dB at 1kHz 30dB at 100–10,000Hz	45dB at 1kHz 30dB at 100–10,000Hz
Muting Level:	17.2dBf, 4.0μV	17.2dBf, 4.0μV
AM:		
Tuning Range:	522–1611kHz (9kHz steps) 531–1602kHz (9kHz steps) Saudi Arabia & Worldwide model	530–1710kHz (10kHz steps)
Usable Sensitivity:	30μV	30μV
Image Rejection Ratio:	40dB	40dB
IF Rejection Ratio:	40dB	40dB
Signal-to-Noise Ratio:	40dB	40dB
Harmonic Distortion:	0.7%	0.7%

GENERAL

Dimensions (W×H×D):	435×137×350mm 17-1/8"×5-3/8"×13-3/4"
Weight:	9.0kg., 19.8 lbs.

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

D (120V) model

Circuit no.	Part no.	Description
F901	252050	5 A (ST-6), Primary

G (220V) and Q (240V) models

Circuit no.	Part no.	Description
F902	252075	2.5A-SE-EAK, Primary
F903	252075	2.5A-SE-EAK, AC outlet (Only 220V model)

W (Worldwide) model

Circuit no.	Part no.	Description
F901	252050	5A (ST-6), Primary
F902	252075	2.5A-SE-EAK, Primary

2. Change of FM/AM band step.

With the exception of the models below, a BAND STEP selector switch is not provided.

(FM)

MODEL	BAND STEP	D761
UD	200kHz→50kHz	Additional
UG/UQ	50kHz→200kHz	Eliminated

(AM)

BAND STEP	D717
10kHz→9kHz	Eliminated
9kHz→10kHz	Additional

In D761 and D717 1SS133 (Part No. 223163) are used.

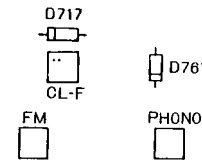
— Worldwide model —

Worldwide models are equipped with a step band selector switch. This switch is located on the back panel. This switch is set to 50kHz (FM) and 9kHz (AM) at the factory, but may have to be reset to 200kHz and 10kHz depending on the area where the unit is used.

	De-emphasis	FM step	AM step
Europe:	50 μ sec	50kHz	9kHz
U.S.A.:	75 μ sec	200kHz	10kHz

3. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in



DISPLAY PC BOARD

and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

4. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

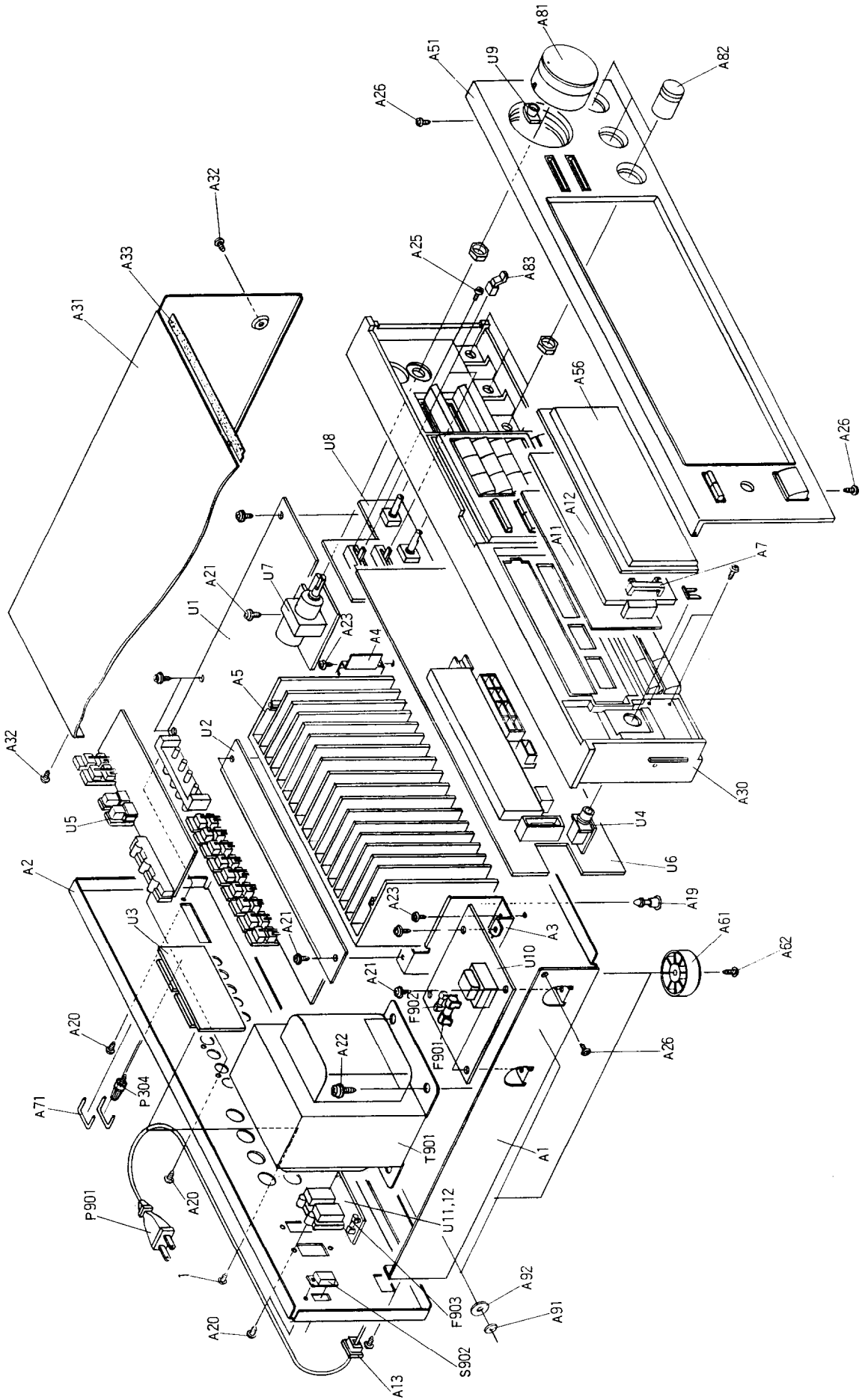
Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel. Specifications: 3.3 Mohm \pm 10% at 500V.

5. Change of voltage

Worldwide models are equipped with a voltage selector to conform with local power supplies. This switch is located on the back panel. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

This switch is set to 220V at the factory. Voltage is changed by sliding the groove in the switch with the screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.

EXPLODED VIEW



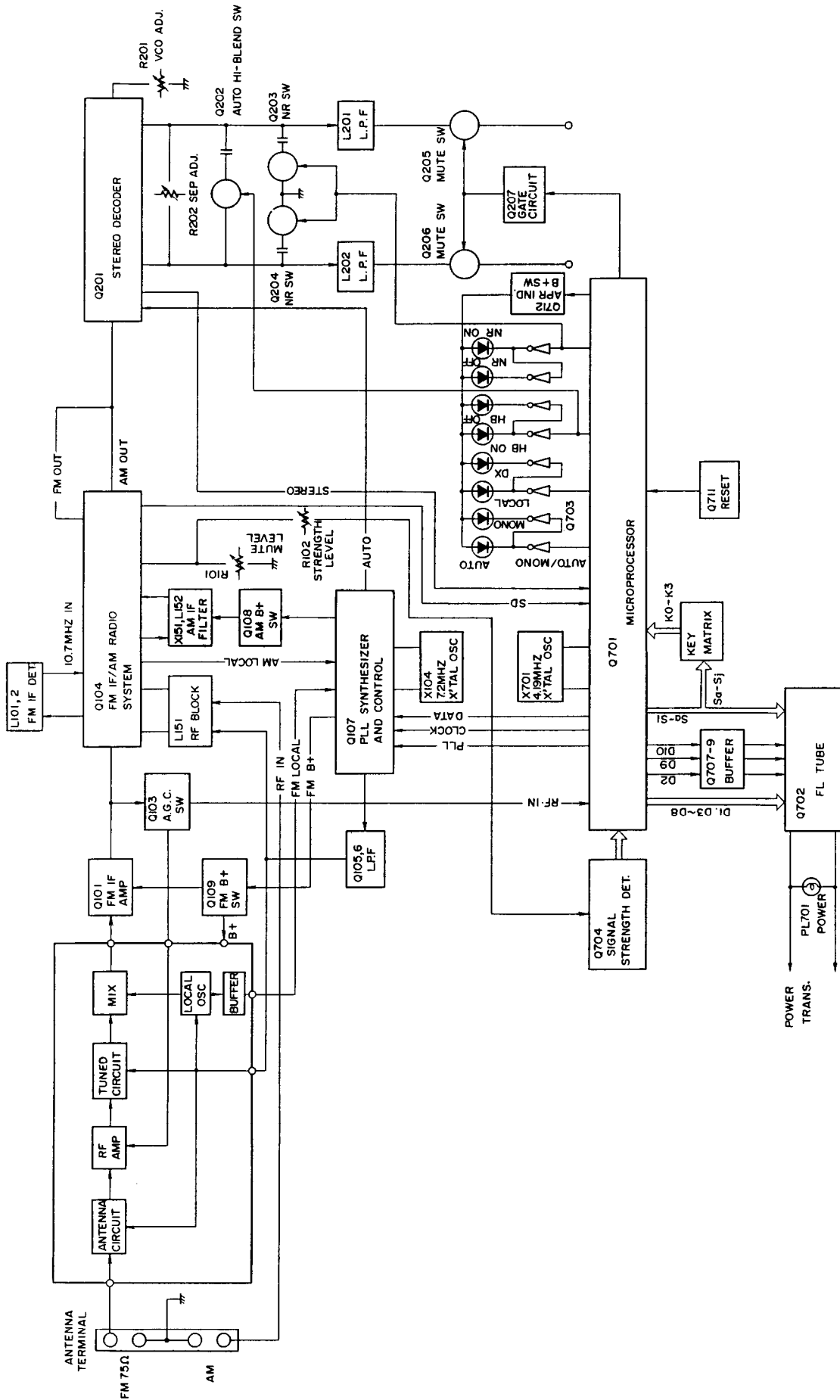
PARTS LIST

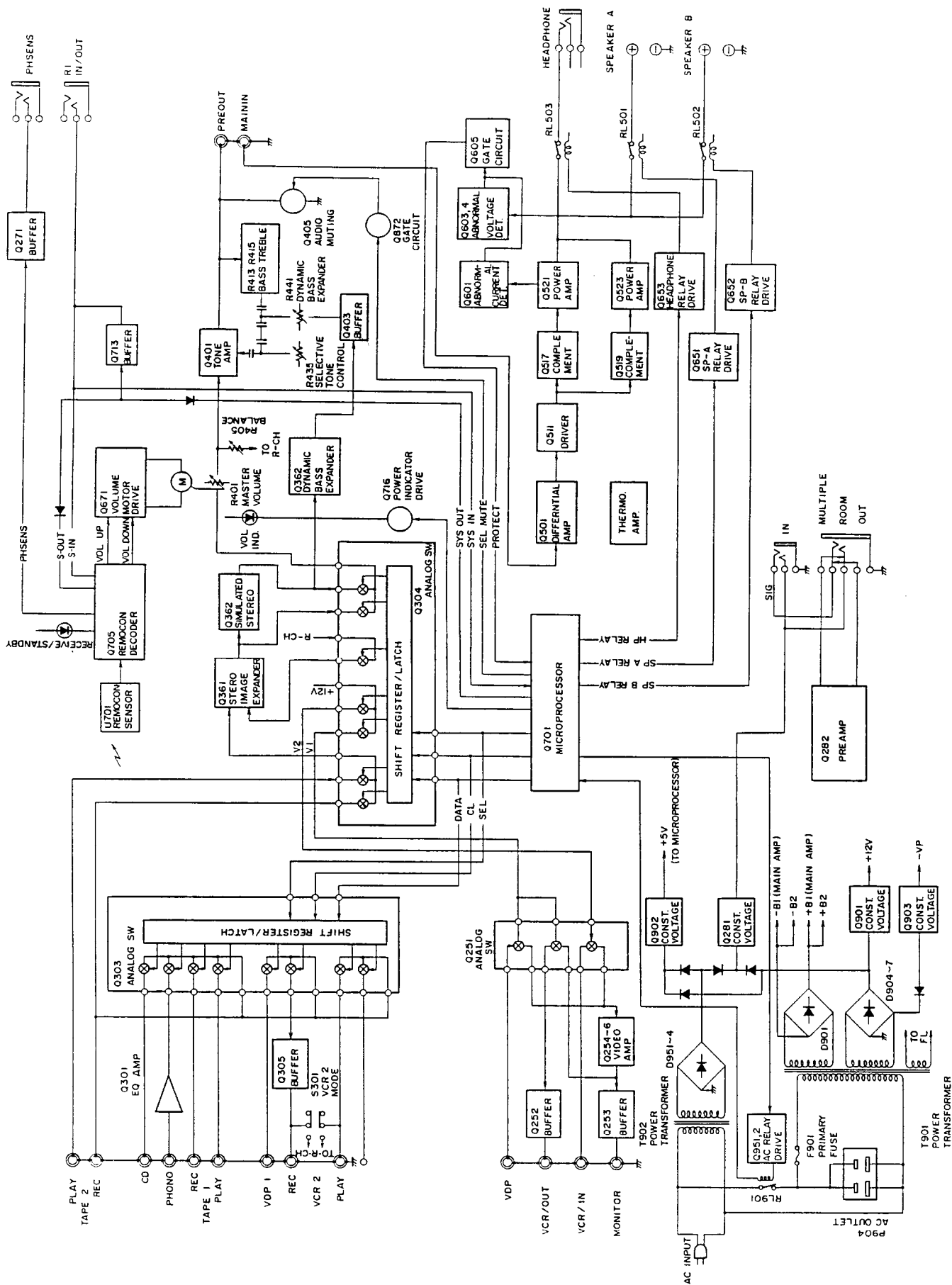
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A1	27100163-2	Chassis	P901	253149 or 253151	AS-CEE, Power supply cord <G/W>	U5	1A215573-1	NAETC-3873-1, Video terminal pc board ass'y <D>
A2	27121347A	Back panel <D>	P902, P903	253118	AS-SAA, Power supply cord <Q>	U6	1A215573-1A	NAETC-3873-1A, Video terminal pc board ass'y <G/W/Q>
A3	27121347-1A	Back panel <G>	Q521, Q522	25050346	NSCT-2P173, AC outlet terminal <Q>	U7	1A215574-1	NADIS-3874-1, Display pc board ass'y <D>
A4	27121347-3A	Back panel <W>	Q523, Q524	2201653, 2201654, 2201655, 2202272 or 2202273	2SC3856(O), 2SC3856(Y), 2SC3856(P), 2SC3907(R) or 2SC3907(O), Power amplifier transistors	U8	1A215574-1A	NADIS-3874-1A, Display pc board ass'y <G/Q>
A5	27121347-4	Back panel <Q>	S902	25065287	2SA1492(O), 2SA1492(Y), 2SA1492(P), 2SA1516(R) or 2SA1516(O), Power amplifier transistors	U9	1A215575-1	NAAF-3875-1, Volume pc board ass'y <D>
A6	27141391	Bracket LH	T901	2300432	NSS-22113P, Voltage selector switch <W>	U10	1A215578-1	NAPS-3878-1, Power supply circuit pc board ass'y <D>
A7	27141392	Bracket RH	U1	2300304	NPT-992G, Power transformer <D>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A8	27160257	Radiator	U2	2300305	NPT-992DG, Power transformer <G>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A9	27190644	Holder, dial plate	U3	2300339	NPT-992Q, Power transformer <Q>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <G>
A10	28133244	Back plate	U4	1A215569-1	NAAR-3869-1, FM/AM tuner and selector circuit pc board ass'y <D>	U11	1A215578-1B	NAPS-3878-1B, Power supply circuit pc board ass'y <W>
A11	28133244	Back plate	U4	1A215569-1A	NAAR-3869-1A, FM/AM tuner and selector circuit pc board ass'y <G/Q>	U12	1A215578-1C	NAPS-3878-1C, Power supply circuit pc board ass'y <Q>
A12	28130260	Dial plate	U1	1A215569-1B	NAAR-3869-1B, FM/AM tuner and selector circuit pc board ass'y <W>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A13	27300750	Strainrelief	U2	1A215570-1	NAAF-3870-1, Power amplifier pc board ass'y <D/W>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A19	27190524	KGLS-14R, Holder	U3	1A215570-1A	NAAF-3870-1A, Power amplifier pc board ass'y <G/Q>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <D>
A20	834430088	3TTS+8B(BC), Self-tapping screw	U4	1A215571-1	NAETC-3871-1, Speaker terminal pc board ass'y <D>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A21	831130088	3TTW+8B, Self-tapping screw	U4	1A215571-1A	NAETC-3871-1A, Speaker terminal pc board ass'y <G/W/Q>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A22	830440089	4TTC+8C(BC), Self-tapping screw	U4	1A215572-1	NAETC-3872-1, Headphone terminal pc board ass'y <D/W>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <G>
A23	834430108	3TTS+10B(BC), Self-tapping screw	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A25	82142004	2P+4F(BC), Pan head screw	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A26	833430080	3TTP+8P(BC), Self-tapping screw	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U10	1A215578-1	NAPS-3878-1, Power supply circuit pc board ass'y <D>
A27	801433	3SMS10WSW+14B, Sems tapping screw	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A30	27110560A	Front bracket ass'y	U1	1A215569-1	NAAR-3869-1, FM/AM tuner and selector circuit pc board ass'y <D>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A31	28184394	Top cover	U2	1A215570-1	NAAF-3870-1, Power amplifier pc board ass'y <D/W>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <G>
A32	834430088	3TTS+8B(BC), Self-tapping screw	U3	1A215570-1A	NAAF-3870-1A, Power amplifier pc board ass'y <G/Q>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A33	28140024	0.5t x 10 x 390, Cushion	U3	1A215571-1	NAETC-3871-1, Speaker terminal pc board ass'y <D>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A51	1A215121	Front panel ass'y	U1	1A215569-1	NAAR-3869-1, FM/AM tuner and selector circuit pc board ass'y <D>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A56	28191561A	Clear plate	U2	1A215570-1	NAAF-3870-1, Power amplifier pc board ass'y <D/W>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A61	27175153-1	Leg	U3	1A215571-1	NAETC-3871-1, Speaker terminal pc board ass'y <D>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <G>
A62	834430088	3TTS+8B(BC), Self-tapping screw	U4	1A215572-1	NAETC-3872-1, Headphone terminal pc board ass'y <D/W>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A71	27141033	Bracket, plug <D>	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A81	28323365C	Knob VOLUME	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <G>
A82	28324034	Knob BALANCE	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
A83	28322925	Knob SLIDE	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
A91	870048	3 x 8 x t0.8, Washer, nylon	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U10	1A215578-1	NAPS-3878-1, Power supply circuit pc board ass'y <D>
A92	27270212	Spacer <G/W/Q>	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
F901	252050	5A(ST-6), Primary fuse <D/W>	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
F902	252075	2.5A-SE-EAK, Primary fuse <G/W/Q>	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U10	1A215578-1A	NAPS-3878-1A, Power supply circuit pc board ass'y <G>
F903	252075	2.5A-SE-EAK, AC outlet fuse <G>	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U11	1A215579-1	NAETC-3879-1, AC outlet terminal pc board ass'y <D>
P304	25060044	14 x 3mm, Terminal GROUND	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U12	1A215580-1	NAETC-3880-1, AC outlet terminal pc board ass'y <G>
P901	253123, 253136, 253140 or 253146	AS-UC-6 #18, Power supply cord <D>	U4	1A215572-1A	NAETC-3872-1A, Headphone terminal pc board ass'y <G/Q>	U10	1A215578-1	NAPS-3878-1, Power supply circuit pc board ass'y <D>

NOTE: <D>: Only 120V model
<G>: Only 220V model
<W>: Only Worldwide model
<Q>: Only 240V model

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

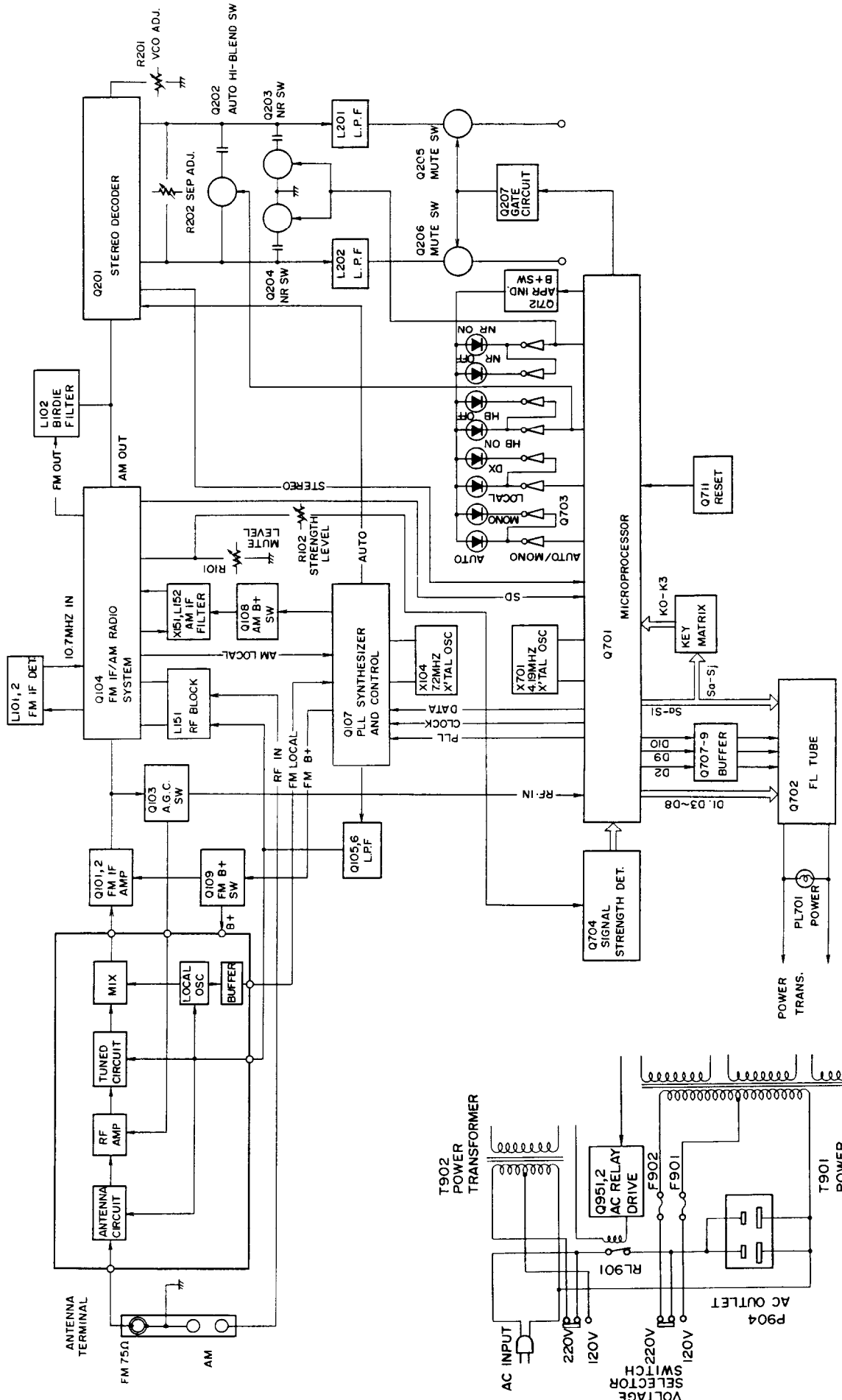
BLOCK DIAGRAM — 120V MODEL —



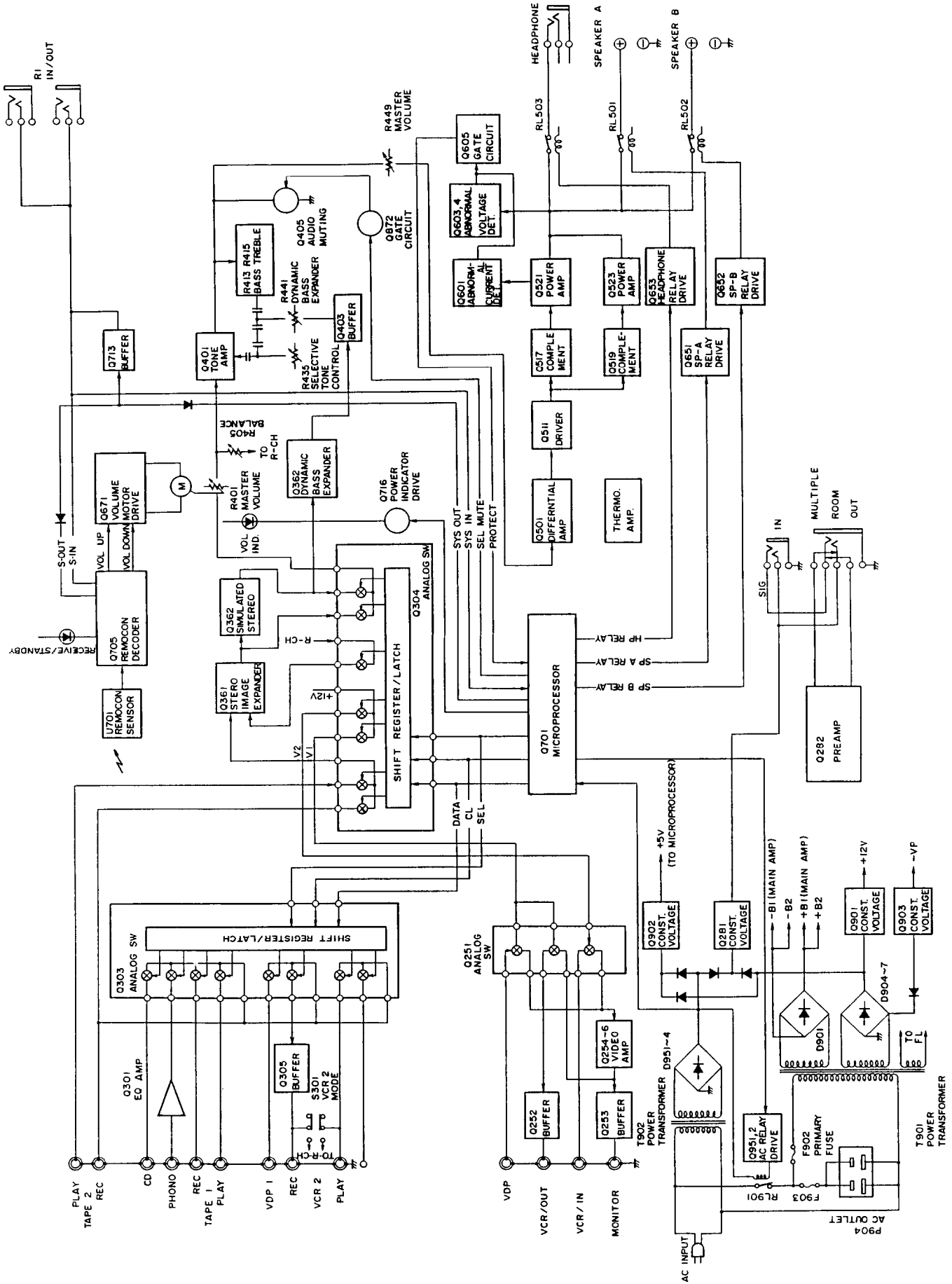


BLOCK DIAGRAM

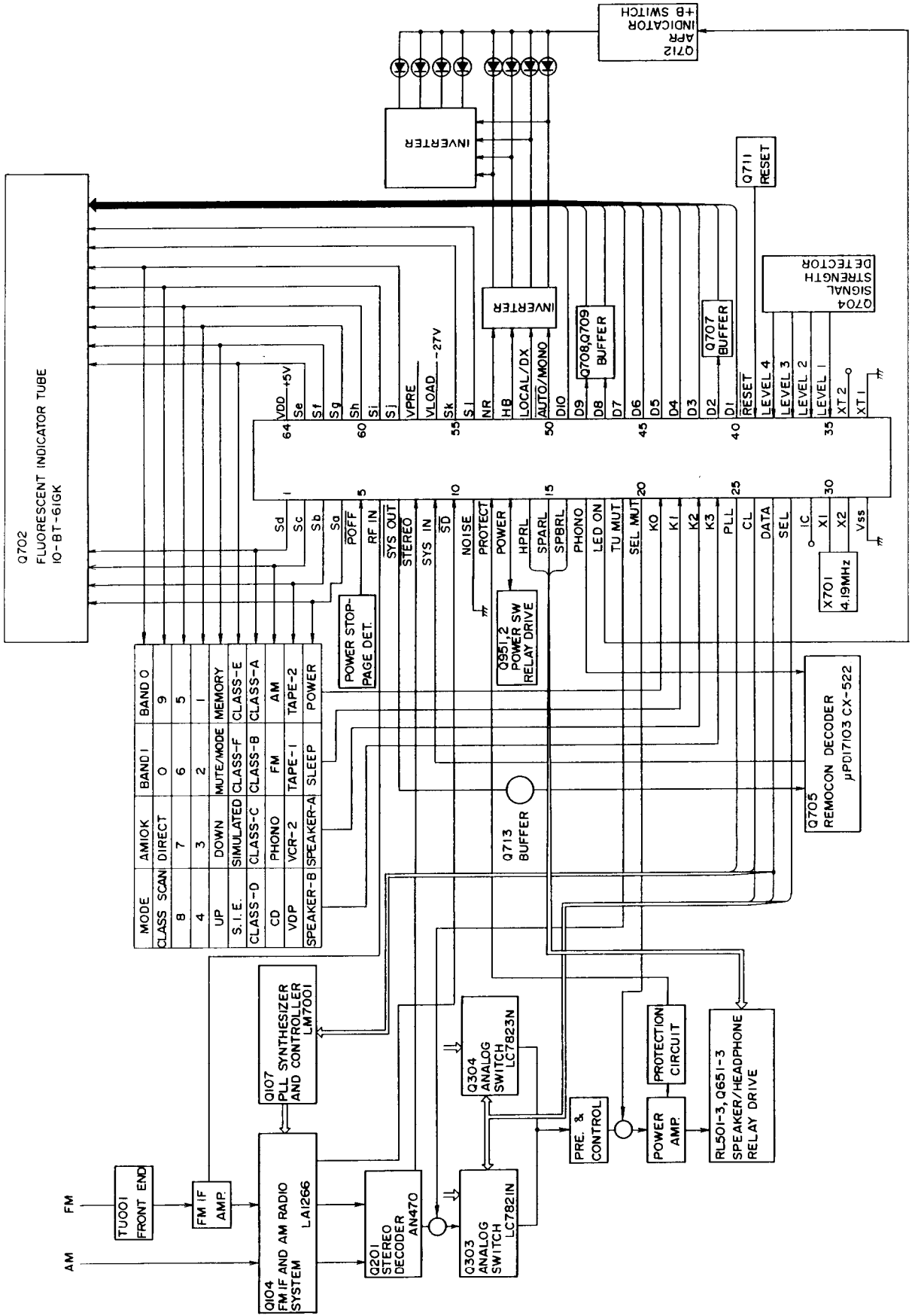
— OTHER MODELS —



Worldwide model



CONNECTION DIAGRAM OF MICROPROCESSOR



Q701 μ PD75286CW-014 (MICROPROCESSOR)

Pin No.	Function	Description																																																						
1-4	Sd-Sa	Segment and key scan output terminals. "H" when active.																																																						
5	POFF	This is the input terminal for detection of the stoppage of electric current. "L" when the stoppage of electric current.																																																						
6	RF IN	RF mode input terminal Control the terminal LOCAL/DX as shown below. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>RF IN</th> <th>LOCAL/DX</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>L</td> </tr> <tr> <td>H</td> <td>H</td> </tr> </tbody> </table>	RF IN	LOCAL/DX	L	L	H	H																																																
RF IN	LOCAL/DX																																																							
L	L																																																							
H	H																																																							
7	SYS OUT /SYS EN	System code output terminal. "L" when active. The initial setting input terminal when the power turns on.																																																						
8	STEREO	Stereo broadcast detection input terminal. "L" when stereo broadcast. Control of STEREO indicator.																																																						
9	SYS IN	System code input terminal. "H" when active.																																																						
10	SD	Broadcast detection input terminal. "L" when tuned. Control the stop of the auto tuning and the output TU MUT.																																																						
11	NOISE	Noise detection input terminal. "H" when active. Control the stop of the auto tuning.																																																						
12	PROTECT	Protect operation detection input terminal. "H" when active.																																																						
13	POWER	Relay control output terminal for power switch. "H" when the power turns on.																																																						
14	HPRL	Relay control output terminal for headphone. "H" when the relay turns on.																																																						
15	SPARL	Relay control output terminal for speaker A. "H" when the relay turns on.																																																						
16	SPBRL	Relay control output terminal for speaker B. "H" when the relay turns on.																																																						
17	PHONO	Phono control output terminal. "L" when the selector switch is PHONO.																																																						
18	LED ON	APR indicator control output terminal. "L" when indicators light on.																																																						
19	TU MUT	Muting output terminal of tuner section. "H" when active.																																																						
20	SEL MUT	Muting output terminal when the selector switch operates. "H" when active.																																																						
21-24	K0-K3	Key scan input terminals. "H" when active.																																																						
25	PLL	Output terminal to connect to the terminal CE of PLL IC(LN7001).																																																						
26	CL	Output terminal to connect to the terminal CL of function switches(LC7821N, LC7823N) and the terminal CL of PLL IC.																																																						
27	DATA	Output terminal to connect to the terminal DI of function switches(LC7821N, LC7823N) and the terminal DATA of PLL IC.																																																						
28	SEL	Output terminal to connect to the terminal CE of function switches.																																																						
29	IC	Internal connected																																																						
30	X1	Ceramic oscillator connection terminals for main system clock. Connect to the 4.19MHz ceramic oscillator.																																																						
31	X2																																																							
32	GND	Ground terminal.																																																						
33	XT1	Crystal oscillator connection terminal for sub-system. Not used.																																																						
34	XT2																																																							
35-38	LEVEL1- LEVEL4	Signal strength level input terminal. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2">Input</th> <th colspan="4">Signal indicator</th> <th colspan="2">Output</th> </tr> <tr> <th>1th</th> <th>2nd</th> <th>3th</th> <th>4th</th> <th>NR</th> <th>HB</th> </tr> </thead> <tbody> <tr> <td>LEVEL 1</td> <td>H</td> <td>off</td> <td>off</td> <td>off</td> <td>off</td> <td>H</td> <td>H</td> </tr> <tr> <td>LEVEL 1</td> <td>L</td> <td>on</td> <td>off</td> <td>off</td> <td>off</td> <td>H</td> <td>H</td> </tr> <tr> <td>LEVEL 1/2</td> <td>L</td> <td>on</td> <td>on</td> <td>off</td> <td>off</td> <td>L</td> <td>H</td> </tr> <tr> <td>LEVEL 1-3</td> <td>L</td> <td>on</td> <td>on</td> <td>on</td> <td>off</td> <td>L</td> <td>H</td> </tr> <tr> <td>LEVEL 1-4</td> <td>L</td> <td>on</td> <td>on</td> <td>on</td> <td>on</td> <td>L</td> <td>L</td> </tr> </tbody> </table>		Input	Signal indicator				Output		1th	2nd	3th	4th	NR	HB	LEVEL 1	H	off	off	off	off	H	H	LEVEL 1	L	on	off	off	off	H	H	LEVEL 1/2	L	on	on	off	off	L	H	LEVEL 1-3	L	on	on	on	off	L	H	LEVEL 1-4	L	on	on	on	on	L	L
	Input	Signal indicator				Output																																																		
		1th	2nd	3th	4th	NR	HB																																																	
LEVEL 1	H	off	off	off	off	H	H																																																	
LEVEL 1	L	on	off	off	off	H	H																																																	
LEVEL 1/2	L	on	on	off	off	L	H																																																	
LEVEL 1-3	L	on	on	on	off	L	H																																																	
LEVEL 1-4	L	on	on	on	on	L	L																																																	
39	RESET	Reset input terminal. "L" when active.																																																						
40-49	D1-D10	Digit output terminals. "H" when active.																																																						

50	AUTO/MONO	AUTO/MONO indicator output terminal. "L" when FM mode is AUTO and "H" when FM mode is MONO.
51	LOCAL/DX	LOCAL/DX indicator output terminal. Control according input RF IN when FM.
52	HB	Hi-blend control and indicator output terminal. "H" when LEVEL4 is high and "L" when LEVEL4 is low.
53	NR	Noise reduction control and indicator output terminal. "H" when LEVEL2 is high and "L" when LEVEL2 is low.
54,55	Sl,Sk	Segment output terminal. "H" when active.
56	VLOAD	Pull down resistor connection terminal of FIP controller/driver.
57	VPRE	Power supply terminal for output buffer of FIP controller/driver.
58-63	Sj-Se	Segment and key scan signal output terminals. "H" when active.
64	VDD	Power supply terminal. (+5V)

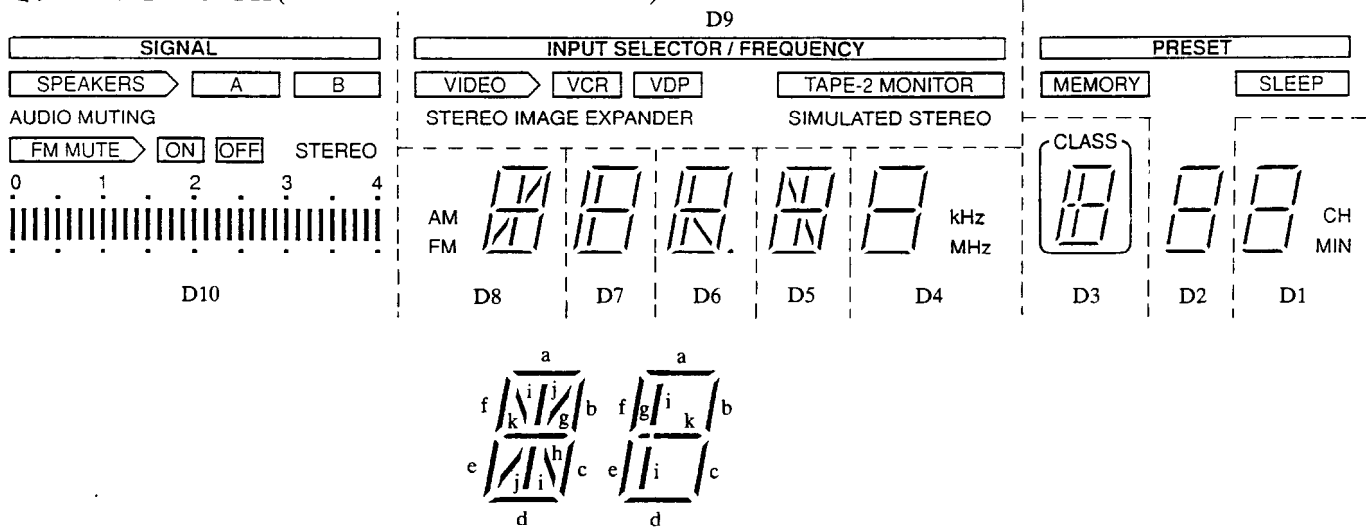
BAND1, BAND0 (FM band setting)

BAND1	BAND0	Region	Frequency range	Channel space	Reference frequency	IF frequency
0	1	Europe	87.50~108.00MHz	50kHz	25kHz	10.7MHz
0	0	U.S.A.	87.9 ~107.9 MHz	200kHz	25kHz	10.7MHz
1	X	Saudi Arabia	87.50~108.00MHz	50kHz	25kHz	10.7MHz

X: Don't care

AM10K

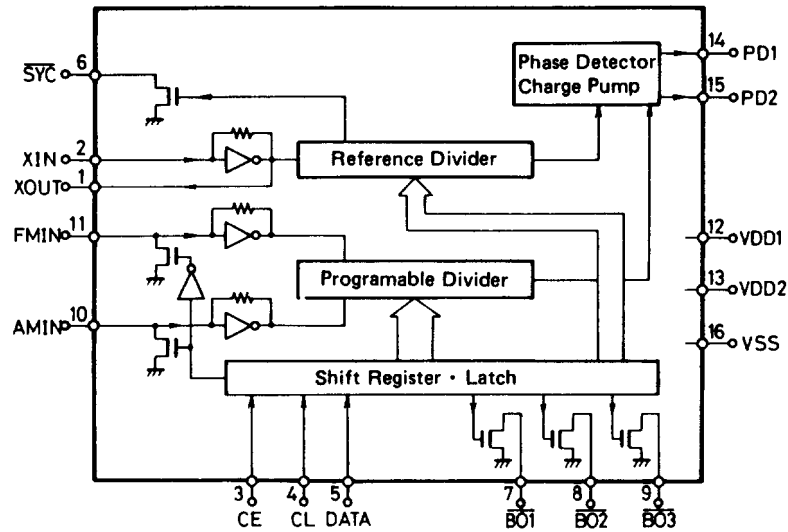
AM10K	Region	Frequency range	Channel space	Reference frequency	IF frequency
0	Europe	522~1611kHz	9kHz	9kHz	450kHz
1	U.S.A.	530~1710kHz	10kHz	10kHz	450kHz
0	Saudi Arabia	531~1602kHz	9kHz	9kHz	450kHz

Q702 10-BT-61GK (Fluorescent Indicator Tube)

	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1
Sa	A	VIDEO	a	a	a	a	a	a	a	a
Sb	B	VCR	b	b	b	b	b	b	b	b
Sc	AUDIO MUT	VDP	c	c	c	c	c	c	c	c
Sd	STEREO	TAPE-2MONI	d	d	d	d	d	d	d	d
Se	II(LEVEL1)	SIMULATED	e	e	e	e	e	e	e	e
Sf	II(LEVEL2)	STEREO IM.	f	f	f	f	f	f	f	f
Sg	II(LEVEL3)		g	g	g	g	g	g	g	g
Sh	II(LEVEL4)			h	h					
Si	FM MUTE		i	i	i	i		i		
Sj	ON		j						MEMORY	
Sk	OFF		AM				kHz	k	SLEEP	CH
Sl	SIGNAL	INPUT SEL.	FM				MHz	CLASS	PRESET	MIN

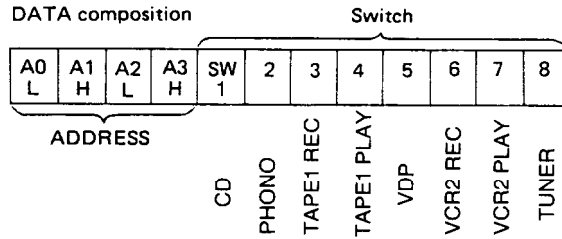
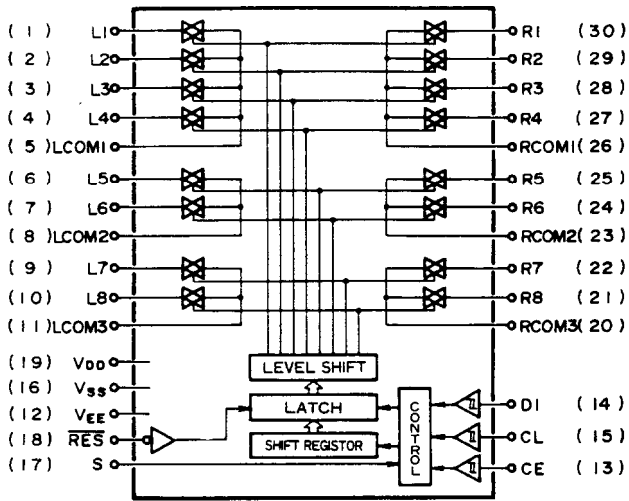
BLOCK DIAGRAMS OF IC

Q107 LM7001 (PLL SYNTHESIZER AND CONTROLLER)



Pin No.	Terminal	Description
1	XOUT	Connect to the 7.2 MHz crystal oscillator.
2	XIN	
3	CE	Chip enable terminal. Connect to the PLL terminal of microprocessor μ PD75286CW-014.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of microprocessor μ PD75286CW-014.
5	DATA	Serial data input terminal. Connect to the DATA terminal of microprocessor μ PD75286CW-014.
6	SYN	Not used.
7	$\overline{BO1}$	Auto/Mono control output terminal. "L" when Auto.
8	$\overline{BO2}$	FM control signal output terminal. "L" when FM.
9	$\overline{BO3}$	AM control signal output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD1	Power supply terminal for back-up.
13	VDD2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	VSS	Ground terminal.

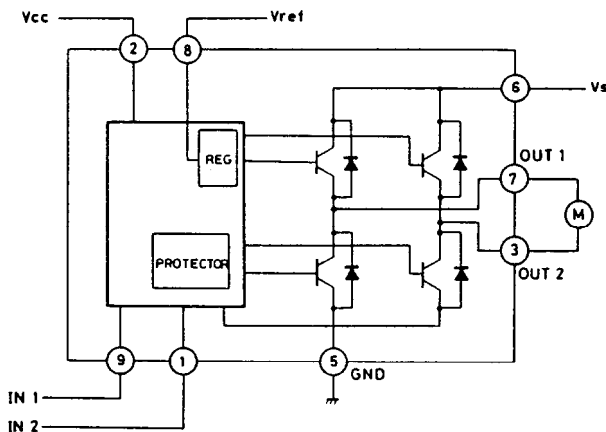
Q303 LC7821N (Analog switch)



The source becomes ON when the bit of switch becomes high.

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	CD	Input/output terminals of audio signal of left channel. Control to the inside analog switch at the serial data.	16	Vss	Ground terminal.
2	PHONO		17	S	Selector terminal.
3	TAPE 1 REC		18	RES	Reset terminal. When power is turned ON, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are OFF.
4	TAPE1 PLAY		19	VDD	Power supply terminal. (+15V)
5	L COM 1		20	R COM 3	Input/output terminals of audio signal of right channel. Control to the inside analog switch at the serial data.
6	VDP		21	TUNER	
7	VCR 2 REC		22	VCR 2 PLAY	
8	L COM 2		23	R COM 2	
9	VCR 2 PLAY		24	VCR 2 REC	
10	TUNER		25	VDP	
11	L COM 3		26	R COM 1	
12	Vss	27	TAPE 1 PLAY		
13	CE	28	TAPE 1 REC		
14	D1	29	PHONO		
15	CL	30	CD		

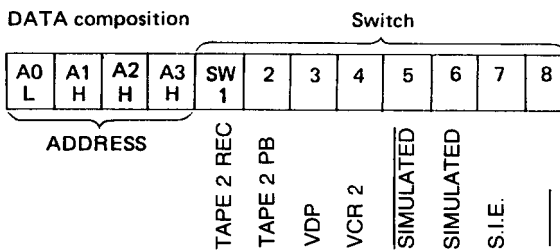
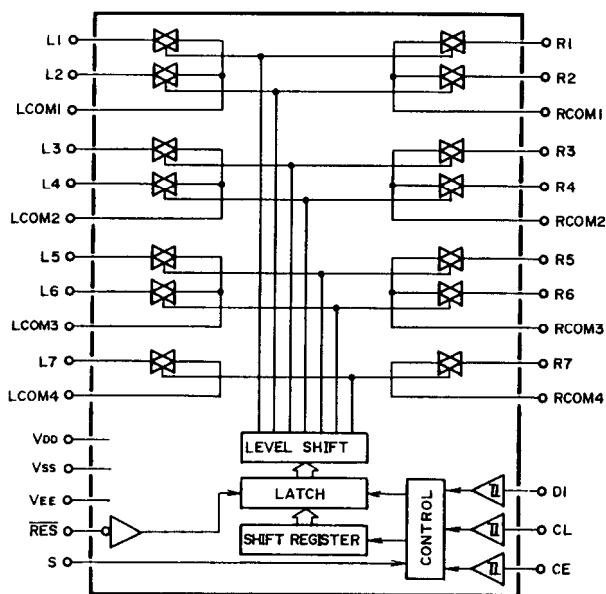
Q871 TA7291S (Volume Motor Drive)



INPUT		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

CCW: Counter clockwise direction
 CW: Clockwise direction

Q304 LC7823N (ANALOG SWITCH)

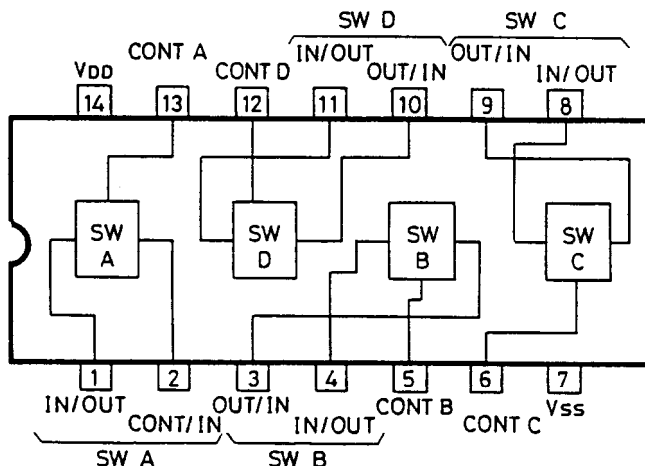


The source becomes ON when the bit of switch becomes high.

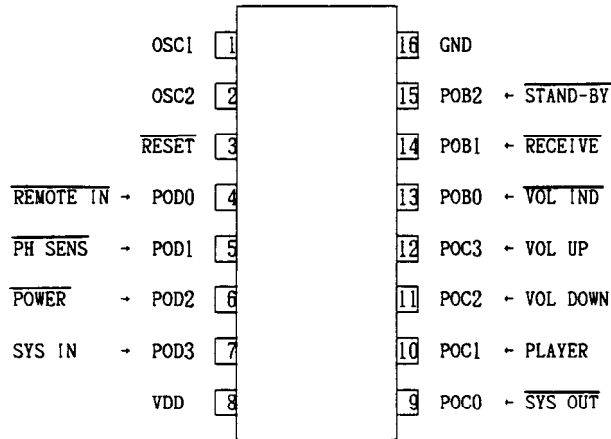
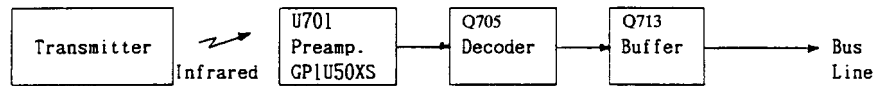
S. I. E. = Stereo Image Expander

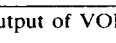
Pin No.	Terminal	Description	Pin No.	Terminal	Description
1 (L1)	TAPE 2 REC	Input/output terminals of audio signal of left channel. Control to the inside analog switch at the serial data.	16	Vss	Ground terminal.
2 (L2)	TAPE 2 PB		17	S	Selector terminal.
3 (L3)	L COM 1		18	RES	Reset terminal. When power is turned ON, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are OFF.
4 (L4)	VDP		19	VDD	Power supply terminal. (+15V)
5 (L5)	VCR 2		20	R COM 4	Input/output terminals of audio signal of right channel. Control to the inside analog switch at the serial data.
6 (L6)	L COM 2		21 (R7)	S.I.E.	
7 (L7)	SIMULATED		22	R COM 3	
8 (L8)	SIMULATED		23 (R6)	SIMULATED	
9 (L9)	L COM 3		24 (R5)	SIMULATED	
10 (L10)	S.I.E.		25	R COM 2	
11 (L11)	L COM 4		26 (R4)	VCR 2	
12	VEE	27 (R3)	VDP		
13	CE	28	R COM 1		
14	DI	29 (R2)	TAPE 2 PB		
15	CL	30 (R1)	TAPE 2 REC		

Q251 4066B (ANALOG SWITCH)



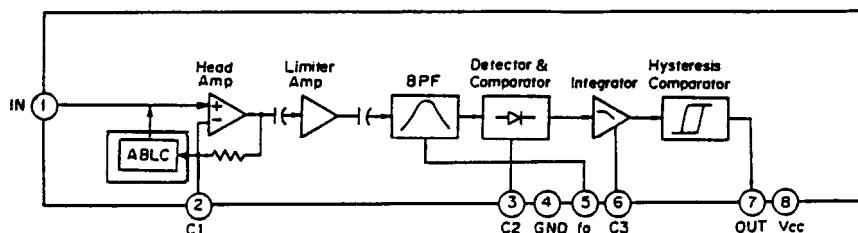
Q705 μ PD17103CX-51 (Remote Control Transmitter Decoder)



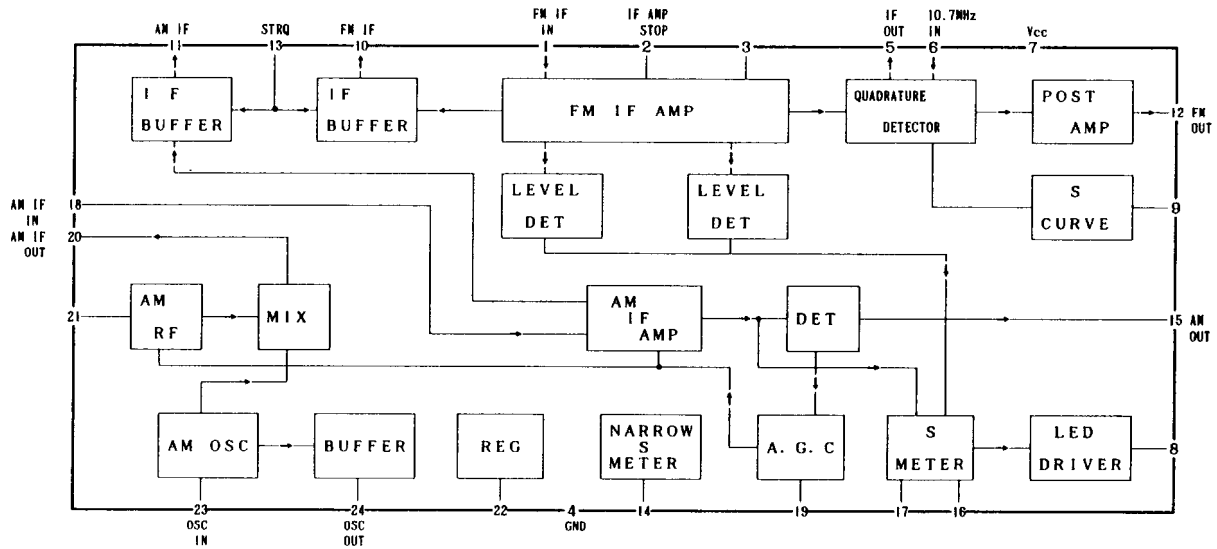
Pin No.	Symbol	Terminal	Description
1	OSC1	OSC	Connect to the 8.00MHz ceramic oscillator.
2	OSC2		
3	RES	RESET	System reset terminal. Active low.
4	POD0	REMOTE IN	Signal input terminal from preamp. for remote control. Active low.
5	POD1	PHONO SENS	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V _{DD}	+B	Power supply terminal.
9	POC0	SYS OUT	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PLAYER	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	VOL IND	During the output of VOLUME UP/DOWN, a pulse ( = 250ms) is output. (Not used.)
14	POB1	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being received.
15	POB2	STAND-BY	STAND-BY indication terminal.
16	V _{SS}	GND	Ground terminal.

Q282 XC20106A (REMOTE CONTROL PREAMPLIFIER)

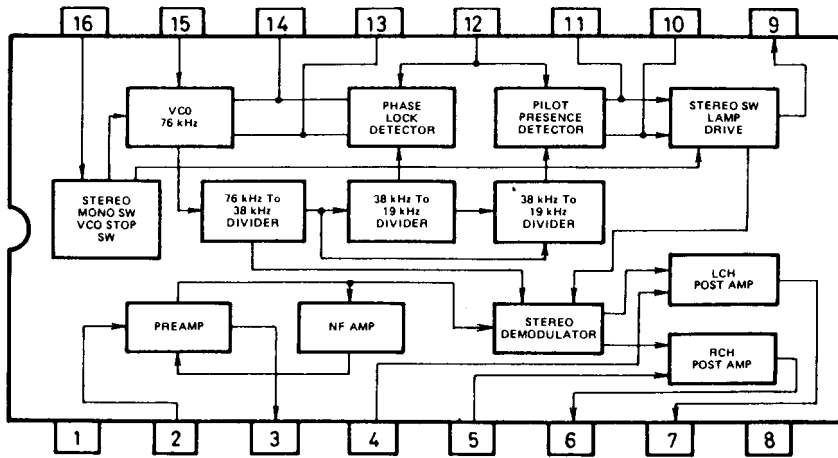
1. IN: Input terminal
2. C1: Frequency response and gain setting terminal of head amplifier
3. C2: Connect to the capacitor for detector
4. GND: Ground terminal
5. fo: Center frequency setting terminal of BPF
6. C3: Connect to the capacitor for integrator
7. OUT: Output terminal
8. V_{CC}: Power supply terminal



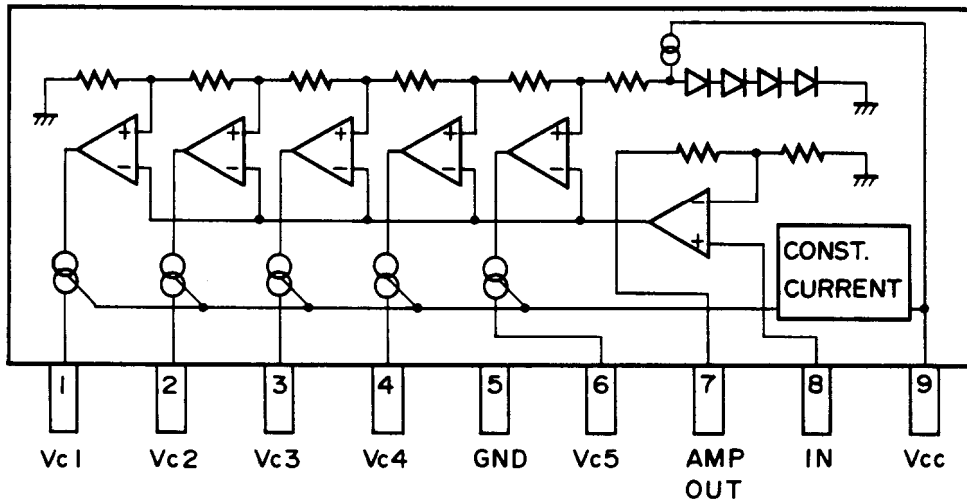
Q104 LA1266 (FM IF and AM Radio System)



Q201 AN7470 (FM Stereo Decoder)



Q704 BA6125 (Signal Strength Detector)



ADJUSTMENT PROCEDURES

Preparation

• Input

FM mono: 1kHz, 75kHz devi., 60dB/ μ V

FM stereo: 1kHz, L+R 67.5kHz devi.: Pilot signal 19kHz
7.5kHz devi.

AM: 400Hz, 30% mod.,

• Output

Connect the non-inductive type resistor of 8 ohms to the speaker terminal A of left and right channels unless otherwise noted.

• Standard knob position

TAPE MONITOR	SOURCE
VOLUME	Maximum
BASS/TREBLE/BALANCE	Center
VCR 2 MODE	STEREO
SPEAKER	A
SIMULATED STEREO	OFF
DYNAMIC BASS EXPANDER	OFF
STEREO IMAGE EXPANDER	OFF
SELECTIVE TONE CONTROL	OFF

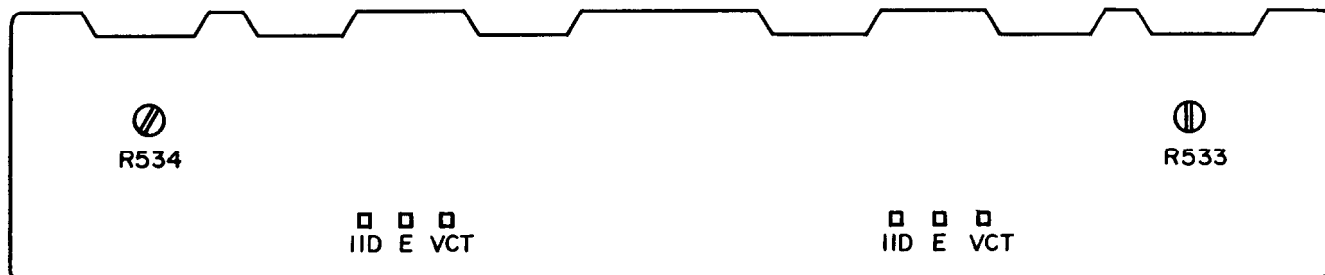
Amplifier section

1. Idling current adjustment

Connect the DC voltmeter to the terminals IID and VCT on the power amplifier pc board.

Adjust the semi-fixed resistors R533 and R534 so that the indication of voltmeter is 7.5 ± 1.5 mV.

Notes: VOLUMEMaximum, Open load, No input
Adjust after switching on for 5 minutes.



PRINTED CIRCUIT BOARD PARTS LIST

DISPLAY PC BOARD(NADIS-3874-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Remocon sensor				
U701	24130003	GP1U50XS	D731-D733	223163	1SS133
	ICs		D737-D739	223163	1SS133
Q701	22240337	μ PD75286CW-014	D740	224450562	MTZ5.6B
Q703	222807	μ PA81C	D741, D742	223163	1SS133
Q704	22240341	BA6125	D746-D749	223163	1SS133
Q705	22240338	μ PD17103CX-522	D759, D760	223163	1SS133
	FL tube		D761	223163	1SS133 <G>
Q702	212083	10-BT-61GK			
	Transistors		D723-D726	225142	SEL2913K
Q707-Q709	2213284	2SC1740S-R	D727-D730	225137CG,	SEL2413E-CG
Q710, Q711	221282	DTC144ES		225137DG or	SEL2413E-DG or
Q712	2213710	DTA123JS		225137DY	SEL2413E-DY
Q713	2213510	DTA114ES	D752	225141	SEL2213C
Q716	221282	DTC144ES			
	Lamp		L701	233409K220	NCH-1284
PL701	210064B	250mA, 6.3V			
	Diodes		X701	3010163	CST4.19MGW
D701-D713	223163	1SS133	X702	3010154	CST8.00MT
D715, D716	223163	1SS133 <W>			
D717	223163	1SS133 <D>			
D718	223163	1SS133			
D719	224450623	MTZ6.2C			
D720, D721	223163	1SS133			
D722	224450623	MTZ6.2C			
				Coil	
				233409K220	NCH-1284
				Ceraic oscillators	
				3010163	CST4.19MGW
				3010154	CST8.00MT
				Capacitors	
			C701	3000057	0.1F, 5.5V, Super
			C702, C705	375524744	0.47 μ F \pm 5%, 50V, MMT
			C706	353780109	1 μ F, 50V, Elect.
			C707	353781009	10 μ F, 50V, Elect.
			C708, C709	353741009	10 μ F, 16V, Elect.
			C712	353721019	100 μ F, 6.3V, Elect.

FM section

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Turning dial setting	Output indicator	Adjustment	Adjust for	Remarks
FM IF	1	Fig. 1	99.1MHz 1kHz, 75kHz dev. 65dB (60dB)	-	99.1MHz	DC voltmeter	L101	0V ± 20mV	Mode switch: MONO Repeat the steps 1 and 2 until no further adjustment is necessary
	Distortion analyzer					L102	Minimum		
VCO		Fig. 2	99.1MHz 1kHz, 75kHz dev. 65dB (60dB)	-	99.1MHz	Frequency counter	R201	19kHz ± 10Hz	
Stereo Distortion		Fig. 3	99.1MHz 65dB (60dB) Ext. modulation	L or Rch. 1kHz	99.1MHz	Distortion analyzer		Minimum	Mode switch: STEREO Don't turn more than ± 180°
Stereo Separation	1	Fig. 3	99.1MHz 65dB (60dB) Ext. modulation	Lch. 1kHz	99.1MHz	Rch. AC voltmeter	R202	Minimum	Maximum and same separation
	2					Lch. AC voltmeter		Minimum	
Muting level		Fig. 3	99.1MHz 17.2dB (12dB) 1kHz, 75kHz dev.	-	99.1MHz	AUTO indicator	R101	Light on	
Signal level		Fig. 3	99.1MHz 35.2dB (30dB) 1kHz, 75kHz dev.	-	99.1MHz	4th indicator of signal strength	R102	Light on	

Reference specifications
FM Tuned voltage

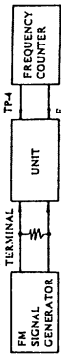
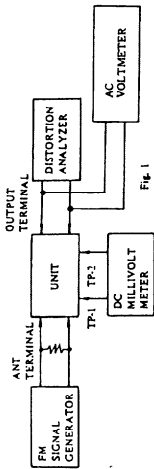
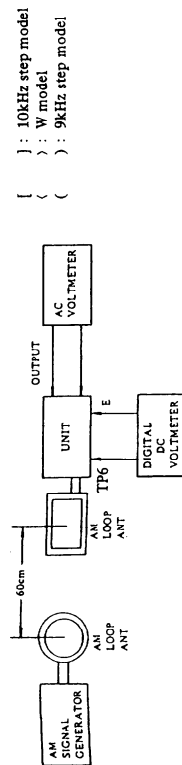
87.9MHz 1.6 ± 0.5V
107.9MHz 7.9 ± 0.5V
(120V model)
87.5MHz 1.6 ± 0.5V
108.0MHz 7.9 ± 0.5V
(Other models)

Auto stop level
AM: Less than 66dB/m
FM: Less than 19dB_μ

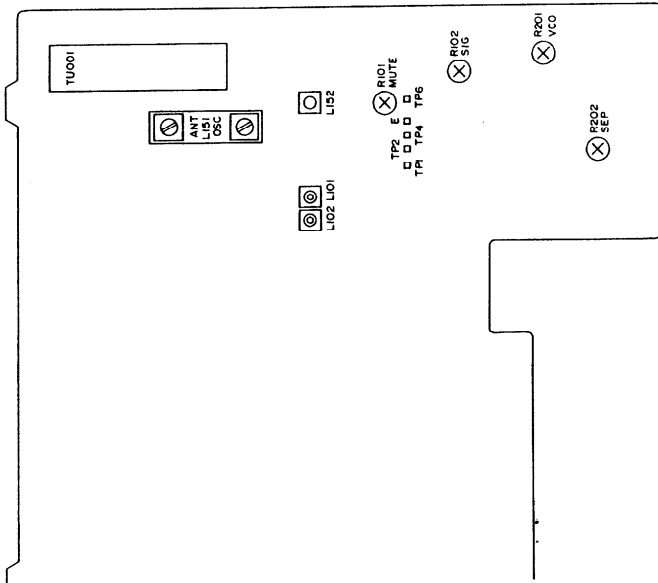
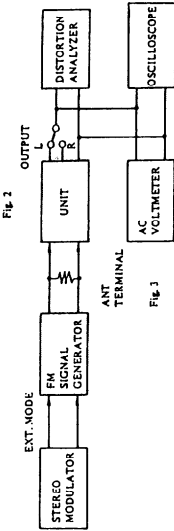
AM Tuned voltage
530kHz 1.3 ± 0.5V
1710kHz 7.2 ± 0.5V
(120V model)
522kHz 1.2 ± 0.5V
1611kHz 7.0 ± 0.5V
(120V/240V models)
531kHz 1.2 ± 0.5V
1602kHz 7.0 ± 0.5V
(Worldwide model)

AM section

Step	AM SG output	Tuned frequency	Output indicator	Adjustment point	Adjust for
1		530kHz [522kHz] (531kHz)	Digital DC voltmeter	OSC on RF block L151	1.5V ± 0.1V
2	600kHz(603kHz) 400Hz 30% mod. 60dB/m	600kHz (603kHz)	AC voltmeter	RF on RF block L151	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum



Use the high impedance probe. (10:1)



CIRCUIT NO.	PART NO.	DESCRIPTION
C714	353780109	1 μ F, 50V, Elect.
	Resistor	
R740	49163103404	10k \times 4, 1/10W, Network
	Switches	
S701	25035548	NPS-111-S510, Push
S703-S736	25035548	NPS-111-S510, Push
S737	25065286	NSS-22112, Slide, Band step <W>
	Holder	
	27190768	L.E.D

VOLUME PC BOARD(NAAF-3875-1/1A)

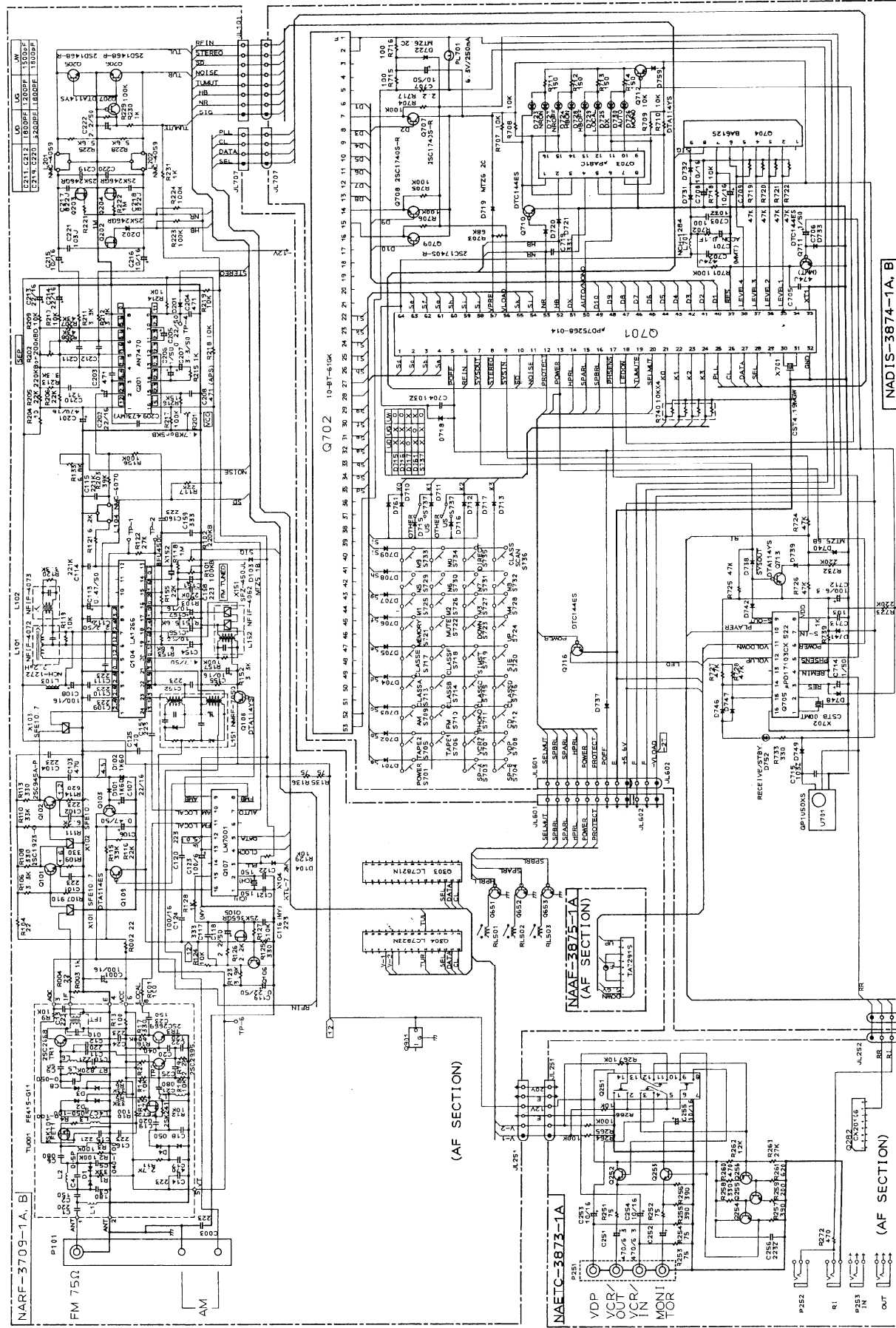
CIRCUIT NO.	PART NO.	DESCRIPTION
Q871	22240239	TA7291S, IC
C871	354721019	100 μ F, 6.3V, Elect. capacitor
R401, R402	5142004	N16RGM50KA30F, Variable resistor <D>
R401, R402 R449, R450	5144009C	N16RGM50KA50KB30F, Variable resistor <G/W>
P401	2000809	NSAS-6P765, Socket
P403	2000624	NSAS-6P580, Socket <G/W>
P871	2000635A	NSAS-4P591, Socket
	27141059	Bracket, ground

NOTE: <D>: Only 120V model
<G>: Only 220V/240V models
<W>: Only Worldwide model

CHEMATIC DIAGRAM

- TUNER SECTION -
OTHER MODELS

A B C D E F G



ONKYO CORPORATION

CHEMATIC DIAGRAM

A

B

C

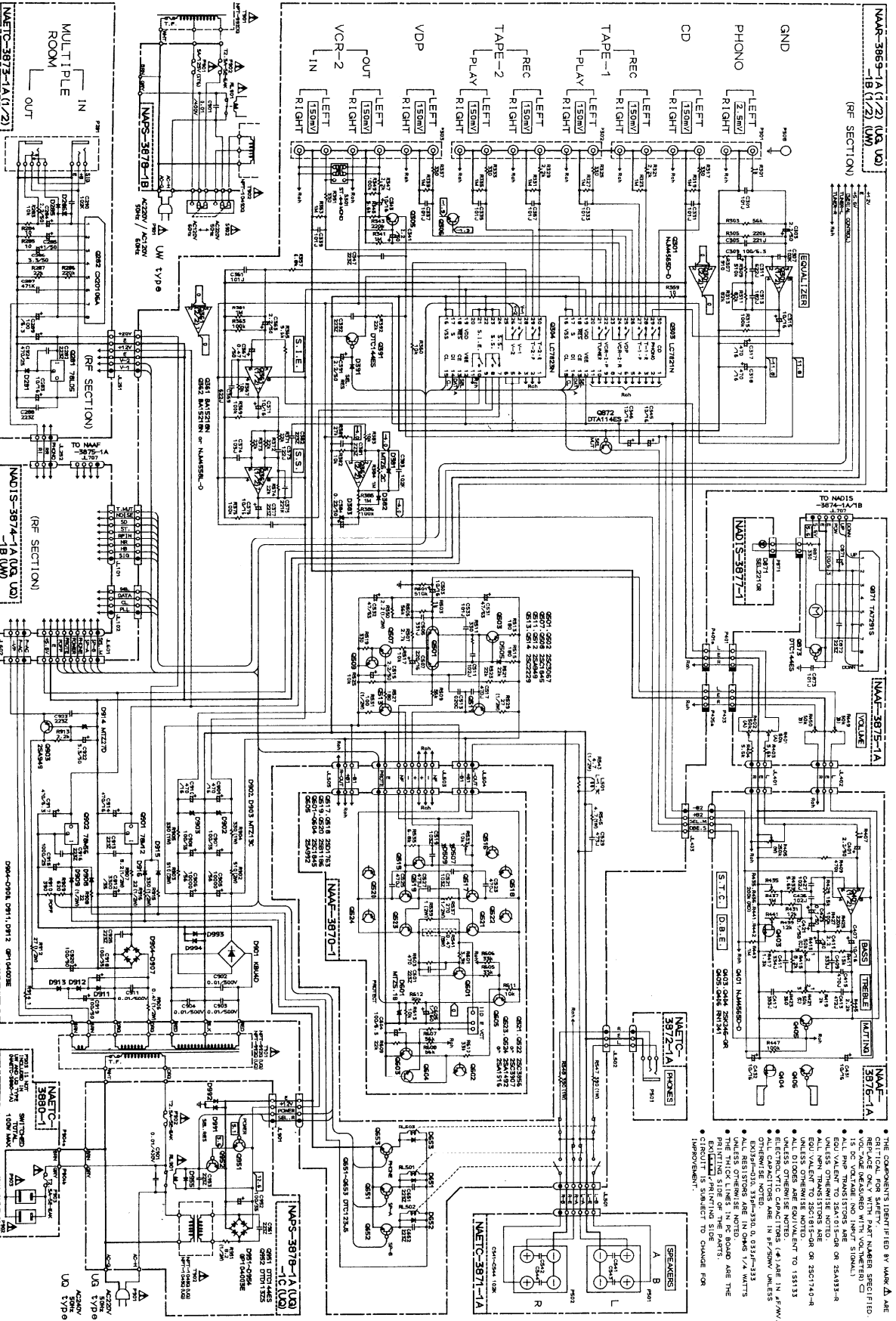
D

E

F

G

AMPLIFIER SECTION -
OTHER MODELS



NOTE

- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR PROPER OPERATION.
- VOLAGE MESSAGES WITH PART NUMBER SPECIFIED ARE TO BE USED.
- ALL PNP TRANSISTORS ARE 9011.
- SOU VALUET TO 2K4015-08 OR 2K4335-R.
- ALL NEP TRANSISTORS ARE 2N4335-R.
- ALL NEP TRANSISTORS ARE 2N4335-R.
- ALL DIODES ARE EQUIVALENT TO 15H13 UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PCB BOARD ARE THE EXTERNAL PRINTING SIDE.
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

ONKYO CORPORATION

PRINTED CIRCUIT BOARD PARTS LIST

FM/AM TUNER AND SELECTOR CIRCUIT PC BOARD (NAAR-3869-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION	
1	TU001	Front end	L104	233383	NMC-6070 <G/W>	
		240088	FE337-A07 <D>	L152	232139	NMIF-4062
		240089	FE415-G11 <G/W>			Coils
			ICs	L103	233409M022	NCH-1272
	Q104	22240039	LA1266	L201, L202	233355A	NMC-4059
	Q107	22240090	LM7001	L501, L502	231176	S-1.3C
	Q201	22240242	AN7470			RF block
	Q301	22240191	NJM4565D-D	L151	232148	NMRF-7050
	Q303	22240280	LC7821N			Ceramic filters
	Q304	22240339	LC7823N	X101, X103	3010071	SFE10.7MA5 <D>
Q361	22240247	BA15218N	X101-X103	3010137	SFE10.7MMK <G/W>	
Q362	22240247 or 22240293	BA15218N or NJM4558L-D	X151	3010123	SFZ-450JL	
Q901	222780122NEC	78M12	X152	3010076	BFU-450C	
Q902	222780565JRC	78M56			X'tal	
		Transistors	X104	3010141	XTL-7.2M	
Q101	2211723	2SC1923-O			Capacitors	
Q102	2210746	2SC945A-P <G/W>	C001, C108	354741019	100 μ F, 16V, Elect.	
Q103, Q106	2211183 or 2211255	2SC1740-R or 2SC1815-GR	C106	354784799	0.47 μ F, 50V, Elect.	
Q105	2212445	2SK365-GR	C107	354742209	22 μ F, 16V, Elect.	
Q108, Q109	2213510	DTA114ES	C112	391980227	2.2 μ F, 50V, Elect. (RA2)	
Q202-Q204	2211945	2SK246-GR	C113	354784799	0.47 μ F, 50V, Elect.	
Q205, Q206	2212794	2SD1468-R	C116	371122234	0.022 μ F \pm 5%, 50V, Mylar	
Q207	2213510	DTA114ES	C117	371123334	0.033 μ F \pm 5%, 50V, Mylar	
Q305, Q306	2211183 or 2211255	2SC1740-R or 2SC1815-GR	C118	391980227	2.2 μ F, 50V, Elect. (RA2)	
Q391	221282	DTC144ES	C119	354782299	0.22 μ F, 50V, Elect.	
Q501, Q502	2213676 or 2213677	2SC3067-F or 2SC3067-G	C123	391921017	100 μ F, 6.3V, Elect. (RA2)	
Q503, Q504	2213074 or 2211455	2SA933-R or 2SA1015-GR	C124	354741019	100 μ F, 16V, Elect.	
Q507, Q508	2211732 or 2211733	2SC1845-F or 2SC1845-E	C154	354780479	4.7 μ F, 50V, Elect.	
Q509, Q510	2211183 or 2211255	2SC1740-R or 2SC1815-GR	C155-C157	391941007	10 μ F, 16V, Elect. (RA2)	
Q511, Q512	2211353 or 2211354	2SA949-O or 2SA949-Y	C159	371123334	0.033 μ F \pm 5%, 50V, Mylar	
Q513, Q514	2211633 or 2211634	2SC2229-O or 2SC2229-Y	C160	371122234	0.022 μ F \pm 5%, 50V, Mylar	
Q651-Q653	2213640	DTC123JS	C201	354744719	470 μ F, 16V, Elect.	
Q872	2213510	DTA114ES	C202	354742209	22 μ F, 16V, Elect.	
Q903	2211353 or 2211354	2SA949-O or 2SA949-Y	C205	354782299	0.22 μ F, 50V, Elect.	
		Diodes	C206	354780109	1 μ F, 50V, Elect.	
D101, D102	223132	1K60	C207	354780339	3.3 μ F, 50V, Elect.	
D103	224450512	MTZ5.1B	C208	370134714	470pF \pm 5%, 100V, APS	
D104	223163	1SS133	C209	374724734	0.047 μ F \pm 5%, 50V, Plastic(TF)	
D201, D202	223163	1SS133	C211, C212	374721824	1800pF \pm 5%, 50V, Plastic(TF)	
D381	224450623	MTZ6.2C			<D>	
D382, D383	223163	1SS133			1200pF \pm 5%, 50V, Plastic(TF)	
D391	223163	1SS133			<G>	
D501-D504	223163	1SS133 <D/W>			1500pF \pm 5%, 50V, Plastic(TF)	
D505, D506	223163	1SS133			<W>	
D651-D653	223163	1SS133	C213, C214	354742209	22 μ F, 16V, Elect.	
D901	22380024	KBU4D	C215, C216	391941007	10 μ F, 16V, Elect. (RA2)	
D902, D903	224451303	MTZ13C	C217, C218	371128224	8200pF \pm 5%, 50V, Mylar	
D904-D908	22380035	GP104003E	C219, C220	374726224	6200pF \pm 5%, 50V, Plastic(TF)	
D909, D913	223163	1SS133			<D>	
D911, D912	22380035	GP104003E			1800pF \pm 5%, 50V, Plastic(TF)	
D914	224452704	MTZ27D	C221	374721034	0.01 μ F \pm 5%, 50V, Plastic(TF)	
D915, D916	223163	1SS133	C222	391980227	2.2 μ F, 50V, Elect. (RA2)	
D993, D994	223163	1SS133	C303, C304	391980227	2.2 μ F, 50V, Elect. (RA2)	
		Transformers	C305, C306	373302214	220pF \pm 5%, 125V, PP <G/W>	
L101	233401	NFIF-4072	C307, C308	373301024	1000pF \pm 5%, 125V, PP <G/W>	
L102	233402	NFIF-4073	C309, C310	391921017	100 μ F, 6.3V, Elect. (RA2)	
			C311, C312	374726224	6200pF \pm 5%, 50V, Plastic(TF)	
			C313, C314	374721824	1800pF \pm 5%, 50V, Plastic(TF)	
			C315, C316	391941007	10 μ F, 16V, Elect. (RA2)	
			C317, C318	354744719	470 μ F, 16V, Elect.	
			C331, C332	373301014	100pF \pm 5%, 125V, PP <G/W>	
			C341, C342	391980227	2.2 μ F, 50V, Elect. (RA2)	
			C343-C346	391941007	10 μ F, 16V, Elect. (RA2)	
			C363, C364	391980227	2.2 μ F, 50V, Elect. (RA2)	
			C367	354784799	0.47 μ F, 50V, Elect.	

SC

PRINTED CIRCUIT BOARD PARTS LIST

SPEAKER TERMINAL PC BOARD (NAETC-3871-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
P501, P502	25060110	NTM-4PDMN44, Speaker terminals

HEADPHONE TERMINAL PC BOARD (NAETC-3872-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
P503	25045256	YKB21-5010, Headphone terminal <D/W>
	25045255	YKB21-5009, Headphone terminal <G>

VIDEO TERMINAL PC BOARD (NAETC-3873-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q251	222840661	4066B
Q281	222780053	78L05
Q282	22240345	CX20106A
Transistors		
Q252-Q255	2211183 or 2211255	2SC1740-R or 2SC1815-GR
Q256	2213074 or 2211455	2SA933-R or 2SA1015-GR
Q271	221282	DTC144ES <D>
Diodes		
D281, D285	223163	1SS133
Capacitors		
C251, C252	354724719	470 μ F, 6.3V, Elect.
C253-C255	391941007	10 μ F, 16V, Elect. (RA2)
C283	391941007	10 μ F, 16V, Elect. (RA2)
C284	391980227	2.2 μ F, 50V, Elect. (RA2)
C285	354780109	1 μ F, 50V, Elect.
C286	354780339	3.3 μ F, 50V, Elect.
C289	391921017	100 μ F, 6.3V, Elect. (RA2)
Terminals		
P251	25045192	NPJ-4PDBL76, Video
P271	25045172	HSJ-1003-01-020, RI
P281	25045293	HSJ-1003-01-012, RR (Room to Room)
P491	25045171	NPJ-4PDBL65, PRE-MAIN <D>
Sockets		
J1.252	25050267	NSCT-3P95
P404	2000562	NSAS-6P518 <D>
Plug		
P402a	25055133	NPLG-3P117 <D>
Shield plate		
	27150294	<D>

AC OUTLET TERMINAL PC BOARD (NAETC-3879-1) (Only 120V model)

CIRCUIT NO.	PART NO.	DESCRIPTION
P902	25050409	NSCT-4P234, AC outlet
P904	2009990078	NSAS-4P0115, Socket

AC OUTLET TERMINAL PC BOARD (NAETC-3880-1/1A) (Only 220V and Worldwide models)

CIRCUIT NO.	PART NO.	DESCRIPTION
P902, P903	25050410	NSCT-2P235, AC outlet
F903a	25050065	YSH-403T, Fuseholders <G>
F903	252075	2.5A-SE-EAK, Primary for AC outlet <G>
P904a	2065543341	Cord ass'y
P904b	2065543348	Cord ass'y

PREAMPLIFIER PC BOARD (NAAF-3876-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
IC		
Q401	22240191	NJM4565D-D
Transistors		
Q403, Q404	2211945	2SK246-GR
Q405, Q406	2213631 or 2213632	RN1241-A or RN1241-B
Capacitors		
C401, C402	391980227	2.2 μ F, 50V, Elect. (RA2)
C407, C408	391941007	10 μ F, 16V, Elect. (RA2)
C409, C410	374723334	0.033 μ F \pm 5%, 50V, Plastic (TF)
C411, C412	374723344	0.33 μ F \pm 5%, 50V, Plastic (TF)
C413, C414	374724724	4700pF \pm 5%, 50V, Plastic (TF)

CIRCUIT NO.	PART NO.	DESCRIPTION
C417, C418	374723934	0.039 μ F \pm 5%, 50V, Plastic (TF)
C419, C420	391980227	2.2 μ F, 50V, Elect. (RA2)
C421-C424	354781099	0.1 μ F, 50V, Elect.
C425-C428	374721024	1000pF \pm 5%, 50V, Plastic (TF)
C431, C432	354741009	10 μ F, 16V, Elect. <D>
	354744709	47 μ F, 16V, Elect. <G/W>

Resistors

R405	5104270	N11RHC250KWT25Z, Variable, BALANCE
R413, R414	5104269	N14RHC50KC25Z, Variable, BASS
R421, R422	5104269	N14RHC50KC25Z, Variable, TREBLE
R435, R436	6182006	N25LGI200KRD10Z, Slide, S.T.C.
R441, R442	6182006	N25LGI200KRD10Z, Slide, D.B.E.

Socket

P402	2000630	NSAS-6P586 <D>
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VOLUME INDICATOR PC BOARD (NADIS-3877-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
D871	225241 or 225242	SEL2210R-C or SEL2210R-D, L.E.E.D.
	27190545	Holder, LED

NOTE: <D>: Only 120V model
<G>: Only 220/240V models
<W>: Only Worldwide model

POWER SUPPLY PC BOARD (NAPS-3878-1/1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
Transistors		
Q951	221282	DTC144ES
Q952	2213650	DTD113ZS
Diodes		
D951-D954	22380035	GP104003E
D955	223163	1SS133
D991, D992	223163	1SS133
Transformer		
T902	2300493	NPT-1049D, Power <D>
	2300494	NPT-1049G, Power <G>
	2300495	NPT-1049DG, Power <W>
	2300496	NPT-1049Q, Power <Q>
Capacitors		
C901	3500065A	DE7150FZ103PAC400V/125V, IS
C952	354761019	100 μ F, 35V, Elect.
Resistors		
R901	431523355	3.3Mohm, 1/2W, Solid <D>
R951	442520824	8.2ohm, 1/2W, Metal oxide film
Relay		
RL901	25065269	NRL-1P5A-DC12-36 <D>
	25065248	NRL-1P15A-DC12-29 <G/W/Q>
Socket		
J1.901	25050268	NSCT-4P96
Fuseholders		
F901a	250113	SN5051 <D/W>
F902a	25050065	YSH403T <G/W/Q>
Fuse		
F901	252050	5A (ST-6), Primary <D/W>
F902	252075	2.5A-SE-EAK, Primary <G/W/Q>
Bracket		
	27141059	Ground <D>
Label		
	29360626-1	Fuse <D>

NOTE: <D>: Only 120V model
<G>: Only 220V model
<Q>: Only 240V model
<W>: Only Worldwide model

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

