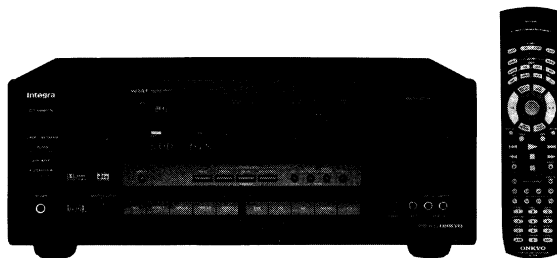


# Integra. SERVICE MANUAL

## AUDIO VIDEO CONTROL RECEIVER MODEL DTR-6



Black model

BMD	120V AC, 60Hz
-----	---------------

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  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 PART 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.

### TABLE OF CONTENTS

Specifications.....	2
Service procedures.....	3
Panel views.....	4
FL tube view.....	7
Microprocessor connection diagram.....	8
Microprocessor terminal descriptions.....	9
IC block diagrams and descriptions.....	10
Printed circuit board-part list.....	21
Adjustment and confirmation.....	27
Wiring view.....	29
Block diagram.....	31
Preamplifier PC board view.....	33
Preamplifier schematic diagram.....	35
Power/Input PC board view.....	37
Power/Input schematic diagram.....	39
Main circuit PC board view.....	41
Main circuit schematic diagram .....	43
DSP PC board view .....	45
DSP schematic diagram .....	47
Power amplifier PC board view.....	49
Power amplifier schematic diagram.....	51
Display PC board view.....	53
Display circuit schematic diagram.....	55
Video circuit PC board view.....	57
Video circuit schematic diagram.....	59
Exploded view.....	61
Parts list.....	63
Packing view.....	64

## SPECIFICATIONS

### AMPLIFIER SECTION

Continuous Average Power output (FTC)

**All channels:** **85 watts per channel min. RMS at 8 ohms, 2 channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.**  
**110 watts min. RMS at 6 ohms, 2 channels driven from 1 kHz with no more than 0.1% total harmonic distortion.**

Total Harmonic Distortion: 0.08% at rated power (Front)

IM Distortion: 0.08% at rated power (Front)

Damping Factor: 60 at 8 ohms (Front)

Input Sensitivity and Impedance

PHONO: 2.5 mV, 50 kohms

LINE (CD, TAPE, DVD,  
VIDEO 1, 2, 3,4): 200 mV, 50 kohms

MULTICHANNEL INPUT  
(FRONT L/R, SURROUND L/R, CENTER):

200 mV, 50 kohms

(SUBWOOFER): 36 mV, 50 kohms

COAXIAL 1, 2 (DIGITAL): 0.5 Vp-p, 75 ohms

Output Level and Impedance

Rec out (TAPE, VIDEO 1): 200 mV, 2.2 kohms

Pre out: 1 V, 470 ohms

Phono Overload: 110 mV RMS at 1 kHz, 0.5% T.H.D.

Frequency Response: 20 Hz to 100 kHz, +1/-3 dB(LINE INPUT)

RIAA Deviation: 20 Hz to 20 kHz,  $\pm 0.8$  dB

Tone Control

Bass:  $\pm 10$  dB at 100 Hz

Treble:  $\pm 10$  dB at 10 kHz

Signal-to-Noise Ratio

Phono: 80 dB (IHF A, 5 mV input)

CD/Tape: 100 dB (IHF A)

### VIDEO SECTION

Input sensitivity/Impedance

(DVD, VIDEO 1, 2, 3,4)

VIDEO (Composite): 1 Vp-p, 75 ohms

Output Level/Impedance

(VIDEO 1, 2, MONITOR)

VIDEO (Composite): 1 Vp-p, 75 ohms

### TUNER SECTION

FM

Tuning Range: 87.5 - 108.0 MHz (50 kHz steps)

Usable Sensitivity

Mono: 11.2 dBf, 1.0  $\mu$ V (75 ohms IHF)

Stereo: 17.2 dBf, 2.0  $\mu$ V (75 ohms IHF)

50 dB Quietening Sensitivity

Mono: 17.2 dBf, 2.0  $\mu$ V (75 ohms)

Stereo: 37.2 dBf, 20  $\mu$ V (75 ohms)

Capture Ratio: 2.0 dB

Image Rejection Ratio 40 dB

IF Rejection Ratio: 90 dB

Signal-to-Noise Ratio

Mono: 76 dB

Stereo: 70 dB

Alternate Channel Attenuation: 55 dB

AM Suppression Ratio: 50 dB

Total Harmonic Distortion

Mono: 0.2%

Stereo: 0.3%

Frequency Response: 30 Hz - 15 kHz,  $\pm 1.0$  dB

Stereo Separation: 45 dB at 1 kHz

30 dB at 100 Hz — 10 kHz

### AM

Tuning Range 530 - 1,710 kHz (10 kHz steps)

Usable Sensitivity: 30  $\mu$ V

Image Rejection Ratio: 40 dB

IF Rejection Ratio: 40 dB

Signal-to-Noise Ratio: 40 dB

Total Harmonic Distortion: 0.7%

### GENERAL

Power Supply: AC 120 V, 60 Hz

Power Consumption: 5.3A

Dimensions (W  $\times$  H  $\times$  D): 435  $\times$  175  $\times$  453 mm

17-1/8"  $\times$  6-7/8"  $\times$  17-13/16"

Weight: 14.7 kg, 32.4 lbs.

### REMOTE CONTROL

Transmitter: Infrared


Signal range: Approx. 5 meters, 16 ft.


Power supply: Two "AA" batteries (1.5 V  $\times$  2)

Specifications and features are subject to change without notice.

## SERVICE PROCEDURES

### 1. Replacing the fuses

 This symbol located near the fuses indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

 Ce symbole indique que le fusible utilise est a rapide. Pour une protection permanente, n'utiliser que fusibles de meme type. Ce dernier est la qu le present symbol est appse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F904	252199	10A-UL, Primary
F941,F942	252160	2.5A-UL/T237,Secondary

### 2. To initialize the unit

This device employs a microprocessor to perform various functions and operations. If interference generated by an external power supply, radio wave, or other electrical source results in accident which causes the specified operations and functions to operate abnormally.

To perform a result, please follow the procedure below.

- 1.Press and hold down the VIDEO-I button, then press the SPEAKER A button.
- 2.After "clear" is displayed, the preset memory and each mode stored in the memory, such as surround, are initialized and will return to the factory setting.

### 3. 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 screw on the back panel.

Specifications: 3.3Mohm $\pm$ 10% at 500V.

### 4. Memory Preservation

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

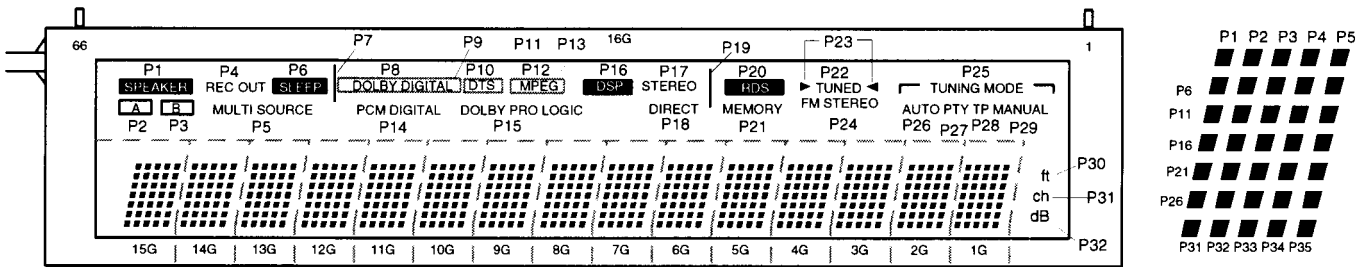
The memory preservation period after the unit has been unplugged varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time the unit has been unplugged. This period is shorter when the unit is exposed to a highly humid climate.

### 5. Changing the AM band step

With the exception of the worldwide models,a tuning step selector switch is not provided. When you change the band step, change the parts as shown below.

	To 10kHz	To 9kHz
R8085	Open	10k
R8086	10k	Open

FL TUBE VIEW



1. How to enter into Debug mode

During press and hold DSP key, press DISPLAY key.  
 Then "DEBUG MODE=NO" is displayed on FL tube.  
 During press and hold DSP key, press DISPLAY key again.  
 Then "DEBUG MODE=YES" is displayed on FL tube.

		0	1
15G,14G	Dialog normalization		
13G	DIR ERF	Digital In	No Digital In
12G	DIR AUTODATA	PCM	AC-3
10G,9G	DIR Address 03H	Refer to the table 2.	
8G,7G	DIR Address 04H	Refer to the table 3.	
5G,4G	Input mode	Refer to the table 4.	
3G	Mode	Refer to the table 5.	
2G	Surround mode	Refer to the table 6.	

Table 1

0X		0X		2X	
X=0	Null	7	Reserved	X=0	Silent
1	Dolby Digital	8	MPEG2 L1	1	DTS LD
2	Reserved	9	MPEG2 L2/3	2	DTS CD
3	Pause	a	Reserved	3	Linear PCM
4	MPEG1 L1	b	DTS1(512)		
5	MPEG1 L2,3/MPEG2 w/o	c	DTS1(1024)		
6	MPEG2 w/e	d	DTS1(2048)		

Table 4

D7	D6	D5	D4	D3	D2	D1	D0	
ERF	0	~AUDIO	AUTO	PEM	FS1	FS0	FS96	Rst
0	0	0	0	0	0	0	0	

Audio bit: 0:Audio, 1:Non audio  
 Pre-empha. output: 0:Off, 1:On  
 Sampling frequency: 00:44.1kHz, 01:Off, 10:48kHz, 11:32kHz

Table 2

0	LFE:Off
1	LFE:On
8	Dolby surround encoder:Off
9	Dolby surround encoder:ON

Table 5

D7	D6	D5	D4	D3	D2	D1	D0	
CV	STC	CRC	LOCK	V	0	BIP	PAR	Rst
0	0	0	0	0	0	0	0	

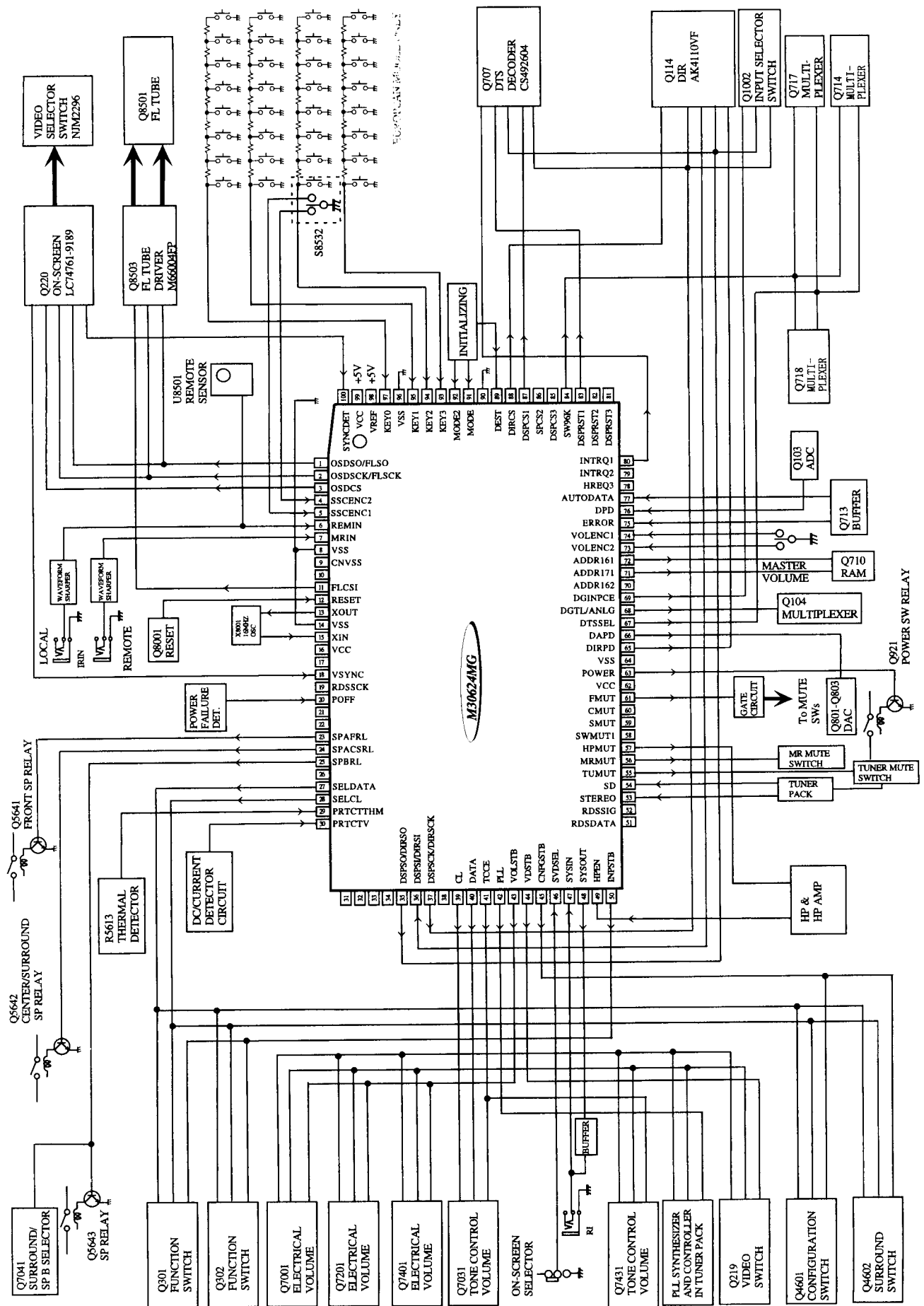
Table 3

Channel Status Validity  
 0:Valid

DSP	When DTS		When DTS		
0	1+1	0	Mono	8	L+R+SL+SR
1	1/0	1	Dual Mono	9	C+L+R+SL+SR
2	2/0	2	L+R	a	CL+CR+L+R+SL+SR
3	3/0	3	(L+R)+(L-R)	b	C+L+R+SL+LR+RR+0V
4	2/1	4	Lt+Rt	c	CF+CR+LF+RF+LR+RR
5	3/1	5	C+L+R	d	CL+C+CR+L+R+SL+SR
6	3/2	6	L+R+S	e	CL+CR+L+R+SL1+SL2+SR1+SR2
		7	C+L+R+S	f	CL+C+CR+L+R+SL+S+SR

Table 6

# MICROPROCESSOR CONNECTION DIAGRAM



## MICROPROCESSOR TERMINAL DESCRIPTIONS

\*Negative logic

PIN NO.	SYMBOL	I/O	DESCRIPTION	PIN NO.	SYMBOL	I/O	DESCRIPTION
1	OSDSO/FLSO	0	Serial data output pin to OSD and Fluorescent tube driver ICs.	51	RDSDATA	1	Data input pin from RDS decoder
2	OSDCK/FLSCK	0	Serial clock output pin to OSD and Fluorescent tube driver ICs.	52	RDSIG	1	Signal input pin from RDS decoder
3	OSDCS	0	Chip select output pin to OSD IC.	53	~STEREO	1	Detection input pin for FM STEREO broadcast
4	SSCENC2	1	Rotary encoder input pin for SSC.	54	~SD	1	Detection input pin for the broadcast
5	SSCENC1	1	Rotary encoder input pin for SSC.	55	TUMUT	0	Muting control output pin for FM section
6	~REMIN	1	Signal input pin from remote controller	56	MRMUT	0	Muting control output pin for multi room section
7	~MRIN	1	Signal input pin from remote controller for Multi room	57	HPMUT	0	Muting control output pin for headphone section
8	VSS	0	Ground pin	58	SWMUT1	0	Muting control output pin for super woofer 1
9	VSS	0	Ground pin	59	SMUT	0	Muting control output pin for surround channel
10				60	GMUT	0	Muting control output pin for center channel
11	FLCSI	0	Chip select output pin to OSD IC.	61	FMUT	0	Muting control output pin for front channel
12	RESET	1	Microprocessor reset input pin	62	VCC	0	Power supply pin
13	XOUT	0	Oscillator circuit output pin for main clock	63	POWER	0	Power source relay control output pin
14	VSS	1	Ground pin	64	VSS	0	Ground pin
15	XIN	1	Oscillator circuit input pin for main clock	65	~DIRPD	0	Power down signal output pin for DIR IC
16	VCC	1	Power supply pin	66	DAPD	0	Reset output pin for D/A converter.
17	VSYNC	1	Vertical synchronizing signal input pin	67	DTSEL	0	DSP switching output pin for DTS/MPEG2 decoder.
18	~RDSCK	1	Clock input pin from RDS decoder	68	DGTL/ANLG	0	Digital/Analog select pin. Digital at the low level.
19	POFF	1	Power failure detection input pin	69	DGINPCE	0	Chip enable output pin for digital input selector IC LC7824.
20				70	ADDR162	0	ADDR 16 output pin to DSP of MPEG2 decoder
21				71	ADDR171	0	ADDR 17 output pin to DTS decoder
22				72	ADDR161	0	ADDR 16 output pin to DTS decoder
23	SPAFRL	0	Speaker A relay control output pin for front channel	73	VOLENC2	1	Rotary encoder input pin for volume
24	SPACSR1	0	Speaker A relay control output pin for center and surround channels	74	VOLENC1	1	Rotary encoder input pin for volume
25	SPBRL	0	Speaker B relay control output pin	75	ERROR	1	Lock error signal input pin for DIR
26				76	DPD	1	Reset signal output pin for A/D converter
27	SELDATA	0	Data output pin to function switch ICs	77	AUTODATA	1	AUTODATA signal input pin for DSP.
28	SELCL	0	Clock output pin to function switch ICs	78	~HREQ3	1	HREQ input pin from the surround DSP
29	PRTCTHMH	1	Detection input pin for Thermal protector	79	~INTRQ2	1	INTRQ input pin from DSP of MPEG2 decoder
30	PRTCTV	1	Detection input pin for Current and voltage protector	80	~INTRQ1	0	INTRQ input pin from DTS decoder
31				81	~DSPRST3	0	Reset signal output pin to the surround DSP
32				82	~DSPRST2	0	Reset signal output pin to DSP of MPEG2 decoder
33				83	~DSPRST1	0	Reset signal output pin to the DTS decoder
34				84	~SW96K	0	Signal pass select pin when PCM 96kHz
35	DSPSO/DIRSO	0	Serial data output pin to DSP and DIR ICs.	85	~DSPCS3	0	Chip select output pin to the surround DSP
36	DSPSI/DIRSI	1	Serial data input pin from DSP and DIR ICs.	86	~DSPCS2	0	Chip select output pin to DSP of MPEG2 decoder
37	DSPSCK/DIRSCK	0	Serial clock output pin to DSP and DIR ICs.	87	~DSPCS1	0	Chip select output pin to the DTS decoder
38				88	~DIRCS	0	Chip select output pin to DIR
39	CL	0	Serial clock output pin to the function switch and Electro volume ICs.	89	DEST	1	Initializing input pin
40	DATA	0	Serial data output pin to the function switch and Electro volume ICs.	90			Mode input pin
41	TCCE	0	Chip enable output pin for the tone control IC TC9184P.	91	MODE	1	Mode 2 input pin
42	PLL	0	Serial data latch output pin for PLL IC on the tuner pack	92	MODE2	1	Operation key connection pin 3
43	VOLSTB	0	Strobe output pin for the Electro volume IC	93	KEY3	1	Operation key connection pin 2
44	VDSSTB	0	Strobe output pin for the function switch ICs	94	KEY2	1	Operation key connection pin 1
45	CNFGSTB	0	Strobe output pin for the function switch ICs	95	KEY1	1	Power supply pin for A/D converter
46	SVDSEL	1	S/Composite video select	96	VSS	1	Operation key connection pin 0
47	YSIN	1	System code input pin	97	KEY0	1	Reference voltage pin for A/D converter
48	YSOUT	0	System code output pin	98	VREF	1	Power supply pin for A/D converter
49	HPEN	1	Detection input pin to insert the headphone jack.	99	VCC	1	External synchronizing judge input pin for on-screen display.
50	INPSTB	0	Strobe output pin of input select ICs.	100	SYNCDT	1	

CAUTION: Replacement of the transistor of mark \*, if necessary, must be made from the same beta group (HFE) as the original type.

## PRINTED CIRCUIT BOARD-PARTS LIST

### POWER AMPLIFIER PC BOARD (NAAF-6600-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Transistors</b>	
Q5001,Q5002	2210755, *	2SC1775A-E,
Q5101,Q5102	2210756, *	2SC1775A-F,
Q5201,Q5202	2211732 or *	2SC1845-F or
Q5301,Q5302	2211733 *	2SC1845-E
Q5003,Q5103	2210755,	2SC1775A-E,
Q5203,Q5303	2210756,	2SC1775A-F,
Q5403	2211732 or	2SC1845-F or
Q5644,Q5645	2211733	2SC1845-E
Q5004,Q5104	2212115,	2SC2458-GR,
Q5204,Q5304	2213284 or	2SC1740S-R or
Q5404	2215864	NP KTC3199-GR
Q5005-Q5007	2211353,	2SA949-O,
Q5105-Q5107	2211354,	2SA949-Y,
Q5205-Q5207	2215843 or	NP KTA1024-O or
	2215844	NP KTA1024-Y
Q5008,Q5108	2211633,	2SC2229-O,
Q5208	2211634,	2SC2229-Y,
	2215853 or	NP KTC3206-O or
	2215854	NP KTC3206-Y
Q5209	2213284	2SC1740S-R
Q5210,Q5310	2213354 or	2SA933S-R or
	2215975	NP KTA1266-GR
Q5212	2211353,	2SA949-O,
	2211354 or	2SA949-Y or
	2215843	NP KTA1024-O
Q5213,Q5313	2203010 or	* 2SC5171 or
	2203434	NP KTD2061-Y
Q5214,Q5314	2203000 or	* 2SA1930 or
	2203424	NP KTB1369-Y
Q5215,Q5315	2202843,	* 2SC5242-O,
	2202842,	* 2SC5242-R,
	2201653,	* 2SC3856-O,
	2201655 or	* 2SC3856-P or
	2201654	* 2SC3856-Y
Q5216,Q5316	2202833,	* 2SA1962-O,
	2202832,	* 2SA1962-R,
	2201663,	* 2SA1492-O,
	2201665 or	* 2SA1492-P or
	2201664	* 2SA1492-Y
Q5217,Q5317	2214984 or	2SC2631-R or
	2214985	2SC2631-S
Q5219,Q5319	2212863 or	2SC3419-O or
	2212864	2SC3419-Y
Q5305-Q5307	2211353,	2SA949-O,
Q5405-Q5407	2211354,	2SA949-Y,
	2215843 or	NP KTA1024-O or
	2215844	NP KTA1024-Y
Q5308	2211633,	2SC2229-O,
Q5408	2211634 or	2SC2229-Y or
	2215853	NP KTC3206-O
Q5309	2213284	2SC1740S-R
Q5401,Q5402	2210755, *	2SC1775A-E,
	2210756, *	2SC1775A-F,
	2211732 or *	2SC1845-F or
	2211733 *	2SC1845-E
Q5601	2212445	2SK365-GR
Q5602-Q5604	2212115,	2SC2458-GR,
	2213284 or	2SC1740S-R or
	2215864	NP KTC3199-GR
Q5605,Q5606	2212282,	DTC144ES,
	2213560 or	RN1204 or
	2215820	NP KRC104M

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Transistors</b>	
Q5607	2202115 or	2SD2061-E or
	2202116	2SD2061-F
Q5641,Q5642	2212115,	2SC2458-GR,
	2213284 or	2SC1740S-R or
	2215864	NP KTC3199-GR
Q5643	2213640,	DTC123JS,
	2214660 or	RN1205 or
	2215830	NP KRC105M
Q5646	2211792 or	2SA992-F or
	2211793	2SA992-E
D5001,D5101	223163 or	1SS133 or
D5201,D5301	223205	1SS270A
D5401	223163 or	1SS133 or
D5601-D5607	223205	1SS270A
D5608	224471303	MTZJ13C,Zener
D5643,D5644	223163 or	1SS133 or
	223205	1SS270A
D5647	224470512	MTZJ5.1B,Zener
	<b>Capacitors</b>	
C5001,C5101	393884707	47 $\mu$ F,50V,Elect.
C5004,C5104	354742219	220 $\mu$ F,16V,Elect.
C5005,C5105	354722219	220 $\mu$ F,6.3V,Elect.
C5010,C5110	354781009	10 $\mu$ F,50V,Elect.
C5017,C5018	354774709	47 $\mu$ F,63V,Elect.
C5117,C5118	354774709	47 $\mu$ F,63V,Elect.
C5201,C5301	393884707	47 $\mu$ F,50V,Elect.
C5204,C5304	354742219	220 $\mu$ F,16V,Elect.
C5205,C5305	354722219	220 $\mu$ F,6.3V,Elect.
C5210,C5212	354781009	10 $\mu$ F,50V,Elect.
C5213,C5313	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic
C5214,C5314	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C5215-C5218	354774709	47 $\mu$ F,63V,Elect.
C5310,C5312	354781009	10 $\mu$ F,50V,Elect.
C5315-C5318	354774709	47 $\mu$ F,63V,Elect.
C5401	393884707	47 $\mu$ F,50V,Elect.
C5404	354742219	220 $\mu$ F,16V,Elect.
C5405,C5645	354722219	220 $\mu$ F,6.3V,Elect.
C5410	354781009	10 $\mu$ F,50V,Elect.
C5417,C5418	354774709	47 $\mu$ F,63V,Elect.
C5601-C5603	354761019	100 $\mu$ F,35V,Elect.
C5646	354741009	10 $\mu$ F,16V,Elect.
C5650	354780109	1 $\mu$ F,50V,Elect.
	<b>Resistors</b>	
R5014,R5015	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5017,R5117	443526804	68 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5018,R5019	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5114,R5115	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5118,R5119	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5214,R5215	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5217,R5317	443526804	68 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5218,R5219	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5222,R5322	5210290	N06HR4.7KBE,Trimming
R5226	443524714	470 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5229,R5329	443521514	150 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5230,R5231	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
R5232,R5332	4000132 or	0.22 $\Omega$ *2,5.5W or
	4500245	0.22 $\Omega$ *2,5.5W,Metal plate
R5240,R5340	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
R5241,R5242	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
R5314,R5315	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5318,R5319	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5330,R5331	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal

CAUTION: Replacement of the transistor of mark \*, if necessary, must be made from the same beta group (HFE) as the original type.

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Resistors</b>		
R5341,R5342	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
R5414,R5415	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5417	443526804	68 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5418,R5419	443521014	100 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5643,R5644	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
<b>Relays</b>		
RL5643,RL5644	25065517, 25065563 or 25065586	NRL-2P5A-DC24-098, NRL-2P5A-DC24-129 or NRL-2P5A-DC24-142
<b>Plugs</b>		
JL5623B	25055628	NPLG-7P590
P5201,P5301	25055038	NPLG-2P29
P5638	25055099	NPLG-2P83
P5641,P5642	25055038	NPLG-2P29
<b>Sockets</b>		
JL5622B	25050271	NSCT-7P99
JL5624B	25050267	NSCT-3P95
JL5625A	25051088	NSCT-4P875
P3011A	200B3381830UL	NSAS-18P0729
P5002B,P5402B	25051426	NSCT-4P1213
P5102B	25051427	NSCT-5P1214
P5633B	25051428	NSCT-6P1215
P5634A	2009990550UL	NSAS-8P0727
<b>Clamp</b>		
P5611	260224	CP-1S

#### FRONT/CENTER POWER AMPLIFIER PC BOARD (NAAF-6601-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Transistors</b>		
Q5009	2213284	2SC1740S-R
Q5010,Q5110	2213354 or	2SA933S-R or
Q5410	2215975	NP KTA1266-GR
Q5013,Q5113	2203010 or	* 2SC5171 or
Q5413	2203434	NP KTD2061-Y
Q5014,Q5114	2203000 or	* 2SA1930 or
Q5414	2203424	NP KTB1369-Y
Q5015,Q5115	2202843,	* 2SC5242-O,
Q5415	2202842,	* 2SC5242-R,
	2201653,	* 2SC3856-O,
	2201655 or	* 2SC3856-P or
	2201654	* 2SC3856-Y
Q5016,Q5116	2202833,	* 2SA1962-O,
Q5416	2202832,	* 2SA1962-R,
	2201663,	* 2SA1492-O,
	2201665 or	* 2SA1492-P or
	2201664	* 2SA1492-Y
Q5017,Q5117	2214984 or	2SC2631-R or
Q5417	2214985	2SC2631-S
Q5019,Q5119	2212863 or	* 2SC3419-O or
Q5419	2212864	* 2SC3419-Y
Q5109,Q5409	2213284	2SC1740S-R
<b>Diodes</b>		
D5621	22380273	RS804M
D5641,D5642	223163 or	1SS133 or
D5645,D5646	223205	1SS270A
<b>Capacitors</b>		
C5012,C5112	354781009	10 $\mu$ F,50V,Elect.
C5013,C5113	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic
C5014,C5114	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C5023,C5123	354781009	10 $\mu$ F,50V,Elect.
C5412	354781009	10 $\mu$ F,50V,Elect.
C5413	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Capacitors</b>		
C5414	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C5423	354781009	10 $\mu$ F,50V,Elect.
C5623,C5624	3504353	15000 $\mu$ F,63V,Elect.
<b>Resistors</b>		
R5022,R5122	5210261	N06HR5KBC,Trimming
R5029,R5129	443521514	150 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5030,R5031	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
R5032,R5132	4000132 or	0.22 $\Omega$ *2,5.5W or
R5432	4500245	0.22 $\Omega$ *2,5.5W,Metal plate
R5040	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
R5130,R5131	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
R5140,R5440	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
R5422	5210261	N06HR5KBC,Trimming
R5429	443521514	150 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
R5430,R5431	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
<b>Relays</b>		
RL5641	25065563, 25065517 or 25065586	NRL-2P5A-DC24-129, NRL-2P5A-DC24-098 or NRL-2P5A-DC24-142
RL5642	25065574	NRL-1P5A-DC24-134
<b>Plugs</b>		
P5001,P5101	25055038	NPLG-2P29
P5002A,P5402A	25055783	NPLG-4P739
P5102A	25055784	NPLG-5P740
P5401	25055038	NPLG-2P29
P5633A	25055785	NPLG-6P741
<b>Sockets</b>		
JL5621A	25051110	NSCT-6P897
JL5622A	25051111	NSCT-7P898
JL5624A	25051107	NSCT-3P894
P5631A	2009990549UL	NSAS-12P0726
P5635A	2009990551UL	NSAS-4P0728
<b>Terminal</b>		
C5623A	27141723	Bus

#### THERMAL DETECTOR PC BOARD (NAETC-6602-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
R5613	4000150	PTH9M04BC222TS2F333, Thermistor
R5614	4000153	PTH9M04BF222TS2F333, Thermistor
JL5625B	25051088	NSCT-4P875,Socket

#### SECONDARY CIRCUIT PC BOARD (NAETC-6606-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
C941,C942	374731044	0.1 $\mu$ F $\pm$ 5%,100V,Plastic capacitor
R941,R942	453530104	1 $\Omega$ $\pm$ 5%,1/2W,Metal resistor
JL5621B	25051110	NSCT-6P897,Socket
JL942B	25050286	NSCT-9P114,Socket
P5612	260224	CP-1S,Clamp

#### DSP CIRCUIT PC BOARD (NADG-6608-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>ICs</b>		
Q1002	22241416	LC7824
Q101,Q102	22241383R2	NJM4565M-D
Q103	22241361R2	AK5383VS
Q104	22274157ER2TO	TC74VHC157FT
Q114	22241338R2	AK4110VF
Q115	222740046R2TO	TC74HCU04F
Q701	22241358R9	CS492505-CL
Q705	22274125ER2TO	TC74VHC125FT
Q707	22241340R9	CS492604-CL
Q708,Q709	22274574ER2TO	TC74VHC574FT
Q710	22241415R2	LC372100PFI0-K34-TLM



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

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ICs</b>	
Q711	22274157ER2TO	TC74VHC157FT
Q713	22274244ER2TO	TC74VHC244FT
Q714	22274153ER2TO	TC74VHC153FT
Q717,Q718	22274153ER2TO	TC74VHC153FT
Q801-Q803	22241360R2	AK4393VF
Q813-Q815	22241409R2	BA15532F
	<b>Photo couplers</b>	
U1003,U1004	24120037	TORX178A
	<b>Crystal</b>	
X101	3010320	AT-49 12.288MHz
	<b>Diodes</b>	
D1002,D1003	224490330R2	UDZ3.3B
D101-D112	223234R2 or	1SS352 or
D701,D702	223233R1	1SS355
	<b>Coils</b>	
L1001-L1003	231237M022R2	NCH-1471
L101	231237M022R2	NCH-1471
L103	230921R2	BLM21B222SPT
L108-L110	231237M022R2	NCH-1471
L703-L705	231237M022R2	NCH-1471
L801,L802	231237M022R2	NCH-1471
R117,R118	230948R2	BLM21A102F
R122,R125	230921R2	BLM21B222SPT
R127,R131	230921R2	BLM21B222SPT
R797,R798	230948R2	BLM21A102F
	<b>Capacitors</b>	
C1005	356724709R2	47 μ F,6.3V,Elect.
C101,C102	356724709R2	47 μ F,6.3V,Elect.
C107-C110	356741009R2	10 μ F,16V,Elect.
C118	356724709R1	47 μ F,6.3V,Elect.
C120,C148	356724709R2	47 μ F,6.3V,Elect.
C158	356724709R2	47 μ F,6.3V,Elect.
C719	356721019R2	100 μ F,6.3V,Elect.
C737,C738	356724709R2	47 μ F,6.3V,Elect.
C742	356724709R2	47 μ F,6.3V,Elect.
C801-C803	356724709R2	47 μ F,6.3V,Elect.
C814,C816	356724709R2	47 μ F,6.3V,Elect.
C818,C820	356724709R2	47 μ F,6.3V,Elect.
C821,C823	356724709R2	47 μ F,6.3V,Elect.
C825,C827	356724709R2	47 μ F,6.3V,Elect.
C831,C832	356741009R2	10 μ F,16V,Elect.
C841-C844	356741009R2	10 μ F,16V,Elect.
	<b>Terminals</b>	
P1001,P1002	25045478	NPJ-1PDOR296
	<b>Sockets</b>	
P701	25051442	NSCT-20P1229
P702,P801	25051438	NSCT-16P1225
P803	25051430	NSCT-8P1217

**PRIMARY CIRCUIT PC BOARD (NAPS-6610-4)**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Transistor</b>	
Q921	2213640 or 2215830	DTC123JS or NP KRC105M
	<b>Diodes</b>	
D921-D924	22380035, 22380032 or 22380260	GP104003E, 1SR139-100 or RL1N4003
D925	223163 or 223205	1SS133 or 1SS270A
	<b>Power transformer</b>	
T902	2300670A Δ	NPT-1111D

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Capacitors</b>	
C901	3500196S	RE275V-103M
C922	354742219	220 μ F,16V,Elect.
	<b>Resistors</b>	
R901	431533355 Δ	RC1/2GFKUL-3.3M,Solid
R921	453530824	8.2 Ω ±5%,1/2W,Metal
	<b>Relay</b>	
RL901	25065584, Δ	NRL-1P10A-DC12-140,
	25065248, Δ	NRL-1P15A-DC12-29,
	25065516 or Δ	NRL-1P10A-DC12-097 or
	25065588 Δ	NRL-1P10A-DC12-143
	<b>AC inlet</b>	
P903	25055960 Δ	NPLG-2P913
	<b>Fuse holders</b>	
F911,F912	25052133 Δ	NSCT-1P2031
	<b>Sockets</b>	
JL9051b	25050267	NSCT-3P95
P902	25051126 Δ	NSCT-4P913
	<b>Fuse</b>	
F904	252199 Δ	10A-UL,Fuse

**INPUT TERMINAL PC BOARD (NAAF-6611-4)**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ICs</b>	
Q301	22240829	TC9274N-008
Q302	22240799	TC9163AN
Q308,Q311	22240191	NJM4565D-D
	<b>Transistors</b>	
Q309,Q310	2213631 or 2213632	RN1241-A or RN1241-B
Q312	2213510, 2215770 or Δ	DTA114ES, KRA102M or RN2202
	<b>Capacitors</b>	
C321,C322	354780229	2.2 μ F,50V,Elect.
C323,C324	354741009	10 μ F,16V,Elect.
C361	353741009	10 μ F,16V,Elect.
C341,C343	354744709	47 μ F,16V,Elect.
C344,C346	354744709	47 μ F,16V,Elect.
C349,C351	353744709	47 μ F,16V,Elect.
C353,C354	393884707	47 μ F,50V,Elect.
C357,C358	393884707	47 μ F,50V,Elect.
	<b>Sockets</b>	
P301b	25051438	NSCT-16P1225
P302b	25051429	NSCT-7P1216
	<b>Plug</b>	
P303b	25055234	NPLG-3P218
	<b>Terminals</b>	
P304-P306	25045583 or 25045565	NPJ-6PDRW394 or NPJ-6PDBL380

**FRONT VIDEO TERMINAL PC BOARD (NAETC-6612-4)**

CIRCUIT NO.	PART NO.	DESCRIPTION
P212	25051749	NSCT-4P1536,Socket
P213	25045402	NPJ-3PDBL227,Terminal
P204a	2009990434UL	NSAS-10P0578,Socket
P303a	2009990513UL	NSAS-6P0675,Socket

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

#### SURROUND/FRONT B SPEAKER TERMINAL PC BOARD (NAETC-6614-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Capacitors</b>	
C5261,C5262	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C5361,C5362	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
	<b>Resistors</b>	
R5261,R5262	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
R5361,R5362	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
	<b>Terminal</b>	
P5636	25060292	NTM-8PDMN223
	<b>Plugs</b>	
P5634b	25055167	NPLG-4P151
P5635b	25055165	NPLG-2P149

#### FRONT/CENTER SPEAKER TERMINAL PC BOARD (NAETC-6615-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Capacitors</b>	
C5061,C5161	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C5461	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
	<b>Resistors</b>	
R5061,R5161	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
R5461	453630824	8.2 $\Omega$ $\pm$ 5%,1W,Metal
	<b>Terminal</b>	
P5632	25060291	NTM-6PDMN222
	<b>Plug</b>	
P5631b	25055169	NPLG-6P153

#### POWER SWITCH PC BOARD (NAETC-6619-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
C906	3500196S	△ RE275V-103M,Capacitor IS
S906	25035550	△ NPS-111-L512P,Switch

#### DISPLAY CIRCUIT PC BOARD (NADIS-6621-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>FL tube</b>	
Q8501	212199	16-BT-66GK
	<b>IC</b>	
Q8503	22240685R9	M66004FP
	<b>Remote sensor</b>	
U8501	241330	PIC-26043TE2
	<b>Transistors</b>	
Q8502,Q8505	2212115,	2SC2458-GR,
	2213284 or	2SC1740S-R or
	2215864	NP KTC3199-GR
Q8504	2213510,	DTA114ES,
	2214350 or	RN2202 or
	2215770	NP KRA102M
Q8506	2215770,	NP KRA102M,
	2213510 or	DTA114ES or
	2214350	RN2202
Q8507	221282,	DTC144ES,
	2213560 or	RN1204 or
	2215820	NP KRC104M
	<b>Diodes</b>	
D8501,D8505	223163 or	1SS133 or
	223205	1SS270A
D8502	225290	SEL4110R,LED
D8503	225291D	SEL4910D-D,LED
D8504	224470823	MTZJ8.2C,Zener

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Capacitors</b>	
C8515	354721019	100 $\mu$ F,6.3V,Elect.
C8506	354741009	10 $\mu$ F,16V,Elect.
C8518	354780109	1 $\mu$ F,50V,Elect.
C8510	354781009	10 $\mu$ F,50V,Elect.
C8514	375524744	0.47 $\mu$ F $\pm$ 5%,50V,Plastic
	<b>Resistor</b>	
R8542	49163103415	RM1/10J-10K*15,Array
	<b>Switches</b>	
S8501-S8531	25035652	NPS-111-S604,Push
S8532	25065507	EC11B15244,Rotary
	<b>Sockets</b>	
JL8501A	25051109	NSCT-5P896
JL8502A	25051107	NSCT-3P894
P8501	25052071,	NSCT-25P1858,
	25050965,	NSCT-25P752,
	25051329,	NSCT-25P1118,
	25051869 or	NSCT-25P1656 or
	25052258	NSCT-25P2155
	<b>Holder</b>	
Q8501A	27191074	(FL)

#### S-VIDEO TERMINAL PC BOARD (NAVD-6622-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ICs</b>	
Q215-Q218	22241347	NJM2296D
Q219	22240800	TC9164AN
	<b>Transistors</b>	
Q201-Q208	2213631 or	RN1241-A or
Q211-Q214	2213632	RN1241-B
	<b>Capacitors</b>	
C232,C233	354744719	470 $\mu$ F,16V,Elect.
	<b>Plug</b>	
P202B	25055236	NPLG-5P220
	<b>Sockets</b>	
JL201A	25051093	NSCT-9P880
JL202A	25051094	NSCT-10P881
P201B	25051428	NSCT-6P1215
P205,P206	25051957	NSCT-12P1744
P207	25051955	NSCT-4P1742

#### ON-SCREEN PC BOARD (NAVD-6623-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ICs</b>	
Q220	22241037	LC74761-9189
Q223,Q224	22241347	NJM2296D
	<b>Transistors</b>	
Q221	2212115,	2SC2458-GR,
	2213284 or	2SC1740S-R or
	2215864	NP KTC3199-GR
Q222	2212125,	2SA1048-GR
	2213354 or	2SA933S-R
	2215975	NP KTA1266-GR
Q225-Q230	2213631 or	RN1241-A or
	2213632	RN1241-B
	<b>Diodes</b>	
D213-D215	223163 or	1SS133 or
	223205	1SS270A
	<b>Crystal</b>	
X201	3010167	XTL-14.32M
	<b>Coils</b>	
L201	233454J056	NCH-1452 056J
L202	233454K220	NCH-1452 220K

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

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Capacitors</b>			<b>Diodes</b>	
C208,C219	354721019	100 $\mu$ F,6.3V,Elect.	D8003,D8007	224490560R2	UDZ5.6B,Zener
C210,C221	375524744	0.47 $\mu$ F $\pm$ 5%,50V,Plastic	D8101,D8102	223234R2 or	1SS352 or
C211	354784799	0.47 $\mu$ F,50V,Elect.	D8201	223233R1	1SS355
C214	374722234	0.022 $\mu$ F $\pm$ 5%,50V,Plastic	D9051	22380022F	RBV402
C215,C225	354780109	1 $\mu$ F,50V,Elect.	D9058	224493300R2	UDZ33B,Zener
C216	374726824	6800pF $\pm$ 5%,50V,Plastic		<b>Coils</b>	
C217	374721224	1200pF $\pm$ 5%,50V,Plastic	L8001	231237K220R2	NCH-1477
C218	354783399	0.33 $\mu$ F,50V,Elect.	R8034,R8036	230948R2	BLM21A102F
C223,C226	354721019	100 $\mu$ F,6.3V,Elect.		<b>Oscillator</b>	
C224	354724719	470 $\mu$ F,6.3V,Elect.	X8001	3010322	CST16.00MXW0C1,Ceramic
C227	354744709	47 $\mu$ F,16V,Elect.		<b>Capacitors</b>	
C230,C231	354744719	470 $\mu$ F,16V,Elect.	C2001	354784799	0.47 $\mu$ F,50V,Elect.
	<b>Terminals</b>		C2002	354780339	3.3 $\mu$ F,50V,Elect.
P209	25045566	NPJ-4PDYE381	C6071,C6171	354741009	10 $\mu$ F,16V,Elect.
P210	25045363	NPJ-3PDYE208	C6072,C6172	354721019	100 $\mu$ F,6.3V,Elect.
	<b>Switch</b>		C6073-C6075	354741009	10 $\mu$ F,16V,Elect.
S201	25065581	NSS-22203	C6173,C6175	354741009	10 $\mu$ F,16V,Elect.
	<b>Sockets</b>		C8001,C8002	354721019	100 $\mu$ F,6.3V,Elect.
JL201B	25051093	NSCT-9P880	C8003	354780109	1 $\mu$ F,50V,Elect.
JL202B	25051094	NSCT-10P881	C8007	3000078	DX-5R5L104,Super
P203B	25051431	NSCT-9P1218	C8008	375524744	0.47 $\mu$ F $\pm$ 5%,50V,Plastic
			C8011	354780339	3.3 $\mu$ F,50V,Elect.
			C8013	354741009	10 $\mu$ F,16V,Elect.
			C8201,C8202	374722234	0.022 $\mu$ F $\pm$ 5%,50V,Plastic
			C8203	354741019	100 $\mu$ F,16V,Elect.
			C9053	354744729	4700 $\mu$ F,16V,Elect.
			C9054	354741029	1000 $\mu$ F,16V,Elect.
			C9056	354724719	470 $\mu$ F,6.3V,Elect.
			C9058,C9060	354741009	10 $\mu$ F,16V,Elect.
			C9062,C9064	354741009	10 $\mu$ F,16V,Elect.
			C9063	354780229	2.2 $\mu$ F,50V,Elect.
			C9065	354762229	2200 $\mu$ F,35V,Elect.
			C9066	354761029	1000 $\mu$ F,35V,Elect.
			C9068,C9070	354741009	10 $\mu$ F,16V,Elect.
			C9069	354780229	2.2 $\mu$ F,50V,Elect.
			C9071	354781019	100 $\mu$ F,50V,Elect.
			C9072	354771019	100 $\mu$ F,63V,Elect.
			C9076	354742229	2200 $\mu$ F,16V,Elect.
			C9078,C9080	354741009	10 $\mu$ F,16V,Elect.
				<b>Resistors</b>	
			R6078,R6178	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
			R9051,R9052	452638294	0.82 $\Omega$ $\pm$ 5%,1W,Metal
			R9053	452630154	1.5 $\Omega$ $\pm$ 5%,1W,Metal
			R9054	452630154	1.5 $\Omega$ $\pm$ 5%,1W,Metal
			R9055	452630334	3.3 $\Omega$ $\pm$ 5%,1W,Metal
			R9056	452530334	3.3 $\Omega$ $\pm$ 5%,1/2W,Metal
			R9057	452530104	1 $\Omega$ $\pm$ 5%,1/2W,Metal
			R9058,R9059	452630474	4.7 $\Omega$ $\pm$ 5%,1W,Metal
			R9060,R9066	452530474	4.7 $\Omega$ $\pm$ 5%,1/2W,Metal
			R9061,R9062	452530824	8.2 $\Omega$ $\pm$ 5%,1/2W,Metal
			R9065	453530224	2.2 $\Omega$ $\pm$ 5%,1/2W,Metal
			R9067,R9068	442621014	100 $\Omega$ $\pm$ 5%,1W,Metal oxide
			R9069	442521204	12 $\Omega$ $\pm$ 5%,1/2W,Metal oxide
				<b>Fuse holders</b>	
			F943-F946	25052133 $\Delta$	NSCT-1P2031
				<b>Sockets</b>	
			JL5623A	25051091	NSCT-7P878
			JL9051A	25051107	NSCT-3P894
			JL942A	25051113	NSCT-9P900
				<b>Plugs</b>	
D8001	22380260,	RL1N4003,	P201A	25055785	NPLG-6P741
D9052-D9057	22380032 or	1SR139-100 or	P203A	25055788	NPLG-9P744
D9059-D9061	22380035	GPI04003E	P3012A,P3013A	25055799	NPLG-20P755
D8002	223234R2 or	1SS352 or			
D804-D806	223233R1	1SS355			

#### HEADPHONE TERMINAL PC BOARD (NAETC-6624-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
JL8501B	25051109	NSCT-5P896,Socket
P8502	25045385	YKB26-5153,Headphone

#### MAIN VOLUME PC BOARD (NAETC-6625-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
JL8502B	25051107	NSCT-3P894,Socket
S8533	25065575	EC16B2425,Rotary encoder

#### MAIN CIRCUIT PC BOARD (NAAR-6627-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ICs</b>	
Q6075	22240191	NJM4565D-D
Q8003	22241420	M30624MG-238FP
Q9051	22278033DNEC	MPC2933HF
Q9052-Q9054	222780055	78M05HF
Q9055	222790055	79M05FA
Q9056,Q9057	222780125	78M12HF
Q9059	222780565JRC	NJM78M56FA
Q9060	222780055	78M05HF
	<b>Transistors</b>	
Q2001,Q2002	2215410R2	RN1441
Q2003	2214530R2	RN2402
Q6071,Q6072	2215410R2	RN1441
Q6073	2214530R2	RN2402
Q6074,Q8001	2214490R2	RN1404
Q6171,Q6172	2215410R2	RN1441
Q8002,Q8102	2214530R2	RN2402
Q8101,Q8103	2214490R2	RN1404
Q8201,Q8202	2214470R2	RN1402
Q8204,Q8205	2214470R2	RN1402
Q9058	2211455	2SA1015-GR
	<b>Photo couplers</b>	
Q8203,Q8206	24120043	ON3131
	<b>Diodes</b>	
D8001	22380260,	RL1N4003,
D9052-D9057	22380032 or	1SR139-100 or
D9059-D9061	22380035	GPI04003E
D8002	223234R2 or	1SS352 or
D804-D806	223233R1	1SS355

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

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Plugs</b>			<b>Capacitors</b>	
P301A,P702A	25055795	NPLG-16P751	C3079,C3080	354741009	10 $\mu$ F,16V,Elect.
P302A	25055786	NPLG-7P742	C3093,C3094	354741009	10 $\mu$ F,16V,Elect.
P701A	25055799	NPLG-20P755	C3097,C3098	354721019	100 $\mu$ F,6.3V,Elect.
P8002A	25052024,	NSCT-15P1811,	C4005,C4105	374721244	0.12 $\mu$ F $\pm$ 5%,50V,Plastic
	25050955,	NSCT-15P742,	C4006,C4106	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
	25051281,	NSCT-15P1070,	C4602,C4604	354741009	10 $\mu$ F,16V,Elect.
	25051822 or	NSCT-15P1609 or	C6604	354781009	10 $\mu$ F,50V,Elect.
	25052211	NSCT-15P2108	C7001,C7002	393884707	47 $\mu$ F,50V,Elect.
P8003A	25055789	NPLG-10P745	C7003,C7004	354744709	47 $\mu$ F,16V,Elect.
P801A	25055795	NPLG-16P751	C7011,C7111	354741009	10 $\mu$ F,16V,Elect.
P803A	25055787	NPLG-8P743	C7013,C7113	354780229	2.2 $\mu$ F,50V,Elect.
	<b>Terminals</b>		C7015,C7024	393884707	47 $\mu$ F,50V,Elect.
P8201,P8202	25045504	NPJ-1PDBL319	C7033,C7034	374721534	0.015 $\mu$ F $\pm$ 5%,50V,Plastic
P8203	25045504	NPJ-1PDBL319,RI	C7035,C7036	374724724	4700pF $\pm$ 5%,50V,Plastic
P8501A	25052034,	NSCT-25P1821,	C7039,C7040	374721234	0.012 $\mu$ F $\pm$ 5%,50V,Plastic
	25050965,	NSCT-25P752,	C7041,C7042	374728234	0.082 $\mu$ F $\pm$ 5%,50V,Plastic
	25051291,	NSCT-25P1080,	C7045,C7046	354744709	47 $\mu$ F,16V,Elect.
	25051832 or	NSCT-25P1619 or	C7115,C7124	354784709	47 $\mu$ F,50V,Elect.
	25052221	NSCT-25P2118	C7201,C7203	354744709	47 $\mu$ F,16V,Elect.
	<b>Fuses</b>		C7202,C7205	354784709	47 $\mu$ F,50V,Elect.
F941,F942	252160 $\Delta$	2.5A-UL/T-237,Fuse	C7204,C7206	354741009	10 $\mu$ F,16V,Elect.
	<b>Screws</b>		C7211,C7311	354741009	10 $\mu$ F,16V,Elect.
Q9051B,Q9052B	82143010	3P+10FN(BC),Pan head	C7213,C7313	354784709	47 $\mu$ F,50V,Elect.
Q9054B,Q9055B	82143010	3P+10FN(BC),Pan head	C7401,C7402	354744709	47 $\mu$ F,16V,Elect.
	<b>Heatsinks</b>		C7403,C7404	393884707	47 $\mu$ F,50V,Elect.
Q9054A,Q9055A	27160391		C7411,C7511	354741009	10 $\mu$ F,16V,Elect.
Q9051A,Q9052A	27160209	RAD-67	C7413,C7513	354780229	2.2 $\mu$ F,50V,Elect.
			C7415,C7422	393884707	47 $\mu$ F,50V,Elect.
			C7515,C7522	354784709	47 $\mu$ F,50V,Elect.
			C7431	374721534	0.015 $\mu$ F $\pm$ 5%,50V,Plastic
			C7432	374724724	4700pF $\pm$ 5%,50V,Plastic
			C7434,C7534	374721234	0.012 $\mu$ F $\pm$ 5%,50V,Plastic
			C7435	374728234	0.082 $\mu$ F $\pm$ 5%,50V,Plastic
			C7524	374722734	0.027 $\mu$ F $\pm$ 5%,50V,Plastic
			C7534	374721234	0.012 $\mu$ F $\pm$ 5%,50V,Plastic
			C7535	374728234	0.082 $\mu$ F $\pm$ 5%,50V,Plastic
			<b>Terminals</b>		
			P3051	25045584 or	NPJ-6PDBRW395 or
				25045585	NPJ-6PDBRW396
			P3052	25045565	NPJ-6PDBL380
			P7051	25045587	NPJ-4PDBRW398
			<b>Plug</b>		
			P3011B	25055139	NPLG-9P123
			<b>Sockets</b>		
			P3012B,P3013B	25051442	NSCT-20P1229
<b>PREAMPLIFIER PC BOARD (NAAF-6628-4)</b>					
CIRCUIT NO.	PART NO.	DESCRIPTION			
	<b>ICs</b>				
Q3051,Q3061	22241383R2	NJM4565M-D			
Q3071,Q3091	22241383R2	NJM4565M-D			
Q4001,Q4101	22241383R2	NJM4565M-D			
Q4201,Q4301	22241383R2	NJM4565M-D			
Q4601	22240786	TC9274N-006			
Q4602	22241221R2	TC9164AF			
Q7001,Q7201	22241220R2	TC9459F			
Q7011,Q7021	22241383R2	NJM4565M-D			
Q7031,Q7431	22241253	TC9184AP			
Q7041	22240025	LC4966			
Q7211	22241383R2	NJM4565M-D			
Q7401	22241220R2	TC9459F			
Q7411,Q7421	22241383R2	NJM4565M-D			
	<b>Transistors</b>				
Q6001-Q6003	2215410R2	RN1441			
Q6101-Q6103	2215410R2	RN1441			
Q6201-Q6203	2215410R2	RN1441			
Q6301-Q6303	2215410R2	RN1441			
Q6401-Q6403	2215410R2	RN1441			
Q6501,Q6502	2215410R2	RN1441			
Q6601	2214470R2	RN1402			
Q6602	2214550R2	RN2404			
Q6605	2214470R2	RN1402			
	<b>Diodes</b>				
D7201,D7202	224490910R2	UDZ9.1B,Zener			
	<b>Capacitors</b>				
C3053,C3054	354784709	47 $\mu$ F,50V,Elect.			
C3063,C3064	354784709	47 $\mu$ F,50V,Elect.			
C3067,C3077	374726224	6200pF $\pm$ 5%,50V,Plastic			
C3068,C3078	374721824	1800pF $\pm$ 5%,50V,Plastic			
C3069,C3070	354741009	10 $\mu$ F,16V,Elect.			
C3073,C3074	354784709	47 $\mu$ F,50V,Elect.			

# ADJUSTMENT AND CONFIRMATION

## 1. Idling current adjustment

Before Idling adjustment, turn the trimming resistors R5022, R5122, R5222, R5322 and R5422 to counter clockwise.

Connect the DC voltmeter to sockets P5001, P5101, P5201, P5301 and P5401.

After turn POWER to ON, adjust the trimming resistors R5022, R5122, R5222, R5322 and R5422 so that the reading of voltmeter becomes 1.0 mV.

After adjustment, attach the top cover.

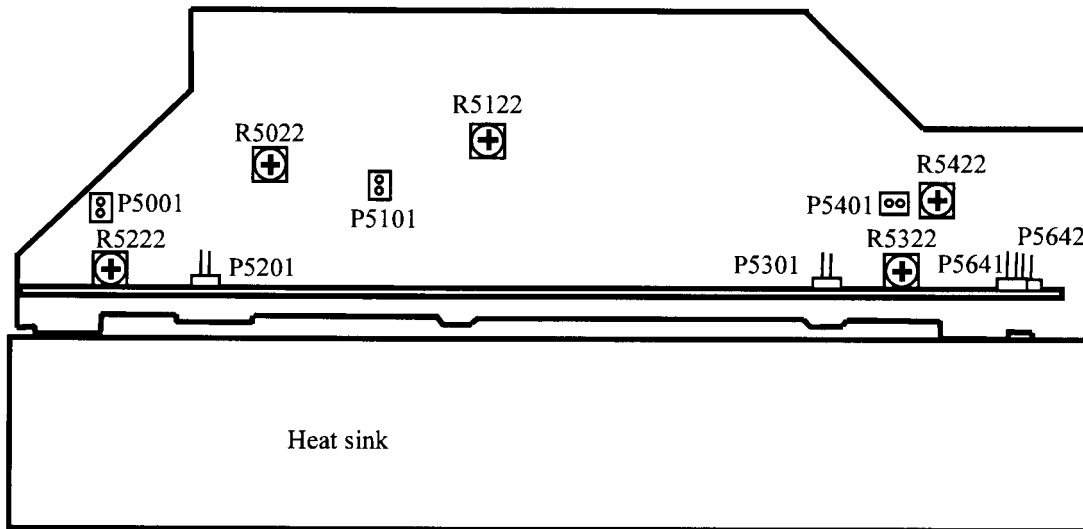
Confirm the voltage of above points after five minutes.

When less than 6 mV, readjust the above resistors so that the voltage becomes 6.0 mV.

When 6 mV to 7.5 mV, you are not necessary to adjust.

When more than 7.5 mV, readjust the above resistors so that the voltage becomes 7.5 mV.

Note: No load and No signal



## Confirmation of protection circuit

### 1. Confirmation of speaker relay

Confirm that the speaker relay turns ON approximate 5 seconds after the power switch is turned ON.

Confirm that the speaker relay turns OFF immediately after the power switch is turned OFF.

### 2. Confirmation of DC detection circuit

Press and hold down CD button, then press SPEAKERS-A and SPEAKERS-B buttons at the same time.

During "TEST-1-00" on the FL tube light on and off, press PRESET/MODE ADJ button.

Apply DC 1.5~3V to MULTI CHANNEL INPUT terminals with no load.

Confirm that the speaker relay turns OFF.

Apply DC -1.5~-3V to MULTI CHANNEL INPUT terminals with no load.

Confirm that the speaker relay turns OFF.

### 3. Confirmation of Current detection circuit

Press and hold down CD button, then press SPEAKERS-A and SPEAKERS-B buttons at the same time.

During "TEST-1-00" on the FL tube light on and off, press PRESET/MODE ADJ button.

Connect Differentiator below and apply the 200Hz square signal to the terminal of MULTI CHANNEL INPUT.

Adjust the attenuator or Volume so that the output level becomes 35V p-p.

Confirm that the speaker relay does not turn OFF when a 3.0 ohm load is connected.

Confirm that the speaker relay turns OFF when a 1.5 ohm load is connected.

## Confirmation of Fan

Set the unit to "TEST-1-00" and apply the signal 1kHz, -30dB (32 mV) to Multi channel inputs except Sub Woofer with no load. Confirm that the fan turns after few seconds.

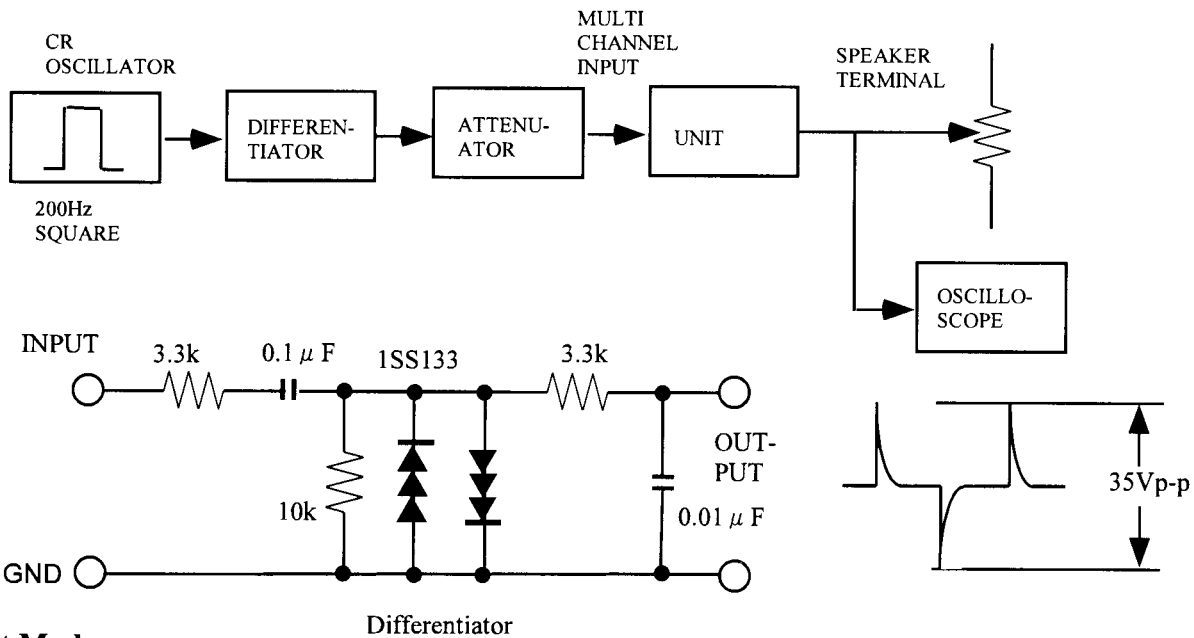
Connect the 22 ohm resistor between terminal P5642 with no input.

Confirm that the fan turns after few seconds.

Confirmation of thermal detection circuit

Set the unit to "TEST-1-00" and connect the 22 ohm resistor between terminal P5641.

Confirm that "Thermal Protect" on the fluorescent tube light on.

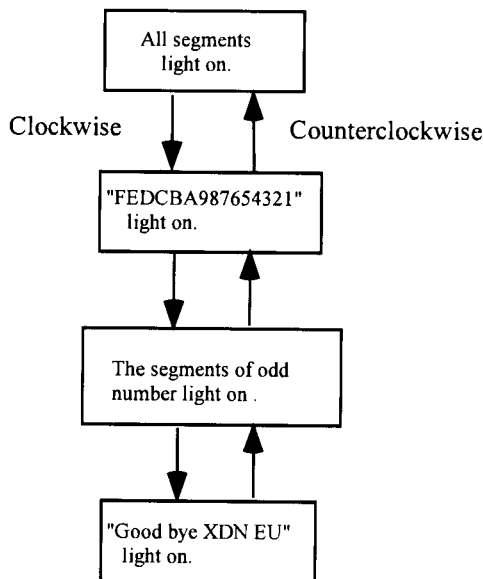
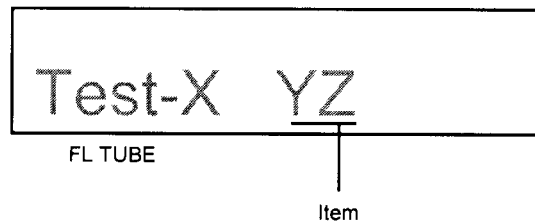


Test Mode

1. Turn POWER button on.
2. Press and hold down CD button, then press SPEAKERS-A and SPEAKERS-B buttons at the same time.
3. During "TEST-1-00" on the FL tube is displayed, press CD button to set the unit to the test mode of FL tube.

Test mode of FL tube

Turn PRESET/MODE ADJ button to change the test mode of FL tube.



Press PRESET/MODE ADJ button to finish the test mode of FL tube.

- XDN EU  
1 2 3 4
1. THX: 1:THX 0:None
  2. Digital output: 1:Yes 0:No
  3. N: 1:NTSC/PAL: Auto PAL 0: NTSC
  4. EU:Europe US: USA SA:Saudi JP:Japan

U17 NAWD-6623  
ON-SCREEN PC BOARD  
<38, 60>

U20 NAAR-6627  
MAIN CIRCUIT PC BOARD  
<41 to 44>

U7 NAAF-6611  
INPUT PC BOARD  
<37, 39, 40>

U21 NAAF-6628  
PREAMP. PC BOARD  
<33 to 36>

U5  
MADG-6608  
DSP CIRCUIT  
PC BOARD  
<45 to 48>

U2  
NAAF-6601  
FRONT/CENTER  
POWER AMP.  
PC BOARD  
<49 to 52>

U11  
NAETC-6615  
SP. TERMINAL  
PC BOARD  
<50, 52>

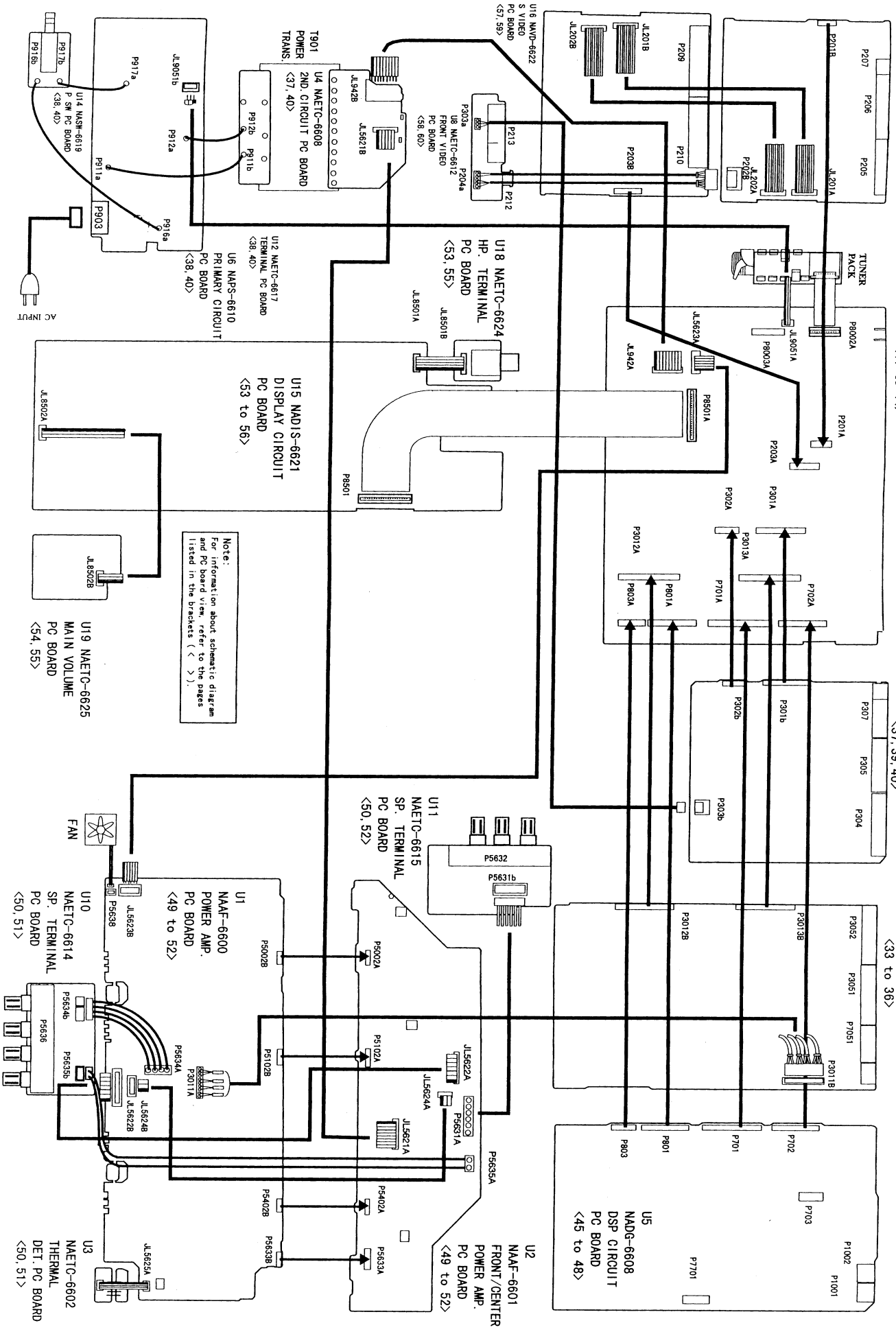
U15 NADIS-6621  
DISPLAY CIRCUIT  
PC BOARD  
<53 to 56>

U1  
MAAF-6600  
POWER AMP.  
PC BOARD  
<49 to 52>

U19 NAETC-6625  
MAIN VOLUME  
PC BOARD  
<54, 55>

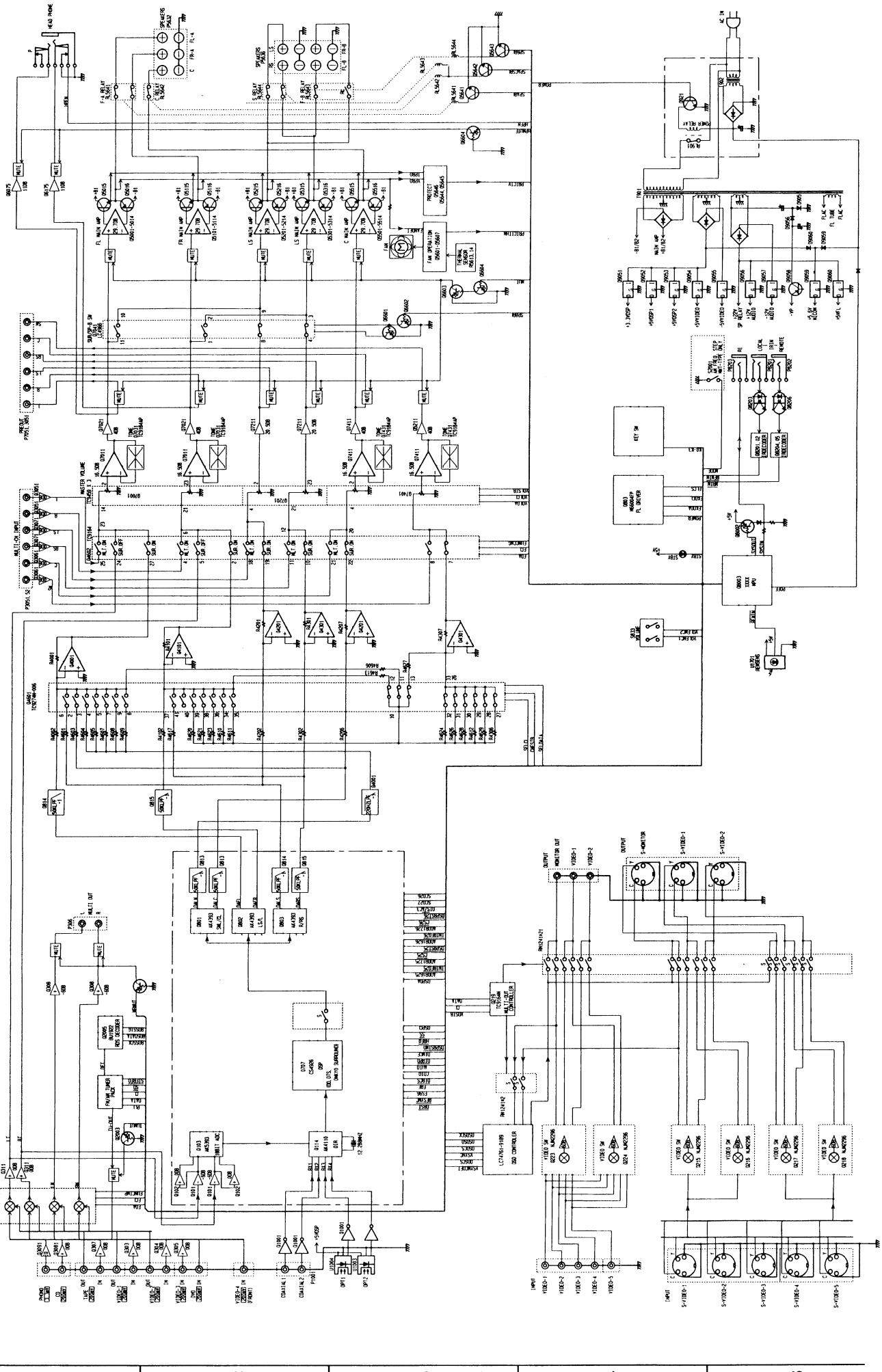
U6 NAPS-6610  
PRIMARY CIRCUIT  
PC BOARD  
<38, 40>

Note:  
For information about schematic diagram  
and PC board view, refer to the pages  
listed in the brackets (< >).



A B C D E F G

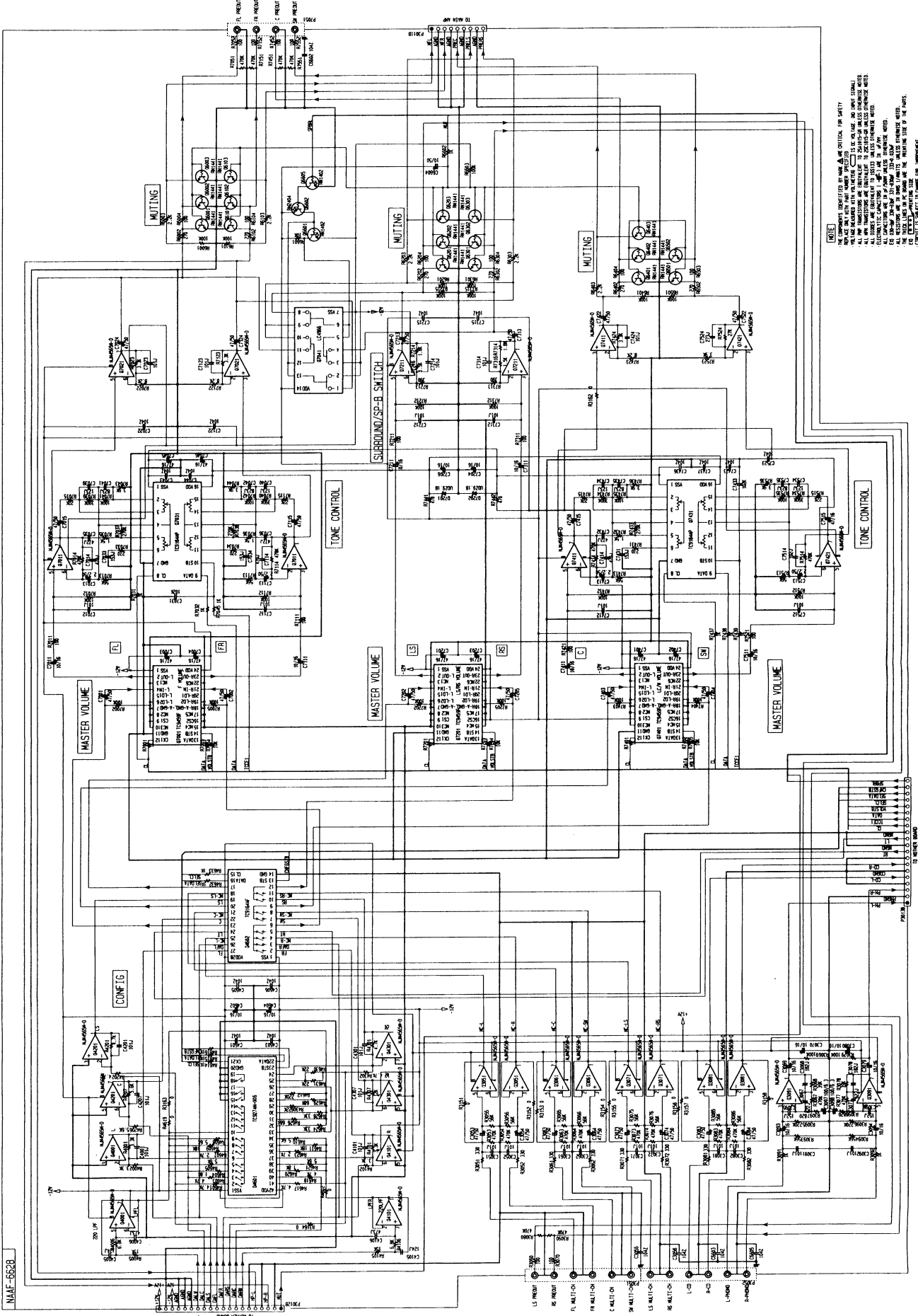
SCHEMATIC DIAGRAM 1





A B C D E F G

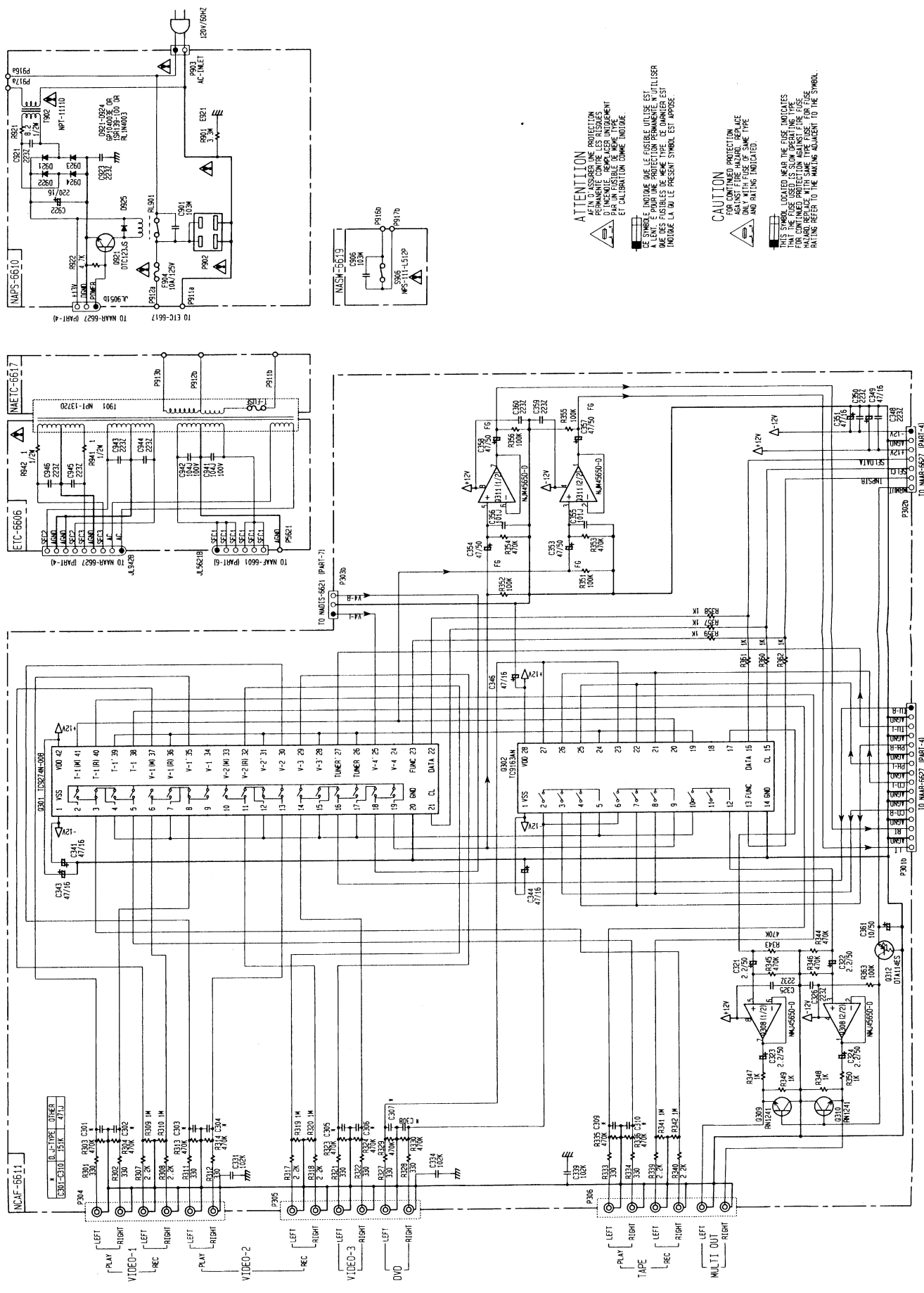
SCHEMATIC DIAGRAM 2



**NOTE**  
 THE COMPONENTS IDENTIFIED BY THIS SYMBOL ARE CRITICAL FOR SAFETY.  
 THEY MUST BE REPLACED WITH THE SAME TYPE AND VALUE. DO NOT EXCEED  
 THE MAXIMUM PERMITTED TOLERANCES. ALL COMPONENTS MUST BE REPLACED WITH THE SAME TYPE AND VALUE.  
 ALL WIRING MUST BE DONE IN ACCORDANCE WITH THE WIRING DIAGRAMS AND THE WIRING MANUAL.  
 ALL COMPONENTS MUST BE REPLACED WITH THE SAME TYPE AND VALUE.  
 ALL WIRING MUST BE DONE IN ACCORDANCE WITH THE WIRING DIAGRAMS AND THE WIRING MANUAL.  
 ALL COMPONENTS MUST BE REPLACED WITH THE SAME TYPE AND VALUE.  
 ALL WIRING MUST BE DONE IN ACCORDANCE WITH THE WIRING DIAGRAMS AND THE WIRING MANUAL.  
 CONSULT TO SUBJECT TO CHANGE FOR IMPROVEMENT.

SCHEMATIC DIAGRAM 3

A B C D E F G

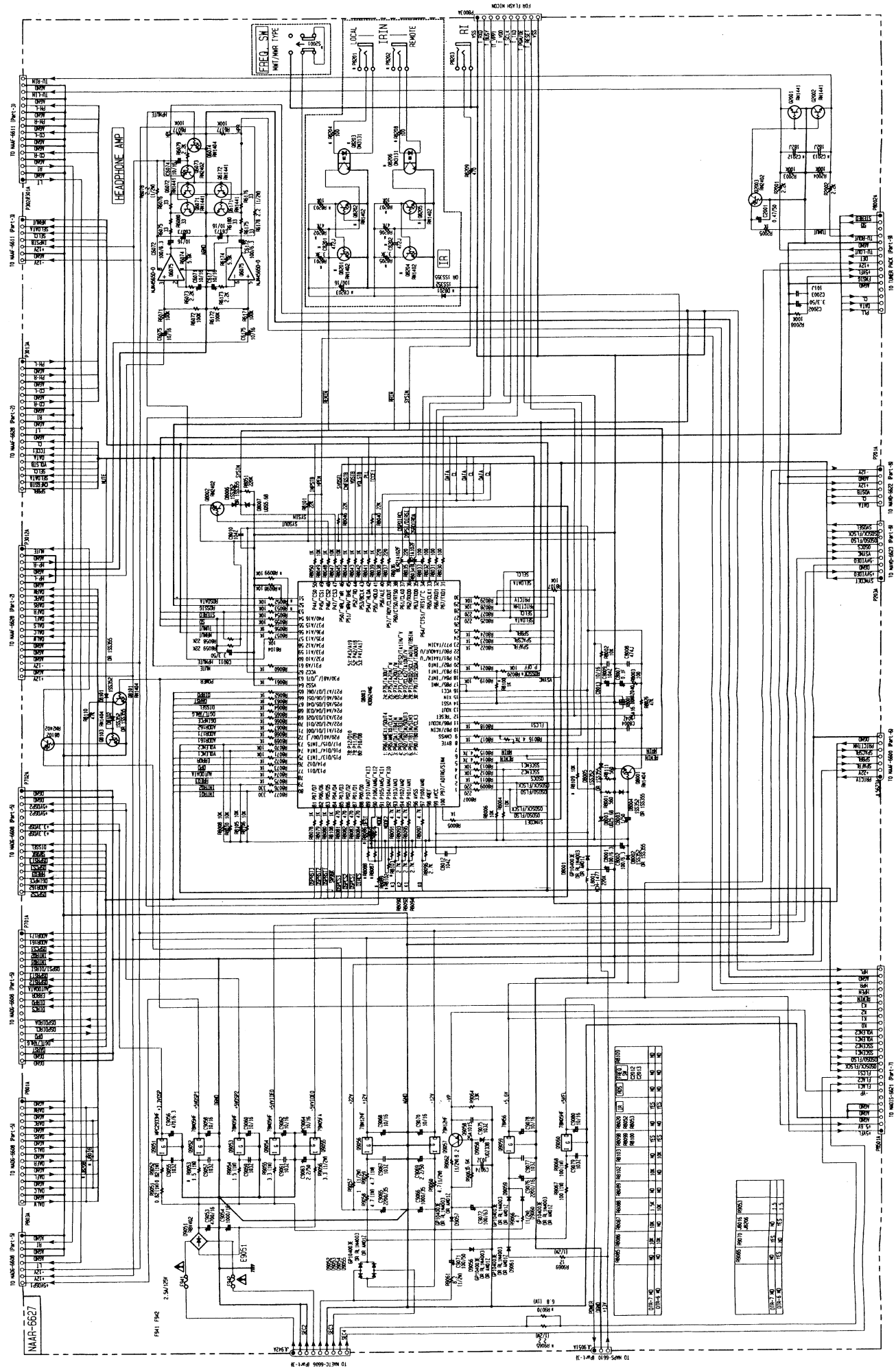


**ATTENTION**  
 AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, NE PAS REMPLACER LE FUSIBLE PAR UN AUTRE D'UNE AUTRE CALIBRATION QUE LE SYMBOLE INDIQUE. LE SYMBOLE INDIQUE QUE LE FUSIBLE UTILISE EST A L'ETAT 5 POUR UNE PROTECTION PERMANENTE. N'UTILISER QUE DES FUSIBLES A L'ETAT 5. LE SYMBOLE INDIQUE QUE LE FUSIBLE A UTILISER DOIT AVOIR LE PRESENT SYMBOLE EST APPRIS.

**CAUTION**  
 TO PREVENT FIRE PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED. THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW BLOWING TYPE. ONLY SLOW BLOWING TYPE FUSES ARE APPROVED FOR USE. FUSES MUST BE REPLACED IN THE MANNER INDICATED BY THE SYMBOL.

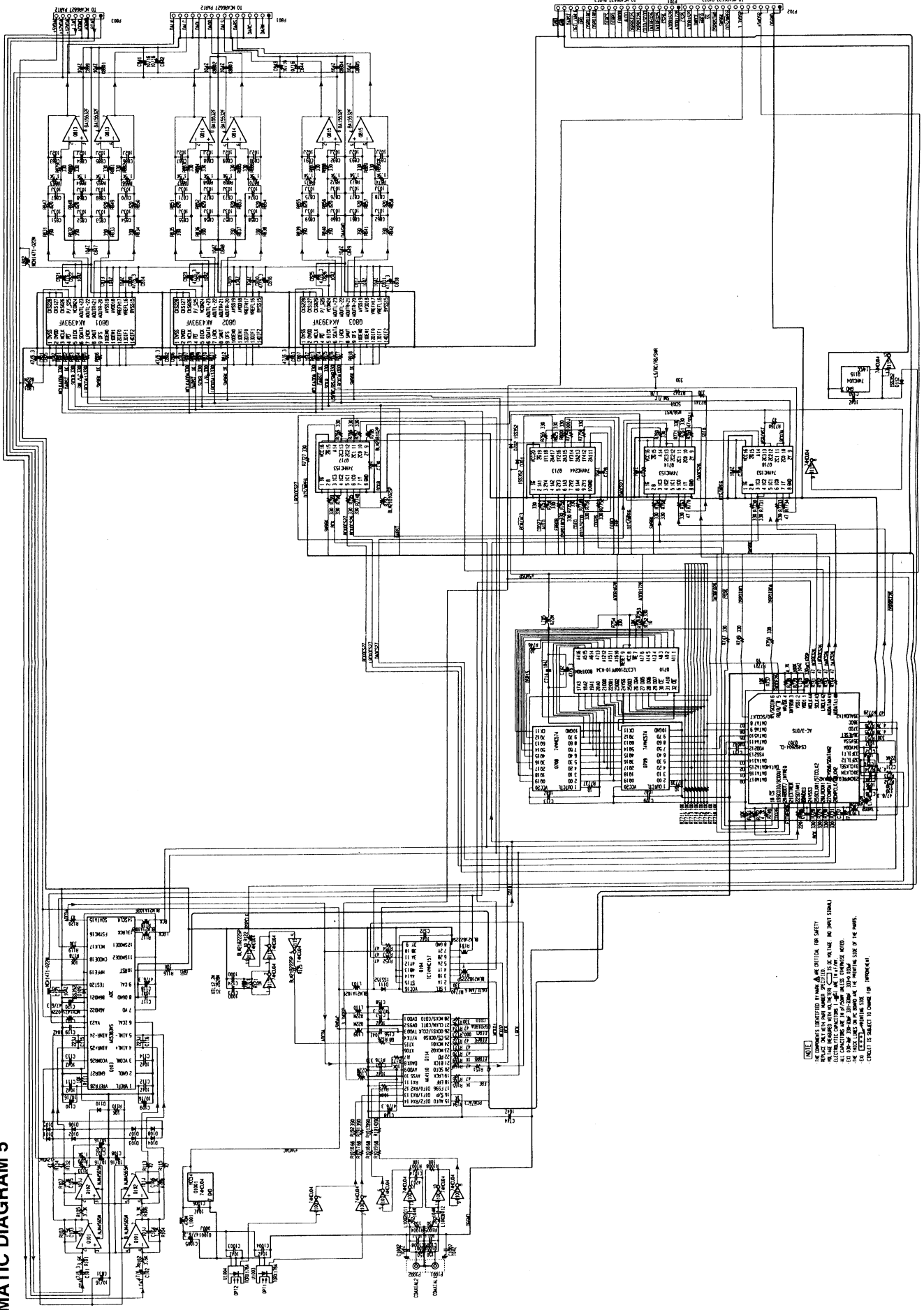
# SCHEMATIC DIAGRAM 4

A B C D E F G



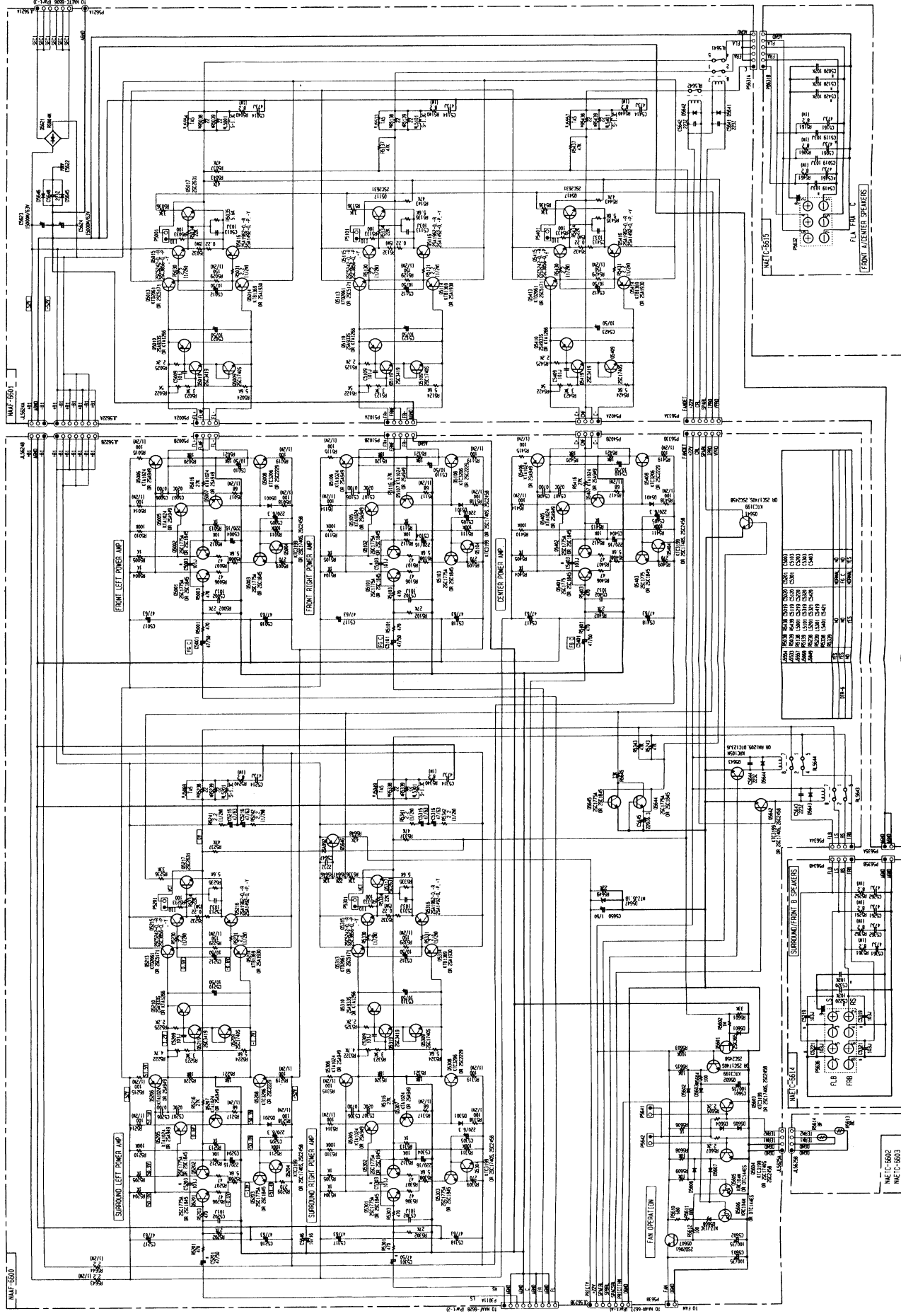
A B C D E F G

SCHEMATIC DIAGRAM 5



A B C D E F G

SCHEMATIC DIAGRAM 6



1

2

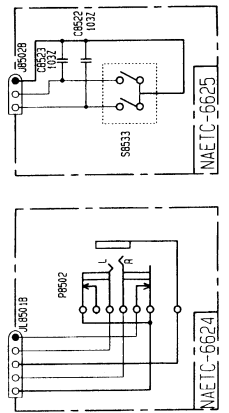
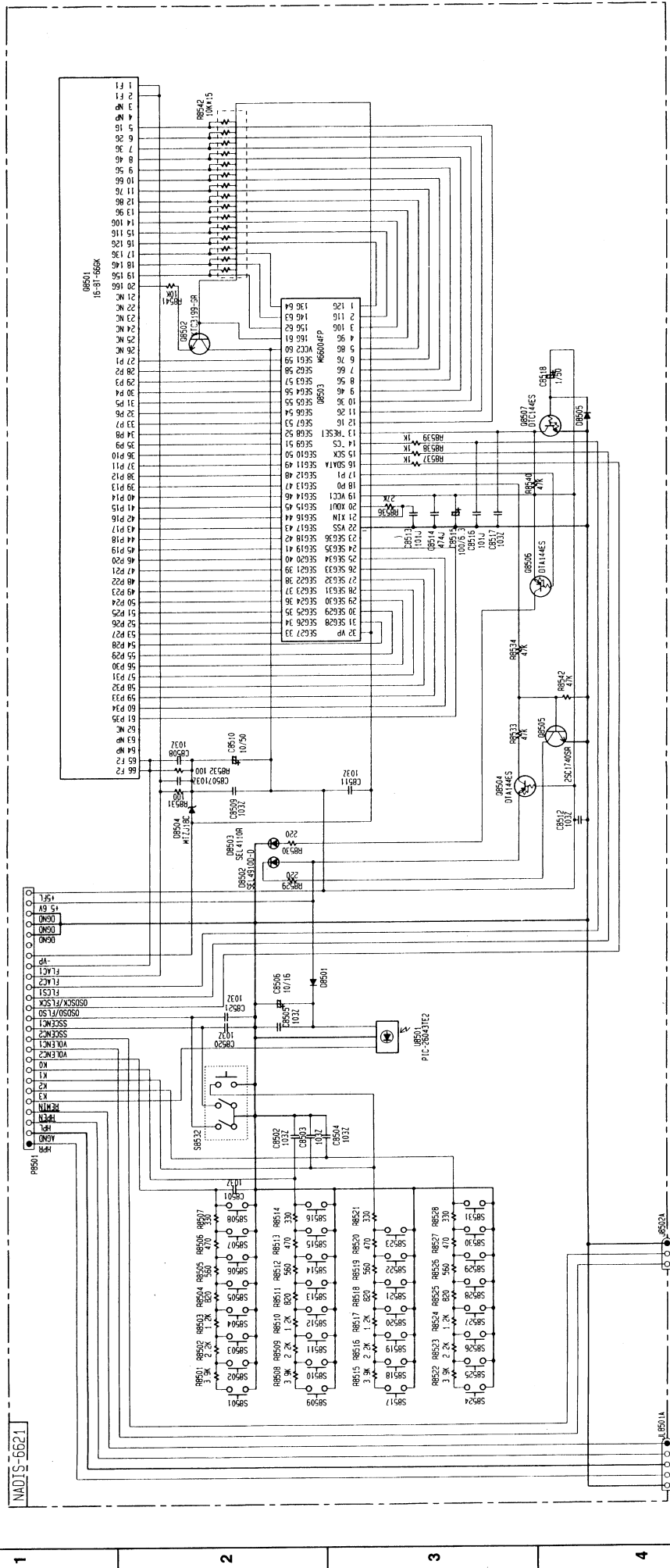
3

4

5

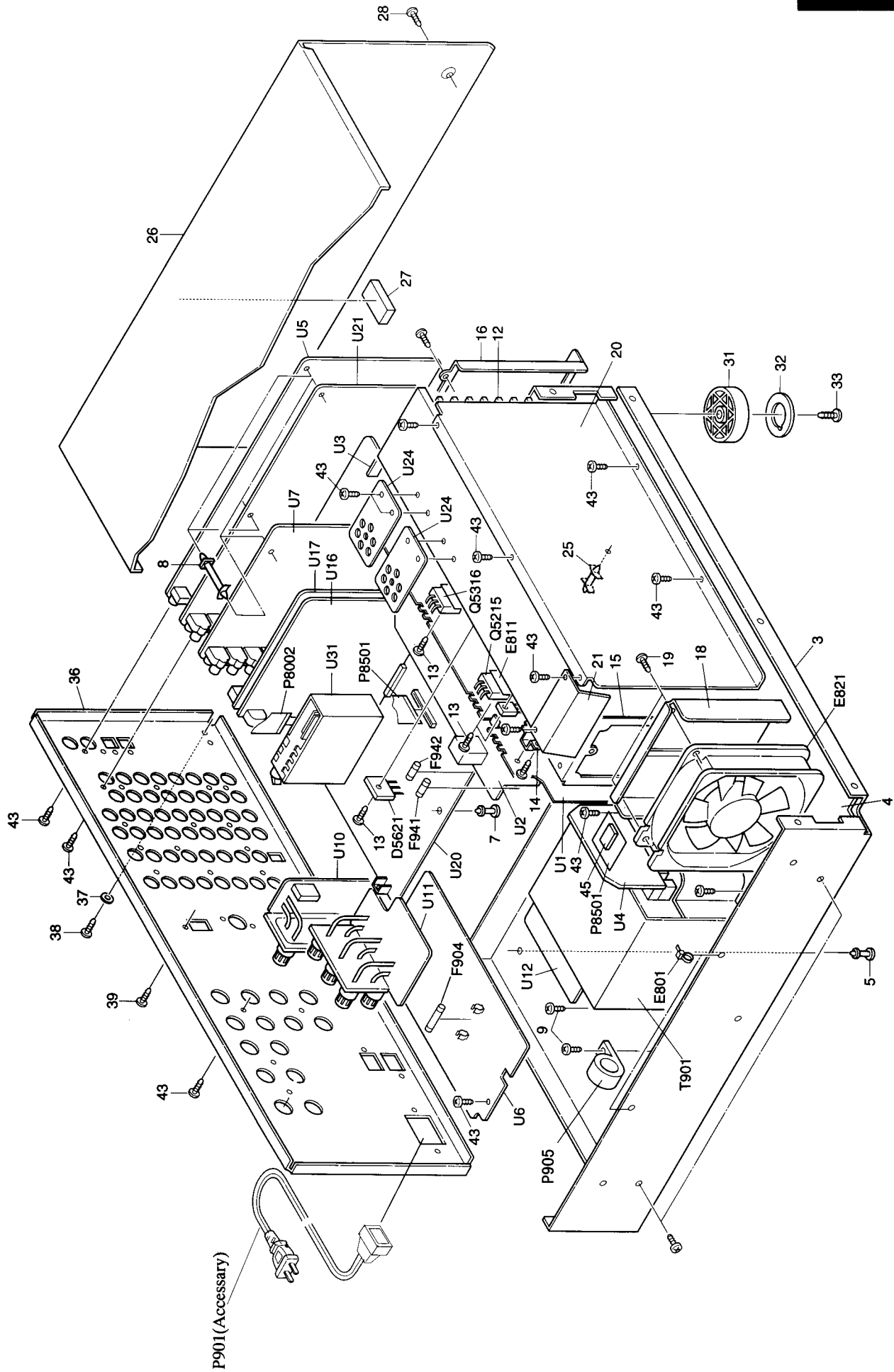
A B C D E F G

SCHEMATIC DIAGRAM 7





EXPLODED VIEW





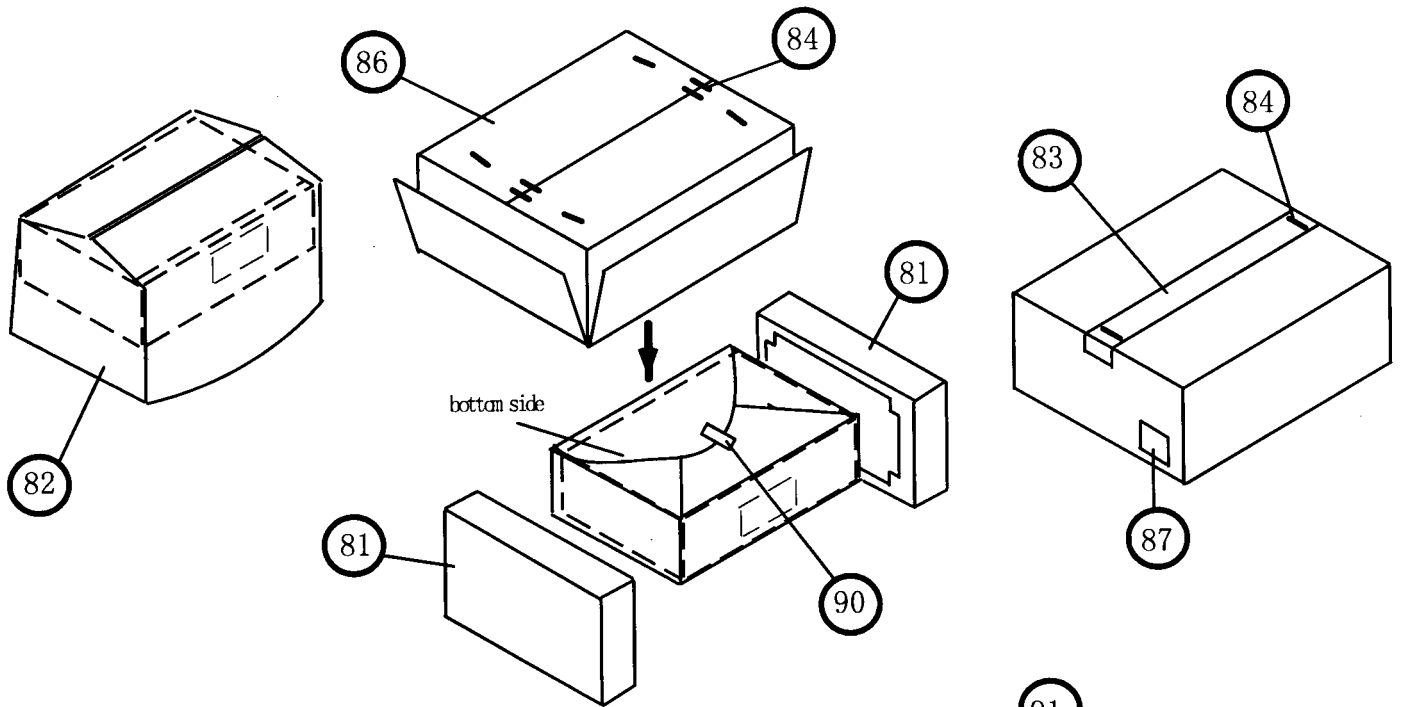


PARTS LIST

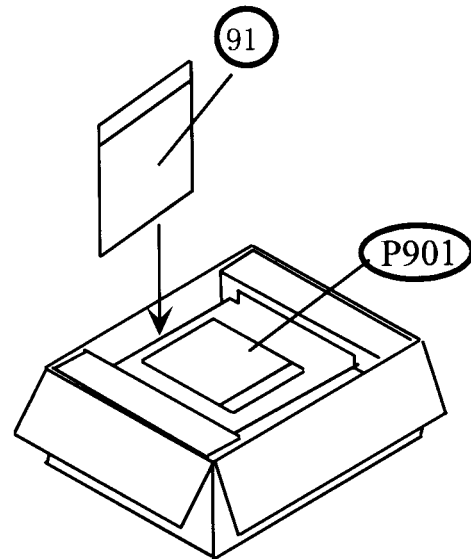
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27111116	Front bracket	P905	230945	△ NFY-25,Core
2	82143010	3P+10FN(BC),Pan head screw	F904	252199	△ 10A-UL,Fuse
3	27100373A	Chassis	F941,F942	252160	△ 2.5A-UL/T-237,Fuse
4	27130824B	Bracket,PT	P8002	2047151512	NCFC7-151512,Flexible flat cable
5	27190813	KGPS-10RF,Holder	P8501	2047255012	NCFC7-255012,Flexible flat cable
6	27190965	Holder	P901	253295KAW	△ AS-UC-1#18,Power supply cord
7	27190428A	KGLS-10RF,Holder	P905	230945	△ NFY-25,Core
8	27190470	KGLS-18S,Holder	Q5015,Q5115	2202843,	* 2SC5242-O,
9	830440089	4TTC+8C(BC),Self-tapping screw	Q5215,Q5315	2202842,	* 2SC5242-R,
11	27301396	HL-28-0,Clamp	Q5415	2201653,	* 2SC3856-O,
12	27160446B	Heat sink		2201655 or	* 2SC3856-P or
13	801433	3SMS8W,.SW+14B(BC),Special screw		2201654	* 2SC3856-Y,Transistor
14	27141681	Retainer,PWB	Q5016,Q5116	2201654	* 2SA1962-O,
15	27141740	Retainer L	Q5216,Q5316	2202832,	* 2SA1962-R,
16	27141741	Retainer R	Q5416	2201663,	* 2SA1492-O,
18	27141742	Retainer, fan		2201665 or	* 2SA1492-P or
19	838150108	5TTB+10B,Self-tapping screw	Q5019,Q5119	2201664	* 2SA1492-Y,Transistor
20	27141743	Retainer F	Q5419	2212863 or	2SC3419-O or
21	27150439	Shield plate	T901	2212864	2SC3419-Y,Transistor
22	28191851A	Clear plate	U1	2301414	△ NPT-1372D,Power transformer
23	28133387	Back plate	U2	1A843500-4	NAAF-6600-4,Power amplifier PC board ass'y
24	28325497A	Knob,Power	U3	1A843501-4	NAAF-6601-4,Front/center power amplifier PC board ass'y
25	27190902	KGPS-16S,Holder	U4	1A843502-4	NAETC-6602-4,Thermal detector PC board ass'y
26	28184757	Top cover	U5	1A843506-4	NAETC-6606-4,Secondary circuit PC board ass'y
27	28141272Y	10x60x20,Cushion	U6	1A843508-4	NADG-6608-4,DSP circuit PC board ass'y
28	838430088	3TTB+8B(BC), Self-tapping screw	U7	1A843510-4	NAPS-6610-4,Primary circuit PC board ass'y
31	27175319A	Leg	U8	1A843511-4	NAAF-6611-4,Input terminal PC board ass'y
32	28141332	Cushion	U9	1A843512-4	NAETC-6612-4,Front video terminal PC board ass'y
33	831430088	3TTW+8B(BC),Self-tapping screw	U10	1A843513-4	NAETC-6613-4,Holder for PC board
34	28325683	Knob SS	U11	1A843514-4	NAETC-6614-4, Surround/front B speaker terminal PC board ass'y
35	28325669	Knob, Volume	U12	1A843515-4	NAETC-6615-4,Front/center speaker terminal PC board ass'y
36	27122622	Rear panel	U13	1A843517-4	NAETC-6617-4,Power transformer terminal PC board ass'y
37	87643010	W3*10F(BC),Flat washer	U14	1A843518-4	NASW-6618-4,Holder for PC board
38	838930088	3TTB+8B(UN),Self-tapping screw	U15	1A843519-4	NASW-6619-4,Power switch PC board ass'y
39	838430068	3TTB+6B(BC),Self-tapping screw	U16	1A843521-4	NADIS-6621-4,Display circuit PC board ass'y
40	27212121	Front panel	U17	1A843522-4	NAVD-6622-4,S- video terminal PC board ass'y
41	28198778	Facet	U18	1A843523-4	NAVD-6623-4,On-screen PC board ass'y
42	28135275	Badge	U19	1A843524-4	NAETC-6624-4,Headphone terminal PC board ass'y
43	838130088	3TTB+8B,Self-tapping screw	U20	1A843525-4	NAETC-6625-4,Main volume PC board ass'y
44	27215332	Decorative frame	U21	1A843527-4	NAAAR-6627-4,Main circuit PC board ass'y
45	28141336Y	Cushion	U24	1A843528-4	NAAF-6628-4,Preamplifier PC board ass'y
D5621	22380273	RS804M, Diode	U25	25136607	NCETC-6607,Holder PC board
E801	260208	Wire tie	U25	25136723	NCETC-6723,Holder PC board
E811	223024Y	△ AC238,Isolated sheet	U31	240134	TFCE1U144A, Tuner pack
E821	24502308	D09T-24PG07(EX),Fan			

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

PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
81	29091881A	Pad
82	29100153Y	1020x720,Polybag
83	29110098	PP tape
84	282301	Staple
86	29053462	Carton box
87	29362479	Label UPC
90	261504	Paper tape
91	29100097-1A	350*250,Polybag
	29365080A	Warranty card
	29095865	Instruction sheet
	29342732	Instruction manual
	29342733	Instruction manual
	24140392A	RC-392M,remote controller
	3010054	Battery
	292142	FM antenna
	232140	NMA-3057,AM loop antenna
P901	253295KAW	△ AS-UC-1#18,Power supply cord



**ONKYO CORPORATION**

Sales & Product Planning Div. : 2-1, Nisshin-cho, Neyagawa-shi, OSAKA 572-8540, JAPAN  
 Tel: 0720-31-8111 Fax: 0720-33-5222

**ONKYO U.S.A. CORPORATION**

200 Williams Drive, Ramesy, N.J. 07446, U.S.A.

Tel: 201-825-7950 Fax: 201-825-8150 E-mail: Integra@onkyousa.com

