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# LCD TV

# SERVICE MANUAL

**CHASSIS : LA61A**

**MODEL : 42LB1DR-UA / 42LB1DRA-UA**

## **CAUTION**

BEFORE SERVICING THE CHASSIS,  
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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# SAFETY PRECAUTIONS

## IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  $\triangle$  in the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

### General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

### Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

### Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between  $1M\Omega$  and  $5.2M\Omega$ .

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

### Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

### Do not use a line Isolation Transformer during this check.

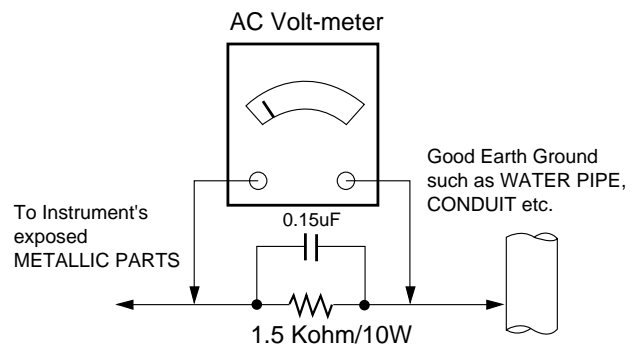
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

### Leakage Current Hot Check circuit



# SERVICING PRECAUTIONS

**CAUTION:** Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the *SAFETY PRECAUTIONS* on page 3 of this publication.

**NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

## General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
  - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
  - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
  - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.  
**CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".

3. Do not spray chemicals on or near this receiver or any of its assemblies.

4. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

**CAUTION:** This is a flammable mixture.

Unless specified otherwise in this service manual, lubrication of contacts is not required.

5. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
6. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
7. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.  
Always remove the test receiver ground lead last.

8. Use with this receiver only the test fixtures specified in this service manual.

**CAUTION:** Do not connect the test fixture ground strap to any heat sink in this receiver.

## Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices*. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the

unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.  
**CAUTION:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500 °F to 600 °F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire-bristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
  - a. Allow the soldering iron tip to reach normal temperature. (500 °F to 600 °F)
  - b. Heat the component lead until the solder melts.
  - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.  
**CAUTION:** Work quickly to avoid overheating the circuitboard printed foil.
6. Use the following soldering technique.
  - a. Allow the soldering iron tip to reach a normal temperature (500 °F to 600 °F)
  - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
  - c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.  
**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
  - d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



### **IC Remove/Replacement**

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

#### *Removal*

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

#### *Replacement*

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush.  
(It is not necessary to reapply acrylic coating to the areas).

### **"Small-Signal" Discrete Transistor**

#### **Removal/Replacement**

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

### **Power Output, Transistor Device**

#### **Removal/Replacement**

1. Heat and remove all solder from around the transistor leads.
2. Remove the heat sink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heat sink.

### **Diode Removal/Replacement**

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

### **Fuse and Conventional Resistor**

#### **Removal/Replacement**

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.

**CAUTION:** Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

### **Circuit Board Foil Repair**

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

#### *At IC Connections*

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

#### *At Other Connections*

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.  
**CAUTION:** Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

# SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

## 1.General Specification(TV)

No	Item	Specification	Remark
1.	Video input applicable system	PAL-D/K, B/G, I, NTSC-M, SECAM NTSC 4.43	
2.	Receivable Broadcasting System	1) PAL/SECAM BG 2) PAL/SECAM DK 3) PAL I/I 4) SECAM L/L' 5) NTSC M	(ZE/TE) EU/Non-EU (PAL Market)
		6) PAL-N/M 7) NTSC M	6),7) South America Market 7) Except South America NTSC Market (ME)
3.	RF Input Channel	VHF : E2 ~ E12 UHF : E21 ~ E69 CATV : S1 ~ S20 HYPER : S21~ S47	PAL
		L/L' : B, C, D	FRANCE
		VHF : 2~13 UHF : 14~69 CATV : 1~125	NTSC
		VHF Low : 1 ~ M10 VHF High : 4~S22 UHF : S23~62	JAPAN
4.	Input Voltage	AC 100 ~ 240 V/50Hz, 60Hz	
5.	Market	Worldwide	
6.	Picture Size	1067.308mm	42.02inch(42LB1R)
7.	Tuning System	FVS 100 program	PAL, 200 PR.(Option)
		FS	NTSC
8.	Operating Environment	1) Temp : 0 ~ 40 deg 2) Humidity : 10~90 %	
		3) Temp : -20 ~ 50 deg 4) Humidity : 10~90 %	
9.	Storage Environment	3) Temp : -20 ~ 50 deg 4) Humidity : 10~90 %	
10.	Display	LCD Module	LPL

## 2. General Specification

No	Item	Specification			Remark	
1	Panel	42" TFT WXGA LCD				
2	Frequency range	H : 31 ~ 61Khz V : 56 ~ 75Hz			PC Input	
3	Control Function	1) Contrast/Brightness 2) H-Position / V-Position 3) Tracking : Clock / Phase 4) Auto Configure 5) Reset				
4	Component Jack	1 : Y 3 : Pb 5 : Pr 7 : Line1 Ready 9 : LINE2 11: LINE3 13: Line3 Ready			Middle east / NTSC Area	
	D4 Jack(525i, 525p, 750p,1125i)	2 : Y GND 4 : Pb GND 6 : Pr GND 8 : LINE1 10:Line2 Ready 12:SWITCH GND 14: SWITCH			JAPAN Only	
5		H/V-Sync	Video	Power consumption	LED	
	Power ON	-	-	≤ 240W		
	Stand by DPMS Mode	ON/OFF	OFF	≤ 3.0W ≤ 30W	Red Green	
	Power off	-	-	-	*	
6	LCD Module	Outline Dimension	42"	1006 x 610 x 56(mm)	(H)x(V)x(D)	
		Pixel Pitch	42"	0.227 x 0.681 x RGB(mm)		
		Pixel Format	1366 horiz. By 768 vert. Pixels RGB strip arrangement			
		Coating	Hard coating(3H), Anti-glare treatment of the front polarizer,			
		Back Light	42"	20EEFL		

### 3.Optical Feature(LCD Module)

No.	Item	Specification				Remark		
			Min	Typ	Max			
1	Viewing Angle<CR ≥10>	R/L, U/D		176, 176				
2	Luminance	Luminance(cd/㎡)		500				
		Variation			1.3	Typical		
3	Contrast Ratio	CR	300	400		MAX/MIN		
		CR <sub>b</sub> (With AI)	700	1000		ALL white/All back		
4	CIE Color Coordinates	WHITE	W <sub>x</sub>	Typ.	0.285	Typ. -0.03	Typ. +0.03	LPL
			W <sub>y</sub>	Typ.				
		RED	R	Typ.	0.640			
			R <sub>y</sub>	Typ.	0.341			
		GREEN	G <sub>x</sub>	Typ.	0.287			
			G <sub>y</sub>	Typ.	0.610			
		BLUE	B <sub>x</sub>	Typ.	0.146			
			B <sub>y</sub>	Typ.	0.069			

### 4.Component Video Input (Y, Pb, Pr)

No	Specification				Proposed
	Resolution	H-freq(kHz)	V-freq(Hz)		
1.	640x480	15.73	60	SDTV, DVD 480i	ZE, TE, ME
2.	640x480	15.63	59.94	SDTV, DVD 480i	ZE, TE, ME
3.	720x480	31.47	59.94	EDTV 480p	TE, ME
4.	720x576	15.625	50.00	SDTV, DVD 625 Line	ZE, TE, ME
5.	720x576	31.25	50.00	HDTV 576p	TE, ME
6.	1280x720	45.00	60.00	HDTV 720p	TE, ME
7.	1280x720	44.96	59.94	HDTV 720p	TE, ME
8.	1920x1080	31.25	50.00	HDTV 1080i 50Hz (AU Ver.)	TE, ME
9.	1920x1080	33.75	60.00	HDTV 1080i 60Hz (ATSC)	TE, ME
10.	1920x1080	33.72	59.94	HDTV 1080i 59.94Hz	TE, ME

### 5. RGB PC INPUT Mode Table

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed
	Analog RGB, Digital RGB				
1	720x400	31.468	70.8	28.321	
2	640x480	31.469	59.94	25.17	VESA
		37.684	75.00	31.5	VESA
3	800x600	37.879	60.31	40.00	VESA
		46.875	75	49.5	VESA
4	832x624	49.725	74.55	57.283	
5	1024x768	48.363	60.00	65.00	VESA(XGA)
		56.47	70.00	75.00	VESA(XGA)
		60.123	75.029	78.75	VESA(XGA)
6	1280x768	47.776	59.870	79.50	VESA(WXGA)
7	1360x768	47.720	59.799	84.75	VESA(WXGA)
8	1366x768	47.720	59.799	84.75	Supported

## 6. RGB DTV INPUT Mode Table

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed
1	720x576	31.25	50.00	SDTV 576p 50Hz	
2	720x480	31.47	59.94	SDTV 480p 60Hz	
3	1280x720	45.00	50.00	HDTV 720p 50Hz	HDCP
4	1280x720	44.96	59.94	HDTV 720p 60Hz	HDCP
5	1920x1080	28.13	50.00	HDTV 1080i 50Hz	HDCP
6	1920x1080	33.72	59.94	HDTV 1080i 60Hz	HDCP

## 7. HDMI PC INPUT Mode Table

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed
	Analog RGB, Digital RGB				
1	720x400	31.468	70.8	28.321	
2	640x480	31.469 37.684	59.94 75.00	25.17 31.5	VESA VESA
3	800x600	37.879 46.875	60.31 75	40.00 49.5	VESA VESA
4	832x624	49.725	74.55	57.283	
5	1024x768	48.363 56.47 60.123	60.00 70.00 75.029	65.00 75.00 78.75	VESA(XGA) VESA(XGA) VESA(XGA)
6	1280x768	47.776	59.870	79.50	VESA(WXGA)
7	1360x768	47.720	59.799	84.75	VESA(WXGA)
8	1366x768	47.720	59.799	84.75	Supported
9	1920x1080	33.75	60.00	86.375	HDCP DVI Digital 1080i
10	1280x720	45.00	60.00	74.375	HDCP DVI Digital 720p

## 8. HDMI DTV INPUT Mode Table

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed
1	720x576	31.25	50.00	SDTV 576p 50Hz	
2	720x480	31.47	59.94	SDTV 480p 60Hz	
3	1280x720	45.00	50.00	HDTV 720p 50Hz	HDCP
4	1280x720	44.96	59.94	HDTV 720p 60Hz	HDCP
5	1920x1080	28.13	50.00	HDTV 1080i 50Hz	HDCP
6	1920x1080	33.72	59.94	HDTV 1080i 60Hz	HDCP

## 9. Mechanical specification

No,	Item	Content			Remark	
1	Product Dimenson	Width(W)	Length(D)	Height(H)	With Stand	
		Before Packing	1175	300		768
		After Packing	1282	386		920
2	Product Weight	Only SET	43.4Kg		With Stand	
		With Box	48.2kg			

## 10. Mechanical specification

<Table 1> Scart Arrangement 1.(Full Scart)

Pin	Signal	Signal Level	Impedance
1	Audio Output B (right)	0.5 Vrms	< 1 K $\Omega$
2	Audio Input B (right)	0.5 Vrms	> 10 K $\Omega$
3	Audio Output A (left)	0.5 Vrms	< 1 K $\Omega$
4	Ground (audio)	-	-
5	Ground (blue)	-	-
6	Audio input A (left)	0.5 Vrms	> 10 K $\Omega$
7	Blue input	0.7 V	75 $\Omega$
8	Function Select (AV control)	High (9.5 - 12V) - AV Mode Mid (5 - 8V) - Wide Screen Low (0 - 2V) - TV Mode	> 10 K $\Omega$
9	Ground (Green)	-	-
10	Comms Data 2		
11	Green input	0.7 V	75 $\Omega$
12	Comms Data 1		
13	Ground (Red)	-	-
14	Ground (Blanking)	-	-
15	Red input	0.7 V	75 $\Omega$
16	RGB Switching Control	High (1 - 3V) - RGB Low (0 - 0.4V) - Composite	75 $\Omega$
17	Ground (Video input & Output)	-	-
18	Ground (RGB Switching Control)	-	-
19	Video output (Composite)	1V including sync	75 $\Omega$
20	Video input (Composite)	1V including sync	75 $\Omega$
21	Common ground (Shield)	-	-

<Table 2> Scart Arrangement 2.(Half Scart)

Pin	Signal	Signal Level	Impedance
1	Audio Output B (right)	0.5 Vrms	< 1 K $\Omega$
2	Audio Input B (right)	0.5 Vrms	> 10 K $\Omega$
3	Audio Output A (left)	0.5 Vrms	< 1 K $\Omega$
4	Ground (audio)	-	-
5	Ground (blue)	-	-
6	Audio input A (left)	0.5 Vrms	> 10 K $\Omega$
7	-	-	-
8	Function Select (AV control)	High (9.5 - 12V) - AV Mode Mid (5 - 8V) - Wide Screen Low (0 - 2V) - TV Mode	> 10 K $\Omega$
9	Ground (Green)	-	-
10	Comms Data 2		
11	-	-	-
12	Comms Data 1		
13	Ground (Red)	-	-
14	Ground (Blanking)	-	-
15	Red input		
16	-	-	-
17	Ground (Video input & Output)	-	-
18	-	-	-
19	Video output (Composite)	1V including sync	75 $\Omega$
20	Video input (Composite)	1V including sync	75 $\Omega$
21	Common ground (Shield)	-	-

# ADJUSTMENT INSTRUCTION

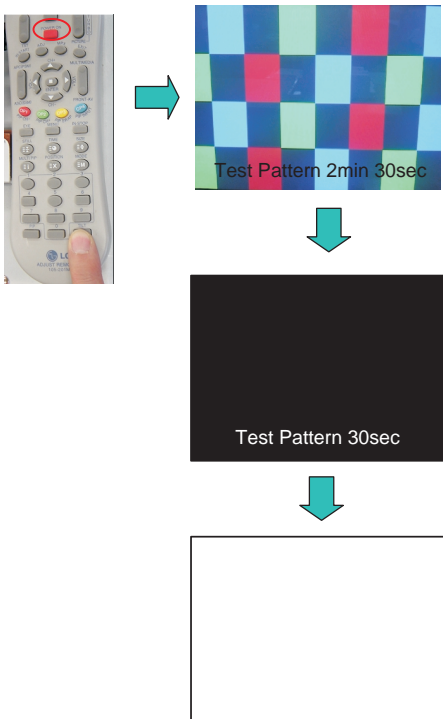
## 1. Application Object

These instructions are applied to all of the PDP TV, PA61A.

If you turn on a still screen more than 20 minutes (Especially Digital pattern(13 CH), Cross Hatch Pattern), an afterimage may occur in the black level part of the screen.

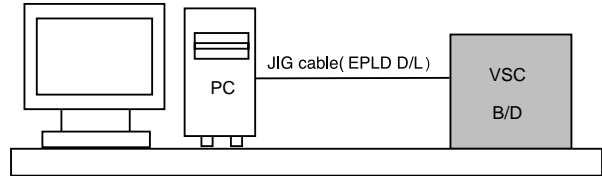
## 2. Notes

- (1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test equipment.
  - (2) Adjustments must be done in the correct order.
  - (3) The adjustments must be performed in the circumstance of  $25\pm 5^{\circ}\text{C}$  of temperature and  $65\pm 10\%$  of relative humidity if there is no specific designation.
  - (4) The input voltage of the receiver be must kept 110V, 60Hz when adjusting.
  - (5) The receiver must be operational for about 15 minutes prior to the adjustments.
- o Preliminary action is applied to the test for afterimage discharge detection, and 100% FULL WHITE PATTERN must be operated automatically.
  - o Test for afterimage discharge detection
    - 1) After pressing Power Only key(only operating by pressing Power Only key), Full Test Pattern(2 min 30sec) --> Full Black Pattern(30sec) --> After this state, Full White Pattern is displayed.  
(but you must preset the program for Full White State when you press the Main Power Off/On)
    - 2) Pattern Mode is deselected by pressing CH +/-, Exit Key.



[ Set is activated HEAT-RUN without signal generator in this mode.

## 3. EPLD Download

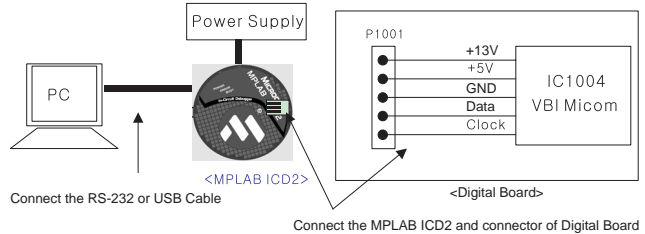


- (1) Test Equipment: PC, Jig for download
- (2) Connect the power of VSC B/D.
- (3) Execute download program(iMPACK) of PC.
- (4) After executing the hot key on the Programmer, click icon
- (5) End after confirming

## 4. Gemstar VBI Micom Download

### 4-1. Preparation for Adjustment

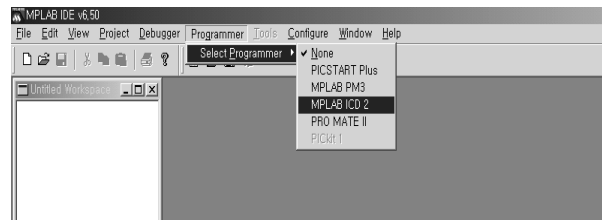
- (1) As shown below, connect the MPLAB ICD2 equipment, PC and Digital Connector.
- (2) Turn on the MPLAB ICD2 POWER Supply.



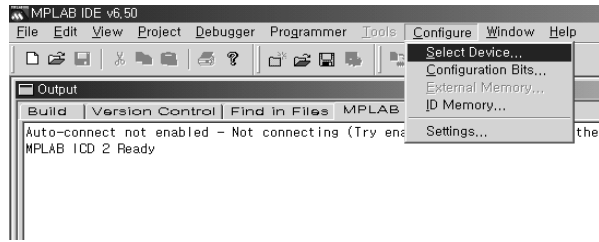
- (3) After turn on the PC and MONITOR, select the 'MPLAB IDE' from the screen.

### 4-2. Adjustment Sequence

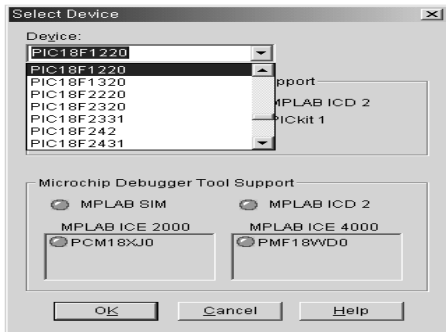
- (1) When the program is executed, select the MPLAB ICD2 from Programmer -> Select Programmer .



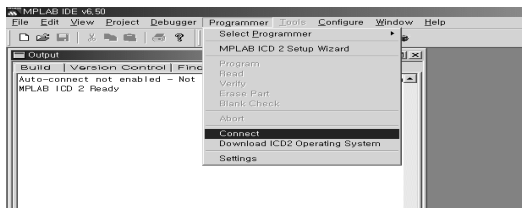
(2) Select "Configure -> Select Device".



(3) When the "Select Device" window appears, select the PIC18F1220 from "Device" and press OK.

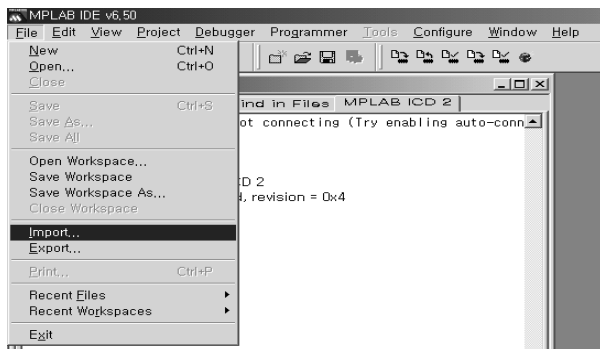


(4) Select "Programmer -> Connect".

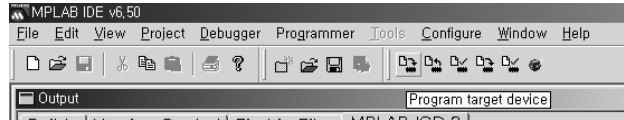
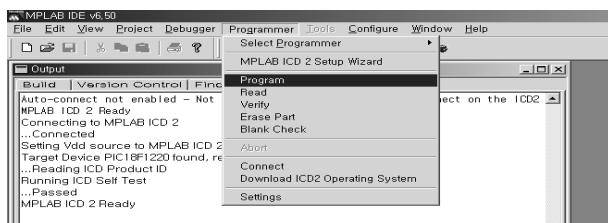


When connected with the Micom, the display message on the Output window appears as below.

(5) Select "File -> Import", select the Work HEX file and open.



(6) Select "Programmer -> Program".



(7) Download is executed and about 5 seconds later, the "Programming succeeded" message is displayed on the Output window and the Download process is ended.

(8) The execution of process (6) is convenient when using the short-cut icon.

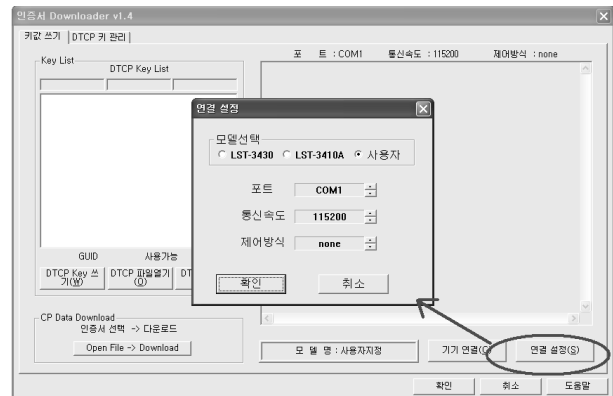
## 5. POD Certificate Download

### 5-1. Preparation for Adjustment

- (1) Connect the MEMORY JIG and PC.
- (2) Turn on the JIG MAIN POWER SWITCH.
- (3) After turn on the PC and MONITOR, execute the 'Certificate Downloader v1.4' from the screen.

### 5-2. Adjustment Sequence

- (1) After open the 'Certificate Downloader v1.4', enter Connection set and set the as same below. The port settings are determined by each PC's setup.



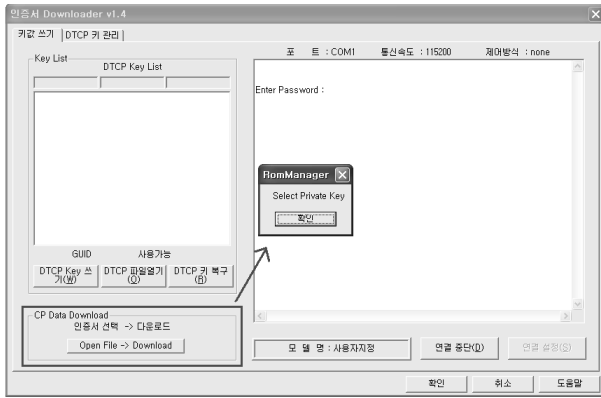
(2) Select 'Connection' and SET connected to RS-232C.

(3) After clicking "Enter", confirm that "Enter Password:" appears.





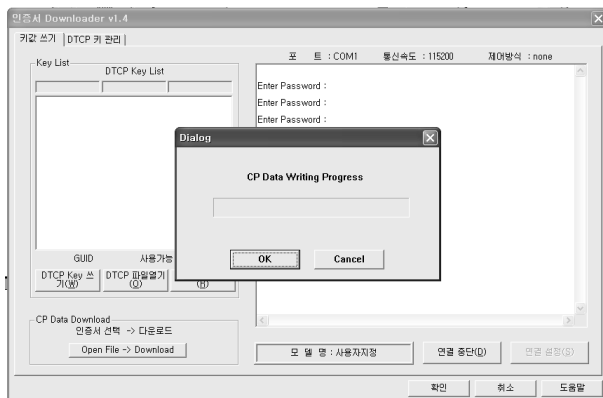
- (4) Click the "OpenFile - Download" button from CP Data Download, 'select the Private Key' appears and click ENTER.



- (5) After clicking ENTER, the 'opens Private key' window appears and select the Private key applied to the SET. The Private Key file name is on the Label of the Digital Board.



- (6) When the Dialog window appears, click OK and the write work will begin.



- (7) When completed, click 'CP Data Download: OK'

[ When 'CP Data Download: OK' does not appear, certificate has not Download correctly. SET is rebooted and certificate Download work must be repeated.

## 6. Gemstar Operation Confirmation

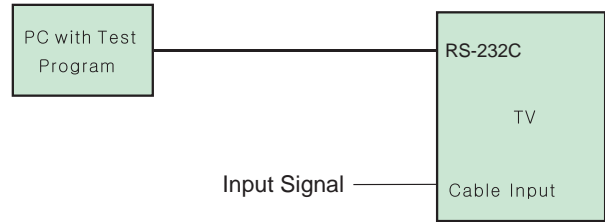
### 6-1. Required Test Equipment

- (1) PC with Factory Test Program
- (2) VBI Inserter (Norpak TES3) - Guide Data Discharge Equipment

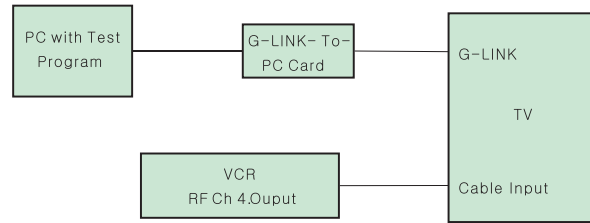
[ In case of without the VBI Inserter(TES3), a VCR may be used.

### 6-2. Preparation for Adjustments

- (1) In case of with VBI Inserter(TES3): Signal uses Cable input and set as below.



- (2) In case of without VBI Inserter(TES3): VCR uses Cable input and set as below.



[ Factory Test S/W must be set to "GlinkTo PC Card" ON.

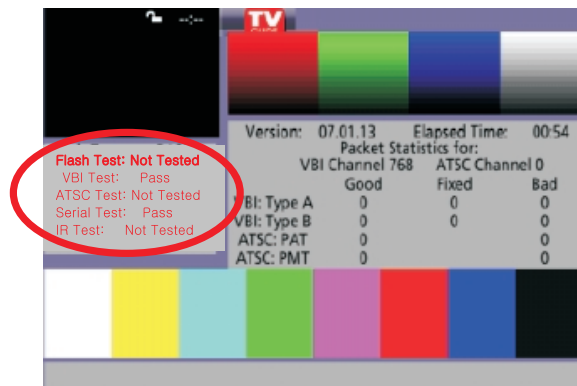
### 6-3. Adjustment Confirmation Work

- (1) Turn on the TV and run Factory Test Program of PC.

[ Program only needs to run once, regardless of set quantity.

- (2) Enter the EZ adjust menu by pressing Adjust on the Service Remote Control (S R/C).
- (3) Go to number 1 Gemstar and press Enter.
- (4) TV set screen will appear as shown.

- (5) Confirm that VBI Test and Serial Test PASS from the screen.



## 7. Cable Operation Confirmation

- (1) Confirm that the Cable Card is inserted in the slot.
- (2) Enter the EZ adjust menu by pressing the Adjust key on the Service Remote Control (S R/C).
- (3) Go to number 2 Cable Check and press the Right key (G) .
- (4) Confirm items below.

Name	Normal	Defective
Descrambler Check	OK	Not OK
CableCARD	CableCARD™ is inserted.	CableCARD™ is removed.
OOB Path	OK(Lock)	Not OK(Unlock)
FDC_SNR	OK(20dB above)	Not OK(20dB under)
Video Signal	Normal Screen	Black Screen (No Picture)

Cable Check	
1. Descrambler Check	OK
2. CableCARD	CableCARD™ is inserted.
3. OOB Path	OK ( Lock )
4. FDC_SNR	OK ( 23 dB )

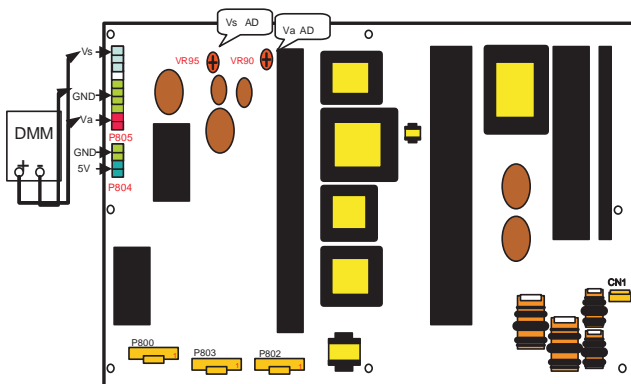
Each PCB Assy must be checked by Check JIG Set before assembly. (Especially, be careful Power PCB Assy which can cause Damage to the PDP Module.)

## 8. POWER PCB Assy Voltage Adjustment (Va, Vs Voltage Adjustment)

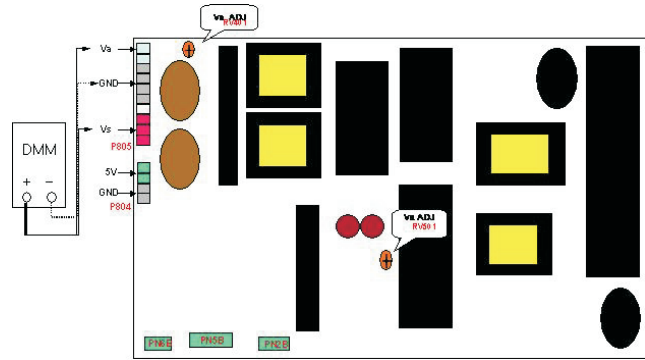
### 8-1. Test Equipment : D.M.M 1EA

### 8-2. Connection Diagram for Measuring

Refer to Fig 1.



<Fig. 1-1> Connection Diagram of Power Adjustment for Measuring (Power Board): 50"



<Fig. 1-2> Connection Diagram of Power Adjustment for Measuring (Power Board): 60"

## 9. EDID(The Extended Display Identification Data)/DDC (Display Data Channel) Download

This is the function that enables "Plug and Play".

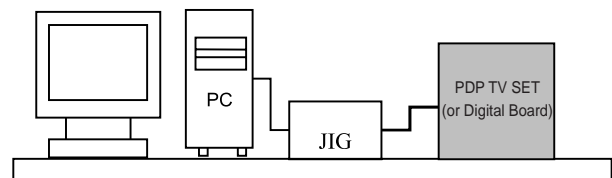
### 9-1. HDMI EDID Data Input

#### (1) Required Test Equipment

- 1) PC, Jig for adjusting DDC. (PC serial to D-sub Connection equipment)
- 2) S/W for writing DDC(EDID data write & read)
- 3) D-Sub cable
- 4) Jig for HDMI Cable connection

#### (2) Preparation for Adjustments & Setting of Device

- 1) Set devices as below and turn on the PC and JIG.
- 2) Open S/W for writing DDC (EDID data write & read). (operated in DOS mode)



<Fig. 2>

# 10. ADC-Set Adjustment

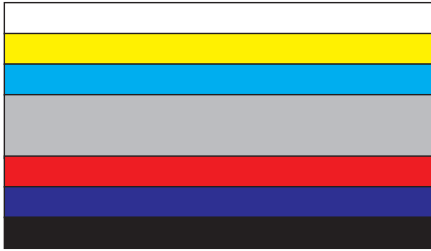
## 10-1. Synopsis

ADC-Set adjustment to set the black level and the Gain to optimum.

## 10-2. Test Equipment

Service R/C, 801GF(802B, 802F, 802R) or MSPG925FA Pattern Generator

(720P The Horizontal 100% Color Bar Pattern output will be possible and the output level will accurately have to be revised with  $0.7\pm 0.1Vp-p$ )



<Fig. 3> Adjustment Pattern : 480i/1080i 60Hz HozTV31 Bar Pattern

## 10-3. Adjustment

### (1) ADC 480i Component1 Adjustment

Check the connection Component1 to the Test Equipment

- (1) Select Component1 as the input with 100% Horizontal Color Bar Pattern(HozTV31Bar) in 480i Mode and select 'Normal' in screen.
- (2) After receiving signal for at least 1 second, press the ADJ Key on the Service R/C to enter the 'Ez - Adjust' and select the '4. ADC 480i Comp1'. Pressing the Enter Key to adjust with automatic movement.
- (3) When the adjustment is over, 'ADC Component1 Success' is displayed.
- (4) If the adjustment has errors, 'ADC Configuration Error' is displayed. And error message('Component Not Connection' or 'Change Format to 480i' or 'Check Pattern of device' ) is displayed for 1 second.

### (2) ADC 1080i Component2/RGB Adjustment

Check the connection Component2, RGB to the Test Equipment

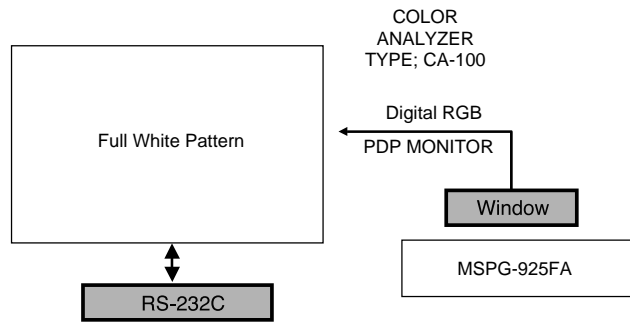
- (1) Select Component2 as the input with 100% Horizontal Color Bar Pattern(HozTV31Bar) in 1080i Mode and select 'Normal' in screen.
- (2) After receiving signal for at least 1 second, press the ADJ Key on the Service R/C to enter the 'Ez - Adjust' and select the '5. ADC 480p Comp2/RGB'. Pressing the Enter Key to adjust with automatic movement.
- (3) When the adjustment is over, 'ADC Component2 Success' is displayed. If the adjustment has errors, 'ADC Configuration Error' is displayed.
- (4) After the Component2 adjustment is over, convert the RGB-DTV Mode and display Pattern.

When the adjustment is over, 'ADC RGB\_DTV Success' is displayed.

- (5) Readjust after confirming the case Pattern or adjustment condition where the adjustment errors. Error message is 'Component Not Connection' or 'Change Format to 480i' or 'Check Pattern of device'.
- (6) After adjustment is complete, exit the adjustment mode by pressing the ADJ KEY.

# 11. Adjustment of White Balance

## 11-1. Connection Diagram of Equipment for Measuring (Automatic Adjustment)



<Fig. 4> Connection Diagram of Automatic Adjustment

### [ RS-232C Command (Automatic Adjustment)

	RS-232C COMMAND			Min	CENTER (DEFAULT)			Max
	[CMD ID DATA]				Cool	Mid	Warm	
	Cool	Mid	Warm					
R Gain	Jg	Ja	Jd	00	184	161	192	255
G Gain	Jh	Jb	Je	00	187	183	159	255
B Gain	Ji	Jc	Jf	00	192	192	95	255
R Cut					64	64	64	127
G Cut					64	64	64	127
B Cut					64	64	64	127

## 11-2. Adjustment of White Balance

- o Operate the Zero-calibration of the CA-210, then attach sensor to PDP module surface when you adjust.
- o Manual adjustment is also possible by the following sequence.

- (1) HEAT RUN at least 30 minutes by pressing the Power only Key on the Service Remote Control and adjust.
- (2) After attaching sensor to center of screen, select 'White-Balance' of 'Ez - Adjust' by pressing the ADJ KEY on the Service R/C. Then enter adjustment mode by pressing the Right KEY (G). This time white pattern is displayed.

- (3) Adjust the Hight Light using R Gain/G Gain(Cool).  
Adjust the Hight Light using G Gain/R Gain(Medium).  
Adjust the Hight Light using G Gain/B Gain(Warm).  
(R Gain: 192, B Gain 192, R-Cut/G-Cut/B-Cut: 64 Fix.)

- (4) Adjust using Volume +/- KEY.
- (5) After adjustment is complete, exit the adjustment mode by pressing the ADJ KEY.

High Level: 216gray

### [Cool]

X; 0.278±0.015 Y; 0.279±0.015  
Color temperature: 11000°K±1000°K  
dUV: -3dUV

### [Medium]

X; 0.287±0.015 Y; 0.289±0.015  
Color temperature: 9300°K±1000°K  
dUV: -3dUV

### [Warm]

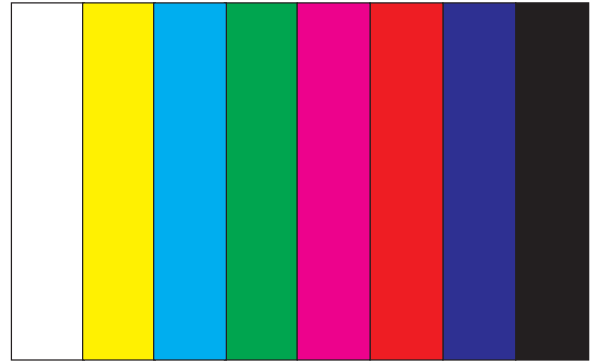
X; 0.314±0.015 Y; 0.318±0.015  
Color temperature: 6500°K±1000°K  
dUV: -3dUV

## 12. Video(uPD)-Set

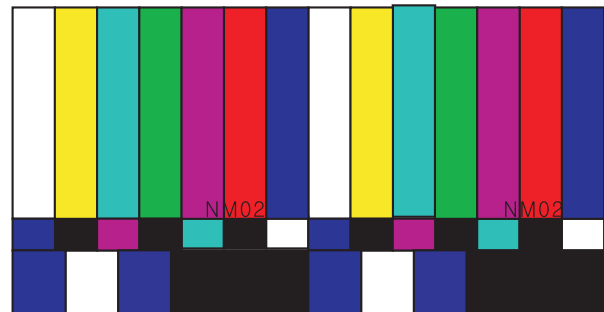
Adjustment for reduce color difference Main/Sub screen of RF or Video signal.

### 12-1. Adjustment

- (1) Connection the Video Signal Generator(Master) to the TV AV Input terminal.  
After input pattern(Model: 201(NTSC-M), Pattern: 32(100% color Bar), pressing the 'Rev' button and appear as below figure



- (2) After receive signal, confirm the signal receiving.  
And Enter the 'EZ-ADJUST' by pressing the ADJ Key on the Service R/C.  
Select '5. Video(UPD)-Set' and enter the adjustment mode by pressing the right key (G).
- (3) When enter the adjustment mode, displayed the TV 2CH SPLIT Screen automatic at picture and appear as below figure.



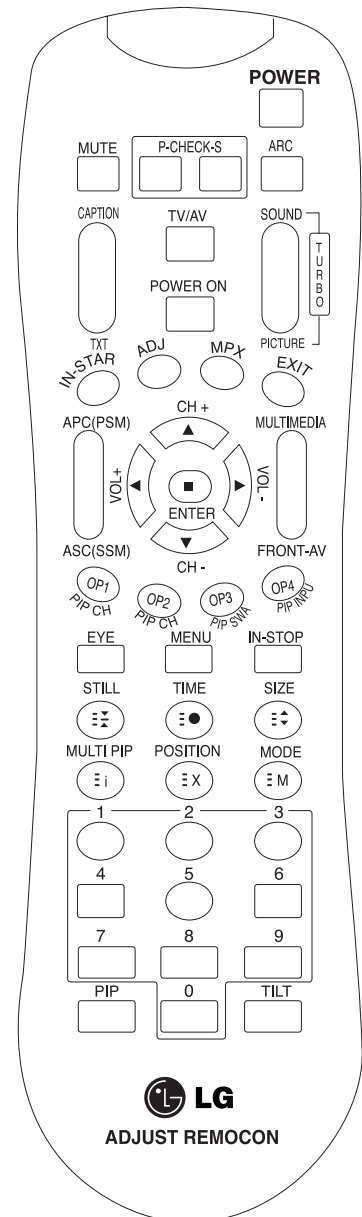
- (4) When the automatic adjustment is over, 'RF Configuration Success' is displayed. If the adjustment has errors, 'Video Configuration Error' is displayed.



- (5) After the RF signal automatic adjustment is over, convert the Video Mode as below figure and adjust with automatic movement the Video Mode.  
When the automatic adjustment is over, 'Video Configuration Success' is displayed. If the adjustment has errors, 'Video Configuration Error' is displayed.

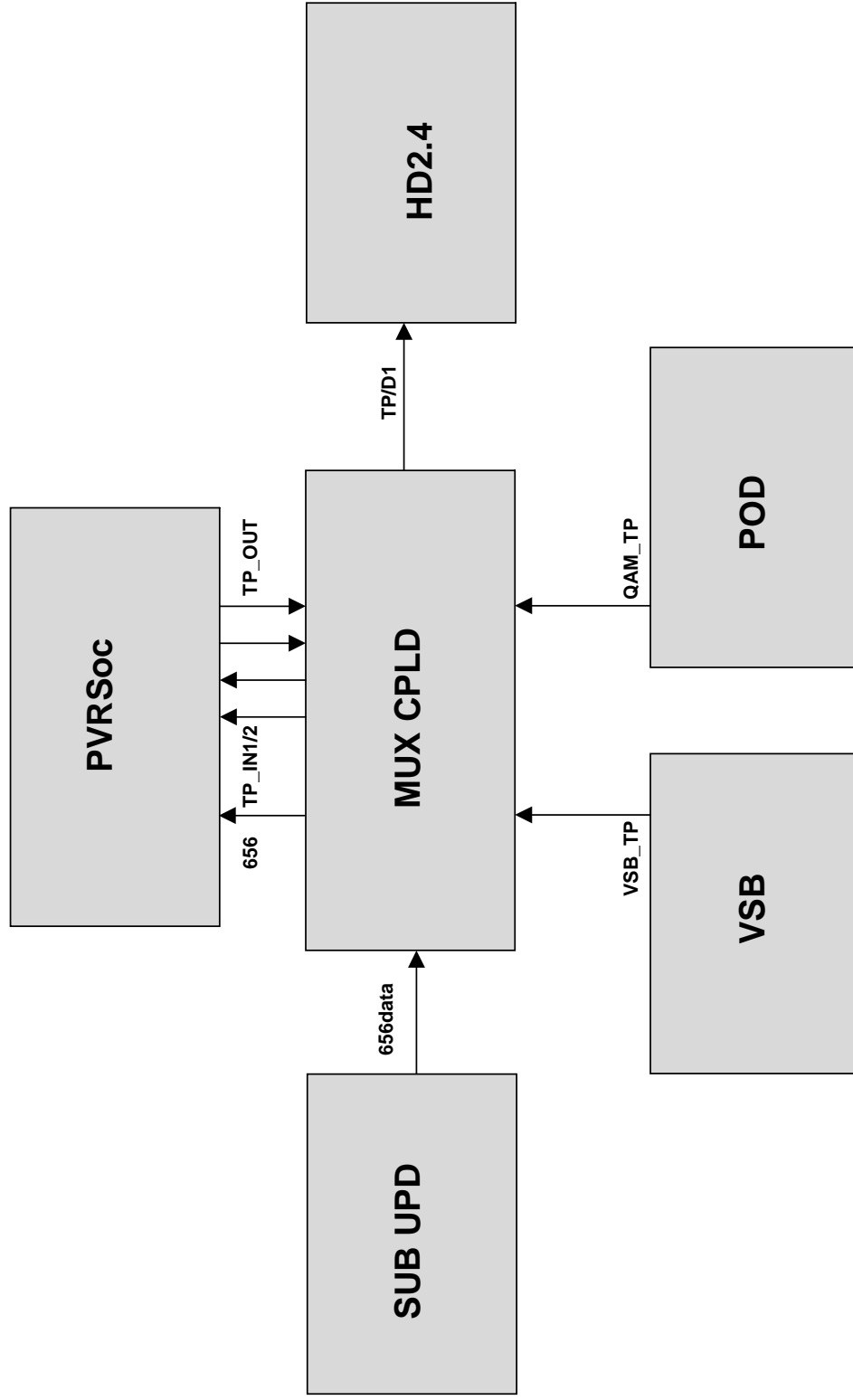
# SVC REMOCON

NO	KEY	FUNTION	REAMARK
1	POWER	To turn the TV on or off	
2	POWER ON	To turn the TV on automatically if the power is supplied to the TV. (Use the POWER key to deactivate): It should be deactivated when delivered.	
3	MUTE	To activate the mute function.	
4	P-CHECK	To check TV screen image easily.	Shortcut keys
5	S-CHECK	To check TV screen sound easily	Shortcut keys
6	ARC	To select size of the main screen (Normal, Spectacle, Wide or Zoom)	Shortcut keys
7	CAPTION	Switch to closed caption broadcasting	
8	TXT	To toggle on/off the teletext mode	
9	TV/AV	To select an external input for the TV screen	
10	TURBO SOUND	To start turbo sound	
11	TURBO PICTURE	To start turbo picture	
12	IN-START	To enter adjustment mode when manufacturing the TV sets. To adjust the screen voltage (automatic): In-start → mute → Adjust → AV(Enter into W/B adjustment mode) W/B adjustment (automatic): After adjusting the screen →W/B adjustment →Exit two times (Adjustment completed)	Use the AV key to enter the screen W/B adjustment mode.
13	ADJ	To enter into the adjustment mode. To adjust horizontal line and sub-brightness.	
14	MPX	To select the multiple sound mode (Mono, Stereo or Foreign language)	
15	EXIT	To release the adjustment mode	
16	APC(PSM)	To easily adjust the screen according to surrounding brightness	
17	ASC(SSM)	To easily adjust sound according to the program type	
18	MULTIMEDIA	To check component input	Shortcut keys
19	FRONT-AV	To check the front AV	Shortcut keys
20	CH ±	To move channel up/down or to select a function displayed on the screen.	
21	VOL ±	To adjust the volume or accurately control a specific function.	
22	ENTER	To set a specific function or complete setting.	
23	PIP CH-(OP1)	To move the channel down in the PIP screen. To use as a red key in the teletext mode	
24	PIP CH+(OP2)	To move the channel in the PIP screen To use as a green key in the teletext mode	
25	PIP SWAP(OP3)	To switch between the main and sub screens To use as a yellow key in the teletext mode	
26	PIP INPUT(OP4)	To select the input status in the PIP screen To use as a blue key in the teletext mode	
27	EYE	To set a function that will automatically adjust screen status to match the surrounding brightness so natural color can be displayed.	
28	MENU	To select the functions such as video, voice, function or channel.	
29	IN-STOP	To set the delivery condition status after manufacturing the TV set.	
30	STILL	To halt the main screen in the normal mode, or the sub screen at the PIP screen. Used as a hold key in the teletext mode (Page updating is stopped.)	
31	TIME	Displays the teletext time in the normal mode Enables to select the sub code in the teletext mode	
32	SIZE	Used as the size key in the PIP screen in the normal mode Used as the size key in the teletext mode	
33	MULTI PIP	Used as the index key in the teletext mode (Top index will be displayed if it is the top text.)	
34	POSITION	To select the position of the PIP screen in the normal mode Used as the update key in the teletext mode (Text will be displayed if the current page is updated.)	
35	MODE	Used as Mode in the teletext mode	
36	PIP	To select the simultaneous screen	
37	TILT	To adjust screen tilt	Shortcut keys
38	0~9	To manually select the channel.	





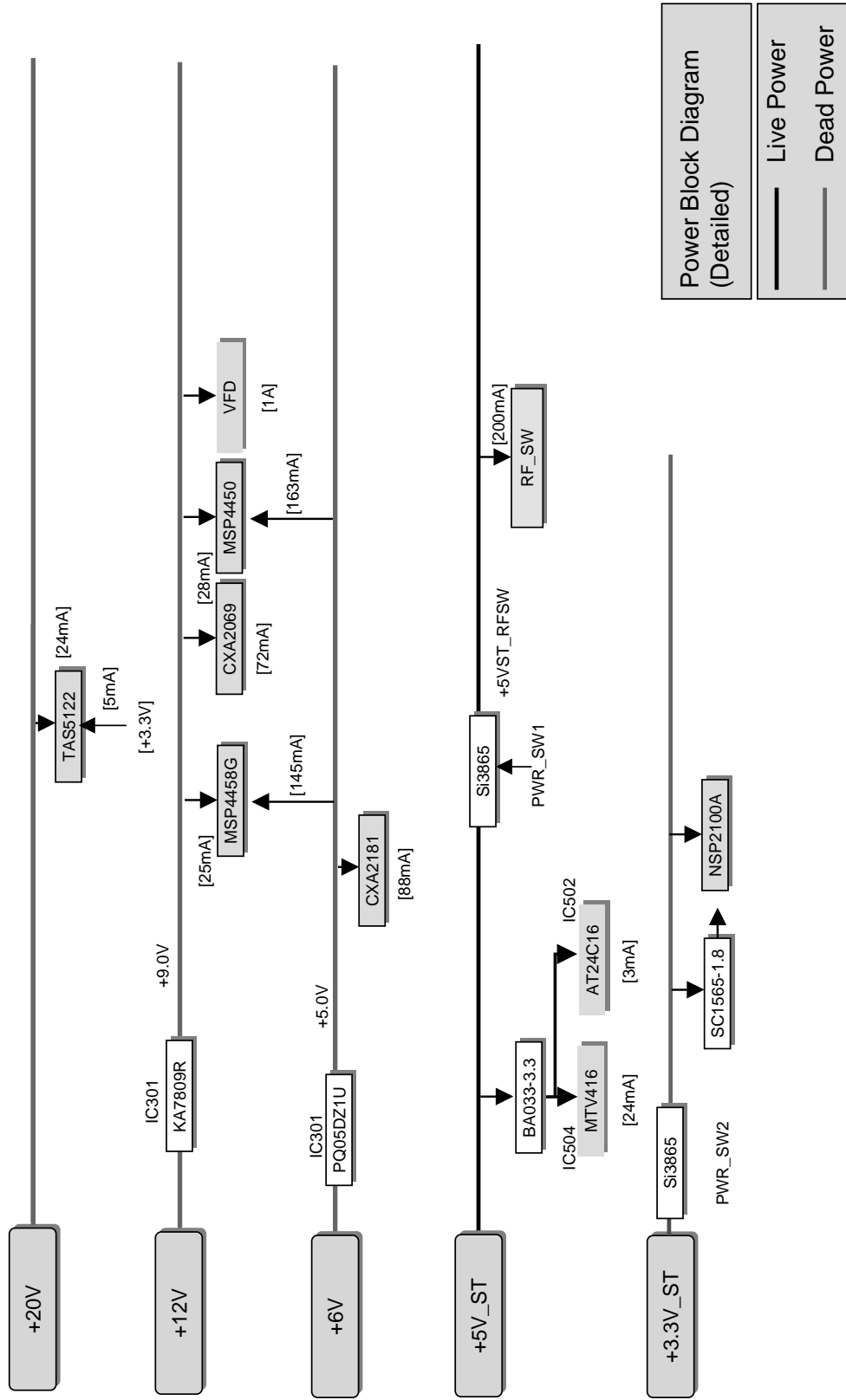
• Digital B/D MUX Interface



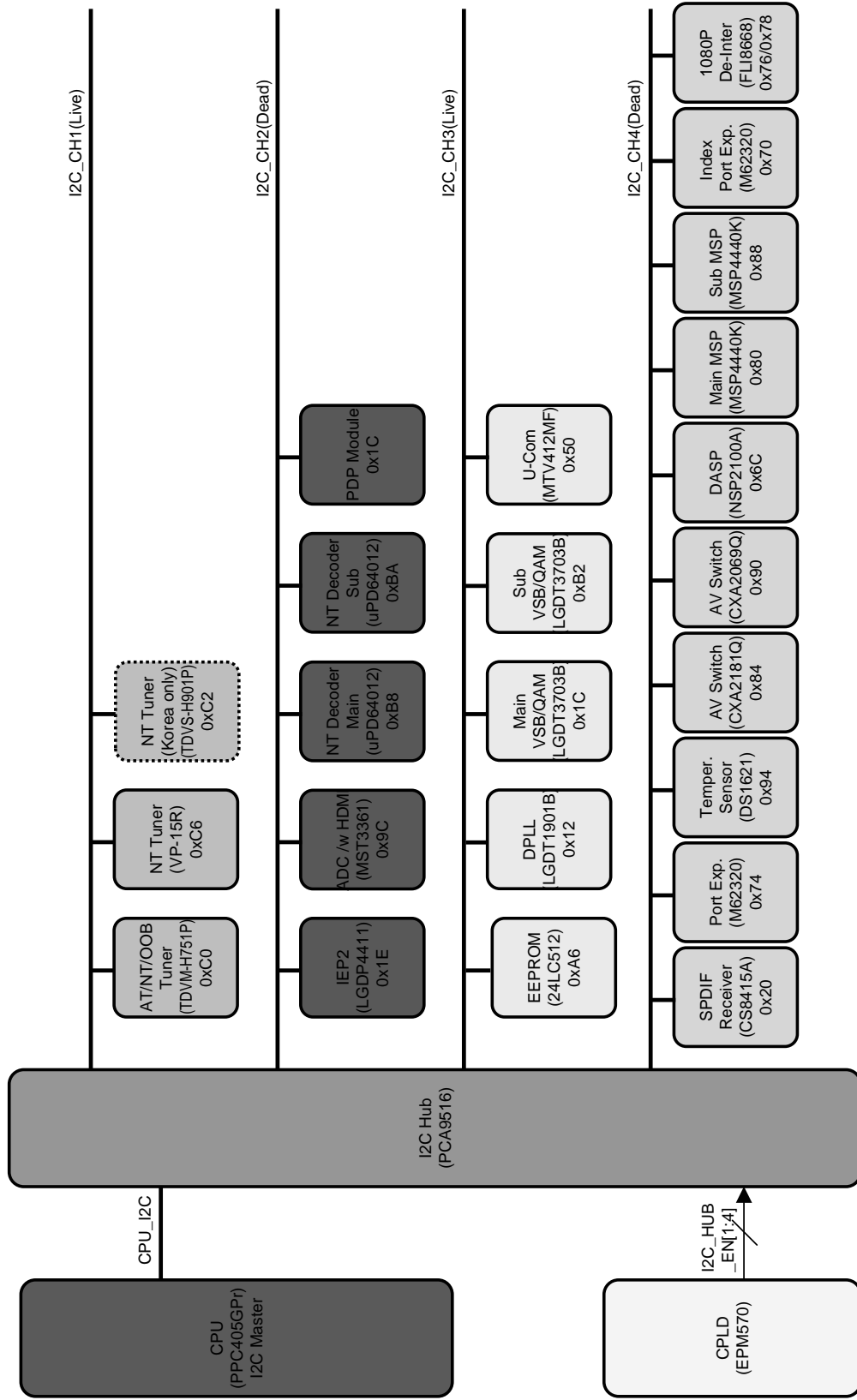




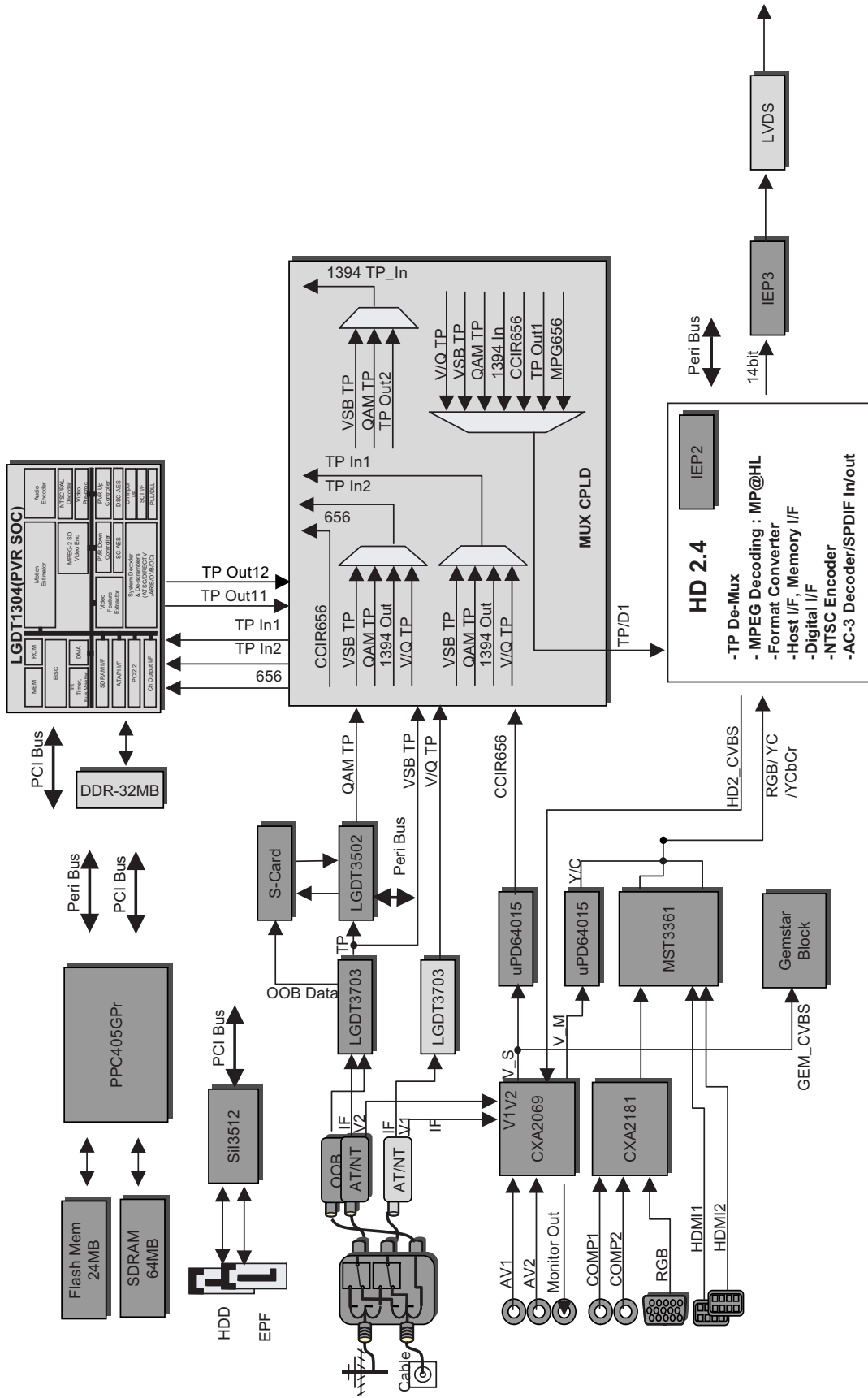
• Digital B/D Power Block



• DCR DVR I2C MAP

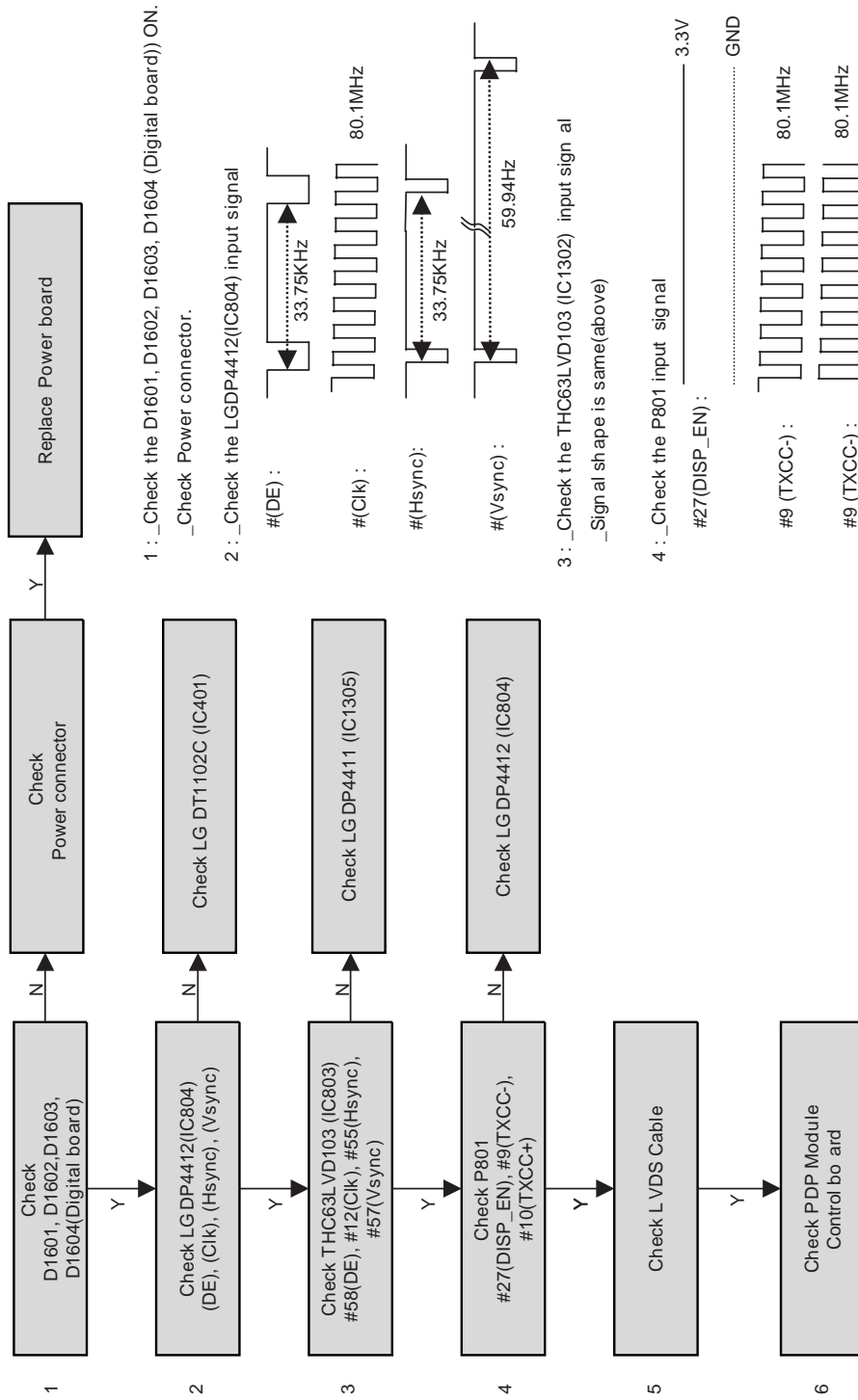


• DCR DVR VIDEO PATH

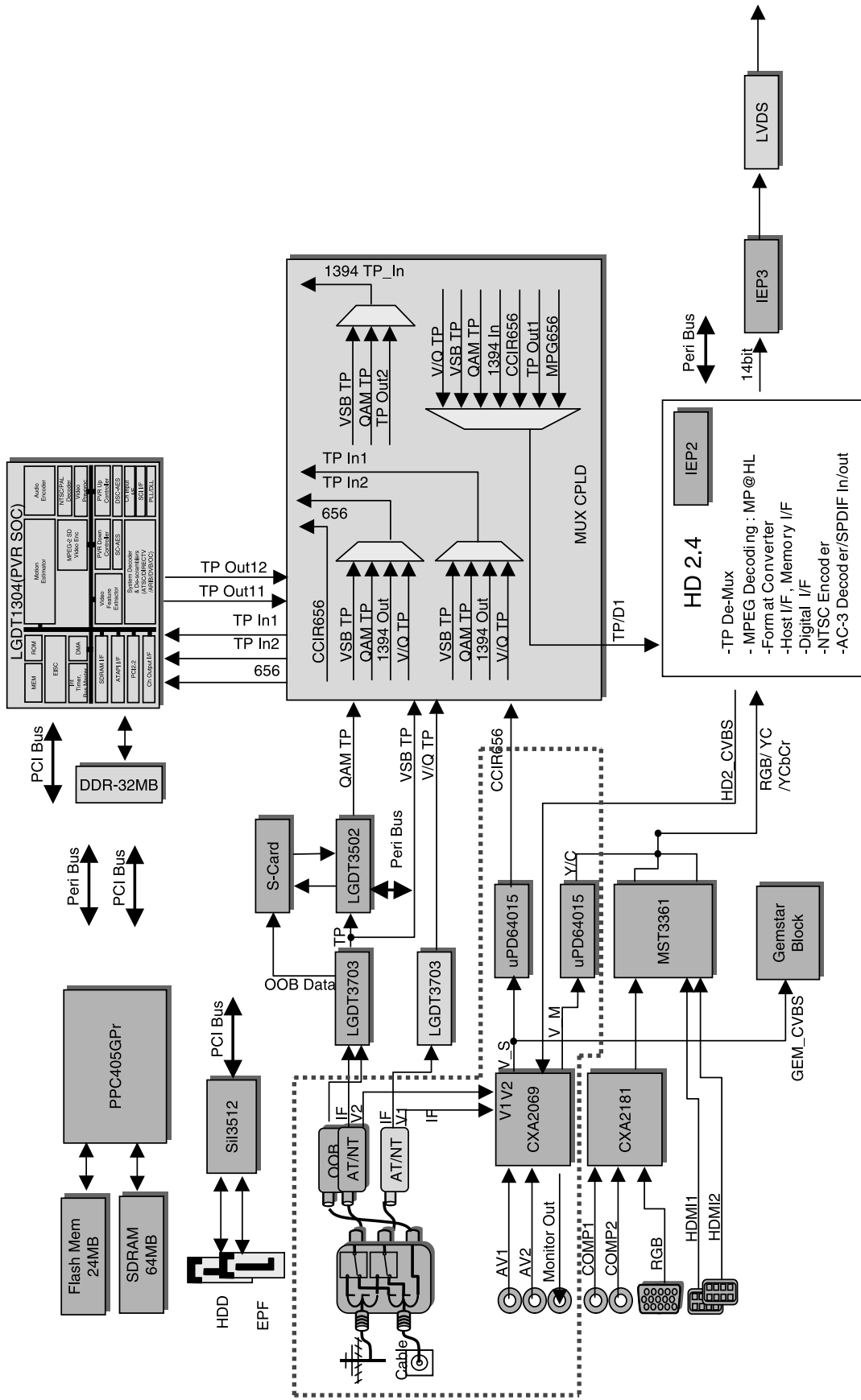




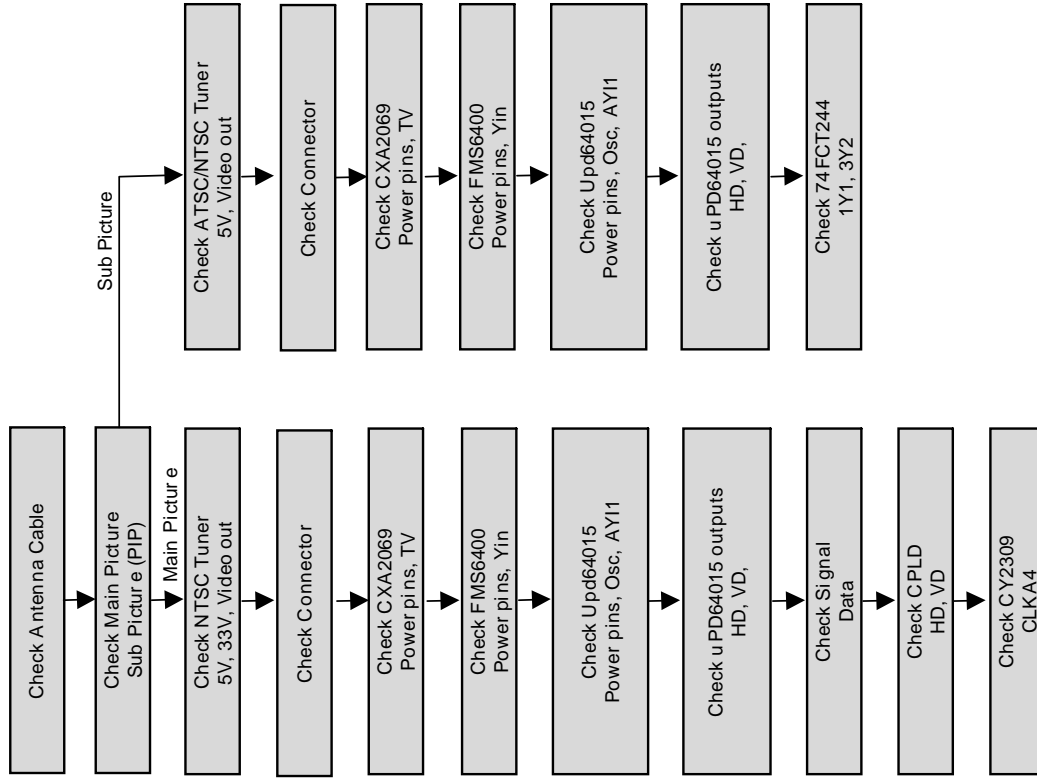
• DCR NO OSD



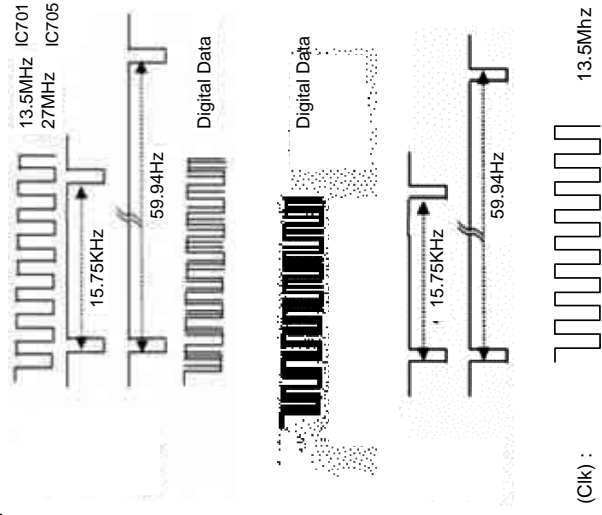
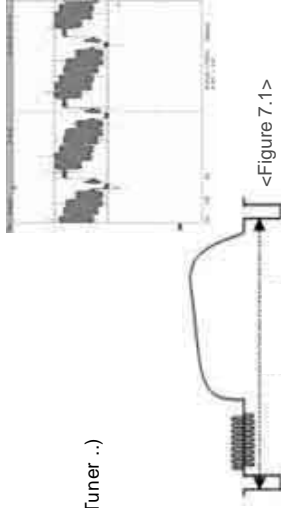
• DCR DVR RF/AV MODE



**• DCR DVR RF/AV MODE**



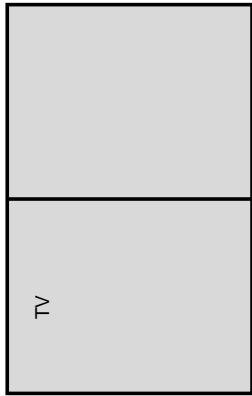
- 1 : \_ Check Antenna cable (RF Switch, Tuner ...)
- 2 : \_ Execute DW or PIP
- 3 : \_ Check Tuners Vcc and Video out
- 4 : \_ Check CXA2069 power, input signal \_TV, V5 signal shape looks like figure7.1
- 5 : \_ Check FMS6400 power, input signal \_Yin signal shape looks like figure7.1
- 6 : \_ Check uPD64001 power, input signal \_AY11 signal shape looks like figure7.1
- 7 : \_ Check uPD64011 output signal



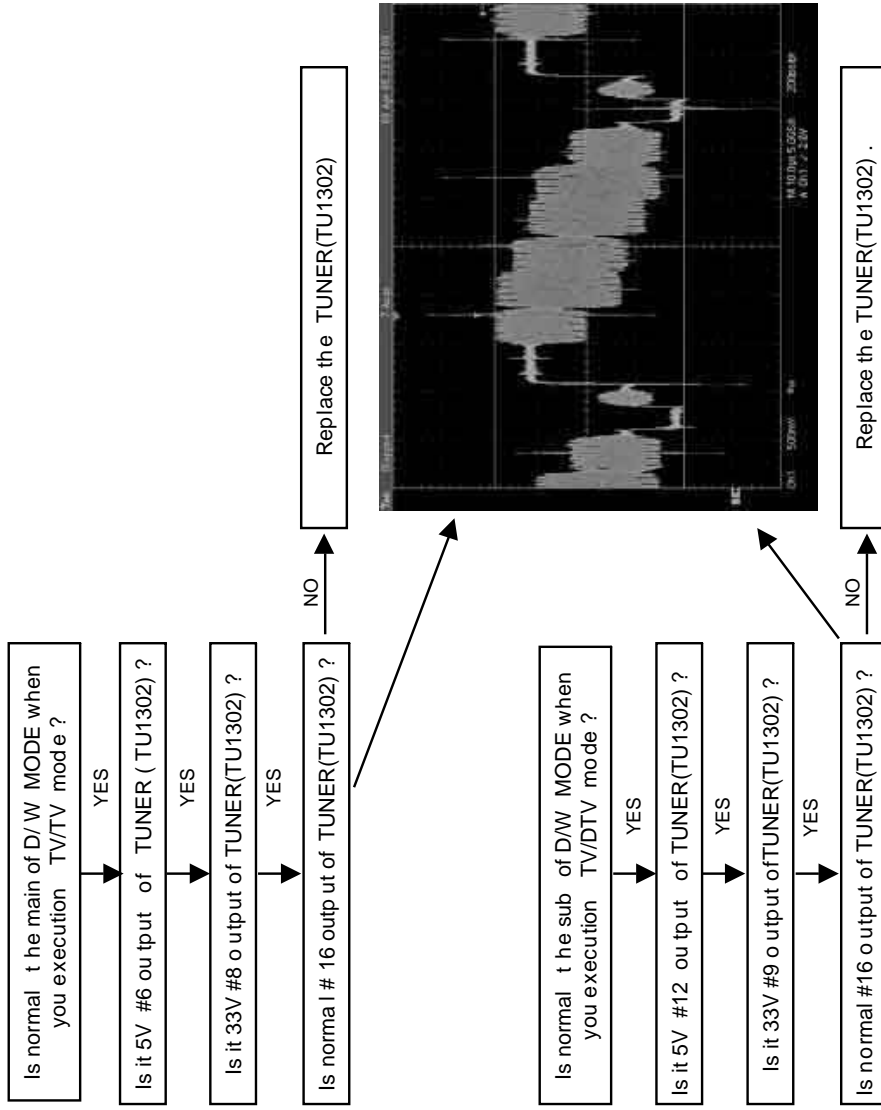
- 8 : \_ Check the signal
- 9 : \_ Check the signal
- 10 : \_ Check the signal (Clk) : 13.5Mhz

• DCR RF MODE(Detailed)

- 1. Check follow
- 1-1. Execution PIP or D/W mode



(TV/CATV mode does not display)





• **DCR DVR RF MODE**

1. Check follow

1-2. When it is normal output of the TUNER

Is normal the main of D/W MODE?

Is it 9V #42 of CXA2069(IC101) ?

Is normal #56 output of CXA2069(IC101)?  
FIG1

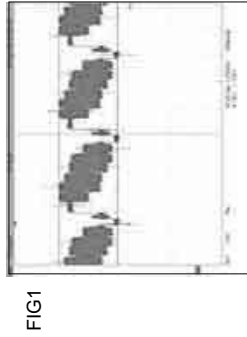


FIG1

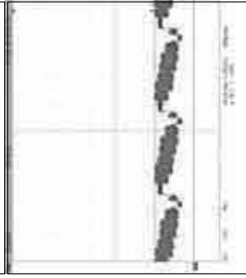


FIG2

Is normal the sub of DW MODE?

Is it 9V #42 of CXA2069(IC101) ?

Is normal #44 output of CXA2069(IC101)?  
FIG1

**(TV/CATV mode does not display)**

Is normally connected P101 to P1612 ?  
Flat cable

Is normal output of FMS6400(IC702) ?  
FIG2

Is normal UPD64015 Power(1.5V,3.3V)

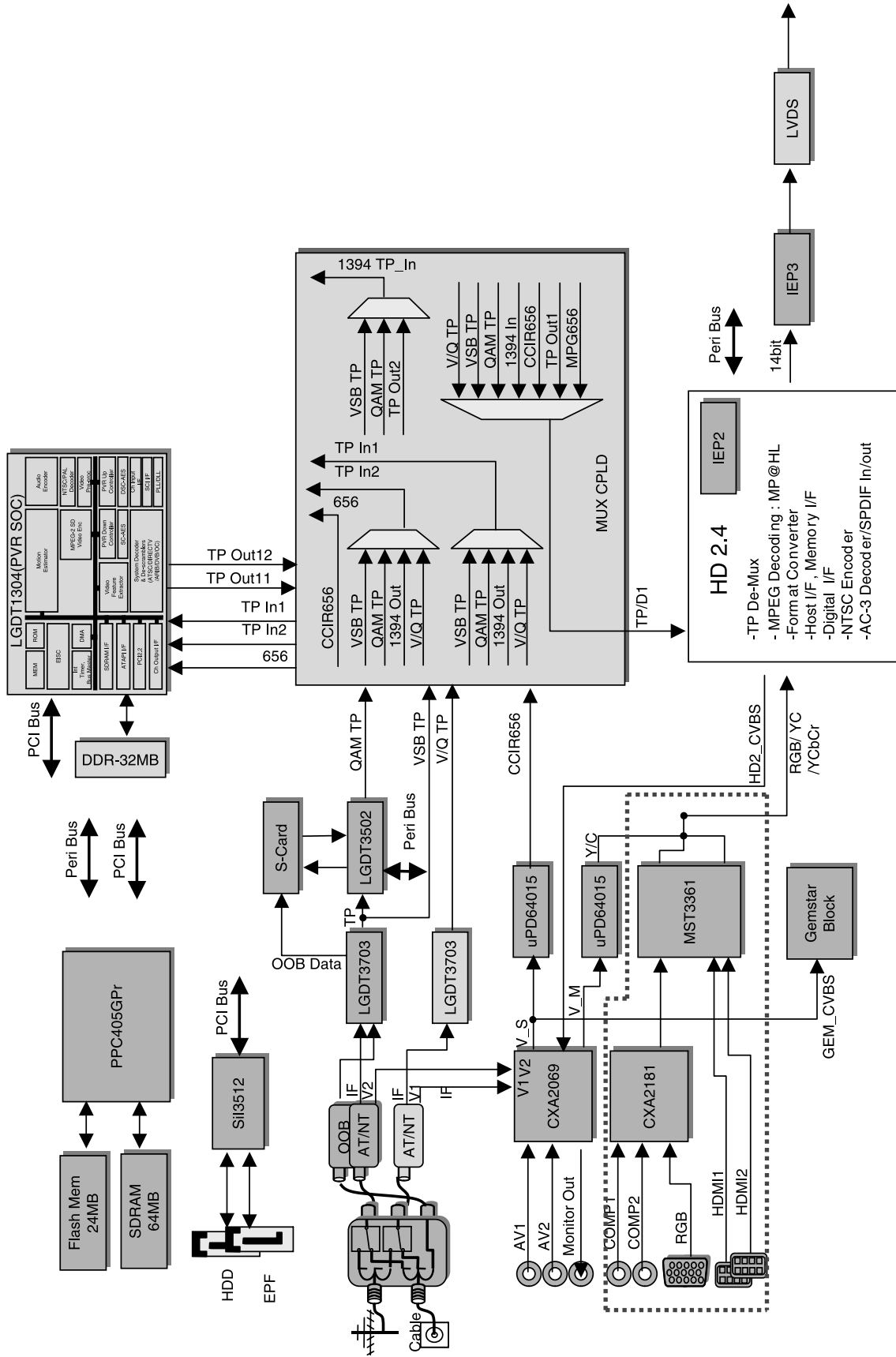
Is normal output of UPD64015(IC701)?  
Digital Output Y(10bit),C(10bit),H/V,FID

Is normal output of FMS6400(IC704)?  
FIG2

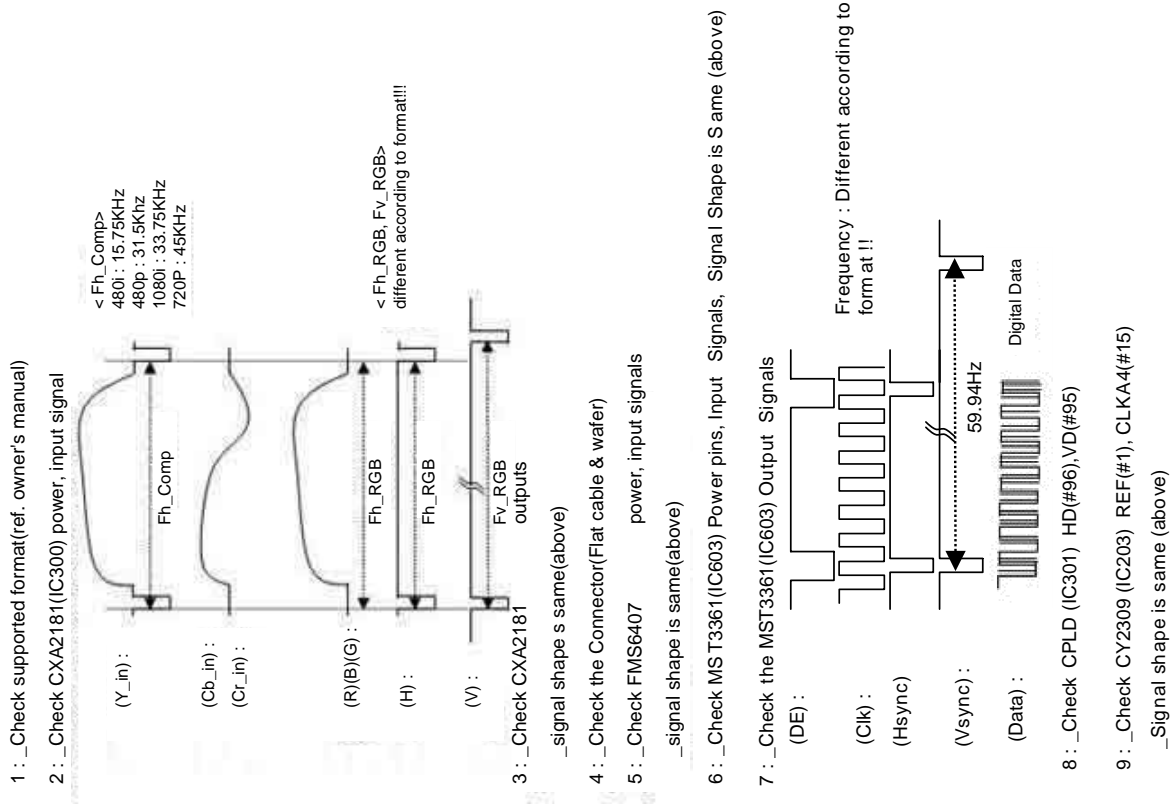
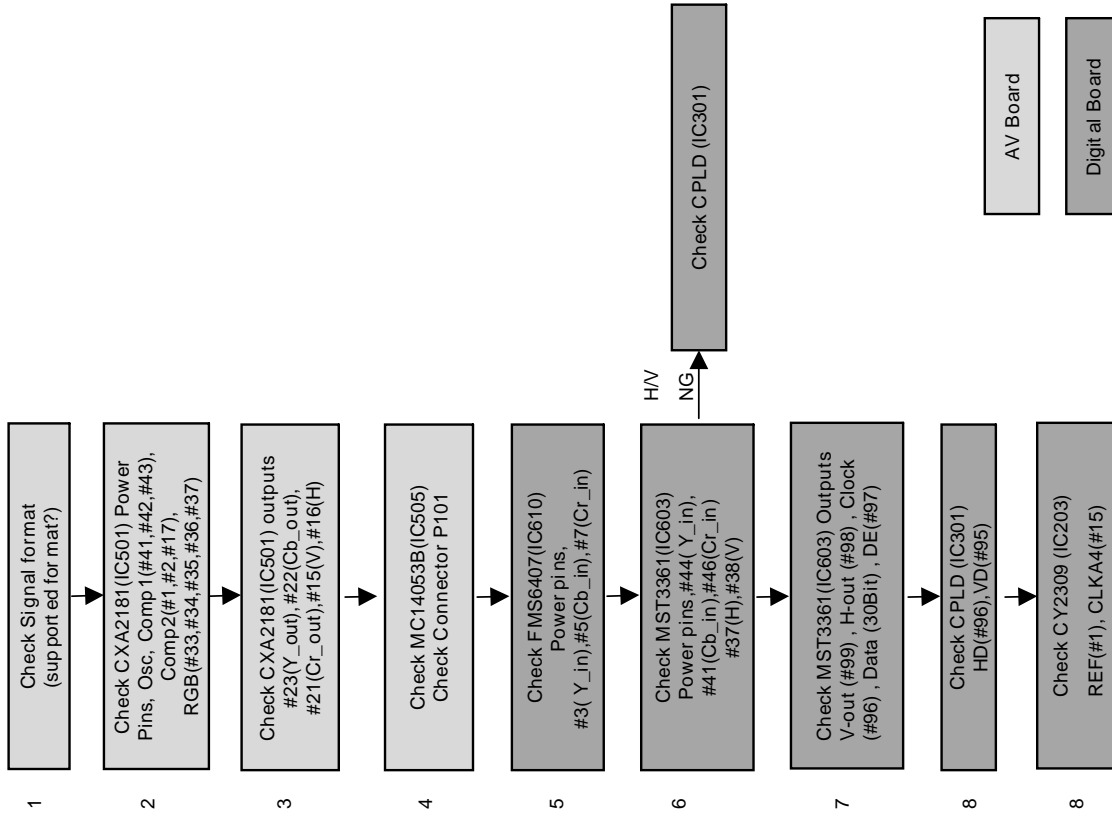
Is normal UPD64015 Power(1.5V,3.3V)

Is normal output of UPD64015(IC701)?  
Digital Output Y(10bit),C(10bit),H/V,FID

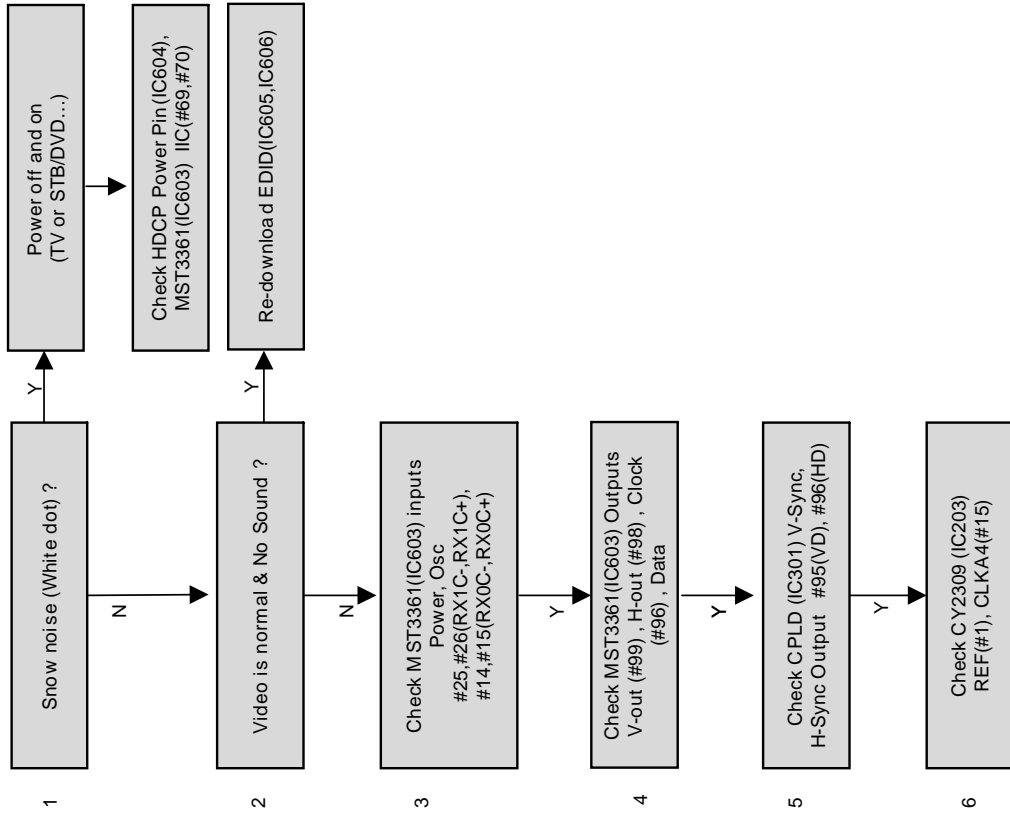
• Component/RGB/HDMI/DVI



## • DCR COMP Component/RGB



## • DCR DVR HDMI/DVI



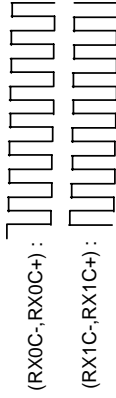
1 : \_Check HDCP Error

\_Retry power off and on (TV or STB/DVD...)  
 \_Check MST3361 (IC603) HDCP IIC line (#69, #70)



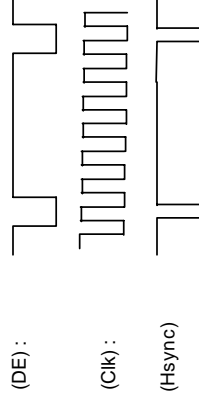
2 : \_Check EDID Download

3 : \_MST3361 (IC603) inputs

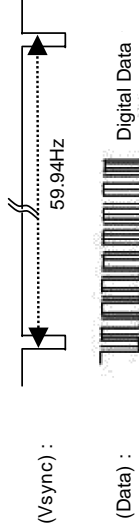


Frequency : Different according to form at !!

4 : \_Check MST3361 (IC603) Outputs



Frequency : Different according to form at !!



5 : \_Check CPLD (IC301) V-Sync, H-Sync Output #95 (VD), #96 (HD)

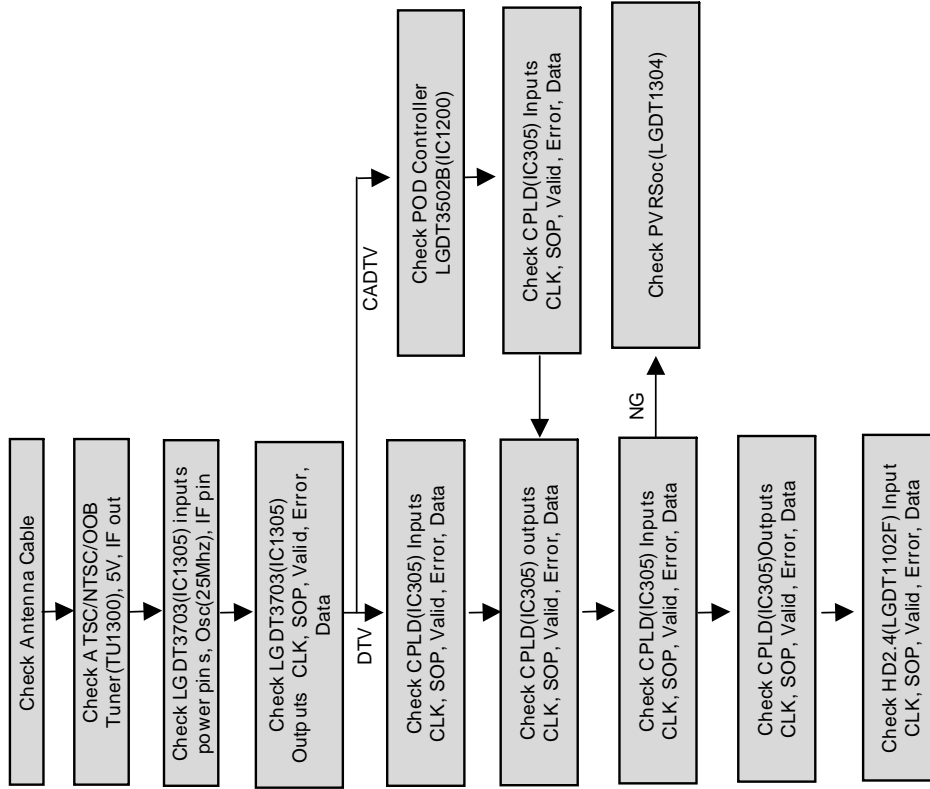
\_Signal shape is same (above)

6 : \_Check CY2309 (IC203) REF (#1), CLKA4 (#15)

\_Signal shape is same (above)



## • DCR DVR DTV/CADTV



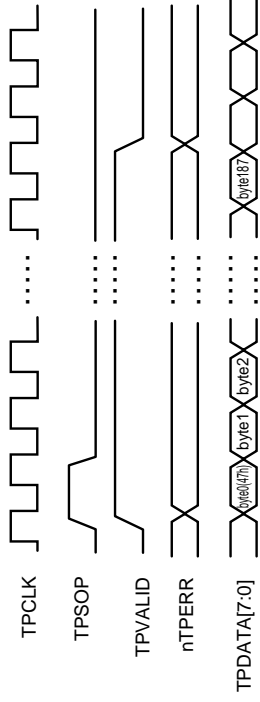
1 : \_ Check Antenna cable(RF switch, Tuners...)

2 : \_ Check Tuners Vcc and IF out



3 : \_ Check LGDT3703(IC1305) inputs power pins, Osc(25Mhz), IF pin Signal

4 : \_ Check LGDT3703(IC1305) Outputs



5 : \_ In case of DTV Check CPLD(IC305) Inputs (CLK, SOP, Valid, Error, Data)

\_ Signal Shape is same (above)

6 : \_ In case of CADTV Check POD Controller

\_ Signal Shape is same (above)

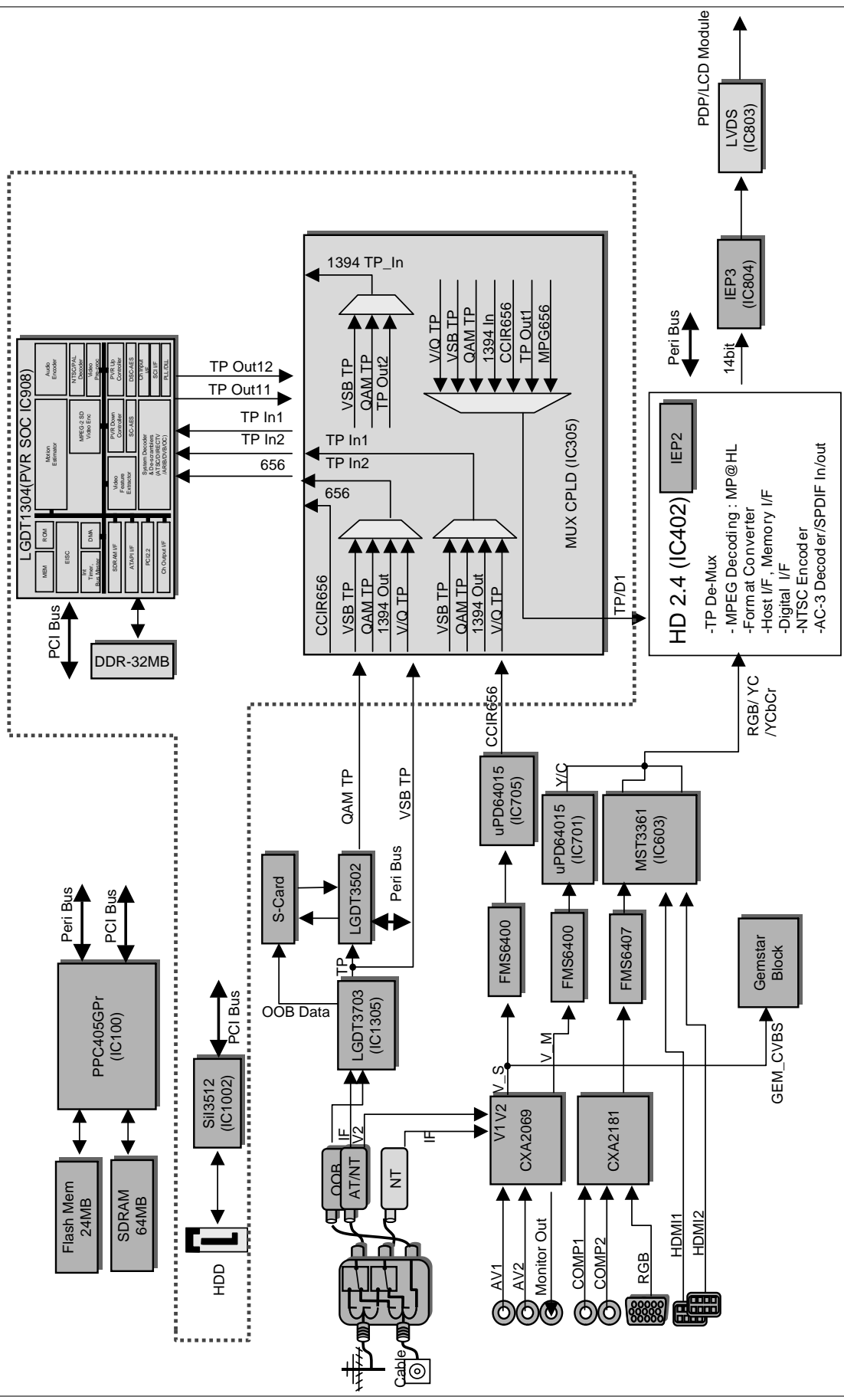
7 : \_ Check CPLD(IC305) Inputs (CLK, SOP, Valid, Error, Data)

8 : \_ Check PVR Soc(LGDT1304)

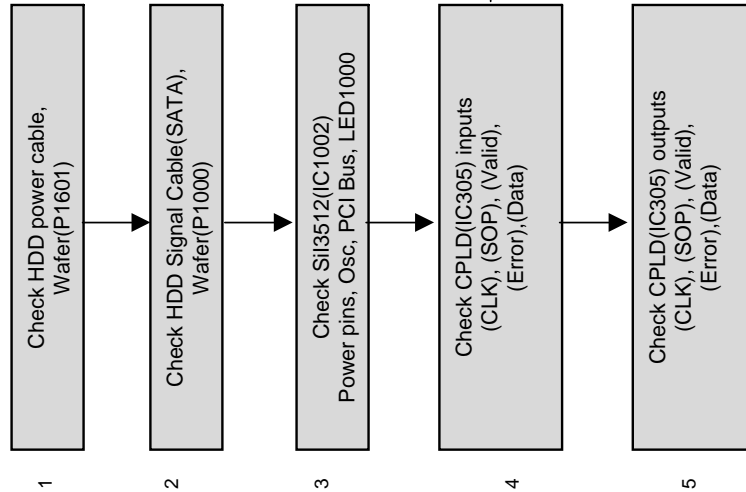
9 : \_ Check CPLD(IC305)Outputs (CLK, SOP, Valid, Error, Data)

10 : \_ Check HD2.4(LGDT1102F) Input (CLK, SOP, Valid, Error, Data)

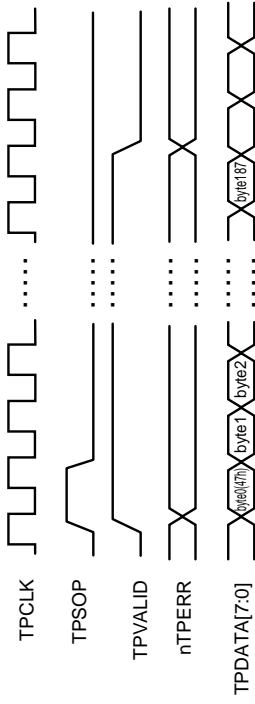
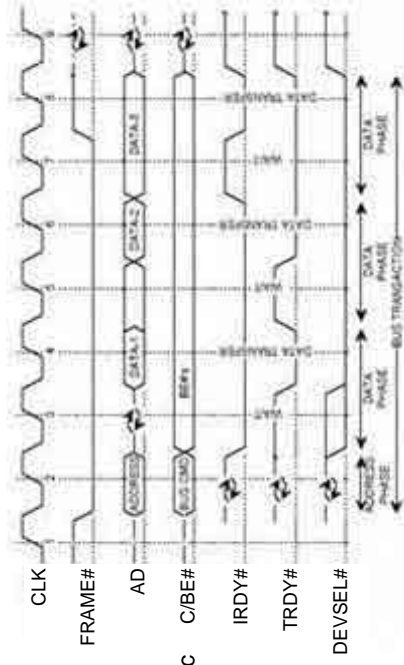
• HDD PLAY BACK



## • HDD PLAY BACK



1. Check HDD Power cable. #1 : 5V, #4:12V
2. Check HDD Signal cable (SATA)
3. Check Sil3512(IC1002) inputs: Power pins, Osc
  - Check LED1000 blinking
  - Check PCI bus

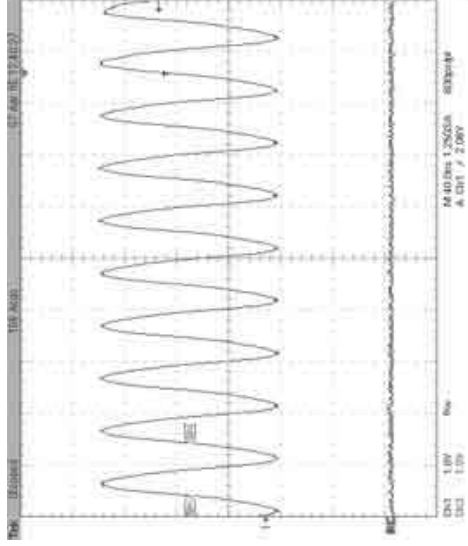
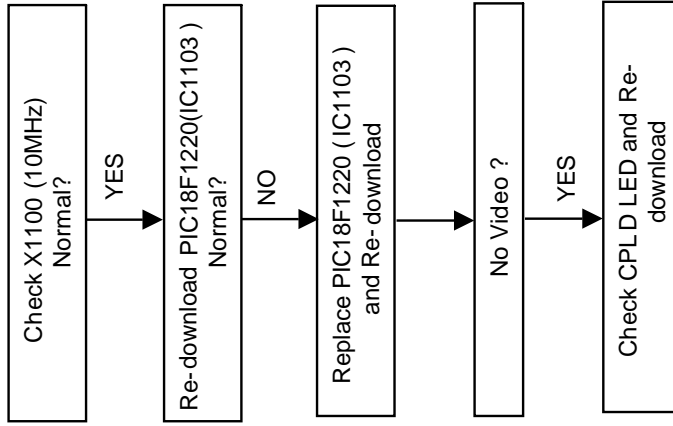


4. Check CPLD(IC305) inputs:  
(Clock, Sop, Valid, Error, Data : 8bit)  
PVRSoC Memory Test :  
(Hardware test Menu)
5. Check CPLD(IC305) outputs:  
(Clock, Sop, Valid, Error, Data : 8bit)



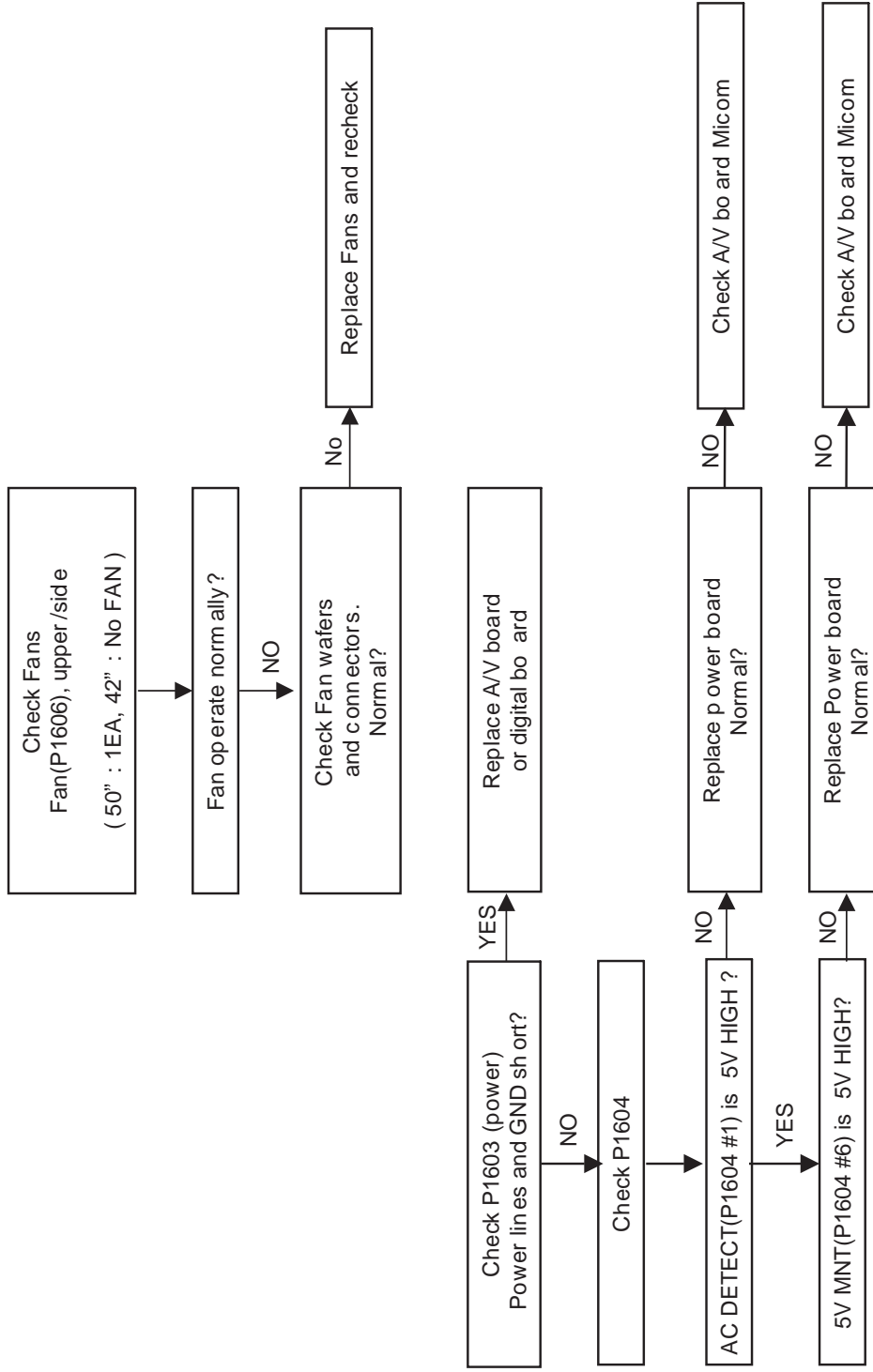
• Power On-Off repetition(Automatically)

Symptom : TV set powers on ( LED :White ) and off ( LED :Red ) repeatedly of its elf. ( No video )



• **Protect Mode**

Symptom : When TV set powers on, LED is blinking in seconds. And power off(LED is red)



# CableCARDTM TROUBLESHOOTING GUIDE

## CableCARD Definition

1. CableCARD device is A PCMCIA card distributed by cable operators and inserted into a DCR TV( Host) to enable premium services, also called "Card" and "Point of Deployment(POD) module". It provides authorization, CA( Conditional Access) decryption and CP(Copy Protection) encryption functions for the consumer's DCR TV.

## Troubleshooting in the Home for CableCARD Installers

2. It is recommended that installers bring along a couple of CableCARDS for troubleshooting. This will help eliminate the CableCARD as a possible problem during the installation.
3. Before installing the CableCARD, installers should check that the Digital Cable Ready (DCR), also referred to as a HOST, is functional without a CableCARD.
  - a. Verify Host (TV) Operation: The installer can perform this by connecting the RF cable to the correct cable input of the DCR (there may be connections for a terrestrial antenna) and verifying good picture quality. The DCR will display all non- encrypted analog and digital content. (The DCR must not receive RF signal via a STB or accessory RF modulator.) This will eliminate basic TV circuitry as a possible problem.
  - b. Check that the CableCARD is inserted properly. When inserting cable card push carefully but firmly until you feel the card click into place.
  - c. Verify RF from Cable System Tap: The installer can also connect a cable set top box to confirm reception of encrypted digital services. This will help eliminate the RF signal as a possible problem.
4. If the first CableCARD installed does not result in a User Interface screen (also referred to as MMI screen) within 5 - 7 minutes, try unplugging the AC Power cord of the DCR and reconnecting it (to reset the DCR) then try to await coming out of the user Interface screen again. If this is still unsuccessful, try another CableCARD.
  - a. To eliminate the possibility of a damaged CableCARD or DCR device, the technician should look closely at the CableCARD device to ensure that none of the pinholes are blocked or clogged.
  - b. Check Host Interface. Using a flashlight, the technician should check the CableCARD slot on the DCR TV to ensure that there are no bent pins.
5. If the second CableCARD is successful, make sure the CSR or Dispatcher knows the new MAC ID and CableCARD ID to complete the installation. The original card should be marked accordingly and returned for repair.
6. Check the CableCARD menu options.

If the second CableCARD fails to bring up the User Interface screen, the technician should refer to the diagnostic menus on the DCR for further troubleshooting. The technician can pull up the User Interface screen manually through the menu choices. the customer should provide the User Manual, so the technician can easily navigate through the DCR TV menu screens. Below table describes how to navigate the CableCARD menu. This list of selectable CableCARD options will vary, depending on your cable service provider or CableCARD manufacturer. Also, below table shows how to access diagnostic screens for the DCR TV. Many of these screens are not described in the User Manual.

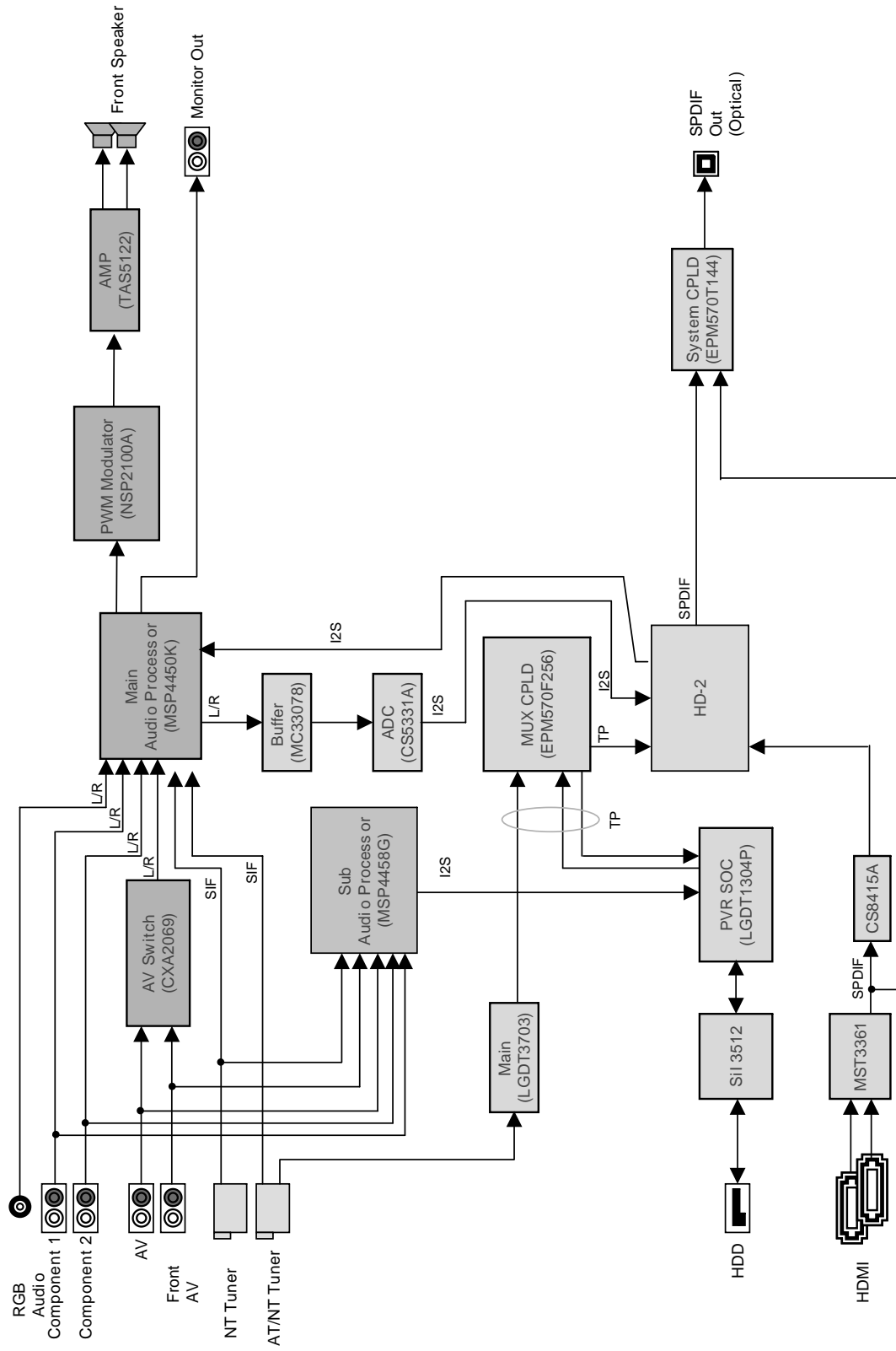
CableCARD Mfg	Diagnostic Type	1st key	2nd key	3rd key
ALL	CableCARD main menu	MENU	Use cursor to select CABLE icon then press ENTER	N/A
Motorola	CableCARD pairing status	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select CableCARD. Pairing option, press ENTER
Motorola	Network status	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select Network. Setup option, press ENTER
Motorola	CableCARD status	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select CableCard. Status option, press ENTER
Mororola	CA status	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select Conditional. Access option, press ENTER
NDS	CableCARD pairing status	MENU	Use cursor to select CABLE icon then press ENTER	Use Cursor to select CableCARD. Pairing option, press ENTER
NDS	Network status	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select Network Setup option, press ENTER
NDS	CA status	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select Conditional Access option, press ENTER
SA	CableCard Diagnostics	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select SA125 125CableCARD Diag option, press ENTER
SA	CableCard pairing status	MENU	Use cursor to select CABLE icon then press ENTER	USE CURSOR TO SELECT SA CableCARD HOST ID optio, press ENTER
SA	CableCARD Copy protection information	MENU	Use cursor to select CABLE icon then press ENTER	Use cursor to select SA CableCARD CP Screen option, press ENTER

7. If installer is still having a problem, the installer should report the problem to the MSO headend dispatcher for troubleshooting. If the cable company dispatcher (head end personnel) has completely checked their channel set-up, confirmed the accounting/ billing system to setup is correct, and has confirmed normal channel map with a or more other DCR TVs at the MSO headend, then go on to the next step.
8. If the installer determines that the DCR device is the problem (unit failed either item 2a or 3b above) and can go no further in correcting the problem, and if the installer determines that the host- pod pairing screen cannot be displayed with multiple CableCARDs, he or she should follow the directions given by the CE manufacturer in informing the customer of their options. usually involving either a return of the DCR device to the retail outlet from which it was purchased or The customer should start by contacting the CE manufacturer directly for assistance and/ or repair information.
- In many cases, if the HOST is under warranty, the repair will be done at the customer's home. Contact Point : Jong Gyu Kim (jongkim@ lge. com, 1-847- 941- 8828) Vice-President, Zenith R& D center. Jong Hoon Lee (jonghoon. lee@ zenith. com, 1- 847- 941- 8774) Engineer, Zenith R& D center.
9. If using a STB will allow the customer to receive services on the damaged DCR device, the installer can leave a box in the customer's home until the customer resolves the issue with the CE manufacturer.
10. If the technician is able to install the CableCARD device and access the User Interface screen (also referred to as MMI screen), and has relayed the information to the dispatcher, but is still not receiving encrypted programming, this programming may be protected through the use of copy protection directive. Ensure that the information passed to dispatch is correct. Relay again the Host ID, CableCARD ID and Data ID (Motorola only). Dispatch will send a hit to the CableCARD once the information is checked and verified. The CableCARD must be paired to the Host before copy protected programming can be displayed. Note that it may take several minutes from the time dispatch sends the authorization before it reaches the DCR device. The MMI screens should be checked to verify if the authorization has been received. For SA systems the host- pod pairing screen should say "Authorization Received." For Motorola the Conditional Access MMI State parameter should say "Subscribed".
- (These should be verified by POD Manufacturers or cable companies.)
11. To confirm the Headend Validation for displaying the encrypted channel, the technician should check the CableCARD menu. For SA systems, the CableCARD Copy Protection Information menu should say "Authorization Received". For Motorola systems, the Conditional Access menu should say "Valid xx (2 digit)".
12. If encrypted programming is still not displayed, installer should check the status of followings.
- Cable Channel List : Ready
  - CableCard : Inserted
  - FDC status (OOB Status) : Lock
  - SNR( Signal to Noise Ratio) : higher than 12 dB is normal range.
- Below table describes how to check above status in LG DCR TV.

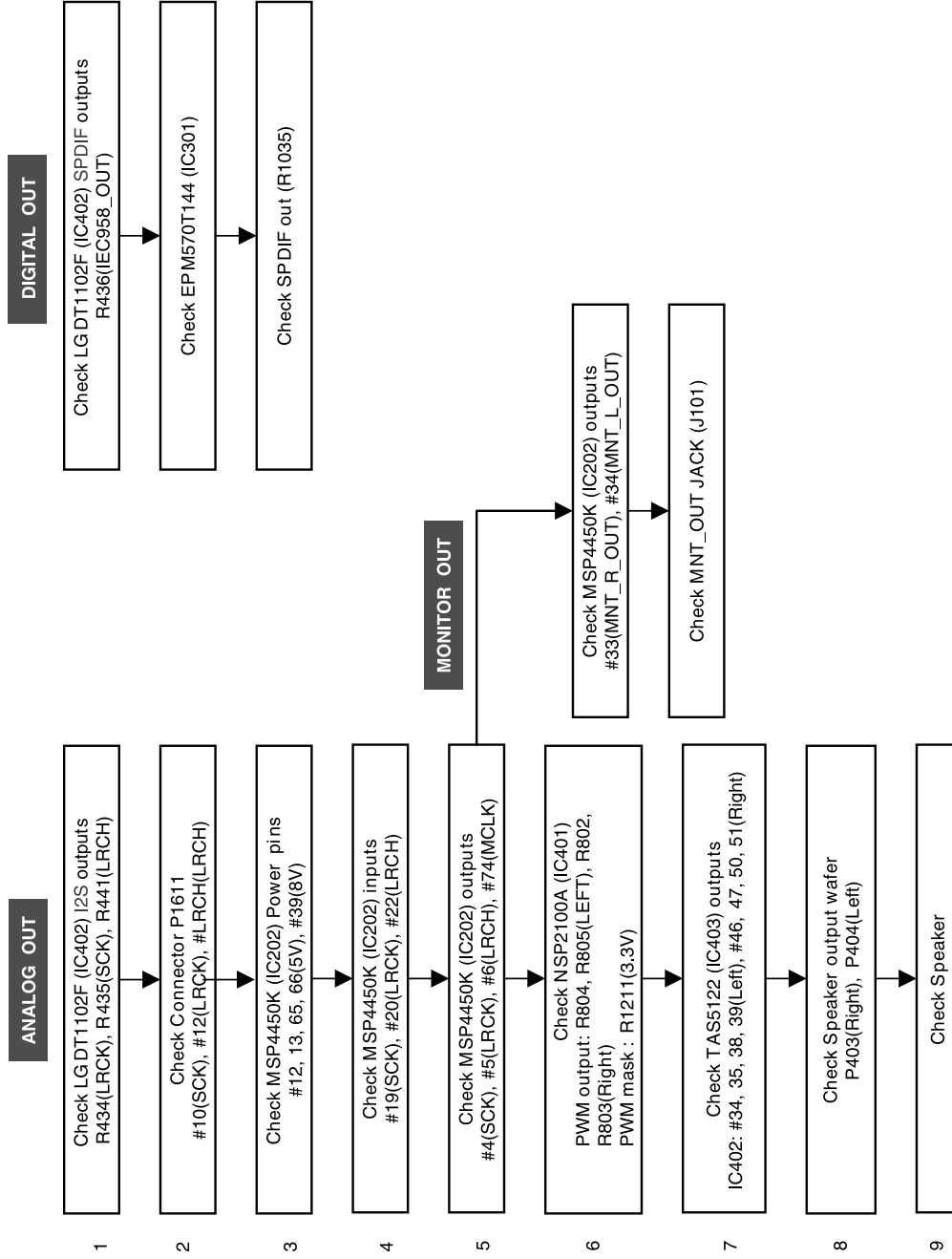
Cabl eCARD Mfg	Diagnostic Type	1st key	2nd key	3rd key	4th key	5th Key
ALL - works with any	Host D i agno st i cs (In Band Si gnal Status, OOB Signal Status, etc)	MENU	Use cursor to select CABLE icon	Press button 0 (zero)	Press button 0 (zero)	Press button 0 (zero)

# AUDIO TROUBLESHOOTING & BLOCK DIAGRAM

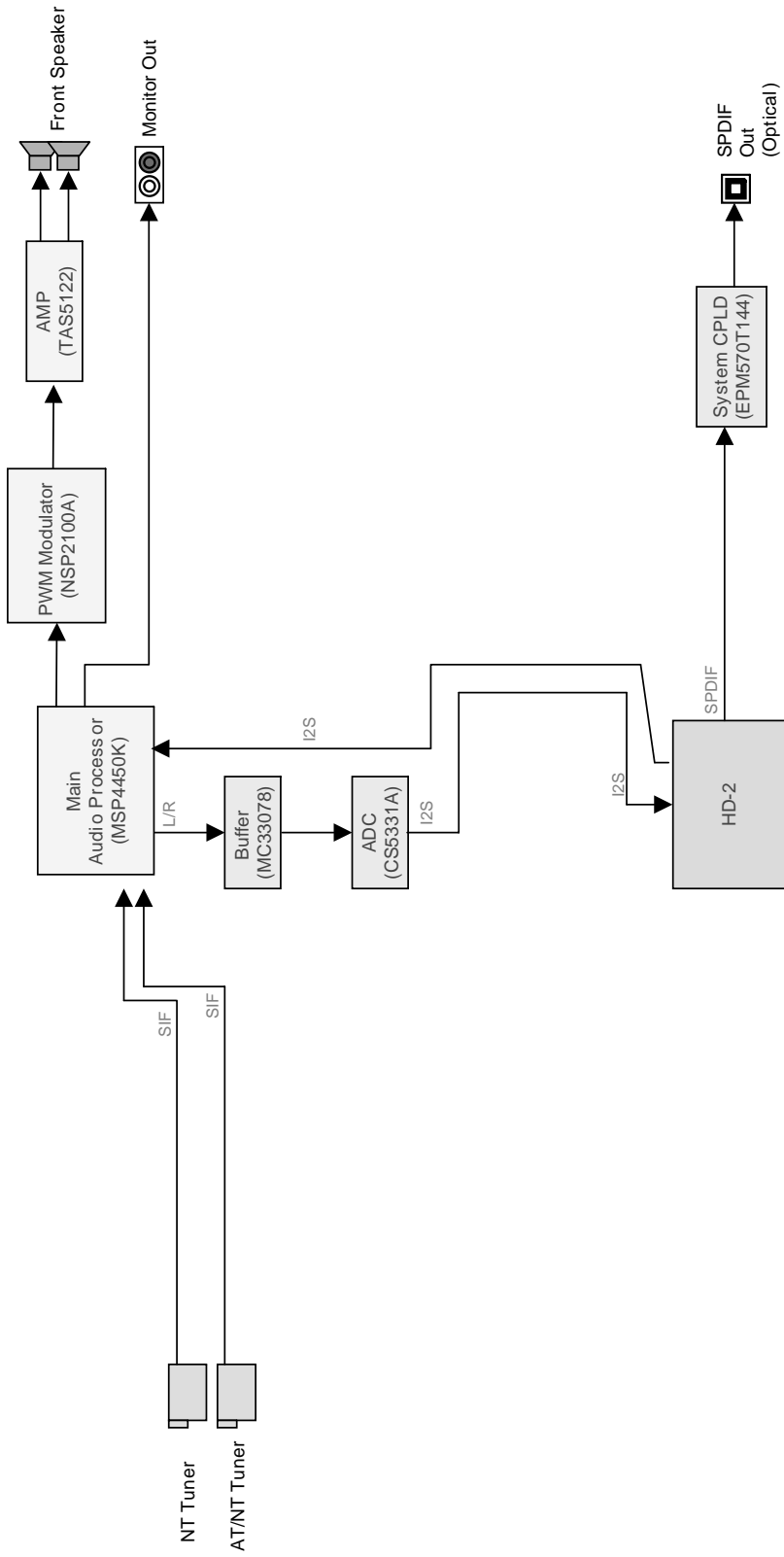
## • Audio Path



• **Common sound out**



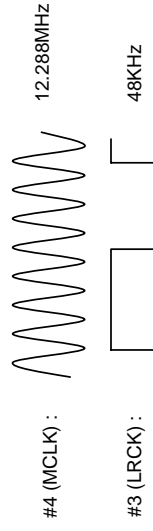
• TV RF NO Sound



• TV RF NO Sound

- 1 Check Antenna Cable
- 2 Check NTSC Tuner (TU1302)  
#4(33V), #7, 18(5V), #16(SIF)
- 3 Check Connector  
P1611(#2)
- 4 Check MSP4450K (IC202) inputs  
#67(M\_SIF)
- 5 Check MSP4450K (IC202) outputs  
#36(SC1\_R), #37(SC1\_L)
- 6 Check Connector  
P103(#16, #18)
- 7 Check MC33078(IC1001) in/outputs & Power  
#8(9V), #2, 6(input), #1, 7(output)
- 8 Check CS5331(IC1000) in/outputs & Power  
#7(5V), #5, 8(L/R input), #1(LRCH), #2(SCK),  
#3(LRCK), #4(MCLK)
- 9 Check LG DT1102F(IC402) inputs  
R413(LRCH), R414(LRCK), R415(SCK)
- 10 Follow the procedure of "COMMON SOUND OUT"

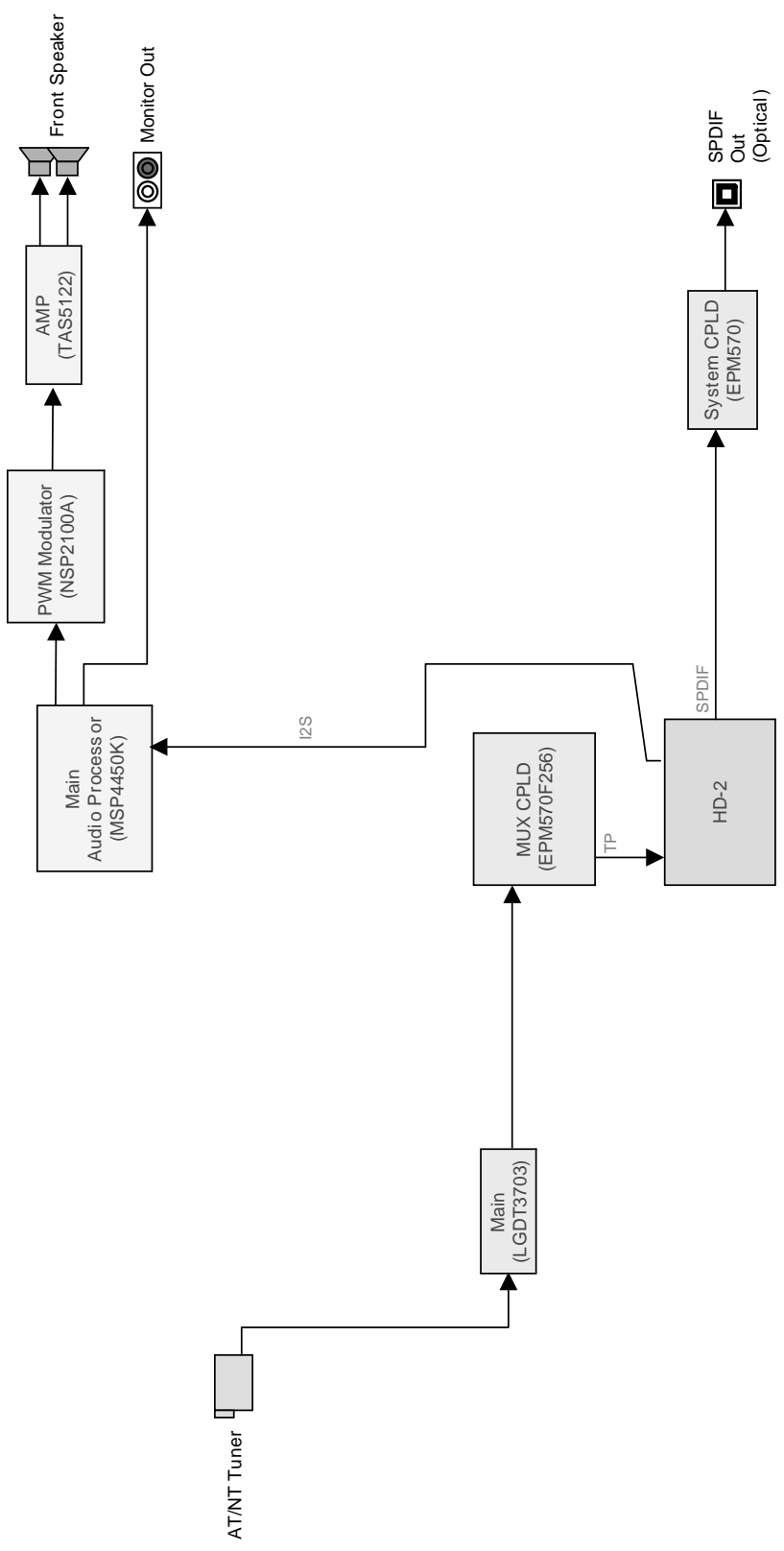
#36 (SC1\_R), 37 (SC1\_L) : Not "0" Voltage Level, Analog signal



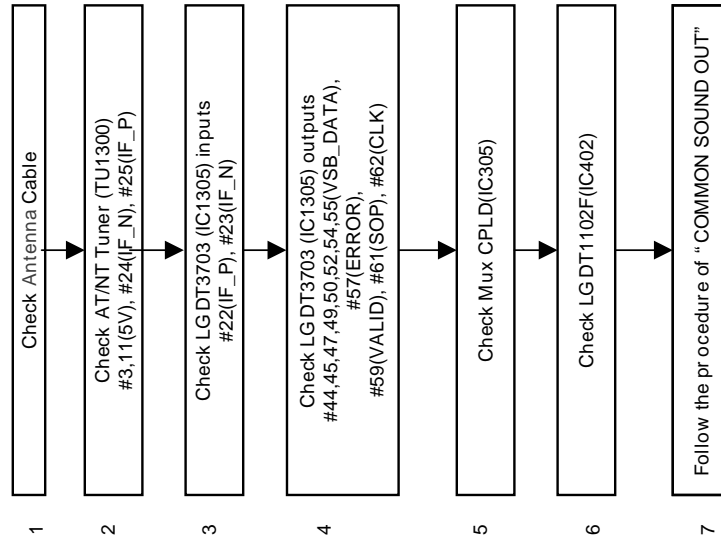
#1 (LRCH) : Not "0" Voltage Level



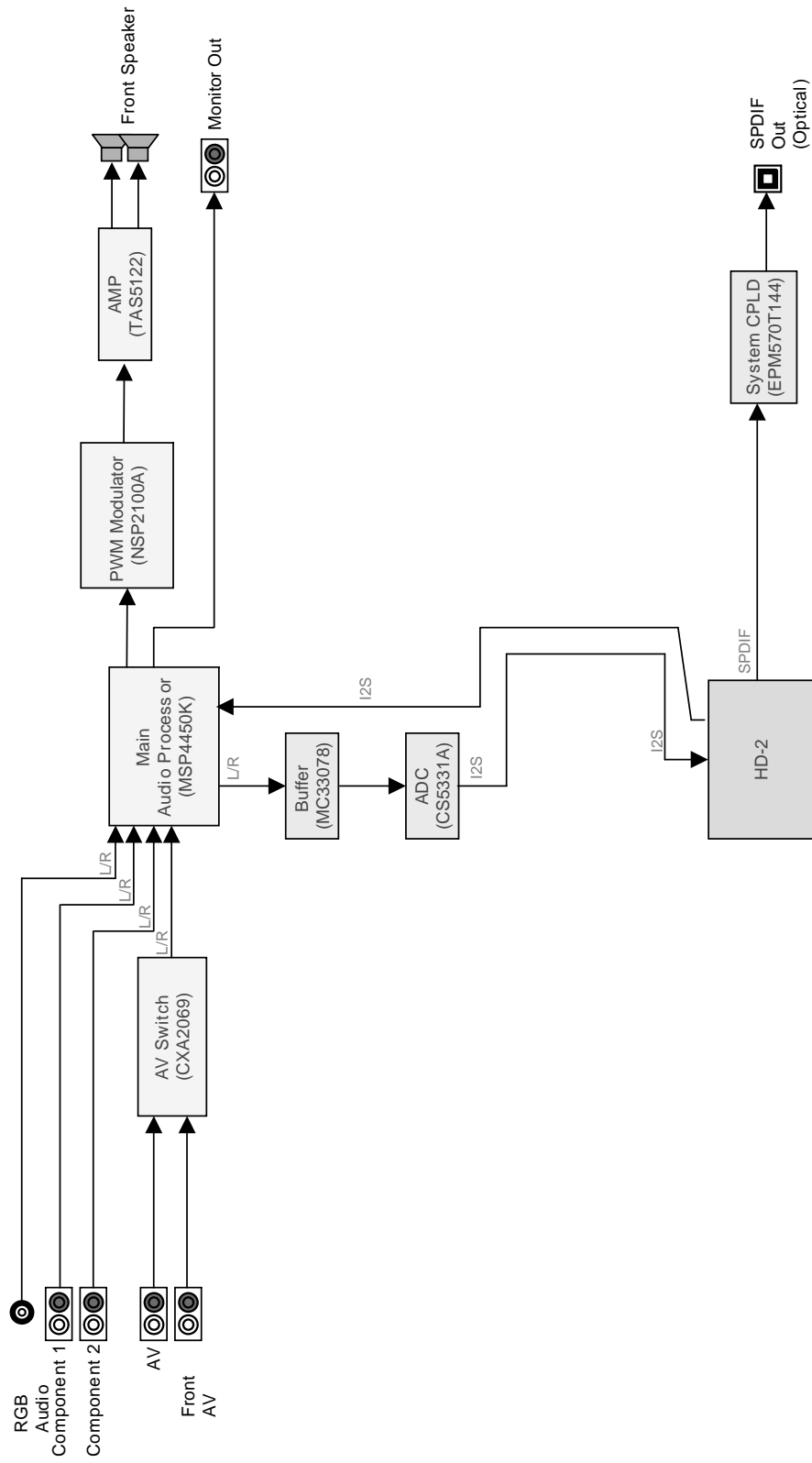
• DTV NO Sound



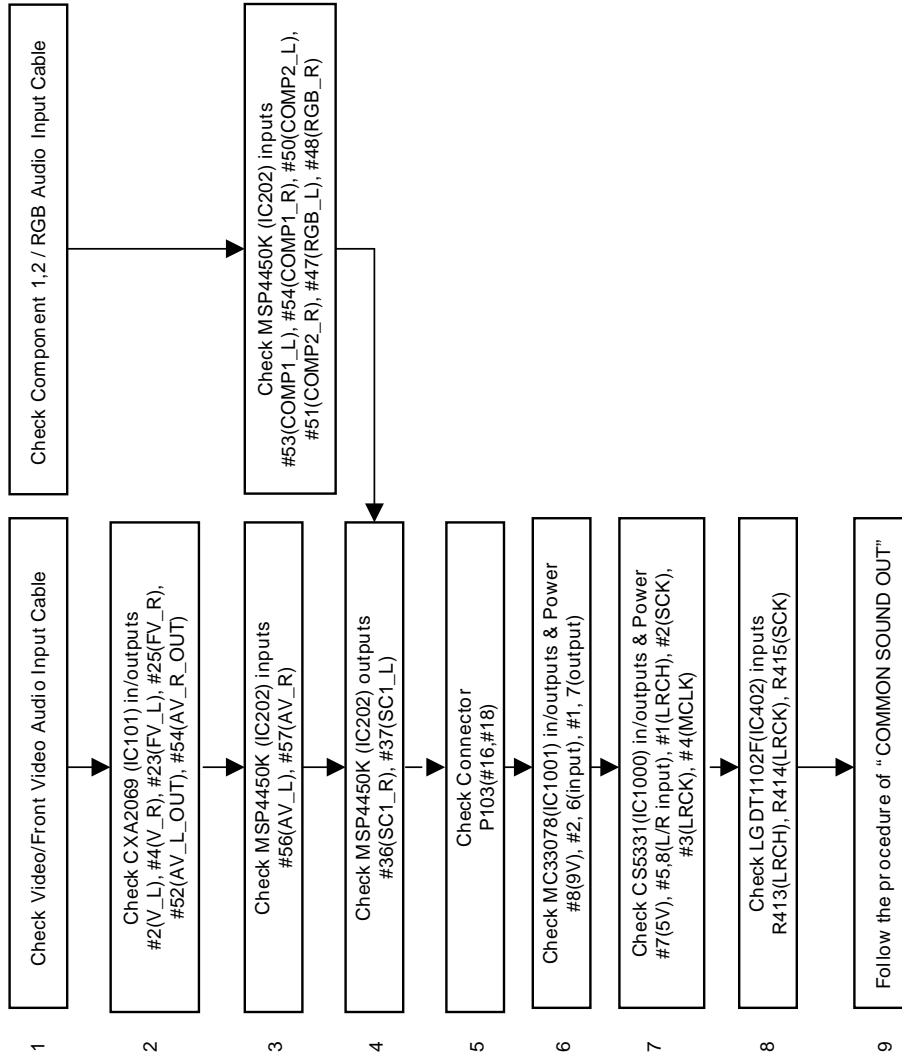
• DTV NO Sound



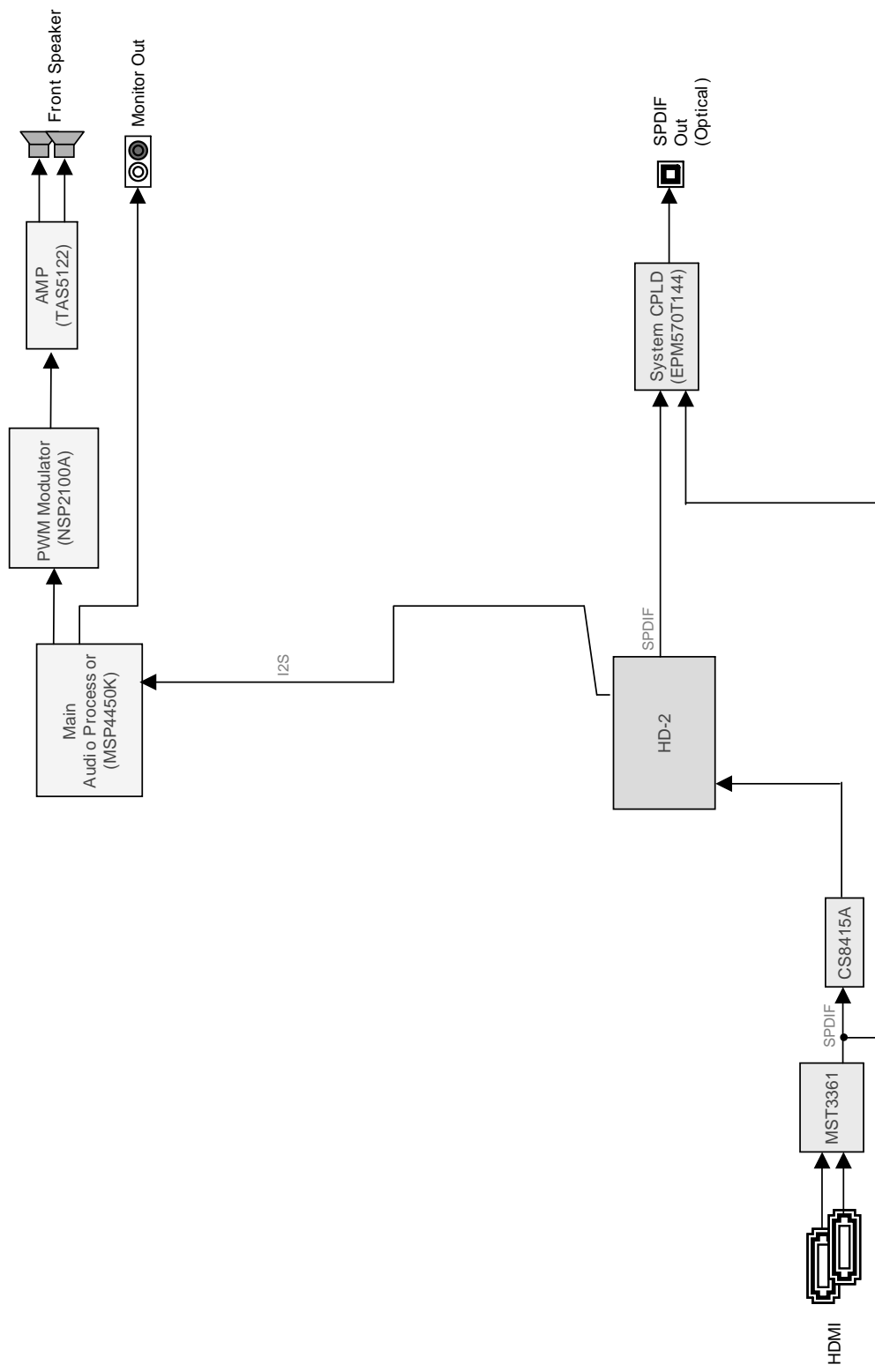
• AV/Component/RGB NO Sound



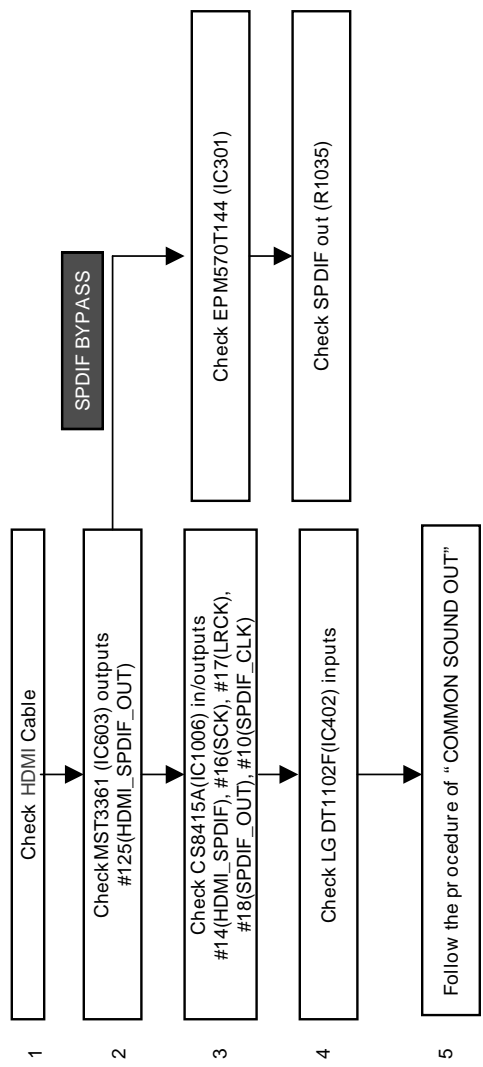
• AV/Component/RGB NO Sound



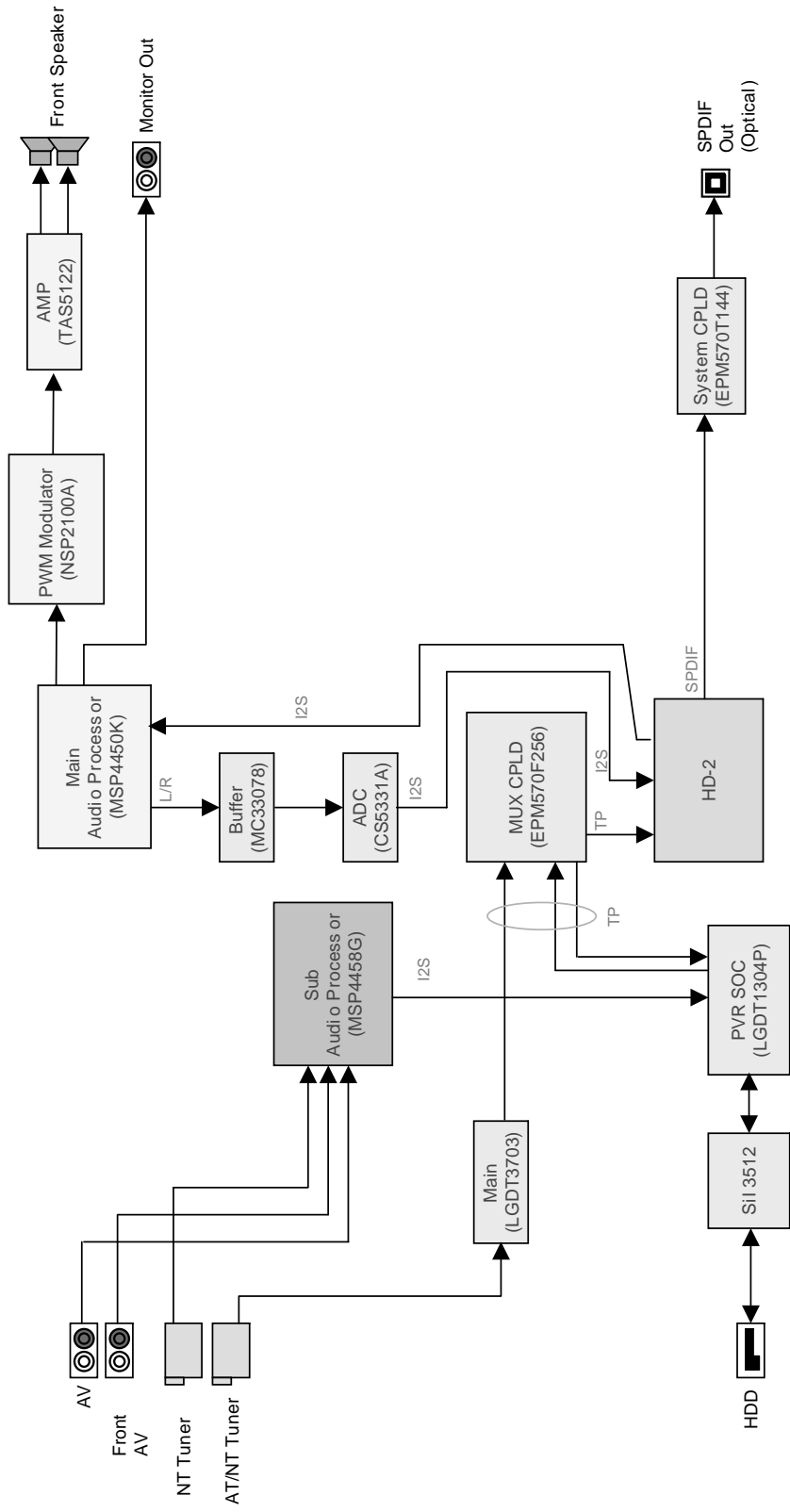
• HDMI NO Sound



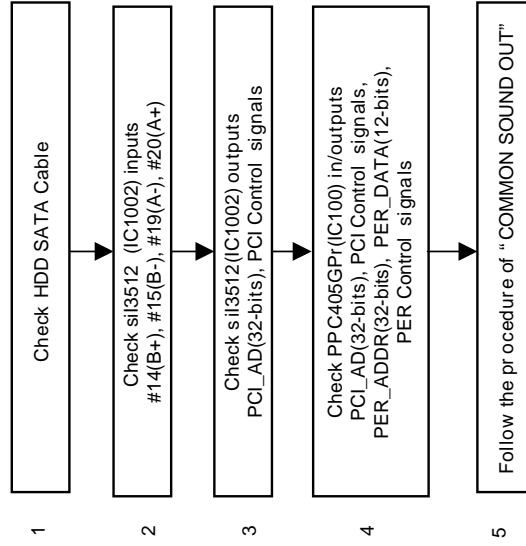
• HDMI NO Sound



• Record & Play No Sound

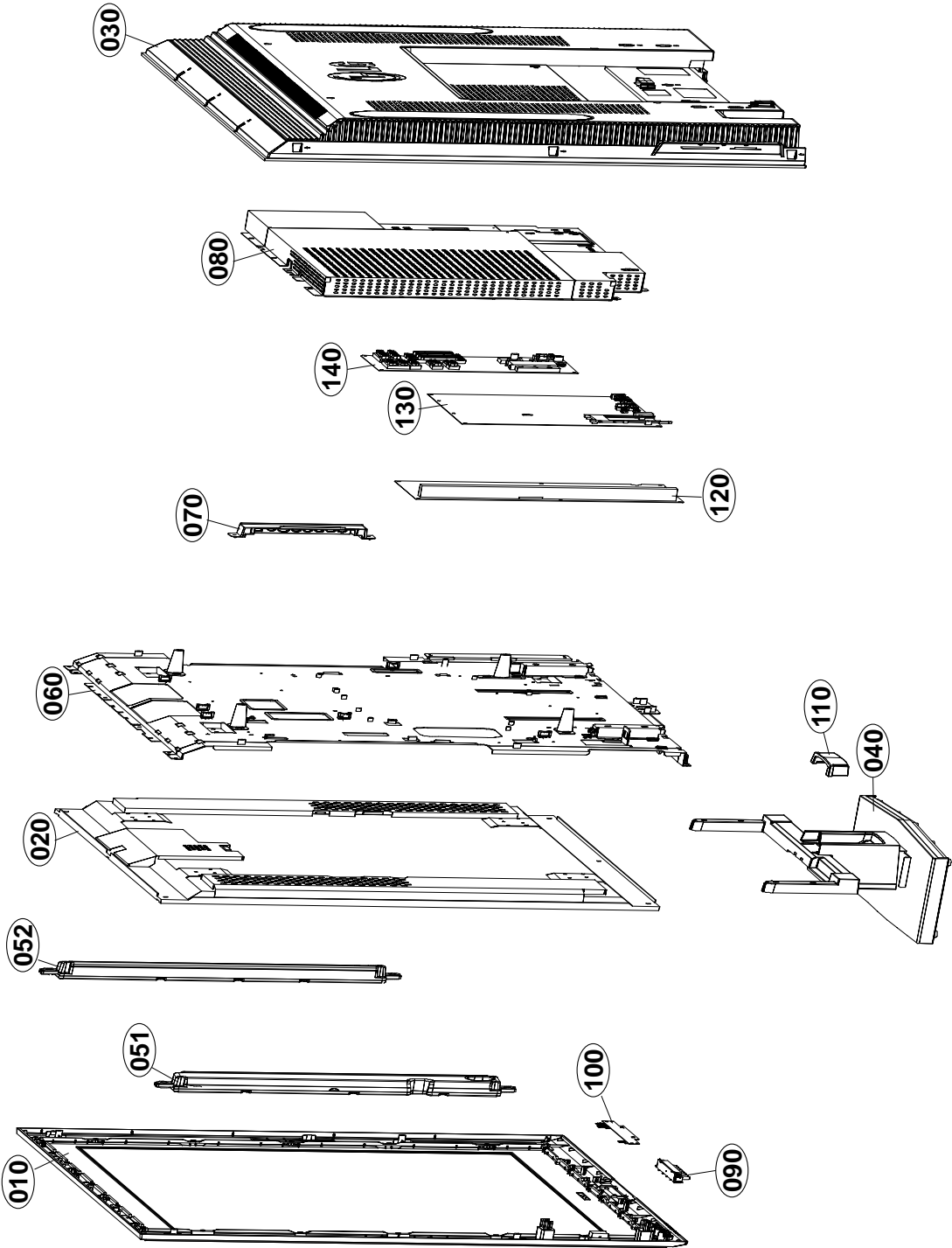


• **Record & Play No Sound**





**EXPLODED VIEW**



## EXPLODED VIEW PARTS LIST

No.	PART NO.	DESCRIPTION
010	▲ 30919E0034E	Cover Assembly, 42LB1 BRAND . <b>42LB1DR-UA</b>
	30919E0034H	Cover Assembly, 42LB1 BRAND . <b>42LB1DR-UA(C/SKD)</b>
	30919E0034B	Cover Assembly, 42LB1 BRAND . <b>42LB1DRA</b>
	30919E0034G	Cover Assembly, 42LB1 BRAND . <b>42LB1DRA-UA(C/SKD)</b>
020	▲ 6304FLP295A	LCD,Module-TFT, <b>LC420W02-B6K1</b> DRIVER 42.0INCH 1366X768 500CD COLOR
	6304FLP363A	LCD,Panel-TFT, <b>LC420W02-SLA1</b> 42INCH 1365X768 500CD COLOR 72% -
030	▲ 3809900149B	Cover Assembly, 42LB1 NON 42LB1DRA
	3809900149E	Cover Assembly, 42LB1 NON 42LB1DR(A)-UA <b>(C/SKD)</b>
040	▲ 3043900021E	Base Assembly, 42LB1DR-UA . <b>SILVER</b>
	3043900021F	Base Assembly, 42LB1DR-UA . <b>SILVER (C/SKD)</b>
	3043900021B	Base Assembly, 42LB1DRA-UA . <b>BLACK</b>
	3043900021D	Base Assembly, 42LB1DRA-UA . <b>BLACK (C/SKD)</b>
051	6401900127G	Speaker Assembly, 42LB1 SIDE RIGHT(42LB1DRA.42LB1D),E2(1800MM)
052	6401900127H	Speaker Assembly, 42LB1 SIDE LEFT(42LB1DRA.42LB1D),E2(400MM)
060	49519S0026N	Plate Assembly, FRAME 42LB1DR(A) (COST UP)
	49519S0026P	Plate Assembly, FRAME 42LB1DR(A) <b>(C/SKD)</b> (COST UP)
070	68719ST936A	PCB Assembly,Sub, T.T LA61A SUB 42LB1DRA ALUSLLX SIDE A/V BOARD TOTAL
080	49519K0115A	Plate Assembly, SHIELD MAIN DIGITAL 42LB1DRA-UA
	49519K0115H	Plate Assembly, SHIELD MAIN DIGITAL 42LB1DR(A)-UA <b>(C/SKD)</b>
090	68719ST937A	PCB Assembly,Sub, T.T LA61A SUB 42LB1DRA ALUSLLX CONTROL KEY BOARD TOTAL
	68719ST937B	PCB Assembly,Sub, T.T LA61A SUB 42LB1DRA ALUSLLX CONTROL KEY FOR <b>C/SKD</b> TOTAL
100	68719ST938A	PCB Assembly,Sub, T.T LA61A SUB 42LB1DRA ALUSLLX INDEX BOARD TOTAL
110	4810900034A	Bracket, 42LB1 AB00EA SUPPORTER CABLE MANAGEMENT ABS MOLD ABS
120	▲ 6709900017A	Power Supply Assembly, YY LCD H3/E2 LCD MODEL LB LC 42INCH 42INCH
130	3313942001A	Main Total Assembly, LA61A DIGITAL BOARD TOTAL 42LB1DRA BRAND- <b>LPL Module</b>
	3313942001B	Main Total Assembly, LA61A <b>P7 MODULE</b> DIGITAL BOARD TOTAL 42LB1DR/42LB1DRA BRAND
140	68719ST939A	PCB Assembly,Sub, T.T LA61A SUB 42LB1DRA ALUSLLX HDD ASSY TOTAL
	68719STA42A	PCB Assembly,Sub, T.T LA61A SUB 42LB1DR/42LB1DRA SLUSLLM HDD TOTAL- <b>CSKD</b>
150	68719MT681A	PCB Assembly,Main, T.T LA61A MAIN2 42LB1DRA ALUSLLX ANALOG BOARD TOTAL

# REPLACEMENT PARTS LIST

For Capacitor & Resistors, the characters at 2nd and 3rd digit in the P/No. means as follows;

CC, CX, CK, CN, CH : Ceramic  
CQ : Polyester  
CE : Electrolytic  
CF : Fixed Film

RD : Carbon Film  
RS : Metal Oxide Film  
RN : Metal Film  
RH : CHIP, Metal Glazed(Chip)  
RR : Drawing

DATE: 2006. 02. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
<b>DIGITAL BOARD</b>				
<b>CAPACITOR</b>				
		C100	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C1001	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C1002	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C1005	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1012	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1014	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C1015	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C1022	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1031	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C1032	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1045	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C1053	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1057	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1058	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1100	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C1105	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C1107	0CE475WJ6DC	MVK4.0TP35VC4.7M 4.7u 20% 3
		C1115	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3u 20% 5
		C1209	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1216	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1218	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C123	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C126	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1320	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1324	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1325	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1326	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1332	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C1334	0CE476WK6DC	MVK8.0TP50VC47M 47u 20% 50V
		C1341	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1342	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1345	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1348	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1349	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1358	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1359	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1360	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1361	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1604	0CE337WJ6D8	MVK12.5TP35VC330M 330u 20%
		C1605	0CE337WJ6D8	MVK12.5TP35VC330M 330u 20%
		C1607	0CE477WF6DC	MVK10TP16VC470M 470u 20% 16
		C1608	0CE477WF6DC	MVK10TP16VC470M 470u 20% 16
		C1613	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1616	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1619	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1622	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C1623	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C1627	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1638	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1640	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C1641	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C216	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C230	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C3039	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C304	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C3041	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C3077	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C3078	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C308	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C401	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C404	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C461	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V

DATE: 2006. 02. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C463	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C481	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C482	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C528	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C531	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C534	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C601	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C608	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C613	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C617	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C619	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C621	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C623	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C627	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C629	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C637	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C653	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C655	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C666	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C668	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C7002	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C7005	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C702	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C703	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C7043	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C7046	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C7048	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C7049	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C7052	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C7053	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C7054	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C709	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C737	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C773	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C774	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C780	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C801	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C803	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C806	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C807	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C810	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C813	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C815	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C822	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C827	0CE336WH6D8	MVK6.3TP25VC33M 33u 20% 25V
		C838	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C840	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C9006	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C9015	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C916	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C918	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C919	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C936	0CE477WF6DC	MVK10TP16VC470M 470u 20% 16
		C937	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C938	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C944	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C945	0CE477WF6DC	MVK10TP16VC470M 470u 20% 16
		C1004	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1006	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1007	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1008	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1009	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1010	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1011	0CK104CK56A	0603B104K500CT 100n 10% 50V
		C1016	0CK104CK56A	0603B104K500CT 100n 10% 50V









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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C965	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C966	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C967	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C968	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C969	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C970	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C971	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C972	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C973	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C974	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C975	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C976	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C977	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C978	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C979	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C980	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C981	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C982	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C983	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C984	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C985	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C986	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C987	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C988	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C989	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C990	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C991	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C992	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C993	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C994	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C995	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C996	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C997	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C998	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C999	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1000	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1003	OCK470CK41A	C1608C0G1H470JT 47p 5% 50V
		C1013	OCK470CK41A	C1608C0G1H470JT 47p 5% 50V
		C102	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1036	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1037	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1038	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1039	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1046	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1051	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1056	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1059	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1104	OCK561CK41A	C1608C0G1H561JT 560p 5% 50V
		C1108	OCK471CK41A	C1608C0G1H471JT 470p 5% 50V
		C1109	OCK271CK46A	0603B271J500CT 270p 5% 50V
		C1110	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1111	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1200	OCK200CK41A	C1608C0G1H200JT 20p 5% 50V
		C1204	OCK200CK41A	C1608C0G1H200JT 20p 5% 50V
		C1213	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1217	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1223	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1236	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1237	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1238	OCK105DF64A	0805F105Z160CT 1u -20TO+80%
		C124	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1346	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1354	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1355	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1356	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1357	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C1362	OCK050CK11A	C1608C0G1H050DT 5p 0.5PF 50
		C1363	OCK050CK11A	C1608C0G1H050DT 5p 0.5PF 50
		C1370	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1386	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1387	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1391	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1392	OCK105DF64A	0805F105Z160CT 1u -20TO+80%
		C1395	OCK104CK56A	0603B104K500CT 100n 10% 50V

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C1396	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1618	OCK102CK56A	0603B102K500CT 1n 10% 50V X
		C1621	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C1625	OCK102CK56A	0603B102K500CT 1n 10% 50V X
		C1626	OCK102CK56A	0603B102K500CT 1n 10% 50V X
		C1628	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C200	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C206	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C211	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C217	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C218	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C223	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C229	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C231	OCK150CK41A	C1608C0G1H150JT 15p 5% 50V
		C232	OCK220CK41A	C1608C0G1H220JT 22p 5% 50V
		C233	OCK150CK41A	C1608C0G1H150JT 15p 5% 50V
		C234	OCK150CK41A	C1608C0G1H150JT 15p 5% 50V
		C3000	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C3001	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C3044	OCK100CK41A	C1608C0G1H100JT 10p 5% 50V
		C3046	OCK100CK41A	C1608C0G1H100JT 10p 5% 50V
		C3070	OCK050CK11A	C1608C0G1H050DT 5p 0.5PF 50
		C3071	OCK050CK11A	C1608C0G1H050DT 5p 0.5PF 50
		C3075	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C3076	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C312	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C316	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C317	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C321	OCK2334F566	0805B334K160CT 330n 10% 16V
		C322	OCK473CH56A	C1608X7R1E473KT 47n 10% 25V
		C323	OCK2334F566	0805B334K160CT 330n 10% 16V
		C324	OCK2334F566	0805B334K160CT 330n 10% 16V
		C326	OCK221CK41A	C1608C0G1H221JT 220p 5% 50V
		C327	OCK221CK41A	C1608C0G1H221JT 220p 5% 50V
		C328	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C348	OCK101CK41A	C1608C0G1H101JT 100p 5% 50V
		C349	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C350	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C480	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C504	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C508	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C509	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C511	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C517	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C518	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C522	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C526	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C529	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C530	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C532	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C535	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C537	OCK100CK41A	C1608C0G1H100JT 10p 5% 50V
		C538	OCK270CK41A	C1608C0G1H270JT 27p 5% 50V
		C542	OCK150CK41A	C1608C0G1H150JT 15p 5% 50V
		C631	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C632	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C633	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C640	OCK470CK41A	C1608C0G1H470JT 47p 5% 50V
		C644	OCK473CH56A	C1608X7R1E473KT 47n 10% 25V
		C646	OCK102CK56A	0603B102K500CT 1n 10% 50V X
		C647	OCK473CH56A	C1608X7R1E473KT 47n 10% 25V
		C649	OCK473CH56A	C1608X7R1E473KT 47n 10% 25V
		C654	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C656	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C659	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C667	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C672	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C7001	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C7003	OCK474CH94A	0603F474Z250CT 470n -20TO+8
		C7006	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C7007	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C7028	OCK180CK41A	C1608C0G1H180JT 18p 5% 50V
		C7029	OCK180CK41A	C1608C0G1H180JT 18p 5% 50V
		C708	OCK104CK56A	0603B104K500CT 100n 10% 50V



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*S	*AL	LOC. NO.	PART NO. DESCRIPTION / SPECIFICATION
		C711	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C718	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C719	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C720	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C725	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C729	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C730	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C731	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C732	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C733	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C734	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C735	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C779	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C781	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C784	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C789	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C794	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C797	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C798	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C799	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C802	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C804	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C808	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C828	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C842	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C844	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C901	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C9016	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C9017	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C902	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C903	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C904	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C905	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C906	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C907	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C908	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C909	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C910	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C911	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C912	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C913	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C914	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C915	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C920	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C929	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C931	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C932	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C933	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C934	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C935	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C940	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C941	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C942	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C943	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C946	OCK103CK56A 0603B103K500CT 10n 10% 50V
		C957	OCK104CK56A 0603B104K500CT 100n 10% 50V
		C960	OCK104CK56A 0603B104K500CT 100n 10% 50V
<b>DIODEs</b>			
		D1300	ODS113379BA 1SS133 1200MV 90V 400MA 600
		D601	ODD184009AA KDS184 1200MV 85V 300MA 2A
		D602	ODD184009AA KDS184 1200MV 85V 300MA 2A
		D302	ODRSE00038A SDC15 1300MV 14.3VTO16.4V 2
		D303	ODRSE00038A SDC15 1300MV 14.3VTO16.4V 2
		D600	ODRSE00048A RCLAMP0504M 1200MV 6V 25V 1
		D603	ODRSE00048A RCLAMP0504M 1200MV 6V 25V 1
		D604	ODRSE00048A RCLAMP0504M 1200MV 6V 25V 1
		D605	ODRSE00048A RCLAMP0504M 1200MV 6V 25V 1
<b>IC</b>			
		IC1000	OICB533100A CS5331A-KSR 4.75TO5.25V 48K
		IC603	OIPRP00696A MST3361M-LF-110 3.3V_2.5V -

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		IC1303	OIPRP00538A	FSA1156P6X-NL 1.65TO5.5V 40
		IC203	OIMCRCY002A	CY2309SC-1HT 3TO3.6V - - -
		IC210	OIMCRCY002A	CY2309SC-1HT 3TO3.6V - - -
		IC504	OIMCRCY002A	CY2309SC-1HT 3TO3.6V - - -
		IC100	OIPRPBM001B	PPC405GPR-3JB266C 1.7TO1.9V
		IC1002	OIMCR02015A	SII3512ECTU128 1.71TO1.89V
		IC1101	OISTL00024A	MC14053BDR2G 3TO18V 0.02mA
		IC1202	OIMCRFA013A	74LCX244MTC 2TO3.6V 0.01mA
		IC303	OIMCRFA013A	74LCX244MTC 2TO3.6V 0.01mA
		IC306	OISTLPH026A	74LVC14APW 1.2TO3.6V 0.01mA
		IC1102	OIPMGNS026A	LM311MX 5V +-15V +30V 50NA
		IC909	OIMMR00159A	HY5DU573222FP-33 256MBIT 8M
		IC209	OIMCRAL021A	AT24C512W-10SI-2.7 512KBIT
		IC604	OIMMRCS012B	CAT24WC08W-T(MST3000) 8KBIT
		IC605	OIMMRAL014B	AT24C02N-10SI-2.7 2KBIT 256
		IC606	OIMMRAL014B	AT24C02N-10SI-2.7 2KBIT 256
		IC1603	OIML623200B	"M62320P,FP 4.5TO5.5V 0.05mA"
		IC610	OIPRPFA016A	FMS6407MTC20X-NL 4.75TO5.25
		IC702	OIPRPFA015B	"FMS6400CS1X,LF 4.75TO5.25 5"
		IC704	OIPRPFA015B	"FMS6400CS1X,LF 4.75TO5.25 5"
		IC1602	OIMCRKE006A	KIA278R05PI 6TO12V 5V 1500M
		IC1003	OIPMGKE032A	KIA78R09F 10TO25V 9V 8W DPA
		IC1007	OIPMG00049A	AZ1117H-1.8 3.2TO10V 1.8V -
		IC101	OIPMG00049A	AZ1117H-1.8 3.2TO10V 1.8V -
		IC1201	OIMCRSJ001B	SC1565IST-2.5TR 2.2TO5V 2.5
		IC1300	OIPMG78403A	AZ1086S-1.8TRE1 3.2TO10V 1.
		IC1301	OIPMG00049A	AZ1117H-1.8 3.2TO10V 1.8V -
		IC1307	OIPMGA0010A	AZ1117H-3.3 4.75TO10V 3.3V
		IC1607	OIPMGKE032A	KIA78R09F 10TO25V 9V 8W DPA
		IC401	OIPMG78403A	AZ1086S-1.8TRE1 3.2TO10V 1.
		IC403	OIPMGA0010A	AZ1117H-3.3 4.75TO10V 3.3V
		IC601	OIPMGA0010A	AZ1117H-3.3 4.75TO10V 3.3V
		IC609	OIMCRSJ001B	SC1565IST-2.5TR 2.2TO5V 2.5
		IC707	OIPMGA0010A	AZ1117H-3.3 4.75TO10V 3.3V
		IC708	OIPMG00028A	AZ1117H-1.5 3TO10V 1.5V - S
		IC801	OIPMGA0010A	AZ1117H-3.3 4.75TO10V 3.3V
		IC802	OIPMG78403A	AZ1086S-1.8TRE1 3.2TO10V 1.
		IC904	OIMCRSJ001B	SC1565IST-2.5TR 2.2TO5V 2.5
		IC906	OIPMG78403A	AZ1086S-1.8TRE1 3.2TO10V 1.
		IC1100	OIMCRMT003A	MM1108XFFE 4.5TO5.5V 4.4mA
		IC1103	OIMCRMP006A	PIC18F1220T-I/SO 4.2TO5.5V
		IC1306	OICTM00006C	- - - TQFP TR 128P
		IC1001	OISTL00029A	MC3307BDR2G +-5TO+-18V 2mV
		IC301	OIPRP00687A	EPM570T144C5N 3TO3.6V_2.375
		IC305	OIPRP00687B	EPM570F256C5N 3TO3.6V_2.375
		IC1204	OIPRPML004B	"MIC2562A-OYM,LF 3.3V_5V - 8"
		IC1205	OIPRPML004B	"MIC2562A-OYM,LF 3.3V_5V - 8"
		IC1006	OICB841500B	"CS8415A-CZR 4500MVTO5500MV,"
		IC201	OIMMRHY038E	HY57V561620CTP-H 256MBIT 4M
		IC202	OIMMRHY038E	HY57V561620CTP-H 256MBIT 4M
		IC500	OIMMR00141A	HY57V641620ETP-6 64MBIT 1MX
		IC501	OIMMR00141A	HY57V641620ETP-6 64MBIT 1MX
		IC502	OIMMR00141A	HY57V641620ETP-6 64MBIT 1MX
		IC503	OIMMR00141A	HY57V641620ETP-6 64MBIT 1MX
		IC703	OIMMR00080A	HY57V161610ETP-6 16MBIT 512
		IC706	OIMMR00080A	HY57V161610ETP-6 16MBIT 512
		IC1200	OICTMLG017A	"LGDT3703D 3VTO3600MV,2250MV"
		IC304	OIPRP00009A	ICL3232CBNZ 3VTO5500MV - SS
		IC803	OIMCRTH002A	THC63LVD103 3.0TO3.6 1W TQF
		IC1305	OICTM00006B	LGDT3703D LG SYSTEM IC 128P
		IC206	OIMCRPH026B	PA9516APW PHILIPS 16P TSSOP
		IC402	OICTMLG009E	LGDT1102F HD2.4 LG IC 432P
		IC505	OICTMLG013B	LGDT1901B LG IC SSOP 24P TR
		IC804	OICTMLG018C	"LGDP4412, IEP3 LG IC 452P,T"
		IC701	OIPRPNE011B	"UPD64015AGM-UEU-A,LF 3.0TO3"
		IC705	OIPRPNE011B	"UPD64015AGM-UEU-A,LF 3.0TO3"
		IC908	OICTM00040A	"LGDT1304P 3.0TO3.6,2.375TO2"
		IC302	OIKE702900G	KIA7029AF -0.3TO15V 2.9V 50
		IC1304	OIPMGON013B	MC34063ADR2G 3TO40V 40V 625
		IC1302	OIMCRSH001A	PQ05DZ1U 6TO16V 5V 8W D2PAK
		IC1601	OIMCRSH001A	PQ05DZ1U 6TO16V 5V 8W D2PAK
		IC907	OIPMG78391A	SC2595STR 2.3TO5V - - SOIC
		IC204	OIMMRAM006B	S29JL064H-90TA100 64MBIT -
		IC205	OIMMRAM006B	S29JL064H-90TA100 64MBIT -



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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		AR500	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR501	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR502	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR503	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR504	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR505	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR506	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR507	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR508	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR509	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR510	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR511	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR512	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR513	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR514	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR515	ORJ0332C687	RCA86TRJ33R0 33OHM 5% 1/16W
		AR601	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR602	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR603	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR604	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR605	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR606	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR607	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR608	ORJ0000C687	RCA86TRJ0000 0OHM 5% 1/16W
		AR701	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR7013	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR7014	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR702	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR703	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR704	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR705	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR706	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR707	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR708	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR709	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR710	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR711	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR712	ORJ1000C687	RCA86TRJ100R 100OHM 5% 1/16
		AR801	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR802	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR803	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR804	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR805	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR806	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR807	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR808	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR809	ORRZVTA001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR900	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR901	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR902	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR903	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR904	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR905	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR906	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR907	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR908	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR909	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR910	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR911	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR912	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR913	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR914	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR915	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR916	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR917	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR918	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR919	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR920	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR921	ORHZTCZ001D	RCA86TRJ22R0 22OHM 5% 1/16W
		AR923	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR924	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		AR925	ORJ0512C687	RCA86TRJ51R0 51OHM 5% 1/16W
		R1302	RD-92T1J3R30 3300MOHM 5% 1/	
		R1634	RD0332H609	RD-92T1J33R0 33OHM 5% 1/2W

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R1009	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1010	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1011	ORJ4702D677	MCR03EZPJ473 4.7KOHM 5% 1/10W
		R1012	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1013	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1014	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1022	ORJ1001D477	MCR03EZPF102 1KOHM 1% 1/10W
		R1023	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1026	ORJ1005D677	MCR03EZPJ106 10MOHM 5% 1/10
		R1029	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R103	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1030	ORJ1201D677	MCR03EZPJ122 1.2KOHM 5% 1/1
		R1031	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1032	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R104	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R107	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1102	ORJ8252D477	MCR03EZPF8252 82.5KOHM 5% 1
		R1103	ORJ0152D677	MCR03EZPJ150 15OHM 5% 1/10W
		R1105	ORJ1003D477	MCR03EZPF104 100KOHM 1% 1/1
		R1107	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1111	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1112	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1115	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1116	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R112	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1121	ORJ0152D677	MCR03EZPJ150 15OHM 5% 1/10W
		R1122	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1123	ORJ4700D677	MCR03EZPJ471 4.7KOHM 5% 1/10
		R1124	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R1125	ORJ4702D677	MCR03EZPJ473 4.7KOHM 5% 1/10W
		R1126	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1127	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1128	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R1129	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R1130	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1131	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1132	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R114	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R119	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R120	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1200	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1201	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1206	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R121	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R1212	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1213	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1215	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1219	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R122	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R123	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R124	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R1241	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R1242	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R1247	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1248	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1249	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1252	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1260	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R1261	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R1263	ORJ1003D677	MCR03EZPJ104 100KOHM 5% 1/1
		R1264	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1266	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R1268	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1269	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R127	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1290	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1292	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1297	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1299	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1300	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1301	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1305	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1306	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1307	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R1308	ORJ1201D677	MCR03EZPJ122 1.2KOHM 5% 1/1
		R1309	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R131	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1310	ORJ1201D677	MCR03EZPJ122 1.2KOHM 5% 1/1
		R1311	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1313	ORJ1800D677	MCR03EZPJ181 180OHM 5% 1/10
		R1314	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1315	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1316	ORJ4700D677	MCR03EZPJ471 470OHM 5% 1/10
		R1317	ORJ4700D677	MCR03EZPJ471 470OHM 5% 1/10
		R1318	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1322	ORJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R1323	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1324	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R1329	ORJ1201D677	MCR03EZPJ122 1.2KOHM 5% 1/1
		R1330	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1333	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1339	ORJ4700D677	MCR03EZPJ471 470OHM 5% 1/10
		R134	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1341	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R135	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R136	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1360	ORJ3001D677	MCR03EZPJ302 3KOHM 5% 1/10W
		R1365	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1367	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1369	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1376	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1387	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R1391	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R140	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R142	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R146	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R147	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R149	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R150	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R152	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R153	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R154	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R155	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R156	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R158	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R159	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R160	ORJ3001D677	MCR03EZPJ302 3KOHM 5% 1/10W
		R1616	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1617	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1618	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1619	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1620	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1621	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1622	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R1641	ORJ1202D677	MCR03EZPJ123 12KOHM 5% 1/10
		R1642	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1650	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1690	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1696	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1805	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1806	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R200	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R201	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R212	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R213	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R219	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R220	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R223	ORJ1202D677	MCR03EZPJ123 12KOHM 5% 1/10
		R224	ORJ1202D677	MCR03EZPJ123 12KOHM 5% 1/10
		R230	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R231	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R235	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R236	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R3000	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R3001	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R3002	ORJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R3003	ORJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R3074	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R3075	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R3079	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R3080	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R3084	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R316	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R321	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R331	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R332	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R333	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R334	ORJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R335	ORJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R346	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R347	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R348	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R385	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R387	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R388	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R389	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R392	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R399	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R401	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R403	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R404	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R405	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R406	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R407	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R415	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R416	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R417	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R418	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R421	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R422	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R430	ORJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R431	ORJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R432	ORJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R433	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R434	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R436	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R445	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R452	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R453	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R454	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R455	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R456	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R461	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R505	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R516	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R517	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R6010	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R6012	ORJ2001D677	MCR03EZPJ200 2KOHM 5% 1/10W
		R6013	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R6015	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R6016	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R6017	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R6018	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R6019	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R6057	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R6058	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R629	ORJ3900D677	MCR03EZPJ391 390OHM 5% 1/10
		R635	ORJ0682D677	MCR03EZPJ680 68OHM 5% 1/10W
		R638	ORJ0682D677	MCR03EZPJ680 68OHM 5% 1/10W
		R640	ORJ0682D677	MCR03EZPJ680 68OHM 5% 1/10W
		R641	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R642	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R643	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R646	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R647	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R650	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R654	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R658	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R660	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R664	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R679	ORJ2001D677	MCR03EZPJ200 2KOHM 5% 1/10W
		R680	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R703	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R714	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R715	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R716	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R717	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R718	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R719	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R720	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R724	ORJ6200D677	MCR03EZPJ621 620OHM 5% 1/10
		R730	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R737	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R738	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R739	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R745	ORJ3300D677	MCR03EZPJ331 330OHM 5% 1/10
		R756	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R757	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R758	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R759	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R760	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R761	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R762	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R763	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R764	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R765	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R766	ORJ6200D677	MCR03EZPJ621 620OHM 5% 1/10
		R770	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R781	ORJ5101D677	MCR03EZPJ512 5.1KOHM 5% 1/1
		R782	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R783	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R784	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R785	ORJ2000D677	MCR03EZPJ201 200OHM 5% 1/10
		R800	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R818	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R825	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R832	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R845	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R847	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R848	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R849	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R850	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R865	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R866	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R867	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R868	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R869	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R874	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R877	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R878	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R896	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R897	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R898	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R9001	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9002	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9005	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R9006	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R9010	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R9011	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9012	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R9013	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R9014	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R9017	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9018	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9022	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9035	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9036	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R9038	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R9039	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R9049	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R9050	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R9051	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R915	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R916	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R917	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R921	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R925	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R926	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R935	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R938	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R939	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R945	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R946	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R949	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R950	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R951	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R962	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R963	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R964	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R965	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R966	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R969	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R972	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R985	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R988	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R989	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R992	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R993	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R996	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R997	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		AR100	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR101	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR102	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR103	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR104	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR105	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR106	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR107	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR108	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR109	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR110	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR111	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR112	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR113	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR114	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		AR115	ORJ3001D605	MCR03EZPJ302 3KOHM 5% 1/10W
		R1001	ORJ1500D677	MCR03EZPJ151 150OHM 5% 1/10
		R1002	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1003	ORJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R1004	ORJ2700D677	MCR03EZPJ271 270OHM 5% 1/10
		R1005	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1006	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1007	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1008	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R101	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1015	ORJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R1016	ORJ2700D677	MCR03EZPJ271 270OHM 5% 1/10
		R1017	ORJ1500D677	MCR03EZPJ151 150OHM 5% 1/10
		R1018	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R1019	ORJ3300D677	MCR03EZPJ331 330OHM 5% 1/10
		R102	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1024	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1027	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1028	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R1033	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R1034	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1035	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R1038	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1039	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1040	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R1041	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R105	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R106	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R1104	ORJ5600D677	MCR03EZPJ561 560OHM 5% 1/10
		R1108	ORJ3303D677	MCR03EZPJ334 330KOHM 5% 1/10
		R1109	ORJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R111	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R1110	ORJ4700D677	MCR03EZPJ471 470OHM 5% 1/10
		R1113	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R1114	ORJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10



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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R221	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R222	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R225	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R226	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R227	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R228	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R229	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R232	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R233	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R234	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R237	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R238	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R239	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R240	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R241	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R242	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R243	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R3004	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R3005	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R302	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R303	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R3070	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R3071	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R3076	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R3077	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R3078	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R308	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R309	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R310	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R311	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R312	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R313	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R314	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R315	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R317	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R318	ORJ3300D677	MCR03EZPJ331 330OHM 5% 1/10
		R319	ORJ3300D677	MCR03EZPJ331 330OHM 5% 1/10
		R320	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R322	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R323	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R324	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R325	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R326	ORJ1602D677	MCR03EZPJ163 16KOHM 5% 1/10
		R327	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R328	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R329	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R330	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R336	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R337	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R339	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R340	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R341	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R342	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R343	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R344	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R345	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R349	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R350	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R351	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R352	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R353	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R354	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R355	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R356	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R357	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R358	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R362	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R363	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R364	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R369	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R370	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R371	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R372	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R373	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R376	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R377	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R380	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R381	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R382	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R383	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R384	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R386	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R394	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R395	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R396	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R398	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R408	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R409	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R423	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R424	ORJ0562D677	MCR03EZPJ560 56OHM 5% 1/10W
		R425	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R426	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R427	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R428	ORJ1820D477	MCR03EZPJ1820 182OHM 1% 1/1
		R435	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R438	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R439	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R440	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R441	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R442	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R444	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R451	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R457	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R500	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R501	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R502	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R503	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R504	ORJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10
		R506	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R507	ORJ0272D677	MCR03EZPJ270 27OHM 5% 1/10W
		R508	ORJ2201D677	MCR03EZPJ221 2.2KOHM 5% 1/1
		R509	ORJ7500D677	MCR03EZPJ751 750OHM 5% 1/10
		R510	ORJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R511	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R513	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R514	ORJ0562D677	MCR03EZPJ560 56OHM 5% 1/10W
		R515	ORJ0562D677	MCR03EZPJ560 56OHM 5% 1/10W
		R518	ORJ0562D677	MCR03EZPJ560 56OHM 5% 1/10W
		R519	ORJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R6001	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R6002	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R6003	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R6004	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R6005	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R6006	ORJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R6007	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R6008	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R6011	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R6023	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R6024	ORJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W
		R6029	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R6030	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R6031	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R6032	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R6053	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R6054	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R6055	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R6056	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R6059	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R609	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R610	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R611	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R612	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R613	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R615	ORJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R616	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R625	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R627	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W





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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R936	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R937	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R940	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R941	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R942	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R943	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R944	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R947	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R948	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R960	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R967	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R968	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R970	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R971	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R973	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R974	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R976	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R977	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R978	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R979	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R980	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R981	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R982	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R983	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R984	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R986	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R987	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R990	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R991	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R994	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R995	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R998	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R999	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
<b>OTHERs</b>				
		X1000	6212AB2872A	HC49SM 25MHZ 50PPM 20p HC49
		X1100	6212AB2015E	HC-49/SM 1MHZ 30PPM 1MHZ 30
		X1200	6212AC2001D	HC-49/SM 14MHZ 30PPM 14MHZ
		X601	6202TS7001A	SX-1 14.31818MHZ 30PPM 14.3
		X701	6212AB2873A	HC-49/SM 24.576MHZ 30PPM 24
		X702	6212AB2873A	HC-49/SM 24.576MHZ 30PPM 24
		D1000	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D1301	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D1303	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D1601	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D1602	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D1603	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D1604	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D300	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		D301	ODL233309AC	SAM2333 RED/Y-GREEN 2.7V 2.
		X200	6204B48360A	SCO-103-33.3300MHZ 33.33MHZ
		X3070	6204B47985P	BMS-873R 25MHZ 30PPM 3.3V 0
		X3071	6204B47985P	BMS-873R 25MHZ 30PPM 3.3V 0
		X500	6204B62705A	VCXO 27MHZ 100PPM 3.3V 0.00
		IC1604	OIPRPN5054A	LM75CIMX-3 3TO5.5V SOP R/TP
		P1613	6630CE00168	10003526-050CA PCMCIA 68P A
		SW301	6600VR1004A	SKHMPWE010 1C1P 12VDC 0.05A
		TU1302	6700NF0024A	ENG36A54GF NTSC ---- HOR
		TU1300	6700AB0001A	ATSC ---- HORIZONTAL
		VR601	6102W5V016A	AVRL161A1R1NT 10V - 1.1p 1.
		VR602	6102W5V016A	AVRL161A1R1NT 10V - 1.1p 1.
		VR603	6102W5V016A	AVRL161A1R1NT 10V - 1.1p 1.
		VR604	6102W5V016A	AVRL161A1R1NT 10V - 1.1p 1.
<b>ANALOG BOARD</b>				
<b>CAPACITOR</b>				
		C101	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C105	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C106	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C107	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C109	0CE225WK6DC	MVK4.0TP50VC2.2M 2.2u 20% 5

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C110	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C112	0CE225WK6DC	MVK4.0TP50VC2.2M 2.2u 20% 5
		C115	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C116	0CE227WF6DC	MVK8.0TP16VC220M 220u 20% 1
		C117	0CE227WF6DC	MVK8.0TP16VC220M 220u 20% 1
		C121	0CE225WK6DC	MVK4.0TP50VC2.2M 2.2u 20% 5
		C122	0CE225WK6DC	MVK4.0TP50VC2.2M 2.2u 20% 5
		C126	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C127	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C203	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C208	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3u 20% 5
		C220	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C232	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3u 20% 5
		C234	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C235	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C237	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C238	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C245	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3u 20% 5
		C247	0CE226WF6DC	MVK5.0TP16VC22M 22u 20% 16V
		C263	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3u 20% 5
		C265	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C266	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C271	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C272	0CE475WK6DC	MVK5.0TP50VC4.7M 4.7u 20% 5
		C273	0CE475WK6DC	MVK5.0TP50VC4.7M 4.7u 20% 5
		C302	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C305	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C311	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C313	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C314	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C319	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C321	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C327	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C328	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C332	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C335	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C344	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C345	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C346	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C347	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C354	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C355	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C356	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C359	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C363	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C367	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C369	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C373	0CE227SF6DC	MVG6.3TP16VC220M 220u 20% 1
		C405	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C408	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C412	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C415	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C428	0CE106SK6DC	VMV106M050S0ANC010 10u 20%
		C429	0CE106SK6DC	VMV106M050S0ANC010 10u 20%
		C452	0CE337WJ6D8	MVK12.5TP35VC330M 330u 20%
		C453	0CE337WJ6D8	MVK12.5TP35VC330M 330u 20%
		C454	0CE337WJ6D8	MVK12.5TP35VC330M 330u 20%
		C455	0CE337WJ6D8	MVK12.5TP35VC330M 330u 20%
		C501	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C512	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C527	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C529	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C532	0CE105WK6DC	MVK4.0TP50VC1M 1u 20% 50V 5
		C536	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C540	0CE107WF6DC	MVK6.3TP16VC100M 100u 20% 1
		C543	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C601	0CE476WF6DC	MVK6.3TP16VC47M 47u 20% 16V
		C623	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C624	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C625	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C626	0CE476WH6DC	MVK8.0TP25VC47M 47u 20% 25V
		C627	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C630	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V
		C632	0CE106WFKDC	MVK4.0TP16VC10M 10u 20% 16V



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		C538	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C539	OCK104CF56A	0603B104K160CT 100n 10% 16V
		C541	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C603	OCC101CK41A	C1608C0G1H101JT 100p 5% 50V
		C604	OCC101CK41A	C1608C0G1H101JT 100p 5% 50V
		C607	OCC220CK41A	C1608C0G1H220JT 22p 5% 50V
		C608	OCC220CK41A	C1608C0G1H220JT 22p 5% 50V
		C611	OCC471CK41A	C1608C0G1H471JT 470p 5% 50V
		C612	OCC471CK41A	C1608C0G1H471JT 470p 5% 50V
		C614	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C615	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C616	OCC471CK41A	C1608C0G1H471JT 470p 5% 50V
		C628	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C631	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C650	OCC471CK41A	C1608C0G1H471JT 470p 5% 50V
		C108	OCK103CK56A	0603B103K500CT 10n 10% 50V
		C120	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C201	OCC020CK01A	C1608C0G1H020CT 2p 0.25PF 5
		C202	OCC020CK01A	C1608C0G1H020CT 2p 0.25PF 5
		C209	OCC103CK56A	0603B103K500CT 10n 10% 50V
		C236	OCK104CK56A	0603B104K500CT 100n 10% 50V
		C239	OCC020CK01A	C1608C0G1H020CT 2p 0.25PF 5
		C240	OCC020CK01A	C1608C0G1H020CT 2p 0.25PF 5
		C248	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C250	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C267	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C268	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C269	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C270	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C312	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C330	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C331	OCC103CK56A	0603B103K500CT 10n 10% 50V
		C333	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C417	OCC102CK41A	C1608C0G1H102JT 1n 5% 50V C
		C422	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C446	OCC333CK56A	C1608X7R1H333KT 33n 10% 50V
		C447	OCC333CK56A	C1608X7R1H333KT 33n 10% 50V
		C449	OCC333CK56A	C1608X7R1H333KT 33n 10% 50V
		C451	OCC333CK56A	C1608X7R1H333KT 33n 10% 50V
		C505	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C506	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C507	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C508	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C513	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C514	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C516	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C517	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C518	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C519	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C520	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C522	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C523	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C524	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C525	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C526	OCC474CH94A	0603F474Z250CT 470n -20TO+8
		C530	OCC104CF56A	0603B104K160CT 100n 10% 16V
		C534	OCC220CK41A	C1608C0G1H220JT 22p 5% 50V
		C535	OCC220CK41A	C1608C0G1H220JT 22p 5% 50V
		C537	OCC104CF56A	0603B104K160CT 100n 10% 16V
		C542	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C544	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C602	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C629	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C633	OCC104CK56A	0603B104K500CT 100n 10% 50V
		C309	OCE686SJ6D8	"68UF MVG,MC,VC 35V 20% SMD"
		C320	OCE686SJ6D8	"68UF MVG,MC,VC 35V 20% SMD"
		C371	OCE686SJ6D8	"68UF MVG,MC,VC 35V 20% SMD"
		C372	OCE686SJ6D8	"68UF MVG,MC,VC 35V 20% SMD"
<b>DIODES</b>				
		D101	ODSIH00028A	MC2838-T112-1 1200MV 75V 30
		D102	ODSIH00028A	MC2838-T112-1 1200MV 75V 30
		ZD109	UDZ560009DA	UDZS5.6B 5600MV 5.49TO5.73V

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			ZD201	0DZRM00248A RLZ8.2B 8200MV 7.78TO8.19V
			ZD202	0DZRM00248A RLZ8.2B 8200MV 7.78TO8.19V
			ZD601	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD602	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD603	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD604	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD605	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD618	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD619	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD620	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD606	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD621	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
			ZD622	0DZ560009DA UDZS5.6B 5600MV 5.49TO5.73V
<b>IC</b>				
			IC101	0ISO206900A CXA2069Q 8.5TO9.5V -- 1300
			IC401	0ILNR00015A NSP-2100A 1.8VTO3.3V ---
			IC403	0IMCRTI028C TAS5122DCAR 3TO3.6V_16TO25.
			IC505	0ISTL00024A MC14053BDR2G 3TO18V 0.02mA
			IC502	0IMCRAL006A AT24C16AN-10SI-2.7 16KBIT 2
			IC601	0IMMRAL014B AT24C02N-10SI-2.7 2KBIT 256
			IC302	0IMCRSJ001A SC15651ST-1.8 2.2TO5.5V 1.8
			IC304	0IMCRRH001A BA033FP-E2 4.3TO25V 3.3V 1W
			IC504	0IMCR02227A MTV416GMF 3TO3.6V 24mA 25MH
			IC201	0IPRP00670A MSP4458G-C4 7.6TO8.7V_4.75T
			IC202	0IMCRMN028C MSP4450K-QA-D6 7.6TO8.7V_4.
			IC602	0IPH740800H 74F08D 4.5TO5.5V 12.9mA AND
			IC501	0IMCRSO025A CXA2181Q 4.75TO5.25 - 1645M
			IC503	0IKE702900G KIA7029AF -0.3TO15V 2.9V 50
			IC301	0IMCRSH001A PQ05DZ1U 6TO16V 5V 8W D2PAK
			IC303	0IMCRFA010A KA7809R 11.5TO24V 9V 150W D
<b>COIL &amp; CORE &amp; INDUCTOR</b>				
			L101	0LC2000005D FI-B2012-332KJT 3.3UH 10% -
			L102	0LC2000005D FI-B2012-332KJT 3.3UH 10% -
			L103	0LC2000005D FI-B2012-332KJT 3.3UH 10% -
			L104	0LC2000005D FI-B2012-332KJT 3.3UH 10% -
			L201	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L202	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L203	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L204	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L205	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L206	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L501	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L502	0LC2232101A FI-D3216-223KJT 22UH 10% -
			L302	6140VB0004B LN-15A1 26uH -- 12X9MM LEA
			L303	6140VB0004B LN-15A1 26uH -- 12X9MM LEA
			L304	6140VB0004B LN-15A1 26uH -- 12X9MM LEA
			L306	6140VB0004B LN-15A1 26uH -- 12X9MM LEA
			L408	61409B0008A DBF-1310S DONGBANG 10UH 15%
			L409	61409B0008A DBF-1310S DONGBANG 10UH 15%
			L410	61409B0008A DBF-1310S DONGBANG 10UH 15%
			L411	61409B0008A DBF-1310S DONGBANG 10UH 15%
			L301	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L305	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L311	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L312	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L313	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L401	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L402	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L403	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L404	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L417	6210TCE001S HU-1M2012-121 120OHM 2X1.25
			L418	6210TCE001S HU-1M2012-121 120OHM 2X1.25
			L419	6210TCE001S HU-1M2012-121 120OHM 2X1.25
			L420	6210TCE001S HU-1M2012-121 120OHM 2X1.25
			L601	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L604	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L613	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L616	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L308	6210TCE001G HH-1M3216-501JT 500OHM 3.2X
			L309	6210TCE001G HH-1M3216-501JT 500OHM 3.2X

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		L310	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		L315	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		L316	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		L503	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		L602	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
<b>TRANSISTOR</b>				
		Q301	0TFVI80067A	SI3865BDV N-CHANNEL MOSFET
		Q303	0TFVI80067A	SI3865BDV N-CHANNEL MOSFET
		Q605	0TR830009BA	BSS83 N-CHANNEL MOSFET 10V
		Q606	0TR830009BA	BSS83 N-CHANNEL MOSFET 10V
		Q107	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q108	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q110	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q112	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q201	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q203	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q205	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q206	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q207	0TR102009AM	KRA102S PNP -30V - -50V -0.
		Q501	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q504	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q612	0TRIH80003A	RT1N141C-T112-1 NPN 10V 50V
		Q102	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q103	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q105	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q106	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q109	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q202	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q204	0TRIH80002A	2SA1530A-T112-1R PNP -6V -6
		Q502	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q503	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q517	0TR102009AM	KRA102S PNP -30V - -50V -0.
		Q613	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q614	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q615	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q616	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q617	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q618	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q619	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q620	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
		Q621	0TRIIY80001A	2SC3052 NPN 6V 50V 50V 200M
<b>RESISTORS</b>				
		R101	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R103	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R112	0RJ0752D677	MCR03EZPJ750 750OHM 5% 1/10W
		R113	0RJ0752D677	MCR03EZPJ750 750OHM 5% 1/10W
		R115	0RJ5601D677	MCR03EZPJ562 5.6KOHM 5% 1/1
		R116	0RJ0222D677	MCR03EZPJ220 220OHM 5% 1/10W
		R117	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R118	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R119	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R120	0RJ0752D677	MCR03EZPJ750 750OHM 5% 1/10W
		R121	0RJ9100D677	MCR03EZPJ911 910OHM 5% 1/10
		R122	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R123	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R124	0RJ5100D677	MCR03EZPJ511 510OHM 5% 1/10
		R125	0RJ9100D677	MCR03EZPJ911 910OHM 5% 1/10
		R126	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R127	0RJ5100D677	MCR03EZPJ511 510OHM 5% 1/10
		R129	0RJ5601D677	MCR03EZPJ562 5.6KOHM 5% 1/1
		R131	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R132	0RJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R133	0RJ1003D677	MCR03EZPJ104 100KOHM 5% 1/1
		R134	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R135	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R136	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R141	0RJ0682D677	MCR03EZPJ680 680OHM 5% 1/10W
		R144	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R146	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R149	0RJ0752D677	MCR03EZPJ750 750OHM 5% 1/10W

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		R150	0RJ0752D677	MCR03EZPJ750 750OHM 5% 1/10W
		R155	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R157	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R158	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R159	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R160	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R161	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R162	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R163	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R164	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R202	0RJ0432D677	MCR03EZPJ430 430OHM 5% 1/10W
		R203	0RJ0432D677	MCR03EZPJ430 430OHM 5% 1/10W
		R204	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R210	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R212	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R215	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R216	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R217	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R218	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R219	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R220	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R221	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R226	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R227	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R230	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R231	0RJ0392D677	MCR03EZPJ390 390OHM 5% 1/10W
		R232	0RJ0392D677	MCR03EZPJ390 390OHM 5% 1/10W
		R247	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R260	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R261	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R266	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R267	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R268	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R269	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R270	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R271	0RJ2001D677	MCR03EZPJ202 2KOHM 5% 1/10W
		R272	0RJ2001D677	MCR03EZPJ202 2KOHM 5% 1/10W
		R273	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R274	0RJ1501D677	MCR03EZPJ152 1.5KOHM 5% 1/1
		R275	0RJ1501D677	MCR03EZPJ152 1.5KOHM 5% 1/1
		R276	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R304	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10
		R308	0RJ5600D677	MCR03EZPJ561 560OHM 5% 1/10
		R310	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R311	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10
		R312	0RJ5600D677	MCR03EZPJ561 560OHM 5% 1/10
		R401	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R402	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/1
		R403	0RJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R407	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R408	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R439	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R441	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R443	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R444	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R448	0RJ0331D677	MCR03EZPJ3R3 3300MOHM 5% 1/1
		R450	0RJ0331D677	MCR03EZPJ3R3 3300MOHM 5% 1/1
		R456	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R458	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R459	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R464	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R465	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R466	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R467	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R469	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R472	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R473	0RJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R501	0RJ4700D677	MCR03EZPJ471 470OHM 5% 1/10
		R506	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R5106	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R5111	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5113	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5114	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5118	0RJ6802D677	MCR03EZPJ683 68KOHM 5% 1/10

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R512	0RJ4700D677	MCR03EZPJ471 470OHM 5% 1/10
		R5120	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R514	0RJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R5140	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R5155	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5166	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R5167	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R5168	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R517	0RJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R5171	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R544	0RJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R563	0RJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R569	0RJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R570	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R580	0RJ2002D677	MCR03EZPJ2002 20KOHM 5% 1/1
		R583	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R585	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R6000	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R6004	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R6005	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R6006	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R6007	0RJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R6008	0RJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R601	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R6016	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R6017	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R6018	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R602	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R607	0RJ2001D677	MCR03EZPJ202 2KOHM 5% 1/10W
		R612	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R613	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R614	0RJ2001D677	MCR03EZPJ202 2KOHM 5% 1/10W
		R617	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R618	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R627	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R628	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R629	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R630	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R631	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R632	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R633	0RJ0102D677	MCR03EZPJ100 10OHM 5% 1/10W
		R634	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R635	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R636	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R645	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R651	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R652	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R653	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R654	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R667	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R668	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R669	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R670	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R671	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R672	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R673	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R674	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R678	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R679	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R680	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R684	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R685	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R686	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10
		R687	0RJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R688	0RJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R689	0RJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R690	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R691	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R692	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R695	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R696	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R697	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R698	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R699	0RJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R102	0RJ5100D677	MCR03EZPJ511 510OHM 5% 1/10
		R104	0RJ5100D677	MCR03EZPJ511 510OHM 5% 1/10
		R105	0RJ1501D677	MCR03EZPJ152 1.5KOHM 5% 1/1
		R106	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R107	0RJ1501D677	MCR03EZPJ152 1.5KOHM 5% 1/1
		R108	0RJ9100D677	MCR03EZPJ911 910OHM 5% 1/10
		R109	0RJ9100D677	MCR03EZPJ911 910OHM 5% 1/10
		R111	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R114	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R128	0RJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R130	0RJ3300D677	MCR03EZPJ331 330OHM 5% 1/10
		R137	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R138	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R139	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R140	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R142	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R143	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R147	0RJ1003D677	MCR03EZPJ104 100KOHM 5% 1/1
		R148	0RJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R151	0RJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R152	0RJ5601D677	MCR03EZPJ562 5.6KOHM 5% 1/1
		R153	0RJ5601D677	MCR03EZPJ562 5.6KOHM 5% 1/1
		R154	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R207	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R208	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R209	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R211	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R213	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R222	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R223	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R224	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R228	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R233	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R234	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R235	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R236	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R237	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R239	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R240	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R241	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R242	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R243	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R244	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R245	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R248	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R249	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R250	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R251	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R252	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R253	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R254	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R255	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R256	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R257	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R258	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/1
		R259	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R262	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R263	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R264	0RJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R265	0RJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/1
		R303	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R306	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R404	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R406	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R409	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R410	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R411	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R412	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R413	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R414	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R415	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R417	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R418	0RJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R423	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10

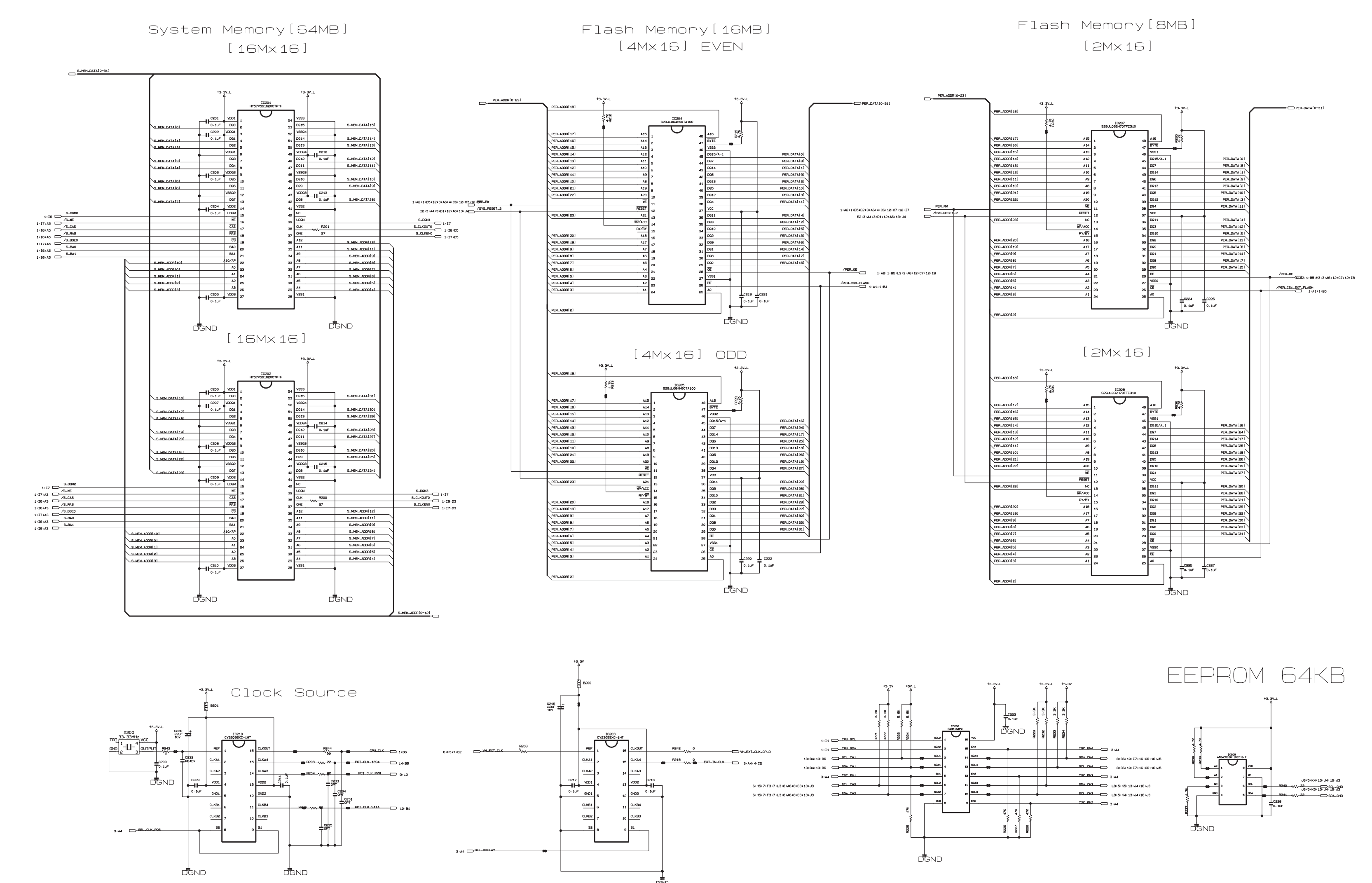
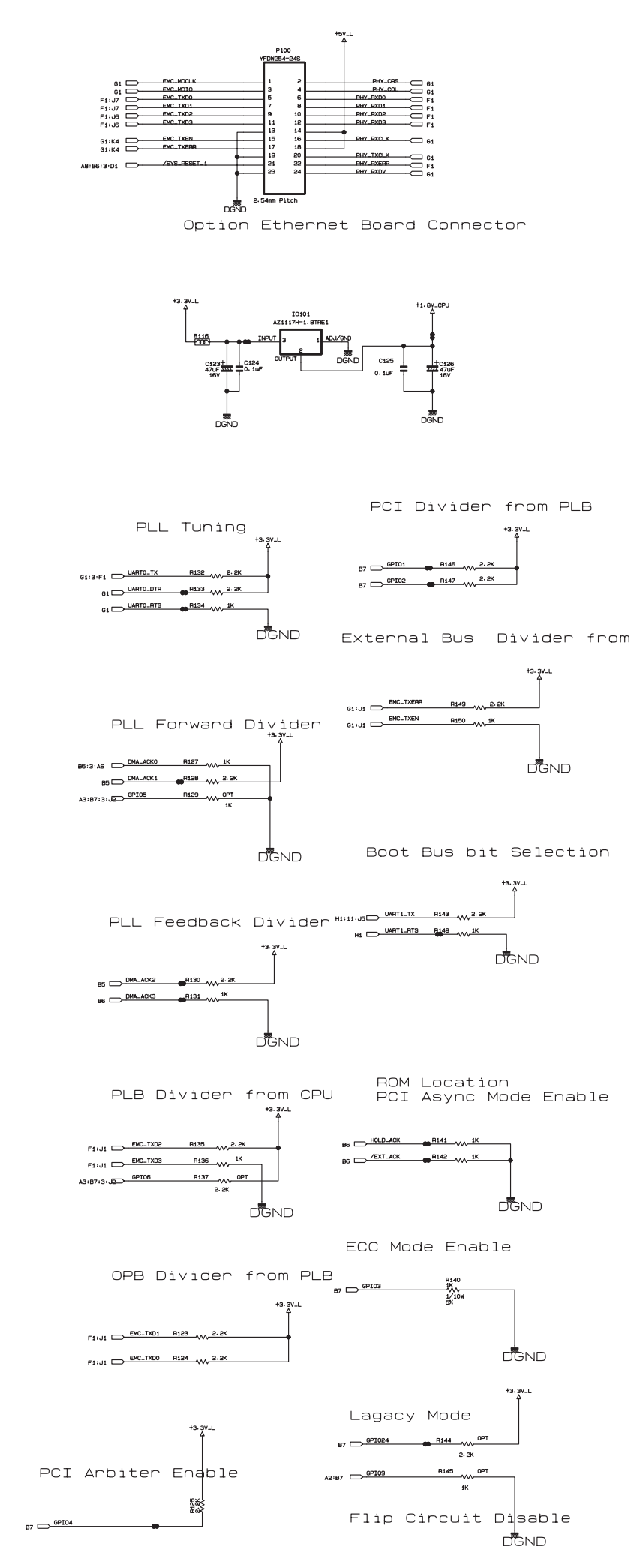
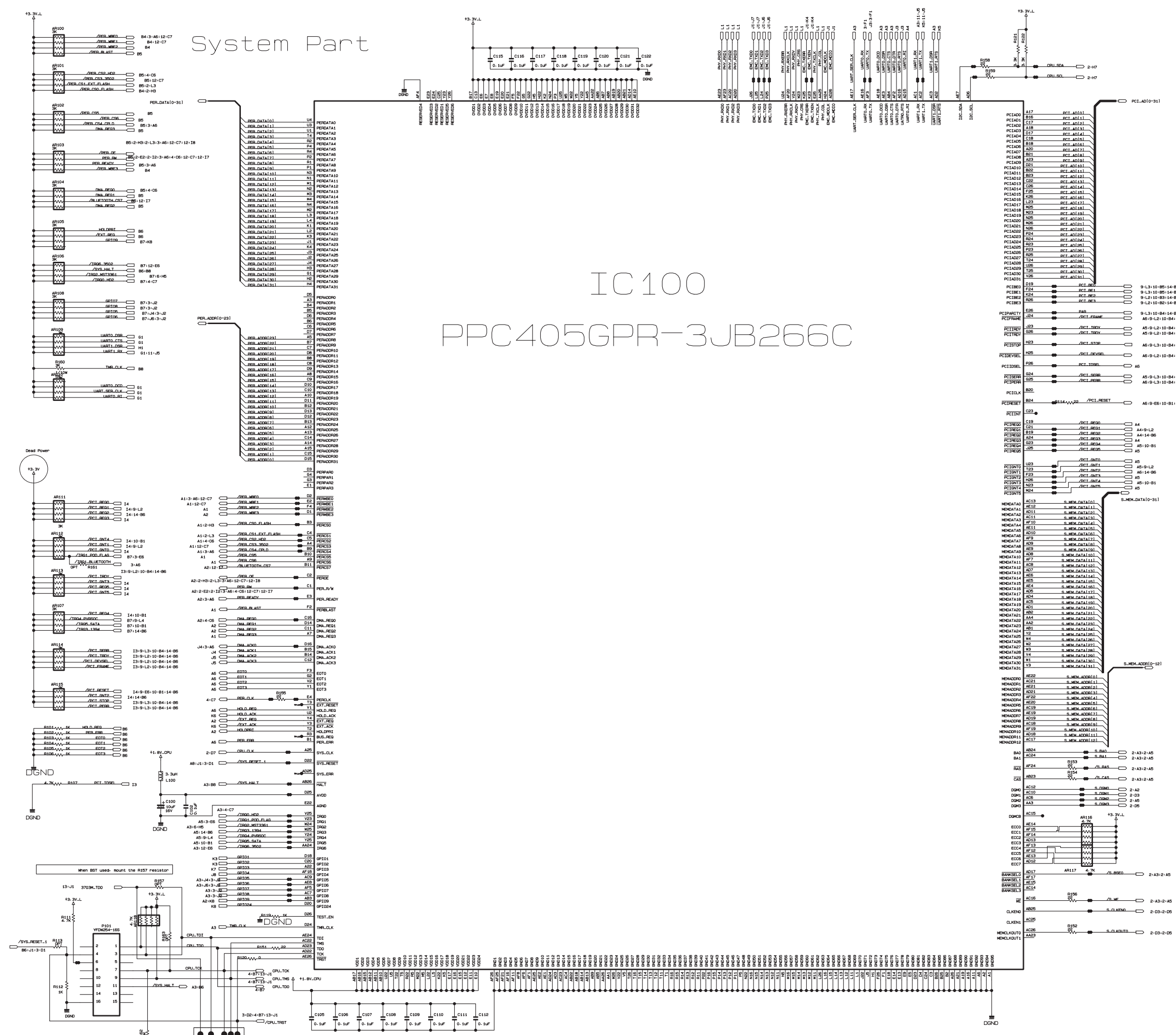
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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R424	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R426	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R427	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R438	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R453	ORJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R454	ORJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R455	ORJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R457	ORJ0101D677	MCR03EZPJ1R0 1OHM 5% 1/10W
		R508	ORJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R510	ORJ0752D677	MCR03EZPJ750 75OHM 5% 1/10W
		R5101	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5103	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R5105	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5107	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5108	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5109	ORJ1003D677	MCR03EZPJ104 100KOHM 5% 1/1
		R5110	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5112	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R513	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R5137	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R5139	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R515	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R5153	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R5154	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R5156	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R5157	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5158	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5159	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R516	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R5160	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5161	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5162	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
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		R5164	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R5165	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R520	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R521	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R524	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R527	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R529	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R530	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R540	ORJ2001D677	MCR03EZPJ202 2KOHM 5% 1/10W
		R541	ORJ2001D677	MCR03EZPJ202 2KOHM 5% 1/10W
		R542	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R546	ORJ2200D677	MCR03EZPJ221 220OHM 5% 1/10
		R550	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R551	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R552	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R555	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R556	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R557	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R558	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R559	ORJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/1
		R561	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R562	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R566	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R567	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R573	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R574	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R575	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R576	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R577	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R578	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R579	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R581	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R584	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R587	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R589	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R591	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R592	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R593	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R594	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R595	ORJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W
		R596	ORJ3302D677	MCR03EZPJ333 33KOHM 5% 1/10

DATE: 2006. 02. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R597	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R598	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R599	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R6009	ORJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R6019	ORJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R6020	ORJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R6021	ORJ6801D677	MCR03EZPJ682 6.8KOHM 5% 1/1
		R6025	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R6027	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R606	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R608	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R609	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R610	ORJ1000D677	MCR03EZPJ101 100OHM 5% 1/10
		R611	ORJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10
		R615	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R616	ORJ4702D677	MCR03EZPJ473 47KOHM 5% 1/10
		R663	ORJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W
		R681	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R682	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R683	ORJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W
		R693	ORJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R694	ORJ0822D677	MCR03EZPJ820 82OHM 5% 1/10W
		R505	ORN1002F409	RN-96T1F10K0 10KOHM 1% 1/6W
<b>OTHERS</b>				
		X501	6212AB3004D	CSALF2M69G4ZF01-A3 2.696MHZ
		TU2	6634D00016A	TASA-H401F LG INNOTEK 75 OH
		X201	6202VDT002H	SX-1 18.432MHZ 30PPM 18.432
		X202	6202VDT002H	SX-1 18.432MHZ 30PPM 18.432
		X502	6212AB2015A	HC-49/SM4H 4MHZ 30PPM 4MHZ
		X503	6202TST001E	SX-1 24MHZ 30PPM 24MHZ 30PP
<b>CONTROL BOARD</b>				
		SW101	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW102	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW103	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW104	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW105	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW106	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW107	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		SW108	140-313B	KPT-1115AM 1C1P 12VDC 0.05A
		R101	0RH2702D622	MCR10EZHJ273 27KOHM 5% 1/8W
		R102	0RH2702D622	MCR10EZHJ273 27KOHM 5% 1/8W
		R103	0RH8201D622	MCR10EZHJ822 8.2KOHM 5% 1/8
		R104	0RH8201D622	MCR10EZHJ822 8.2KOHM 5% 1/8
		R105	0RH2401D622	MCR10EZHJ242 2.4KOHM 5% 1/8
		R106	0RH2401D622	MCR10EZHJ242 2.4KOHM 5% 1/8
		R107	0RH9100D622	MCR10EZHJ911 910OHM 5% 1/8W
		R108	0RH9100D622	MCR10EZHJ911 910OHM 5% 1/8W
		ZD101	0DZ510009EE	UDZS5.1B 5100MV 4.98TO5.2V
		ZD102	0DZ510009EE	UDZS5.1B 5100MV 4.98TO5.2V
<b>INDEX BOARD</b>				
		C101	0CH3104K566	0805B104K500CT 100n 10% 50V
		C107	0CH3104K566	0805B104K500CT 100n 10% 50V
		C110	0CH3104K566	0805B104K500CT 100n 10% 50V
		C112	0CH3104K566	0805B104K500CT 100n 10% 50V
		L101	0LC2232101A	FI-D3216-223KJT 22UH 10% -
		L103	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		L104	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		Q101	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		R101	0RH1101D622	MCR10EZHJ112 1.1KOHM 5% 1/8
		R102	0RH5100D622	MCR10EZHJ511 510OHM 5% 1/8W
		R103	0RH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R104	0RH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R136	0RH0000D622	MCR10EZHJ000 0OHM 5% 1/8W 2
		R139	0RH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R141	0RH1002D622	MCR10EZHJ103 10KOHM 5% 1/8W
		R142	0RH1002D622	MCR10EZHJ103 10KOHM 5% 1/8W
		D101	0DLAU0410AA	SAW5670 ROUNDED 5mm AMBER/WHI
		D102	6301900003A	LED INDEX WHITE 3V 20MA 80M

DATE: 2006. 02. 20.

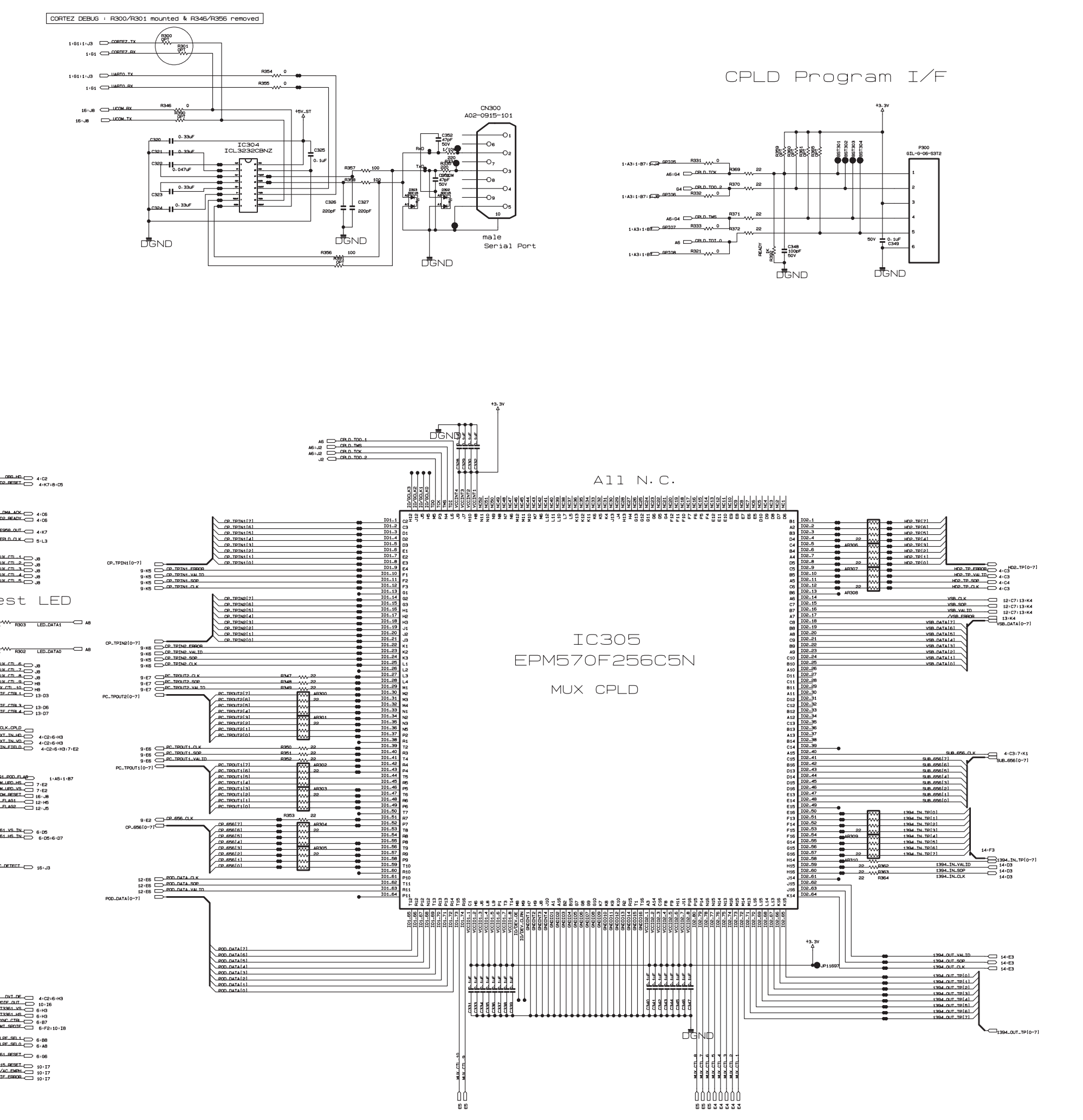
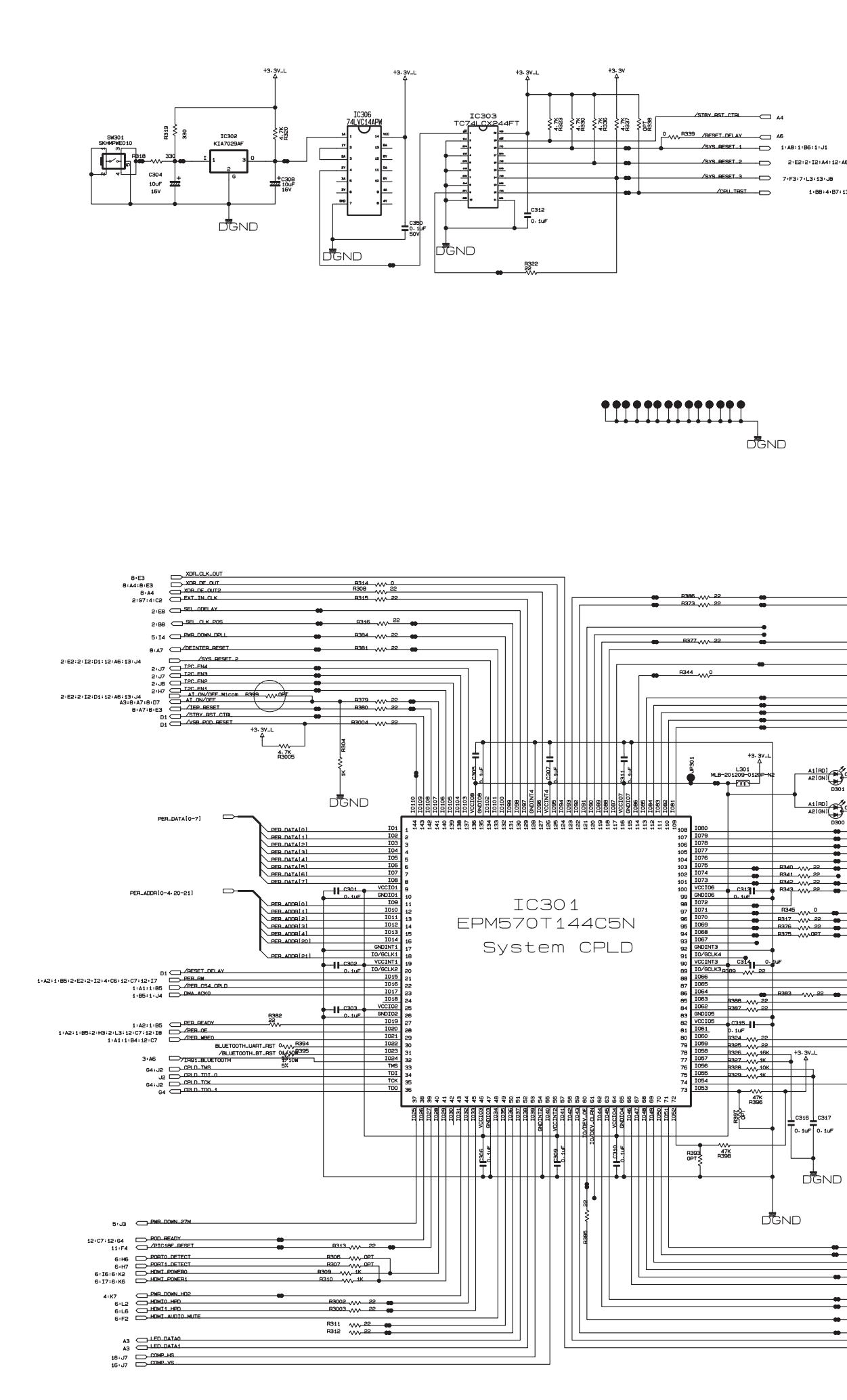
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		IC101	6712000011B	KSM-2013TE2A 4.5TO5.5V 1.3M
		C102	OCE107SF6DC	VMV107M016S0ANE010 100u 20%
		C103	OCH6330K416	C2012C0G1H330JT 33p 5% 50V
		C104	OCH3103K516	C2012Y5P1H103KT 10n 10% 50V
		C105	OCH3104K566	0805B104K500CT 100n 10% 50V
		C106	OCE106SH6DC	VMV106M025S0ANB010 10u 20%
		C108	OCE106SH6DC	VMV106M025S0ANB010 10u 20%
		C109	OCE106SH6DC	VMV106M025S0ANB010 10u 20%
		C111	OCE106SH6DC	VMV106M025S0ANB010 10u 20%
		C115	OCE107SF6DC	VMV107M016S0ANE010 100u 20%
		IC102	OIM623200B	"M62320P,FP 4.5TO5.5V 0.05mA"
		IC103	OIMCRFA015A	KA7805R 7TO20V 5V 150W DPAK
		L105	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X
		Q102	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		Q103	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		Q104	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		Q105	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		Q106	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		Q107	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		Q108	0TR387500AA	2SC3875S NPN 5V 60V 50V 150
		R105	ORH1000D622	MCR10EZHJ101 100OHM 5% 1/8W
		R106	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R107	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R108	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R109	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R110	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R111	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R112	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R115	ORH0222D622	MCR10EZHJ220 22OHM 5% 1/8W
		R116	ORH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R117	ORH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R118	ORH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R119	ORH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R120	ORH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R121	ORH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R122	ORH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R123	ORH0000D622	MCR10EZHJ000 0OHM 5% 1/8W 2
		R124	ORH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R125	ORH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R126	ORH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W
		R127	ORH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R128	ORH4701D622	MCR10EZHJ472 4.7KOHM 5% 1/8
		R140	ORH1002D622	MCR10EZHJ103 10KOHM 5% 1/8W
<b>SIDE BOARD</b>				
		C100	OCH4101K416	C2012C0G1H101JT 100p 5% 50V
		C101	OCH4101K416	C2012C0G1H101JT 100p 5% 50V
		R105	ORH0000D622	MCR10EZHJ000 0OHM 5% 1/8W 2
		R106	ORH4700D622	MCR10EZHJ471 470OHM 5% 1/8W
		R107	ORH0000D622	MCR10EZHJ000 0OHM 5% 1/8W 2
		R108	ORH4700D622	MCR10EZHJ471 470OHM 5% 1/8W
		R109	ORH0000D622	MCR10EZHJ000 0OHM 5% 1/8W 2
		R110	ORH0000D622	MCR10EZHJ000 0OHM 5% 1/8W 2





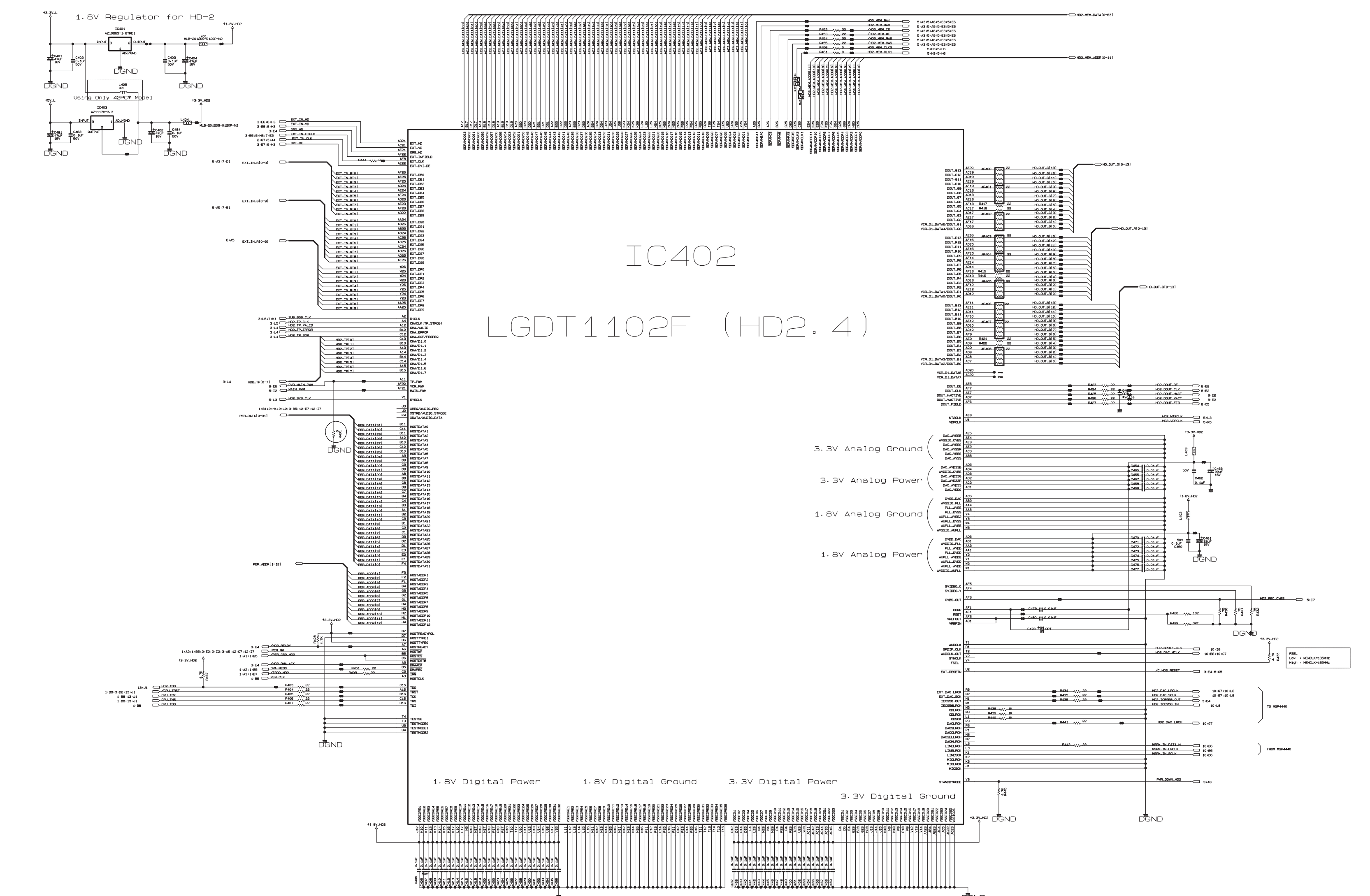
THE Δ SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM IRRADIATION. PLEASE REFER TO THE ELECTRICAL SPECIFICATIONS AND THE ELECTRICAL SYMBOLS AND MARKS WHEN REVIEWING IT. IT IS ESSENTIAL THAT ONLY MANUFACTURED SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE Δ SYMBOL MARK OF THE SCHEMATIC.

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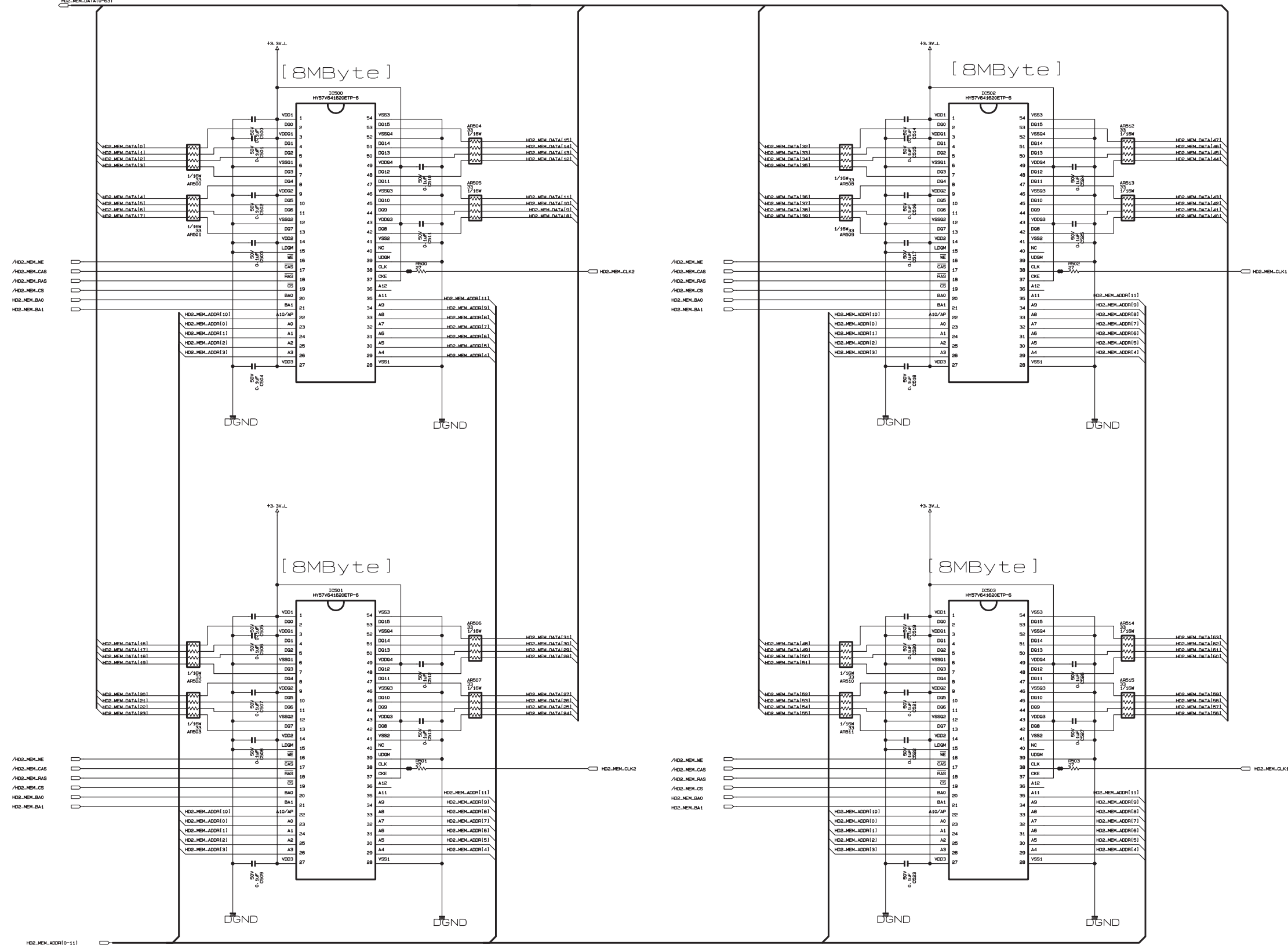
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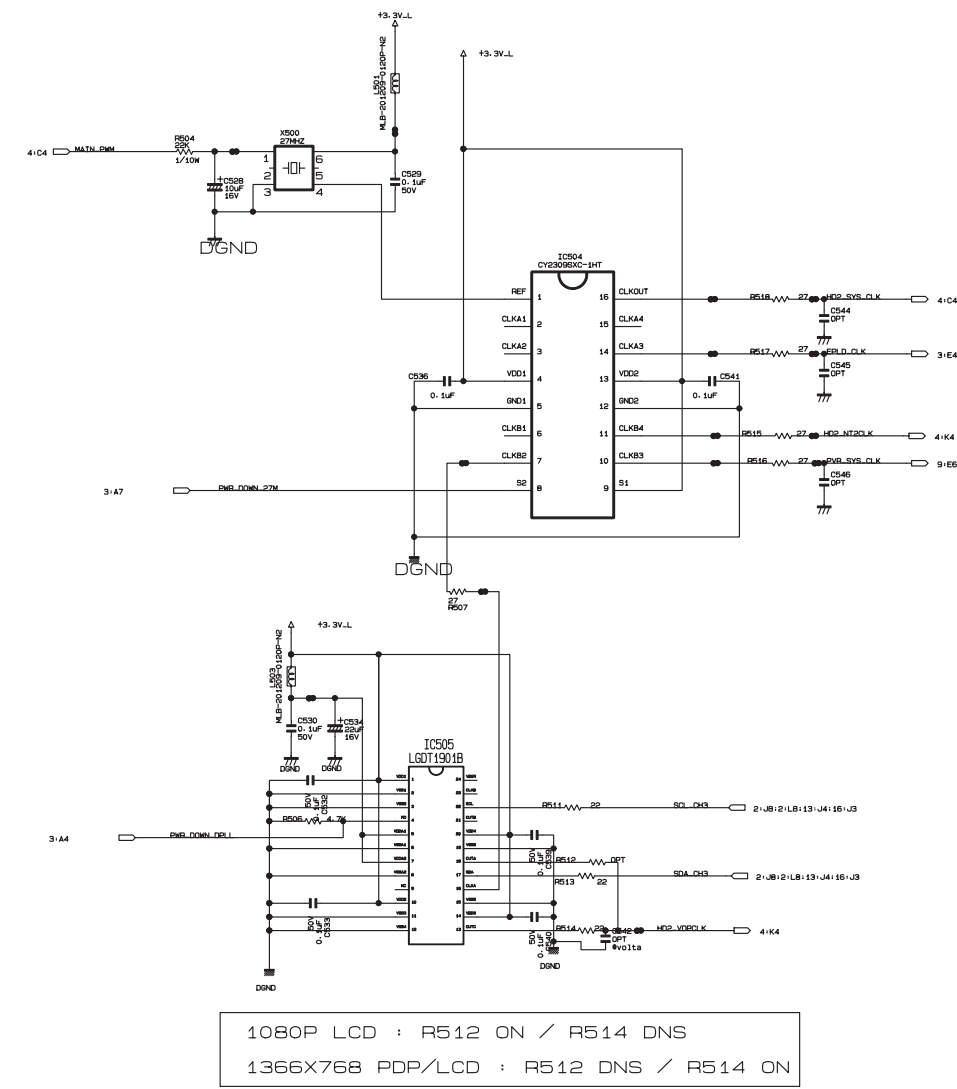




HD-2 Memory [32MB]

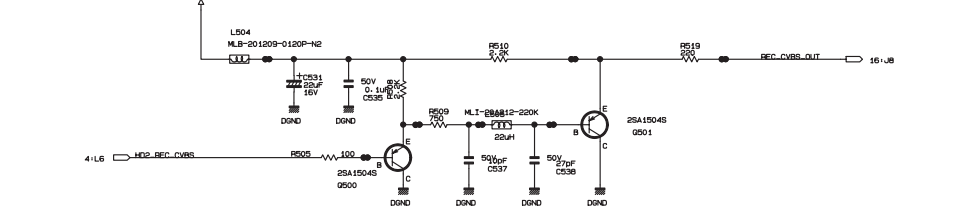


HD-2 PLL Circuit

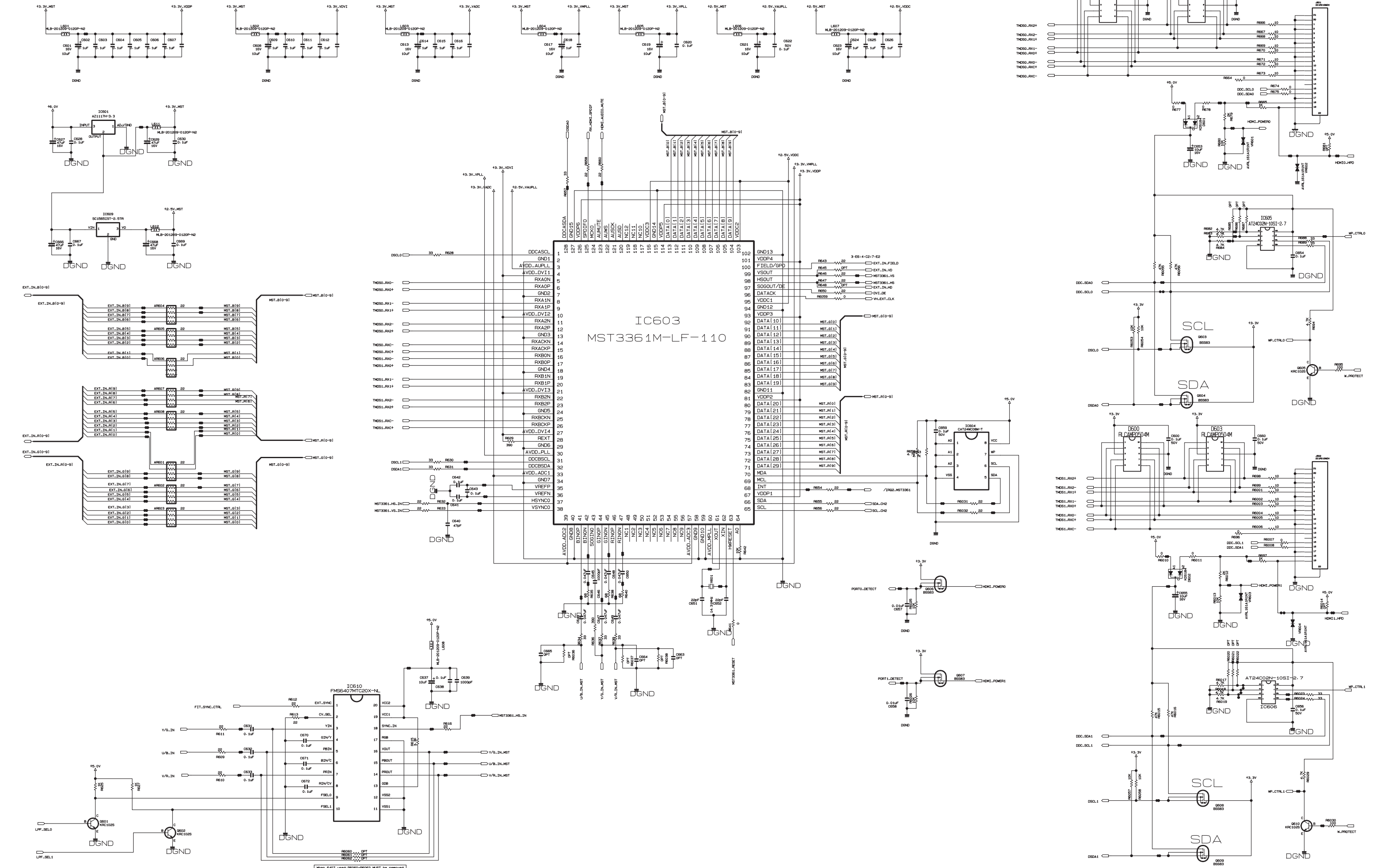


1080P LCD : RS12 ON / RS14 DNS  
1366x768 PDP/LCD : RS12 DNS / RS14 ON

VCR\_REC\_OUTPUT



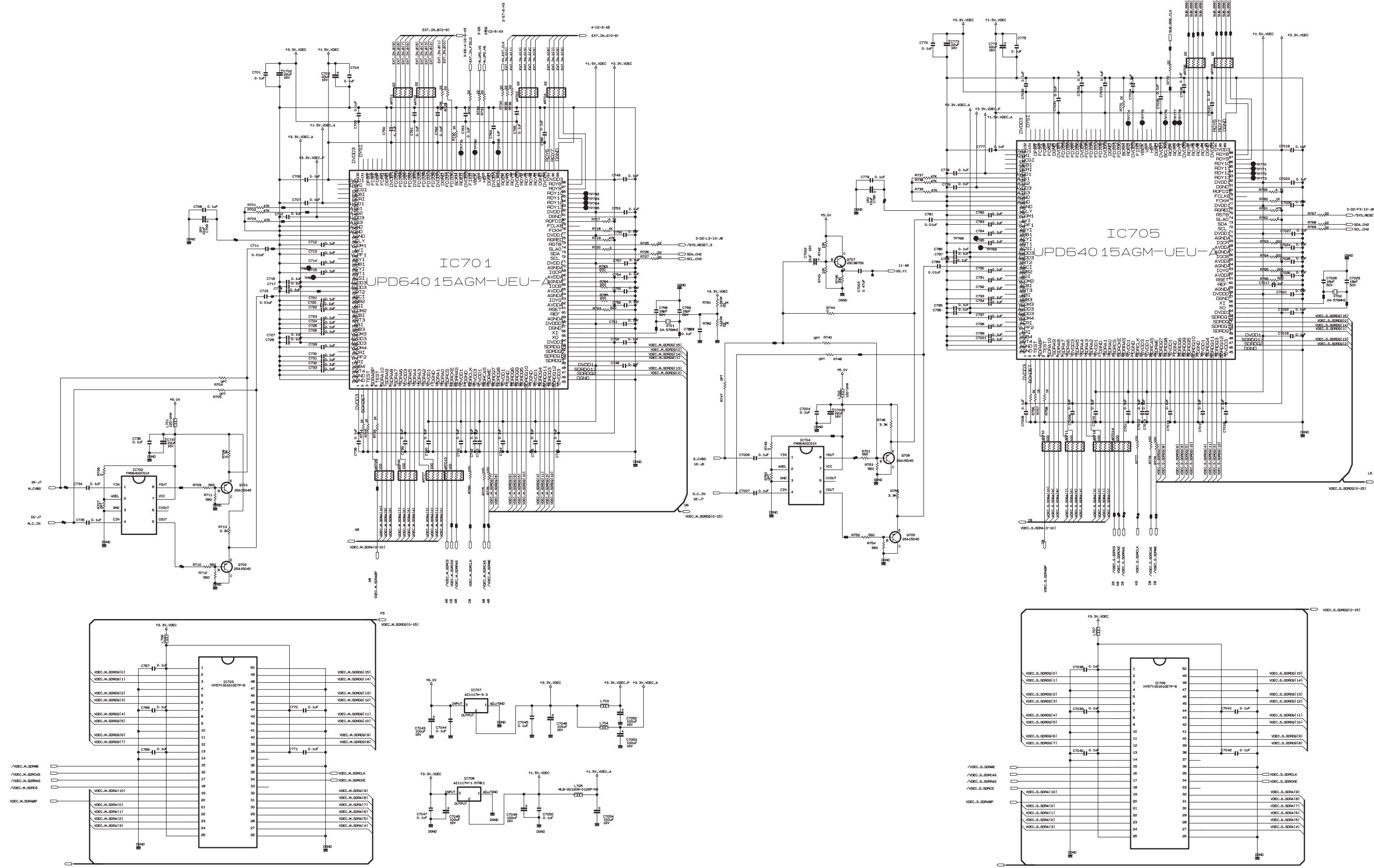
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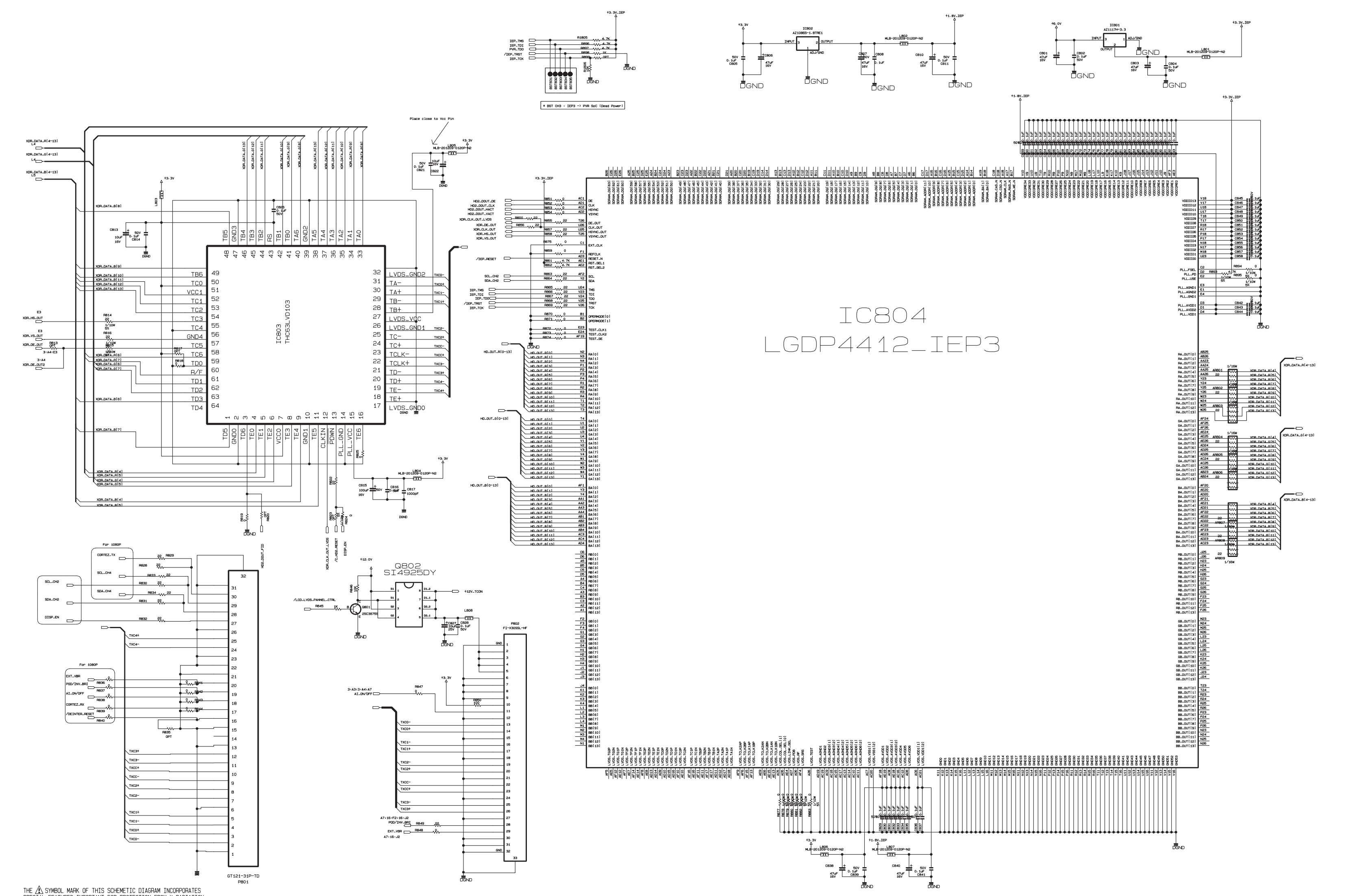
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MAIN VIDEO DECODER

SUB VIDEO DECODER



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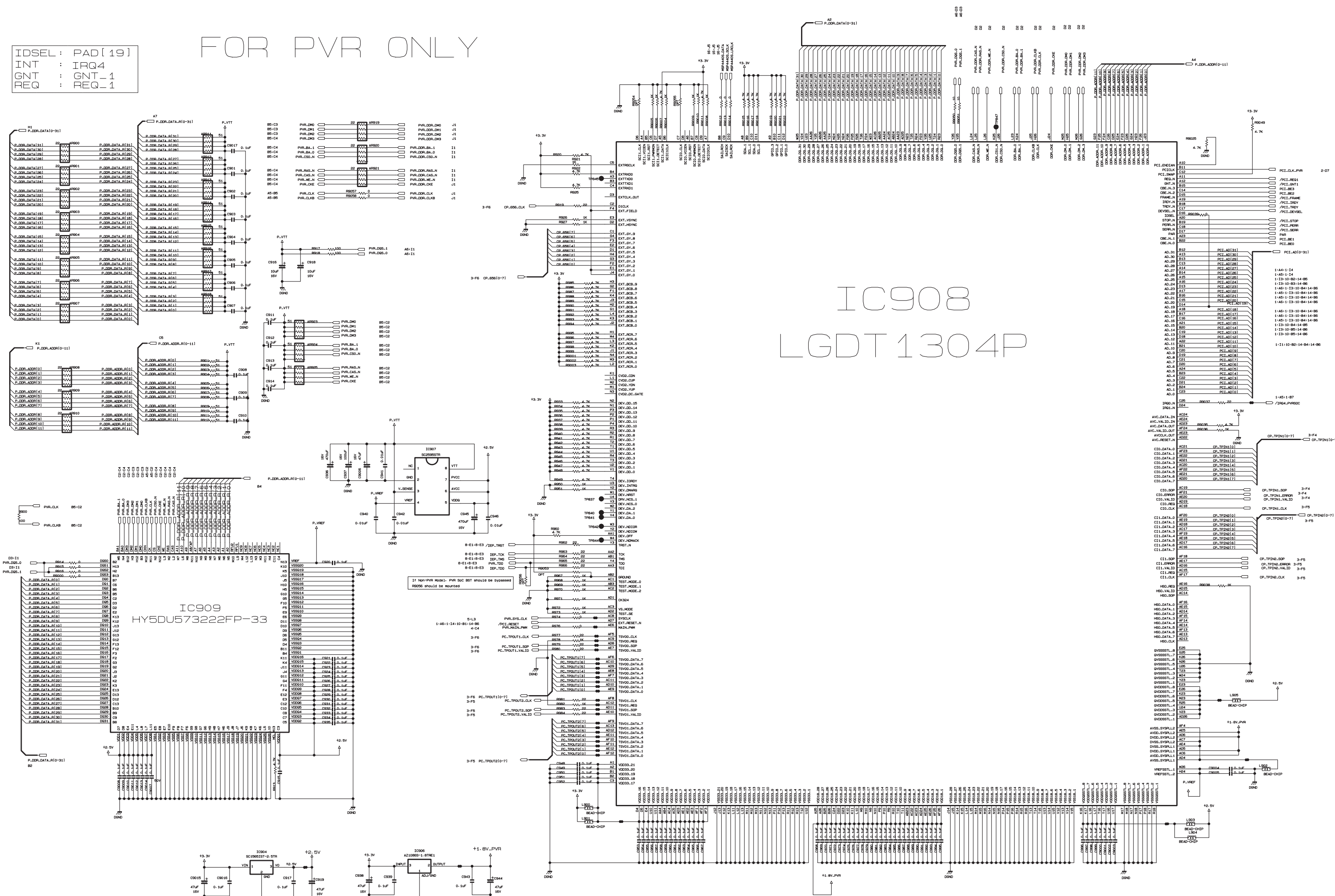


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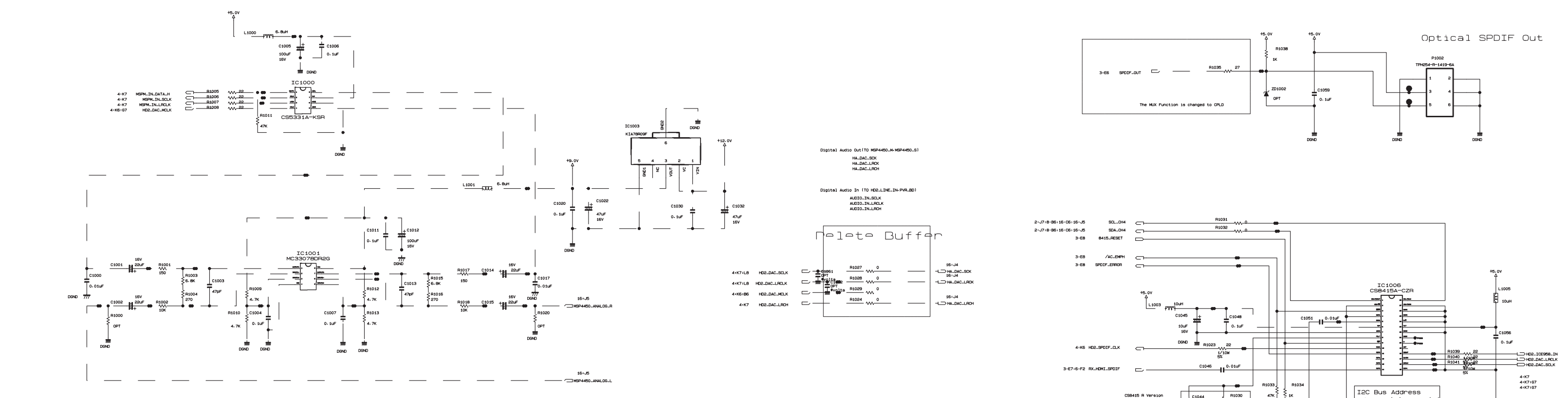
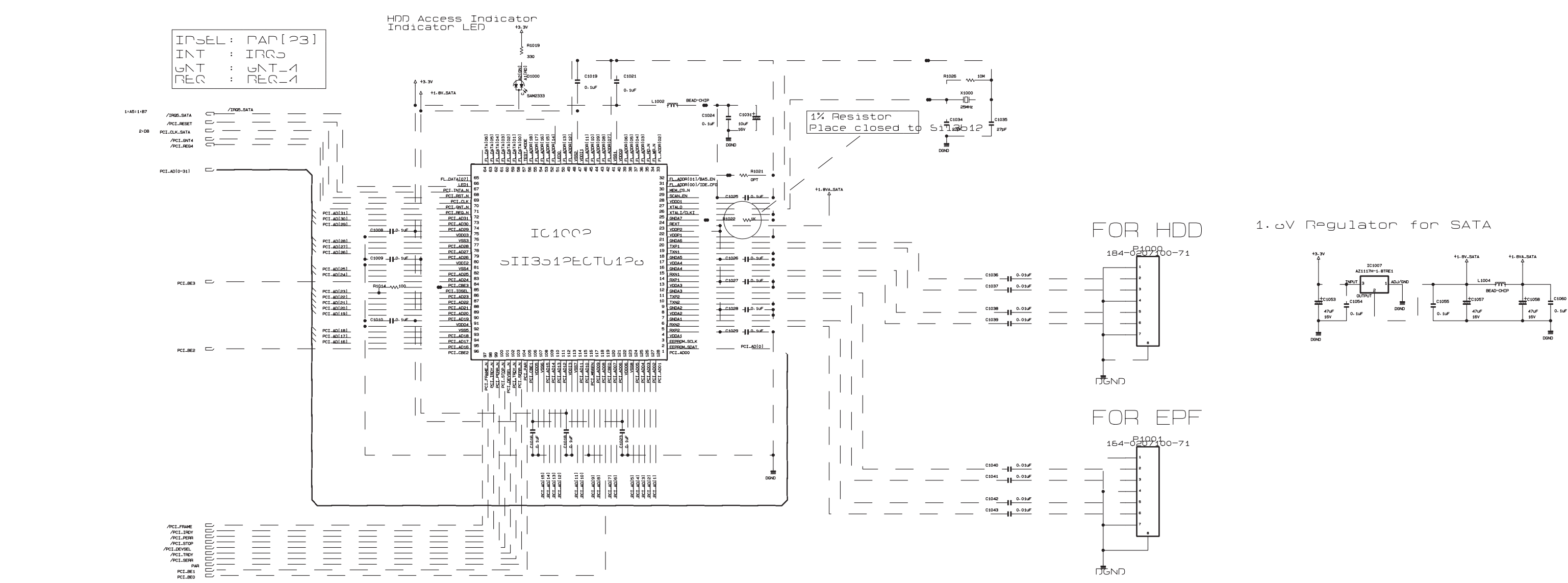
IDSEL: PAD[19]  
 INT: IRQ4  
 GNT: GNT-1  
 REQ: REQ-1

FOR PVR ONLY



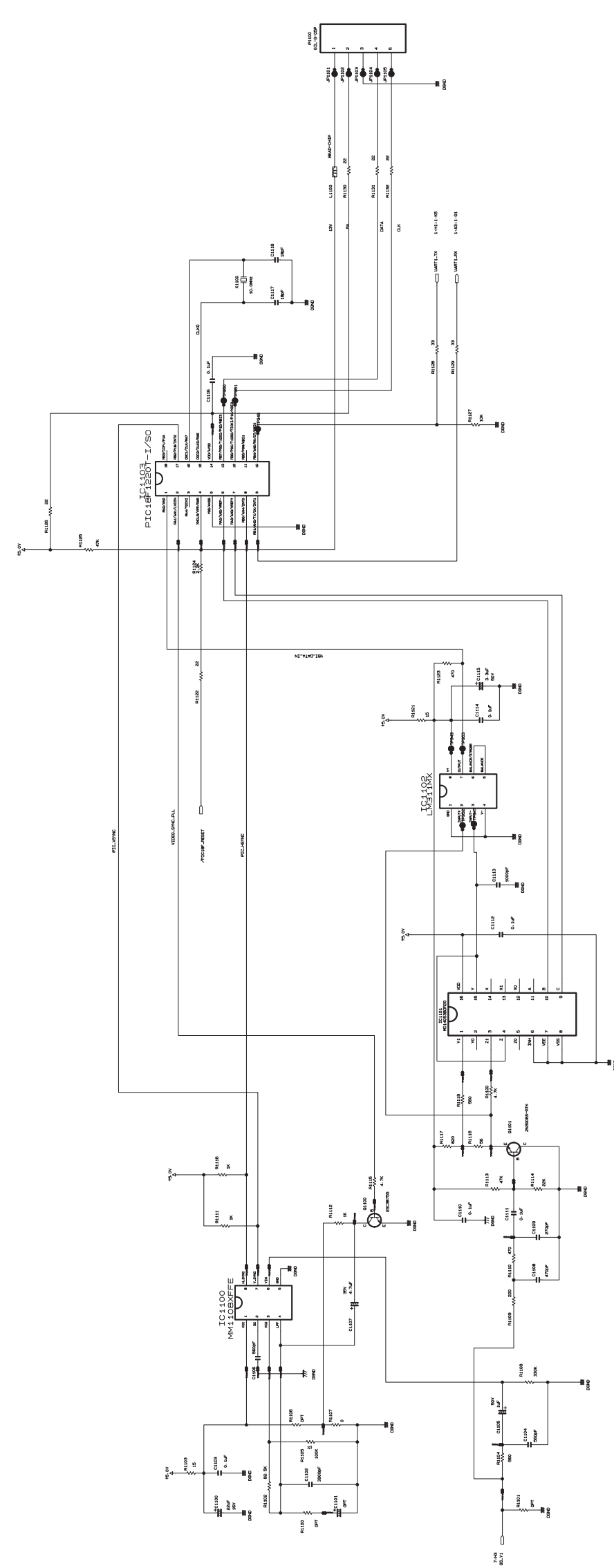
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IDSEL: PAD[23]  
 INT: IRQ3  
 GNT: GNT-4  
 REQ: REQ-4



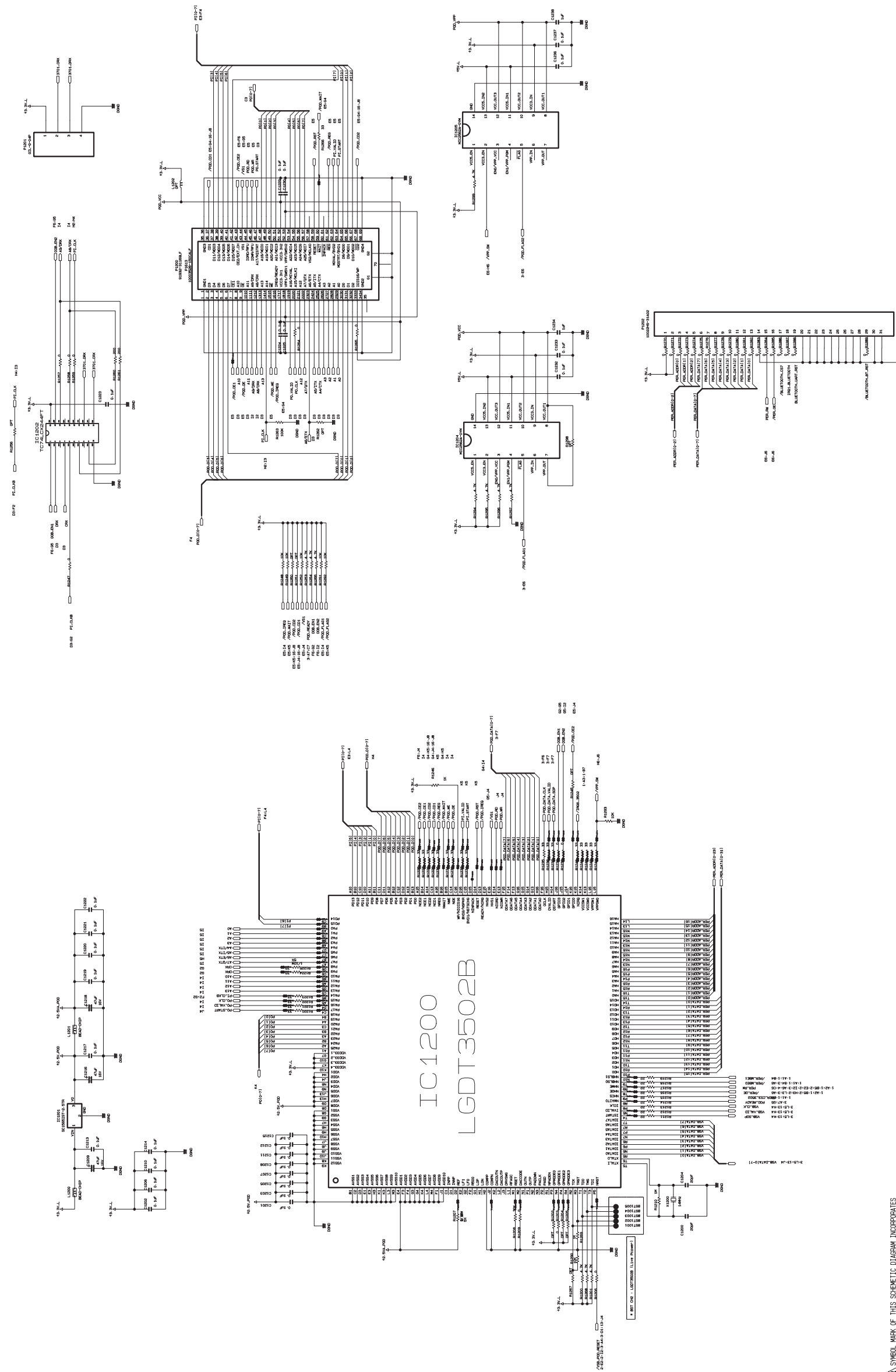
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For USA Only



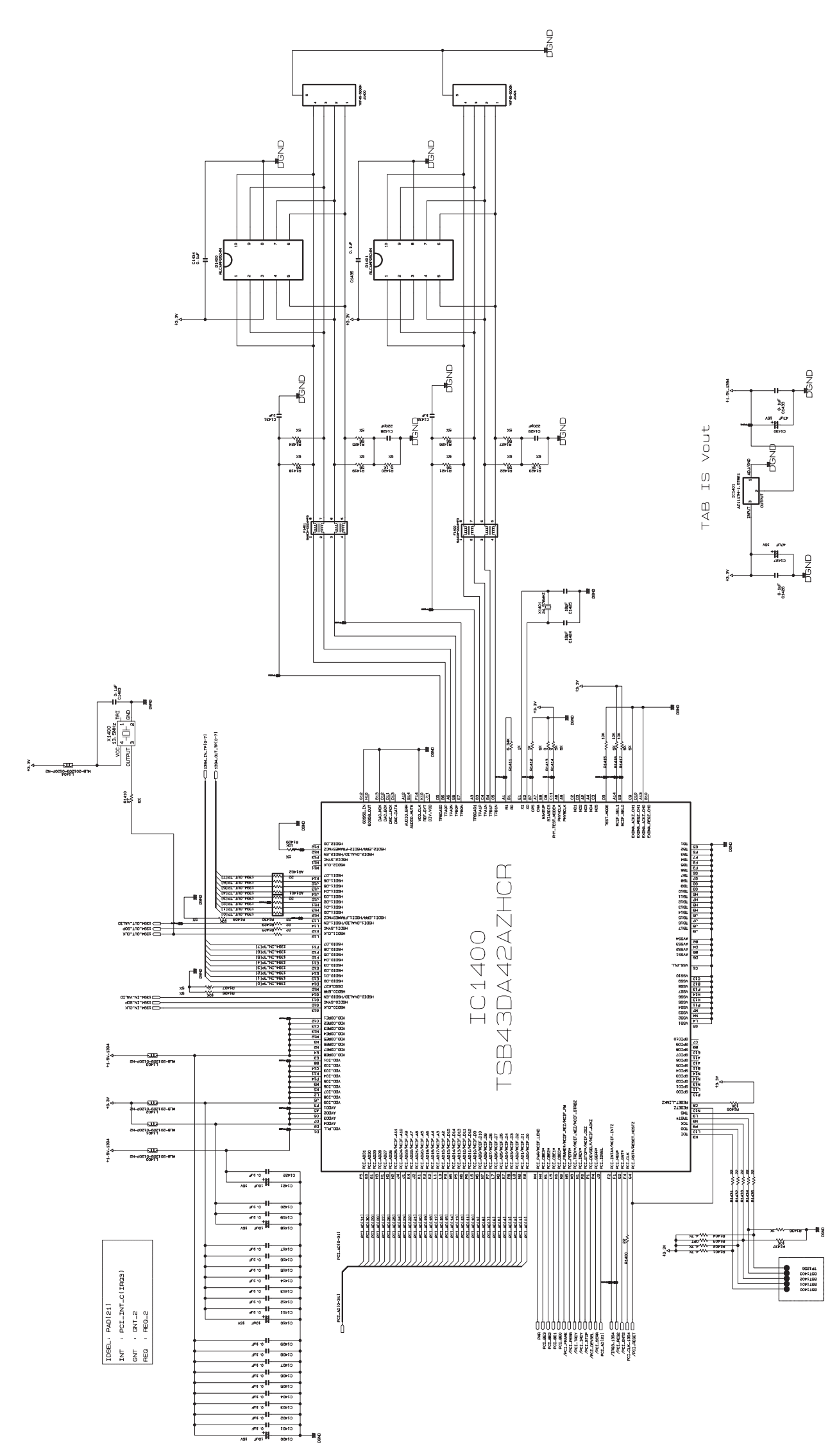
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For USA Only



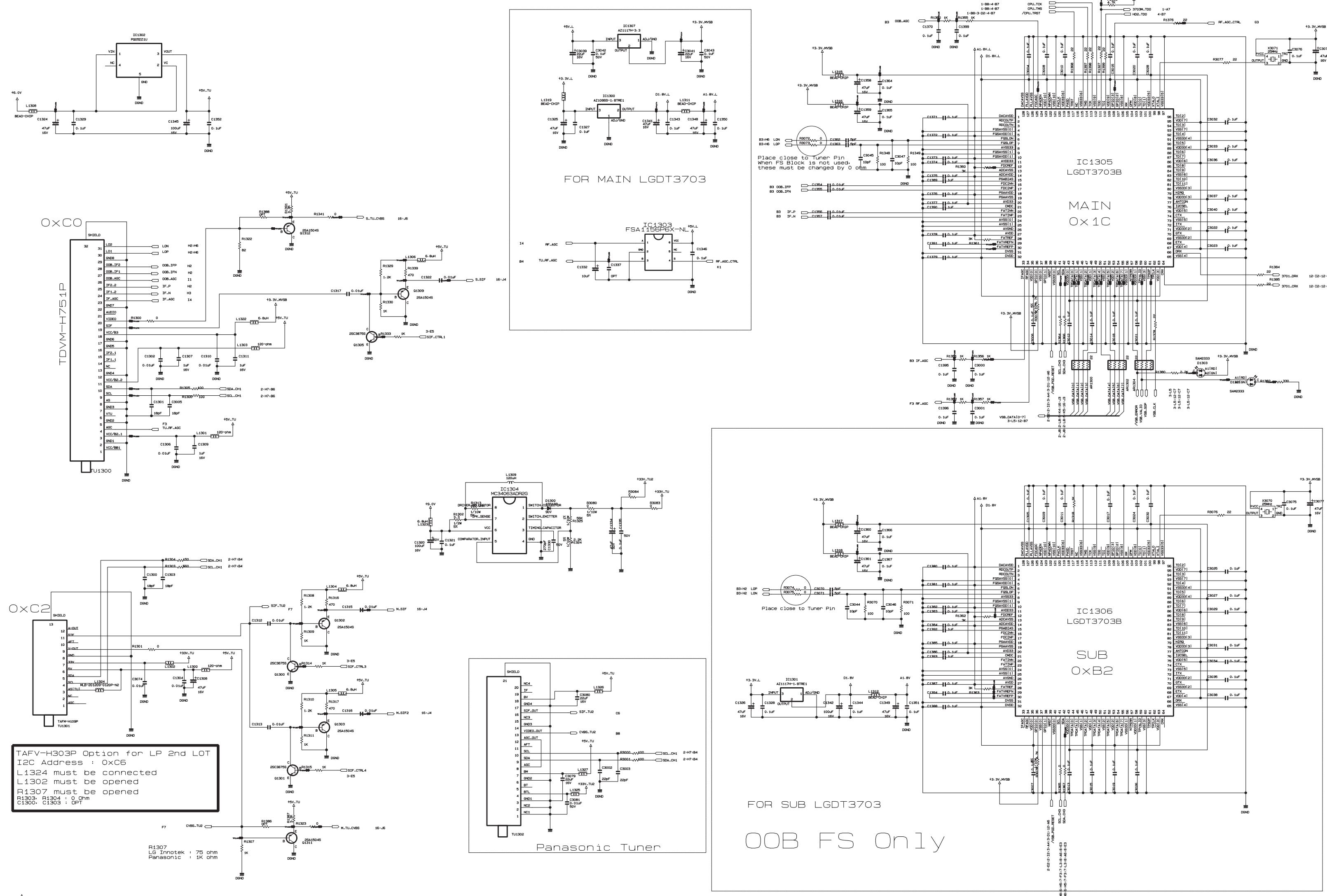
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For Korea Only



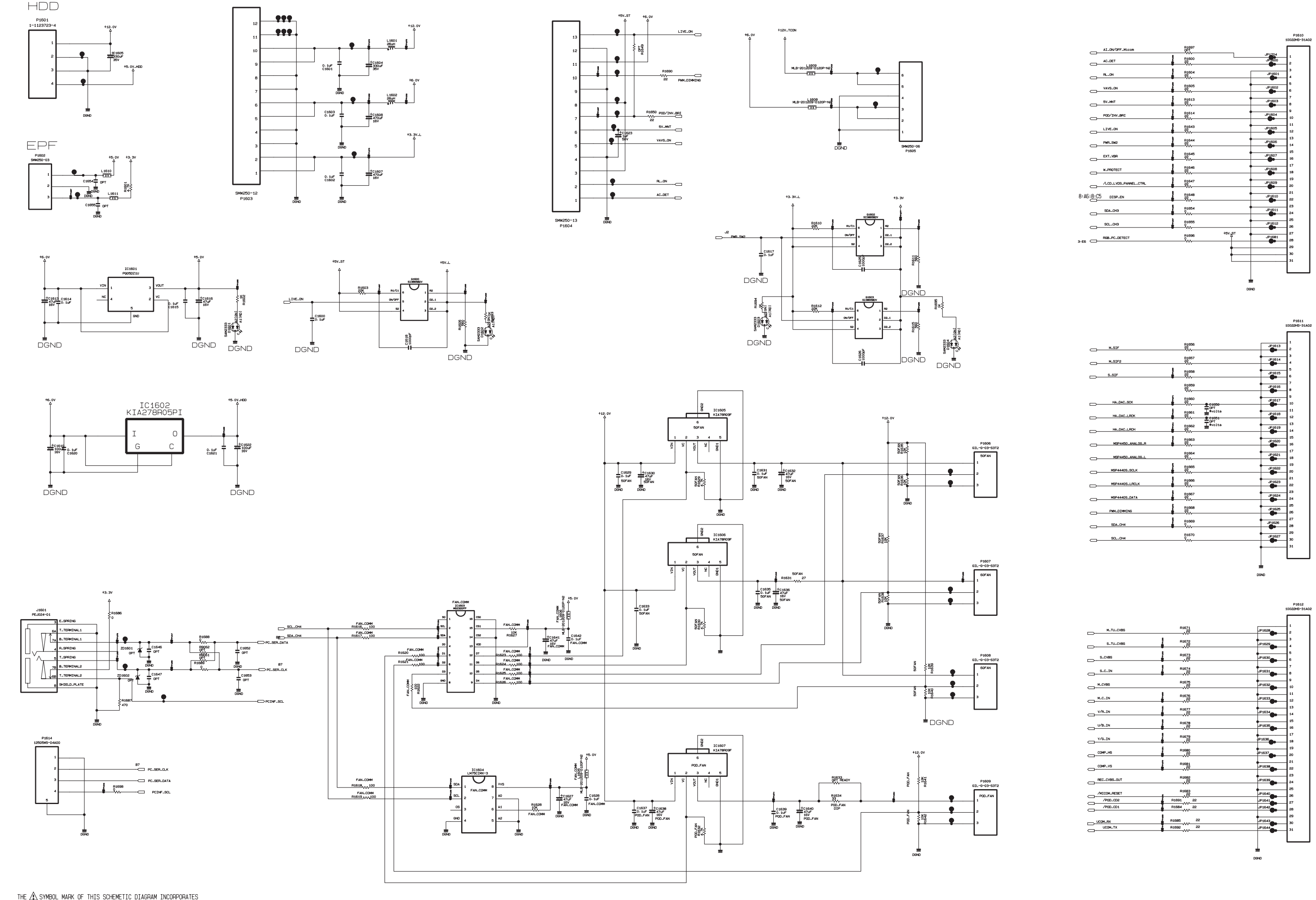
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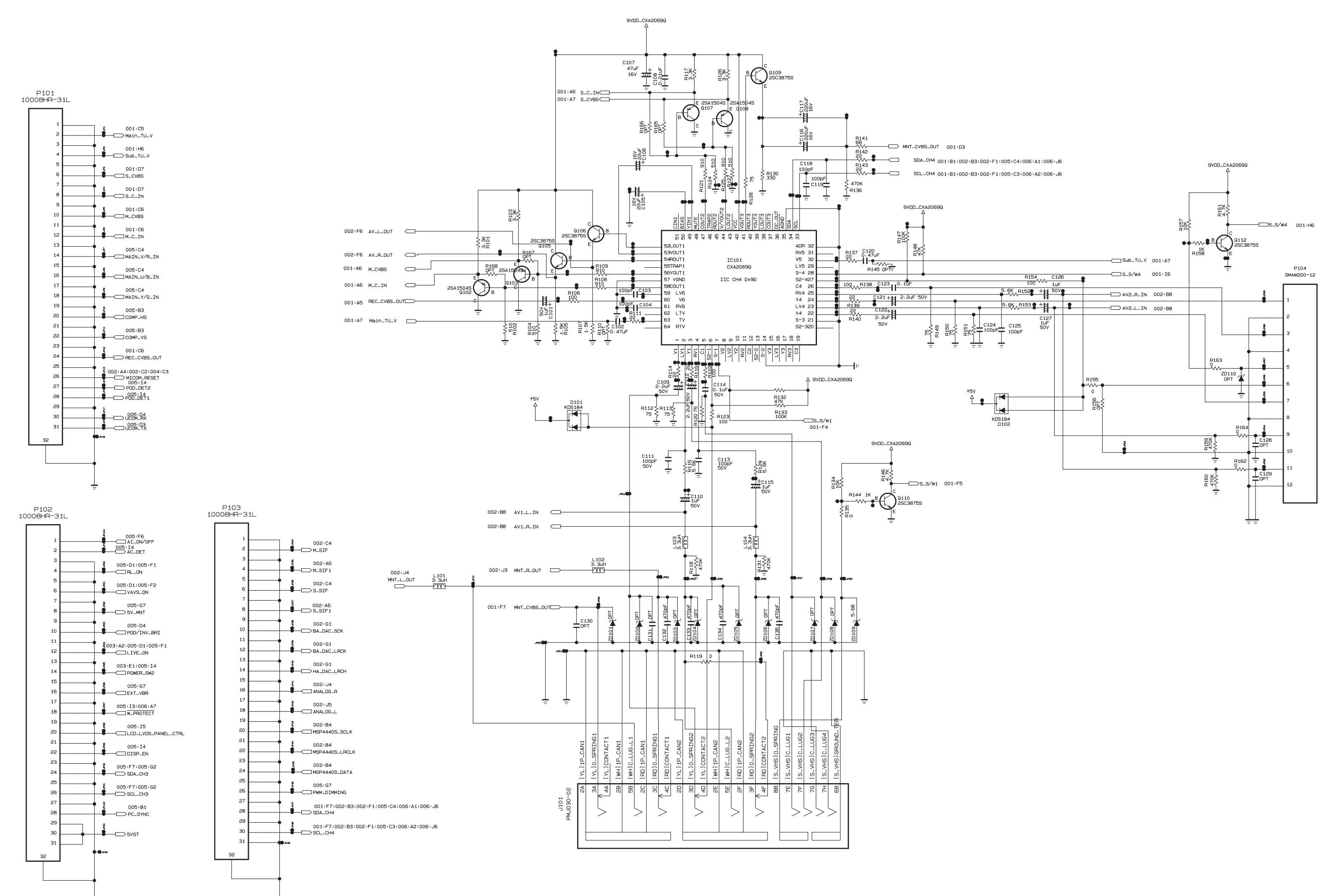


TA87-H333P Option for LP 2nd LOT  
IC Address : 0x06  
L1334 must be connected  
L1335 must be opened  
R1337 must be opened  
R1338, R1339 : 50 $\Omega$

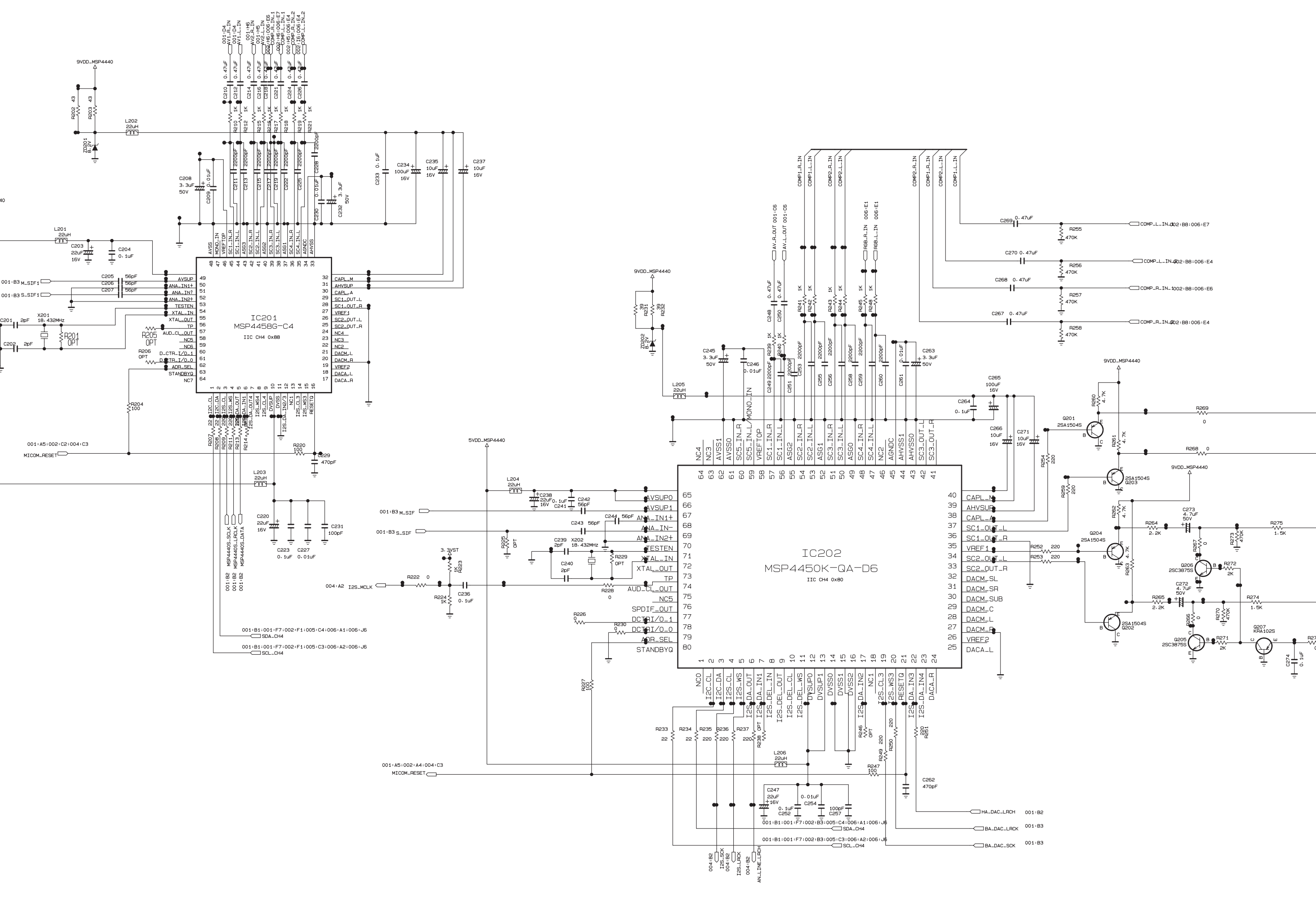
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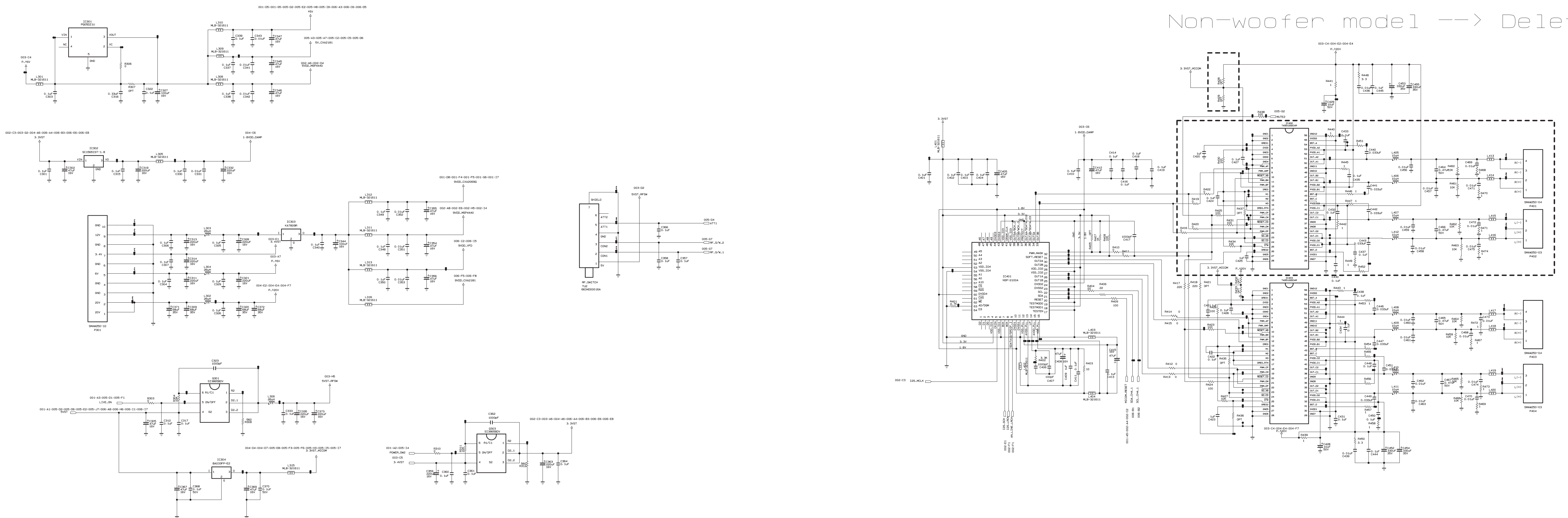


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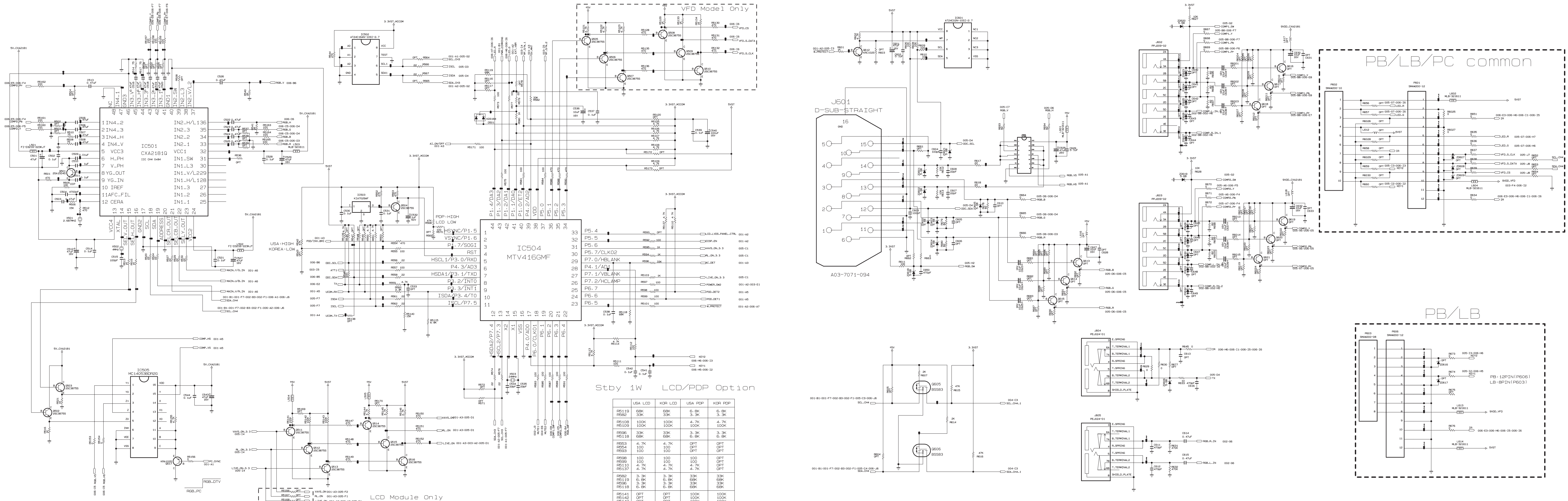
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