

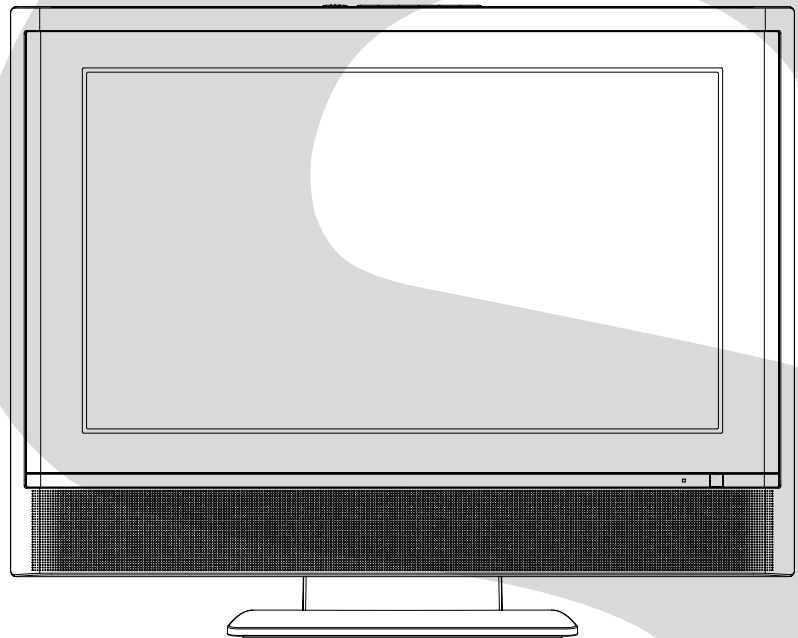
TOSHIBA

FILE NO. 050-200528GR
(MFR'S VERSION A)

SERVICE MANUAL

LCD COLOR TELEVISION

20HL85



The above model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

(*1)

GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing lead.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2)

LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the CE industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

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 external 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
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

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 on the contact section of the heat sink. Befor applying new silicon grease, remove all the old silicon grease.
(Old grease may cause damages to the IC and Transistor.)

TABLE OF CONTENTS

GREEN PRODUCT PROCUREMENT	A1-1
LEAD-FREE SOLDER	A1-1
SERVICING NOTICES ON CHECKING	A1-2
HOW TO ORDER PARTS	A1-2
IMPORTANT	A1-2
TABLE OF CONTENTS	A2-1
GENERAL SPECIFICATIONS	A3-1~A3-6
DISASSEMBLY INSTRUCTIONS	
1. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC	B-1, B-2
SERVICE MODE LIST	C-1
CONFIRMATION OF HOURS USED	C-1
CONFIRMATION OF CHECK SUM	C-2
WHEN REPLACING EEPROM (MEMORY) IC	C-2~C-4
ELECTRICAL ADJUSTMENTS	D-1~D-5
BLOCK DIAGRAMS	
SCALER/LVDS/MICON/ADC/JACK/AV_SW/REGULATOR	E-1, E-2
AV_SW/TUNER/JACK/STEREO/SOUND AMP	E-3, E-4
POWER	E-5, E-6
INTERFACE	E-7, E-8
MICON2	E-9, E-10
AC ADAPTER	E-11, E-12
PRINTED CIRCUIT BOARDS	
AV/OPERATION/REMOCON	F-1~F-4
SCALER	F-5, F-6
AC ADAPTER/HD-MI	F-7, F-8
SCHEMATIC DIAGRAMS	
AV SWITCH1	G-1, G-2
TUNER/JACK	G-3, G-4
STEREO/SOUND AMP	G-5, G-6
POWER	G-7, G-8
OPERATION/REMOCON	G-9, G-10
MICON1	G-11, G-12
SCALER	G-13, G-14
ADC	G-15, G-16
LVDS	G-17, G-18
JACK	G-19, G-20
AV SWITCH2	G-21, G-22
REGULATOR	G-23, G-24
INTERFACE	G-25, G-26
MICON2	G-27, G-28
AC ADAPTER	G-29, G-30
WAVEFORMS	H-1~H-3
MECHANICAL EXPLODED VIEWS	I-1~J-4
MECHANICAL REPLACEMENT PARTS LIST	J1-1, J1-2
ELECTRICAL REPLACEMENT PARTS LIST	J2-1~J2-6

GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size	20.04 inch / 508.9mmV		
			LCD Type	Color TFT LCD		
			Number of Pixels	1366(H) x 768(V)		
			View Range	89/89 degree		
			Left/Right Up/Down	89/89 degree		
		Color System		NTSC		
		Speaker	Position	2 Speaker		
			Size	Front		
			Impedance	1.8 x 3.9 inch		
		Sound Output	Max	16 ohm		
			10%(Typical)	2.5W + 2.5W		

G-2	Tuning System	Broadcasting System		US System M		
		Tuner and Receive CH	System	1Tuner		
			Destination	US (W/CABLE)		
			CH Coverage	2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84		
		Intermediate Frequency	Picture(FP)	45.75MHz		
			Sound(FS)	41.25MHz		
			FP-FS	4.50MHz		
			Preset CH	No		
	Stereo/Dual TV Sound		US-Stereo			
	Tuner Sound Muting		Yes			
G-3	Signal	Video Signal	Input Level	1 V p-p/75 ohm		
			Output Level	--		
			S/N Ratio (Weighted)	--		
			Horizontal Resolution at DVD Mode	--		
						--
		RGB Signal	Output Level	--		
		Audio Signal	Input Level	-8.0dBm/50k ohm		
			Output Level	at DVD at TV	-- --	
			Digital Output Level	--		
			S/N Ratio at DVD (Weighted)	--		
			Harmonic Distortion	--		
			Frequency Response :	at DVD at Video CD at SVCD at CD	-- -- -- --	
					--	
					--	
G-4	Power	Power Source	AC	120V, 60Hz		
			DC	--		
		Power Consumption		at AC	90W at 120V 60Hz	
				at DC	--	
			Stand by (at AC)		1W at 120V 60Hz	
	Energy Star		Yes			
	Per Year		-- kWh/Year			
Protector	Power Fuse		Yes			
	Safety Circuit		Yes			
	IC Protector(Micro Fuse)		Yes			
G-5	Regulation	Safety		UL/CSA(From O/R No. W563016)		
		Radiation		FCC/IC(From O/R No. W563016)		
		Laser		--		
G-6	Temperature	Operation		+5oC ~ +40oC		
		Storage		-20oC ~ +60oC		
G-7	Operating Humidity			Less than 80% RH		

GENERAL SPECIFICATIONS

G-8	On Screen Display	Menu	Menu Type	Yes
			Icon	Yes
			Picture	Yes
			Mode(Picture preference)	Yes
			Brightness	Yes
			Contrast	Yes
			Color	Yes
			Tint	Yes
			Sharpness	Yes
			Cable Clear	Yes
			Color Temperature	Yes
			Reset	Yes
			Audio	Yes
			MTS	Yes
			Bass	Yes
			Treble	Yes
			Balance	Yes
			Stable Sound	Yes
			Speakers On/Off	No
			Dolby Virtual	No
			WOW SRS 3D	Yes
			WOW Focus	Yes
			WOW Tru Bass	Yes
			HDMI	Yes
			Reset	Yes
			Setup	Yes
			Language	Yes
			Clock Set	Yes
			TV/CABLE	Yes
			CH Program	Yes
			Add/ Erase	Yes
			Closed Caption	Yes
			Picture Size	Yes
			Picture Scroll	No
			Cinema Mode	Yes
			Aspect	Yes
			Back Lighting	Yes
			Option	Yes
			On Timer	Yes
			Favorite CH	Yes
			CH Label	Yes
			VIDEO Label	Yes
			Locks	Yes
			V-Chip Set	Yes
			CH Lock	Yes
	Video Lock	Yes		
	Game Timer	Yes		
	Panel Lock	Yes		
	New Password	Yes		
	PC Monitor Picture Menu	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		
	Reset	Yes		
	PC Monitor Audio Menu	Yes		
	Bass	Yes		
	Treble	Yes		
	Balance	Yes		
	Stable Sound	Yes		
	WOW SRS 3D	Yes		
	WOW Focus	Yes		
	WOW Tru Bass	Yes		
	Reset	Yes		

GENERAL SPECIFICATIONS

	Control Level		Yes
		Volume	Yes
		Brightness	Yes
		Contrast	Yes
		Color	Yes
		Tint	Yes
		Sharpness	Yes
		Bass	Yes
		Treble	Yes
		Balance	Yes
		Picture Scroll	No
		Back Lighting	Yes
		H Position	Yes
		V Position	Yes
		Phase	Yes
		Clock	Yes
		Red	Yes
		Green	Yes
		Blue	Yes
		Stereo, SAP, Mono	Yes
		CH / AV(Line) / PC	Yes
		Color Stream HD (Component)	Yes
		HDMI	Yes
		Channel (TV/Cable)	Yes
		CH Label	Yes
		Video Label	Yes
		Clock	Yes
		Game Timer	Yes
		Panel Lock	Yes
		On Timer	Yes
		Sleep Timer	Yes
		Reset	Yes
		Sound Mute	Yes
		V-chip Rating	Yes
		NOT AVAILABLE	Yes
		Picture Size	Yes
G-9	OSD Language		English, French, Spanish
G-10	Clock and Timer	Sleep Timer	Max Time 120 Min
		On Timer	Step 10 Min
		Wake Up Timer	Program Yes
		Timer Back-up (at Power Off Mode)	more than No
			-- Min Sec

GENERAL SPECIFICATIONS

G-11	Remote Control	Unit	RC-KK		
		Glow in Dark Remocon	Yes		
		Remocon Format	TOSHIBA		
		Format	TOSHIBA		
		Custom Code	40-BF h		
		Power Source	Voltage(D.C) UM size x pcs	3V UM-4 x 2 pcs	
		Total Keys		44 Keys	
		Keys	Power	Yes	
			Input	Yes	
			Display	Yes	
			Mute	Yes	
			1	Yes	
			2	Yes	
			3	Yes	
			4	Yes	
			5	Yes	
			6	Yes	
			7	Yes	
			8	Yes	
			9	Yes	
			0	Yes	
			100 / +10	Yes	
			CH Return / Ent	Yes	
			CH +	Yes	
			CH -	Yes	
			VOL +	Yes	
			VOL -	Yes	
			SLEEP	Yes	
			Picture Size	Yes	
			UP	Yes	
			LEFT / FAV -	Yes	
			MENU/ENTER/DVD MENU	Yes	
			RIGHT / FAV +	Yes	
			DOWN	Yes	
			EXIT	Yes	
			Multi Brand Keys	TV	Yes
				CBL/SAT	Yes
				VCR	Yes
				DVD	Yes
				ENTER	Yes
PAUSE	Yes				
PLAY	Yes				
STOP	Yes				
REW	Yes				
FF	Yes				
SKIP/SEARCH <<	Yes				
SKIP/SEARCH >>	Yes				
TOP MENU	Yes				
REC	Yes				
CLEAR	Yes				
TV/VCR	Yes				

GENERAL SPECIFICATIONS

G-12	Features	Auto Shut Off	Yes	
		Auto Search	No	
		Comb Filter	Yes 3 -D	
		Game Position	No	
		Power On Memory	Yes	
		Variable Audio Out	No	
		Mode (Picture Preference)	Yes	
		Color Temperature Control	Yes	
		Cable Clear	Yes	
		SAP	Yes	
		Stable Sound	Yes	
		Virtual Dolby	No	
		SRS WOW(SRS 3D/Focus/Tru Bass)	Yes	
		CABLE	Yes	
		CH Program (Auto CH Memory)	Yes	
		Closed Caption	Yes	
		Picture Size	Yes	
		Picture Scroll	No	
		Cinema Mode	Yes	
		Aspect	Yes	
		On Timer	Yes	
		Sleep Timer	Yes	
		Favorite CH	Yes	
		CH Label	Yes	
		VIDEO Label	Yes	
		V-Chip	Yes	
		CH Lock	USA Type	
		Video Lock	Yes	
		Game Timer(Max Time:120Min)	Yes	
		Panel Lock	Yes	
		Direct Input Selection	Yes	
		PC Monitor Input	Yes	
Available Scan Rates (Component/HDMI)	480i/480p/720p/1080i			
Auto Setup(Language/CH Program)	Yes			
Freeze frame	No			
G-13	Accessories	Owner's Manual	Language w/Guarantee Card	English / French / Spanish
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	--
			Terminal	--
		Loop Antenna		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		Yes
		AC Cord (for AC Adapter)		Yes
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		Yes
		300ohm to 75ohm Antenna Adapter		No
		Sheet Information (Return)		No
		Sheet Information (HDMI)		No
Screw for wall hanging		No		

GENERAL SPECIFICATIONS

G-14	Interface	Switch	Top	Power (Tact)	Yes	
				Channel Up/Menu Up	Yes	
				Channel Down/Menu Down	Yes	
				Volume Up/Menu >	Yes	
				Volume Down/Menu <	Yes	
				Menu	Yes	
				Play	No	
				Eject	No	
				Skip+, Search+	No	
				Skip-, Search-	No	
				Still/Pause	No	
				Stop	No	
				Main Power SW	No	
				Input Select	Yes	
		Indicator	Power	Yes (Red)		
			Stand-by	No		
			On Timer	No		
		Terminals	Rear	Video Input 1	RCA x 1	
				Audio Input 1	RCA x 2(Stereo)	
				S - Input 1	Yes	
				Video Output	No	
				Audio Output	No	
				Component Input(w/ Analog Audio L/R)	RCA x 5	
				HDMI Input(w/ Analog Audio L/R)	HDMI x 1(RCA x 2)	
				PC Monitor Input(w/ Analog Audio L/R)	No	
				Digital Audio Output	No	
				DC Jack	Yes	
VHF/UHF Antenna Input	F Type					
AC Outlet	No					
Side	Video Input 2			RCA x 1		
	Audio Input 2			RCA x 2(Stereo)		
	PC Monitor Input(w/ Analog Audio L/R)			Dsub15pin x 1(RCA x 2)		
	Other Terminal			Headphone		
G-15	Set Size				Approx. W x D x H (mm)	554 x 220 x 448
					w/o Handle, Stand Approx. W x D x H (mm)	554 x 94 x 403
G-16	Weight		Net (Approx.)	9.0kg (19.8 lbs)		
			Net w/o Handle, Stand (Approx.)	7.5kg (16.5 lbs)		
			Gross (Approx.)	12.0kg (26.5 lbs)		
G-17	Carton	Master Carton		No		
			Content	--- Sets		
			Material	--- / ---		
			Dimensions W x D x H(mm)	---		
			Description of Origin	---		
		Gift Box	Material	Double/ Brown		
			W/Color Photo Label	No		
			W/Handle	No		
			Dimensions W x D x H(mm)	654 x 338 x 565		
		Drop Test	Description of Origin	No(Assembled In Thailand)		
			Height (cm)	62		
	Container Stuffing (40' container)	492 Sets				
G-18	Material	Cabinet	Front	PS 94V0 DECABROM		
			Rear	PS 94V0 DECABROM		
		PCB	Non-Halogen Demand	No		
			Eyelet Demand	No		
G-19	Environment	Environmental standard requirement (by buyer)		Green PROCUREMENT of TOSHIBA		
		Pb-Free		Phase 3 (Phase 3A)		
G-20	AC Power Adapter	Provided Accessories				
		Power Requirement	AC	120V 60Hz		
		Power Consumption	at AC	100 W		
		DC Output		DC Jack : DC24V 3.4A		
		Dimension	Approx. W x D x H (mm)	200 x 90 x 60		
		Weight	Approx.	1.5kg (3.3 lbs)		

DISASSEMBLY INSTRUCTIONS

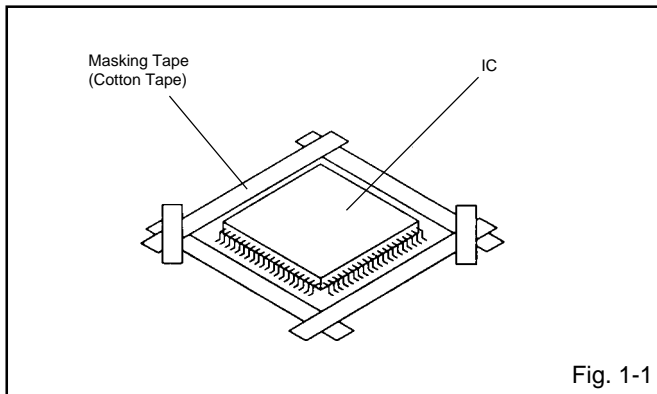
1. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

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

NOTE

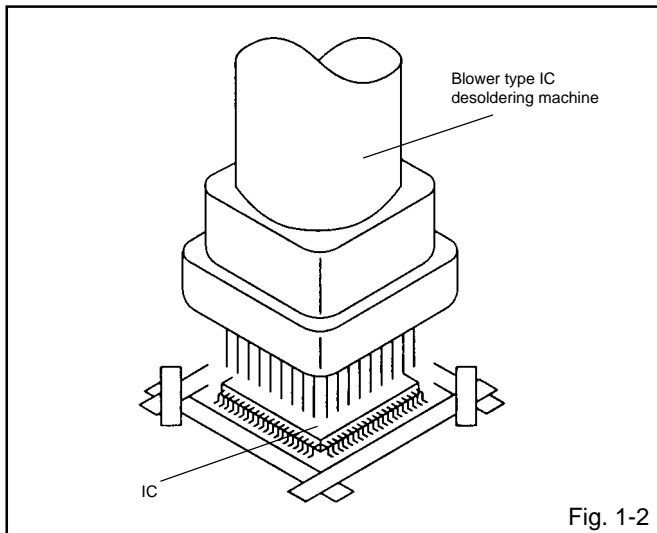
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

NOTE

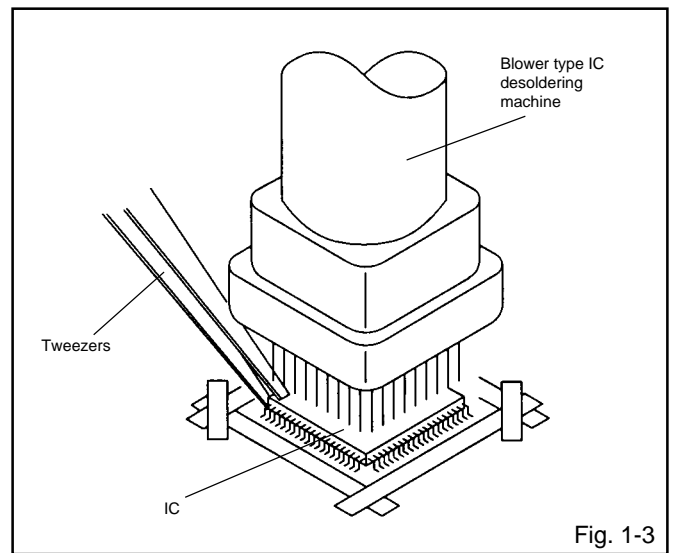
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a 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.

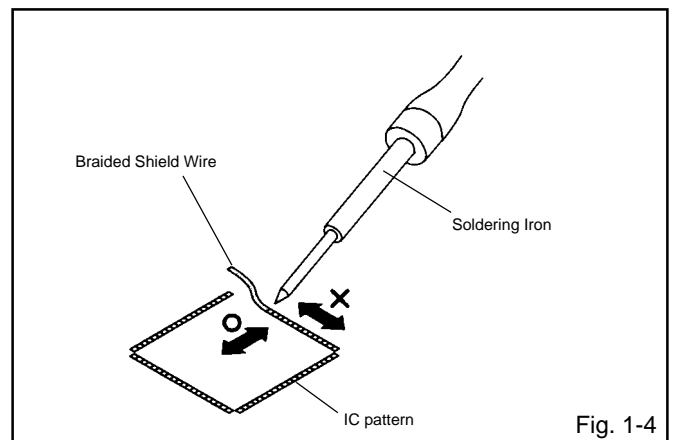


4. Peel off the Masking Tape.

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.



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.)

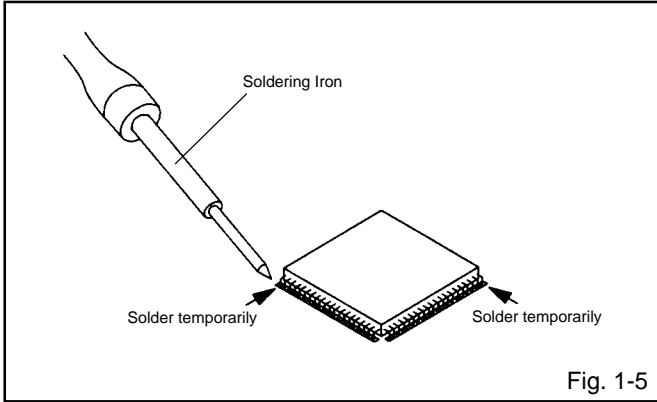


Fig. 1-5

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.)

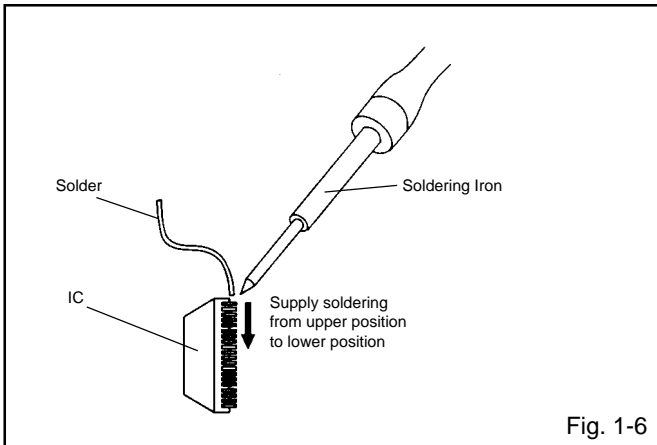


Fig. 1-6

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.

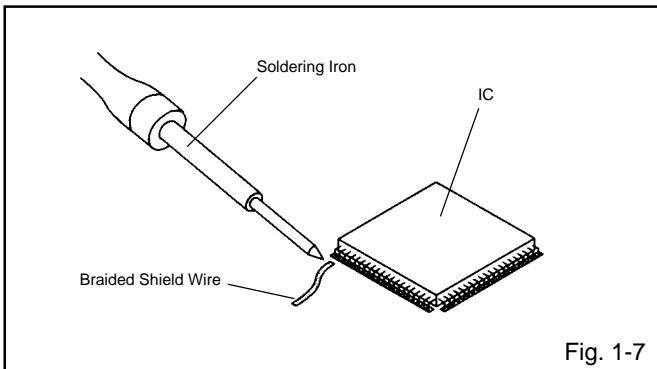


Fig. 1-7

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.)

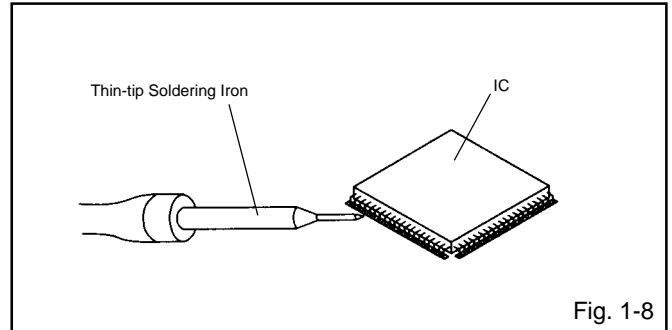


Fig. 1-8

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 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 a 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.	Releasing of V-CHIP PASSWORD.
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 "CONFIRMATION OF HOURS USED" . Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
TV mode	VOL. DOWN (Minimum)	8	2 sec.	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "CONFIRMATION OF CHECK SUM".
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.

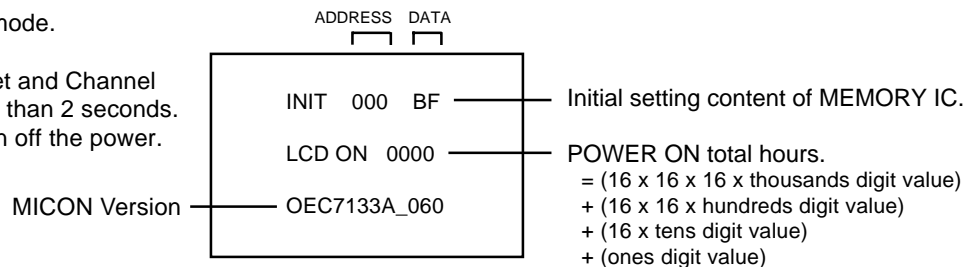


FIG. 1

CONFIRMATION OF CHECK SUM

Initial total of MEMORY IC 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 **(8)** on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, turn off the power.

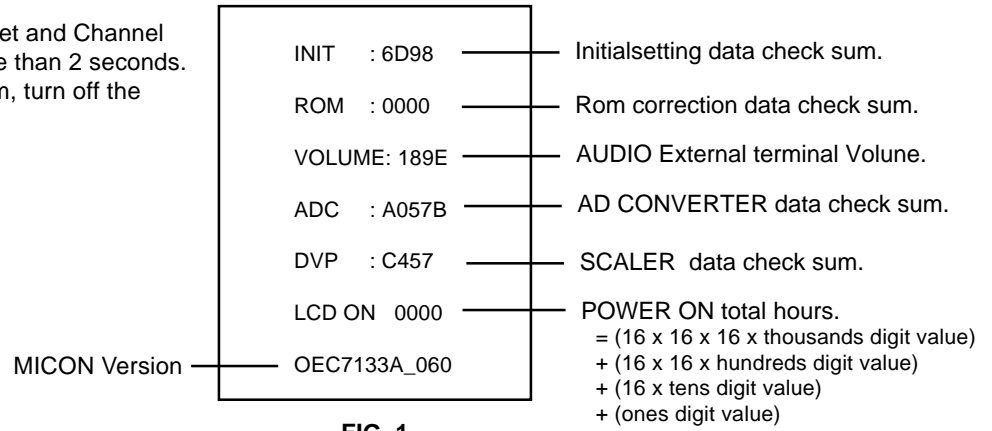


FIG. 1

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.

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. ADDRESS and DATA should appear as FIG 1.

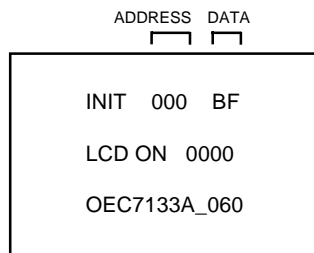


FIG. 1

4. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
6. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. 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.

9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. 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.

WHEN REPLACING EEPROM (MEMORY) IC

INIT	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	0F
000	BF	3F	01	99	6F	08	23	F9	00	30	80	55	B3	36	03	60
010	05	12	1F	24	40	45	5D	62	45	4A	19	00	13	57	00	00
020	40	08	3E	00	00	00	00	00	00	00	00	00	00	00	00	00
030	72	99	59	68	99	59	59	99	59	40	20	88	0D	45	80	40
040	46	63	68	49	53	65	6A	30	00	5C	62	00	00	00	00	00
050	00	00	00	D0	73	14	1C	2C	24	16	00	00	00	00	00	EC
060	E6	E6	EB	F2	15	F5	08	0D	07	07	73	00	00	00	06	F4
070	02	12	22	00	0D	F0	F0	F0	F0	F0	26	03	26	03	1E	0F
080	1E	0F	04	18	91	40	00	00	00	00	00	00	00	00	00	00
090	00	00	3C	20	3C	20	3C	20	3C	20	00	23	27	2B	2F	32
0A0	36	3A	3E	42	46	4A	4B	4D	4F	51	53	55	57	59	5B	5D
0B0	5F	61	63	66	67	68	69	6A	6B	6C	6D	6E	6F	70	71	71
0C0	72	72	72	73	73	73	74	74	74	75	75	75	76	75	76	76
0D0	76	76	77	77	77	77	78	78	78	78	79	42	00	00	00	EF
0E0	06	04	0B	01	00	01	07	3C	4F	02	0A	14	3F	49	00	00
0F0	00	00	00	00	00	50	19	32	19	00	19	44	43	40	40	40
100	10	92	FF	FF	10	30	B0	D0	F0	7B	30	57	7A	15	82	D9
110	4D	8C	28	70	20	60	10	80	20	A0	00	2C	0D	00	88	0F
120	84	10	C0	E0	12	19	00	F0	0F	00	7F	12	18	EB	83	7F
130	F9	5E	CA	52	18	F7	4C	33	4C	29	73	74	74	74	75	75
140	23	27	2B	2F	32	36	3A	3E	42	46	4A	4B	4D	4F	51	53
150	55	57	59	5B	5D	5F	61	63	66	67	68	69	6A	6B	6C	6D
160	6E	6F	70	71	71	72	72	72	73	73	73	74	74	74	75	75
170	75	76	75	76	76	76	76	77	77	77	77	78	78	78	78	79
600	31	F0	28	1F	08	08	20	80	80	80	7F	7F	7F	66	6E	80
610	20	04	04	02	00	00	00	01	00	00	00	00	00	00	00	00
620	38	30	20	10	10	08	20	80	80	80	7F	7F	7F	66	6E	B8
630	28	04	04	02	00	00	00	01	00	00	00	00	00	00	00	00
640	41	F0	60	A0	08	08	20	80	80	80	7F	7F	7F	66	6E	80
650	20	04	04	02	00	00	00	01	00	00	00	00	00	00	00	00
660	53	F0	70	A5	08	08	20	80	80	80	7F	7F	7F	66	6E	80
670	20	04	04	02	00	00	00	01	00	00	00	00	00	00	00	00
680	67	F0	A0	C0	10	08	60	80	80	80	7F	7F	7F	66	6E	B8
690	28	04	04	02	00	00	00	01	00	00	00	00	00	00	00	00

Table 1-1

WHEN REPLACING EEPROM (MEMORY) IC

INIT	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	0F
6A0	67	F0	A0	1B	10	08	60	80	80	80	7F	7F	7F	66	6E	B8
6B0	28	04	04	02	00	00	00	01	00	00	00	00	00	00	00	00
6C0	6C	90	18	F0	07	14	44	80	80	80	7B	50	7A	6B	66	B5
6D0	30	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
6E0	35	90	18	70	07	14	35	80	80	80	80	80	80	6B	66	B5
6F0	30	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
700	67	10	A8	85	2B	05	B0	80	80	80	7F	80	80	6B	66	B5
710	20	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
720	89	80	A8	48	2B	03	94	80	80	80	7E	80	7E	6B	66	B5
730	30	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
740	6C	90	18	F0	07	14	44	80	80	80	7B	50	7A	6B	66	B5
750	30	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
760	35	90	18	70	07	14	44	80	80	80	80	80	7F	6B	66	B5
770	30	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
780	67	10	A8	85	2B	14	B0	80	80	80	80	80	80	6B	66	B5
790	20	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
7A0	89	80	A8	48	2B	66	94	80	80	80	7F	80	80	6B	66	B5
7B0	30	0B	0F	02	00	00	00	01	00	00	00	00	00	00	00	00
7C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
7D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
7E0	E7	02	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
7F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Table 1-2

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

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

CAUTION

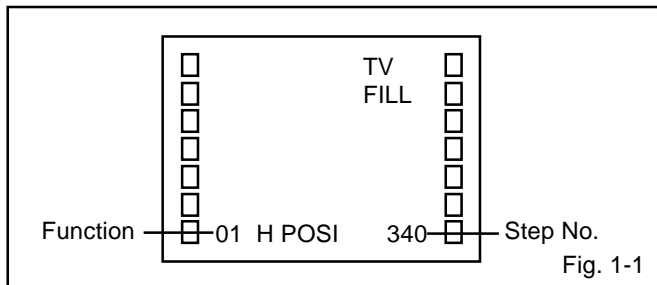
- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.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

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

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. 1-1.



3. Use the Channel UP/DOWN button or Channel button (0-9) on the remote control to select the options shown in Fig. 1-2.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for TV, AV, CS, HD-MI and PC mode, press the INPUT button on the remote control. 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	23	BAK LIGHT CENT
02	V POSI OSD	24	BAK LIGHT MAX
03	R DRIVE(N)	25	BAK LIGHT MIN
04	R CUT OFF(N)	26	BRIGHT CENT
05	G DRIVE(N)	27	BRIGHT MAX
06	G CUT OFF(N)	28	BRIGHT MIN
07	B DRIVE(N)	29	TINT
08	B CUT OFF(N)	30	SHARP CENTER
09	R DRIVE(C)	31	SHARP MAX
10	R CUT OFF(C)	32	SHARP MIN
11	G DRIVE(C)	33	CONTRAST CENTER(N)
12	G CUT OFF(C)	34	CONTRAST MAX(N)
13	B DRIVE(C)	35	CONTRAST MIN(N)
14	B CUT OFF(C)	36	COLOR CENT
15	R DRIVE(W)	37	COLOR MAX
16	R CUT OFF(W)	38	COLOR MIN
17	G DRIVE(W)	39	CONTRAST CENTER(C)
18	G CUT OFF(W)	40	CONTRAST MAX(C)
19	B DRIVE(W)	41	CONTRAST MIN(C)
20	B CUT OFF(W)	42	CONTRAST CENTER(W)
21	H POSI	43	CONTRAST MAX(W)
22	V POSI	44	CONTRAST MIN(W)

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT MAX

1. Activate the adjustment mode display of Fig. 1-1 and press the channel button (40) on the remote control to select "CONTRAST MAX(C)".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "135".
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.
5. Press the INPUT button on the remote control to set to the CS mode.
6. Activate the adjustment mode display of Fig. 1-1 and press the channel button (40) on the remote control to select "CONTRAST MAX(C)".
7. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "125".
8. Receive a broadcast and check if the picture is normal.
9. Press the INPUT button on the remote control to set to the HD-MI mode. Then perform the above adjustments 6~8.

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. 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 **(03)** on the remote control to select "R DRIVE(N)".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT OFF(N)", "G DRIVE(N)", "G CUT OFF(N)", "R DRIVE(C)", "R CUT OFF(C)", "G DRIVE(C)", "G CUT OFF(C)", "R DRIVE(W)", "R CUT OFF(W)", "G DRIVE(W)" or "G CUT OFF(W)".
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R CUT OFF(N), G DRIVE(N), G CUT OFF(N), R DRIVE(C), R CUT OFF(C)", G DRIVE(C), G CUT OFF(C), R DRIVE(W), R CUT OFF(W) G DRIVE(W) and G CUT OFF(W), B DRIVE(W) and B CUT OFF(W) at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white achieved.

ELECTRICAL ADJUSTMENTS

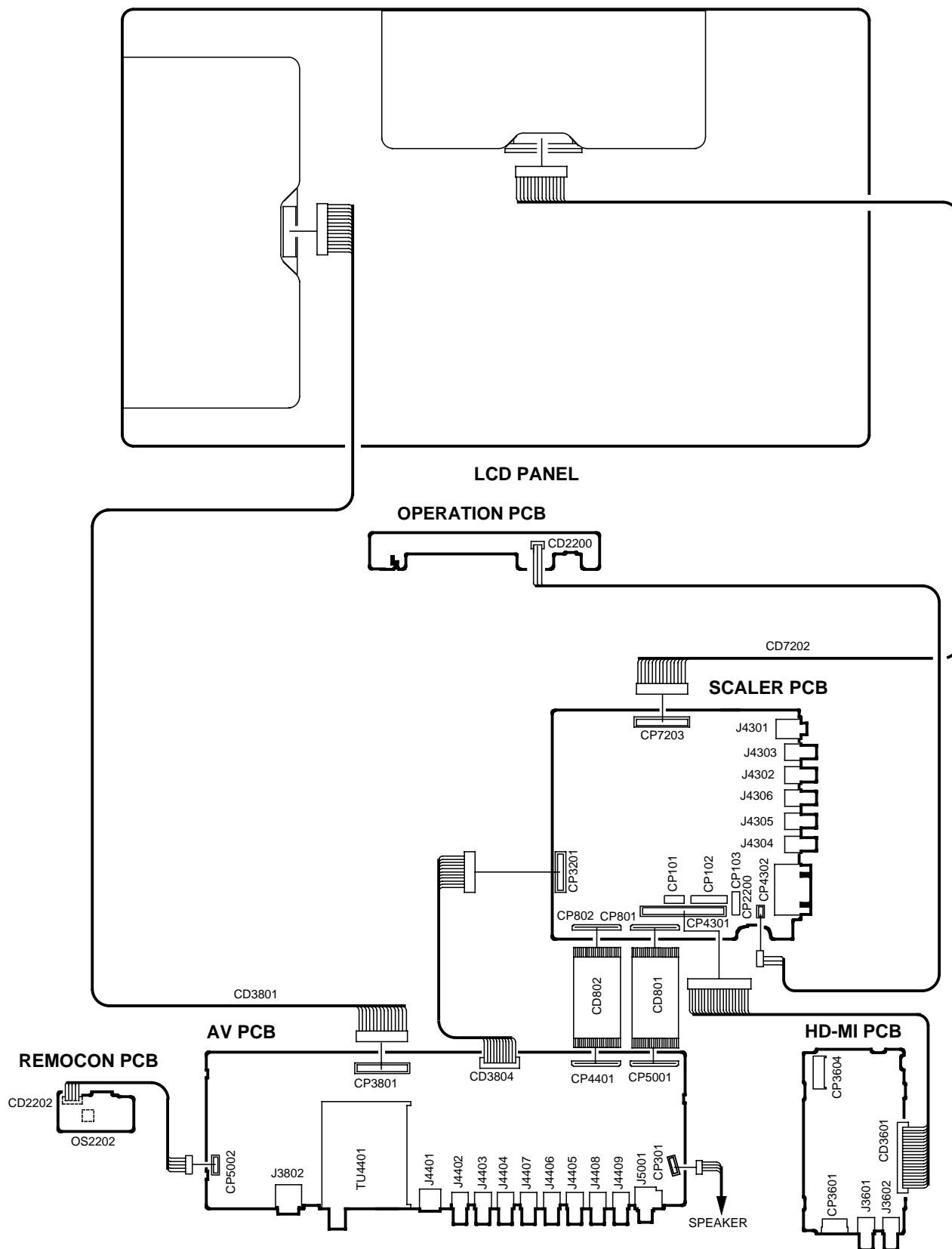
2-3: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each the adjustment items are set correctly referring below.

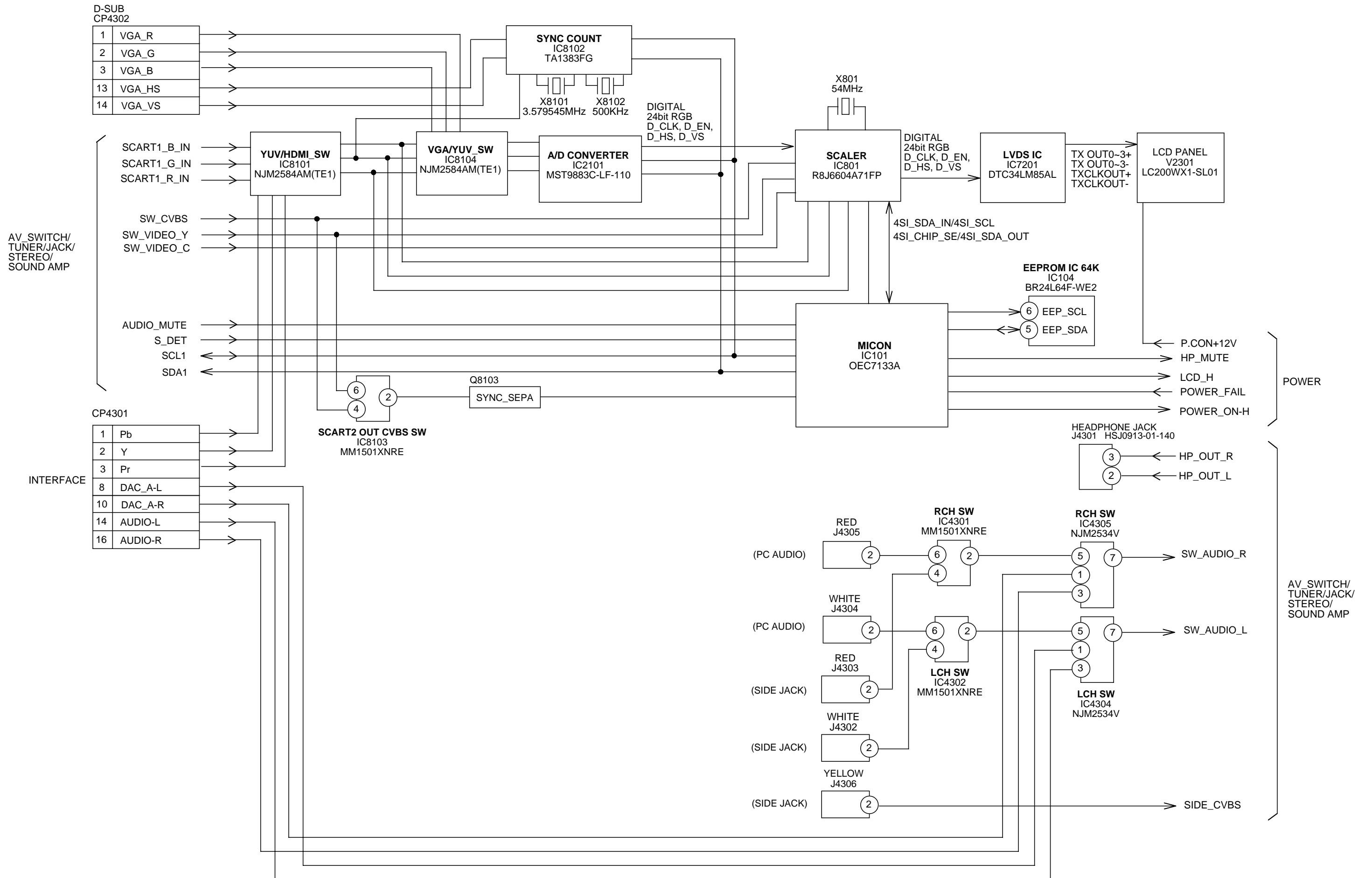
NO.	FUNCTION	TV	AV	CS				HD-MI				PC					
				480i	480p	720p	1080i	480i	480p	720p	1080i	VGA	VGA70	SVGA	XGA	WXGA	WXGA44.7
01	H POSI OSD	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
02	V POSI OSD	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
03	R DRIVE (N)	154	154	154	154	154	154	154	154	154	154	120	120	120	120	120	120
04	R CUTOFF (N)	107	107	107	107	107	107	107	107	107	107						
05	G DRIVE (N)	124	124	124	124	124	124	124	124	124	124	120	120	120	120	120	120
06	G CUTOFF (N)	116	116	116	116	116	116	116	116	116	116						
07	B DRIVE (N)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
08	B CUTOFF (N)	121	121	121	121	121	121	121	121	121	121						
09	R DRIVE (C)	140	140	140	140	140	140	140	140	140	140						
10	R CUTOFF (C)	122	122	122	122	122	122	122	122	122	122						
11	G DRIVE (C)	128	128	128	128	128	128	128	128	128	128						
12	G CUTOFF (C)	125	125	125	125	125	125	125	125	125	125						
13	B DRIVE (C)	128	128	128	128	128	128	128	128	128	128						
14	B CUTOFF (C)	128	128	128	128	128	128	128	128	128	128						
15	R DRIVE (W)	161	161	161	161	161	161	161	161	161	161						
16	R CUTOFF (W)	80	80	80	80	80	80	80	80	80	80						
17	G DRIVE (W)	123	123	123	123	123	123	123	123	123	123						
18	G CUTOFF (W)	92	92	92	92	92	92	92	92	92	92						
19	B DRIVE (W)	108	108	103	108	108	108	103	108	108	108						
20	B CUTOFF (W)	98	98	98	98	98	98	98	98	98	98						
21	H POSI	300	300	300	146	338	295	294	144	294	245	143	159	215	291	313	322
22	V POSI	41	41	41	29	33	34	41	29	28	29	50	20	31	32	24	23
23	BAK LIGHT CENT	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
24	BAK LIGHT MAX	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
25	BAK LIGHT MIN	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
26	BRIGHT CENT	124	124	124	124	124	124	124	124	124	124	118	118	118	118	118	118
27	BRIGHT MAX	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
28	BRIGHT MIN	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
29	TINT	110	110	110	122	122	122	110	122	122	122						
30	SHARP CENTER	105	105	105	105	105	105	105	105	105	105	128	128	128	128	128	128
31	SHARP MAX	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
32	SHARP MIN	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
33	CONT CENTER (N)	95	80	90	85	85	85	95	85	85	85	128	128	128	128	128	128
34	CONT MAX (N)	120	120	105	105	105	105	150	105	105	105	150	150	150	150	150	150
35	CONT MIN (N)	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
36	COLOR CENT	80	80	80	80	80	80	80	80	80	80						
37	COLOR MAX	127	127	127	127	127	127	127	127	127	127						
38	COLOR MIN	00	00	00	00	00	00	00	00	00	00						
39	CONT CENTER (C)	100	95	100	100	100	100	100	100	100	100						
40	CONT MAX (C)	135	135	125	120	120	120	125	120	120	120						
41	CONT MIN (C)	50	50	50	50	50	50	50	50	50	50						
42	CONT CENTER (W)	70	65	65	65	65	65	65	65	65	65						
43	CONT MAX (W)	100	100	90	90	90	90	90	90	90	90						
44	CONT MIN (W)	50	50	50	50	50	50	50	50	50	50						

ELECTRICAL ADJUSTMENTS

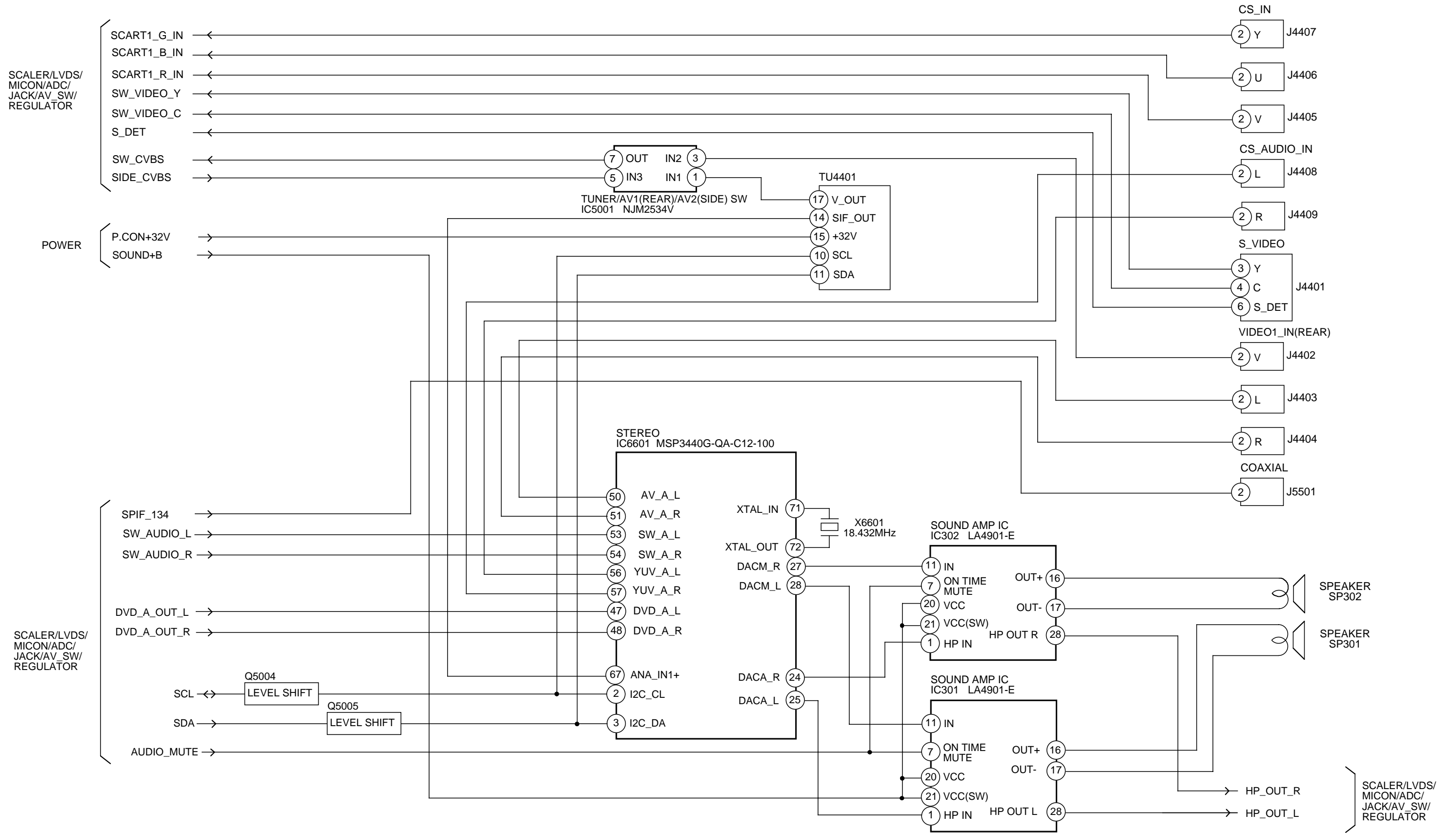
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



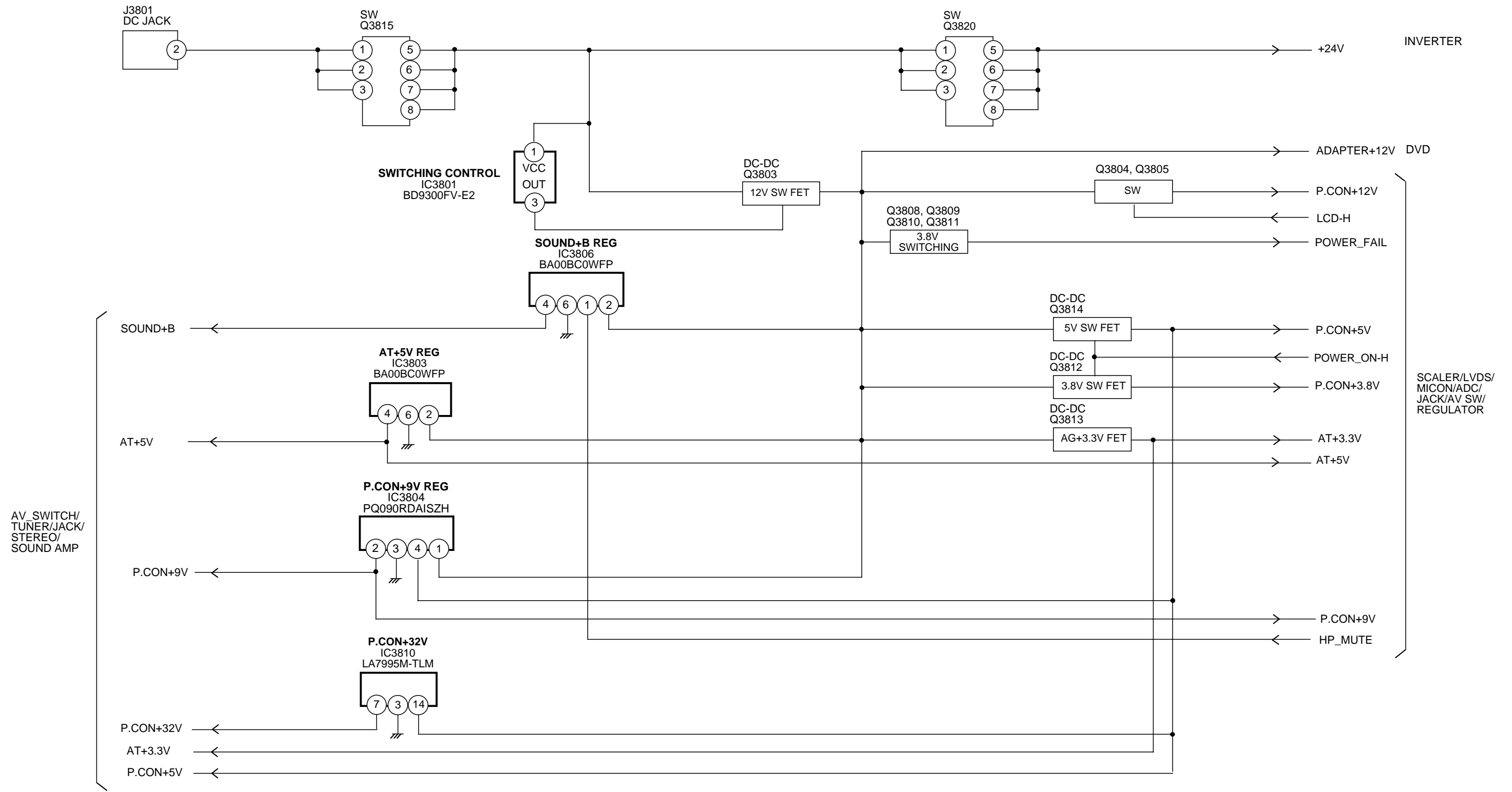
SCALER/LVDS/MICON/ADC/JACK/AV_SW/REGULATOR BLOCK DIAGRAM



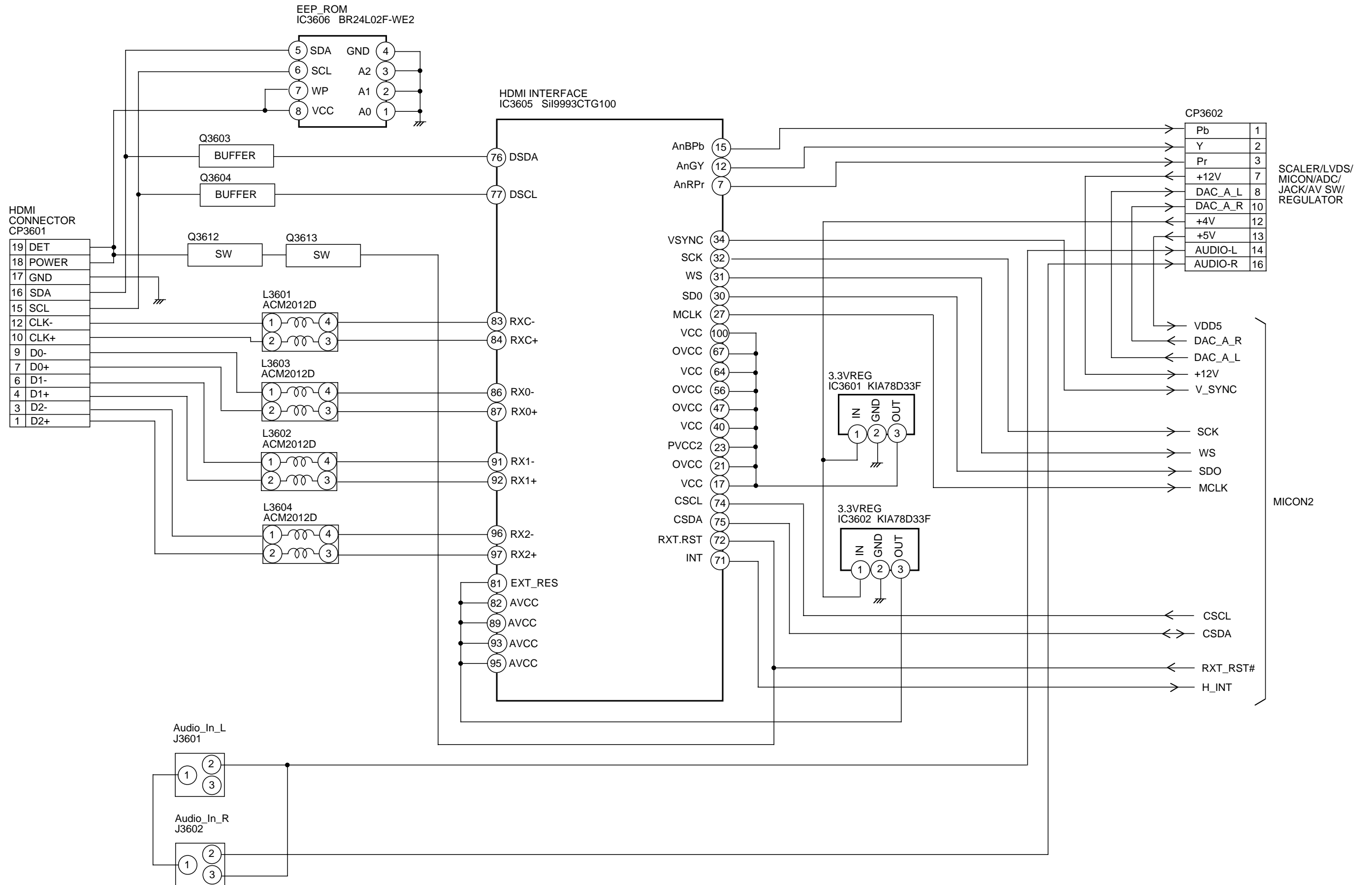
AV_SW/TUNER/JACK/STEREO/SOUND AMP BLOCK DIAGRAM



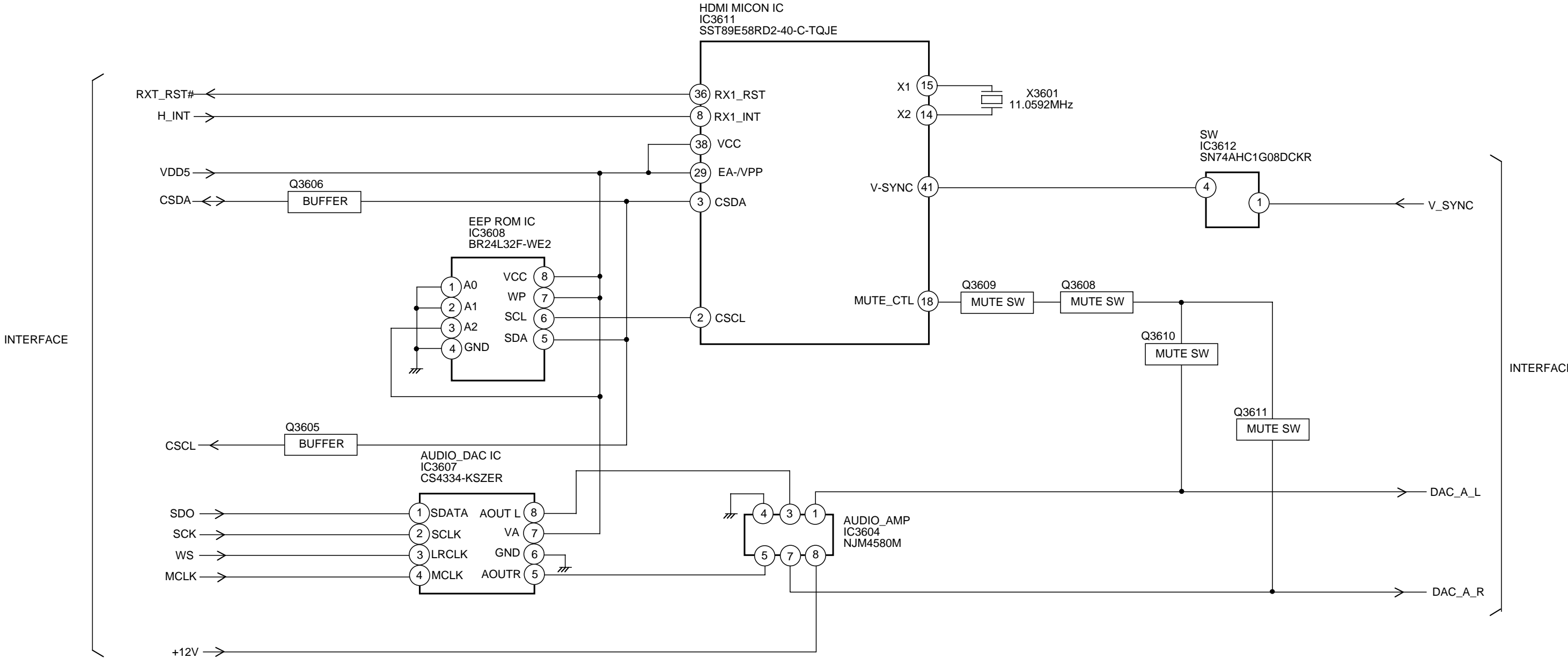
POWER BLOCK DIAGRAM



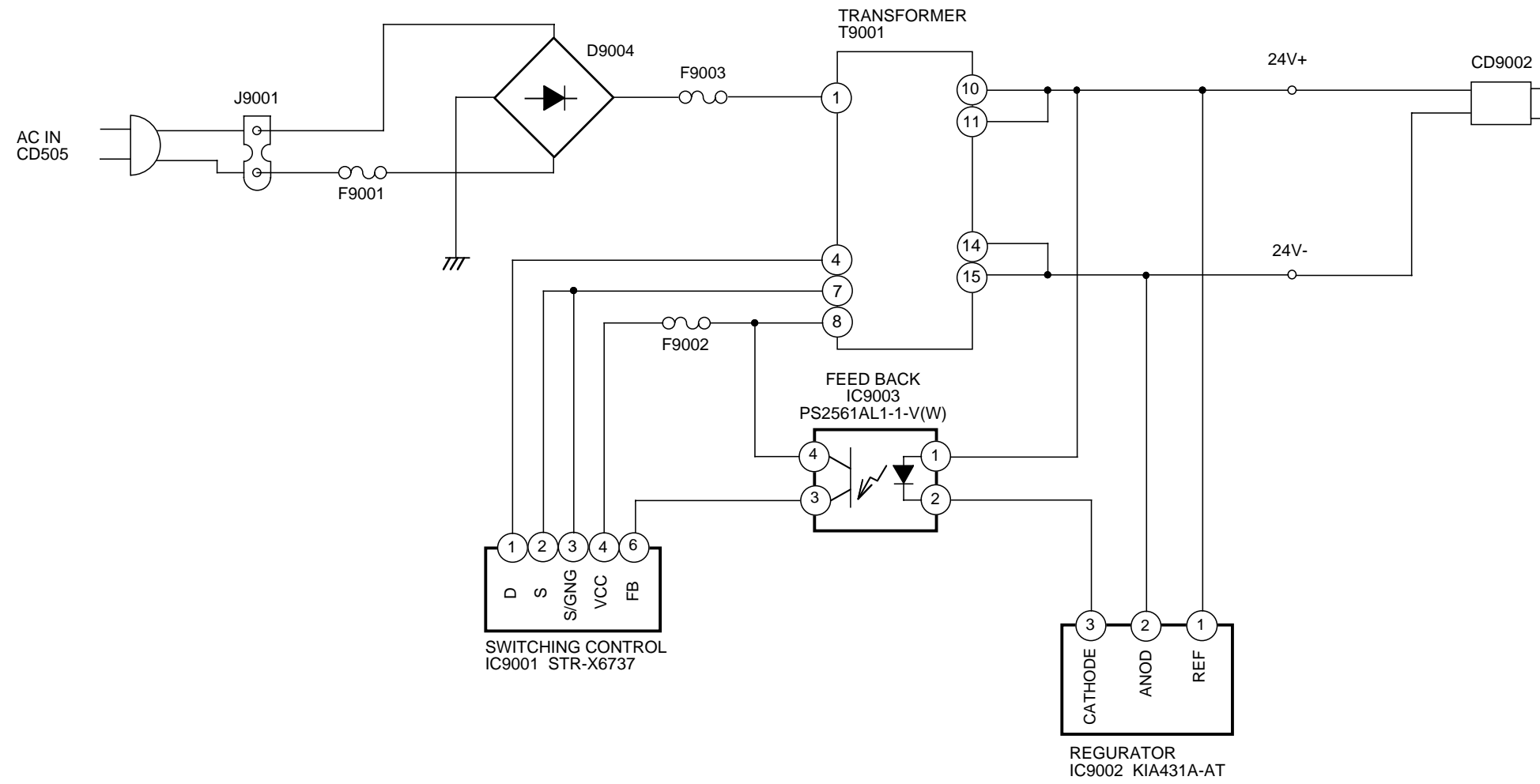
INTERFACE BLOCK DIAGRAM



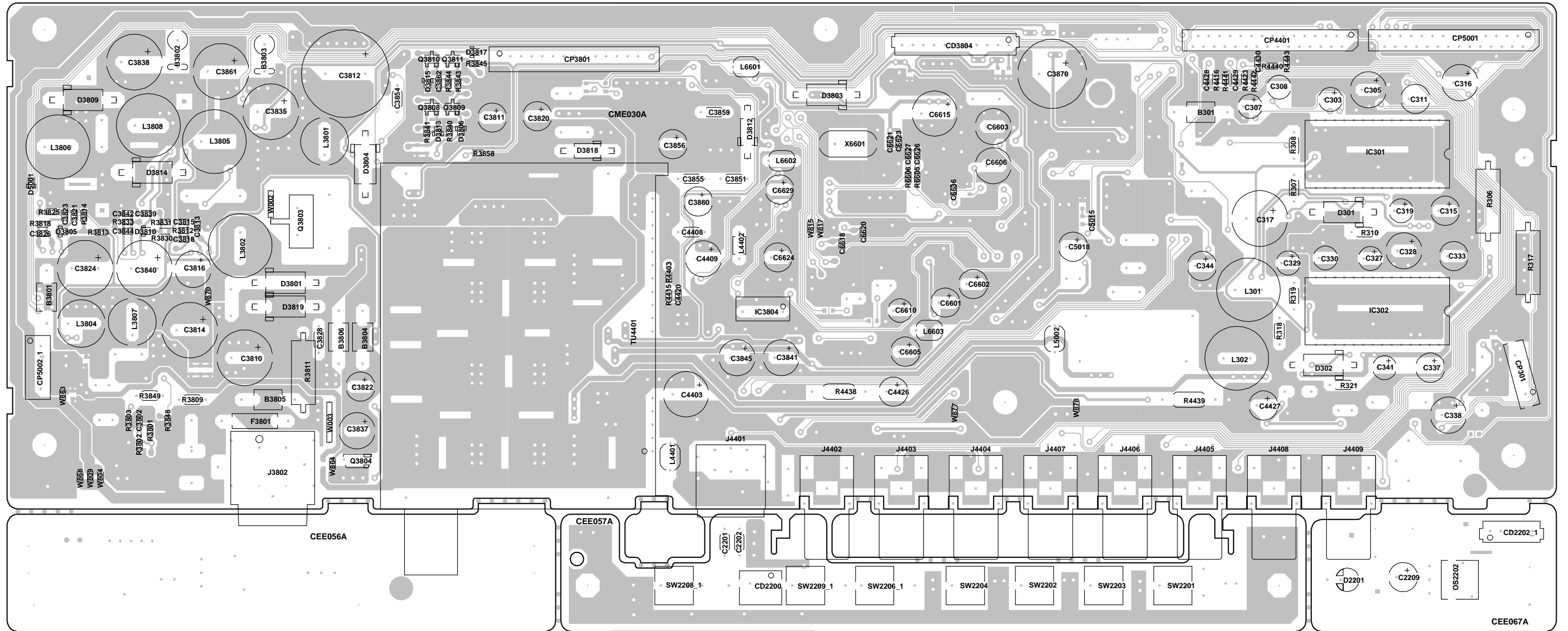
MICON2 BLOCK DIAGRAM



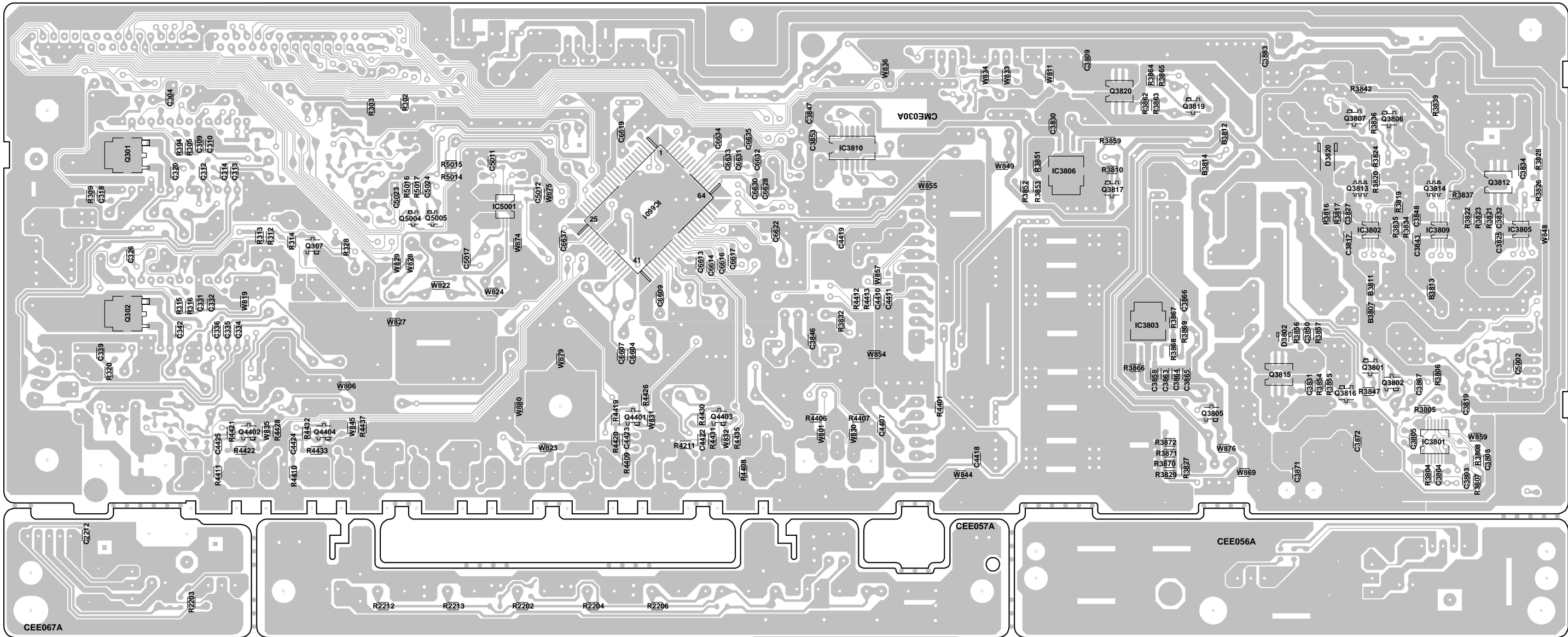
AC ADAPTER BLOCK DIAGRAM



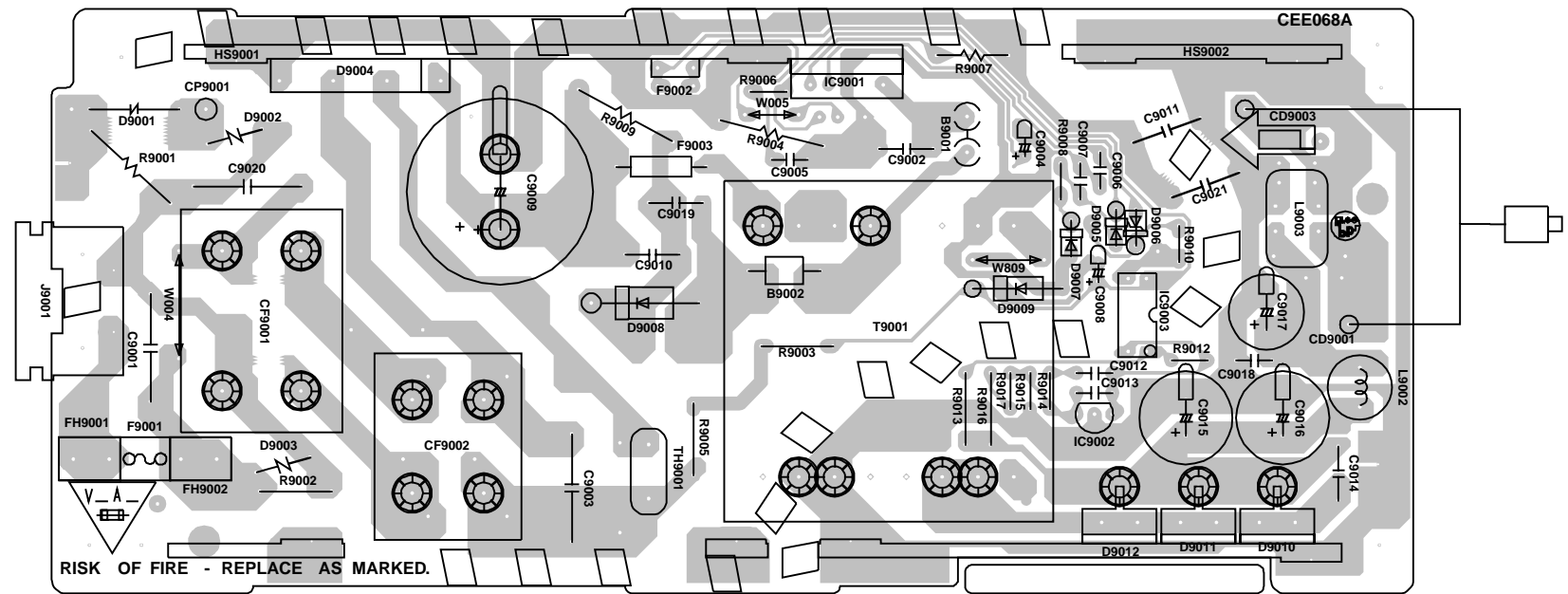
PRINTED CIRCUIT BOARDS AV/OPERATION/REMOCON (TOP SIDE)



PRINTED CIRCUIT BOARDS
AV/OPERATION/REMOCON (BOTTOM SIDE)

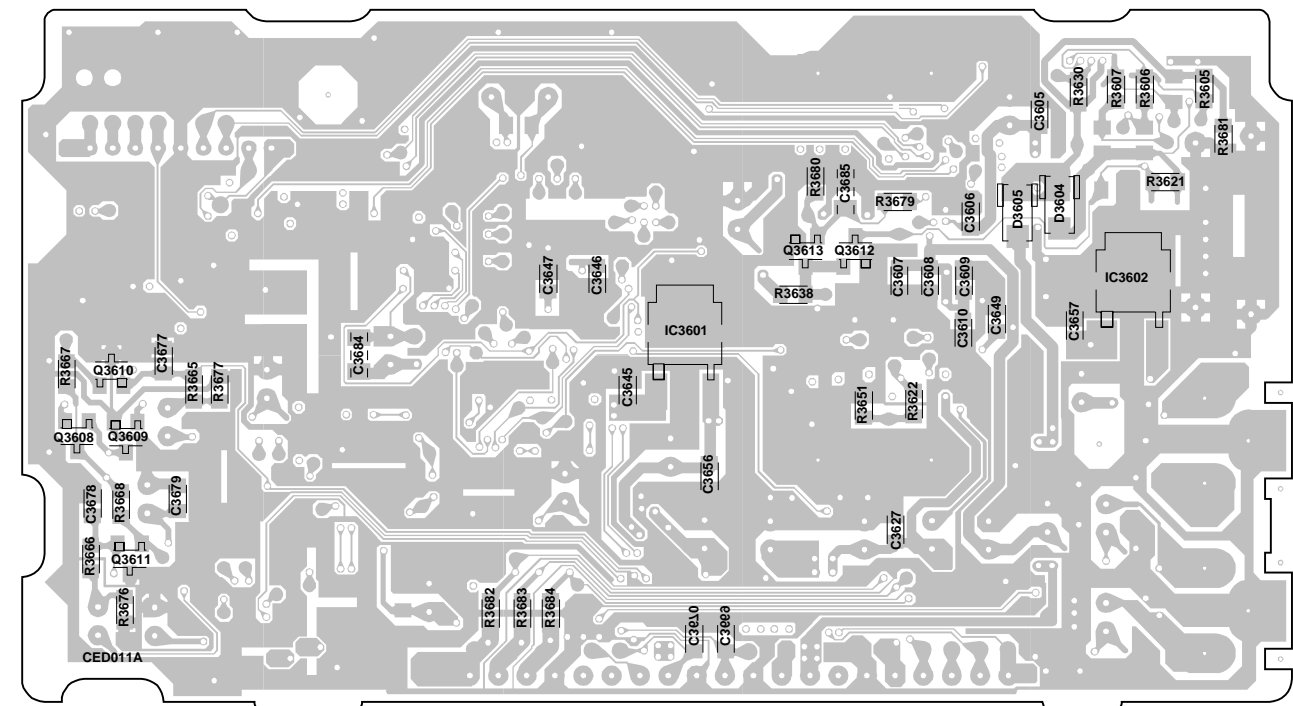
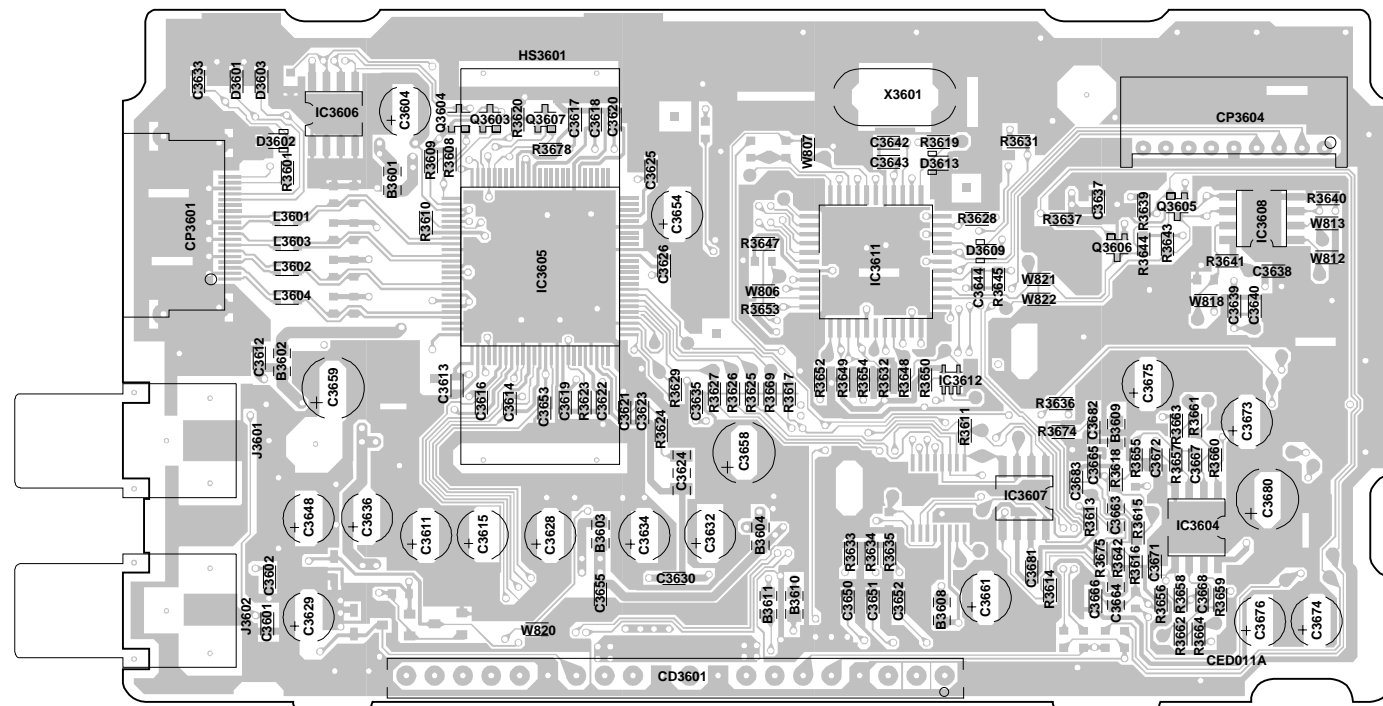


**PRINTED CIRCUIT BOARDS
AC ADAPTER
SOLDER SIDE**



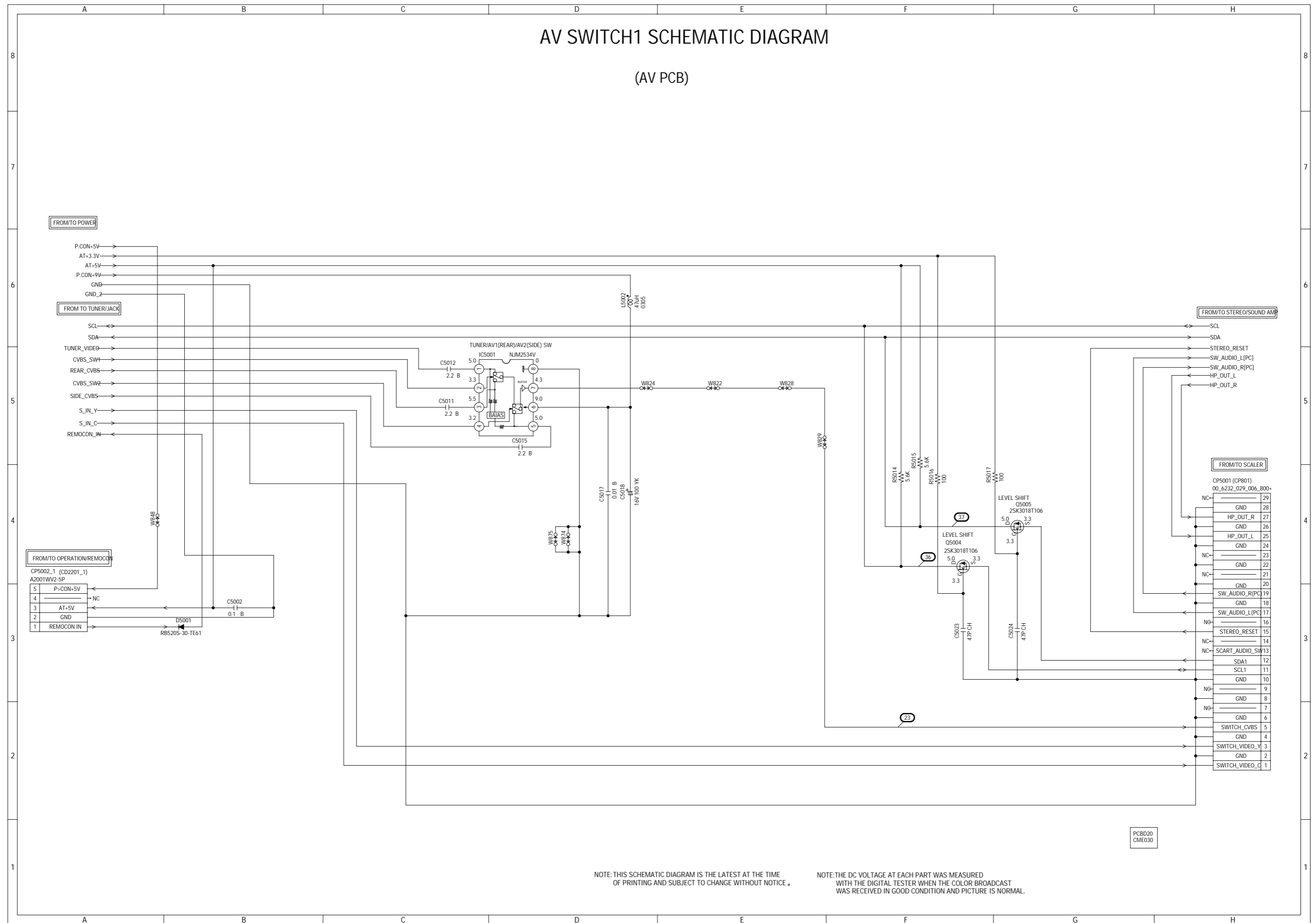
HD-MI (TOP SIDE)

HD-MI (BOTTOM SIDE)



AV SWITCH1 SCHEMATIC DIAGRAM

(AV PCB)

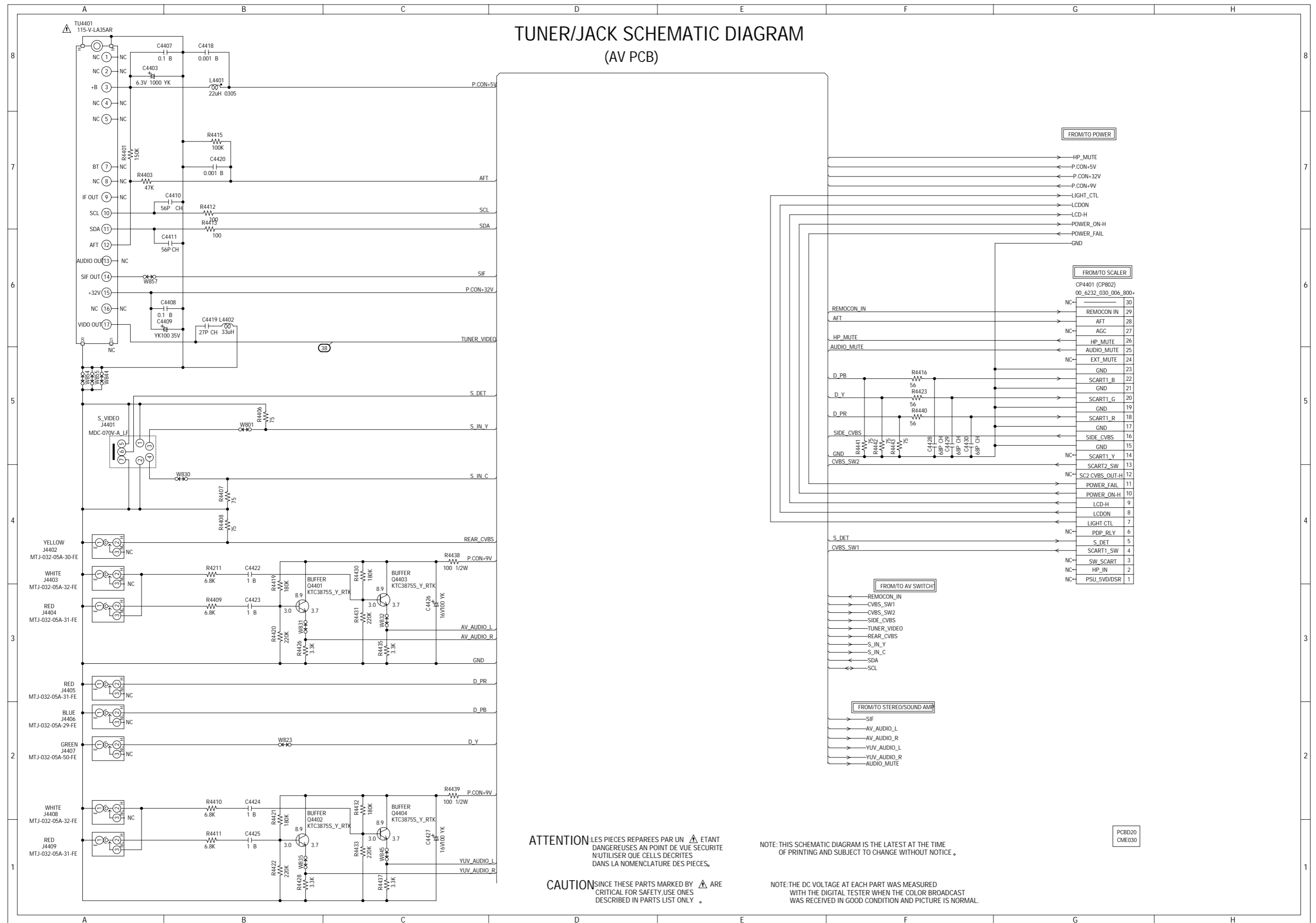


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

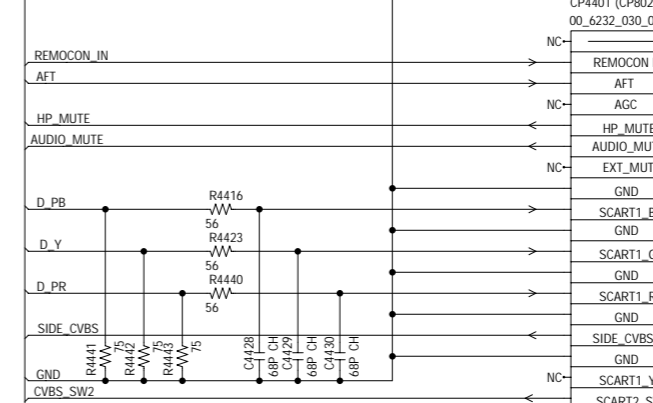
TUNER/JACK SCHEMATIC DIAGRAM

(AV PCB)



FROM/TO POWER

FROM/TO SCALER



FROM/TO STEREO/SOUND AMP



PCBD20
CME030

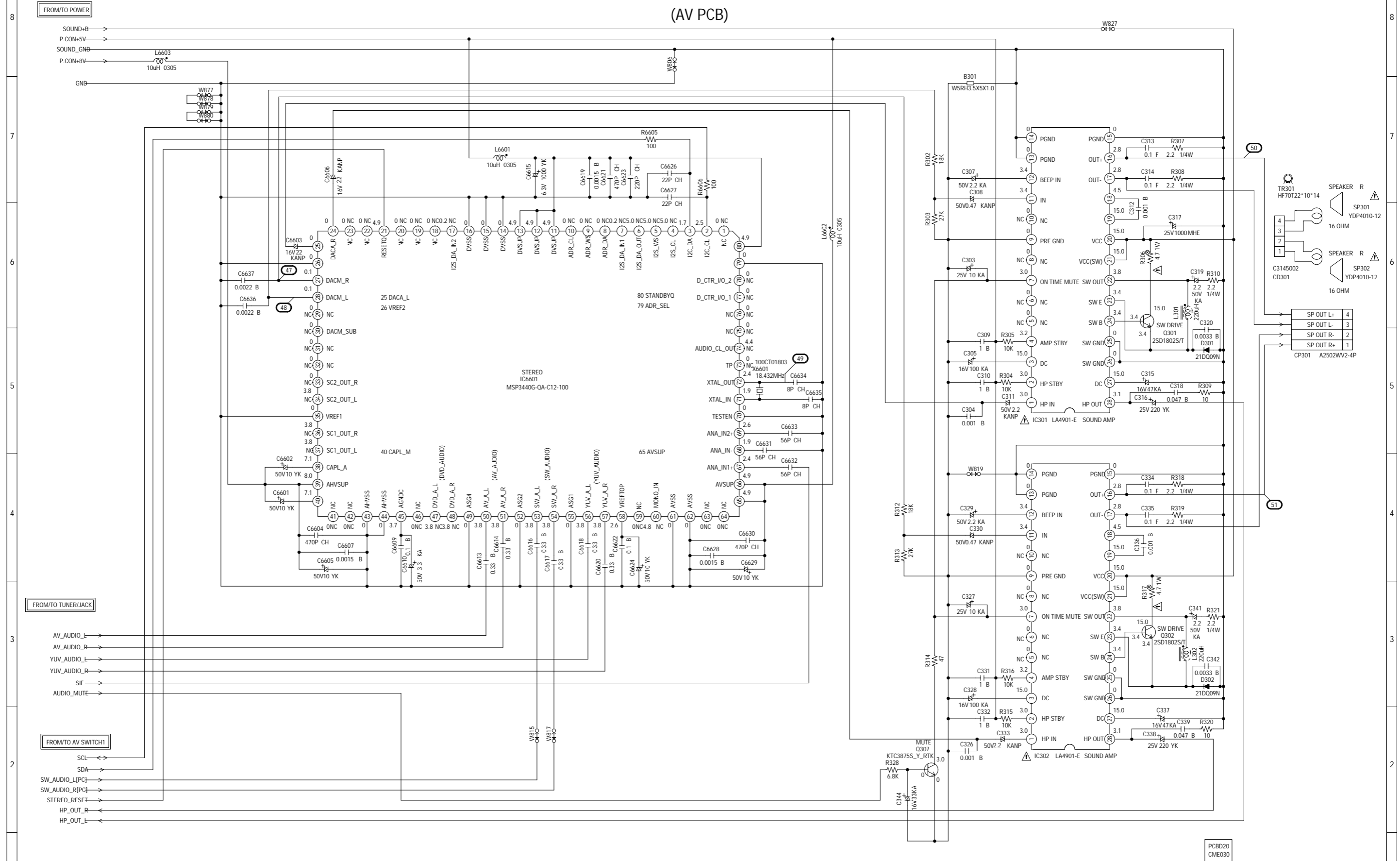
ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

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

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.

STEREO/SOUND AMP SCHEMATIC DIAGRAM (AV PCB)



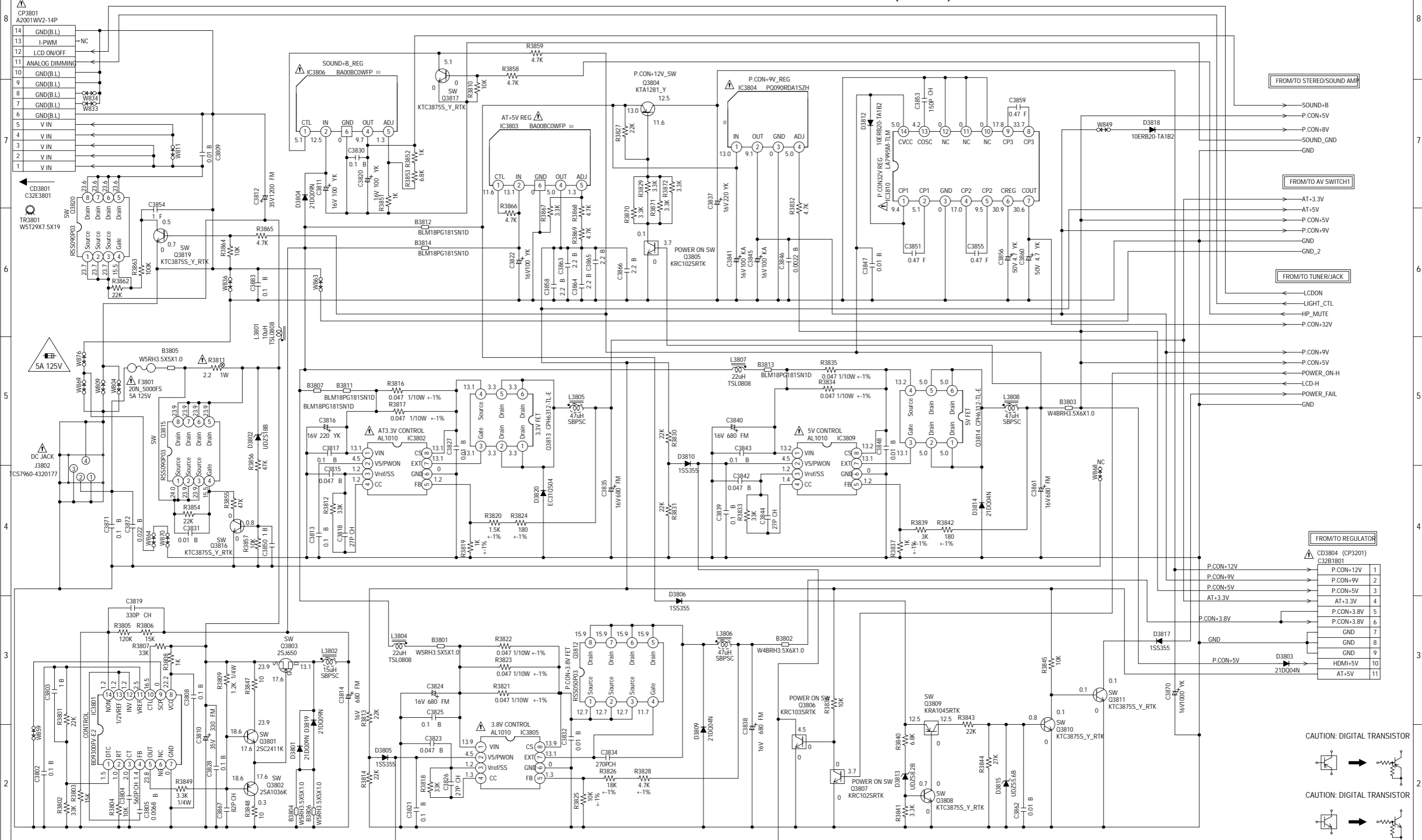
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMÉNCLATURE DES PIÈCES.

POWER SCHEMATIC DIAGRAM (AV PCB)



FROM/TO STEREO/SOUND AMP

- SOUND+B
- P.CON+5V
- P.CON+8V
- SOUND_GND
- GND

FROM/TO AV SWITCH1

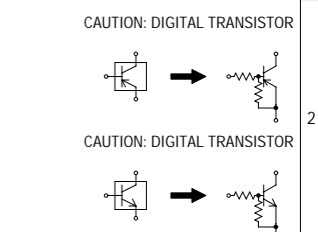
- AT+3.3V
- AT+5V
- P.CON+5V
- P.CON+9V
- GND
- GND_2

FROM/TO TUNER/JACK

- LCDON
- LIGHT_CTL
- HP_MUTE
- P.CON+32V

FROM/TO REGULATOR

CD3804 (CP3201)	P.CON+12V	1
C32B1801	P.CON+9V	2
	P.CON+5V	3
	AT+3.3V	4
	P.CON+3.8V	5
	P.CON+3.8V	6
	GND	7
	GND	8
	GND	9
	HDMI+5V	10
	AT+5V	11



CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 5A 125V (F3801).

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCIEI N'UTILISER QUE DES FUSIBLE DE MEME TYPE 5A 125V (F3801).

CAUTION F3801 IS MANUFACTURED BY SKYGATE CO.,LTD,TYPE 20N.

CAUTION SINCE THESE PARTS MARKED WITH ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

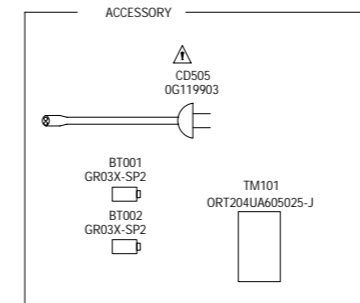
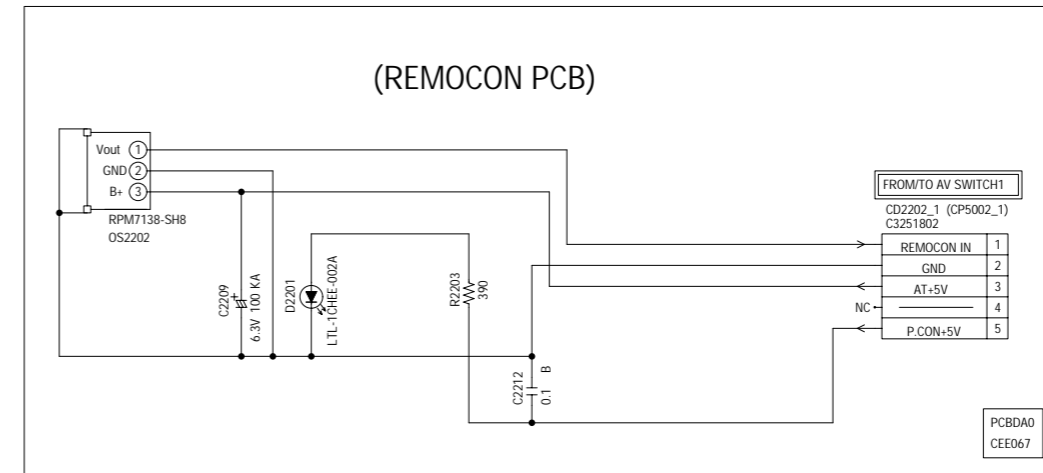
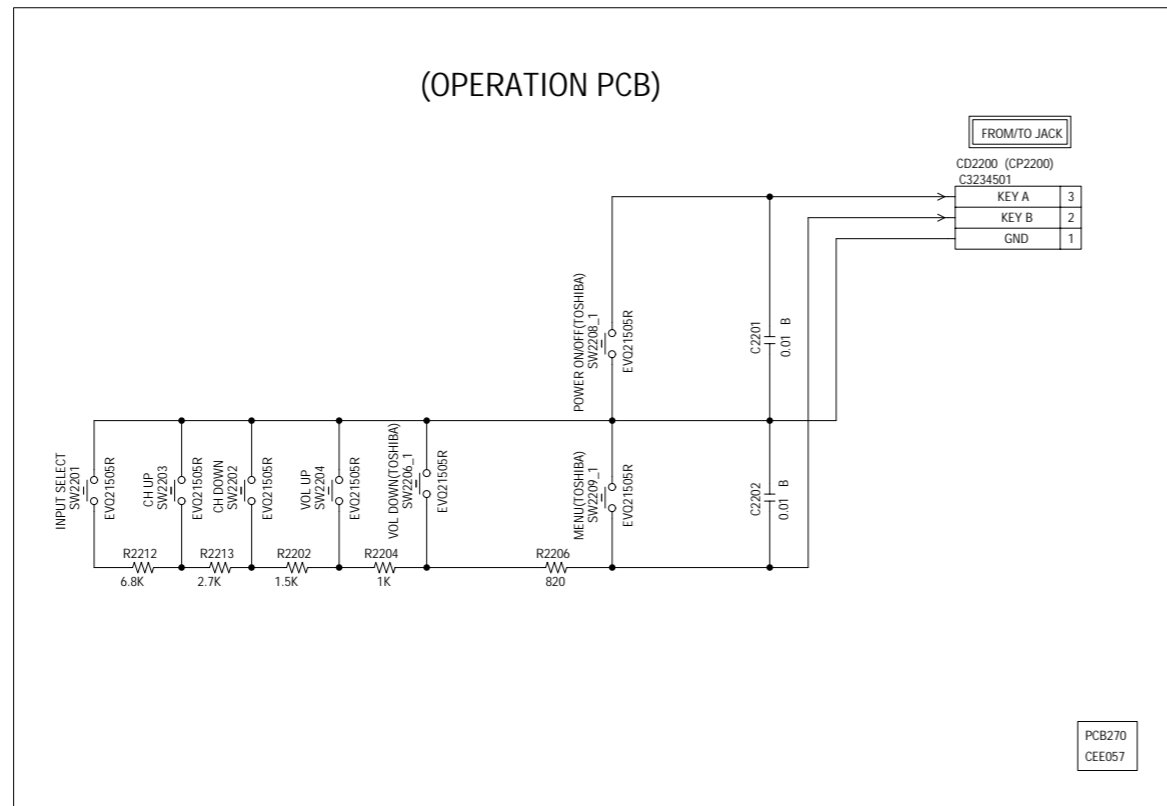
ATTENTION LES PIECES REPAREES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

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.

PCBD20
CME030

OPERATION/REMOCON 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.

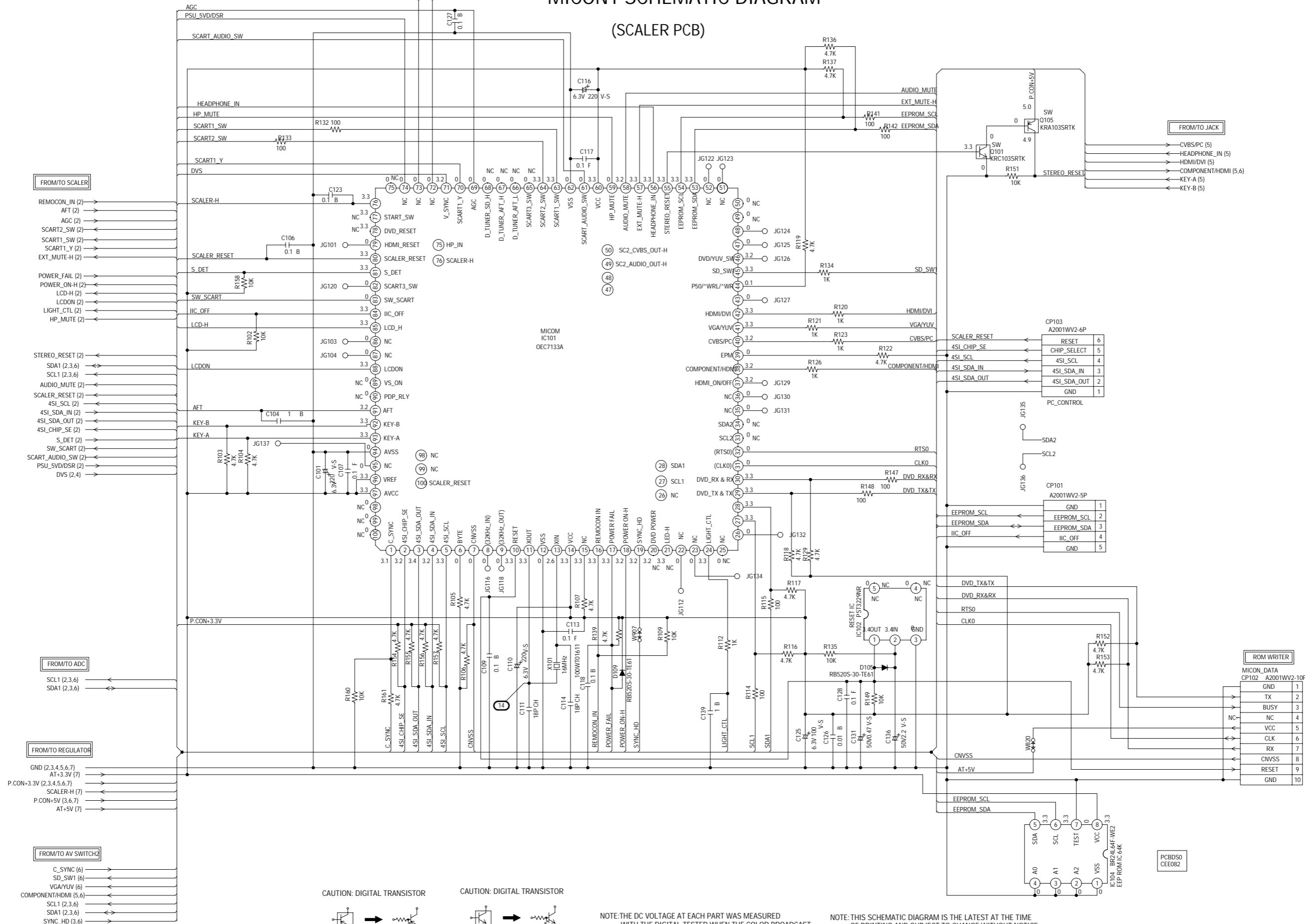
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

MICON1 SCHEMATIC DIAGRAM

(SCALER PCB)



FROM/TO SCALER

FROM/TO ADC

FROM/TO REGULATOR

FROM/TO AV SWITCH

FROM/TO JACK

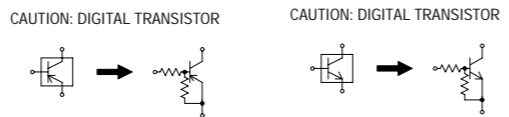
ROM WRITER

MICON_DATA	1
CP102 A2001WV2-10P	2
GND	3
TX	4
BUSY	5
NC	6
VCC	7
CLK	8
RX	9
RESET	10
GND	11

CP103 A2001WV2-6P	1
RESET	2
CHIP_SELECT	3
4SI_SCL	4
4SI_SDA_IN	5
4SI_SDA_OUT	6
GND	7

CP101 A2001WV2-5P	1
GND	2
EEPROM_SCL	3
EEPROM_SDA	4
IIC_OFF	5
GND	6

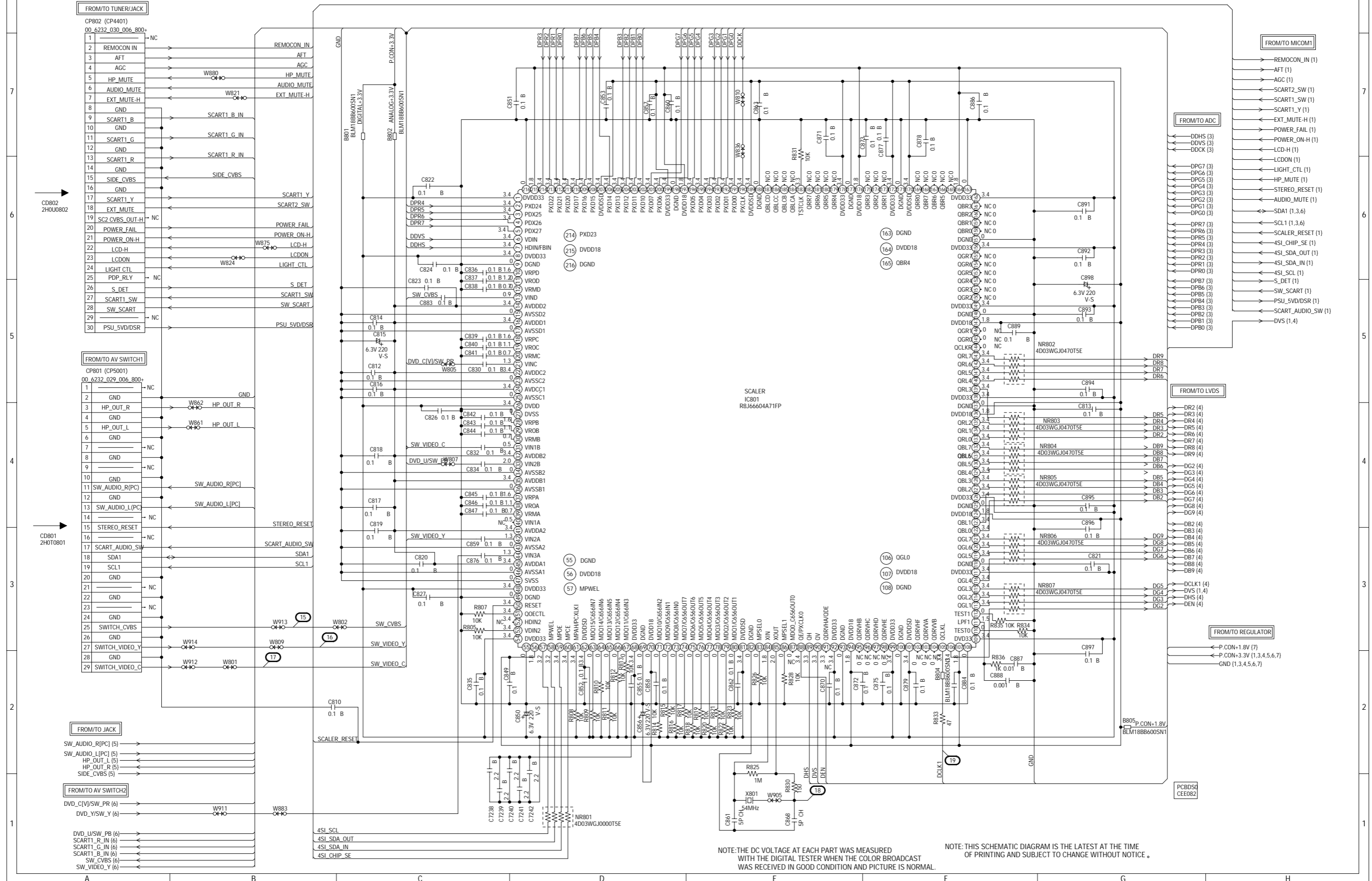
PCB050 CEE062



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.

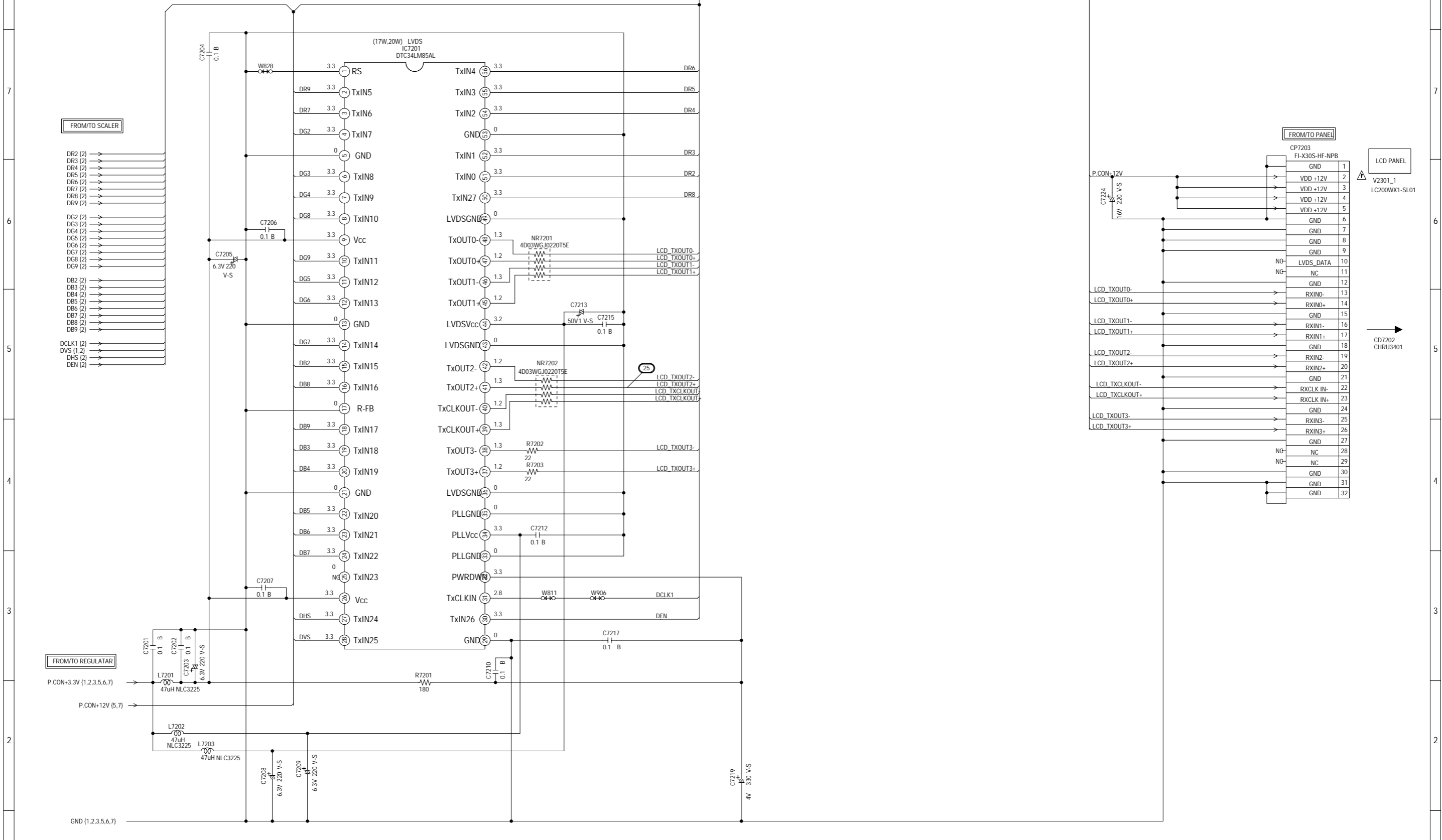
SCALER SCHEMATIC DIAGRAM (SCALER PCB)



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.

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

LVDS SCHEMATIC DIAGRAM (SCALER PCB)



FROM/TO SCALER

FROM/TO PANEL

FROM/TO REGULATOR

PCBDS0
CEE082

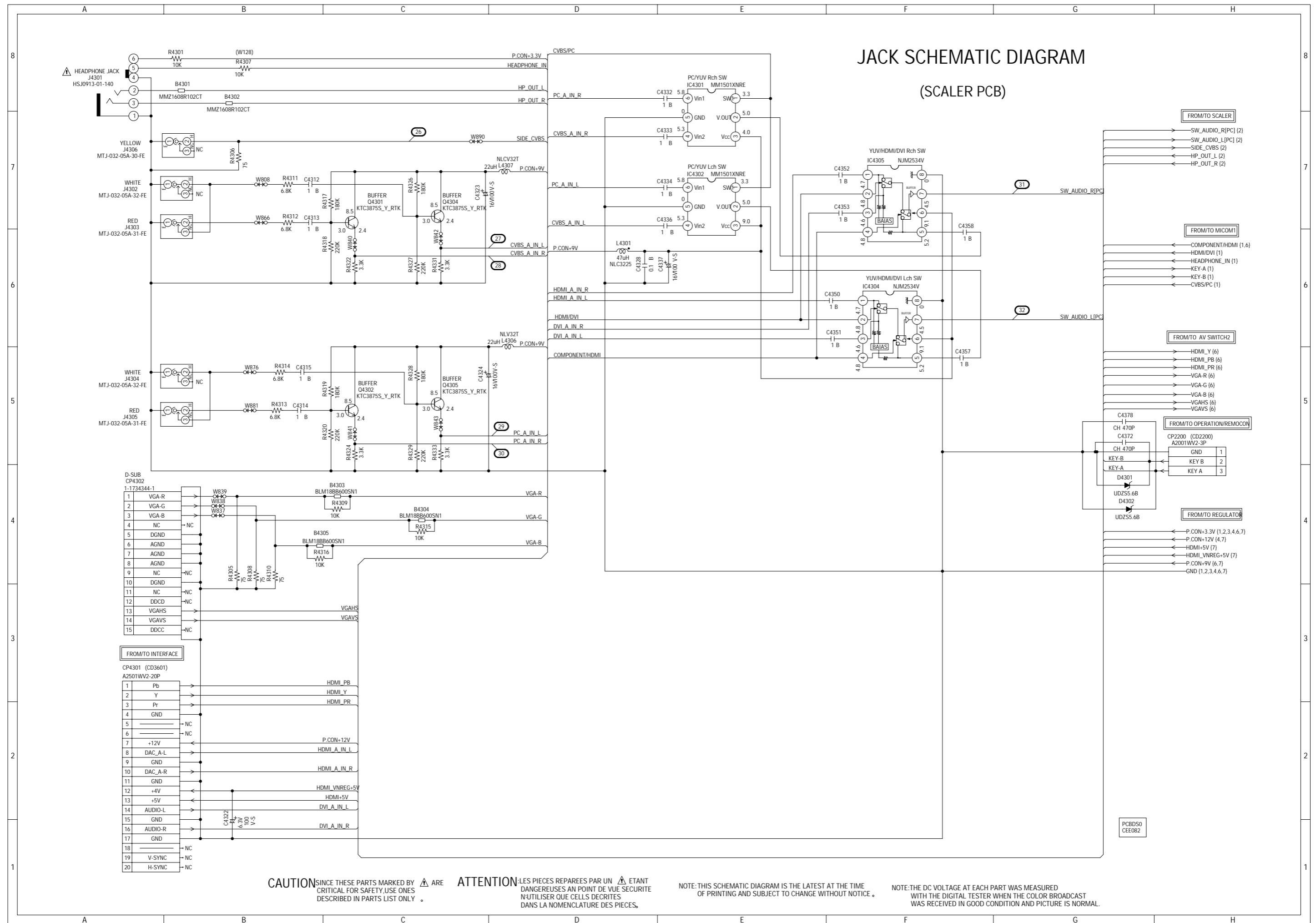
CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N-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.

JACK SCHEMATIC DIAGRAM (SCALER PCB)



CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

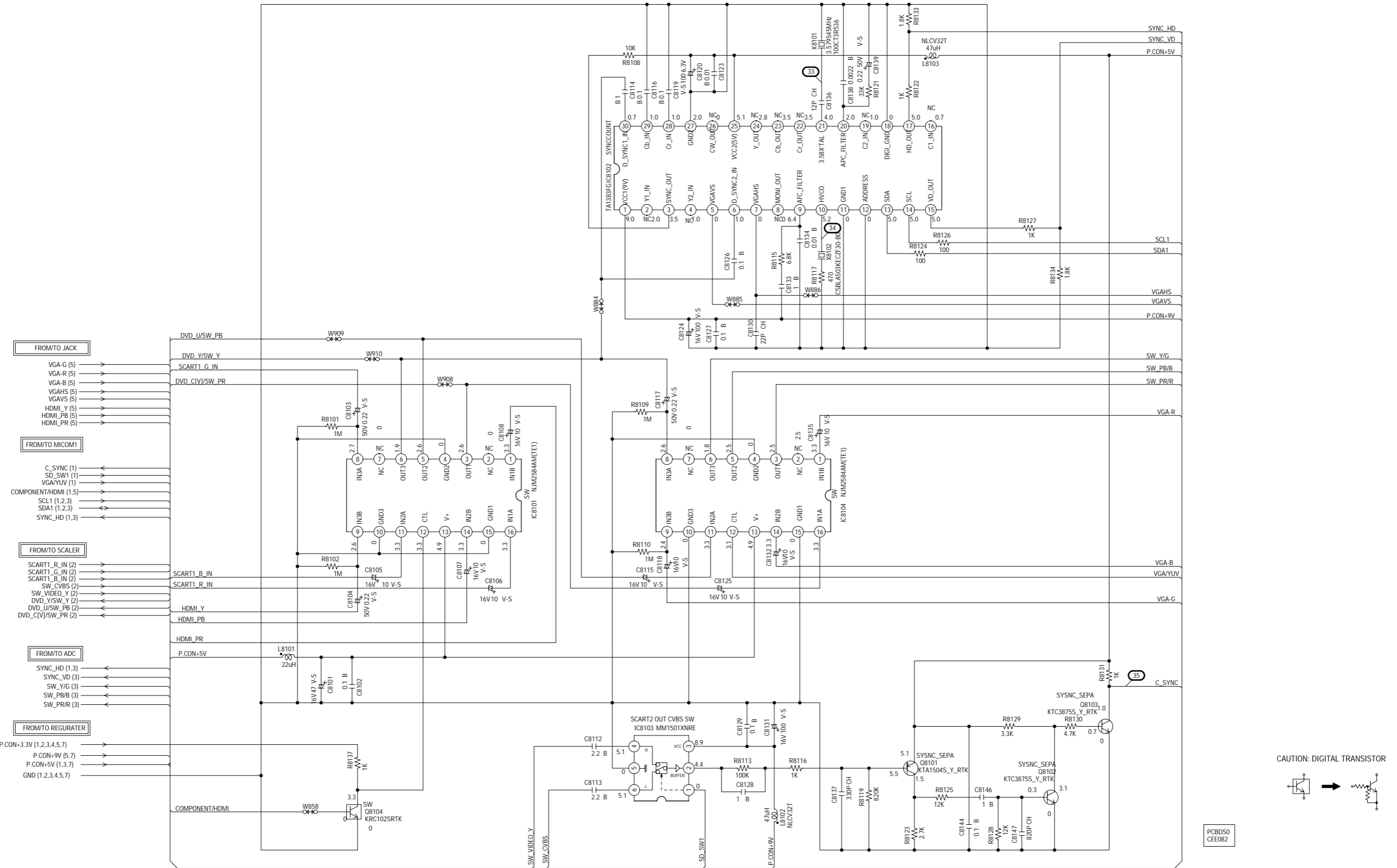
ATTENTION -LES PIECES REPARÉES PAR UN ETANT DANGEREUSES AU POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRIRES DANS LA NOMENCLATURE DES PIECES.

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.

AV SWITCH2 SCHEMATIC DIAGRAM

(SCALER PCB)



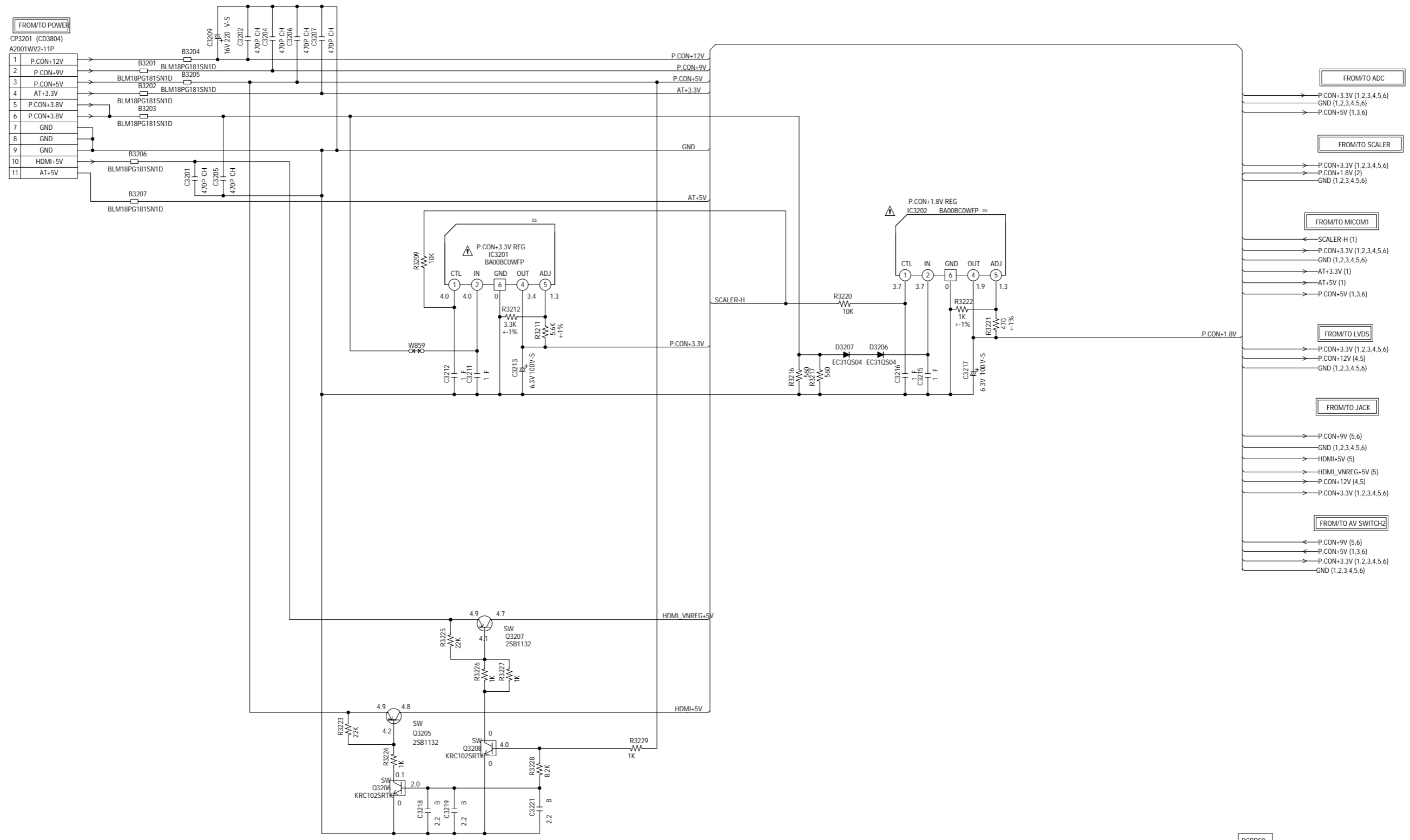
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

PCBDS0
CEE082

REGULATOR SCHEMATIC DIAGRAM

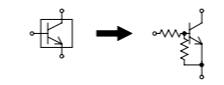
(SCALER PCB)



CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIÈCES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: DIGITAL TRANSISTOR



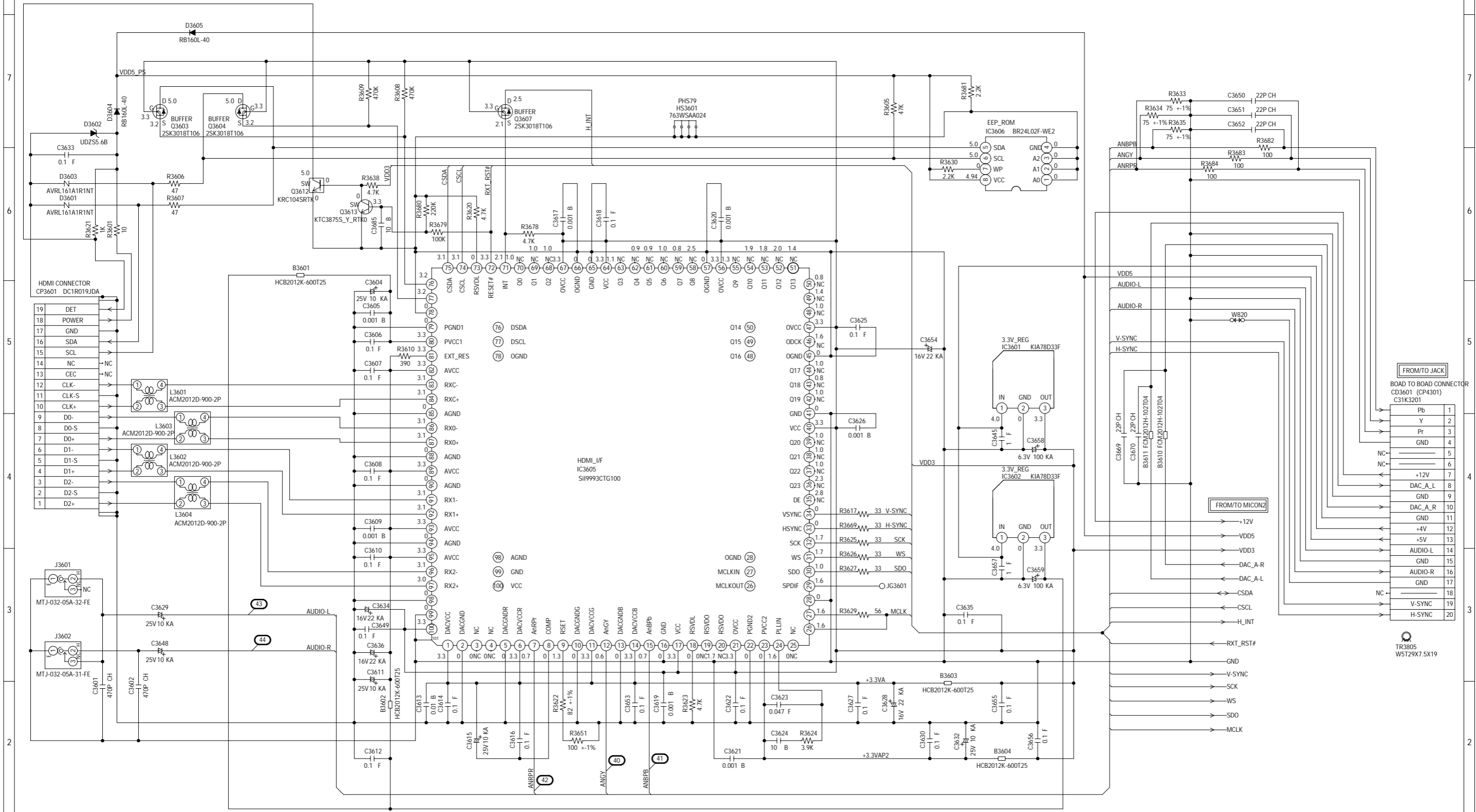
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

PCBDS0
CEE082

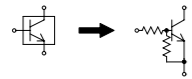
INTERFACE SCHEMATIC DIAGRAM

(HD-MI PCB)



PCBDJ0
CED011

CAUTION: DIGITAL TRANSISTOR



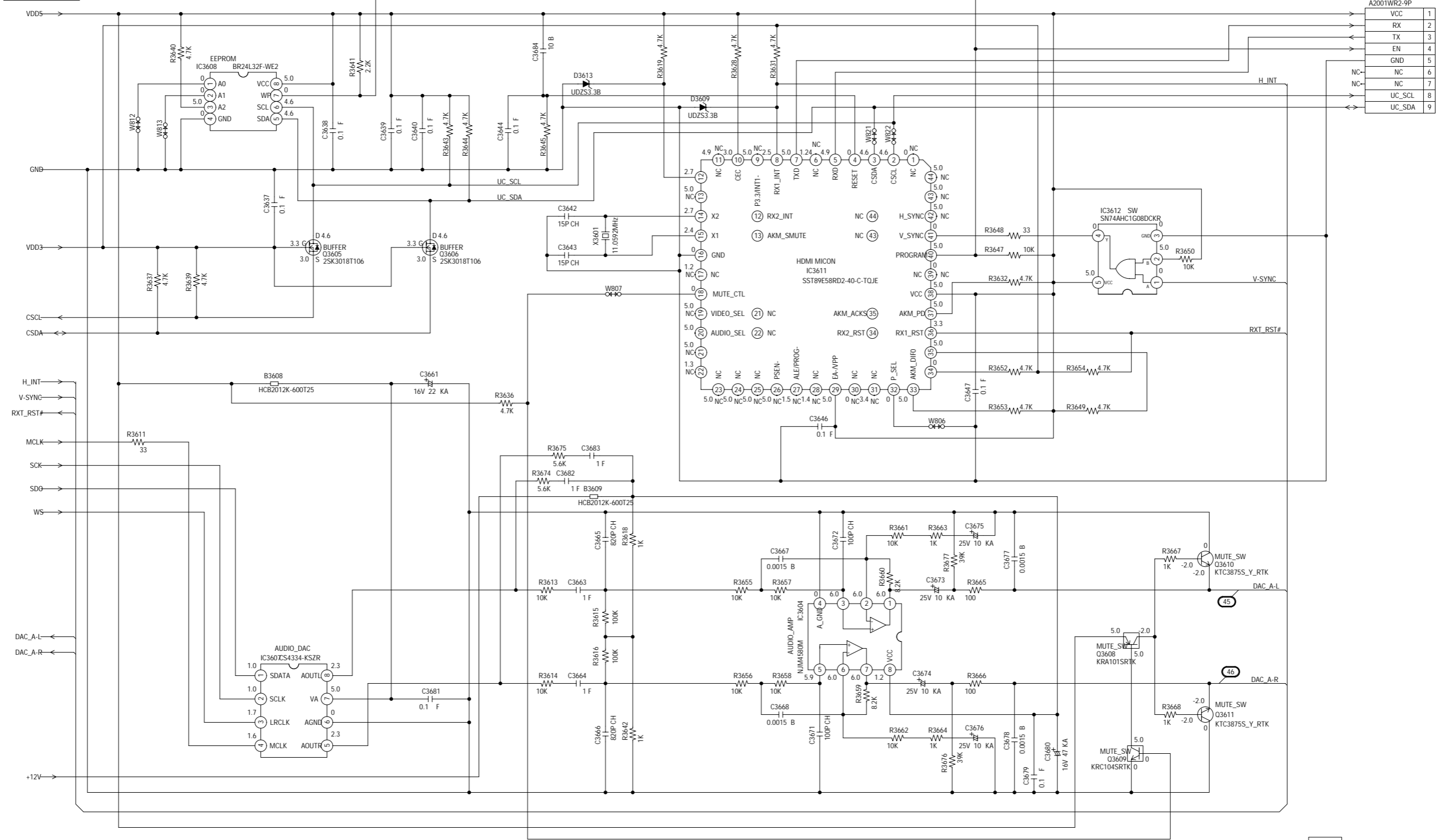
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

MICON2 SCHEMATIC DIAGRAM

(HD-MI PCB)

FROM/TO INTERFACE



CP3604 A2001WR2-9P	
VCC	1
RX	2
TX	3
EN	4
GND	5
NC	6
NC	7
UC_SCL	8
UC_SDA	9

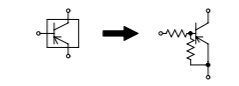
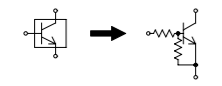
PCBDJ0
CED011

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

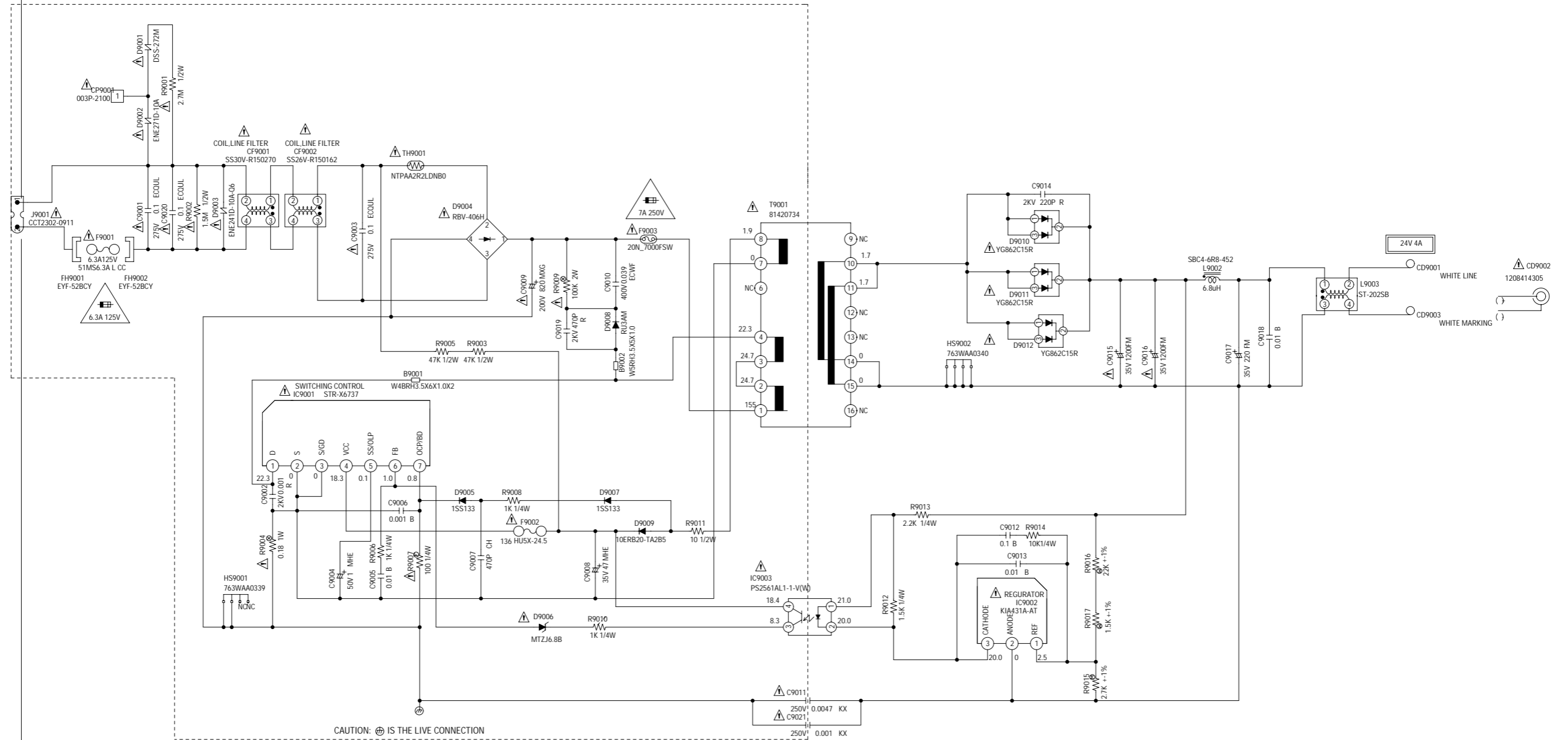
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

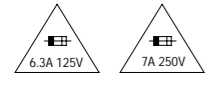


AC ADAPTER SCHEMATIC DIAGRAM

(AC ADAPTER PCB)



CAUTION: ⚡ IS THE LIVE CONNECTION



CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V (F9001) AND 7A 250V (F9003)

ATTENTION POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MEME TYPE 6.3A 125V (F9001) ET 7A 250V (F9003)

CAUTION F9003 IS MANUFACTURED BY SKYGATE CO., LTD, TYPE 20N.

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.

CAUTION SINCE THESE PARTS MARKED BY ⚡ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

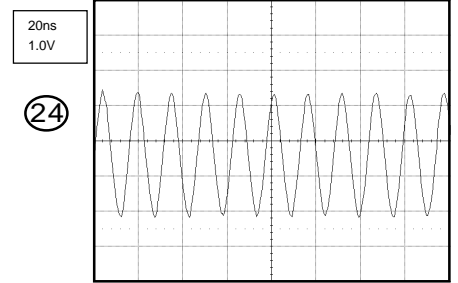
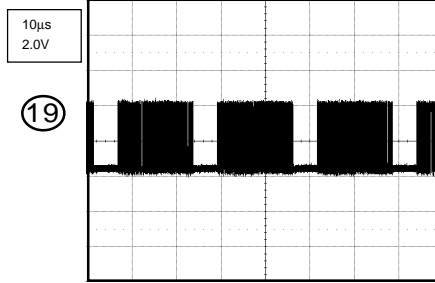
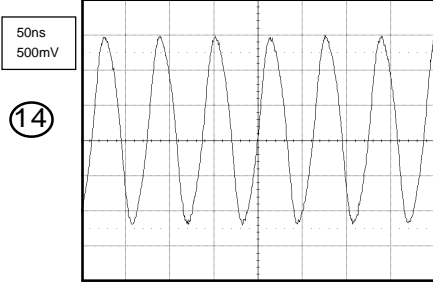
ATTENTION LES PIECES REPARÉES PAR UN ⚡ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

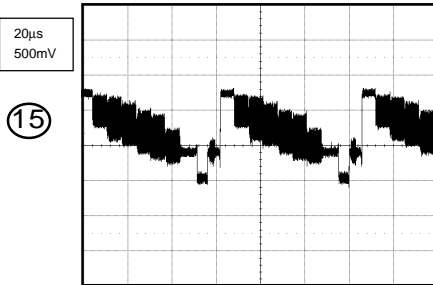
PCBD80
CEE068

WAVEFORMS

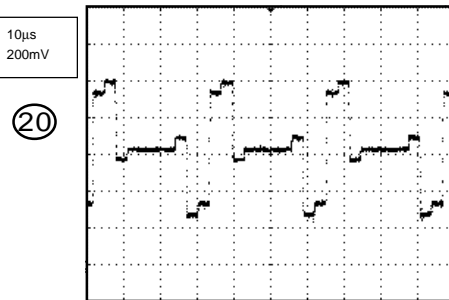
MICON1



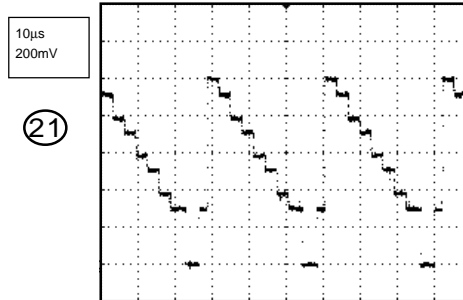
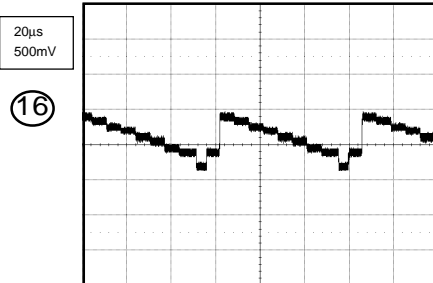
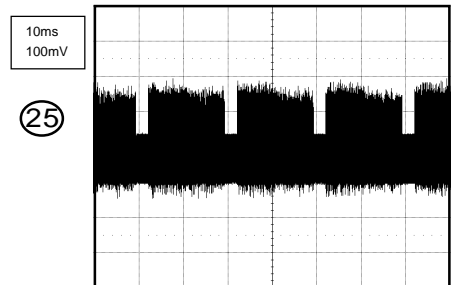
SCALER



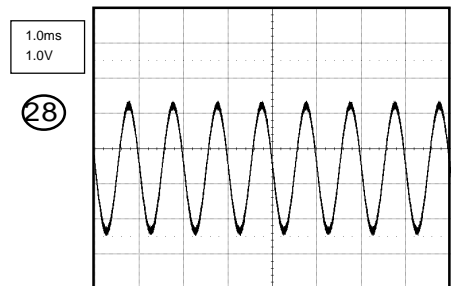
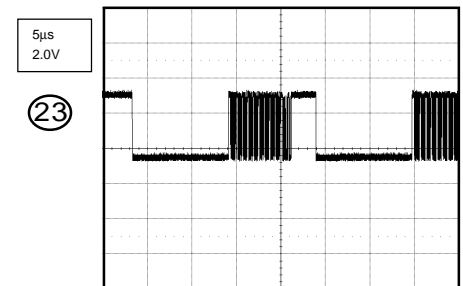
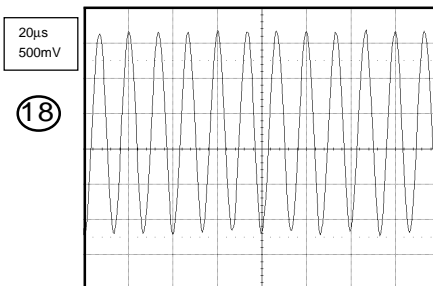
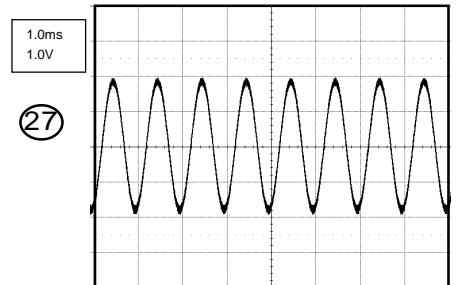
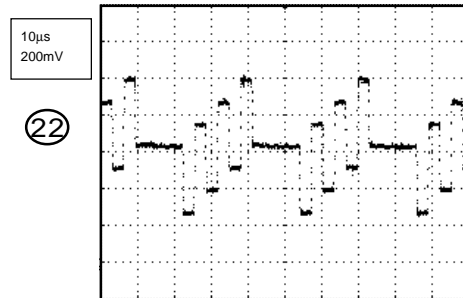
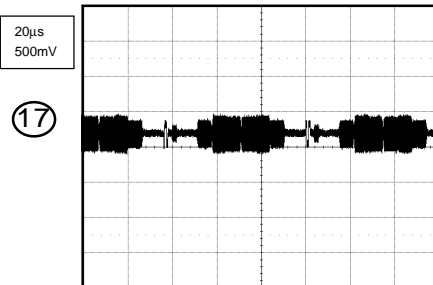
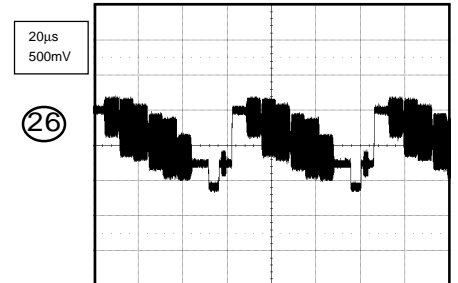
ADC



LVDS



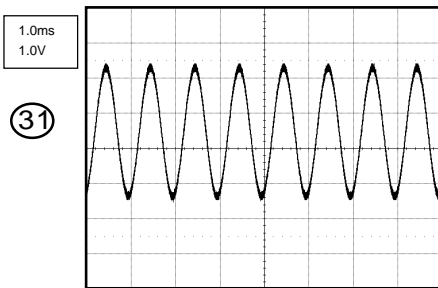
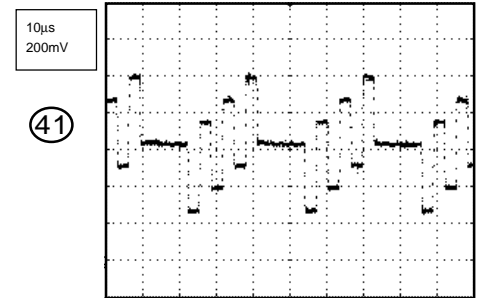
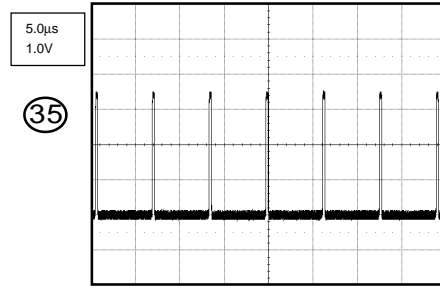
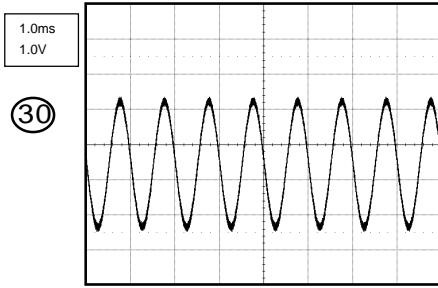
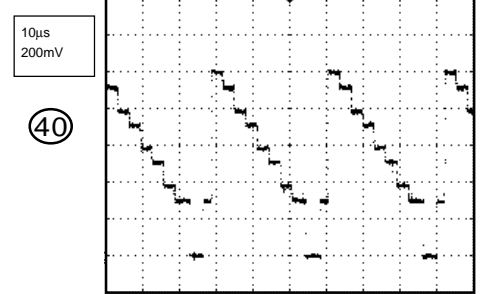
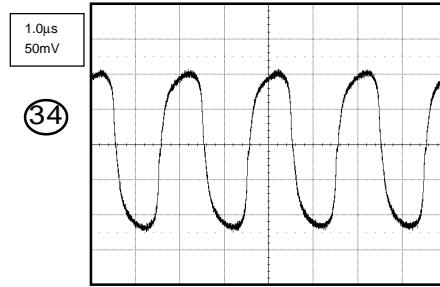
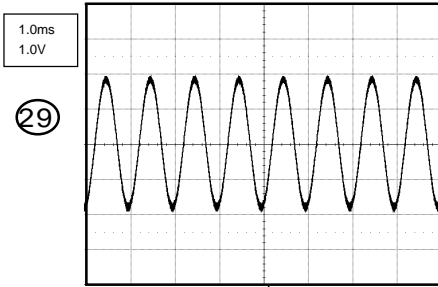
JACK



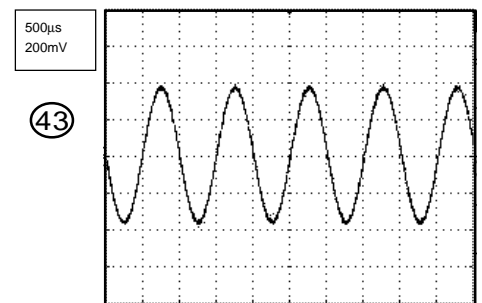
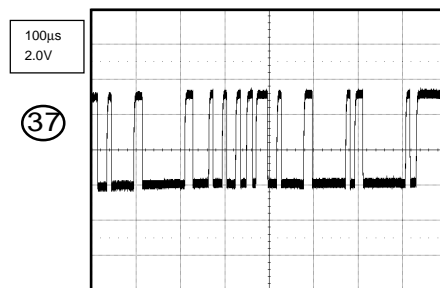
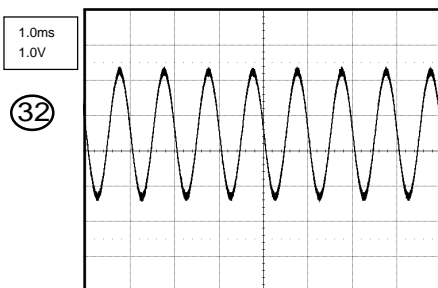
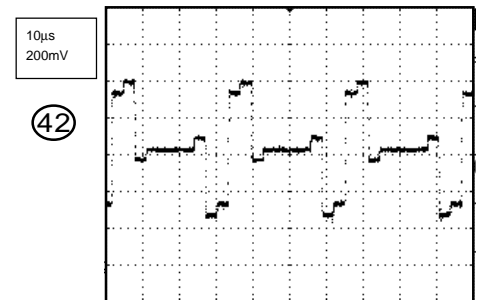
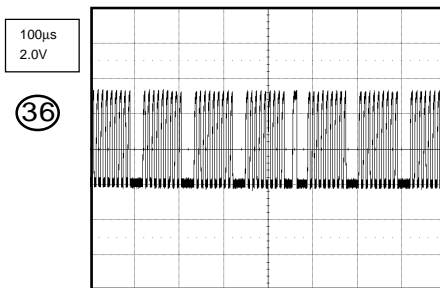
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

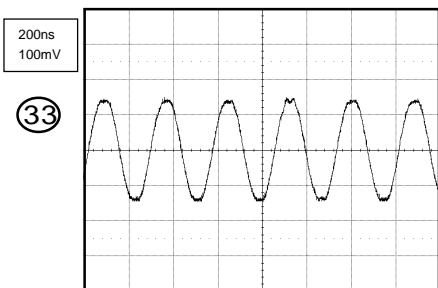
INTERFACE



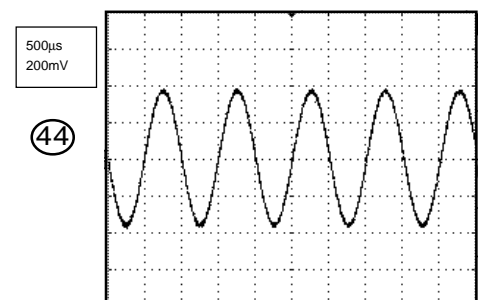
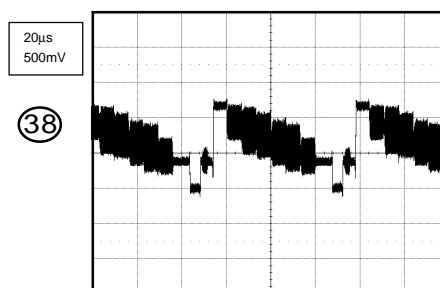
AV SWITCH1



AV SWITCH2



TUNER/JACK



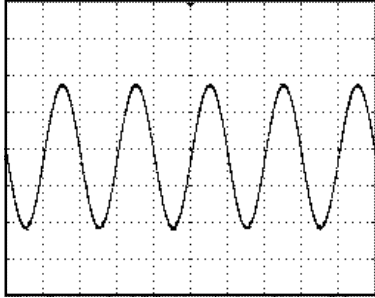
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

MICON2

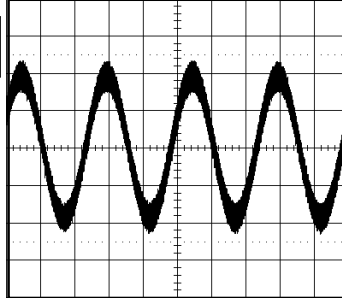
500 μ s
1.0V

④5



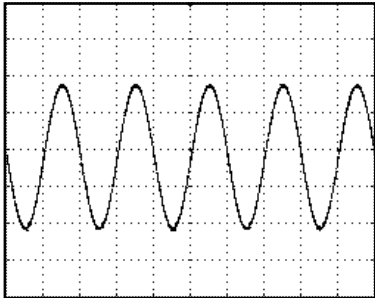
1ms
200mV

⑤0



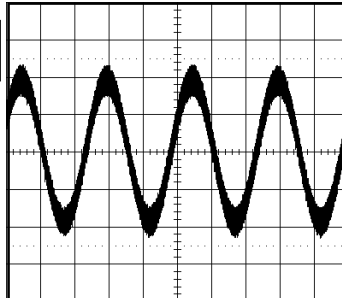
500 μ s
1.0V

④6



1ms
200mV

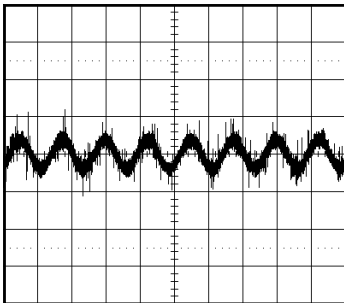
⑤1



STEREO/SOUND AMP

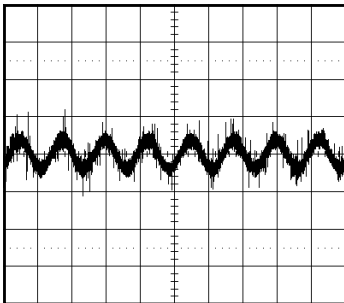
2ms
50mV

④7



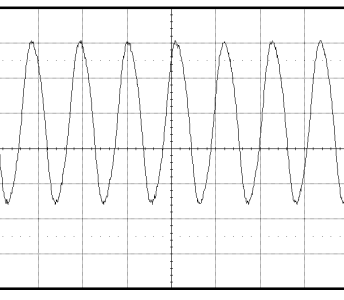
2ms
50mV

④8



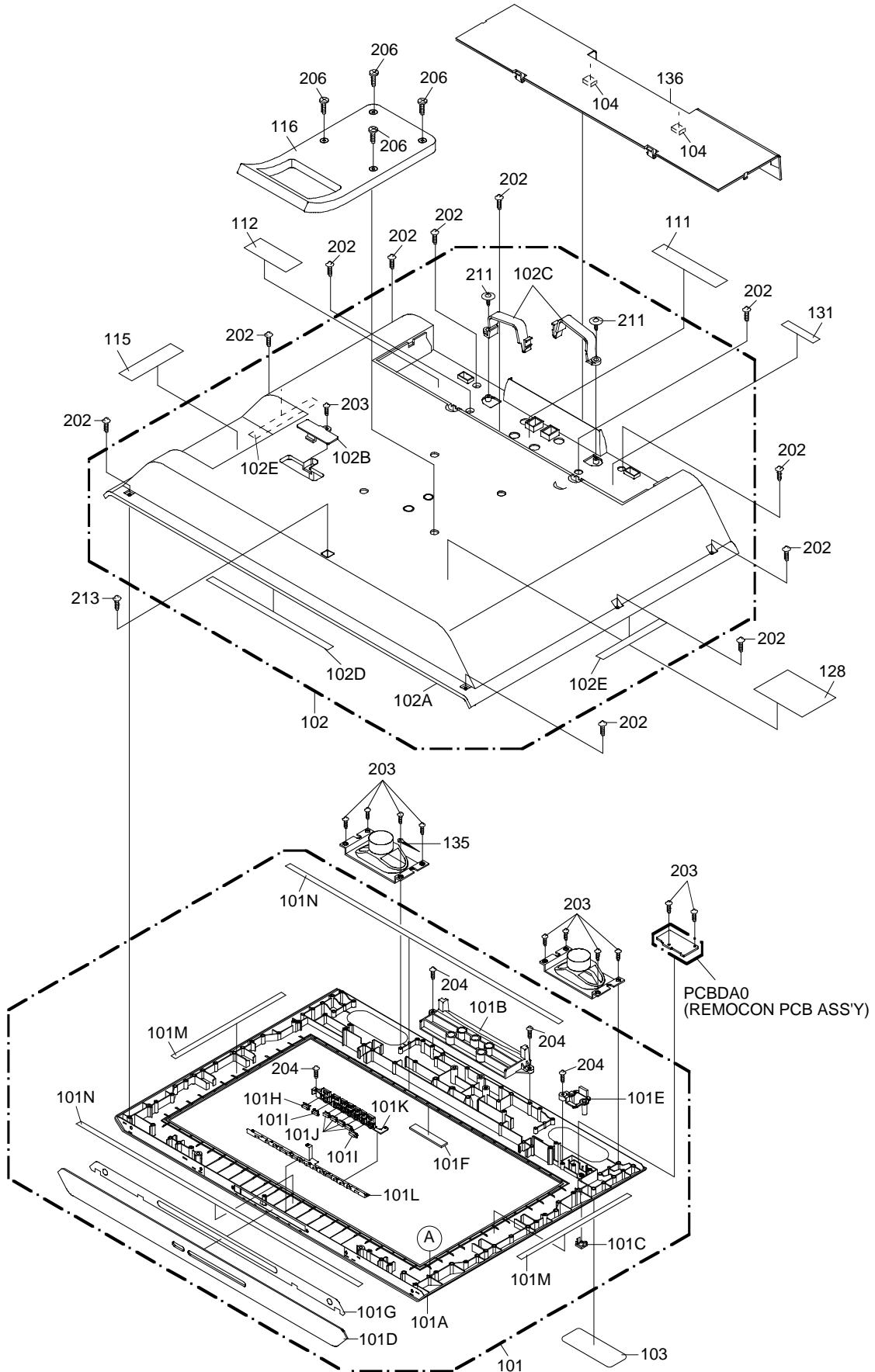
50ns
500mV

④9

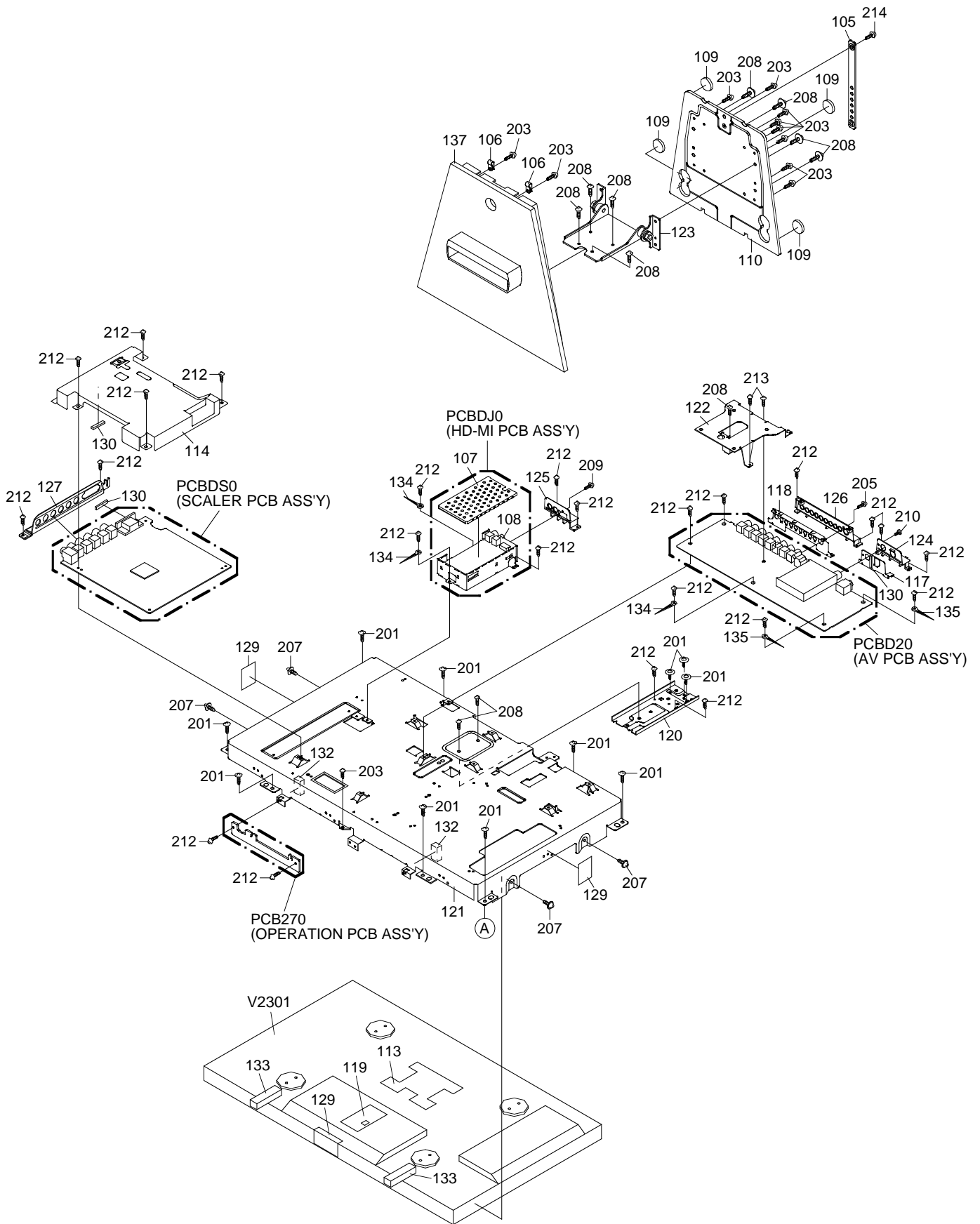


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

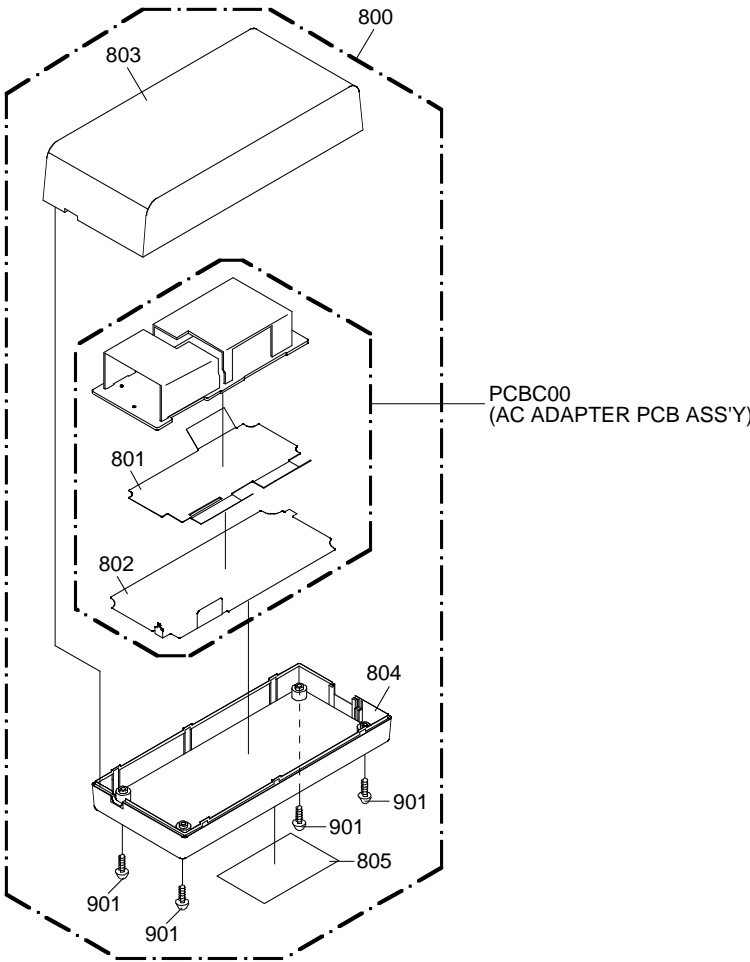
MECHANICAL EXPLODED VIEW



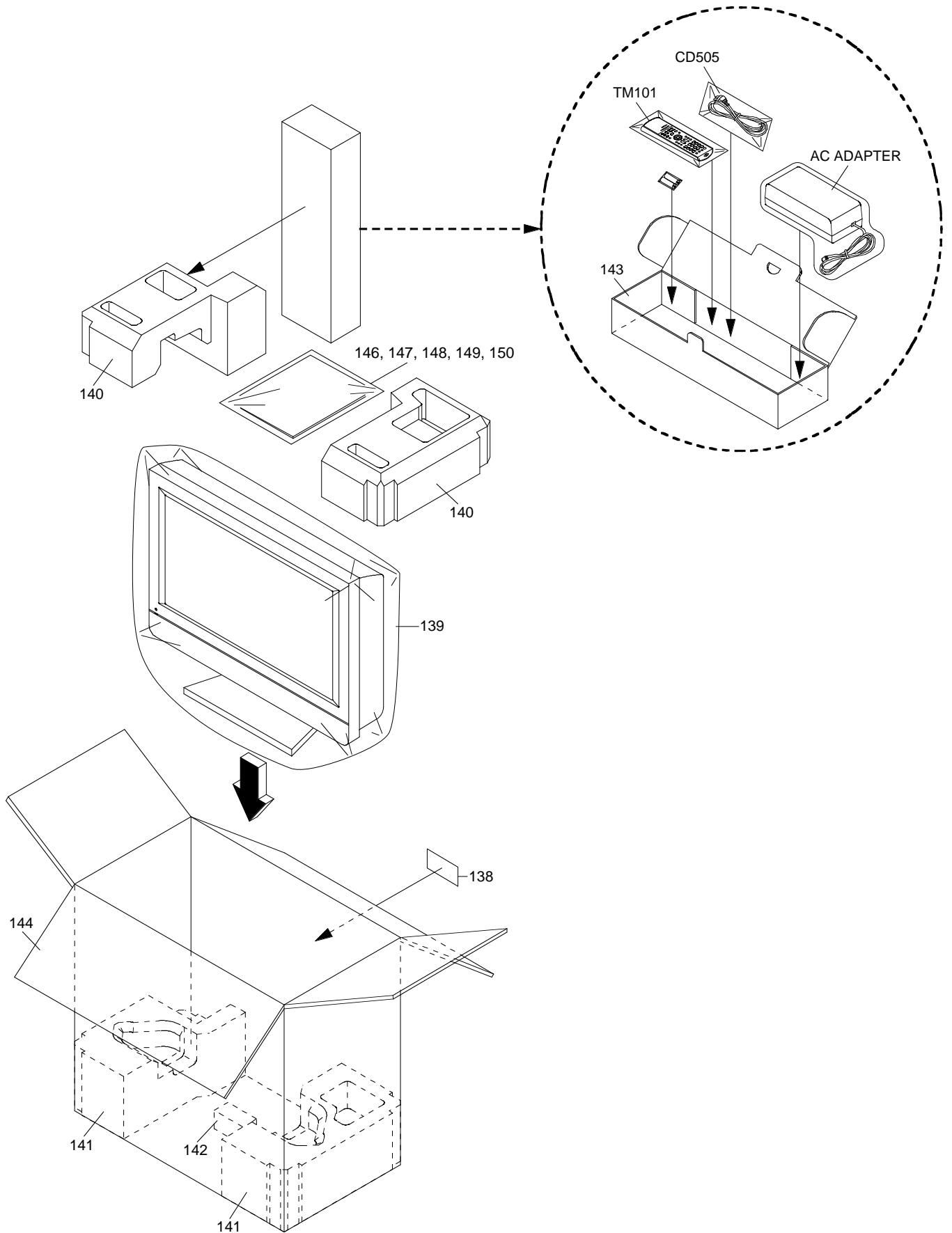
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW (AC ADAPTER)



MECHANICAL EXPLODED VIEW (PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
101	72781975	7A7010129B	FRONT CABI ASS'Y
101A	72781960	701WPJ1365	CABINET,FRONT
101B	72799365	702WPB0077	COVER,HINGE
101C	72799406	711WPA0242	PLATE,FRONT
101D	72781962	711WPC0017	PLATE,TOP ASS'Y
101E	72799471	713WPA0375	GLASS,LED
101F	72799690	7235490068	BADGE,BRAND
101G	72799725	7290000158	DOUBLE,FACE-TAPE
101H	72799783	735WPE0048	BUTTON,CAP-1
101I	72799784	735WPE0049	BUTTON,CAP-2
101J	72799785	735WPE0050	BUTTON,CAP-3
101K	72799825	738WPA0172	BUTTON,FRAME-TV
101L	72799862	752WSA0516	SHIELD,BUTTON
101M	72781217	800WQ0A049	FELT,SHEET
101N	72781211	800WQ00087	FELT,SHEET 9*380*T=0.3
102	72781976	7A7020051B	BACK CABI ASS'Y
102A	72781961	702WPB0078	CABINET,BACK
102B	72799366	702WPB0079	COVER,CONNECTOR
102C	72799978	774WPA0007	HOLDER,CORD
102D	72794722	800WQ0A070	FELT SHEET
102E	72795622	800WQ0A110	FELT,SHEET
103	72781966	7230007979	POP,LABEL
104	72781209	800WFA0081	CUSHION
105	72781312	89900FB118	BAND
106	72781311	899000NK4N	CABLE,CLAMPS
107	72799836	752WSA0413	HDMI SHIELD,COVER
108	72799858	752WSA0511	SHIELD,BOTTOM HDMI
109	72781208	800WFA0078	CUSHION,LEG
110	72799960	761WSB0008	ANGLE,STAND
111	72781965	7230007976	SHEET,JACK-2
112	72799604	7230007977	SHEET,JACK-3
113	72799728	735WEA0004	SHEET,CU
114	72799833	751WSA0017	SHIELD,LCD-PCB
115	72799605	7230007978	SHEET,JACK SIDE
116	72799393	705WPB0028	HANDLE
117	72799859	752WSA0512	SHIELD,JACK-1
118	72799860	752WSA0513	SHIELD,JACK-2
119	72799891	753WEA0022	SHEET,CU
120	72799949	761WSA0264	ANGLE,HINGE
121	72781969	761WSA0261	COVER,LCD
122	72781970	761WSA0266	ANGLE,HANDLE-TV
123	72799395	706JSA0013	HINGE ASS'Y
124	72799972	771WPB0054	PLATE,JACK-1
125	72799973	771WPB0056	PLATE,JACK-3
126	72781971	771WPB0055	PLATE,JACK-2
127	72799977	771WPJ0004	PLATE,JACK SIDE
128	72781964	7225490215	SHEET,RATING
129	72781302	890MP2401A	TAPE 50*35
130	72781304	8965TS0415	CUSHION 65TS4-2(15*50*16)
131	72799603	7230007975	SHEET,JACK-1
132	72781978	8965TS1017	CUSHION 65TS10-10(17.5*20*14)
133	72781306	8965TS1060	CUSHION W10/H10/L60
134	72795699	899EFBA002	WIRING-CLIP
135	72795680	8995034000	CORD CLIP UL CO.
136	72799367	702WPB0080	COVER,BACK
137	72799389	704WPB0012	STAND
138	72781967	7230008023	SHEET,BAR CODE
139	72781972	791WHDA001	LAMIFILM,BAG
140	72781973	792WHA0614	PACKAGE,TOP
141	72781010	792WHA0615	PACKAGE,BOTTOM
142	72781015	792WHA0625	PACKAGE,PAD
143	72781023	793WCA0017	ACCESSORY BOX
144	72781974	793WCD1664	GIFT,BOX
145	72781980	A3U701D975	INSTRUCTION BOOK KIT
146	72781630	JA4ND400	POLYBAG INSTRUCTION(RED CAUTION)
147	72781569	J3N51617A	REGISTRATION CARD
148	72781981	J3U70101A	INSTRUCTION BOOK(E)
149	72781982	J3U70110A	INSTRUCTION BOOK(F)
150	72781983	J3U70111A	INSTRUCTION BOOK(S)

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
201	72781279	8117540A6U	SCREW TAP TITE(B0) TRUSS 4*16 CH
202	72781267	8110230A4U	SCREW,TAP TITE(P) BIND 3*14 CH
203	72798791	8110630A0U	SCREW TAP TITE(P) BRAZIER 3*10 CH
204	72798790	811063080U	SCREW TAP TITE(P) BRAZIER 3*8 CH
205	72781265	811023080U	SCREW TAP TITE(P) BIND 3*8 CH
206	72781232	8102240A2U	SCREW,BIND M4*12 CH
207	72781259	810A13060U	SCREW WASHER(A) M3*6 CH
208	72781262	810A140A0U	SCREW,WASHER(A) M4*10 CH
209	72781228	810213080U	SCREW,PAN M3*8
210	72781235	810723060U	SCREW TAP TITE(S) BIND 3*6 CH
211	72781292	8159130A0S	SCREW,TAPPING(B) WASHER12 PAN 3*10 BLACK
212	72781247	810923060U	SCREW TAP TITE(B) BIND 3*6 CH
213	72798787	810923080U	SCREW TAP TITE(B) BIND 3*8 CH
214	72781977	814623080U	SCREW,TAP TITE(B) BIND 3*5.7+4*2.3 CH
800	72781979	A3U701D800	AC ADAPTER CABI ASSY
801	72799696	724WNA0014	SHEET,PC
802	72799865	752WSA0527	SHIELD,BOTTOM
803	72799341	702WPA1187	CABINET, TOP
804	72799342	702WPA1188	CABINET,BOTTOM
805	72781963	7225490211	SHEET,ADAPTER
901	72798791	8110630A0U	SCREW TAP TITE(P) BRAZIER 3*10 CH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
RESISTORS			
△R306	72797854	R3X1814R7J	R,METAL OXIDE 4.7 OHM 1W
△R317	72797854	R3X1814R7J	R,METAL OXIDE 4.7 OHM 1W
△R3811	72796433	R3X1812R2J	R,METAL OXIDE 2.2 OHM 1W
△R9001	72794631	R0G3K2275K	RC 2.7M OHM 1/2W
△R9002	72795500	R002T2155J	RC 1.5M OHM 1/2W
△R9004	72796436	R3X181R18J	R,METAL OXIDE 0.18 OHM 1W
△R9007	72794617	R65584101J	R,FUSE 100 OHM 1/4W
△R9009	72796001	R3X28A104J	R,METAL OXIDE 100K OHM 2W
CAPACITORS			
C317	72794410	E5EZF3102M	CE 1000 UF 25V
C3812	72781397	E61FF4122N	CE 1200 UF 35V
△C9001	72795567	P2122B104M	CMP 0.1 UF 275V ECQUL
C9002	72794393	C03L0R713K	CC 0.001 UF 2KV R
△C9003	72795567	P2122B104M	CMP 0.1 UF 275V ECQUL
△C9009	72781428	E62XFC821D	CE 820 UF 200V
C9010	72794407	P411F4393J	CMPP 0.039 UF 400V ECWF
△C9011	72795579	CD39E0MQ3M	CC 0.0047UF 250V
C9014	72794414	C03L0R7H2K	CC 220 PF 2KV R
△C9015	72781396	E61FF4122D	CE 1200 UF 35V
△C9016	72781396	E61FF4122D	CE 1200 UF 35V
C9019	72797089	C03L0R7Q2K	CC 470 PF 2KV R
△C9020	72795567	P2122B104M	CMP 0.1 UF 275V ECQUL
△C9021	72794409	CD39E0M13M	CC 0.001 UF 250V
DIODES			
D105	72781371	DD7R20S300	DIODE,SCHOTTKY BARRI ER RB520S-30-TE61
D109	72781371	DD7R20S300	DIODE,SCHOTTKY BARRI ER RB520S-30-TE61
D301	72794480	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
D302	72794480	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
D2201	72796482	0021E2Q140	LED LTL-1CHEE-002A
D3206	72797300	D28R1QS040	DIODE EC31QS04-TE12L
D3207	72797300	D28R1QS040	DIODE EC31QS04-TE12L
D3601	72781361	D77R1A1R10	DIODE,VARISTA AVR1161A1R1NT
D3602	72781375	DE7RB5R62B	DIODE,ZENER UDZS5.6B TE-17
D3603	72781361	D77R1A1R10	DIODE,VARISTA AVR1161A1R1NT
D3604	72781372	DD7R60L400	DIODE,SCHOTTKY RB160L-40-TE25
D3605	72781372	DD7R60L400	DIODE,SCHOTTKY RB160L-40-TE25
D3609	72781374	DE7RB3R32B	DIODE,ZENER UDZS3.3B TE-17
D3613	72781374	DE7RB3R32B	DIODE,ZENER UDZS3.3B TE-17
D3801	72794480	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
D3802	72781373	DE7RB1802B	DIODE,ZENER UDZS18B TE-17
D3803	72794485	D28T21DQN4	DIODE,SCHOTTKY 21DQ04N-TA2B1
D3804	72794480	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
D3805	72795897	DD7R0S3550	DIODE,SILICON 1SS355 TE-17
D3806	72795897	DD7R0S3550	DIODE,SILICON 1SS355 TE-17
D3809	72794485	D28T21DQN4	DIODE,SCHOTTKY 21DQ04N-TA2B1
D3810	72795897	DD7R0S3550	DIODE,SILICON 1SS355 TE-17
D3812	72796388	D28T0ERB20	DIODE,RECTIFIER 10ERB20-TA1B2
D3813	72781377	DE7RB8R22B	DIODE,ZENER UDZS8.2B TE-17
D3814	72794485	D28T21DQN4	DIODE,SCHOTTKY 21DQ04N-TA2B1
D3815	72781375	DE7RB5R62B	DIODE,ZENER UDZS5.6B TE-17
D3817	72795897	DD7R0S3550	DIODE,SILICON 1SS355 TE-17
D3818	72796388	D28T0ERB20	DIODE,RECTIFIER 10ERB20-TA1B2
D3819	72794480	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
D3820	72797300	D28R1QS040	DIODE EC31QS04-TE12L
D4301	72781375	DE7RB5R62B	DIODE,ZENER UDZS5.6B TE-17
D4302	72781375	DE7RB5R62B	DIODE,ZENER UDZS5.6B TE-17
D5001	72781371	DD7R20S300	DIODE,SCHOTTKY BARRI ER RB520S-30-TE61
△D9001	72794484	DOU002720M	DIODE,VARISTA DSS-272M-S00B
△D9002	72795544	D6E027110A	DIODE,VARISTA ENE271D-10A
△D9003	72797313	D6CE24110A	DIODE,VARISTA ENE241D-10A-Q6
△D9004	72781358	D2BE0406H0	DIODE,BRIDGE RBV-406H
D9005	72794491	D1VT001330	DIODE,SILICON 1SS133T-77
△D9006	72794478	D97U06R81B	DIODE,ZENER MTZJ6.8B T-77
D9007	72794491	D1VT001330	DIODE,SILICON 1SS133T-77
D9008	72781356	D2B0RU3AM0	DIODE,SILICON RU3AM
D9009	72794492	D28X0ERB20	DIODE,RECTIFIER 10ERB20-TA2B5

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
△D9010	72781359	D2CA2C15R0	DIODES DIODE,,SCHOTTKY BARRI	ER YG862C15R
△D9011	72781359	D2CA2C15R0	DIODE,,SCHOTTKY BARRI	ER YG862C15R
△D9012	72781359	D2CA2C15R0	DIODE,,SCHOTTKY BARRI	ER YG862C15R
			ICS	
IC101	72781959	S3U701DM01	MEMORY DATA	OEC7133A
IC102	72795101	I9UF032290	IC	PST3229NR
IC104	72781956	S3U701DE01	MEMORY DATA	BR24L64F-WE2
△IC301	72781433	I03DP901E0	IC	LA4901-E
△IC302	72781433	I03DP901E0	IC	LA4901-E
IC801	72781487	I56K04A710	IC	R8J66604A71FP
IC2101	72781516	IFSK0883C0	IC	MST9883C-LF-110
△IC3201	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
△IC3202	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
IC3601	72797597	I1KF98D330	IC	KIA78D33F
IC3602	72797597	I1KF98D330	IC	KIA78D33F
IC3604	72795921	I0QJ045800	IC	NJM4580M(TE1)
IC3605	72781495	I5PF099930	IC	SI9993CTG100
IC3606	72781958	S3U701DE03	MEMORY DATA	BR24L02F-WE2
IC3607	72781457	I1FF043340	IC	CS4334-KSZR
IC3608	72781957	S3U701DE02	MEMORY DATA	BR24L32F-WE2
IC3611	72781499	ICMF08RD20	IC	SST89E58RD2-40-C-TQJE
IC3612	72797630	I5CF01G080	IC	SN74AHC1G08DCKR
IC3801	72781439	I07F093000	IC	BD9300FV-E2
△IC3802	72797601	I1LF010100	IC	AL1010
△IC3803	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
△IC3804	72781443	I0GA9090R0	IC	PQ090RDA1SZH
△IC3805	72797601	I1LF010100	IC	AL1010
△IC3806	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
△IC3809	72797601	I1LF010100	IC	AL1010
△IC3810	72797534	I03D979950	IC	LA7995M-TLM
IC4301	72794502	I0UF015010	IC	MM1501XNRE
IC4302	72794502	I0UF015010	IC	MM1501XNRE
IC4304	72795918	I0QF02534V	IC	NJM2534V(TE2)
IC4305	72795918	I0QF02534V	IC	NJM2534V(TE2)
IC5001	72795918	I0QF02534V	IC	NJM2534V(TE2)
IC6601	72781453	I19FF34400	IC	MSP3440G-QA-C12-100
IC7201	72797639	IFKJ0LM850	IC	DTC34LM85AL
IC8101	72797567	I0QF025840	IC	NJM2584AM(TE1)
IC8102	72781437	I05FE13830	IC	TA1383FG
IC8103	72794502	I0UF015010	IC	MM1501XNRE
IC8104	72797567	I0QF025840	IC	NJM2584AM(TE1)
△IC9001	72781442	I0BT0X6730	IC	STR-X6737
△IC9002	72794508	I1KJ9A431A	IC	KIA431A-AT
△IC9003	72794512	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
			TRANSISTORS	
Q101	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q105	72798367	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q301	72798321	T93A018020	TRANSISTOR,SILICON	2SD1802S/T-TL-E
Q302	72798321	T93A018020	TRANSISTOR,SILICON	2SD1802S/T-TL-E
Q307	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q2101	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q3205	72798319	T77J011320	TRANSISTOR,SILICON	2SB1132T100(Q,R)
Q3206	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3207	72798319	T77J011320	TRANSISTOR,SILICON	2SB1132T100(Q,R)
Q3208	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3603	72798315	T27T030180	FET	2SK3018T106
Q3604	72798315	T27T030180	FET	2SK3018T106
Q3605	72798315	T27T030180	FET	2SK3018T106
Q3606	72798315	T27T030180	FET	2SK3018T106
Q3607	72798315	T27T030180	FET	2SK3018T106
Q3608	72798366	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK
Q3609	72794558	TNAAD05001	COMPOUND TRANSISTOR	KRC104SRTK
Q3610	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3611	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3612	72794558	TNAAD05001	COMPOUND TRANSISTOR	KRC104SRTK
Q3613	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
TRANSISTORS				
Q3801	72781790	T87J2411K0	TRANSISTOR,SILICON	2SC2411K_Q,RT146
Q3802	72795964	T67J1036K0	TRANSISTOR,SILICON	2SA1036KT146
Q3803	72781787	T0300J6500	FET	2SJ650
Q3804	72796092	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q3805	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3806	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q3807	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3808	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3809	72798368	TPAAD05003	COMPOUND TRANSISTOR	KRA104SRTK
Q3810	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3811	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3812	72781799	TJ7M50P030	FET	RSS050P03_TB
Q3813	72798375	TS3M000044	COMPOUND TRANSISTOR	CPH6312-TL-E
Q3814	72798375	TS3M000044	COMPOUND TRANSISTOR	CPH6312-TL-E
Q3815	72781798	TJ7I90P030	FET	RSS090P03_TB
Q3816	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3817	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3819	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3820	72781798	TJ7I90P030	FET	RSS090P03_TB
Q4301	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4302	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4304	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4305	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4401	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4402	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4403	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4404	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q5004	72798315	T27T030180	FET	2SK3018T106
Q5005	72798315	T27T030180	FET	2SK3018T106
Q8101	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q8102	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q8103	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q8104	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
COILS & TRANSFORMERS				
L301	72796490	021404221M	COIL	220 UH
L302	72796490	021404221M	COIL	220 UH
L2101	72798914	0216S8220K	COIL	22 UH
L2102	72798914	0216S8220K	COIL	22 UH
L2103	72798916	0216S8470K	COIL	47 UH
L2106	72798909	0216S45R6J	COIL	5.6 UH
L2107	72798914	0216S8220K	COIL	22 UH
L3601	72798955	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00
L3602	72798955	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00
L3603	72798955	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00
L3604	72798955	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00
L3801	72796087	02167E100K	COIL	10 UH
L3802	72796489	021404150M	COIL	15 UH
L3804	72796513	02167E220K	COIL	22 UH
L3805	72798896	021404470M	COIL	47 UH
L3806	72798896	021404470M	COIL	47 UH
L3807	72796513	02167E220K	COIL	22 UH
L3808	72798896	021404470M	COIL	47 UH
L4301	72798916	0216S8470K	COIL	47 UH
L4306	72798914	0216S8220K	COIL	22 UH
L4307	72798914	0216S8220K	COIL	22 UH
L4401	72794526	02167F220J	COIL	22 UH
L4402	72796538	0216A6330J	COIL	33 UH
L5002	72796089	02167F470J	COIL	47 UH
L6601	72795062	02167F100J	COIL	10 UH
L6602	72795062	02167F100J	COIL	10 UH
L6603	72795062	02167F100J	COIL	10 UH
L7201	72798916	0216S8470K	COIL	47 UH
L7202	72798916	0216S8470K	COIL	47 UH
L7203	72798916	0216S8470K	COIL	47 UH
L8101	72798914	0216S8220K	COIL	22 UH
L8102	72798916	0216S8470K	COIL	47 UH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
COILS & TRANSFORMERS				
L8103	72798916	0216S8470K	COIL	47 UH
L9002	72798897	0214646R8M	COIL	6.8 UH
L9003	72798956	02DX000075	COIL,CHOKE	ST-202SB
▲T9001	72798981	0481420734	TRANSFORMER,SWITCHING	81420734
JACKS				
J3601	72795925	060J421037	RCA JACK	MTJ-032-05A-32-FE
J3602	72795926	060J421030	RCA JACK	MTJ-032-05A-31-FE
▲J3802	72798988	0602606001	JACK,DC	TCS7960-4320177
▲J4301	72796721	0602131008	HEADPHONE JACK	HSJ0913-01-140
J4302	72795925	060J421037	RCA JACK	MTJ-032-05A-32-FE
J4303	72795926	060J421030	RCA JACK	MTJ-032-05A-31-FE
J4304	72795925	060J421037	RCA JACK	MTJ-032-05A-32-FE
J4305	72795926	060J421030	RCA JACK	MTJ-032-05A-31-FE
J4306	72795924	060J421036	RCA JACK	MTJ-032-05A-30-FE
J4401	72796746	063D700009	JACK	MDC-070V-A_LF
J4402	72795924	060J421036	RCA JACK	MTJ-032-05A-30-FE
J4403	72795925	060J421037	RCA JACK	MTJ-032-05A-32-FE
J4404	72795926	060J421030	RCA JACK	MTJ-032-05A-31-FE
J4405	72795926	060J421030	RCA JACK	MTJ-032-05A-31-FE
J4406	72798994	060J421043	RCA JACK	MTJ-032-05A-29-FE
J4407	72798995	060J421044	RCA JACK	MTJ-032-05A-50-FE
J4408	72795925	060J421037	RCA JACK	MTJ-032-05A-32-FE
J4409	72795926	060J421030	RCA JACK	MTJ-032-05A-31-FE
▲J9001	72799007	064Q1A0003	JACK,AC	CCT2302-0911
SWITCHES				
SW2201	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW2203	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW2208	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW2209	72794688	0504101T34	SWITCH,TACT	EVQ21505R
P.C.BOARD ASSEMBLIES				
PCB270	72781950	A3U701D270	PCB ASS'Y	CEE057A
PCBC00	72781951	A3U701DC00	PCB ASS'Y	CEE068A
PCBD20	72781952	A3U701DD20	PCB ASS'Y	CME030A
PCBDA0	72781953	A3U701DDA0	PCB ASS'Y	CEE067A
PCBDJ0	72781954	A3U701DDJ0	PCB ASS'Y	CED011A
PCBDS0	72781955	A3U701DDS0	PCB ASS'Y	CEE082A
MISCELLANEOUS				
B301	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B801	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B802	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B804	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B805	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B2101	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B3201	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3202	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3203	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3204	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3205	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3206	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3207	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3601	72796605	024HC36001	CORE,BEADS	HCB2012K-600T25
B3602	72796605	024HC36001	CORE,BEADS	HCB2012K-600T25
B3603	72796605	024HC36001	CORE,BEADS	HCB2012K-600T25
B3604	72796605	024HC36001	CORE,BEADS	HCB2012K-600T25
B3608	72796605	024HC36001	CORE,BEADS	HCB2012K-600T25
B3609	72796605	024HC36001	CORE,BEADS	HCB2012K-600T25
B3610	72795786	024HC31022	CORE,BEADS	FCM2012H-102T04
B3611	72795786	024HC31022	CORE,BEADS	FCM2012H-102T04
B3801	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3802	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B3803	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B3804	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3805	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
MISCELLANEOUS				
B3806	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3807	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3811	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3812	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3813	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3814	72798930	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B4301	72795787	0246C51024	CORE,BEADS	MMZ1608R102CT
B4302	72795787	0246C51024	CORE,BEADS	MMZ1608R102CT
B4303	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4304	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B4305	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B9001	72794355	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B9002	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
BT001	72799278	141R004016	BATTERY,MANGAN	GR03X-SP2
BT002	72799278	141R004016	BATTERY,MANGAN	GR03X-SP2
CD301	72799066	06C3145002	CORD,CONNECTOR	C3145002
△CD505	72797039	120G119903	CORD,SET AC	OG119903
CD801	72799271	122H0T0801	CORD,JUMPER	2H0T0801
CD802	72799273	122H0U0802	CORD,JUMPER	2H0U0802
CP101	72796798	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP102	72796806	069S2A0629	CONNECTOR PCB SIDE	A2001WV2-10P
CP103	72796800	069S260629	CONNECTOR PCB SIDE	A2001WV2-6P
CP301	72796793	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP801	72799027	069EVT3030	CONNECTOR PCB SIDE	00_6232_029_006_800+
CP802	72799028	069EVU3030	CONNECTOR PCB SIDE	00_6232_030_006_800+
CD2200	72799076	06C3234501	CORD,CONNECTOR	C3234501
CD2202	72799081	06C3251802	CORD,CONNECTOR	C3251802
CD3601	72799069	06C31K3201	CORD,CONNECTOR	C31K3201
CD3801	72799094	06C32E3801	CORD,CONNECTOR	C32E3801
△CD3804	72799088	06C32B1801	CORD,CONNECTOR	C32B1801
CD7202	72799115	06CHR3401	CORD,CONNECTOR	CHR3401
△CD9002	72799245	1208414305	CORD,DC	1208414305
△CF9001	72798950	029X000135	COIL,LINE FILTER	SS30V-R150270
△CF9002	72798949	029X000131	COIL,LINE FILTER	SS26V-R150162
CP2200	72796794	069S230629	CONNECTOR PCB SIDE	A2001WV2-3P
CP3201	72796807	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP3601	72799030	069HYJ3010	CONNECTOR PCB SIDE	DC1R019JDA
CP3604	72796805	069S290639	CONNECTOR PCB SIDE	A2001WR2-9P
△CP3801	72796812	069S2E0629	CONNECTOR PCB SIDE	A2001WV2-14P
CP4301	72799045	069S1K0019	CONNECTOR PCB SIDE	A2501WV2-20P
CP4302	72799010	0694S15017	CONNECTOR PCB SIDE	1-1734344-1
CP4401	72799028	069EVU3030	CONNECTOR PCB SIDE	00_6232_030_006_800+
CP5001	72799027	069EVT3030	CONNECTOR PCB SIDE	00_6232_029_006_800+
CP5002	72796798	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP7203	72799029	069HVWT04A	CONNECTOR PCB SIDE	FI-X30S-HF-NPB
△CP9001	72796768	069D01001A	CONNECTOR PCB SIDE	003P-2100
ELC001	72797069	124116281A	EYE LET	XRY16X28BD
ELC002	72797070	124120301A	EYE LET	XRY20X30BD
△F3801	72796955	0835C05003	MICRO FUSE	20N_5000FS
△F9001	72794493	081PC6R305	FUSE	51MS063L
△F9002	72799204	08ATC03001	FUSE	HU5X-24.5
△F9003	72796952	0835A07005	MICRO FUSE	20N_7000FSW
FH9001	72794496	06710T0009	HOLDER,FUSE	EYF-52BCY
FH9002	72794496	06710T0009	HOLDER,FUSE	EYF-52BCY
NR801	72799237	110P4000M4	R,NETWORK	4D03WGJ0000T5E
NR802	72799240	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR803	72799240	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR804	72799240	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR805	72799240	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR806	72799240	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR807	72799240	110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR2101	72797034	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2102	72797034	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2103	72797034	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2104	72797034	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR2105	72797034	110P4101M4	R,NETWORK	4D03WGJ0101T5E

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
MISCELLANEOUS				
NR2106	72797034	110P4101M4	R,NETWORK	4D03WGJ0101T5E
NR7201	72799238	110P4220M4	R,NETWORK	4D03WGJ0220T5E
NR7202	72799238	110P4220M4	R,NETWORK	4D03WGJ0220T5E
OS2202	72796940	0773071006	REMOTE RECEIVER	RPM7138-SH8
△SP301	72799167	070N546013	SPEAKER	YDP4010-12
△SP302	72799167	070N546013	SPEAKER	YDP4010-12
TM101	72781948	076D0KK020	TRANSMITTER	ORT204UA605025-J
TR301	72796644	02A6B2E0A1	CORE,FERRITE	HF70T22*10*14
△TH9001	72781378	DSR0LDNB00	THERMISTOR	NTPAA2R2LDNB0
TR3801	72796088	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
TR3805	72796088	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
△TU4401	72798894	0162300045	RF UNIT	115-V-LA35AR
△V2301	72799219	09ES120001	LCD	LC200WX1-SL01
X101	72799226	100WT01611	CRYSTAL	HC-49/U-S
X801	72799227	100YT05401	CRYSTAL	FCX-03
X3601	72799220	100CT01101	CRYSTAL	HC-49/U-S
X6601	72797001	100CT01803	CRYSTAL	HC-49/U-S
X8101	72799221	100DA3R529	CRYSTAL	HC-49/U
X8102	72781949	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

TOSHIBA CORPORATION

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN