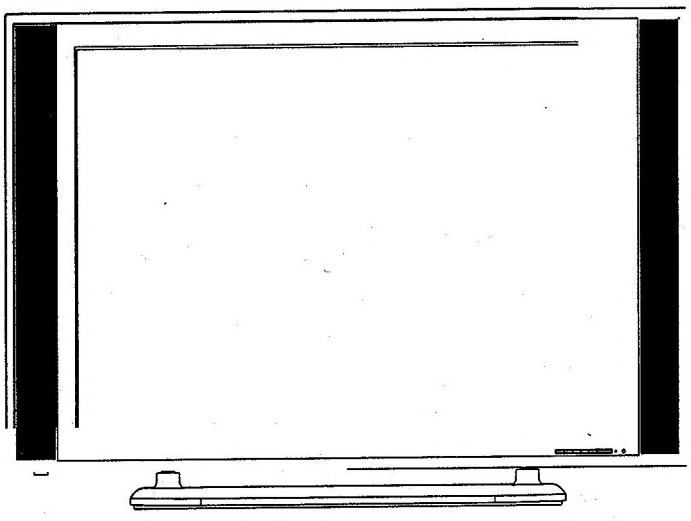
Schwalbe
Service & Versand GmbH

SERVICE MANUAL

ORION

TV-42007 SI

42" PLASMA COLOR TELEVISION



ORIGINAL
CHASSIS CODE A

Best. Nr. SM42007

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Headphon jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

1. MODEL NUMBER and CHASSIS CODE
   YOU can find it in the back of your unit.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease (YG6260M) on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease.
(Old grease may cause damage to the IC and Transistor).

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
NR2104	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2105	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2106	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR7203	110P4220M4	R,NETWORK	4D03WGJ0220T5E
NR7204	110P4220M4	R,NETWORK	4D03WGJ0220T5E
OS2200	0773071006	REMOTE RECEIVER	RPM7138-SH8
SP301	0701016001	SPEAKER	EAS12D175A
SP302	0701016001	SPEAKER	EAS12D175A
TM101	076R0DN080	TRANSMITTER	R56-0810
TR301	02A6B3A3T1	CORE FERRITE	ZCAT2436-1330A
TR302	02A6B3A3T1	CORE FERRITE	ZCAT2436-1330A
TR2201	02A6B3A3T1	CORE FERRITE	ZCAT2436-1330A
TR4201	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR4202	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR4203	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR4204	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR4205	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR4206	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR6501	02A6C0A3Y1	CORE FERRITE	ZCAT3035-1330
TR6502	02A6B3A3T1	CORE FERRITE	ZCAT2436-1330A
⚠ TU6001	0163Y03001	RF UNIT	TAFM-W122D
V801	09HD042001	PDP	PDP42V7####
V801A	Undecided	PCB ASS'Y	
V801B	Undecided	PCB ASS'Y	
V801C	Undecided	PCB ASS'Y	
V801D	Undecided	PCB ASS'Y	
V801E	Undecided	PCB ASS'Y	
V801F	Undecided	PCB ASS'Y	
V801G	Undecided	PCB ASS'Y	
V801H	Undecided	PCB ASS'Y	
V802	09JE042001	PDP FILTER	FG410PAA-05
X101	100WT01611	CRYSTAL	HC-49/U-S
X801	100YT05401	CRYSTAL	FCX-03
X901	100CT01803	CRYSTAL	HC-49/U-S
X8101	100CT3R536	CRYSTAL	HC-49/U
X8102	1002R01502	CERAMIC OSCILLATOR	CSBLA503KECZF30-B0

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

SPEC.NO.	M3U8-01A
O/R NO.	U553525

CONTENTS

GENERAL SPECIFICATIONS

G-1	**TV System**	PDP	PDP Size / Visual Size	41.58 inch / 1056.1 mmV
			Number of Pixels(H x V)	852(H) x 480(V)
		Color System		PAL/SECAM
		Speaker		2 Speaker
			Position	Front Side
			Size	2.2 x 5.0 inch
			Impedance	4 ohm
		Sound Output	MAX	10W + 10W
			10%(Typical)	---
		NTSC3.58+4.43 /PAL60Hz		Yes
G-2	**Tuning System**	Broadcasting System		U.K., I.R., CCIR, FRENCH System B/G, D/K, I/I, L
		Tuner and Receive CH	System	1Tuner
			Destination	UK, I.R., CCIR Hyper+France CATV
			CH Coverage	IreE2~E4,X~Z+2,S1~S10,E5~E12, S11~S41,E21~E69
		Intermediate Frequency		PAL/SECAM(U&VH)/SECAM(VL)
			Picture(FP)	38.9/38.9/33.9MHz
			Sound(FS)	33.4/32.9/32.4/40.4MHz
			FP-FS	5.5/6.0/6.5/6.5MHz
		Auto Tuning Method		ALL Band (Not C.C.I.R. CH Plan)
		Preset CH		80
		Stereo/Dual TV Sound		NICAM/A2 Dual
		Tuner Sound Muting		Yes
G-3	**Power**	Power Source	AC	230V AC 50Hz
			DC	---
		Power Consumption	at AC	250 W at AC 230 V 50 Hz
			at DC	--
			Stand by (at AC)	2 W at 230V 50Hz
			Per Year	-- kWh/Year
		Protector	*Power Fuse*	Yes
			Safety Circuit	Yes
			IC Protector(Micro Fuse)	No
G-4	**Regulation**		Safety	CE(EN60065:98)
			Radiation	CE
			X-Radiation	---
G-5	**Temperature**		Operation	+5oC ~ +40oC
			Storage	-20oC ~ +60oC
G-6	**Operating Humidity**			Less than 80% RH

GENERAL SPECIFICATIONS

G-7	**On Screen Display**	Menu (TV)			Yes	
			Menu Type		Icon	
			Picture		Yes	
				Brightness	Yes	
				Contrast	Yes	
				Color	Yes	
				Tint (NTSC Only)	Yes	
				Sharpness	Yes	
				DNR ON/OFF	Yes	
				Color Temperature	Yes	
				Blue Back	Yes	
			Audio		Yes	
				NICAM AUTO/OFF	Yes	
				Bass	Yes	
				Treble	Yes	
				Balance	Yes	
				Surround ON/OFF		No
				BBE	Yes	
				Speakers ON/OFF	Yes	
				HDMI		No
			Setup		Yes	
				Auto Tuning	Yes	
				Manual Tuning	Yes	
				CH Allocation	Yes	
				BACKLIGHT		No
				Language	Yes	
				Position (Vertical Position)	Yes	
				AUTO 4:3 DEFAULT	Yes	
				AV2 Output	Yes	
				AV2 Input	Yes	
				AV Color	Yes	
				Inversion		No
				Full White	Yes	
				Screen Saver	Yes	
				Static Image	Yes	
			Option		Yes	
				On Timer	Yes	
				Off Timer	Yes	
				Panel Lock	Yes	
		Menu (PC)			Yes	
			Picture		Yes	
				BRIGHTNESS	Yes	
				CONTRAST	Yes	
				HOR POSITION	Yes	
				VER POSITION	Yes	
				PHASE	Yes	
				CLOCK	Yes	
				AUTO ADJUST		No
				RED	Yes	
				GREEN	Yes	
				BLUE	Yes	
				WXGA INPUT	Yes	
			Audio		Yes	
				Bass	Yes	
				Treble	Yes	
				Balance	Yes	
				Surround ON/OFF		No
				BBE	Yes	
				Speakers	Yes	
		Control Level			Yes	
				Volume	Yes	
				Brightness	Yes	
				Contrast	Yes	
				Color	Yes	
				Tint (NTSC Only)	Yes	
				Sharpness	Yes	
				Tuning	Yes	
				Bass	Yes	
				Treble	Yes	
				Balance	Yes	
				H Position	Yes	
				V Position	Yes	
				PHASE	Yes	
				CLOCK	Yes	
				Red	Yes	
				Green	Yes	
				Blue	Yes	
				Backlight		No
		Nicam ST			Yes	
		Tone 1/2			Yes	
		Pin Code				No
		FREEZE				No
		CH/AV/PC			Yes	
		Hotel Lock				No
		Wide Mode			Yes	
		Sleep Timer			Yes	
		Sound Mute			Yes	

GENERAL SPECIFICATIONS

G-8	OSD Language			English French Spanish German Italian
G-9	Clock and Timer	Sleep Timer	Max Time	120 Min
			Step	10 Min
		On/Off Timer	Program(On Timer / Off Timer)	1 Program
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode) more than		-- Min Sec
G-10	Remote Control	Unit		RC-DN
		Glow in Dark Remocon		Yes
		Remocon Format		ORION
		Format		NEC
		Custom Code		80-63 h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		31
		Keys	Power (Stand By)	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0 / AV	Yes
			CH Up	No
			CH Down	No
			Volume Up / Right	Yes
			Volume Down / Left	Yes
			Quick View	No
			Sleep	Yes
			Display (CH Call)	Yes
			Normal	No
			Menu	Yes
			Enter	Yes
			Mute	Yes
			Dolby Virtual On/Off	No
			Picture Size	Yes
			Auto	No
			Position	No
			Fine Tuning +	No
			Fine Tuning -	No
			Tone 1/2	No
		T'TEXT Keys	TEXT / MIX / TV	Yes
			CH Up / Page Up / Up	Yes
			CH Down / Page Down / Down	Yes
			Red	Yes
			Green	Yes
			Yellow	Yes
			Cyan	Yes
			F/T/B(Expand) / Normal	Yes
			Reveal / Skip	Yes
			Display Cancel	No
			Reset	No
			Reset / Tone 1/2	Yes
			Hold / Status	Yes
			Sub Page / Quick View	Yes

GENERAL SPECIFICATIONS

G-11	**Features**	Auto Shut Off		Yes
		BBE		Yes
		Auto Search		Yes
		CH Allocation		Yes
		Channel Lock		No
		Just Clock Function		No
		Game Position		No
		CH Label		No
		T'Text		Yes
			Text type	Toptext
			Text Language	English , French, Swedish, Hungarian Finnish, Turkish, German, Dutch Portuguese, Spanish, Italian, Greek
		Wide Mode		Yes
		Picture Scroll		Yes
		DNR		Yes 3D
		Comb Filter		Yes 5 Lines
		Surround		No
		Backlight		No
		Stable Sound		No
		PFC(Power Factor circuit)		Yes
		Auto Set Up		No
		Power ON Memory		Yes
		Hotel Lock		No
		PC Monitor Input		Yes
		Freeze frame		No
G-12	**Accessories**	Owner's Manual	Language	German/Czech/French/Dutch
			w/Guarantee Card	Yes
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	-
			Terminal	-
		Loop Antenna (W/ Antenna Change Plug)		No
			Terminal	-
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Facility List		No
		Important Safeguard		No
		Dew/AHC Caution Sheet		No
		Quick Set-up Sheet		No
		Battery		Yes
			UM size x pcs	UM-4 x 2 pcs
			OEM Brand	No
		AC Adapter		No
		AC Cord (for AC Adapter)		No
		AC Cord		Yes
		AV Cord (2Pin-1Pin)		No
		HDMI-DVI Cable		No
		Registration Card		No
		300 ohm to 75 ohm Antenna Adapter		No

GENERAL SPECIFICATIONS

G-13	Interface	Switch	FRONT	Sub Power (Tact)	Yes
				System Select	No
				Main Power SW	No
				Channel Up/Menu Up	Yes
				Channel Down/Menu Down	Yes
				Volume Up/Menu >	Yes
				Volume Down/Menu <	Yes
				Input Select	Yes
				Menu	No
			REAR	Main Power SW	Yes
		Indicator		Power / Stand-by	Yes(GREEN / RED)
				On Timer	No
		Terminals	Rear	Video Input	No
				Audio Input	No
				S- Input	No
				Video Output	No
				Audio Output	RCA x 2(Variable)
				Color Stream	No
				Other Terminal	No
				Euro Scart (21Pin)	3Scart
				HDMI Input(w/ Analog Audio L/R)	No
				Sub Woofer Out	No
				PC Monitor Input (D-Sub)	Yes
				Audio Input	RCA x 2(Stereo)
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	DIN Type
				AC Inlet	Yes
			Side	Video Input	RCA x 1
				Audio Input	RCA x 2(Stereo)
				S- Input	Yes
				Other Terminal	Headphone
G-14	Set Size			Approx. W x D x H (mm)	1,210 x 340 x 716.5
				w/o Stand,Handle Approx. W x D x H (mm)	1,210 x 115 x 658
G-15	Weight			Net Approx.	39.0kg (85.8 lbs)
				Net w/o Stand,Handle Approx.	34.0kg (74.8 lbs)
				Gross Approx.	46.0kg (101.2 lbs)
G-16	Carton		Master Carton		No
				Content	--- Sets
				Material	--- / ---
				Dimensions W x D x H(mm)	---
				Description of Origin	---
			Gift Box	Material	Double/Brown
				Dimensions W x D x H(mm)	1,320 x 435 x 820
				Design	As per Buyer's
				Description of Origin	No
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	25
			Container Stuffing		90 Sets/40' container
G-17	Material		Cabinet	Cabinet Front	PS 94V0 DECABROM
				Cabinet Rear	Steel
			PCB	Non-Halogen	No
				Eyelet	Yes
G-18	Environment		Environmental standard requirement (by buyer)		No
			Pb-free		Phase3(Phase3A)
			WEEE		Yes

DISASSEMBLY INSTRUCTIONS

1. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 1-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

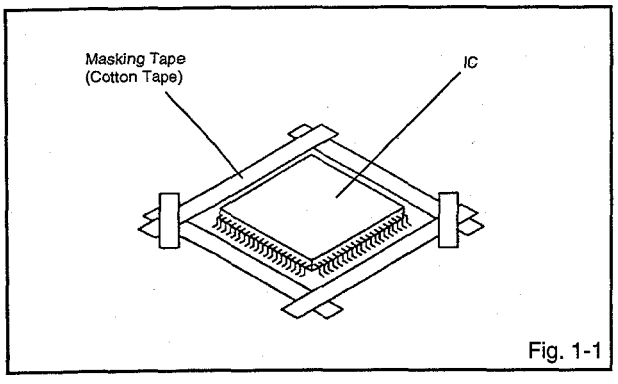


Fig. 1-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 1-2.)**

   NOTE

   Do not rotate or move the IC back and forth , until IC can move back and forth easily after desoldering the leads completely.

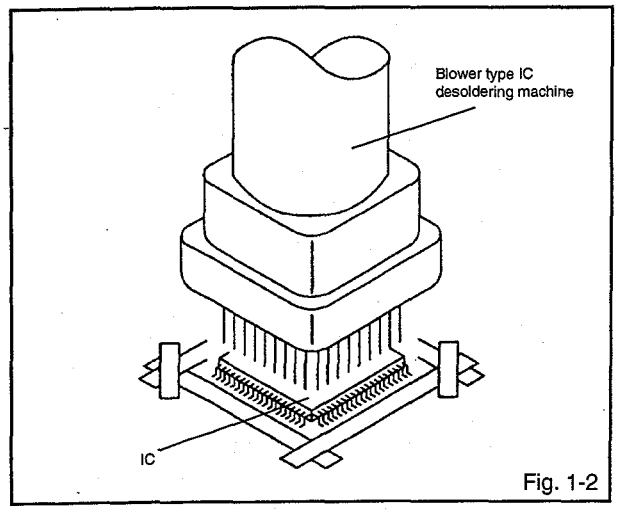


Fig. 1-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 1-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

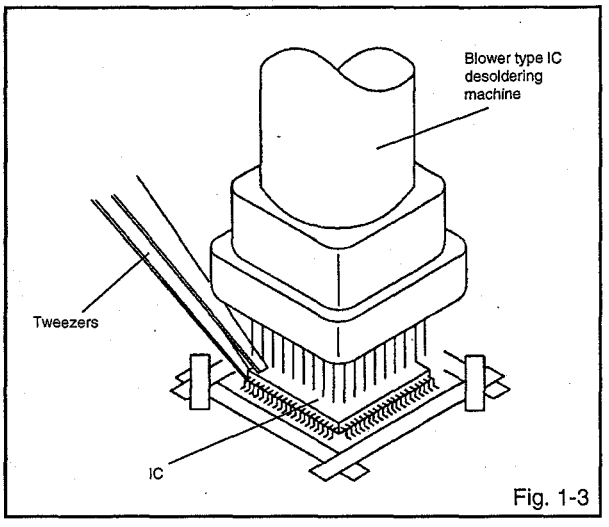


Fig. 1-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 1-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

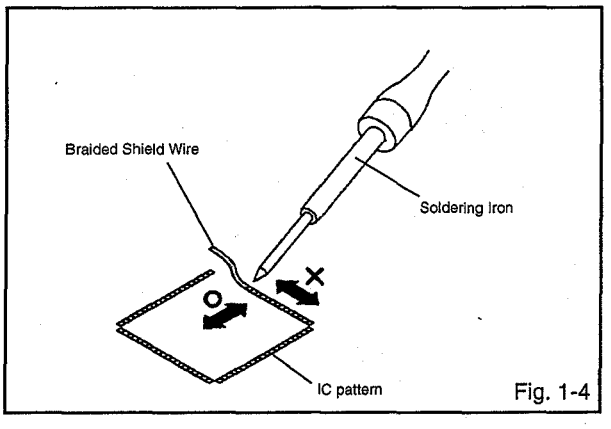


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 1-5.)**

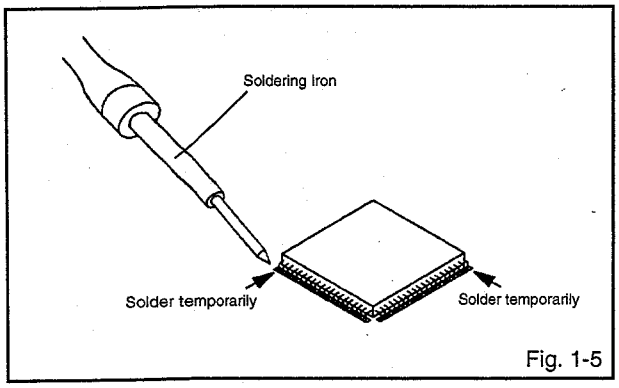


Fig. 1-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 1-6.)**

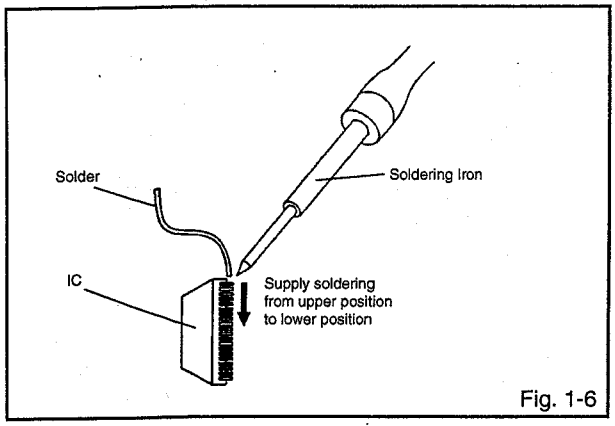


Fig. 1-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 1-7.)**

NOTE

Do not absorb the solder to excess.

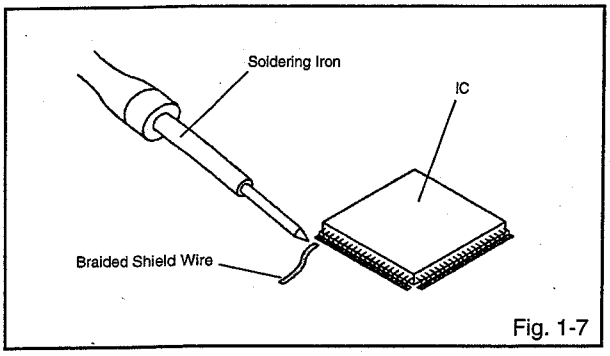


Fig. 1-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 1-8.)**

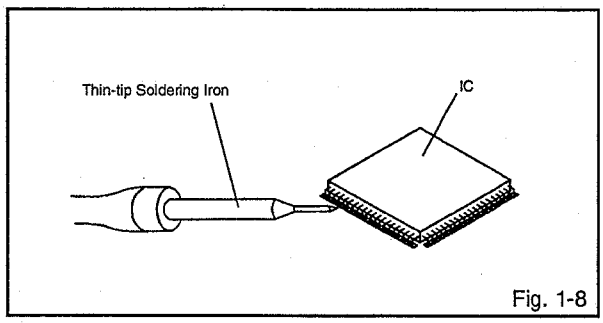


Fig. 1-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
TV mode	VOL. DOWN (Minimum)	0	2 sec.	Reset the user setting items (PICTURE, VOLUME, LANGUAGE and NICAM AUTO/OFF) to the initial state for delivery.
TV mode	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
TV mode	VOL. DOWN (Minimum)	6	2 sec.	POWER ON total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
ALL mode	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
4. After the confirmation of using hours, turn off the power.

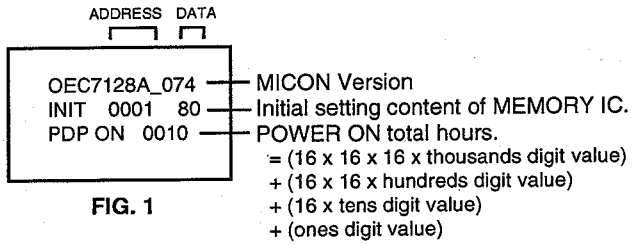


FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
0000	---	80	C9	E0	74	34	02	A4	CA	EE	FE	F0	90	80	00	11
0010	0D	40	00	00	AA	30	30	10	01	00	1E	20	03	03	0F	08
0020	00	00	7F	48	40	70	4D	03	0B	30	00	00	00	00	00	00
0030	00	00	00	00	00	00	00	00	00	00	00	00	00	98	00	2C
0040	00	00	2C	EA	E1	DB	DB	DB	00	00	00	00	00	00	00	0D
0050	05	10	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0060	80	00	00	00	00	00	40	46	63	68	4D	53	65	6A	3A	3D
0070	3E	48	4A	4C	52	57	58	5A	5B	5D	5F	60	61	62	63	64
0080	65	66	67	67	68	68	69	69	6A	6A	6B	6B	6C	6C	6D	6D
0090	6E	6E	6F	6F	70	70	71	71	72	72	73	73	74	74	75	75
00A0	3A	3D	3E	48	4A	4C	52	57	58	5A	5B	5D	5F	60	61	62
00B0	63	64	65	66	67	67	68	68	69	69	6A	6A	6B	6B	6C	6C
00C0	6D	6D	6E	6E	6F	6F	70	70	71	71	72	72	73	73	74	74
00D0	75	75	DB	DB	98	DB	DB	0F	08	00	01	00	22	13	74	6C
00E0	D4	D4	C1	3C	F6	8C	5C	62	18	75	73	25	38	63	55	55
00F0	00	64	00	64	00	64	00	64	00	64	00	64	00	64	55	AA
0600	31	F0	28	1F	08	08	20	80	80	80	7F	7F	7F	F2	6E	80
0610	20	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
0620	38	30	20	FF	10	08	60	80	80	80	7F	7F	7F	F6	6E	B8
0630	28	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
0640	41	F0	60	1F	08	08	20	80	80	80	7F	7F	7F	F2	6E	80
0650	20	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
0660	53	F0	70	1F	08	08	20	80	80	80	7F	7F	7F	F2	6E	80
0670	20	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
0680	67	F0	A0	FF	10	08	60	80	80	80	7F	7F	7F	F2	6E	B8
0690	28	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
06A0	67	F0	A0	FF	10	08	60	80	80	80	7F	7F	7F	F2	6E	B8
06B0	28	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
06C0	6B	30	18	F0	07	14	44	80	80	80	7D	50	7D	FF	66	B5
06D0	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
06E0	35	90	18	F0	07	14	35	80	80	80	7D	50	7D	FF	66	B5
06F0	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00

Table 1-1

WHEN REPLACING EEPROM (MEMORY) IC

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
0700	67	10	88	B0	2B	14	B0	80	80	80	7E	5C	7E	FF	66	B5
0710	20	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
0720	89	70	88	B0	2B	66	94	80	80	80	7F	5C	7F	FF	66	B5
0730	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
0740	3F	F0	60	1F	08	08	20	80	80	80	7F	7F	7F	F2	6E	80
0750	20	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
0760	6B	F0	18	F0	07	14	44	80	80	80	7D	50	7D	FF	66	B5
0770	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
0780	35	F0	18	F0	07	14	35	80	80	80	7D	50	7D	FF	66	B5
0790	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
07A0	7B	B0	88	B0	2B	14	B0	80	80	80	7E	5C	7E	FF	66	B5
07B0	20	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
07C0	A4	F0	88	B0	2B	66	94	80	80	80	7F	5C	7F	FF	66	B5
07D0	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
07E0	04	04	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
07F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	01	3C	05	3C	05
1000	47	DF	FF	BF	F2	FE	F7	EF	FF	7F	D7	DF	FF	FF	FF	FF
1010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	00
1040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1050	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1060	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1070	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Table 1-2

WHEN REPLACING EEPROM (MEMORY) IC

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
0700	67	10	88	B0	2B	14	B0	80	80	80	7E	5C	7E	FF	66	B5
0710	20	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
0720	89	70	88	B0	2B	66	94	80	80	80	7F	5C	7F	FF	66	B5
0730	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
0740	3F	F0	60	1F	08	08	20	80	80	80	7F	7F	7F	F2	6E	80
0750	20	04	04	02	00	00	00	00	01	00	00	00	00	00	00	00
0760	6B	F0	18	F0	07	14	44	80	80	80	7D	50	7D	FF	66	B5
0770	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
0780	35	F0	18	F0	07	14	35	80	80	80	7D	50	7D	FF	66	B5
0790	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
07A0	7B	B0	88	B0	2B	14	B0	80	80	80	7E	5C	7E	FF	66	B5
07B0	20	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
07C0	A4	F0	88	B0	2B	66	94	80	80	80	7F	5C	7F	FF	66	B5
07D0	30	0B	0F	02	00	00	00	00	01	00	00	00	00	00	00	00
07E0	04	04	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
07F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	01	3C	05	3C	05
1000	47	DF	FF	BF	F2	FE	F7	EF	FF	7F	D7	DF	FF	FF	FF	FF
1010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	00
1040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1050	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1060	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1070	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
10F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Table 1-3

WHEN REPLACING EEPROM (MEMORY) IC

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
1100	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1110	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1120	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1130	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1140	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1150	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1160	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1170	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1180	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1190	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
11A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
11B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
11C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
11D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
11E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
11F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1200	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1210	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1220	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1230	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1240	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1250	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1260	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1270	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1280	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1290	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
12A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
12B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
12C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
12D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
12E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
12F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Table 1-4

WHEN REPLACING EEPROM (MEMORY) IC

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
1300	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1310	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1320	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1330	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1340	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1350	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1360	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1370	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1380	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1390	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
13A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
13B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
13C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
13D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
13E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
13F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1400	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1410	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1420	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1430	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1440	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1450	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1460	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1470	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1480	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1490	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
14A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
14B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
14C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
14D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
14E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
14F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Table 1-5

WHEN REPLACING EEPROM (MEMORY) IC

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
1500	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1510	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1520	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1530	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1540	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1550	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1560	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1570	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1580	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1590	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
15A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
15B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
15C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
15D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
15E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
15F0	FF	FF	FF	FF	FF	---	---	---	---	---	---	---	---	---	---	---

Table 1-6

1. Turn on the POWER, and set to the TV mode.
2. Enter DATA SET mode by setting VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.

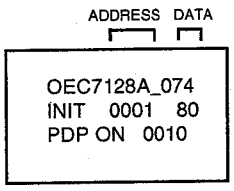


FIG. 1

4. ADDRESS is now selected and should "blink". Using the RIGHT/LEFT button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using RIGHT/LEFT button until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
10. Turn on the POWER, and set to the TV mode.
11. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
12. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

2. BASIC ADJUSTMENTS

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 2-1**.

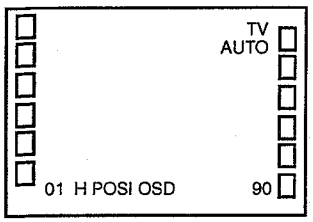


Fig. 2-1

3. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 2-2**.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for AV mode, press the 0/AV button on the remote control to set to the AV mode. Press the VOL.DOWN button on the set and the channel **(9)** on the remote control for more than 2 seconds.

NO.	FUNCTION	NO.	FUNCTION
01	H POSI OSD	34	SHARP MIN
02	V POSI OSD	35	CONTRAST CENTER
03	R DRIVE (N)	36	CONTRAST MAX
04	R CUT OFF (N)	37	CONTRAST MIN
05	G DRIVE (N)	38	COLOR CENT
06	G CUT OFF (N)	39	COLOR MAX
07	B DRIVE (N)	40	COLOR MIN
08	B CUT OFF (N)	41	H POSI TEXT
09	R DRIVE (C)	42	V POSI TEXT
10	R CUT OFF (C)	43	NT COLOR CENT
11	G DRIVE (C)	44	NT COLOR MAX
12	G CUT OFF (C)	45	NT COLOR MIN
13	B DRIVE (C)	46	RGB BRIGHT CENT
14	B CUT OFF (C)	47	RGB BRIGHT MAX
15	R DRIVE (W)	48	RGB BRIGHT MIN
16	R CUT OFF (W)	49	RGB CONTRAT CENT
17	G DRIVE (W)	50	RGB CONTRAT MAX
18	G CUT OFF (W)	51	RGB CONTRAT MIN
19	B DRIVE (W)	52	RGB COLOR CENT
20	B CUT OFF (W)	53	RGB COLOR MAX
21	H POSI 50Hz	54	RGB COLOR MIN
22	H POSI 60Hz	55	RGB SHARP CENT
23	V POSI 50Hz	56	RGB SHARP MAX
24	V POSI 60Hz	57	RGB SHARP MIN
28	BRIGHT CENT	58	RGB V POSI 50Hz
29	BRIGHT MAX	59	RGB V POSI 60Hz
30	BRIGHT MIN	60	RGB H POSI 50Hz
31	TINT	61	RGB H POSI 60Hz
32	SHARP CENTER	62	INVERSION
33	SHARP MAX		

Fig. 2-2

2-1: CONTRAST CENT

1. Receive the Window Pattern .(RF Input)
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select "CONTRAST CENTER".
3. Check if the step No. CONT CENT is "140".
4. Receive a broadcast and check if the picture is normal.
5. Press the 0/AV button on the remote control to set to the AV/COMPOSITE mode. Then perform the above adjustments 1~3.
6. Receive a broadcast and check if the picture is normal.
7. Receive a RGB signal.
   (Ex. By the DVD PLAYER, it's the RGB mode setting.)
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(49)** on the remote control to select "RGB CONTRAST CENT".
9. Check if the step No. CONT CENT is "90".
10. Receive a broadcast and check if the picture is normal.

ELECTRICAL ADJUSTMENTS

2-2: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the 0/AV button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE".
6. Press the CH. UP/DOWN button on the remote control to select the "R CUTOFF", "G.DRIVE", "G CUTOFF", "B.DRIVE" and "B CUTOFF".
7. Adjust the VOL. UP/DOWN button on the remote control to whiten the R CUTOFF, G.DRIVE, G CUTOFF, B.DRIVE and B CUTOFF at each step tone sections equally. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-3: H OSD POSITION

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H POSI OSD".
4. Press the LEFT/RIGHT button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

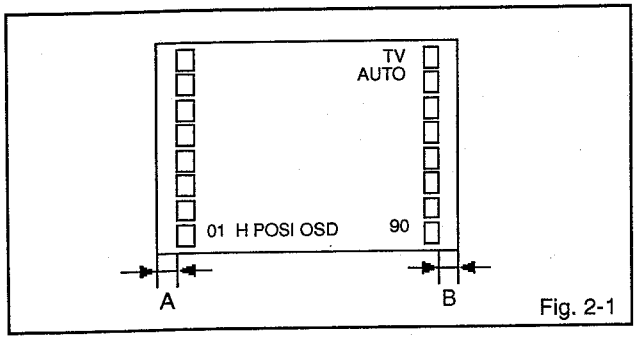


Fig. 2-1

2-4: BRIGHT CENT

1. Receive the monoscope pattern. (RF Input)
2. Set the screen mode to FULL.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(28)** on the remote control to select "BRI CENT".
5. Press the VOL. UP/DOWN button on the remote control until the white 5.4% is starting to be visible
6. Receive the monoscope pattern.
7. Press the 0/AV button on the remote control to set to the AV/COMPOSITE mode. Then perform the above adjustments 2~5.
8. Receive the monoscope pattern. (RGB signal)
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(48)** on the remote control to select "RGB BRIGTH CENT".
11. Press the VOL. UP/DOWN button on the remote control
12. until the white 5.4% is starting to be visible

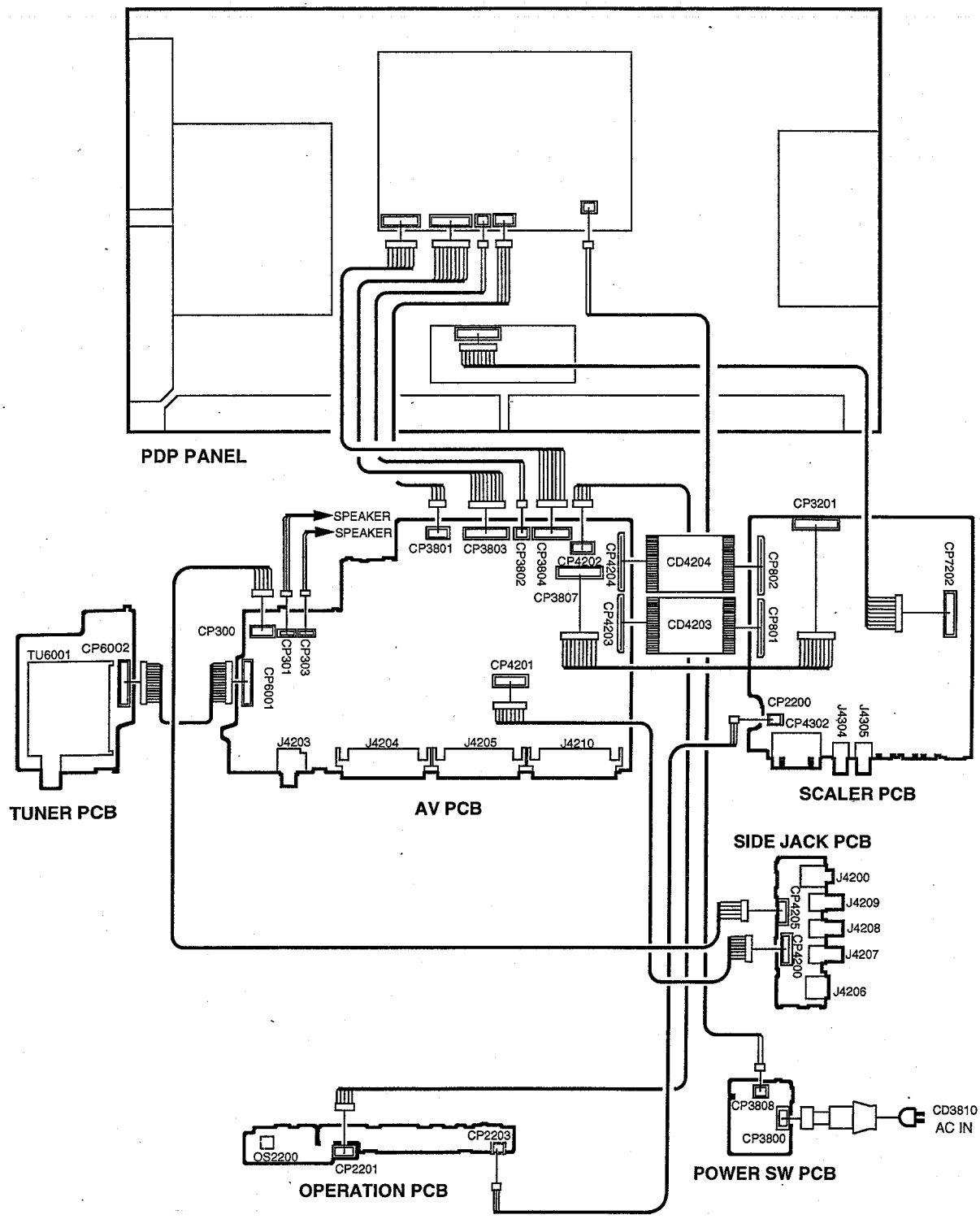
2-5: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each the adjustment items are set correctly referring below.**(RF/AV/AV RGB/PC)**

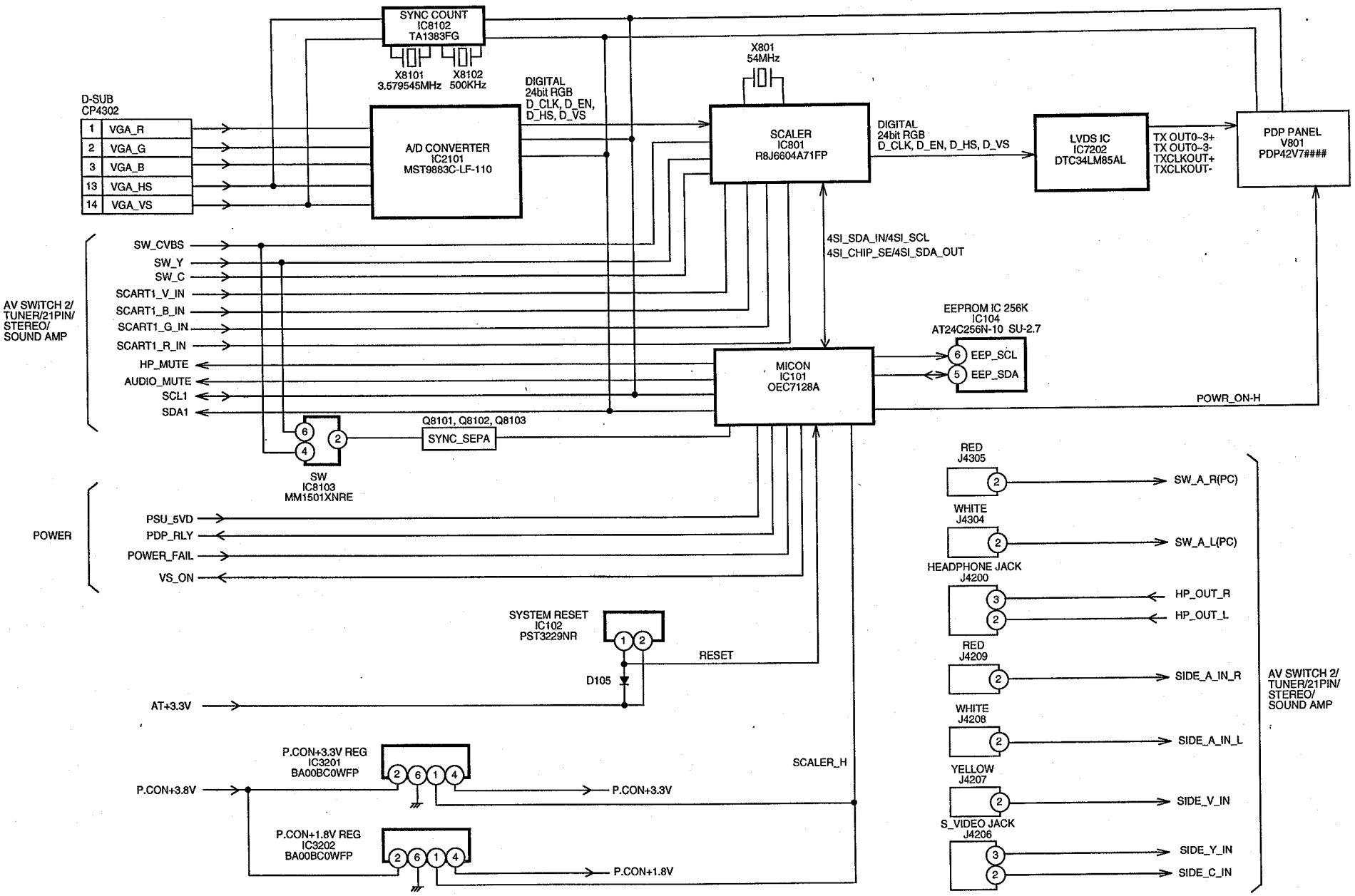
NO.	FUNCTION	RF	AV	AV RGB	PC
01	H POSI OSD	90	90	90	90
02	V POSI OSD	100	100	100	100
03	R DRIVE (N)	122	122	121	122
04	R CUT OFF (N)	131	131	129	
05	G DRIVE (N)	128	128	128	128
06	G CUT OFF (N)	128	128	128	
07	B DRIVE (N)	115	115	122	115
08	B CUT OFF (N)	135	135	129	
09	R DRIVE (C)	119	119	120	
10	R CUT OFF (C)	132	132	129	
11	G DRIVE (C)	128	128	128	
12	G CUT OFF (C)	128	128	128	
13	B DRIVE (C)	122	122	127	
14	B CUT OFF (C)	133	133	127	
15	R DRIVE (W)	131	131	131	
16	R CUT OFF (W)	129	129	126	
17	G DRIVE (W)	128	128	128	
18	G CUT OFF (W)	128	128	128	
19	B DRIVE (W)	116	116	122	
20	B CUT OFF (W)	133	133	128	
21	H POSI 50Hz	332	332	332	
22	H POSI 60Hz	302	302	302	
23	V POSI 50Hz	38	38	38	
24	V POSI 60Hz	35	35	35	
28	BRIGHT CENT	135	135	135	130
29	BRIGHT MAX	150	150	150	150
30	BRIGHT MIN	70	70	70	70
31	TINT	128	128	128	
32	SHARP CENTER	55	55	55	128
33	SHARP MAX	180	180	180	255
34	SHARP MIN	00	00	00	00
35	CONTRAST CENTER	140	140	140	127
36	CONTRAST MAX	180	180	180	150
37	CONTRAST MIN	60	60	60	60
38	COLOR CENT	55	55	55	
39	COLOR MAX	120	120	120	
40	COLOR MIN	00	00	00	
41	H POSI TEXT	180	180	180	
42	V POSI TEXT	87	87	87	
43	NT COLOR CENT	55	55	55	
44	NT COLOR MAX	120	120	120	
45	NT COLOR MIN	00	00	00	
46	RGB BRIGHT CENT			136	
47	RGB BRIGHT MAX			150	
48	RGB BRIGHT MIN			70	
49	RGB CONTRAT CENT			90	
50	RGB CONTRAT MAX			130	
51	RGB CONTRAT MIN			60	
52	RGB COLOR CENT			105	
53	RGB COLOR MAX			155	
54	RGB COLOR MIN			00	
55	RGB SHARP CENT			65	
56	RGB SHARP MAX			180	
57	RGB SHARP MIN			00	
58	RGB V POSI 50Hz			36	
59	RGB V POSI 60Hz			35	
60	RGB H POSI 50Hz			329	
61	RGB H POSI 60Hz			302	

ELECTRICAL ADJUSTMENTS

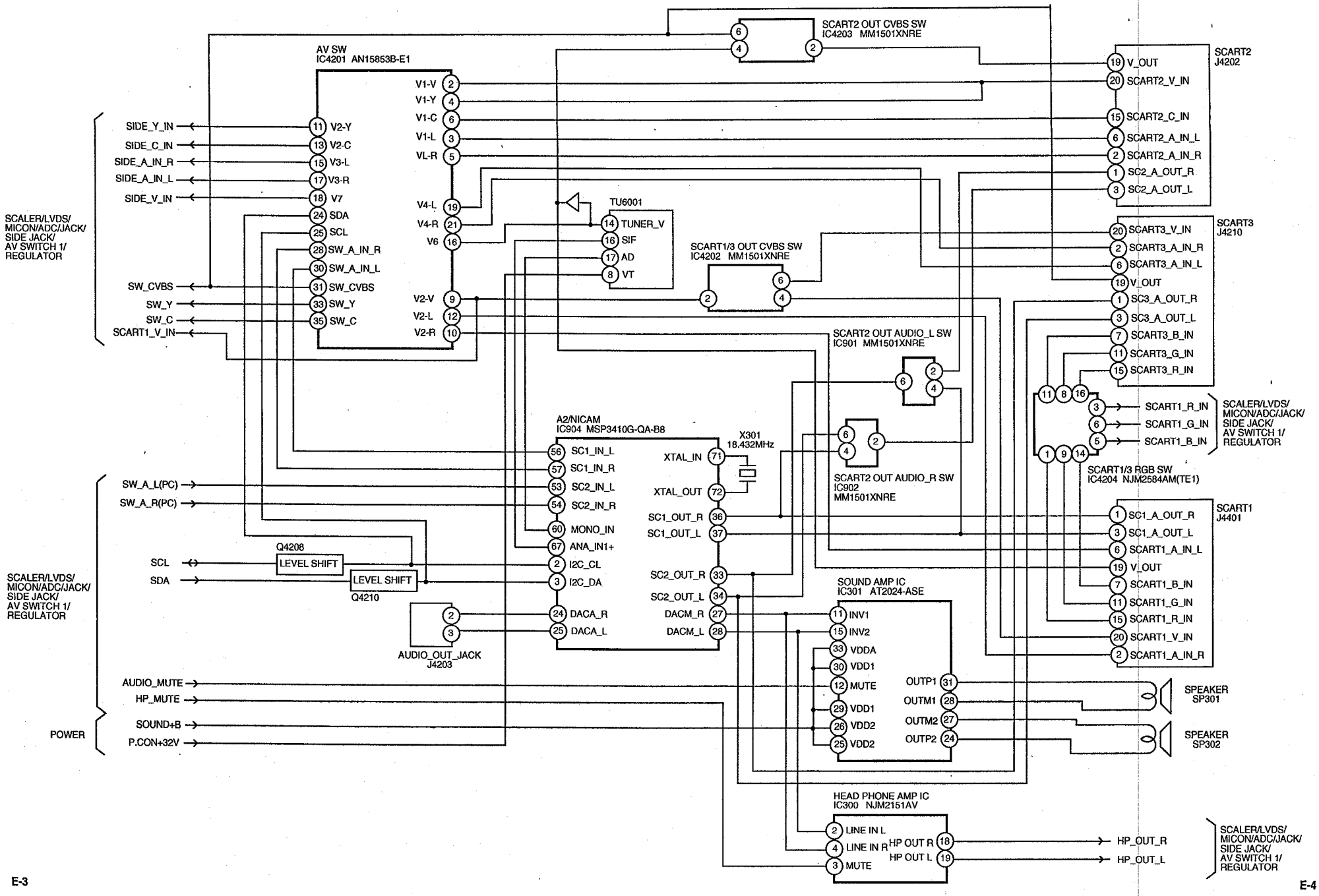
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



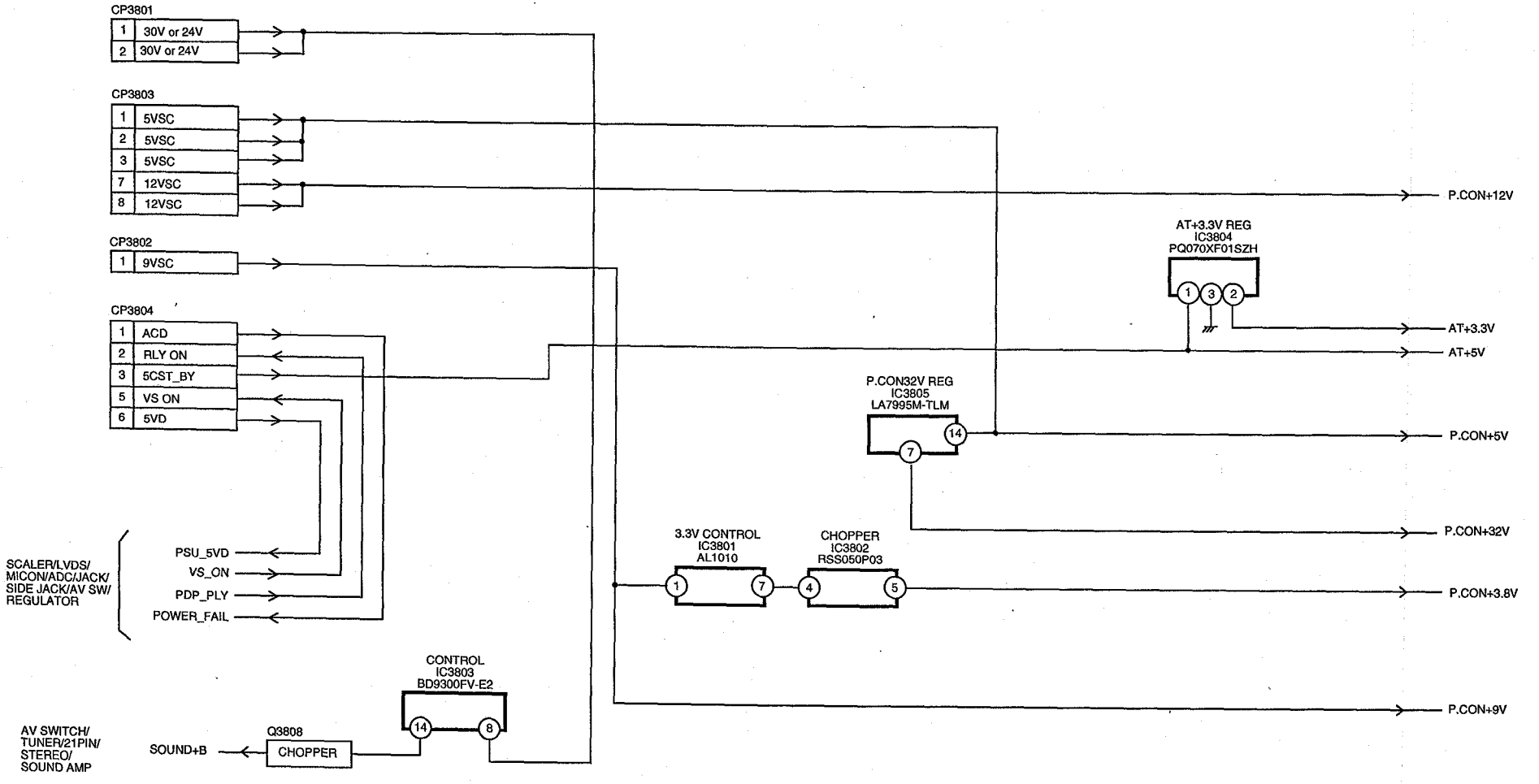
SCALER/LVDS/MICON/ADC/JACK/SIDE JACK/AV SWITCH 1/REGULATOR BLOCK DIAGRAM



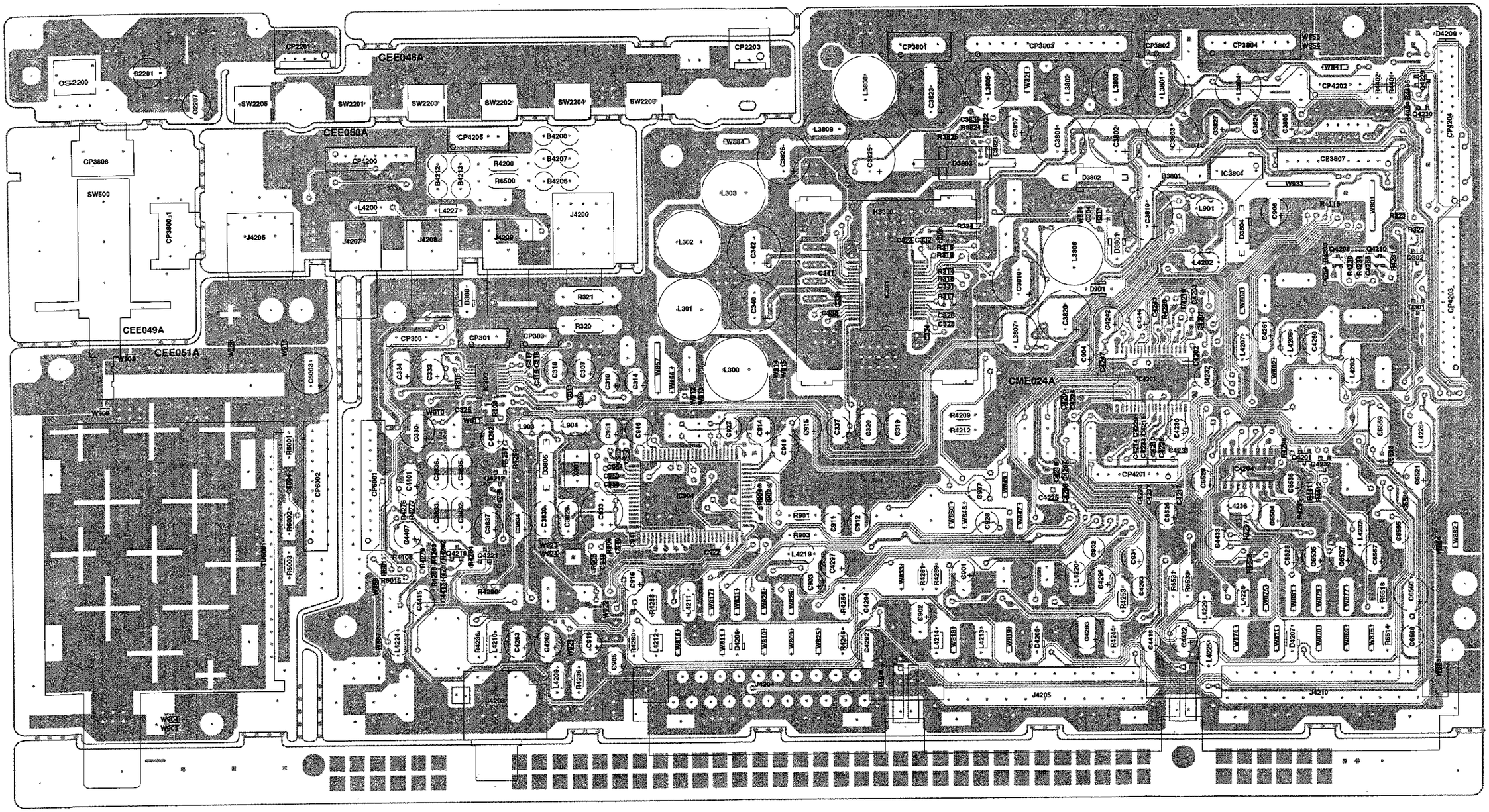
AV SWITCH 2/TUNER/21PIN/STEREO/SOUND AMP BLOCK DIAGRAM



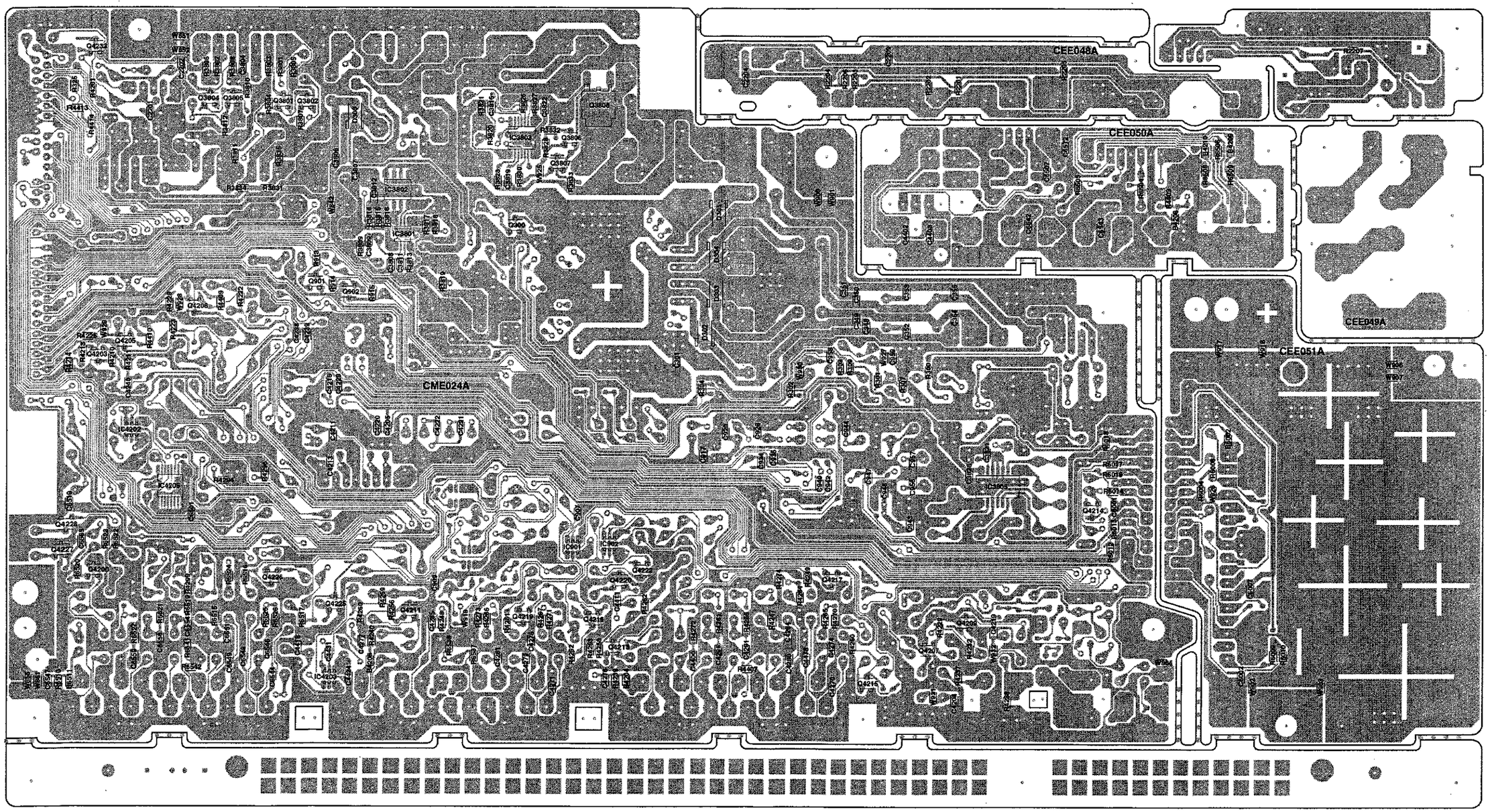
POWER BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
AV/OPERATION/TUNER/POWER SW/SIDE JACK (TOP SIDE)

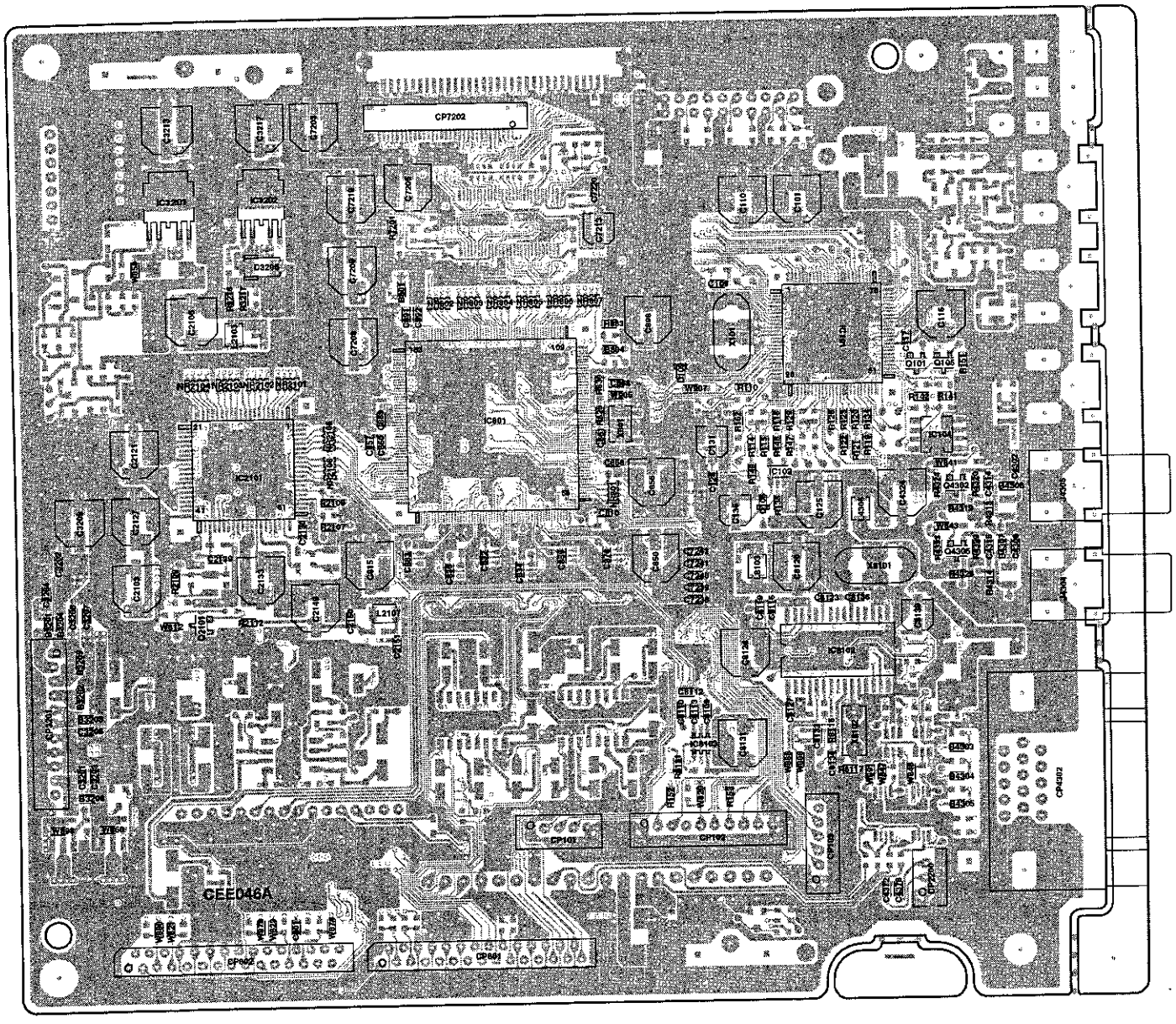


PRINTED CIRCUIT BOARDS
AV/OPERATION/TUNER/SIDE JACK (BOTTOM SIDE)



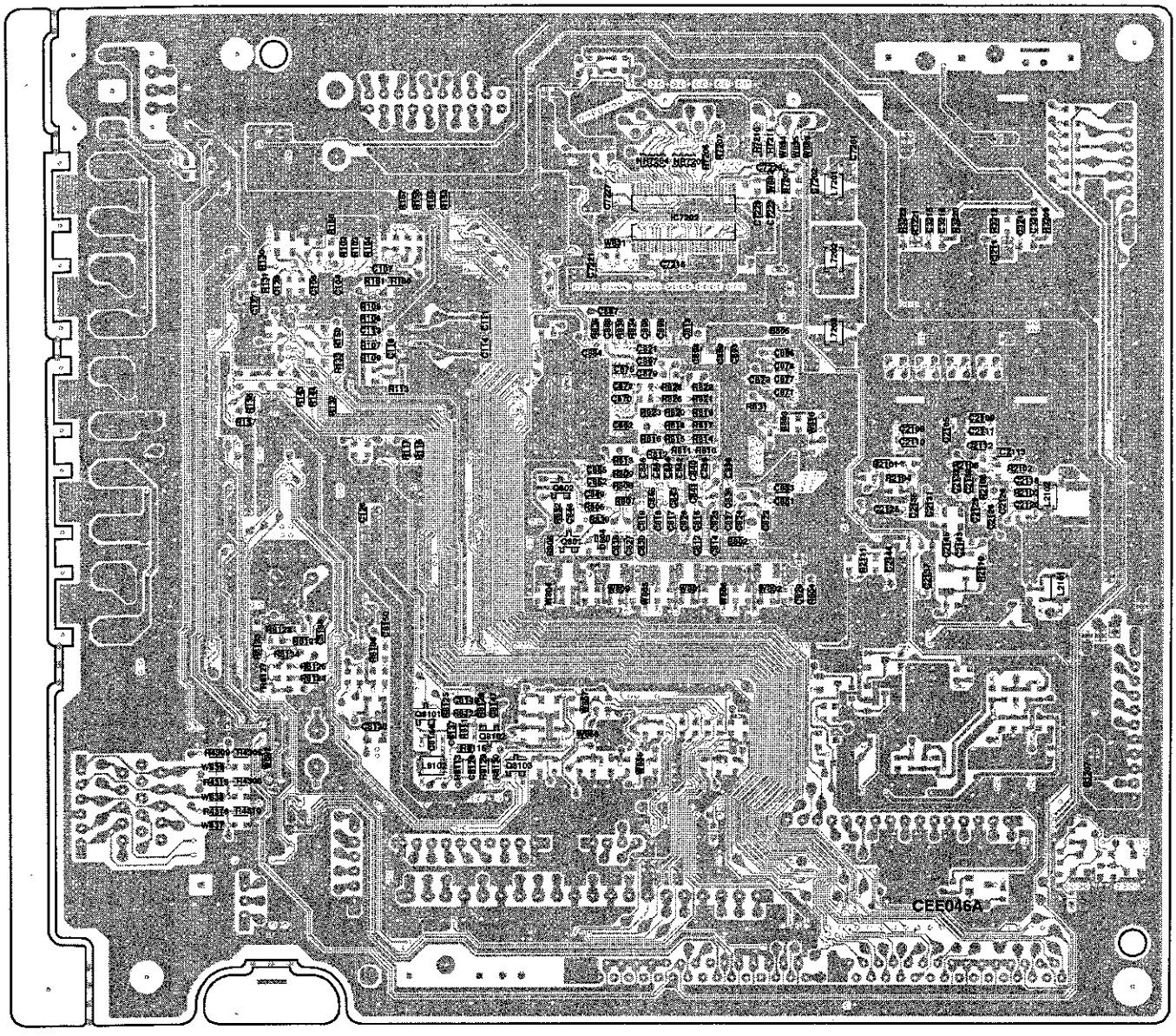
PRINTED CIRCUIT BOARDS

SCALER (TOP SIDE)



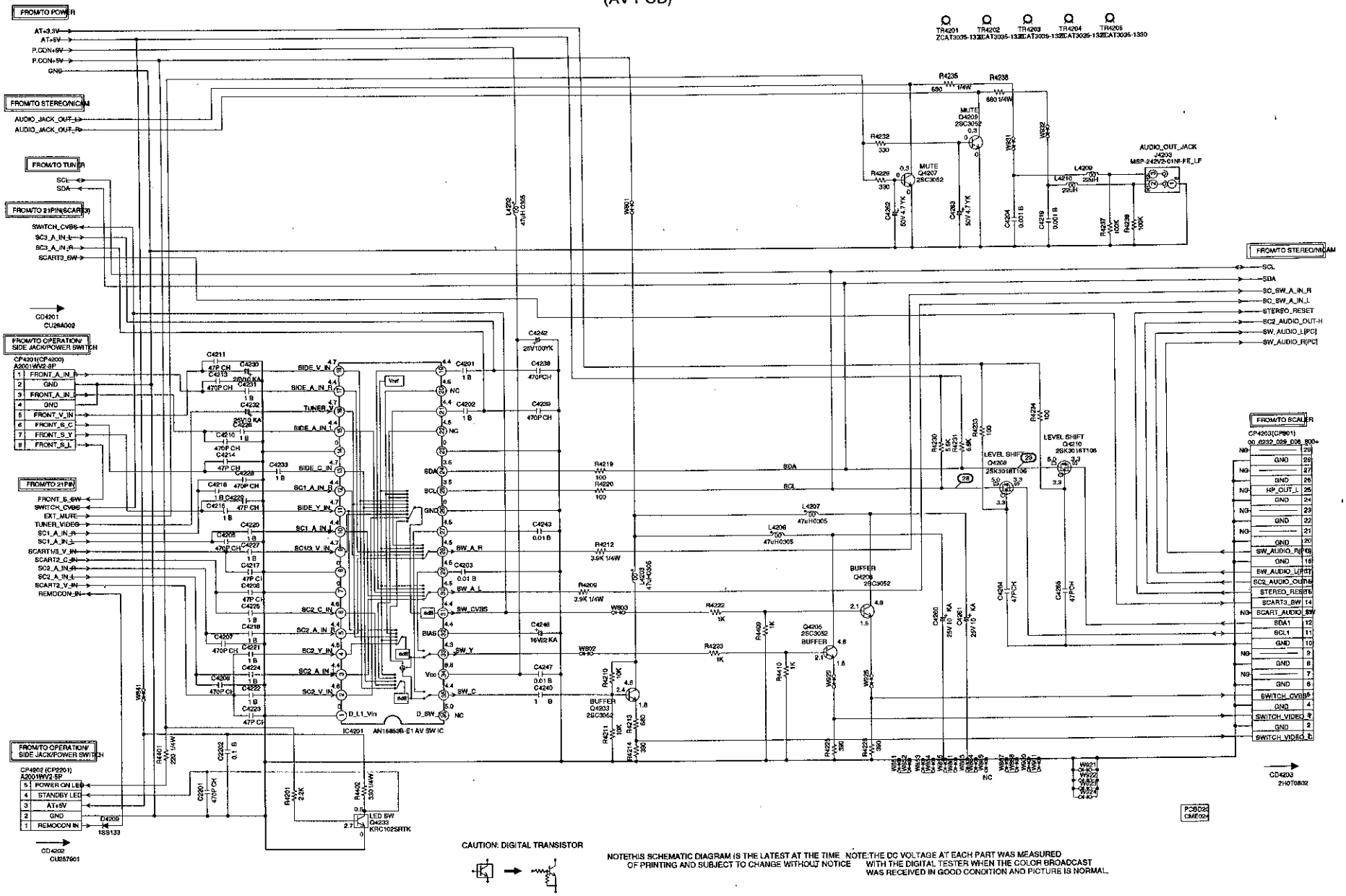
PRINTED CIRCUIT BOARDS

SCALER (BOTTOM SIDE)



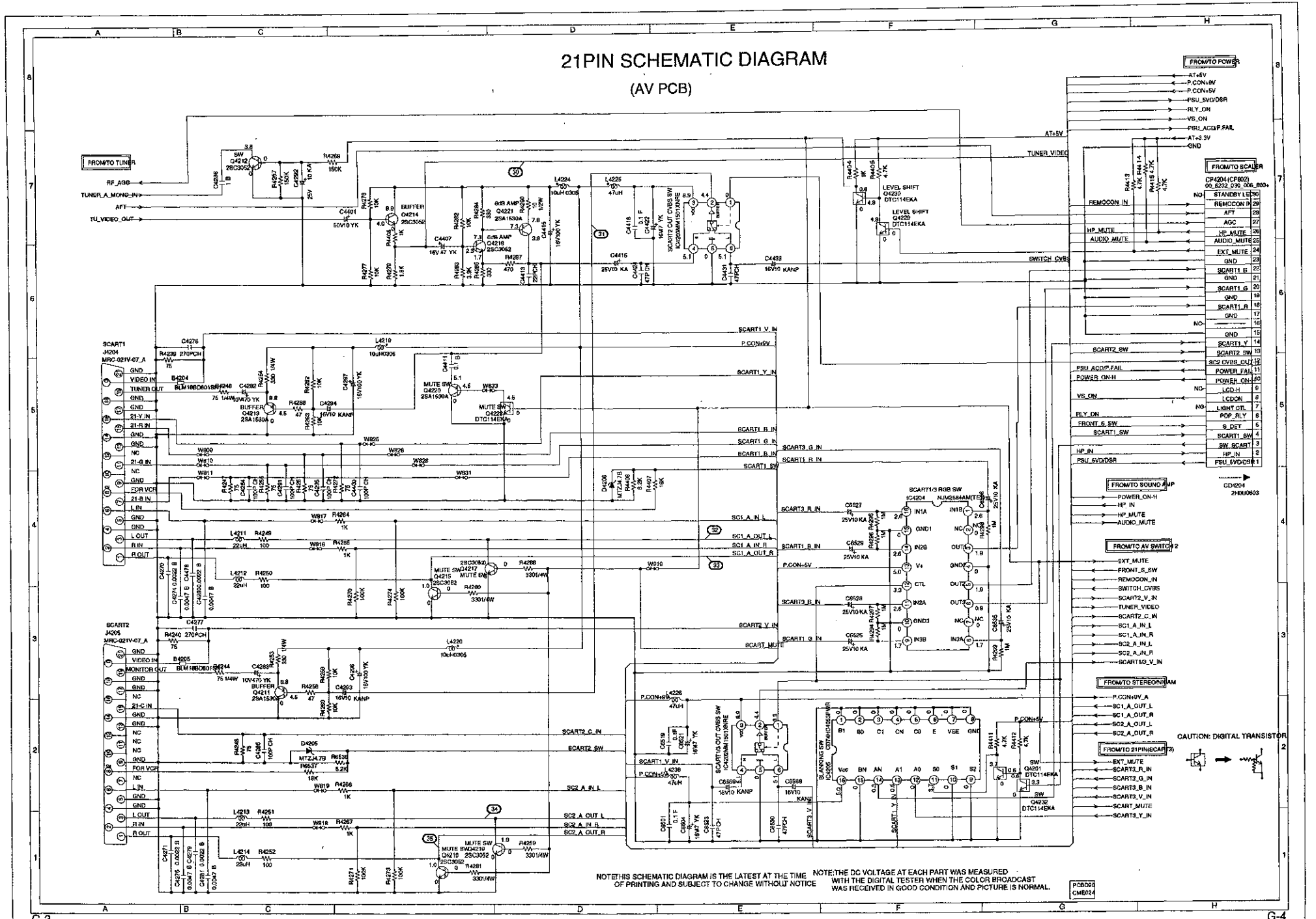
AV SWITCH 2 SCHEMATIC DIAGRAM

(AV PCB)



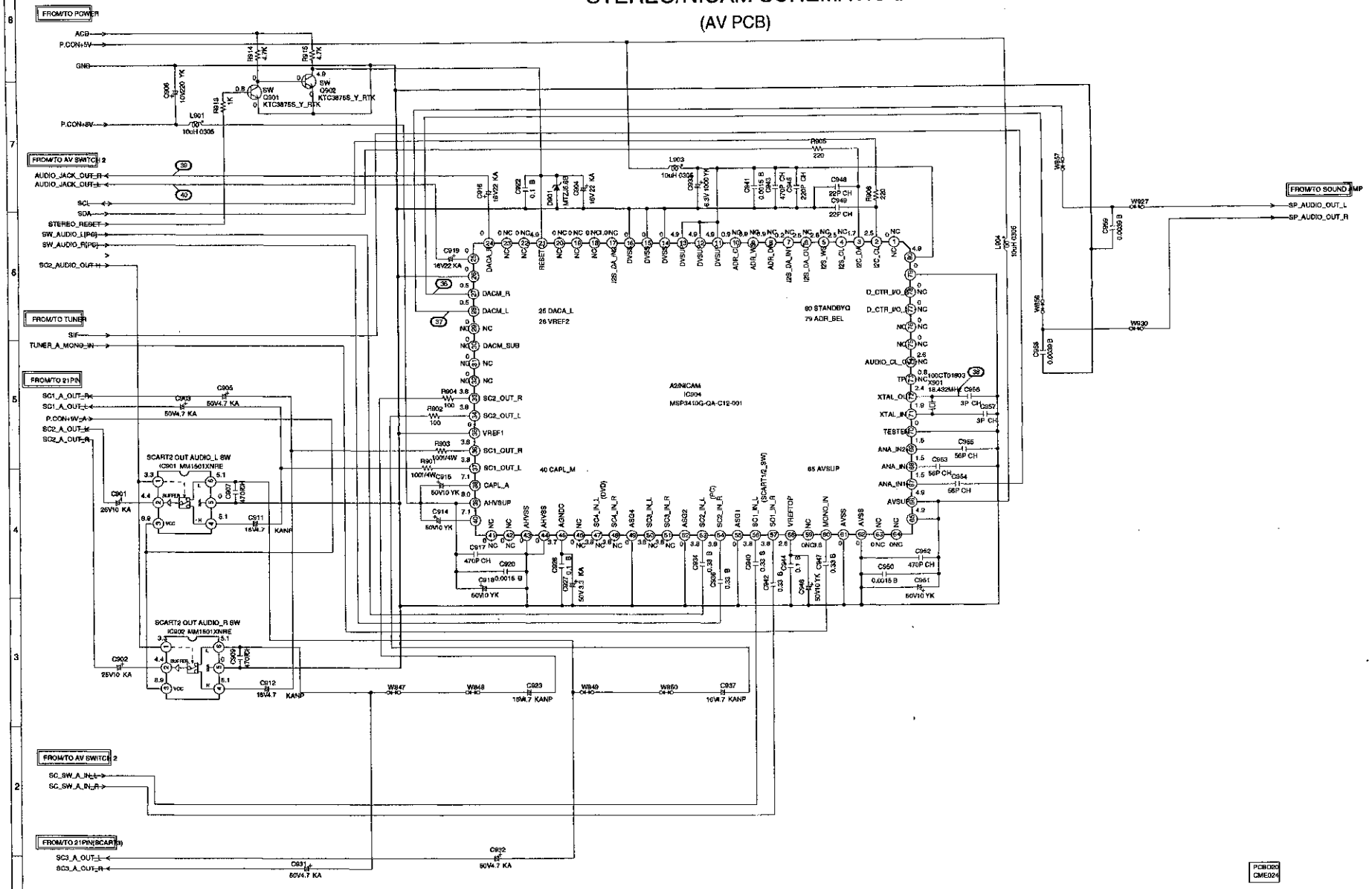
21PIN SCHEMATIC DIAGRAM

(AV PCB)



STEREO/NICAM SCHEMATIC DIAGRAM

(AV PCB)

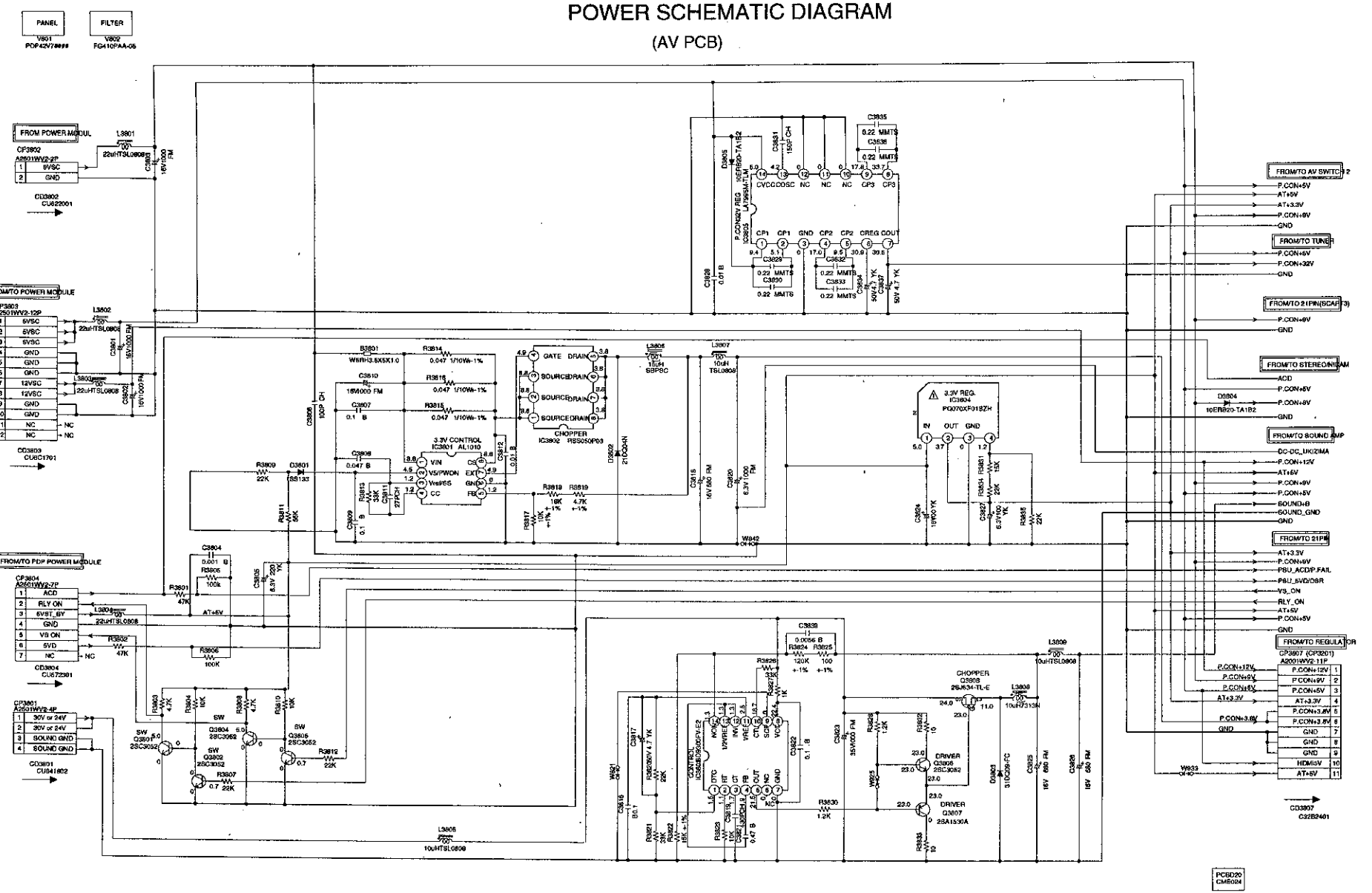


NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

POWER SCHEMATIC DIAGRAM

(AV PCB)



CAUTION: NOTICE THESE PARTS MARKED ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR ⚠ SONT DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES BIECES

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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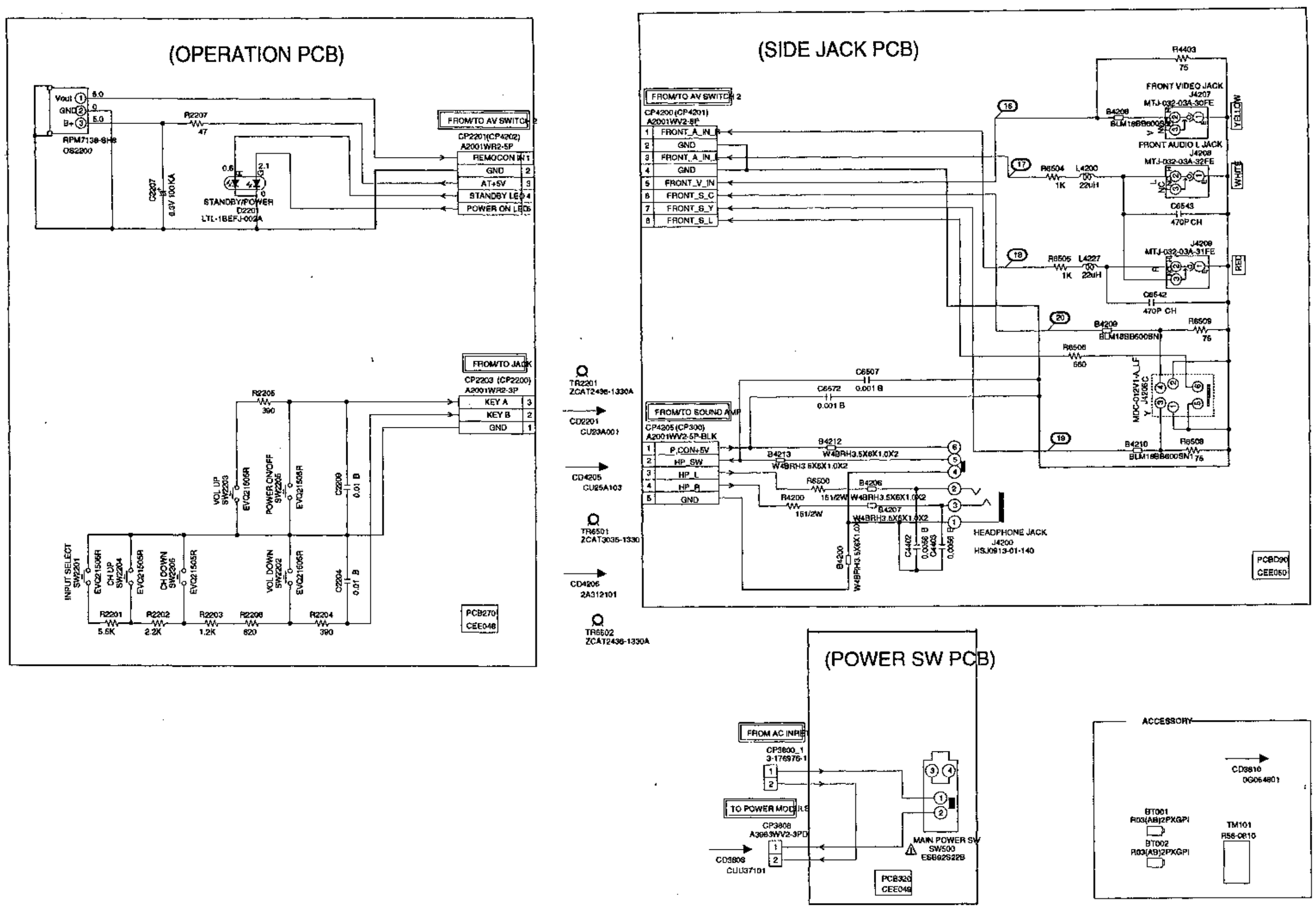
OPERATION/SIDE JACK/POWER SWITCH SCHEMATIC DIAGRAM



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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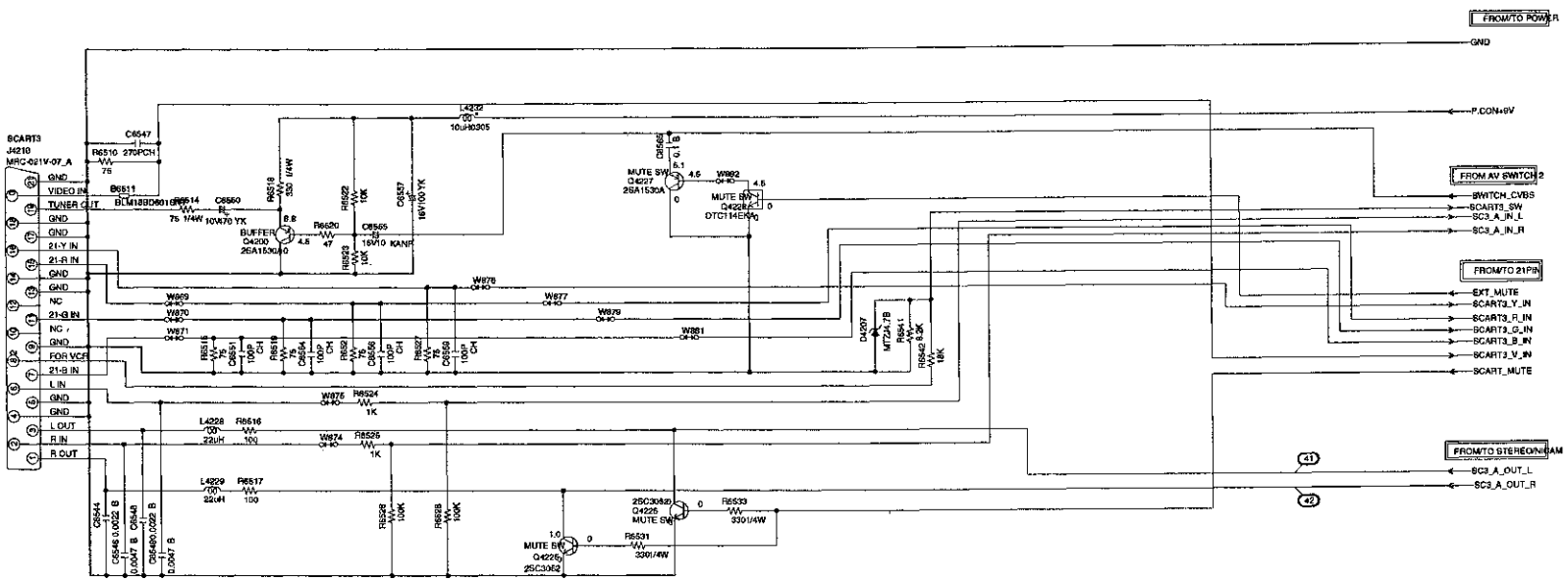
ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

21PIN(SCART3) SCHEMATIC DIAGRAM

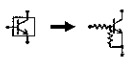
(AV PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

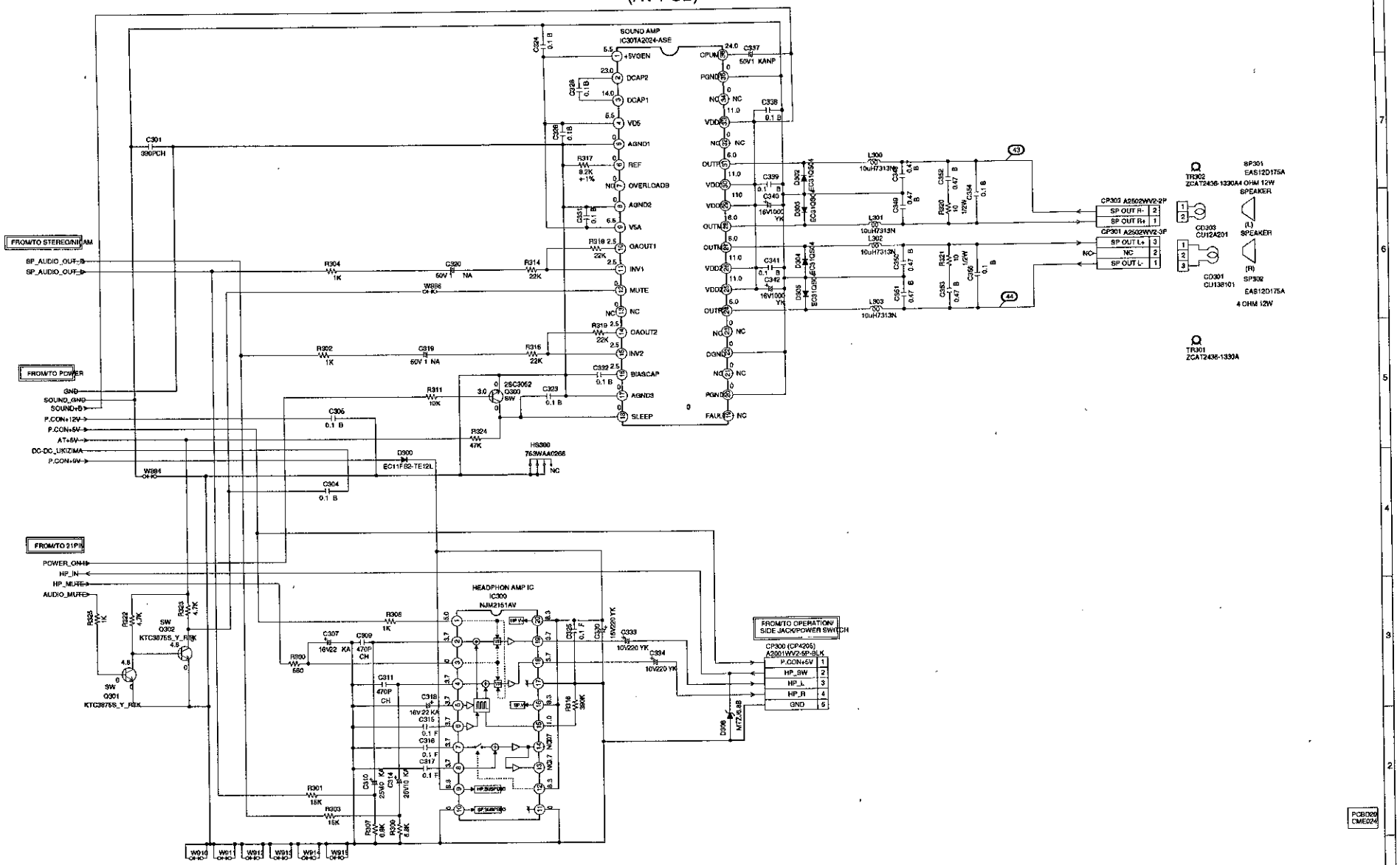
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: DIGITAL TRANSISTOR



SOUND AMP SCHEMATIC DIAGRAM

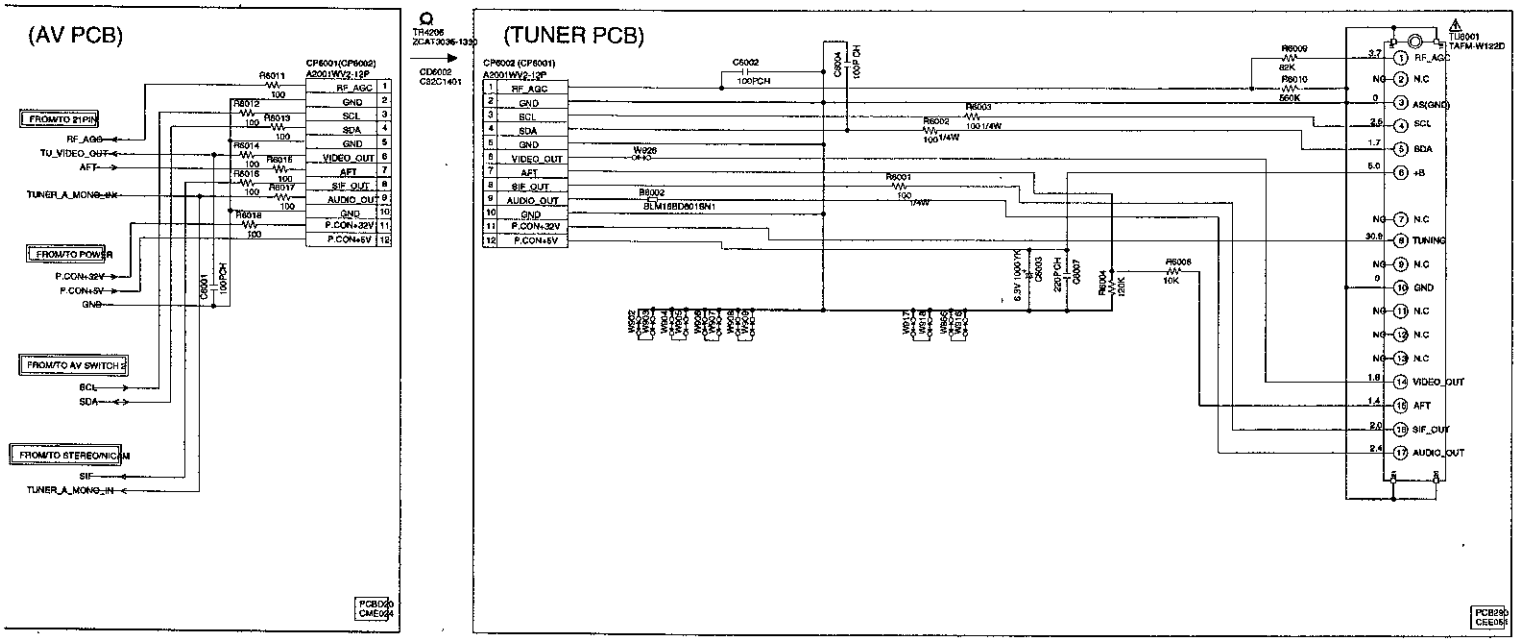
(AV PCB)



NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

TUNER SCHEMATIC DIAGRAM



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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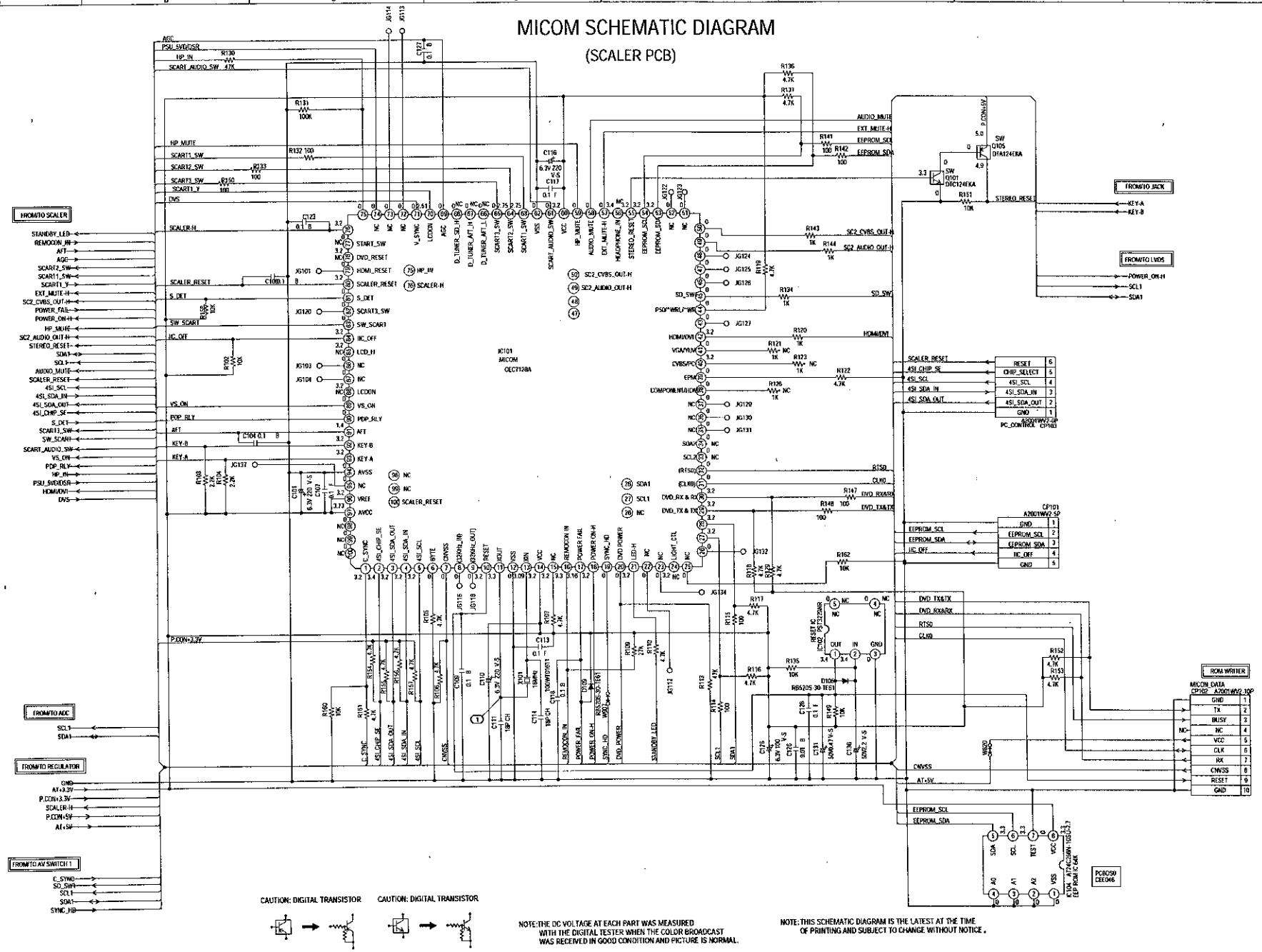
ATTENTION: LES PIECES REPAREES PARTICULIEREMENT IMPORTANT DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

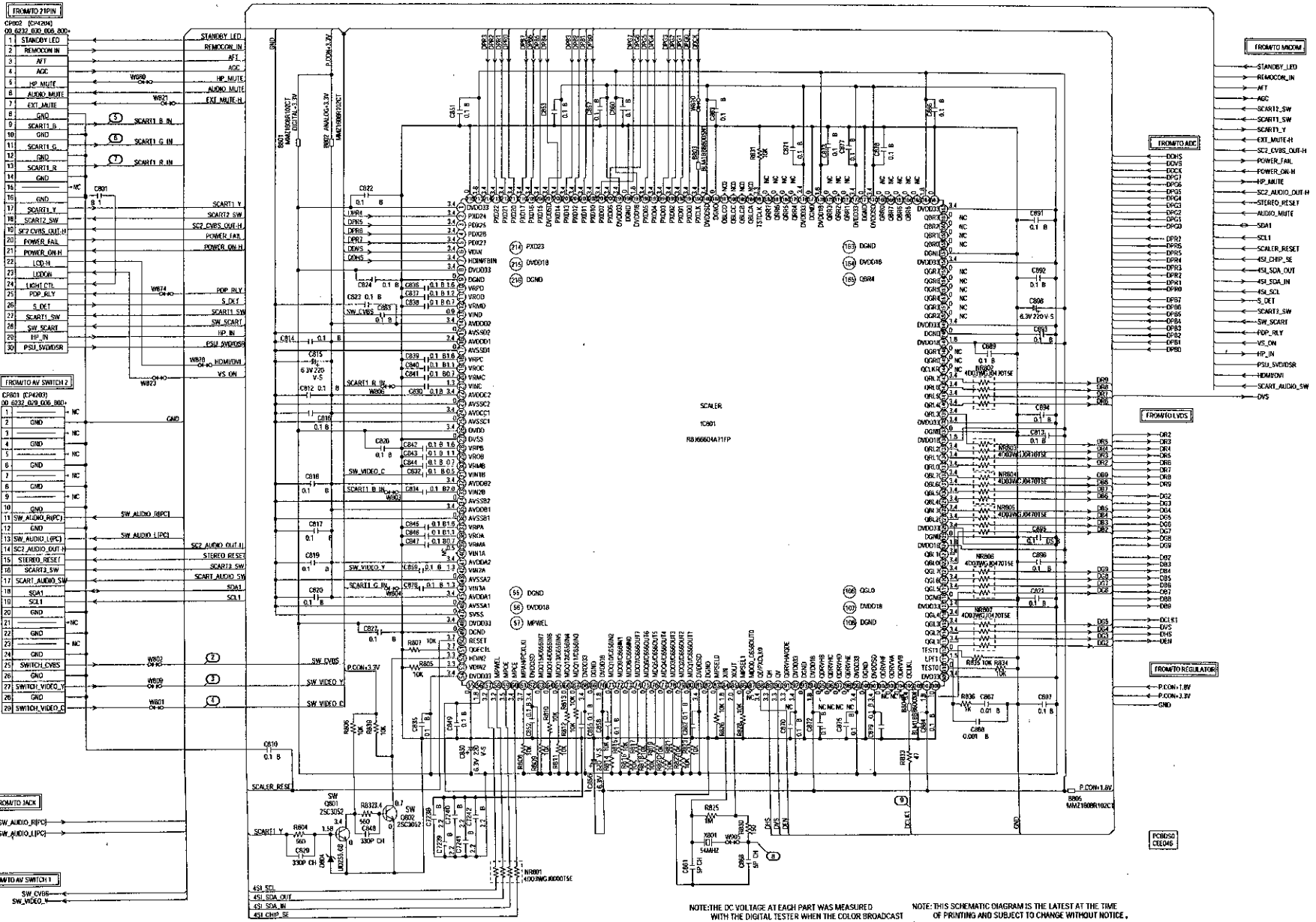
MICOM SCHEMATIC DIAGRAM

(SCALER PCB)



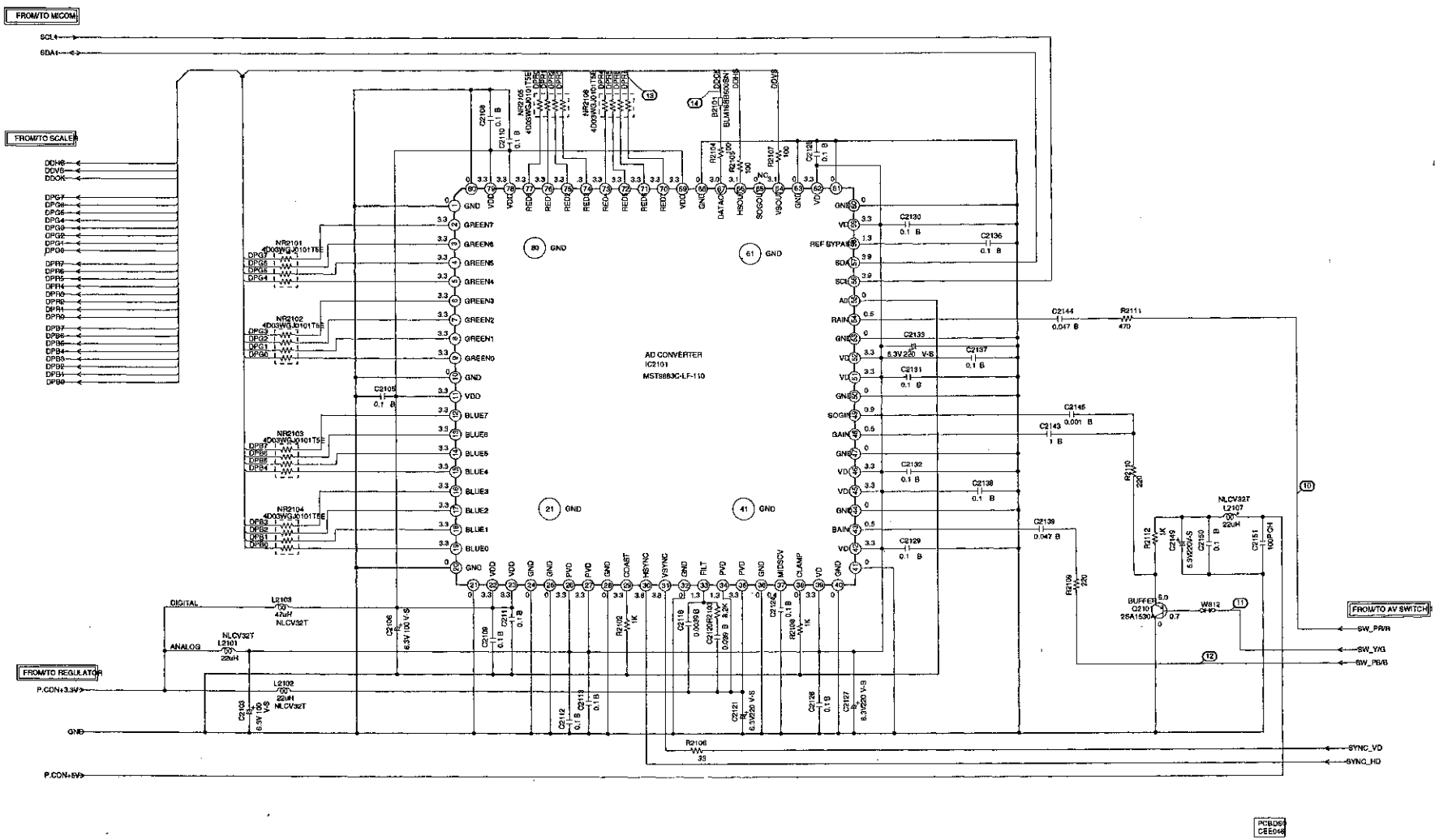
SCALER SCHEMATIC DIAGRAM

(SCALER PCB)



ADC SCHEMATIC DIAGRAM

(SCALER PCB)

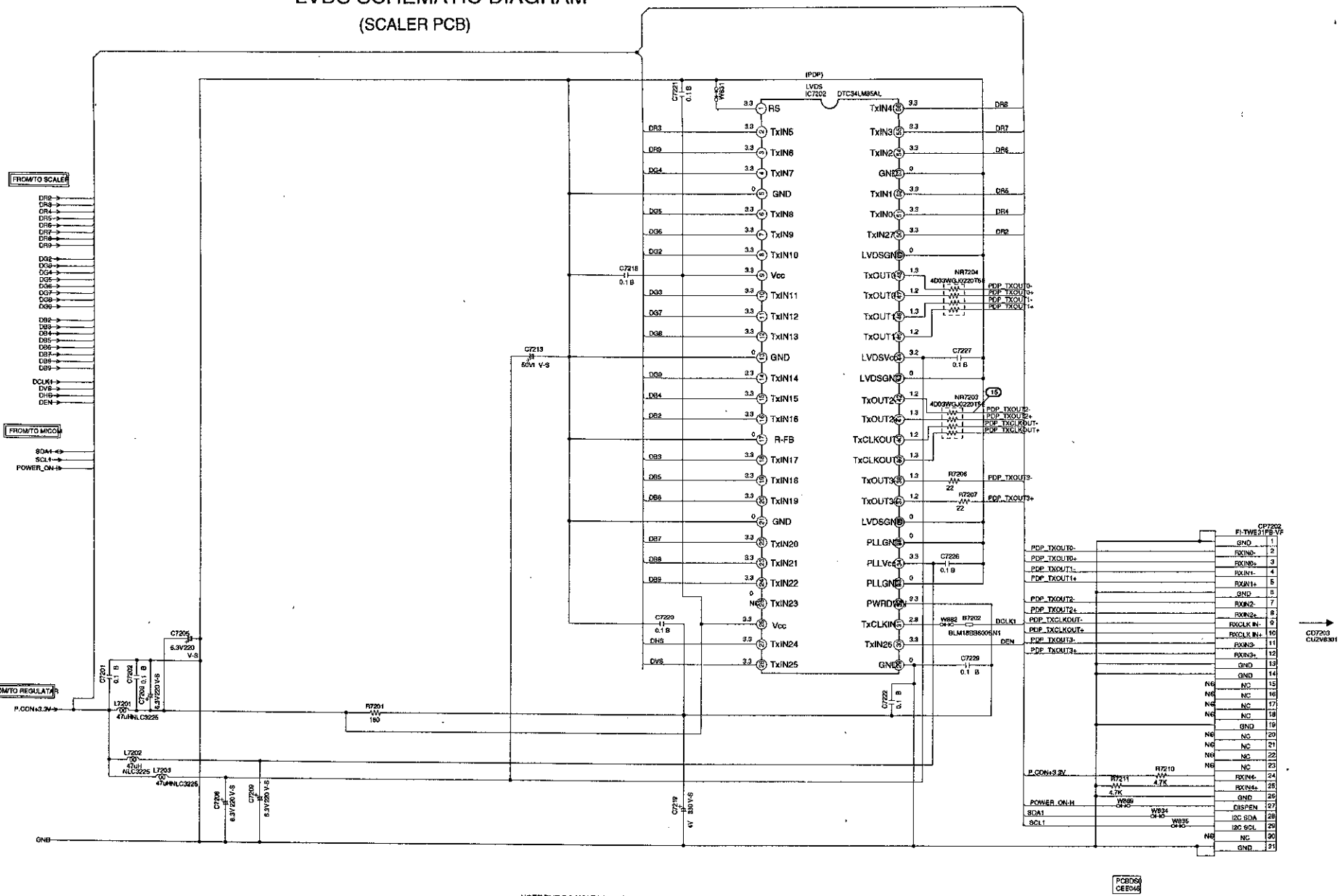


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

LVDS SCHEMATIC DIAGRAM

(SCALER PCB)

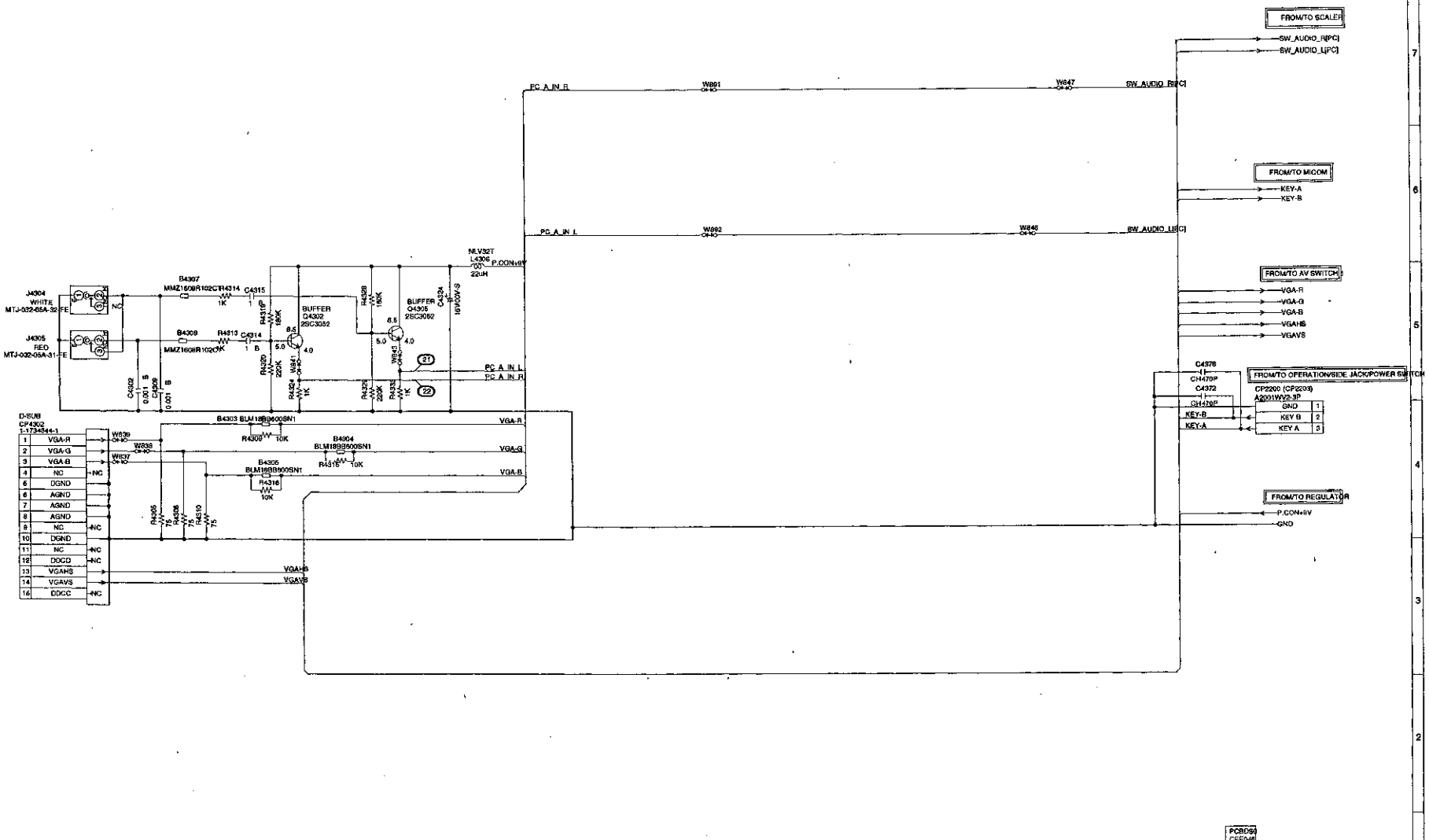


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

JACK SCHEMATIC DIAGRAM

(SCALER PCB)

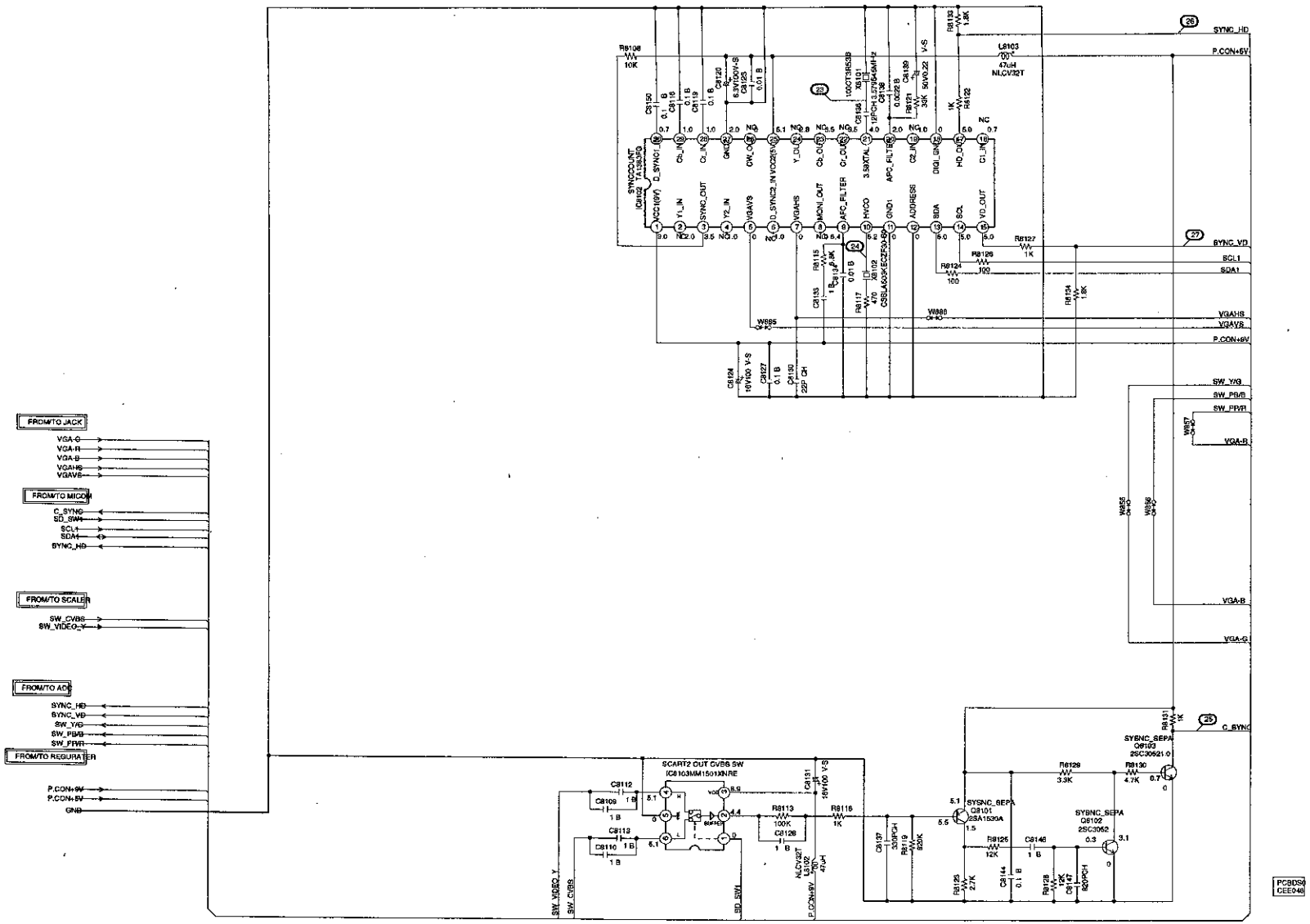


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

AV SWITCH 1 SCHEMATIC DIAGRAM

(SCALER PCB)

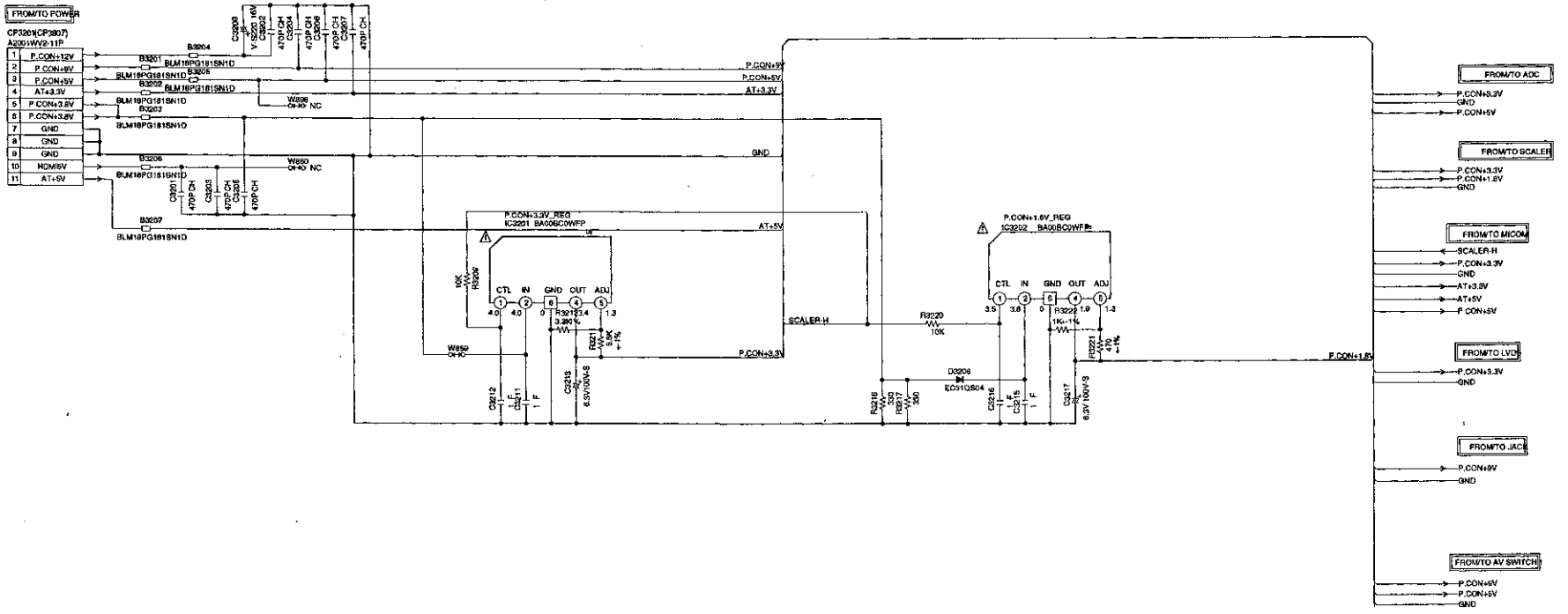


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

REGULATOR SCHEMATIC DIAGRAM

(SCALER PCB)



PCB060
CEE049

CAUTION: FOR SAFETY, USE ONLY THESE PARTS MARKED Δ WHICH ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: POUR LA SECURITE, UTILISER SEULEMENT LES PIECES REPAREES PAR Δ QUI SONT CRITIQUES POUR LA SECURITE. NE PAS UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

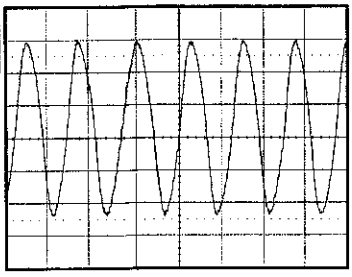
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

WAVEFORMS

MICON

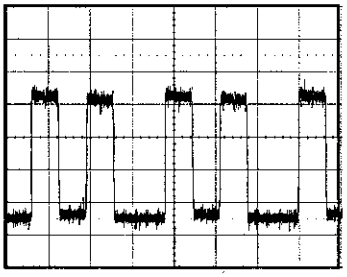
50ns
500mV

①



20µs
200mV

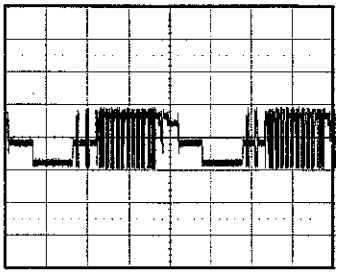
⑥



ADC

5µs
500mV

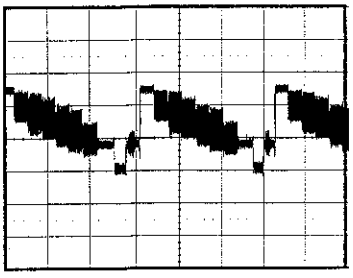
⑪



SCALER

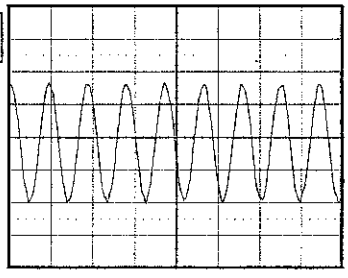
20µs
500mV

②



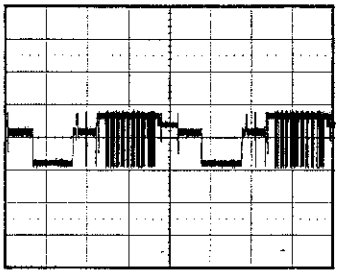
20µs
500mV

⑦



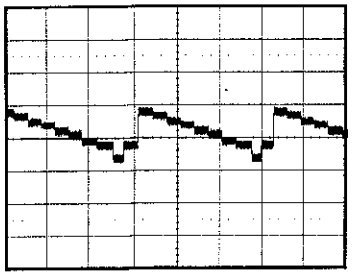
5µs
500mV

⑫



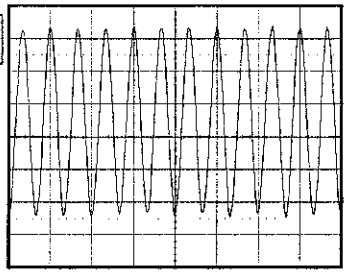
20µs
500mV

③



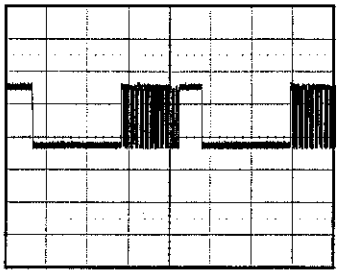
20µs
500mV

⑧



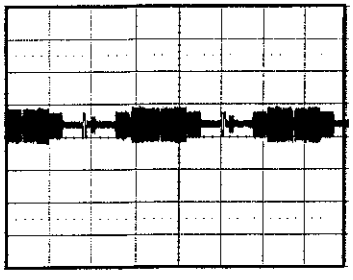
5µs
2.0V

⑬



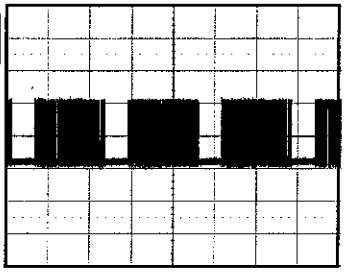
20µs
500mV

④



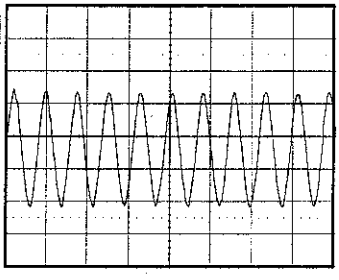
10µs
2.0V

⑨



20ns
1.0V

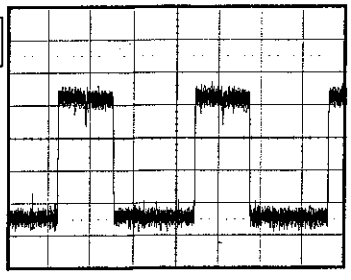
⑭



LVDS

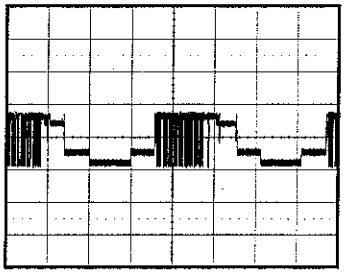
20µs
200mV

⑤



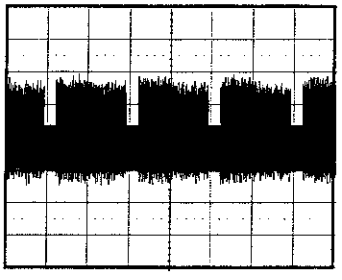
5µs
500mV

⑩



10ms
100mV

⑮



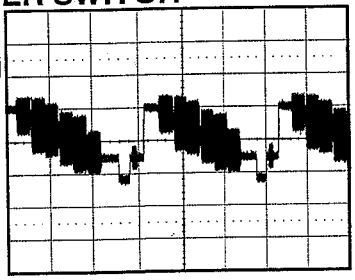
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

OPERATION/SIDE JACK/ POWER SWITCH

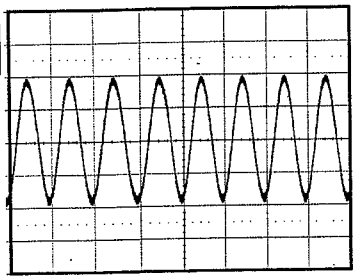
20µs 500mV

(16)



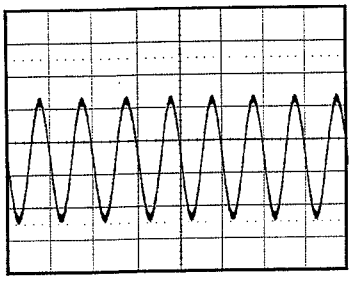
1.0ms 1.0V

(17)



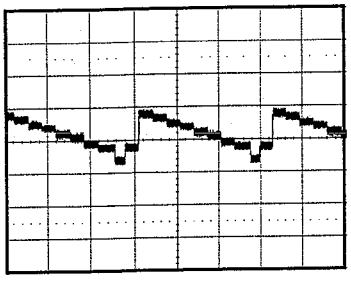
1.0ms 1.0V

(18)



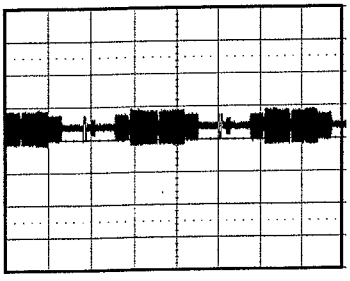
20µs 500mV

(19)



20µs 500mV

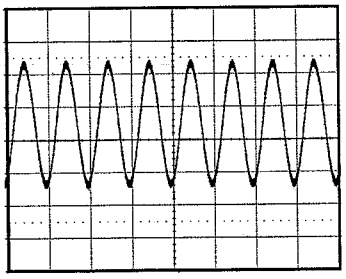
(20)



JACK

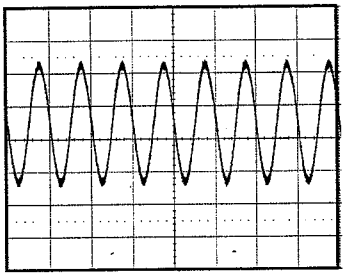
1.0ms 1.0V

(21)



1.0ms 1.0V

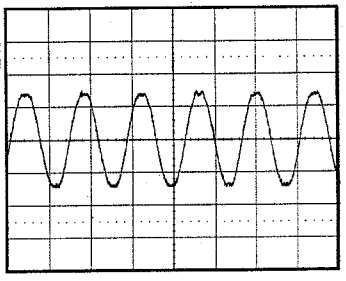
(22)



AV SWITCH 1

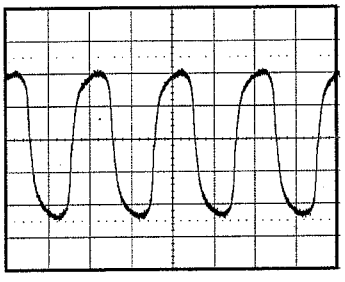
200ns 100mV

(23)



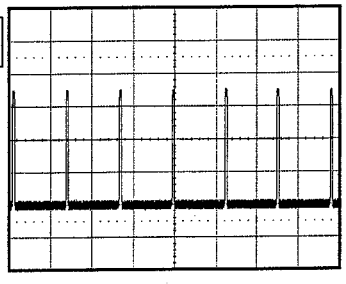
1.0µs 50mV

(24)



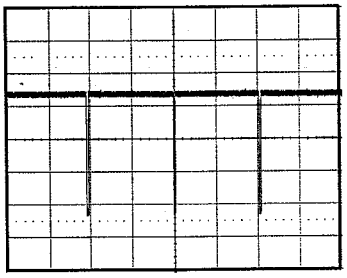
5.0µs 1.0V

(25)



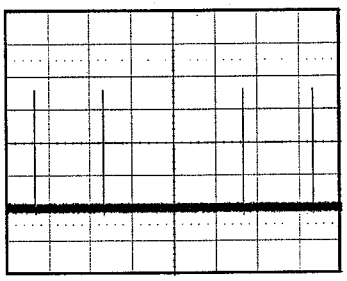
1.0µs 1.0V

(26)



10ms 1.0V

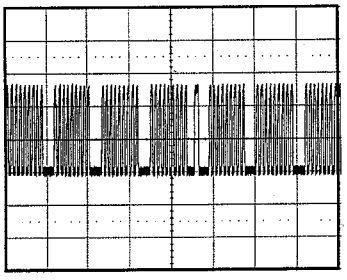
(27)



AV SWITCH 2

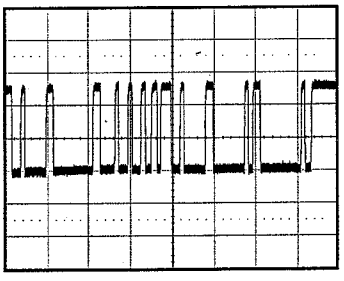
100µs 2.0V

(28)



100µs 2.0V

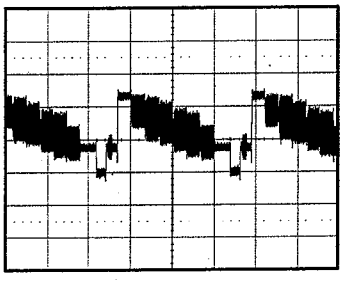
(29)



21PIN

20µs 500mV

(30)

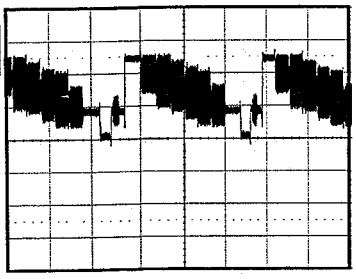


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

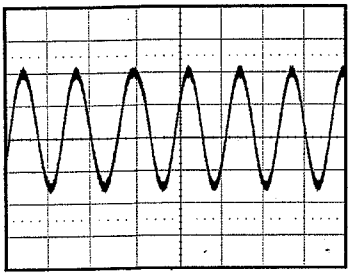
20µs
1.0V

(31)



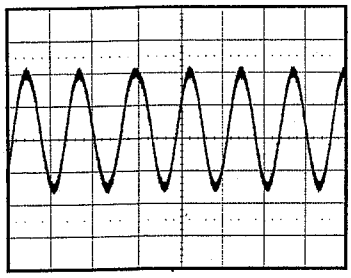
2.0ms
500mV

(32)



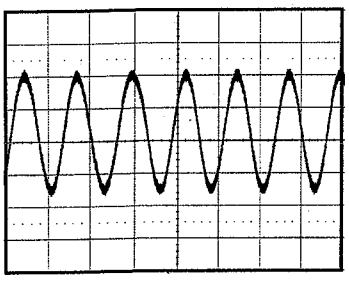
2.0ms
500mV

(33)



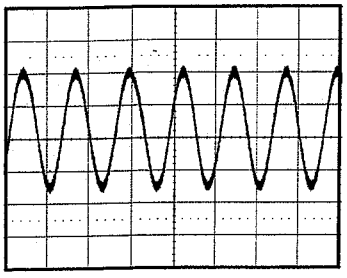
2.0ms
500mV

(34)



2.0ms
500mV

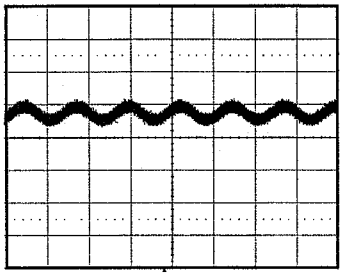
(35)



STEREO/NICAM

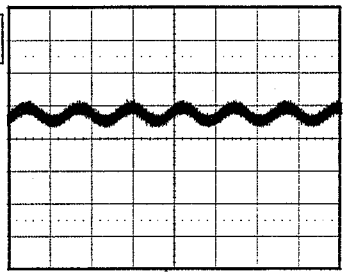
2.0ms
2.0V

(36)



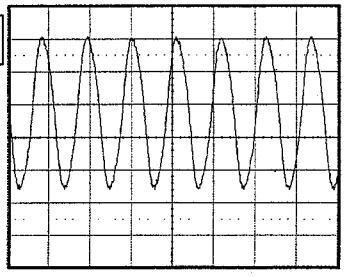
2.0ms
2.0V

(37)



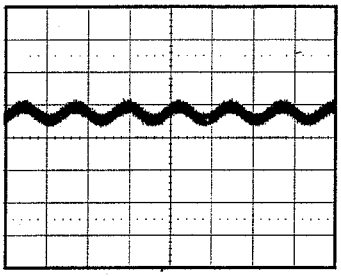
50ns
500mV

(38)



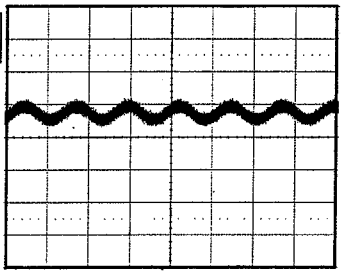
2.0ms
2.0V

(39)



2.0ms
2.0V

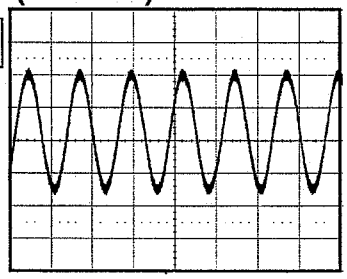
(40)



21PIN(SCART3)

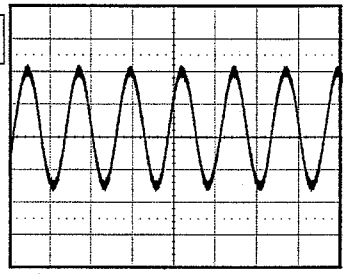
2.0ms
500mV

(41)



2.0ms
500mV

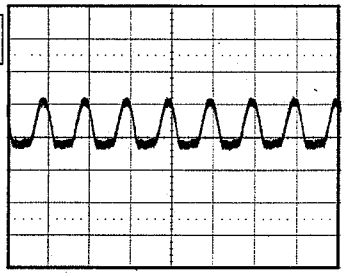
(42)



SOUND AMP

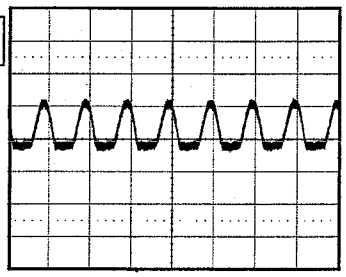
500µs
5.0V

(43)



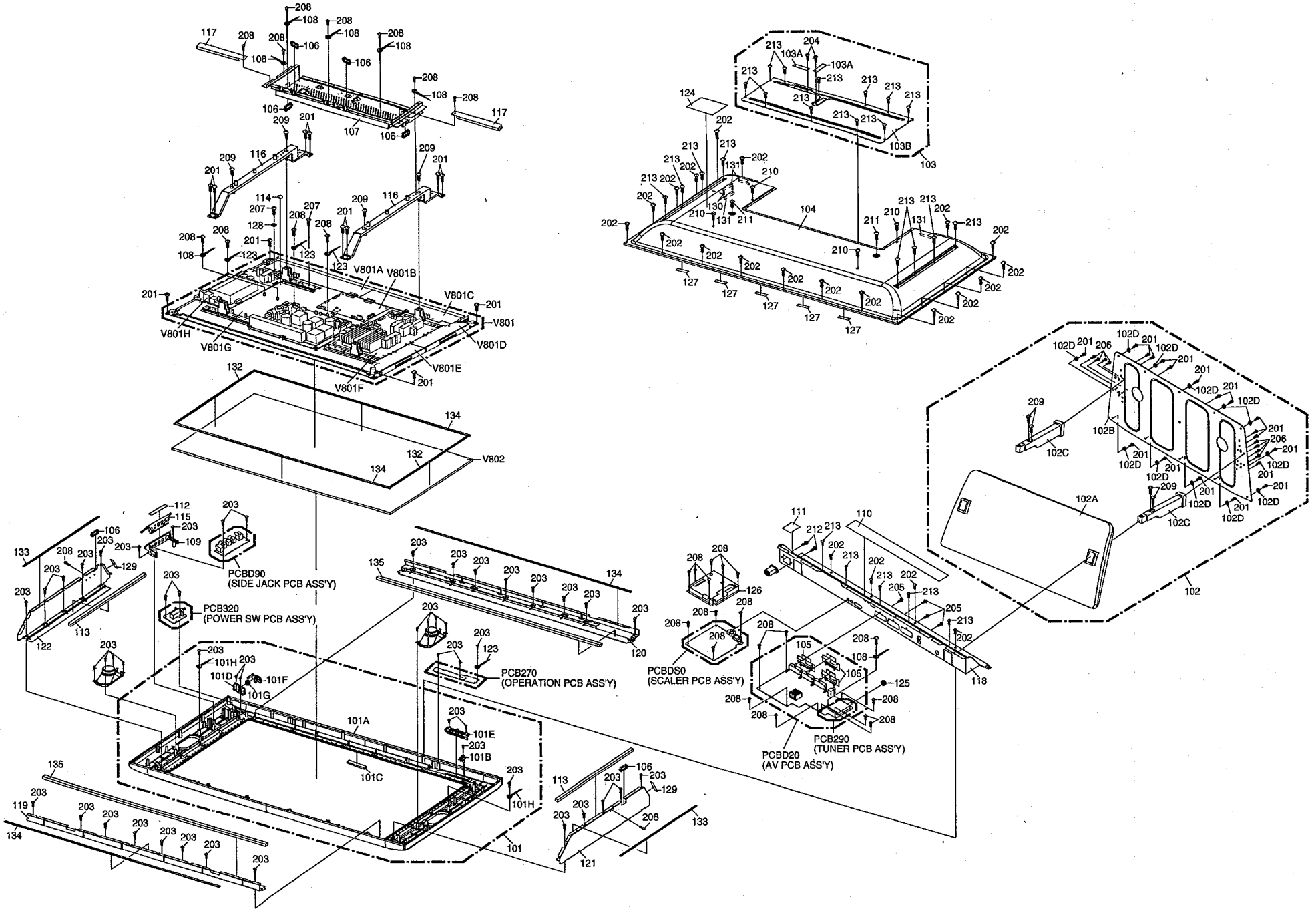
500µs
5.0V

(44)



NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	
101	7A701O113B	FRONT CABI ASS'Y	201	8117540A6U	SCREW,TAP TITE(B0) TRUSS	4x16
101A	701WPJ1351	CABINET,FRONT	202	8117540A6S	SCREW,TAP TITE(B0) TRUSS	4x16
101B	713WPA0365	GLASS,LED	203	8110630A0U	SCREW,TAP TITE(P) BRAZIER	3x10
101C	7232020787	BADGE,BRAND	204	810763080S	SCREW,TAP TITE(S) BRAZIER	3x8
101D	738WPA0171	STOPPER,BUTTON	205	810923080S	SCREW,TAP TITE(B) BIND	3x8
101E	738WPB0060	BUTTON,FRAME	206	810A140A0U	SCREW,WASHER(A)	M4x10
101F	738WPB0061	BUTTON,POWER	207	810A14080U	SCREW,WASHER(A)	M4x8
101G	743WKA0040	SPRING,BUTTON	208	810B13080U	SCREW,WASHER(B)	M3x8
101H	899EFBA002	WIRING-CLIP	209	810B150B0U	SCREW,SEMS(B)	5x20
102	7A704O005A	STAND ASS'Y	210	810B150A0S	SCREW,SEMS(B)	5x10
102A	704WPB0011	STAND	211	810B140A0S	SCREW,SEMS(B)	4x10
102B	761WSA0236	ANGLE,STAND	212	810233080S	SCREW,FLAT	M3x8
102C	761WSB0004	FRAME.BOTTOM	213	810F13080S	SEMS(F)	3x8
102D	800WRA0006	CUSHION,LEG				
			---	7230008005	SHEET,CARTON	
103	7G7610016A	COVER,BACK ASS'Y	---	791WHA0117	LAMI,BAG	
103A	702WPB0076	COVER,CONNECTOR	---	791WHA0118	LIGHTLON SHEET	
103B	761WSB0003	COVER,BACK	---	792WHA0605	PACKAGE,TOP	
			---	792WHA0606	PACKAGE,BOTTOM	
104	702WSB0126	CABINET,BACK	---	793WCD1649	GIFT BOX TOP	
105	761WSA0212	SHIELD,21PIN	---	793WCD1658	GIFT BOX BOTTOM	
106	709WPA0038	HOLDER,CORD	---	794WHA0006	HANDLE	
107	762WSA0054	ANGLE,PCB	---	A3U801A975	INSTRUCTION BOOK KIT	
108	899EFBA002	WIRING-CLIP	---	J3U80101A	INSTRUCTION BOOK(GERMAN)	
109	711WPB0018	PLATE,JACK-SIDE	---	J3U80110A	INSTRUCTION BOOK(CZECH)	
			---	J3U80111A	INSTRUCTION BOOK(FRENCH)	
110	7230007968	SHEET,JACK	---	J3U80114A	INSTRUCTION BOOK(DUTCH)	
111	7230007986	SHEET,AC INLET	---	JB5XD400	POLYBAG,INSTRUCTION(RED CAUTION)	
112	7230007992	SHEET,JACK-SIDE				
113	800WFA0071	CUSHION				
114	7260000353	SHEET,EARTH MARK				
115	752WSA0510	SHIELD,JACK-SIDE				
116	761WEA0002	FRAME,MAIN				
117	761WSA0273	ANGLE,SHIELD				
118	761WSB0006	PLATE,JACK				
119	762WSA0055	SHIELD,MAIN-TOP				
120	762WSA0056	SHIELD,MAIN-BOTTOM				
121	762WSA0057	SHIELD,MAIN-L				
122	762WSA0058	SHIELD,MAIN-R				
123	8995034000	CORD CLIP UL CO.				
124	7222022699	SHEET,RATING				
125	743WKAA011	SPRING,TUNER				
126	752WSA0508	SHIELD,SCALER				
127	800WQ00092	FELT SHEET				
128	82H4085E5U	TOOTHED LOCK WASHER 4.0x8.5xT0.45				
129	8965TS1060	CUSHION W10/H10/L60				
130	8965TS2045	CUSHION W6/H2/L45				
131	8965TS2095	CUSHION W6/H2/L95				
132	8965TS2550	CUSHION W6/H2/L550				
133	8965TS2710	CUSHION W6/H2/L710				
134	8965TS2A15	CUSHION W6/H2/L1015				
135	800WFA0070	CUSHION				

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		CAPACITORS		
C3801	E61FF2102D	CE	1000 UF 16V	
C3802	E61FF2102D	CE	1000 UF 16V	
C3803	E61FF2102D	CE	1000 UF 16V	
C3810	E61FF2102D	CE	1000 UF 16V	
C3823	E61FF4102D	CE	1000 UF 35V	
		DIODES		
D105	DD7R20S300	DIODE,SCHOTTKY BARRIER	RB520S-30-TE61	
D109	DD7R20S300	DIODE,SCHOTTKY BARRIER	RB520S-30-TE61	
D300	D28R11FS20	DIODE	EC11FS2-TE12L	
D302	D28R1QS040	DIODE	EC31QS04-TE12L	
D303	D28R1QS040	DIODE	EC31QS04-TE12L	
D304	D28R1QS040	DIODE	EC31QS04-TE12L	
D305	D28R1QS040	DIODE	EC31QS04-TE12L	
D308	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77	
D804	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D901	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77	
D2201	0021E9Q010	LED	LTL-1BEFJ-002A	
D3206	D28R1QS040	DIODE	EC31QS04-TE12L	
D3801	D1VT001330	DIODE,SILICON	1SS133T-77	
D3802	D28T21DQN4	DIODE,SCHOTTKY	21DQ04N-TA2B1	
D3803	D28F31DQ09	DIODE,SCHOTTKY	31DQ09-FC	
D3804	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
D3805	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
D4205	D97U04R71B	DIODE,ZENER	MTZJ4.7B T-77	
D4206	D97U04R71B	DIODE,ZENER	MTZJ4.7B T-77	
D4207	D97U04R71B	DIODE,ZENER	MTZJ4.7B T-77	
D4209	D1VT001330	DIODE,SILICON	1SS133T-77	
		ICS		
IC101	S3U801AM01	MEMORY DATA	OEC7128A	
IC102	I9UF032290	IC	PST3229NR	
IC104	ICRJ0256N0	IC	AT24C256N-10SU-2.7	
IC300	I0QJP21510	IC	NJM2151AV	
IC301	I1MFPA2020	IC	TA2024-ASE	
IC801	I56K04A710	IC	R8J66604A71FP	
IC901	I0UF015010	IC	MM1501XNRE	
IC902	I0UF015010	IC	MM1501XNRE	
IC904	I19FF341C0	IC	MSP3410G-QA-C12-001	
IC2101	IFSK0883C0	IC	MST9883C-LF-110	
⚠ IC3201	I07F0C0WF0	IC	BA00BC0WFP-E2	
⚠ IC3202	I07F0C0WF0	IC	BA00BC0WFP-E2	
IC3801	I1LF010100	IC	AL1010	
IC3802	TJ7M50P030	FET	RSS050P03_TB	
IC3803	I07F093000	IC	BD9300FV-E2	
⚠ IC3804	I0GA9XF010	IC	PQ070XF01SZH	
IC3805	I03D979950	IC	LA7995M-TLM	
IC4201	I01F05853B	IC	AN15853B-E1	
IC4202	I0UF015010	IC	MM1501XNRE	
IC4203	I0UF015010	IC	MM1501XNRE	
IC4204	I0QF025840	IC	NJM2584AM(TE1)	
IC4205	I0CF040530	IC	CD74HC4053PWR	
IC7202	IFKJ0LM850	IC	DTC34LM85AL	
IC8102	I05FE13830	IC	TA1383FG	
IC8103	I0UF015010	IC	MM1501XNRE	
		TRANSISTORS		
Q101	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146	
Q105	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146	
Q300	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q301	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q302	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q801	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q802	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q901	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q902	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q2101	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q3801	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q3802	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q3804	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q3805	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q3806	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	

REF. NO.	PART NO.	DESCRIPTION		
		TRANSISTORS		
Q3807	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q3808	T0300J6340	FET	2SJ634-TL-E	
Q4200	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4201	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q4203	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q4205	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4206	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4207	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4208	T27T030180	FET	2SK3018T106	
Q4209	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4210	T27T030180	FET	2SK3018T106	
Q4211	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4212	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4213	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4214	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4215	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4216	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4217	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4218	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4219	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4220	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q4221	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4222	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q4225	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4226	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4227	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q4228	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q4229	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q4230	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q4232	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q4233	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q4302	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4305	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q8101	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	or
	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q8102	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8103	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	or
	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
		COILS &TRANSFORMERS		
L300	021W0G100M	COIL	10 UH	
L301	021W0G100M	COIL	10 UH	
L302	021W0G100M	COIL	10 UH	
L303	021W0G100M	COIL	10 UH	
L901	02167F100J	COIL	10 UH	
L903	02167F100J	COIL	10 UH	
L904	02167F100J	COIL	10 UH	
L2101	0216S8220K	COIL	22 UH	
L2102	0216S8220K	COIL	22 UH	
L2103	0216S8470K	COIL	47 UH	
L2107	0216S8220K	COIL	22 UH	
L3801	02167E220K	COIL	22 UH	
L3802	02167E220K	COIL	22 UH	
L3803	02167E220K	COIL	22 UH	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		COILS &TRANSFORMERS	
L3804	02167E220K	COIL	22 UH
L3805	02167E100K	COIL	10 UH
L3806	021404150M	COIL	15 UH
L3807	02167E100K	COIL	10 UH
L3808	021W0G100M	COIL	10 UH
L3809	02167E100K	COIL	10 UH
L4200	021LA6220J	COIL	22 UH
L4202	02167F470J	COIL	47 UH
L4203	02167F470J	COIL	47 UH
L4206	02167F470J	COIL	47 UH
L4207	02167F470J	COIL	47 UH
L4209	021LA6220J	COIL	22 UH
L4210	021LA6220J	COIL	22 UH
L4211	021LA6220J	COIL	22 UH
L4212	021LA6220J	COIL	22 UH
L4213	021LA6220J	COIL	22 UH
L4214	021LA6220J	COIL	22 UH
L4219	02167F100J	COIL	10 UH
L4220	02167F100J	COIL	10 UH
L4224	02167F100J	COIL	10 UH
L4225	02167F470J	COIL	47 UH
L4226	02167F470J	COIL	47 UH
L4227	021LA6220J	COIL	22 UH
L4228	021LA6220J	COIL	22 UH
L4229	021LA6220J	COIL	22 UH
L4232	02167F100J	COIL	10 UH
L4236	02167F470J	COIL	47 UH
L4306	0216S8220K	COIL	22 UH
L7201	0216S8470K	COIL	47 UH
L7202	0216S8470K	COIL	47 UH
L7203	0216S8470K	COIL	47 UH
L8102	0216S8470K	COIL	47 UH
L8103	0216S8470K	COIL	47 UH
		JACKS	
J4200	0602131008	HEADPHONE JACK	HSJ0913-01-140
J4203	060J411034	RCA JACK	MSP-242V2-01NI-FE_LF
J4204	063D100050	SOCKET,21PIN	MRC-021V-07_A
J4205	063D100050	SOCKET,21PIN	MRC-021V-07_A
J4206	063D700010	JACK	MDC-012V1-A_LF
J4207	060J401104	RCA JACK	MTJ-032-03A-30FE
J4208	060J401106	RCA JACK	MTJ-032-03A-32FE
J4209	060J401105	RCA JACK	MTJ-032-03A-31FE
J4210	063D100050	SOCKET,21PIN	MRC-021V-07_A
J4304	060J421037	RCA JACK	MTJ-032-05A-32-FE
J4305	060J421030	RCA JACK	MTJ-032-05A-31-FE
		SWITCHES	
⚠ SW500	0530105019	SWITCH	ESB92S22B
SW2201	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	0504101T34	SWITCH,TACT	EVQ21505R
SW2203	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	0504101T34	SWITCH,TACT	EVQ21505R
SW2205	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	0504101T34	SWITCH,TACT	EVQ21505R
		P.C.BOARD ASSEMBLIES	
PCB270	A3U801A270B	PCB AS'Y	CEE048A
PCB290	A3U801A290B	PCB AS'Y	CEE051A
PCB320	A3U801A320B	PCB AS'Y	CEE049A
PCBD20	A3U801AD20B	PCB AS'Y	CME024A
PCBD90	A3U801AD90B	PCB AS'Y	CEE050A
PCBDS0	A3U801ADS0B	PCB AS'Y	CEE046A
		MISCELLANEOUS	
B801	0246C51024	CORE,BEADS	MMZ1608R102CT
B802	0246C51024	CORE,BEADS	MMZ1608R102CT
B803	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B804	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B805	0246C51024	CORE,BEADS	MMZ1608R102CT
B2101	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B3201	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3202	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3203	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3204	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3205	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3206	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3207	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3801	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B4200	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B4204	024AC5601F	CORE,BEADS	BLM18BD601SN1D

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
B4205	024AC5601F	CORE,BEADS	BLM18BD601SN1D
B4206	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B4207	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B4208	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4209	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4210	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4212	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B4213	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B4303	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4304	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4305	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4307	0246C51024	CORE,BEADS	MMZ1608R102CT
B4308	0246C51024	CORE,BEADS	MMZ1608R102CT
B6002	024AC5601F	CORE,BEADS	BLM18BD601SN1D
B6511	024AC5601F	CORE,BEADS	BLM18BD601SN1D
B7202	024AC5600E	CORE,BEADS	BLM18BB600SN1D
BT001	1412004013	BATTERY,MANGAN	R03(AB)2PXGPI or
	1412004008	BATTERY,MANGAN	R03(AB)E_2P_G
BT002	1412004013	BATTERY,MANGAN	R03(AB)2PXGPI or
	1412004008	BATTERY,MANGAN	R03(AB)E_2P_G
CD301	06CU138101	CORD,CONNECTOR	CU138101
CD303	06CU12A201	CORD,CONNECTOR	CU12A201
CP101	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP102	069S2A0629	CONNECTOR PCB SIDE	A2001WV2-10P
CP103	069S260629	CONNECTOR PCB SIDE	A2001WV2-6P
CP300	069S250620	CONNECTOR PCB SIDE	A2001WV2-5P-BLK
CP301	069S130419	CONNECTOR PCB SIDE	A2502WV2-3P
CP303	069S120419	CONNECTOR PCB SIDE	A2502WV2-2P
CP801	069EVT3030	CONNECTOR PCB SIDE	00_6232_029_006_800+
CP802	069EVU3030	CONNECTOR PCB SIDE	00_6232_030_006_800+
CD2201	06CU23A001	CORD,CONNECTOR	CU23A001
CD3801	06CU641802	CORD,CONNECTOR	CU641802
CD3802	06CU622001	CORD,CONNECTOR	CU622001
CD3803	06CU6C1701	CORD,CONNECTOR	CU6C1701
CD3804	06CU672301	CORD,CONNECTOR	CU672301
CD3807	06C32B2401	CORD,CONNECTOR	C32B2401
CD3808	06CUU37101	CORD,CONNECTOR	CUU37101
CD3810	120G054801	CORD,AC	0G054801
CD4201	06CU28A002	CORD,CONNECTOR	CU28A002
CD4202	06CU257901	CORD,CONNECTOR	CU257901
CD4203	122H0T0802	CORD,JUMPER	2H0T0802
CD4204	122H0U0803	CORD,JUMPER	2H0U0803
CD4205	06CU25A103	CORD,CONNECTOR	CU25A103
CD4206	122A312101	CORD,JUMPER	2A312101
CD6002	06C32C1401	CORD,CONNECTOR	C32C1401
CD7203	06CUZV6301	CORD,CONNECTOR	CUZV6301
CP2200	069S230629	CONNECTOR PCB SIDE	A2001WV2-3P
CP2201	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P
CP2203	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P
CP3201	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP3800	069432001A	CONNECTOR PCB SIDE	3-176976-1
CP3801	069S140019	CONNECTOR PCB SIDE	A2501WV2-4P
CP3802	069S120019	CONNECTOR PCB SIDE	A2501WV2-2P
CP3803	069S1C0019	CONNECTOR PCB SIDE	A2501WV2-12P
CP3804	069S170019	CONNECTOR PCB SIDE	A2501WV2-7P
CP3807	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP3808	069S320419	CONNECTOR PCB SIDE	A3963WV2-3PD
CP4200	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CP4201	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CP4202	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP4203	069EVT3030	CONNECTOR PCB SIDE	00_6232_029_006_800+
CP4204	069EVU3030	CONNECTOR PCB SIDE	00_6232_030_006_800+
CP4205	069S250620	CONNECTOR PCB SIDE	A2001WV2-5P-BLK
CP4302	0694S15017	CONNECTOR PCB SIDE	1-1734344-1
CP6001	069S2C0629	CONNECTOR PCB SIDE	A2001WV2-12P
CP6002	069S2C0629	CONNECTOR PCB SIDE	A2001WV2-12P
CP7202	069HTR001A	CONNECTOR PCB SIDE	FI-TWE31PB-VF
NR801	110P4000M4	R,NETWORK	4D03WGJ0000T5E
NR802	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR803	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR804	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR805	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR806	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR807	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR2101	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2102	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2103	110P4101M4	R,NETWORK	4D03WGJ0101T5E