

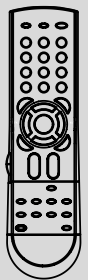
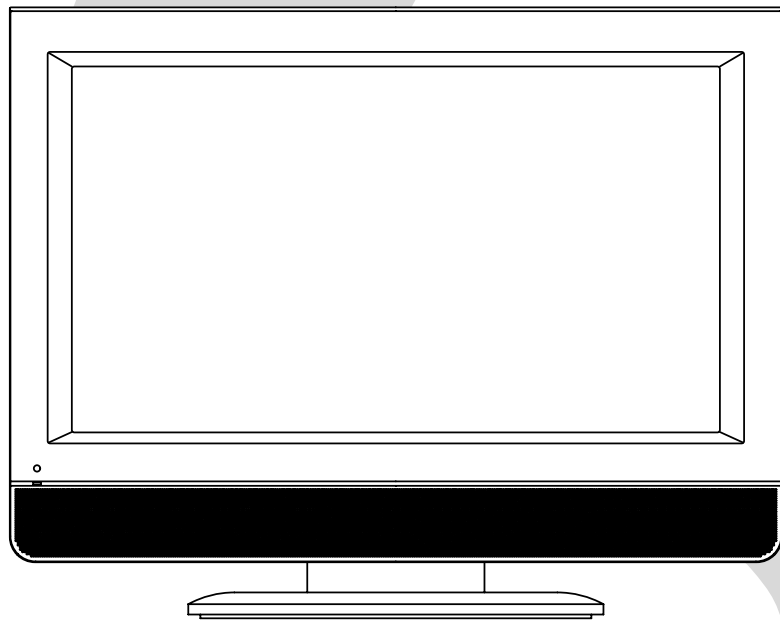
TOSHIBA

FILE NO. 050-200416

SERVICE MANUAL

LCD COLOR TELEVISION

23HL84



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. 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.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.

Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.

Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

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

(INSULATION CHECK PROCEDURE)

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

[Note 1]

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

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

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

1. MODEL NUMBER and VERSION LETTER

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

2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

IMPORTANT

Inferior silicon grease can damage IC's and transistors.

When replacing an IC's or transistors, use only specified silicon grease (YG6260M).

Remove all old silicon before applying new silicon.

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 50°F~70°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.

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GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size	22.95 inch / 583.0mmV	
			LCD Type	Color TFT LCD	
			Number of Pixels	1366(H) x 768(V)	
			View Range	88/88 degree	
				Left/Right Up/Down	88/88 degree
		Color System		NTSC	
		Speaker		2 Speaker	
			Position	Front	
			Size	1.8 x 3.9 inch	
			Impedance	16 ohm	
		Sound Output	Max	5.0W + 5.0W	
			10%(Typical)	---	
G-2	Tuning System	Broadcasting System		US System M	
		Tuner and	System	1Tuner	
		Receive CH	Destination	US (W/CABLE)	
			Tuning System	F-Synth	
			Input Impedance	VHF/UHF 75 Ohm	
			CH Coverage	2~69, 4A, A-5~A-1, A-1, J~W, W+1~W+84	
		Intermediate	Picture(FP)	45.75MHz	
		Frequency	Sound(FS)	41.25MHz	
			FP-FS	4.50MHz	
			Preset CH	No	
	Stereo/Dual TV Sound	US-Stereo			
	Tuner Sound Muting	Yes			
G-3	Power	Power Source	AC	120V, 60Hz	
			DC	--	
		Power Consumption		at AC	100W at 120V 60Hz
				at DC	--
			Stand by (at AC)		1W at 120V 60Hz
	Per Year		-- kWh/Year		
	Protector	Power Fuse	Yes		
		Safety Circuit	Yes		
		IC Protector(Micro Fuse)	No		
G-4	Regulation	Safety		UL / CSA	
		Radiation		FCC / IC	
		X-Radiation		-	
G-5	Temperature	Operation		+5oC ~ +40oC	
		Storage		-20oC ~ +60oC	
G-6	Operating Humidity			Less than 80% RH	

GENERAL SPECIFICATIONS

G-7	On Screen Display	Menu (TV)	Yes
		Menu Type	Icon
		Picture	Yes
		Mode(Picture preference)	Yes
		Brightness	Yes
		Contrast	Yes
		Color	Yes
		Tint	Yes
		Sharpness	Yes
		Color Temperature	Yes
		Cable Clear	No
		Reset	Yes
		Audio	Yes
		MTS	Yes
		Bass	Yes
		Treble	Yes
		Balance	Yes
		Stable Sound	Yes
		Speakers On/Off	Yes
		Dolby Virtual	Yes
		WOW SRS 3D	Yes
		WOW Focus	Yes
		WOW Tru Bass	Yes
		HDMI	Yes
		Reset	Yes
		Setup	Yes
		Language	Yes
		Clock Set	Yes
		TV/CABLE	Yes
		CH Program	Yes
		Add/ Erase	Yes
		Closed Caption	Yes
		Picture Size	Yes
		Picture Scroll	Yes
		Cinema Mode	Yes
		Aspect	Yes
		Back Lighting	Yes
		Option	Yes
		On Timer	Yes
		Favorite CH	Yes
		CH Label	Yes
		VIDEO Label	Yes
		Locks	Yes
		V-Chip	Yes
		Lock	Yes
New Password	Yes		
Panel Lock	Yes		
PC Monitor Menu	Yes		
Brightness	Yes		
Contrast	Yes		
Hor Position	Yes		
Ver Position	Yes		
Phase	Yes		
Clock	Yes		
Auto Adjust	Yes		
Reset	Yes		
Color Temperature Menu	Yes		
Red	Yes		
Green	Yes		
Blue	Yes		
Reset	Yes		

GENERAL SPECIFICATIONS

	Control Level		Yes
		Volume	Yes
		Brightness	Yes
		Contrast	Yes
		Color	Yes
		Tint	Yes
		Sharpness	Yes
		Bass	Yes
		Treble	Yes
		Balance	Yes
		Picture Scroll	Yes
		Back Lighting	Yes
		H Position	Yes
		V Position	Yes
		Red	Yes
		Green	Yes
		Blue	Yes
		Stereo, SAP, Mono	Yes
		CH/AV(Line)/PC	Yes
		Color Stream HD (Component)	Yes
		HDMI	Yes
		Channel (TV/Cable)	Yes
		CH Label	Yes
		Video Label	Yes
		Clock	Yes
		Game Timer	Yes
		Front Panel Lock	Yes
		On Timer	Yes
		Sleep Timer	Yes
		Reset	Yes
		Sound Mute	Yes
		V-chip Rating	Yes
		NOT AVAILABLE	Yes
		Picture Size	Yes
G-8	OSD Language		English, French, Spanish
G-9	Clock and Timer	Sleep Timer	Max Time Step
		On Timer	Program
		Wake Up Timer	
		Timer Back-up (at Power Off Mode)	more than
			120 Min _10 Min_ Yes _No -- Min Sec

GENERAL SPECIFICATIONS

G-10	Remote Control	Unit	RC-GR	
		Glow in Dark Remocon	No	
		Back Light Remocon	Yes	
		Format	Toshiba	
		Custom Code	TV:40-BFh	
		Power Source	Voltage(D.C) UM size x pcs	3V UM-3 x 2 pcs
		Total Keys		40 Keys
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			100 /+10	Yes
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			TV/Video(Input Select)	Yes
			ENT,CH RTN(Quick View)	Yes
			Menu > / FAV Up	Yes
			Menu < / FAV Down	Yes
			Menu Up	Yes
			Menu Down	Yes
			Mute	Yes
			PIC SIZE (16:9)	Yes
			Light	Yes
		Multi Brand Keys	TV/CBL/SAT/VCR/DVD	Yes
		(DVD Keys)	Enter	Yes
		(TV / DVD Keys)	SLEEP/TOP MENU	Yes
			RECALL(Call) / (Display)	Yes
			Menu/Enter / DVD MENU	Yes
			Exit / DVD CLEAR	Yes
		(DVD / VCR Keys)	Pause/Still	Yes
			FF	Yes
			Rew	Yes
			Play	Yes
			Stop	Yes
			<</Skip / Search Forward	Yes
			>>/Skip / Search Forward	Yes
		(VCR Keys)	Rec	Yes
			TV/VCR	Yes

GENERAL SPECIFICATIONS

G-11	Features	Auto Shut Off	Yes	
		Auto Search	No	
		Comb Filter	Yes	
				3 -D
		Energy Star	Yes	
		Game Position	No	
		Power On Memory	Yes	
		Variable Audio Out	Yes	
		Mode (Picture Preference)	Yes	
		Color Temperature Control	Yes	
		Cable Clear	No	
		SAP	Yes	
		Stable Sound	Yes	
		Virtual Dolby	Yes	
		SRS WOW(SRS 3D/Focus/Tru Bass)	Yes	
		CABLE	Yes	
		CH Program (Auto CH Memory)	Yes	
		Closed Caption	Yes	
		Picture Size	Yes	
		Picture Scroll	Yes	
		Cinema Mode	Yes	
		Aspect	Yes	
		On Timer	Yes	
		Favorite CH	Yes	
		CH Label	Yes	
		VIDEO Label	Yes	
		V-Chip	Yes	
			Type	USA Type
		CH Lock	Yes	
		Video Lock	Yes	
		Game Timer(Max Time:120Min)	Yes	
		Panel Lock	Yes	
Direct Input Selection	Yes			
PC Monitor Input	Yes			
Available Scan Rates (Component/HDMI)	480i/480p/720p/1080i			
Auto Setup(Language/CH Program)	Yes			
Freeze frame	No			
G-12	Accessories	Owner's Manual	Language	English / French
			w/Guarantee Card	Yes
		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-3 x 2 pcs
			OEM Brand	No
		AC Adapter		No
		AC Cord (for AC Adapter)		No
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		No
		300,75ohm to 75ohm Antenna Adapter		No
		Sheet Information (Return)		No
Sheet Information (HDMI)		Yes		

GENERAL SPECIFICATIONS

G-13	Interface	Switch	Top	Power (Tact)	Yes		
				Channel Up/Menu Up	Yes		
				Channel Down/Menu Down	Yes		
				Volume Up/Menu >	Yes		
				Volume Down/Menu <	Yes		
				Menu	Yes		
				Play	No		
				Eject	No		
				Skip+, Search+	No		
				Skip-, Search-	No		
				Still/Pause	No		
				Stop	No		
				Main Power SW	No		
				Input Select	Yes		
		Indicator	Rear	Main Power SW	No		
				Power	Yes (Red)		
				Stand-by	No		
		Terminals	Rear	On Timer	No		
				Video Input 1	RCA x 1		
				Audio Input 1	RCA x 2(Stereo)		
				S - Input 1	Yes		
				Video Output	No		
				Audio Output	RCA x 2 (Variable)		
				Component Input(w/ Analog Audio L/R)	RCA x 5		
				HDMI Input(w/ Analog Audio L/R)	HDMI x 1(RCA x 2)		
				PC Monitor Input(w/ Analog Audio L/R)	Dsub15pin x 1(RCA x 2)		
				Digital Audio Output	No		
				DC Jack (Center +)	No		
				VHF/UHF Antenna Input	F Type		
				AC Outlet	No		
				Side	Side	Video Input 2	RCA x 1
						Audio Input 2	RCA x 2(Stereo)
Other Terminal	Headphone						
G-14	Set Size			Approx. W x D x H (mm)	610 x 276 x 484		
				w/o Handle, Stand Approx. W x D x H (mm)	610 x 100.5 x 438.5		
G-15	Weight	Net (Approx.)	11.0kg (24.3 lbs)				
		Net w/o Handle, Stand (Approx.)	10.0kg (22.1lbs)				
		Gross (Approx.)	14.0kg (30.9lbs)				
G-16	Carton	Master Carton	No				
			Content	--- Sets			
			Material	--- / ---			
			Dimensions W x D x H(mm)	---			
		Gift Box	Description of Origin	---			
			Yes				
			Material	Double/Brown			
			W/Color Photo Label	No			
			W/Handle	No			
			Dimensions W x D x H(mm)	720 x 383 x 590			
		Drop Test	Design	As Per Buyer 's			
			Description of Origin	Yes			
			1 Corner / 3 Edges / 6 Surfaces				
			Height (cm)	62			
Container Stuffing (40' container)	394	Sets					
G-17	Material	Cabinet	Front	PS 94V0 DECABROM			
			Rear	PS 94V0 DECABROM			
			Jack Panel	--			
		PCB	Non-Halogen Demand	No			
			Eyelet Demand	Yes			
G-18	Environment	Pb Free	Lead-free Solder	Yes			
			Other	No			
			Cd Free	No			

DISASSEMBLY INSTRUCTIONS

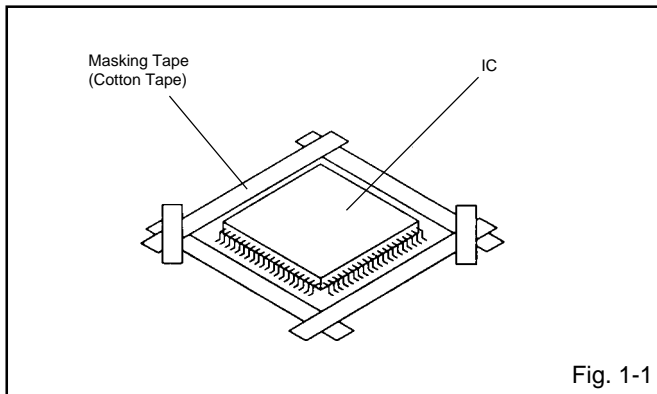
1. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

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

NOTE

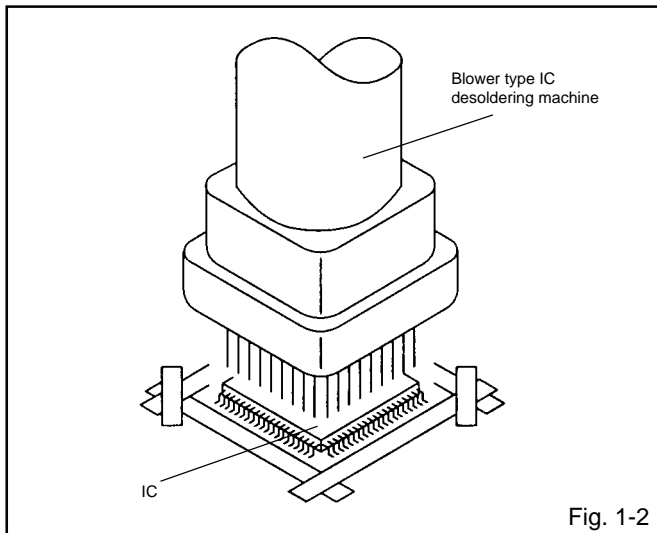
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

NOTE

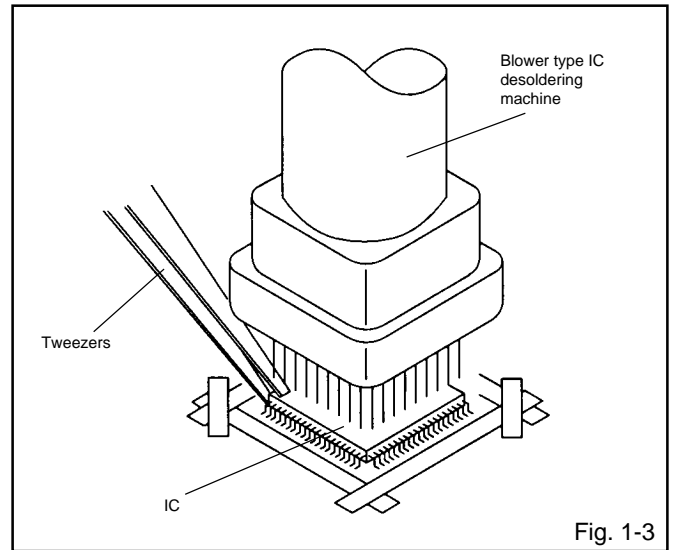
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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

NOTE

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

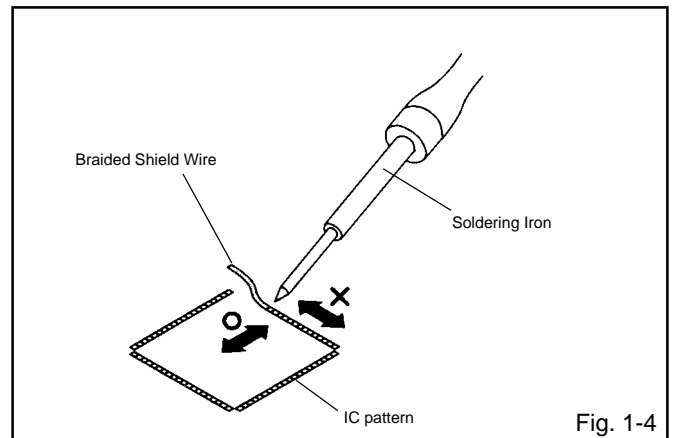


4. Peel off the Masking Tape.

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

NOTE

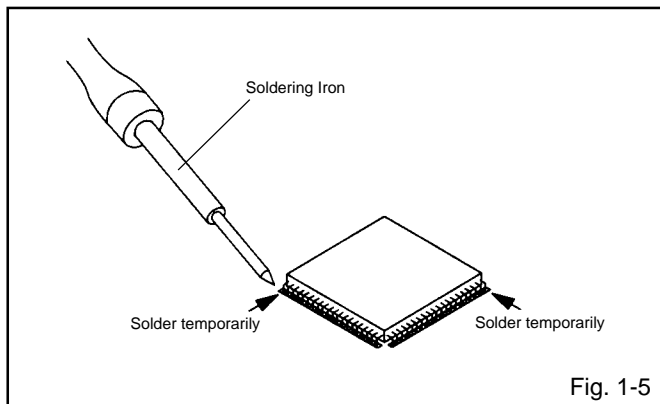
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



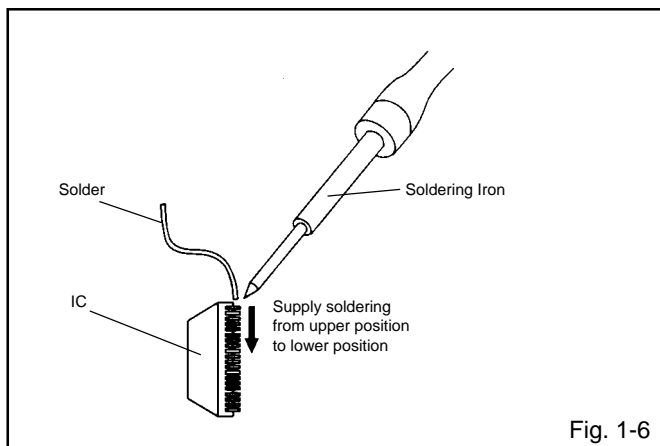
DISASSEMBLY INSTRUCTIONS

INSTALLATION

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



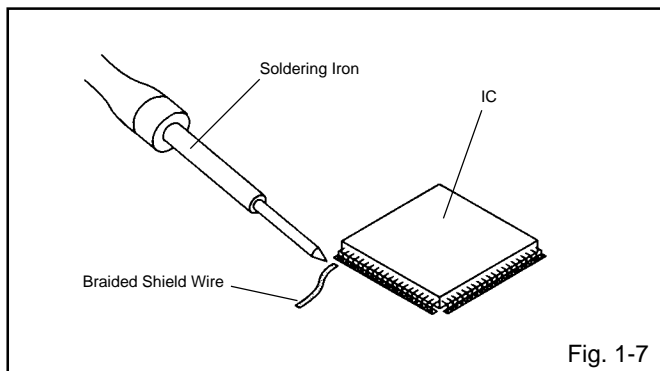
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 1-6.)



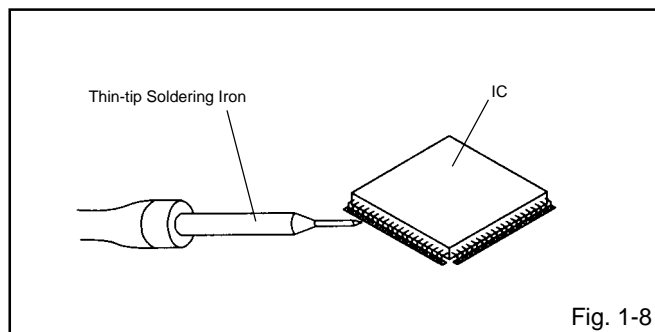
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 1-7.)

NOTE

Do not absorb the solder to excess.



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



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

NOTE

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

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 2 seconds.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

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

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

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

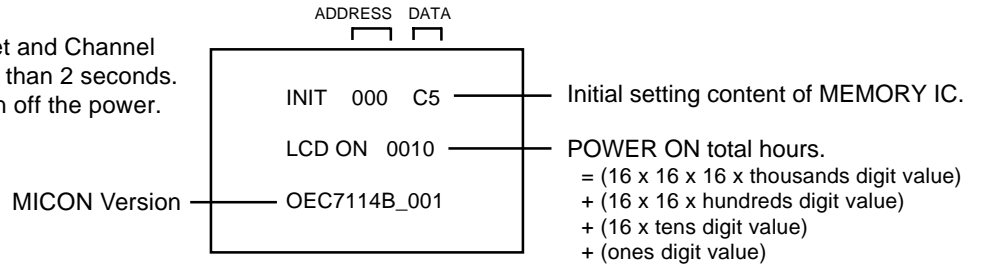


FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1 and 2.

Main Micon side EEPROM (IC199) initial setting

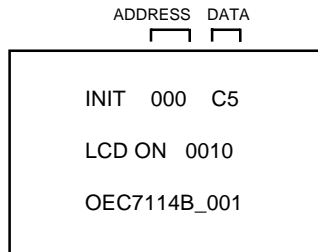


FIG. 1

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
000	C5	A2	01	80	A3	10	86	6C	C2	C1	B3	03	38	36	03	35
010	01	05	1F	24	40	45	5D	62	45	4A	18	20	05	0A	00	00
020	8F	00	00	00	00	00	00	00	00	19	00	5A	98	33	04	76
030	77	0F	07	23	1F	07	00	22	46	81	01	07	04	40	40	40
040	00	C0	40	00	12	2A	2A	00	13	00	00	50	70	72	99	59
050	68	99	59	00	73	14	1C	2C	24	16	00	00	00	00	00	EC
060	E6	E6	EB	F2	15	F5	08	0D	07	07	73	00	45	80	23	00
070	F1	00	40	20	5E	70	40	80	01	22	F9	00	00	00	00	19
080	FE	02	12	22	23	00	0D	00	00	00	00	00	00	00	00	00
090	00	00	00	00	00	00	00	00	00	00	00	23	27	2A	2D	30
0A0	33	36	39	3C	3F	42	45	48	4B	4E	51	53	55	57	58	59
0B0	5A	5B	5C	5D	5E	5F	61	63	65	67	69	6A	6B	6C	6D	6E
0C0	6F	70	71	71	72	72	73	73	74	74	75	75	75	75	76	76
0D0	76	76	77	77	77	77	78	78	78	78	79	42	00	00	00	EF
0E0	06	04	FB	F1	F4	F5	F7	3C	4F	02	18	24	3F	49	00	3F
0F0	54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
100	DC	F1	3C	22	22	DA	71	69	33	00	0E	38	22	22	DA	71
110	69	33	33	44	33	77	59	99	59	01	01	8C	04	03	05	81
120	02	81	02	81	02	00	0B	01	01	8C	04	03	05	D0	81	02
130	81	02	81	02	00	0B	05	35	90	08	39	0E	14	44	80	80
140	80	6B	3F	68	36	62	B5	20	06	00	25	FC	00	35	90	08
150	D0	23	06	20	80	80	80	6B	3F	68	36	62	B5	20	01	00
160	25	FC	00	67	10	A0	C0	03	25	36	80	80	80	6B	3F	68
170	36	62	B5	20	06	0A	00	FC	00	89	70	98	B5	03	05	94
180	80	80	80	6B	3F	68	36	62	B5	20	06	0A	00	FC	00	---

Table 1

WHEN REPLACING EEPROM (MEMORY) IC

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
6. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

9. Turn POWER on.
 10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
 11. After the finishing of the initializing of shipping, the unit will turn off automatically.
- The unit will now have the correct DATA for the new MEMORY IC.

Sub Micon side EEPROM (IC104) initial setting

	ADDRESS	DATA
INIT	00	08
SUM	1211	
ROM	0000	
OEC6081B	0100	

FIG. 2

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	08	11	0A	10	0A	00	11	00	00	04	FA	00	00	FA	00	00
10	00	F9	00	00	F9	00	00	F9	00	00	F9	00	00	00	C0	0F
20	FF	00	F0	0F	EE	00	F7	FF	0E	AA	CC	CA	80	00	00	00
30	00	00	00	07	8C	8F	00	00	00	07	8C	8F	00	00	00	09
40	8C	8F	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 2

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. Again, 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.
4. ADDRESS is now selected and should "blink". Using the UP/DOWN button 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 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

10. Turn 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. BEFORE MAKING ELECTRICAL ADJUSTMENTS

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

CAUTION

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

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. AC Voltmeter
3. Pattern Generator
4. Multi-Sound Signal 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 second to appear the adjustment mode on the screen as shown in Fig. 1-1.

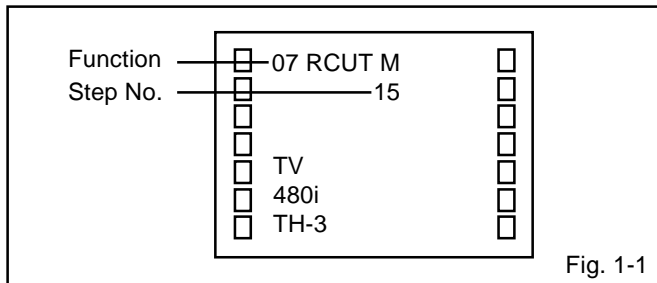


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button (1-0) on the remote control to select the options shown in Fig. 1-2.
4. And, press the VOL. DOWN button on the set and the Channel button (9) on the remote control for more than 2 second to appear the adjustment mode on the screen as shown in Fig. 1-3.
5. Use the Channel UP/DOWN button or Channel button (1-0) on the remote control to select the options shown in Fig. 1-4.
6. Press the MENU button on the remote control to end the adjustments.
7. To display the adjustment screen for AV, CS and HD-MI mode, press the TV/VIDEO button on the remote control to set to the AV, CS and HD-MI mode. Press the VOL.DOWN button on the set and the channel (9) on the remote control for more than 2 second.

NO.	FUNCTION	NO.	FUNCTION
07	RCUT M	36	GCUT W
08	GCUT M	37	BCUT W
09	BCUT M	38	DRI1 W
10	DRI1 M	39	DRI2 W
11	DRI2 M	40	MD6 W
12	MD6 M	41	DTHON W
13	DTHON M	42	DRREF W
14	DRREF M	43	RCUT2 W
15	RCUT2 M	44	GCUT2 W
16	GCUT2 M	45	BCUT2 W
17	BCUT2 M	46	GAINR W
18	GAINR M	47	GAING W
19	GAING M	48	GAINB W
20	GAINB M	49	BRI CEN
21	RCUT C	50	BRI MAX
22	GCUT C	51	BRI MIN
23	BCUT C	52	CON CEN
24	DRI1 C	53	CON MAX
25	DRI2 C	54	CON MIN
26	MD6 C	55	COL CEN
27	DTHON C	56	COL MAX
28	DRREF C	57	COL MIN
29	RCUT2 C	58	TIN CEN
30	GCUT2 C	59	TIN MAX
31	BCUT2 C	60	TIN MIN
32	GAINR C	61	SHA CEN
33	GAING C	62	SHA MAX
34	GAINB C	63	SHA MIN
35	RCUT W		

Fig. 1-2

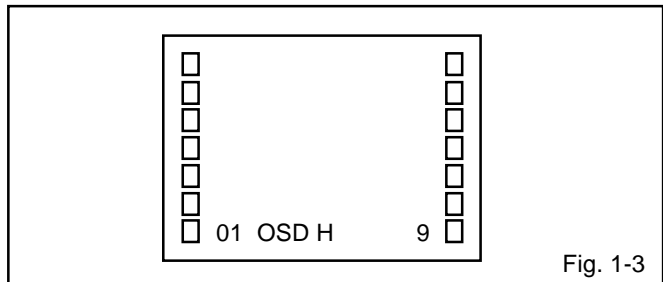


Fig. 1-3

NO.	FUNCTION
01	OSD
05	G OFFSET
15	BACK LIGHT CENT
16	BACK LIGHT MAX
17	BACK LIGHT MIN
58	TEST STEREO
59	TEST AUDIO

Fig. 1-4

ELECTRICAL ADJUSTMENTS

2. BASIC ADJUSTMENTS

2-1: CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (**53**) on the remote control to select "CONT MAX".
2. Check if the step No. SUB CONT is "5A".
3. Receive a broadcast and check if the picture is normal.
4. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.
5. Press the TV/VIDEO button on the remote control to set to the CS mode.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (**53**) on the remote control to select "CONT MAX".
7. Check if the step No. SUB CONT is "42".
8. Receive a broadcast and check if the picture is normal.
9. Press the TV/VIDEO button on the remote control to set to the HD-MI mode Then perform the above adjustments 6~8.

2-2: WHITE BALANCE

1. Place the set with Aging Test for more than 5 minutes.
2. Receive the White 10% signal. (CS Input jack)
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-3** and press the channel button (**04**) on the remote control to select "R OFFSET".
5. Adjust the VOL UP/DOWN button on the remote control to adjust the "R OFFSET" and "B OFFSET".

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

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

(SUB MICON)

(RF/AV/S-VIDEO/CS/HD-MI MODE)

NO.	FUNCTION	RF	AV	STEP NO.		
				S-VIDEO	CS	HD-MI
07	RCUT M	82	82	82	82	82
08	GCUT M	81	81	81	81	81
09	BCUT M	7D	7D	7D	7D	7D
10	DRI1 M	3F	3F	3F	3F	3F
11	DRI2 M	40	40	40	40	40
12	MD6 M	0	0	0	0	0
13	DTHON M	0	0	0	0	0
14	DRREF M	0	0	0	0	0
15	RCUT2 M	3F	3F	3F	3F	3F
16	GCUT2 M	40	40	40	40	40
17	BCUT2 M	3F	3F	3F	3F	3F
18	GAINR M	40	40	40	40	40
19	GAING M	3E	3E	3E	3E	3E
20	GAINB M	41	41	41	41	41
21	RCUT C	79	79	79	7D	7D
22	GCUT C	7B	7B	7B	7B	7B
23	BCUT C	7F	7F	7F	7F	7F
24	DRI1 C	3F	3F	3F	3F	3F
25	DRI2 C	3E	3E	3E	3E	3E
26	MD6 C	0	0	0	0	0
27	DTHON C	0	0	0	0	0
28	DRREF C	0	0	0	0	0
29	RCUT2 C	41	41	41	41	41
30	GCUT2 C	44	44	44	44	44
31	BCUT2 C	3E	3E	3E	3E	3E
32	GAINR C	3D	3D	3D	3D	3D
33	GAING C	3F	3F	3F	3F	3F

NO.	FUNCTION	RF	AV	STEP NO.		
				S-VIDEO	CS	HD-MI
34	GAINB C	49	49	49	49	49
35	RCUT W	92	92	92	92	92
36	GCUT W	8C	8C	8C	8C	8C
37	BCUT W	8A	8A	8A	8A	8A
38	DRI1 W	3F	3F	3F	3F	3F
39	DRI2 W	40	40	40	40	40
40	MD6 W	0	0	0	0	0
41	DTHON W	0	0	0	0	0
42	DRREF W	0	0	0	0	0
43	RCUT2 W	31	31	31	31	31
44	GCUT2 W	38	38	38	38	38
45	BCUT2 W	36	36	36	36	36
46	GAINR W	45	45	45	45	45
47	GAING W	3A	3A	3A	3A	3A
48	GAINB W	34	34	34	34	34
49	BRI CEN	C1	C1	C1	B8	B8
50	BRI MAX	EA	EA	EA	D0	D0
51	BRI MIN	A0	A0	A0	80	80
52	CON CEN	30	30	30	28	28
53	CON MAX	5A	5A	5A	42	42
54	CON MIN	1B	1B	1B	23	23
55	COL CEN	90	88	88	A0	A0
56	COL MAX	A5	A5	A5	E0	E0
57	COL MIN	00	00	00	00	00
58	TIN CEN	3D	3D	3D	40	40
59	TIN MAX	7F	7F	7F	7F	7F
60	TIN MIN	00	00	00	00	00
61	SHA CEN	15	15	15	15	15
62	SHA MAX	3F	3F	3F	3F	3F
63	SHA MIN	00	00	00	00	00

(MAIN MICON)

(RF/AV/S-VIDEO/CS/HD-MI MODE)

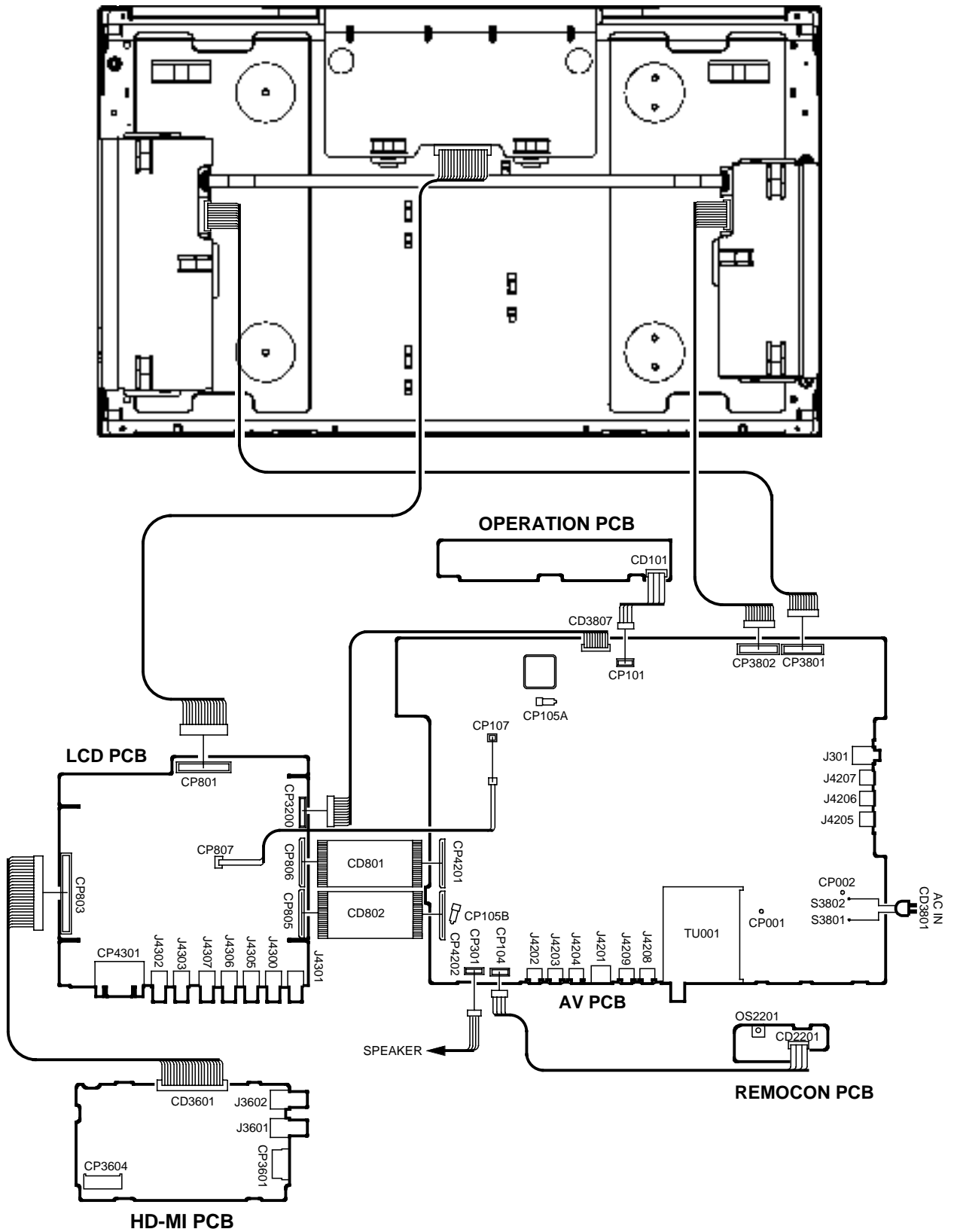
NO.	FUNCTION	RF	AV	STEP NO.		
				S-VIDEO	CS	HD-MI
01	OSD H OSD	35	35	35	35 (480i) 2 (1080i,720p)	35 (480i) 2 (1080i,720p)
05	G OFFSET	0	0	0	0	0
15	BACK LIGHT CENT	128	128	128	128	128
16	BACK LIGHT MAX	255	255	255	255	255
17	BACK LIGHT MIN	0	0	0	0	0
58	TEST STEREO	0	0	0	0	0
59	TEST AUDIO	0	0	0	0	0

(PC MODE)

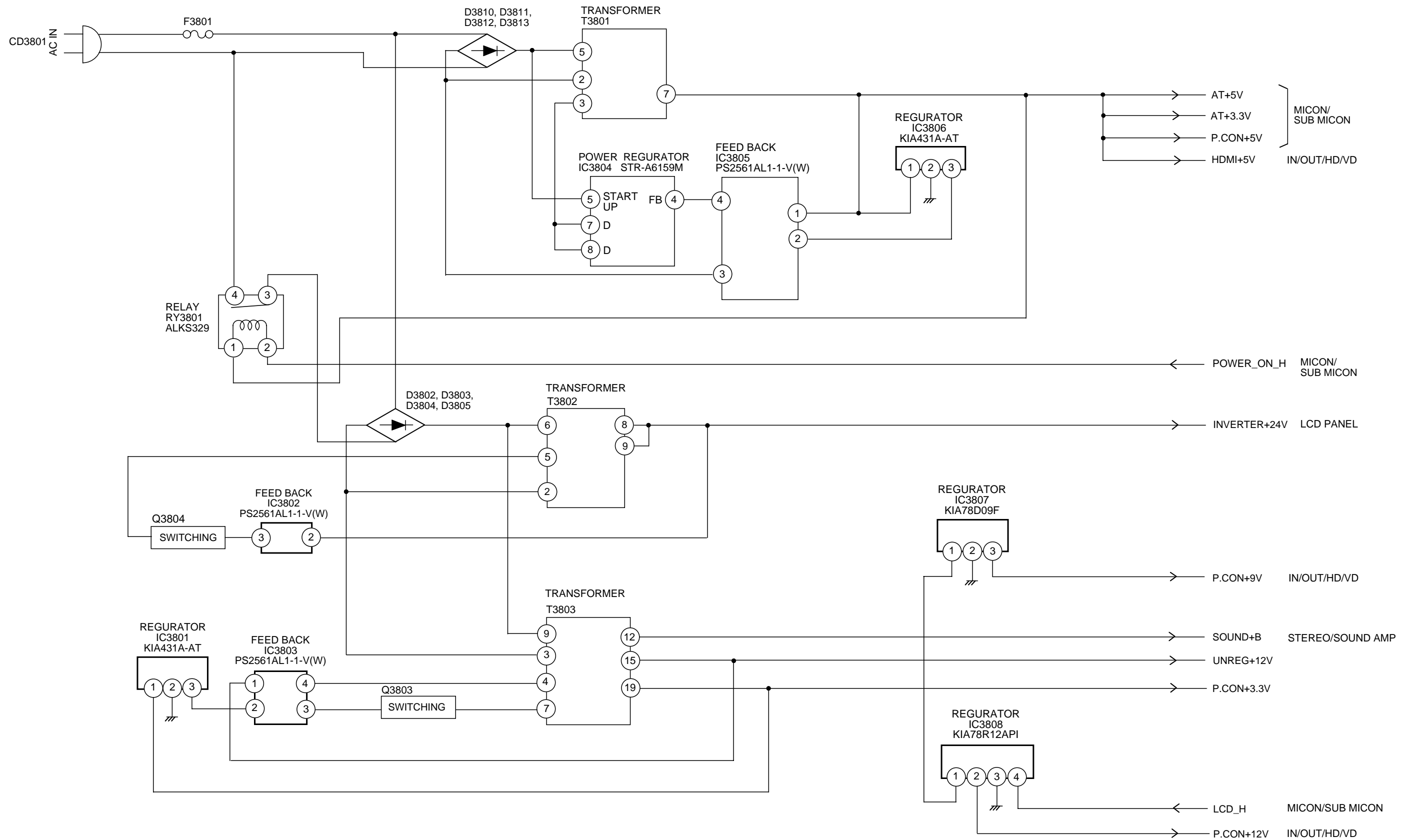
FUNCTION	STEP NO.
BRIGHT MAX	150
BRIGHT CENTER	90
BRIGHT MIN	0
CONT MAX	150
CONT CENTER	75
CONT MIN	0
RED CENTER	128
GREEN CENTER	128
BLUE CENTER	128

ELECTRICAL ADJUSTMENTS

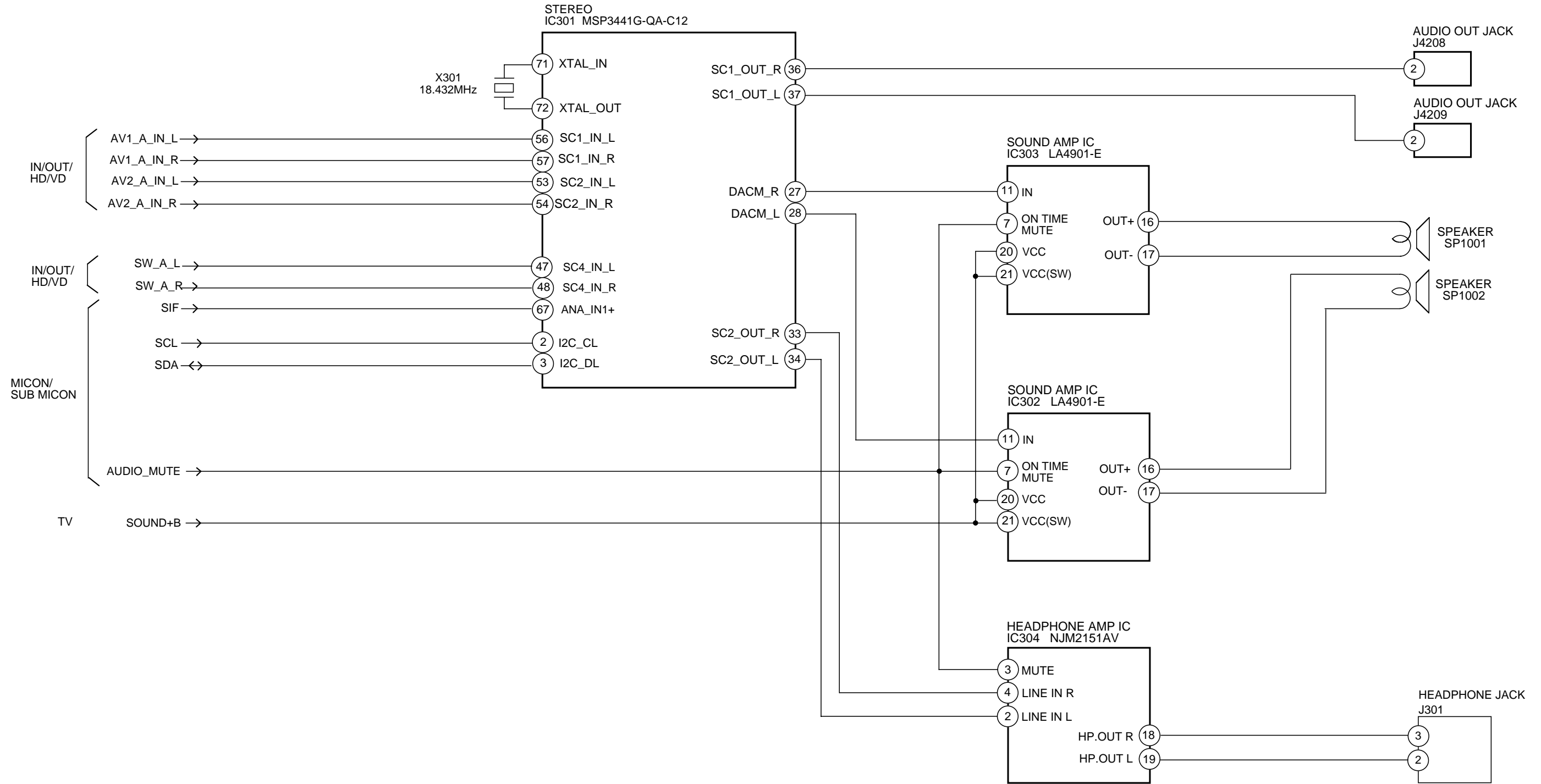
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



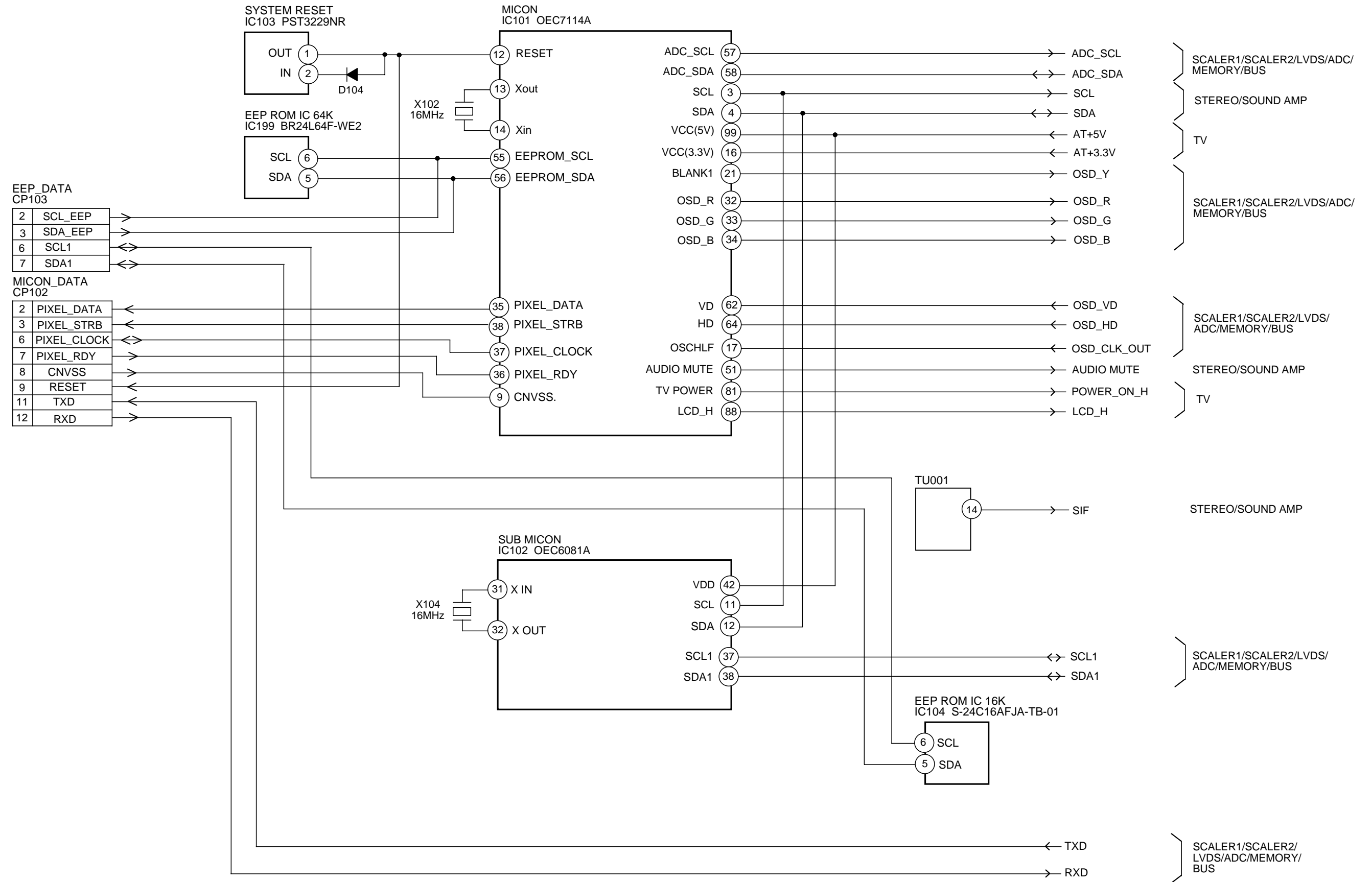
TV BLOCK DIAGRAM



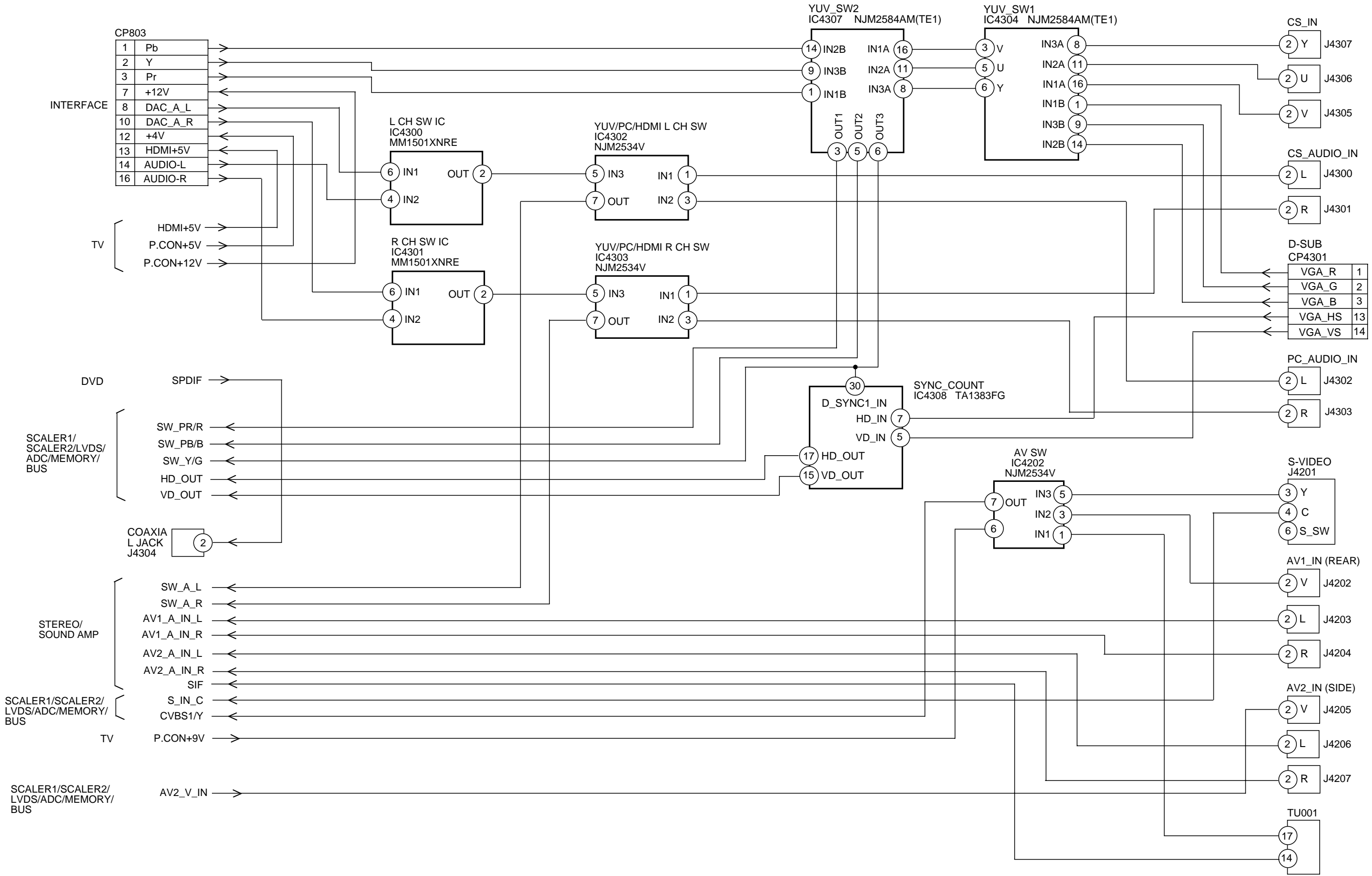
STEREO/SOUND AMP BLOCK DIAGRAM



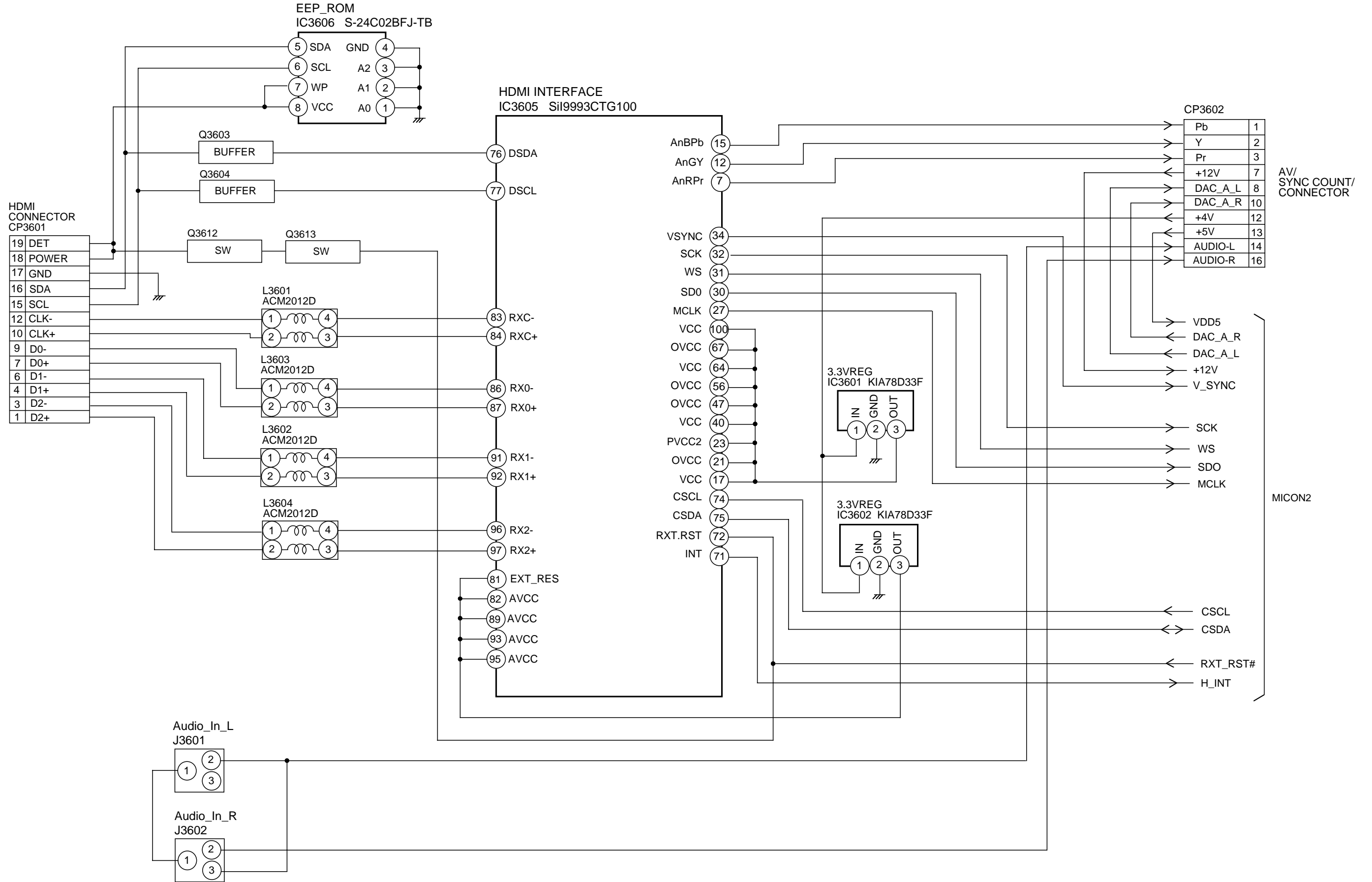
MICON/SUB MICON BLOCK DIAGRAM



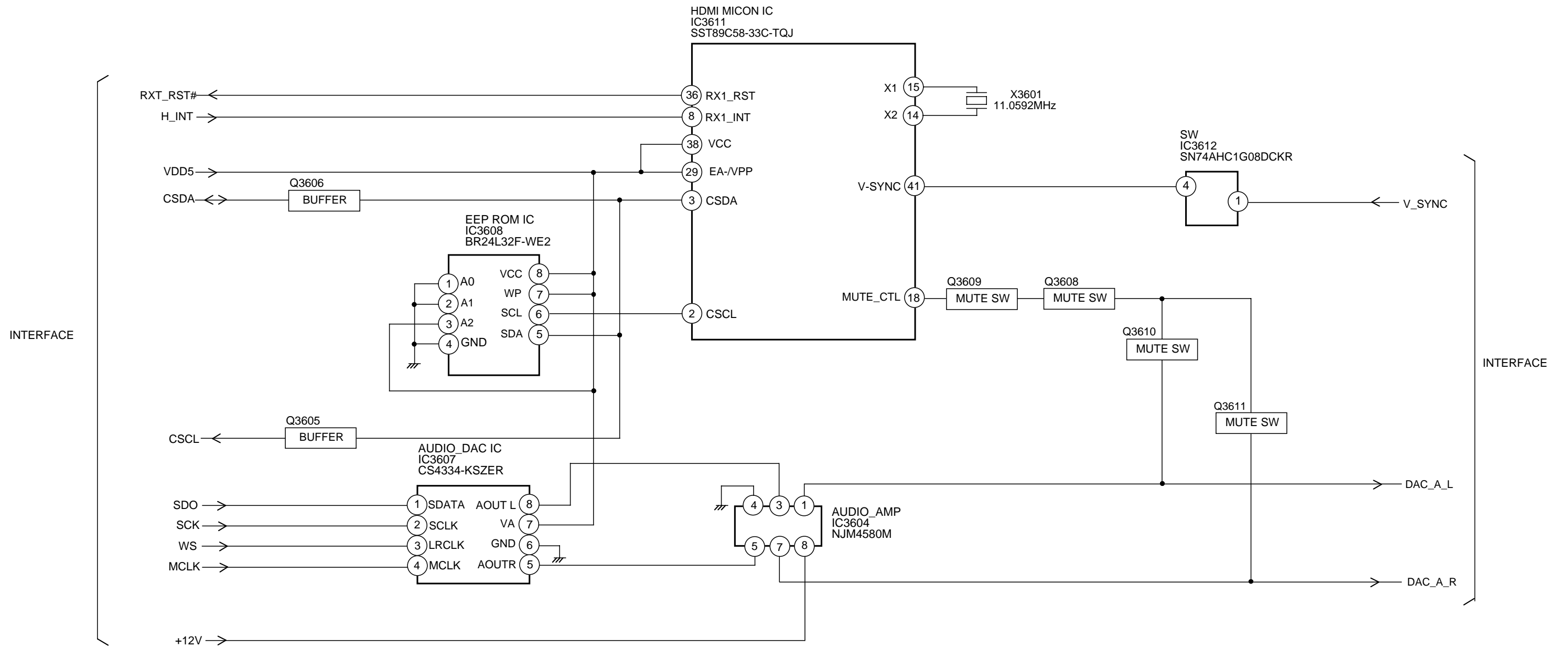
IN/OUT/HD/VD BLOCK DIAGRM



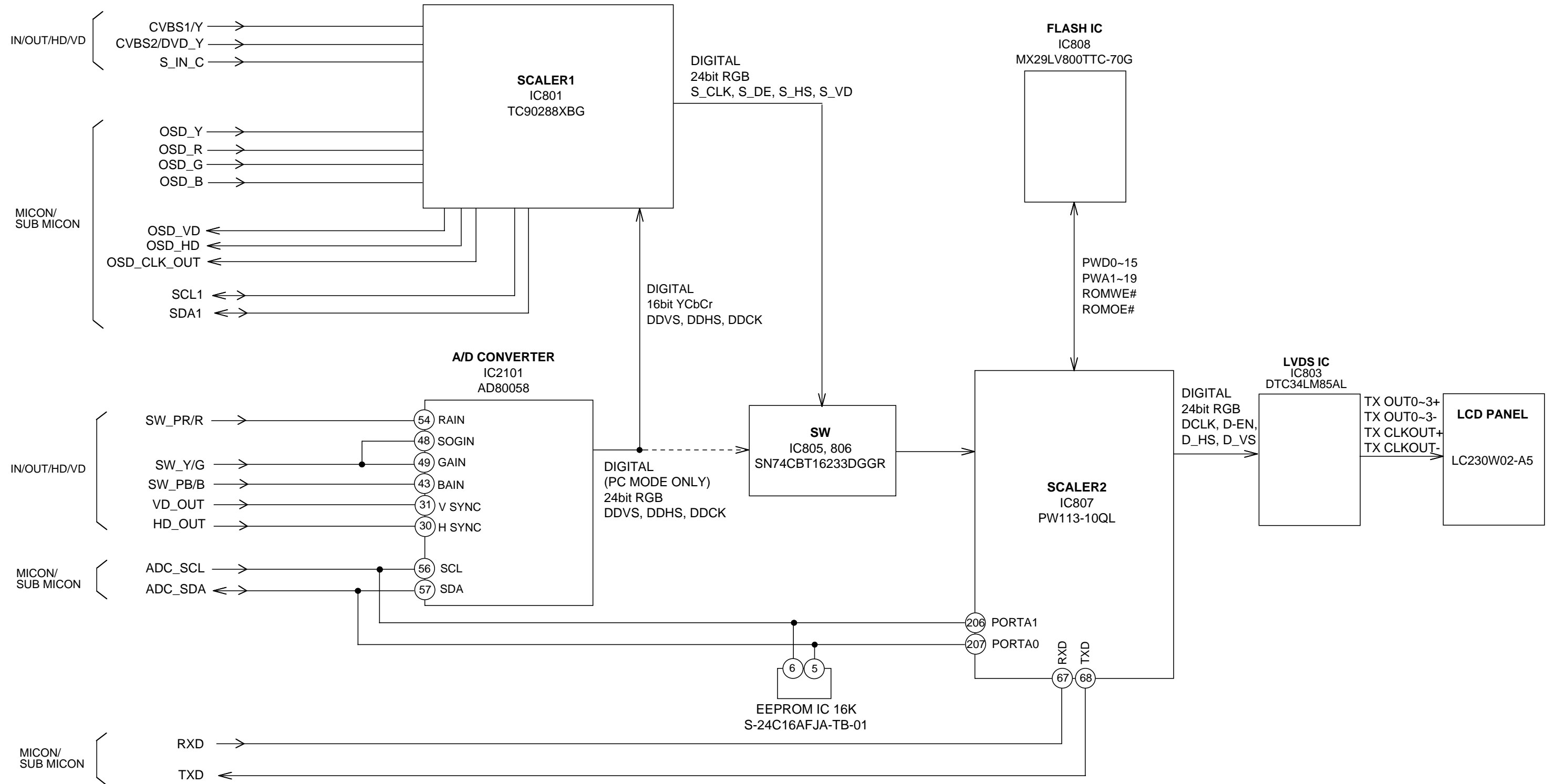
INTERFACE BLOCK DIAGRAM



MICON2 BLOCK DIAGRAM

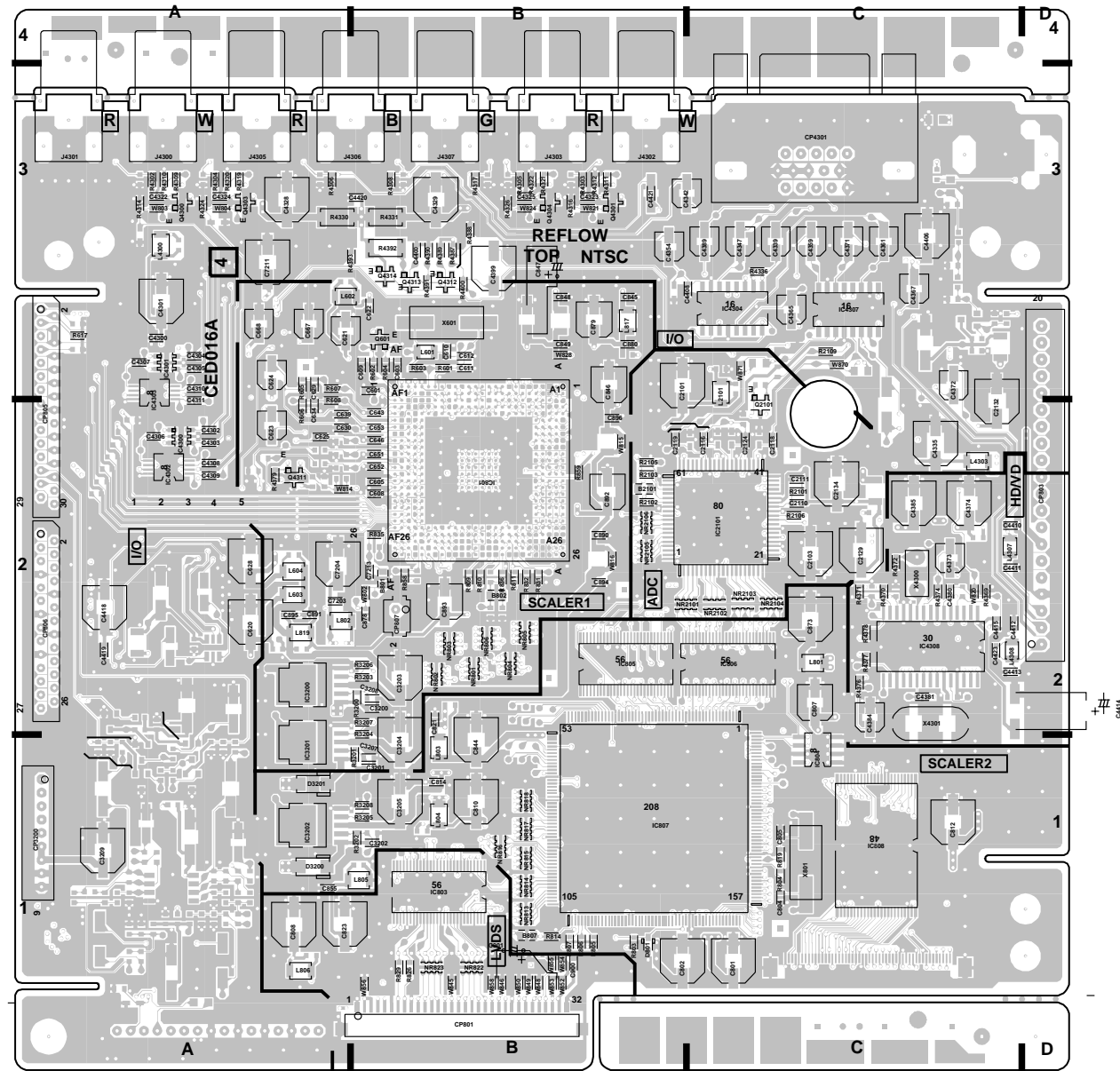


SCALER1/SCALER2/LVDS/ADC/MEMORY/BUS DIAGRAM

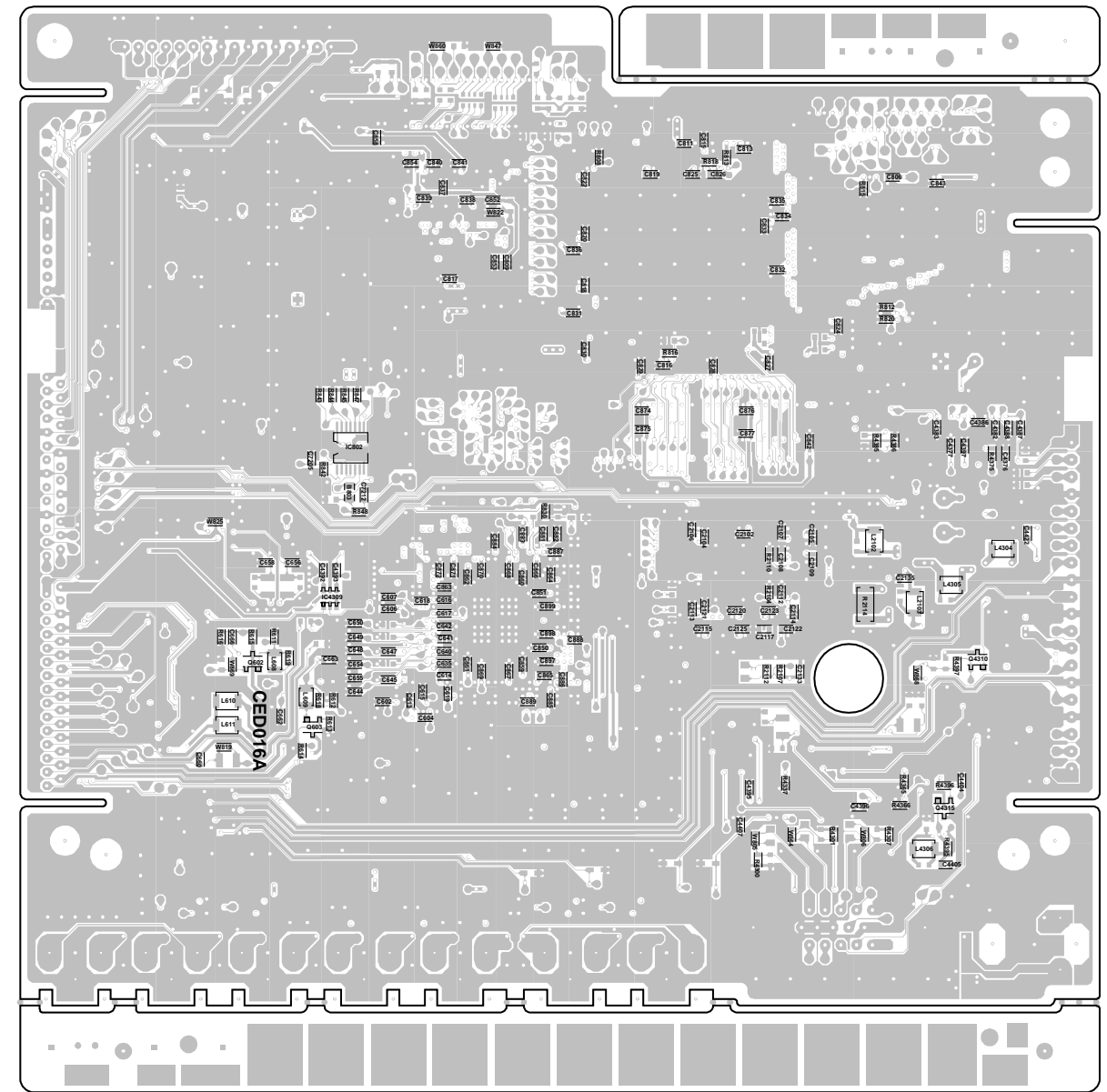


PRINTED CIRCUIT BOARDS

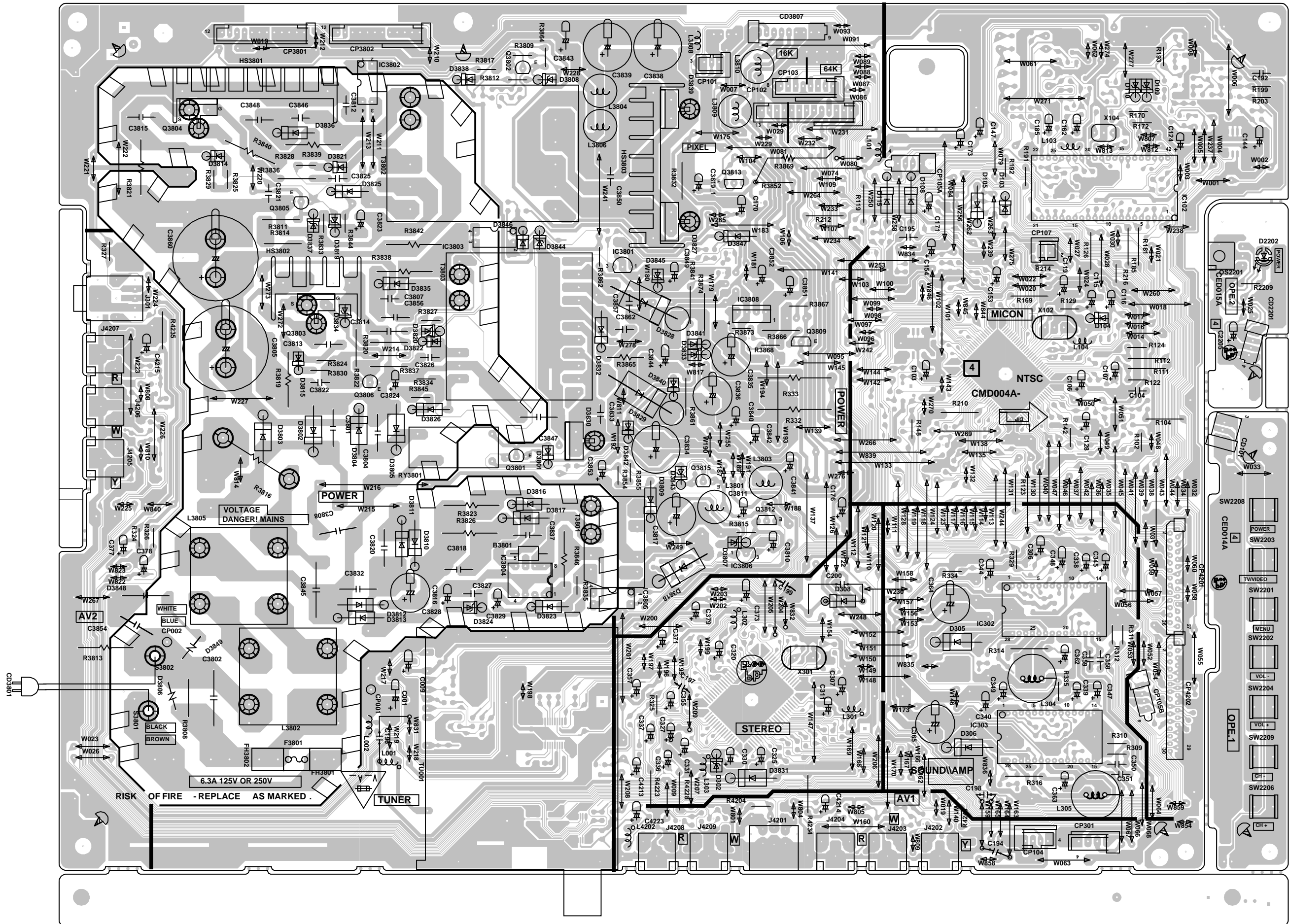
LCD (TOP SIDE)



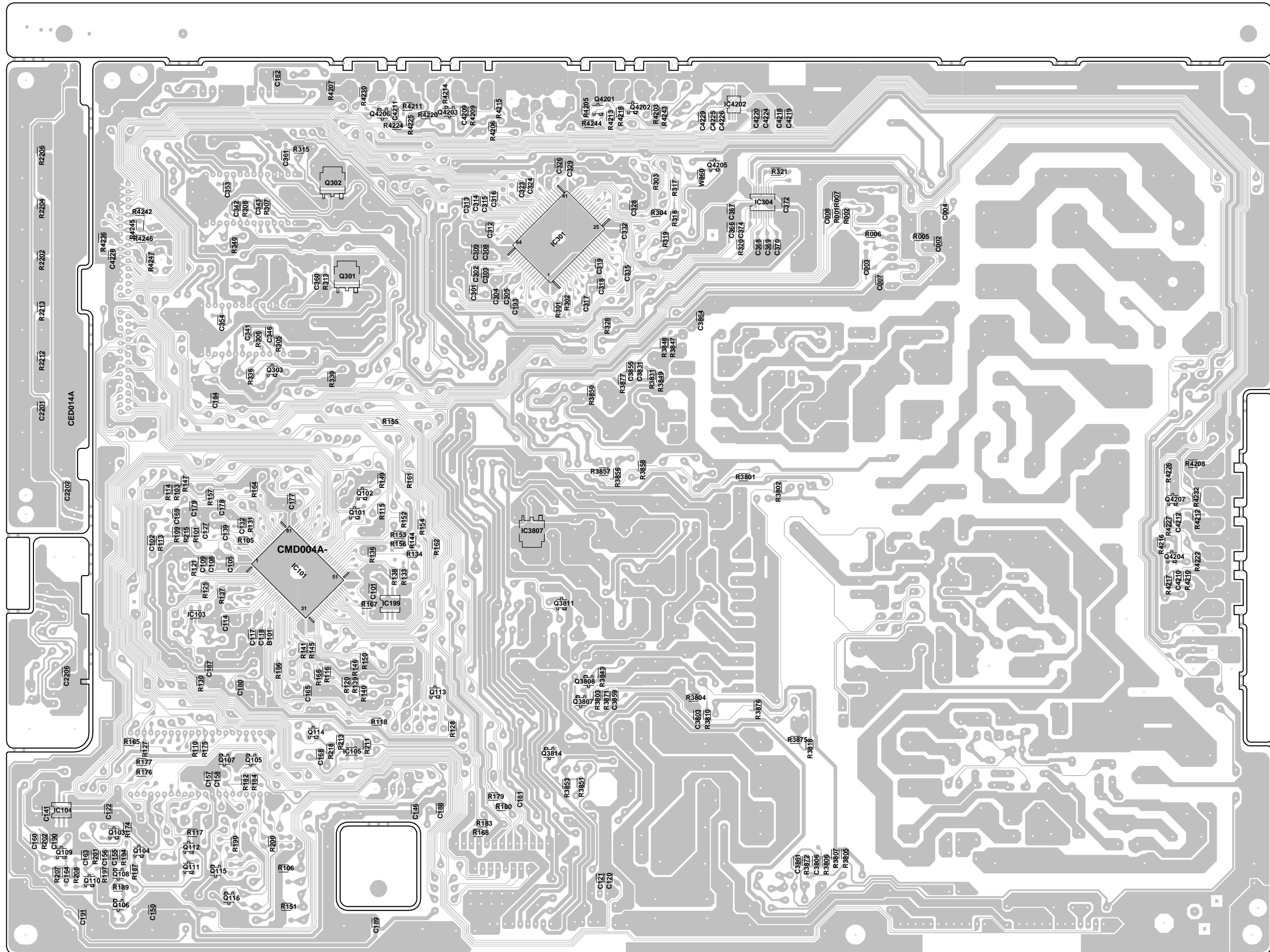
LCD (BOTTOM SIDE)



PRINTED CIRCUIT BAORDS
AV/REMOCON/OPERATION (INSERTED PARTS)
SOLDER SIDE

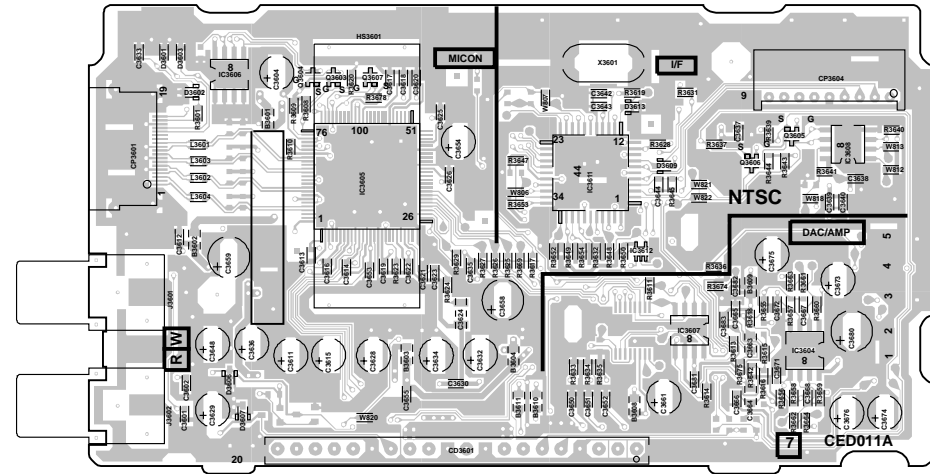


PRINTED CIRCUIT BAORDS
AV/REMOCON/OPERATION (CHIP MOUNTED PARTS)
SOLDER SIDE

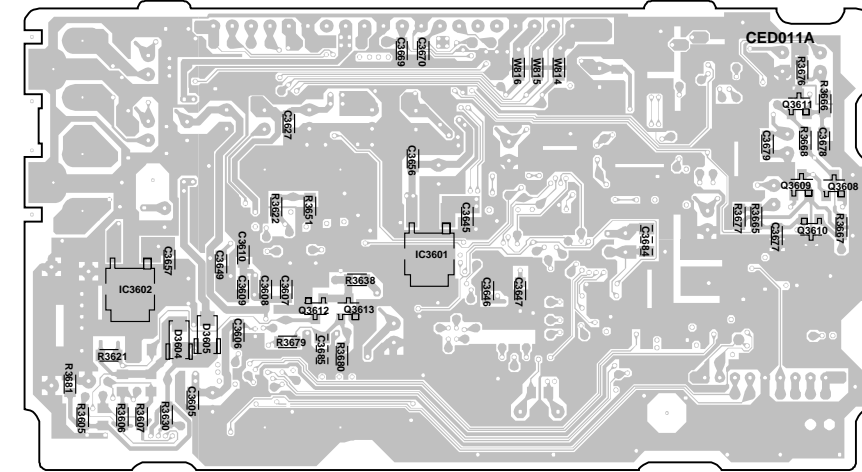


PRINTED CIRCUIT BOARDS

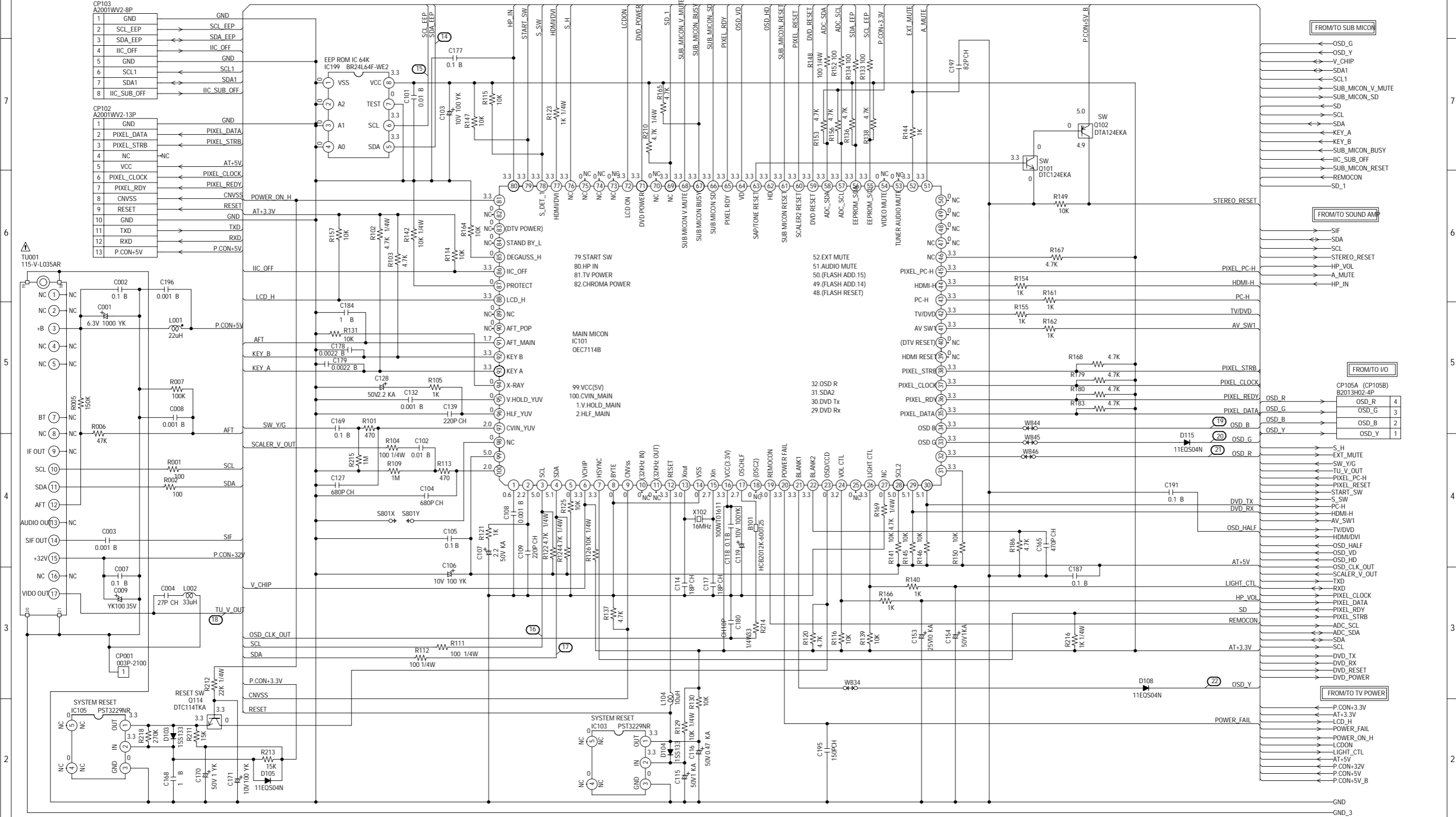
HD-MI (TOP SIDE)



HD-MI (BOTTOMSIDE)



TUNER/MICON SCHEMATIC DIAGRAM (AV PCB)



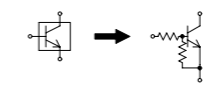
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

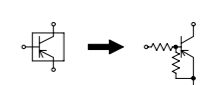
CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

CAUTION: DIGITAL TRANSISTOR



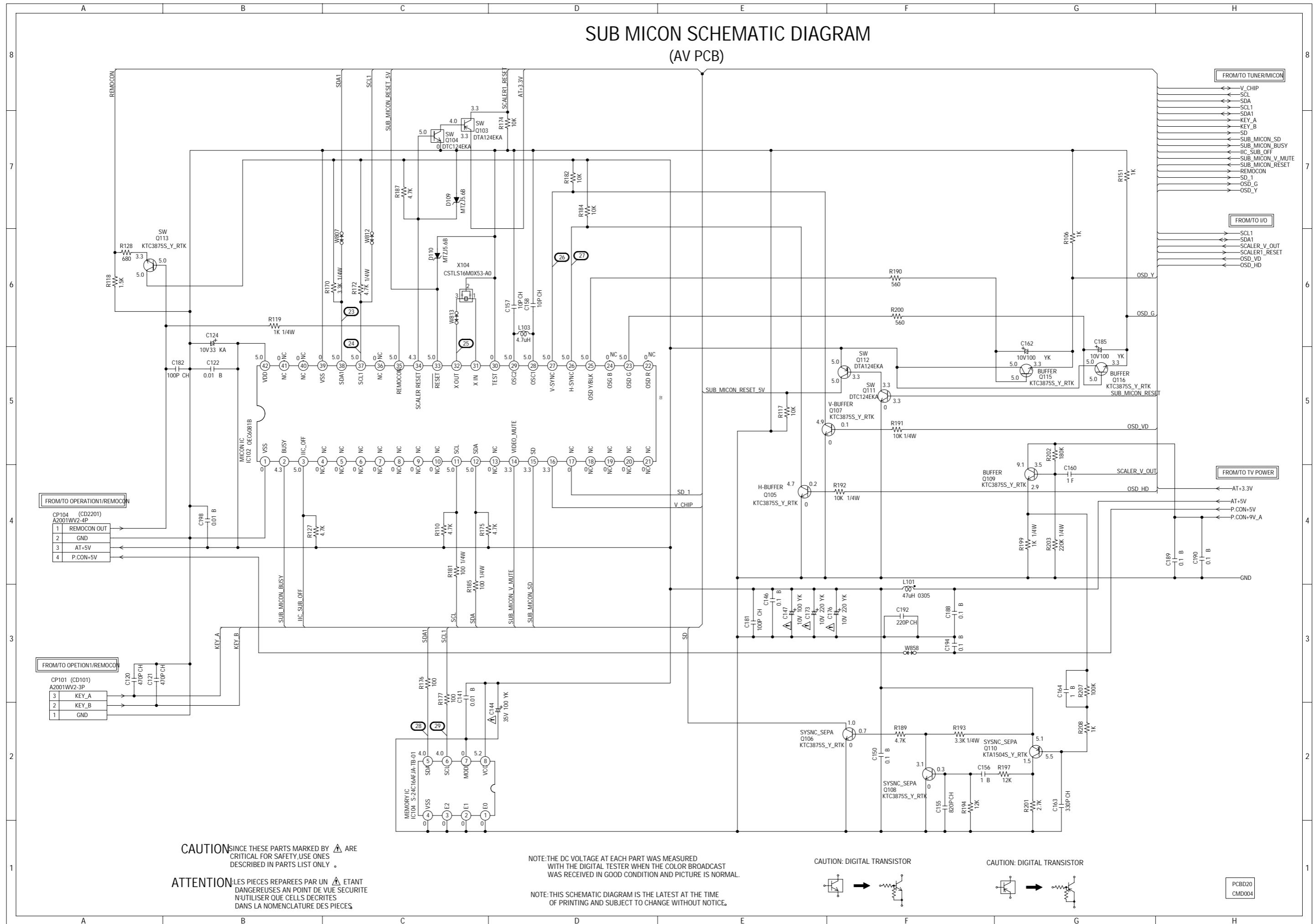
CAUTION: DIGITAL TRANSISTOR



PCBD20
CMD004

SUB MICON SCHEMATIC DIAGRAM

(AV PCB)



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

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

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

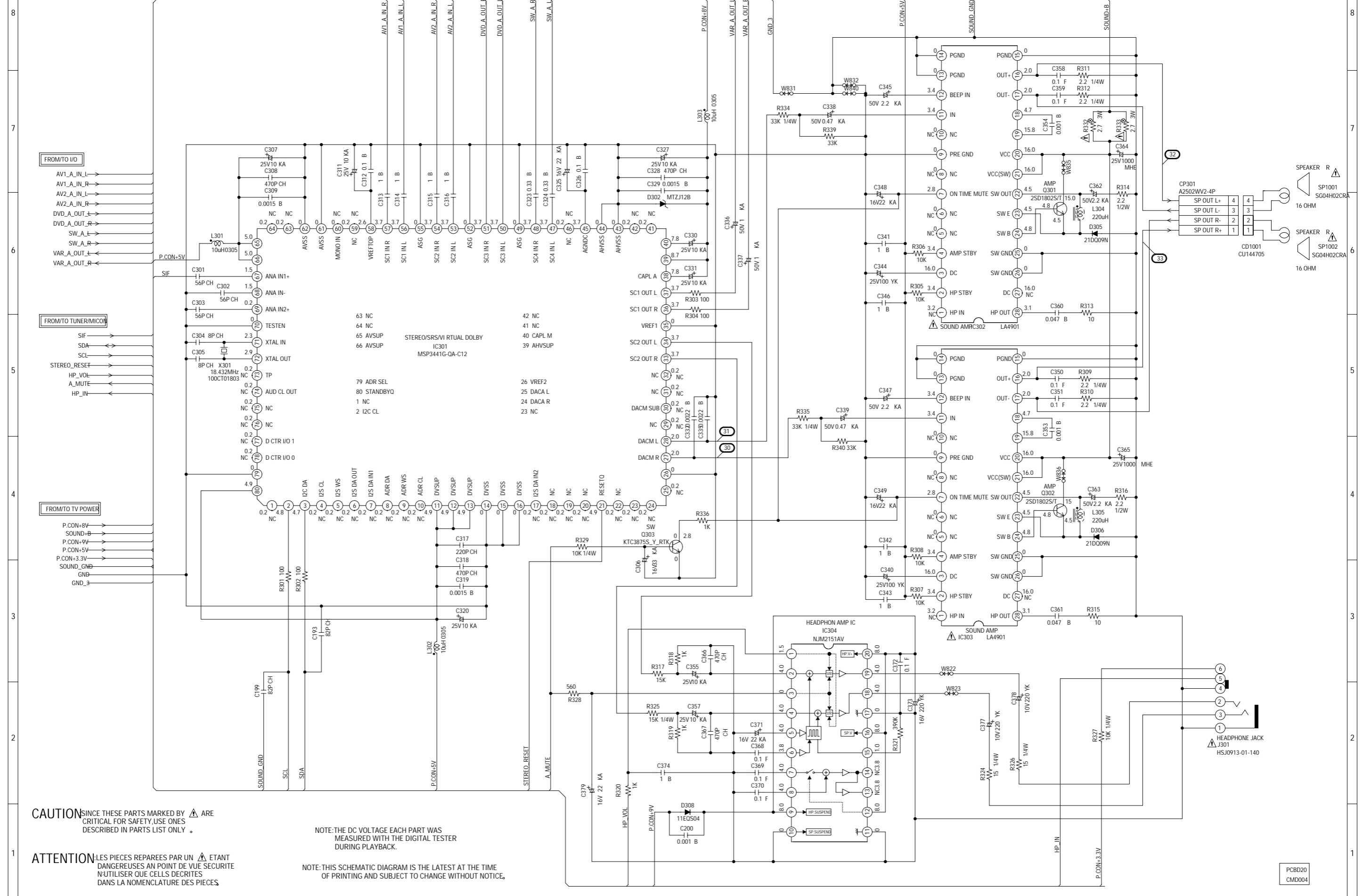
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

PCBD20
CMD004

SOUND AMP SCHEMATIC DIAGRAM (AV PCB)



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

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

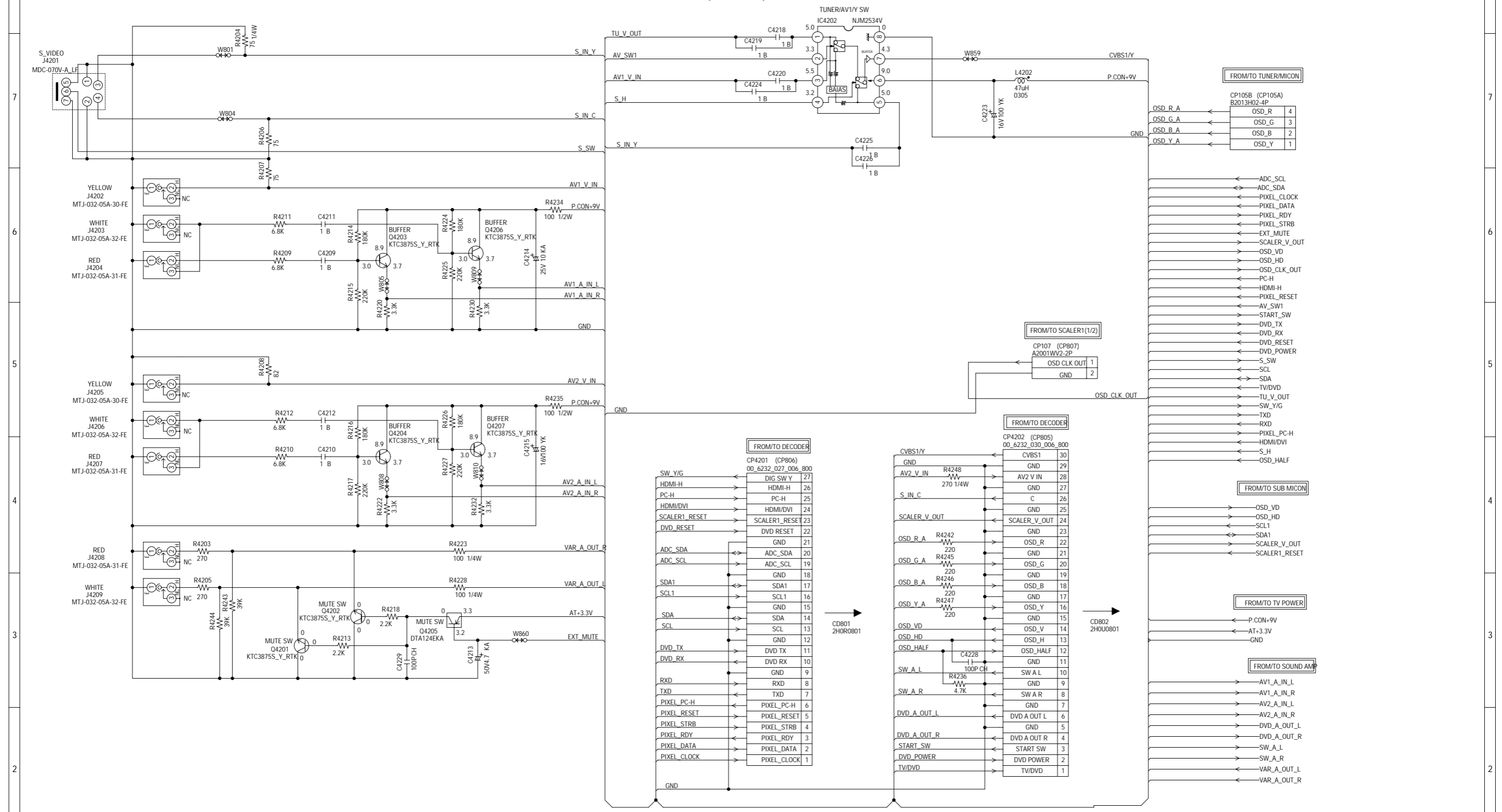
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCBD20
CMD004

IN/OUT SCHEMATIC DIAGRAM

(AV PCB)



CAUTION: DIGITAL TRANSISTOR

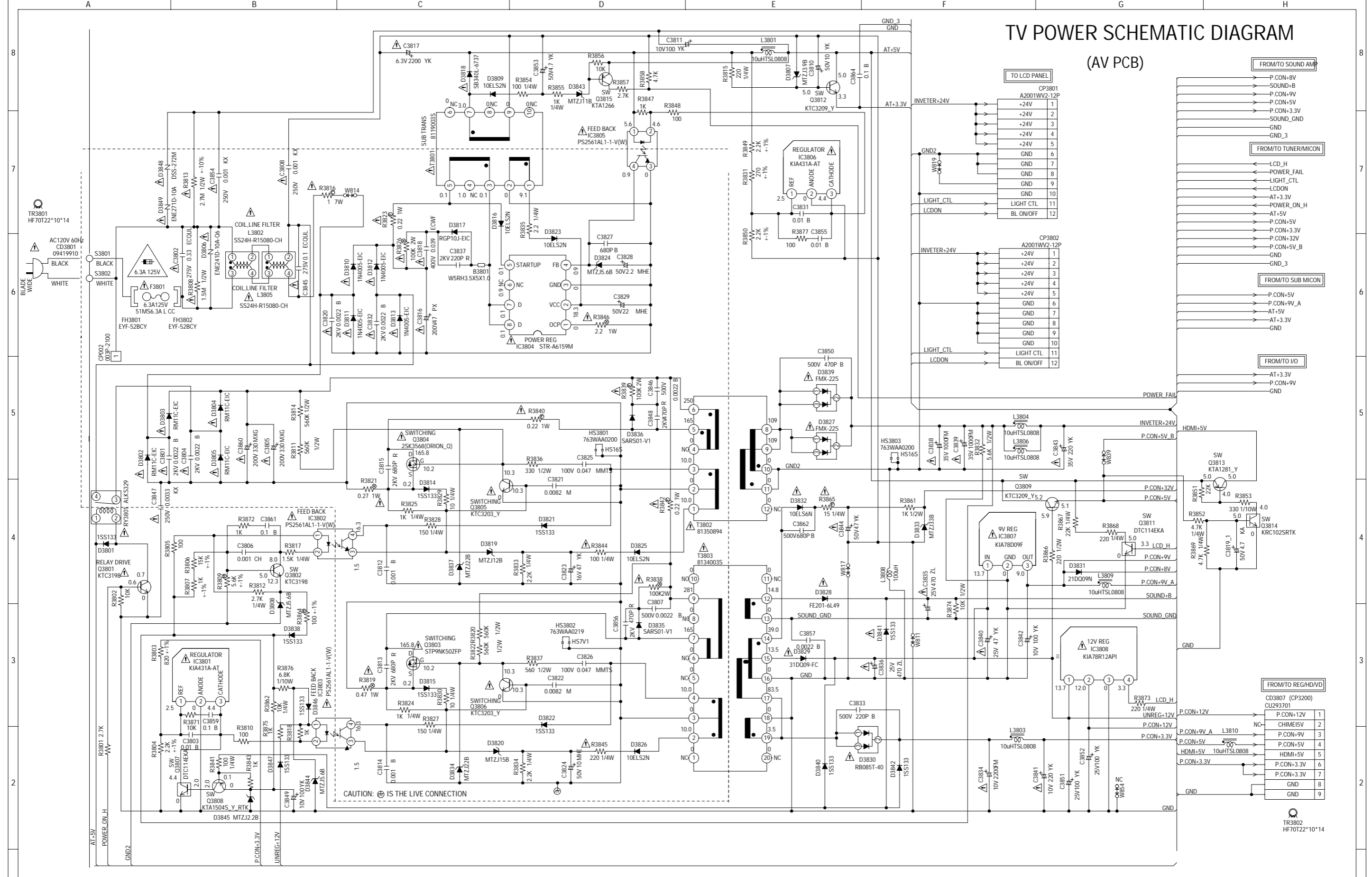
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCBD20
CMD004

TV POWER SCHEMATIC DIAGRAM

(AV PCB)



CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. 6.3A 125V (F3801).

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE. 6.3A 125V (F3801).

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

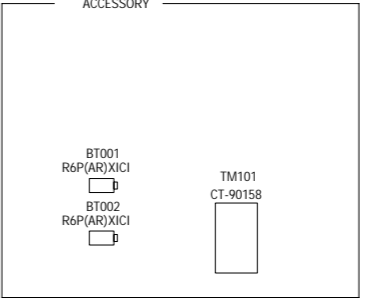
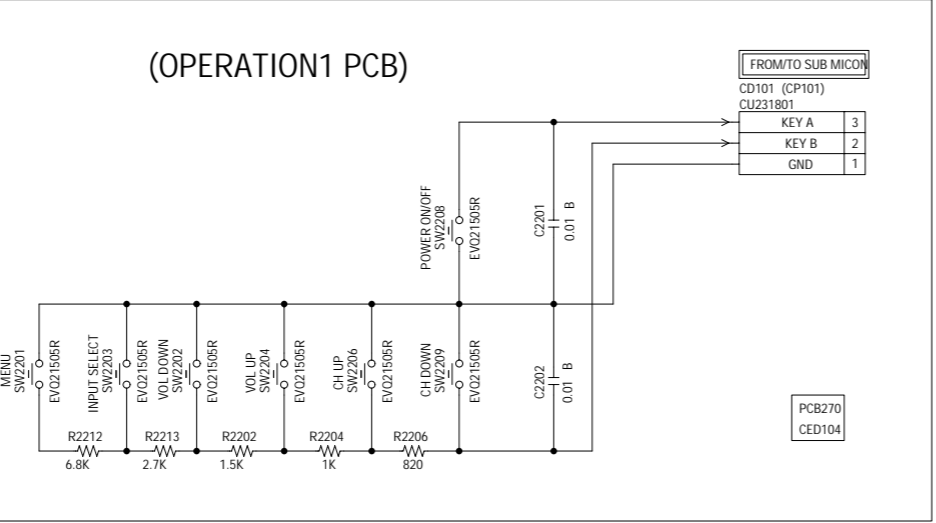
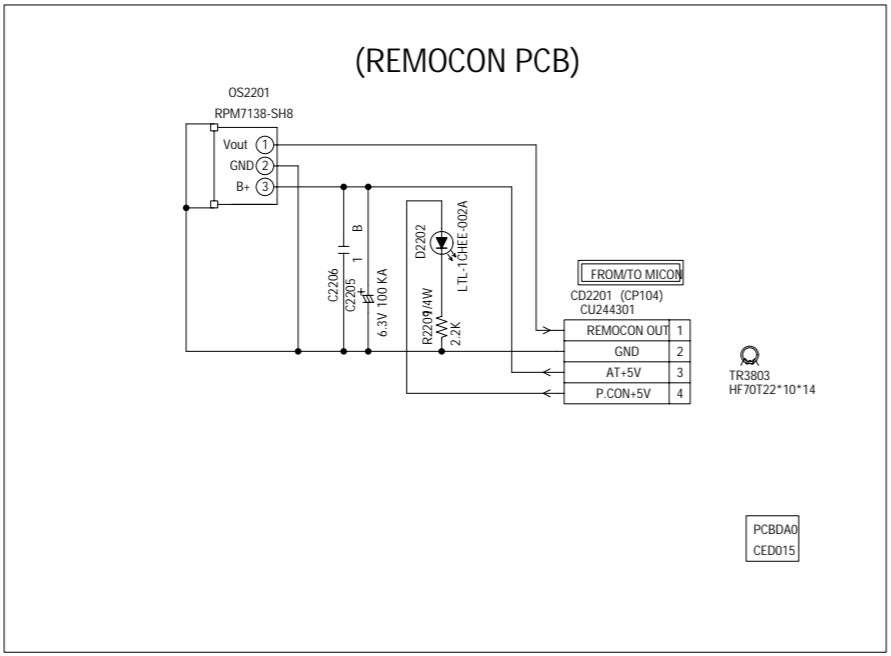
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

CAUTION: DIGITAL TRANSISTOR PCB20 CMD004

OPERATION1/REMOCON SCHEMATIC DIAGRAM



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

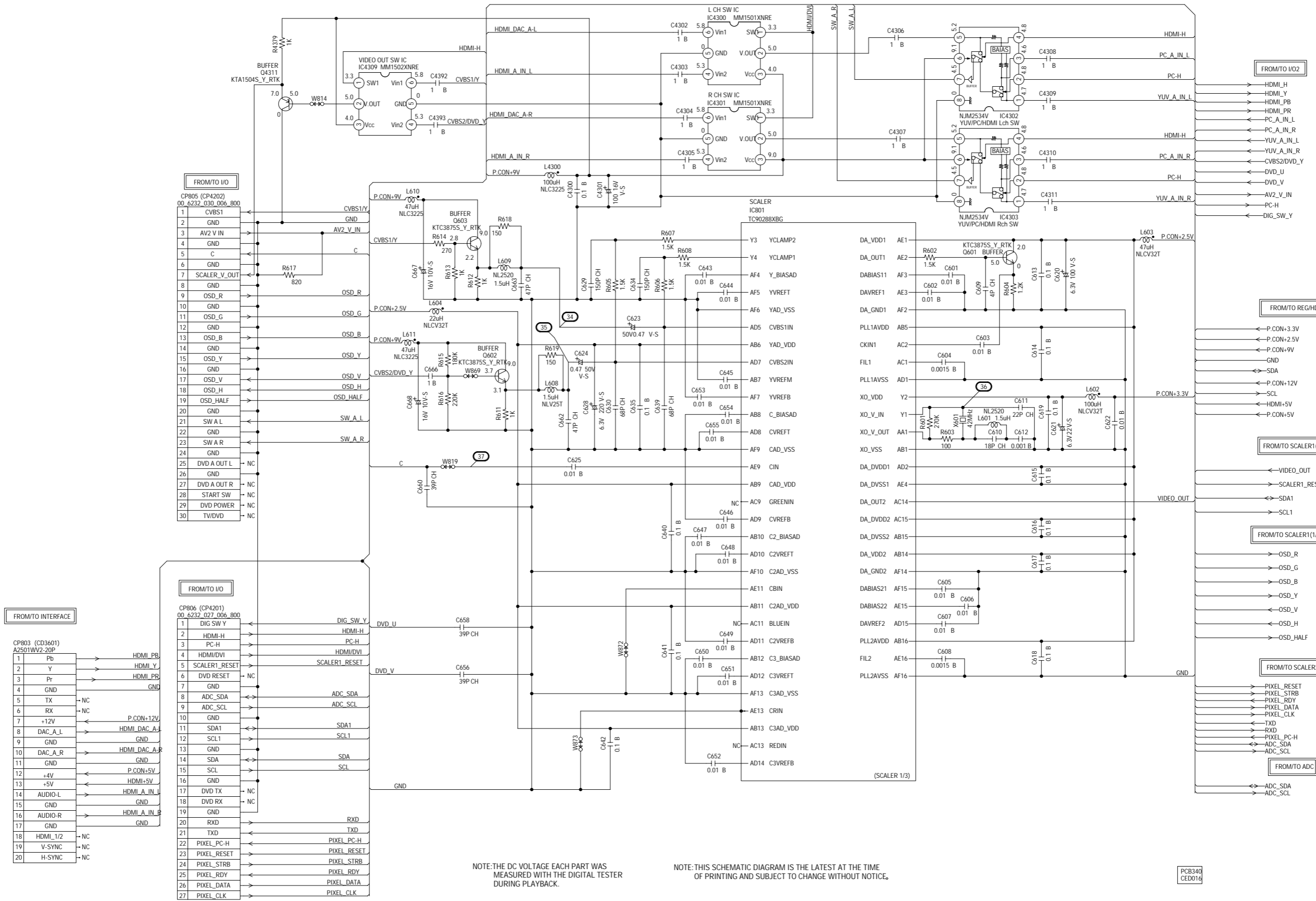
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

DECODER SCHEMATIC DIAGRAM

(LCD PCB)



FROM/TO I/O

CP805 (CP4202)	00 6232 030 006 800	
1	CVBS1	CVBS1/Y
2	GND	GND
3	AV2 V IN	AV2 V_IN
4	GND	C
5	C	
6	GND	
7	SCALER_V_OUT	
8	GND	
9	OSD_R	OSD_R
10	GND	
11	OSD_G	OSD_G
12	GND	
13	OSD_B	OSD_B
14	GND	
15	OSD_Y	OSD_Y
16	GND	
17	OSD_V	OSD_V
18	OSD_HALF	OSD_HALF
19	OSD_HALF	OSD_HALF
20	GND	
21	SW A L	SW_A_L
22	GND	
23	SW A R	SW_A_R
24	GND	
25	DVD A OUT L	NC
26	GND	
27	DVD A OUT R	NC
28	START SW	NC
29	DVD POWER	NC
30	TV/DVD	NC

FROM/TO INTERFACE

CP803 (CD3601)	A2501WV2-20P	
1	Pb	HDMI_PB
2	Y	HDMI_Y
3	Pr	HDMI_PR
4	GND	GND
5	TX	NC
6	RX	NC
7	+12V	P.CON+12V
8	DAC_A_L	HDMI_DAC_A_L
9	GND	GND
10	DAC_A_R	HDMI_DAC_A_R
11	GND	GND
12	+4V	P.CON+5V
13	+5V	HDMI+5V
14	AUDIO-L	HDMI_A_IN_L
15	GND	GND
16	AUDIO-R	HDMI_A_IN_R
17	GND	GND
18	HDMI_1/2	NC
19	V-SYNC	NC
20	H-SYNC	NC

FROM/TO I/O

CP806 (CP4201)	00 6232 027 006 800	
1	DIG SW Y	DIG_SW_Y
2	HDMI-H	HDMI-H
3	PC-H	PC-H
4	HDMI/DVI	HDMI/DVI
5	SCALER1_RESET	SCALER1_RESET
6	DVD RESET	NC
7	GND	
8	ADC_SDA	ADC_SDA
9	ADC_SCL	ADC_SCL
10	GND	
11	SDA1	SDA1
12	SCL1	SCL1
13	GND	
14	SDA	SDA
15	SCL	SCL
16	GND	
17	DVD TX	NC
18	DVD RX	NC
19	GND	
20	RXD	RXD
21	TXD	TXD
22	PIXEL_PC-H	PIXEL_PC-H
23	PIXEL_RESET	PIXEL_RESET
24	PIXEL_STRB	PIXEL_STRB
25	PIXEL_RDY	PIXEL_RDY
26	PIXEL_DATA	PIXEL_DATA
27	PIXEL_CLK	PIXEL_CLK

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.

PCB340
CED016

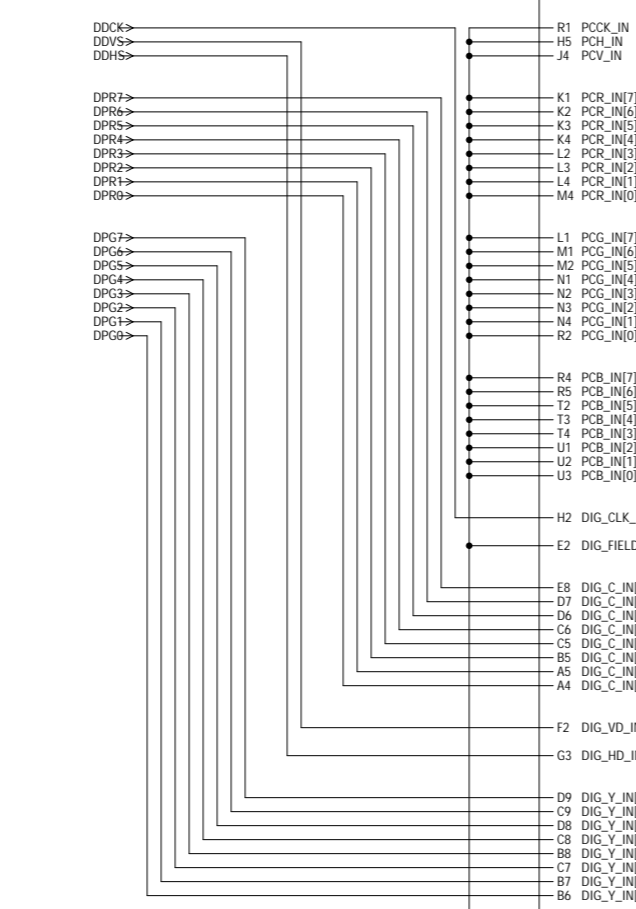
SCALER1(1/2) SCHEMATIC CIAGRAM

(LCD PCB)

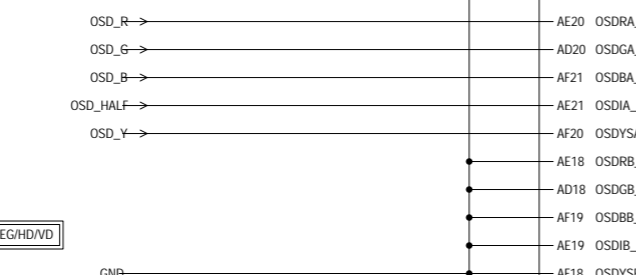
SCALER
IC801
TC90288XBG

NC	A3	NC_A3	NC_V1	V1	NC
NC	A6	NC_A6	NC_V3	V3	NC
NC	A7	NC_A7	NC_V4	V4	NC
NC	A22	NC_A22	NC_V22	V22	NC
NC	A23	NC_A23	NC_V26	V26	NC
NC	A24	NC_A24	NC_AA2	AA2	NC
NC	B3	NC_B3	NC_AA3	AA3	NC
NC	B4	NC_B4	NC_AA4	AA4	NC
NC	B22	NC_B22	NC_AA25	AA25	NC
NC	B23	NC_B23	NC_AB2	AB2	NC
NC	B24	NC_B24	NC_AB3	AB3	NC
NC	C1	NC_C1	NC_AB4	AB4	NC
NC	C2	NC_C2	NC_AB23	AB23	NC
NC	C4	NC_C4	NC_AB24	AB24	NC
NC	C23	NC_C23	NC_AC3	AC3	NC
NC	C25	NC_C25	NC_AC4	AC4	NC
NC	C26	NC_C26	NC_AC5	AC5	NC
NC	D1	NC_D1	NC_AC6	AC6	NC
NC	D2	NC_D2	NC_AC7	AC7	NC
NC	D5	NC_D5	NC_AC8	AC8	NC
NC	D24	NC_D24	NC_AC10	AC10	NC
NC	D25	NC_D25	NC_AC12	AC12	NC
NC	D26	NC_D26	NC_AC16	AC16	NC
NC	E1	NC_E1	NC_AC18	AC18	NC
NC	E15	NC_E15	NC_AC19	AC19	NC
NC	E23	NC_E23	NC_AC20	AC20	NC
NC	E24	NC_E24	NC_AC22	AC22	NC
NC	E25	NC_E25	NC_AC25	AC25	NC
NC	E26	NC_E26	NC_AC26	AC26	NC
NC	F1	NC_F1	NC_AD3	AD3	NC
NC	F23	NC_F23	NC_AD4	AD4	NC
NC	F24	NC_F24	NC_AD6	AD6	NC
NC	F25	NC_F25	NC_AD13	AD13	NC
NC	G1	NC_G1	NC_AD16	AD16	NC
NC	G26	NC_G26	NC_AD21	AD21	NC
NC	H4	NC_H4	NC_AE5	AE5	NC
NC	H22	NC_H22	NC_AE6	AE6	NC
NC	H26	NC_H26	NC_AE7	AE7	NC
NC	J1	NC_J1	NC_AE8	AE8	NC
NC	J3	NC_J3	NC_AE10	AE10	NC
NC	J26	NC_J26	NC_AE12	AE12	NC
NC	K5	NC_K5	NC_AE14	AE14	NC
NC	M3	NC_M3	NC_AF1	AF1	NC
NC	M5	NC_M5	NC_AF8	AF8	NC
NC	R3	NC_R3	NC_AF11	AF11	NC
NC	T1	NC_T1	NC_AF12	AF12	NC
NC	U4	NC_U4			NC

FROM/TO ADC



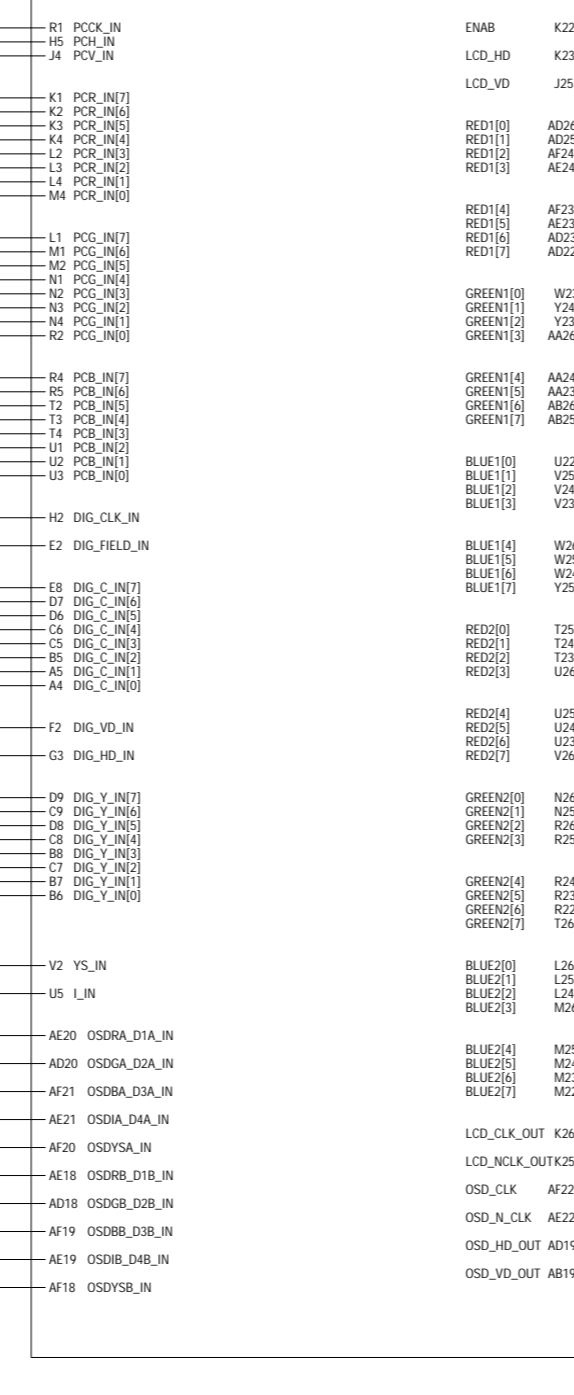
FROM/TO DECODER



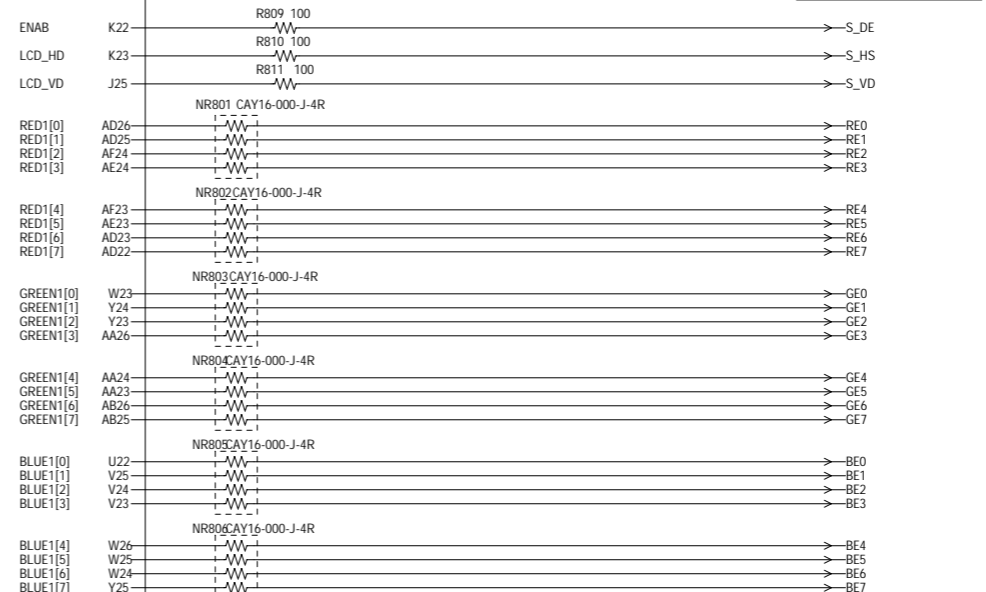
FROM/TO REG/HD/VD



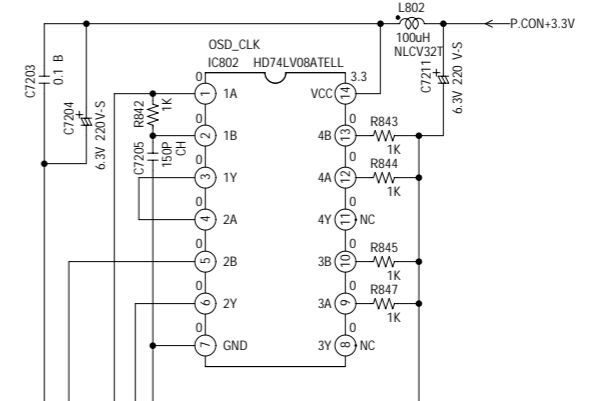
SCALER
IC801
TC90288XBG



FROM/TO BUS TRANSCEIVER



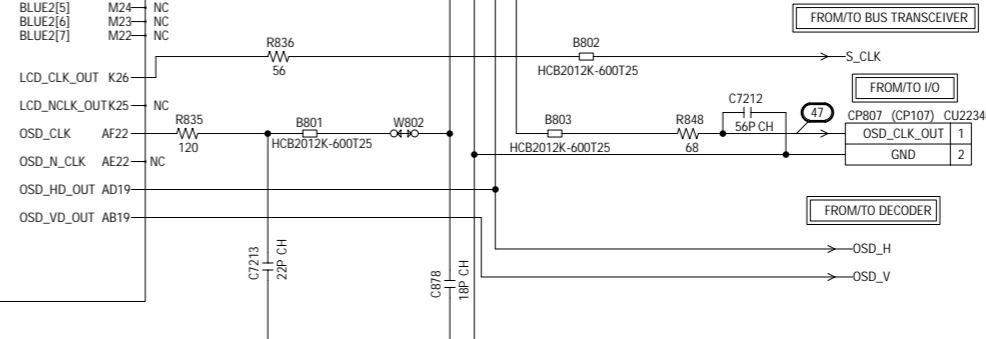
FROM/TO REG/HD/VD



FROM/TO BUS TRANSCEIVER

FROM/TO I/O

FROM/TO DECODER



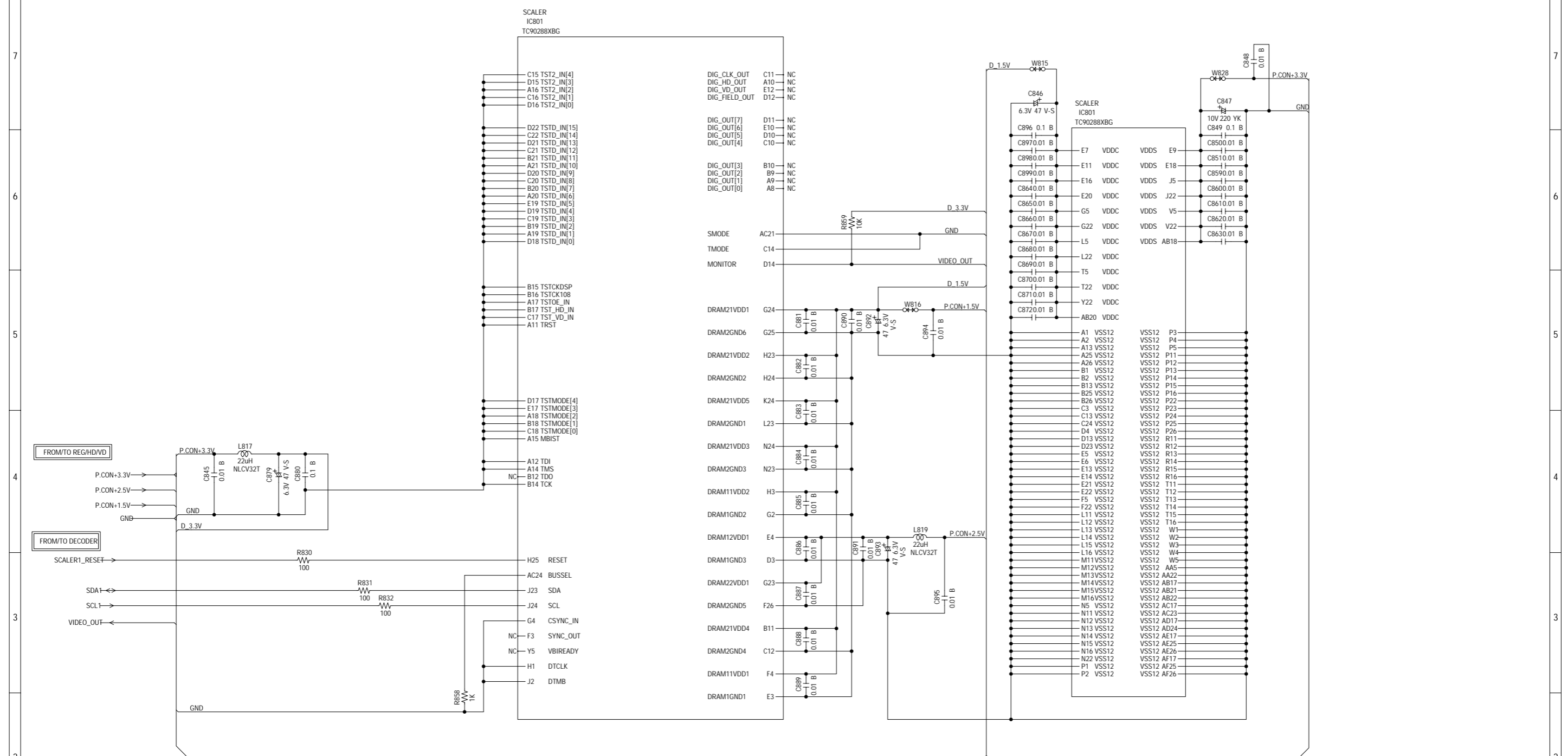
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

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SCALER1(2/2) SCHEMATIC DIAGRAM

(LCD PCB)

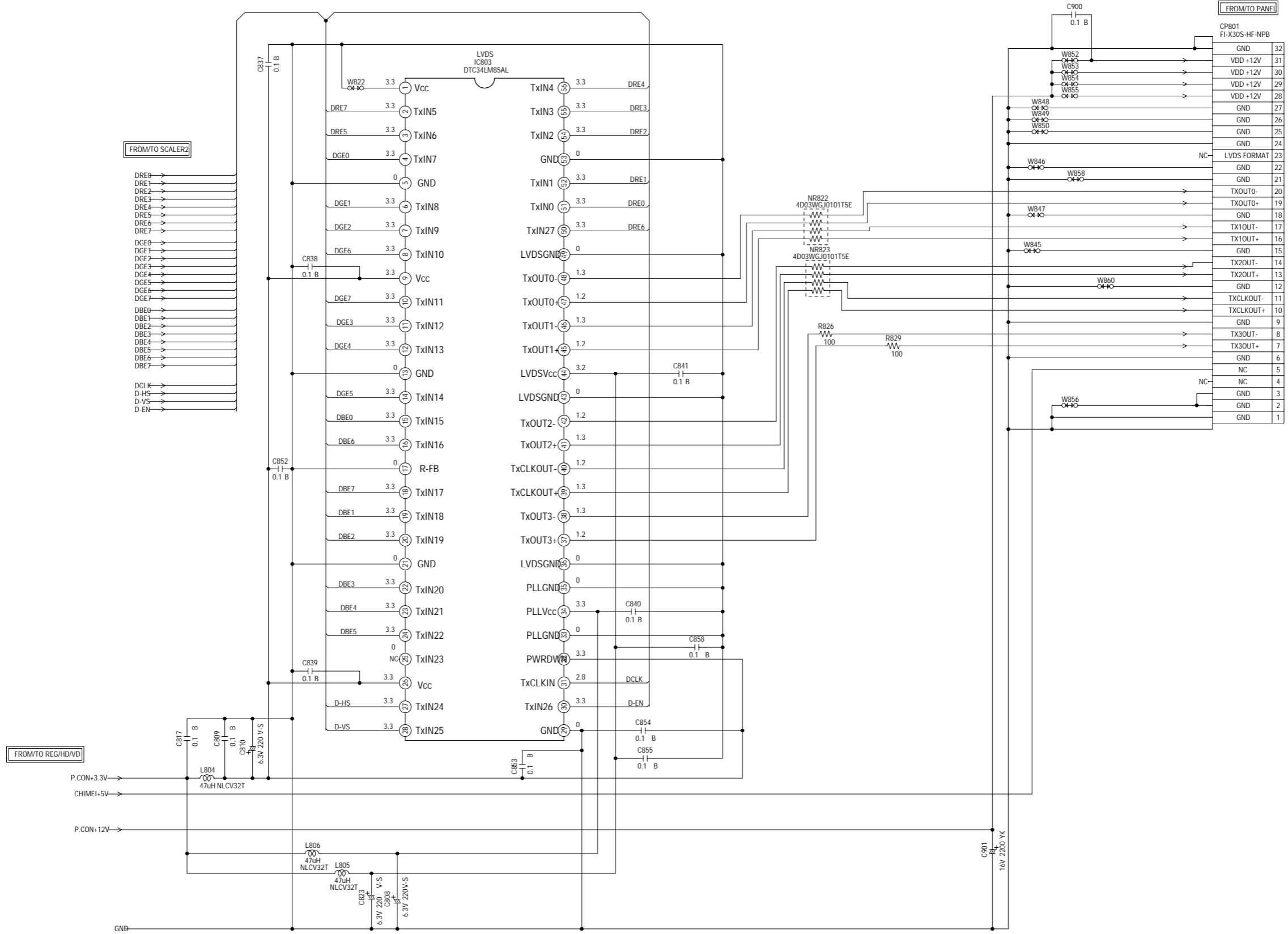


NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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PCB340
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LVDS SCHEMATIC DIAGRAM (LCD PCB)



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PCB340
CED016

ADC SCHEMATIC DIAGRAM

(LCD PCB)

FROM/TO DECODER

ADC_SCL
ADC_SDA

FROM/TO BUS TRANSCEIVER

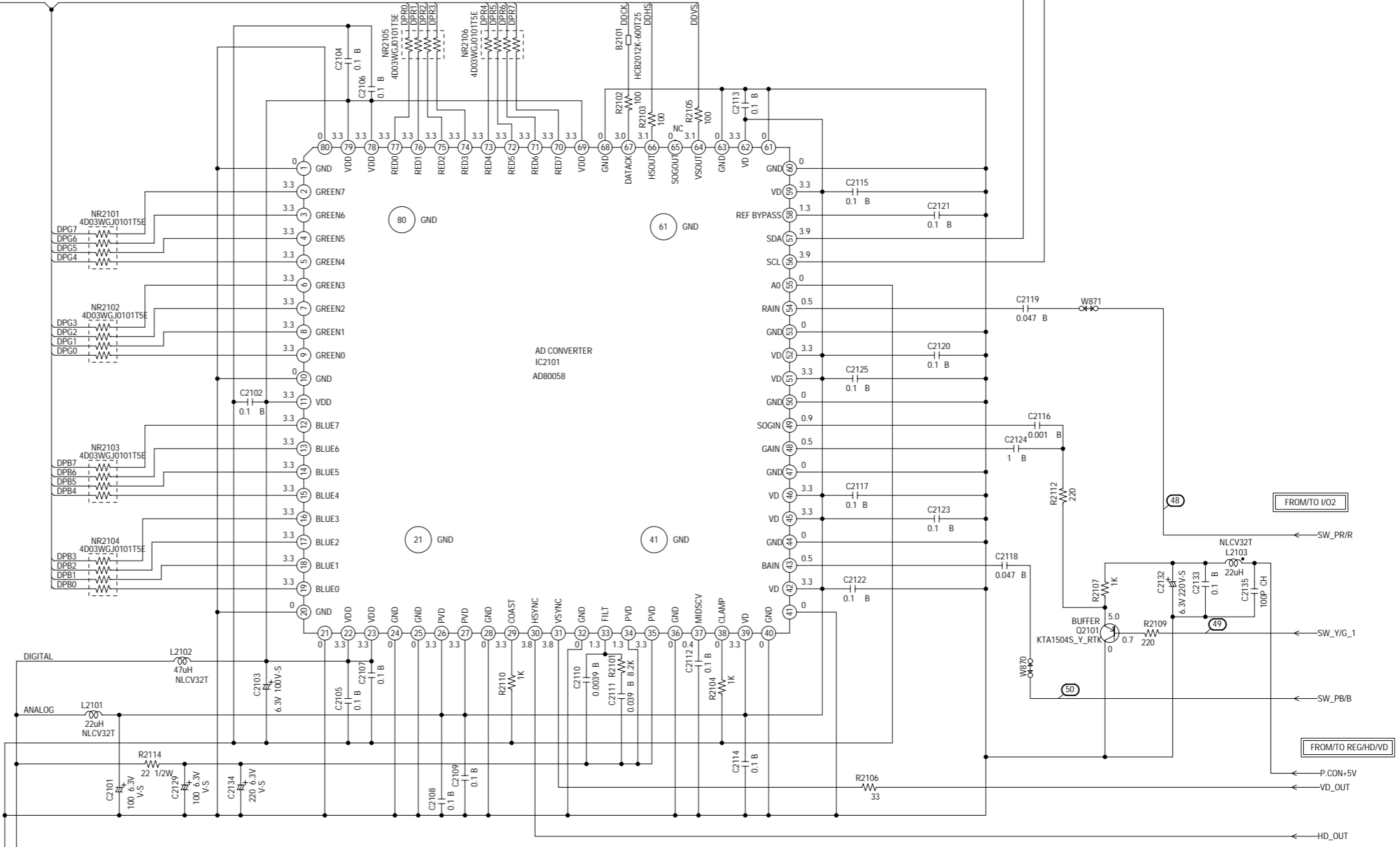
DDHS
DDVS
DDCK
DPG7
DPG6
DPG5
DPG4
DPG3
DPG2
DPG1
DPG0
DPR7
DPR6
DPR5
DPR4
DPR3
DPR2
DPR1
DPR0
DPB7
DPB6
DPB5
DPB4
DPB3
DPB2
DPB1
DPB0

FROM/TO SCALER(1/2)

DDHS
DDVS
DDCK
DPG7
DPG6
DPG5
DPG4
DPG3
DPG2
DPG1
DPG0
DPR7
DPR6
DPR5
DPR4
DPR3
DPR2
DPR1
DPR0

FROM/TO REG/HD/VD

P.CON+3.3V
GND



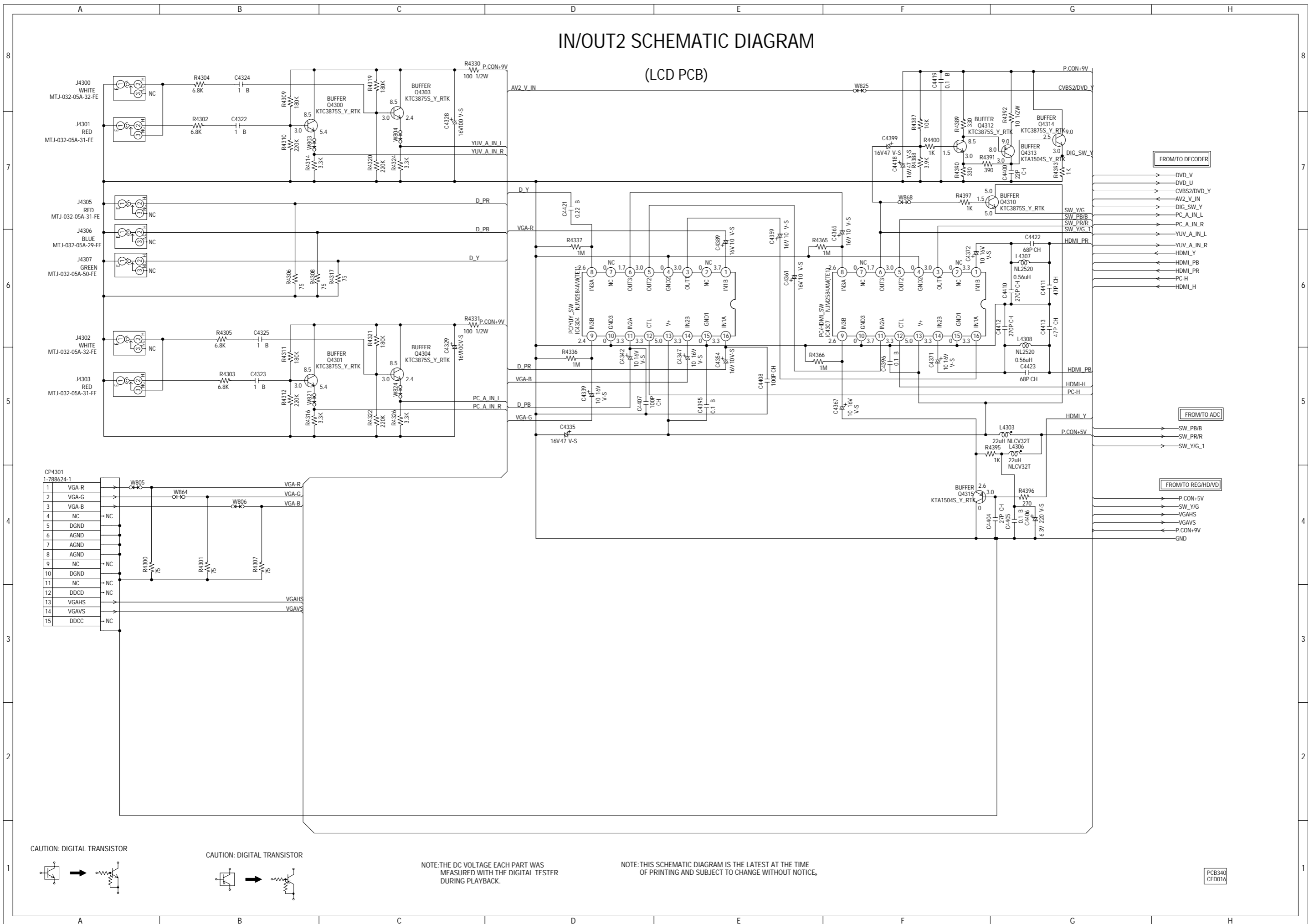
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB340
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IN/OUT2 SCHEMATIC DIAGRAM

(LCD PCB)



CAUTION: DIGITAL TRANSISTOR

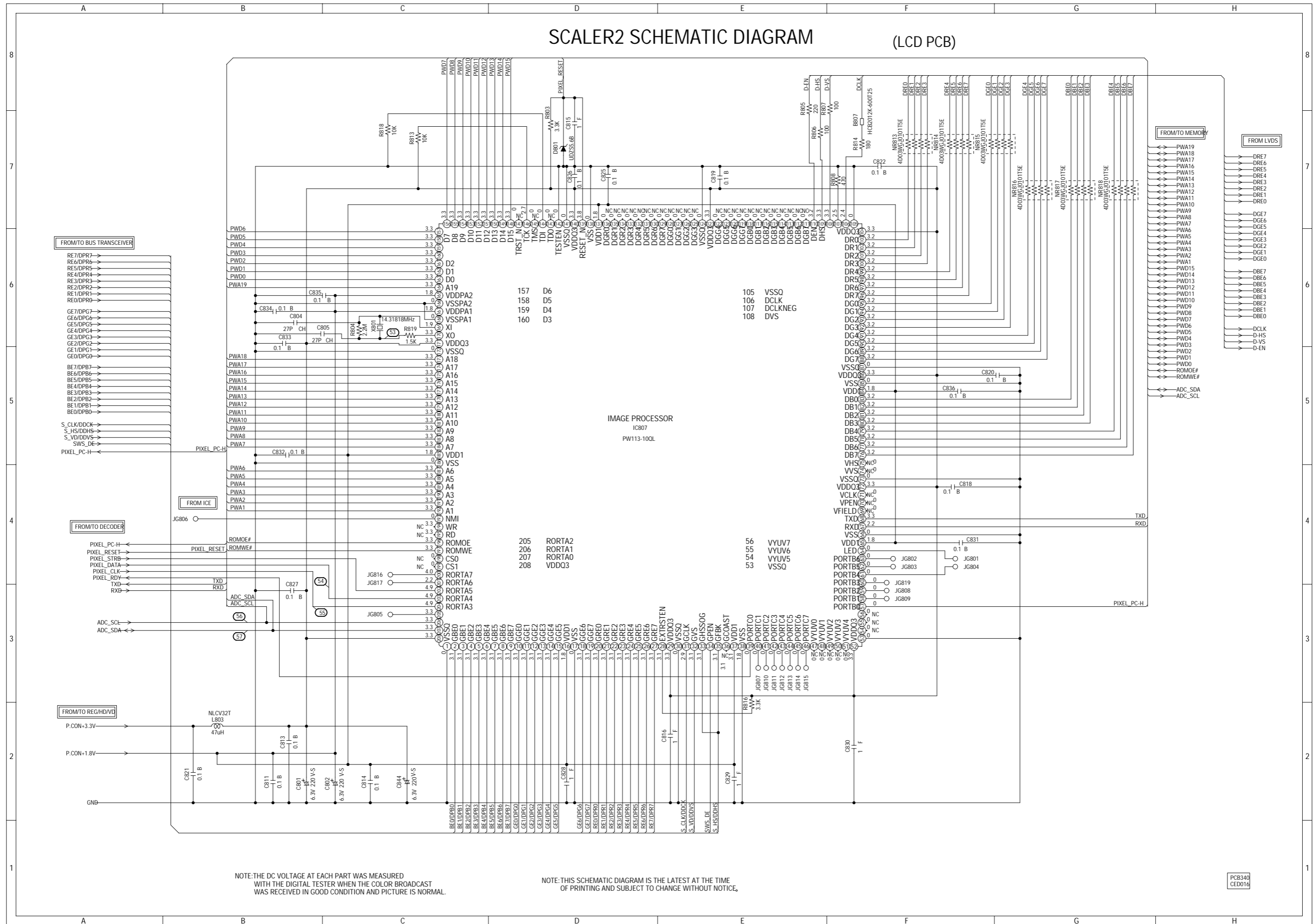
CAUTION: DIGITAL TRANSISTOR

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

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PCB340
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SCALER2 SCHEMATIC DIAGRAM (LCD PCB)



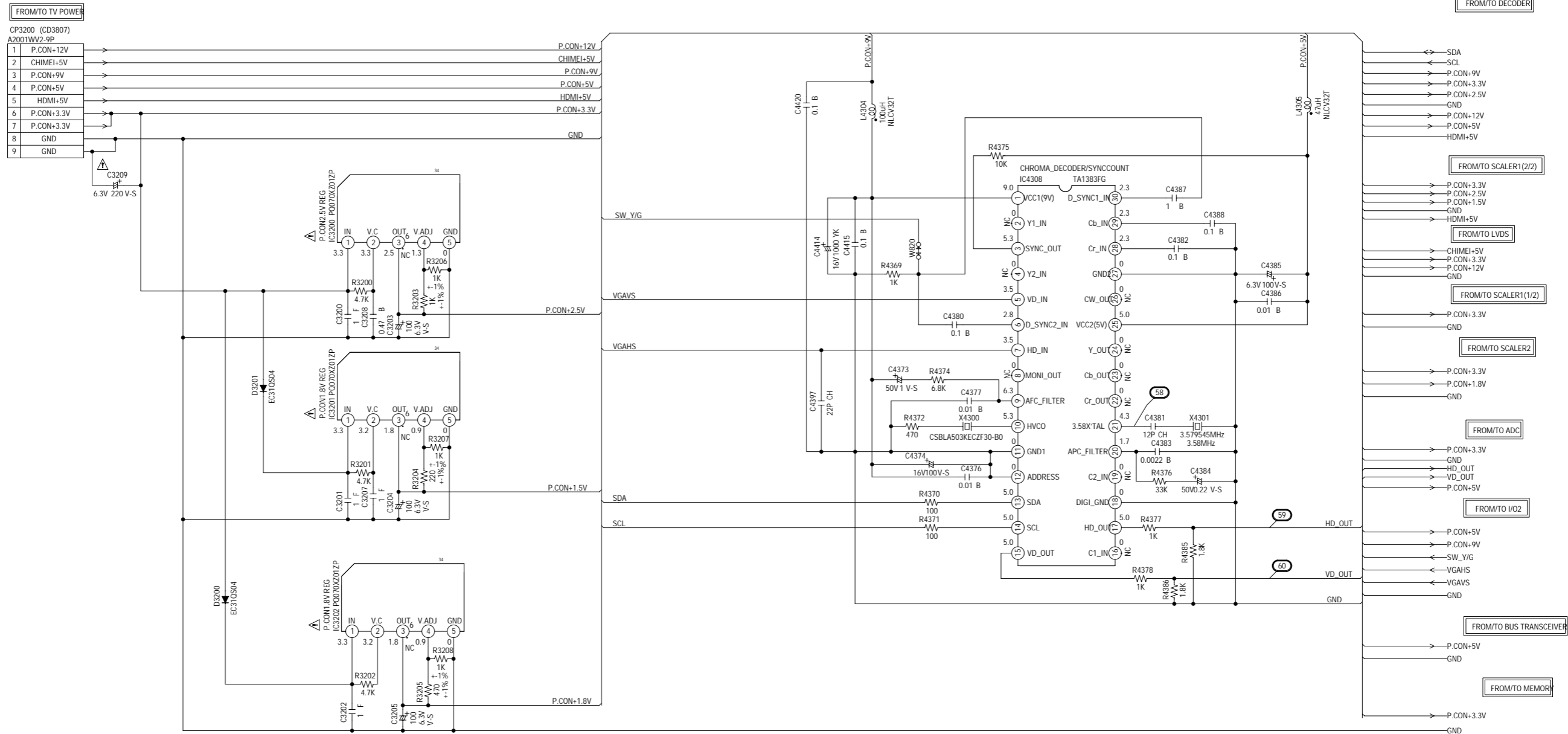
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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REG/HD/VD SCHEMATIC DIAGRAM

(LCD PCB)



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

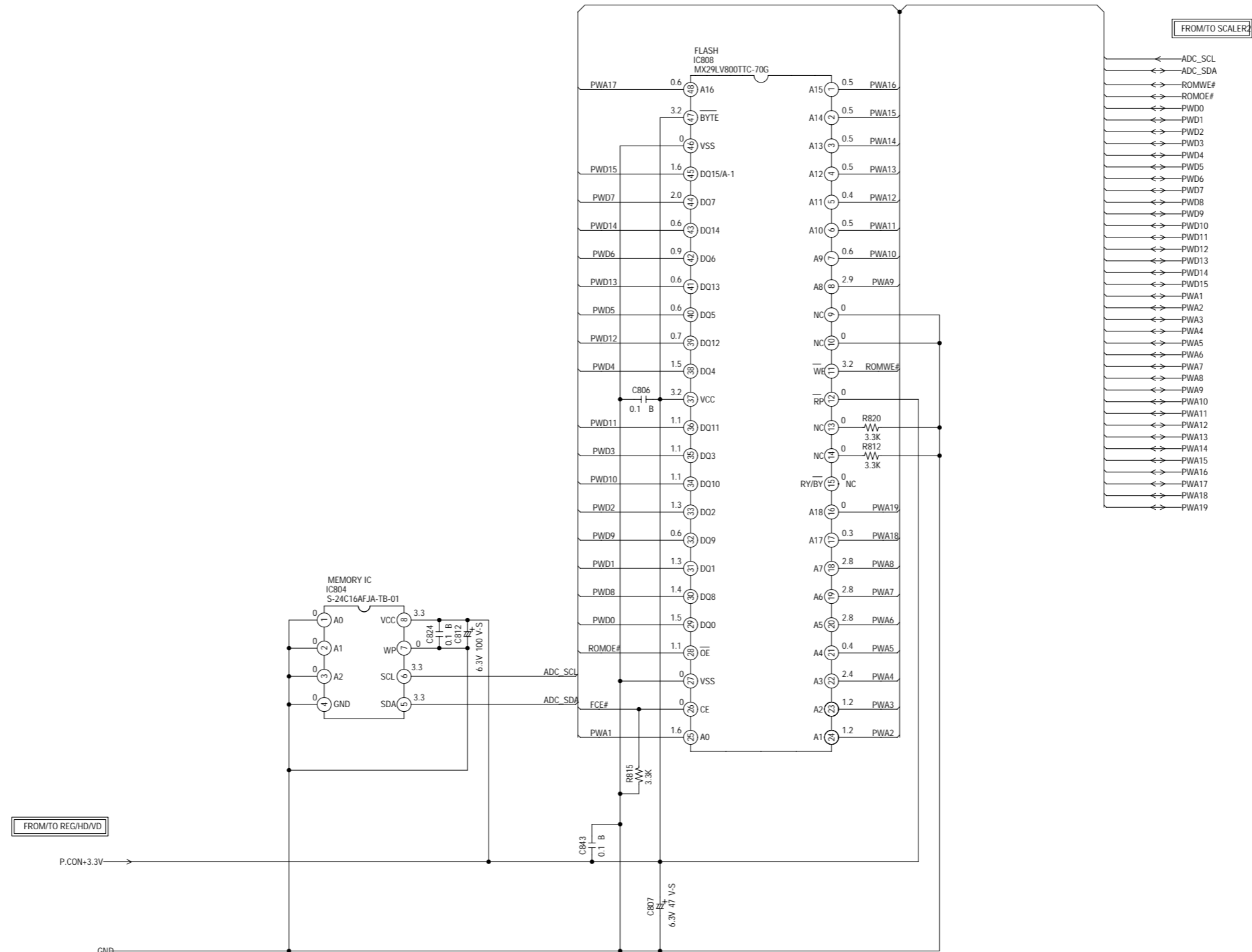
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

MEMORY SCHEMATIC DIAGRAM

(LCD PCB)



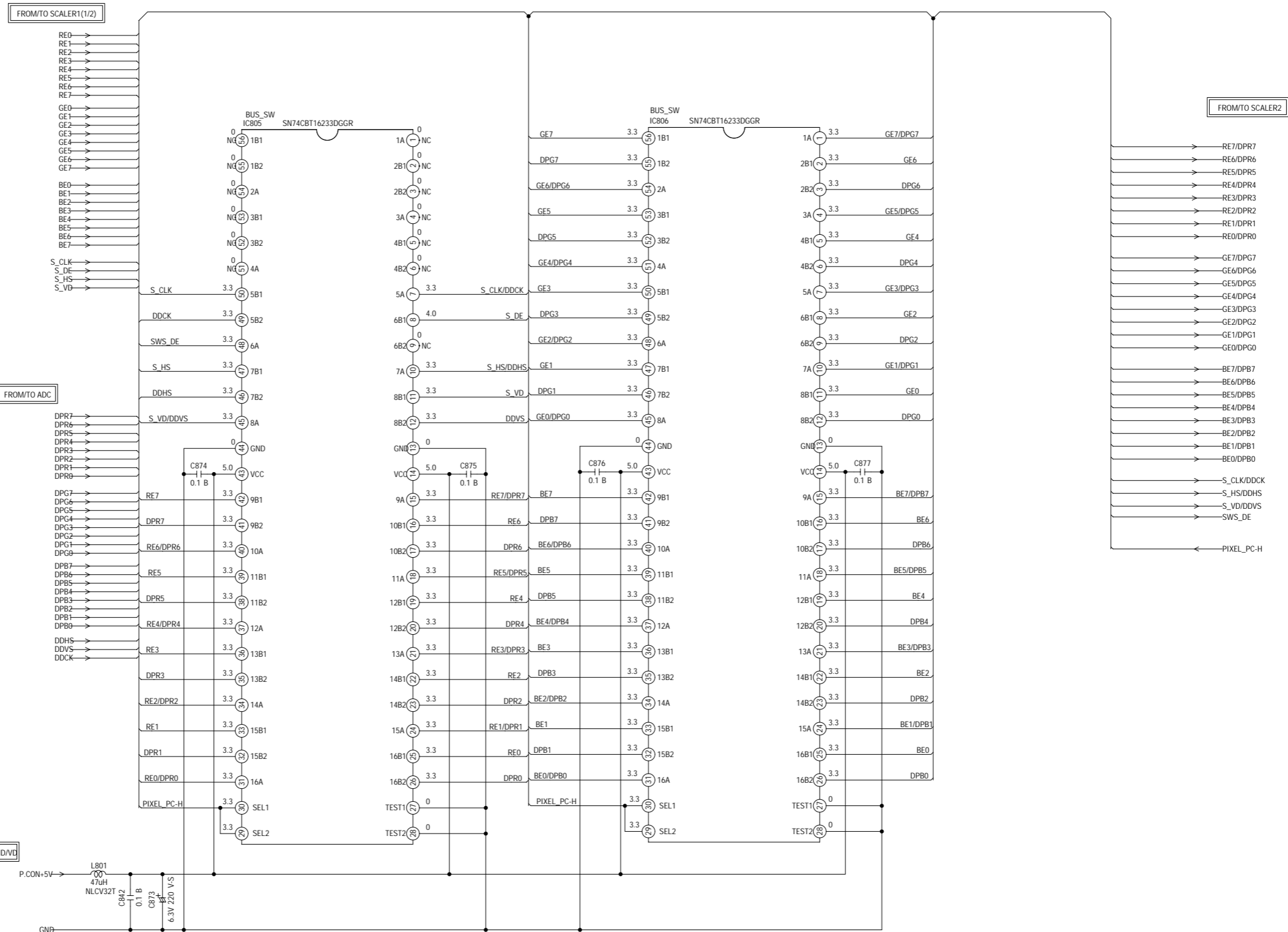
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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PCB340
CED016

BUS TRANSCEIVER SCHEMATIC DIAGRAM

(LCD PCB)

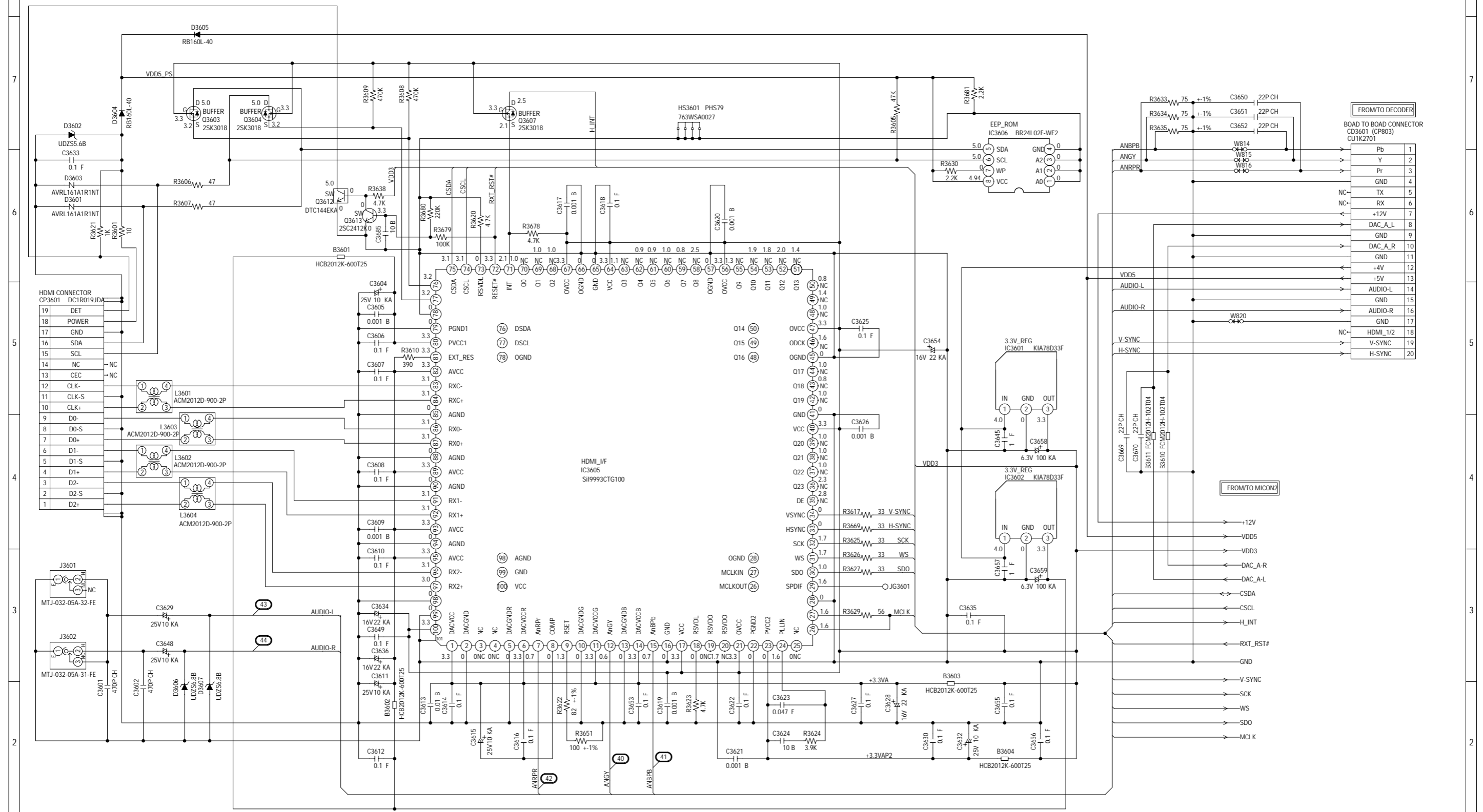


NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB340
CED016

INTERFACE SCHEMATIC DIAGRAM (HD-MI PCB)

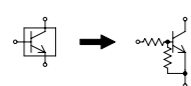


FROM TO DECODER
BOARD TO BOARD CONNECTOR
CD3601 (CP803)
CU1K2701

Pb	1
Y	2
Pr	3
GND	4
TX	5
RX	6
+12V	7
DAC_A_L	8
GND	9
DAC_A_R	10
GND	11
+4V	12
+5V	13
AUDIO-L	14
GND	15
AUDIO-R	16
GND	17
HDMI_1/2	18
V-SYNC	19
H-SYNC	20

FROM TO MICON2

CAUTION: DIGITAL TRANSISTOR



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

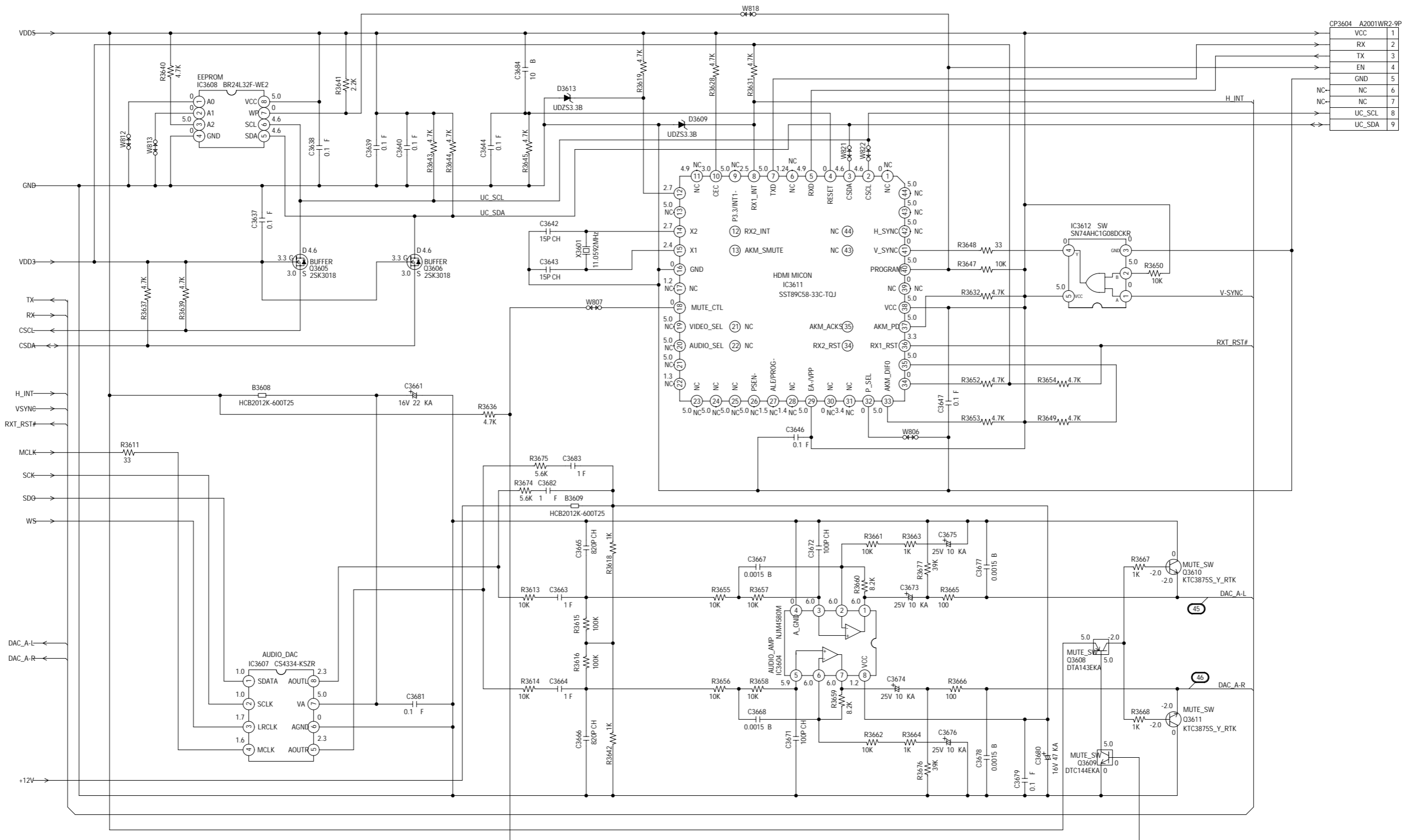
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDJ0
CED011

MICON2 SCHEMATIC DIAGRAM

(HD-MI PCB)

FROM/TO INTERFACE



CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

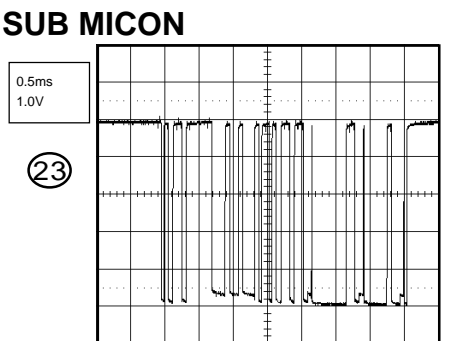
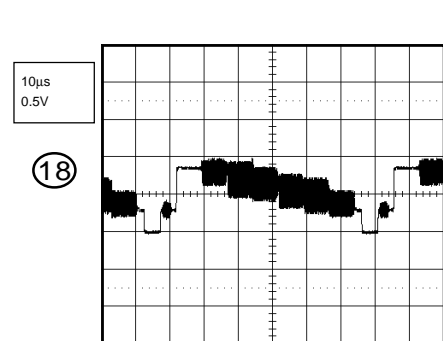
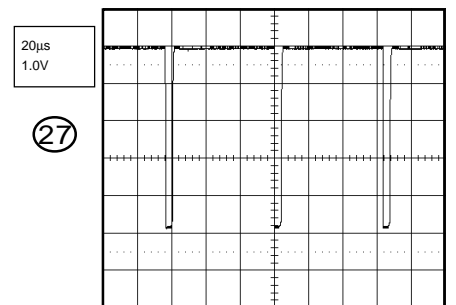
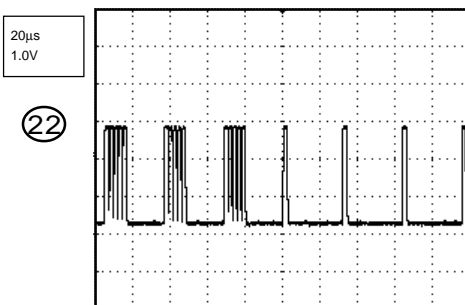
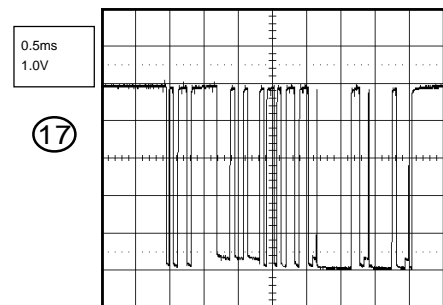
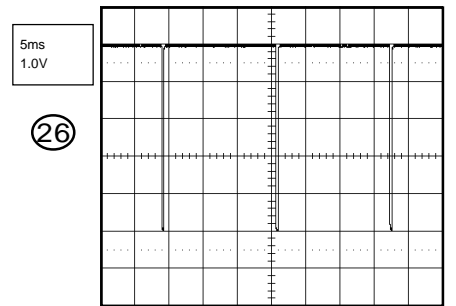
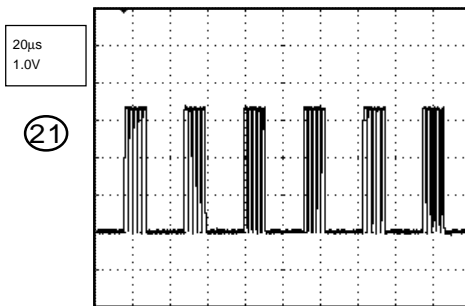
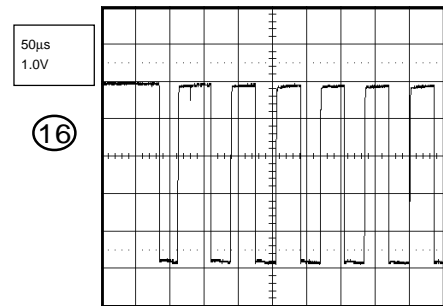
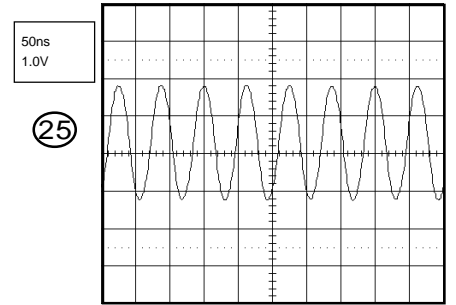
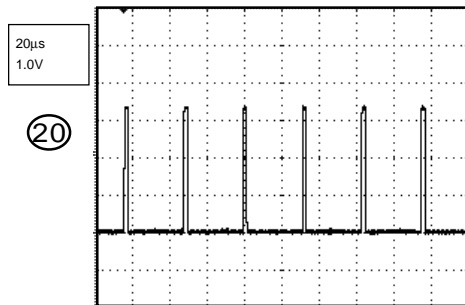
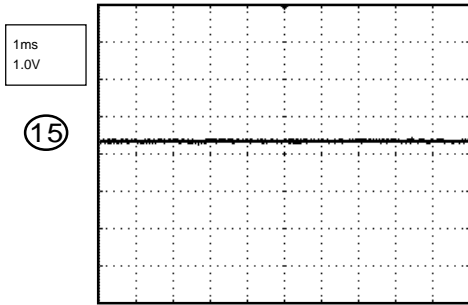
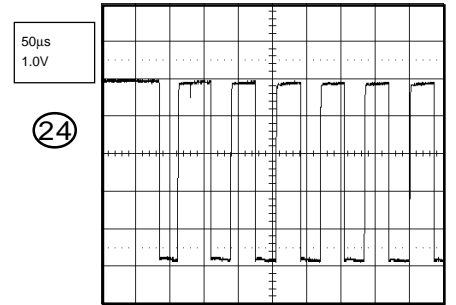
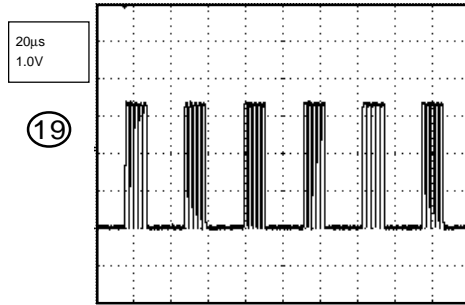
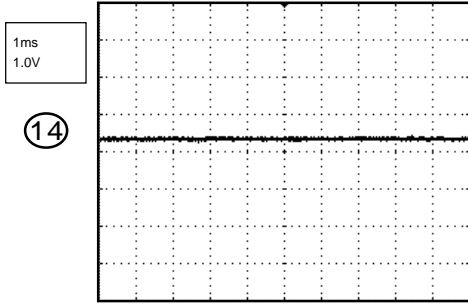
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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.

PCBDJ0 CED011

WAVEFORMS

TUNER/MICON

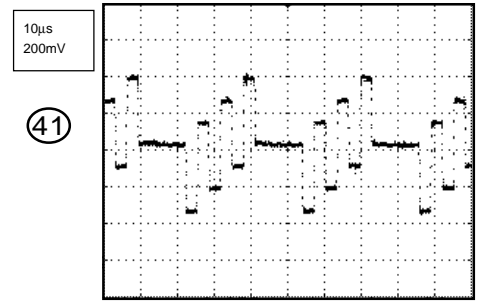
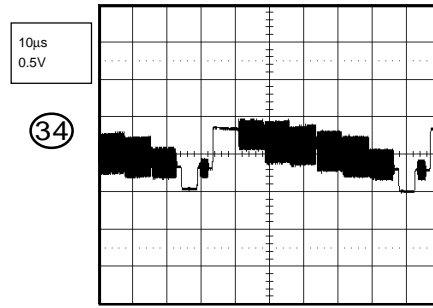
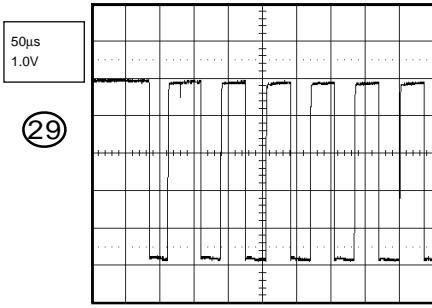


SUB MICON

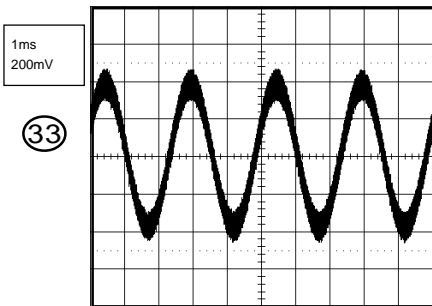
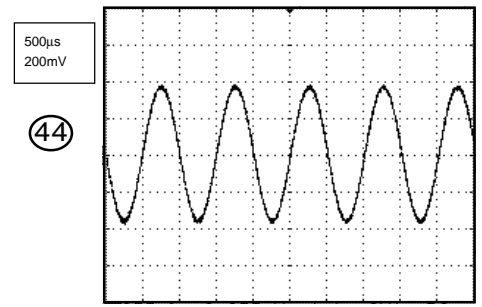
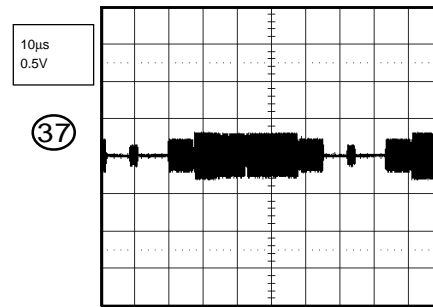
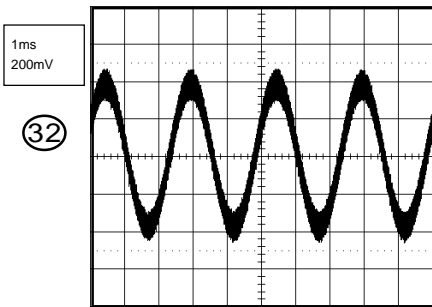
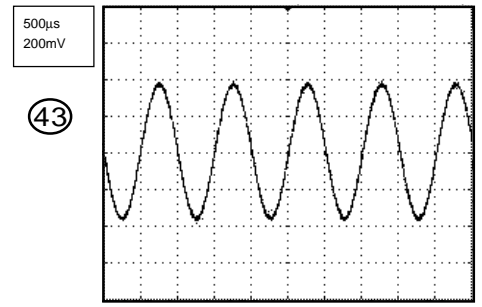
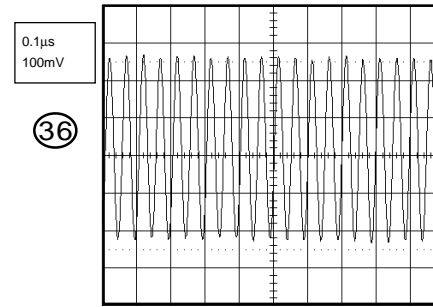
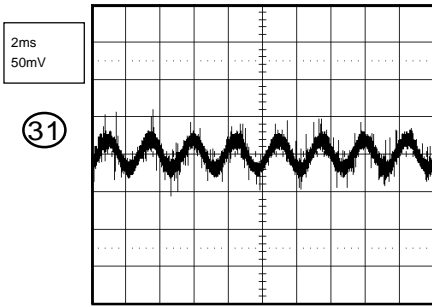
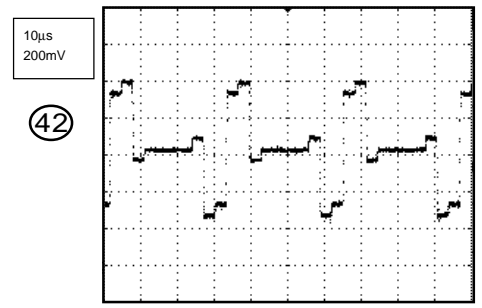
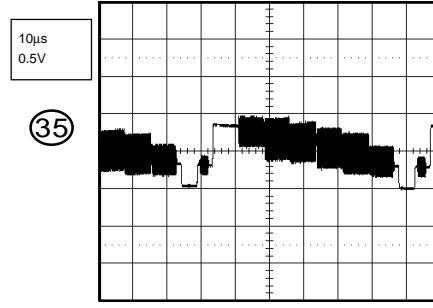
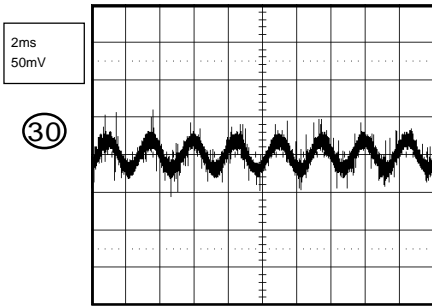
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

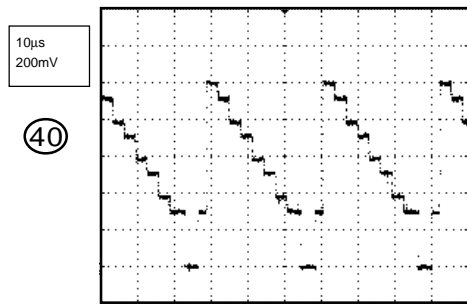
DECODER



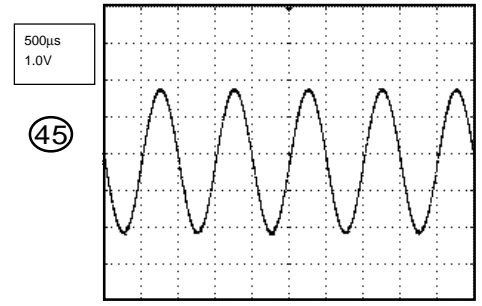
SOUND AMP



INTERFACE



MICON2



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

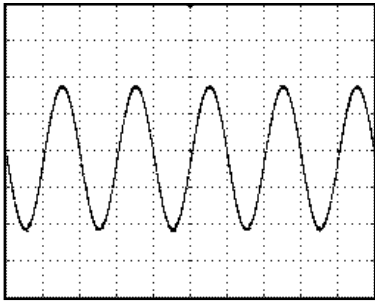
WAVEFORMS

SCALER 2

REG/HD/VD

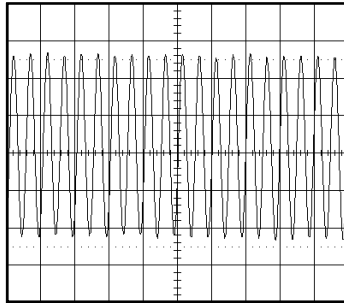
500 μ s
1.0V

46



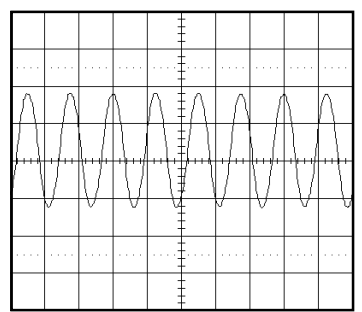
0.1 μ s
100mV

53



50ns
1.0V

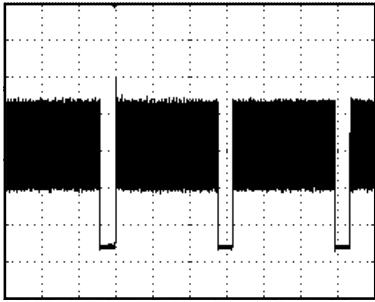
58



SCALER (1/2)

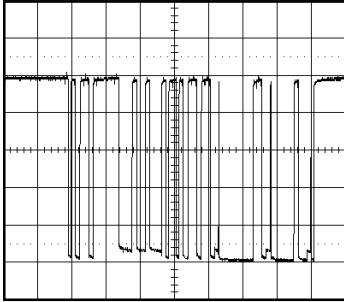
10 μ s
500mV

47



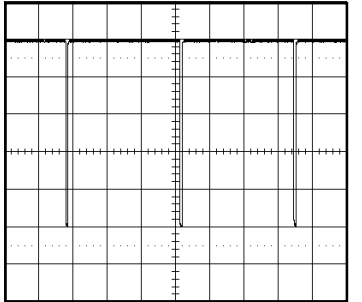
0.5ms
1.0V

54



5ms
1.0V

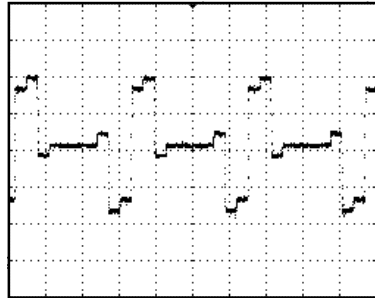
59



ADC

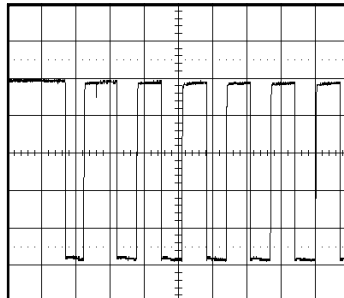
10 μ s
200mV

48



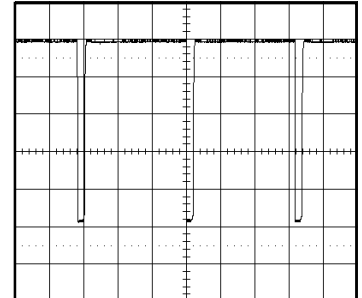
50 μ s
1.0V

55



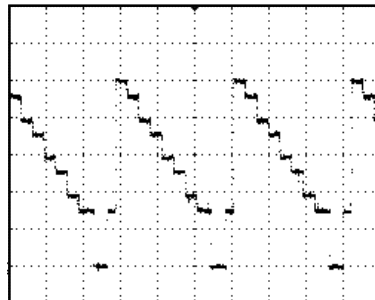
20 μ s
1.0V

60



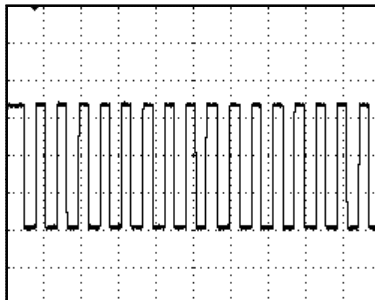
10 μ s
200mV

49



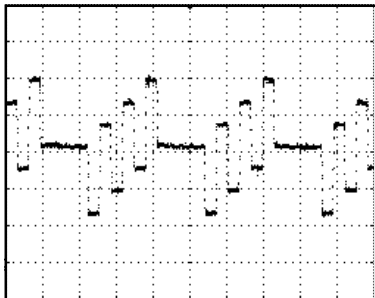
20 μ s
1.0V

56



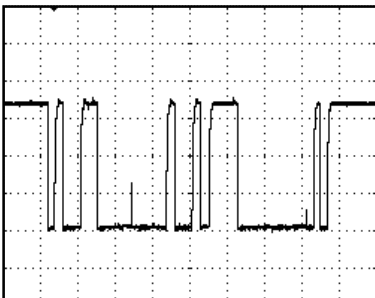
10 μ s
200mV

50

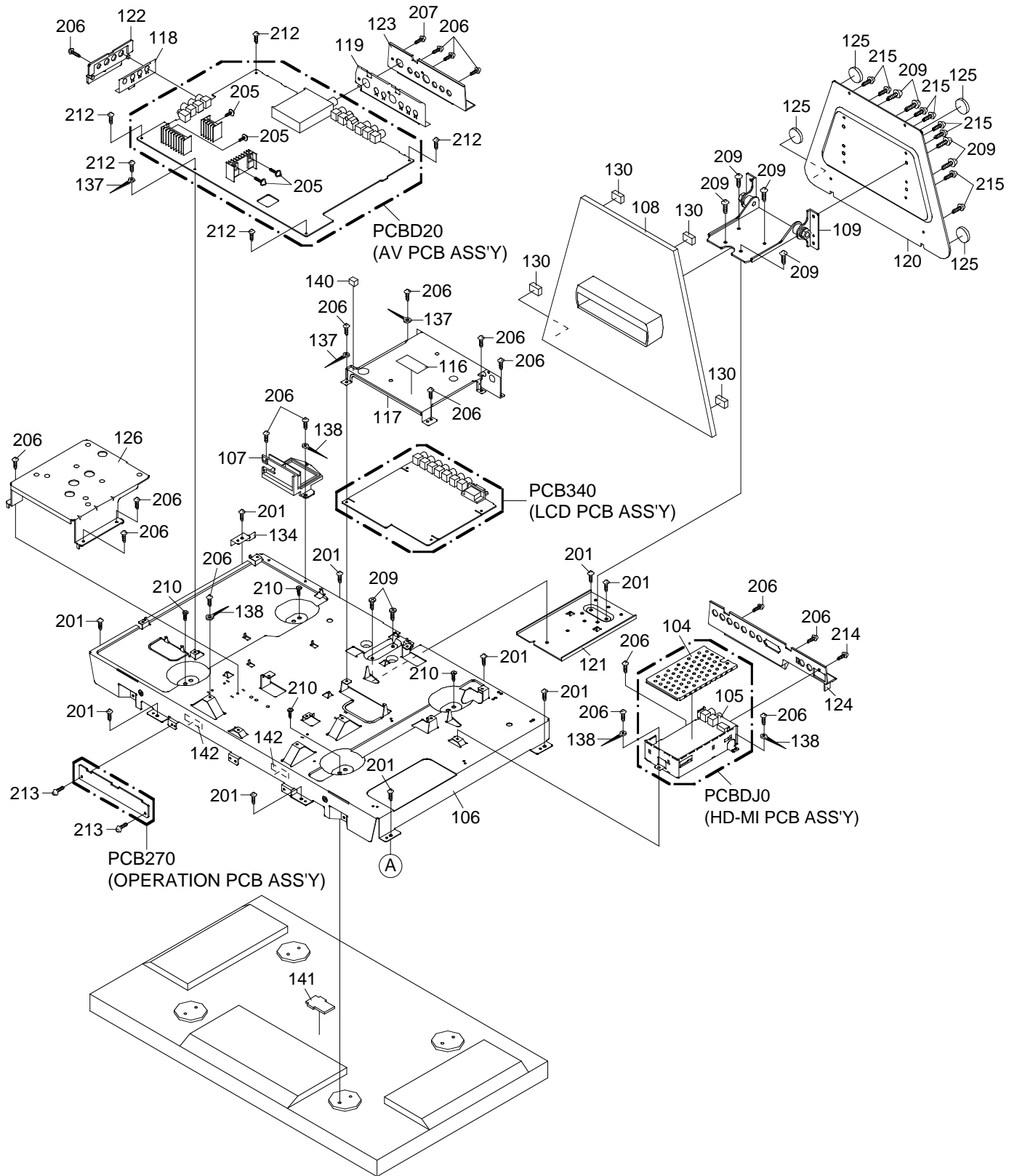


50 μ s
1.0V

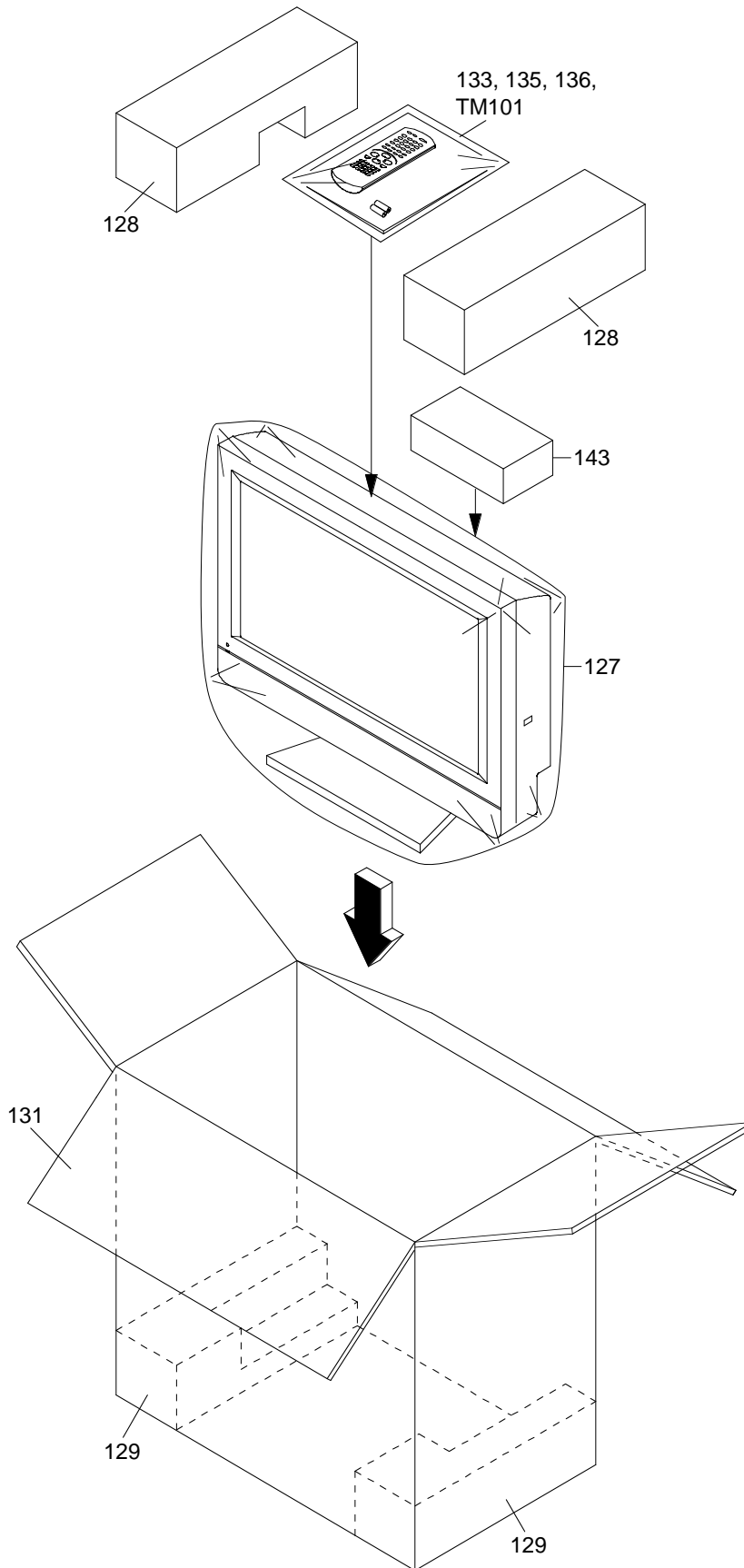
57



MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW (PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	AE005307	7A7010041A	FRONT CABI ASS'Y	
101A	AE005308	701WPJ1286	CABINET,FRONT	
101B	AE005450	702WPB0065	COVER,HINGE	
101C	AE005102	713WPA0343	GLASS,LED	
101D	AD302008	7235490036	BADGE,BRAND	
101E	AE005451	800WQ0A049	FELT SHEET	
101F	AE005310	761WPA0350	HOLDER,LED	
101G	AE005452	800WQ00086	FELT SHEET	9x540xT=0.3
102	AE005103	7A7020019A	REAR CABI ASS'Y	
102A	AE005104	702WPJ0032	CABINET,BACK	
102B	AE005314	706WPB0004	COVER,CONNECTOR	
102C	AE005106	735WPA0829	BUTTON,FRAME(TV)	
102D	AE005107	737WPE0013	BUTTON,CAP	
102E	AE005453	752WSA0447	SHIELD,BUTTON-TV	
102F	AE005454	761WPA0359	COVER,HINGE3	
102G	AE005455	774WPA0007	HOLDER,CORD	
102H	AE005456	800WQ00087	FELT SHEET	9x380xT=0.3
103	AE005108	7A7050004A	HANDLE ASS'Y	
103A	AE005109	705WPB0022	HANDLE 1	
103B	AE005110	705WPB0023	HANDLE 2	
104	AE004831	752WSA0413	HDMI SHIELD,COVER	
105	AE005111	752WSA0426	SHIELD,HDMI	
106	AE005112	761WSA0182	COVER,LCD	
107	AE005113	701WPB0207	HOLDER,AC-CORD	
108	AE005457	704WPB0006	STAND	
109	AE005115	706JSA0011	HINGE ASS'Y	
110	AE005458	7225490167	SHEET,RATING	
111	AE005322	7230007867	SHEET,JACK(SIDE)	
112	AE005323	7230007864	SHEET,JACK 1	
113	AE005324	7230007865	SHEET,JACK 2	
114	AE005120	7230007830	POP LABEL	
115	AE005121	7230007838	SHEET,JACK3	
116	AE005383	7220001115	SHEET,CSA WARNING	
117	AE005123	752WSA0425	SHIELD,LCD	
118	AE005124	752WSA0427	SHIELD,JACK(SIDE)	
119	AE005125	752WSA0428	SHIELD,JACK1	
120	AE005126	761WSA0184	ANGLE,STAND	
121	AE005127	761WSA0185	ANGLE,HINGE	
122	AE005128	771WPB0023	PLATE,JACK(SIDE)	
123	AE005129	771WPB0024	PLATE,JACK 1	
124	AE005459	771WPB0031	PLATE,JACK2	
125	AE004521	800WFA0063	CUSHION,LEG	
126	AE005460	761WSA0210	ANGLE,HANDLE-TV	
127	AD302402	791WHA0061	LAMIFILM BAG	
128	AE005461	792WHA0581	PACKAGE,TOP	
129	AE005462	792WHA0582	PACKAGE,BOTTOM	
130	AE005463	800WFA0065	CUSHION,LEG	
131	AE005134	793WCD1575	GIFT BOX	
132	AE005135	A3R501D975	INSTRUCTION BOOK KIT	
133	AE003390	JA4UD200	POLYBAG,INSTRUCTION(REDAUTION)	
134	AE005464	752WSA0452	SHIELD,REMOCON	
135	AE004971	J3R40129A	INFORMATION SHEET	
136	AE005136	J3R50121A	INSTRUCTION BOOK	
137	AD301370	899EFBA002	WIRING-CLIP	
138	BZ710039	8995034000	CORD CLIP UL CO.	
139	AE005465	7A7020031A	COVER,BACK(TV) ASS'Y	
139A	AE005466	702WPB0066	COVER,BACK(TV)	
139B	AE005467	800WQ00088	FELT SHEET	2x20xT0.3
140	AE005385	8965TS1015	CUSHION 65TS10-5	15x20x16
141	AE005056	800WF0A008	CUSHION	
142	AE005468	800WQ0A055	FELT SHEET	
143	AE005469	795WHAA012	PAD FOAM	

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
201	AE004847	8117540A6U	SCREW,TAP TITE(B0) TRUSS	4x16
202	AE005470	8110230A4U	SCREW,TAP TITE(P) BIND	3x14
203	AE003528	8110630A0U	SCREW,TAP TITE(P) BRAZIER	3x10
204	AE003529	811063080U	SCREW,TAP TITE(P) BRAZIER	3x8
205	AE003524	8109I30A0U	SCREW,TAP TITE(B) WH7	3x10
206	AE004849	8109230A0U	SCREW,TAP TITE(B) BIND	3x10
207	AE005138	810763060U	SCREW,TAP TITE(S) BRAZIER	3x6
208	AE005471	8102240A2U	SCREW,BIND	M4x12
209	AE005338	810A140A0U	SCREW,WASHER(A)	M4x10
210	AE005141	810A14060U	SCREW,WASHER(A)	M4x6
211	AE005472	8159130A0S	SCREW,TAPPING(B) WASHER 12 PAN	3x10
212	AE005473	8109D30A0U	SCREW,TAP TITE(B) WH8	3x10
213	AE005474	810923070U	SCREW,TAP TITE(B) R BIND	3x7
214	AE005214	810213080U	SCREW,PAN	M3x8
215	AE005475	8110K30A0U	SCREW,TAP TITE(P) LAMI HEAD	3x10

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
RESISTORS			
△R332	AE003270	R3X28B2R7J	R,METAL OXIDE 2.7 OHM 3W
△R333	AE003270	R3X28B2R7J	R,METAL OXIDE 2.7 OHM 3W
△R3808	BZ210206	R002T2155J	RC 1.5M OHM 1/2W
△R3813	BZ210080	R0G3K2275K	RC 2.7M OHM 1/2W
△R3816	AD301596	R5X2AE010J	R,CEMENT 1 OHM 7W
△R3819	BZ210251	R3X181R47J	R,METAL OXIDE 0.47 OHM 1W
△R3821	AD301143	R3X181R27J	R,METAL OXIDE 0.27 OHM 1W
△R3823	BZ210190	R63581R22J	R,FUSE 0.22 OHM 1W
△R3826	AE001883	R3X28A104J	R,METAL OXIDE 100K OHM 2W
△R3838	AE001883	R3X28A104J	R,METAL OXIDE 100K OHM 2W
△R3839	AE001883	R3X28A104J	R,METAL OXIDE 100K OHM 2W
△R3840	BZ210190	R63581R22J	R,FUSE 0.22 OHM 1W
△R3842	BZ210190	R63581R22J	R,FUSE 0.22 OHM 1W
△R3844	AD301203	R002T4101J	RC 100 OHM 1/4W
△R3845	BZ210135	R002T4221J	RC 220 OHM 1/4W
△R3846	BZ210059	R3X1812R2J	R,METAL OXIDE 2.2 OHM 1W
△R3865	AE001255	R65584150J	R,FUSE 15 OHM 1/4W
R3869	BZ210122	R002T4472J	RC 4.7K OHM 1/4W
CAPACITORS			
△C144	AD301434	E02LU4101M	CE 100 UF 35V
△C147	AE000336	E02LU1101M	CE 100 UF 10V
△C173	AE000466	E02LU1221M	CE 220 UF 10V
△C176	AE000466	E02LU1221M	CE 220 UF 10V
C194	BZ110255	CQGTB0415K	CC 0.1 UF 50V B
C195	AE005442	CQGTCH4E2J	CC 150 PF 50V CH
C196	BZ110098	CHGTB0413K	CC 0.001 UF 50V B
C197	AE005443	CQGTCH4W1J	CC 82 PF 50V CH
C198	BZ110243	CQGTB0414K	CC 0.01 UF 50V B
C199	AE005443	CQGTCH4W1J	CC 82 PF 50V CH
C200	BZ110098	CHGTB0413K	CC 0.001 UF 50V B
C364	BZ110032	E5EZF3102M	CE 1000 UF 25V
C365	BZ110032	E5EZF3102M	CE 1000 UF 25V
C847	AE000466	E02LU1221M	CE 220 UF 10V
C901	BZ110135	E02L02222M	CE 2200 UF 16V
△C3209	AE005444	E61UM0221D	CE 220 UF 6.3V
△C3801	BZ110226	C0JBB07H3K	CC 0.0022UF 2KV B
△C3802	AE003965	P2122B334M	CMP 0.33 UF 275V ECQUL
△C3804	BZ110226	C0JBB07H3K	CC 0.0022UF 2KV B
△C3805	AE005176	E62XHC331M	CE 2*25 330 UF 200V
△C3808	AD301026	CD39EOM13M	CC 0.001 UF 250V
C3813	BZ110172	C03L0R7U2K	CC 680 PF 2KV R
C3815	BZ110172	C03L0R7U2K	CC 680 PF 2KV R
△C3816	AE003902	E62RFC470M	CE 47 UF 200V
△C3817	AD301021	E02LF0222M	CE 2200 UF 6.3V
C3818	AE002229	P411F4393J	CMPP 0.039 UF 400V ECWF
△C3820	BZ110226	C0JBB07H3K	CC 0.0022UF 2KV B
△C3832	BZ110226	C0JBB07H3K	CC 0.0022UF 2KV B
△C3834	AE005174	E61FF1222D	CE 2200 UF 10V
△C3835	AE005445	E62FT3471M	CE 470 UF 25V
△C3836	AE005445	E62FT3471M	CE 470 UF 25V
C3837	AE000029	C0PLRR7H2K	CC 220 PF 2KV R
△C3838	AE005175	E61FF4102D	CE 1000 UF 35V
△C3839	AE005175	E61FF4102D	CE 1000 UF 35V
△C3840	AD301349	E02LU3470M	CE 47 UF 25V
△C3841	AE000466	E02LU1221M	CE 220 UF 10V
△C3843	AD301317	E02LT4221M	CE 220 UF 35V
△C3844	BZ110197	E02LU5470M	CE 47 UF 50V
△C3845	BZ110035	P2122B104M	CMP 0.1 UF 275V ECQUL
△C3847	BZ110227	CD39EOML3M	CC 0.0033UF 250V
C3848	BZ110219	C0PLRR7Q2K	CC 470 PF 2KV R
△C3854	AD301026	CD39EOM13M	CC 0.001 UF 250V
C3856	BZ110219	C0PLRR7Q2K	CC 470 PF 2KV R
△C3860	AE005176	E62XHC331M	CE 2*25 330 UF 200V
C4414	BZ110250	E02L02102M	CE 1000 UF 16V
DIODES			
D103	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D104	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D105	AD300732	D28XQS04N0	DIODE,SCHOTTKY 11EQS04N-TA2B5
D108	AD300732	D28XQS04N0	DIODE,SCHOTTKY 11EQS04N-TA2B5
D109	BZ410021	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77
D110	BZ410021	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
DIODES			
D115	AD300732	D28XQS04N0	DIODE,SCHOTTKY
D302	AD300070	D97U01201B	DIODE,ZENER
D305	BZ410010	D28T21DQN9	DIODE,SCHOTTKY
D306	BZ410010	D28T21DQN9	DIODE,SCHOTTKY
D308	BZ410073	D28TEQS040	DIODE,SCHOTTKY
D801	AE004795	DE7RB5R62B	DIODE,ZENER
D2202	BZ410087	0021E2Q140	LED
D3200	AE004643	D28R1QS040	DIODE
D3201	AE004643	D28R1QS040	DIODE
D3601	AE004937	D77R1A1R10	DIODE,VARISTA
D3602	AE004795	DE7RB5R62B	DIODE,ZENER
D3603	AE004937	D77R1A1R10	DIODE,VARISTA
D3604	AE004793	DD7R60L400	DIODE,SCHOTTKY
D3605	AE004793	DD7R60L400	DIODE,SCHOTTKY
D3606	AE004796	DE7RB6R82B	DIODE,ZENER
D3607	AE004796	DE7RB6R82B	DIODE,ZENER
D3609	AE004794	DE7RB3R32B	DIODE,ZENER
D3613	AE004794	DE7RB3R32B	DIODE,ZENER
D3801	BZ410006	D1VT001330	DIODE,SILICON
△D3802	BZ410062	D2WTRM11C0	DIODE,SILICON
△D3803	BZ410062	D2WTRM11C0	DIODE,SILICON
△D3804	BZ410062	D2WTRM11C0	DIODE,SILICON
△D3805	BZ410062	D2WTRM11C0	DIODE,SILICON
△D3806	BZ410031	D6CE24110A	DIODE,VARISTA
D3807	BZ410064	D97U03R91B	DIODE,ZENER
D3808	BZ410021	D97U05R61B	DIODE,ZENER
D3809	BZ410011	D28TELS2N2	DIODE,RECTIFER
△D3810	BZ410085	D2WXN40050	DIODE,SILICON
△D3811	BZ410085	D2WXN40050	DIODE,SILICON
△D3812	BZ410085	D2WXN40050	DIODE,SILICON
△D3813	BZ410085	D2WXN40050	DIODE,SILICON
D3814	BZ410006	D1VT001330	DIODE,SILICON
D3815	BZ410006	D1VT001330	DIODE,SILICON
D3816	BZ410011	D28TELS2N2	DIODE,RECTIFER
D3817	BZ410103	D2WXGP10J0	DIODE,RECTIFER
△D3818	BZ410115	D2LKB340L0	DIODE,SCHOTTKY
D3819	AD300070	D97U01201B	DIODE,ZENER
D3820	BZ410094	D97U01501B	DIODE,ZENER
D3821	BZ410006	D1VT001330	DIODE,SILICON
D3822	BZ410006	D1VT001330	DIODE,SILICON
D3823	BZ410011	D28TELS2N2	DIODE,RECTIFER
D3824	BZ410021	D97U05R61B	DIODE,ZENER
D3825	BZ410011	D28TELS2N2	DIODE,RECTIFER
D3826	BZ410011	D28TELS2N2	DIODE,RECTIFER
△D3827	AE005173	D2BAMX22S0	DIODE,SCHOTTKY
△D3828	AD301980	D2CF2016L0	DIODE,SILICON
△D3829	AE001064	D28F31DQ09	DIODE,SCHOTTKY
△D3830	AE005172	D27A85T400	DIODE,SCHOTTKY
D3831	BZ410010	D28T21DQN9	DIODE,SCHOTTKY
△D3832	AD300075	D28TELS6N6	DIODE,RECTIFER
D3833	BZ410037	D97U03301B	DIODE,ZENER
D3834	BZ410113	D97U02201B	DIODE,ZENER
D3835	AE002133	D2BXARS010	DIODE,SILICON
D3836	AE002133	D2BXARS010	DIODE,SILICON
D3837	BZ410113	D97U02201B	DIODE,ZENER
D3838	BZ410006	D1VT001330	DIODE,SILICON
△D3839	AE005173	D2BAMX22S0	DIODE,SCHOTTKY
D3840	BZ410006	D1VT001330	DIODE,SILICON
D3841	BZ410006	D1VT001330	DIODE,SILICON
D3842	BZ410006	D1VT001330	DIODE,SILICON
D3843	BZ410084	D97U01101B	DIODE,ZENER
D3844	BZ410021	D97U05R61B	DIODE,ZENER
D3845	BZ410067	D97U02R21B	DIODE,ZENER
D3846	BZ410006	D1VT001330	DIODE,SILICON
D3847	BZ410006	D1VT001330	DIODE,SILICON
△D3848	AE003872	DOU002720M	DIODE,VARISTA
△D3849	AE004936	D6E027110A	DIODE,VARISTA
ICS			
IC101	AE005447	I56F57114B	IC
IC102	AE005446	I55D06081B	IC
IC103	79097849	I9UF032290	IC

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
		ICs	
IC104	AE005191	S3R501DE03	MEMORY DATA
IC105	79097849	I9UF032290	IC
IC199	AE005192	S3R501DE04	MEMORY DATA
IC301	AE005179	I19FF34410	IC
△IC302	AE005177	I03DP49010	IC
△IC303	AE005177	I03DP49010	IC
IC304	AE002505	I0QJP21510	IC
IC801	AE004658	I55M002880	IC
IC802	AE005182	I54F0LV080	IC
IC803	AE004660	IFKJ0LM850	IC
IC804	AD301028	I5HF016AJ0	IC
IC805	AE005186	I5CF062330	IC
IC806	AE005186	I5CF062330	IC
IC807	AE005187	IFCK0113L0	IC
IC808	AE005193	S3R501DF01	MEMORY DATA
IC2101	AE005188	IFDK000580	IC
△IC3200	BZ611130	I0GF9XZ010	IC
△IC3201	BZ611130	I0GF9XZ010	IC
△IC3202	BZ611130	I0GF9XZ010	IC
IC3601	AE004654	I1KF98D330	IC
IC3602	AE004654	I1KF98D330	IC
IC3604	AE001295	I0QJ045800	IC
IC3605	AE004805	I5PF099930	IC
IC3606	AE005421	I57J0L02F0	IC
IC3607	AE004802	I1FF043340	IC
IC3608	AE005190	S3R501DE02	MEMORY DATA
IC3611	AE004806	ICMF09C580	IC
IC3612	AE003923	I5CF01G080	IC
△IC3801	AD302211	I1KJ9A431A	IC
△IC3802	AE002809	000220002W	PHOTO COUPLER
△IC3803	AE002809	000220002W	PHOTO COUPLER
△IC3804	AE005178	I0BD0159M0	IC
△IC3805	AE002809	000220002W	PHOTO COUPLER
△IC3806	AD302211	I1KJ9A431A	IC
△IC3807	AE005181	I1KF98D090	IC
△IC3808	AE005180	I1KA98R12A	IC
IC4202	BZ611139	I0QF02534V	IC
IC4300	AD301988	I0UF015010	IC
IC4301	AD301988	I0UF015010	IC
IC4302	BZ611139	I0QF02534V	IC
IC4303	BZ611139	I0QF02534V	IC
IC4304	AE004651	I0QF025840	IC
IC4307	AE004651	I0QF025840	IC
IC4308	AE004800	I05FE13830	IC
IC4309	AE001069	I0UF015020	IC
		TRANSISTORS	
Q101	BZ510021	TNYJC05001	COMPOUND TRANSISTOR
Q102	BZ510026	TPYJC05001	COMPOUND TRANSISTOR
Q103	BZ510026	TPYJC05001	COMPOUND TRANSISTOR
Q104	BZ510021	TNYJC05001	COMPOUND TRANSISTOR
Q105	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q106	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q107	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q108	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q109	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q110	BZ510108	TAAA1504SY	TRANSISTOR,SILICON
Q111	BZ510021	TNYJC05001	COMPOUND TRANSISTOR
Q112	BZ510026	TPYJC05001	COMPOUND TRANSISTOR
Q113	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q114	BZ510022	TNYJJ05001	COMPOUND TRANSISTOR
Q115	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q116	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q301	AE004662	T93A018020	TRANSISTOR,SILICON
Q302	AE004662	T93A018020	TRANSISTOR,SILICON
Q303	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q601	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q602	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q603	BZ510109	TCAA3875SY	TRANSISTOR,SILICON
Q2101	BZ510108	TAAA1504SY	TRANSISTOR,SILICON
Q3603	BZ510113	T27T030180	FET
Q3604	BZ510113	T27T030180	FET

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
TRANSISTORS			
Q3605	BZ510113	T27T030180	FET 2SK3018
Q3606	BZ510113	T27T030180	FET 2SK3018
Q3607	BZ510113	T27T030180	FET 2SK3018
Q3608	BZ510081	TPYJA05001	COMPOUND TRANSISTOR DTA143EKAT146
Q3609	BZ510045	TNYJD05001	COMPOUND TRANSISTOR DTC144EKAT146
Q3610	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q3611	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q3612	BZ510045	TNYJD05001	COMPOUND TRANSISTOR DTC144EKAT146
Q3613	AE002626	T8YJ2412K0	TRANSISTOR,SILICON 2SC2412KT146 R,S
△Q3801	BZ510069	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
Q3802	BZ510069	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△Q3803	AE004014	TJXG9NK500	FET STP9NK50ZFP
△Q3804	AE003591	T250035680	FET 2SK3568(ORION_Q)
△Q3805	BZ510070	TCAT032034	TRANSISTOR,SILICON KTC3203_Y-AT
△Q3806	BZ510070	TCAT032034	TRANSISTOR,SILICON KTC3203_Y-AT
Q3807	BZ510020	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146
Q3808	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q3809	BZ510105	TCAT03209Y	TRANSISTOR,SILICON KTC3209_Y-AT
Q3811	BZ510020	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146
Q3812	BZ510105	TCAT03209Y	TRANSISTOR,SILICON KTC3209_Y-AT
Q3813	BZ510057	TAAT01281Y	TRANSISTOR,SILICON KTA1281_Y
Q3814	BZ510071	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q3815	BZ510073	TAATA12660	TRANSISTOR,SILICON KTA1266-AT(Y,GR)
Q4201	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4202	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4203	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4204	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4205	BZ510026	TPYJC05001	COMPOUND TRANSISTOR DTA124EKAT146
Q4206	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4207	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4300	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4301	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4303	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4304	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4310	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4311	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q4312	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4313	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q4314	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4315	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
COILS & TRANSFORMERS			
L001	AE002347	021673220K	COIL 22 UH
L002	AD301989	0216A6330J	COIL 33 UH
L101	BZ310040	02167F470J	COIL 47 UH
L103	AE005142	021LA64R7K	COIL 4.7 UH
L104	BZ310052	021LA6100K	COIL 10 UH
L301	BZ310141	02167F100J	COIL 10 UH
L302	BZ310141	02167F100J	COIL 10 UH
L303	BZ310141	02167F100J	COIL 10 UH
L304	AE004595	021404221M	COIL 21A 220 UH
L305	AE004595	021404221M	COIL 21A 220 UH
L601	AE004601	0216SD1R5J	COIL 1.5 UH
L602	AE005283	0216S8101K	COIL F 100 UH
L603	AE005285	0216S8470K	COIL F 47 UH
L604	AE005284	0216S8220K	COIL F 22 UH
L608	AE004601	0216SD1R5J	COIL 1.5 UH
L609	AE004601	0216SD1R5J	COIL 1.5 UH
L610	AE005059	0216S4470J	COIL 47 UH
L611	AE005059	0216S4470J	COIL 47 UH
L801	AE005285	0216S8470K	COIL F 47 UH
L802	AE005283	0216S8101K	COIL F 100 UH
L803	AE005285	0216S8470K	COIL F 47 UH
L804	AE005285	0216S8470K	COIL F 47 UH
L805	AE005285	0216S8470K	COIL F 47 UH
L806	AE005285	0216S8470K	COIL F 47 UH
L807	AD301539	02AHB0A0A4	CORE,FERRITE W5T_20*10*10A
L817	AE005284	0216S8220K	COIL F 22 UH
L819	AE005284	0216S8220K	COIL F 22 UH
L2101	AE005284	0216S8220K	COIL F 22 UH
L2102	AE005285	0216S8470K	COIL F 47 UH
L2103	AE005284	0216S8220K	COIL F 22 UH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
COILS & TRANSFORMERS			
L3601	AE004752	02D6000068	COIL,CHOKE ACM2012D-900-2P-T00
L3602	AE004752	02D6000068	COIL,CHOKE ACM2012D-900-2P-T00
L3603	AE004752	02D6000068	COIL,CHOKE ACM2012D-900-2P-T00
L3604	AE004752	02D6000068	COIL,CHOKE ACM2012D-900-2P-T00
L3801	AD301785	02167E100K	COIL R6-1 10 UH
▲L3802	AE005286	029X000120	COIL,LINE FILTER SS24H-R15080-CH
L3803	AD301785	02167E100K	COIL R6-1 10 UH
L3804	AD301785	02167E100K	COIL R6-1 10 UH
▲L3805	AE005286	029X000120	COIL,LINE FILTER SS24H-R15080-CH
L3806	AD301785	02167E100K	COIL R6-1 10 UH
L3808	BZ310079	021LA6101J	COIL 100 UH
L3809	AD301785	02167E100K	COIL R6-1 10 UH
L3810	AD301785	02167E100K	COIL R6-1 10 UH
L4202	BZ310040	02167F470J	COIL 47 UH
L4300	AE005057	0216S4101J	COIL 100 UH
L4303	AE005284	0216S8220K	COIL F 22 UH
L4304	AE005283	0216S8101K	COIL F 100 UH
L4305	AE005285	0216S8470K	COIL F 47 UH
L4306	AE005284	0216S8220K	COIL F 22 UH
L4307	AE005060	0216SDR56J	COIL 0.56 UH
L4308	AE005060	0216SDR56J	COIL 0.56 UH
▲T3801	AE004942	048119003S	TRANSFORMER,SWITCHING 8119003S
▲T3802	AE005145	0481350894	TRANSFORMER,SWITCHING 81350894
▲T3803	AE005144	048134003S	TRANSFORMER,SWITCHING 8134003S
JACKS			
▲J301	AE002426	0602131008	HEADPHONE JACK HSJ0913-01-140
J3601	AE002950	060J421037	RCA JACK MTJ-032-05A-32-FE
J3602	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4201	AE004334	063D700009	JACK MDC-070V-A_LF
J4202	AE002949	060J421036	RCA JACK MTJ-032-05A-30-FE
J4203	AE002950	060J421037	RCA JACK MTJ-032-05A-32-FE
J4204	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4205	AE002949	060J421036	RCA JACK MTJ-032-05A-30-FE
J4206	AE002950	060J421037	RCA JACK MTJ-032-05A-32-FE
J4207	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4208	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4209	AE002950	060J421037	RCA JACK MTJ-032-05A-32-FE
J4300	AE002950	060J421037	RCA JACK MTJ-032-05A-32-FE
J4301	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4302	AE002950	060J421037	RCA JACK MTJ-032-05A-32-FE
J4303	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4305	AE002951	060J421030	RCA JACK MTJ-032-05A-31-FE
J4306	AE005146	060J421043	RCA JACK MTJ-032-05A-29-FE
J4307	AE005147	060J421044	RCA JACK MTJ-032-05A-50-FE
SWITCHES			
SW2201	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2202	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2203	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2204	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2206	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2208	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2209	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
P.C. BOARD ASSEMBLIES			
PCB270	AE005167	A3R501D270	PCB ASS'Y CED014A
PCB340	AE005168	A3R501D340	PCB ASS'Y CED016A
PCBD20	AE005169	A3R501DD20	PCB ASS'Y CMD004A
PCBDA0	AE005170	A3R501DDA0	PCB ASS'Y CED015A
PCBDJ0	AE005171	A3R501DDJ0	PCB ASS'Y CED011A
MISCELLANEOUS			
B101	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B801	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B802	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B803	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B807	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B2101	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B3601	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B3602	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B3603	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B3604	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B3608	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25
B3609	AE004602	024HC36001	CORE,BEADS HCB2012K-600T25

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
MISCELLANEOUS			
B3610	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B3611	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B3801	BZ310121	024HT03553	CORE,BEADS W5RH3.5X5X1.0
BT001	AD302369	141L003010	BATTERY,MANGAN R6P(AR)XICI
BT002	AD302369	141L003010	BATTERY,MANGAN R6P(AR)XICI
CD101	AE004613	06CU231801	CORD,CONNECTOR CU231801
CD105	BZ614447	WBL6022038	FLAT CABLE AWM2468 A WG26 4C BLACK 220MM
CD502	AE005439	06CU2C2801	CORD,CONNECTOR CU2C2801
CD503	AE005440	06CU2C5801	CORD,CONNECTOR CU2C5801
CD801	AE005165	122H0R0801	CORD,JUMPER 2H0R0801
CD802	AE005166	122H0U0801	CORD,JUMPER 2H0U0801
CD803	AE005434	06CHRU2201	CORD,CONNECTOR CHRU2201
CP001	BZ614444	069D01001A	CONNECTOR PCB SIDE 003P-2100
CP002	BZ614444	069D01001A	CONNECTOR PCB SIDE 003P-2100
CP101	BZ614350	069S230629	CONNECTOR PCB SIDE A2001WV2-3P
CP102	BZ614420	069S2D0629	CONNECTOR PCB SIDE A2001WV2-13P
CP103	AD301796	069S280629	CONNECTOR PCB SIDE A2001WV2-8P
CP104	AD301998	069S240629	CONNECTOR PCB SIDE A2001WV2-4P
CP107	BZ614416	069S220629	CONNECTOR PCB SIDE A2001WV2-2P
CP301	AD301045	069S140419	CONNECTOR PCB SIDE A2502WV2-4P
CP801	AE005151	069HVWT04A	CONNECTOR PCB SIDE FI-X30S-HF-NPB
CP803	AE005152	069S1K0019	CONNECTOR PCB SIDE A2501WV2-20P
CP805	AE005150	069EVU3010	CONNECTOR PCB SIDE 00_6232_030_006_800
CP806	AE005149	069EVR3010	CONNECTOR PCB SIDE 00_6232_027_006_8
CP807	AE005436	06CU223401	CORD,CONNECTOR CU223401
CU801	BZ710279	800WFAA006	CUSHION A
CD1001	AE005435	06CU144705	CORD,CONNECTOR CU144705
CD2201	AE005437	06CU244301	CORD,CONNECTOR CU244301
CD2601	AE005164	122H0O1401	CORD,JUMPER 2H001401
CD3601	AE005288	06CU1K2701	CORD,CONNECTOR CU1K2701
△CD3801	AE001245	1209419910	CORD,AC BUSH 9419910
CD3807	AE005438	06CU293701	CORD,CONNECTOR CU293701
CP105A	BZ614334	067U004029	WIRE HOLDER B2013H02-4P
CP105B	BZ614334	067U004029	WIRE HOLDER B2013H02-4P
CP3200	BZ614458	069S290629	CONNECTOR PCB SIDE A2001WV2-9P
CP3601	AE004763	069HYJ3010	CONNECTOR PCB SIDE DC1R019JDA
CP3604	BZ614239	069S290639	CONNECTOR PCB SIDE A2001WR2-9P
CP3801	AD301554	069S2C0629	CONNECTOR PCB SIDE A2001WV2-12P
CP3802	AD301554	069S2C0629	CONNECTOR PCB SIDE A2001WV2-12P
CP4201	AE005149	069EVR3010	CONNECTOR PCB SIDE 00_6232_027_006_8
CP4202	AE005150	069EVU3010	CONNECTOR PCB SIDE 00_6232_030_006_800
CP4301	AE005148	0694S15016	CONNECTOR PCB SIDE 1-788624-1
ELD201	BZ614043	124116281A	EYE LET XRY16X28BD
ELD202	BZ614044	124120301A	EYE LET XRY20X30BD
△F3801	BZ614422	081PC6R305	FUSE 51MS063L
FH3801	AE002634	06710T0009	HOLDER,FUSE EYF-52BCY
FH3802	AE002634	06710T0009	HOLDER,FUSE EYF-52BCY
NR801	AE004629	110N4000M3	R,NETWORK CAY16-000-J-4R
NR802	AE004629	110N4000M3	R,NETWORK CAY16-000-J-4R
NR803	AE004629	110N4000M3	R,NETWORK CAY16-000-J-4R
NR804	AE004629	110N4000M3	R,NETWORK CAY16-000-J-4R
NR805	AE004629	110N4000M3	R,NETWORK CAY16-000-J-4R
NR806	AE004629	110N4000M3	R,NETWORK CAY16-000-J-4R
NR813	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR814	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR815	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR816	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR817	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR818	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR822	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR823	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR2101	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR2102	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR2103	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR2104	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR2105	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
NR2106	AE004680	110P4101M4	R,NETWORK 4D03WVGJ0101T5E
OS2201	AE004623	0773071006	REMOTE RECEIVER RPM7138-SH8
△RY3801	AE003621	0560V50118	RELAY ALKS329
△SP1001	AE005159	070C546009	SPEAKER SG04H02CRA
△SP1002	AE005159	070C546009	SPEAKER SG04H02CRA

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
		MISCELLANEOUS	
TM101	AD302374	07650GR010	TRANSMITTER
△TU001	AE004592	0162300043	RF UNIT
TR3801	BZ310181	02A6B2E0A1	CORE,FERRITE
TR3802	BZ310181	02A6B2E0A1	CORE,FERRITE
TR3803	BZ310181	02A6B2E0A1	CORE,FERRITE
TR3804	BZ310118	02AHB9A972	CORE,FERRITE
TR3805	BZ310118	02AHB9A972	CORE,FERRITE
V2301	AE005160	095S123001	LCD
X102	AE004780	100WT01611	CRYSTAL
X104	BZ613019	1002T01606	CERAMIC OSCILLATOR
X301	BZ613042	100CT01803	CRYSTAL
X601	AE004628	100DT04201	CRYSTAL
X801	AE005161	100DT01407	CRYSTAL
X3601	AE004779	100CT01101	CRYSTAL
X4300	AE004348	1002R01502	CERAMIC OSCILLATOR
X4301	AE005441	100DA3R529	CRYSTAL
			CT-90158
			115-V-L035AR
			HF70T22*10*14
			HF70T22*10*14
			HF70T22*10*14
			W5T29X7.5X19
			W5T29X7.5X19
			LC230W02-A5
			HC-49/U-S
			CSTLS16M0X53-A0
			HC-49/U-S
			SMD-49
			SMD-49
			HC-49/U-S
			CSBLA503KECF30-B0
			HC-49/U
RESISTOR			
	RC.....	CARBON RESISTOR	
CAPACITORS			
	CC.....	CERAMIC CAPACITOR	
	CE.....	ALUMI ELECTROLYTIC CAPACITOR	
	CP.....	POLYESTER CAPACITOR	
	CPP.....	POLYPROPYLENE CAPACITOR	
	CPL.....	PLASTIC CAPACITOR	
	CMP.....	METAL POLYESTER CAPACITOR	
	CMPL.....	METAL PLASTIC CAPACITOR	
	CMPP.....	METAL POLYPROPYLENE CAPACITOR	

TOSHIBA CORPORATION

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