SHARP SERVICE MANUAL

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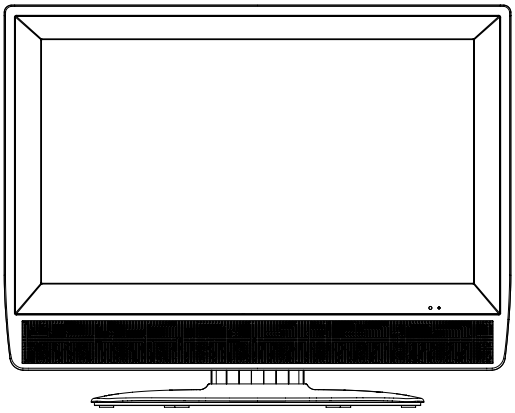


LCD COLOR TELEVISION

MODEL LC-32A40L

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

CONTENTS

SHARP CORPORATION

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
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.

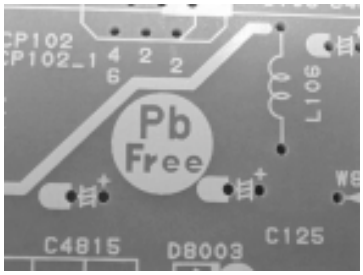
IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease (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).

ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF printing on the PCB.
(Please refer to figures.)



Caution:

- Pb free solder has a higher melting point than standard solder;
  Typically the melting point is 86°F~104°F(30°C~40°C) higher.
  Please use a soldering iron with temperature control and adjust it to 650°F ± 20°F (350°C ± 10°C).
  In case of using high temperature soldering iron, please be careful not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).
- All products with the printed circuit board with PbF printing must be serviced with lead free solder.
  When soldering or unsoldering, completely remove all of the solder from the pins or solder area,
  and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations

Recommended lead free solder composition is Sn-3.0Ag-0.5Cu.

GENERAL SPECIFICATIONS

G-1	**TV System**	LCD	LCD Size / Visual Size		31.5 inch / 800.4mmV
			LCD Type		Color TFT LCD
			Number of Pixels		1366(H) x 768(V)
			View Range	Left/Right	88/88 degree
				Up/Down	88/88 degree
		Color System			NTSC/PAL-M/PAL-N
		Speaker			2 Speaker
			Position		Front
			Size		2.2 x 5.0 inch
			Impedance		4 ohm
		Sound Output	Max		10W + 10W
			10%(Typical)		---
G-2	**Tuning System**	Broadcasting System	Analog		US-M, Bra-PAL-M, Arge-PAL-N
			Digital		--
		Tuner and	System		1Tuner
		Receive CH	Destination		US (W/CABLE)
			CH Coverage		2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84
		Intermediate Digital			--
		Frequency Analog	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		0.85 V p-p/50k ohm
			Output Level	at DVD	--
				at TV	0.85 V p-p/1k ohm
					0-1.70 V p-p/1k ohm (Variable out mode)
			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		110-240V, 50/60Hz
			DC		--
		Power Consumption		at AC	160W 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		CB(IEC60065:01)
			Radiation		CISPR 13:2001+A1:2003
			Laser		--
G-6	**Temperature**		Operation		0oC ~ +40oC
			Storage		-20oC ~ +60oC
G-7	**Operating Humidity**				Less than 80% RH
G-8	**Clock and Timer**	Clock			Yes
		Sleep Timer	Max Time		120 Min
			Step		10 Min
		On Timer	Program		No
		Off Timer	Program		No
		Game Timer			No
		Wake Up Timer			No
		Timer Back-up (at Power Off Mode)	more than		-- Min Sec

GENERAL SPECIFICATIONS

G-9	**Remote Control**	Unit		RC-MP
		Glow in Dark Remocon		No
		Remocon Format		SHARP
		Format		SHARP
		Custom Code		10000 / 10001
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		52 Keys
		Keys	POWER	Yes
			FUNCTION	Yes
			Source POWER	Yes
			DISPLAY	Yes
			LIGHT	Yes
			SEARCH+	Yes
			SEARCH-	Yes
			PLAY	Yes
			REC	Yes
			STOP	Yes
			PAUSE	Yes
			SKIP+	Yes
			SKIP-	Yes
			VIEW MODE	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			.	Yes
			ENT	Yes
			INPUT	Yes
			FLASH BACK	Yes
			VOL+	Yes
			VOL-	Yes
			CH+	Yes
			CH-	Yes
			SURROUND	Yes
			MUTE	Yes
			FREEZE	Yes
			MENU	Yes
			LEFT	Yes
			ENTER	Yes
			RIGHT	Yes
			UP	Yes
			DOWN	Yes
			EXIT	Yes
			RETURN	Yes
			FAVORITE A	Yes
			FAVORITE B	Yes
			FAVORITE C	Yes
			FAVORITE D	Yes
			FAVORITE	Yes
			SLEEP	Yes
			AUDIO	Yes
			AV MODE	Yes
			CC	Yes

GENERAL SPECIFICATIONS

G-10	**Features**	Auto Shut Off		Yes	
		Auto Search			No
		Power On Memory			No
		Comb Filter		Yes NTSC: PAL:	 <u>3 D</u> <u>5 Lines</u>
		Game Position			No
		Auto Setup(Language/CH Program)			No
		Picture Setting(TV)		Yes	
			AV Mode(Picture Preference)	Yes	
			Brightness , Contrast , Color	Yes	
			Tint	Yes	
			Sharpness	Yes	
			Color Temperature	Yes	
			Cable Clear		No
		Picture Setting(PC)			No
			BRIGHTNESS , CONTRAST		No
			HOR POSITION , VER POSITION		No
			PHASE , CLOCK		No
			AUTO ADJUST		No
			RED , GREEN , BLUE		No
		Audio	MTS	Yes	
			Tone Control (Bass/Treble/Balance)	Yes	
			Stable Sound		No
			Surround		No
			BBE		No
			SRS WOW (SRS 3D/Focus/Tru Bass)	Yes	
			Valiable Audio Out	Yes	
		Tuning	CH Program	Yes	
			Air/Cable	Yes	
			ADD/DELETE	Yes	
		Label	CH Label	Yes	
			Video Label	Yes	
		Color System		Yes	
		Favorite CH		Yes	
		V-Chip		Yes	
			Type	<u>USA Type</u>	
		RRT Setup			No
		Lock	Hotel Lock		No
			Channel Lock		No
			Video Lock		No
			Panel Lock		No
		OSD Language		English Portuguese Spanish	
		Closed Caption		Yes	
		CC Advanced			No
		View Mode (Picture Size)		Yes	
		Picture Scroll		Yes	
		Cinema Mode		Yes	(2:3 Pull Down Only)
		Aspect		Yes	(NTSC Only)
		Backlight		Yes	
		PFC(Power Factor circuit)			No
		Freeze frame		Yes	
		PIP/POP			No
		Direct Input Selection		Yes	
		Digital Out	Dolby Digital		No
			MPEG		No
			PCM		No
			DTS		No
		PC Monitor Input			No
			VGA (640x480)		No
			VGA (720x400)		No
			WVGA (848x480)		No
			SVGA (800x600)		No
			XGA (1024x768)		No
			WXGA (1280x768)		No
			WXGA (1280x720)		No
			WXGA (1360x768)		No
			SXGA (1280x1024)		No

GENERAL SPECIFICATIONS

		HDMI Input		Yes
			VGA (640x480)	Yes (60Hz)
			720x480i (4:3)	Yes (60Hz)
			720x480i (16:9)	Yes (60Hz)
			720x480p (4:3)	Yes (60Hz)
			720x480p (16:9)	Yes (60Hz)
			720x576i (4:3)	Yes (50Hz)
			720x576i (16:9)	Yes (50Hz)
			720x576p (4:3)	Yes (50Hz)
			720x576p (16:9)	Yes (50Hz)
			1280x720p	Yes (50/60Hz)
			1920x1080i	Yes (50/60Hz)
		Component Input		Yes
			720x480i (4:3)	Yes (60Hz)
			720x480i (16:9)	Yes (60Hz)
			720x480p (4:3)	Yes (60Hz)
			720x480p (16:9)	Yes (60Hz)
			720x576i (4:3)	Yes (50Hz)
			720x576i (16:9)	Yes (50Hz)
			720x576p (4:3)	Yes (50Hz)
			720x576p (16:9)	Yes (50Hz)
			1280x720p	Yes (50/60Hz)
			1920x1080i	Yes (50/60Hz)
G-11	**Accessories**	Owner's Manual	Language	English/Portuguese/Spanish
			w/Guarantee Card	No
		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		No
		AC Cord (for AC Adapter)		No
		AC Cord (Flat Polarity Plugs)		Yes
		Cable Cramp		Yes
		Stand		Yes
		Stand Screw		Yes
		Hexagon Wrench		Yes
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		No
		300 to 75ohm Antenna Adapter		No

GENERAL SPECIFICATIONS

G-12	**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	No
				Play	No
				Eject	No
				Skip+, Search+	No
				Skip-, Search-	No
				Still/Pause	No
				Stop	No
				Main Power SW	No
				Input Select	Yes
			Rear	Main Power SW	No
		Indicator		Power/Stand-By	Yes (Green / Red)
				On Timer	No
		Terminals	Rear	Video Input 1	RCA x 1
				Audio Input 1	RCA x 2(L/MONO, R)
				S - Input 1	Yes
				Video Input 2	RCA x 1
				Audio Input 2	RCA x 2(L/MONO, R)
				S - Input 2	Yes
				Video Output	No
				Audio Output	RCA x 2 (Variable) (L, R)
				Component Input 1	RCA x 3
				Analog Audio	RCA x 2(L/MONO, R)
				Component Input 2	RCA x 3
				Analog Audio	RCA x 2(L/MONO, R)
				HDMI Input 1	HDMI x 1
				Analog Audio	RCA x 2(L/MONO, R)
				HDMI Input 2	HDMI x 1
				Analog Audio	No
				Sub Woofer Out	No
				PC Monitor Input	No
				Analog Audio	No
				Digital Audio Output	No
				DC Jack (Center +)	No
				VHF/UHF Antenna Input	F Type
				AC Inlet	Yes
			Side	Video Input 3	No
				Audio Input 3	No
				S - Input 3	No
				Other Terminal	No
G-13	**Set Size**			Approx. W x D x H (mm)	821.0 x 273.5 x 650.5
				w/o Handle, Stand Approx. W x D x H (mm)	821.0 x 117.0 x 591.5
G-14	**Weight**			Net (Approx.)	17.5kg (38.6lbs)
				Net w/o Handle, Stand (Approx.)	15.6kg (34.4lbs)
				Gross (Approx.)	20.5kg (45.2lbs)
G-15	**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)	917 x 271 x 716
				Description of Origin	Yes
			Drop Test		1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	32
			Container Stuffing (40' container)		327 Sets/40' container
G-16	**Material**		Cabinet	Front	PS 94V0 NON-DECABROM
				Rear	PS 94V0 NON-DECABROM
				Jack Panel	--
			PCB	Non-Halogen Demand	No
				Eyelet Demand	Yes
G-17	**Environment**		Environmental standard requirement		Green procurement of SHARP
			Pb-free		Phase3(Phase3A)
				Measures for Whisker	Yes
			Rohs		Yes

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 19 screws ①.
2. Remove the Back Cabinet in the direction of arrow.

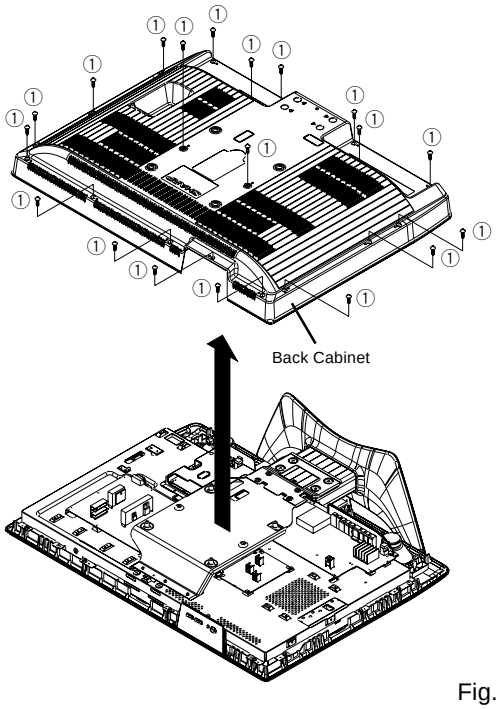


Fig. 1-1

1-2: STAND ASS'Y/ANGLE BACK 1/2/PLATE JACK 1/2 (Refer to Fig. 1-2)

1. Remove the 4 screws ①.
2. Remove the Stand Ass'y in the direction of arrow (A).
3. Remove the 4 screws ②.
4. Remove the 7 screws ③.
5. Remove the Angle Back 1/2 in the direction of arrow (B).
6. Remove the 5 screws ④.
7. Remove the Plate Jack 2 in the direction of arrow (C).
8. Remove the 9 screws ⑤.
9. Remove the Plate Jack 1 and Shield Jack in the direction of arrow (D).

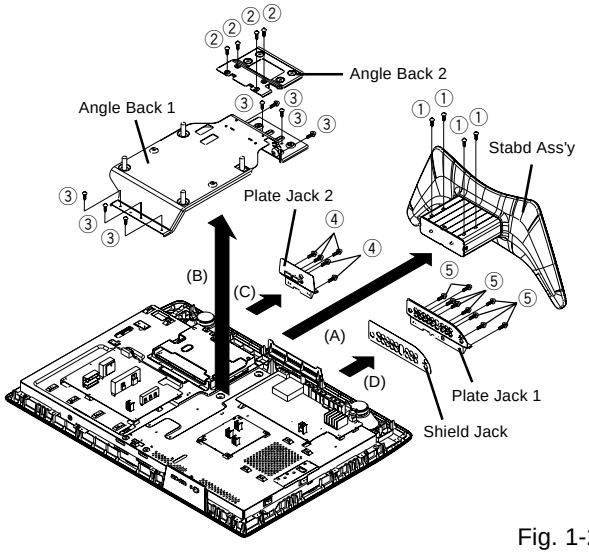


Fig. 1-2

1-3: POWER PCB/SCALER PCB/AV PCB (Refer to Fig. 1-3)

1. Disconnect the following connectors: (CP506, CP507, CP508, CP511, CP514).
2. Remove the 9 screws ①.
3. Remove the Holder AC-Inlet and Power PCB in the direction of arrow (A).
4. Disconnect the following connectors: (CP802, CP803, CP2200, CP3201, CP3602, CP7203).
5. Remove the 10 screws ②.
6. Remove the Shield Scaler and Scaler PCB in the direction of arrow (B).
7. Disconnect the following connectors: (CP301, CP303, CP3802, CP3803, CP4202).
8. Remove the 6 screws ③.
9. Remove the AV PCB in the direction of arrow (C).

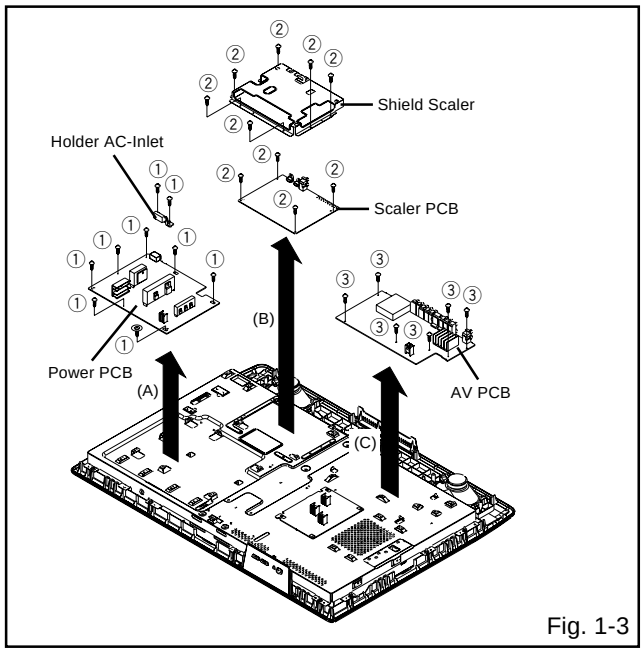


Fig. 1-3

DISASSEMBLY INSTRUCTIONS

1-4: REGULATOR PCB/REMOCON PCB/OPERATION PCB (Refer to Fig. 1-4)

1. Remove the 4 screws ①.
2. Remove the Regulator PCB in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the Remocon PCB in the direction of arrow (B).
5. Remove the 5 screws ③.
6. Remove the Plate Button and Operation PCB in the direction of arrow (C).

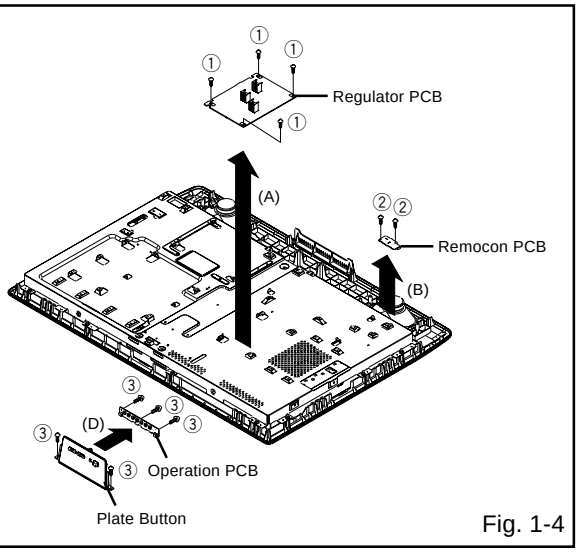


Fig. 1-4

1-5: LCD COVER/LCD PANEL (Refer to Fig. 1-5)

1. Remove the 8 screws ①.
2. Remove the LCD Cover in the direction of arrow (A).
3. Remove the 4 screws ②.
4. Remove the LCD Panel in the direction of arrow (B).

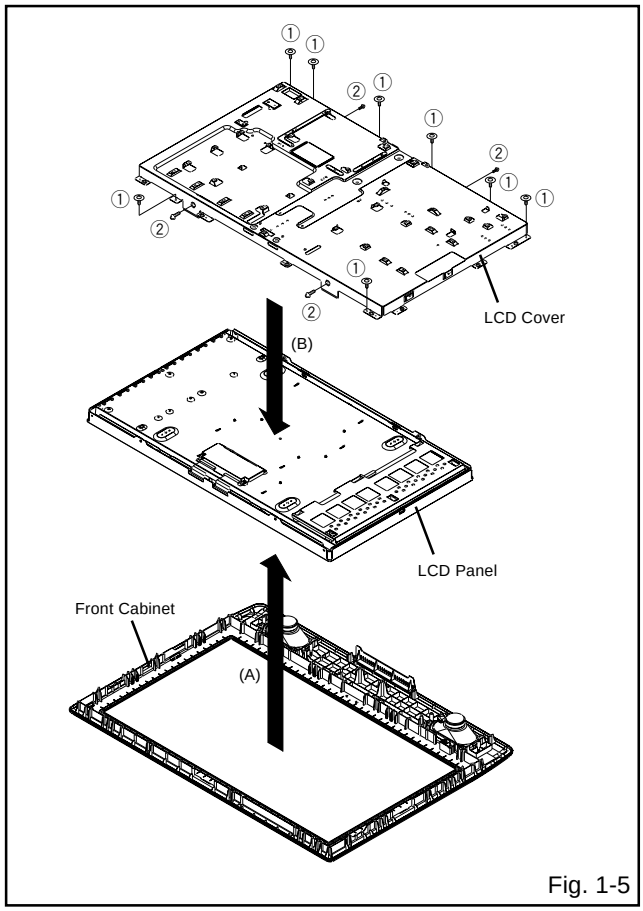


Fig. 1-5

DISASSEMBLY INSTRUCTIONS

2. 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. 2-1.)**

   NOTE

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

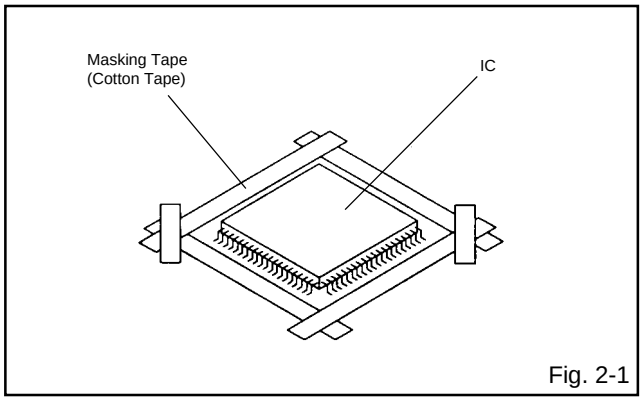


Fig. 2-1

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

   NOTE

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

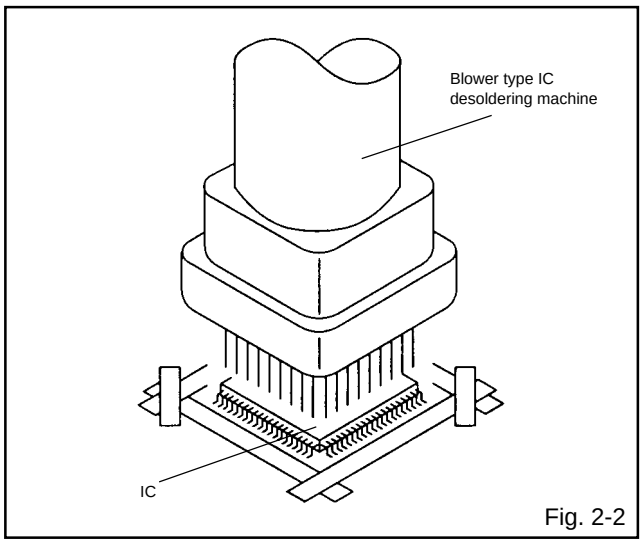


Fig. 2-2

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. 2-3.)**

   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.

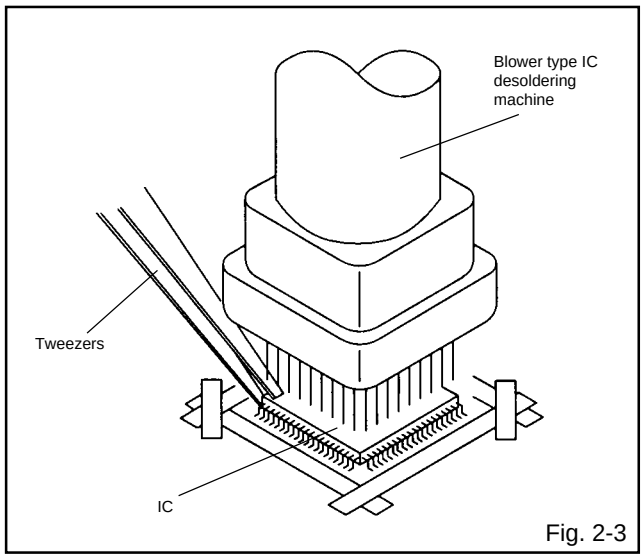


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

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

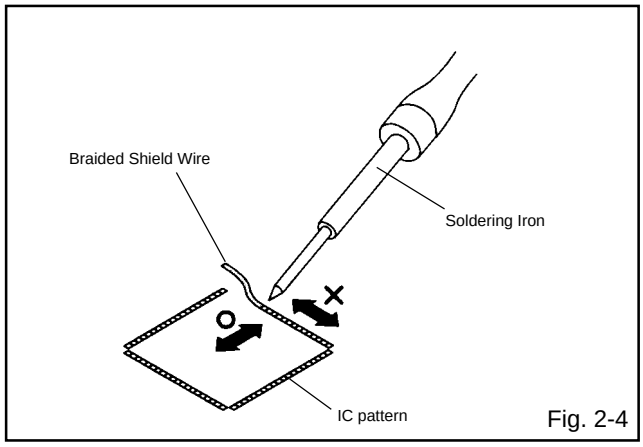


Fig. 2-4

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. 2-5.)**

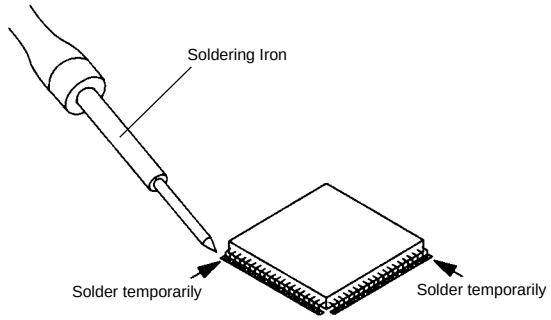


Fig. 2-5

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

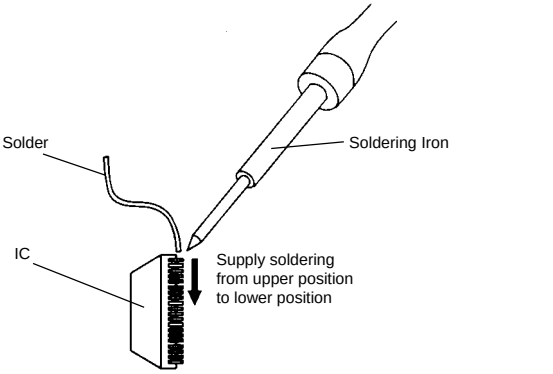


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   NOTE

   Do not absorb the solder to excess.

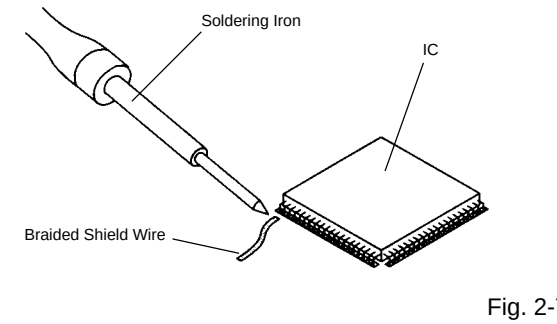


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

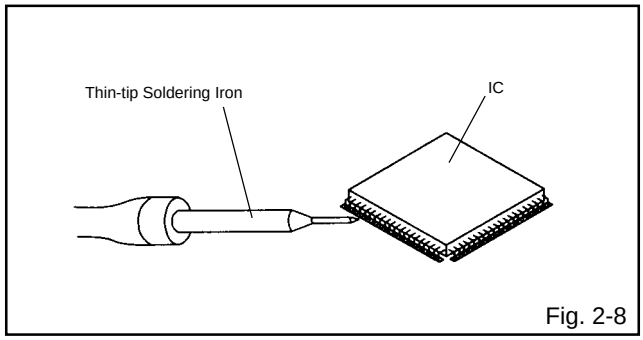


Fig. 2-8

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.	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.	Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
ALL mode	VOL. DOWN (Minimum)	8	2 sec.	Check of the SUM DATA, POWER ON total hours, MICON VERSION and DIGITAL TV MICON FIRMWARE on the screen. 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).

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS AND MICON VERSION

Initial total of MEMORY IC, POWER ON total hours and MICON VERSION 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".
Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

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, POWER ON total hours and MICON VERSION , turn off the power.

*1 DVP1 is different according to each set.

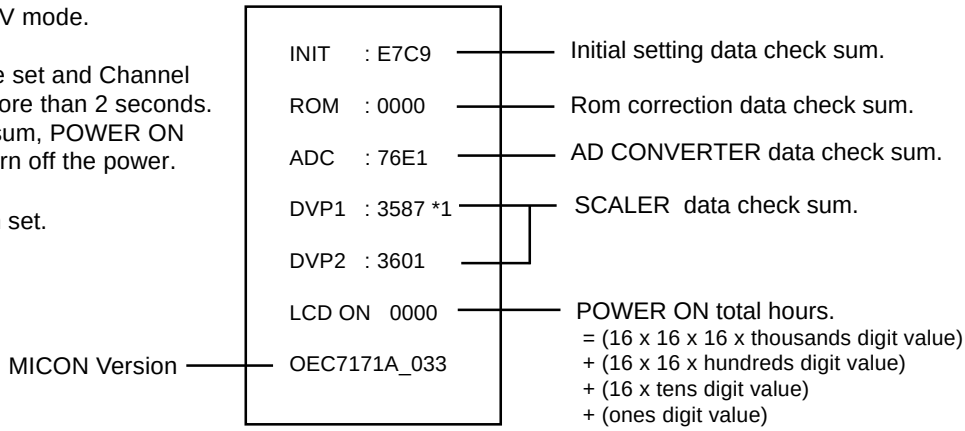


FIG. 1

CONFIRMATION OF INITIAL DATA

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 INITIAL SETTING TABLE (Attached "INITIAL DATA").

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 2.

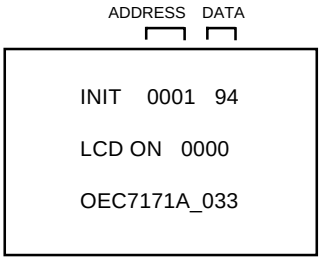


FIG. 2

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

- ï Use an isolation transformer when performing any service on this chassis.
- ï When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- ï 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 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**.

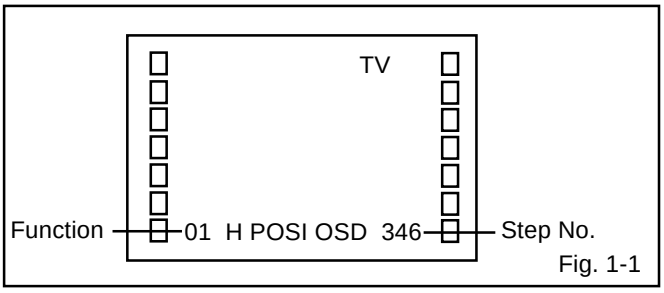


Fig. 1-1

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 INPUT button on the remote control to end the adjustments.
5. To display the adjustment screen for TV, AV, AV(S), YUV and HDMI mode, press the INPUT button on the remote control to set to the TV, AV, AV(S) YUV and HDMI 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	22	H POSI 60Hz
02	V POSI OSD	23	V POSI 50Hz
03	R DRIVE(N)	24	V POSI 60Hz
04	R CUT OFF(N)	25	BAK LIGHT CENT
05	G DRIVE(N)	26	BAK LIGHT MAX
06	G CUT OFF(N)	27	BAK LIGHT MIN
07	B DRIVE(N)	28	BRIGHT CENT
08	B CUT OFF(N)	29	BRIGHT MAX
09	R DRIVE(C)	30	BRIGHT MIN
10	R CUT OFF(C)	31	TINT
11	G DRIVE(C)	35	CONTRAST CENTER
12	G CUT OFF(C)	36	CONTRAST MAX
13	B DRIVE(C)	37	CONTRAST MIN
14	B CUT OFF(C)	38	COLOR CENT
15	R DRIVE(W)	39	COLOR MAX
16	R CUT OFF(W)	40	COLOR MIN
17	G DRIVE(W)	43	CONTRAST 40
18	G CUT OFF(W)	44	BRIGHT (3F54)
19	B DRIVE(W)	45	CONTRAST(3F55)
20	B CUT OFF(W)	46	SRC TOP
21	H POSI 50Hz	47	DFEA VIMGVT

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONTRAST MAX

1. Receive the monoscope pattern. (RF Input)
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 **(36)** on the remote control to select "CONTRAST MAX".
4. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "219"
5. Check if the picture is normal.
6. Receive the monoscope pattern. (VIDEO Input)
7. Press the INPUT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness and contrast to normal position.
9. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(36)** on the remote control to select "CONTRAST MAX".
10. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "217".
11. Check if the picture is normal.
12. Playback the DVD(480i) disc. (COMPONENT Input)
13. Press the INPUT button on the remote control to set to the YUV mode.
14. Using the remote control, set the brightness and contrast to normal position.
15. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(36)** on the remote control to select "CONTRAST MAX".
16. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "199".
17. Playback the DVD(480i) disc. (HDMI Input)
18. Press the INPUT button on the remote control to set to the HDMI mode.
19. Using the remote control, set the brightness and contrast to normal position.
20. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "CONTRAST MAX".
21. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "168".
22. 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. 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)", "B DRIVE(N)", "B CUT OFF(N)", "R DRIVE(C)", "R CUT OFF(C)", "B DRIVE(C)", "B CUT OFF(C)", "R DRIVE(W)", "R CUT OFF(W)", "B DRIVE(W)" or "B CUT OFF(W)".
6. Adjust the LEFT/RIGTH button on the remote control to whiten the R CUT OFF(N), B DRIVE(N), B CUT OFF(N), R DRIVE(C), R CUT OFF(C)", B DRIVE(C), B CUT OFF(C), R DRIVE(W), R CUT OFF(W), B DRIVE(W) or B CUT OFF(W) at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white achieved.

ELECTRICAL ADJUSTMENTS

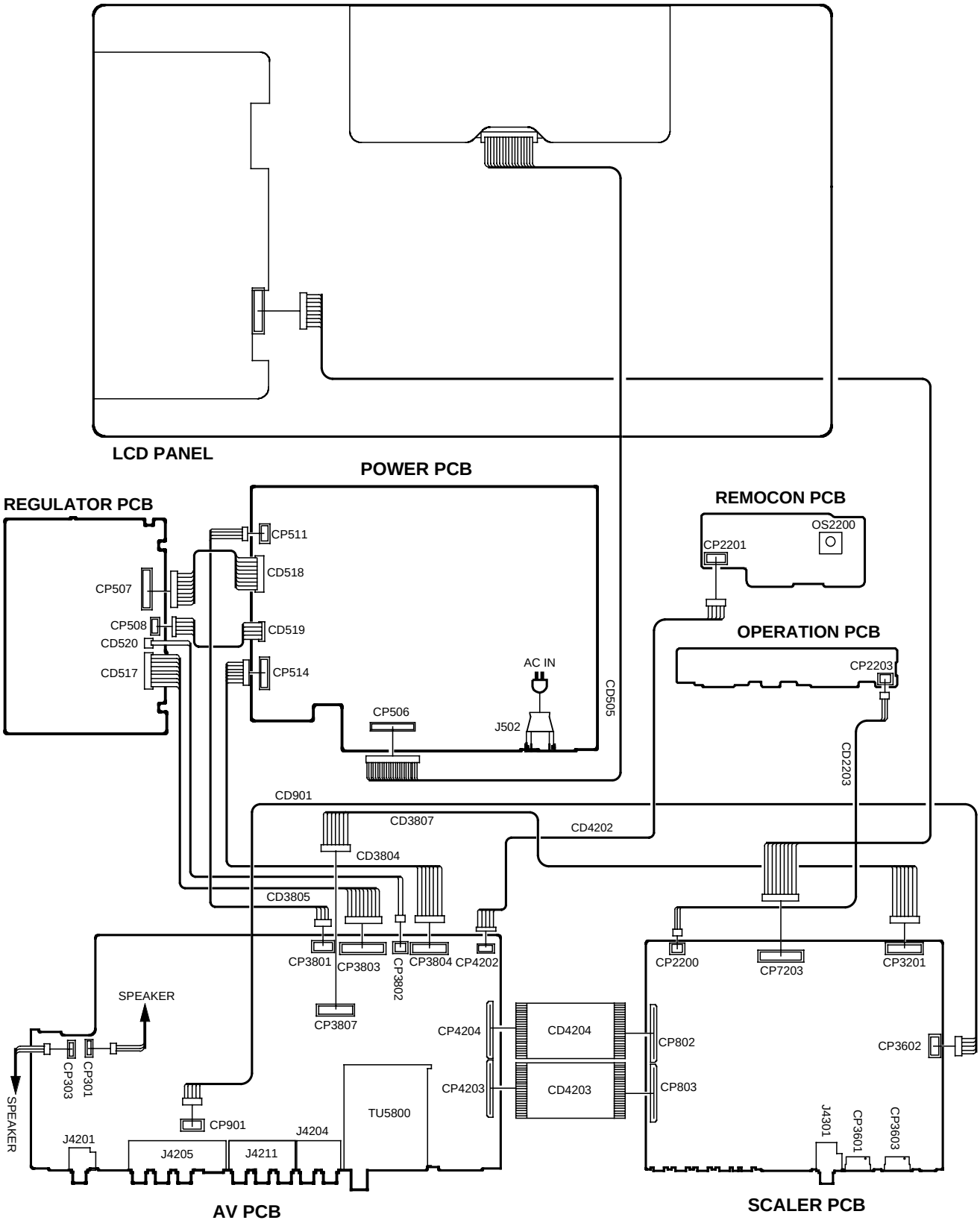
2-3: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each adjustment item is set correctly referring below. **(TV/AV/AV(S)/YUV/HD-MI)**

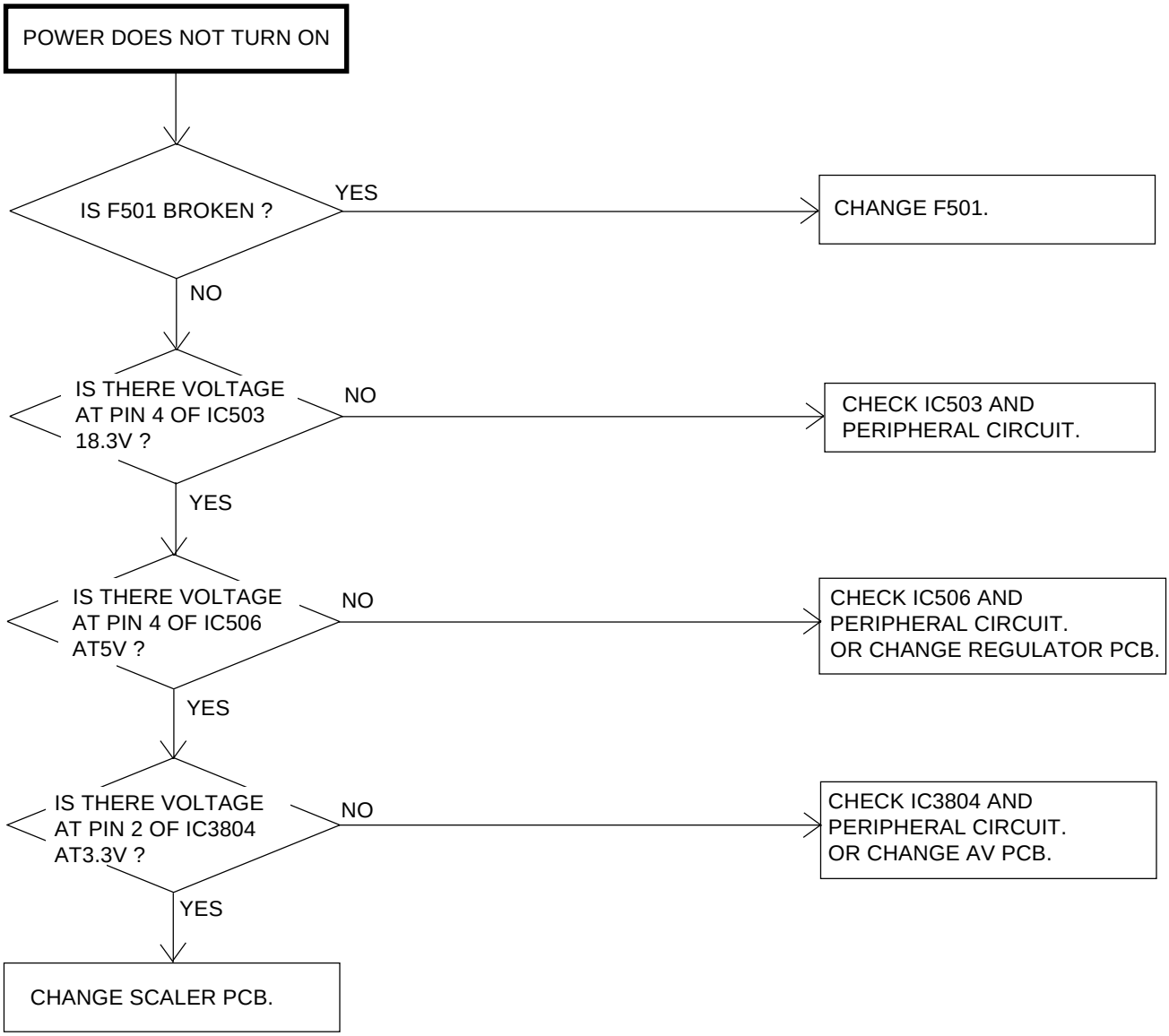
NO.	FUNCTION	TV			AV			AV(S)			YUV								HD-MI							
		NTSC	PAL-M	PAL-N	NTSC	PAL-M	PAL-N	NTSC	PAL-M	PAL-N	60Hz				50Hz				60Hz				50Hz			
											480i	480p	720p	1080i	576i	576p	720p	1080i	480i	480p	720p	1080i	576i	576p	720p	1080i
		Step No.																									
1	H POSI OSD	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346
2	V POSI OSD	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
3	R DRIVE (N)	135	135	135	134	134	134	133	133	133	135	132	132	132	135	132	132	132	132	132	132	132	132	132	132	132	132
4	R CUT OFF (N)	127	127	127	127	127	127	130	130	130	126	129	130	130	126	129	130	130	130	130	130	130	130	130	130	130	130
5	G DRIVE (N)	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
6	G CUT OFF (N)	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
7	B DRIVE (N)	108	108	108	106	106	106	105	105	105	106	107	106	107	106	107	106	107	105	105	105	105	105	105	105	105	105
8	B CUT OFF (N)	129	129	129	127	127	127	130	130	130	127	127	128	127	127	127	128	127	128	128	128	128	128	128	128	128	128
9	R DRIVE (C)	131	131	131	130	130	130	130	130	130	130	129	129	129	130	129	129	129	130	130	130	130	130	130	130	130	130
10	R CUT OFF (C)	127	127	127	126	126	126	129	129	129	125	129	129	130	125	129	129	130	129	129	129	129	129	129	129	129	129
11	G DRIVE (C)	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
12	G CUT OFF (C)	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
13	B DRIVE (C)	137	137	137	129	129	129	129	129	129	127	132	130	132	127	132	130	132	132	132	132	132	132	132	132	132	132
14	B CUT OFF (C)	129	129	129	127	127	127	130	130	130	128	125	125	125	128	125	125	125	125	125	125	125	125	125	125	125	125
15	R DRIVE (W)	153	153	153	152	152	152	152	152	152	153	152	153	153	153	152	153	153	153	153	153	153	153	153	153	153	153
16	R CUT OFF (W)	129	129	129	129	129	129	131	151	131	128	129	129	129	128	129	129	129	129	129	129	129	129	129	129	129	129
17	G DRIVE (W)	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
18	G CUT OFF (W)	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
19	B DRIVE (W)	81	81	81	81	81	81	81	81	81	82	81	82	82	82	81	82	82	81	81	81	81	81	81	81	81	81
20	B CUT OFF (W)	129	129	129	128	128	128	130	130	130	127	128	128	128	127	128	128	128	129	129	129	129	129	129	129	129	129
21	H POSI 50Hz	316	316	316	316	316	316	316	316	316	---	---	---	---	314	148	328	278	---	---	---	---	298	148	290	238
22	H POSI 60Hz	280	280	280	280	280	280	282	282	282	278	138	328	278	---	---	---	---	268	136	290	238	---	---	---	---
23	V POSI 50Hz	24	24	24	24	24	24	24	24	24	---	---	---	---	24	24	35	18	---	---	---	---	24	24	35	18
24	V POSI 60Hz	23	23	23	23	23	23	23	23	23	24	24	33	19	---	---	---	---	24	24	34	19	---	---	---	---
25	BAK LIGHT CENT	128	123	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
26	BAK LIGHT MAX	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
27	BAK LIGHT MIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	BRIGHT CENT	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126
29	BRIGHT MAX	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	56	156
30	BRIGHT MIN	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
31	TINT	116	116	116	116	116	116	128	128	128	118	118	118	120	118	118	118	120	122	122	130	130	122	122	130	130
35	CONTRAST CENT	154	154	154	159	159	159	145	145	145	145	106	105	107	145	106	105	107	122	122	122	122	122	122	122	122
36	CONTRAST MAX	219	219	219	217	217	217	200	200	200	199	146	144	146	199	146	144	146	168	168	168	168	168	168	168	168
37	CONTRAST MIN	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
38	COLOR CENT	111	111	111	86	86	86	91	91	91	120	110	110	125	120	110	110	125	62	62	62	62	62	62	62	62
39	COLOR MAX	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
40	COLOR MIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	CONTRAST 40	207	207	207	209	209	209	193	193	193	191	141	139	141	191	141	139	141	161	161	161	161	161	161	161	161
44	BRIGHT (3F54)	120	120	120	122	122	122	122	122	122	120	125	128	128	120	125	128	128	113	113	113	113	113	113	113	113
45	CONTRAST (3F55)	220	220	220	220	220	220	220	220	220	220	180	180	180	220	180	180	180	113	113	113	113	113	113	113	113
46	SRC TOP	21	21	27	42	42	42	21	21	27	42	103	---	---	42	---	---	---	---	---	---	---	---	---	---	---
47	DFEA VIM GVT	-	-	-	-	-	-	-	-	-	0	0	32	0	0	124	32	0	49	102	32	0	27	69	32	0

ELECTRICAL ADJUSTMENTS

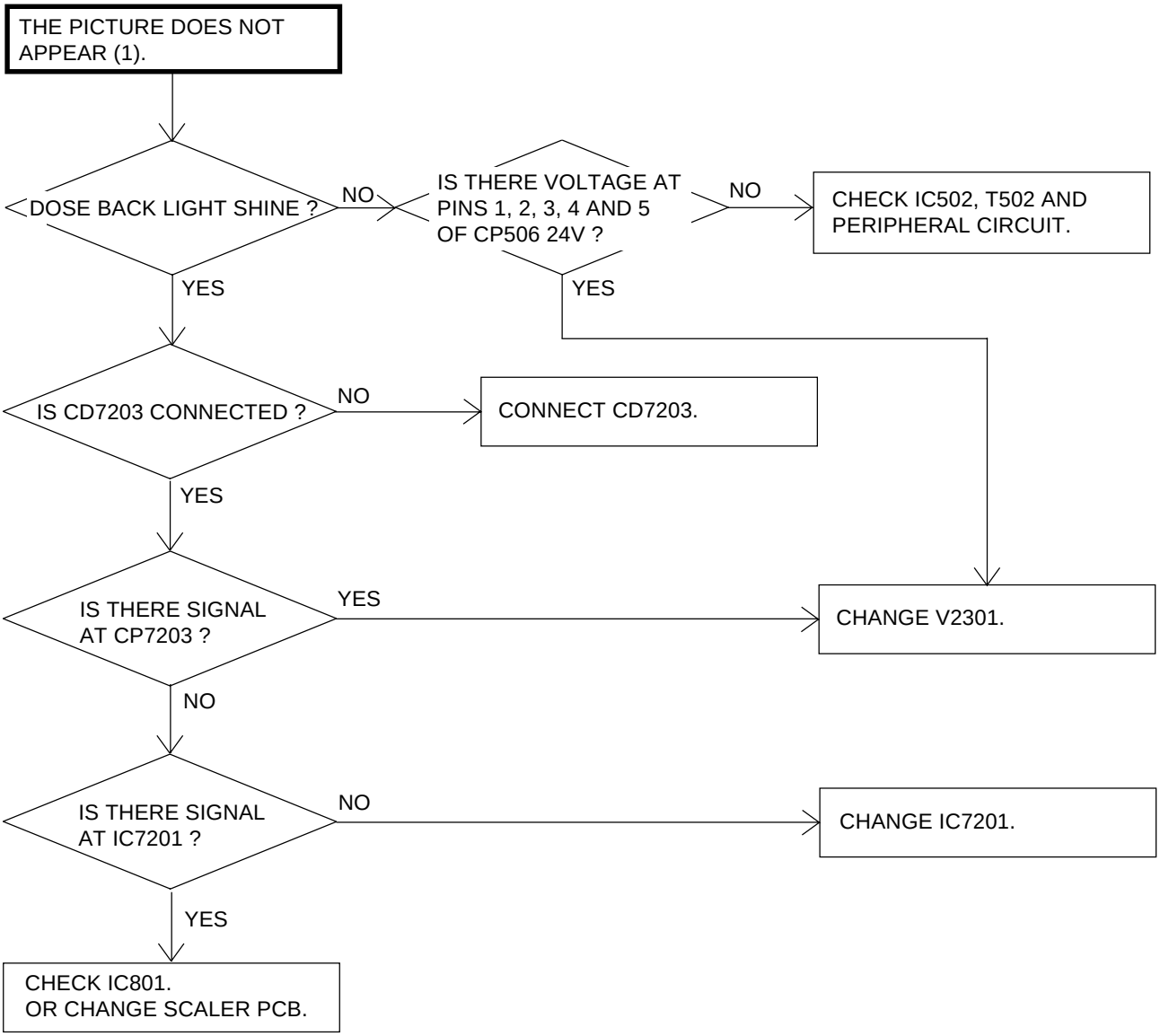
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



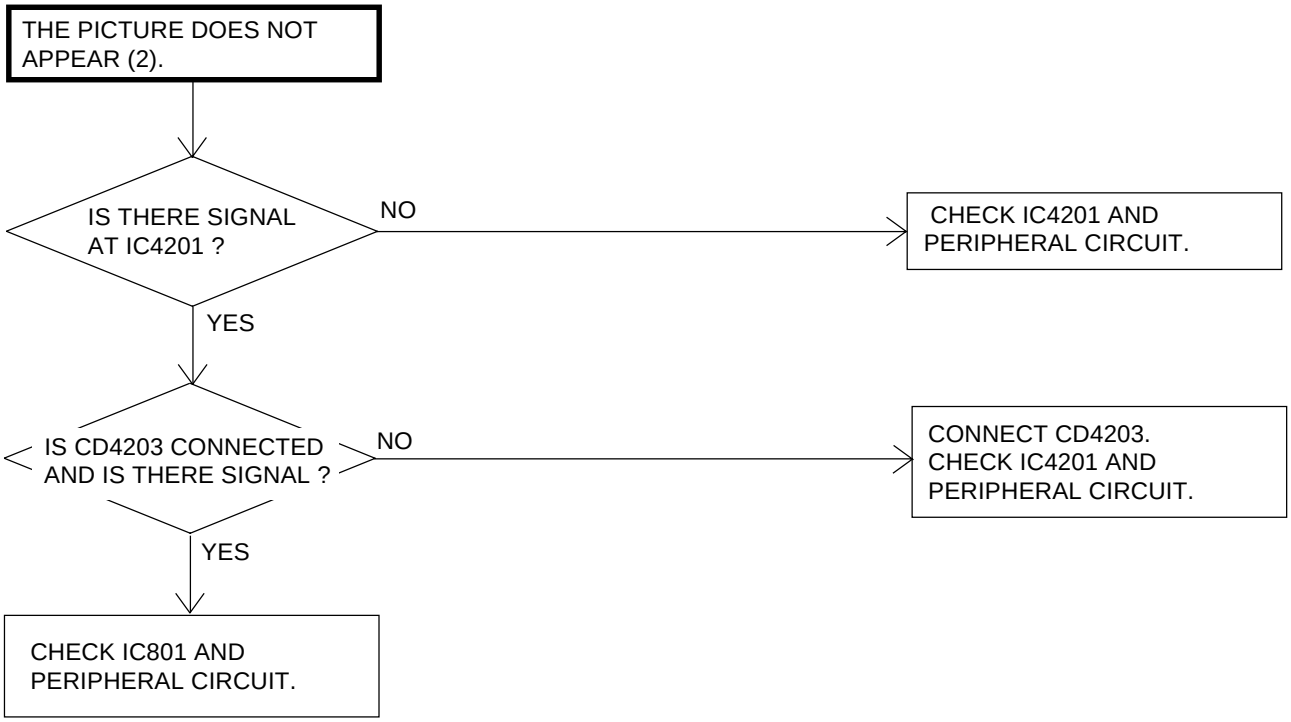
TROUBLESHOOTING GUIDE



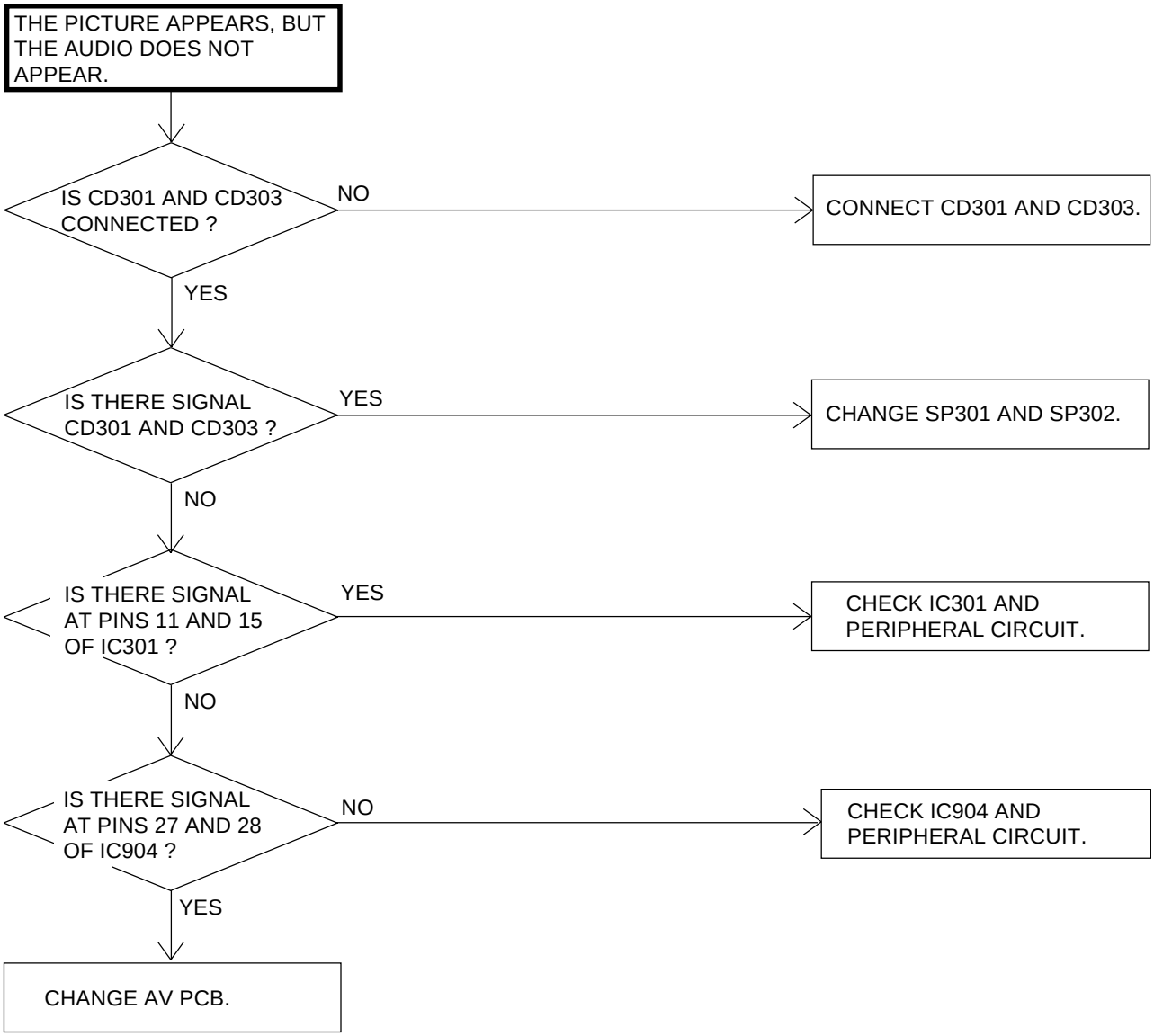
TROUBLESHOOTING GUIDE



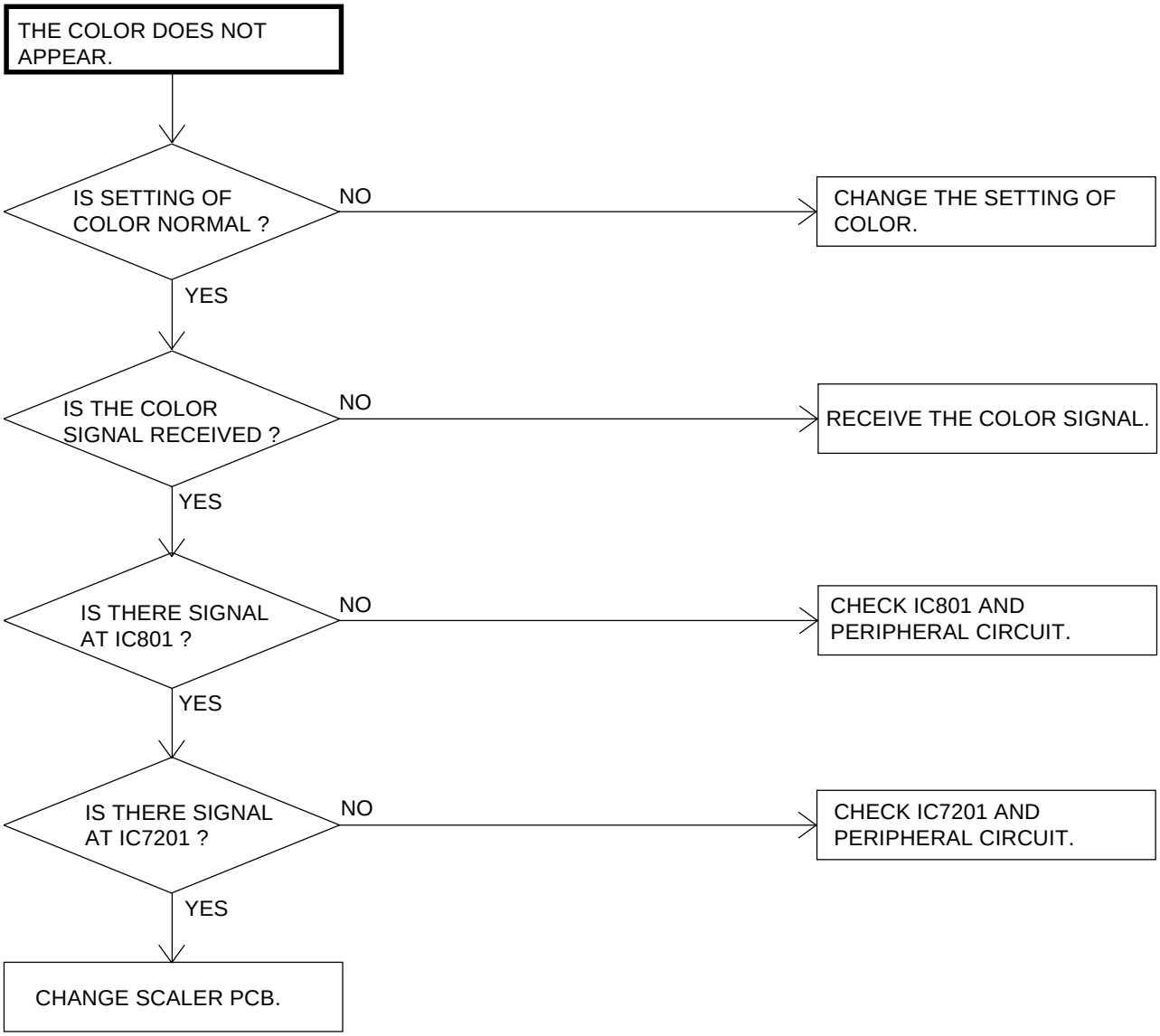
TROUBLESHOOTING GUIDE



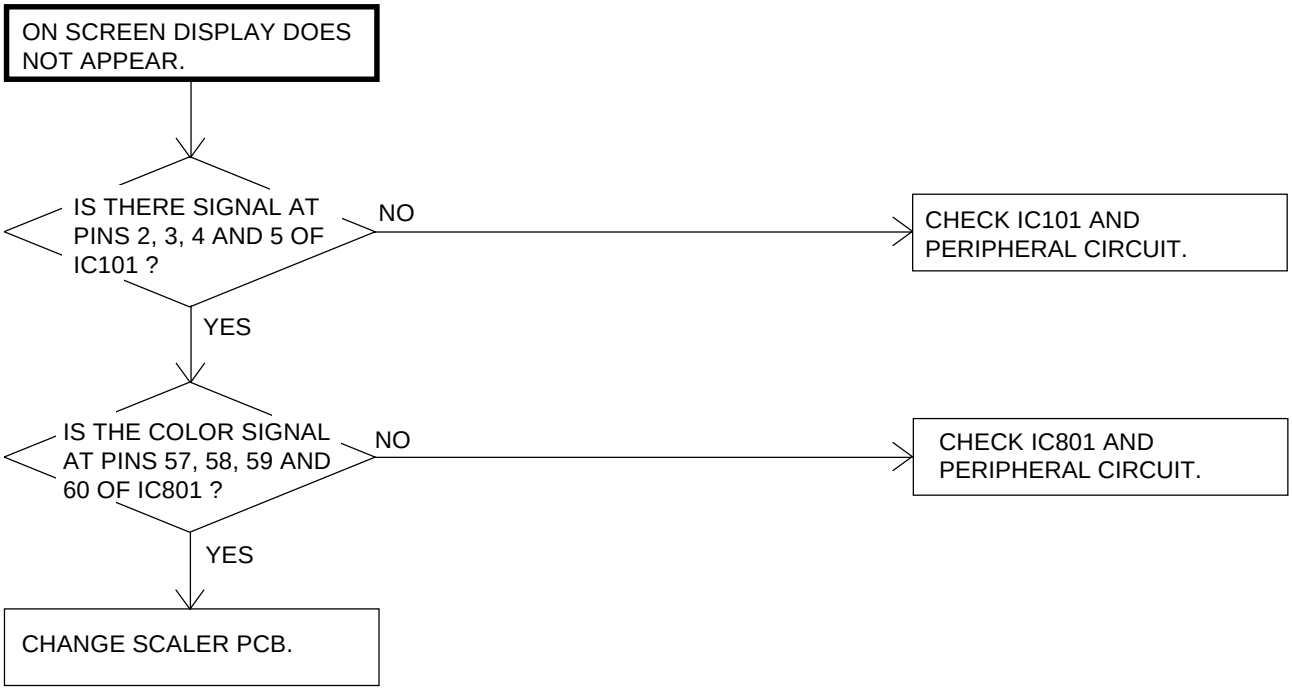
TROUBLESHOOTING GUIDE



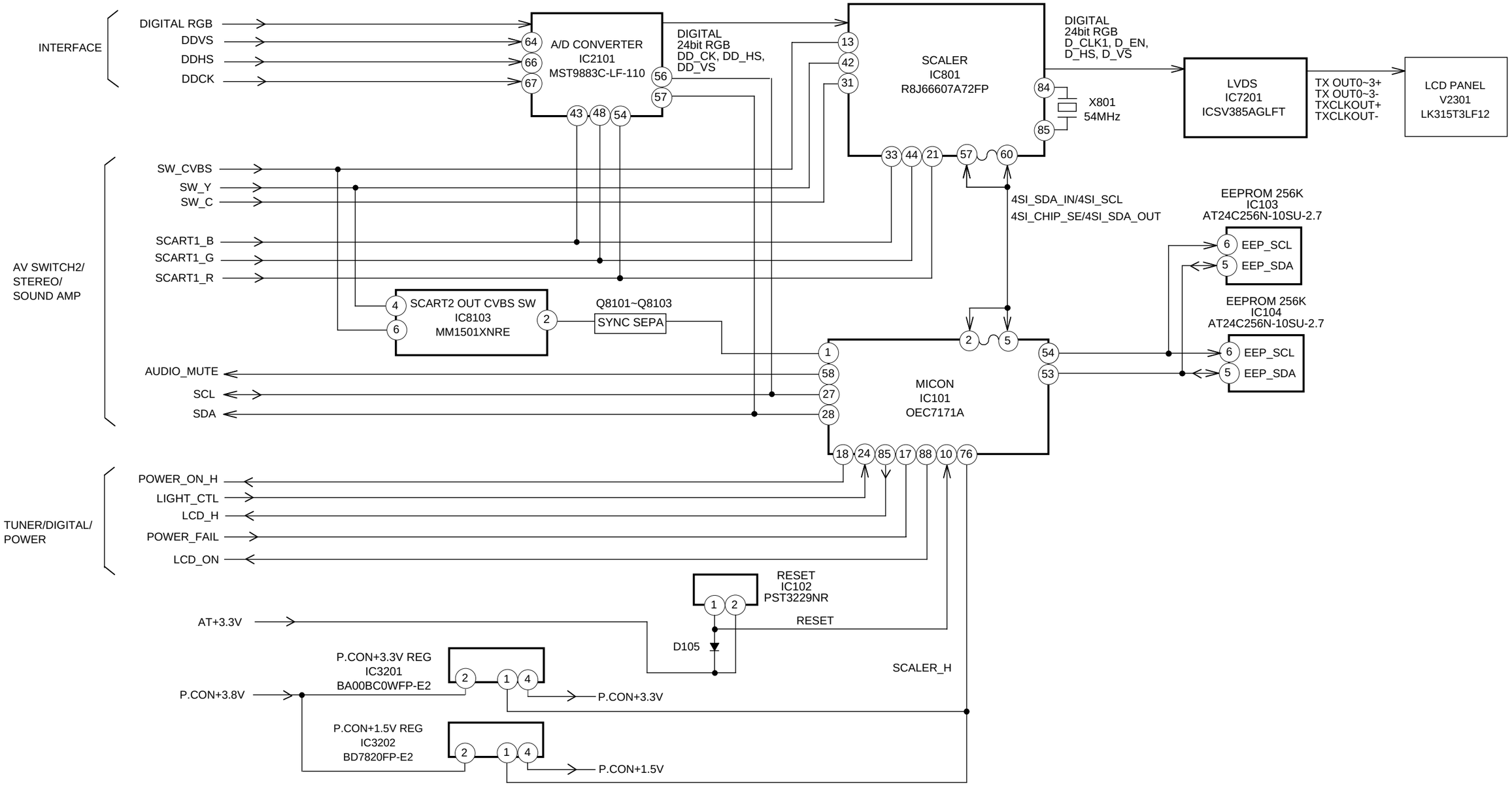
TROUBLESHOOTING GUIDE



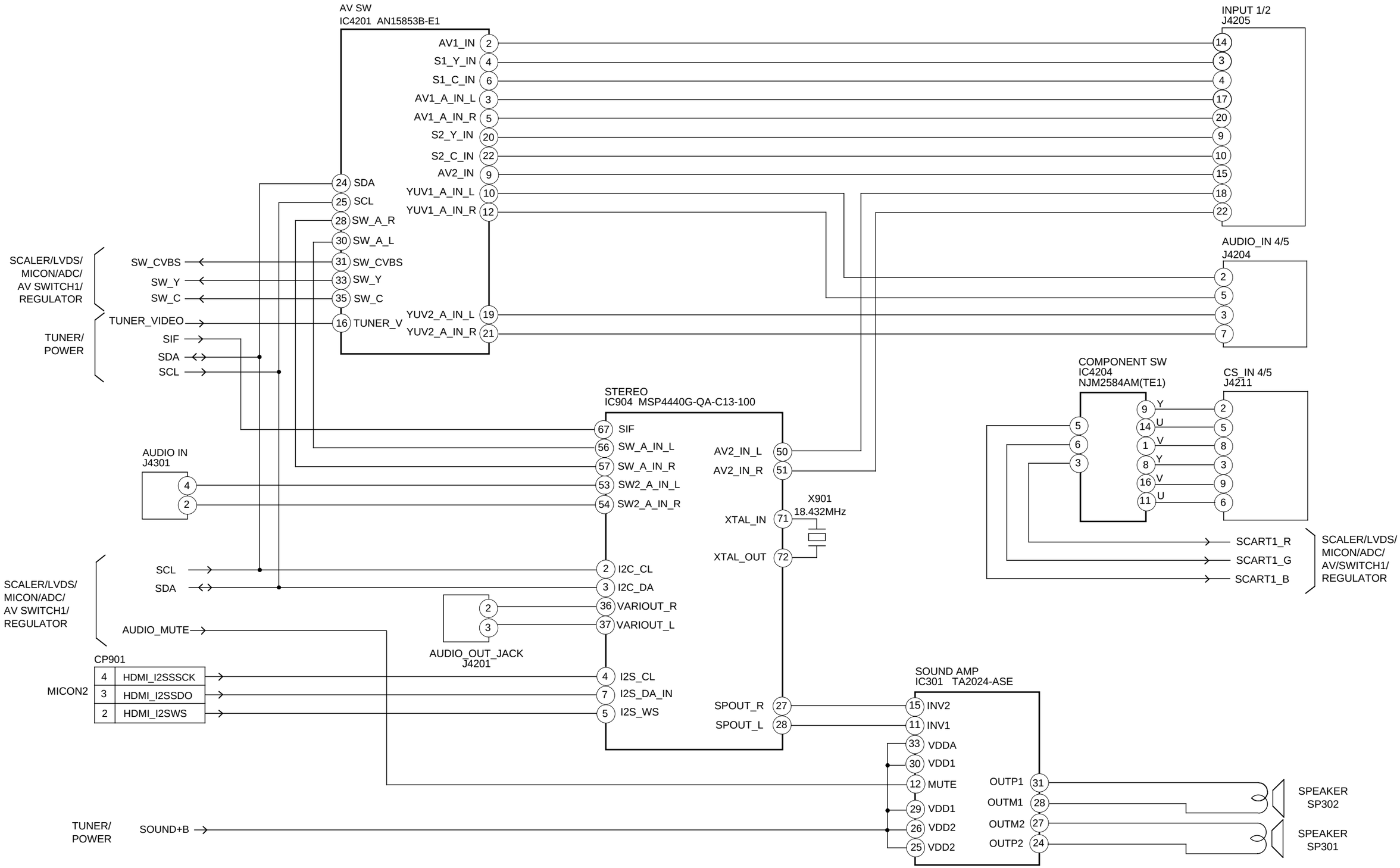
TROUBLESHOOTING GUIDE



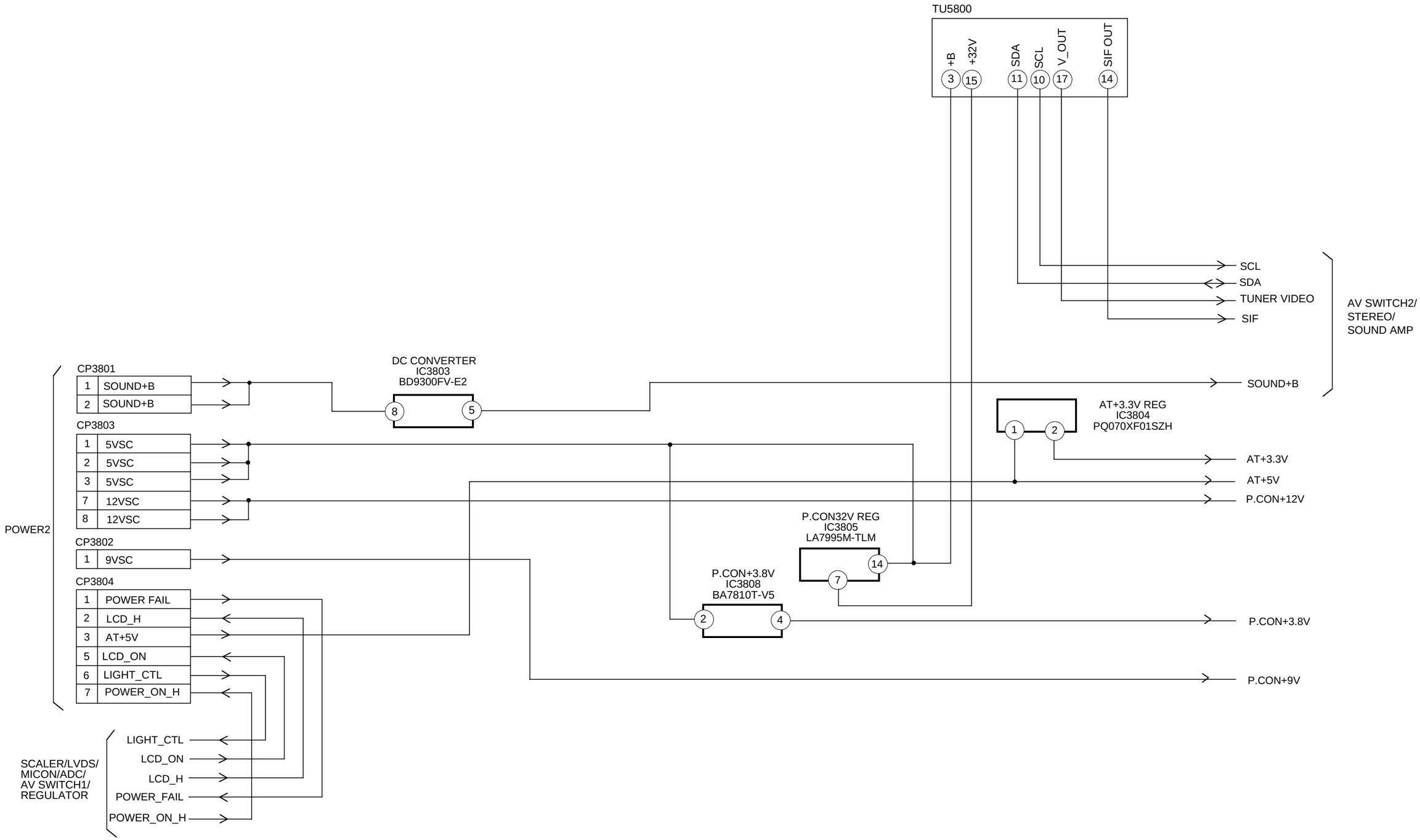
SCALER/LVDS/MICON/ADC/AV SWITCH1/REGULATOR BLOCK DIAGRAM



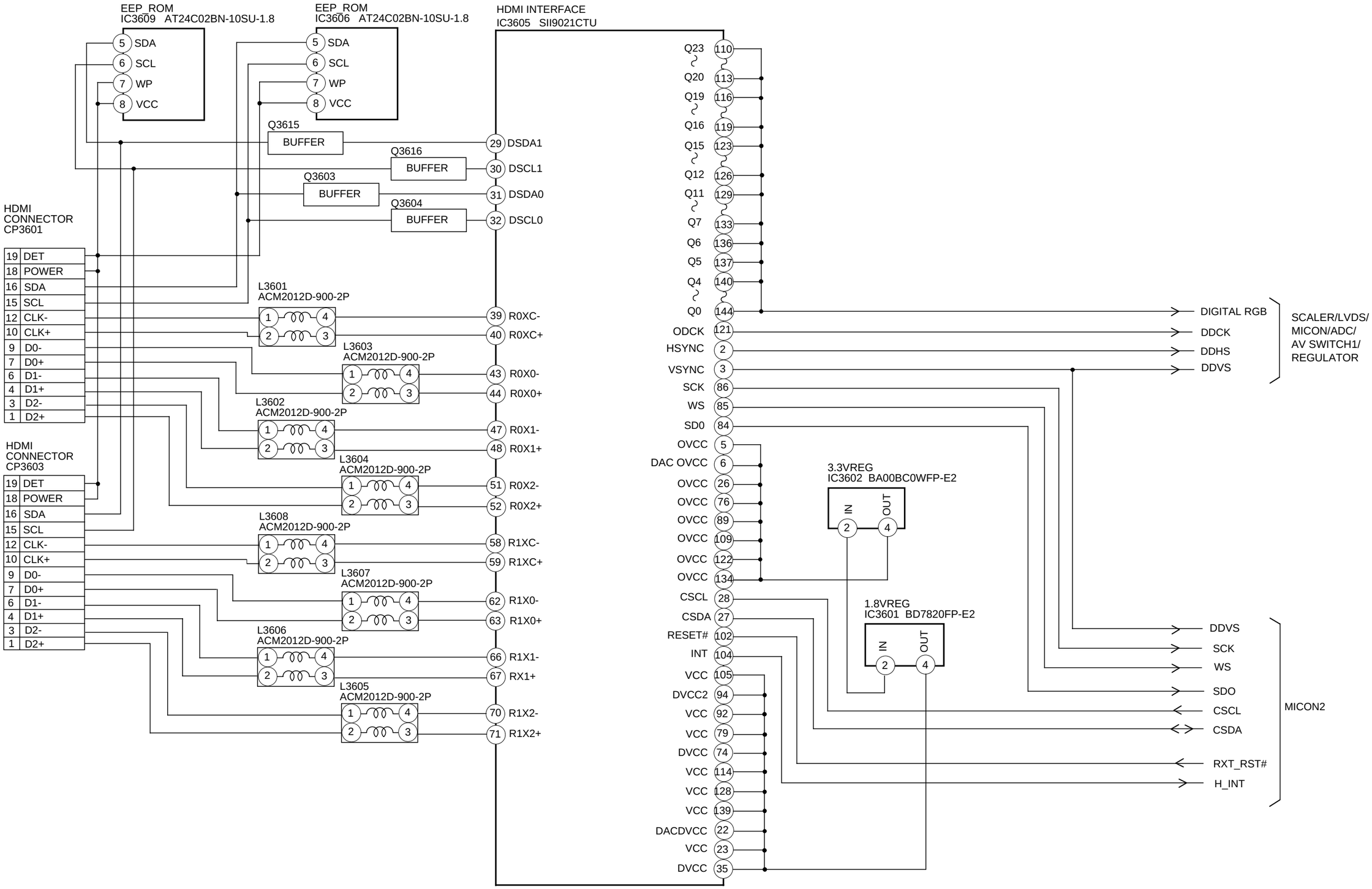
AV SWITCH2/STEREO/SOUND AMP BLOCK DIAGRAM



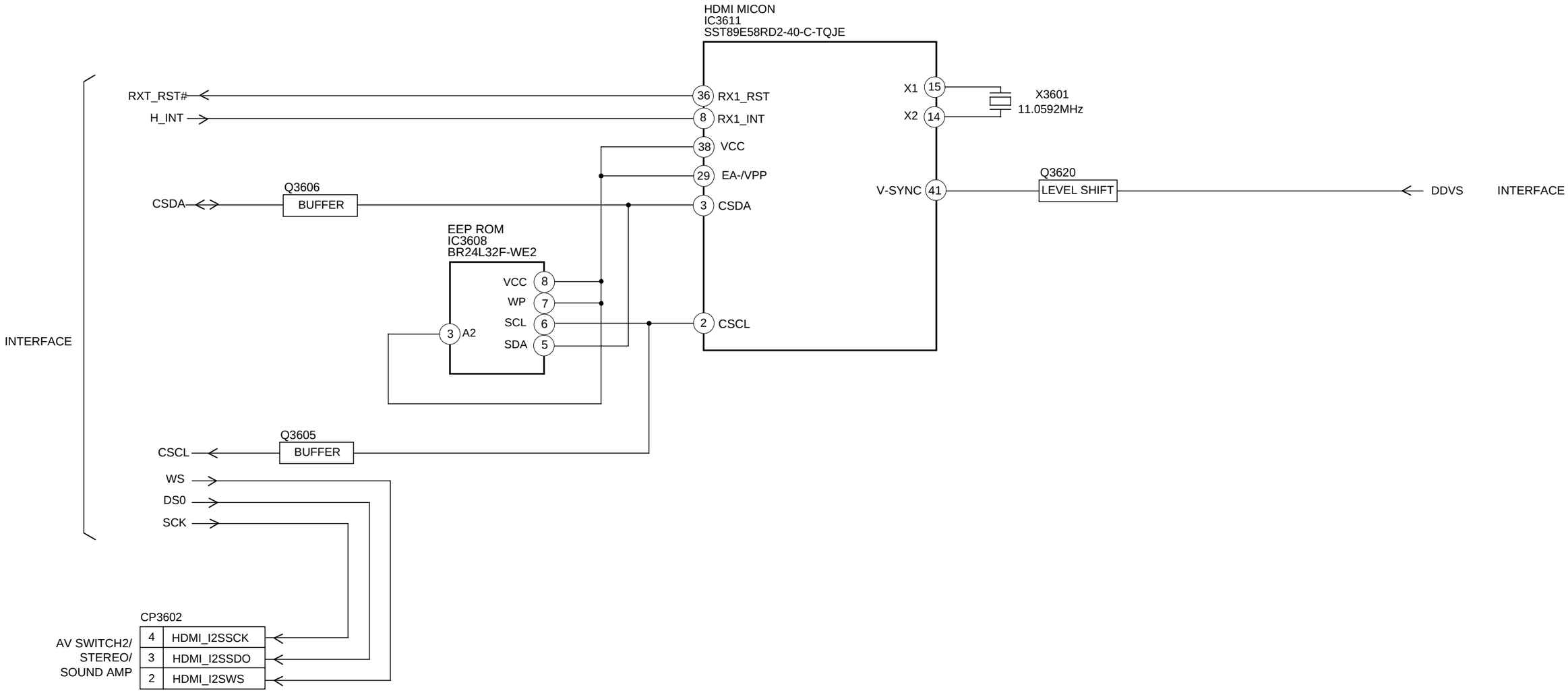
TUNER/POWER BLOCK DIAGRAM



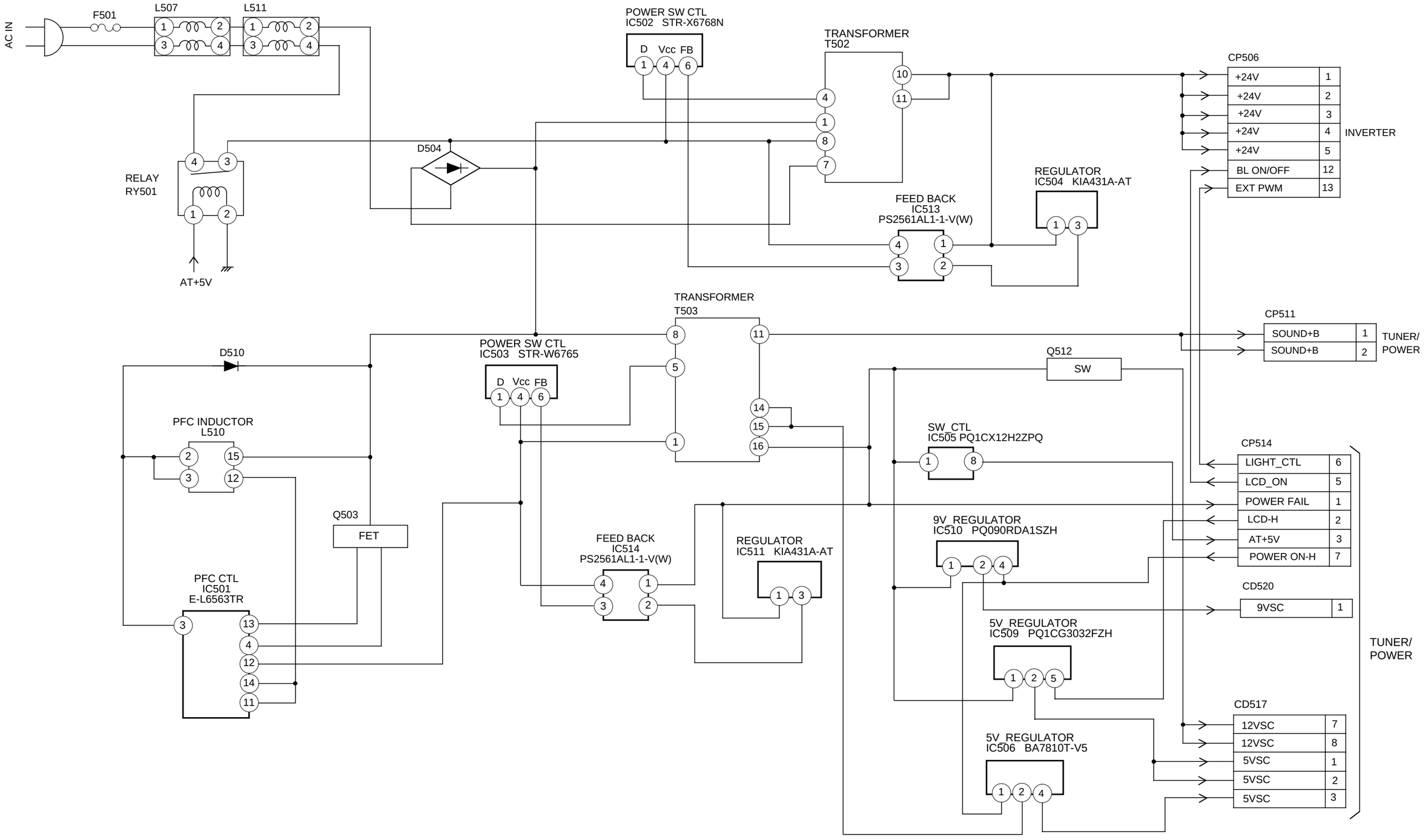
INTERFACE BLOCK DIAGRAM



MICON2 BLOCK DIAGRAM

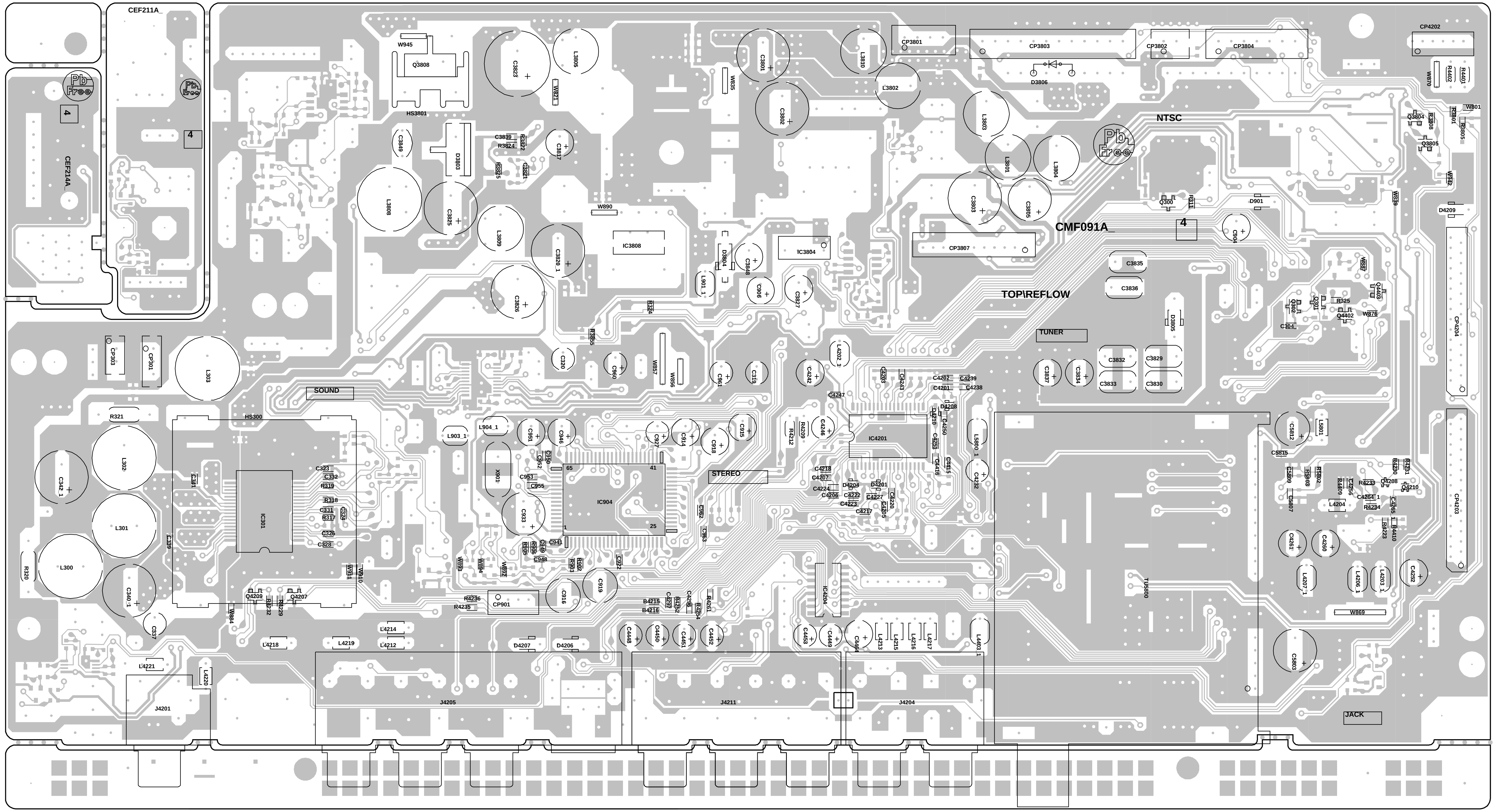


POWER2 BLOCK DIAGRAM



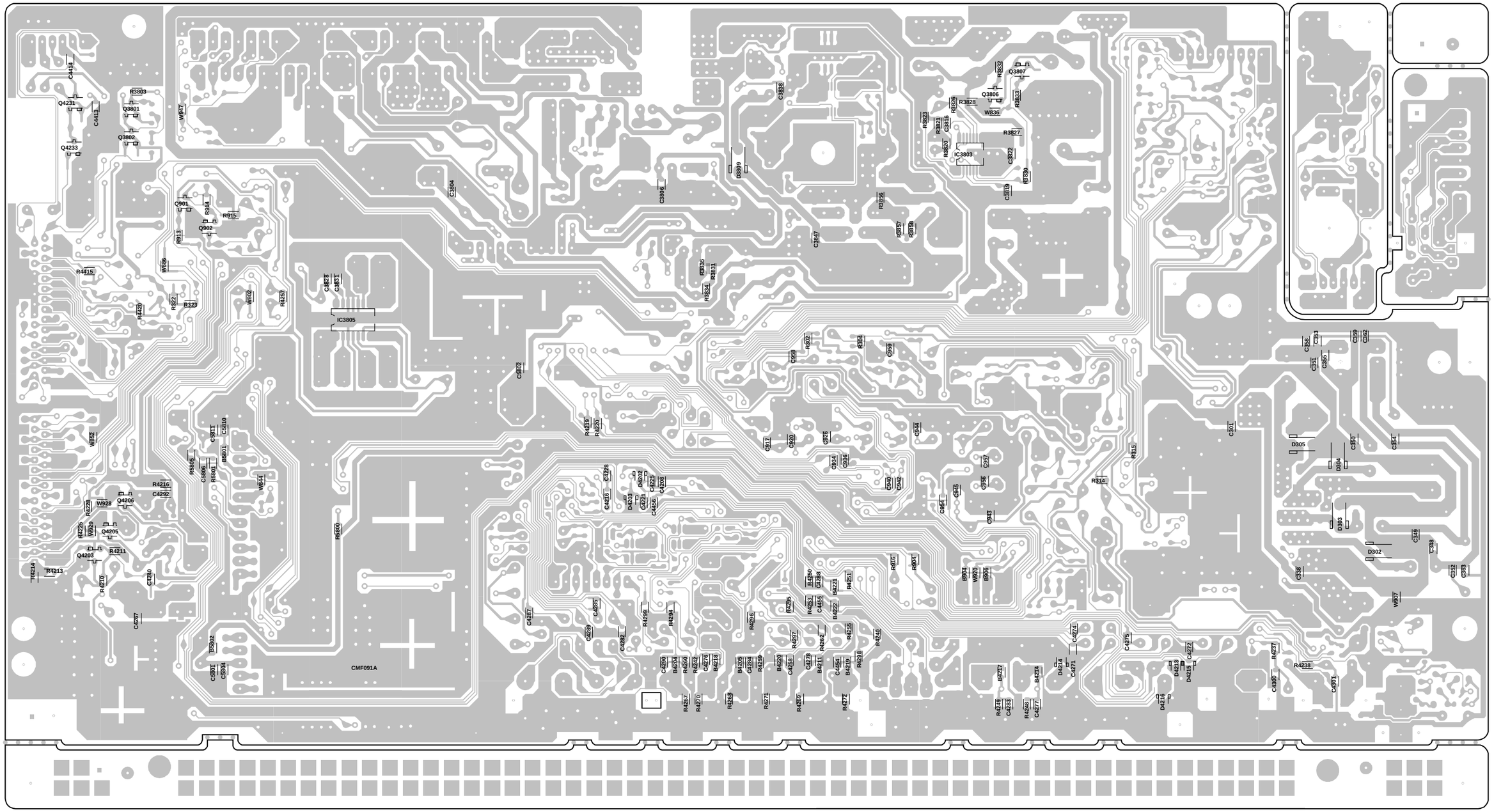
PRINTED CIRCUIT BOARDS

AV (TOP SIDE)



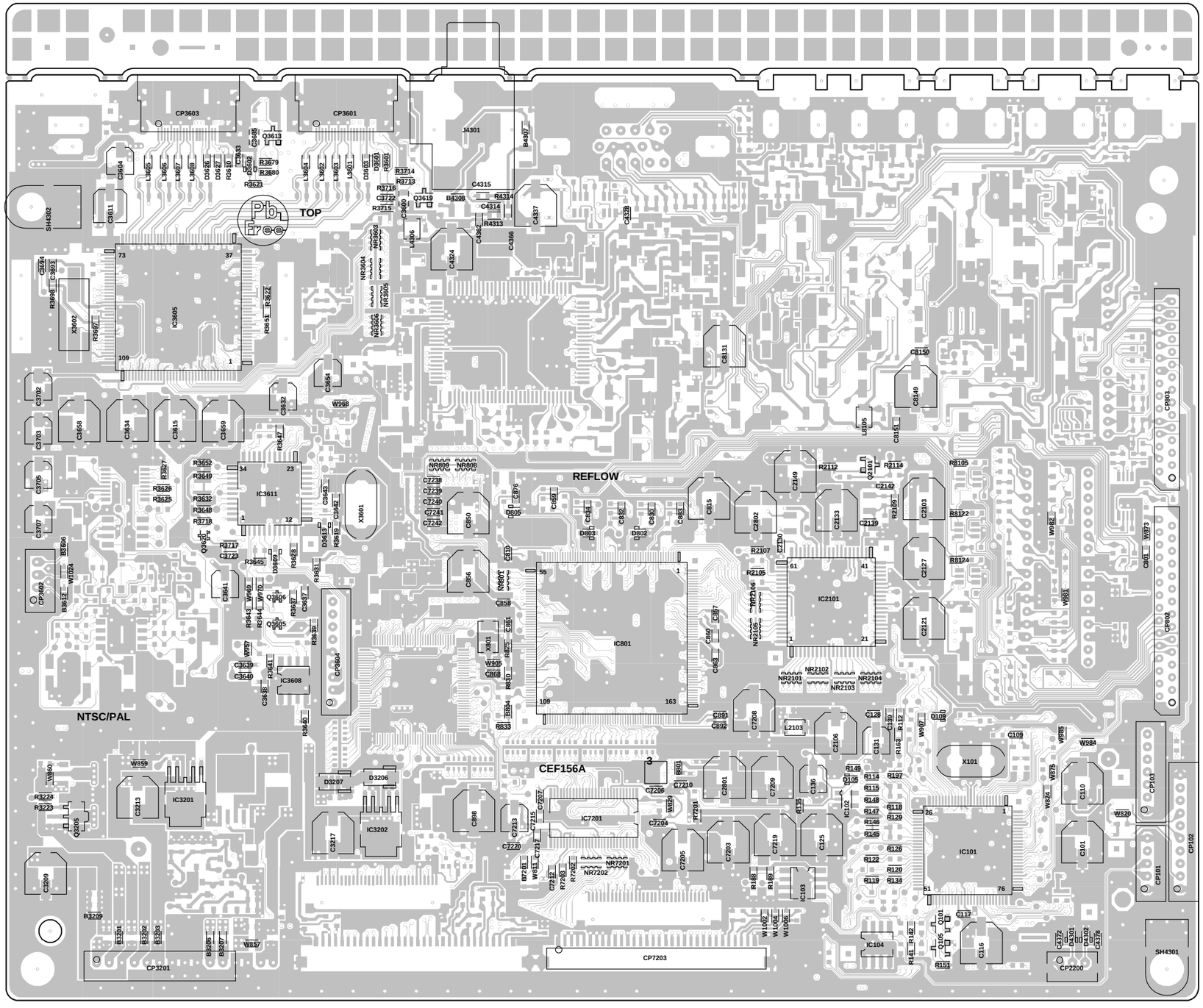
PRINTED CIRCUIT BOARDS

AV (BOTTOM SIDE)



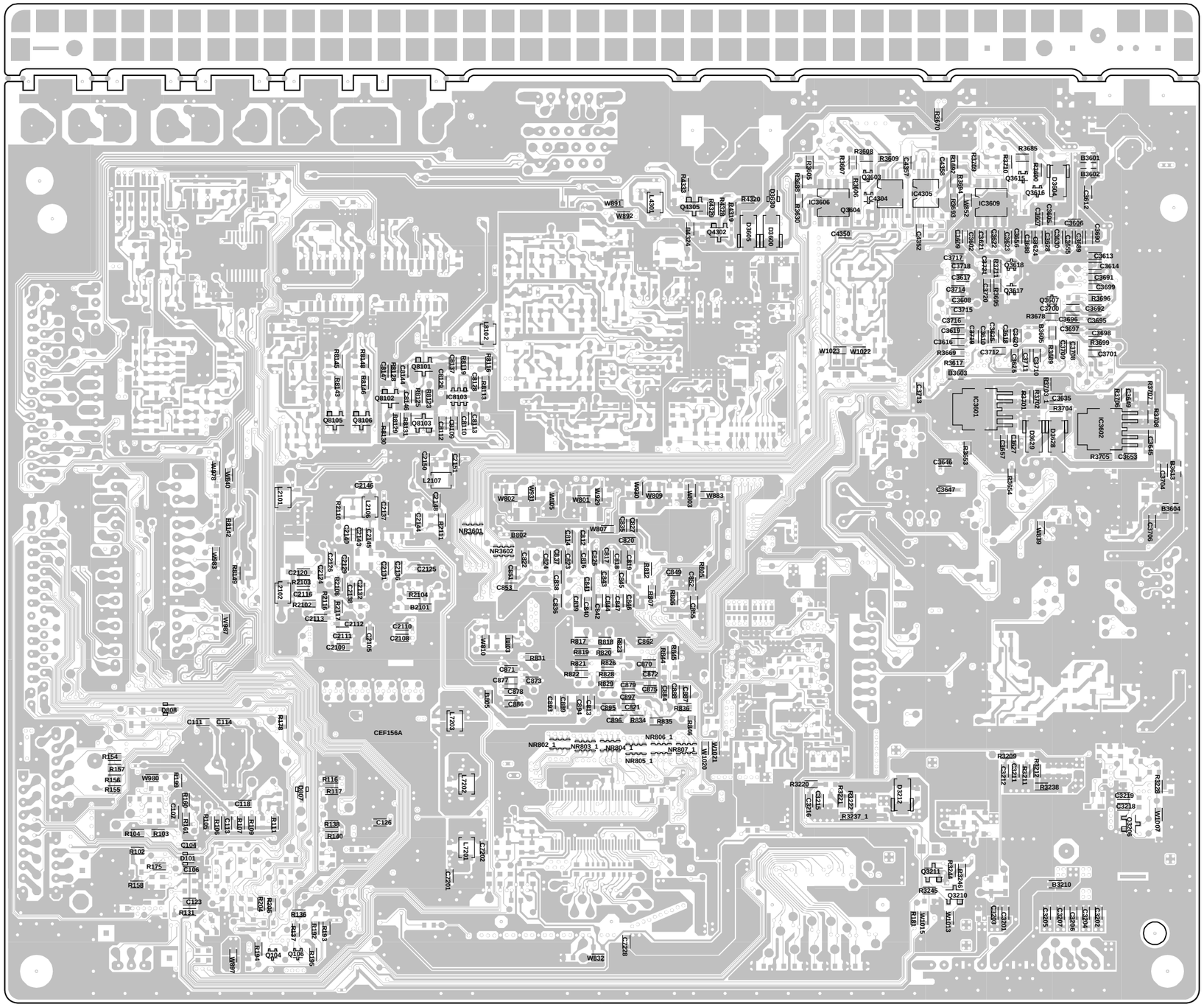
PRINTED CIRCUIT BOARDS

SCALER (TOP SIDE)

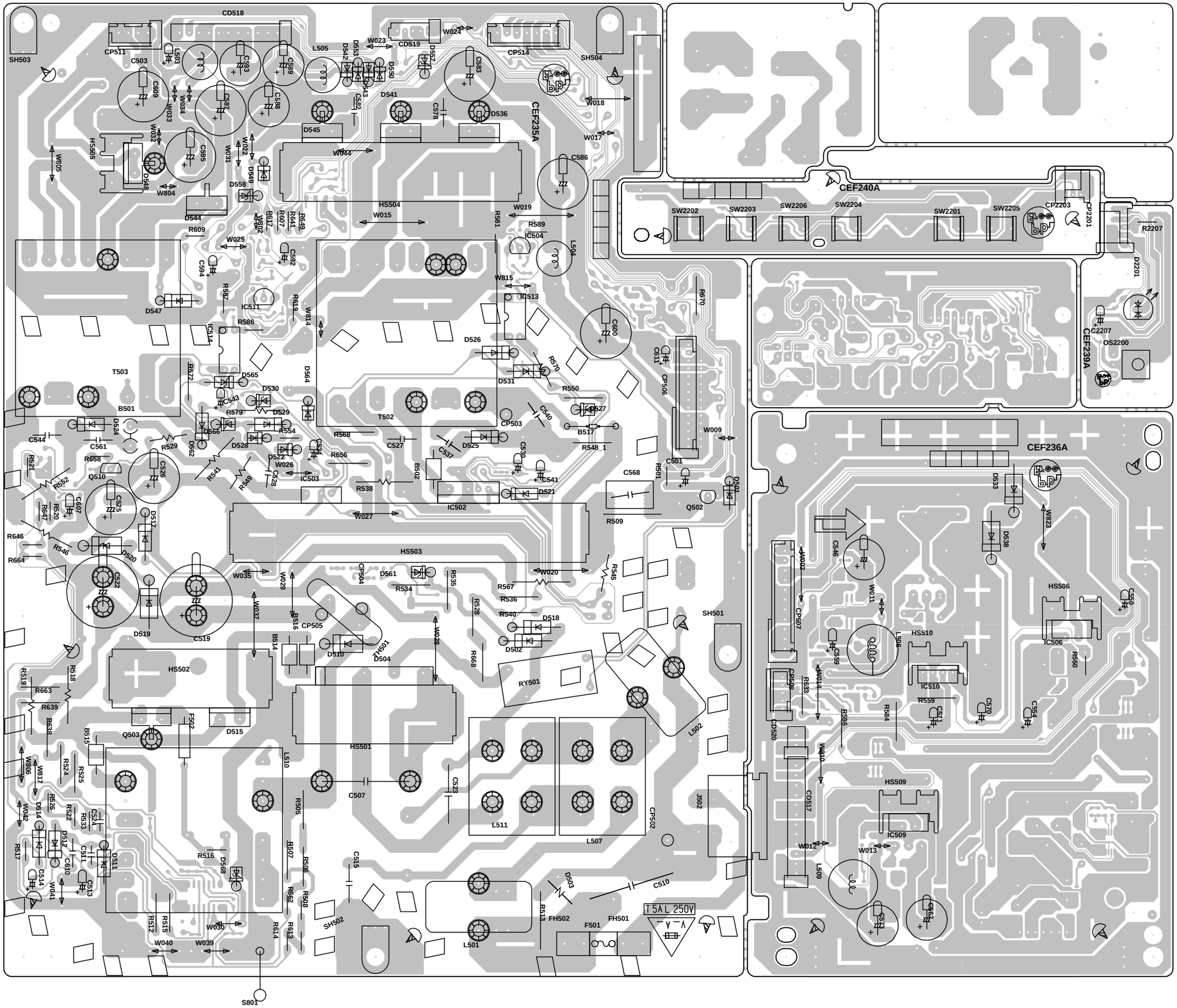


PRINTED CIRCUIT BOARDS

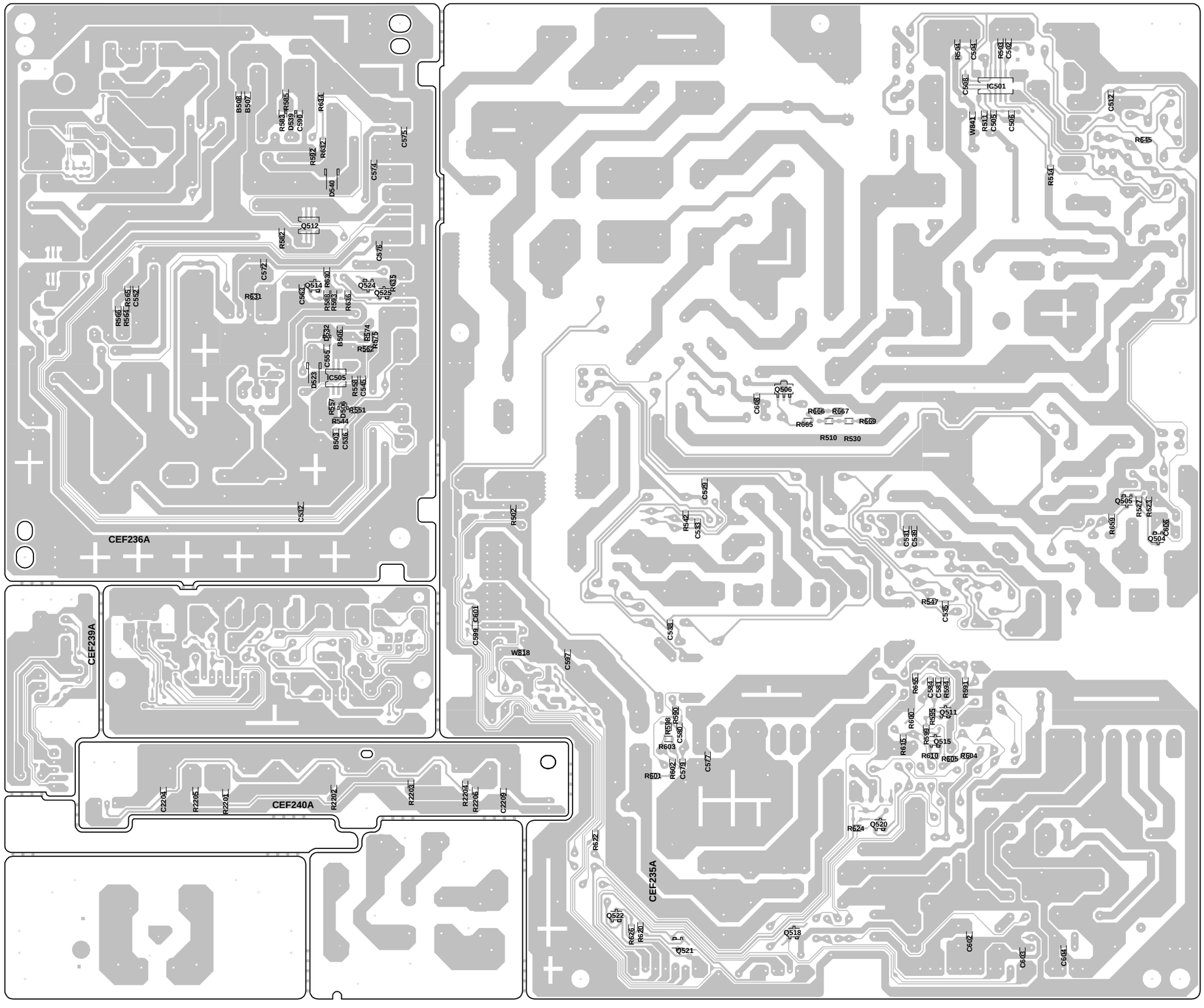
SCALER (BOTTOM SIDE)



PRINTED CIRCUIT BOARDS
POWER/REGULATOR/REMOCON/OPERATION (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
POWER/REGULATOR/OPERATION (CHIP MOUNTED PARTS)
SOLDER SIDE



AV SWITCH2 SCHEMATIC DIAGRAM

(AV PCB)

FROM POWER
AT+3.3V
AT+5V
P.CON+9V
GND
P.CON+5V
STANDBY_LED

FROM AV JACK
YUV1_A_IN_L
YUV1_A_IN_R
YUV2_A_IN_L
YUV2_A_IN_R
S_SW_1
S_SW_2
S1_Y_IN
S1_C_IN
S2_Y_IN
S2_C_IN
AV1_IN
AV2_IN
AV1_A_IN_L
AV1_A_IN_R

FROM/TO SWITCH/AMP
REMOCON_IN
STANDBY_LED

FROM/TO OPERATION/REMOCON
CP4202 (CP2201)
A2001WV2-5P
5 P.ON LED
4 STANDBY LED
3 AT+5V
2 GND
1 REMOCON IN

CD4202
CU256001

FROM TUNER
TUNER_VIDEO
SCL
SDA

FROM/TO STEREO
SCL
SDA
SW_AUDIO_R[JACK]
SW_AUDIO_L[JACK]
STEREO_RESET
SW_AUDIO_L[PC]
SW_AUDIO_R[PC]

FROM/TO SCALER
CP4203 (CP803)
00_6232_029_006_800+

NC	DVD/AV3_SW	29
NC	DTUNER_H	28
NC	DTV_MUTE_L	27
	GND/INV_DET	26
NC	DTUNER_RX	25
	GND	24
NC	DTUNER_TX	23
	GND	22
NC	DTUNER_RESET_L	21
	GND	20
SW_AUDIO_R[PC]	SW_AUDIO_R(PC)	19
	GND	18
SW_AUDIO_L[PC]	SW_AUDIO_L(PC)	17
NC	SC2_AUDIO_OUT-L	16
STEREO_RESET	STEREO_RESET	15
NC	SCART3_SW	14
NC	SCART_AUDIO_SW	13
	SDA1	12
	SCL1	11
	GND	10
NC	DTUNER_POWER	9
	GND	8
NC	DTUNER_SD_H	7
	GND	6
	SWITCH_CVBS	5
	GND	4
	SWITCH_VIDEO_Y	3
	GND	2
	SWITCH_VIDEO_C	1

CD4203_1
2H0T1801

AV SW IC
IC4201
AN15853B-E1

PCBD20
CMF091

CAUTION: DIGITAL TRANSISTOR

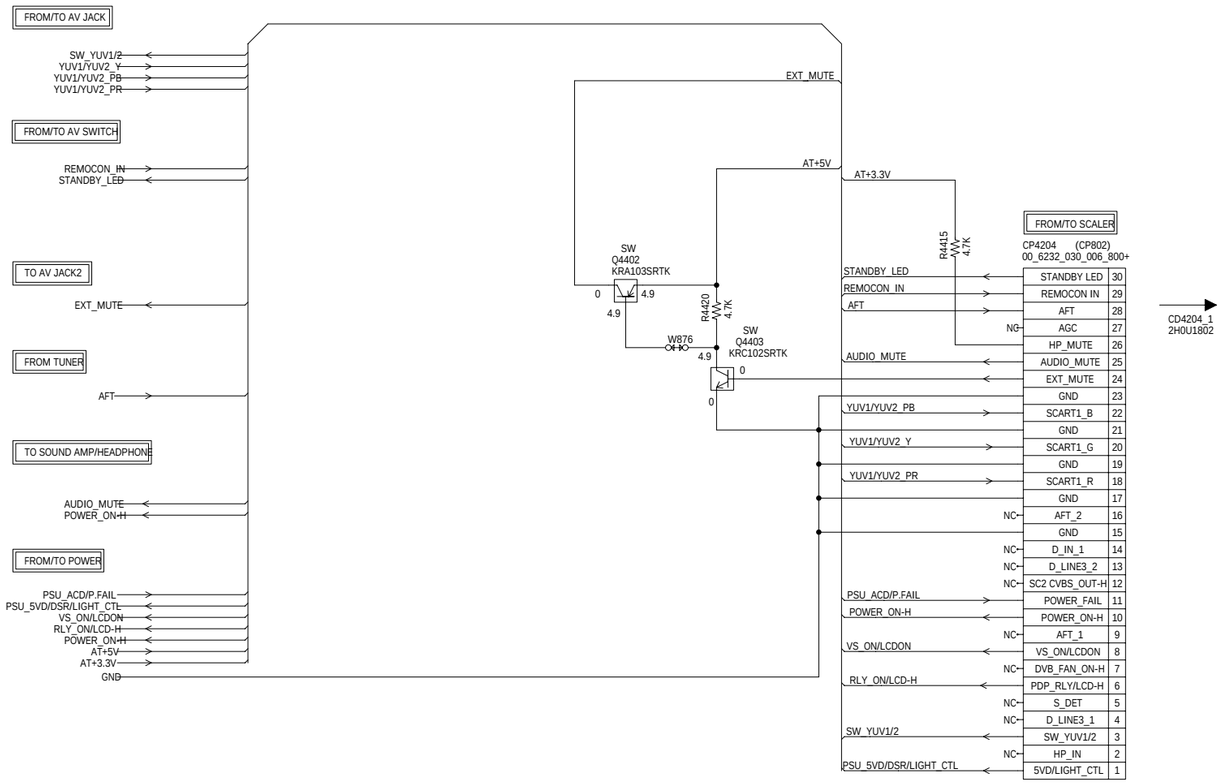
CAUTION: DIGITAL TRANSISTOR

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.

SWITCH/AMP SCHEMATIC DIAGRAM

(AV PCB)



PCBD20
CMF091

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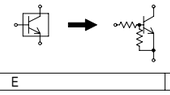
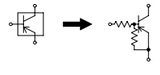
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

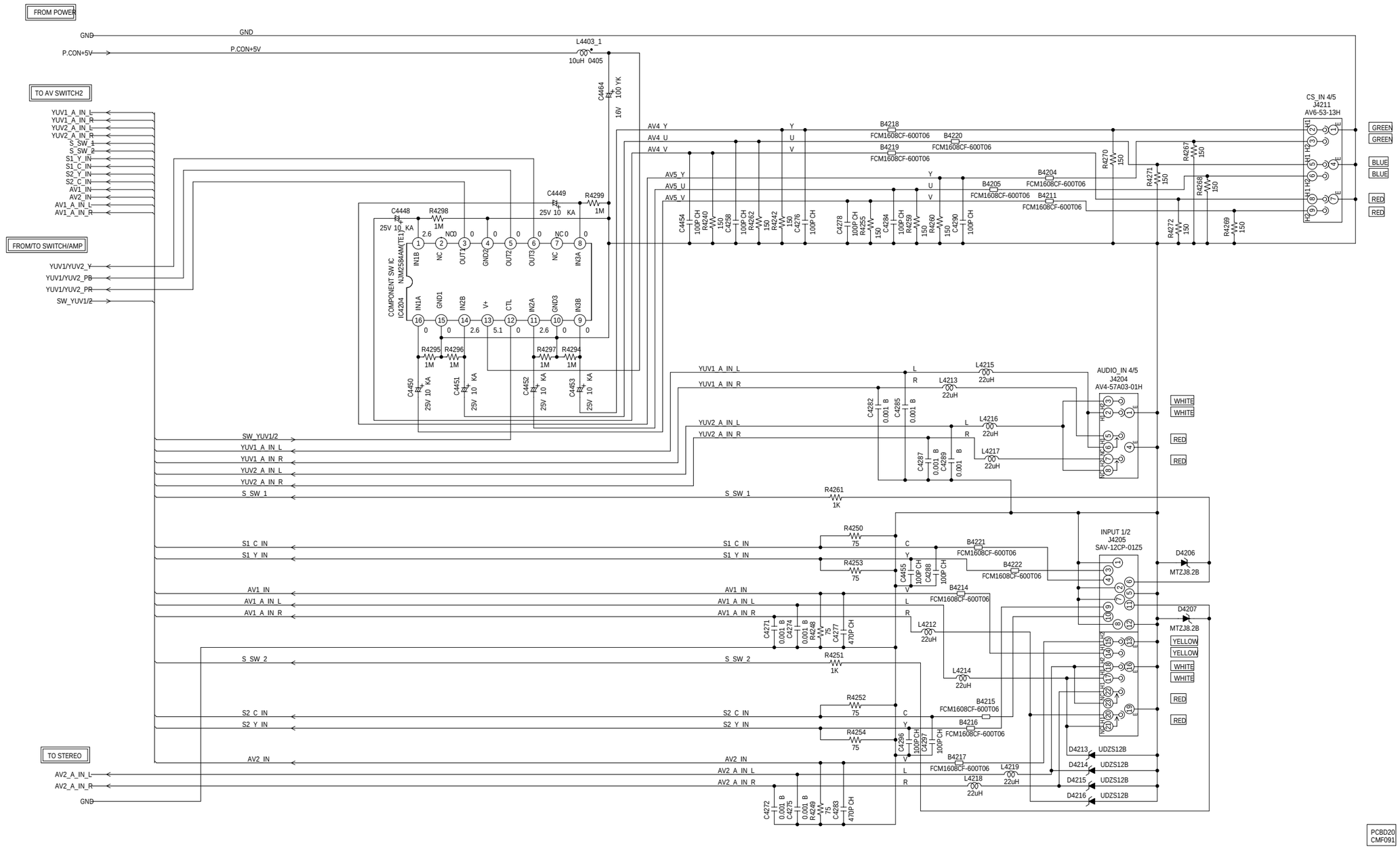


CAUTION: DIGITAL TRANSISTOR



AV JACK SCHEMATIC DIAGRAM

(AV PCB)



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STEREO SCHEMATIC DIAGRAM
(AV PCB)

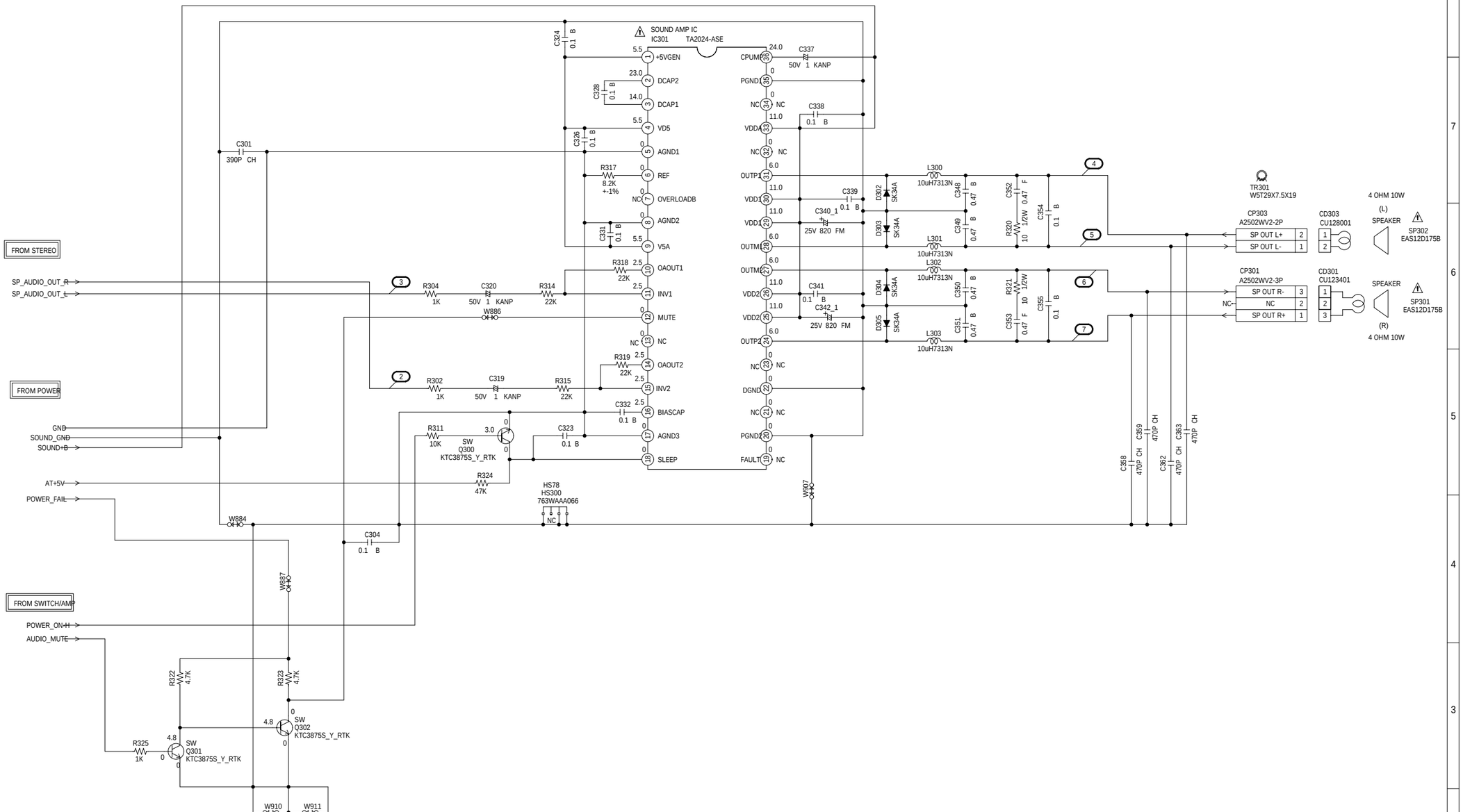
FROM POWER
AT+5V
P.CON+5V
GND
P.CON+8V
W839
L901_1 10uH 0405
C906 10V 220 YK
R914 10K
R915 10K
R913 1K
BUFFER Q901 KTC3875S_Y_RTK
BUFFER Q902 KTC3875S_Y_RTK
L903_1 10uH 0405
R906 100
R905 100
C922 0.1 B
D901 MTZJ5.6B
C904 50V 22 YK
C933 6.3V 1000 YK
C941 0.0015 B
C943 470P CH
C945 220P CH
C948 22P CH
C949 22P CH
R902 33
R903 33
L904_1 10uH 0405
W857
W856
C959 0.0022 B
C960 50V 1 KA
C961 50V 1 KA
C958 0.0022 B
TO SOUND AMP/HEADPHON
SP_AUDIO_OUT_L
SP_AUDIO_OUT_R
FROM/TO HDMI MICON2
CP901 (CP3602) A2001WV2-4P
HDMI_I2SSCK/MCK
HDMI_I2SSDO
HDMI_I2SWS
GND
W892 W893 W894
B904 B906 FCM1608KF-102T02
W920
CD901_1 CU248101
TR901 W5T29X7.5X19
SPOUT_R
SPOUT_L
DACM_SUB
SC2_OUT_R
SC2_OUT_L
VREF1
VariOut_R
VariOut_L
CAPL_A
AHVSUP
25 NC
26 VREF2
80 STANDBYQ
79 ADR_SEL
STEREO IC
IC904
MSP4440G-QA-C13-100
D_CTR_I/O_2
D_CTR_I/O_1
AUDIO_CL_OUT
TP
XTAL_OUT
XTAL_IN
TESTEN
ANA_IN2+
ANA_IN-
SIF
AVSUP
X901 100GT01806 18.432MHz
C956 10P CH
C957 5P CH
C955 56P CH
C953 56P CH
C954 56P CH
FROM TUNER
SIF
TO AV JACK2
AUDIO_JACK_OUT_R
AUDIO_JACK_OUT_L
C916 16V 22 KANP
C919 16V 22 KANP
R904 100
R916 100
C915 50V 10 YK
C914 50V 10 YK
40 CAPL_M
65 AVSUP
C917 470P CH
C920 0.0015 B
C918 50V 10 YK
C926 0.1 B
C927 3.3 KA 50V
C962 0.33 B
C963 0.33 B
C934 0.33 B
C936 0.33 B
C940 0.33 B
C942 0.33 B
C944 0.1 B
C946 50V 10 YK
C952 470P CH
C950 0.0015 B
C951 50V 10 YK
FROM/TO AV SWITCH2
STEREO_RESET
SCL
SDA
SW_AUDIO_L[PC]
SW_AUDIO_R[PC]
SW_AUDIO_L[JACK]
SW_AUDIO_R[JACK]
FROM AV JACK
AV2_A_IN_L
AV2_A_IN_R
GND
PCBD20 CMF091

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.

SOUND AMP/HEADPHONE AMP SCHEMATIC DIAGRAM

(AV PCB)



PCBD20
CMF091

CAUTION SINCE THESE PARTS MARKED BY ⚠ 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。

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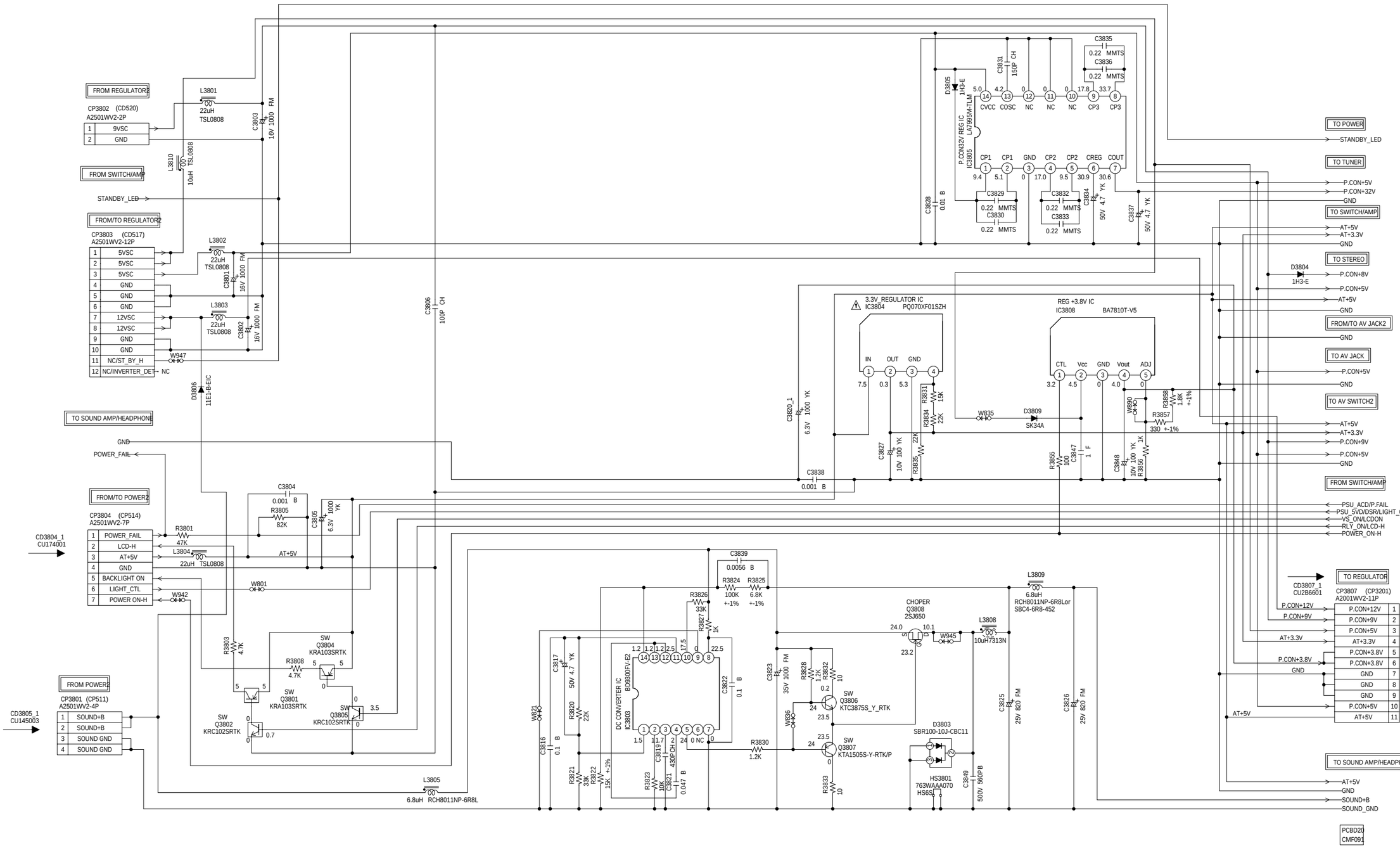
POWER SCHEMATIC DIAGRAM

(AV PCB)



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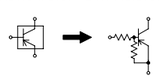
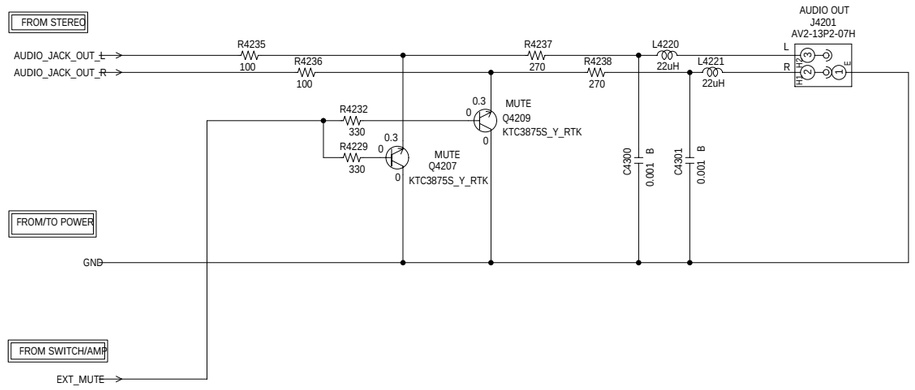
CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR

AV JACK2 SCHEMATIC DIAGRAM

(AV PCB)



PCBD20
CMF091

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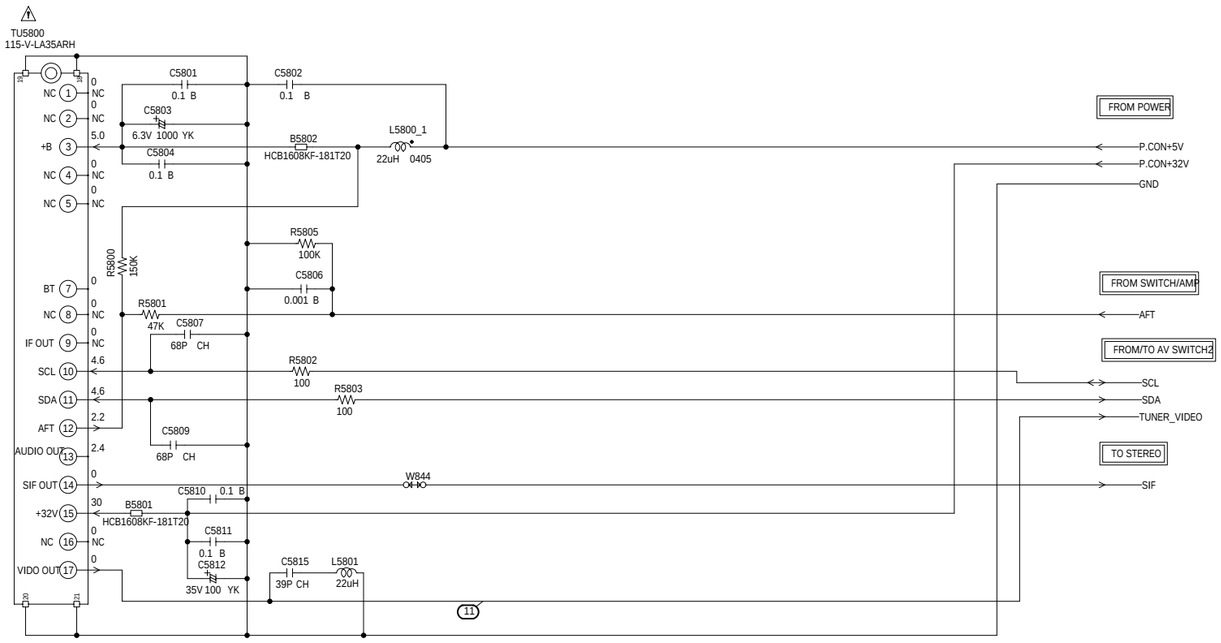
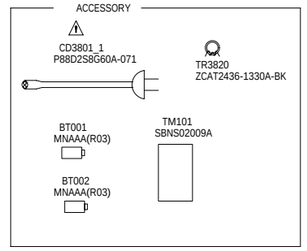
TUNER SCHEMATIC DIAGRAM
(AV PCB)





PCBD20
CMF091

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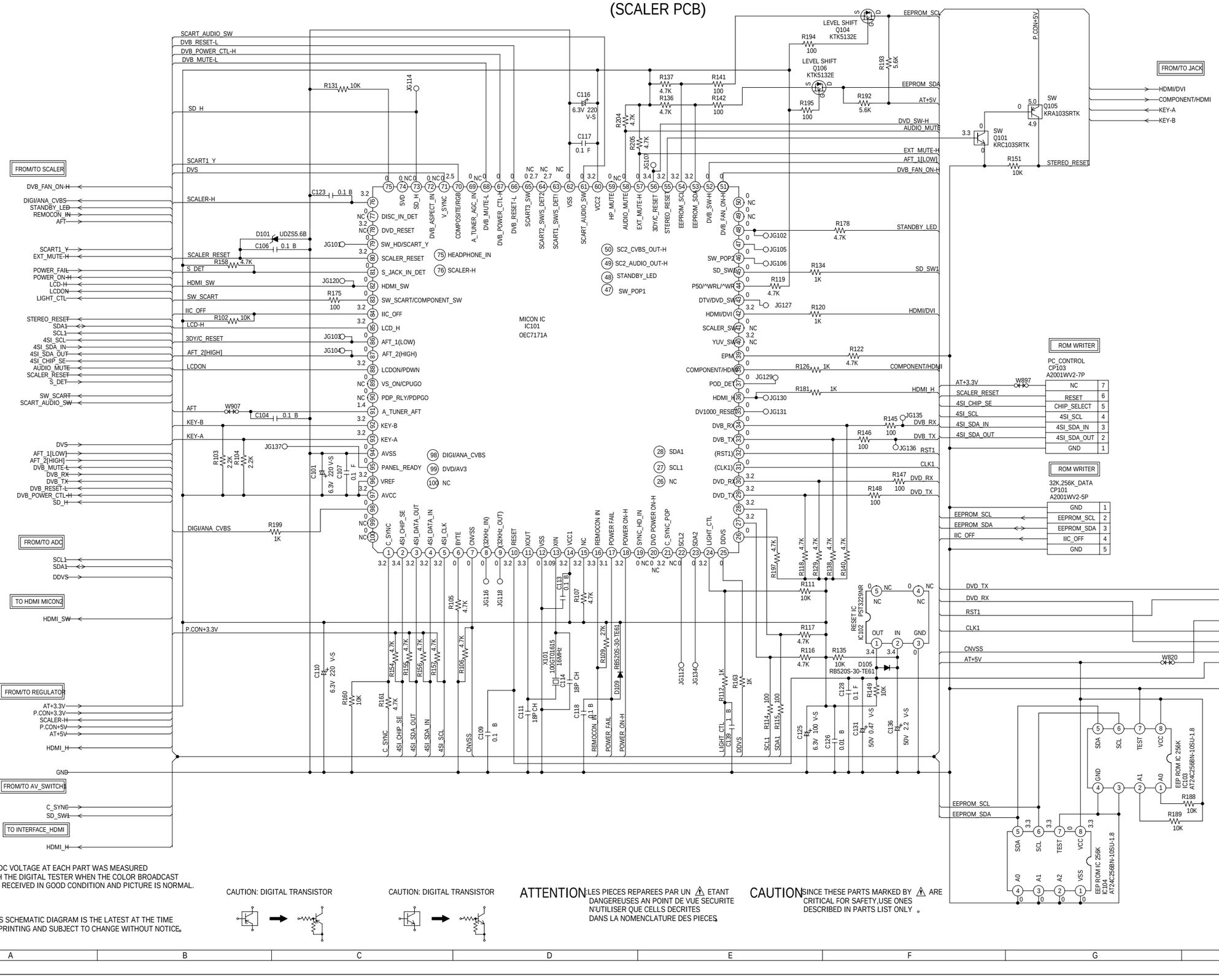
MICON SCHEMATIC DIAGRAM

(SCALER PCB)



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CAUTION: DIGITAL TRANSISTOR

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

SCALER SCHEMATIC DIAGRAM

(SCALER PCB)

FROM/TO SWITCH/AMP

CP802 (CP4204)
00_6232_030_006_800+

1	STANDBY LED	STANDBY_LED
2	REMOCON IN	REMOCON_IN
3	AFT	AFT
4	AGC	NC
5	HP_MUTE	NC
6	AUDIO_MUTE	AUDIO_MUTE
7	EXT_MUTE-H	EXT_MUTE-H
8	GND	
9	SCART1_B	SW2_B/CB
10	GND	
11	SCART1_G	SW2_G/Y
12	GND	
13	SCART1_R	SW2_R/CR
14	GND	
15	AFT_2/DTV_CVBS	AFT_2[HIGH]
16	GND	GND
17	SCART1_Y	SCART1_Y
18	SCART2_SW	NC
19	SC2 CVBS_OUT-H	NC
20	POWER_FAIL	POWER_FAIL
21	POWER_ON-H	POWER_ON-H
22	AFT_1	AFT_1[LOW]
23	LCDON	LCDON
24	DVB_FAN_ON-H	DVB_FAN_ON-H
25	LCD-H/PDP_RLY	LCD-H
26	S_DET	S_DET
27	SCART1_SW	NC
28	SW_YUV1/2	SW_SCART
29	HP_IN	NC
30	LIGHT CTL/PSU_5VD	LIGHT_CTL

FROM/TO AV SWITCH2

CP803 (CP4203)
00_6232_029_006_800+

1	DVD/AV3_SW/SPDIF	NC
2	D/A_SW/INV_DET	DIGI/ANA_CVBS
3	SPIF/DTV_A_R	DVB_MUTE
4	INVERT_DET/GND	NC
5	POP_S_Y/DTV_A_L	DVB_RX
6	GND	
7	POP_S_C/DAD_A_R	DVB_TX
8	GND	
9	POP_CVBS/DVD_A_L	DVB_RESET-L
10	GND	
11	SW_AUDIO_R(PC)	SW_AUDIO_R[PC]
12	GND	
13	SW_AUDIO_L(PC)	SW_AUDIO_L[PC]
14	SC2_AUDIO_OUT-H	NC
15	STEREO_RESET	STEREO_RESET
16	SCART3_SW	NC
17	SCART_AUDIO_SW	SCART_AUDIO_SW
18	SDA1	SDA1
19	SCL1	SCL1
20	GND	
21	DVD_Y_OUT	DVB_POWER_CTL-H
22	GND	
23	DVD_C_OUT	SD_H
24	GND	
25	SWITCH_CVBS	SW_CVBS
26	GND	
27	SWITCH_VIDEO_Y	SW_VIDEO_Y
28	GND	
29	SWITCH_VIDEO_C	SW_VIDEO_C

FROM/TO AV_SWITCH

SW_G/SW_Y
SW_R/SW_CR
SW_B/SW_CB
SW2_R/CR
SW2_G/Y
SW2_B/CB
SW_CVBS
SW_VIDEO_Y

SCALER IC
IC801
R8J66607A72FP

TO LVDS

DR9_W/O_DV, DR8_W/O_DV, DR7_W/O_DV, DV6_W/O_DV, DR5_W/O_DV, DR4_W/O_DV, DR3_W/O_DV, DR2_W/O_DV
DB9_W/O_DV, DB8_W/O_DV, DB7_W/O_DV, DB6_W/O_DV, DB5_W/O_DV, DB4_W/O_DV, DB3_W/O_DV, DB2_W/O_DV
DG9_W/O_DV, DG8_W/O_DV, DG7_W/O_DV, DG6_W/O_DV, DG5_W/O_DV, DG4_W/O_DV, DG3_W/O_DV, DG2_W/O_DV
DCLK1
DEN
DVS
DHS

FROM ADC

DDHS, DDVS, DDCK
DPG7, DPG6, DPG5, DPG4, DPG3, DPG2, DPG1, DPG0
DPR7, DPR6, DPR5, DPR4, DPR3, DPR2, DPR1, DPR0
DPB7, DPB6, DPB5, DPB4, DPB3, DPB2, DPB1, DPB0

FROM REGULATOR

P.CON+1.5V
P.CON+3.3V
GND

FROM JACK

SW_AUDIO_R[PC]
SW_AUDIO_L[PC]

FROM/TO MICON

STANDBY_LED, REMOCON_IN, AFT, SCART1_Y, EXT_MUTE-H, POWER_FAIL, POWER_ON-H, LCD-H, LCDON, LIGHT_CTL, STEREO_RESET, AUDIO_MUTE, SDA1, SCL1, SCALER_RESET, 4SI_CHIP_SE, 4SI_SDA_OUT, 4SI_SDA_IN, 4SI_SCL, S_DET, SW_SCART, SCART_AUDIO_SW, DVS, DVB_FAN_ON-H, AFT_1[LOW], AFT_2[HIGH], DVB_MUTE-L, DVB_RX, DVB_TX, DVB_RESET-L, DVB_POWER_CTL-H, SD_H, DIGI/ANA_CVBS

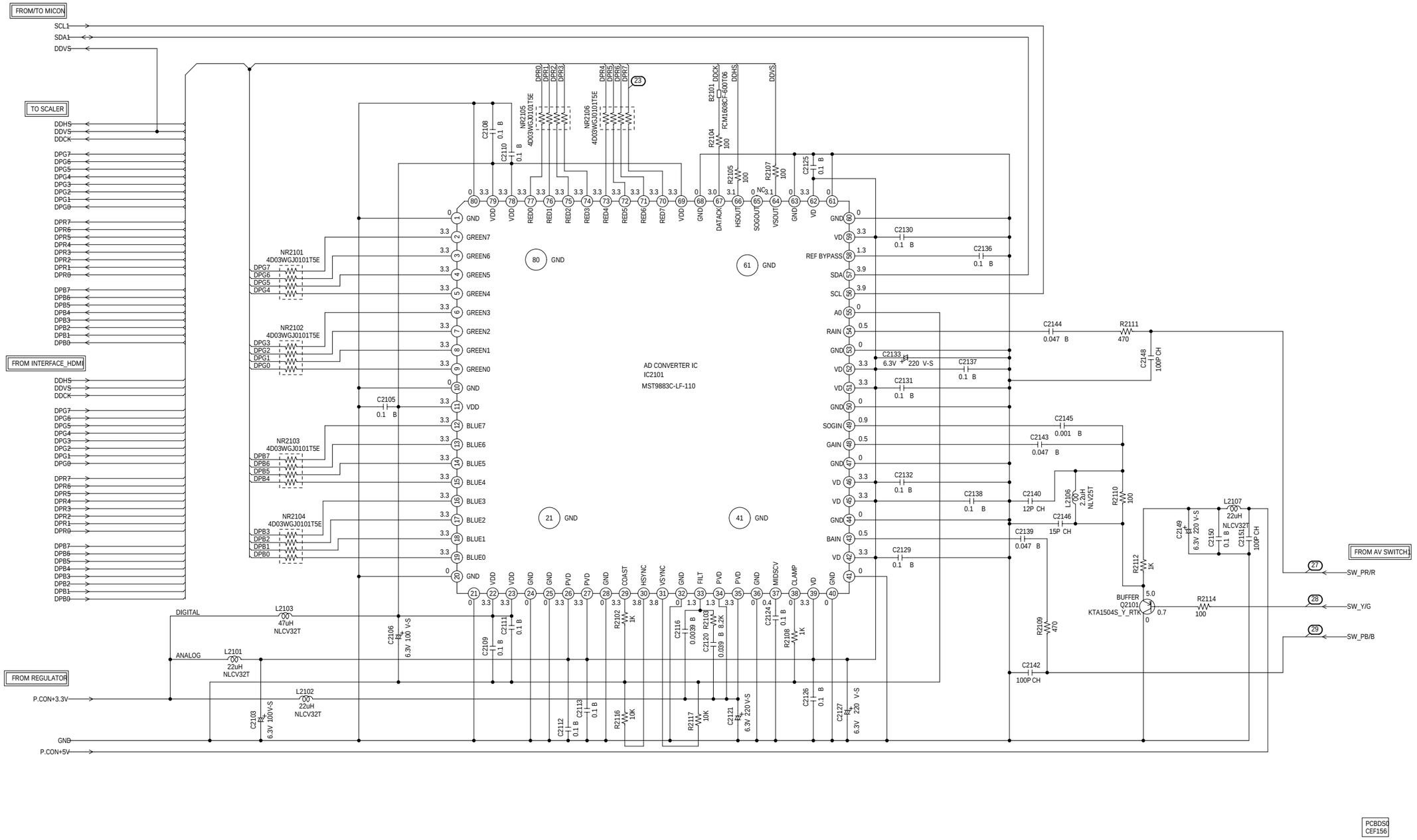
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

PCBDSC
CEF156

ADC SCHEMATIC DIAGRAM

(SCALER PCB)

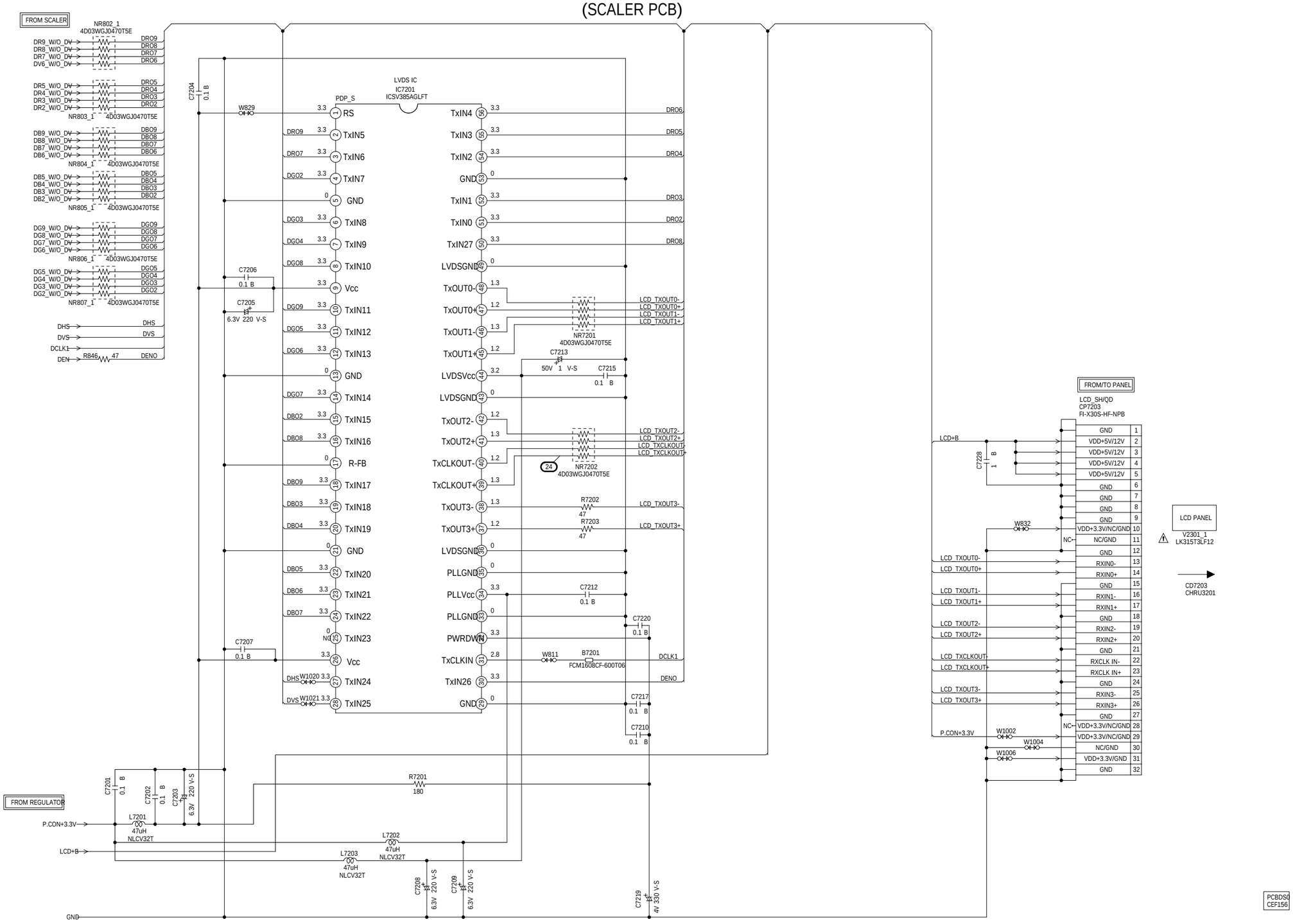


NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

LVDS SCHEMATIC DIAGRAM

(SCALER PCB)

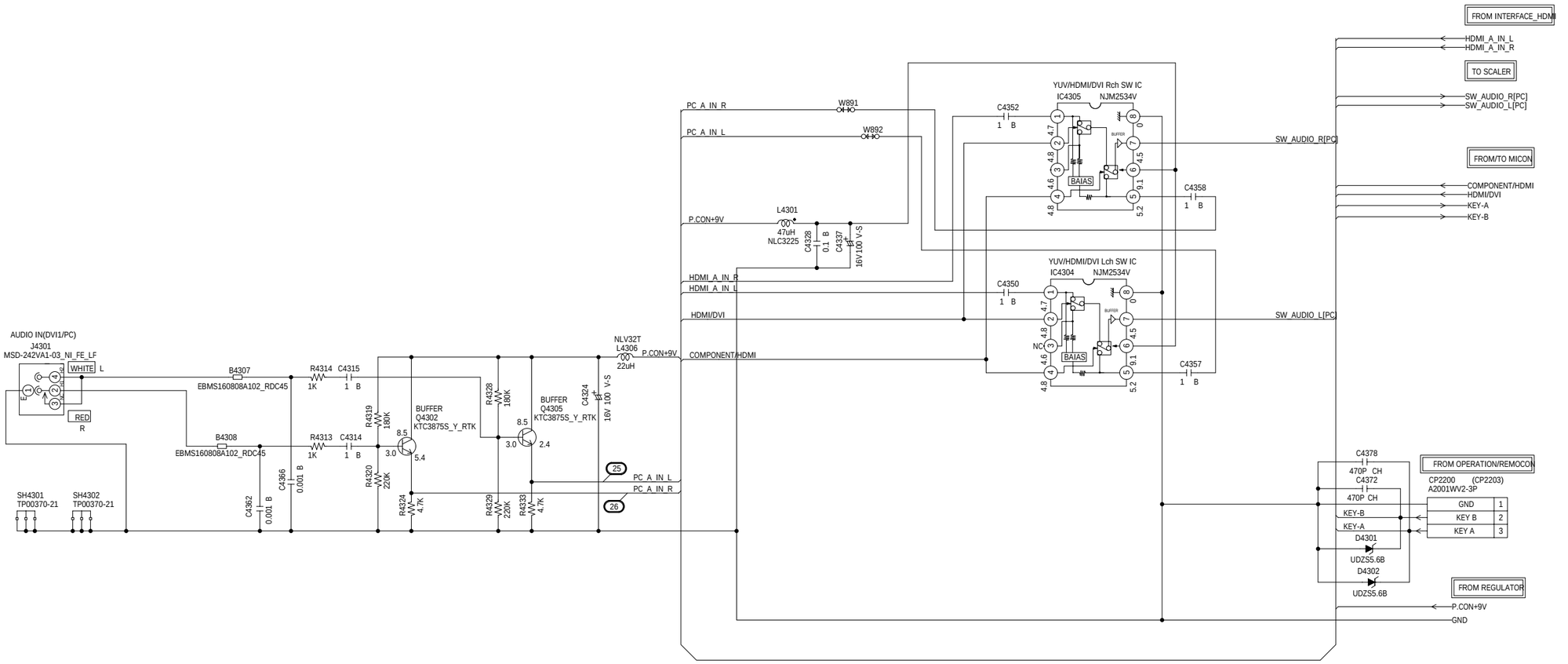


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

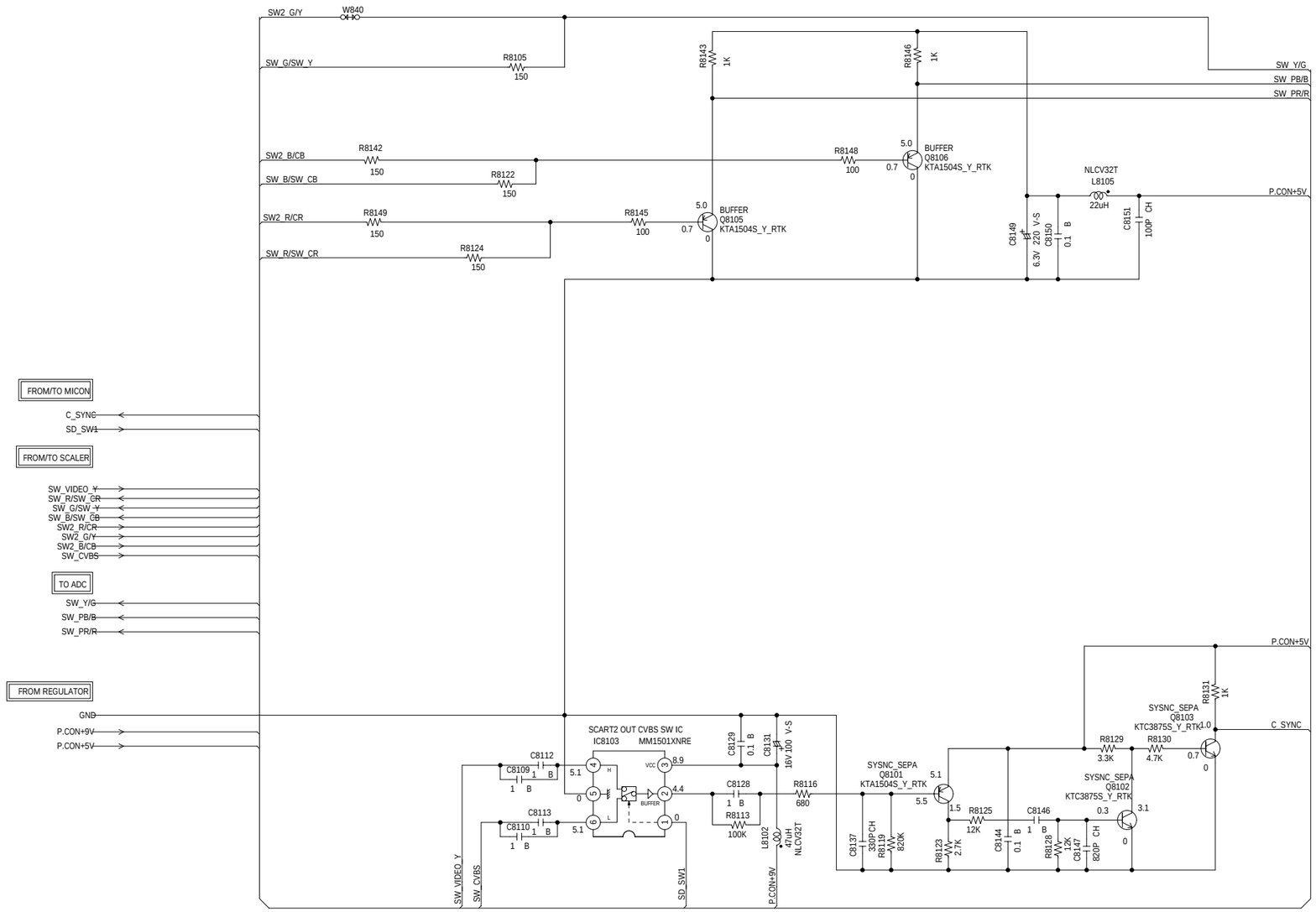
JACK SCHEMATIC DIAGRAM

(SCALER PCB)



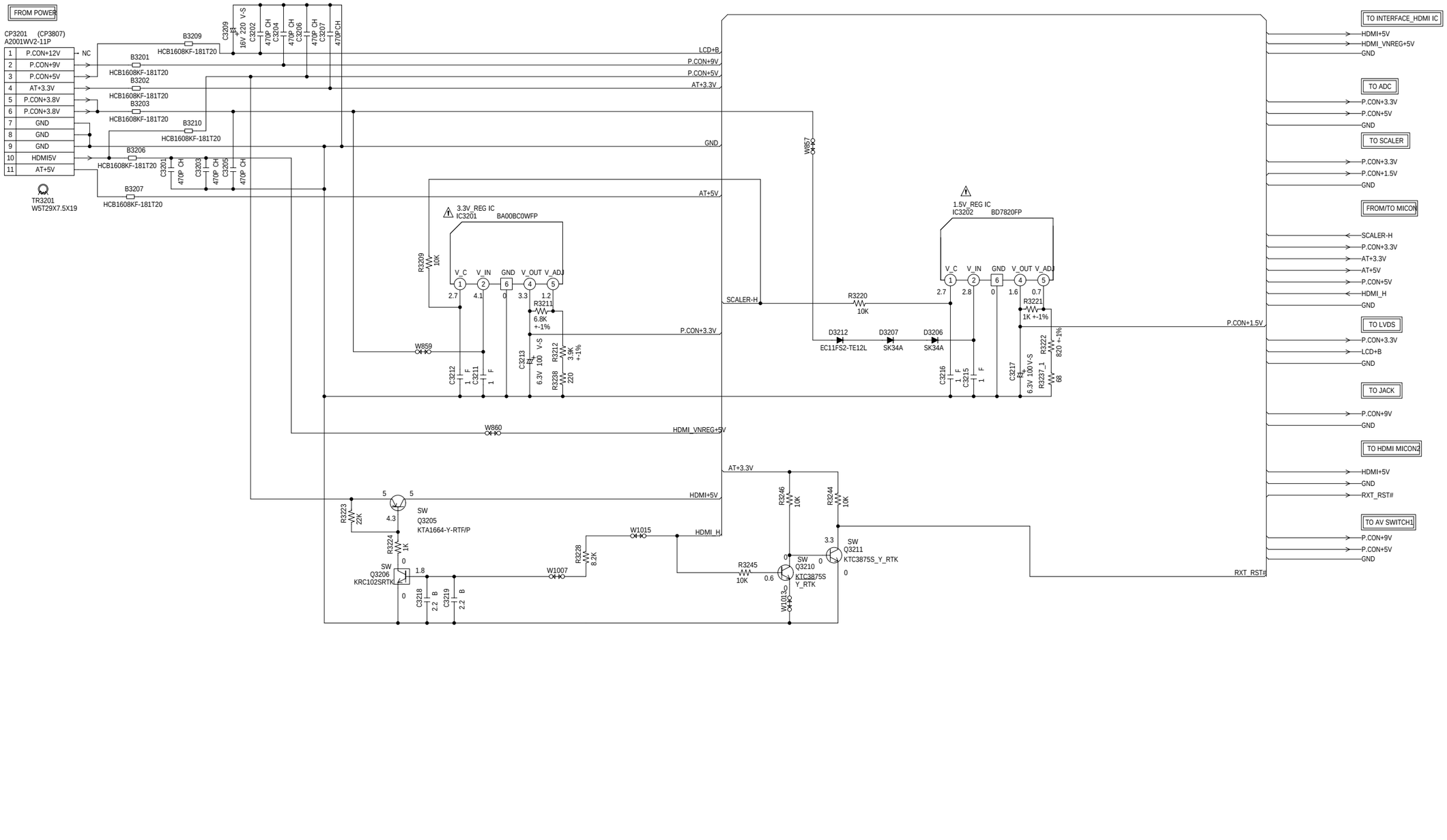
AV SWITCH1 SCHEMATIC DIAGRAM

(SCALER PCB)



REGULATOR SCHEMATIC DIAGRAM

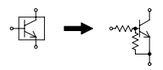
(SCALER PCB)



CAUTION SINCE THESE PARTS MARKED BY ⚠ 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。

CAUTION: DIGITAL TRANSISTOR

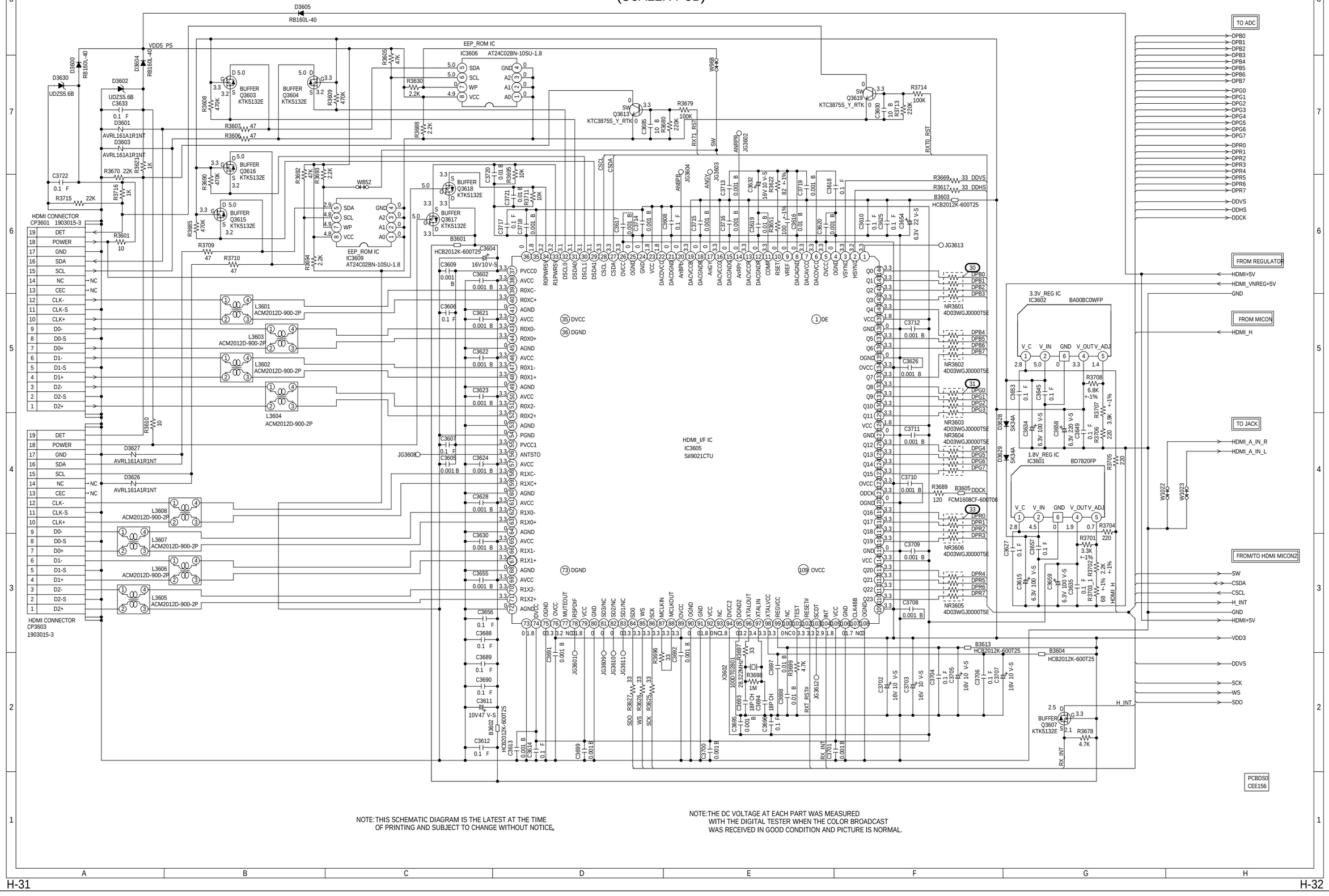


NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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.

INTERFACE_HDMI IC SCHEMATIC DIAGRAM

(SCALER PCB)



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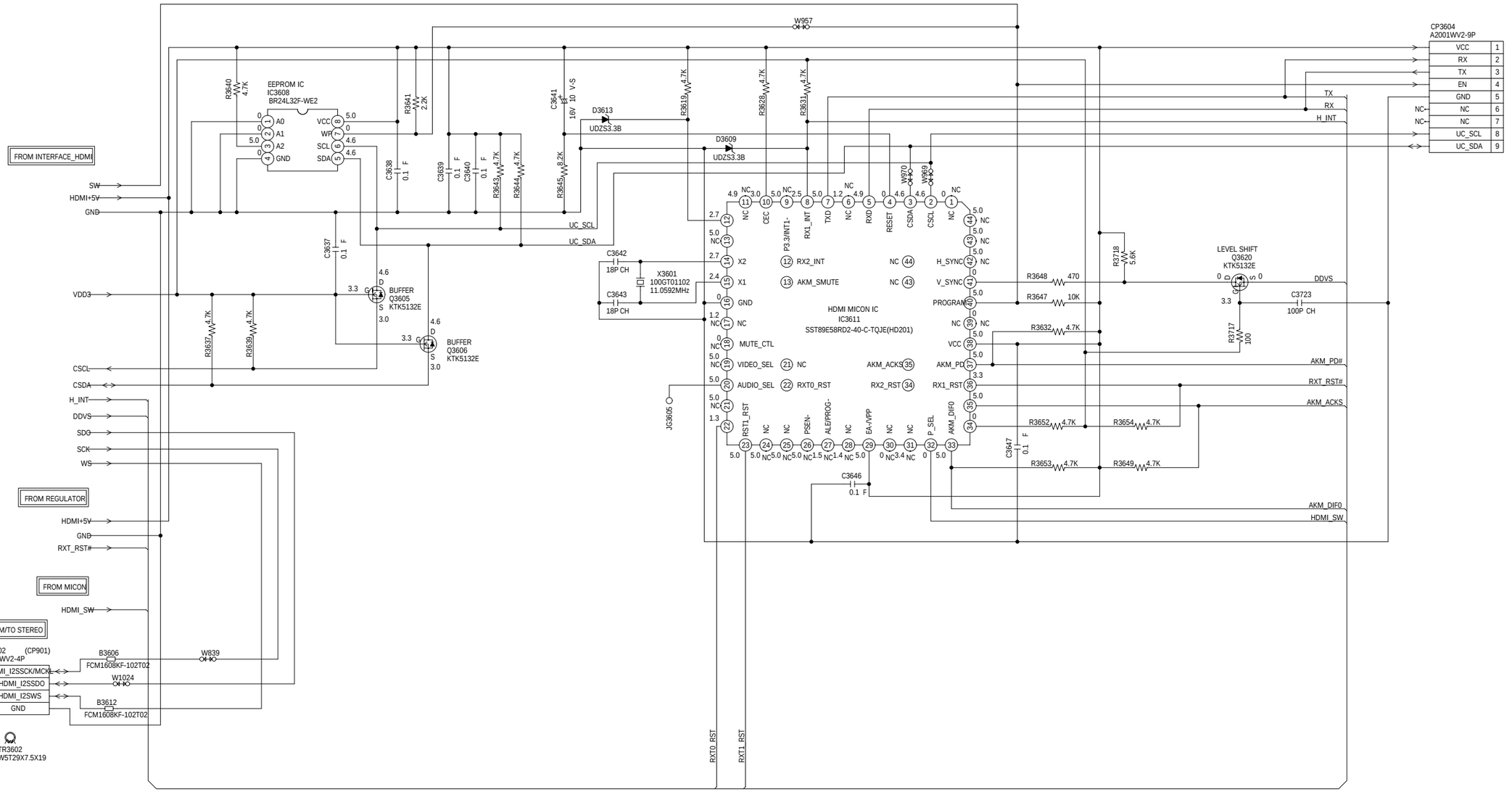
HDMI MICON2 SCHEMATIC DIAGRAM

(SCALER PCB)



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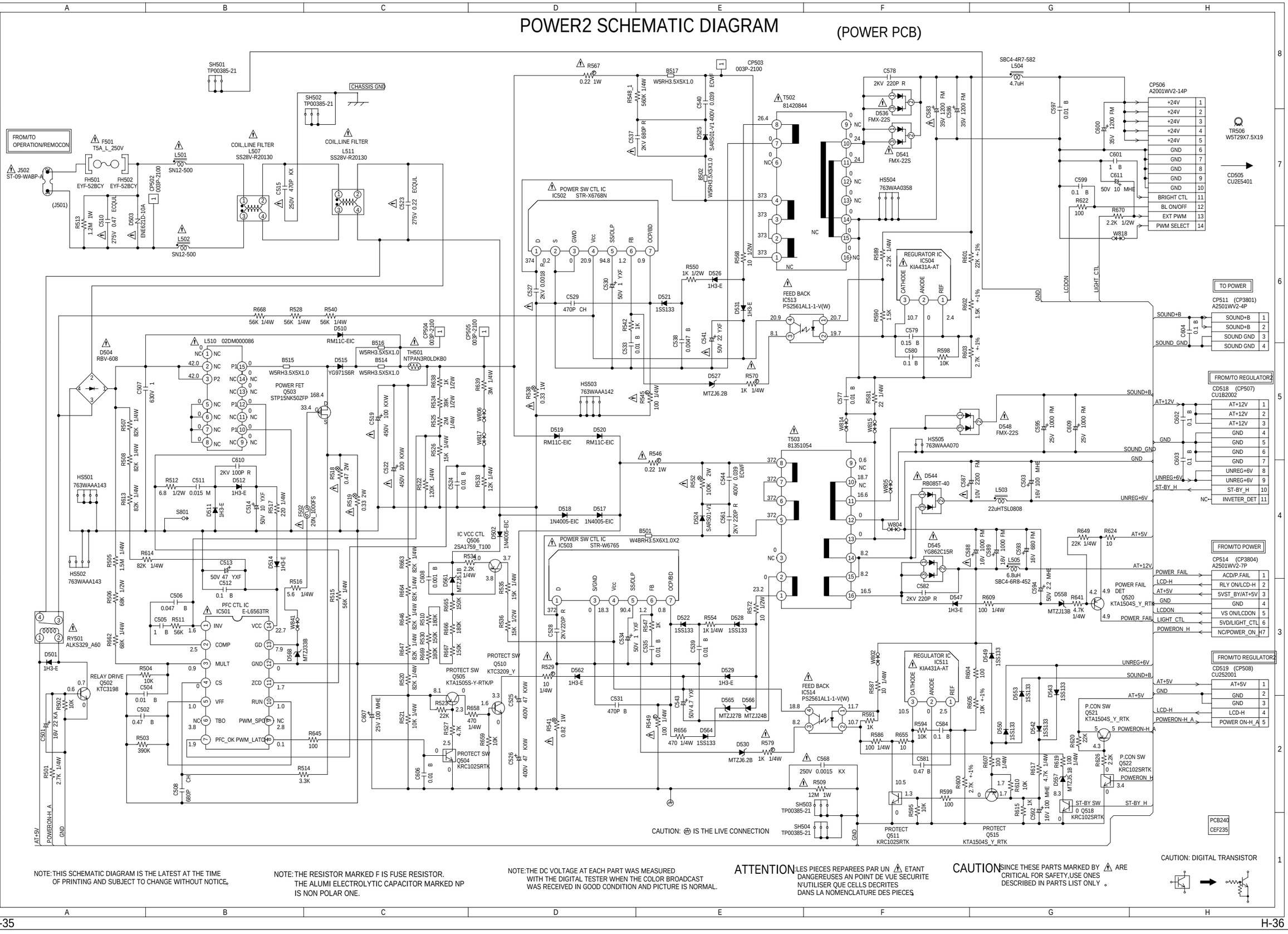
PCBDS0
CEF156

POWER2 SCHEMATIC DIAGRAM (POWER PCB)



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

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

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.

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

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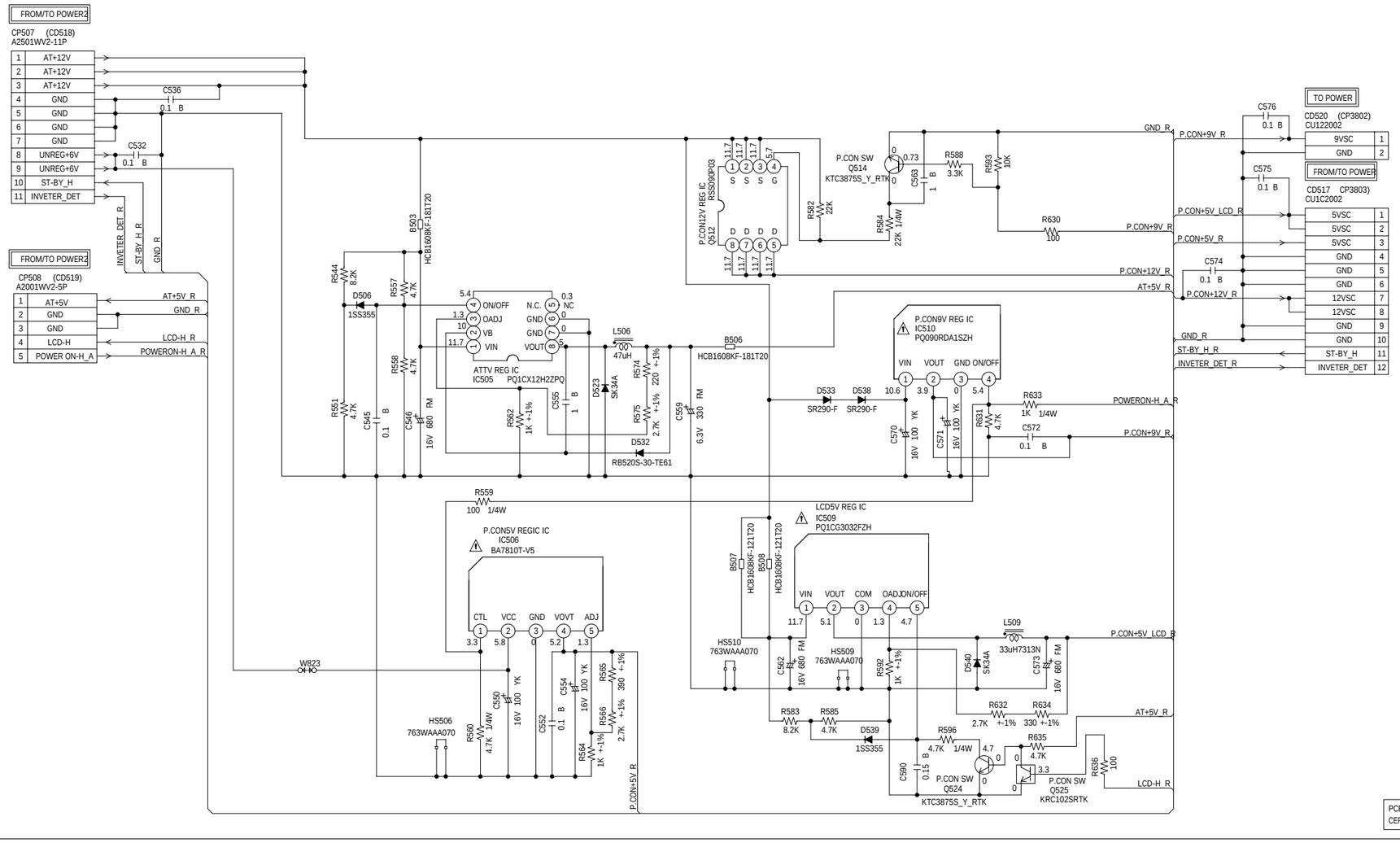
REGULATOR2 SCHEMATIC DIAGRAM

(REGULATOR PCB)



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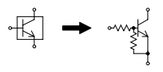
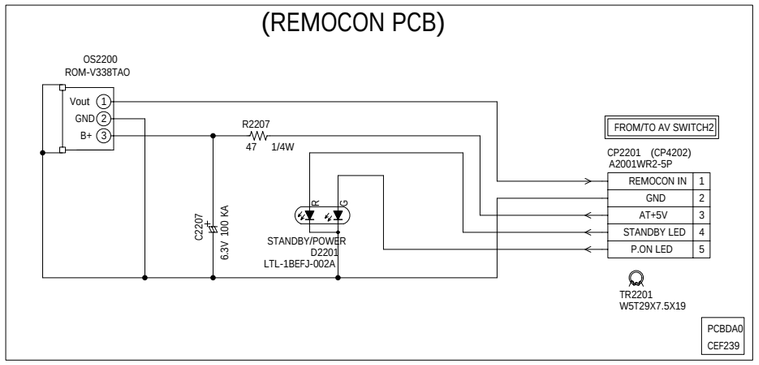
CAUTION: DIGITAL TRANSISTOR

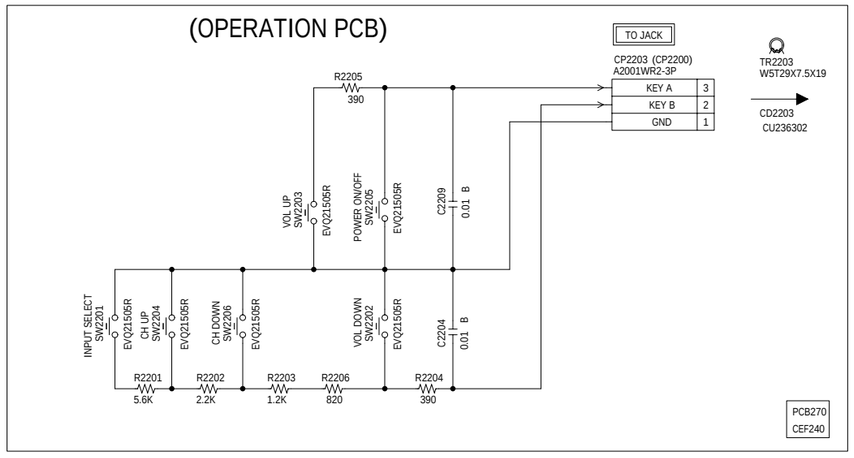


OPERATION/REMOCON SCHEMATIC DIAGRAM

(REMOCON PCB)



(OPERATION 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.

INTERCONNECTION DIAGRAM

SP302 4 OHM 10W
SPEAKER (L)
CD303
SPEAKER (R)
SP301 4 OHM 10W
CD301
TR301

CP506
1	+24V
2	+24V
3	+24V
4	+24V
5	+24V
6	GND
7	GND
8	GND
9	GND
10	GND
11	BRIGHT CTL
12	BL ON/OFF
13	Brightness Ctl
14	N.? SIGNAL GND

TR506

CP511 — CD3805_1 — CP3801
SOUND+B	1	1	SOUND+B
SOUND+B	2	2	SOUND+B
SOUND GND	3	3	SOUND GND
SOUND GND	4	4	SOUND GND

CP508 — CD3806 — CP3808
GND	7	7	GND
GND	6	6	GND
GND	5	5	GND
DTV UNREG+4V	4	4	DTV UNREG+4V
DTV UNREG+4V	3	3	DTV UNREG+4V
DTV UNREG+5V	2	2	DTV UNREG+5V
DTV UNREG+5V	1	1	DTV UNREG+5V

CP303
2	SP OUT L+
1	SP OUT L-

CP301
3	SP OUT R-
2	NC
1	SP OUT R+

AUDIO_IN 4/5 J4204: RED, RED, WHITE, WHITE
CS_IN 4/5 J4211: RED, RED, BLUE, BLUE, GREEN, GREEN
INPUT 1/2 J4205: RED, RED, WHITE, WHITE, YELLOW, YELLOW
AUDIO OUT J4201: R, L

CP3603
DET	19
POWER	18
GND	17
SDA	16
SCL	15
NC	14
CEC	13
CLK-	12
CLK-S	11
CLK+	10
D0-	9
D0-S	8
D0+	7
D1-	6
D1-S	5
D1+	4
D2-	3
D2-S	2
D2+	1

CP3601
DET	19
POWER	18
GND	17
SDA	16
SCL	15
NC	14
CEC	13
CLK-	12
CLK-S	11
CLK+	10
D0-	9
D0-S	8
D0+	7
D1-	6
D1-S	5
D1+	4
D2-	3
D2-S	2
D2+	1

CP7203
GND	1
VDD+5V/12V	2
VDD+5V/12V	3
VDD+5V/12V	4
VDD+5V/12V	5
GND	6
GND	7
GND	8
GND	9
VDD+3.3V/NC/GND	10
NC/GND	11
GND	12
RXIN0-	13
RXIN0+	14
GND	15
RXIN1-	16
RXIN1+	17
GND	18
RXIN2-	19
RXIN2+	20
GND	21
RXCLK IN-	22
RXCLK IN+	23
GND	24
RXIN3-	25
RXIN3+	26
GND	27
VDD+3.3V/NC/GND	28
VDD+3.3V/NC/GND	29
NC/GND	30
VDD+3.3V/GND	31
GND	32

CD7203 → V2301_1 → LCD PANEL

CP3807 — CD3807_1 — CP3201
P.CON12V	1	1	P.CON12V
P.CON+9V	2	2	P.CON+9V
P.CON+5V	3	3	P.CON+5V
AT3.3V	4	4	AT3.3V
P.CON+3.8V	5	5	P.CON+3.8V
P.CON+3.8V	6	6	P.CON+3.8V
GND	7	7	GND
GND	8	8	GND
GND	9	9	GND
P.CON+5V	10	10	HDMI5V
AT+5V	11	11	AT+5V

AUDIO IN(DVI1/PC) J4301: WHITE (L), RED (R)
TR3201

CP514 — CD3804_1 — CP3804
ACD/P.FAIL	1	1	POWER_FAIL
RLY ON/LCD-H	2	2	LCD-H
5VST_BY/AT+5V	3	3	AT+5V
GND	4	4	GND
VS ON/LCDON	5	5	BACKLIGHT ON
5VD/LIGHT_CTL	6	6	LIGHT_CTL
NC/POWER_ON_H	7	7	POWER ON-H

TR3820
AV PCB PCBD20 CMF091
J502
CD3801_1
POWER PCB PCB240 CEF235

CD518 → CP507: AT+12V, AT+12V, AT+12V, GND, GND, GND, GND, UNREG+6V, UNREG+6V, ST-BY_H, INVETER_DET
CD519 → CP508: AT+5V, GND, GND, LCD-H, POWER ON-H_A

CP4204
STANDBY LED	30	30	1
REMOCON IN	29	29	2
AFT	28	28	3
AGC	27	27	4
HP_MUTE	26	26	5
AUDIO_MUTE	25	25	6
EXT_MUTE	24	24	7
GND	23	23	8
SCART1_B	22	22	9
GND	21	21	10
SCART1_G	20	20	11
GND	19	19	12
SCART1_R	18	18	13
GND	17	17	14
AFT_2	16	16	15
GND	15	15	16
D_IN_1	14	14	17
D_LINE3_2	13	13	18
SC2 CVBS_OUT-H	12	12	19
POWER_FAIL	11	11	20
POWER_ON-H	10	10	21
AFT_1	9	9	22
VS_ON/LCDON	8	8	23
DVB_FAN_ON-H	7	7	24
PDP_RLY/LCD-H	6	6	25
S_DET	5	5	26
D_LINE3_1	4	4	27
SW_YUV1/2	3	3	28
HP_IN	2	2	29
5VD/LIGHT_CTL	1	1	30

FFC CD4204_1

CP802
STANDBY LED	30	1	1
REMOCON IN	29	2	2
AFT	28	3	3
AGC	27	4	4
HP_MUTE	26	5	5
AUDIO_MUTE	25	6	6
EXT_MUTE-H	24	7	7
GND	23	8	8
SCART1_B	22	9	9
GND	21	10	10
SCART1_G	20	11	11
GND	19	12	12
SCART1_R	18	13	13
GND	17	14	14
AFT_2	16	15	15
GND	15	16	16
D_IN_1	14	17	17
D_LINE3_2	13	18	18
SC2 CVBS_OUT-H	12	19	19
POWER_FAIL	11	20	20
POWER_ON-H	10	21	21
AFT_1	9	22	22
LCDON	8	23	23
DVB_FAN_ON-H	7	24	24
LCD-H/PDP_RLY	6	25	25
S_DET	5	26	26
SCART1_SW	4	27	27
SW_YUV1/2	3	28	28
HP_IN	2	29	29
LIGHT CTL/PSU_5VD	1	30	30

CP4203
DVD/AV3_SW	29	29	1
DTUNER_H	28	28	2
DTV_MUTE_L	27	27	3
GND/INV_DET	26	26	4
DTUNER_RX	25	25	5
GND	24	24	6
DTUNER_TX	23	23	7
GND	22	22	8
DTUNER_RESET	21	21	9
GND	20	20	10
SW_AUDIO_R(PC)	19	19	11
GND	18	18	12
SW_AUDIO_L(PC)	17	17	13
SC2_AUDIO_OUT-H	16	16	14
STEREO_RESET	15	15	15
SCART3_SW	14	14	16
SCART_AUDIO_SW	13	13	17
SDA1	12	12	18
SCL1	11	11	19
GND	10	10	20
DTUNER_POWER	9	9	21
GND	8	8	22
DTUNER_SD_H	7	7	23
GND	6	6	24
SWITCH_CVBS	5	5	25
GND	4	4	26
SWITCH_VIDEO_Y	3	3	27
GND	2	2	28
SWITCH_VIDEO_C	1	1	29

FFC CD4203_1

CP803
DVD/AV3_SW/SPDIF	1	1	1
D/A_SW/INV_DET	2	2	2
SPIF/DTV_A_R	3	3	3
INVERT_DET/GND	4	4	4
POP_S_Y/DTV_A_L	5	5	5
GND	6	6	6
POP_S_C/DAD_A_R	7	7	7
GND	8	8	8
POP_CVBS/DVD_A_L	9	9	9
GND	10	10	10
SW_AUDIO_R(PC)	11	11	11
GND	12	12	12
SW_AUDIO_L(PC)	13	13	13
SC2_AUDIO_OUT-H	14	14	14
STEREO_RESET	15	15	15
SCART3_SW	16	16	16
SCART_AUDIO_SW	17	17	17
SDA1	18	18	18
SCL1	19	19	19
GND	20	20	20
DVD_Y_OUT	21	21	21
GND	22	22	22
DVD_C_OUT	23	23	23
GND	24	24	24
SWITCH_CVBS	25	25	25
GND	26	26	26
SWITCH_VIDEO_Y	27	27	27
GND	28	28	28
SWITCH_VIDEO_C	29	29	29

CP901
HDMI_I2SSCK/MCKL	4	4	4
HDMI_I2SSDO	3	3	3
HDMI_I2SWS	2	2	2
GND	1	1	1

CD901_1
TR901

CP3602
HDMI_I2SSCK/MCKL	4	4	4
HDMI_I2SSDO	3	3	3
HDMI_I2SWS	2	2	2
GND	1	1	1

TR3602

PC_CONTROL CP103
AT+3.3V	7
RESET	6
CHIP_SELECT	5
4SI_SCL	4
4SI_SDA_IN	3
4SI_SDA_OUT	2
GND	1

32K,256K_DATA CP101
GND	1
EEPROM_SCL	2
EEPROM_SDA	3
IIC_OFF	4
GND	5

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

SCALER PCB PCBDS0 CEF156

CP3604: UC_SDA, UC_SCL, NC, NC, GND, EN, TX, RX, VCC

CP2200: GND, KEY B, KEY A

TU5800
21	
NC	1
NC	2
+B	3
NC	4
NC	5
NC	
BT	7
NC	8
IF OUT	9
SCL	10
SDA	11
AFT	12
AUDIO OUT	13
SIF OUT	14
+32V	15
NC	16
VIDO OUT	17
20	21

COMMAND TRANSMITTER TM101
OS2200: B+, GND, Vout
CP4202 CD4202 CP2201
REMOCON IN	1	1	REMOCON IN
GND	2	2	GND
AT+5V	3	3	AT+5V
STANDBY LED	4	4	STANDBY LED
P.ON LED	5	5	P.ON LED

TR2201
REMOCON PCB PCBDA0 CEF239

CP3802
9VSC	1	1	9VSC
GND	2	2	GND

CD520

CP3803
5VSC	1	1	5VSC
5VSC	2	2	5VSC
5VSC	3	3	5VSC
GND	4	4	GND
GND	5	5	GND
GND	6	6	GND
12VSC	7	7	12VSC
12VSC	8	8	12VSC
GND	9	9	GND
GND	10	10	GND
ST-BY_H	11	11	ST-BY_H
INVETER_DET	12	12	INVETER_DET

CD517

OPERATION PCB PCB270 CEF240
CP2203 — CD2203
KEY A	3	
KEY B	2	
GND	1	

TR2203
REGULATOR PCB PCBF10 CEF236

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

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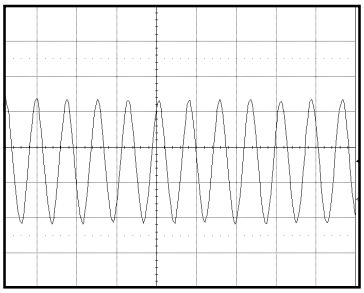
WAVEFORMS

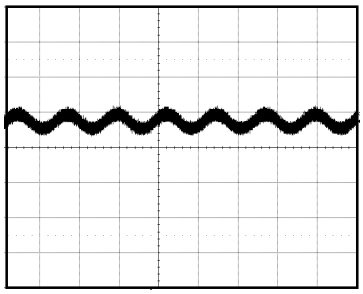
ADC

20ns
1.0V



①

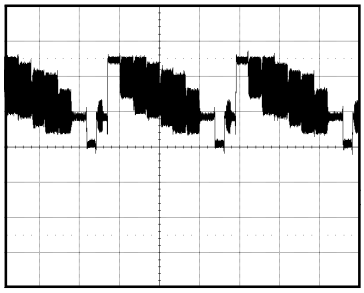
2.0ms
2.0V



⑥

TUNER

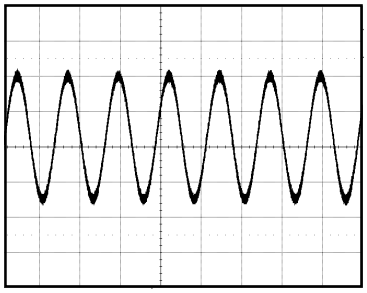
20µs
1.0V



⑪

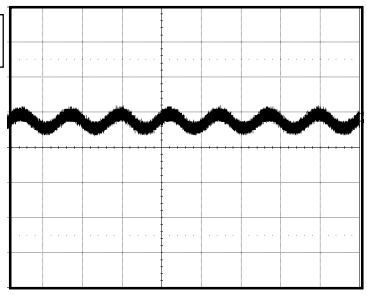
SOUND AMP/HEADPHONE AMP

2.0ms
500mV



②

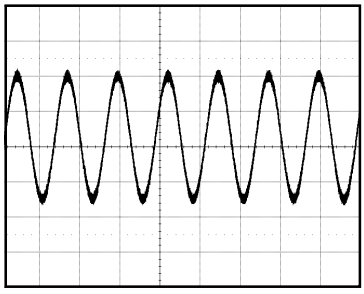
2.0ms
2.0V



⑦

STEREO

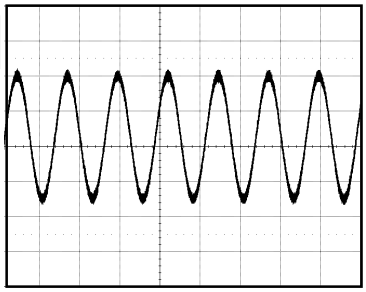
2.0ms
500mV



⑫

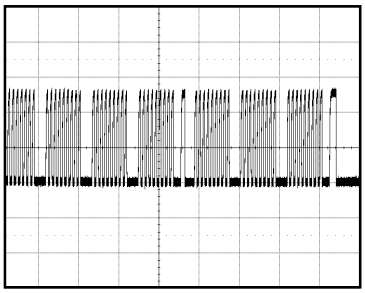
AV SWITCH2

2.0ms
500mV



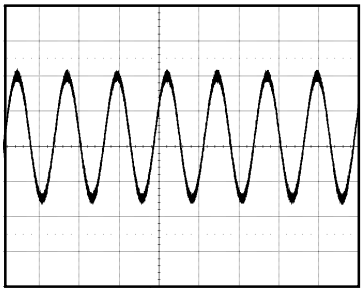
③

100µs
2.0V



⑧

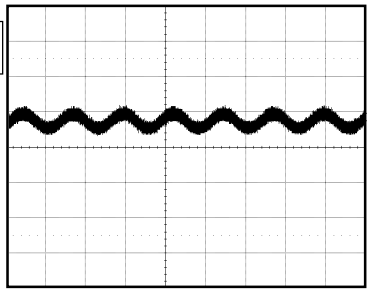
2.0ms
500mV



⑬

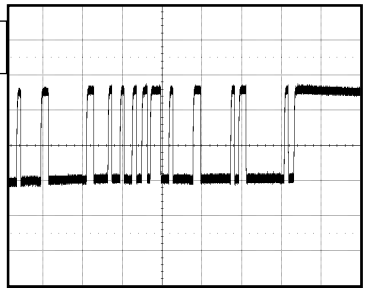
MICON

2.0ms
2.0V



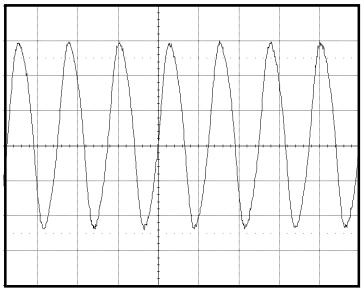
④

100µs
2.0V



⑨

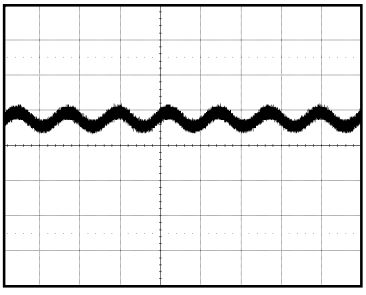
50ns
500mV



⑭

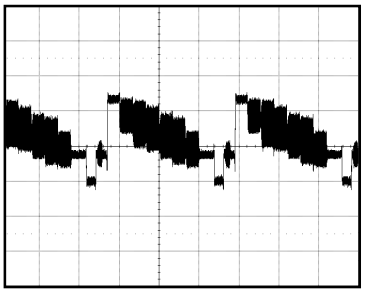
SCALER

2.0ms
2.0V



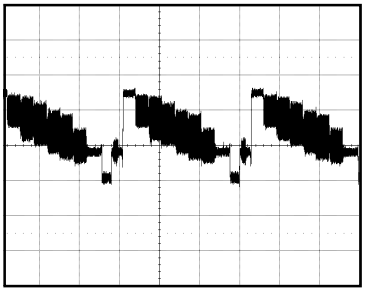
⑤

20µs
500mV



⑩

20µs
500mV



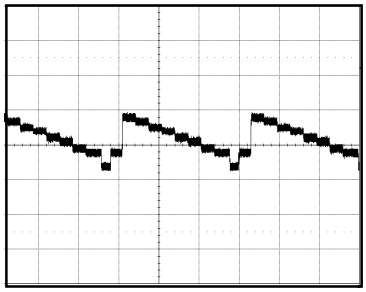
⑮

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

WAVEFORMS

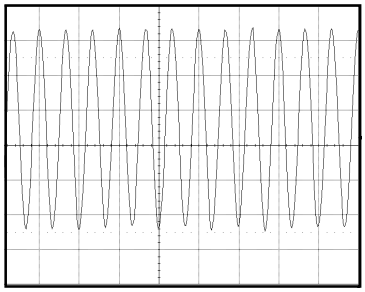
20µs
500mV

16



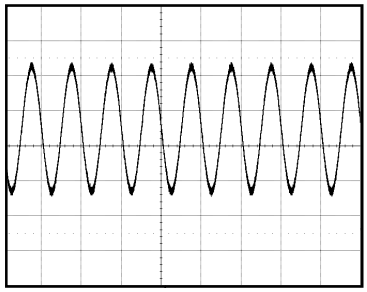
20µs
500mV

21



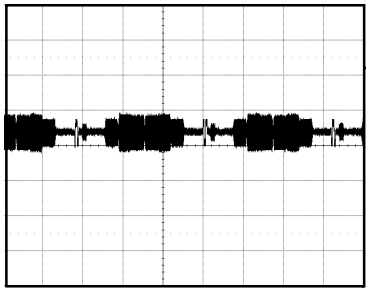
1.0ms
1.0V

26



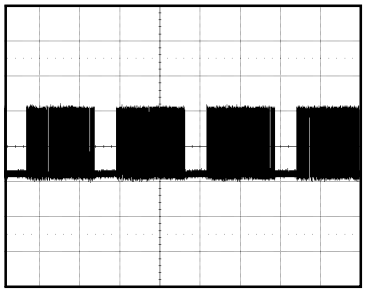
20µs
500mV

17



10µs
2.0V

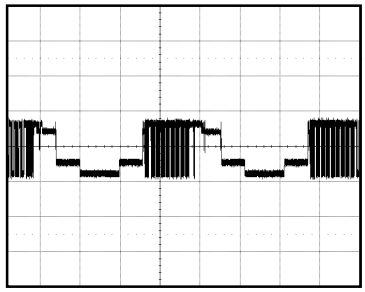
22



ADC

5µs
500mV

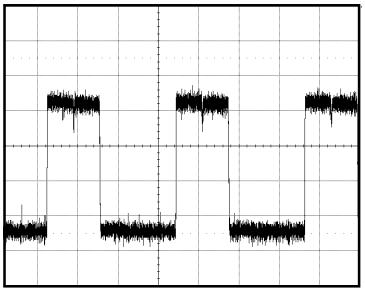
27



ADC

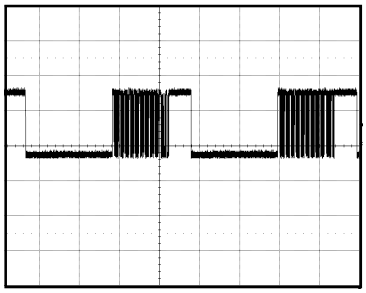
20µs
200mV

18



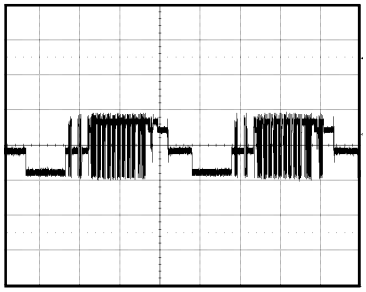
5µs
2.0V

23



5µs
500mV

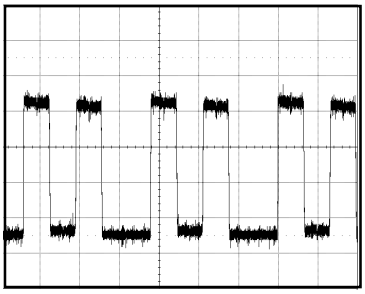
28



LVDS

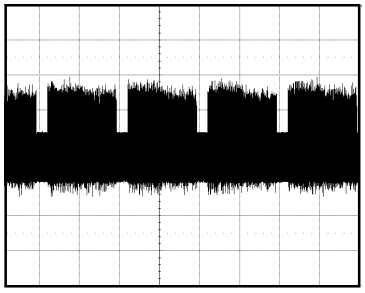
20µs
200mV

19



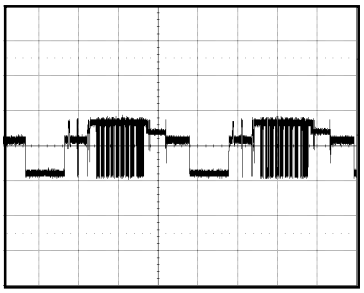
10ms
100mV

24



5µs
500mV

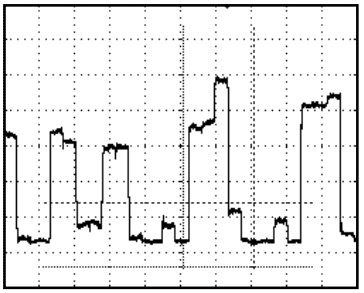
29



JACK

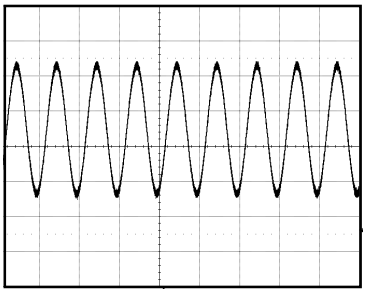
20µs
200mV

20



1.0ms
1.0V

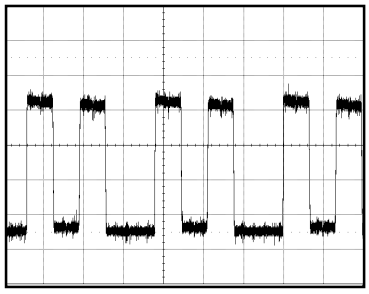
25



INTERFACE_HDMI IC

20µs
1.0V

30

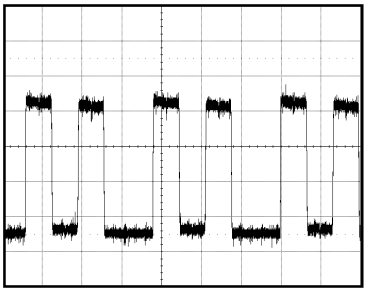


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

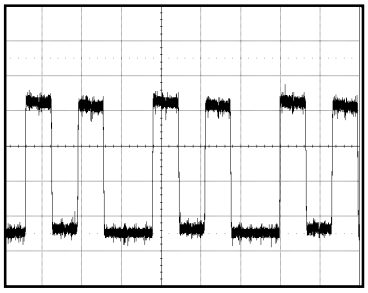
20µs
1.0V

(31)



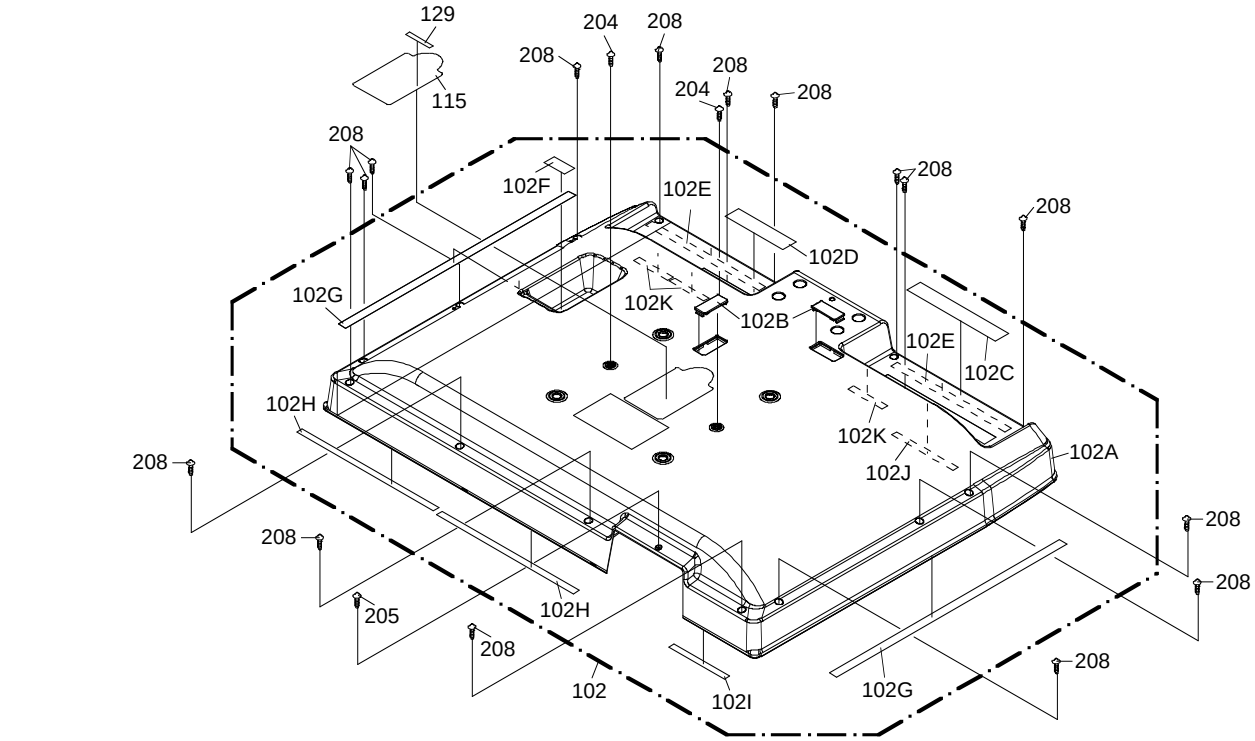
20µs
1.0V

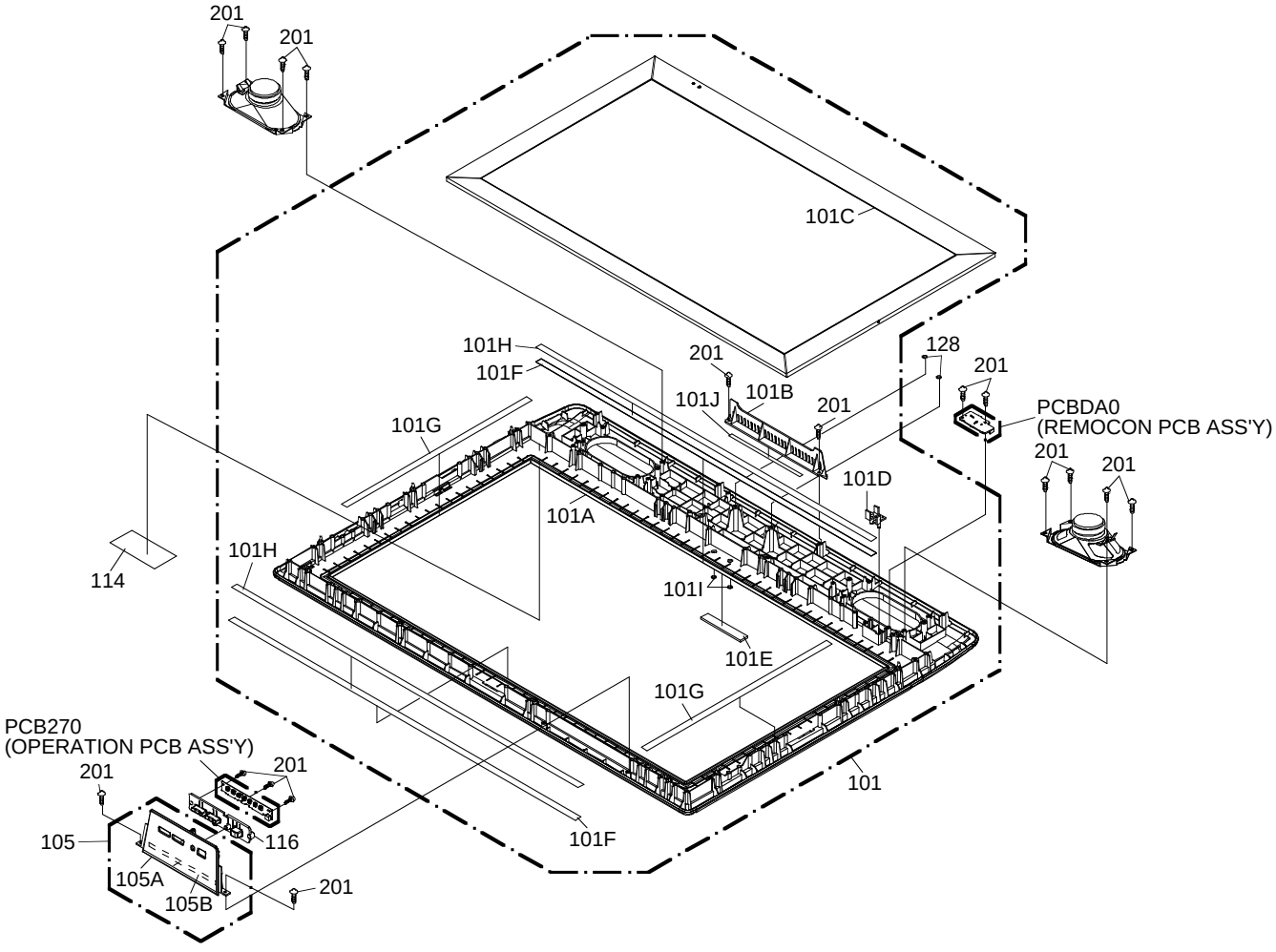
(33)



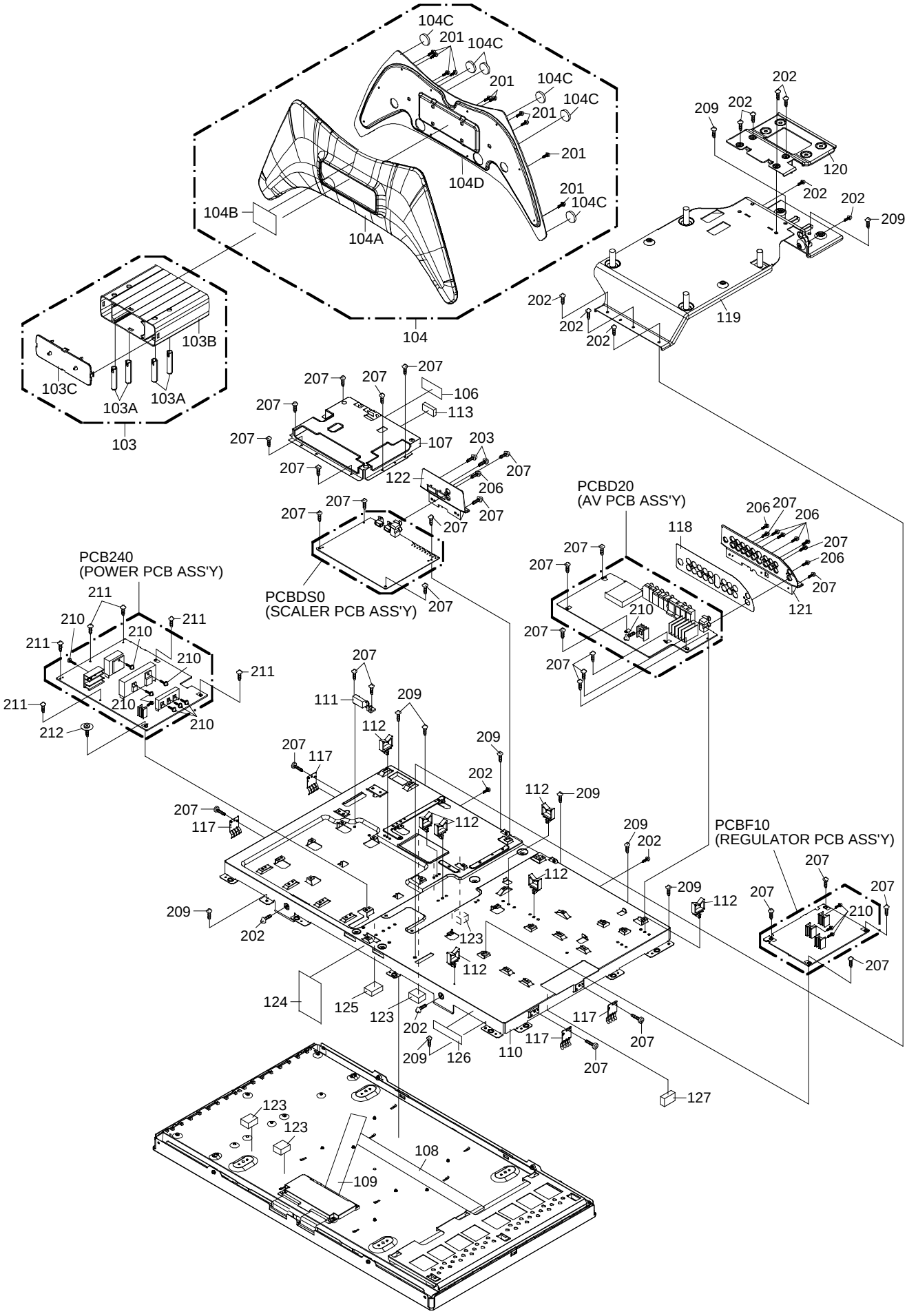
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW

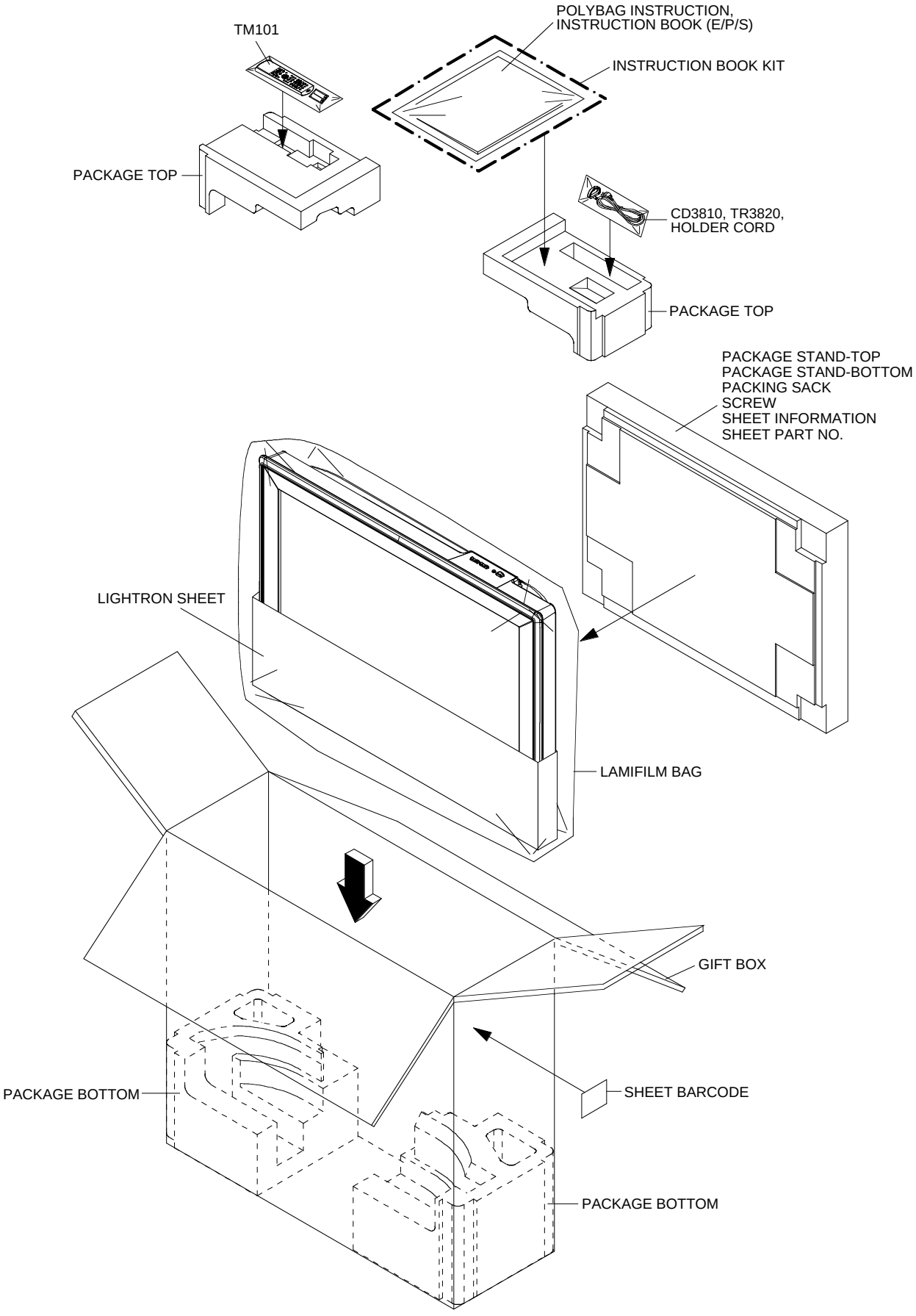




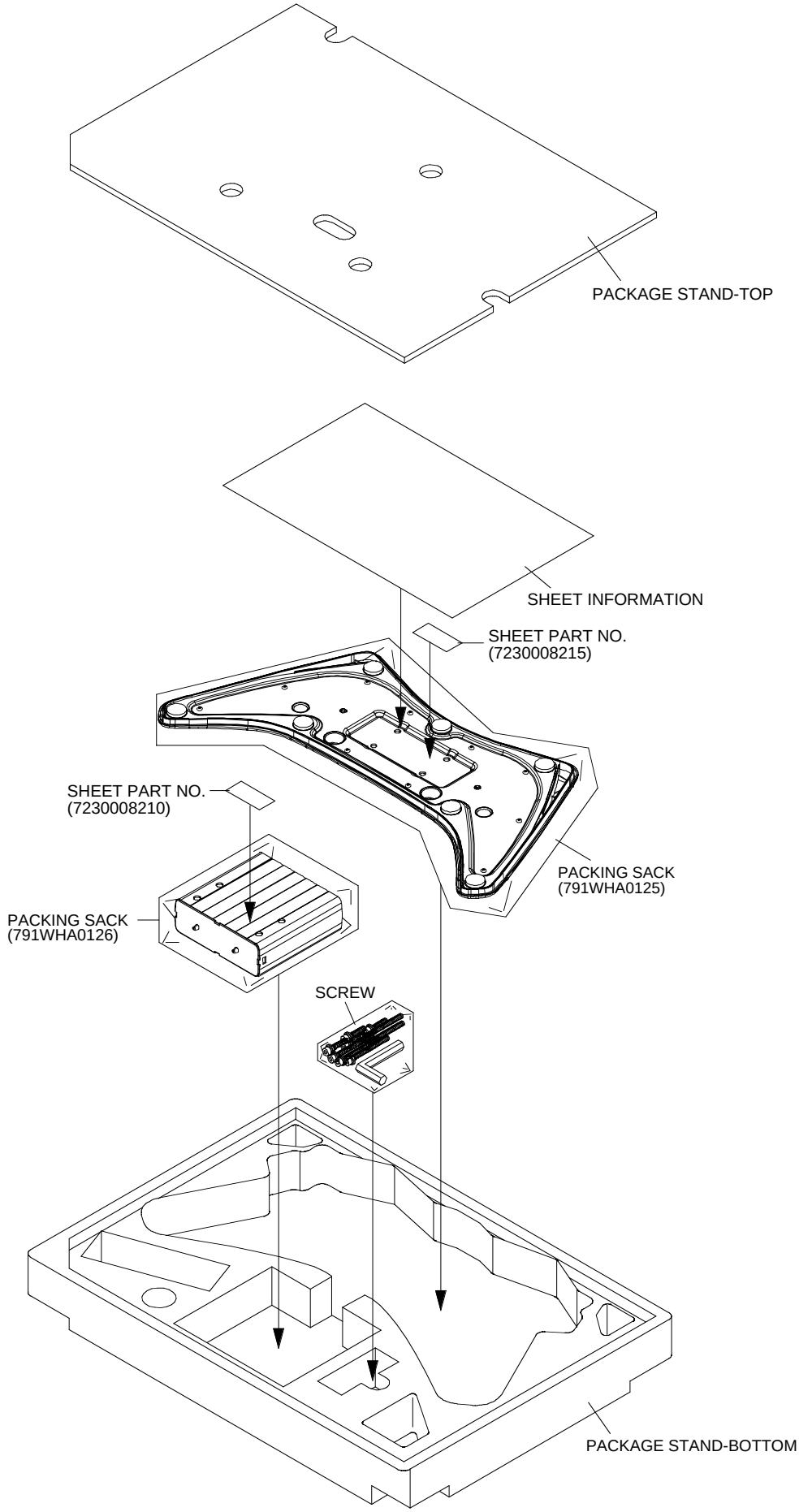
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)



MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
101	7A701A820A	FRONT CABI ASS'Y		201	8110630A0U	SCREW TAP TITE(P) BRAZIER	3x10
101A	701WPBA076	CABINET FRONT		202	810A14080U	SCREW WASHER(A)	M4x8
101B	702WPBA229	COVER STAND		203	810213080S	SCREW PAN	M3x8
101C	711WPJA045	PANEL FRONT		204	810223080S	SCREW BIND	M3x8
101D	713WPA0389	GLASS LED		205	8110630A0S	SCREW TAP TITE(P) BRAZIER	3x10
101E	7235270014	BADGE BRAND		206	810923080S	SCREW TAP TITE(B) BIND	3x8
101F	800WQ0A131	FELT SHEET		207	810923080U	SCREW TAP TITE(B) BIND	3x8
101G	800WQ0A132	FELT SHEET		208	8110230A4S	SCREW TAP TITE(P) BIND	3x14
101H	800WQ0A133	FELT SHEET		209	8117540A2U	SCREW TAPPING(B0) TRUSS	4x12
101I	83SPN2000W	PUSH NUT					
101J	800WQ0A142	FELT SHEET		210	8109I30A0U	SCREW TAP TITE(B) WH7	3x10
				211	8109D30A0U	SCREW TAP TITE(B) WH8	3x10
102	7A702A249A	BACK CABI ASS'Y		212	8168130A0U	SCREW TAP TITE (B) WASHER16	3x10
102A	702WPBA236	CABINET BACK					
102B	706WPB0009	COVER CONNECTOR		---	7230008210	SHEET PARTS NO.	
102C	723000D444	SHEET JACK 1		---	7230008215	SHEET PARTS NO.	
102D	7230008122	SHEET JACK-2		---	723000D426	SHEET BAR CODE	
102E	800WQ0A097	FELT SHEET		---	7290000175	SHEET INFORMATION	
102F	723000D458	SHEET AC INLET		---	774WPA0010	HOLDER CORD	
102G	800WQ0A036	FELT,SHEET		---	791WHA0125	PACKING SACK	
102H	800WQ0A049	FELT SHEET		---	791WHA0126	PACKING SACK	
102I	800WQ0A080	FELT SHEET		---	791WHA0129	LAMIFILM BAG	
102J	800WQ0A113	FELT SHEET		---	791WHAA139	LIGHTRON SHEET	
102K	800WQ0A143	FELT SHEET		---	792WHA0653	PACKAGE,TOP	
				---	792WHA0654	PACKAGE,BOTTOM	
103	7A7640001B	FRAME STAND ASS'Y		---	792WHA0660	PACKAGE STAND-TOP	
103A	701WPA1423	HOLDER STAND		---	792WHA0661	PACKAGE STAND-BOTTOM	
103B	761WEB0001	FRAME,STAND		---	793WCDD317	GIFT BOX	
103C	761WPA0436	COVER STAND FRAME		---	89001122A0	SCREW	or
					890CDAIA24	SCREW	
104	7A7040014B	STAND ASS'Y		---	A30D01G975	INSTRUCTION BOOK KIT	
104A	704WPAA043	STAND		---	J30D0131A	INSTRUCTION BOOK(E/P/S)	
104B	7290000172	SHEET CAUTION		---	JA4ND100	POLYBAG INSTRUCTION(RED CAUTION)	
104C	800WFA0063	CUSHION LEG					
104D	761WSB0039	ANGLE STAND					
105	7A711A010A	PLATE BUTTON ASS'Y					
105A	711WPJ0076	PLATE BUTTON					
105B	800WQ0A082	FELT SHEET					
106	890MP2401E	TAPE	50x12				
107	752WSA0565	SHIELD SCALER					
108	753WEA0031	SHEET CU					
109	753WEA0034	SHEET CU					
110	761WSAA065	COVER LCD					
111	771WPA0343	HOLDER AC-INLET					
112	899CH16000	HOLDER WIRE					
113	8965TS1015	CUSHION 65TS10-5	10x5x15				
114	7230008152	POP LABEL					
115	723527A029	SHEET RATING					
116	735WPB0334	BUTTON FRAME					
117	744WUA0022	SPRING EARTH					
118	752WSAA135	SHIELD JACK					
119	761WSA0331	ANGLE,BACK-1					
120	761WSA0332	ANGLE,BACK-2					
121	771WPAA096	PLATE JACK-1					
122	771WPA0342	PLATE JACK-2					
123	8965TS302A	CUSHION W20/H30/L20					
124	890MP2401A	TAPE	50x35				
125	8965TS202A	CUSHION 65TS20-20	20x15x12				
126	7240001125	SHEET PC					
127	8965TS1017	CUSHION 65TS10-10	17.5x20x14				
128	800WB0A007	FIBER WASHER					
129	722000A522	SHEET SERIAL					

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		REMOCON PCB ASS'Y		
		*** PCB ***		
PCBDA0	A30D01GDA0	REMOCON PCB ASS'Y	CEF239A	
		*** DIODES ***		
D2201	0021E9Q010	LED	LTL-1BEFJ-002A	
		*** CONNECTORS ***		
CP2201	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P	
		*** OTHERS ***		
OS2200	077A033001	REMOTE RECEIVER	ROM-V338TAO	
		SCALER PCB ASS'Y		
		*** PCB ***		
PCBDS0	A30D01GDS0	SCALER PCB ASS'Y	CEF156A	
		*** DIODES ***		
D101	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D105	DD7R20S300	DIODE,SCHOTTKY BARRIER	RB520S-30-TE61	
D109	DD7R20S300	DIODE,SCHOTTKY BARRIER	RB520S-30-TE61	
D802	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D803	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D805	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D807	DD7R0S3550	DIODE,SILICON	1SS355 TE-17	
D808	DD7R0S3550	DIODE,SILICON	1SS355 TE-17	
D3206	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D3206	D28R1QS040	DIODE	EC31QS04-TE12L	
D3207	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D3207	D28R1QS040	DIODE	EC31QS04-TE12L	
D3212	D28R11FS20	DIODE	EC11FS2-TE12L	
D3600	DD7R60L400	DIODE,SCHOTTKY	RB160L-40-TE25	
D3601	D77R1A1R10	DIODE,VARISTA	AVRL161A1R1NT	
D3602	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D3603	D77R1A1R10	DIODE,VARISTA	AVRL161A1R1NT	
D3604	DD7R60L400	DIODE,SCHOTTKY	RB160L-40-TE25	
D3605	DD7R60L400	DIODE,SCHOTTKY	RB160L-40-TE25	
D3609	DE7RB3R32B	DIODE,ZENER	UDZS3.3B TE-17	
D3613	DE7RB3R32B	DIODE,ZENER	UDZS3.3B TE-17	
D3626	D77R1A1R10	DIODE,VARISTA	AVRL161A1R1NT	
D3627	D77R1A1R10	DIODE,VARISTA	AVRL161A1R1NT	
D3628	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D3628	D28R1QS040	DIODE	EC31QS04-TE12L	
D3629	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D3629	D28R1QS040	DIODE	EC31QS04-TE12L	
D3630	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D4301	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
D4302	DE7RB5R62B	DIODE,ZENER	UDZS5.6B TE-17	
		*** ICS ***		
IC101	I56F07171A	IC	OEC7171A	
IC102	I9UF032290	IC	PST3229NR	
IC103	S30D01GE02	MEMORY DATA	AT24C256BN-10SU-1.8	
IC104	S30D01GE01	MEMORY DATA	AT24C256BN-10SU-1.8	
IC801	I56K07A720	IC	R8J66607A72FP	

ELECTRICAL REPLACEMENT PARTS LIST

	IC2101	IFSK0883C0	IC	MST9883C-LF-110	
⚠	IC3201	I07F0C0WF0	IC	BA00BC0WFP-E2	
⚠	IC3202	I07F078200	IC	BD7820FP-E2	
	IC3601	I07F078200	IC	BD7820FP-E2	
	IC3602	I07F0C0WF0	IC	BA00BC0WFP-E2	
	IC3605	IG1F090210	IC	SII9021CTU	
	IC3606	S30C01GE03	MEMORY DATA	AT24C02BN-10SU-1.8	
	IC3608	S3Y106GE03	MEMORY DATA	BR24L32F-WE2	
	IC3609	S30C01GE04	MEMORY DATA	AT24C02BN-10SU-1.8	
	IC3611	ICMF0T89E0	IC	SST89E58RD2-40-C-TQJE	
	IC4304	I0QF02534V	IC	NJM2534V(TE2)	
	IC4305	I0QF02534V	IC	NJM2534V(TE2)	
	IC7201	IF8F0385A0	IC	ICSV385AGLFT	
	IC8103	I0UF015010	IC	MM1501XNRE	

*** TRANSISTORS ***

Q101	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK	or
Q101	TNRAC05003	COMPOUND TRANSISTOR	RT1N241C-T112-1	
Q104	T2AA5132E0	FET	KTK5132E-RTK/P	
Q105	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK	or
Q105	TPRAC05003	COMPOUND TRANSISTOR	RT1P241C-T112-1	
Q106	T2AA5132E0	FET	KTK5132E-RTK/P	
Q2101	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q2101	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	
Q3205	TAAA01664Y	TRANSISTOR,SILICON	KTA1664-Y-RTF/P	
Q3206	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q3210	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q3210	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q3211	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q3211	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q3603	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3604	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3605	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3606	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3607	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3613	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q3613	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q3615	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3616	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3617	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3618	T2AA5132E0	FET	KTK5132E-RTK/P	
Q3619	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q3619	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q3620	T2AA5132E0	FET	KTK5132E-RTK/P	
Q4302	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q4302	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q4305	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q4305	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q8101	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q8101	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	
Q8102	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q8102	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q8103	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	or
Q8103	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1	
Q8105	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q8105	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	
Q8106	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q8106	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	

*** COILS ***

B801	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B801	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B802	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B802	024AC5181J	CORE,BEADS	BLM18PG181SN1D	

ELECTRICAL REPLACEMENT PARTS LIST

B803	024HC56005	CORE,BEADS	FCM1608CF-600T06	
B804	024HC56005	CORE,BEADS	FCM1608CF-600T06	
B805	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B805	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B2101	024HC56005	CORE,BEADS	FCM1608CF-600T06	
B3201	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3201	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3202	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3202	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3203	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3203	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3206	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3206	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3207	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3207	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3209	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3209	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3210	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B3210	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B3601	024HC36001	CORE,BEADS	HCB2012K-600T25	
B3602	024HC36001	CORE,BEADS	HCB2012K-600T25	
B3603	024HC36001	CORE,BEADS	HCB2012K-600T25	
B3604	024HC36001	CORE,BEADS	HCB2012K-600T25	
B3605	024HC56005	CORE,BEADS	FCM1608CF-600T06	
B3606	024HC51023	CORE,BEADS	FCM1608KF-102T02	
B3612	024HC51023	CORE,BEADS	FCM1608KF-102T02	
B3613	024HC36001	CORE,BEADS	HCB2012K-600T25	
B4307	024NC51021	CORE,BEADS	EBMS160808A102_RDC45	or
B4307	0246C51024	CORE,BEADS	MMZ1608R102CT	
B4308	024NC51021	CORE,BEADS	EBMS160808A102_RDC45	or
B4308	0246C51024	CORE,BEADS	MMZ1608R102CT	
B7201	024HC56005	CORE,BEADS	FCM1608CF-600T06	
L2101	0216S8220K	COIL	F 22 UH	
L2102	0216S8220K	COIL	F 22 UH	
L2103	0216S8470K	COIL	F 47 UH	
L2106	0216S42R2J	COIL	2.2 UH	
L2107	0216S8220K	COIL	F 22 UH	
L3601	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3602	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3603	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3604	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3605	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3606	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3607	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L3608	02D6000068	COIL,CHOKE	ACM2012D-900-2P-T00	
L4301	0216S8470K	COIL	F 47 UH	
L4306	0216S8220K	COIL	F 22 UH	
L7201	0216S8470K	COIL	F 47 UH	
L7202	0216S8470K	COIL	F 47 UH	
L7203	0216S8470K	COIL	F 47 UH	
L8102	0216S8470K	COIL	F 47 UH	
L8105	0216S8220K	COIL	F 22 UH	
		*** JACKS ***		
J4301	060J431025	RCA JACK	MSD-242VA1-03_NI_FE_LF	
		*** CONNECTORS ***		
CP101	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P	
CP102	069S2A0629	CONNECTOR PCB SIDE	A2001WV2-10P	
CP103	069S270629	CONNECTOR PCB SIDE	A2001WV2-7P	
CP802	069EVU3030	CONNECTOR PCB SIDE	00_6232_030_006_800+	
CP803	069EVT3030	CONNECTOR PCB SIDE	00_6232_029_006_800+	
CP2200	069S230629	CONNECTOR PCB SIDE	A2001WV2-3P	

ELECTRICAL REPLACEMENT PARTS LIST

CP3201	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P	
CP3601	0694YJ3018	CONNECTOR PCB SIDE	1903015-3	or
CP3601	069HYJ3010	CONNECTOR PCB SIDE	DC1R019JDA	
CP3602	069S240629	CONNECTOR PCB SIDE	A2001WV2-4P	
CP3603	0694YJ3018	CONNECTOR PCB SIDE	1903015-3	or
CP3603	069HYJ3010	CONNECTOR PCB SIDE	DC1R019JDA	
CP3604	069S290629	CONNECTOR PCB SIDE	A2001WV2-9P	
CP7203	069HVWT04A	CONNECTOR PCB SIDE	FI-X30S-HF-NPB	
		*** CRYSTAL & CERAMIC OSCILLATORS ***		
X101	100GT01615	CRYSTAL	B16000E007	or
X101	100WT01611	CRYSTAL	HC-49/U-S	
X801	100YT05401	CRYSTAL	FCX-03	
X3601	100GT01102	CRYSTAL	B11059C002	or
X3601	100CT01101	CRYSTAL	HC-49/U-S	
X3602	100DT02801	CRYSTAL	SMD-49	
		*** NETWORKS ***		
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	
NR808	110P4103M4	R,NETWORK	4D03WGJ0103T5E	
NR809	110P4103M4	R,NETWORK	4D03WGJ0103T5E	
NR2101	110P4101M4	R,NETWORK	4D03WGJ0101T5E	
NR2102	110P4101M4	R,NETWORK	4D03WGJ0101T5E	
NR2103	110P4101M4	R,NETWORK	4D03WGJ0101T5E	
NR2104	110P4101M4	R,NETWORK	4D03WGJ0101T5E	
NR2105	110P4101M4	R,NETWORK	4D03WGJ0101T5E	
NR2106	110P4101M4	R,NETWORK	4D03WGJ0101T5E	
NR3601	110P4000M4	R,NETWORK	4D03WGJ0000T5E	
NR3602	110P4000M4	R,NETWORK	4D03WGJ0000T5E	
NR3603	110P4000M4	R,NETWORK	4D03WGJ0000T5E	
NR3604	110P4000M4	R,NETWORK	4D03WGJ0000T5E	
NR3605	110P4000M4	R,NETWORK	4D03WGJ0000T5E	
NR3606	110P4000M4	R,NETWORK	4D03WGJ0000T5E	
NR7201	110P4470M4	R,NETWORK	4D03WGJ0470T5E	
NR7202	110P4470M4	R,NETWORK	4D03WGJ0470T5E	
		*** OTHERS ***		
SH4301	126R000038	TERMINAL PIN	TP00370-21	
SH4302	126R000038	TERMINAL PIN	TP00370-21	
		AV PCB ASS'Y		
		*** PCB ***		
PCBD20	A30D01GD20	AV PCB ASS'Y	CMF091A	
		*** CAPACITORS ***		
C340	E61FF3821D	CE	820 UF 25V	
C342	E61FF3821D	CE	820 UF 25V	
C3801	E61FF2102D	CE	1000 UF 16V	
C3802	E61FF2102D	CE	1000 UF 16V	
C3803	E61FF2102D	CE	1000 UF 16V	
C3823	E61FF4102D	CE	1000 UF 35V	
C3825	E61FF3821D	CE	820 UF 25V	
C3826	E61FF3821D	CE	820 UF 25V	

ELECTRICAL REPLACEMENT PARTS LIST

*** DIODES ***

D302	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D302	D28R1QS040	DIODE	EC31QS04-TE12L	
D303	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D303	D28R1QS040	DIODE	EC31QS04-TE12L	
D304	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D304	D28R1QS040	DIODE	EC31QS04-TE12L	
D305	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D305	D28R1QS040	DIODE	EC31QS04-TE12L	
D901	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77	
D3803	D23A0010J0	DIODE,SCHOTTKY	SBR100-10J-CBC11	
D3804	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	
D3805	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	
D3806	D2W0011E10	DIODE,SILICON	11E1-B-EIC	
D3809	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
D3809	D28R1QS040	DIODE	EC31QS04-TE12L	
D4201	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4202	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4203	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4204	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4206	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77	
D4207	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77	
D4208	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4209	D1VT001330	DIODE,SILICON	1SS133T-77	
D4210	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4213	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4214	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4215	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	
D4216	DE7RB1202B	DIODE,ZENER	UDZS12B TE-177	

*** ICS ***

⚠ IC301	I1MFPA2020	IC	TA2024-ASE	
IC904	I19FF4440G	IC	MSP4440G-QA-C13-100	
IC3803	I07F093000	IC	BD9300FV-E2	
⚠ IC3804	I0GA9XF010	IC	PQ070XF01SZH	
IC3805	I03D979950	IC	LA7995M-TLM	
IC3808	I07A078100	IC	BA7810T-V5	
IC4201	I01F05853B	IC	AN15853B-E1	
IC4204	I0QF025840	IC	NJM2584AM(TE1)	

*** TRANSISTORS ***

Q300	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q301	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q302	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q901	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q902	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3801	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q3802	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3804	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q3805	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3806	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3807	TAAA1505SY	TRANSISTOR,SILICON	KTA1505S-Y-RTK/P
Q3808	T0300J6500	FET	2SJ650
Q4203	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4205	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4206	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4207	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4208	T2AA5132E0	FET	KTK5132E-RTK/P
Q4209	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4210	T2AA5132E0	FET	KTK5132E-RTK/P
Q4231	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4233	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4402	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK

ELECTRICAL REPLACEMENT PARTS LIST

Q4403	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
		*** COILS ***		
B904	024HC51023	CORE,BEADS	FCM1608KF-102T02	or
B904	024AC5102F	CORE,BEADS	BLM18BD102SN1D	
B906	024HC51023	CORE,BEADS	FCM1608KF-102T02	or
B906	024AC5102F	CORE,BEADS	BLM18BD102SN1D	
B4204	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4204	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4205	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4205	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4211	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4211	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4214	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4214	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4215	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4215	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4216	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4216	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4217	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4217	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4218	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4218	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4219	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4219	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4220	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4220	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4221	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4221	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B4222	024HC56005	CORE,BEADS	FCM1608CF-600T06	or
B4222	024AC5600E	CORE,BEADS	BLM18BB600SN1D	
B5801	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B5801	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B5802	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B5802	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
L300	021W0G100M	COIL	10 UH	
L301	021W0G100M	COIL	10 UH	
L302	021W0G100M	COIL	10 UH	
L303	021W0G100M	COIL	10 UH	
L901	02167B100K	COIL	10 UH	
L903	02167B100K	COIL	10 UH	
L904	02167B100K	COIL	10 UH	
L3801	02167E220K	COIL	R7 22 UH	
L3802	02167E220K	COIL	R7 22 UH	
L3803	02167E220K	COIL	R7 22 UH	
L3804	02167E220K	COIL	R7 22 UH	
L3805	0214646R8M	COIL	6.8 UH	
L3808	021W0G100M	COIL	10 UH	
L3809	0214646R8M	COIL	6.8 UH	
L3810	02167E100K	COIL	R6-1 10 UH	
L4202	02167B470J	COIL	3 47 UH	
L4203	02167B470J	COIL	3 47 UH	
L4204	021LA6330J	COIL	33 UH	
L4206	02167B470J	COIL	3 47 UH	
L4207	02167B470J	COIL	3 47 UH	
L4212	021LA6220J	COIL	22 UH	
L4213	021LA6220J	COIL	22 UH	
L4214	021LA6220J	COIL	22 UH	
L4215	021LA6220J	COIL	22 UH	
L4216	021LA6220J	COIL	22 UH	
L4217	021LA6220J	COIL	22 UH	
L4218	021LA6220J	COIL	22 UH	
L4219	021LA6220J	COIL	22 UH	
L4220	021LA6220J	COIL	22 UH	

ELECTRICAL REPLACEMENT PARTS LIST

	L4221	021LA6220J	COIL	22 UH	
	L4403	02167B100K	COIL	10 UH	
	L5800	02167B220J	COIL	3 22 UH	
	L5801	021LA6220J	COIL	22 UH	
			*** JACKS ***		
	J4201	060K411041	RCA JACK	AV2-13P2-07H	
	J4204	060K471011	RCA JACK	AV4-57A03-01H	
	J4205	063E000082	JACK PLATE	SAV-12CP-01Z5	
	J4211	060K441006	RCA JACK	AV6-53-13H	
			*** CONNECTORS ***		
	CP301	069S130419	CONNECTOR PCB SIDE	A2502WV2-3P	
	CP303	069S120419	CONNECTOR PCB SIDE	A2502WV2-2P	
	CP901	069S240629	CONNECTOR PCB SIDE	A2001WV2-4P	
	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	
	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+	
			*** CRYSTAL & CERAMIC OSCILLATORS ***		
	X901	100GT01806	CRYSTAL	B18432E005	or
	X901	100CT01803	CRYSTAL	HC-49/U-S	
			*** TUNER ***		
⚠	TU5800	0162300048	RF UNIT	115-V-LA35ARH	
			REGULATOR PCB ASS'Y		
			*** PCB ***		
	PCBF10	A30D01GF10	REGULATOR PCB ASS'Y	CEF236A	
			*** DIODES ***		
	D506	DD7R0S3550	DIODE,SILICON	1SS355 TE-17	
	D523	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
	D523	D28R1QS040	DIODE	EC31QS04-TE12L	
	D532	DD7R20S300	DIODE,SCHOTTKY BARRIER	RB520S-30-TE61	
	D533	D2LXSR2900	DIODE,SCHOTTKY	SR290-F	or
	D533	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1	
	D538	D2LXSR2900	DIODE,SCHOTTKY	SR290-F	or
	D538	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1	
	D539	DD7R0S3550	DIODE,SILICON	1SS355 TE-17	
	D540	D4CRSK34A0	DIODE,SCHOTTKY	SK34A	or
	D540	D28R1QS040	DIODE	EC31QS04-TE12L	
			*** ICS ***		
	IC505	I0GF912H20	IC	PQ1CX12H2ZPQ	
⚠	IC506	I07A078100	IC	BA7810T-V5	
⚠	IC509	I0GT930320	IC	PQ1CG3032FZH	
⚠	IC510	I0GA9090R0	IC	PQ090RDA1SZH	

ELECTRICAL REPLACEMENT PARTS LIST

*** TRANSISTORS ***

Q512	TJ7I90P030	FET	RSS090P03_TB	
Q514	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q524	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q525	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	or
Q525	TNRAB05004	COMPOUND TRANSISTOR	RT1N141C-T112-1	

*** COILS ***

B503	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B503	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B506	024HC51816	CORE,BEADS	HCB1608KF-181T20	or
B506	024AC5181J	CORE,BEADS	BLM18PG181SN1D	
B507	024HC51216	CORE,BEADS	HCB1608KF-121T20	or
B507	024BC5121J	CORE,BEADS	BLM18PG121SN1D	
B508	024HC51216	CORE,BEADS	HCB1608KF-121T20	or
B508	024BC5121J	CORE,BEADS	BLM18PG121SN1D	
L506	021404470M	COIL	70A 47 UH	
L509	021W0G330M	COIL	33 UH	

*** CONNECTORS ***

CD517	06CU1C2002	CORD,CONNECTOR	CU1C2002
CD520	06CU122002	CORD,CONNECTOR	CU122002
CP507	069S1B0019	CONNECTOR PCB SIDE	A2501WV2-11P
CP508	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P

POWER PCB ASS'Y

*** PCB ***

PCB240	A30D01G240	POWER PCB ASS'Y	CEF235A

*** RESISTORS ***

⚠ R509	RC31X1126J	RC	12M OHM 1W	
⚠ R518	R3X28AR47J	R,METAL OXIDE	0.47 OHM 2W	
⚠ R519	R3X28AR33J	R,METAL OXIDE	0.33 OHM 2W	
⚠ R529	R63884100J	R,FUSE	10 OHM 1/4W	
⚠ R538	R3X181R33J	R,METAL OXIDE	0.33 OHM 1W	
⚠ R541	R3X181R82J	R,METAL OXIDE	0.82 OHM 1W	
⚠ R545	R63884101J	R,FUSE	100 OHM 1/4W	or
⚠ R545	R65584101J	R,FUSE	100 OHM 1/4W	
⚠ R546	R63881R22J	R,FUSE	0.22 OHM 1W	
⚠ R549	R63884101J	R,FUSE	100 OHM 1/4W	or
⚠ R549	R65584101J	R,FUSE	100 OHM 1/4W	
⚠ R552	R3X28A104J	R,METAL OXIDE	100K OHM 2W	
⚠ R567	R63881R22J	R,FUSE	0.22 OHM 1W	
⚠ R570	R63884102J	R,FUSE	1K OHM 1/4W	
⚠ R579	R63884102J	R,FUSE	1K OHM 1/4W	

*** CAPACITORS ***

C507	P211F5105J	CMP	1 UF 630V	
⚠ C510	P2122B474M	CMP	0.47 UF 275V ECQUL	
⚠ C515	CD39B0MQ2K	CC	470 PF 250V	
⚠ C519	E72FFJ101D	CE	5 100 UF 450V	or
⚠ C519	E8E5FJ101D	CE	8*35 100 UF 450V	
⚠ C522	E72FFJ101D	CE	5 100 UF 450V	or
⚠ C522	E8E5FJ101D	CE	8*35 100 UF 450V	
⚠ C523	P2122B224M	CMP	0.22 UF 275V ECQUL	
C525	E72FFH470D	CE	30 47 UF 400V	or
C525	E8E5FH470D	CE	.5*30 47 UF 400V	

ELECTRICAL REPLACEMENT PARTS LIST

	C526	E72FFH470D	CE	30 47 UF 400V	or
	C526	E8E5FH470D	CE	.5*30 47 UF 400V	
⚠	C527	C03L0R7G3K	CC	0.0018UF 2KV R	
	C528	C03L0R7H2K	CC	220 PF 2KV R	
⚠	C537	C03L0R7U2K	CC	680 PF 2KV R	
	C540	P411F4393J	CMPP	0.039 UF 400V ECWF	
⚠	C541	E62NU5220D	CE	22 UF 50V	or
⚠	C541	E8E2U5220D	CE	11 22 UF 50V	
	C544	P411F4393J	CMPP	0.039 UF 400V ECWF	
	C561	C03L0R7H2K	CC	220 PF 2KV R	
⚠	C568	CD39E0ME3M	CC	0.0015UF 250V	
	C578	C03L0R7H2K	CC	220 PF 2KV R	
	C582	C03L0R7H2K	CC	220 PF 2KV R	
⚠	C583	E61FF4122D	CE	1200 UF 35V	
	C586	E61FF4122D	CE	1200 UF 35V	
⚠	C587	E61FF1222D	CE	2200 UF 10V	
⚠	C588	E61FF2102D	CE	1000 UF 16V	
	C589	E61FF2102D	CE	1000 UF 16V	
	C595	E61FF3102D	CE	1000 UF 25V	
	C600	E61FF4122D	CE	1200 UF 35V	
	C609	E61FF3102D	CE	1000 UF 25V	
	C610	C0PLRR712K	CC	100 PF 2KV R	

*** DIODES ***

	D501	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D501	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
	D502	D2WXN40050	DIODE,SILICON	1N4005-EIC	
⚠	D503	D6E0621100	DIODE,VARISTA	ENE621D-10A	
⚠	D504	D2B0BV6080	DIODE,BRIDGE	RBV-608	
	D510	D2WTRM11C0	DIODE,SILICON	RM11C-EIC	
	D511	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D511	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
	D512	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D512	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
	D514	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D514	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
	D515	D2CA7006R0	DIODE,SILICON	YG971S6R	
	D517	D2WXN40050	DIODE,SILICON	1N4005-EIC	
	D518	D2WXN40050	DIODE,SILICON	1N4005-EIC	
	D519	D2WTRM11C0	DIODE,SILICON	RM11C-EIC	
	D520	D2WTRM11C0	DIODE,SILICON	RM11C-EIC	
	D521	D1VT001330	DIODE,SILICON	1SS133T-77	
	D522	D1VT001330	DIODE,SILICON	1SS133T-77	
	D524	D2BXARS010	DIODE,SILICON	SARS01-V1	
	D525	D2BXARS010	DIODE,SILICON	SARS01-V1	
	D526	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D526	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
	D527	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77	
	D528	D1VT001330	DIODE,SILICON	1SS133T-77	
	D529	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D529	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
	D530	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77	
	D531	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D531	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
⚠	D536	D2BAMX22S0	DIODE,SCHOTTKY	FMX-22S	
⚠	D541	D2BAMX22S0	DIODE,SCHOTTKY	FMX-22S	
	D542	D1VT001330	DIODE,SILICON	1SS133T-77	
	D543	D1VT001330	DIODE,SILICON	1SS133T-77	
⚠	D544	D27A85T400	DIODE,SCHOTTKY	RB085T-40	
⚠	D545	D2CA2C15R0	DIODE,SCHOTTKY BARRIER	YG862C15R	
	D547	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
	D547	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
⚠	D548	D2BAMX22S0	DIODE,SCHOTTKY	FMX-22S	
	D549	D1VT001330	DIODE,SILICON	1SS133T-77	
	D550	D1VT001330	DIODE,SILICON	1SS133T-77	

ELECTRICAL REPLACEMENT PARTS LIST

D553	D1VT001330	DIODE,SILICON	1SS133T-77	
D557	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77	
D558	D97U01301B	DIODE,ZENER	MTZJ13B T-77	
D561	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77	
D562	D4AT01H3E0	DIODE,RECTIFIER	1H3-E	or
D562	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2	
D564	D1VT001330	DIODE,SILICON	1SS133T-77	
D565	D97U02701B	DIODE,ZENER	MTZJ27B T-77	
D566	D97U02401B	DIODE,ZENER	MTZJ24B T-77	
D568	D97U03301B	DIODE,ZENER	MTZJ33B T-77	
		*** ICS ***		
⚠ IC501	I5PL065630	IC	E-E-L6563TR	
⚠ IC502	I0BT067680	IC	STR-X6768N	
⚠ IC503	I2BT067650	IC	STR-W6765	
⚠ IC504	I1KJ9A431A	IC	KIA431A-AT	
⚠ IC511	I1KJ9A431A	IC	KIA431A-AT	
⚠ IC513	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)	
⚠ IC514	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)	
		*** TRANSISTORS ***		
Q502	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q503	TJXG15NK50	FET	STP15NK50ZFP	
Q504	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	or
Q504	TNRAB05004	COMPOUND TRANSISTOR	RT1N141C-T112-1	
Q505	TAAA1505SY	TRANSISTOR,SILICON	KTA1505S-Y-RTK/P	or
Q505	T67J1036K0	TRANSISTOR,SILICON	2SA1036KT146	
Q506	T67J017590	TRANSISTOR,SILICON	2SA1759_T100	
Q510	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT	
Q511	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	or
Q511	TNRAB05004	COMPOUND TRANSISTOR	RT1N141C-T112-1	
Q515	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q515	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	
Q518	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q520	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q520	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	
Q521	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	or
Q521	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1	
Q522	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	or
Q522	TNRAB05004	COMPOUND TRANSISTOR	RT1N141C-T112-1	
		*** COILS ***		
B501	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2	
B502	024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
B514	024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
B515	024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
B516	024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
B517	024H003553	CORE,BEADS	W5RH3.5X5X1.0	
⚠ L501	029X000138	COIL,LINE FILTER	SN12-500	
⚠ L502	029X000138	COIL,LINE FILTER	SN12-500	
L503	02167E220K	COIL	R7 22 UH	
L504	0214644R7M	COIL	4.7 UH	
L505	0214646R8M	COIL	6.8 UH	
⚠ L507	029X000116	COIL,LINE FILTER	SS28V-R20130	
⚠ L510	02DM000086	COIL,CHOKE	02DM000086	
⚠ L511	029X000116	COIL,LINE FILTER	SS28V-R20130	
		*** TRANSFORMERS ***		
⚠ T502	0481420844	TRANSFORMER,SWITCHING	81420844	
⚠ T503	0481351054	TRANSFORMER,SWITCHING	81351054	

ELECTRICAL REPLACEMENT PARTS LIST

			*** JACKS ***		
⚠	J502	064S1A0009	JACK,AC	ST-09-WABP-A	
			*** CONNECTORS ***		
	CD518	06CU1B2002	CORD,CONNECTOR	CU1B2002	
	CD519	06CU252001	CORD,CONNECTOR	CU252001	
	CP502	069W01001A	CONNECTOR PCB SIDE	003P-2100	
	CP503	069W01001A	CONNECTOR PCB SIDE	003P-2100	
	CP504	069W01001A	CONNECTOR PCB SIDE	003P-2100	
	CP505	069W01001A	CONNECTOR PCB SIDE	003P-2100	
	CP506	069S2E0629	CONNECTOR PCB SIDE	A2001WV2-14P	
	CP511	069S140019	CONNECTOR PCB SIDE	A2501WV2-4P	
	CP514	069S170019	CONNECTOR PCB SIDE	A2501WV2-7P	
			*** FUSES ***		
⚠	F501	080NT05004	FUSE	50T050H	
⚠	F502	0835C01003	MICRO FUSE	20N_1000FS	
	FH501	06710T0009	HOLDER,FUSE	EYF-52BCY	
	FH502	06710T0009	HOLDER,FUSE	EYF-52BCY	
			*** RELAYS ***		
⚠	RY501	0560V50119	RELAY	ALKS329 A60	or
⚠	RY501	0560V50118	RELAY	ALKS329	
			*** THERMISTOR ***		
⚠	TH501	DSRFSP3R0L	THERMISTOR	NTPAN3R0LDKB0	
			*** OTHERS ***		
	EL2401	124116281A	EYE LET	XRY16X28BD	
	SH501	126R000036	TERMINAL PIN	TP00385-21	
	SH502	126R000036	TERMINAL PIN	TP00385-21	
	SH503	126R000036	TERMINAL PIN	TP00385-21	
	SH504	126R000036	TERMINAL PIN	TP00385-21	
			OPERATION PCB ASS'Y		
			*** PCB ***		
	PCB270	A30D01G270	OPERATION PCB ASS'Y	CEF240A	
			*** SWITCHES ***		
	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	
			*** CONNECTORS ***		
	CP2203	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P	
			AND OTHERS		
			*** COILS ***		
	TR301	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
	TR506	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	

ELECTRICAL REPLACEMENT PARTS LIST

	TR901	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
	TR2201	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
	TR2203	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
	TR3201	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
	TR3602	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
	TR3820	02A6B3A3T2	CORE,FERRITE	ZCAT2436-1330A-BK
			*** CONNECTORS ***	
	CD301	06CU123401	CORD,CONNECTOR	CU123401
	CD303	06CU128001	CORD,CONNECTOR	CU128001
	CD505	06CU2E5401	CORD,CONNECTOR	CU2E5401
	CD901	06CU248101	CORD,CONNECTOR	CU248101
	CD2203	06CU236302	CORD,CONNECTOR	CU236302
	CD3804	06CU174001	CORD,CONNECTOR	CU174001
	CD3805	06CU145003	CORD,CONNECTOR	CU145003
	CD3807	06CU2B6601	CORD,CONNECTOR	CU2B6601
	CD4202	06CU256001	CORD,CONNECTOR	CU256001
	CD4203	122H0T1801	CORD,JUMPER	2H0T1801
	CD4204	122H0U1802	CORD,JUMPER	2H0U1802
	CD7203	06CHRU3201	CORD,CONNECTOR	CHRU3201
			*** AC CORD ***	
⚠	CD3801	120V910901	CORD,SET AC	P88D2S8G60AA071
			*** OTHERS ***	
	BT001	141U004016	BATTERY,MANGAN	MNAAA(R03)
	BT002	141U004016	BATTERY,MANGAN	MNAAA(R03)
⚠	SP301	0701016002	SPEAKER	EAS12D175B
⚠	SP302	0701016002	SPEAKER	EAS12D175B
	TM101	07660MP010	TRANSMITTER	SBNS02009A
⚠	V2301	09E4132004	LCD	LK315T3LF12

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

SHARP

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