

SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations marked "⚠"
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:
 - A. Leakage test "cold":
 1. Unplug the AC cord; turn power switch ON.
 2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
 3. Touch other lead to all exposed metal parts.
 4. Impedance measurement must be 0.3-5.0 Megohms.
 - B. Leakage test, "live":
 1. Plug unit directly into the AC outlet: do not use isolation transformer.
 2. Connect one lead of the Leakage Current Tester to earth ground.
 3. Touch other lead to all exposed metal parts.
 4. Leakage measurement must be less than 0.5 milliamps.

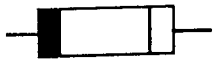
AV716

RECEIVER

AV716
RECEIVER

SERVICE SAFETY PRECAUTIONS

1. Replacing the fuses



This symbol located near the fuse 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.

Circuit No.	Part No.	Description
F901	252166Y	6.3A-UL/T-237, Primary <AH>
F902	252076 or 252076Y	3.15A-SE-EAK, Primary <B1><C>
F903	252075 or 252075Y	2.5A-SE-EAK, AC outlet <C>
F911	252166Y	6.3A-UL/T-237, Secondary <AH>
	252079	6.3A-SE-EAK, Secondary <B1><C>
F912	252166Y	6.3A-UL/T-237, Secondary <AH>
	252079	6.3A-SE-EAK, Secondary <B1><C>

NOTE: <AH>: U.S.A., Canadian model only
: U.K. model only
<B1>: Australian model only
<C>: European model only

2. 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 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 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.

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 the screw on the back panel.

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

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SPECIFICATIONS

AMPLIFIER SECTION

POWER OUTPUT:

Stereo Mode:	2 x 80 Watts cont. into 8 ohms
	2 x 115 Watts cont. 4 ohms, 1 kHz
Surround or Multi Source Mode	3 x 55 Watts (left, right, center)
	2 x 20 Watts Rear or Remote Channels
Total Harmonic Distortion	0.08% at rated power (Front)
IM Distortion	0.08% at rated power (Front)
Damping factor	60 at 8 ohms (Front)
Sensitivity and Impedance:	Phono: 2.5 mV/50 kohms
	Line: 150 mV/50k ohms
Frequency Response	20 to 30,000 Hz, ± 1dB
RIAA Deviation	20 to 20,000 Hz, ± 1dB
Tone Controls	Bass: ± 10 dB at 100Hz
	Treble: ± 10 dB at 10,000Hz
Signal to Noise Ratio	Phono: 80 dB (IHF A, 5mV input)
	Line: 100 dB (IHF A)

TUNER SECTION

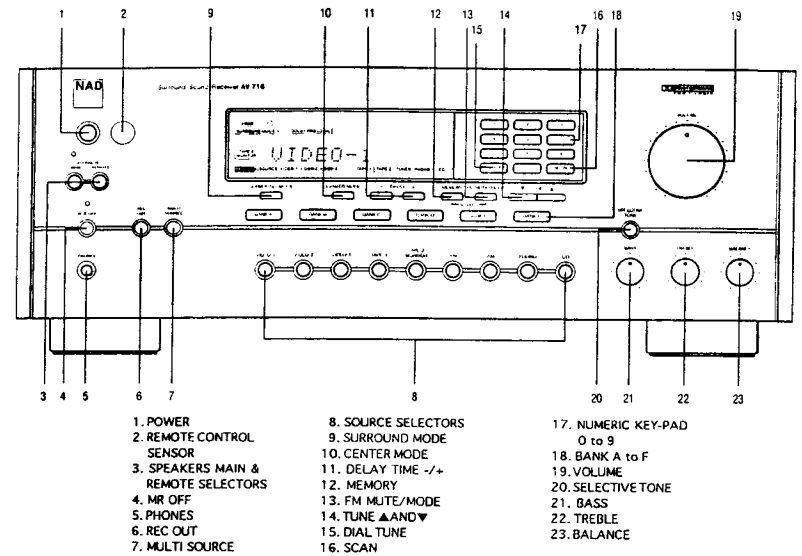
FM:

Input Sensitivity	1 μV
Total Harmonic Distortion	Mono: 0.15%
	Stereo: 0.25%
Stereo Separation	45 dB at 1 kHz
Signal to Noise Ratio	Mono: 73 dB
	Stereo: 67 dB
AM:	
Usable Sensitivity	30 μV
Signal to Noise Ratio	40dB
Total Harmonic Distortion	0.7%

Dimensions in mm (W x H x D)	455 x 168 x 375
Net Weight	13.2 kg/29.1 lbs.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

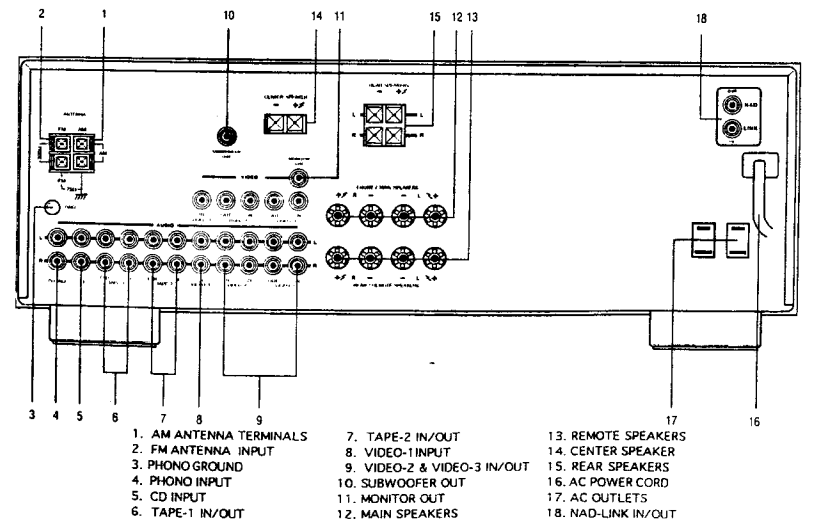
FRONT PANEL CONTROLS



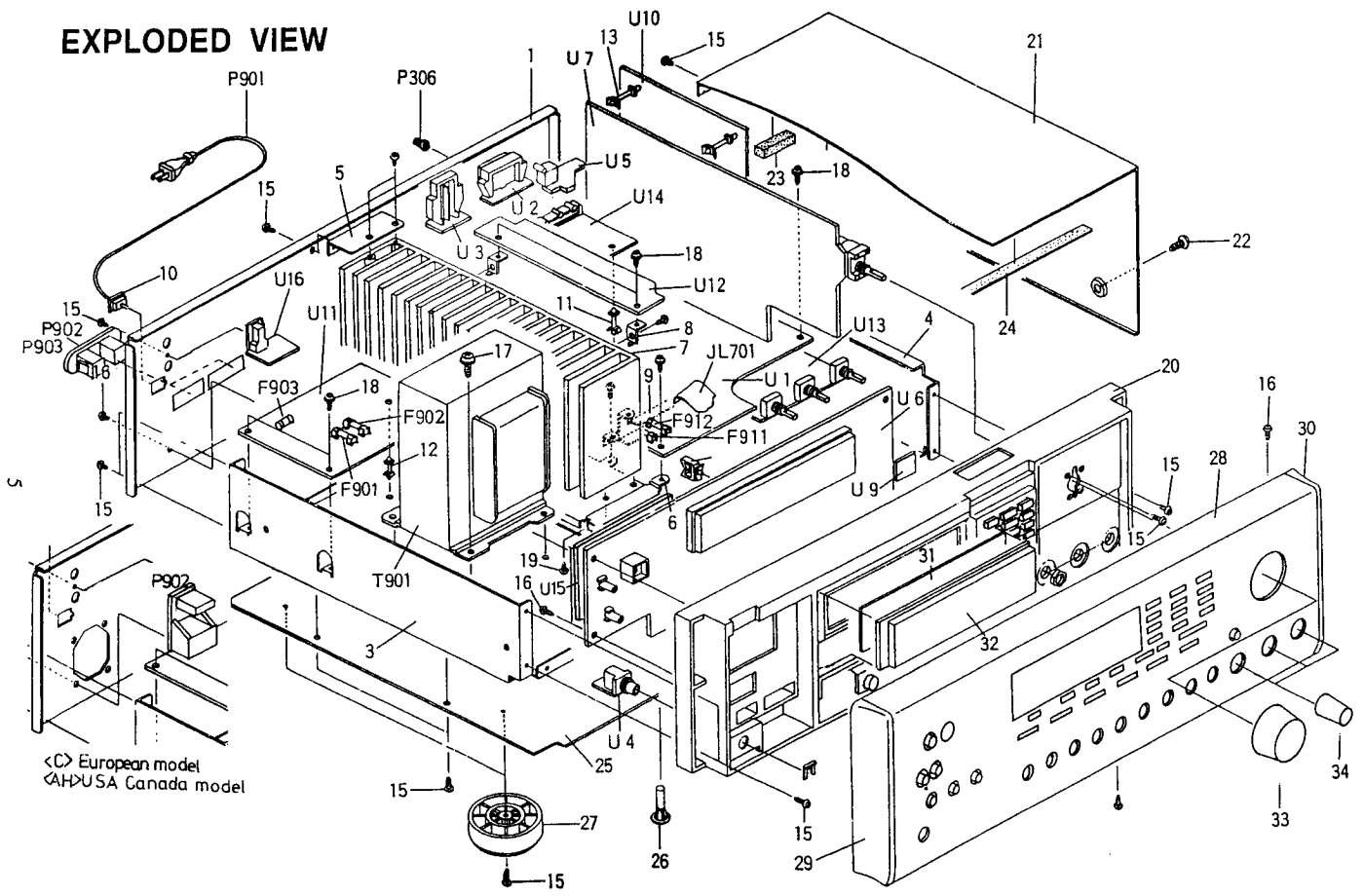
The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

REAR PANEL CONNECTIONS



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

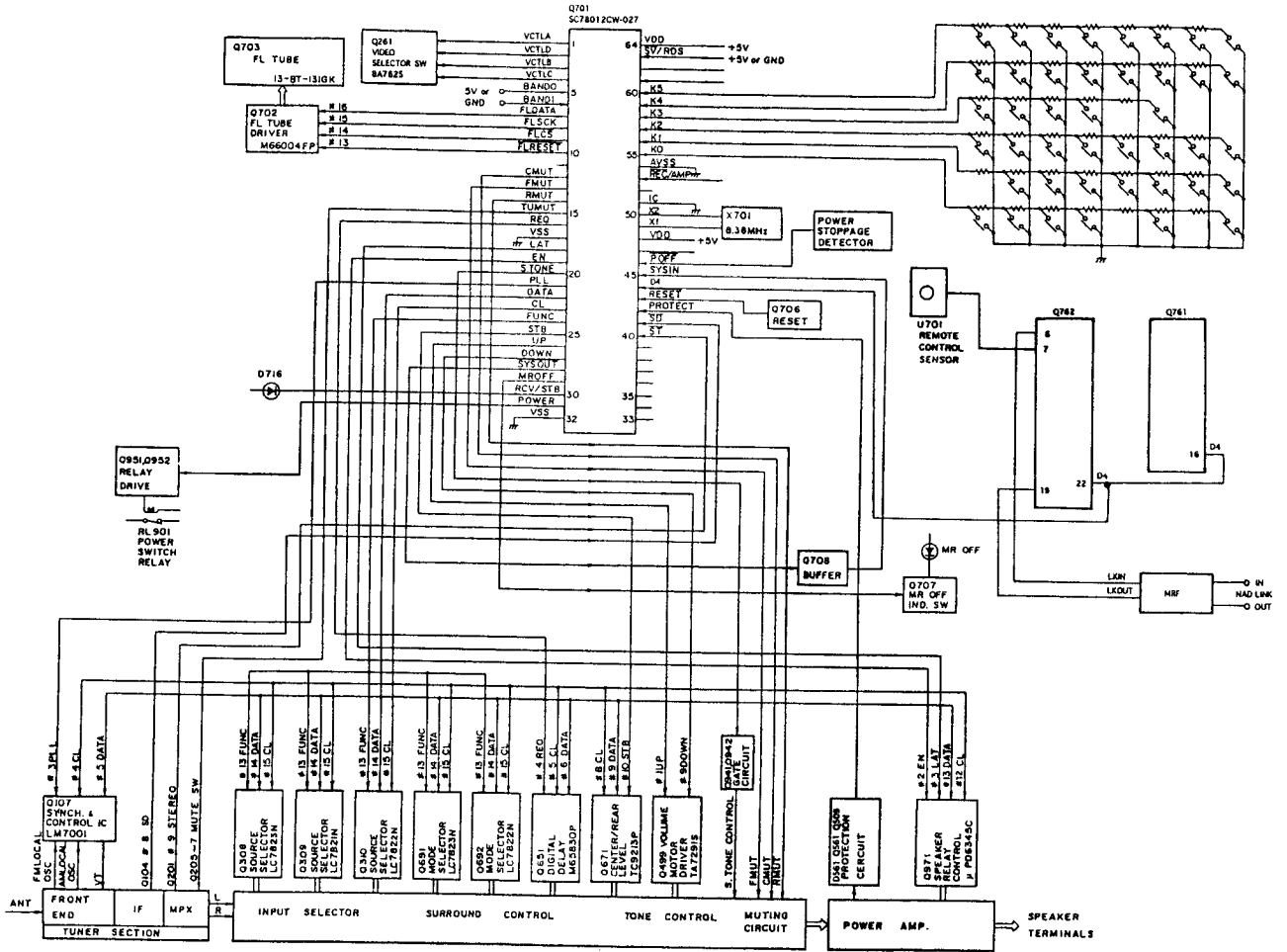
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	27121927AY	Rear Panel <AH>		2202263	* 2SA1516-O, Power transistor	U2	1A548593-6Y	NAETC-4693-6, Center speaker terminal pc board ass'y <AH>
	27121929BY	Rear Panel <B1><C>	Q543	2202253 or 2202254 or 2202256 or 2202502 or 2202503	* 2SC4467-O or * 2SC4467-Y or * 2SC4467-P or * 2SC3181N-R or * 2SC3181N-O, Power transistor		1A548593-6AY	NAETC-4693-6A, Center speaker terminal pc board ass'y <B1><C>
3	27130717AY	Side Bracket (PT)		2202243 or 2202244 or 2202246 or 2202492 or 2202493	* 2SA1694-O or * 2SA1694-Y or * 2SA1694-P or * 2SA1264N-R or * 2SA1264N-O, Power transistor	U3	1A548594-6Y	NAETC-4694-6, Speaker terminal pc board ass'y <AH>
4	27115255Y	Side Bracket		2202053 or 2202054 or 2202056	* 2SA1725-O or * 2SA1725-Y or * 2SA1725-P, Power transistor		1A548594-6AY	NAETC-4694-6A, Speaker terminal pc board ass'y <B1><C>
5	27141607AY	Retainer (H)		2300891AY	Δ NPT-1168D, Power Transformer <AH>	U4	1A548595-6Y	NAETC-4695-6, Headphone terminal pc board ass'y
6	27130718AY	Bracket (H)		2300894AY	Δ NPT-1168Q, Power Transformer <B1>	U5	1A548596-6Y	NAETC-4696-6, Output terminal pc board ass'y
7	27160323Y	Heatsink	Q544	2300892AY	Δ NPT-1168P, Power Transformer <C>	U6	1A548597-6Y	NADIS-4697-6, Display circuit pc board ass'y <AH>
8	27141530A	Retainer (HS-2)		25060044	Ground terminal post		1A548597-6AY	NADIS-4697-6A, Display circuit pc board ass'y <B1><C>
9	27141532	Retainer (PD-1)		253163Y or 253174Y	Δ AS-UC-6 #18, Power Supply Cord <AH>	U7	1A548598-6Y	NAAF-4698-6, Surround circuit pc board ass'y <AH><B1>
10	27300750	Δ Cord Bushing		253196HIT	Δ AS-BC, Power Supply cord 	U9	1A548500-6Y	NASW-4700-6, STC switch pc board ass'y
11	27190369	Holder		253188HIT	Δ AS-SAA, Power Supply Cord <B1>		1A548501-6Y	NARF-4701-6, Tuner circuit pc board ass'y <AH>
12	27190480-1 or 27190480	Holder	Q575, Q576	253164Y or 253175Y	Δ AS-CEE, Power Supply Cord <C>	U10	1A548501-6Y	NARF-4701-6A, Tuner circuit pc board ass'y <B1><C>
13	27190062	Holder	Q577, Q578	252076 or 252076Y	Δ 3.15A-SE-EAK, Primary Fuse <B1><C>		1A548502-6Y	NAPS-4702-6, Power supply circuit pc board ass'y <AH>
14	801433	3SMS8W.SW+14B(BC), Self-tapping screw		252075 or 252075Y	Δ 2.5A-SE-EAK, AC outlet Fuse <C>	U11	1A548502-6BY	NAPS-4702-6B, Power supply circuit pc board ass'y <B1>
15	834430088	3TTS+8B(BC), Self-tapping screw		252166Y	Δ 6.3A-UL/T-237, Secondary Fuse <AH>	U12	1A548503-6Y	NAAF-4703-6, Rear amplifier pc board ass'y <AH>
16	834430080	3TTP+8P(BC), Self-tapping screw	T901	252166Y	Δ 6.3A-UL/T-237, Fuse <AH>	U13	1A548504-6Y	NAAF-4703-6A, Rear amplifier pc board ass'y <B1><C>
17	830440089	4TTC+8B(BC), Self-tapping screw		252079	Δ 6.3A-SE-EAK, Primary Fuse <B1><C>	U14	1A548505-6Y	NAETC-4705-6, Video circuit pc board ass'y
18	831130088	3TTW+8B, Self-tapping screw		2041322010 or 2047322012	NCFC1-322010 or NCFC7-322012, Flexible Flat Cable	U15	1A548556-1Y	NAETC-5056-1, NAD Link converter ass'y
19	834430108	3TTS+10B(BC), Self-tapping screw		1A548592-6Y	NAAR-4692-6, Main circuit pc board ass'y <AH>	U16	1A548557-1Y	NAETC-5057-1, NAD Link I/O pc board ass'y
20	27110818AY	Front Bracket ass'y		1A548592-6AY	NAAR-4692-6A, Main circuit pc board ass'y <B1><C>			
21	28184571Y	Top Cover						
22	838440089	4TTB+8C(BC), Self-tapping screw	P306					
23	28141132	Cushion, 16x60x10	P901					
24	28140680	Cushion, 0.5x180x8						
25	27170300AY	Bottom Board						
26	27190926-1 or 27190926	Holder						
27	27175300Y	Leg ass'y						
28	1A548121Y	Front Panel ass'y	P902, P903	25051570Y	Δ NSCT-2P1357, AC outlet <B1>			
29	28125263Y	End Cap (L)	F901	252166Y	Δ 6.3A-UL/T-237, Primary Fuse <AH>			
30	28125264Y	End Cap (R)	F902	252076 or 252076Y	Δ 3.15A-SE-EAK, Primary Fuse <B1><C>			
31	28191686Y	Clear Plate (RE)		252075 or 252075Y	Δ 2.5A-SE-EAK, AC outlet Fuse <C>			
32	28133330	Filter	F903	252166Y	Δ 6.3A-UL/T-237, Secondary Fuse <AH>			
33	28325002A	Knob (VOL.) ass'y		252166Y	Δ 6.3A-SE-EAK, Secondary Fuse <B1><C>			
34	28325004Y	Knob (TONE)	F911	252166Y	Δ 6.3A-UL/T-237, Secondary Fuse <AH>			
35	880009	Plastic Rivet, Speaker Terminal <C>		252079	Δ 6.3A-SE-EAK, Secondary Fuse <B1><C>			
Q505, Q506	2201653 or 2201654 or 2201655 or 2202272 or 2202273	* 2SC3856-O or * 2SC3856-Y or * 2SC3856-P or * 2SC3907-R or * 2SC3907-O, Power transistor	F912	252166Y	Δ 6.3A-UL/T-237, Fuse <AH>			
Q507, Q508	2201663 or 2201664 or 2201665 or 2202262 or	* 2SA1492-O or * 2SA1492-Y or * 2SA1492-P or * 2SA1516-R or	JL701	2041322010 or 2047322012	NCFC1-322010 or NCFC7-322012, Flexible Flat Cable			

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

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

NOTE: <AH>: U.S.A., Canadian model only
 : U.K. model only
 <B1>: Australian model only
 <C>: European model only

MICROPROCESSOR DESCRIPTIONS



Terminal Description

Pin No.	Function	I/O	Description
1	VCTLA	O	Video signal control A output terminal.
2	VCTLD	O	Video signal control D output terminal.
3	VCTLB	O	Video signal control B output terminal.
4	VCTLC	O	Video signal control C output terminal.
5	BAND 1	I	Initializing input terminal for FM/AM band region.
6	BAND 1	I	
7	FLDATA	O	Connect to the terminal SDA of Fluorescent tube driver M66004FP (Q702)
8	FLSCK	O	Connect to the terminal SCK of Fluorescent tube driver M66004FP.
9	FLCS	O	Connect to the terminal CS of Fluorescent tube driver M66004FP.
10	FLRESET	O	Connect to the terminal RESET of Fluorescent tube driver M66004FP.
11	PLAYER	O	Not used.
12	CMUT	O	Muting output terminal for the center amplifier.
13	FMUT	O	Muting output terminal for the front amplifier.
14	RMUT	O	Muting output terminal for the rear amplifier.
15	TMUT	O	Muting output terminal for the tuner.
16	REQ	O	Connect to the terminal REQ of Digital delay M65830P (Q651)
17	VSS	-	Ground terminal
18	LAT	O	Connect to the terminal LAT of Output extended IC μ PD6345C (Q971)
19	EN	O	Connect to the terminal EN of Output extended IC μ PD6345C.
20	S.TONE	O	Selective tone control output terminal.
21	PL	O	Connect to the terminal CE of P.L.L. IC LM7001 (Q107)
22	DATA	O	Connect to the terminal DI of Analog switches LC7821N, LC7822N, and LC7823N, the terminal DATA of P.L.L. IC LM7001, the terminal DATA of Electro volume TC9213P, the terminal DATA of Digital delay M65830P, and the terminal SIN of Output extended IC μ PD6345C.
23	CL	O	Connect to the terminal CL of Analog switches LC7821N, LC7822N, and LC7823N, the terminal CL of P.L.L. IC LM7001, the terminal CK of Electro volume TC9213P, the terminal SCK of Digital delay M65830P, and the terminal SCK of Output extended IC μ PD6345C.
24	FUNC	O	Connect to the terminal CE of Analog switches LC7821N, LC7822N, and LC7823N (Q309, Q310, Q692, Q308 and Q691)
25	STB	O	Connect to the terminal STB of Electro volume TC9213P (Q671)
26	UP	O	Volume UP/DOWN control output (Q499)
27	DOWN	O	Volume UP/DOWN control output (Q499)
28	SYSOUT	O	System code output terminal.

VIDEO SIGNAL CONTROL OUTPUT			
Input Selector	#1	#2	SOURCE
L	L	L	VIDEO-3
H	L	L	VIDEO-2
L	H	H	VIDEO-1
H	H	H	VIDEO-1

Recording Selector			
#4	#2	SOURCE	
L	L	VIDEO-3	
H	L	VIDEO-2	
L	H	VIDEO-1	
H	H	Other	
Same as #1			Multi position
Same as #1			Multi mode

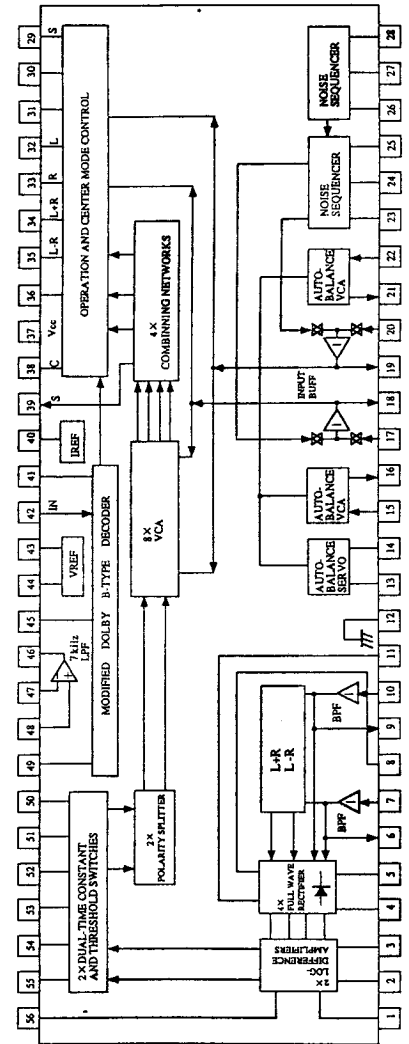
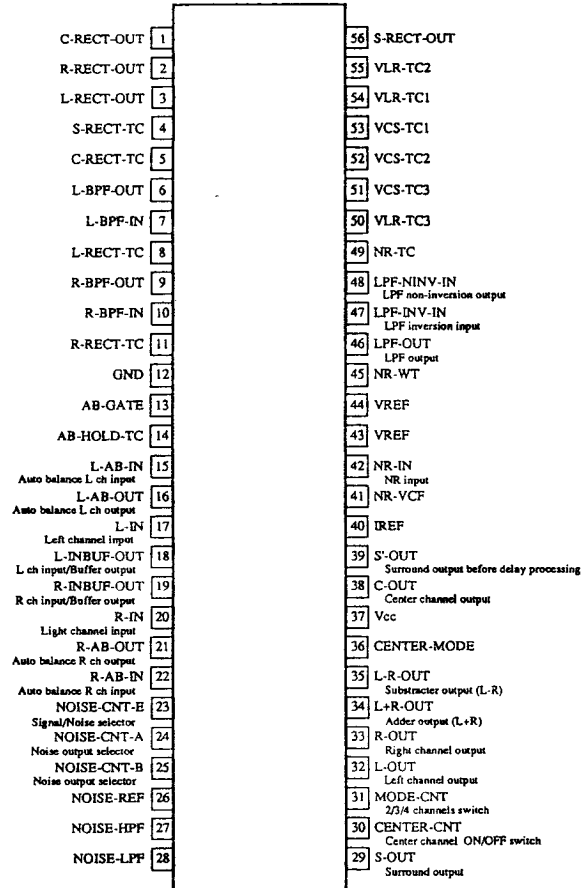
IC BLOCK DIAGRAMS AND DESCRIPTION

Q602
NJM2177L / M69032P (Dolby Pro Logic)

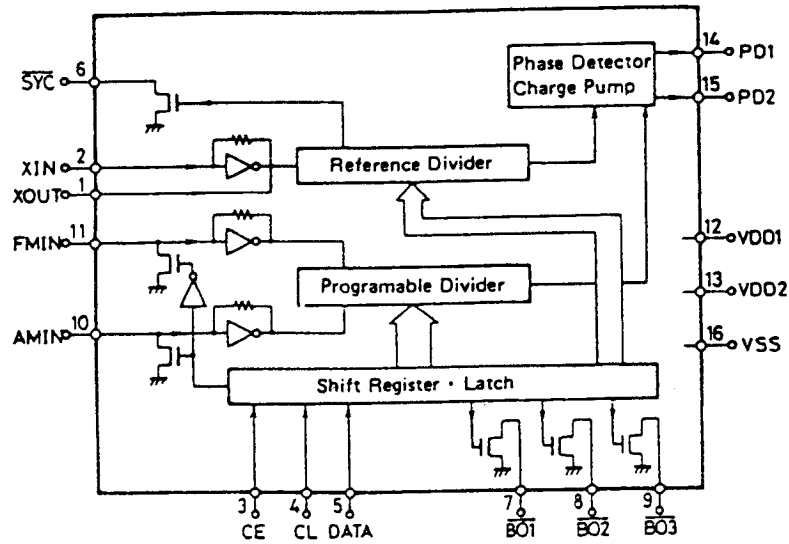
Pin No.	Function	I/O	Description
29	MR	O	MULTI ROOM indicator control output.
30	STBY/RECV	O	STAND-BY/RECEIVED indicator control output.
31	POWER	O	Power switch relay control output.
32	VSS	-	Ground terminal.
33			Not used.
34			Not used.
35			Not used.
36			Not used.
37			Not used.
38			Not used.
39			Not used.
40	ST	I	Stereo detection input terminal.
41	SD	I	Broadcast detection input terminal.
42	PROTECT	I	Protection circuit operation detection input terminal.
43	RESET	I	System reset input terminal.
44	REMIN	I	Remote control signal input terminal.
45	SYSIN	I	System code input terminal.
46	POFF	I	Detection input terminal for the stoppage of electric current.
47			Not used.
48	VDD		Power supply terminal.(+5V)
49	X2		Ceramic resonator connection terminal for the main system clock.
50	X1		Connect the ceramic resonator 8.38 MHz.
51	IC		Connect to the ground terminal.
52			Not used.
53	REC/AMP		Connect to the ground terminal.
54	AVSS		Ground terminal of A/D converter.
55	K0	I	Operation key connection terminals.
56	K1	I	
57	K2	I	
58	K3	I	
59	K4	I	
60	K5	I	
61			Not used.
62	MODE	I	Connect to the ground terminal.
63	SV/RDS		Analogue power supply terminal of A/D converter. (+5V)
64	AVREF		Reference voltage input terminal of A/D converter.

Initialing Input

#5,#6					
BAND 1	BAND 0	Region	Band	Frequency Range	Channel Space
0	0	U.S.A.	FM	87.50~108.00MHz	50kHz
			AM	530~1710kHz	10kHz
0	1	European	FM	87.50~108.00MHz	50kHz
			AM	522~1611kHz	9kHz

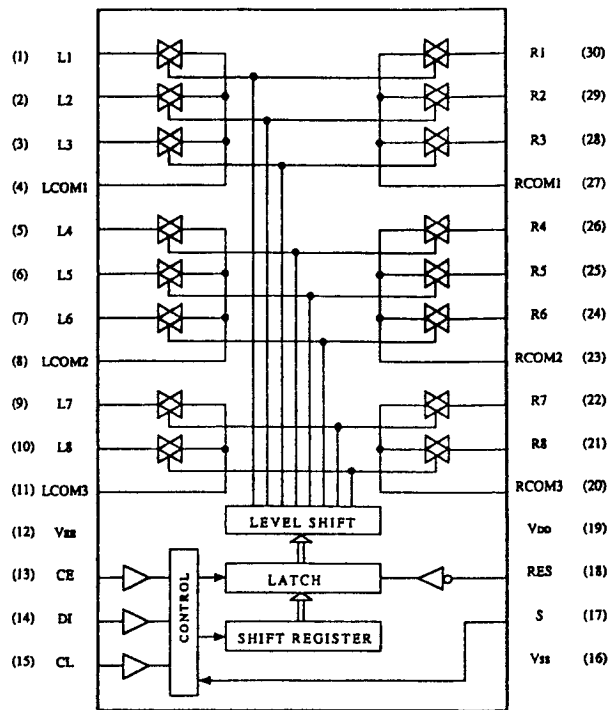


Q107
LM7001 (PLL Synthesizer and Controller)



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.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of microprocessor.
5	DATA	Serial data input terminal. Connect to the DATA terminal of microprocessor.
6	$\overline{\text{SYN}}$	Not used.
7	$\overline{\text{AUTOMONO}}$	AUTOMONO selection output terminal. "L" when AUTO.
8	$\overline{\text{FM}}$	FM band control output terminal. "L" when FM.
9	$\overline{\text{AM}}$	AM band control 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. 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.
15	PD2	
16	VSS	Ground terminal.

Q310, Q692
LC7822N (Analogue switch)



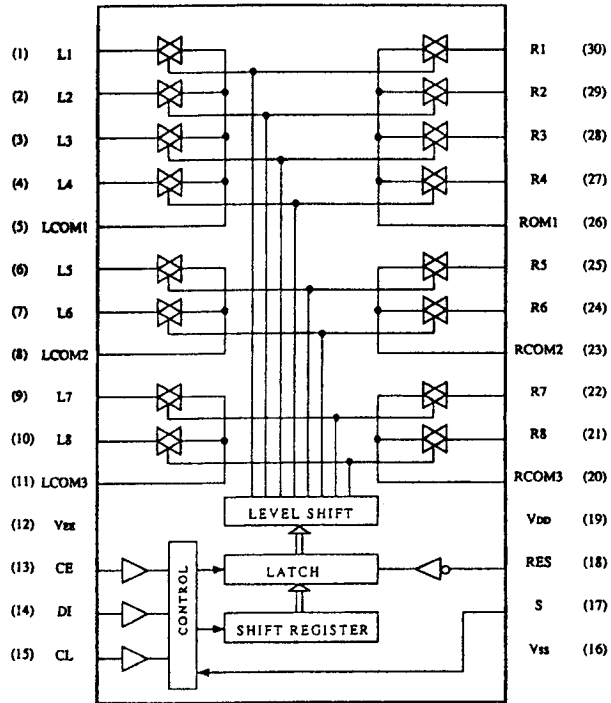
Q310

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	VIDEO-3' REC	Input/output terminals of multi source of left channel. Control the analogue switch at the serial data.	16	VEE	Ground terminal
2	VIDEO-2'		17	S	Selector terminal
3	VIDEO-2' REC		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	LCOM1		19	VDD	Power supply terminal (+15V)
5	VIDEO-2 MON	Input/output terminals of audio signal of left channel. Control the analogue switch at the serial data.	20	RCOM3	Input/output terminals of VIDEO-3 signal of right channel.
6	VIDEO-2		21	VIDEO-3	Input/output terminals of audio signal of right channel.
7	VIDEO-3 MON		22	VIDEO-3'	Control the analogue switch at the serial data.
8	LCOM2		23	RCOM2	Input/output terminals of audio signal of right channel.
9	VIDEO-3'	Input/output terminals of VIDEO-3 signal of left channel. Control the analogue switch at the serial data.	24	VIDEO-3 MON	Control the analogue switch at the serial data.
10	VIDEO-3		25	VIDEO-2	Control the analogue switch at the serial data.
11	LCOM3		26	VIDEO-2 MON	
12	Vss		Negative power supply terminal (-15V)	27	RCOM1
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	VIDEO-2' REC	Control the analogue switch at the serial data.
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	VIDEO-2'	Control the analogue switch at the serial data.
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	VIDEO-3' REC	

Q692

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	SURROUND	Input/output terminals of audio source of left channel. Control the analogue switch at the serial data.	16	VEE	Ground terminal
2	NC		17	S	Selector terminal
3	MULTI		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	LCOM1		19	VDD	Power supply terminal (+15V)
5	MULTI		20	RCOM3	Input/output terminals of audio signal of right channel. Control the analogue switch at the serial data.
6	HALL		21	DOLBY	
7	DOLBY		22	DOLBY	
8	LCOM2		23	RCOM2	
9	DOLBY		24	DOLBY	
10	DOLBY		25	HALL	
11	LCOM3		26	MULTI	
12	Vss	Negative power supply terminal (-15V)	27	RCOM1	
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	MULTI	
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	NC	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	SURROUND	

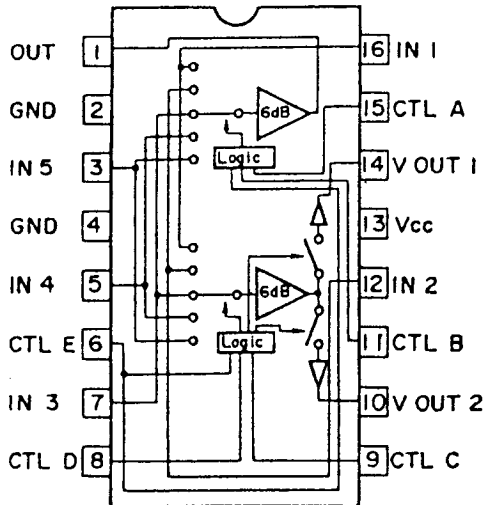
Q309
LC7821N (Analogue switch)



Q309

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	VIDEO-1'	Input/output terminals of multi source of left channel. Control the analogue switch at the serial data.	16	VEE	Ground terminal
2	TUNER'		17	S	Selector terminal
3	TAPE-1'		Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.	18	RES
4	TAPE-1' REC				
5	LCOM1				
6	TAPE-1 MON	Input/output terminals of TAPE-1 signal of left channel.	19	VDD	Power supply terminal (+15V)
7	TAPE-1		20	RCOM3	Input/output terminals of audio signal of right channel.
8	LCOM2	Control the analogue switch at the serial data.	21	VIDEO-1	Control the analogue switch at the serial data.
9	TUNER	Input/output terminals of audio signal of left channel.	22	TUNER	
10	VIDEO-1		23	RCOM2	Input/output terminals of TAPE-1 signal of right channel.
11	LCOM3	Control the analogue switch at the serial data.	24	TAPE-1	Control the analogue switch at the serial data.
12	Vss	Negative power supply terminal (-15V)	25	TAPE-1 MON	
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	26	RCOM1	Input/output terminals of multi source of right channel.
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	27	TAPE-1' REC	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	28	TAPE-1'	
			29	TUNER'	Control the analogue switch at the serial data.
			30	VIDEO-1'	

Q251
BA7625 (Video Selector Switch)



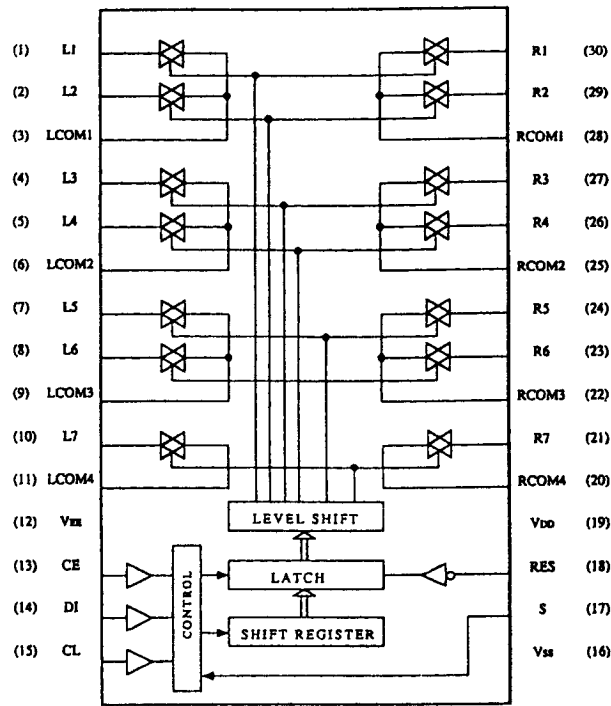
#15	#11	#6	#1
A	B	E	MONITOR OUT
L	L	X	IN1
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

#9	#8	#6	#14
C	D	E	VOUT 1
L	L	X	
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

#15	#11	#6	#10
A	B	E	VOUT 2
L	L	X	IN1
H	L	X	
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

X: Don't care

Q308, Q691
LC7823N (Analogue switch)



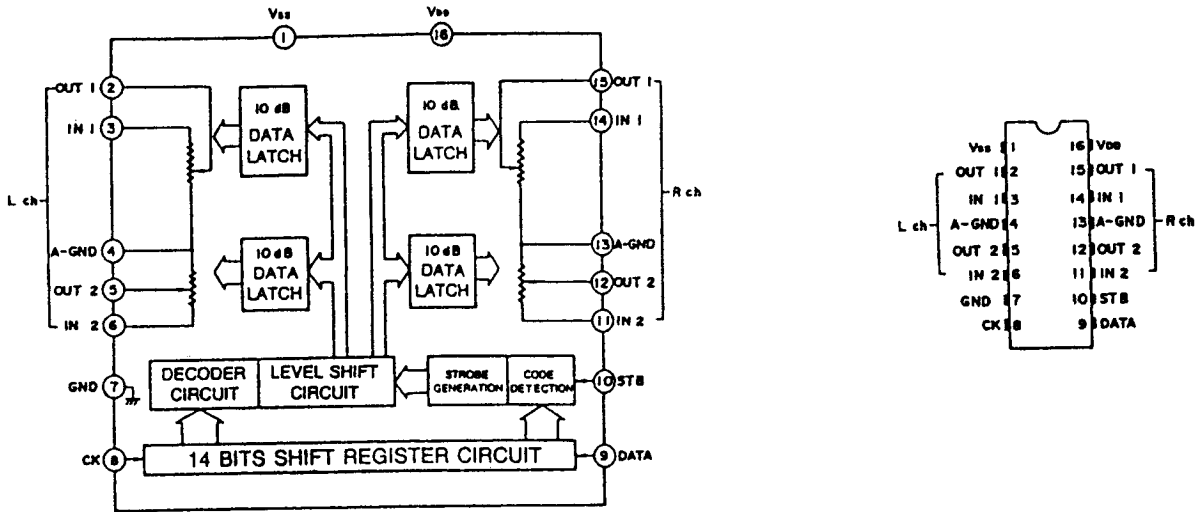
Q308

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	PHONO'	Input/output terminals of multi source of left channel. Control the analogue switch at the serial data.	16	VBE	Ground terminal
2	CD'		17	S	Selector terminal
3	LCOM1		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	CD	Input/output terminals of audio signal of left channel. Control the analogue switch at the serial data.	19	VDD	Power supply terminal (+15V)
5	PHONO		20	RCOM4	Input/output terminals of multi source of right channel. Control the analogue switch at the serial data.
6	LCOM2		21	TAPE-2'	
7	SOURCE		22	RCOM3	Input/output terminals of audio signal of right channel. Control the analogue switch at the serial data.
8	TAPE-2		23	TAPE-2	
9	LCOM3	24	SOURCE		
10	TAPE-2'	Input/output terminals of multi source of left channel. Control the analogue switch at the serial data.	25	RCOM2	Input/output terminals of multi source of right channel. Control the analogue switch at the serial data.
11	LCOM4		26	PHONO	
12	Vss	Negative power supply terminal (-15V)	27	CD	
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	RCOM1	
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	CD'	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	PHONO'	

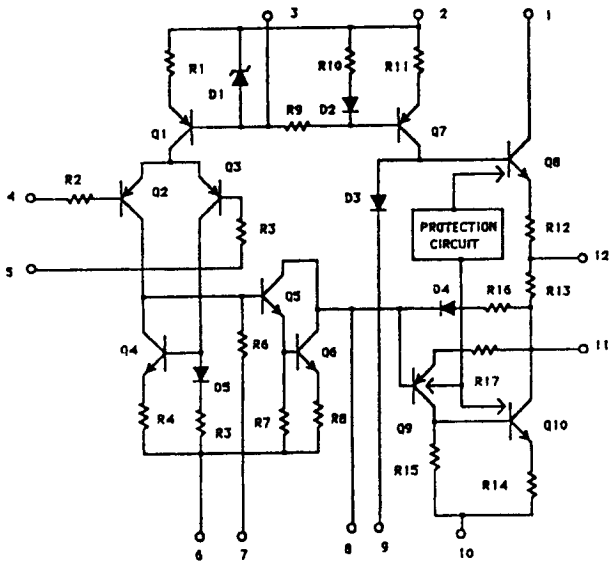
Q691

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	DOLBY	Input/output terminals of digital delay signal when surround mode. Control the analogue switch at the serial data.	16	VBE	Ground terminal
2	HALL		17	S	Selector terminal
3	LCOM1		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	NORMAL	Mode select terminal when Dolby Pro Logic. Control the analogue switch at the serial data.	19	VDD	Power supply terminal (+15V)
5	WIDE		20	NC	Not used.
6	LCOM2		21	NC	
7	TEST B		22	NC	
8	TEST A		23	NC	
9	LCOM3		24	NC	
10	TEST		25	NC	
11	LCOM4	26	NC		
12	Vss	Negative power supply terminal (-15V)	27	NC	
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	NC	
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	NC	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	NC	

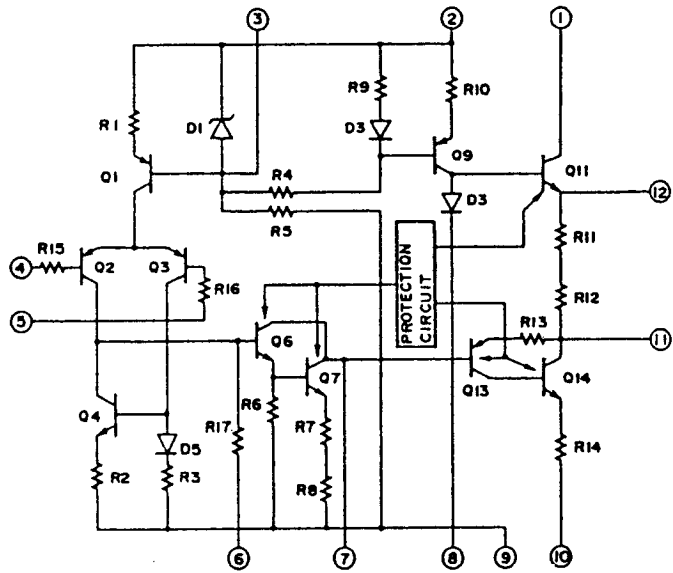
Q671
TC9213P (Electro Volume)



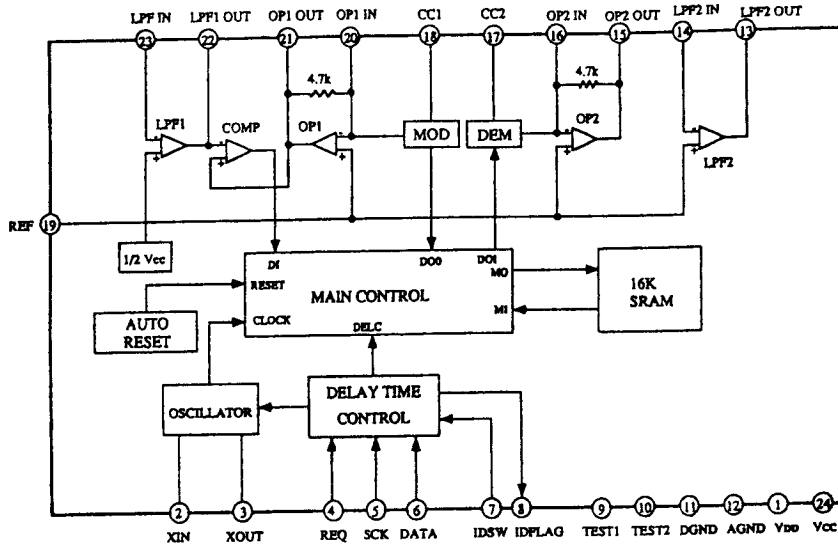
Q501, Q502, Q541
μ PC1298V (Power Amplifier Driver)



Q571, Q572
μ PC1225H (Power Amplifier Driver)

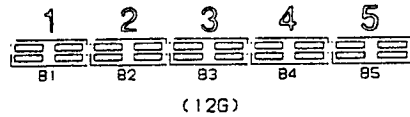
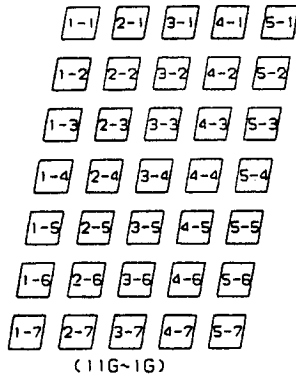
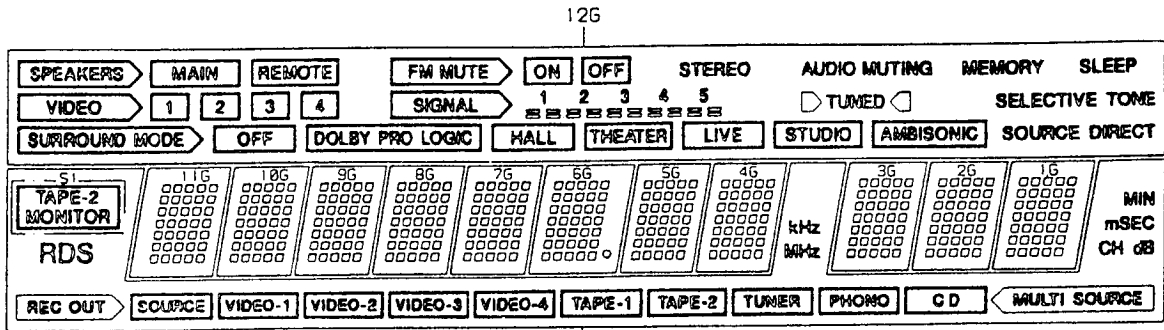


Q651
M65830P (Digital Delay)



Pin No.	Mark	Function	I/O	Description
1	VDD	Digital power supply	-	
2	XIN	Resonator input	I	Connect the 2MHz ceramic resonator
3	XOUT	Resonator output	O	
4	REQ	Request	I	Data request input
5	SCK	Shift lock	I	Serial data shift clock input
6	DATA	Data	I	Serial data input
7	IDSW	ID switch	I	External input of 4th bit of ID code
8	IDFLAG	ID flag	O	Data input confirmation pulse and serial data output
9	TEST1	Test 1	-	Normal mode when low level
10	TEST2	Test 2	-	Normal mode when low level
11	D GND	Digital ground	-	
12	A GND	Analog ground	-	
13	LPF2 OUT	LPF filter 2 output	O	
14	LPF2 IN	LPF filter 2 input	I	
15	OP2 OUT	Operation amp. 2 output	O	
16	OP2 IN	Operation amp. 2 input	I	
17	CC2	Current control 2	-	Demodulation ADM control
18	CC1	Current control 1	-	Modulation ADM control
19	REF	Reference	-	Analog reference voltage=1/2VCC
20	OP1 IN	Operation amp. 1 input	I	
21	OP1 OUT	Operation amp. 1 output	O	
22	LPF1 OUT	LPF filter 1 output	O	
23	LPF1 IN	LPF filter 1 input	I	
24	VCC	Analog power supply	-	

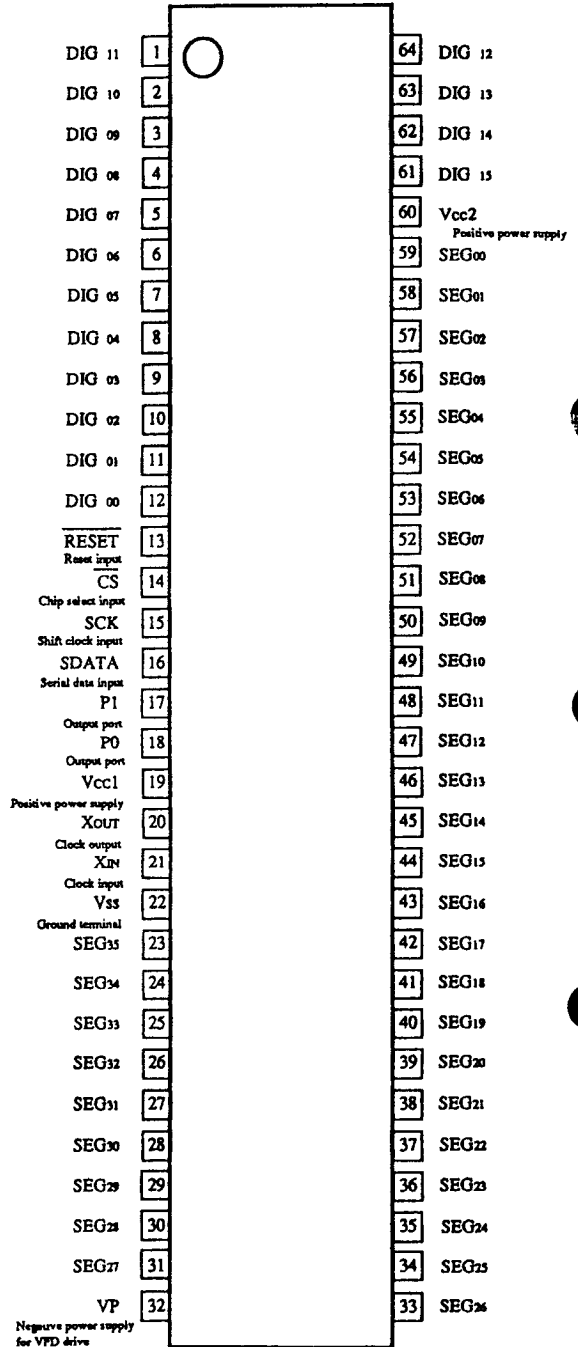
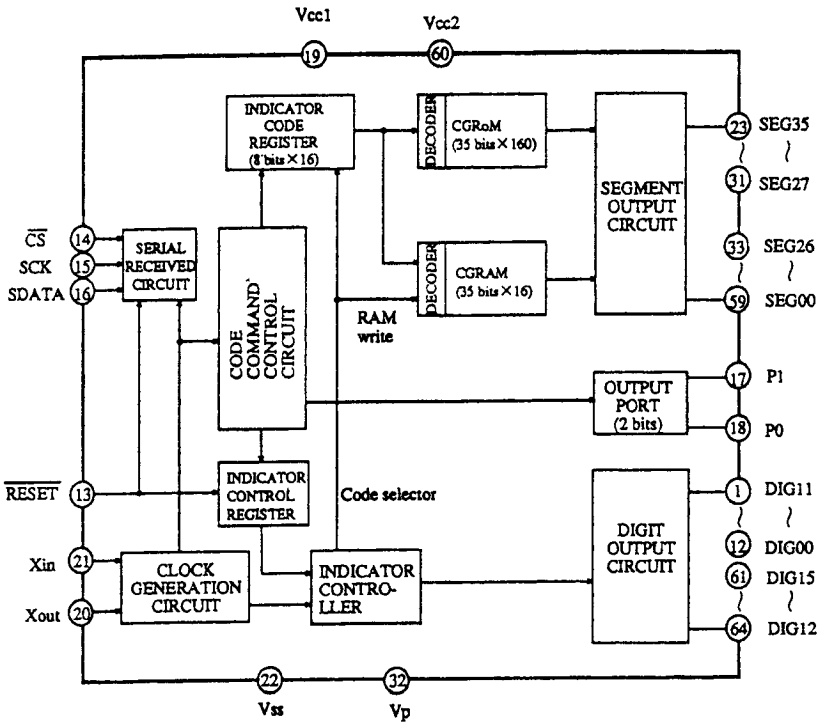
Q703
13-BT-131GK (Fluorescent Indicator Tube)



	13G	12G	11G~7G	6G	5G~1G
P1	MIN	SLEEP	1-1	1-1	1-1
P2	mSEC	MEMORY	2-1	2-1	2-1
P3	dB	AUDIO MUTING	3-1	3-1	3-1
P4	CH	SELECTIVE TONE	4-1	4-1	4-1
P5	MULTI SOURCE	SOURCE DIRECT	5-1	5-1	5-1
P6	REC OUT	TUNED	1-2	1-2	1-2
P7	SOURCE	STEREO	2-2	2-2	2-2
P8	(SOURCE)	OFF (Center)	3-2	3-2	3-2
P9	VIDEO-1	ON	4-2	4-2	4-2
P10	(VIDEO-1)	FM MUTE	5-2	5-2	5-2
P11	VIDEO-2	AMBISONIC	1-3	1-3	1-3
P12	(VIDEO-2)	STUDIO	2-3	2-3	2-3
P13	VIDEO-3	LIVE	3-3	3-3	3-3
P14	(VIDEO-3)	THEATER	4-3	4-3	4-3
P15	VIDEO-4	HALL	5-3	5-3	5-3
P16	(VIDEO-4)	DOLBY PRO LOGIC	1-4	1-4	1-4
P17	TAPE-1	OFF (LEFT)	2-4	2-4	2-4
P18	(TAPE-1)	SURROUND MODE	3-4	3-4	3-4
P19	TAPE-2	1 2 3 4 5	4-4	4-4	4-4
P20	(TAPE-2)	B5	5-4	5-4	5-4
P21	TUNER	B5	1-5	1-5	1-5
P22	(TUNER)	B4	2-5	2-5	2-5
P23	PHONO	B3	3-5	3-5	3-5
P24	(PHONO)	B2	4-5	4-5	4-5
P25	CD	B1	5-5	5-5	5-5
P26	(CD)	SIGNAL	1-6	1-6	1-6
P27	MHz	REMOTE	2-6	2-6	2-6
P28	MHz	MAIN	3-6	3-6	3-6
P29	SI	SPEAKERS	4-6	4-6	4-6
P30	RDS	4	5-6	5-6	5-6
P31		3	1-7	1-7	1-7
P32		2	2-7	2-7	2-7
P33		1	3-7	3-7	3-7
P34		VIDEO	4-7	4-7	4-7
P35			5-7	5-7	5-7
P36				○	

PIN NO.	64	63	62	61	60	59	58	57
CONNECTION	F2	F2	NP	NP	P36	P35	P34	P33
PIN NO.	56	55	54	53	52	51	50	49
CONNECTION	P32	P31	P30	P29	P28	P27	P26	P25
PIN NO.	48	47	46	45	44	43	42	41
CONNECTION	P24	P23	P22	P21	P20	P19	P18	P17
PIN NO.	40	39	38	37	36	35	34	33
CONNECTION	P16	P15	P14	P13	P12	P11	P10	P9
PIN NO.	32	31	30	29	28	27	26	25
CONNECTION	P8	P7	P6	P5	P4	P3	P2	P1
PIN NO.	24	23	22	21	20	19	18	17
CONNECTION	NC	NC	NC	NC	NC	NC	NC	13G
PIN NO.	16	15	14	13	12	11	10	9
CONNECTION	12G	11G	10G	9G	8G	7G	6G	5G
PIN NO.	8	7	6	5	4	3	2	1
CONNECTION	4G	3G	2G	1G	NP	NP	F1	F1

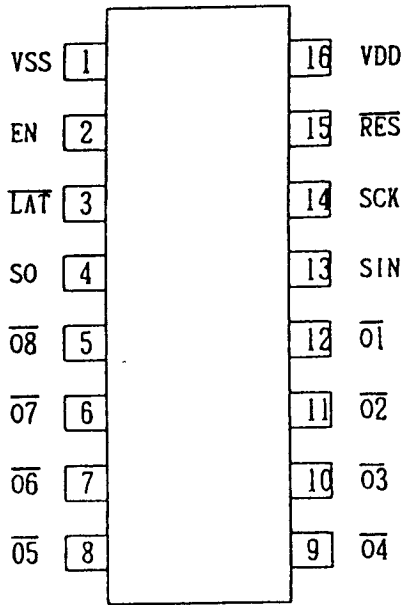
Q702
M66004FP (FL Tube Driver)



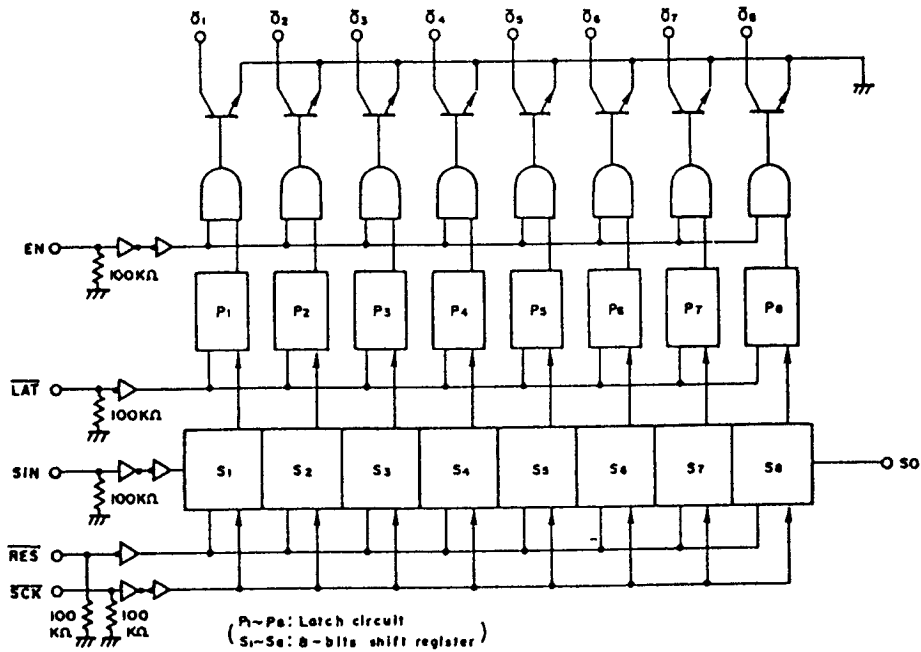
DIG00 ~ DIG15: Digit output
 SEG00 ~ SEG35: Segment output

Q971

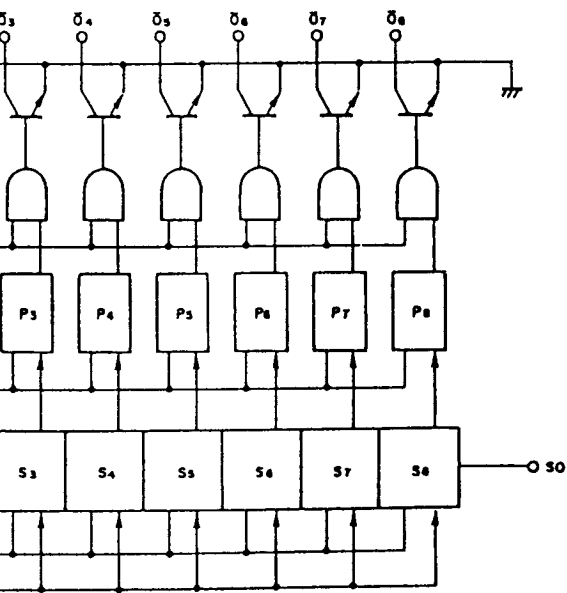
μ PD6345C (Extended IC)



Pin No.	Symbol	Description
1	VSS	Ground terminal
2	EN	Chip enable input terminal. Connect to the terminal EN of the microprocessor.
3	$\overline{\text{LAT}}$	Latch input terminal. Connect to the terminal LAT of the microprocessor.
4	SO	Serial data output terminal. Not used.
5	$\overline{\text{O8}}$	Not used.
6	$\overline{\text{O7}}$	Not used.
7	$\overline{\text{O6}}$	Front speaker relay control output terminal
8	$\overline{\text{O5}}$	Center speaker relay control output terminal
9	$\overline{\text{O4}}$	Rear speaker relay control terminal
10	$\overline{\text{O3}}$	Remote speaker relay control terminal
11	$\overline{\text{O2}}$	Headphone relay control output terminal
12	$\overline{\text{O1}}$	Power supply voltage switch relay control output terminal
13	SIN	Serial data input terminal. Connect to the terminal DATA of the microprocessor.
14	SCK	Serial clock input terminal. Connect to the terminal CLOCK of the microprocessor.
15	RESET	Reset input terminal
16	VDD	Power supply terminal

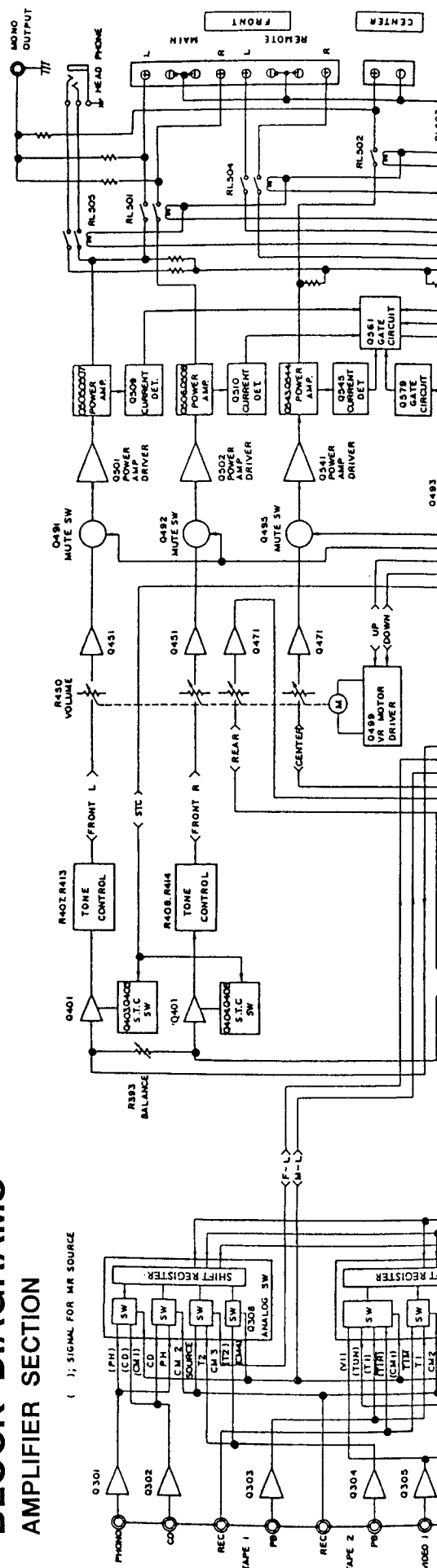


Pin No.	Symbol	Description
1	VSS	Ground terminal
2	EN	Chip enable input terminal. Connect to the terminal EN of the microprocessor.
3	LAT	Latch input terminal. Connect to the terminal LAT of the microprocessor.
4	SO	Serial data output terminal. Not used.
5	O8	Not used.
6	O7	Not used.
7	O6	Front speaker relay control output terminal
8	O5	Center speaker relay control output terminal
9	O4	Rear speaker relay control terminal
10	O3	Remote speaker relay control terminal
11	O2	Headphone relay control output terminal
12	O1	Power supply voltage switch relay control output terminal
13	SIN	Serial data input terminal. Connect to the terminal DATA of the microprocessor.
14	SCK	Serial clock input terminal. Connect to the terminal CLOCK of the microprocessor.
15	RESET	Reset input terminal
16	VDD	Power supply terminal

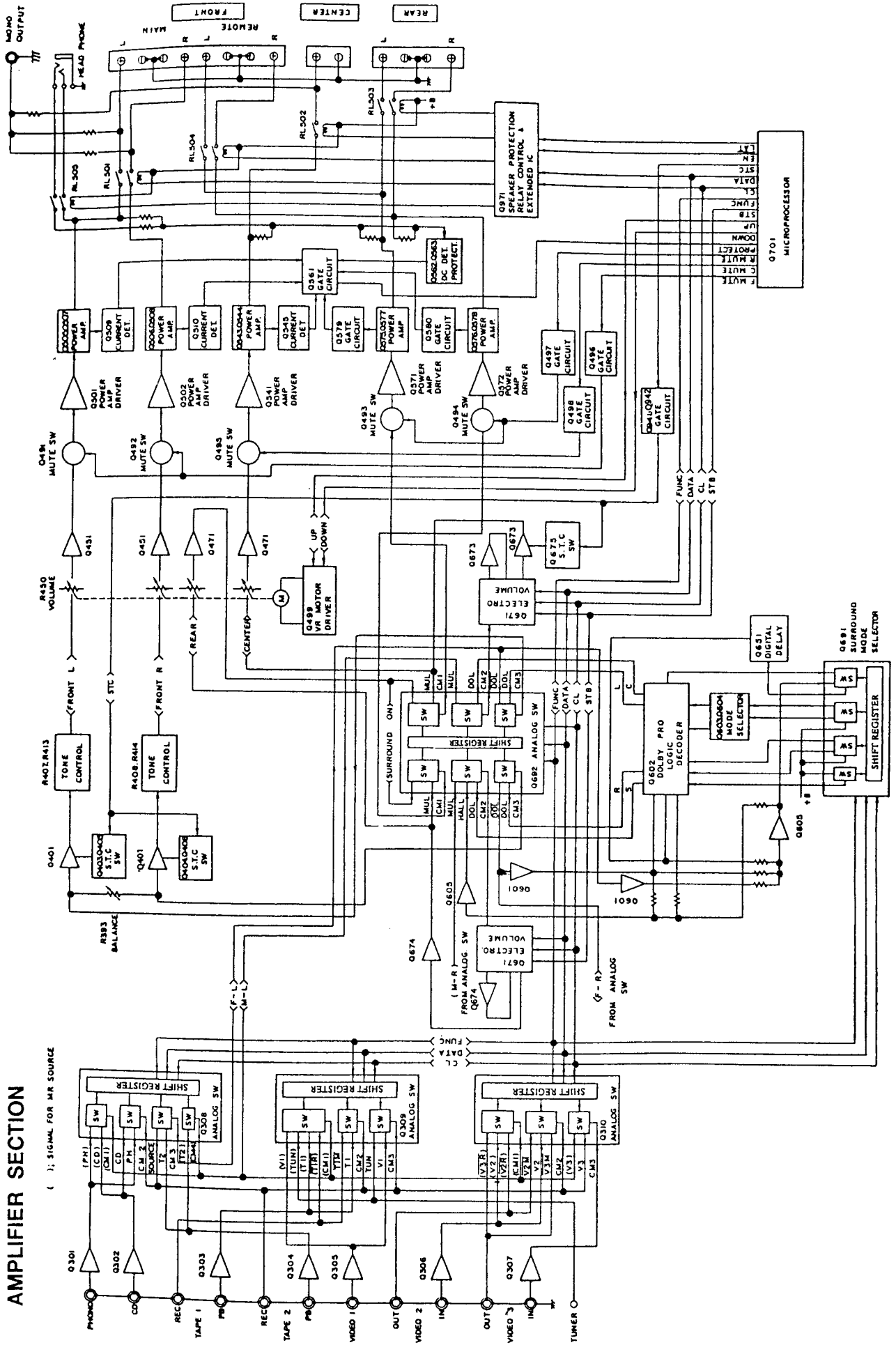


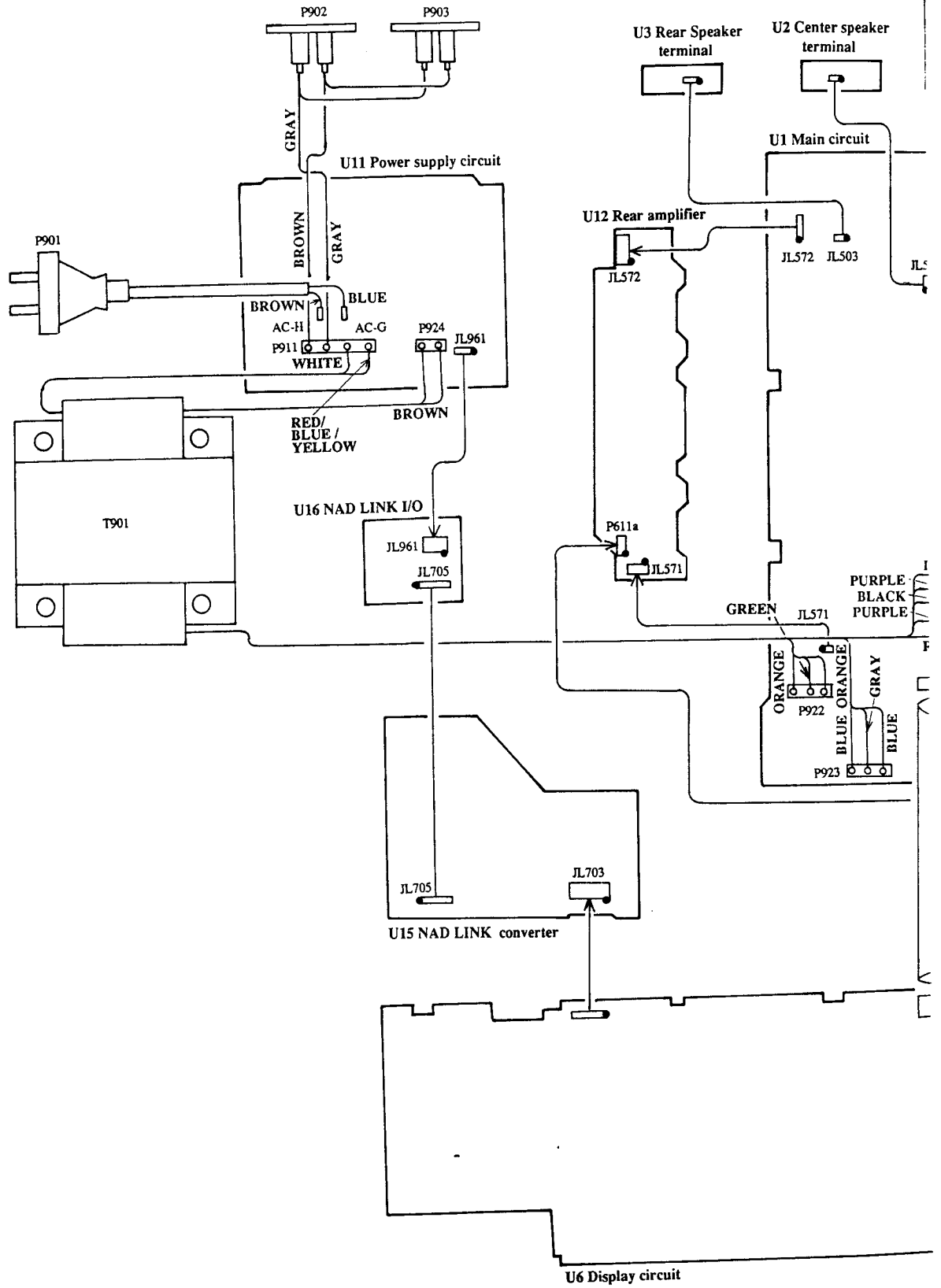
(circuit shift register)

BLOCK DIAGRAMS AMPLIFIER SECTION

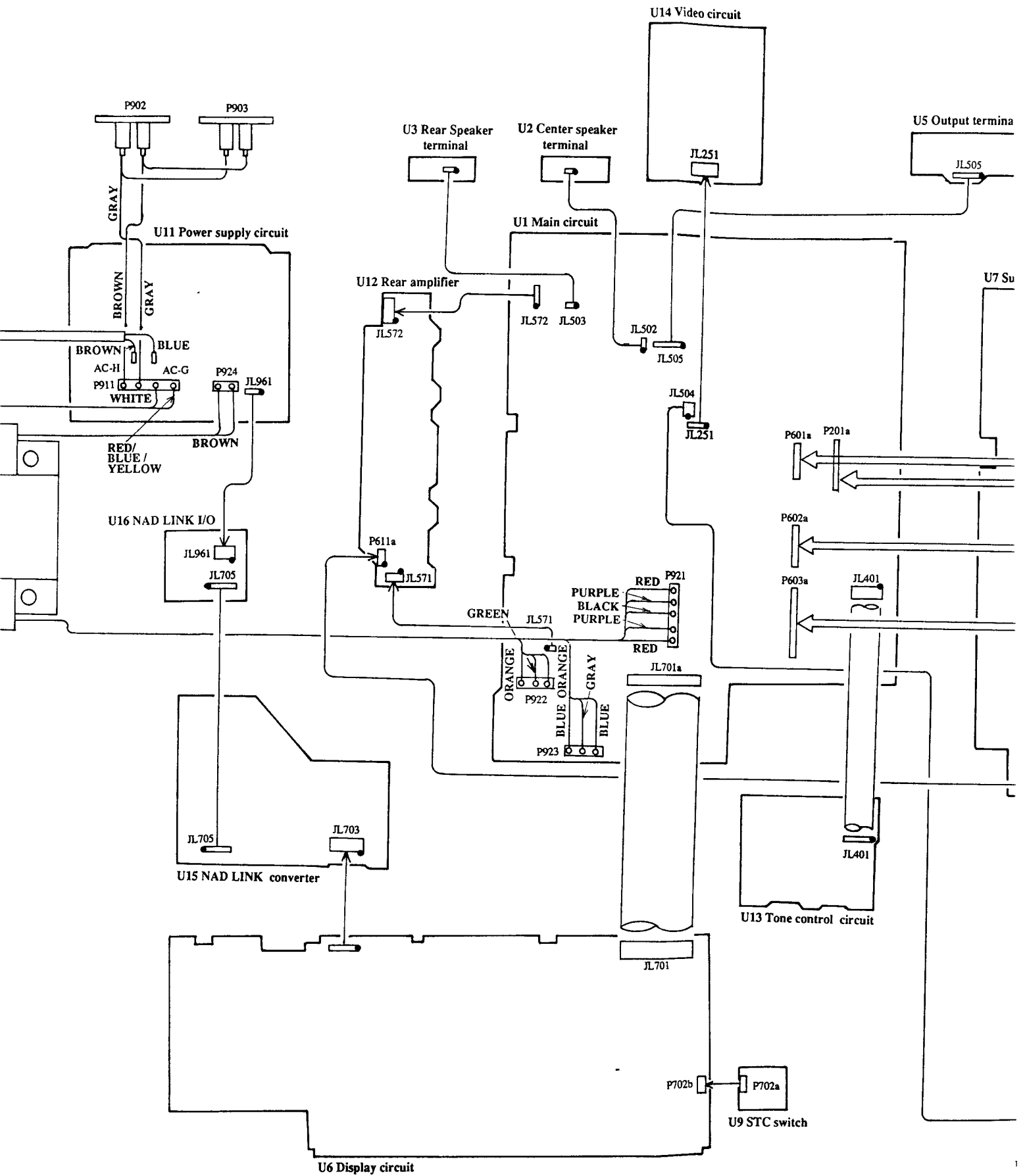


BLOCK DIAGRAMS AMPLIFIER SECTION

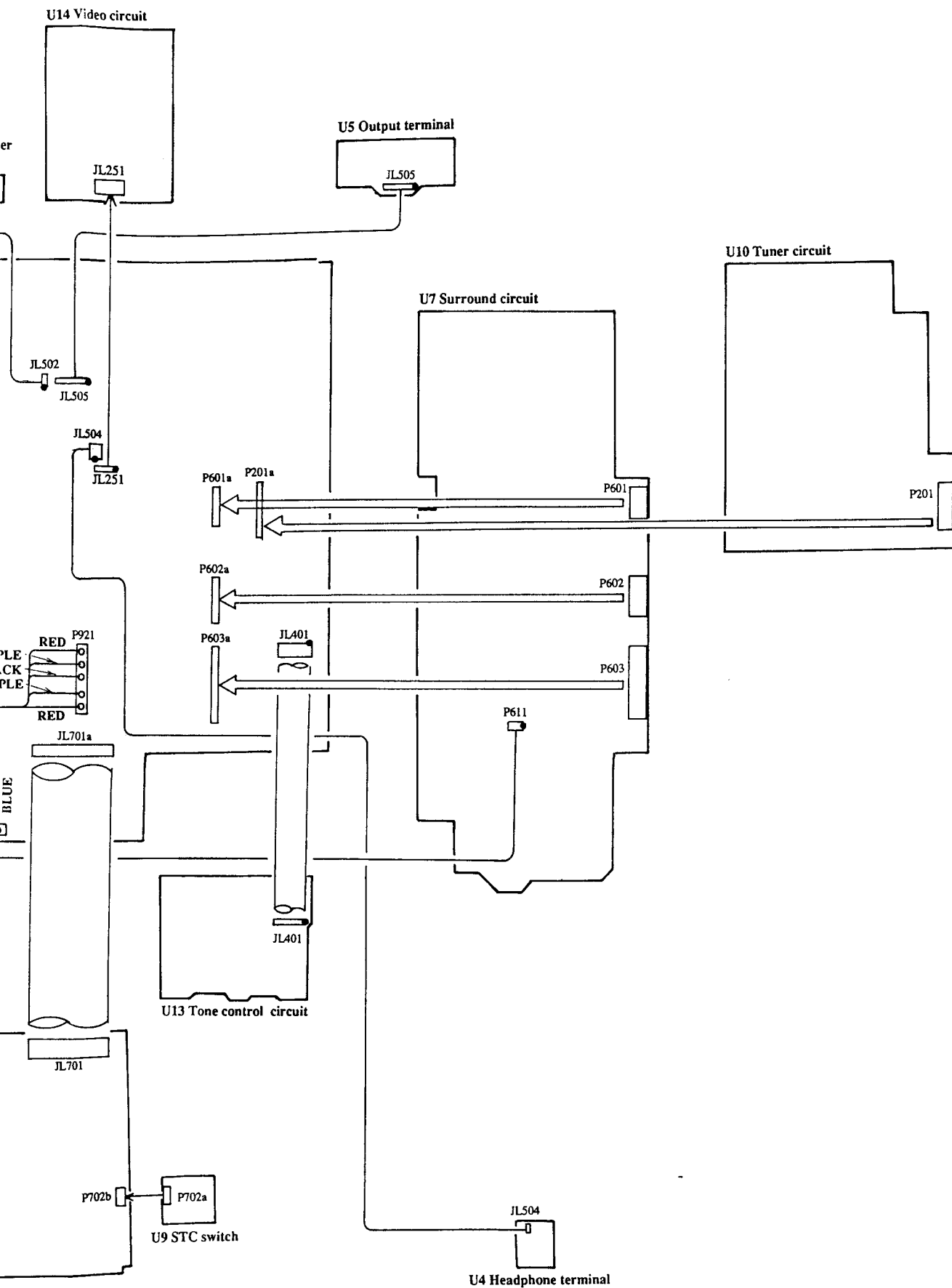




WIRING DIAGRAM



WIRING DIAGRAM



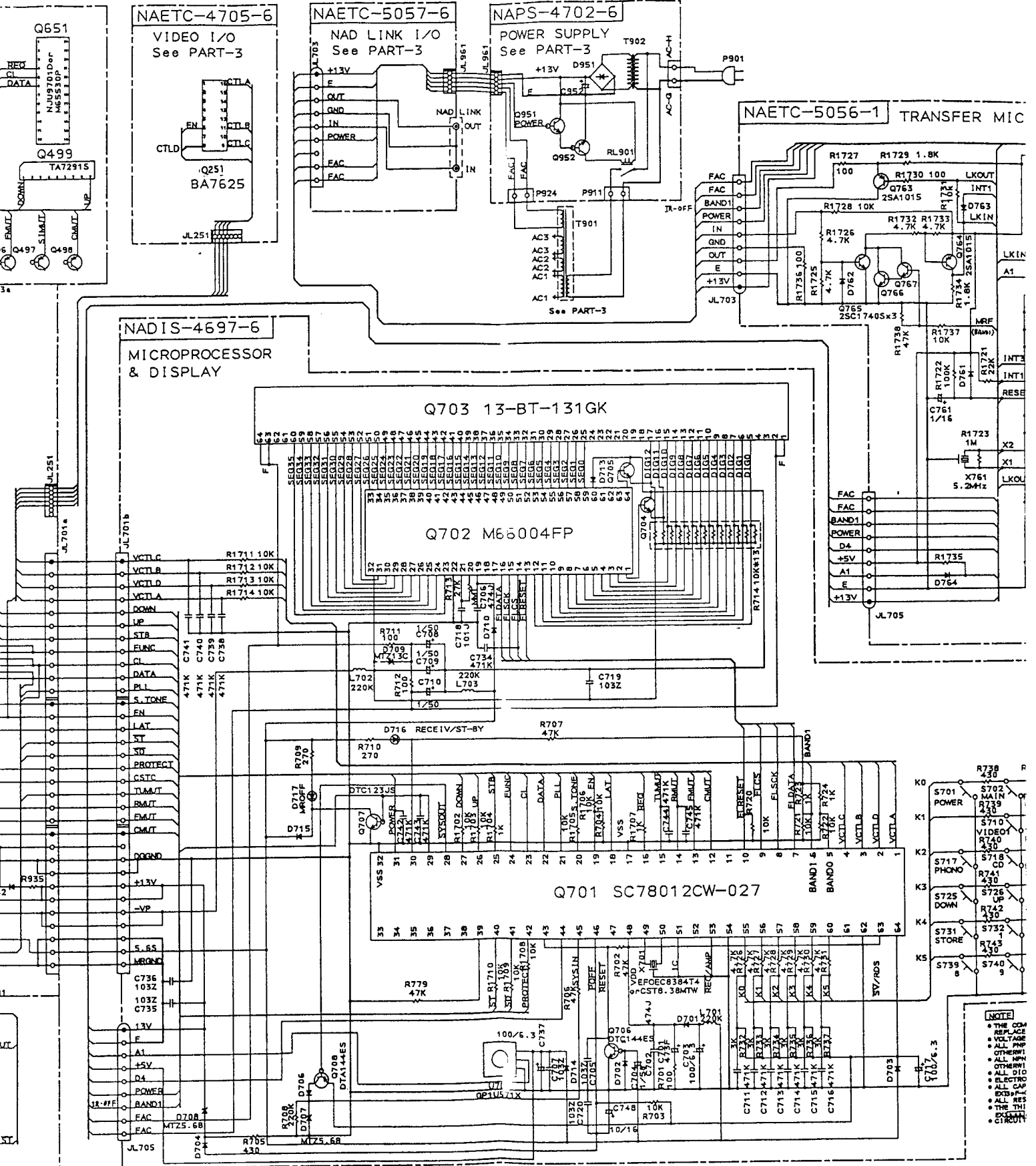
PART-1)
PROCESSOR

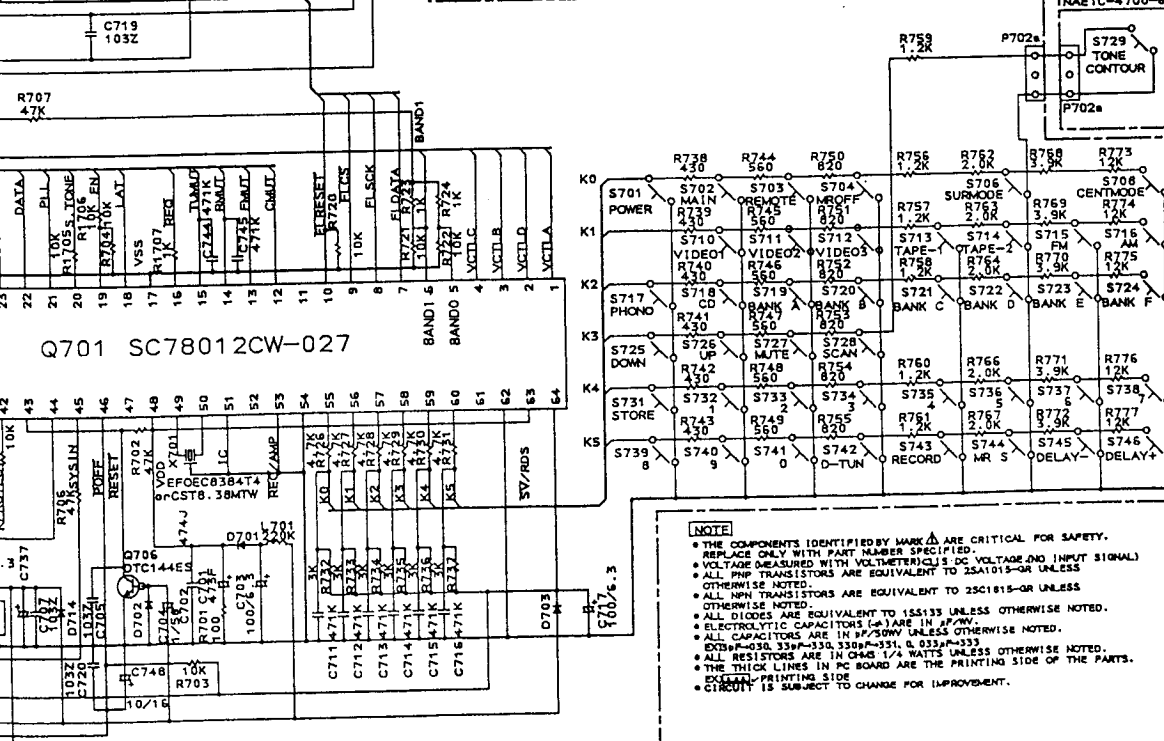
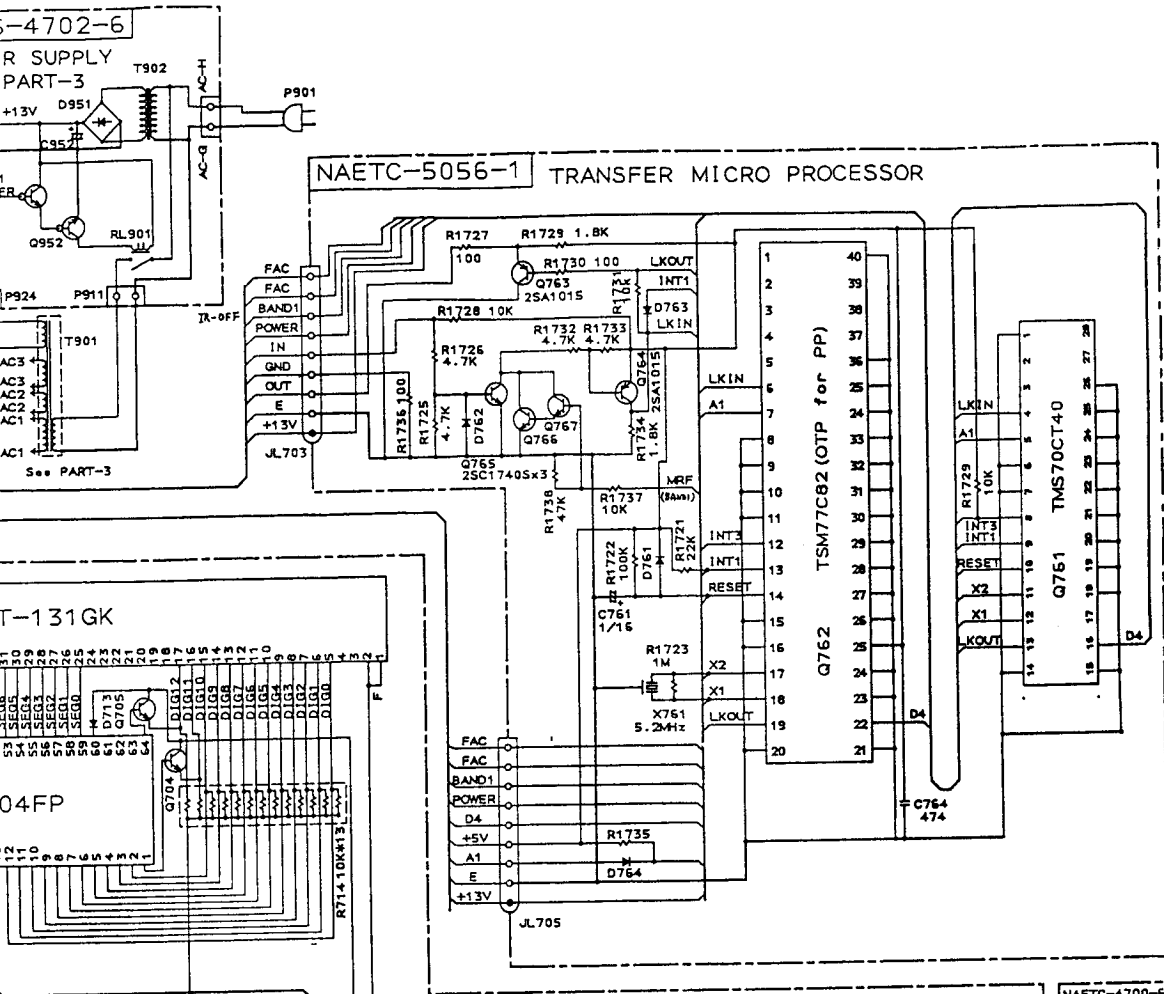
C

D

E

F

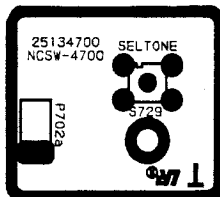
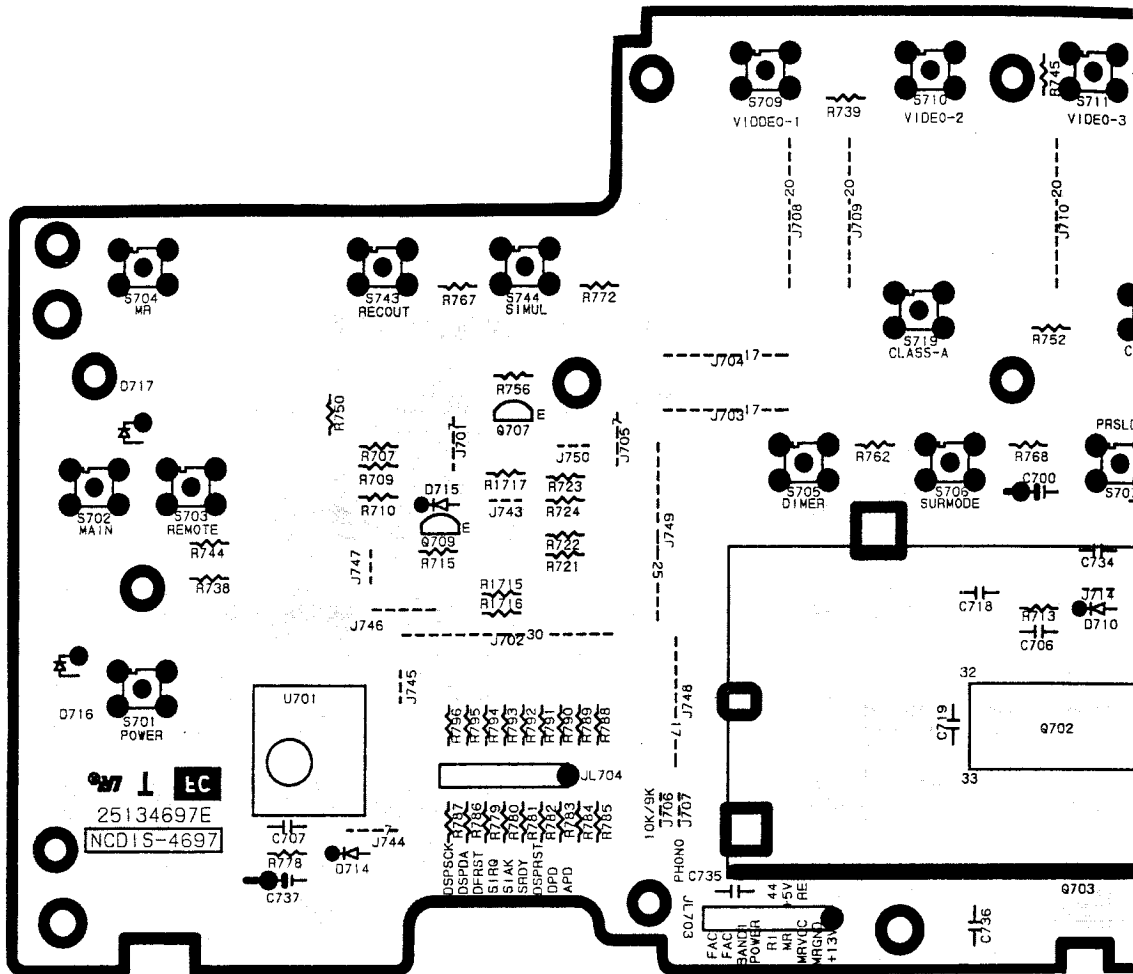




- NOTE**
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
 - VOLTAGE MEASURED WITH VOLTMETER (AC) IS DC VOLTAGE (NO INPUT SIGNAL).
 - ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-OR UNLESS OTHERWISE NOTED.
 - ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-OR UNLESS OTHERWISE NOTED.
 - ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITORS (E) ARE IN μ F/V.
 - ALL CAPACITORS ARE IN P/P/50V UNLESS OTHERWISE NOTED.
 - EXCEPT 030, 33P-330, 330P-330, & 033P-333.
 - ALL RESISTORS ARE IN OHMS 1/4 WATT UNLESS OTHERWISE NOTED.
 - THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
 - ORIGINAL PRINTING SIDE.
 - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

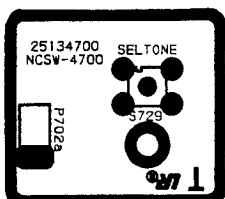
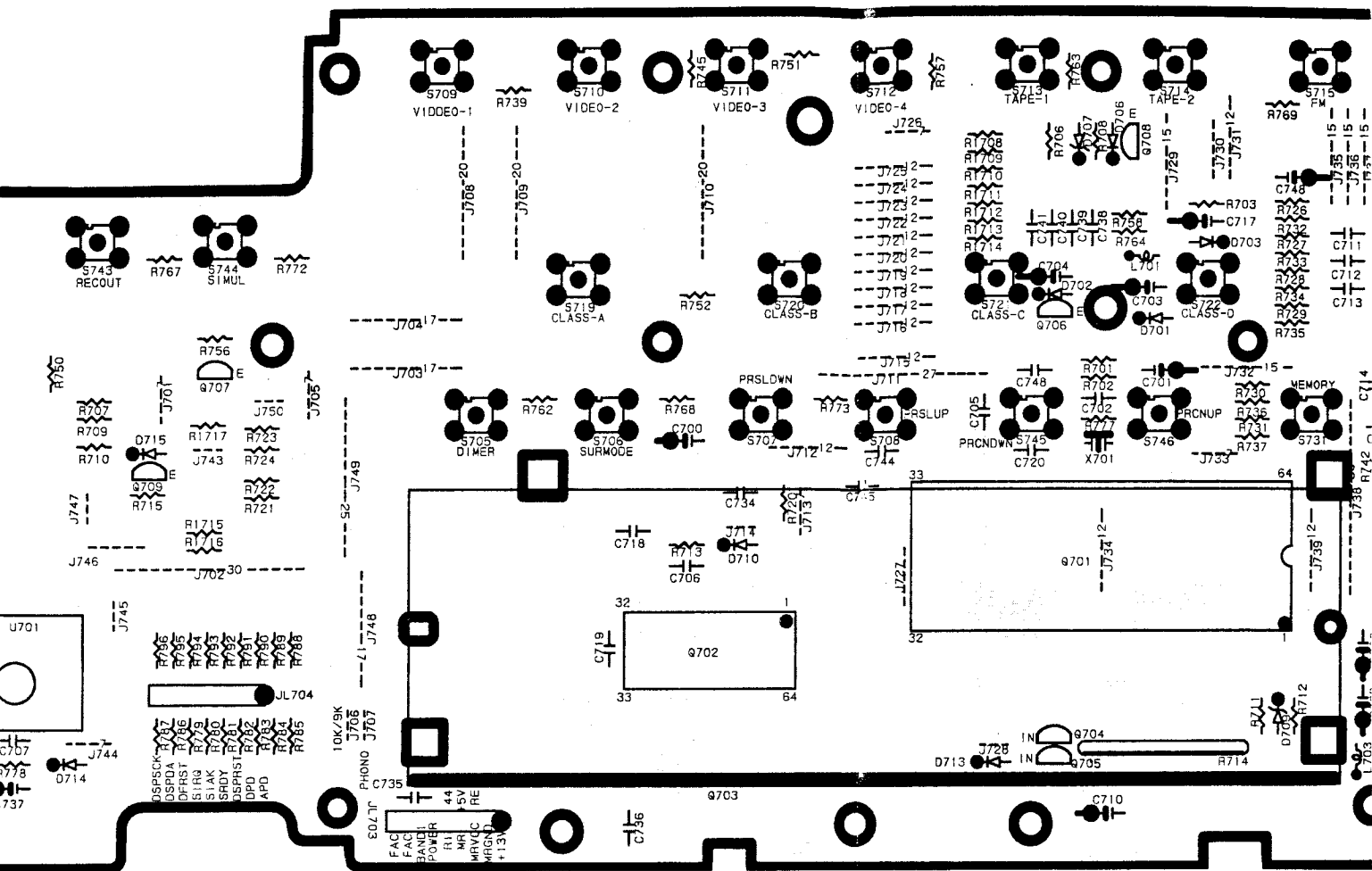
DISPLAY CIRCUIT PC BOARD (NA



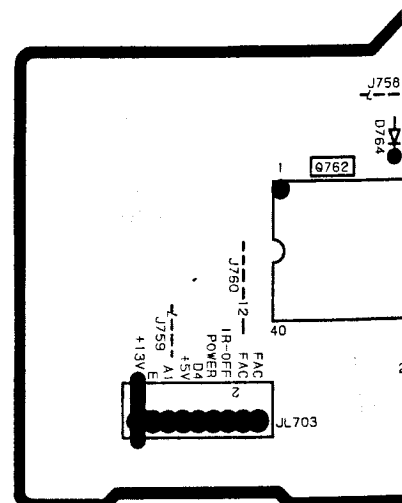
STC SWITCH PC BOARD
(NASW-4700)

BOARD VIEW FROM BOTTOM SIDE

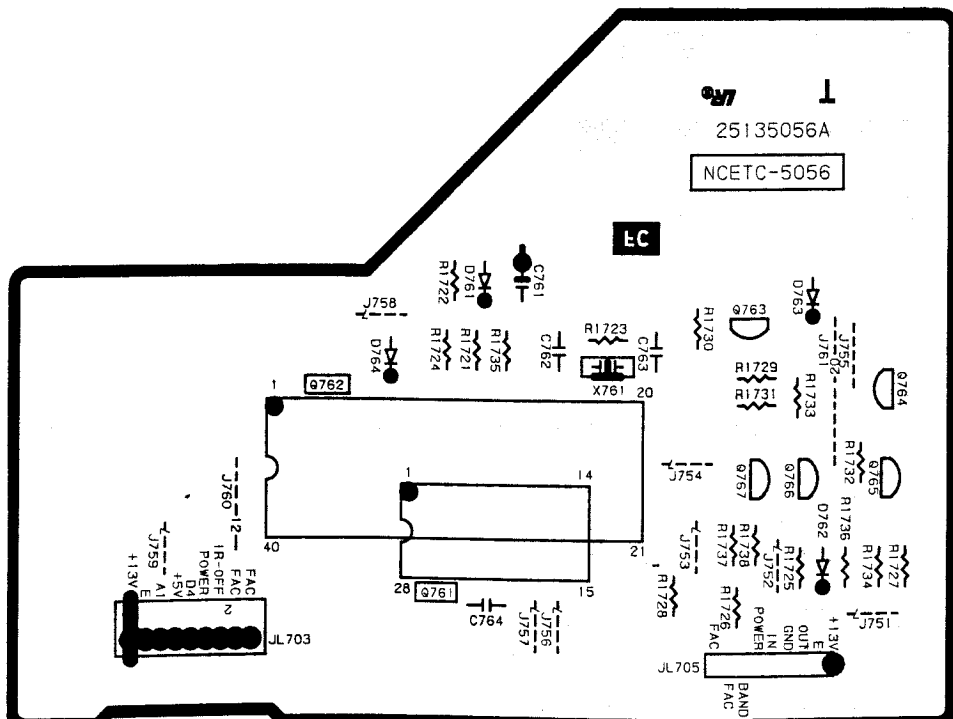
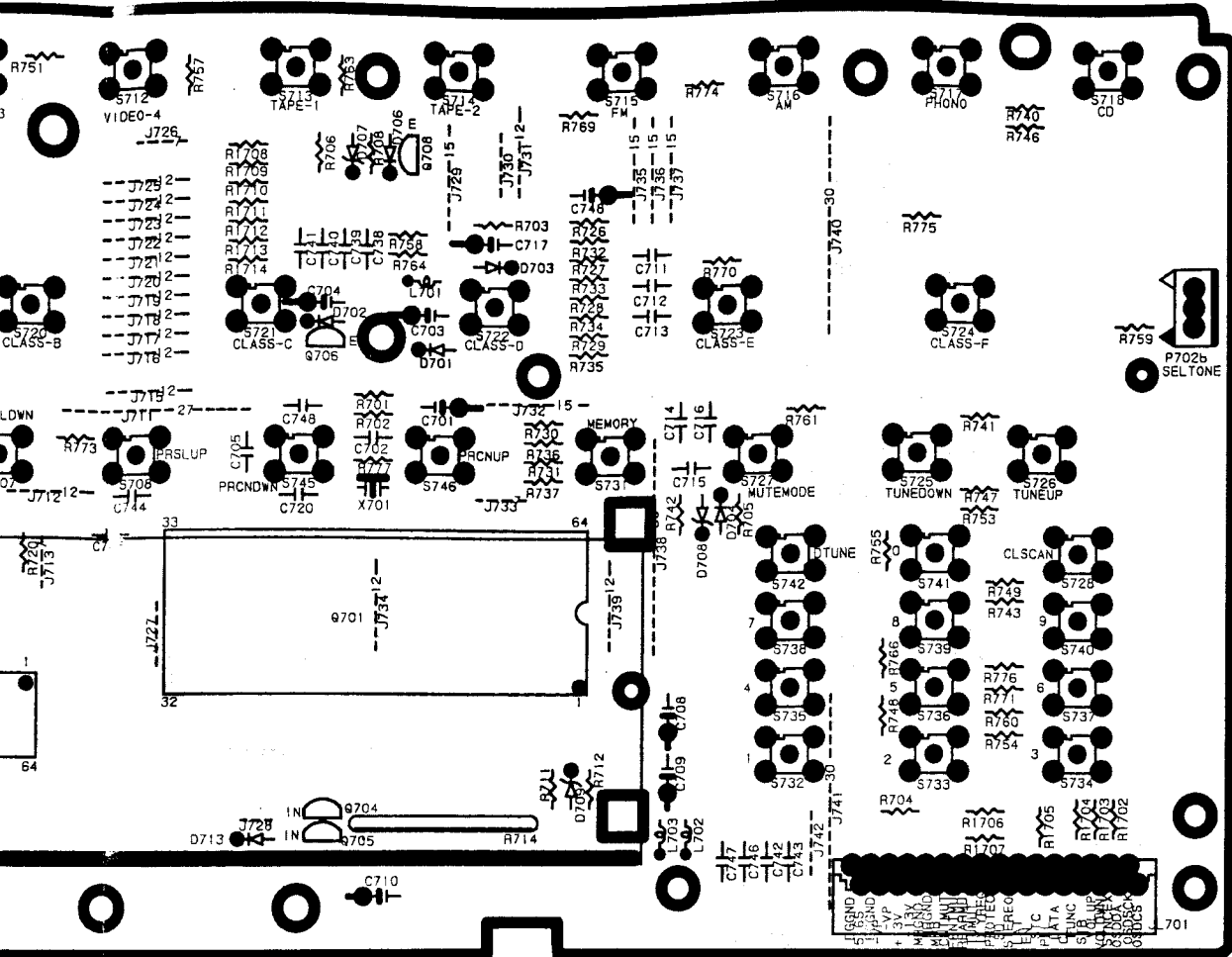
DISPLAY CIRCUIT PC BOARD (NADIS-4697)



STC SWITCH PC BOARD
(NASW-4700)



NAD LINK CONVERTER P

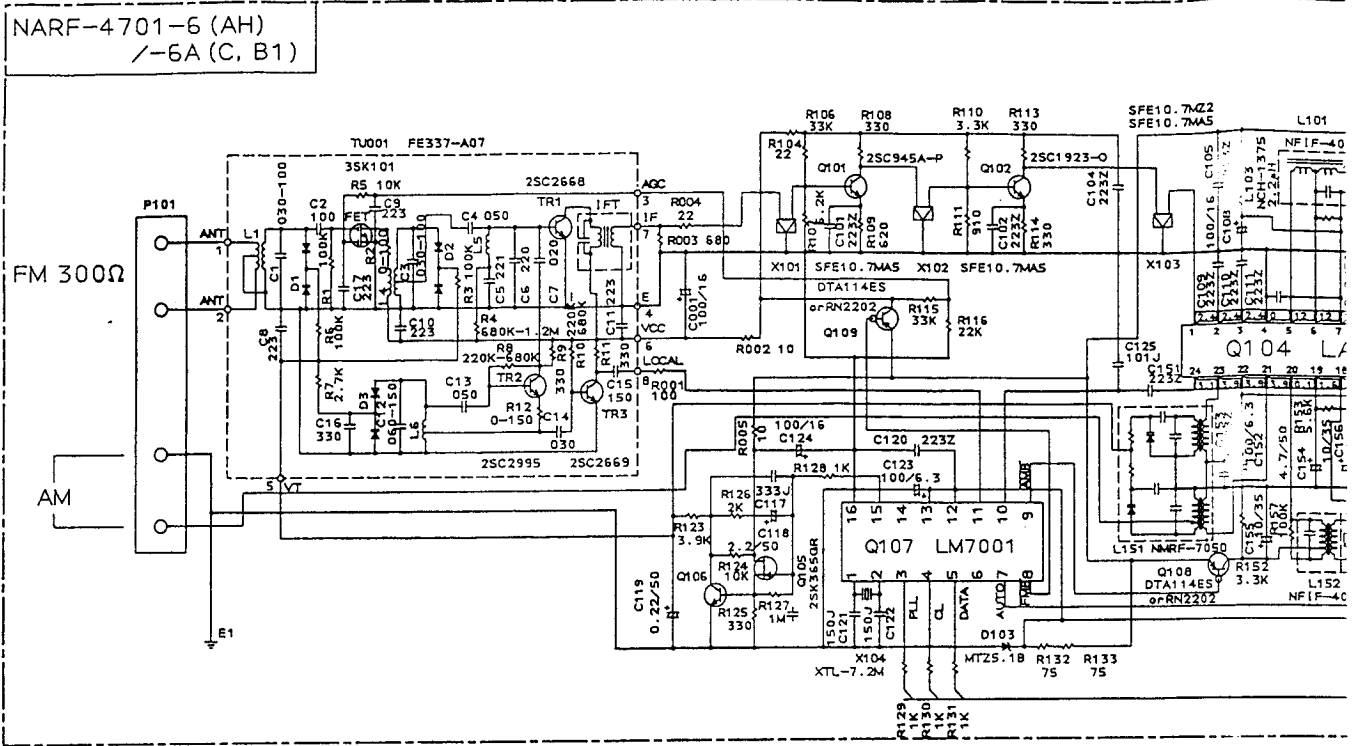


NAD LINK CONVERTER PC BOARD (NAETC-5056)

SCHEMATIC DIAGRAM (PART-2)

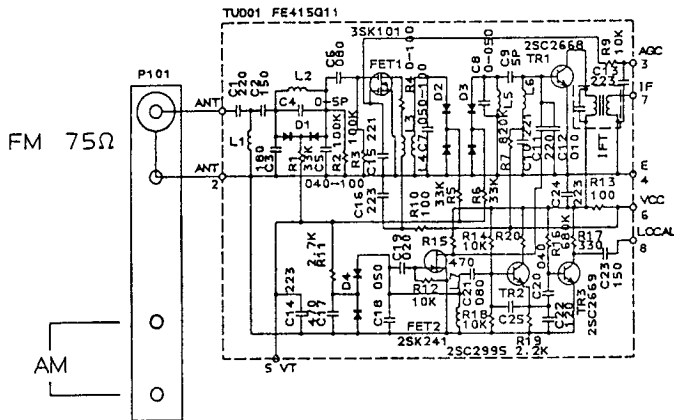
TUNER SECTION

1



2

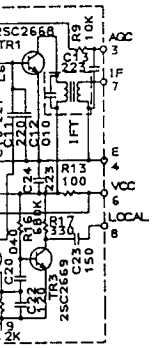
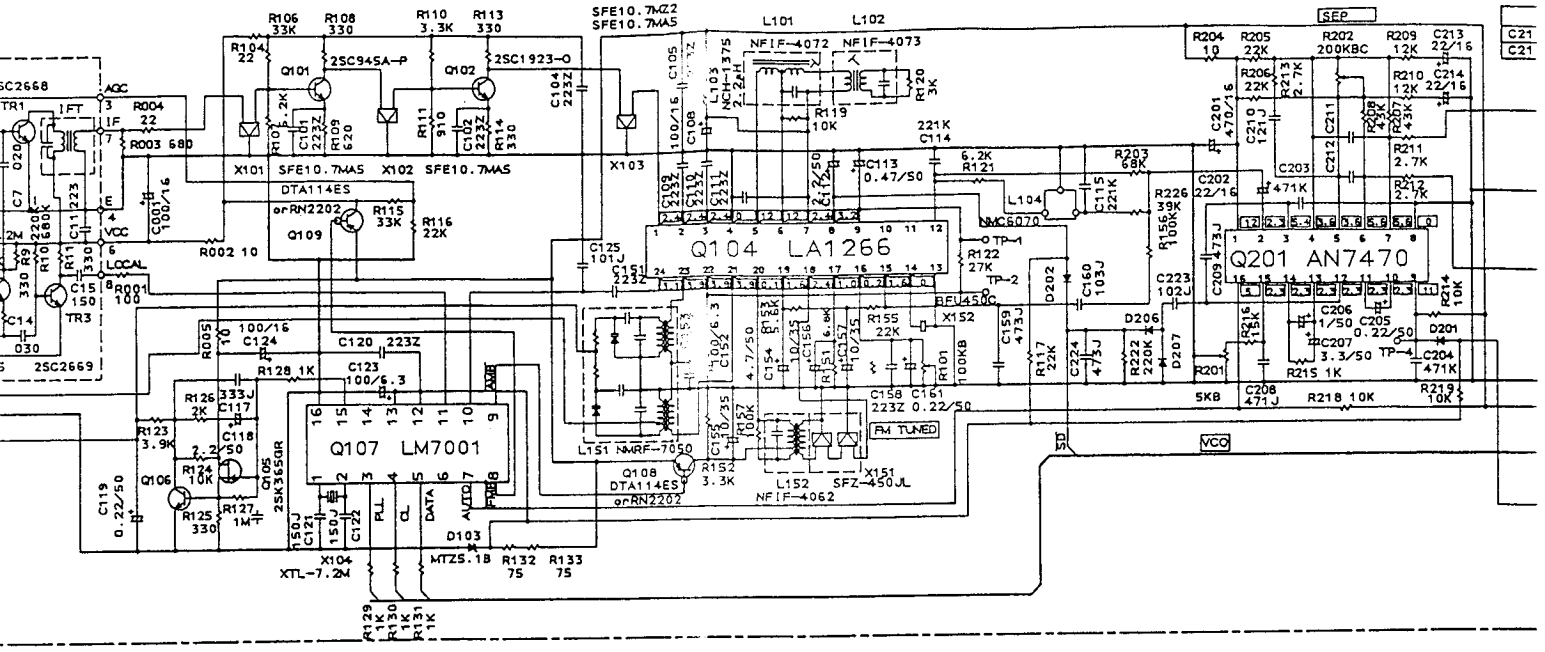
3



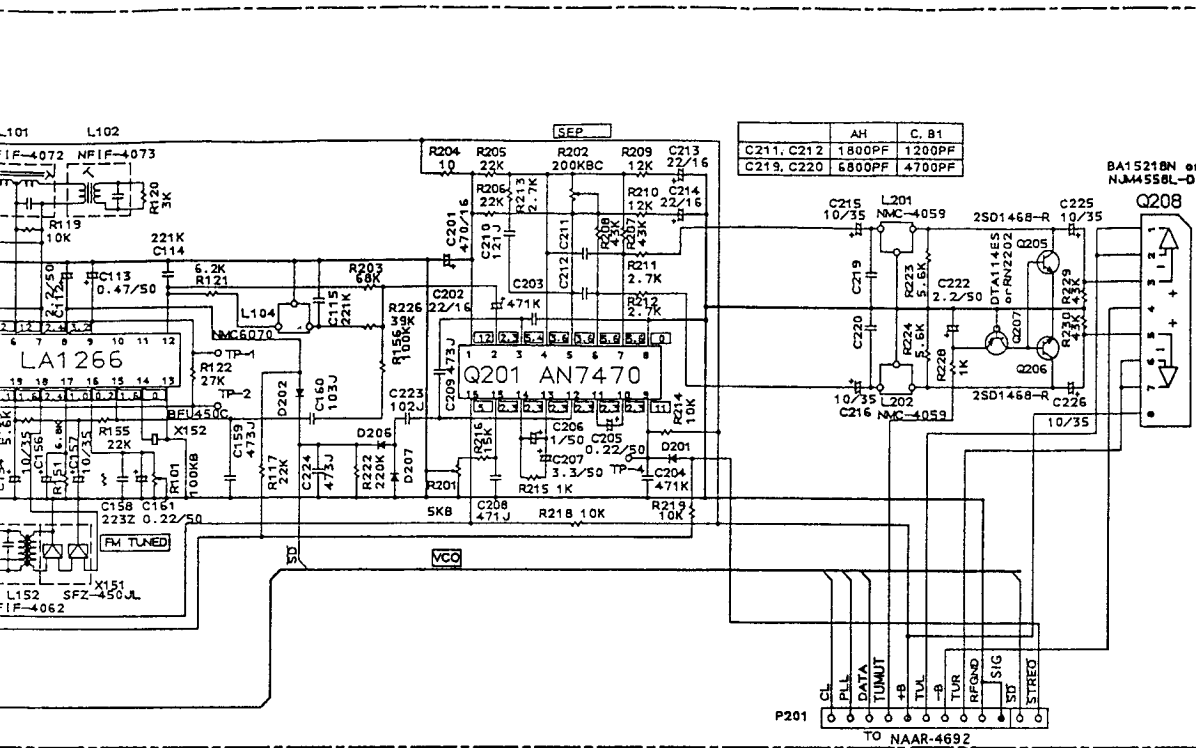
	AH	C, B1
Q101		
X102		
L104		
R106-109	No parts	○
R121		
R226		
C101		
C115		
R203	○	No parts
R111	9100	5600
TU001	FE337-A07	FE415-Q11
X103	SFE10.7MA	SFE10.7M22

4

5

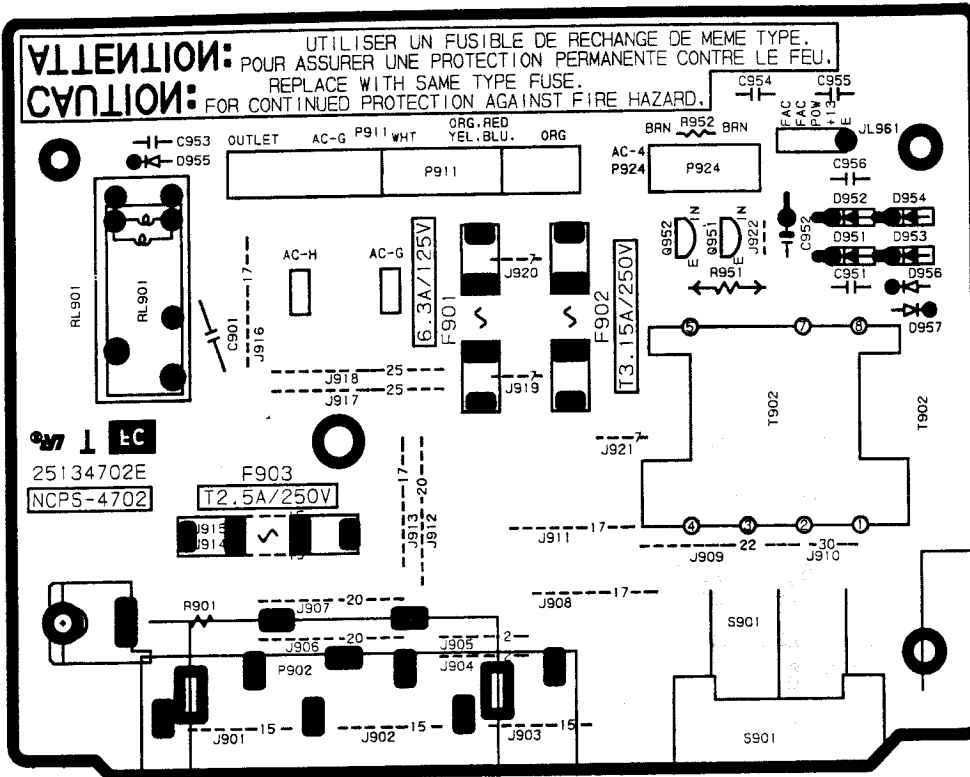


	AH	C, B1
Q101		
X102		
L104		
R106-109	No parts	○
R121		
R221		
R226		
C101		
C115		
R203	○	No parts
R111	9100	5600
TU001	FE337-A07	FE415-Q11
X103	SFE10.7MA	SFE10.7M22

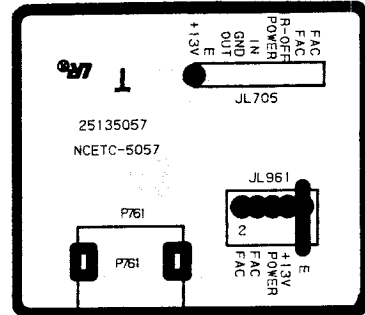


E (RF)

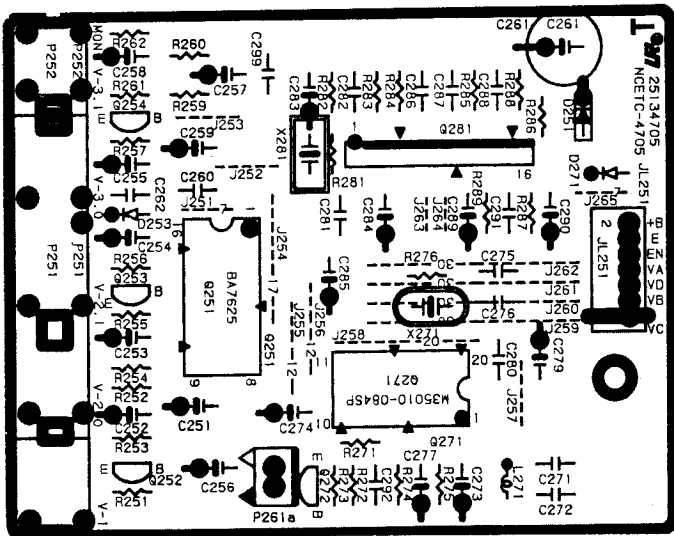
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



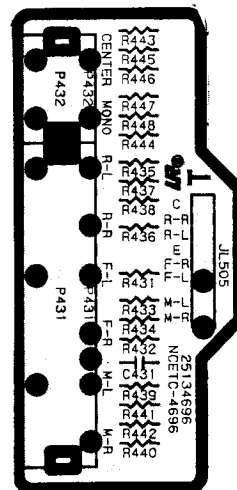
POWER SUPPLY CIRCUIT PC BOARD (NAPS-4702)



NAD LINK I/O PC BOARD (NAETC-5057)



VIDEO CIRCUIT PC BOARD (NAETC-4705)

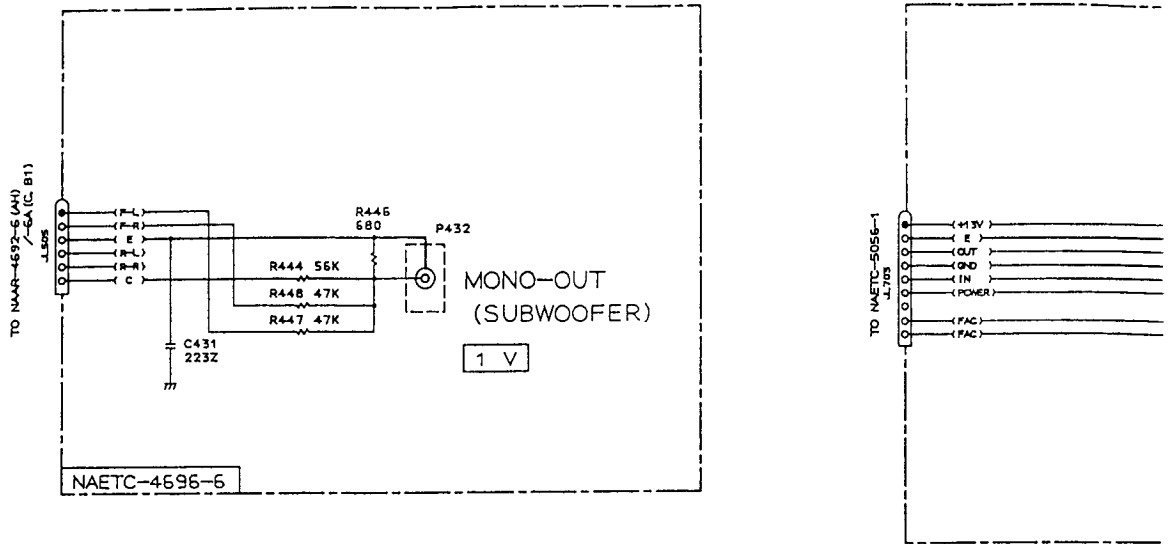


OUTPUT TERMINAL PC BOARD (NAETC-4696)

SCHEMATIC DIAGRAM (PART-3)

POWER SUPPLY AND VIDEO SECTION

1

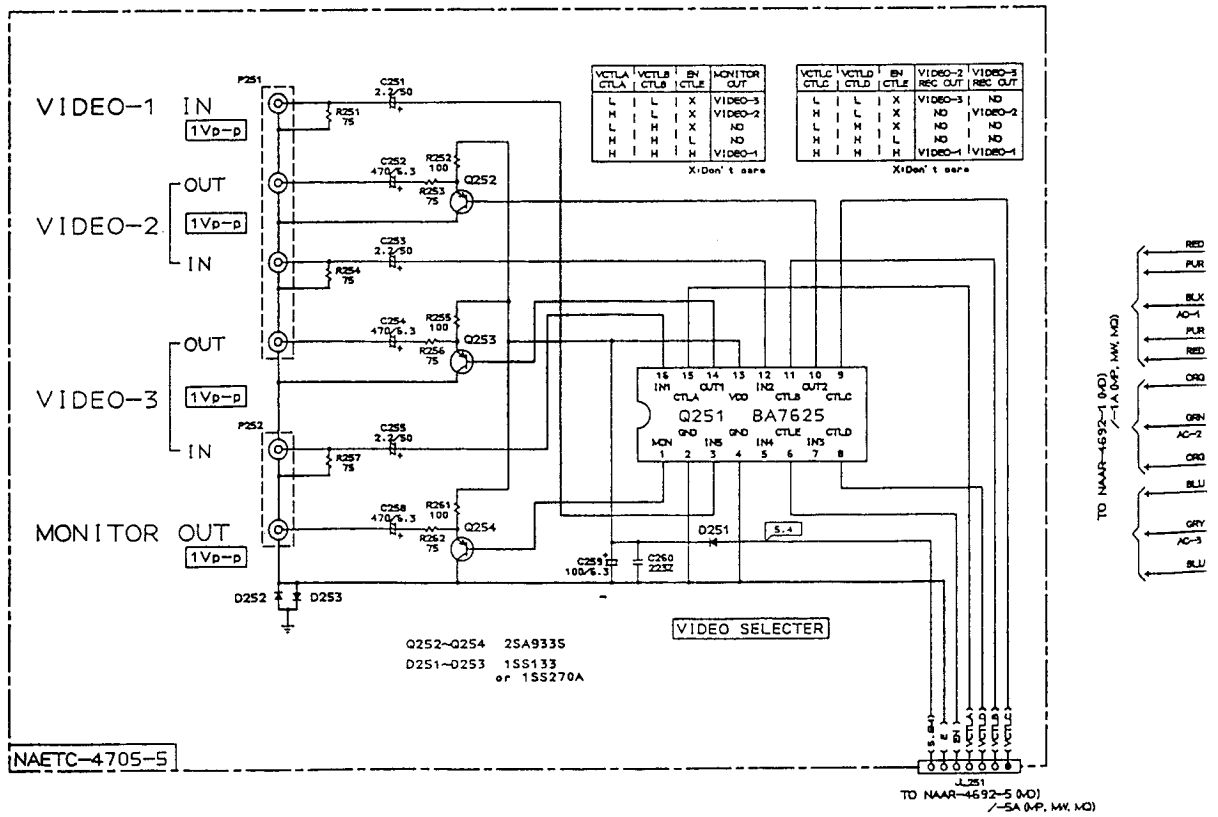


2

AH type : 120V/60Hz Area
 C type : 230V/50Hz Area
 B1 type : 240V/50Hz Area

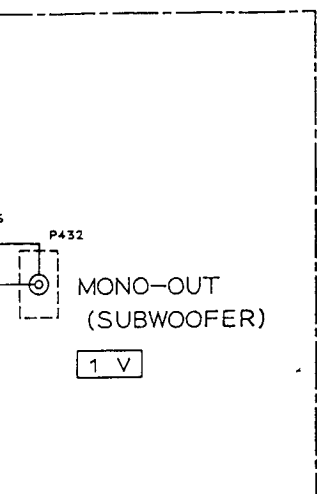
3

4

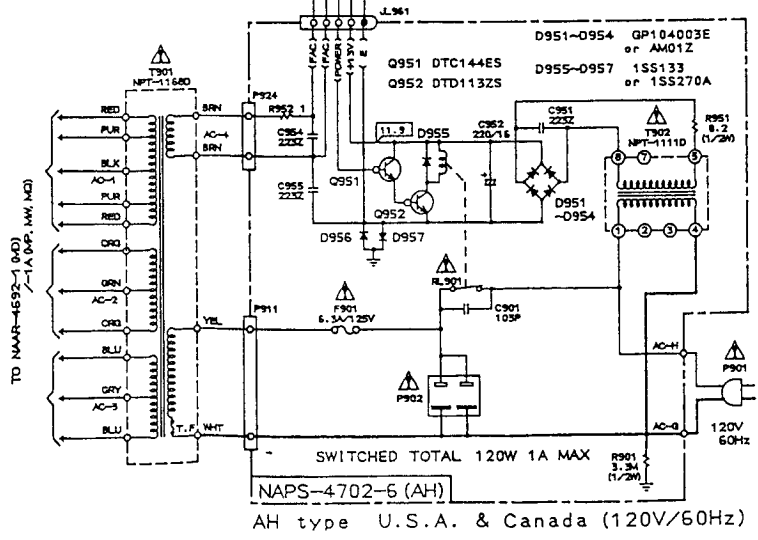
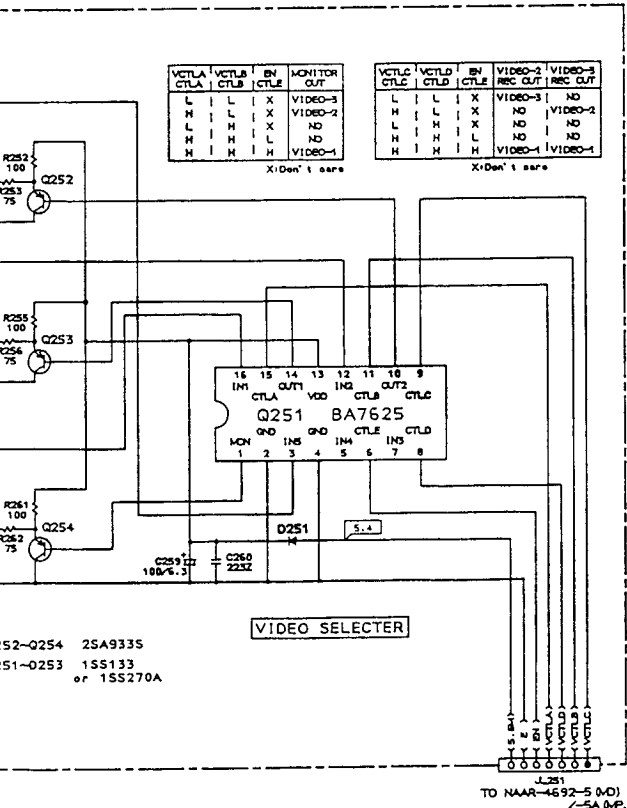
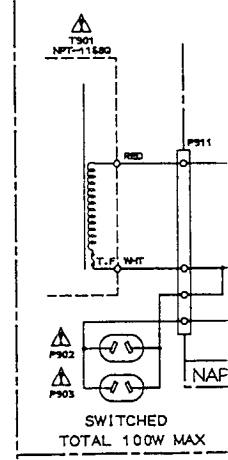
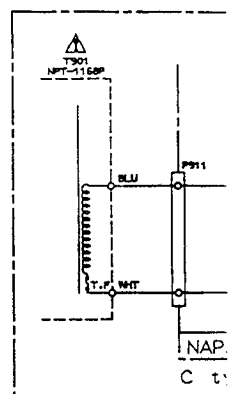
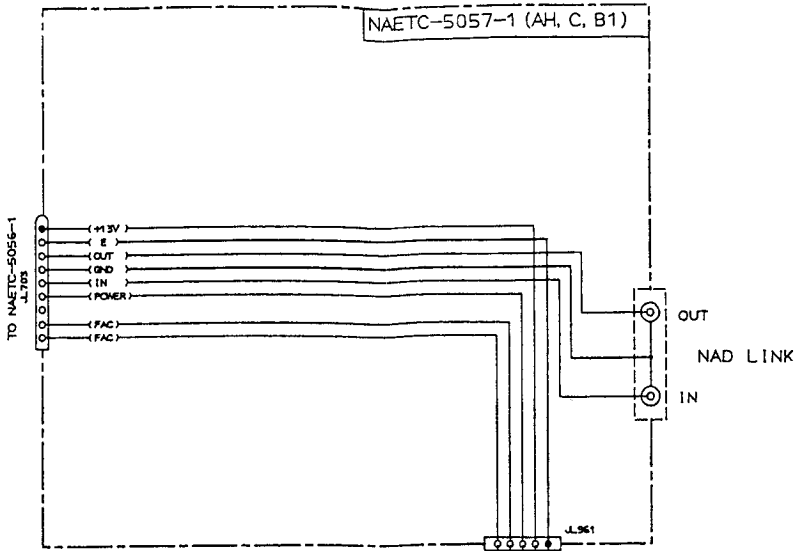


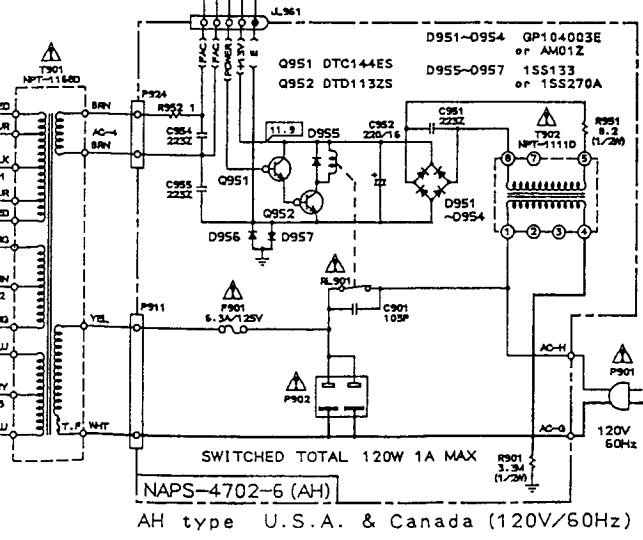
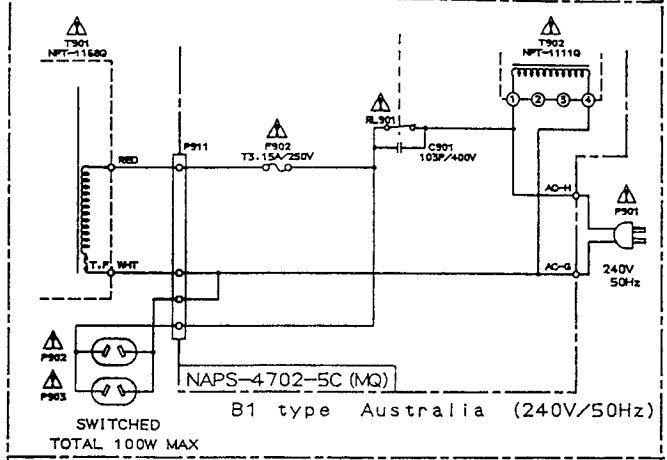
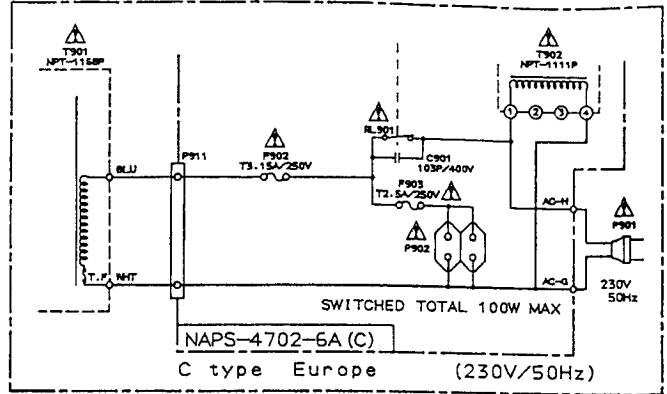
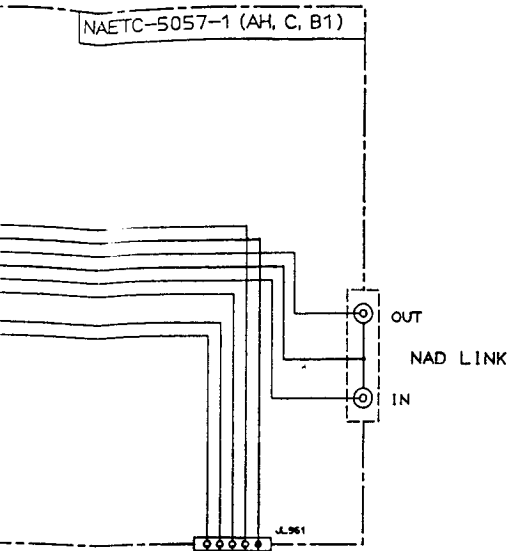
5

M (PART-3)
SECTION



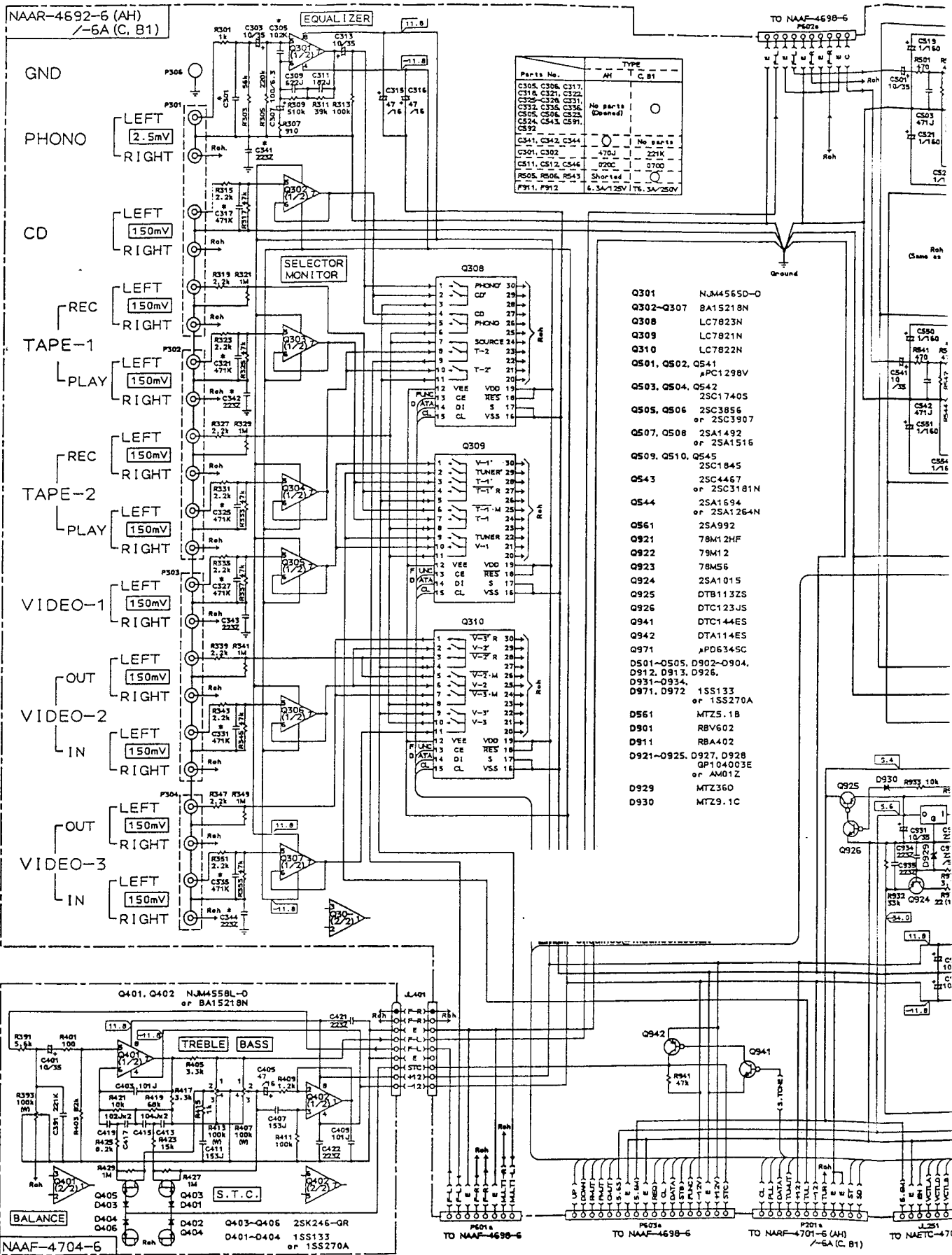
Area
Area
Area





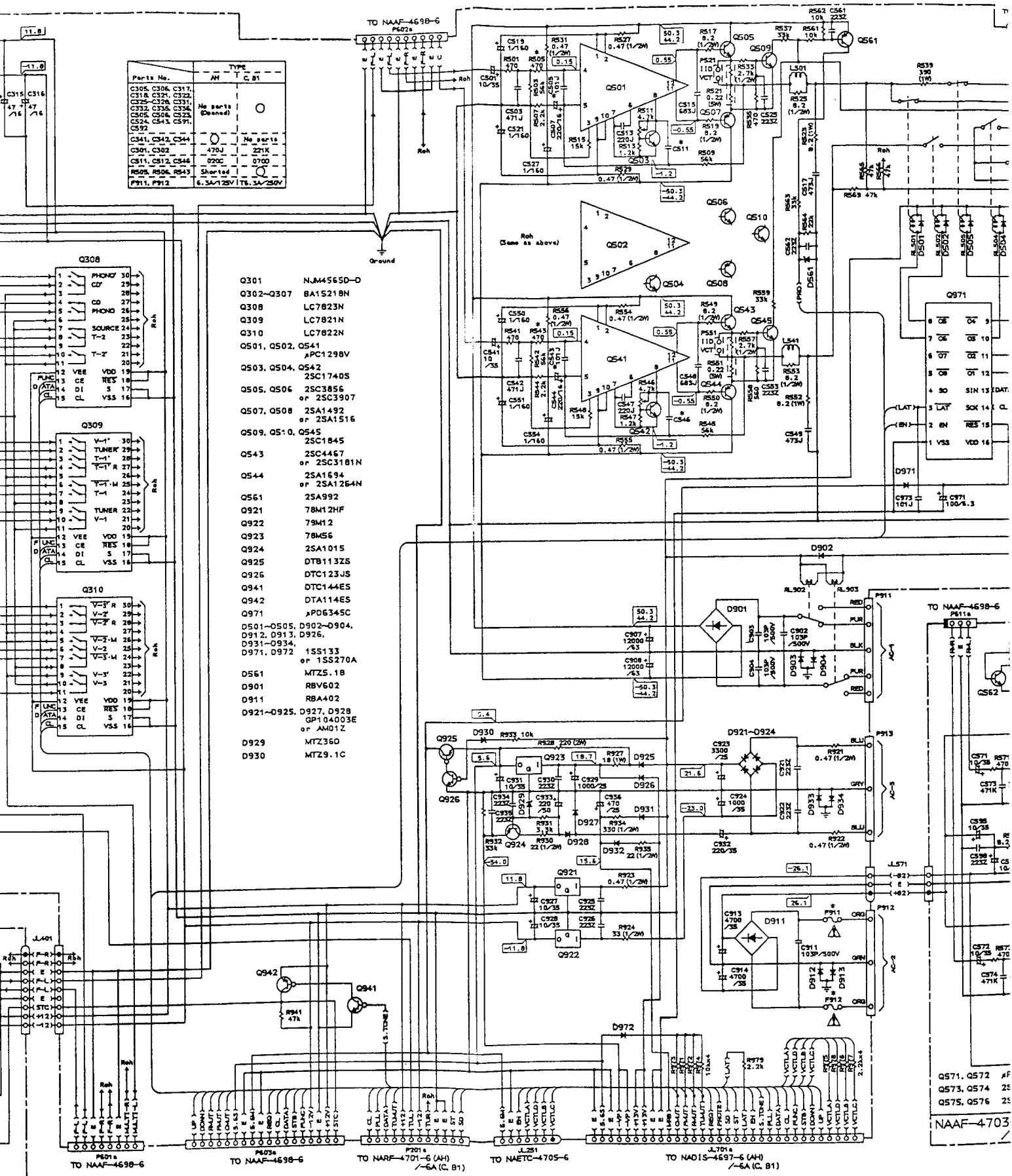
SCHEMATIC DIAGRAM (PART-4)

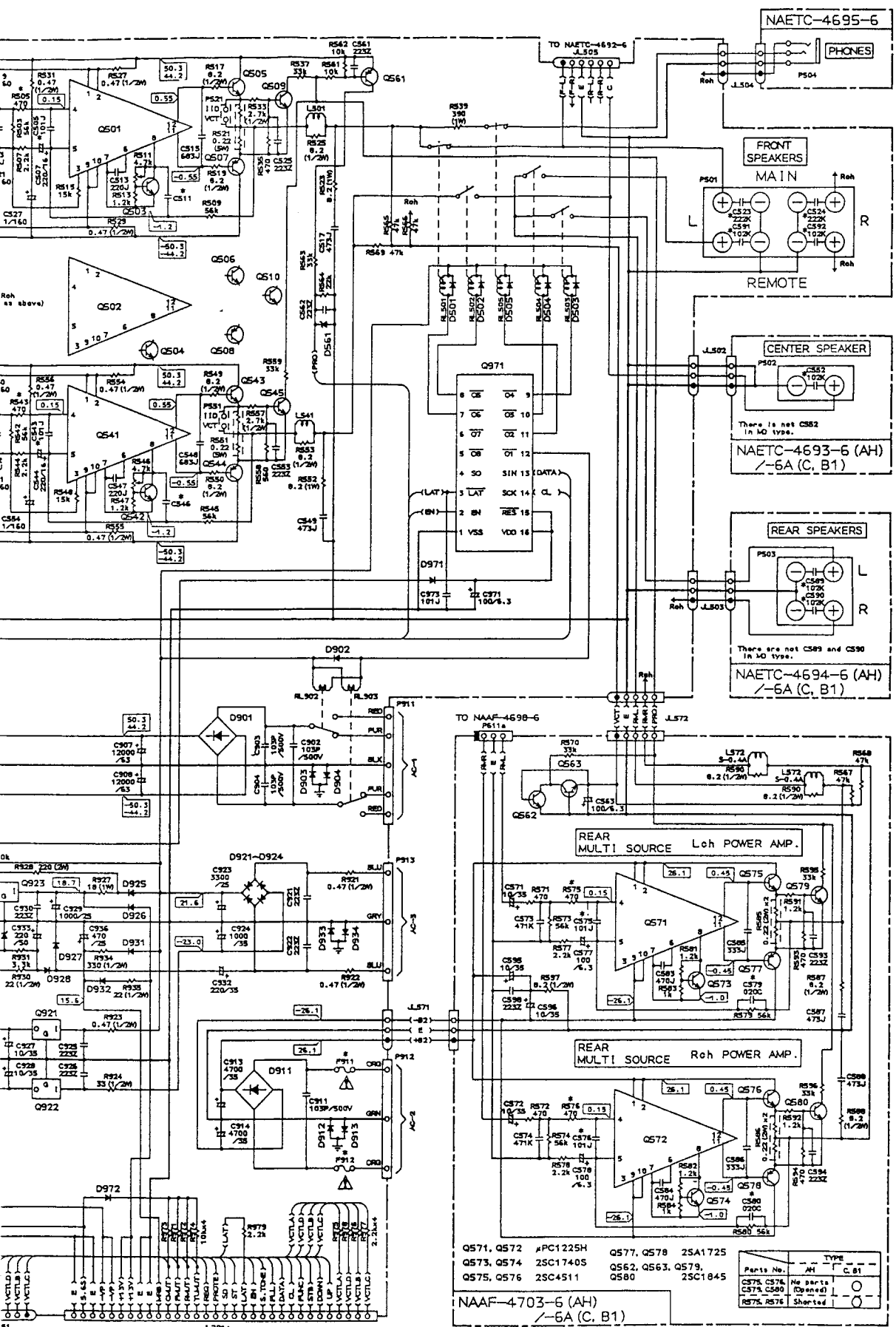
AUDIO SECTION



Parts No.	TYPE	
	AH	C, B1
C308, C306, C317, C318, C321, C322, C323, C324, C331, C332, C336, C336, C337, C338, C338, C338, C339, C341, C342, C344	No parts (Deleted)	
G301, C302	470J	221K
C511, C512, C546	920C	0700
R505, R506, R543	Shorted	
P311, P312	6.3A/125V	18.3A/250V

- Q301 NJM4565D
- Q302-Q307 BA15218N
- Q308 LC7823N
- Q309 LC7821N
- Q310 LC7822N
- Q501, Q502, Q541 APC1298V
- Q503, Q504, Q542 25C1740S
- Q505, Q506 25C3856 or 25C3907
- Q507, Q508 25A1492 or 25A1516
- Q509, Q510, Q545 25C1845
- Q543 25C4467 or 25C3181N
- Q544 25A1694 or 25A1264N
- Q561 25A992
- Q921 78M12HF
- Q922 79M12
- Q923 78M56
- Q924 25A1015
- Q925 DTB113ZS
- Q926 DTC123JS
- Q941 DTA144ES
- Q942 DTA114ES
- Q971 PDC6345C
- D501-Q505, D902-Q904, D912, D913, D926, D931-Q934, D971, D972 15S133 or 15S270A
- D561 MTZ5.1B
- D901 RBV602
- D911 RBA402
- D921-Q925, D927, D928 GP104003E or AM01Z
- D929 MTZ360
- D930 MTZ9.1C





- Q571, Q572 #PC1225H
 Q573, Q574 25C1740S
 Q575, Q576 25C4511
- Q577, Q578 25A1725
 Q562, Q563, Q579,
 Q580 25C1845

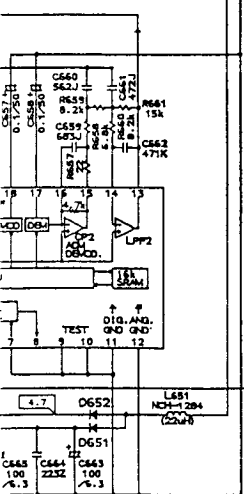
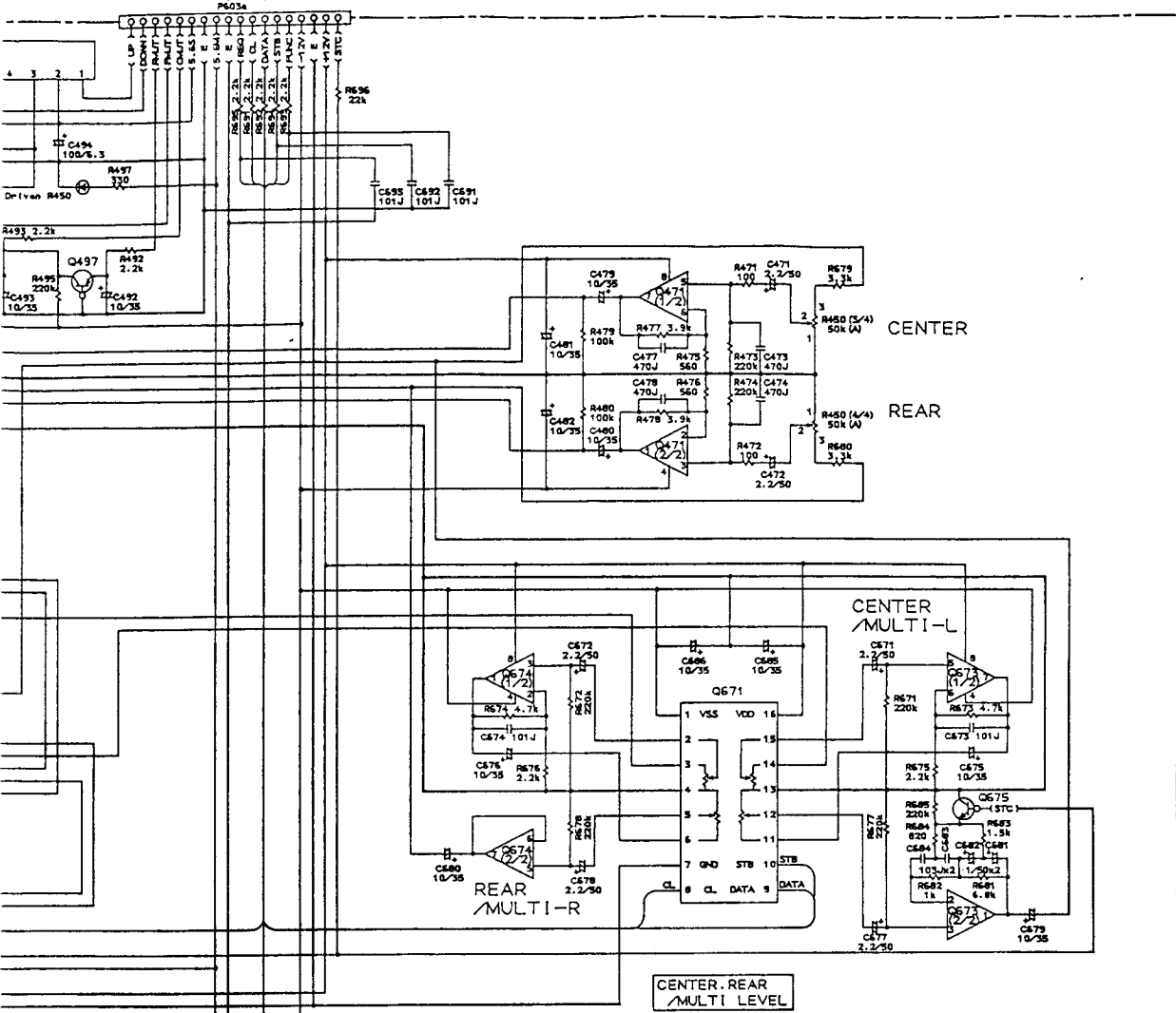
NAAF-4703-6 (AH)
 /-6A (C, B1)

Parts No.	TYPE
C575, C576	No parts
C573, C580	(Opened)
R575, R576	Shorted

4705-6

TO NAD15-4697-6 (AH)
 /-6A (C, B1)

TO NAAR-4692-6 (AH)
-6A (C, B1)



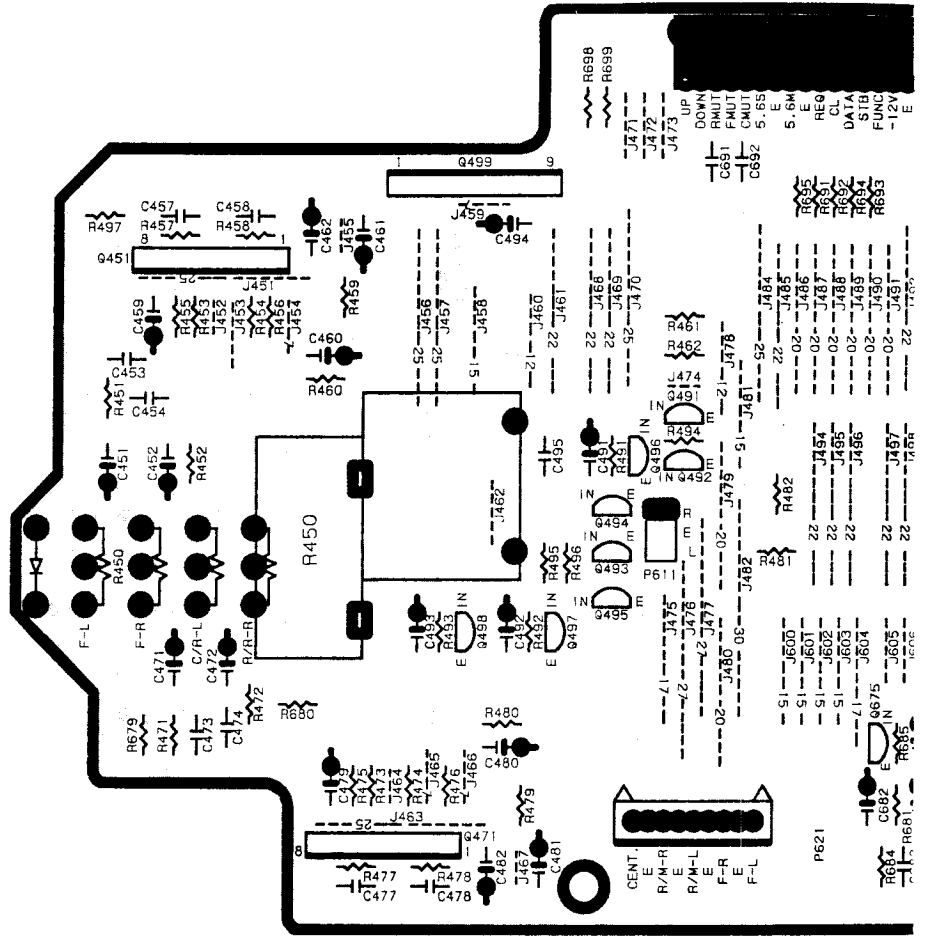
TEST	TEST-A	TEST-B	OUT	PUT
H	X	X		TEST OFF
L	L	L		NOISE-L
L	L	H		NOISE-C
L	H	L		NOISE-R
L	H	H		NOISE-S

X: Don't care

NOTE

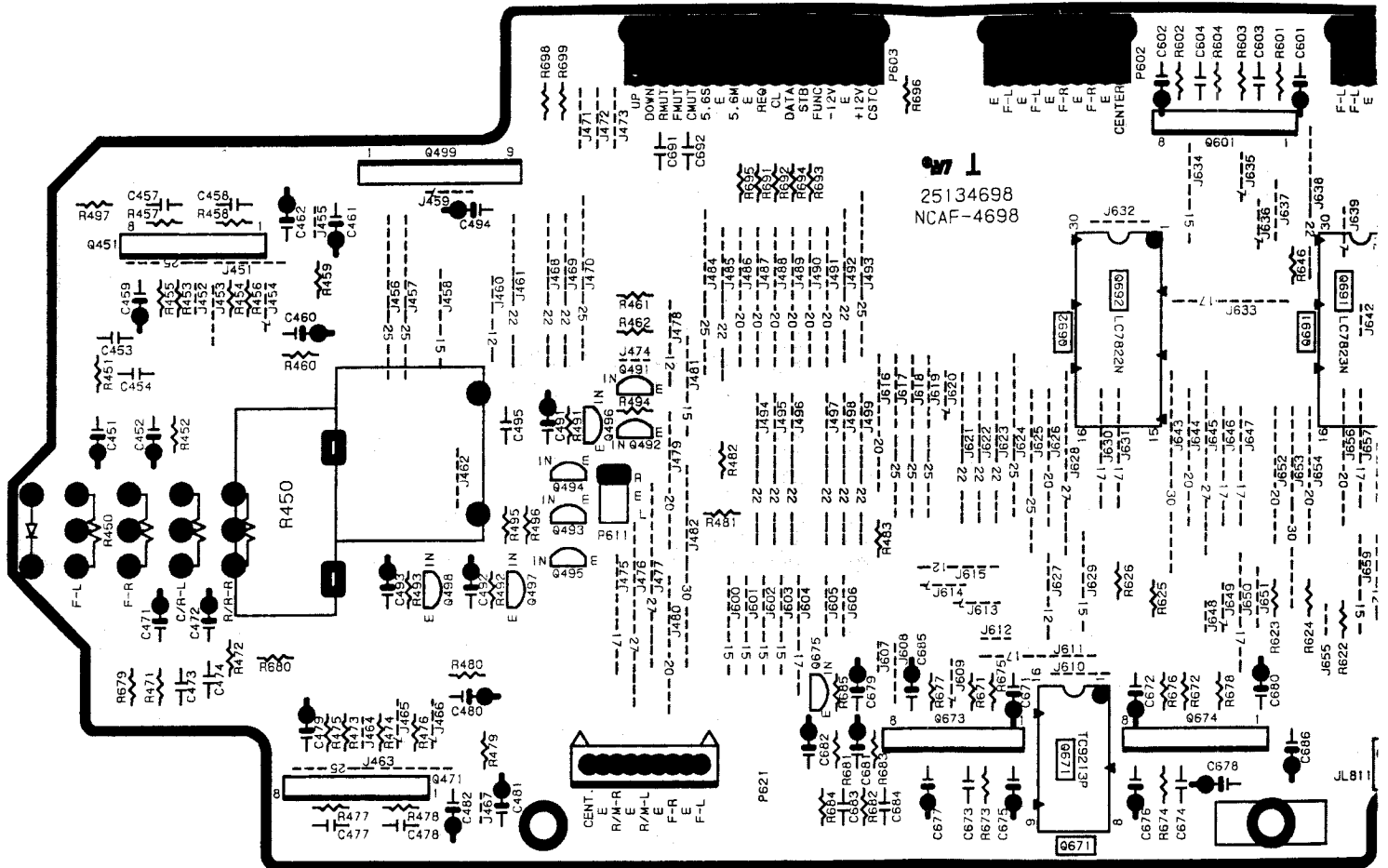
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) \square IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-OR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-OR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (Φ) ARE IN μ F/VV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
- EX) 3pF-030, 33pF-330, 330pF-331, 0.033uF-333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EX) \square PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



SURROUND CIRCUIT PC BOARD (NAAF-4)

CIRCUIT BOARD VIEW FROM BOTTOM SIDE



SURROUND CIRCUIT PC BOARD (NAAF-4698)

ADJUSTMENT PROCEDURES

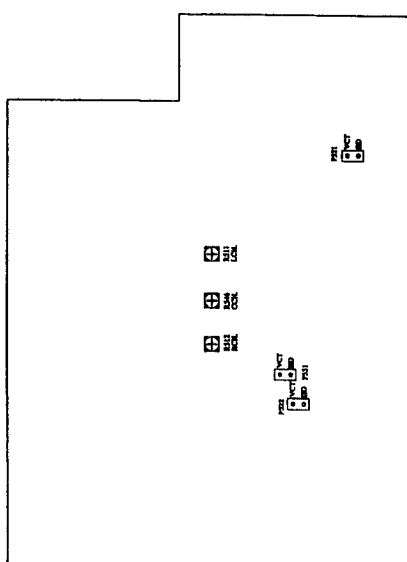
● Preparation

- Input
 FM mono : 1 kHz, 75kHz devi., 60dB/μV
 FM stereo : 1 kHz, 67.5kHz devi., 60dB/μV
 Pilot signal 19kHz 7.5kHz devi.
 A.M. : 400Hz 30% mod.
- Outputs
 Connect the non-inductive type resistors of 8 ohms to the main speaker, remote speaker, and rear speaker terminals unless otherwise noted.

- Standard Knob Positions
 Tape-2 Monitor Off
 Master Volume Maximum
 Rear Volume Center
 Center Volume Center
 Multi Source Volume Center
 Bass Control Center
 Treble Control Center
 Balance Control Center

- Initializing of unit
 1. Set POWER switch to ON.
 2. Press and hold down the CD button, then press the POWER button.
 3. "Test" is displayed on the display for approximately 5 seconds.
 4. While "Test" is displayed, unplug the power cord from its AC outlet, then "Test" will disappear.
 5. Preset memory and parameters stored in memory, such as surround are initialized and will return to the factory settings.

- Muting Off
- Rec Out Source
- Input Selector CD
- Speakers Main, Remote On
- Selective Tone Off
- Surround Mode Off
- Center Mode Wide Band
- Delay Time 20 ms
- MR Off On
- FM Mute On



MAIN CIRCUIT PC BOARD

Amplifier section
Idle Current Adjustment
 Connect the DC voltmeter to the terminals P521, P522, and P551(VCT and IID) on the main circuit pc board. Adjust the trim resistors R511, R512 and R546 so that the indicator of voltmeter becomes 5±0.5mV.
 NOTE: Adjust after switching on for 5 minutes.

FM ADJUSTMENT

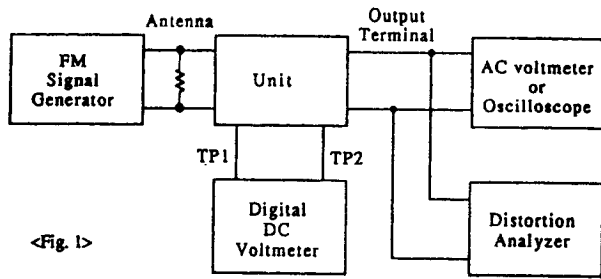
Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks			
FM IF/RF	1	Fig.1	99.1MHz (99.0MHz) 1kHz 7.5kHz devi. 65dB(60dB μ)	—	99.1MHz	DC voltmeter	L101	0±20mV	IF BAND switch: WIDE. FM MUTE/MODE switch: ON/STEREO Repeat the steps 1 and 3 until no further adjustment is necessary.			
	2									AC voltmeter	IFT on the front end	Maximum
	3									Distortion analyzer	L102	Minimum
VCO		Fig.2	99.1MHz (99.0MHz) 1kHz 7.5kHz devi. 65dB(60dB μ)	—	99.1MHz	Frequency counter	R201	19,000±10Hz				
Stereo Distortion		Fig.3	99.1MHz (99.0MHz) Ext. mod. 65dB(60dB μ)	Channel L or R 1kHz	99.1MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°			
		Fig.3	99.1MHz (99.0MHz) Ext. mod. 65dB(60dB μ)	Channel L Channel R 1kHz	99.1MHz	Channel R AC voltmeter Channel L AC voltmeter	R202	Minimum Minimum	Maximum and same separation			
Muting Level		Fig.3	99.1MHz (99.0MHz) 17.24dB(12dB) <19.2dB(14dB)>	—	99.1MHz	Oscilloscope	R101	Signal output				

AM ADJUSTMENT

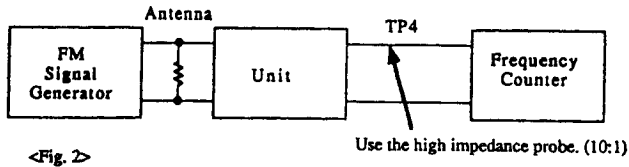
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment Point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.4±0.2V
2	600kHz 30% mod. -60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 30% mod. -60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specification
 FM tuned voltage : 87.9MHz ~ 107.9MHz
 More than 1.3V ~ Less than 10V
 AM tuned voltage : 530kHz ~ 1710kHz
 1.4±0.2V ~ Less than 9.0V

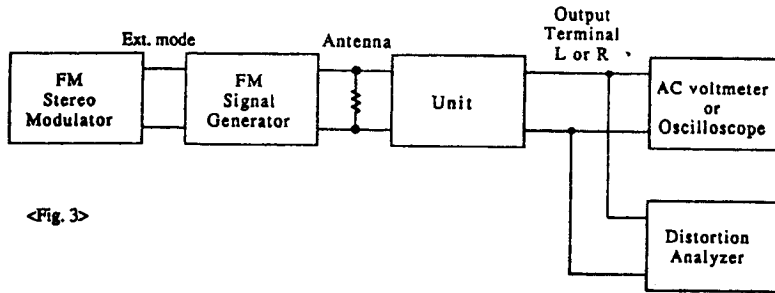
Reference Specification
 FM tuned voltage : 87.5MHz ~ 108.0MHz
 More than 1.3V ~ Less than 10V
 522kHz ~ 1611kHz
 AM tuned voltage : 1.3±0.2V ~ Less than 9.0V



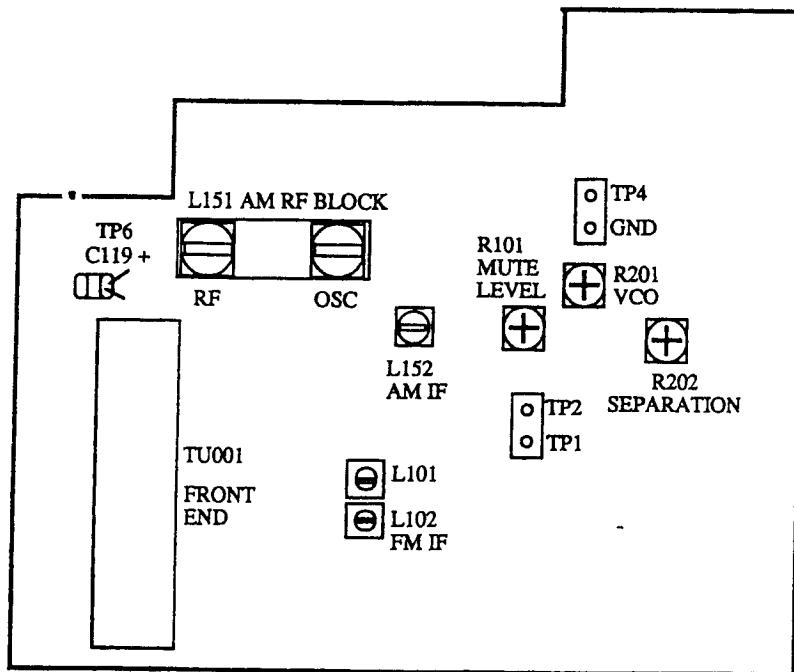
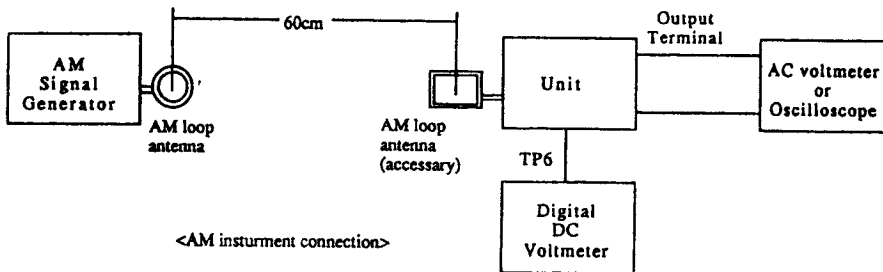
<Fig. 1>



<Fig. 2>



<Fig. 3>



PRINTED CIRCUIT BOARD PARTS LIST

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

MAIN CIRCUIT PC BOARD (NAAR-4692)
CIRCUIT NO. PART NO. DESCRIPTION

ICs
Q301 22240191 NJM4565D-D
Q302-Q307 22240247 BA15218N
Q308 22240339 LC7823N
Q309 22240280 LC7821N
Q310 22240270 LC7822N
Q501,Q502 22240311 MPC1298V
Q541 22240311 MPC1298V
Q921 222780125NEC 78M12HF
Q922 222790125 79M12
Q923 222780565JRC 78M56
Q971 22240211 MPD6345C

Transistors
Q503 2213284 2SC1740S-R
Q504 2213284 2SC1740S-R
Q505,Q506 2201653 or * 2SC3856-O or
2201654 or * 2SC3856-Y or
2201655 or * 2SC3856-P or
2202272 or * 2SC3907-R or
2202273 * 2SC3907-O
Q507,Q508 2201663 or * 2SA1492-O or
2201664 or * 2SA1492-Y or
2201665 or * 2SA1492-P or
2202262 or * 2SA1516-R or
2202263 * 2SA1516-O
Q509,Q510 2211732 or 2SC1845-F or
2211733 2SC1845-E
Q542 2213284 2SC1740S-R
Q543 2202253 or * 2SC4467-O or
2202254 or * 2SC4467-Y or
2202256 or * 2SC4467-P or
2202502 or * 2SC3181N-R or
2202503 * 2SC3181N-O
Q544 2202243 or * 2SA1694-O or
2202244 or * 2SA1694-Y or
2202246 or * 2SA1694-P or
2202492 or * 2SA1264N-R or
2202493 * 2SA1264N-O
Q545 2211732 or 2SC1845-F or
2211733 2SC1845-E
Q561 2211792 or 2SA992-F or
2211793 2SA992-E
Q924 2211455 2SA1015-GR
Q925 2213830 DTB113ZS
Q926 2213640 DTC123JS
Q941 221282 DTC144ES
Q942 2213510 DTA114ES

Diodes
D501-D505 223205 or 1SS270A or
223163 1SS133
D561 224450512 MTZ5.1B
D901 22380038 RBV602
D902 223205 or 1SS270A or
223163 1SS133
D903,D904 223205 1SS270A
223163 1SS133
D911 22380048 RBA402
D912,D913 223205 or 1SS270A or
223163 1SS133
D921-D925 22380046 AM01Z
22380035 GP104003E
D926 223205 or 1SS270A or
223163 1SS133
D927,D928 22380046 AM01Z
22380035 GP104003E

CIRCUIT NO. PART NO. DESCRIPTION
D929 224453604 MTZ36D
D930 224450913 MTZ9.1C
D931-D934 223205 or 1SS270A or
223163 1SS133
D971,D972 223205 or 1SS270A or
223163 1SS133
Coils
L501,L502 231209s S-0.4A
L541 231209s S-0.4A
Capacitors
C303,C304 354761009 10 μ F, 35V, Elect.
C307,C308 354721019 100 μ F, 6.3V, Elect.
C309,C310 374726224 6200pF \pm 5%, 50V, Plastic
C311,C312 374721824 1800pF \pm 5%, 50V, Plastic
C313,C314 354761009 10 μ F, 35V, Elect.
C315,C316 354744709 47 μ F, 16V, Elect.
C501,C502 354761009 10 μ F, 35V, Elect.
C503,C504 374724714 470pF \pm 5%, 50V, Plastic
C507,C508 354742219 220 μ F, 16V, Elect.
C515,C516 374726834 0.068 μ F \pm 5%, 50V, Plastic
C517,C518 374724734 0.047 μ F \pm 5%, 50V, Plastic
C519-C522 354700109 1 μ F, 160V, Elect.
C527,C528 354700109 1 μ F, 160V, Elect.
C541 354761009 10 μ F, 35V, Elect.
C542 374724714 470pF \pm 5%, 50V, Plastic
C544 354742219 220 μ F, 16V, Elect.
C548 374726834 0.068 μ F \pm 5%, 50V, Plastic
C549 374724734 0.047 μ F \pm 5%, 50V, Plastic
C550,C551 354700109 1 μ F, 160V, Elect.
C554 354700109 1 μ F, 160V, Elect.
C907,C908 3504258 12000 μ F, 63V, Elect.
C913,C914 3504213 4700 μ F, 35V, Elect.
C923 354753329 3300 μ F, 25V, Elect.
C924 354761029 1000 μ F, 35V, Elect.
C927,C928 354761009 10 μ F, 35V, Elect.
C929 354751029 1000 μ F, 25V, Elect.
C931 354761009 10 μ F, 35V, Elect.
C932,C933 354762219 220 μ F, 35V, Elect.
C936 354754719 470 μ F, 25V, Elect.
C971 354721019 100 μ F, 6.3V, Elect.

Resistors
R511,R512 5210261 N06HR 5KBC, Trim
R517-R520 452530824 8.2 ohm, 1/2W, Metal
R521,R522 4000132 0.22ohm x2.5.5W, Metal Plate
R523-R526 451630824 8.2 ohm, 1W, Metal
R527-R532 452534794 0.47 ohm, 1/2W, Metal
R533,R534 442522724 2.7kohm, 1/2W, Metal Oxide
R539,R540 441623914 390 ohm, 1W, Metal Oxide
R546 5210261 N06HR 5kBC, trim
R549,R550 452530824 8.2 ohm, 1/2W, Metal
R551 4000132 0.22ohm x2.5.5W, Metal Plate
R552 451630824 8.2 ohm, 1W, Metal
R553 452530824 8.2 ohm, 1/2W, Metal
R554-R556 452534794 0.47 ohm, 1/2W, Metal
R557 442522724 2.7kohm, 1/2W, Metal Oxide
R921-R923 452534794 0.47 ohm, 1/2W, Metal
R924 442523304 33 ohm, 1/2W, Metal Oxide
452530824 8.2 ohm, 1/2W, Metal
<B1><C>
R927 441621804 18 ohm, 1W, Metal Oxide
R928 441722214 220 ohm, 2W, Metal Oxide
R930 442522204 22 ohm, 1/2W, Metal Oxide
R934 442523314 330 ohm, 1/2W, Metal Oxide
R935 442522204 22 ohm, 1/2W, Metal Oxide

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Relays			ICs	
RL501	25065339	NRL-2P5A-DC24-046	Q701	22240824	MPD78012BCW-139
RL502	25065379	NRL-1P5A-DC24-058	Q702	22240685R9	M66004FP
RL503,RL504	25065339	NRL-2P5A-DC24-046		FL tube	
RL505	25065470	NRL-2P1.25A-DC24-079	Q703	212120	13-BT-131GK
RL902,RL903	25065435	NRL-1P10A-DC24-072		Transistors	
	Fuses		Q704, Q705	2213284	2SC1740S-R
F911	252166Y	△ 6.3A-UL/T-237, Secondary Fuse <AH>	Q706	221282	DTC144ES
	252079	△ 6.3A-SE-EAK,Secondary Fuse <B1><C>	Q707	2213640	DTC123JS
F912	252166Y	△ 6.3A-UL/T-237, Fuse <AH>	Q708	2213510	DTA114ES
	252079	△ 6.3A-SE-EAK,Fuse <B1><C>		Diodes	
	Jacks		D701-D706	223205 or 223163	1SS270A or 1SS133
P301-P303	25045300	NPJ-6PDBL159	D707,D708	224450562	MTZ5.6B
P304	25045303	NPJ-4PDBL162	D709	224451303	MTZ13C
	Terminal		D710-D715	223205 or 223163	1SS270A or 1SS133
P501	25060125	NTM-8PDMN058	D716,D717	225142	LED,SEL2913K
	Plugs			Coils	
P201a	25055500	NPLG-12P475	L701-L703	233411K220	NCH-1387 220K
P601a	25055498	NPLG-8P473		Resonator	
P602a	25055499	NPLG-10P474	X701	3010205	CST8.38MTW, Ceramic
P603a	25055503	NPLG-18P478		Capacitors	
	Sockets		C701	3000074T	0.047F, 5.5V, Super
JL401	25050531	NSCT-9P354	C702	375524744	0.47 μ F ± 5%,50V,Plastic
JL701a	25050612 or 25050705	NSCT-32P423 or NSCT-32P509	C703	353721019 or 354721019	100 μ F,6.3V, Elect.
	Fuse holders		C704	353780109 or 354780109	1 μ F,50V, Elect.
F911a,F912a	25050065	YSH403T	C706	375524744	0.47 μ F ± 5%,50V,Plastic
	Heatsinks		C708-C710	353780109 or 354780109	1 μ F,50V, Elect.
	27160262	Q501,502	C717,C737	353721019 or 354721019	100 μ F,6.3V, Elect.
	27160209	RAD-67, Q921,923	C748	353741009 or 354741009	10 μ F,16V, Elect.
	27160271	RAD-083, D901		Resistor	
CENTER SPEAKER TERMINAL PC BOARD (NAETC-4693)			R714	49163103413	10kohm x 13, 1/10W, Array
CIRCUIT NO.	PART NO.	DESCRIPTION		Switches	
	Terminal		S701-S704	25035548	NPS-111-S510
P502	25060114	NTM-2PDML048	S706	25035548	NPS-111-S510
	REAR SPEAKER TERMINAL PC BOARD (NAETC-4694)		S708	25035548	NPS-111-S510
CIRCUIT NO.	PART NO.	DESCRIPTION	S710-S728	25035548	NPS-111-S510
	Terminal		S731-S746	25035548	NPS-111-S510
P503	25060161	NTM-4PDML087		Socket	
	HEADPHONE TERMINAL PC BOARD (NAETC-4695)		JL701b	25050578 or 25050726	NSCT-32P389 or NSCT-32P530
CIRCUIT NO.	PART NO.	DESCRIPTION		Plug	
	Jack		P702a	25055510	NPLG-3P485
P504	25045255	YKB26-5009		Bracket	
	OUTPUT TERMINAL PC BOARD (NAETC-4696)		U701a	27141575Y	
CIRCUIT NO.	PART NO.	DESCRIPTION		Holders	
	Jack		Q703a	27190913	
P432	25045302	NPJ-1PDBL161	D712a,D716a	27190843	RS-412326
	DISPLAY CIRCUIT PC BOARD (NADIS-4697)				
CIRCUIT NO.	PART NO.	DESCRIPTION			
	Remote control sensor				
U701	24130007	GP1U571X			

SURROUND CIRCUIT PC BOARD (NAAF-4698)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q451,Q471	22240247 or 22240293	BA15218N or NJM4558L-D
Q499	22240239	TA7291S
Q601	22240247 or 22240293	BA15218N or NJM4558L-D
Q602	22240683 or 22240692	NJM2177L or M69032P
Q605	22240247 or 22240293	BA15218N or NJM4558L-D
Q651	22240686 or 22240687	M65830P or NJU9701D
Q671	22240266	TC9213P
Q673,Q674	22240247 or 22240293	BA15218N or NJM4558L-D
Q691	22240339	LC7823N
Q692	22240270	LC7822N

Transistors		
Q491-Q495	2213631T or 2213632T	RN1241-A or RN1241-B
Q496-Q498	2213510	DTA114ES
Q603,Q604	2213631T or 2213632T	RN1241-A or RN1241-B
Q675	2213631T or 2213632T	RN1241-A or RN1241-B

Diodes		
D651,D652	223205 or 223163	1SS270A or 1SS133

Resonator		
X651	3010217Y	CST2.04MG040

Coil		
L651	233411K220	NCH-1387

Capacitors		
C451,C452	354780229	2.2 μ F,50V, Elect.
C459-C462	354761009	10 μ F,35V, Elect.
C471,C472	354780229	2.2 μ F,50V, Elect.
C479	354761009	10 μ F,35V, Elect.
C480-C482	354761009	10 μ F,35V, Elect.
C491-C493	354761009	10 μ F,35V, Elect.
C494	354721019	100 μ F,6.3V,Elect.
C601,C602	354761009	10 μ F,35V,Elect.
C605,C606	354761009	10 μ F,35V,Elect.
C607-C610	353781099 or 354781099	0.1 μ F,50V, Elect.
C613,C614	374724734	473pF \pm 5%, 50V, Plastic
C615,C616	374722234	223pF \pm 5%, 50V, Plastic
C617-C620	353781099 or 354781099	0.1 μ F,50V,Elect.
C621,C622	354780479	4.7 μ F,50V, Elect.
C623-C627	353782299 or 354782299	0.22 μ F,50V,Elect.
C628	354761009	10 μ F,35V, Elect.
C629	354786899	0.68 μ F,50V,Elect.
C630	374724734	0.047 μ F \pm 5%, 50V, Plastic
C631	374725624	5600pF \pm 5%, 50V, Plastic
C632	354780229	2.2 μ F,50V, Elect.
C634	354722219	220 μ F,6.3V, Elect.
C635	354741019	100 μ F,16V,Elect.
C636-C641	354761009	10 μ F,35V,Elect.
C642	374724724	4700pF \pm 5%, 50V, Plastic
C643	354761009	10 μ F,35V,Elect.
C644	392841007	10 μ F,16V,Elect.
C647-C649	354761009	10 μ F,35V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
C653	374723924	3900pF \pm 5%, 50V, Plastic
C655	374726834	0.068 μ F \pm 5%, 50V, Plastic
C656	354744709	47 μ F,16V,Elect.
C657,C658	353781099 or 354781099	0.1 μ F,50V, Elect.
C659	374726834	0.068 μ F \pm 5%, 50V, Plastic
C660	374725624	5600pF \pm 5%, 50V, Plastic
C661	374724724	4700pF \pm 5%, 50V, Plastic
C663,C665	354721019	100 μ F,6.3V, Elect.
C666	375524744	0.47 μ F \pm 5%, 50V, Plastic
C671,C672	354780229	2.2 μ F,50V,Elect.
C675,C676	354761009	10 μ F,35V,Elect.
C677,C678	354780229	2.2 μ F,50V,Elect.
C679,C680	354761009	10 μ F,35V, Elect.
C681,C682	354780109	1 μ F,50V,Elect.
C683,C684	374721034	0.01 μ F \pm 5%, 50V, Plastic
C685,C686	354761009	10 μ F,35V,Elect.

Resistor		
R450	5144018	N16RQL50KA25F, Variable, Volume

Socket		
P601	25050445	NSCT-8P269
P602	25050446	NSCT-10P270
P603	25050450	NSCT-18P274
P611	2000802AUL	NSAS-6P758

Plug		
P621	25055411	NPLG-9P393

STC SWITCH PC BOARD (NASW-4700)

CIRCUIT NO.	PART NO.	DESCRIPTION
Switch		
S729	25035548	NPS-111-S510

Socket		
P702b	25050454	NSCT-3P278

TUNER CIRCUIT PC BOARD (NARF-4701)

CIRCUIT NO.	PART NO.	DESCRIPTION
Front end		
TU001	240088	FE337-A07 <AH>
	240089	FE415-G11 <B1><C>

ICs		
Q104	22240039	LA1266
Q107	22240090	LM7001
Q201	22240242	AN7470
Q208	22240247 or 22240293	BA15218N or NJM4558L-D

Transistors		
Q101	2210746	2SC945A-P <B1><C>
Q102	2211723	2SC1923-O
Q105	2212445	2SK365-GR
Q106	2213284	2SC1740S-R
Q108,Q109	2213510	DTA114ES
Q205,Q206	2212794	2SD1468-R
Q207	2213510	DTA114ES

Diodes		
D103	224450512	MTZ5.1B
D201,D202	223205 or 223163	1SS270A or 1SS133
D206,D207	223205 or 223163	1SS270A or 1SS133

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transformers	
L101	233401	NFIF-4072
L102	233402	NFIF-4073
L152	232139	NMIF-4062
	Coils	
L103	233411M022	NCH-1375 022M
L104	233383	NMC-6070 <B1><C>
L151	232148	NMRF-7050
L201,L202	233355A	NMC-4059
	Ceramic filters	
X101	3010071	SFE10.7MA5
X102	3010071	SFE10.7MA5 <B1><C>
X103	3010071	SFE10.7MA5 <AH>
	3010130	SFE10.7MZ2A <B1><C>
X151	3010123	SFZ-450JL
X152	3010076	BFU-450C
	Resonator	
X104	3010158 or 3010141	XTL-7.2M,Crystal
	Capacitors	
C001,C108	354741019	100 μ F, 16V, Elect.
C112	354780229	2.2 μ F, 50V, Elect.
C113	354784799	0.47 μ F, 50V, Elect.
C117	374723334	0.033 μ F \pm 5%, 50V, Plastic
C118	354780229	2.2 μ F, 50V, Elect.
C119	353782299	0.22 μ F, 50V, Elect.
C123	354721019	100 μ F, 6.3V, Elect.
C124	354741019	100 μ F, 16V, Elect.
C152	354721019	100 μ F, 6.3V, Elect.
C154	354780479	4.7 μ F, 50V, Elect.
C155-C157	354761009	10 μ F, 35V, Elect.
C159	374724734	0.047 μ F \pm 5%, 50V, Plastic
C160	374721034	0.01 μ F \pm 5%, 50V, Plastic
C161	353782299	0.22 μ F, 50V, Elect.
C201	354744719	470 μ F, 16V, Elect.
C202	354742209	22 μ F, 16V, Elect.
C205	353782299	0.22 μ F, 50V, Elect.
C206	354780109	1 μ F, 50V, Elect.
C207	354780339	3.3 μ F, 50V, Elect.
C208	370134714	470pF \pm 5%, 50V, Plastic
C209	374724734	1800pF \pm 5%, 50V, Plastic
C211,C212	374721824 374721224	1200pF \pm 5%, 50V, Plastic <B1><C>
C213,C214	354742209	22 μ F, 16V, Elect.
C215,C216	354761009	10 μ F, 35V, Elect.
C219,C220	374726824 374724724	6800pF \pm 5%, 50V, Plastic 4700pF \pm 5%, 50V, Plastic <B1><C>
C222	354780229	2.2 μ F, 50V, Elect.
C223	374721024	1000pF \pm 5%, 50V, Plastic
C224	374724734	0.047 μ F \pm 5%, 50V, Plastic
C225,C226	354761009	10 μ F, 35V, Elect.
	Trim resistors	
R101	5210266	N06HR100KBC
R201	5210261	N06HR5KBC
R202	5210267	N06HR200KBC
	Terminal	
P101	25060160 25060117	NTM-4PDMN086 <AH> NTM-2PDMN051 <B1><C>
	Socket	
P201	25050447	NSCT-12P271

CIRCUIT NO.	PART NO.	DESCRIPTION
	Shield plate	
TU101a	27150346	<B1><C>
	POWER SUPPLY CIRCUIT PC BOARD (NAPS-4702)	
	CIRCUIT NO. PART NO. DESCRIPTION	
	Transistors	
Q951	221282	DTC144ES
Q952	2213650	DTD113ZS
	Diodes	
D951-D954	22380046 or 22380035	AM01Z or GP104003E
D955-D957	223205 or 223163	1SS270A or 1SS133
	Transformer	
T902	2300670A 2300671A 2300673A	Δ NPT-1111D, Sub Power <AH> Δ NPT-1111P, Sub Power <C> Δ NPT-1111Q, Sub Power<B1>
	Capacitors	
C901	3500191	Δ DE7150FZ103MAC400V/125V
C952	354742219	220 μ F, 16V, Elect.
	Resistors	
R901	431523355	Δ 3.3Mohm, 1/2W, Solid
R951	452530824F	Δ 8.2ohm, 1/2W, Metal
	Fuses	
F901	252166Y	Δ 6.3A-UL/T-237, Primary Fuse <AH>
F902	252076 or 252076CCY	Δ 3.15A-SE-EAK, Primary Fuse <B1><C>
F903	252075 or 252075CCY	Δ 2.5A-SE-EAK, AC outlet Fuse <C>
	AC outlet	
P902	25050409 25050640	Δ NSCT-4P234 <AH> Δ NSCT-4P451 <C>
	Relay	
RL901	25065248	Δ NRL-1P15A-DC12-29
	Fuse holders	
F901a	25050065	Δ YSH403T <AH>
F902a	25050065	Δ YSH403T <B1><C>
F903a	25050065	Δ YSH403T <C>
	Terminal	
	25060092	NTM-!S33
	REAR AMPLIFIER PC BOARD (NAAF-4703)	
	CIRCUIT NO. PART NO. DESCRIPTION	
	ICs	
Q571,Q572	22240108	μ PC1225H
	Transistors	
Q562,Q563	2211732 or 2211733	2SC1845-F or 2SC1845-E
Q573,Q574	2213284	2SC1740S-R
Q575,Q576	2202063 or 2202064 or 2202066	* 2SC4511-O or * 2SC4511-Y or * 2SC4511-P
Q577,Q578	2202053 or 2202054 or 2202056	* 2SA1725-O or * 2SA1725-Y or * 2SA1725-P

CIRCUIT NO.	PART NO.	DESCRIPTION
Q579,Q580	2211732 or 2211733	2SC1845-F or 2SC1845-E
L571,L572	Coils 231209s	S-0.4A
C563	Capacitors 354721019	100 μ F, 6.3V, Elect.
C571,C572	354761009	10 μ F, 35V, Elect.
C577,C578	354721019	100 μ F, 6.3V, Elect.
C585,C586	374723334	0.033 μ F \pm 5%, 50V, Plastic
C587,C588	374724734	0.047 μ F \pm 5%, 50V, Plastic
C595,C596	354761009	10 μ F, 35V, Elect.
R585,R586	Resistors 4000131	0.22 ohm x2, 2W, Metal plate
R587-R590	452530824	8.2 ohm, 1/2W, Metal
R597	452530824	8.2 ohm, 1/2W, Metal

P611a	Plug 25055234	NPLG-3P218
JL571	Sockets 25050280	NSCT-3P108
JL572	25050282	NSCT-5P110

TONE CONTROL CIRCUIT PC BOARD (NAAF-4704)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q401,Q402	ICs 22240247 or 22240293	BA15218N or NJM4558L-D
Q403-Q406	Transistors 2211945	2SK246-GR
D401-D404	Diodes 223205 or 223163	1SS270A or 1SS133
C401,C402	Capacitors 354761009	10 μ F, 35V, Elect.
C405,C406	354744709	47 μ F, 16V, Elect.
C407,C408	374721534	0.015 μ F \pm 5%, 50V, Plastic
C411,C412	374721534	0.015 μ F \pm 5%, 50V, Plastic
C413-C416	374721044	0.01 μ F \pm 5%, 50V, Plastic
C417-C420	374721024	1000pF \pm 5%, 50V, Plastic
R393	Resistors 5104225	N11RGLC 250KWT22Z, Balance
R407,R413	5104230	N14RLC 100KWT22Z, Bass, Treble

VIDEO CIRCUIT PC BOARD (NAETC-4705)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q251	IC 22240373	BA7625
Q252-Q254	Transistors 2213354	2SA933S-R
D251	Diodes 22380046 or 22380035	AM01Z or GP104003E

CIRCUIT NO.	PART NO.	DESCRIPTION
C251	Capacitors 354780229	2.2 μ F, 50V, Elect.
C252	354724719	470 μ F, 6.3V, Elect.
C253	354780229	2.2 μ F, 50V, Elect.
C254	354724719	470 μ F, 6.3V, Elect.
C255	354780229	2.2 μ F, 50V, Elect.
C258	354724719	470 μ F, 6.3V, Elect.
C259	354721019	100 μ F, 6.3V, Elect.
P251	Terminals 25045339	NPJ-4PDYE190
P252	25045395	NPJ-2PDYE221
JL251	Socket 25050529	NSCT-7P352

NAD LINK CONVERTER CIRCUIT PC BOARD (NAETC-5056)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q761	ICs 22240808	TMS70CT40
Q762	22240809	TMS77C82
Q763,Q764	Transistors 2211455 or 2211455	2SA1015-GR
Q765-Q767	2213284	2SC1740S-R

D761-D764	Diodes 223205 or 223163	1SS270A or 1SS133
X761	Resonator 3010234Y	CST5.2MGW

C761	Capacitors 354780109	1 μ F, 50V, Elect.
C764	375524744	0.047 μ F \pm 5%, 50V, Plastic
JL703	Socket 25050531	NSCT-9P354

NAD LINK I/O CIRCUIT PC BOARD (NAETC-5057)

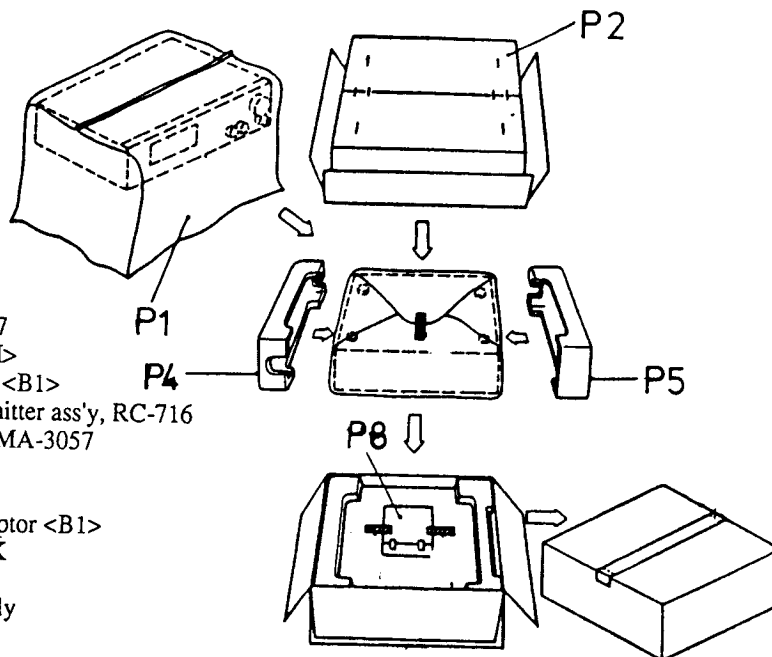
CIRCUIT NO.	PART NO.	DESCRIPTION
JL961	Socket 25050527	NSCT-5P350
P761	Jack 25045395	NPJ-2PDYE221

NOTE: <AH>: U.S.A., Canadian model only
: U.K. model only
<B1>: Australian model only
<C>: European model only

PACKING VIEW

REF.NO.	PART NO.	DESCRIPTION
P1	29100034AY	Styren Bag 850x650
P2	29052790Y	Carton Box
P4	29091615BY	Pad (R)
P5	29091614BY	Pad (L)
P8		Accessory bag ass'y
P8-1	29341983Y	Instruction manual, U7
P8-2	29355226Y	Instruction Sheet <AH>
P8-3	29365043Y	Warranty card (NAD) <B1>
P8-4	24140274	Remote control transmitter ass'y, RC-716
P8-5	232140	AM Loop antenna, NMA-3057
P8-6	292111Y	FM antenna
P8-7	292112	FM antenna <B1><C>
P8-8	25065462	YAE21-0237, FM adaptor <B1>
P8-9	2010317Y	Cord ass'y, NAD LINK

NOTE: <AH>: U.S.A., Canadian model only
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 <B1>: Australian model only
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