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LCD TV
SERVICE MANUAL

CHASSIS :

MODEL : 42LF7700 42LF7700-ZC

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

P/NO : MFL42349003 (0903-REV00) Printed in Korea

CONTENTS

SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Exploded View.
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 it's 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)

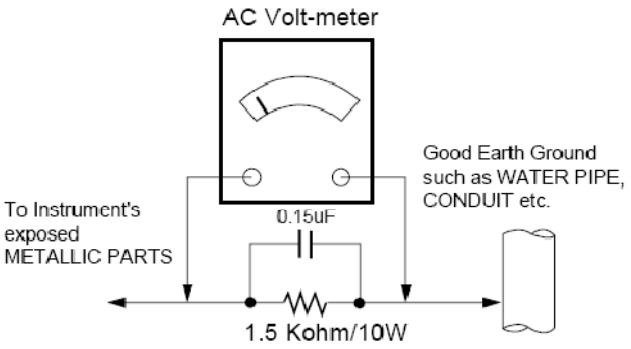
With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
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 is 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 4 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 in 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 circuit board 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. Application Range.

This spec sheet is applied to the 32"/37"/42"/47" LCD TV used LF7700 chassis.

2. Specification

Each part is tested as below without special appointment

2.1 Temperature : 25±5°C(77±9°F), CST : 40±5°C
2.2 Relative Humidity : 65±10%
2.3 Power Voltage : Standard input voltage (100~240V@ 50/60Hz)
• Standard Voltage of each products is marked by models
2.4 Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM .
2.5 The receiver must be operated for about 5 minutes prior to the adjustment.

3. Test method

3.1 Performance : LGE TV test method followed.
3.2 Demanded other specification
Safety : CE, IEC specification
EMC : CE, IEC

4. General Specification

No	Item	Specification		Remark
1	Display Screen Device	32"/37"/42"/47" wide Color Display Module		
2	Aspect Ratio	16:9		MAKER : 32" – LGD 37" – LGD 42" – LGD 47" – LGD
3	Operating Environment	Temp. : 5 ~ 35 deg Humidity : 10 ~ 90%		LGE SPEC.
4	Storage Environment	Temp. : -20 ~ 50 deg Humidity : 10 ~ 90 %		
5	Input Voltage	AC100 ~ 240V, 50/60Hz		
6	Power Consumption	Power ON		
		32"	180W	
		37"	190W	
		42"	230W	
		47"	310W	
7	Module Size	32"	760.0(H) x 450.0(V) x 48.0(D)	
		37"	877.0(H) x 516.8(V) x 46.9(D)	
		42"	983.0(H) x 576.0(V) x 46.0(D)	
		47"	1096.0(H) x 640.0(V) x 46.0(D)	
8	Pixel Pitch	32"	0.36375(H) x 0.36375(V)	
		37"	0.42675(H) x 0.42675(V)	
		42"	0.48450(H) x 0.48450(V)	
		47"	0.54150(H) x 0.54150(V)	
9	Back Light	32"	EEFL	
		37"	EEFL	
		42"	EEFL	
		47"	CCFL	
10	Display Colors	10-bit(D), 1.06 Billion Color		
11	Coating	3H, AG		

5. MODEL General Specification

No	Item	Specification	Remark
1	Broadcasting system	1) PAL-I 2) DVB-T 3) DVB-S/S2	
2	Receiving system	Analog : Upper Heterodyne Digital : DVB-T(COFDM), DVB-S/S2	
3	SCART Jack (2EA)	PAL, SECAM	**SCART1** Jack is Full SACRT and support RF-OUT(TV-OUT) **SCART2** jack is Half SCART and support MNT-OUT
4	Video Input RCA(1EA)	PAL, SECAM, NTSC	Side
5	Component Input (1EA)	Y/Cb/Cr Y/Pb/Pr	
6	RGB Input	RGB-PC	Analog(D-SUB 15PIN)
7	HDMI Input (3EA)	HDMI1-DTV/DVI HDMI2-DTV HDMI3-DTV	PC(HDMI version 1.3) Support HDCP
8	Audio Input (3EA)		L/R Input
9	SDPIF out (1EA)		In digital mode only
10	Headphone out(1EA)		Side
11	Ethernet(1EA)		
12	USB(2EA)	JPEG, MP3,	Side
		Service Only	Rear
13	PCMCIA(1EA)	CI(CAM Interface)	Side

6. Chroma & Brightness

6.1 32"LCD Module

No	Item			Min	Typ	Max	Unit	Remark
1	Luminance, white	Luminance (white)		400	500	-	cd/m²	PSM : Vivid, CSM : Cool, White(100 IRE) Dynamic contrast : off Dynamic color L off
		Variation				1.3		
2	View angle (R/L, U/D)				178/178	-	degree	
3	Contrast ratio			900	1300	-		
4	Color Coordinate	White	X	Typ. -0.03	**0.279**	Typ. +0.03		PSM : Vivid, CSM : Cool, White(80 IRE) Dynamic contrast : off Dynamic color L off
			Y		**0.292**			
		Red	X		**0.638**			
			Y		**0.334**			
		Green	X		**0.291**			
			Y		**0.607**			
		Blue	X		**0.145**			
			Y		**0.062**			

1) Standard Test Condition (The unit has been 'ON')
2) Stable for approximately 30 minutes in a dark environment at 25±2_
3) The values specified are at approximate distance 50Cm from the LCD surface
4) Ta= 25±2°C, VLCD=12.0V, fV=60Hz, Dclk=72.4MHz VBR_A=1.65V, ExtVBR_B=100%

6.2 37"LCD Module

No	Item			Min	Typ	Max	Unit	Remark
1	Luminance, white	Luminance (white)		400	500	-	cd/m²	PSM : Vivid, CSM : Cool, White(100 IRE) Dynamic contrast : off Dynamic color L off
		Variation				1.3		
2	View angle (R/L, U/D)				178/178	-	degree	
3	Contrast ratio			1000	1400	-		
4	Color Coordinate	White	X	Typ. -0.03	**0.279**	Typ. +0.03		PSM : Vivid, CSM : Cool, White(80 IRE) Dynamic contrast : off Dynamic color L off
			Y		**0.292**			
		Red	X		**0.639**			
			Y		**0.334**			
		Green	X		**0.289**			
			Y		**0.606**			
		Blue	X		**0.145**			
			Y		**0.065**			

1) Standard Test Condition (The unit has been 'ON')
2) Stable for approximately 30 minutes in a dark environment at 25±2_
3) The values specified are at approximate distance 50Cm from the LCD surface
4) Ta= 25±2°C, VLCD=12.0V, fV=60Hz, Dclk=72.4MHz VBR_A=1.65V, ExtVBR_B=100%

6.3 42"LCD Module

No	Item			Min	Typ	Max	Unit	Remark
1	Luminance	Luminance (white)		400	500	-	cd/m²	PSM : Vivid, CSM : Cool, White(100 IRE) Dynamic contrast : off Dynamic color L off
		Variation				1.3		
2	View angle (R/L, U/D)				178/178	-	degree	
3	Contrast ratio			1000	1400			
4	Color Coordinate	White	X	Typ. -0.03	**0.279**	Typ. +0.03		PSM : Vivid, CSM : Cool, White(80 IRE) Dynamic contrast : off Dynamic color L off
			Y		**0.292**			
		Red	X		**0.636**			
			Y		**0.334**			
		Green	X		**0.290**			
			Y		**0.608**			
		Blue	X		**0.145**			
			Y		**0.064**			

1) Standard Test Condition (The unit has been 'ON')
2) Stable for approximately 30 minutes in a dark environment at 25±2_
3) The values specified are at approximate distance 50Cm from the LCD surface
4) Ta= 25±2°C, VLCD=12.0V, fV=60Hz, Dclk=72.4MHz VBR_A=1.65V, ExtVBR_B=100%

6.4 47"LCD Module

No	Item			Min	Typ	Max	Unit	Remark
1	Luminance, white	Luminance (white)		400	500	-	cd/m²	PSM : Vivid, CSM : Cool, White(100 IRE) Dynamic contrast : off Dynamic color L off
		Variation				1.3		
2	View angle (R/L, U/D)				178/178	-	degree	
3	Contrast ratio			900	1300	-		
4	Color Coordinate	White	X	Typ. -0.03	**0.279**	Typ. +0.03		PSM : Vivid, CSM : Cool, White(80 IRE) Dynamic contrast : off Dynamic color L off
			Y		**0.292**			
		Red	X		**0.636**			
			Y		**0.334**			
		Green	X		**0.290**			
			Y		**0.608**			
		Blue	X		**0.145**			
			Y		**0.064**			

1) Standard Test Condition (The unit has been 'ON')
2) Stable for approximately 30 minutes in a dark environment at 25±2_
3) The values specified are at approximate distance 50Cm from the LCD surface
4) Ta= 25±2°C, VLCD=12.0V, fV=60Hz, Dclk=72.4MHz VBR_A=1.65V, ExtVBR_B=100%

7. SET Optical Feature

(Measurement Condition: Full white/ User Mode : Contrast[100], Brightness[50], Color Temp[Normal], Back Light[100])
→ Measure the black luminance after 30 seconds.

No	Item	Module	Luminance (cd/m^2)	C/R(min)	Remark
			AV, COMPONENT, HDMI	AV, COMPONENT, HDMI	
1	32 inch	LPL	450	1200	
2	37 inch	LPL	450	1200	
3	42 inch	LPL	450	1200	
4	47 inch	LPL	450	1200	

8. Component Video Input (Y, PB, PR)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remark
1	720*480	15.73	59.94	13.500	SDTV, DVD 480I(525I)	
2	720*480	15.75	60.00	13.514	SDTV, DVD 480I(525I)	
3	720*576	15.625	50.00	13.500	SDTV, DVD 576I(625I) 50Hz	
4	720*480	31.47	59.94	27.000	SDTV 480P	
5	720*480	31.50	60.00	27.027	SDTV 480P	
6	720*576	31.25	50.00	27.000	SDTV 576P 50Hz	
7	1280*720	44.96	59.94	74.176	HDTV 720P	
8	1280*720	45.00	60.00	74.250	HDTV 720P	
9	1280*720	37.50	50.00	74.25	HDTV 720P 50Hz	
10	1920*1080	33.72	59.94	74.176	HDTV 1080I	
11	1920*1080	33.75	60.00	74.250	HDTV 1080I	
12	1920*1080	28.125	50.00	74.250	HDTV 1080I 50Hz,	
13	1920×1080	56.25	50	148.50	HDTV 1080P	
14	1920×1080	67.5	60	148.50	HDTV 1080P	

9. RGB PC

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Remark
1.	720*400	31.468	70.08	28.32	
2.	640*480	31.469	59.94	25.17	VESA
3.	800*600	37.879	60.31	40.00	VESA
4.	1024*768	48.363	60.00	65.00	VESA(XGA)
5.	1280*768	47.78	59.87	80.125	VESA(WXGA)
6	1360*768	47.72	59.80	84.625	VESA(WXGA)
7	1280*1024	63.98	60.02	108.	SXGA
8	1400*1050	65.317	59.979	121.75	SXGA
9.	1920*1080	66.587	59.934	138.5	WUXGA

10. HDMI Input (DTV)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remark
1	640*480	31.649	59.94	25.175	SDTV 480p 60Hz	
2	640*480	31.469	60	25.20	SDTV 480p 60Hz	
3	720*480	31.47	59.94	27.00	SDTV 480p 60Hz	
4	720*480	31.50	60	27.027	SDTV 480p 60Hz	
5	720*576	31.25	50.00	27.00	SDTV 576p 50Hz	
6	1280*720	37.50	50.00	74.176	HDTV 720p 50Hz	
7	1280*720	44.96	59.94	74.176	HDTV 720p 60Hz	
8	1280*720	45.00	60	74.250	HDTV 720p 60Hz	
9	1920*1080	28.125	50.00	74.250	HDTV 1080i 50Hz	
10	1920*1080	33.72	59.94	74.176	HDTV 1080i 60Hz	
11	1920*1080	33.75	60	74.250	HDTV 1080i 60Hz	
12	1920*1080	27.00	24.00	74.25	HDTV 1080p 24Hz	
13	1920*1080	33.750	30	74.25	HDTV 1080p 30Hz	
14	1920*1080	56.25	50.00	148.50	HDTV 1080p 50Hz	
15	1920*1080	67.433	59.94	148.352	HDTV 1080p 60Hz	
16	1920*1080	67.50	60	148.50	HDTV 1080p 60Hz	

11. HDMI Input (PC Mode)

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed	Remark
1.	720*400	31.468	70.08	28.32		HDCP
2.	640*480	31.469	59.94	25.17	VESA	HDCP
3.	800*600	37.879	60.31	40.00	VESA	HDCP
4.	1024*768	48.363	60.00	65.00	VESA(XGA)	HDCP
5.	1280*768	47.78	59.87	80.125	VESA(WXGA)	HDCP
6	1360*768	47.72	59.80	84.625	VESA(WXGA)	HDCP
7	1280*1024	63.98	60.02	108.	SXGA	HDCP
8	1400*1050	65.317	59.979	121.75	SXGA	HDCP
9.	1920*1080	66.587	59.934	138.5	WUXGA	HDCP

12. Mechanical specification

12-1. 32LF7700-ZC

No.	Item		Content			Unit	Remark
1.	Product Dimension		Width (W)	Length (D)	Height (H)	mm	
		Before Packing	797.0	227.3	597.0	mm	With Stand
		After Packing	986.0	193.0	665.0	mm	Box Out Size
2.	Product Weight	Only SET	13.0			Kg	With Stand
		With BOX	15.2			Kg	

12-2. 37LF7700-ZC

No.	Item		Content			Unit	Remark
1.	Product Dimension		Width (W)	Length (D)	Height (H)	mm	
		Before Packing	918.6	293.8	684.8	mm	With Stand
		After Packing	1015.0	253.0	881.0	mm	Box Out Size
2.	Product Weight	Only SET	17.3			Kg	With Stand
		With BOX	21.1			Kg	

12-3. 42LF7700-ZC

No.	Item		Content			Unit	Remark
1.	Product Dimension		Width (W)	Length (D)	Height (H)	mm	
		Before Packing	1026.2	293.8	734.0	mm	With Stand
		After Packing	1330.0	257.0	772.0	mm	Box Out Size
2.	Product Weight	Only SET	20.3				
		With BOX	25.3				

12-4. 47LF7700-ZC

No.	Item		Content			Unit	Remark
1.	Product Dimension		Width (W)	Length (D)	Height (H)	mm	
		Before Packing	1140.4	342.9	820.1	mm	With Stand
		After Packing	1266.0	460.0	887.0	mm	Box Out Size
2.	Product Weight	Only SET	27.0			Kg	With Stand
		With BOX	33.0			Kg	

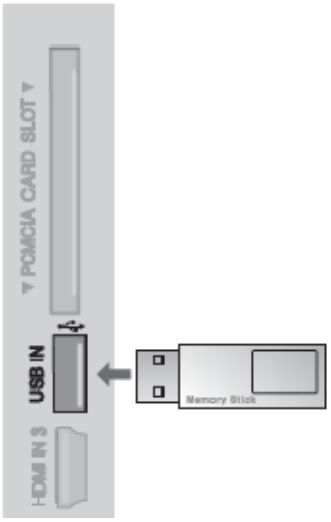
ADJUSTMENT INSTRUCTION

1. USB DOWNLOAD

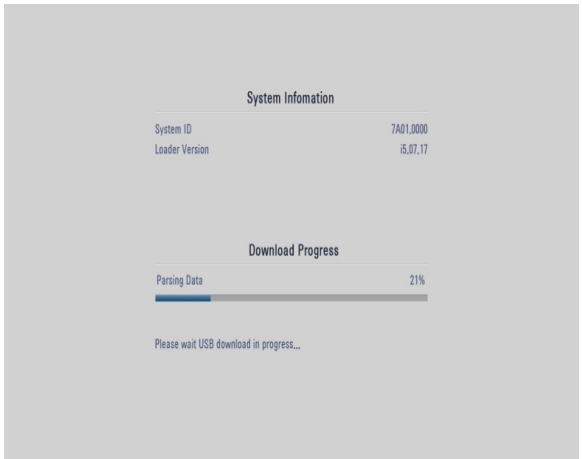
To update the system software, use only the **"USB IN SERVICE ONLY"** jack on the rear of the TV. Otherwise you will fail to update.
(The **USB IN** jack on the side of the TV works for the music or photo service.)

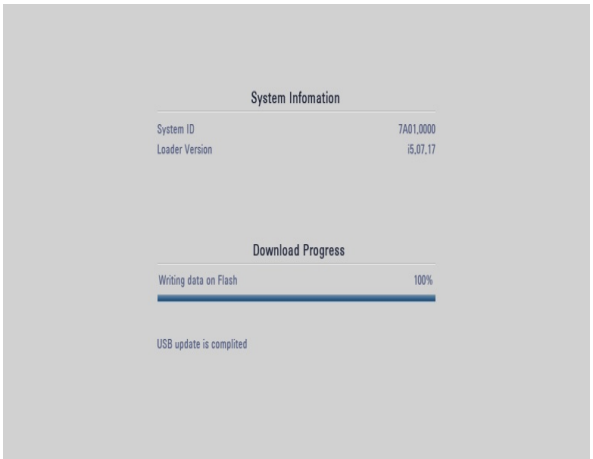
1-1) sub Micom & TV Software Download

a) Put the **"hmx_lf7700.hdf"** in the USB.
b) Connect the USB device to the **"USB IN"** jack on the side of the TV.

32LF7700-ZC, 37LF7700-ZC	42LF7700-ZC, 47LF7700-ZC
	

c) Power Off and Power On.
d) Waiting until the new software upgrade is finished.



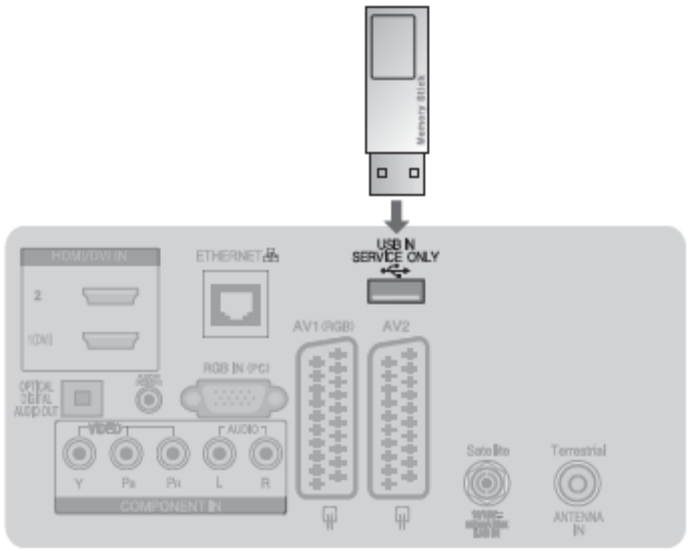


e) Fishing the version uploading, you have to put USB stick and **"AC Power"** off.
f) After putting **"AC Power"** on and check updated version on your TV.

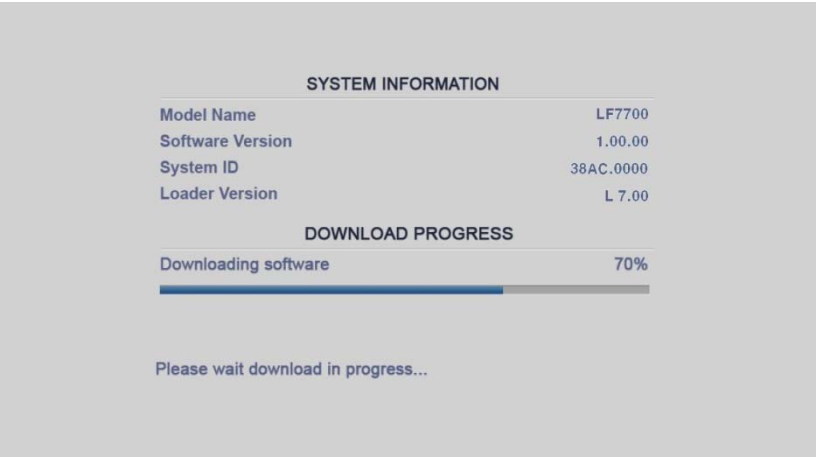
- If downloading version is more high than your TV have, TV can lost all channel data.
  In this case, you have to channel recover.
  if all channel data is cleared, you didn't have a DTV/ATV test on production line.

1-2) Freesat Software Download

a) Put the **"lf7700_upgrade.hdf"** in the USB.
b) Connect the USB device to the **"USB IN"(Service Only)** jack on the Rear service.

32LF7700, 37LF7700 42LF7700, 47LF7700


c) Power Off and Power On.
d) Waiting until the new software upgrade is finished.



e) Fishing the version uploading, you have to put USB stick and **"AC Power"** off.
f) After putting **"AC Power"** on and check updated version on your TV.

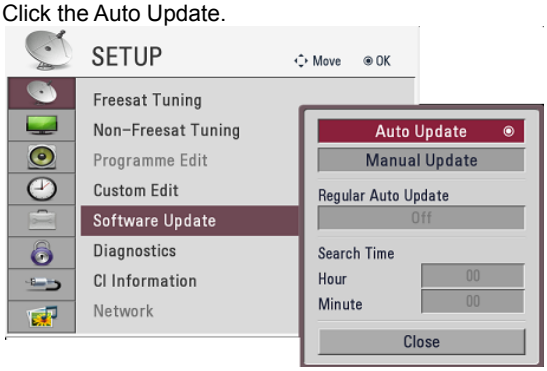
- If downloading version is more high than your TV have, TV can lost all channel data.
  In this case, you have to channel recover.
  if all channel data is cleared, you didn't have a DTV/ATV test on production line.

2. OTA DOWNLOAD

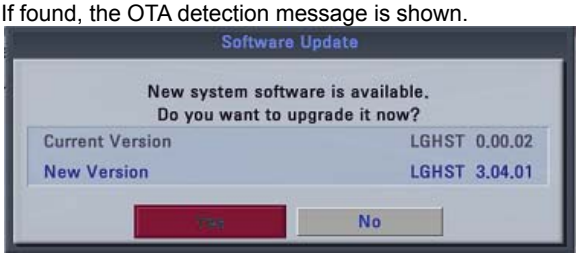
2-1) Freesat Software OTA Download.

Auto update case.

a) Click the Software Update.
b) Click the Auto Update.



c) If found, the OTA detection message is shown.

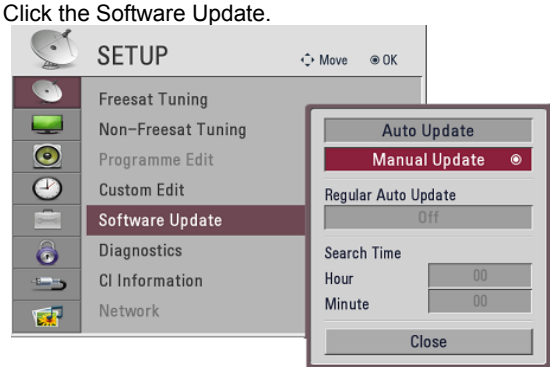


c-1) Select “Yes”.
c-2) The TV is reboot and OTA process starts.
c-3) Select “No”
c-4) OTA process does not start.

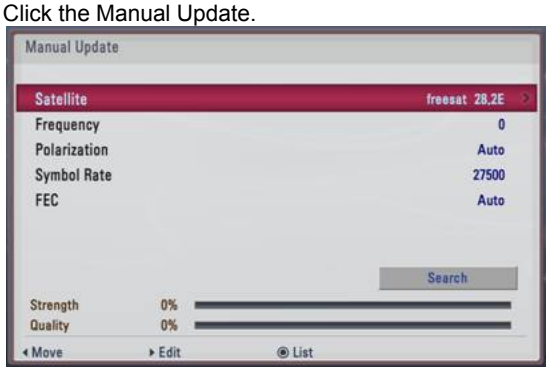
d) The TV is reboot and OTA process starts.
e) If not, the OTA not detection message is shown.

Manual Update Case.

a) Click the Software Update.



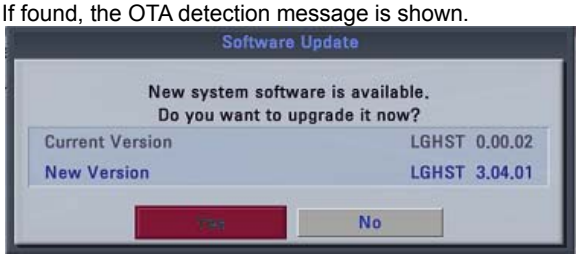
b) Click the Manual Update.



c) Change Frequency, Polarization, Symbol Rate, FEC for OTA TP.

d) Click “Search” button

e) If found, the OTA detection message is shown.



e-1) Select “Yes”.
e-2) The tv is reboot and OTA process starts.
e-3) Select “No”
e-4) OTA process does not start.

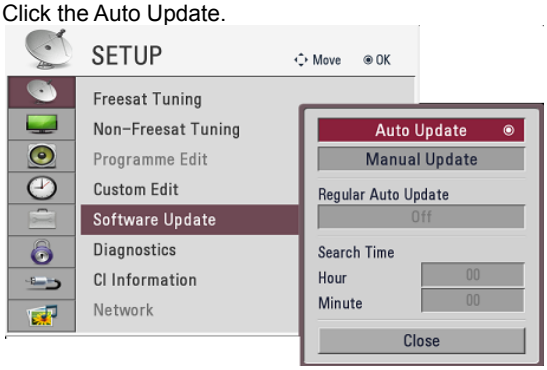
f) The TV is reboot and OTA process shows.

g) If not , the OTA not detection message is shown.

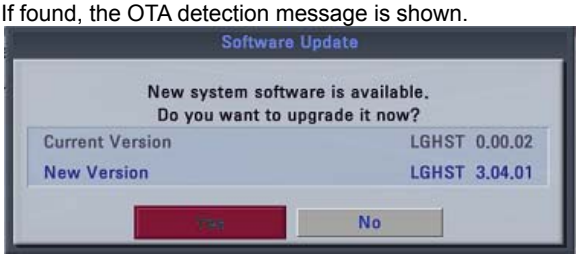
2-2) Freeview Software OTA Download.

Auto update case.

a) Click the Software Update.
b) Click the Auto Update.



c) If found, the OTA detection message is shown.

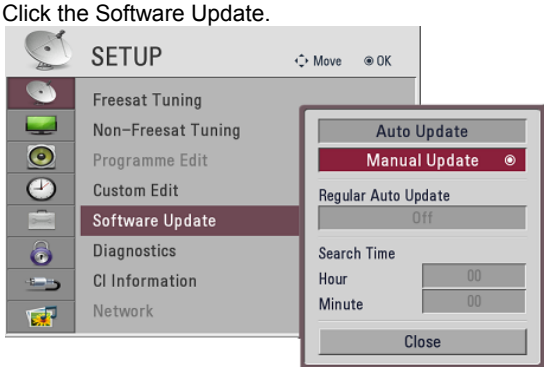


c-1) Select “Yes”.
c-2) The TV is reboot and OTA process starts.
c-3) Select “No”
c-4) OTA process does not start.

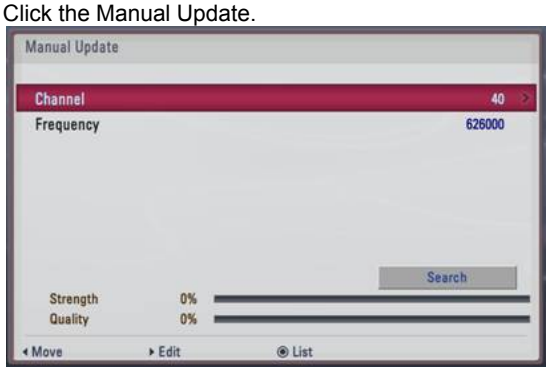
d) The TV is reboot and OTA process starts.
e) If not, the OTA not detection message is shown.

Manual Update Case.

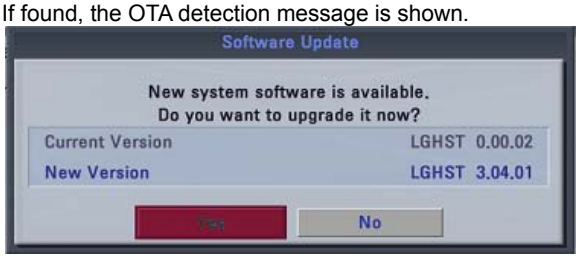
a) Click the Software Update.



b) Click the Manual Update.



c) If found, the OTA detection message is shown.



e-1) Select “Yes”.
e-2) The tv is reboot and OTA process starts.
e-3) Select “No”
e-4) OTA process does not start.

d) The TV is reboot and OTA process shows.

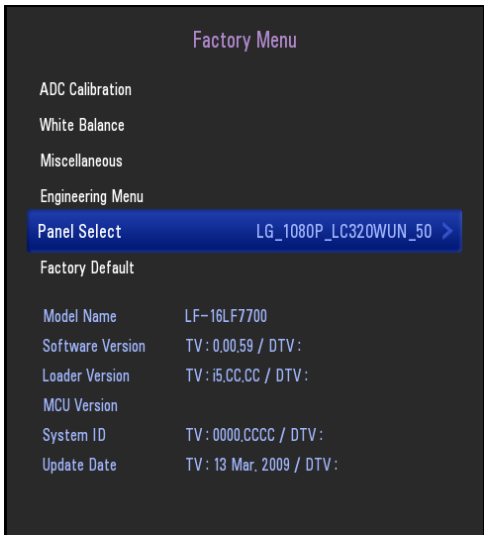
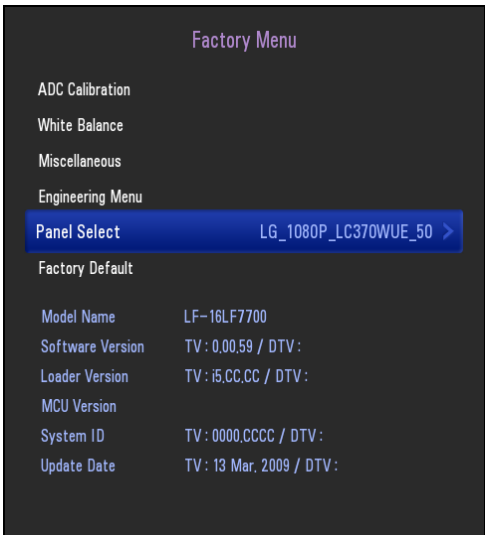
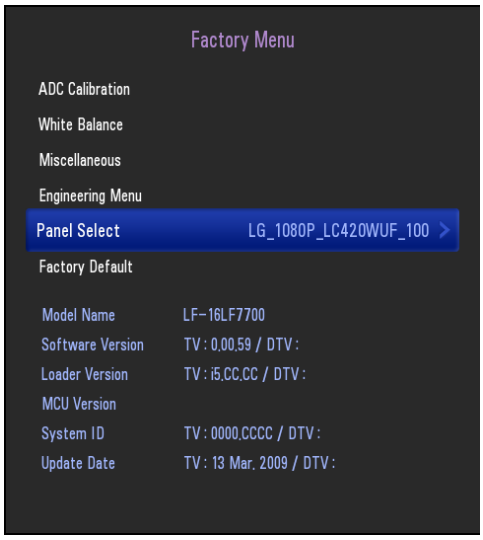
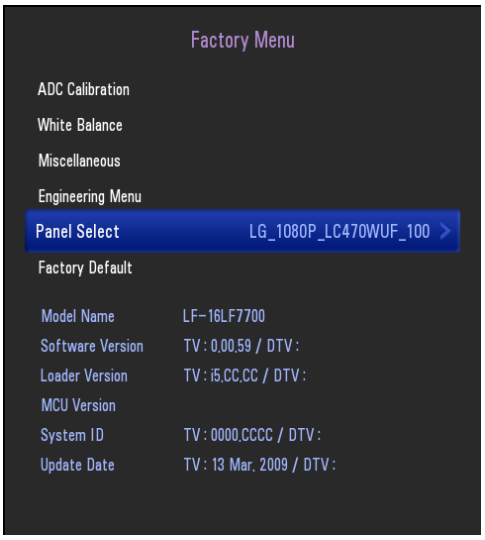
e) If not , the OTA not detection message is shown.

3. EDID DOWNLOAD

3-1. Panel Setting

a) You should change the panel size by going to the Factory Mode, press “Menu”, “1”, “2”, “4”, 7” and “5” keys on a remote.

b) You have to select 32”, 37” or 42”, 47” panel in Factory mode.

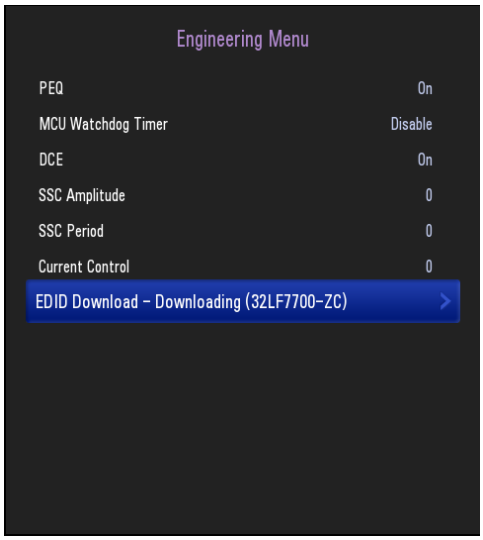
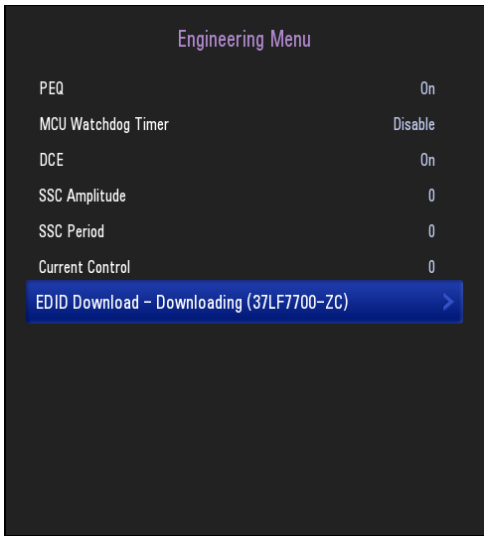
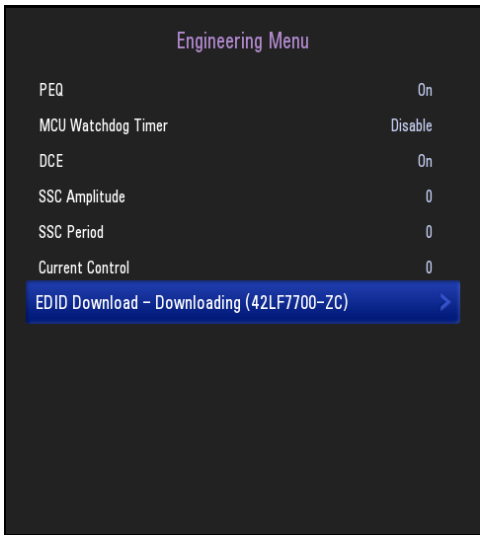
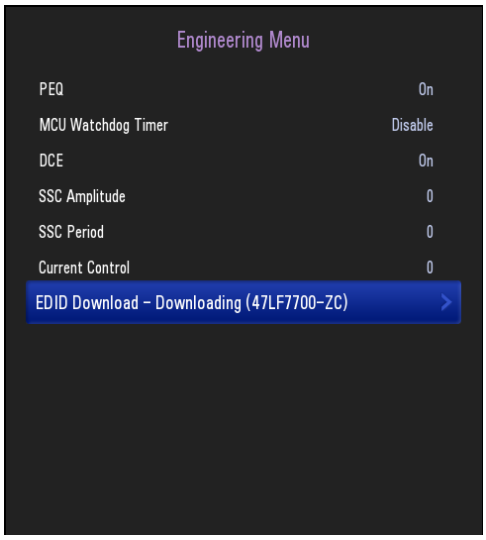
<table>
<tr><td>32LF7700-ZC : Panel Select → “LG_1080P_LC320WUN_50”</td><td>37LF7700-ZC : Panel Select → “LG_1080P_LC370WUE_50”</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>42LF7700-ZC : Panel Select → “LG_1080P_LC420WUF_100”</td><td>47LF7700-ZC : Panel Select → “LG_1080P_LC470WUF_100”</td></tr>
<tr><td> 
</td><td> 
</td></tr>
</table>

3-2. EDID Setting

a) You should change the panel size by going to the Factory Mode, press “Menu”, “1”, “2”, “4”, 7” and “5” keys on a remote.

b) You have to select “Engineering Menu” in Factory mode.

c) Enter “ EDID Download” by pushing “OK” key.

<table>
<tr><td>32LF7700-ZC
(Factory mode → Engineering menu → EDID Download select)</td><td>37LF7700-ZC
(Factory mode → Engineering menu → EDID Download select)</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>42LF7700-ZC
(Factory mode → Engineering menu → EDID Download select)</td><td>47LF7700-ZC
(Factory mode → Engineering menu → EDID Download select)</td></tr>
<tr><td> 
</td><td> 
</td></tr>
</table>

3-3. PC EDID Table

a) 32LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	46	27	78	2A	60	00	A3	55	4A	9B	25
0F	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	BA	88	21	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	BA	88	21	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ													00	C/Sⓔ	

b) 37LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	46	27	78	2A	60	00	A3	55	4A	9B	25
10	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	33	CC	31	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	33	CC	31	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ													00	C/Sⓔ	

c) 42LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	46	27	78	2A	60	00	A3	55	4A	9B	24
10	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	A2	0B	32	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	A2	0B	32	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ													00	C/Sⓔ	

d) 47LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	46	27	78	2A	60	00	A3	55	4A	9B	25
10	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	10	49	42	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	10	49	42	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ													00	C/Sⓔ	

ⓐ Product ID

MODEL NAME	PRODUCT ID	HEX	EDID Table
32LF7700-ZC	30383	76AF	AF76
37LF7700-ZC	30375	76A7	A776
42LF7700-ZC	40440	9DF8	F89D
47LF7700-ZC	30373	76A5	A576

ⓑ Serial No: Controlled on production line.

ⓒ Week, Year: Controlled on production line: ex) Weekly : '01' ➔ '01' , Year : '2009' ➔ '13'

ⓓ Model Name(Hex):

MODEL NAME	MODEL NAME(HEX)
32LF7700-ZC	00 00 00 FC 00 33 32 4C 46 37 37 30 30 0A 20 20 20 20
37LF7700-ZC	00 00 00 FC 00 33 37 4C 46 37 37 30 30 0A 20 20 20 20
42LF7700-ZC	00 00 00 FC 00 34 32 4C 46 37 37 30 30 0A 20 20 20 20
47LF7700-ZC	00 00 00 FC 00 34 37 4C 46 37 37 30 30 0A 20 20 20 20

ⓔ Checksum: Changeable by total EDID data.

3-4. HDMI EDID Table

a) 32LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	46	27	78	2A	60	00	A3	55	4A	9B	25
0F	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	BA	88	21	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	BA	88	21	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ														01	C/Sⓔ
02	03	28	F1	50	81	02	03	06	07	15	16	12	13	04	14
05	20	22	1F	10	26	15	07	50	09	57	07	83	01	00	00
67	03	0C	00	Portⓕ	00	B8	2D	01	1D	00	80	51	D0	1C	20
40	80	35	00	BC	88	21	00	00	1E	8C	0A	D0	8A	20	E0
2D	10	10	3E	96	00	13	8E	21	00	00	18	02	3A	80	18
71	38	2D	40	58	2C	45	00	06	44	21	00	00	1E	01	1D
80	18	71	1C	16	20	58	2C	25	00	C4	8E	21	00	00	9E
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	C/Sⓔ

b) 37LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	52	2E	78	2A	A1	3B	A3	55	4A	9B	25
10	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	33	CC	31	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	33	CC	31	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ														01	C/Sⓔ
02	03	28	F1	50	81	02	03	06	07	15	16	12	13	04	14
05	20	22	1F	10	26	15	07	50	09	57	07	83	01	00	00
67	03	0C	00	Portⓕ	00	B8	2D	01	1D	00	80	51	D0	1C	20
40	80	35	00	BC	88	21	00	00	1E	8C	0A	D0	8A	20	E0
2D	10	10	3E	96	00	13	8E	21	00	00	18	02	3A	80	18
71	38	2D	40	58	2C	45	00	06	44	21	00	00	1E	01	1D
80	18	71	1C	16	20	58	2C	25	00	C4	8E	21	00	00	9E
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	C/Sⓔ

c) 42LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	5D	34	78	2A	65	EB	A3	55	4A	9B	24
10	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	A2	0B	32	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	A2	0B	32	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ														01	C/Sⓔ
02	03	28	F1	50	81	02	03	06	07	15	16	12	13	04	14
05	20	22	1F	10	26	15	07	50	09	57	07	83	01	00	00
67	03	0C	00	Portⓕ	00	B8	2D	01	1D	00	80	51	D0	1C	20
40	80	35	00	BC	88	21	00	00	1E	8C	0A	D0	8A	20	E0
2D	10	10	3E	96	00	13	8E	21	00	00	18	02	3A	80	18
71	38	2D	40	58	2C	45	00	06	44	21	00	00	1E	01	1D
80	18	71	1C	16	20	58	2C	25	00	C4	8E	21	00	00	9E
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	C/Sⓔ

d) 47LF7700-ZC

00	FF	FF	FF	FF	FF	FF	00	1E	6D	Product IDⓐ		Serial Noⓑ			
Week/Yearⓒ		01	03	80	68	3A	78	2A	E7	2B	A2	55	4A	9B	25
10	47	4A	A1	08	00	31	40	45	40	61	40	01	01	90	40
81	80	01	01	01	01	1A	36	80	A0	70	38	1F	40	30	20
35	00	10	49	42	00	00	1A	16	21	50	A0	51	00	1E	30
48	88	35	00	10	49	42	00	00	1C	00	00	00	FD	00	39
3E	1F	54	12	00	0A	20	20	20	20	20	20				
Model Nameⓓ														01	C/Sⓔ
02	03	28	F1	50	81	02	03	06	07	15	16	12	13	04	14
05	20	22	1F	10	26	15	07	50	09	57	07	83	01	00	00
67	03	0C	00	Portⓕ	00	B8	2D	01	1D	00	80	51	D0	1C	20
40	80	35	00	BC	88	21	00	00	1E	8C	0A	D0	8A	20	E0
2D	10	10	3E	96	00	13	8E	21	00	00	18	02	3A	80	18
71	38	2D	40	58	2C	45	00	06	44	21	00	00	1E	01	1D
80	18	71	1C	16	20	58	2C	25	00	C4	8E	21	00	00	9E
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	C/Sⓔ

ⓐ Product ID

MODEL NAME	PRODUCT ID	HEX	EDID Table
32LF7700	30384	76B0	B076
37LF7700	30376	76A8	A876
42LF7700	40441	9DF9	F99D
47LF7700	30374	76A6	A676

ⓑ Serial No: Controlled on production line.

ⓒ Week, Year: Controlled on production line: ex) Weekly : '01' ➔ '01', Year : '2009' ➔ '13'

ⓓ Model Name(Hex):

MODEL NAME	MODEL NAME(HEX)
32LF7700	00 00 00 FC 00 33 32 4C 46 37 37 30 30 0A 20 20 20 20
37LF7700	00 00 00 FC 00 33 37 4C 46 37 37 30 30 0A 20 20 20 20
42LF7700	00 00 00 FC 00 34 32 4C 46 37 37 30 30 0A 20 20 20 20
47LF7700	00 00 00 FC 00 34 37 4C 46 37 37 30 30 0A 20 20 20 20

ⓔ Checksum: Changeable by total EDID data.

ⓕ Port No. 10 : HDMI1, 20 : HDMI2, 30 : HDMI3

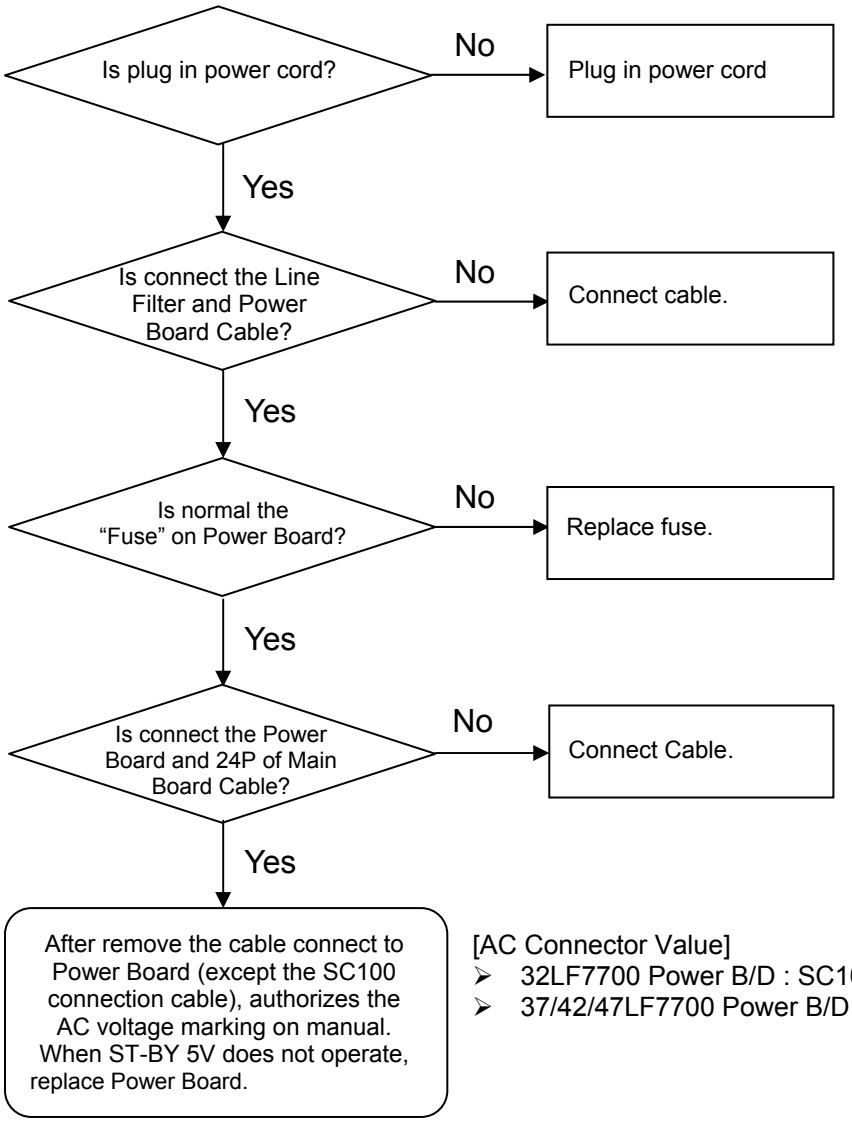
TROUBLESHOOTING

1. No power

(1) Symptom

1) Doesn't minute discharge at module.
2) Non does not come in into the front LED.
3) Check Off Mode.

(2) Check follow



[AC Connector Value]

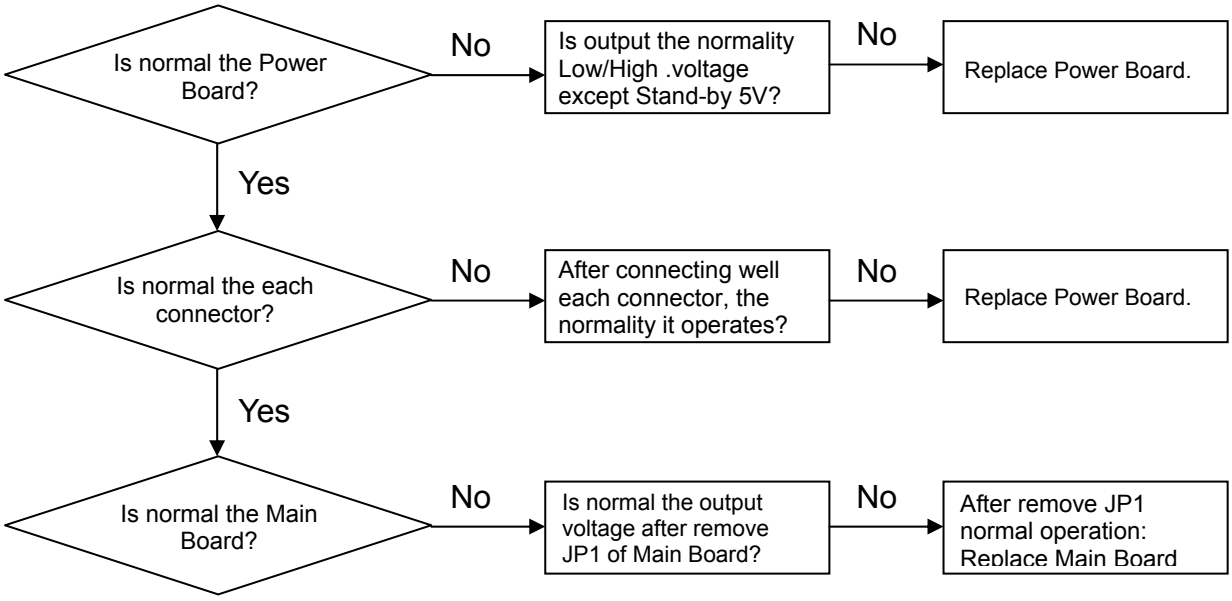
- 32LF7700 Power B/D : SC100
- 37/42/47LF7700 Power B/D : SC101

2. Protect mode

(1) Symptom

1) After once shining, it does not discharge minutely from module.
2) It is converted with the color where the front LED is red from blue.

(2) Check follow

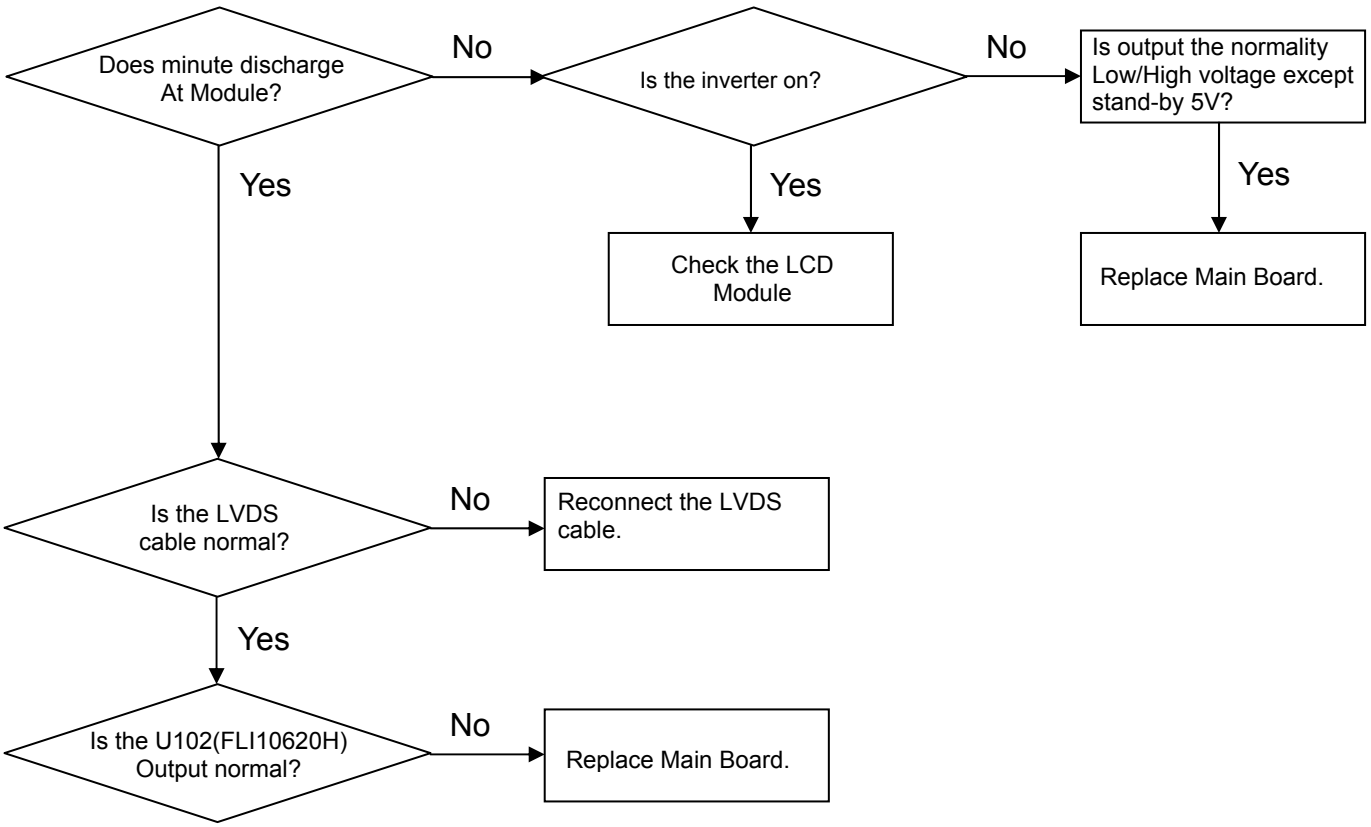


3. No Raster

(1) Symptom

1) No OSD and image occur at screen.
2) It maintains the condition where the front LED is blue

(2) Check follow



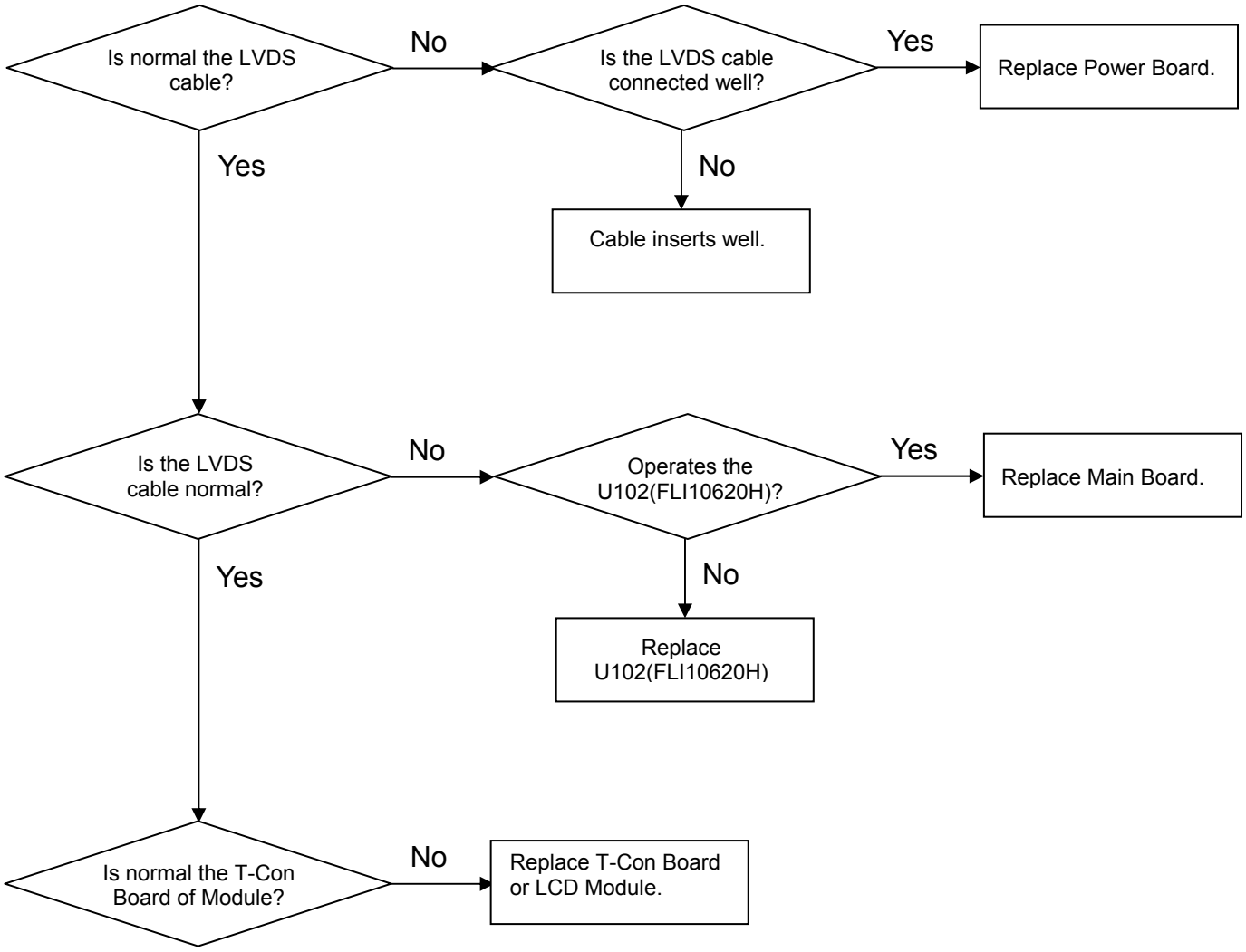
4. In case of occur strange screen into specific mode

1) In case of does't display the OSD

(1) Symptom

1) LED is blue.
2) The minute discharge continuously becomes accomplished from module

(2) Check follow



2) In case of does't display the screen into specific mode

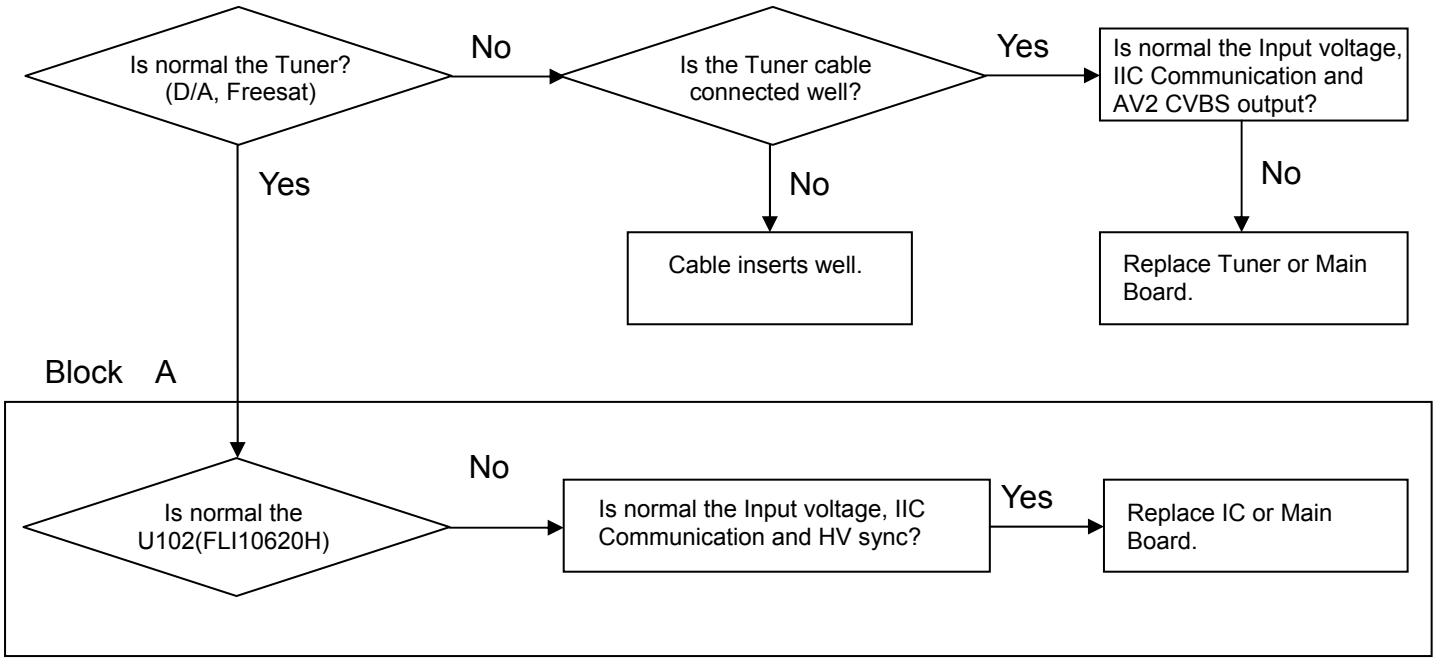
(1) Symptom

e) The screen does not become the display from specific input mode (RF, AV, Component, RGB, DVI).

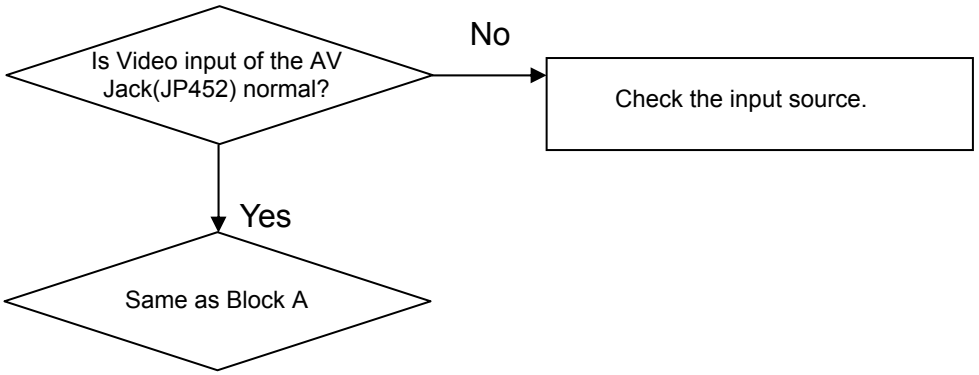
(2) Check follow

(1) Check the all input mode should become normality display.

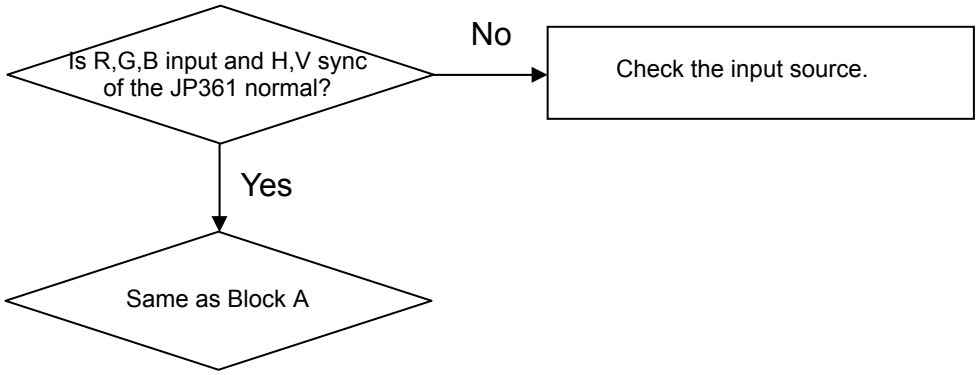
(3) In case of becomes unusual display from D/A mode



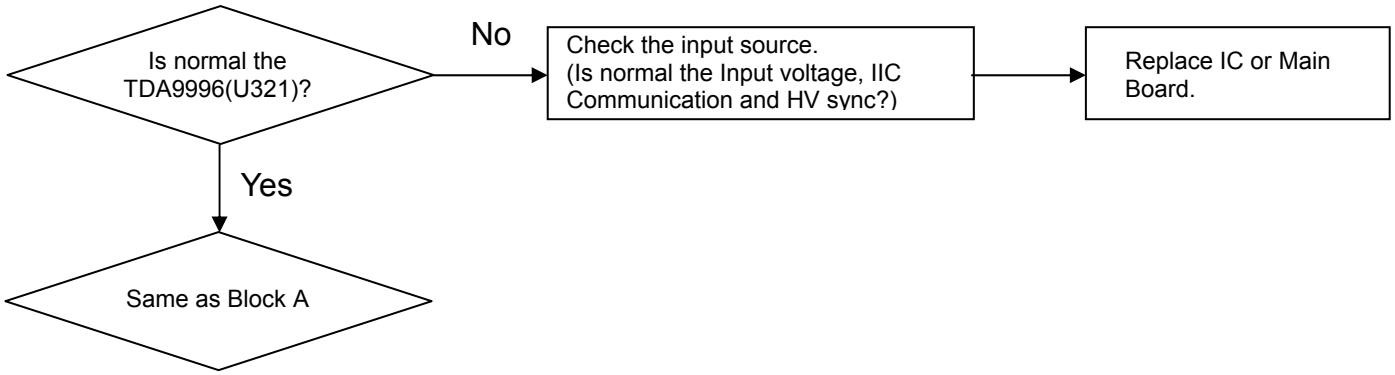
(4) In case of becomes unusual display from A/V mode



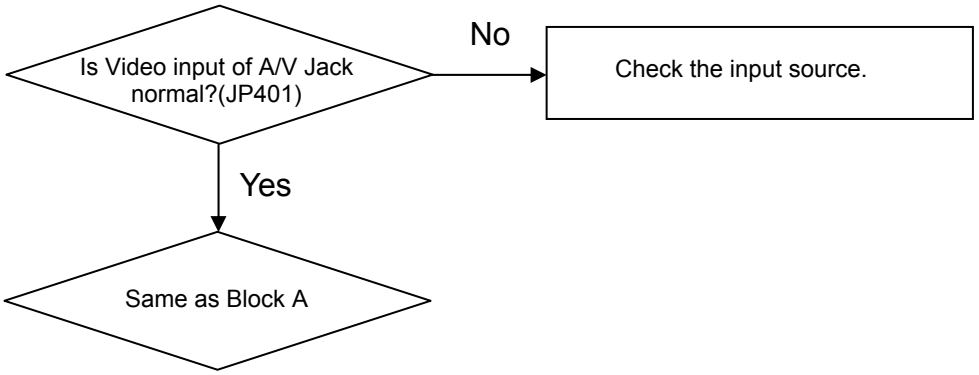
(5) In case of becomes unusual display from Component, RGB mode



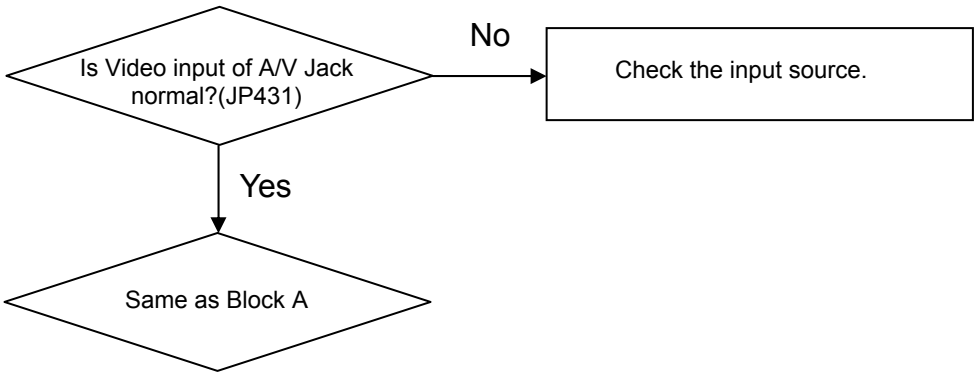
(6) In case of becomes unusual display from HDMI mode



(7) In case of becomes unusual display from SCART1 mode



(8) In case of becomes unusual display from SCART2 mode

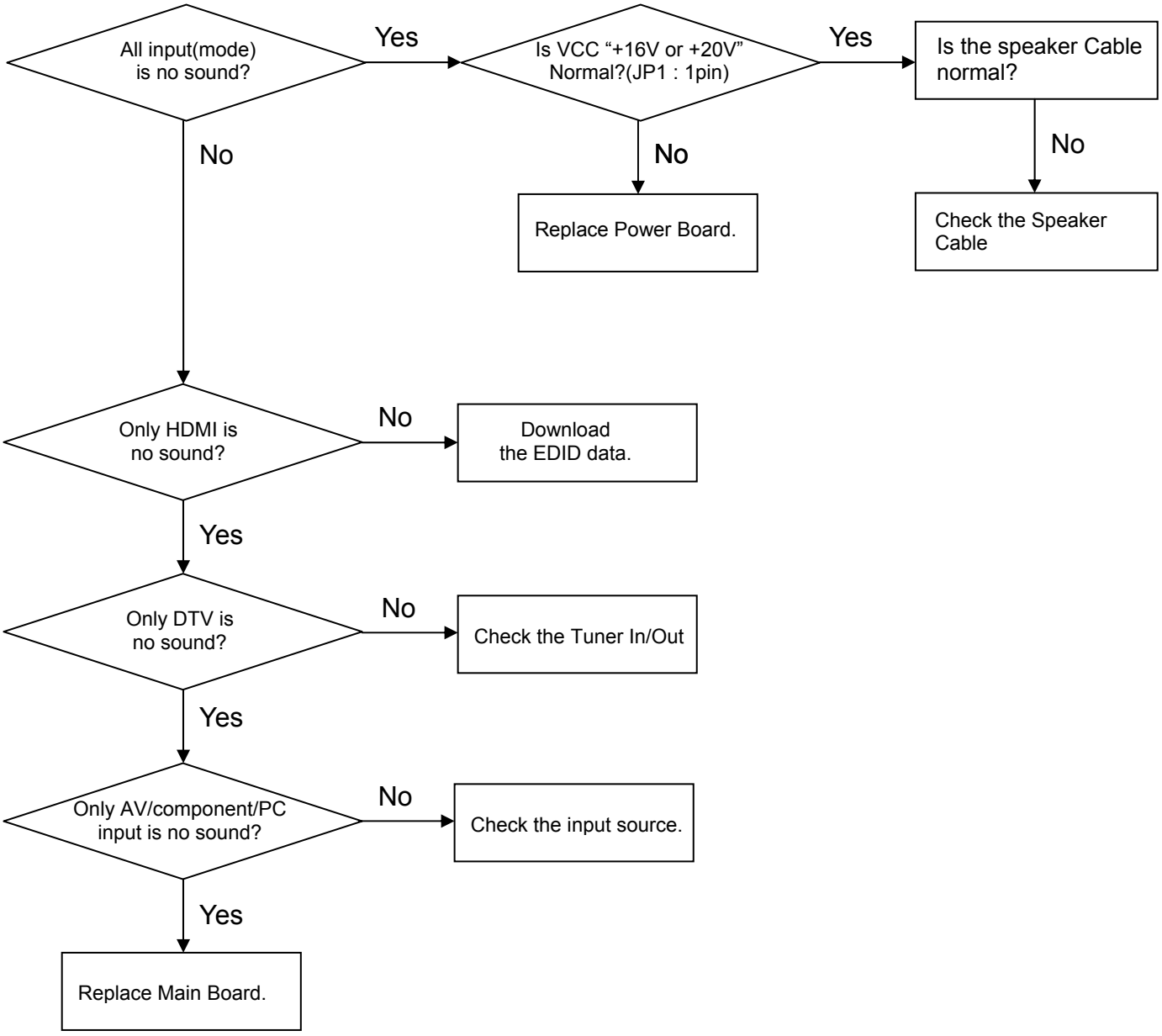


5. In case of no sound

(1) Symptom

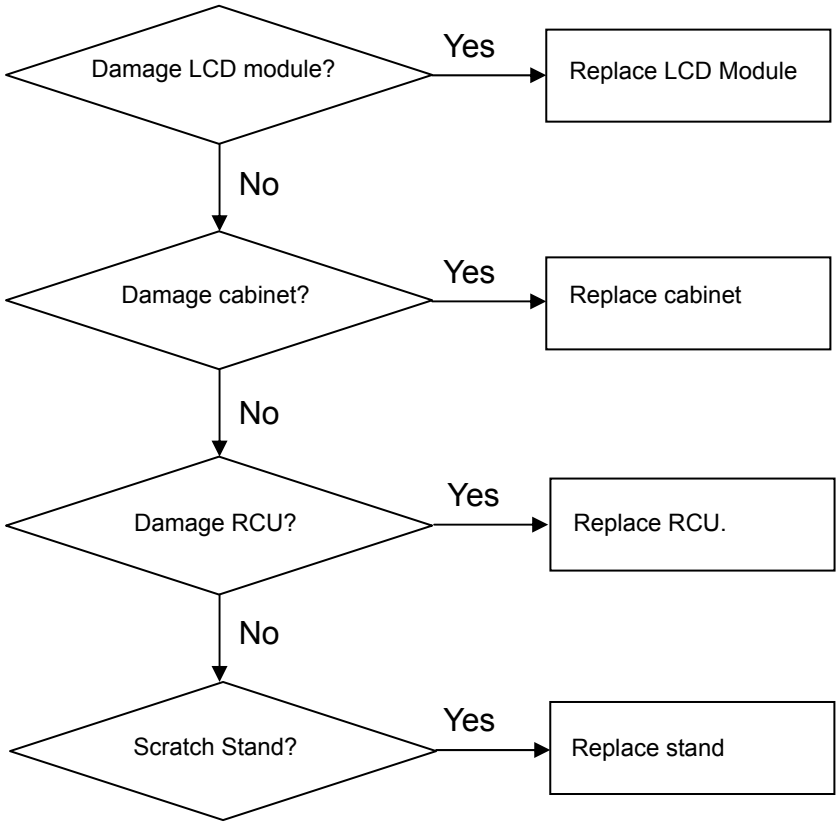
1) LED is blue.
2) Screen display but sound is not output

(2) Check follow

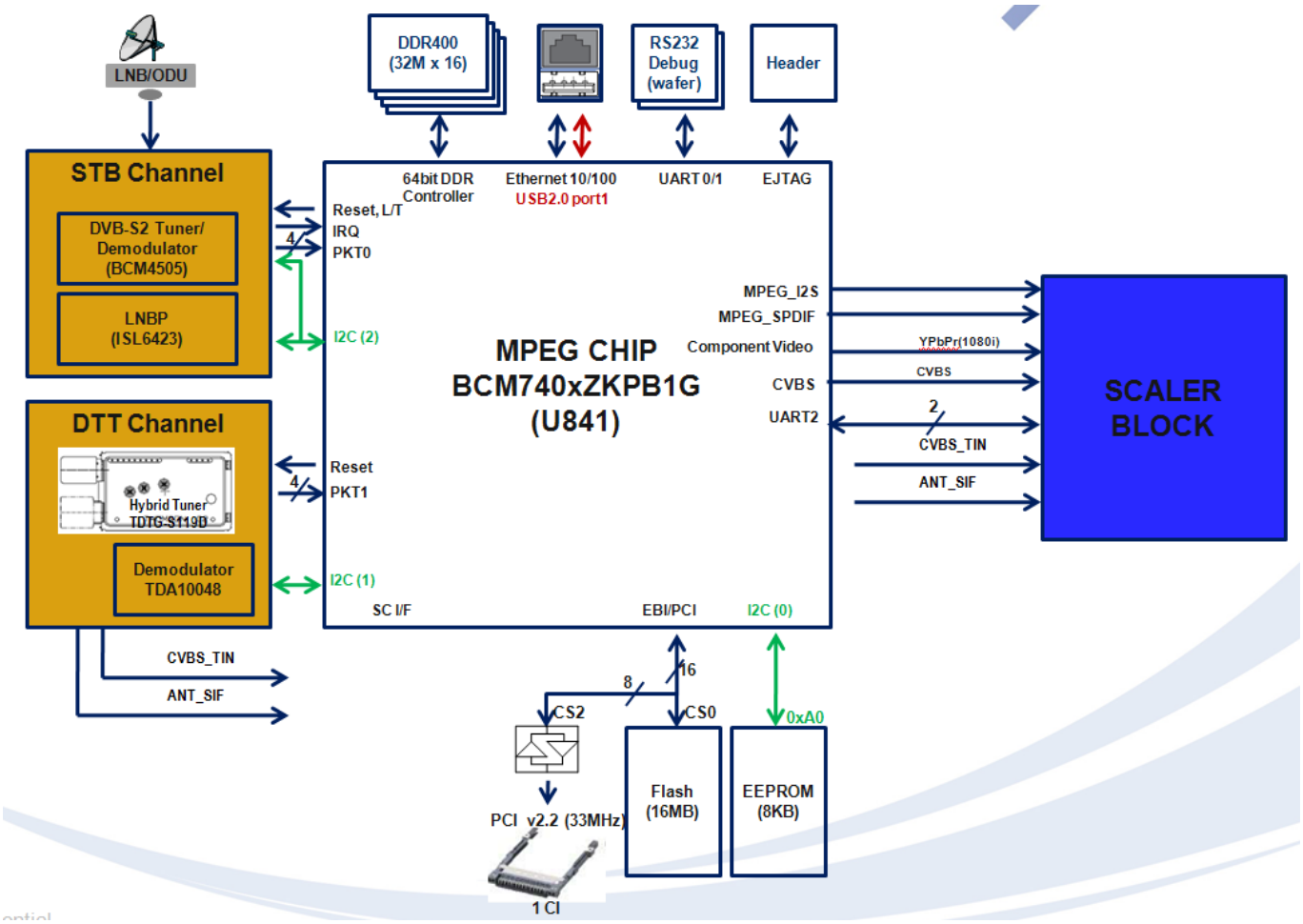


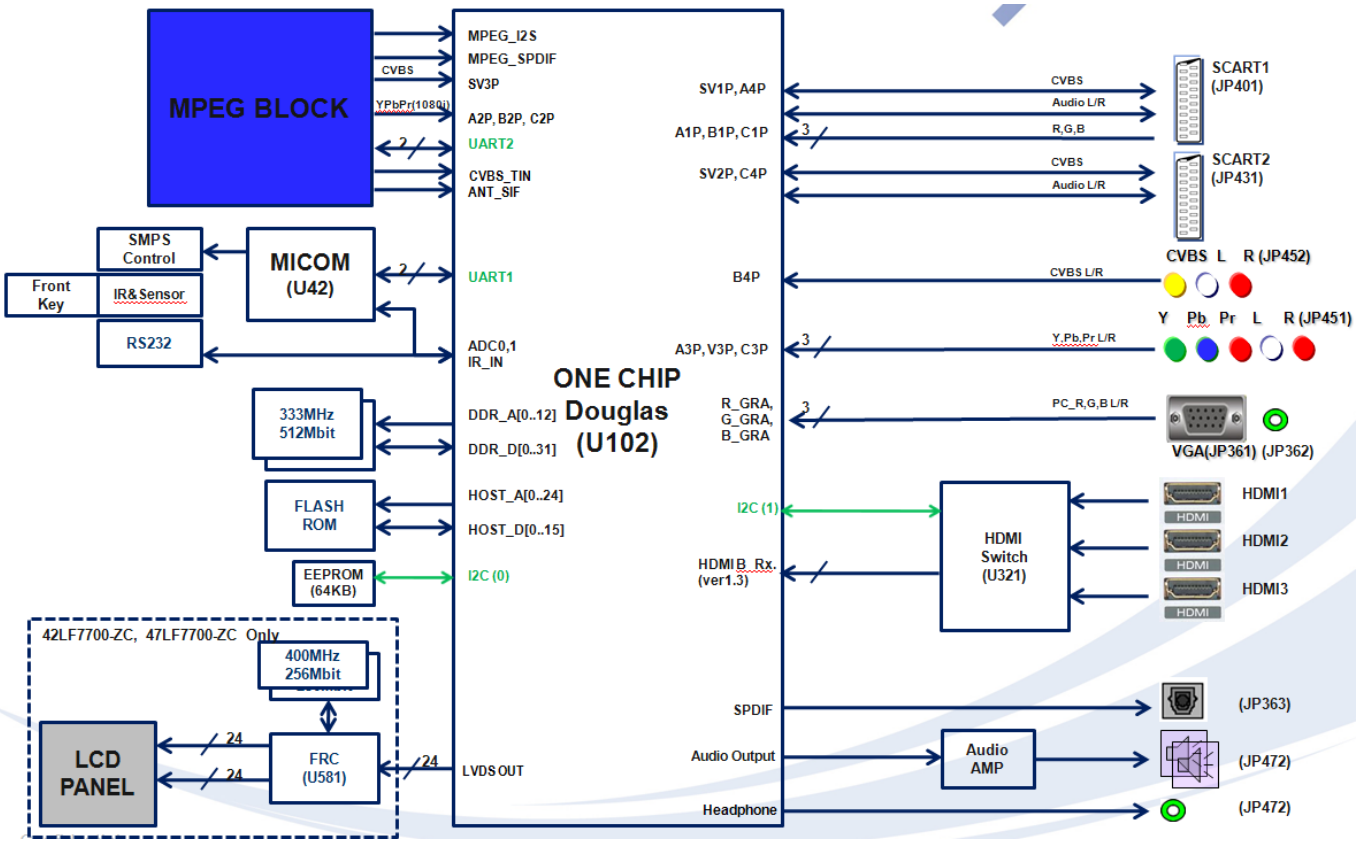
6. Exterior view defectiveness

(1) Check follow



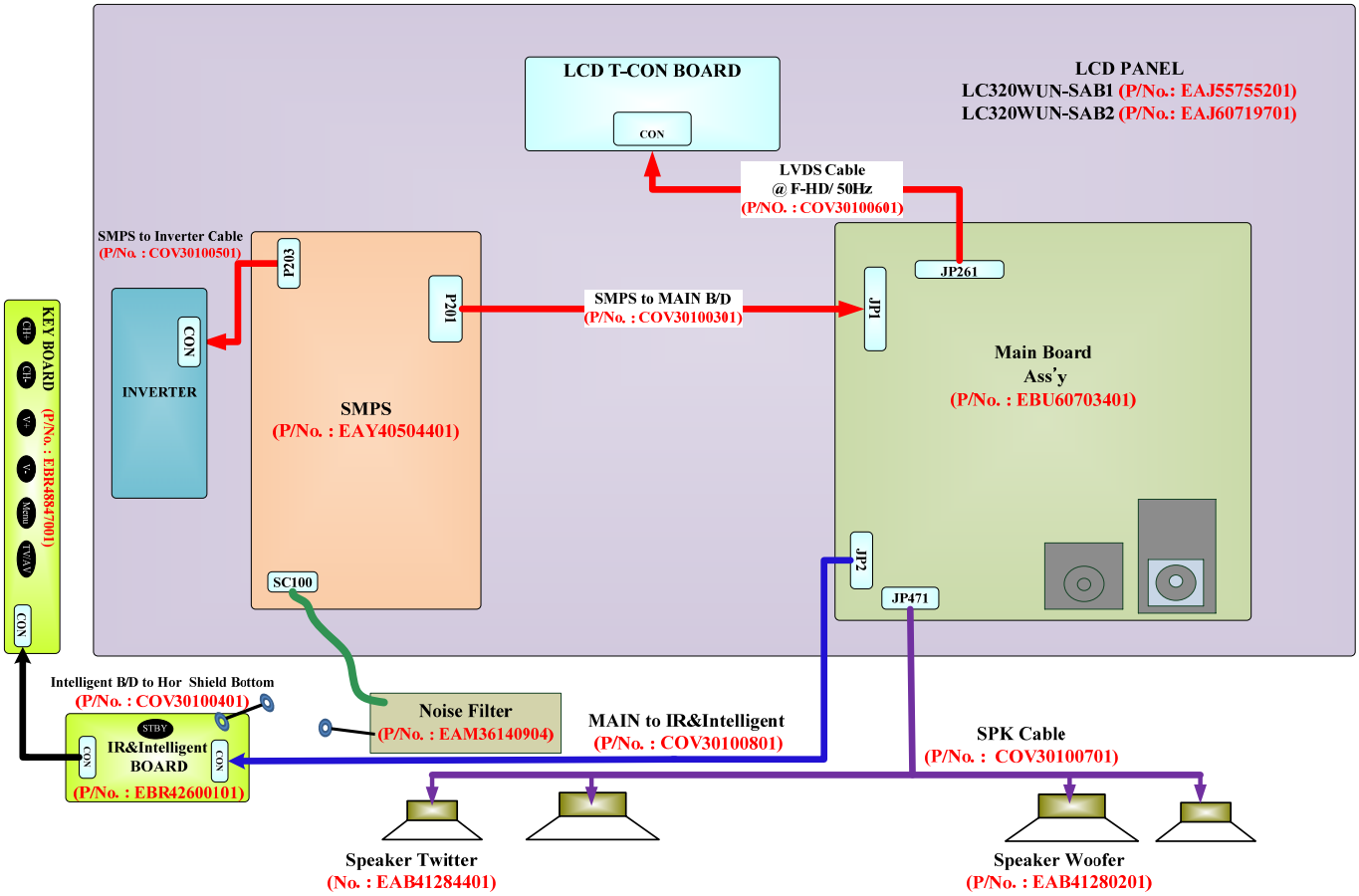
BLOCK DIAGRAM



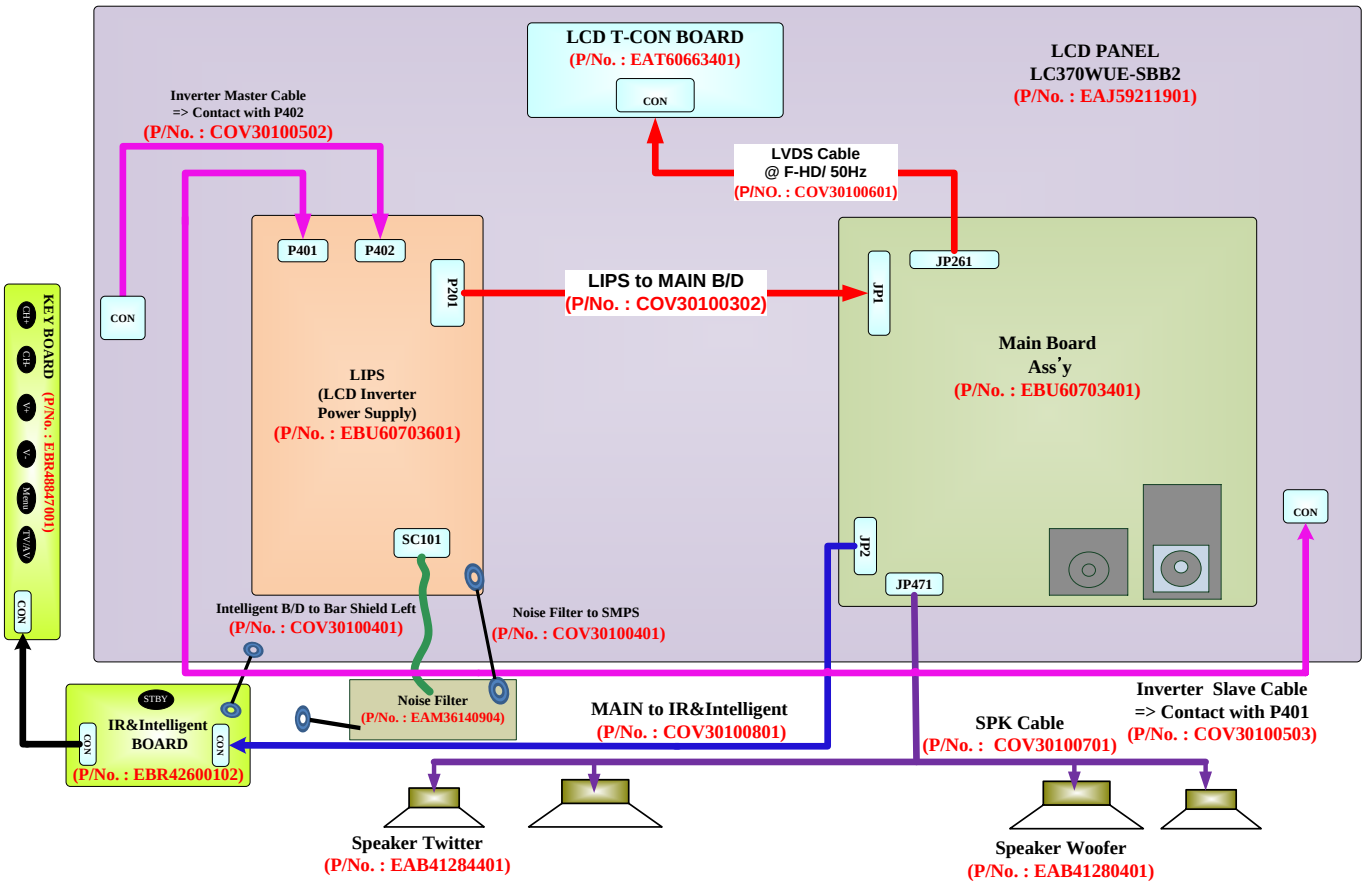


WIRING DIAGRAM

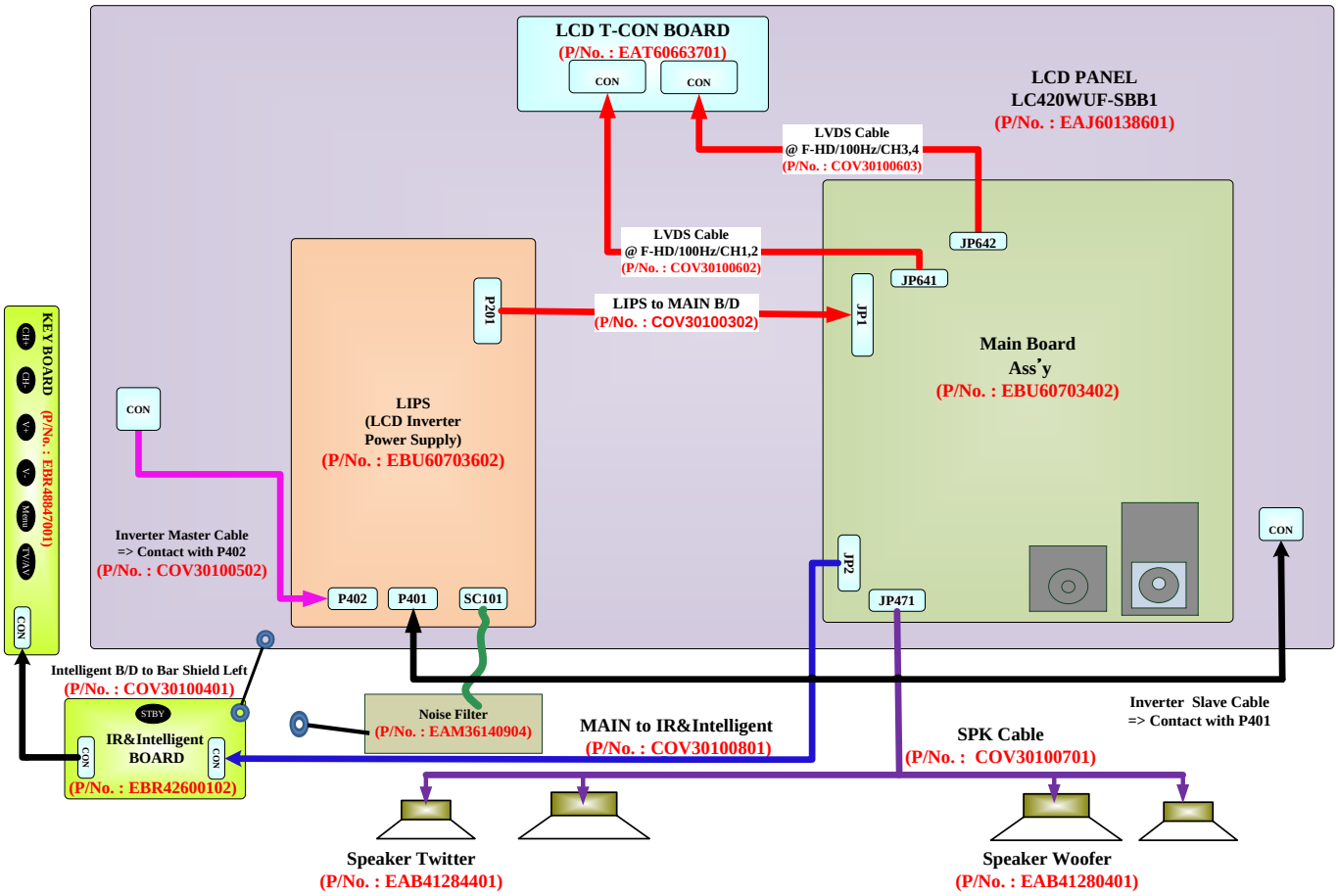
1. 32LF7700-ZC



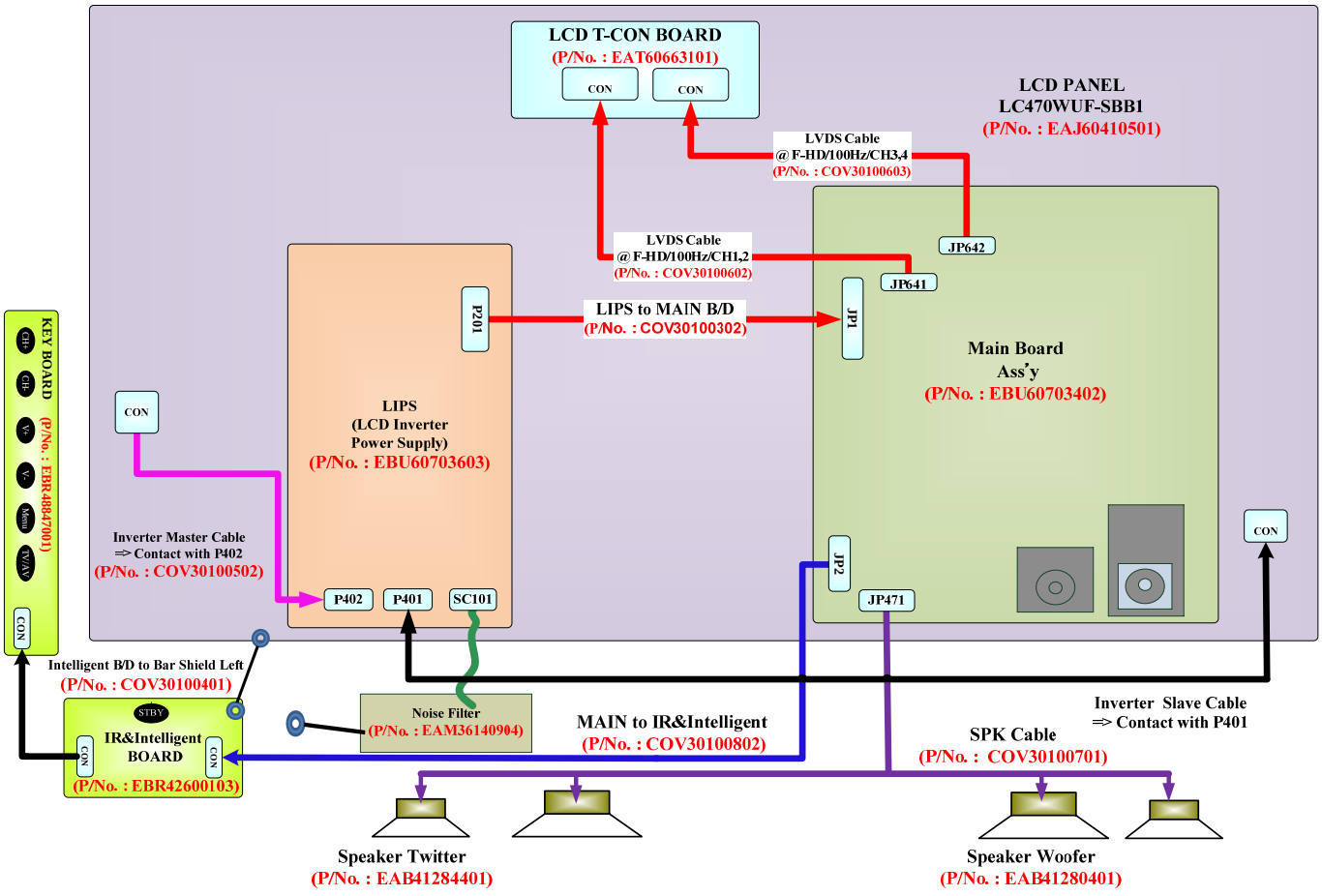
2. 37LF7700-ZC



3. 42LF7700-ZC



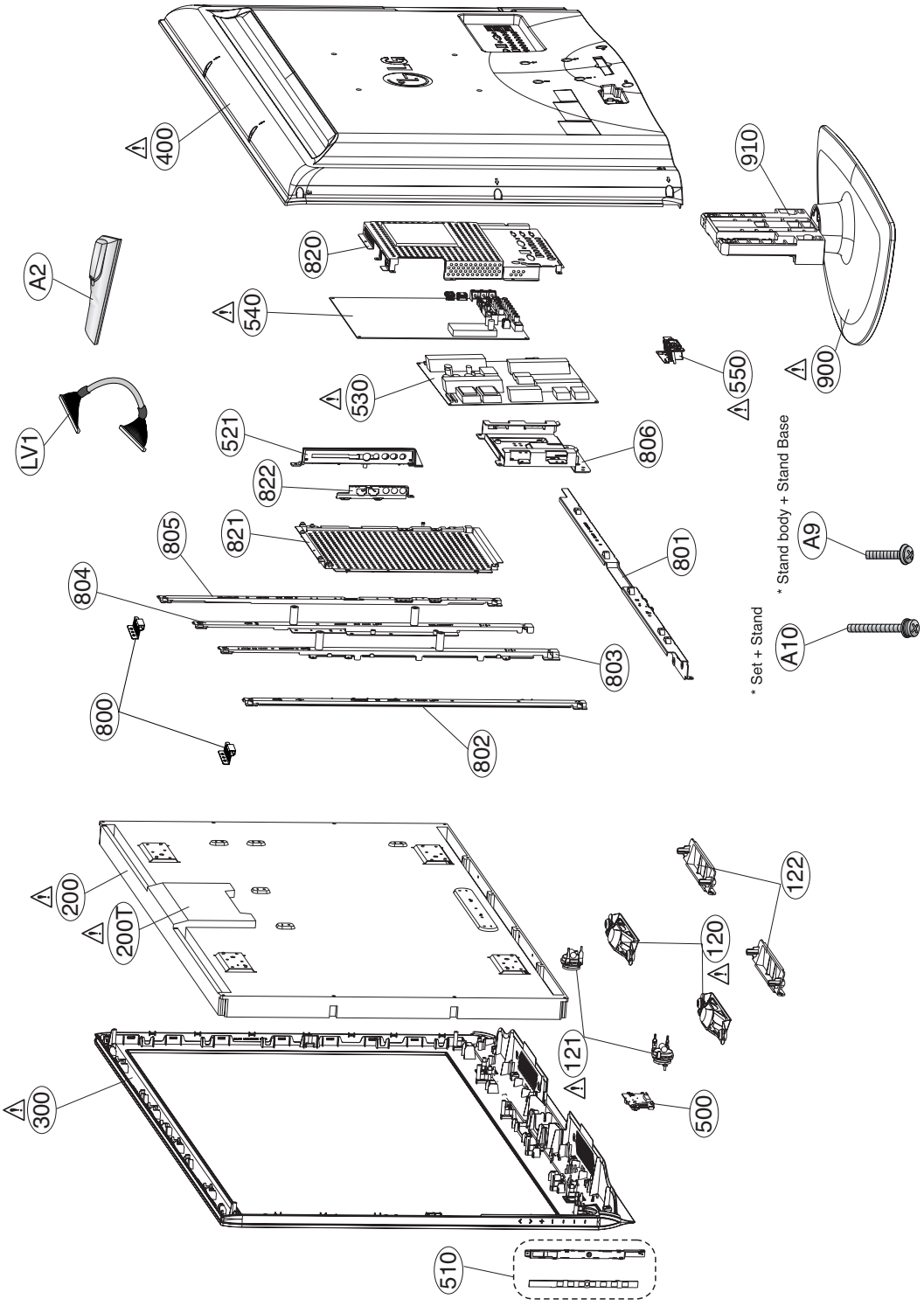
4. 47LF7700-ZC

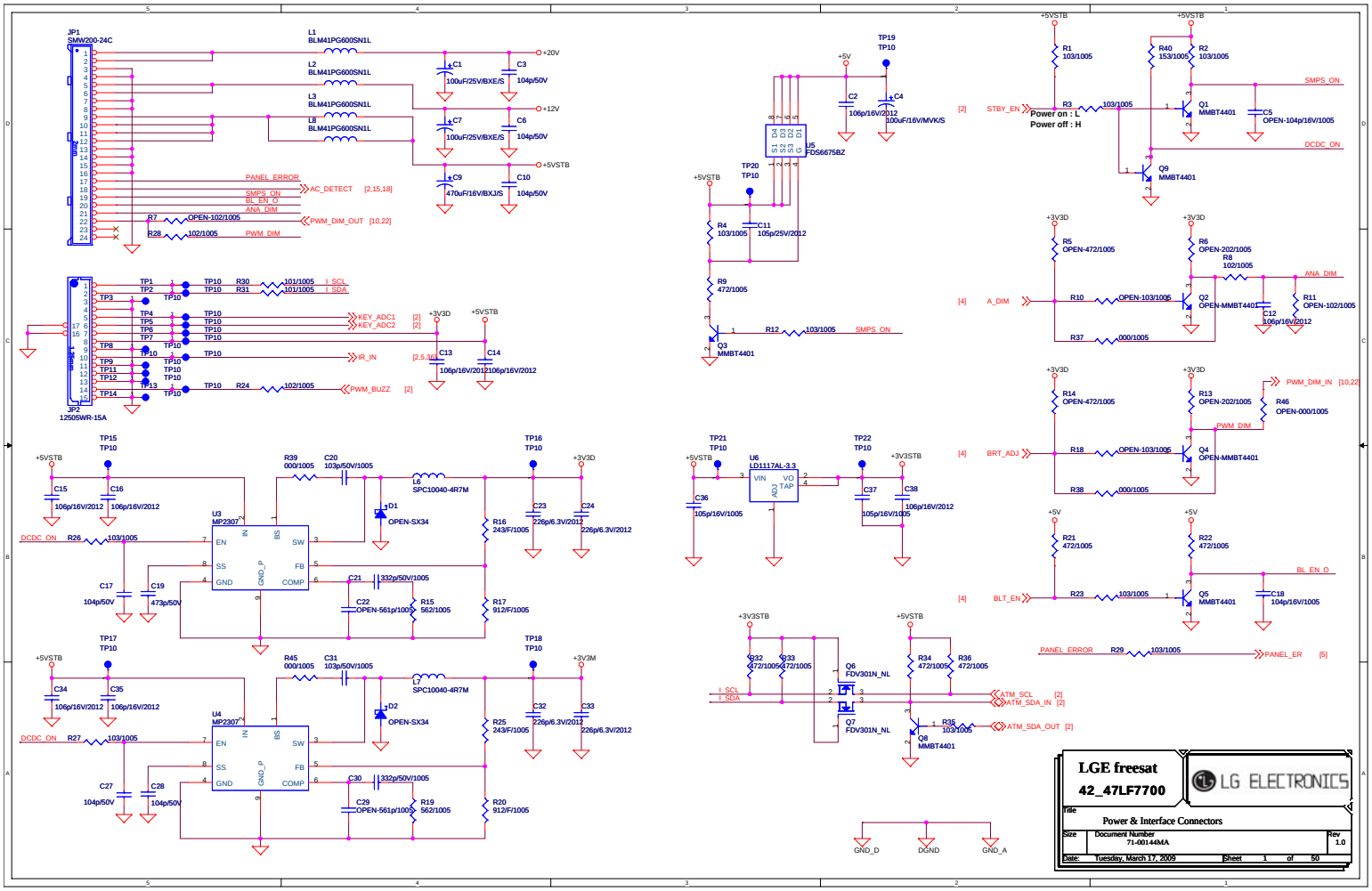


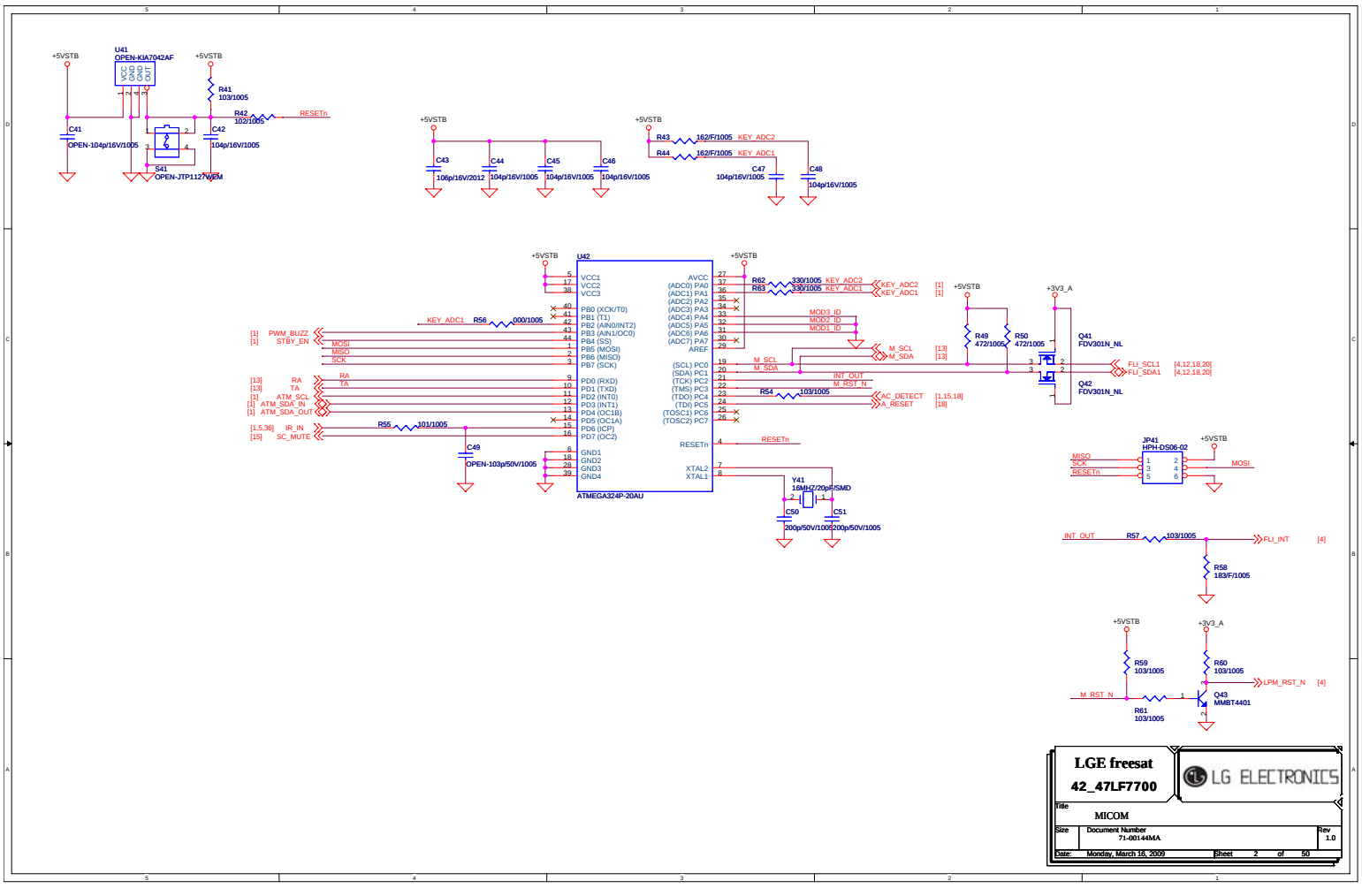
EXPLODED VIEW

IMPORTANT SAFETY NOTICE

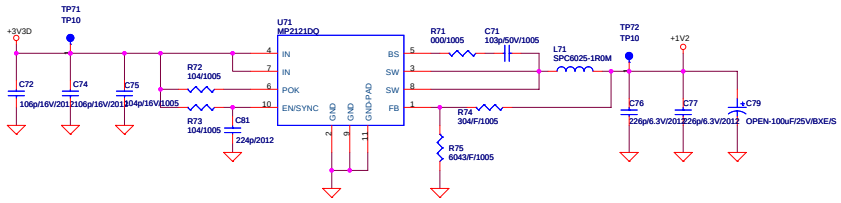
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and EXPLODED VIEW.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.



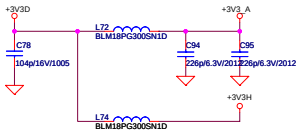

JP1
SMW200-24C
L1
BLM41PG600SN1L
L2
BLM41PG600SN1L
L3
BLM41PG600SN1L
L8
BLM41PG600SN1L
C1
100uF/25V/BXE/S
C3
104p/50V
+20V
C7
100uF/25V/BXE/S
C6
104p/50V
+12V
C9
470uF/16V/BXJ/S
C10
104p/50V
+5VSTBV
PANEL_ERROR
SMPS_ON
BL_EN_O
ANA_DIM
AC_DETECT [2,15,18]
PWM_DIM_OUT [10,22]
R7 OPEN-102/1005
R28 102/1005 PWM_DIM
JP2
12505WR-15A
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP11 TP12 TP13 TP14
R30 101/1005 I_SCL
R31 101/1005 I_SDA
KEY_ADC1 [2]
KEY_ADC2 [2]
IR_IN [2,5,36]
PWM_BUZZ [2]
R24 102/1005
+3V3D
+5VSTB
C13 106p/16V/2012
C14 106p/16V/2012
TP19 TP10
+5V
C2 106p/16V/2012
C4 100uF/16V/MVK/S
U5 FDS6675BZ
TP20 TP10
R4 103/1005
C11 105p/25V/2012
R9 472/1005
Q3 MMBT4401
R12 103/1005 SMPS_ON
STBY_EN [2]
Power on : L
Power off : H
R1 103/1005
R40 153/1005
R2 103/1005
R3 103/1005
Q1 MMBT4401
Q9 MMBT4401
C5 OPEN-104p/16V/1005
SMPS_ON
DCDC_ON
R5 OPEN-472/1005
R6 OPEN-202/1005
R8 102/1005
R10 OPEN-103/1005
Q2 OPEN-MMBT4401
R11 OPEN-102/1005
C12 106p/16V/2012
R37 000/1005
A_DIM [4]
ANA_DIM
R14 OPEN-472/1005
R13 OPEN-202/1005
R46 OPEN-000/1005
R18 OPEN-103/1005
Q4 OPEN-MMBT4401
R38 000/1005
BRT_ADJ [4]
PWM_DIM_IN [10,22]
PWM_DIM
R21 472/1005
R22 472/1005
R23 103/1005
Q5 MMBT4401
C18 104p/16V/1005
BLT_EN [4]
BL_EN_O
PANEL_ERROR
R29 103/1005
PANEL_ER [5]
TP15 TP10
C15 106p/16V/2012
C16 106p/16V/2012
U3 MP2307
R39 000/1005
C20 103p/50V/1005
L6 SPC10040-4R7M
D1 OPEN-SX34
R16 243/F/1005
C23 226p/6.3V/2012
C24 226p/6.3V/2012
DCDC_ON
R26 103/1005
C17 104p/50V
C19 473p/50V
C21 332p/50V/1005
C22 OPEN-561p/1005
R15 562/1005
R17 912/F/1005
TP16 TP10
+3V3D
TP17 TP10
C34 106p/16V/2012
C35 106p/16V/2012
U4 MP2307
R45 000/1005
C31 103p/50V/1005
L7 SPC10040-4R7M
D2 OPEN-SX34
R25 243/F/1005
C32 226p/6.3V/2012
C33 226p/6.3V/2012
DCDC_ON
R27 103/1005
C27 104p/50V
C28 104p/50V
C30 332p/50V/1005
C29 OPEN-561p/1005
R19 562/1005
R20 912/F/1005
TP18 TP10
+3V3M
TP21 TP10
U6 LD1117AL-3.3
VIN VO ADJ TAP
C36 105p/16V/1005
TP22 TP10
+3V3STB
C37 105p/16V/1005
C38 106p/16V/2012
R32 472/1005
R33 472/1005
Q6 FDV301N_NL
Q7 FDV301N_NL
R34 472/1005
R36 472/1005
Q8 MMBT4401
R35 103/1005
I_SCL
I_SDA
ATM_SCL [2]
ATM_SDA_IN [2]
ATM_SDA_OUT [2]
GND_D
DGND
GND_A
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
Power & Interface Connectors
Size
Document Number
71-00144MA
Rev
1.0
Date: Tuesday, March 17, 2009
Sheet 1 of 50

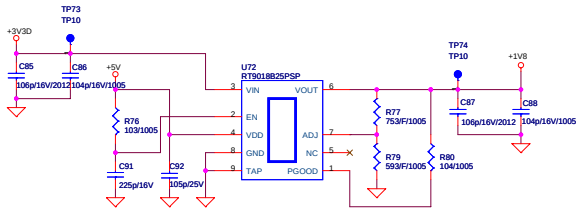

U41
OPEN-KIA7042AF
GND GND OUT
R41 103/1005
R42 102/1005
RESETn
C41 OPEN-104p/16V/1005
C42 104p/16V/1005
S41
OPEN-JTP1127WEM
C43 106p/16V/2012
C44 104p/16V/1005
C45 104p/16V/1005
C46 104p/16V/1005
R43 162/F/1005 KEY_ADC2
R44 162/F/1005 KEY_ADC1
C47 104p/16V/1005
C48 104p/16V/1005
U42
ATMEGA324P-20AU
KEY_ADC1 R56 000/1005
PWM_BUZZ [1]
STBY_EN [1]
MOSI
MISO
SCK
RA [13]
TA [13]
ATM_SCL [1]
ATM_SDA_IN [1]
ATM_SDA_OUT [1]
IR_IN [1,5,36]
SC_MUTE [15]
R55 101/1005
C49 OPEN-103p/50V/1005
R62 330/1005 KEY_ADC2
R63 330/1005 KEY_ADC1
KEY_ADC2 [1]
KEY_ADC1 [1]
MOD3_ID
MOD2_ID
MOD1_ID
M_SCL [13]
M_SDA [13]
INT_OUT
M_RST_N
R54 103/1005
AC_DETECT [1,15,18]
A_RESET [18]
RESETn
Y41
16MHZ/20pF/SMD
C50 200p/50V/1005
C51 200p/50V/1005
R49 472/1005
R50 472/1005
Q41 FDV301N_NL
Q42 FDV301N_NL
FLI_SCL1 [4,12,18,20]
FLI_SDA1 [4,12,18,20]
+3V3_A
JP41
HPH-DS06-02
MISO
SCK
RESETn
MOSI
INT_OUT
R57 103/1005
FLI_INT [4]
R58 183/F/1005
R59 103/1005
R60 103/1005
LPM_RST_N [4]
M_RST_N
R61 103/1005
Q43 MMBT4401
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
MICOM
Size
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 2 of 50

Douglas Power(Scaler)

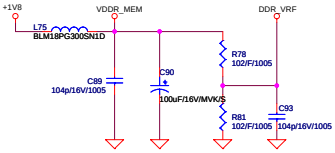


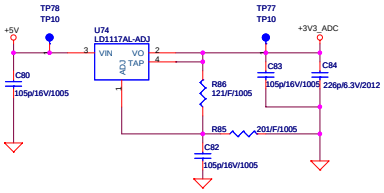
3V3 Power Branch





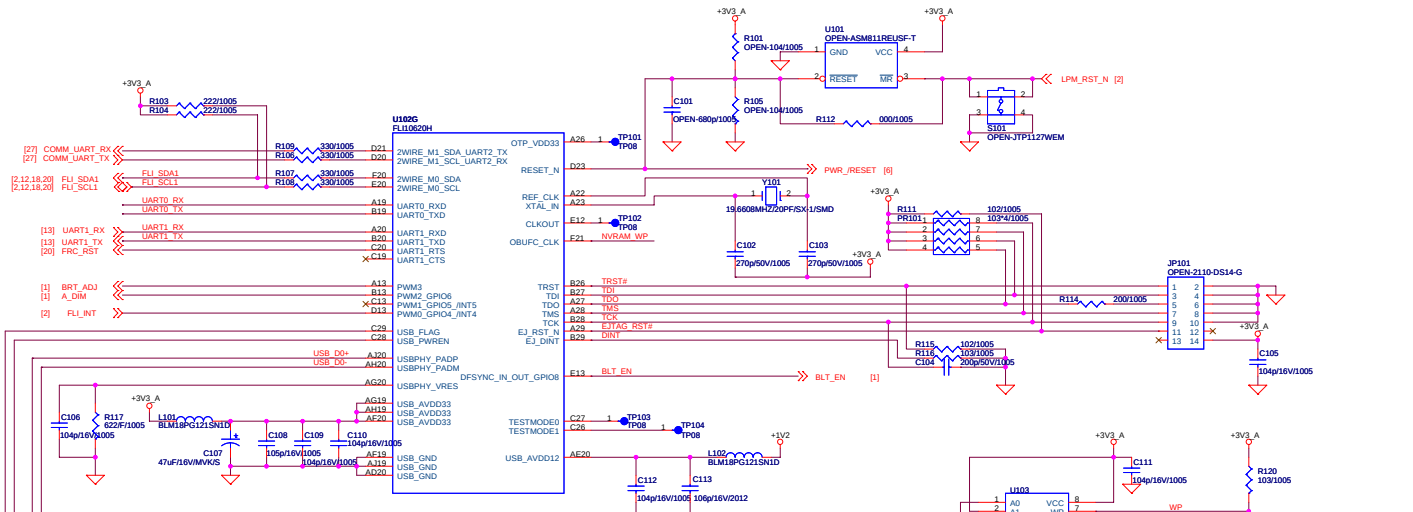
1V8 Power Branch



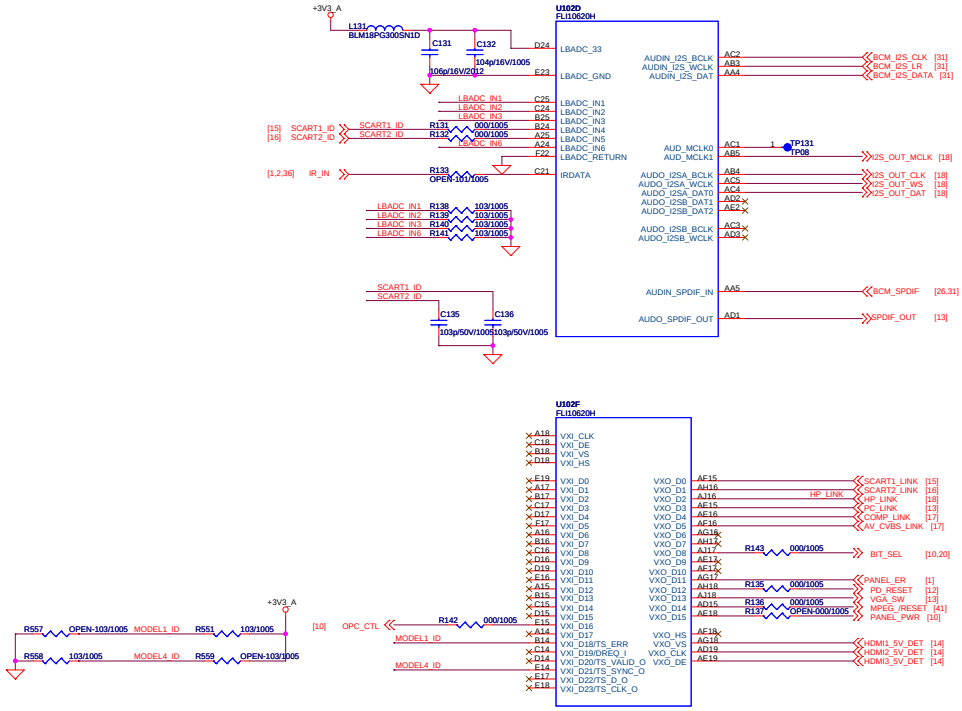


All location are from 71 to 100

LGE freesat 42_47LF7700	LG ELECTRONICS	
Title: POWER_REGULATION		
Size	Document Number: 71-00144MA	Rev: 1.0
Date: Monday, March 16, 2009	Sheet 3 of 50	



LGE freesat 42_47LF7700	LG ELECTRONICS	
Title: Douglas_USB,I2C,JTAG		
Size	Document Number: 71-00144MA	Rev: 1.0
Date: Monday, March 16, 2009	Sheet 4 of 50	



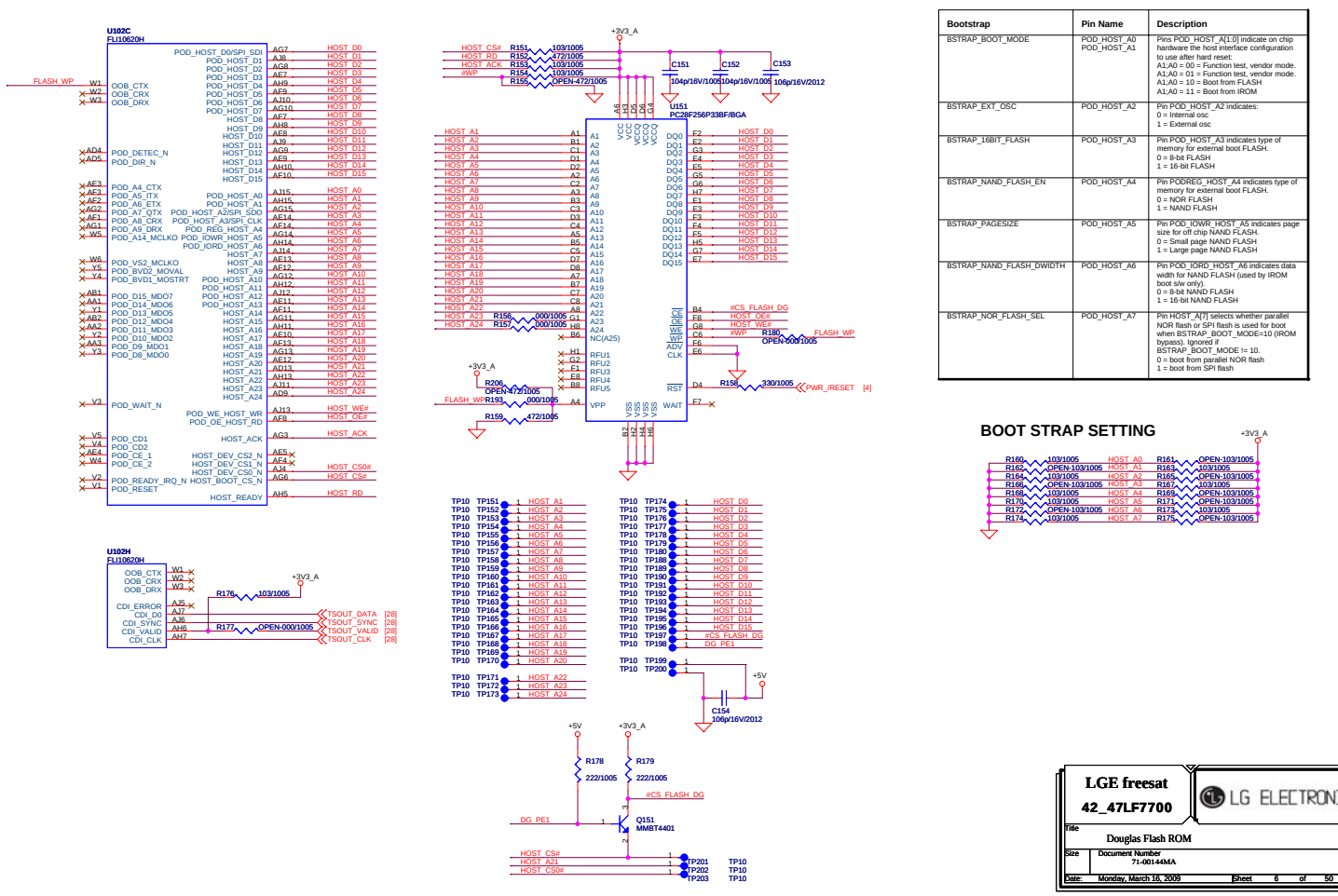
LGE freesat
42_47LF7700

LG ELECTRONICS

Title: Douglas I2S

Size	Document Number	Rev
	71-00144MA	1.0

Date: Monday, March 16, 2009 Sheet 5 of 50



Bootstrap	Pin Name	Description
BSTRAP_BOOT_MODE	POD_HOST_A0 POD_HOST_A1	Pins POD_HOST_A[1:0] indicate on chip hardware the host interface configuration to use after hard reset. A1:A0 = 00 = Function test, vendor mode. A1:A0 = 01 = Function test, vendor mode. A1:A0 = 10 = Boot from FLASH A1:A0 = 11 = Boot from IROM
BSTRAP_EXT_OSC	POD_HOST_A2	Pin POD_HOST_A2 indicates: 0 = Internal osc 1 = External osc
BSTRAP_16BIT_FLASH	POD_HOST_A3	Pin POD_HOST_A3 indicates type of memory for external boot FLASH. 0 = 8-bit FLASH 1 = 16-bit FLASH
BSTRAP_NAND_FLASH_EN	POD_HOST_A4	Pin PODREG_HOST_A4 indicates type of memory for external boot FLASH. 0 = NOR FLASH 1 = NAND FLASH
BSTRAP_PAGESIZE	POD_HOST_A5	Pin POD_IOWR_HOST_A5 indicates page size for off chip NAND FLASH. 0 = Small page NAND FLASH 1 = Large page NAND FLASH
BSTRAP_NAND_FLASH_DWIDTH	POD_HOST_A6	Pin POD_IORD_HOST_A6 indicates data width for NAND FLASH (used by IROM boot s/w only). 0 = 8-bit NAND FLASH 1 = 16-bit NAND FLASH
BSTRAP_NOR_FLASH_SEL	POD_HOST_A7	Pin HOST_A[7] selects whether parallel NOR flash or SPI flash is used for boot when BSTRAP_BOOT_MODE=10 (IROM bypass). Ignored if BSTRAP_BOOT_MODE != 10. 0 = boot from parallel NOR flash 1 = boot from SPI flash

BOOT STRAP SETTING

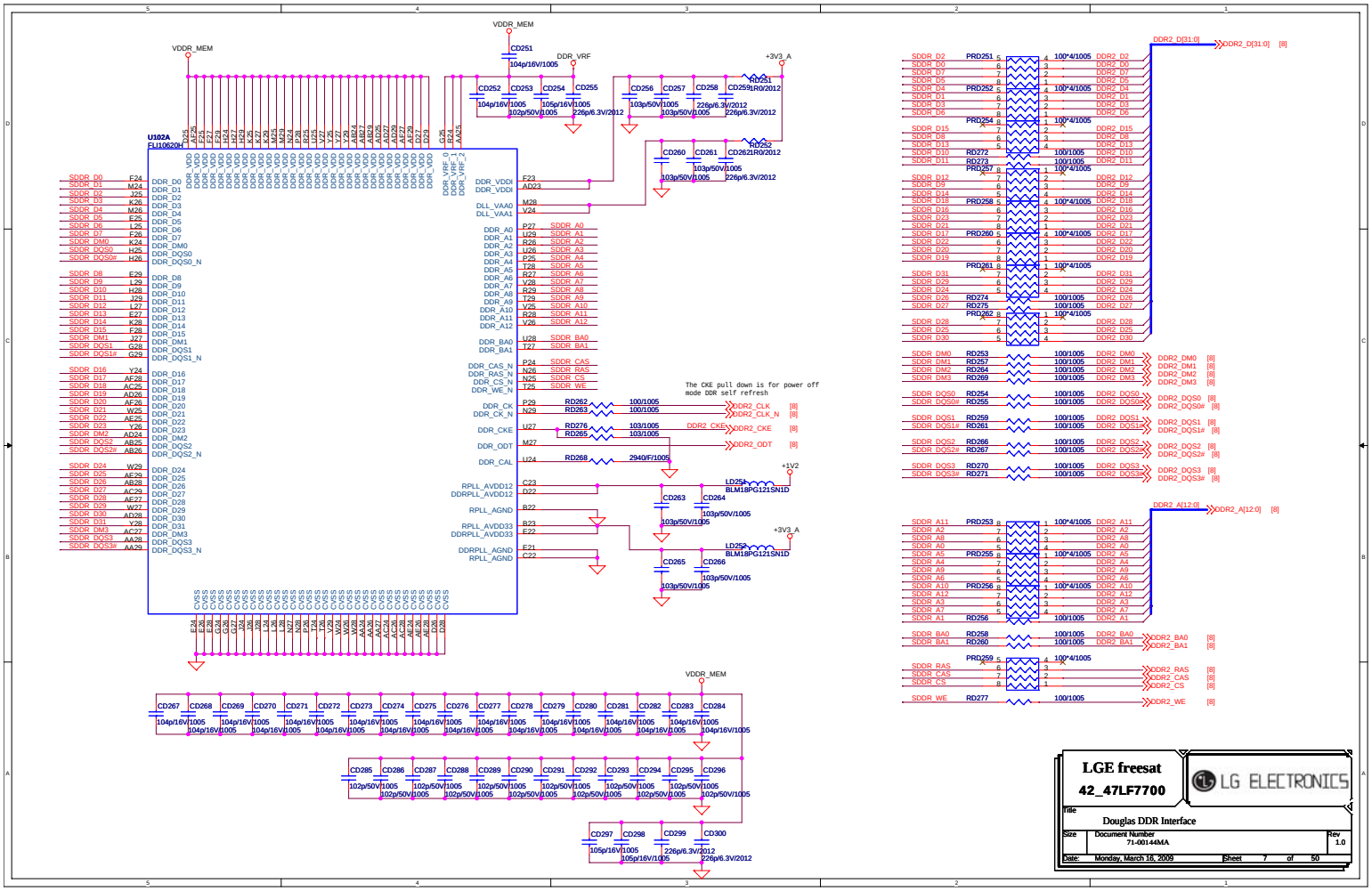
LGE freesat
42_47LF7700

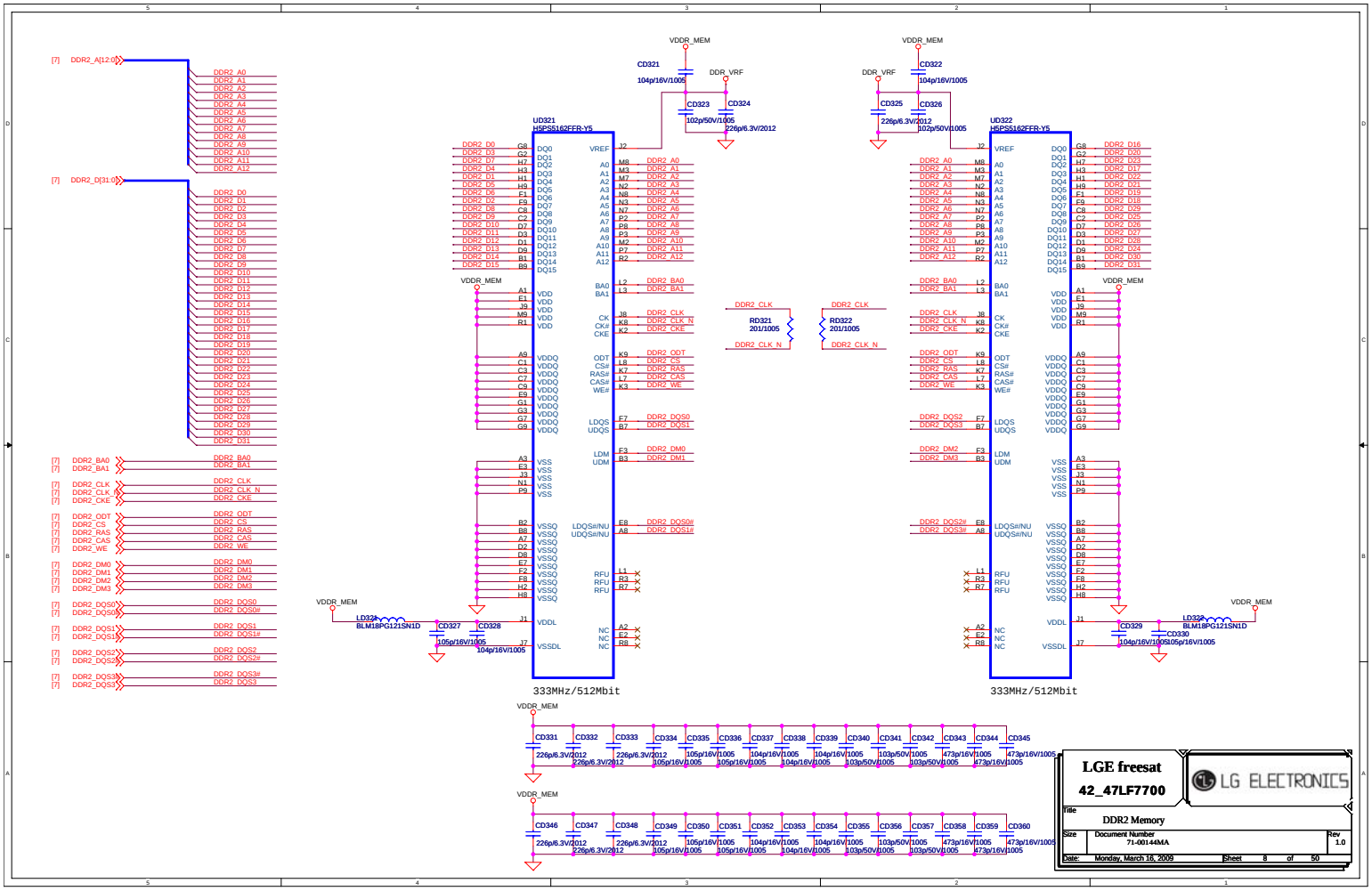
LG ELECTRONICS

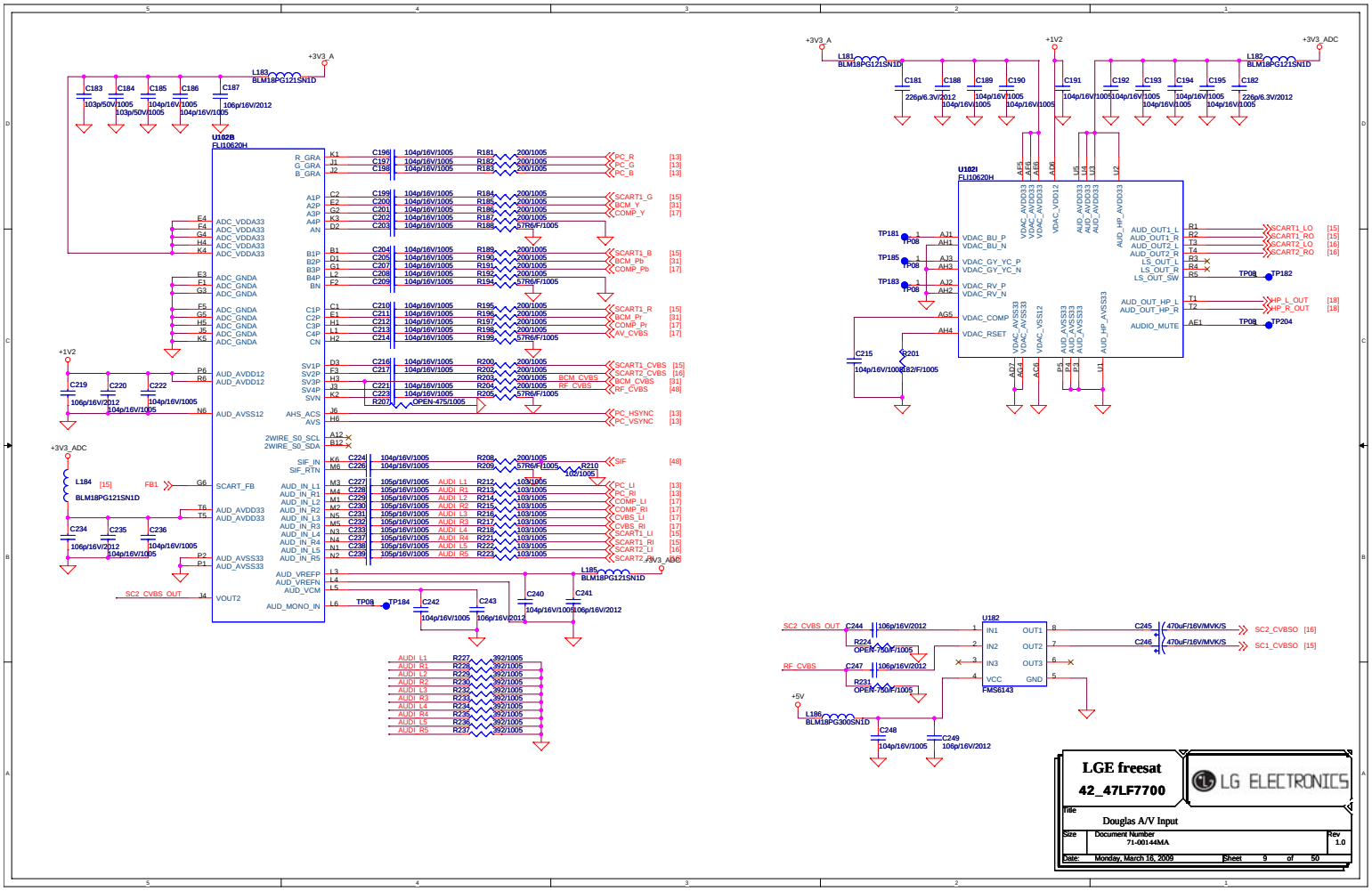
Title: Douglas Flash ROM

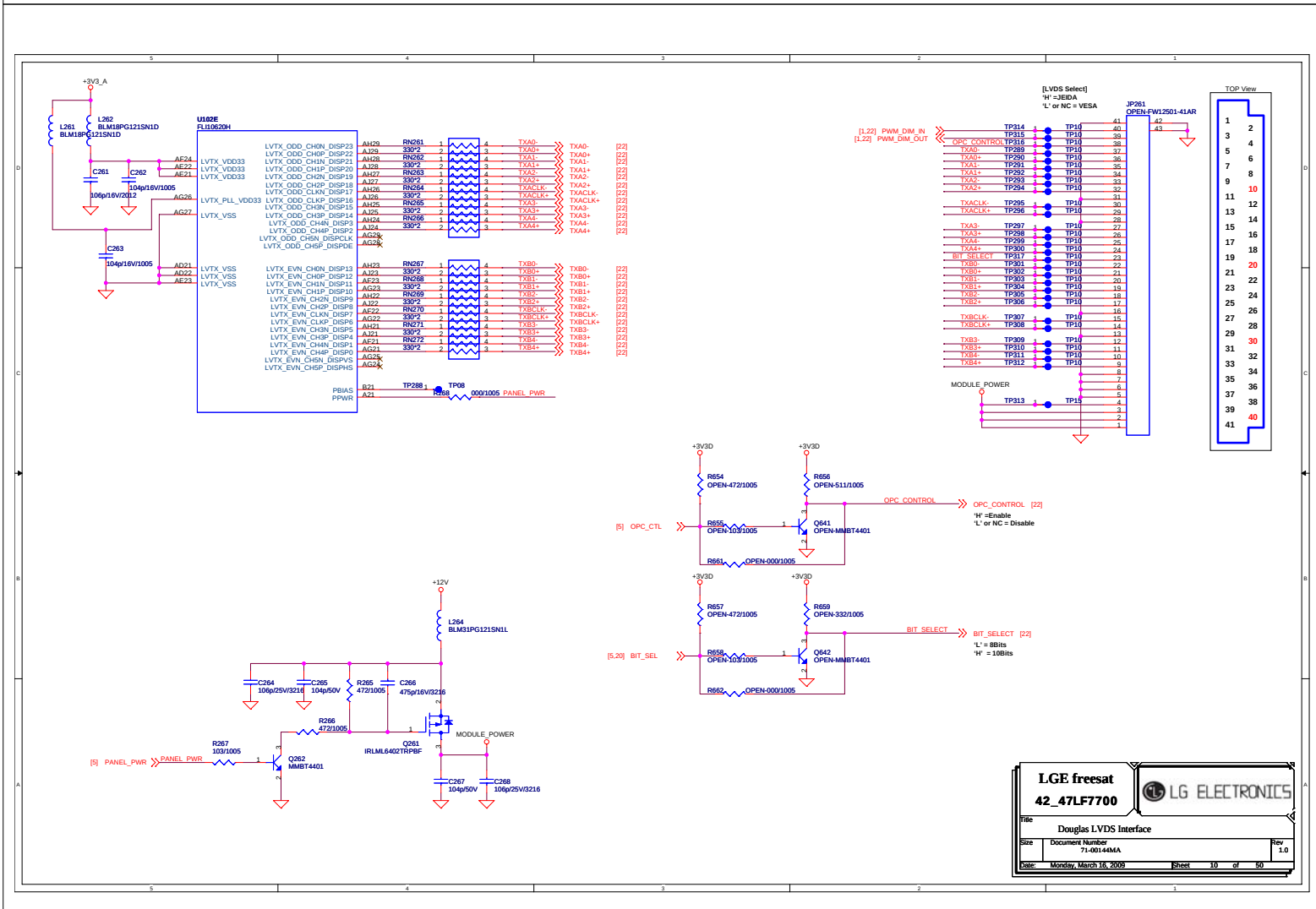
Size	Document Number	Rev
	71-00144MA	1.0

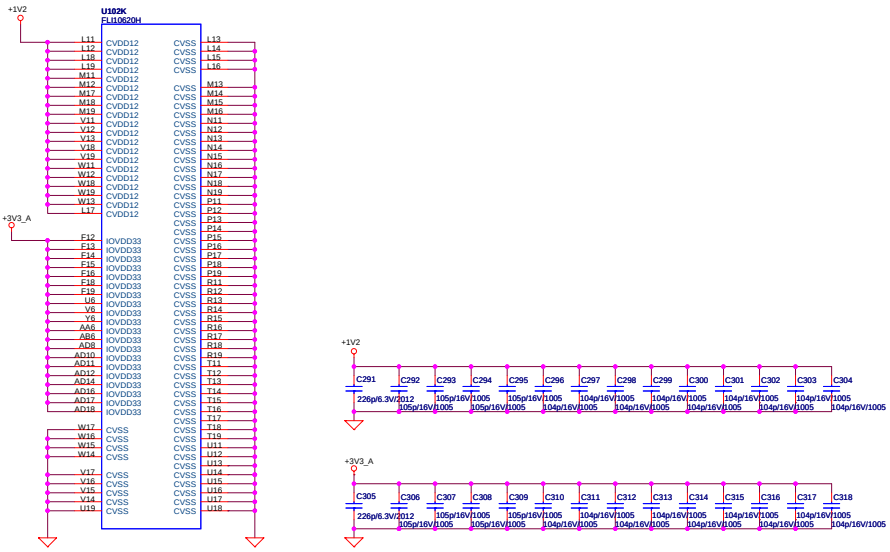
Date: Monday, March 16, 2009 Sheet 6 of 50


VDDR_MEM
U102A
ELI10620-F
DDR_VRF
+3V3_A
+1V2
The CKE pull down is for power off mode DDR self refresh
LD251 BLM18PG121SN1D
LD252 BLM18PG121SN1D
DDR2_D[31:0]
DDR2_A[12:0]
LGE freesat
42_47LF7700
LG ELECTRONICS
Douglas DDR Interface
Document Number 71-00144MA
Rev 1.0
Monday, March 16, 2009
Sheet 7 of 50

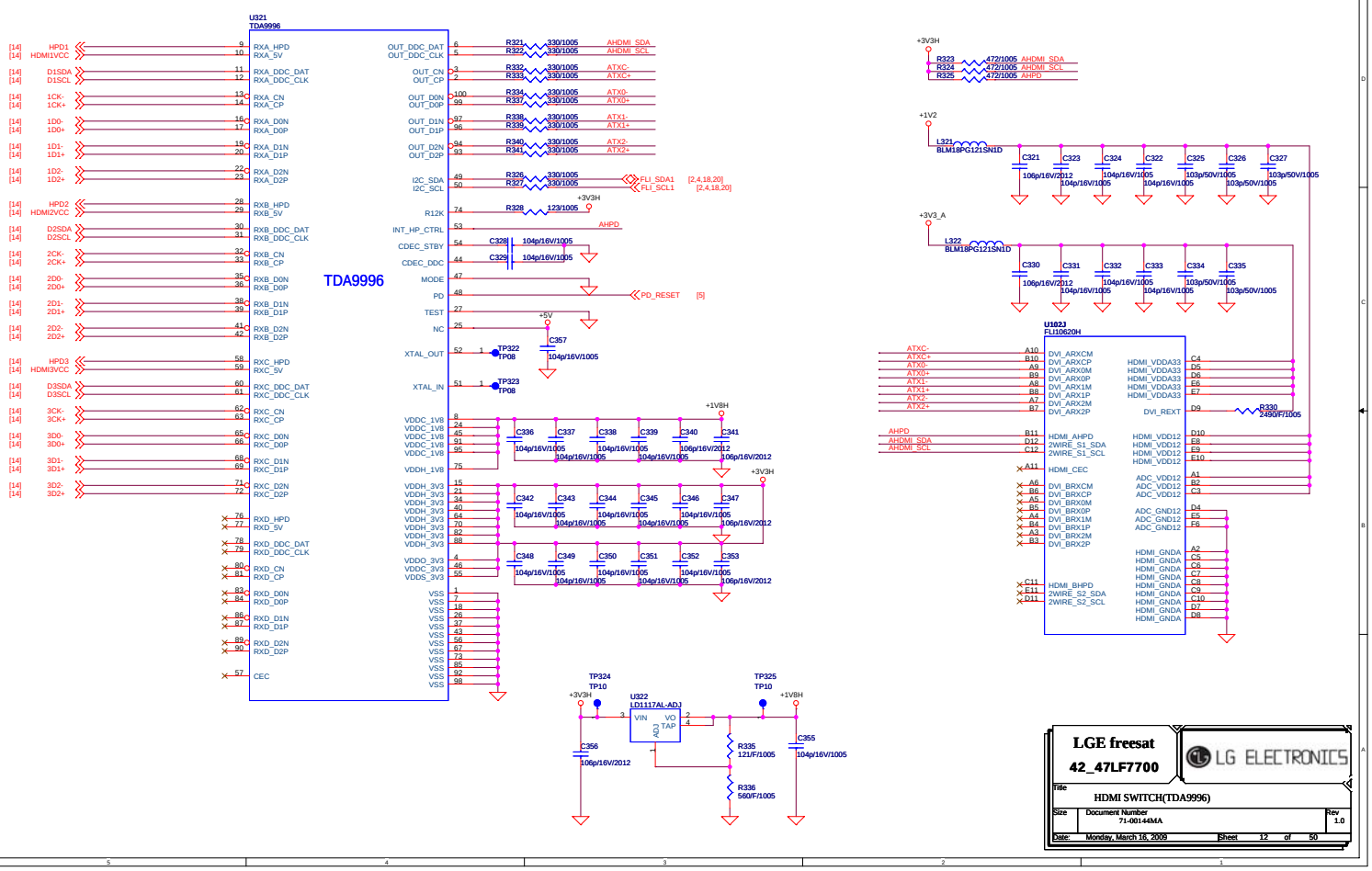

VDDR_MEM
UD321 H5PS5162FER-Y5
UD322 H5PS5162FER-Y5
DDR_VRF
LD321 BLM18PG121SN1D
LD322 BLM18PG121SN1D
333MHz/512Mbit
333MHz/512Mbit
LGE freesat
42_47LF7700
LG ELECTRONICS
DDR2 Memory
Document Number 71-00144MA
Rev 1.0
Monday, March 16, 2009
Sheet 8 of 50


U102B
FLI10620H
U102I
FLI10620H
U182
FMS6143
L183
BLM18PG121SN1D
L181
BLM18PG121SN1D
L182
BLM18PG121SN1D
L184
BLM18PG121SN1D
L185
BLM18PG121SN1D
L186
BLM18PG300SN1D
+3V3_A
+3V3_ADC
+1V2
SCART1_G
SCART1_B
SCART1_R
SCART1_CVBS
SCART2_CVBS
SCART2_R
SCART2_LI
SCART1_RI
SCART1_LI
SC2_CVBS_OUT
SC1_CVBS_OUT
PC_R
PC_G
PC_B
PC_HSYNC
PC_VSYNC
SIF
AUDIO_MUTE
HP_L_OUT
HP_R_OUT
LGE freesat
42_47LF7700
LG ELECTRONICS
Douglas A/V Input
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 9 of 50

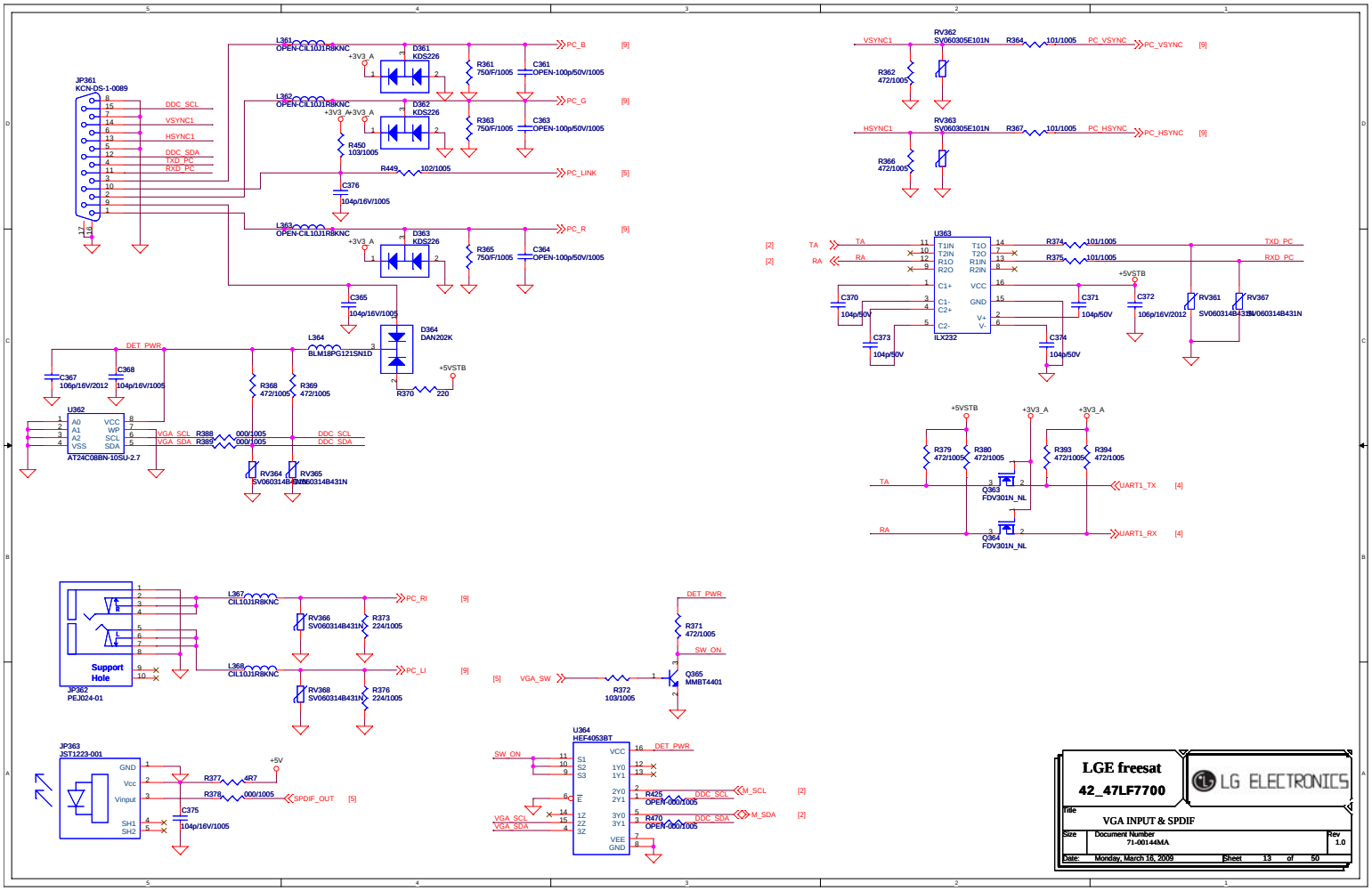

U102E
FLI10620H
L261
BLM18PG121SN1D
L262
BLM18PG121SN1D
L264
BLM31PG121SN1L
JP261
OPEN-FW12501-41AR
[LVDS Select]
'H' =JEIDA
'L' or NC = VESA
TOP View
OPC_CONTROL
BIT_SELECT
MODULE_POWER
PANEL_PWR
Q641
OPEN-MMBT4401
Q642
OPEN-MMBT4401
Q261
IRLML6402TRPBF
Q262
MMBT4401
LGE freesat
42_47LF7700
LG ELECTRONICS
Douglas LVDS Interface
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 10 of 50



LGE freesat	LG ELECTRONICS
42_47LF7700	
Title	Douglas Power
Size	Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009	Sheet 11 of 50



LGE freesat	LG ELECTRONICS
42_47LF7700	
Title	HDMI SWITCH(TDA9996)
Size	Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009	Sheet 12 of 50



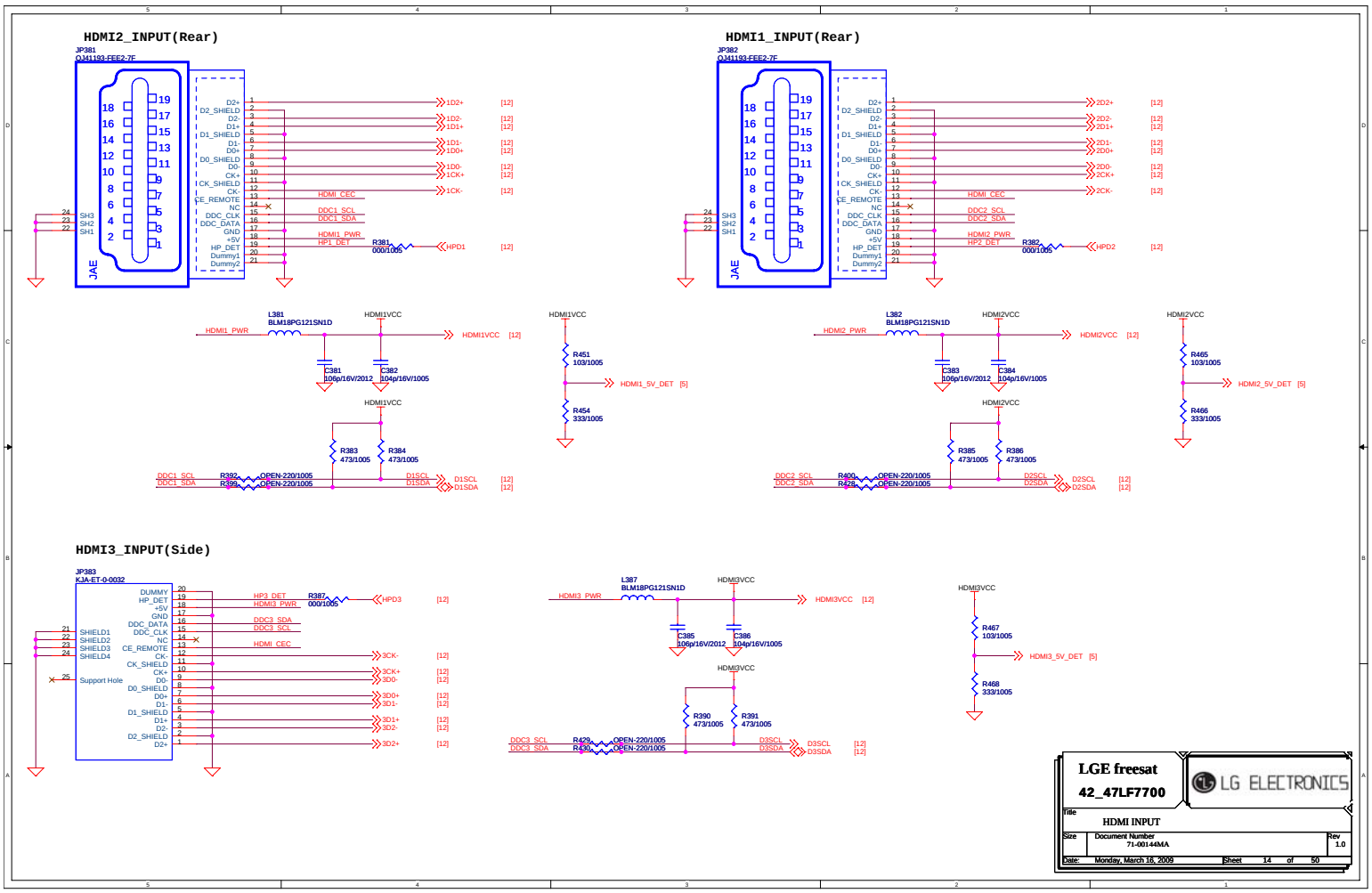
LGE freesat
42_47LF7700

LG ELECTRONICS

Title: VGA INPUT & SPDIF

Size	Document Number	Rev
	71-00144MA	1.0

Date: Monday, March 16, 2009 Sheet 13 of 50



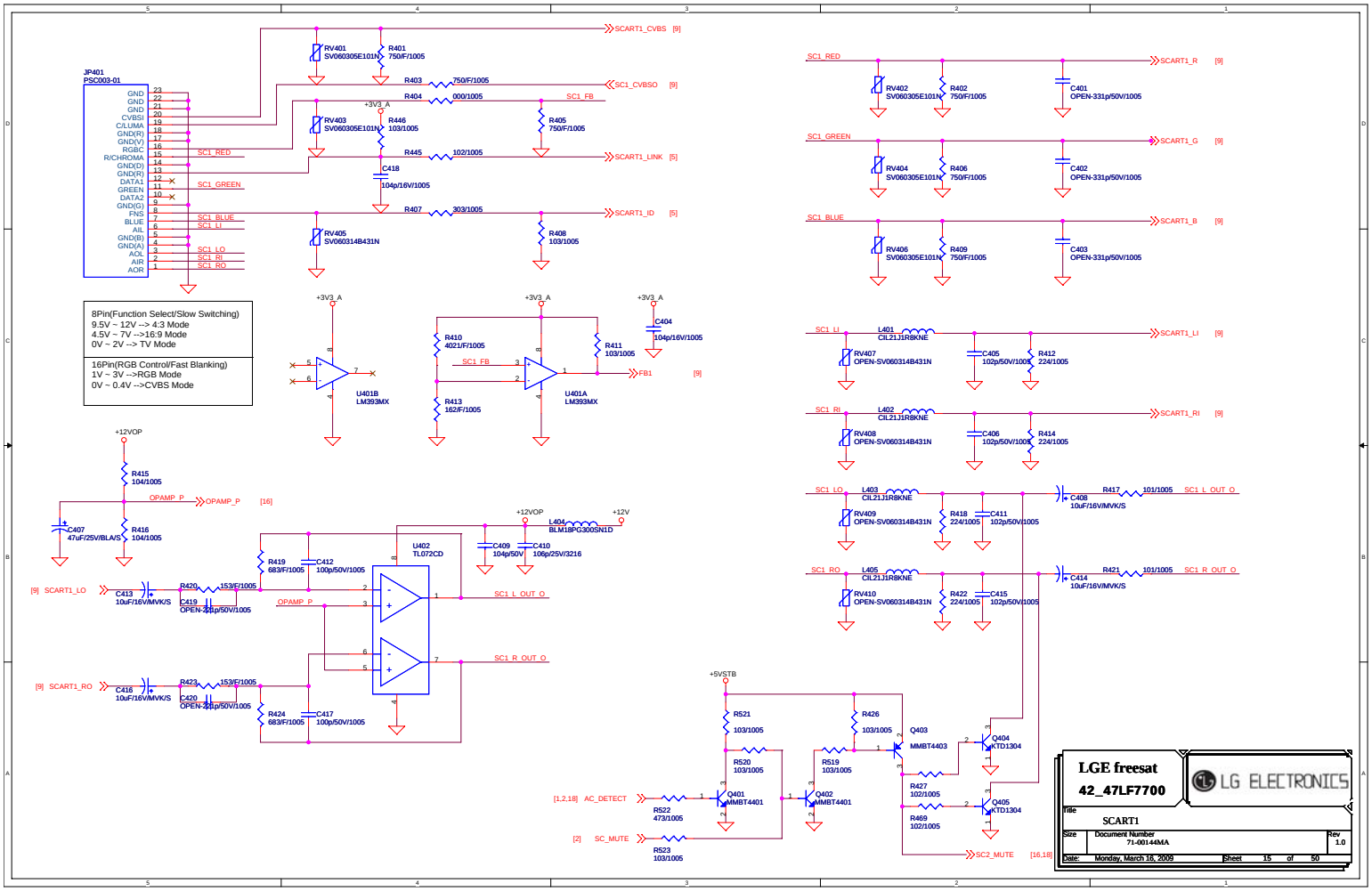
LGE freesat
42_47LF7700

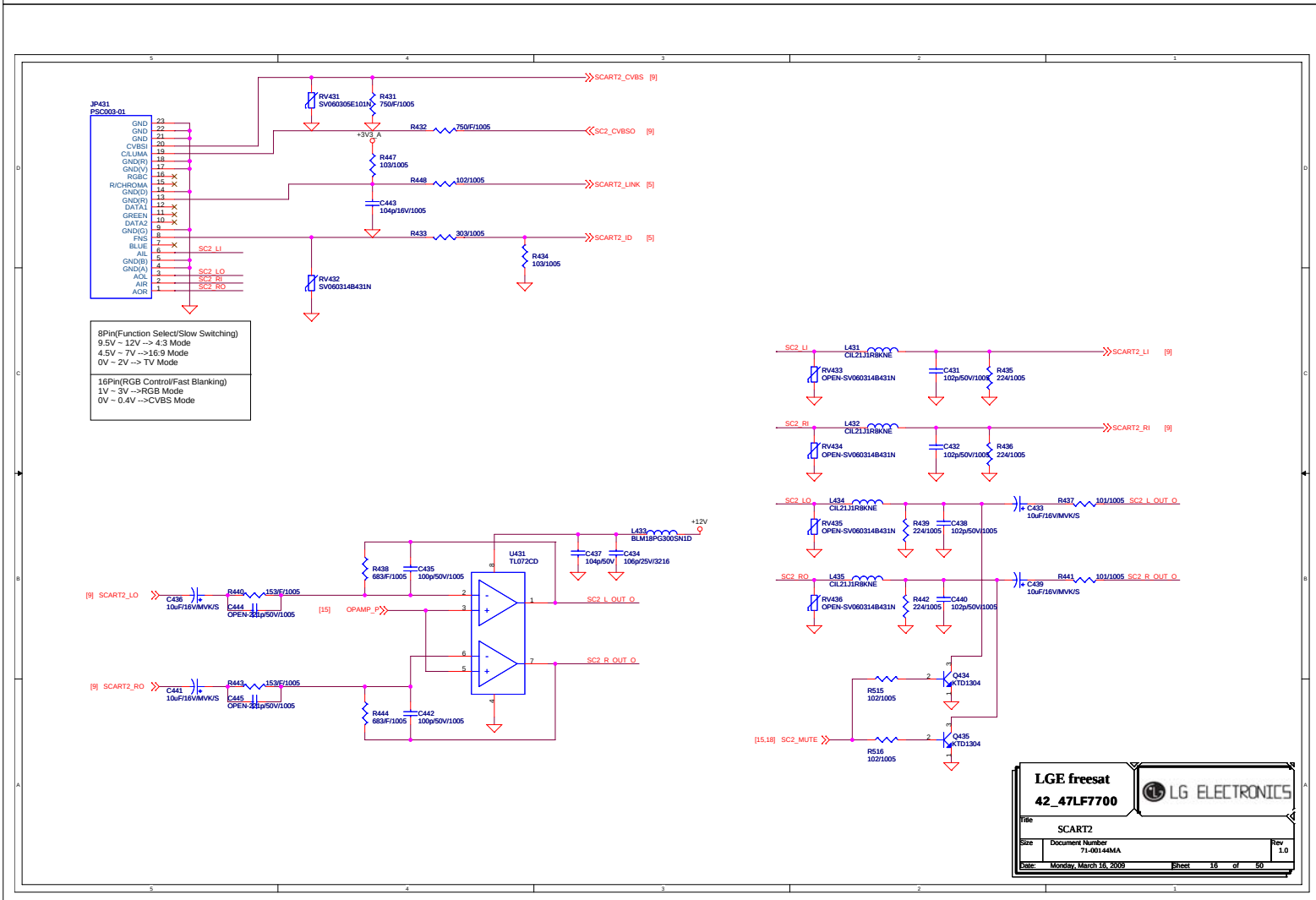
LG ELECTRONICS

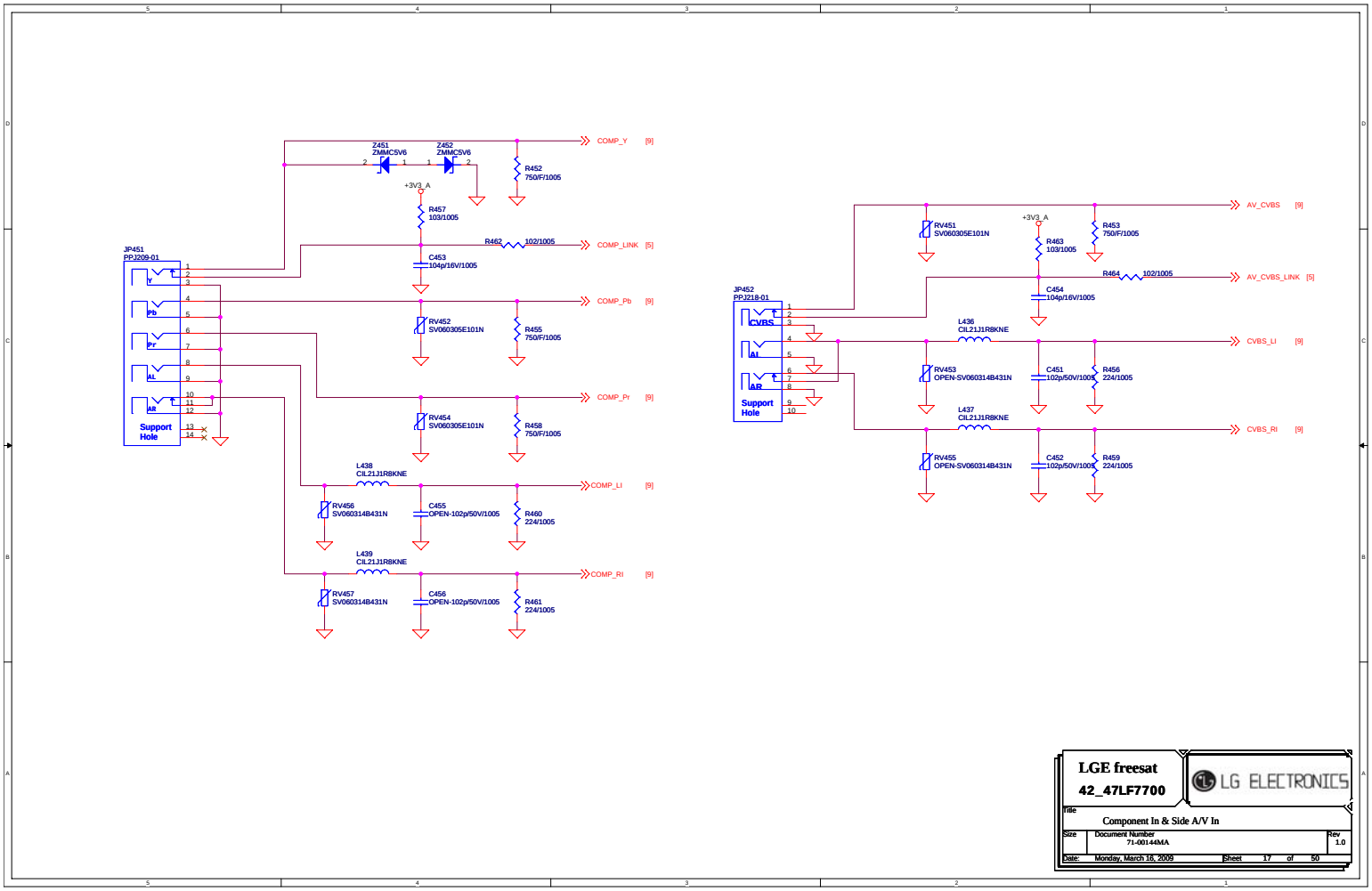
Title: HDMI INPUT

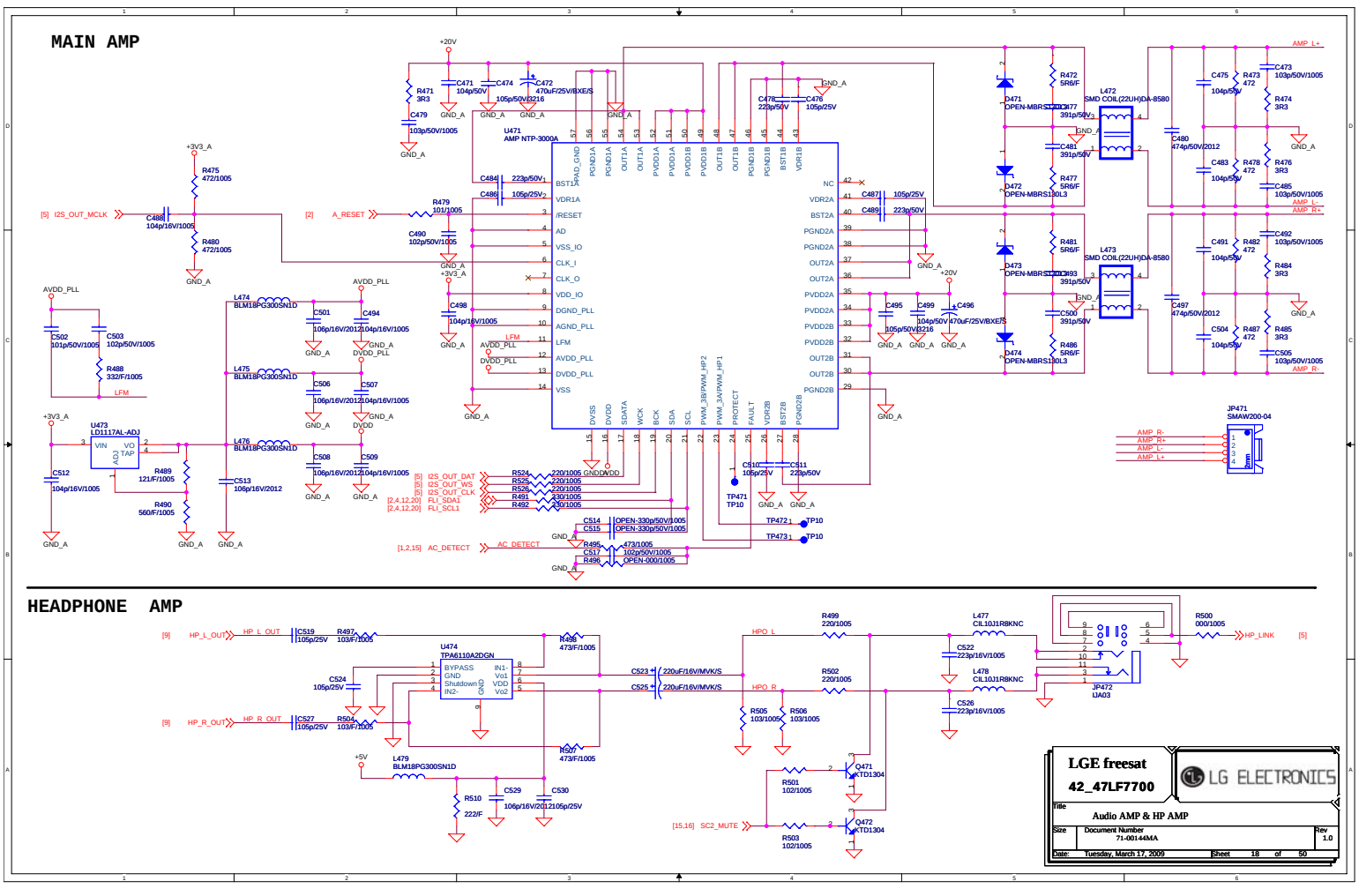
Size	Document Number	Rev
	71-00144MA	1.0

Date: Monday, March 16, 2009 Sheet 14 of 50

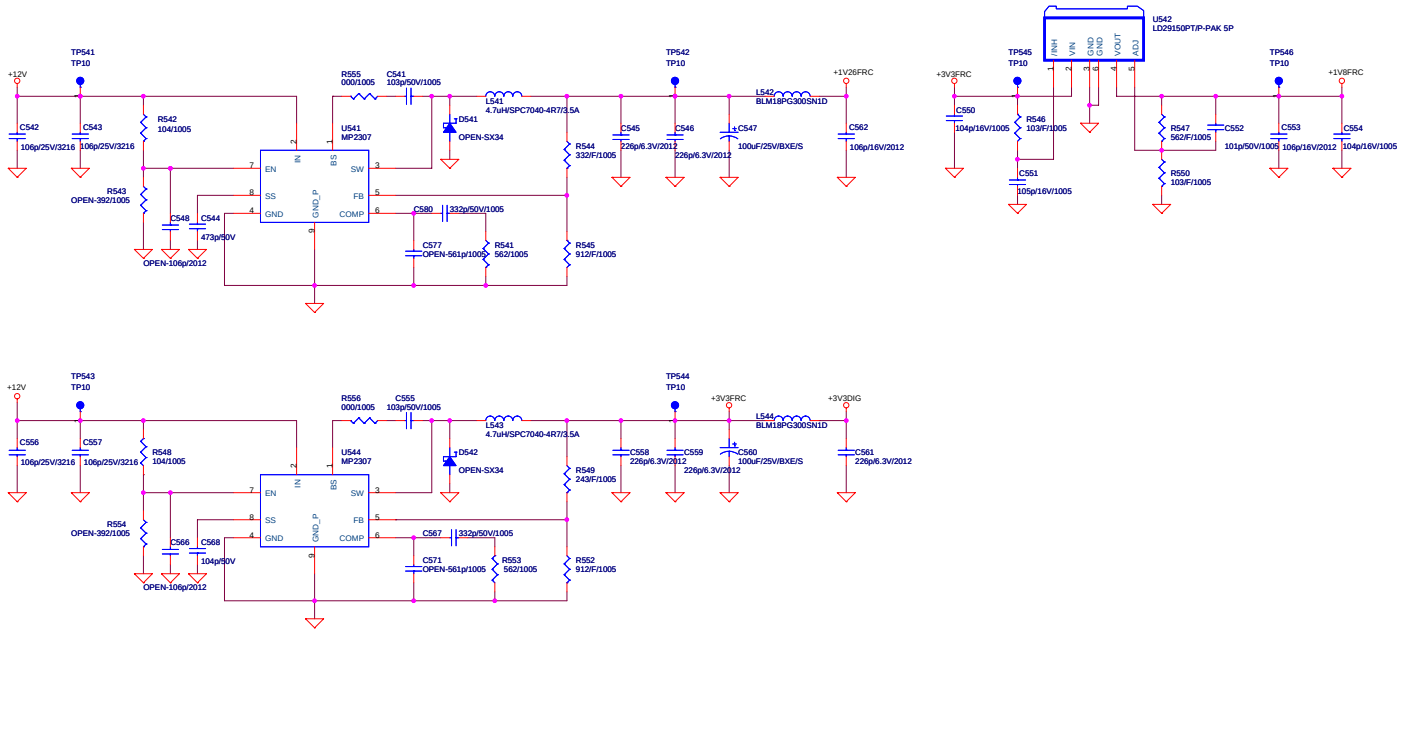

JP401
PSC003-01
SCART1_CVBS [9]
SC1_CVBSO [9]
SC1_FB
SCART1_LINK [5]
SCART1_ID [5]
SC1_RED
SC1_GREEN
SC1_BLUE
SC1_LI
SC1_LO
SC1_RI
SC1_RO
8Pin(Function Select/Slow Switching)
9.5V ~ 12V --> 4:3 Mode
4.5V ~ 7V -->16:9 Mode
0V ~ 2V --> TV Mode
16Pin(RGB Control/Fast Blanking)
1V ~ 3V -->RGB Mode
0V ~ 0.4V -->CVBS Mode
U401B LM393MX
U401A LM393MX
FB1 [9]
SCART1_R [9]
SCART1_G [9]
SCART1_B [9]
SCART1_LI [9]
SCART1_RI [9]
SC1_L_OUT_O
SC1_R_OUT_O
U402 TL072CD
OPAMP_P [16]
SCART1_LO [9]
SCART1_RO [9]
AC_DETECT [1,2,18]
SC_MUTE [2]
SC2_MUTE [16,18]
LGE freesat
42_47LF7700
LG ELECTRONICS
SCART1
Monday, March 16, 2009
15 of 50


JP431
PSC003-01
SCART2_CVBS [9]
SC2_CVBSO [9]
SCART2_LINK [5]
SCART2_ID [5]
SC2_LI
SC2_LO
SC2_RI
SC2_RO
8Pin(Function Select/Slow Switching)
9.5V ~ 12V --> 4:3 Mode
4.5V ~ 7V -->16:9 Mode
0V ~ 2V --> TV Mode
16Pin(RGB Control/Fast Blanking)
1V ~ 3V -->RGB Mode
0V ~ 0.4V -->CVBS Mode
SCART2_R [9]
SCART2_G [9]
SCART2_B [9]
SCART2_LI [9]
SCART2_RI [9]
SC2_L_OUT_O
SC2_R_OUT_O
U431 TL072CD
OPAMP_P [15]
SCART2_LO [9]
SCART2_RO [9]
SC2_MUTE [15,18]
LGE freesat
42_47LF7700
LG ELECTRONICS
SCART2
Monday, March 16, 2009
16 of 50

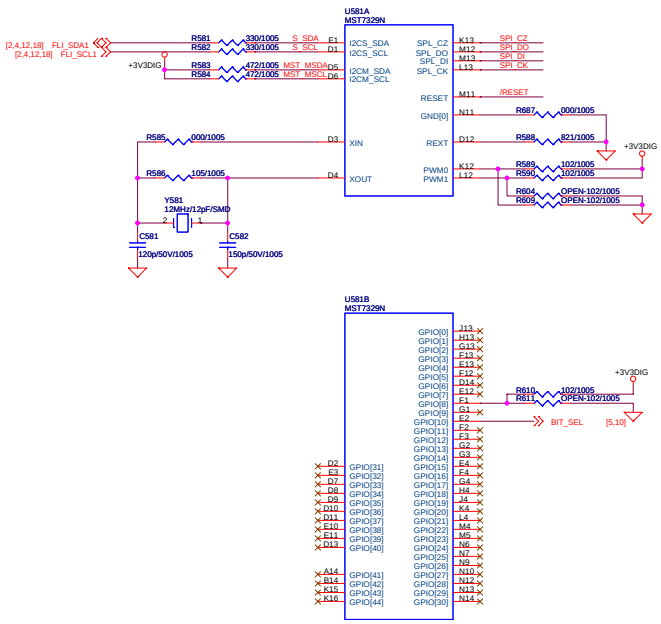

JP451
PPJ209-01
Support Hole
Z451 ZMMC5V6
Z452 ZMMC5V6
+3V3_A
R452 750/F/1005
R457 103/1005
R462 102/1005
C453 104p/16V/1005
R455 750/F/1005
RV452 SV060305E101N
RV454 SV060305E101N
R458 750/F/1005
L438 CIL21J1R8KNE
RV456 SV060314B431N
C455 OPEN-102p/50V/1005
R460 224/1005
L439 CIL21J1R8KNE
RV457 SV060314B431N
C456 OPEN-102p/50V/1005
R461 224/1005
COMP_Y [9]
COMP_LINK [5]
COMP_Pb [9]
COMP_Pr [9]
COMP_LI [9]
COMP_RI [9]
JP452
PPJ218-01
Support Hole
RV451 SV060305E101N
R463 103/1005
R453 750/F/1005
R464 102/1005
C454 104p/16V/1005
L436 CIL21J1R8KNE
RV453 OPEN-SV060314B431N
C451 102p/50V/1005
R456 224/1005
L437 CIL21J1R8KNE
RV455 OPEN-SV060314B431N
C452 102p/50V/1005
R459 224/1005
AV_CVBS [9]
AV_CVBS_LINK [5]
CVBS_LI [9]
CVBS_RI [9]
LGE freesat
42_47LF7700
LG ELECTRONICS
Component In & Side A/V In
Size
Document Number 71-00144MA
Rev 1.0
Date: Monday, March 16, 2009
Sheet 17 of 50

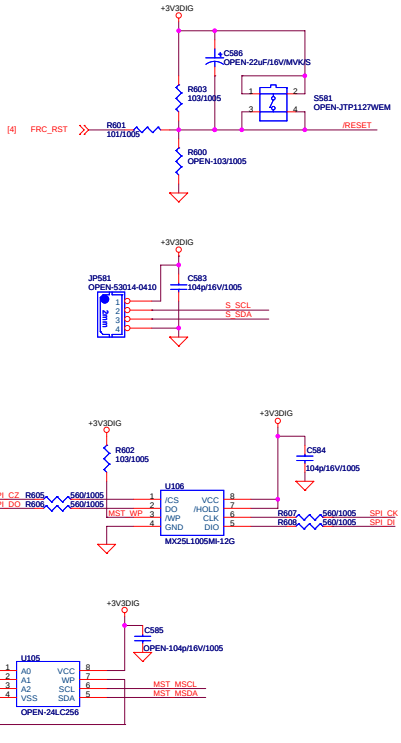

MAIN AMP
U471
AMP NTP-3000A
U473
LD1117AL-ADJ
JP471
SMAW200-04
HEADPHONE AMP
U474
TPA6110A2DGN
JP472
LJA03
LGE freesat
42_47LF7700
LG ELECTRONICS
Audio AMP & HP AMP
Size
Document Number 71-00144MA
Rev 1.0
Date: Tuesday, March 17, 2009
Sheet 18 of 50

FRC Power

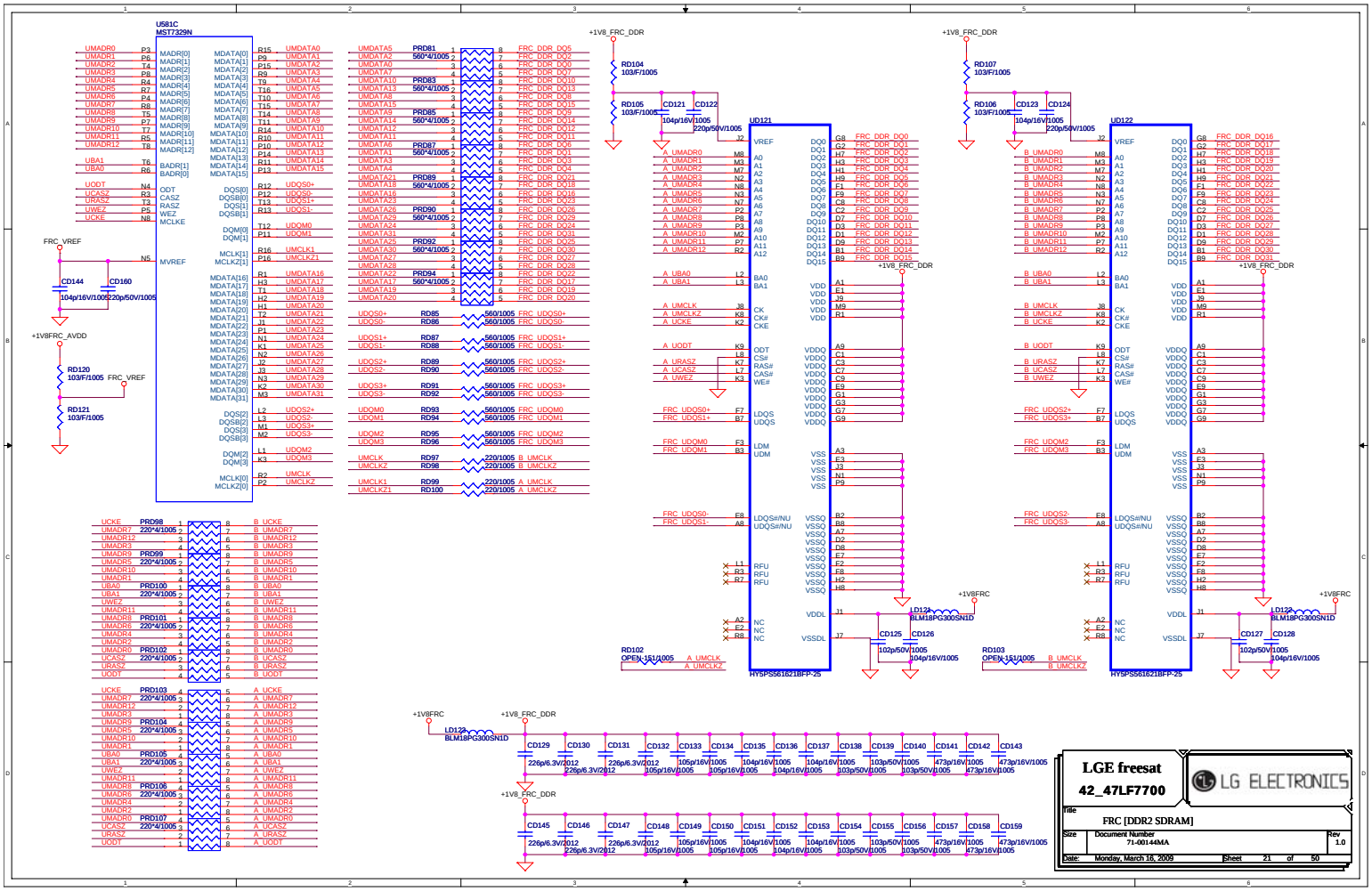


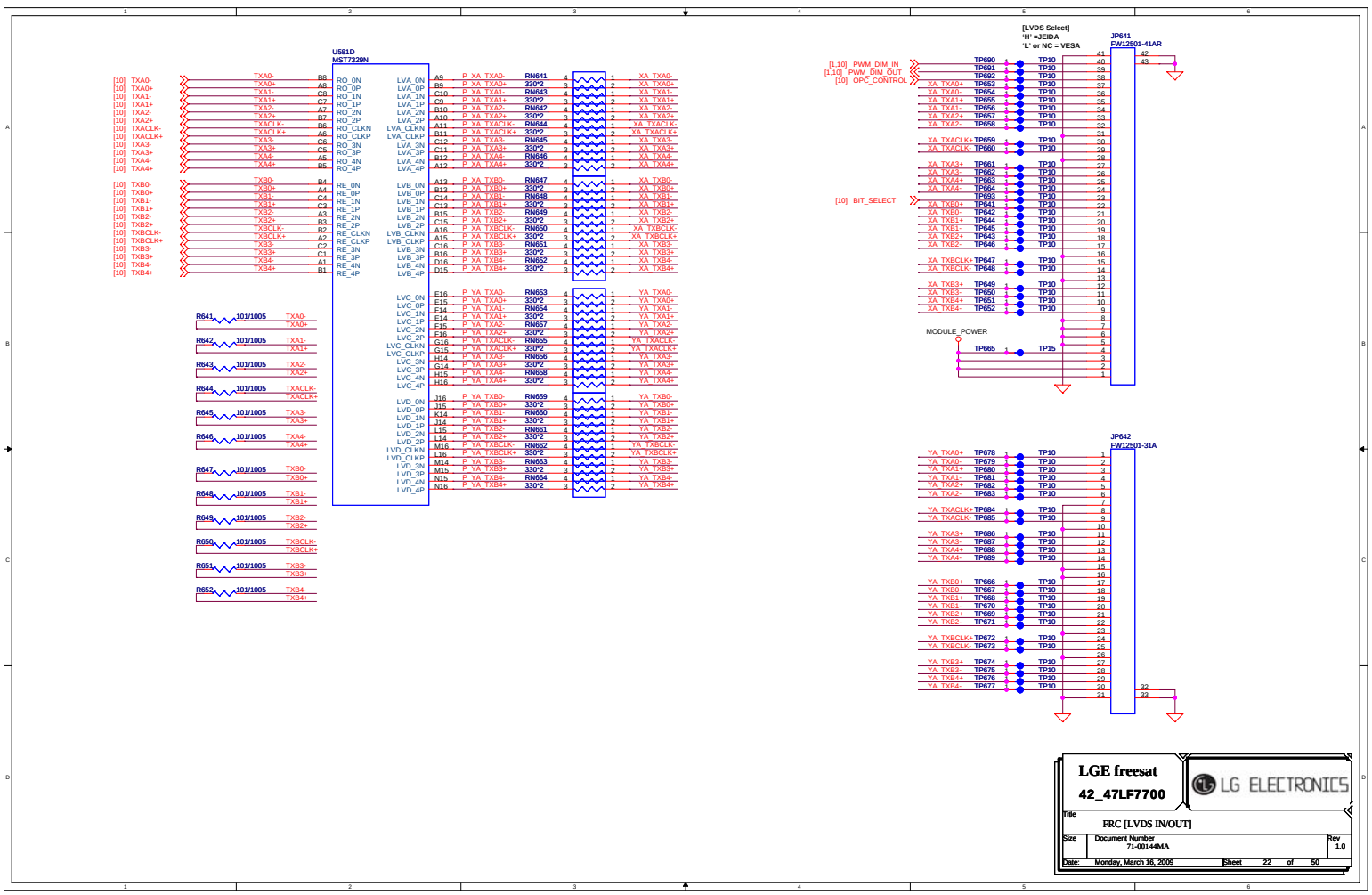
LGE freesat 42_47LF7700	LG ELECTRONICS		
Title: FRC POWER [DC/DC]			
Size	Document Number: 71-00144MA		Rev: 1.0
Date: Monday, March 16, 2009	Sheet 19 of 50		

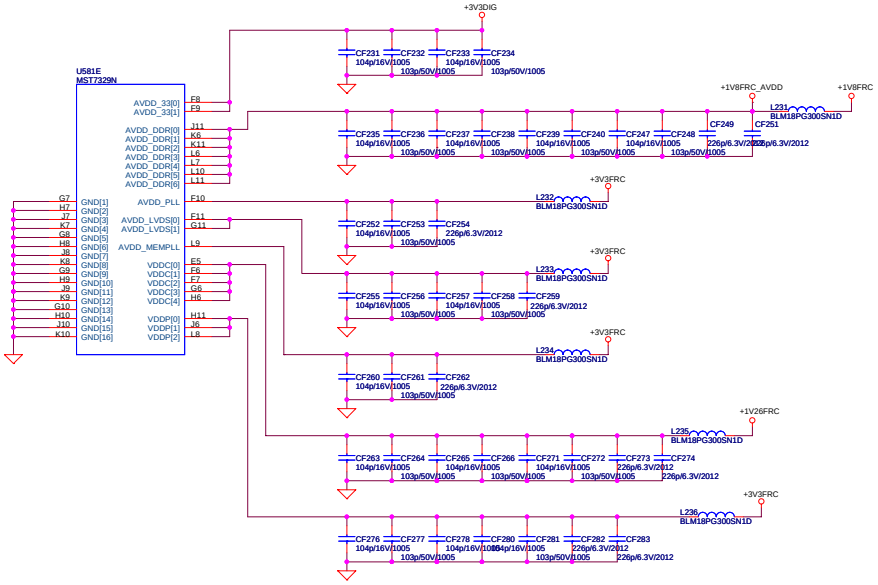




LGE freesat 42_47LF7700	LG ELECTRONICS		
Title: FRC [GPIO]			
Size	Document Number: 71-00144MA		Rev: 1.0
Date: Monday, March 16, 2009	Sheet 20 of 50		

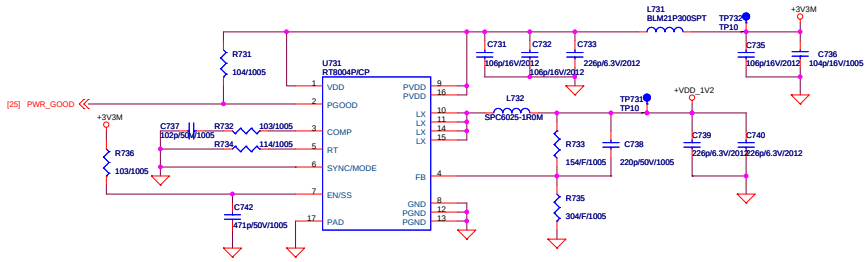

U581C
MST7329N
UD121
UD122
HY5PS561621BFP-25
+1V8_FRC_DDR
+1V8FRC
FRC_VREF
+1V8FRC_AVDD
LGE freesat
42_47LF7700
LG ELECTRONICS
FRC [DDR2 SDRAM]
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 21 of 50


U581D
MST7329N
[LVDS Select]
'H' =JEIDA
'L' or NC = VESA
JP641
FW12501-41AR
JP642
FW12501-31A
MODULE_POWER
LGE freesat
42_47LF7700
LG ELECTRONICS
FRC [LVDS IN/OUT]
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 22 of 50

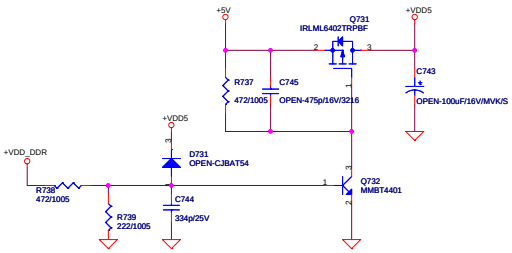


LGE freesat	LG ELECTRONICS
42_47LF7700	
Title	FRC [POWER]
Size	Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009	Sheet 23 of 50

+1.2V BCM7404 CORE Power

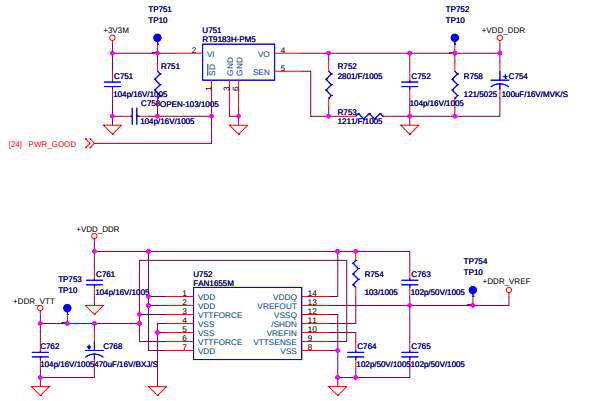


+5V System Power

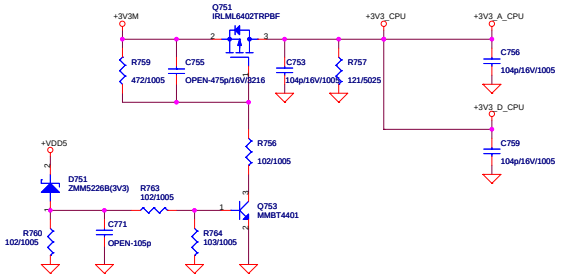


LGE freesat	LG ELECTRONICS
42_47LF7700	
Title	BCM7404 POWER [DC/DC]
Size	Document Number 71-00144MA Rev 1.0
Date: Tuesday, March 17, 2009	Sheet 24 of 50

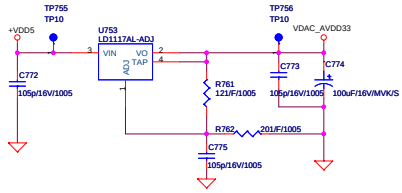
DDR MEMORY Power



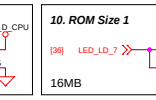
Power Sequence



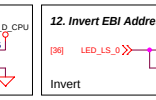
+3.3V Video DAC

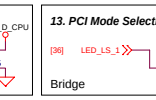


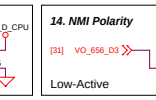
LGE freesat 42_47LF7700	LG ELECTRONICS	
Title: BCM7404 POWER [Regurator]]		
Size	Document Number: 71-00144MA	Rev: 1.0
Date: Monday, March 16, 2009	Sheet 25 of 50	

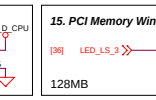
1. Reset Extension Mode — 200ms


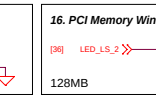
2. NAND Flash(B0/C0) — NOR

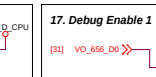

3. CPU PLL Clock Frequency 1 — 297MHz


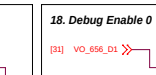
4. CPU PLL Clock Frequency 0 — 297MHz


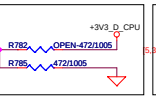
5. DDR Chip Size 1 — 32Mx16bit


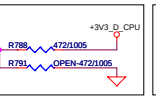
6. DDR Chip Size 0 — 32Mx16bit


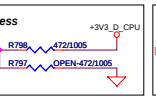
7. DDR Interface Width — 64bit


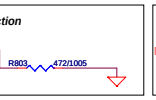
8. Boot Memory Width 8/16bit — 16bit


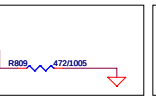
9. EBI_CS_SWAP — NO_SWAP


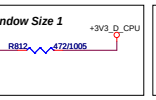
10. ROM Size 1 — 16MB


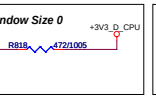
11. ROM_Size 0 — 16MB


12. Invert EBI Address — Invert


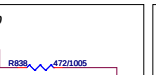
13. PCI Mode Selection — Bridge


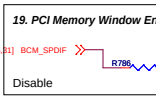
14. NMI Polarity — Low-Active


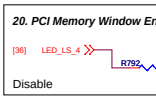
15. PCI Memory Window Size 1 — 128MB


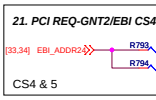
16. PCI Memory Window Size 0 — 128MB


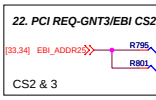
17. Debug Enable 1 — Disable

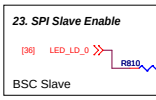

18. Debug Enable 0 — Disable


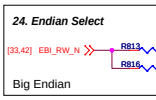
19. PCI Memory Window Enable 2 — Disable


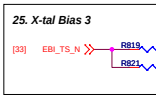
20. PCI Memory Window Enable 1 — Disable


21. PCI REQ-GNT2/EBI CS4 & 5 Select — CS4 & 5


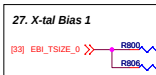
22. PCI REQ-GNT3/EBI CS2 & 3 Select — CS2 & 3


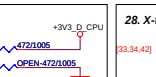
23. SPI Slave Enable — BSC Slave


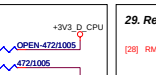
24. Endian Select — Big Endian


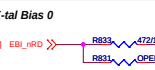
25. X-tal Bias 3


26. X-tal Bias 2


27. X-tal Bias 1


28. X-tal Bias 0


29. Reset Output Behavior — One shot reset output


30. Clock Output Select — 33MHz


LGE freesat 42_47LF7700	LG ELECTRONICS	
Title: BCM7404 [Strapping]		
Size	Document Number: 71-00144MA	Rev: 1.0
Date: Monday, March 16, 2009	Sheet 26 of 50	

U841-17
BCM7404ZKPB1G

GPIO & DAA

GPIO_00 / NDS_SC_AUX0 / Ext. IRQb_0 — A9 — nCI_CD1 [42]
GPIO_01 / SPI_M_SSb / SC_PRES_1 / Alt_Ext. IRQb_0 — AE10
GPIO_02 / NDS_SC_AUX1 / Ext. IRQb_1 — AB10
GPIO_03 / SPI_M_SS1b / SC_VCC_1 / Alt_Ext. IRQb_1 — AE11 — HW_REV_X1 — TP841 — TP06
GPIO_04 / SC_CLK_1 / Ext. IRQb_2 / ALT_PKT_CLK4 — AD11 — nCI_CD2 [42]

GPIO_05 / NDS_SC_VPP / Ext. IRQb_3 — AA11 — nCI_IRQ [42]
GPIO_06 / Ext. IRQb_4 / SPI_M_MOSI — AE13
GPIO_07 / SPI_M_SCK / SC_IO_1 / Alt_Ext. IRQb_7 / ALT_PKT_SYNC4 — AD12
GPIO_08 / SPI_M_MISO / SC_RST_1 / Alt_Ext. IRQb_5 — AC12

GPIO_09 / UART_TXD_1 / ALT_AUD_FS_CLK_1 / ALT_PWM_0 — AB12 — RS232_TXD1 [41]
GPIO_10 / UART_RXD_1 / AUD_FS_CLK_0 — AA12 — RS232_RXD1 [41]
GPIO_11 / I2S_O_DATA / Ext. IRQb_10 — E21 — CI_RESET [42]
GPIO_12 / LED_KD_3 / ALT_DVO_10 / ALT_MII_TX_CLK — AF15 — IRQ_6417_N — TP842 — TP06
GPIO_13 / LED_KD_2 / ALT_DVO_8 / ALT_MII_COL — AE15 — GPIO_SEL_RGB_nYPbPr — TP843 — TP06

GPIO_14 / LED_KD_1 / Ext. IRQb_6 / ALT_DVO_5 / ALT_MII_CRS — AD15 — HW_REV_X2 — TP844 — TP06
GPIO_15 / LED_KD_0 / ALT_DVO_1 / ALT_MII_RX_EN — AC15 — HW_SEL_RGB_nYPbPr — TP845 — TP06
GPIO_16 / MPOD_I_DATA0 / MII_RX_CLK / RMXP_SYNC / ALT_EBI_ADDR17 — N26 — RMXP_SYNC [42]
GPIO_17 / MPOD_I_DATA1 / RMXP_CLK / ALT_EBI_ADDR15 — P26 — RMXP_CLK [42]
GPIO_18 / MPOD_SDI / RMXP_DATA5 / ALT_EBI_ADDR23 — P24 — RMXP_D5
GPIO_19 / MPOD_I_SYNC / RMXP_DATA4 / ALT_EBI_ADDR22 — P23 — RMXP_D4
GPIO_20 / MPOD_SDO / MII_MDC / RMXP_DATA2 / ALT_EBI_ADDR20 — P22 — RMXP_D2
GPIO_21 / MPOD_O_DATA1 / MII_MDIO / RMXP_DATA0 / ALT_EBI_ADDR18 — P21 — RMXP_D0

GPIO_22 / Ext. IRQb_8 / MPOD_SCTL / MII_RXD_00 / RMXP_DATA6 / ALT_EBI_ADDR24 — N25 — RMXP_D6
GPIO_23 / MPOD_SCLK / MII_RXD_01 / RMXP_DATA3 / ALT_EBI_ADDR21 — N24 — RMXP_D3
GPIO_24 / MPOD_O_DATA0 / MII_RXD_02 / RMXP_DATA1 / ALT_EBI_ADDR19 — N23 — RMXP_D1
GPIO_25 / MPOD_O_SYNC / MII_RXD_03 / RMXP_VALID / ALT_EBI_ADDR16 — N22 — RMXP_VAL [42]
GPIO_26 / MPOD_O_CLK / MII_COL / PKT_DATA7 — N21 — PPKT_D7
GPIO_27 / PKT_ERROR4 / MII_CRS / PPKT_DATA6 — M22 — PPKT_D6
GPIO_28 / PKT_VALID4 / MII_RX_EN / PPKT_DATA4 — M23 — PPKT_D4
GPIO_29 / PKT_DATA3 / ALT_SC_PRES_1 / MII_TXD_01 / PPKT_DATA2 — L24 — PPKT_D2
GPIO_30 / PKT_ERROR3 / MII_TXD_03 / PPKT_VALID — L22 — PPKT_VAL [42]
GPIO_31 / PKT_VALID3 / MII_TXD_02 / PPKT_ERROR — L23 — FLASH_WP_N [34]
GPIO_32 / PKT_VALID2 / Ext. IRQb_7 — K21 — LNBP_IRQ [44]

GPIO_33 / PKT_CLK3 / ALT_SC_CLK_1 / MII_TX_CLK / PPKT_CLK / ALT_EBI_ADDR14 — L26 — PPKT_CLK [42]
GPIO_34 / PKT_DATA4 / MII_RX_ER / PPKT_DATA3 — M24 — PPKT_D3
GPIO_35 / PKT_SYNC3 / ALT_SC_VCC_1 / MII_TXD_00 / PPKT_DATA0 — L25 — PPKT_D0
GPIO_36 / PKT_ERROR2 / Ext. IRQb_9 — L21 — TP852 — TP06
GPIO_37 / MPOD_I_CLK / RMXP_DATA7 / ALT_EBI_ADDR25 — P25 — RMXP_D7
GPIO_38 / AUD_FS_CLK_1 / ALT_AUD_FS_CLK_0 / PWM_1 — D21 — SC_EXT_CLK [35]
GPIO_39 / UART_RXD_2 / HSYNC_0 / ALT_SPI_M_SCK / ALT2_MPOD_SDO — B22 — COMM_UART_RX [4]
GPIO_40 / I2S_O_LR / ALT_RMX_PAUSE0 / UART_CTSb_2 / ALT2_MPOD_SDI — E20 — CH0_RSTn [46]

GPIO_41 / I2S_O_CLK / Ext. IRQb_11 / UART_RTSb_2 / ALT2_MPOD_SCTL — D22 — IRQ_DEMOD_N [46]
GPIO_42 / UART_TXD_2 / Ext. IRQb_5 / VSYNC_0 / ALT_SPI_M_MISO / ALT2_MPOD_SCLK — C22 — COMM_UART_TX [4]
GPIO_43 / ENET_LINK — C9 — ENET_LINK [32]
GPIO_44 / CODEC_SCLK / Ext. IRQb_14 — E10
GPIO_45 / ENET_ACTIVITY — D9 — ENET_ACTIVITY [32]

GPIO_46 / CODEC_SDO — E10 — CI_PWR [42]
GPIO_47 / CODEC_MCLK — E8 — CI_OUTEN_N [42]

GPIO_48 / CODEC_SDI / Ext. IRQb_12 — E9 — CH1_RSTn [49]
GPIO_49 / UART_TXD_0 / ALT_IR_INT — C8 — RS232_TXD0 [41]

GPIO_50 / UART_RXD_0 / Alt_Ext. IRQb_12 — D8 — RS232_RXD0 [41]
GPIO_51 / Ext. IRQb_13 / PPKT_DATA5 — M21 — PPKT_D5
GPIO_52 / PKT_CLK4 / ALT_SC_RST_1 / MII_TX_EN / PPKT_SYNC — M26 — PPKT_SYNC [42]
GPIO_53 / PKT_VALID1 / DVO_HSYNC — K23 — HS1_VALID [49]
GPIO_54 / PKT_SYNC4 / ALT_SC_IO_1 / MII_TX_ER / PPKT_DATA1 — M25 — PPKT_D1

GPIO_55 / PKT_ERROR1 / DVO_VSYNC — K22 — HW_REV_X3 — TP853 — TP06
GPIO_56 / PKT_ERROR0 / DVO_1 — J22 — TP846 — TP06 — HS0_ERR
GPIO_57 / PKT_VALID0 / DVO_2 — J23 — HS0_VALID [46]
GPIO_58 / PWM_0 / IR_INT — E22

SGPIO_00 / BSC_M0_SCL — B21 — R851 000/1005 — R852 000/1005 — I2C0_SCL [34]
SGPIO_01 / BSC_M0_SDA — C21 — I2C0_SDA [34] — EEPROM

SGPIO_02 / BSC_M1_SCL — B9 — R853 000/1005 — R854 000/1005 — I2C1_SCL [49]
SGPIO_03 / BSC_M1_SDA — A9 — I2C1_SDA [49] — TDA10048

SGPIO_04 / BSC_M2_SCL — R23 — R855 000/1005 — R856 000/1005 — I2C2_SCL [44,46]
SGPIO_05 / BSC_M2_SDA — R22 — I2C2_SDA [44,46] — BCM4505, LNBP

SGPIO_06 / BSC_M3_SCL — AE13 — TP847 — TP06
SGPIO_07 / BSC_M3_SDA — AD13 — TP848 — TP06

DAA_C1A — A8 — TP849 — TP06
DAA_C2A — B8 — TP850 — TP06
DAA_AOUT / CODEC_FSYNCb — D10 — TP851 — TP06

+3V3_D_CPU
150/1005 — R845 — 150/1005 — R846 — 150/1005 — R847 — 150/1005 — R848 — 150/1005 — R849 — 150/1005 — R850

PPKT_D[7..0] [42]
RMXP_D[7..0] [42]

LGE freesat
42_47LF7700
LG ELECTRONICS

Title: BCM7404 [GPIO]
Size: Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009 Sheet 27 of 50

U841-12
BCM7404ZKPB1G

Clocks

B3 — EXT_DDR0_CLK
T20 — F19 — BYP_SYS9_CLK / MDIO_SATA
U20 — BYP_RFM_PLLO
Y9 — H14 — BYP_CPU_CLK / BYP_AVD_CLK / BYP_AUD_DSP_CLK
CLK27_OUT / CLK_33 — V22 — R861 330/1005 — PCI_CLK_IN [33]
VCXO27A — AF14 — TP861 — TP06
OBSRV_VCXO — V21 — TP864 — TP06
OBSRV_PLL — R20 — TP866 — TP06
C26 — CLK54_XTALP
CLK54_XTALN — D26
C861 150p/50V/1005 — L861 CIL10J1R8KNC — C862 150p/50V/1005
R862 3010F/1005 — R863 3010F/1005
R864 220/1005 — Y861 54MHz/10pF — R865 220/1005
C863 120p/50V/1005 — C864 100p/50V/1005

U841-6
BCM7404ZKPB1G

QPSK-S2 TS Input From Tuner
DVB-T TS Input From Tuner

Transport Inputs
[46] HS0_CLK — H26 — PKT_CLK0
[46] HS0_SYNC — H24 — PKT_SYNC0 / DVO_5
[46] HS0_D0 — H25 — PKT_DATA0 / OBSRV_PLL_SEL3 / DVO_DATA_EN
[49] HS1_CLK — J26 — PKT_CLK1
[49] HS1_SYNC — J24 — PKT_SYNC1 / DVO_CLK_POS
[49] HS1_D0 — J25 — PKT_DATA1 / DVO_CLK_NEG
K26 — PKT_CLK2
K25 — PKT_SYNC2
K24 — PKT_DATA2

Transport Outputs
RMX_CLK0 — R24
RMX_SYNC0 — R26
RMX_DATA0 — R25
T24
T26
T25
RMX_CLK1 / SPI_S_SS0b / RMX_PAUSE0 / ALT_PKT_VALID3
RMX_SYNC1 / SPI_S_MISO / HSYNC_1 / BTTXRQ / ALT_PKT_VALID4
RMX_DATA1 / VSYNC_1 / BTTX

For Strapping
PR861 330*4/1005 — RMX0_SYNC [26] — RMX0_DATA [26] — RMX0_CLK [26]
RMX1_DATA [26]
PR862 330*4/1005 — TSOUT_CLK [6] — TSOUT_DATA [6] — TSOUT_SYNC [6] — TSOUT_VALID [6]
For Douglas TS input

+3V3_CPU
C865 105p/16V/1005
"BBS"
JP861 — 53014-0410

+3V3_CPU
OPEN — R866 OPEN-272/1005 — Y11
OPEN — R867 OPEN-272/1005 — Y12
OPEN — R868 OPEN-272/1005 — Y14
OPEN — R869 OPEN-272/1005 — Y13

U841-8
BCM7404ZKPB1G

TEST

TMODE_0 — EJTAG_TRSTb — W22 — EJT_TRST_N — EJT_TRST_N [41]
TMODE_1 — EJTAG_TDI / OBSRV_PLL_SEL1 — Y28 — EJT_TDI — EJT_TDI [41]
TMODE_2 — EJTAG_TDO — W23 — EJT_TDO — EJT_TDO [41]
TMODE_3 — EJTAG_TMS / OBSRV_PLL_SEL2 — W25 — EJT_TMS — EJT_TMS [41]
EJTAG_TCK / OBSRV_PLL_SEL0 — W24 — EJT_TCK — EJT_TCK [41]

E24 — BSC_S_SCL / SPI_S_SCK
F24 — BSC_S_SDA / SPI_S_MOSI
BroadBand Studio

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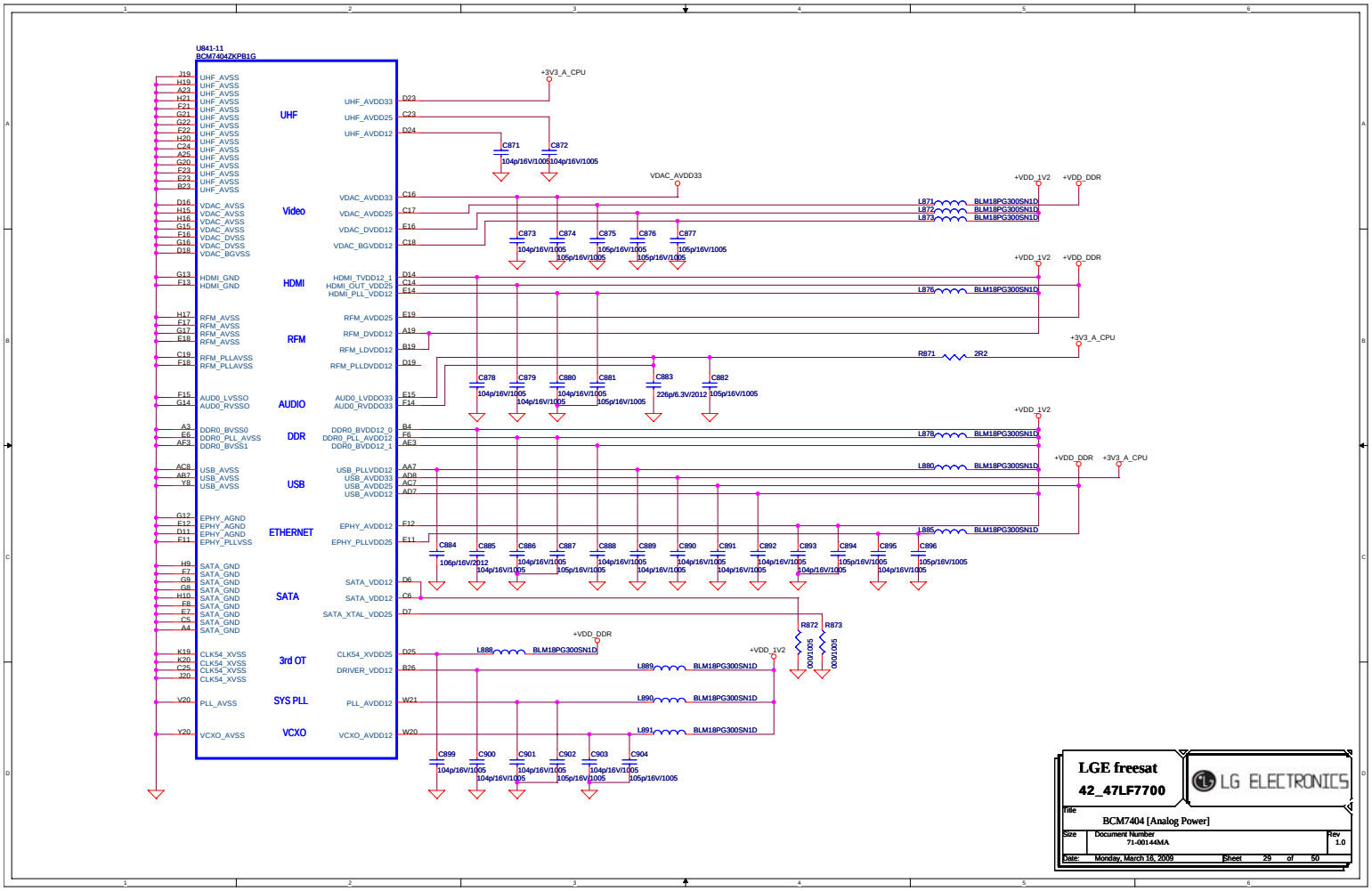
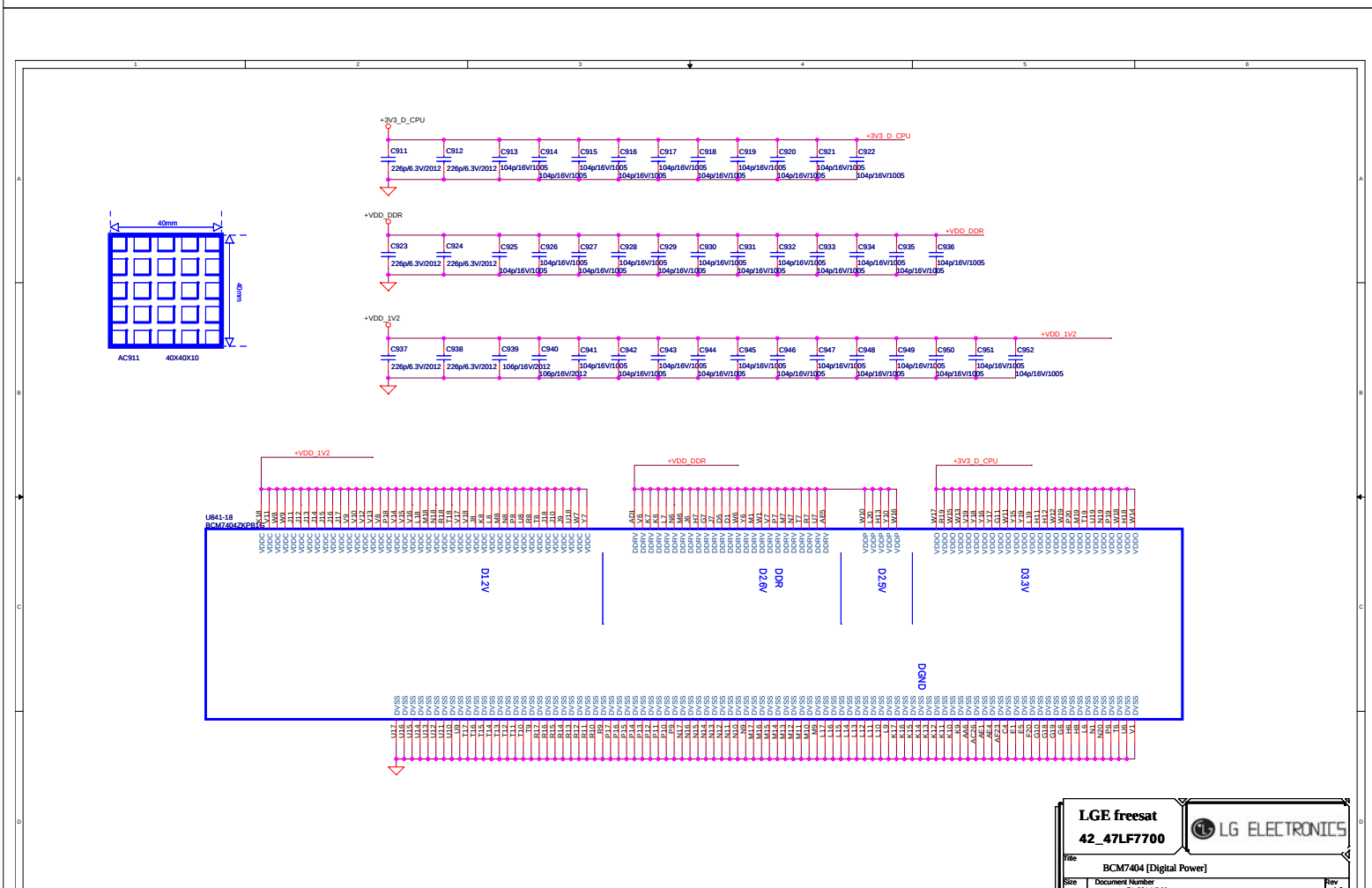
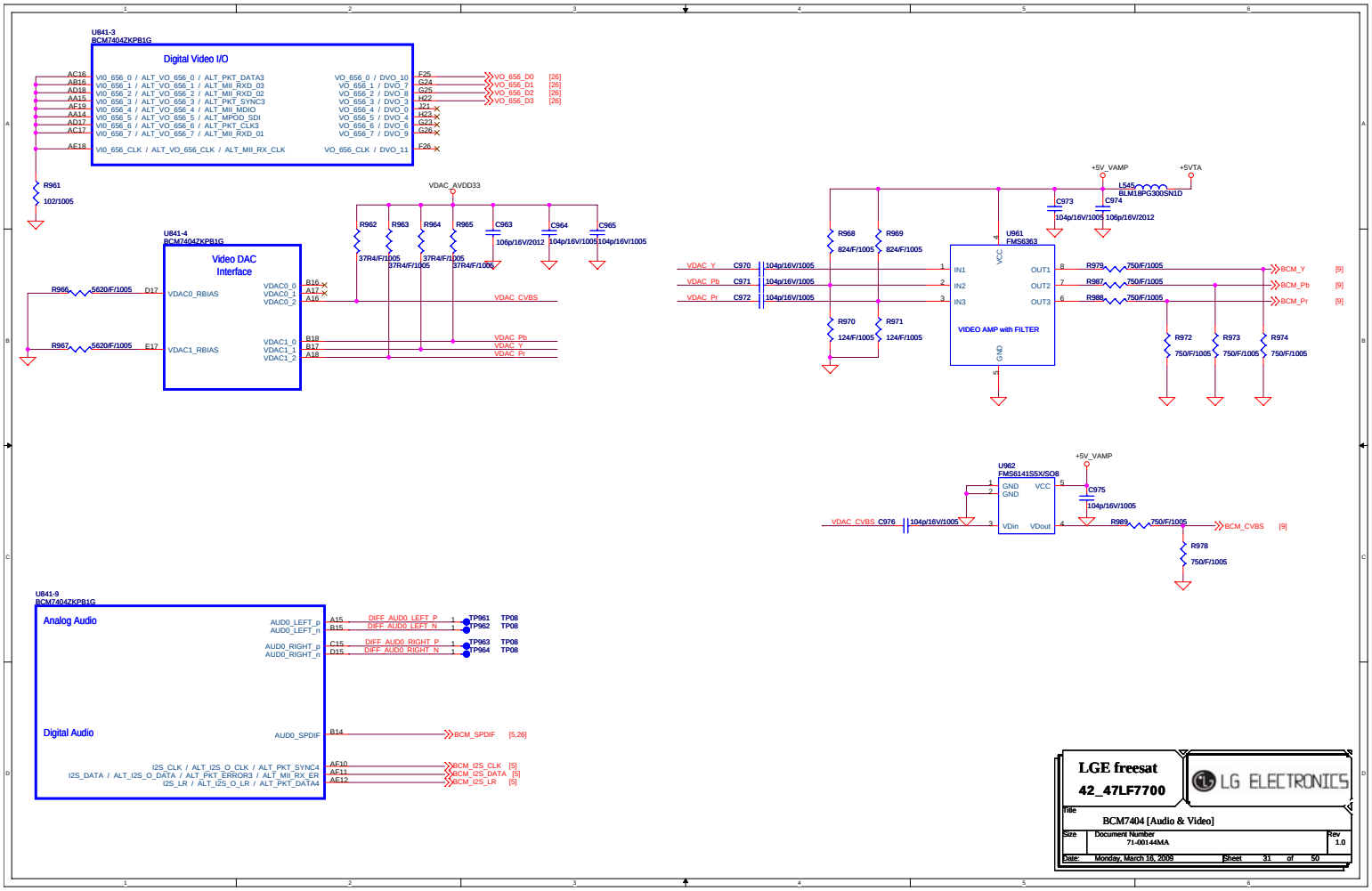
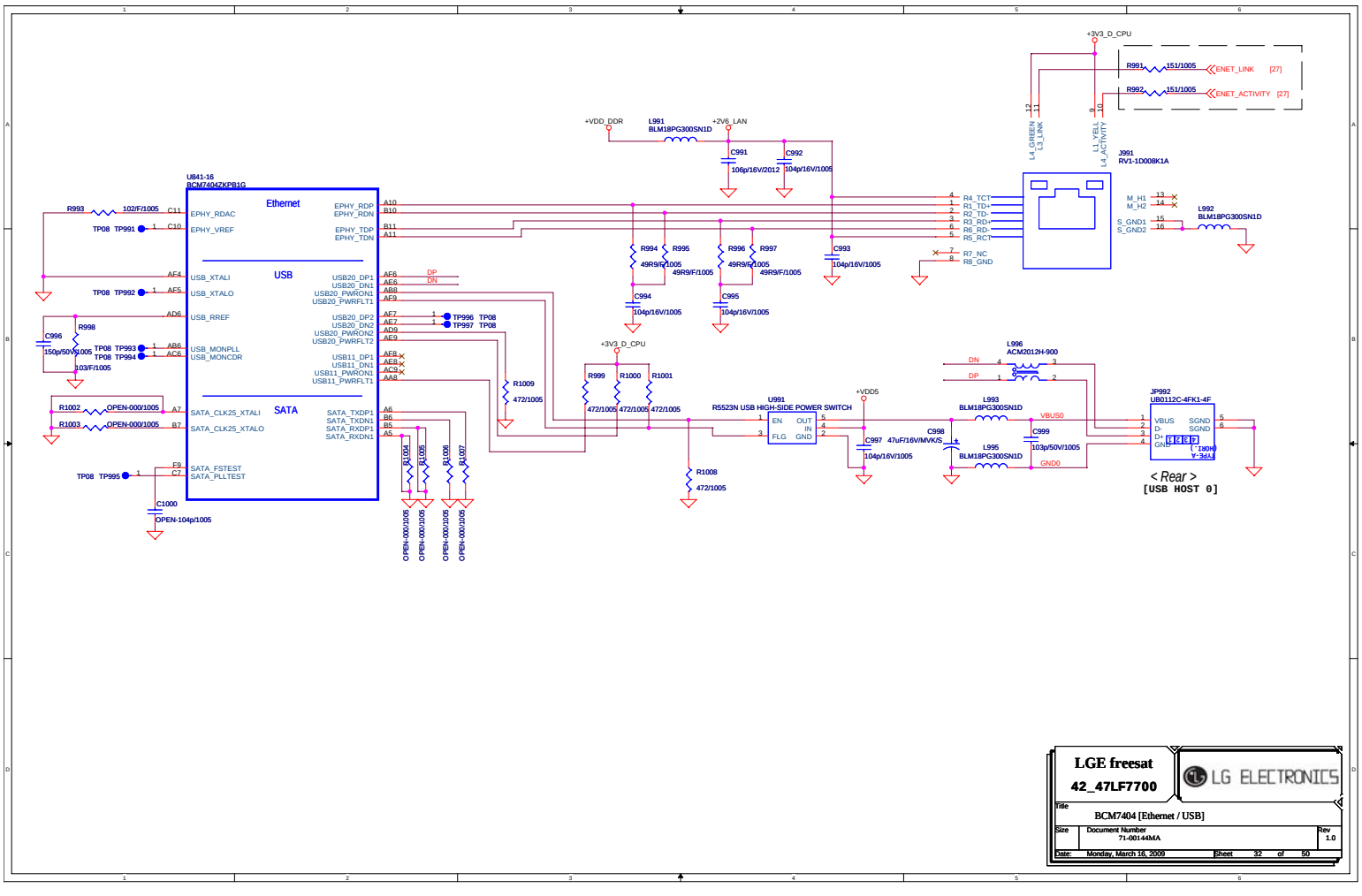
42_47LF7700
LG ELECTRONICS

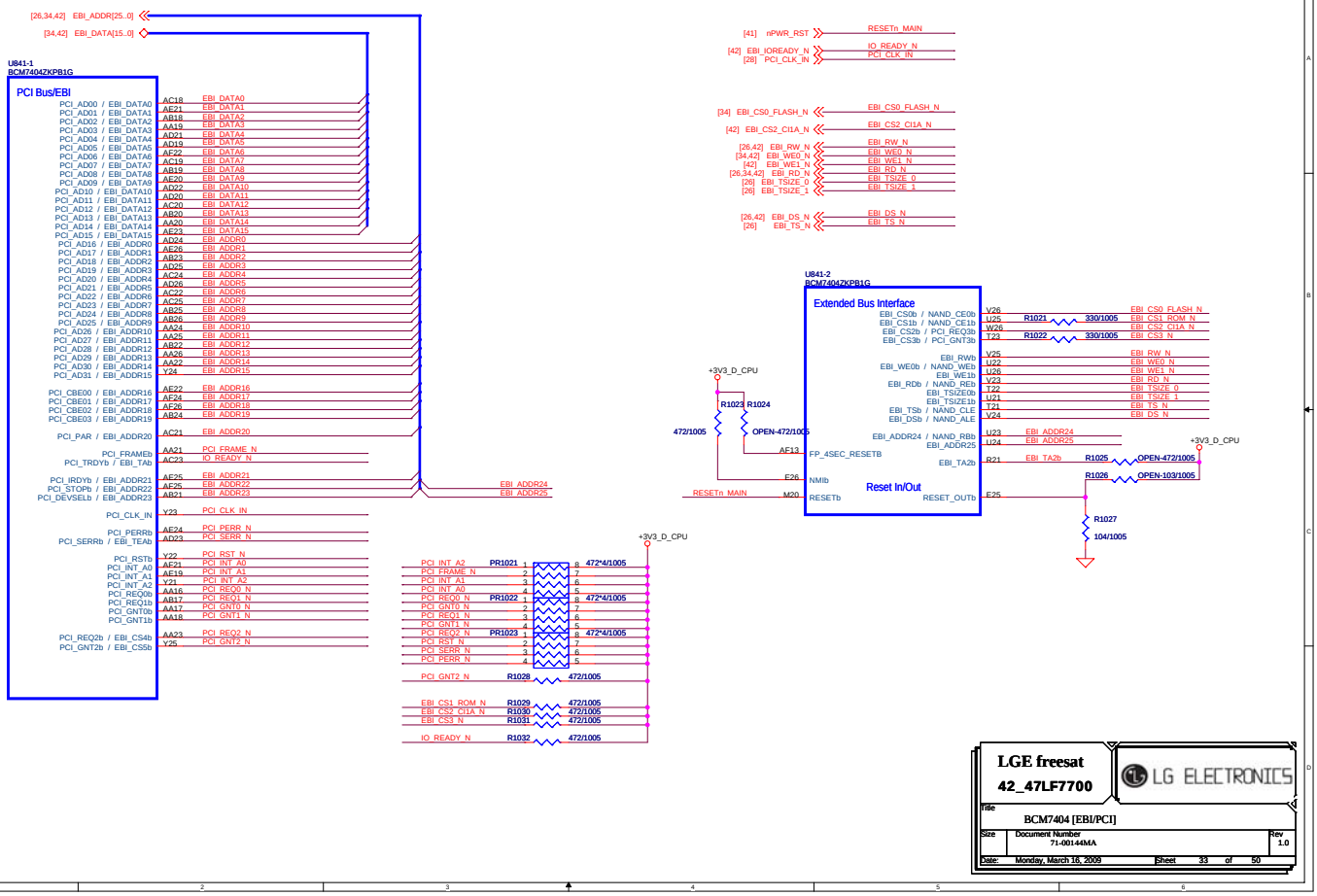
Title: BCM7404 POWER [TS/XTAL/BBS]
Size: Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009 Sheet 28 of 50

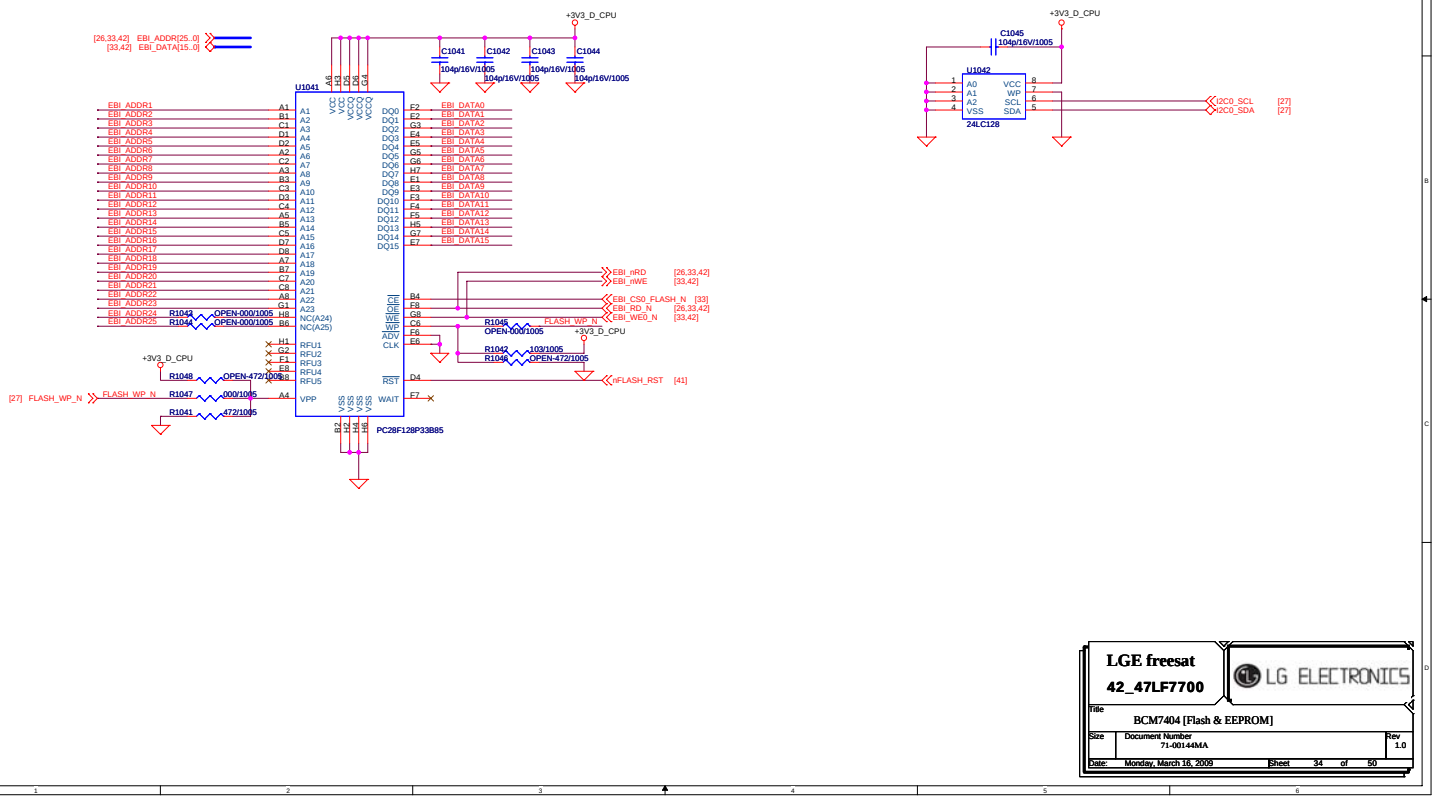

U841-11
BCM7404ZKPB1G
UHF
Video
HDMI
RFM
AUDIO
DDR
USB
ETHERNET
SATA
3rd OT
SYS PLL
VCXO
+3V3_A_CPU
VDAC_AVDD33
+VDD_1V2
+VDD_DDR
+VDD_DDR
+VDD_1V2
+3V3_A_CPU
+VDD_1V2
+VDD_DDR
+3V3_A_CPU
+VDD_DDR
+VDD_1V2
BLM18PG300SN1D
2R2
R871
R872
R873
100/05
LGE freesat
42_47LF7700
LG ELECTRONICS
BCM7404 [Analog Power]
Document Number
71-00144MA
Rev
1.0
Monday, March 16, 2009
Sheet
29
of
50

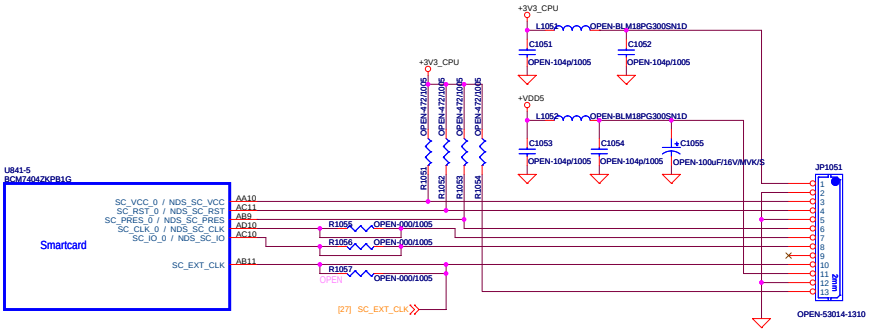

+3V3_D_CPU
+VDD_DDR
+VDD_1V2
40mm
40mm
AC911
40X40X10
U841-18
BCM7404ZKPB1G
+VDD_1V2
+VDD_DDR
+3V3_D_CPU
D1.2V
D2.6V
DDR
D2.5V
D3.3V
DGND
LGE freesat
42_47LF7700
LG ELECTRONICS
BCM7404 [Digital Power]
Document Number
71-00144MA
Rev
1.0
Monday, March 16, 2009
Sheet
30
of
51


U841-3
BCM7404ZKPB1G
Digital Video I/O
VI0_656_0 / ALT_VO_656_0 / ALT_PKT_DATA3
VI0_656_1 / ALT_VO_656_1 / ALT_MII_RXD_03
VI0_656_2 / ALT_VO_656_2 / ALT_MII_RXD_02
VI0_656_3 / ALT_VO_656_3 / ALT_PKT_SYNC3
VI0_656_4 / ALT_VO_656_4 / ALT_MII_MDIO
VI0_656_5 / ALT_VO_656_5 / ALT_MPOD_SDI
VI0_656_6 / ALT_VO_656_6 / ALT_PKT_CLK3
VI0_656_7 / ALT_VO_656_7 / ALT_MII_RXD_01
VI0_656_CLK / ALT_VO_656_CLK / ALT_MII_RX_CLK
VO_656_0 / DVO_10
VO_656_1 / DVO_7
VO_656_2 / DVO_8
VO_656_3 / DVO_3
VO_656_4 / DVO_0
VO_656_5 / DVO_4
VO_656_6 / DVO_6
VO_656_7 / DVO_9
VO_656_CLK / DVO_11
VO_656_D0 [26]
VO_656_D1 [26]
VO_656_D2 [26]
VO_656_D3 [26]
R961 102/1005
VDAC_AVDD33
R962 R963 R964 R965 37R4/F/1005
C963 C964 C965 106p/16V/2012 104p/16V/1005
U841-4
BCM7404ZKPB1G
Video DAC Interface
R966 5620/F/1005
R967 5620/F/1005
VDAC0_RBIAS
VDAC1_RBIAS
VDAC0_0 VDAC0_1 VDAC0_2
VDAC1_0 VDAC1_1 VDAC1_2
VDAC_CVBS
VDAC_Pb
VDAC_Pr
+5V_VAMP
+5VTA
L545 BLM18PG300SN1D
C973 C974 104p/16V/1005 106p/16V/2012
U961 FMS6363
VIDEO AMP with FILTER
VDAC_Y C970 104p/16V/1005
VDAC_Pb C971 104p/16V/1005
VDAC_Pr C972 104p/16V/1005
R968 R969 824/F/1005
R970 R971 124/F/1005
R979 R987 R988 750/F/1005
R972 R973 R974 750/F/1005
BCM_Y [9]
BCM_Pb [9]
BCM_Pr [9]
U962
FMS6141S5X/SO8
VDAC_CVBS C976 104p/16V/1005
C975 104p/16V/1005
R989 750/F/1005
R978 750/F/1005
BCM_CVBS [9]
U841-9
BCM7404ZKPB1G
Analog Audio
AUD0_LEFT_p
AUD0_LEFT_n
AUD0_RIGHT_p
AUD0_RIGHT_n
DIFF_AUD0_LEFT_P
DIFF_AUD0_LEFT_N
DIFF_AUD0_RIGHT_P
DIFF_AUD0_RIGHT_N
TP961 TP962 TP963 TP964 TP08
Digital Audio
AUD0_SPDIF
BCM_SPDIF [5,26]
I2S_CLK / ALT_I2S_O_CLK / ALT_PKT_SYNC4
I2S_DATA / ALT_I2S_O_DATA / ALT_PKT_ERROR3 / ALT_MII_RX_ER
I2S_LR / ALT_I2S_O_LR / ALT_PKT_DATA4
BCM_I2S_CLK [5]
BCM_I2S_DATA [5]
BCM_I2S_LR [5]
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
BCM7404 [Audio & Video]
Size
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 31 of 50

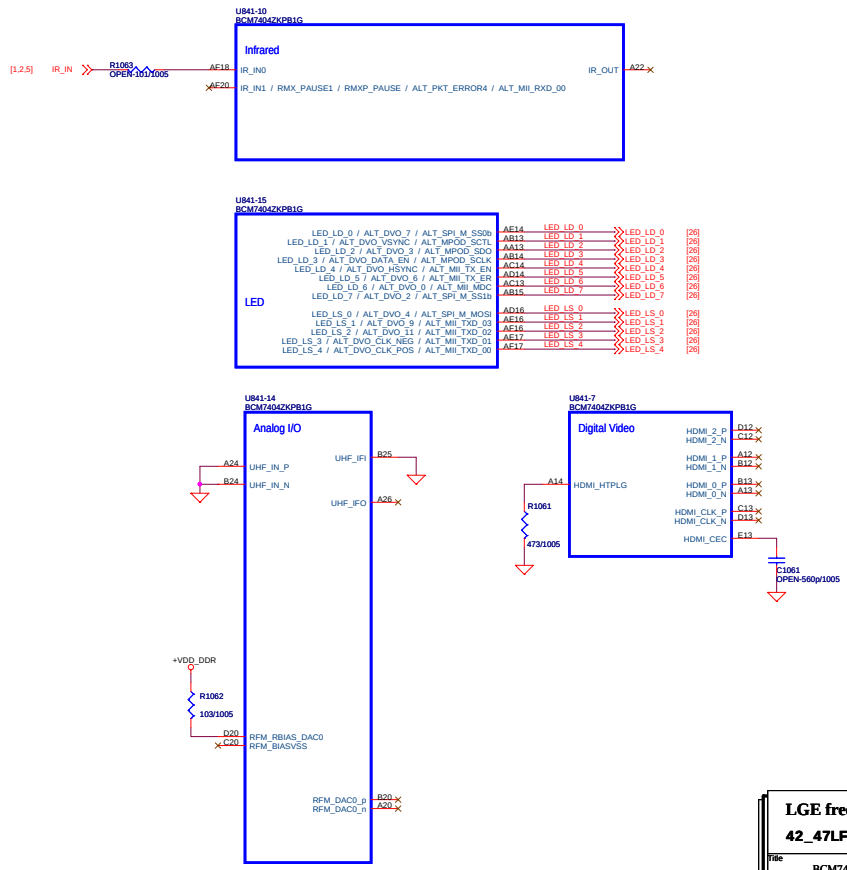

U841-16
BCM7404ZKPB1G
Ethernet
EPHY_RDAC
EPHY_VREF
EPHY_RDP
EPHY_RDN
EPHY_TDP
EPHY_TDN
USB
USB_XTALI
USB_XTALO
USB_RREF
USB_MONPLL
USB_MONCDR
USB20_DP1
USB20_DN1
USB20_PWRON1
USB20_PWRFLT1
USB20_DP2
USB20_DN2
USB20_PWRON2
USB20_PWRFLT2
USB11_DP1
USB11_DN1
USB11_PWRON1
USB11_PWRFLT1
SATA
SATA_CLK25_XTALI
SATA_CLK25_XTALO
SATA_FSTEST
SATA_PLLTEST
SATA_TXDP1
SATA_TXDN1
SATA_RXDP1
SATA_RXDN1
+VDD_DDR
L991 BLM18PG300SN1D
+2V6_LAN
+3V3_D_CPU
R991 151/1005
R992 151/1005
ENET_LINK [27]
ENET_ACTIVITY [27]
L4_GREEN/L3_LNK
L1_YELL/L4_ACTIVITY
J991
RV1-1D008K1A
L992 BLM18PG300SN1D
R4_TCT
R1_TD+
R2_TD-
R3_RD+
R6_RD-
R5_RCT
R7_NC
R8_GND
S_GND1
S_GND2
R994 R995 R996 R997 49R9/F/1005
C991 C992 C993 C994 C995 104p/16V/1005 106p/16V/2012
L996 ACM2012H-900
L993 BLM18PG300SN1D
L995 BLM18PG300SN1D
U991
R5523N USB HIGH-SIDE POWER SWITCH
EN OUT IN FLG GND
C997 47uF/16V/MVKS
C998 C999 103p/50V/1005
VBUS0
GND0
JP992
U80112C-4FK1-4F
VBUS SGND D- D+ GND
< Rear >
[USB HOST 0]
R999 R1000 R1001 472/1005
R1008 472/1005
R1009 472/1005
R1002 R1003 OPEN-000/1005
C996 150p/50V/1005
R998 103/F/1005
C1000 OPEN-104p/1005
R1004 R1005 R1006 R1007 OPEN-000/1005
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
BCM7404 [Ethernet / USB]
Size
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 32 of 50


U841-1
BCM7404ZKPB1G
PCI Bus/EBI
Extended Bus Interface
Reset In/Out
U841-2
BCM7404ZKPB1G
+3V3_D_CPU
LGE freesat
42_47LF7700
LG ELECTRONICS
BCM7404 [EBI/PCI]
Size
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 33 of 50

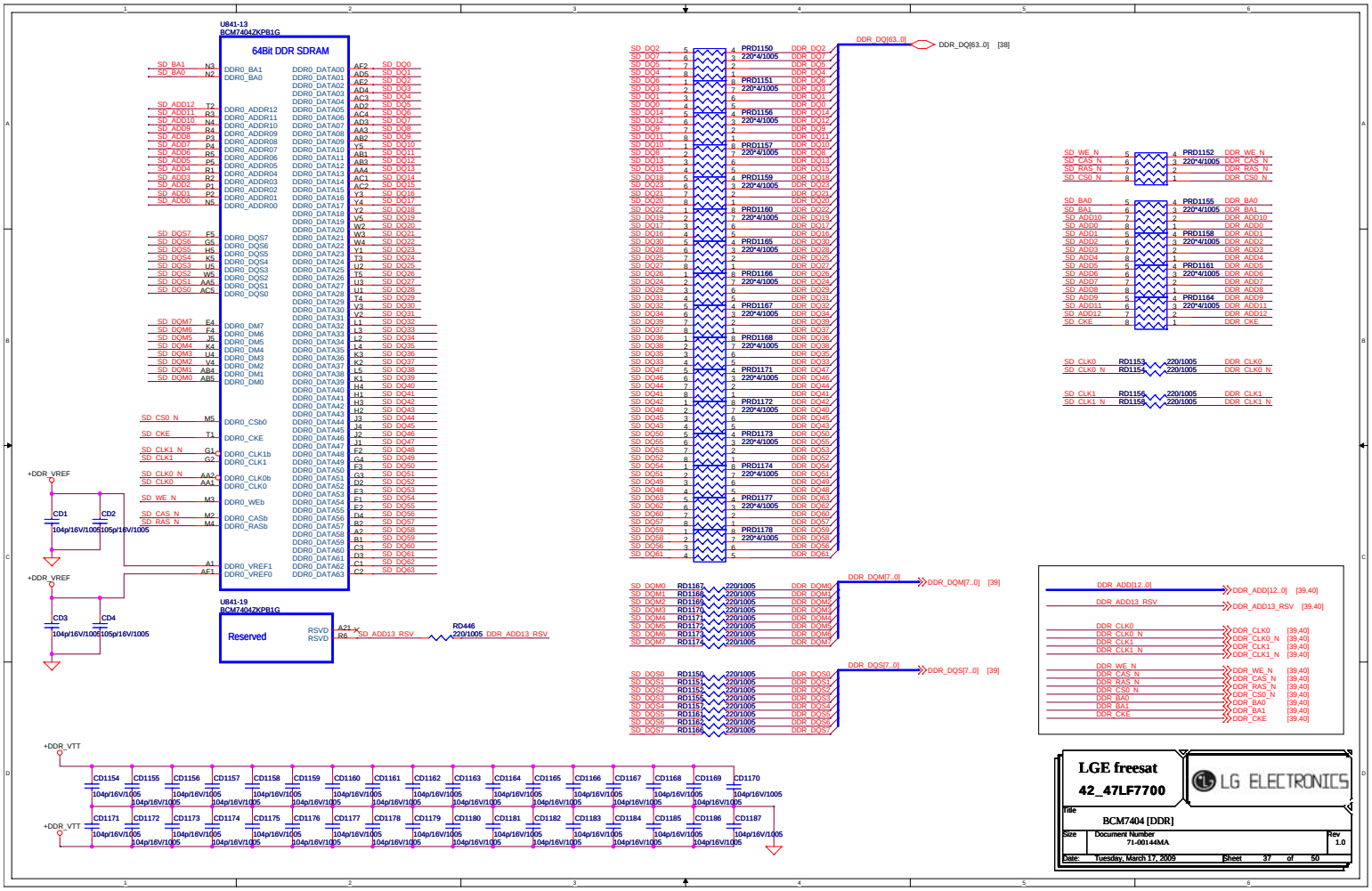

U1041
PC28F128P33B85
U1042
24LC128
+3V3_D_CPU
LGE freesat
42_47LF7700
LG ELECTRONICS
BCM7404 [Flash & EEPROM]
Size
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 34 of 50

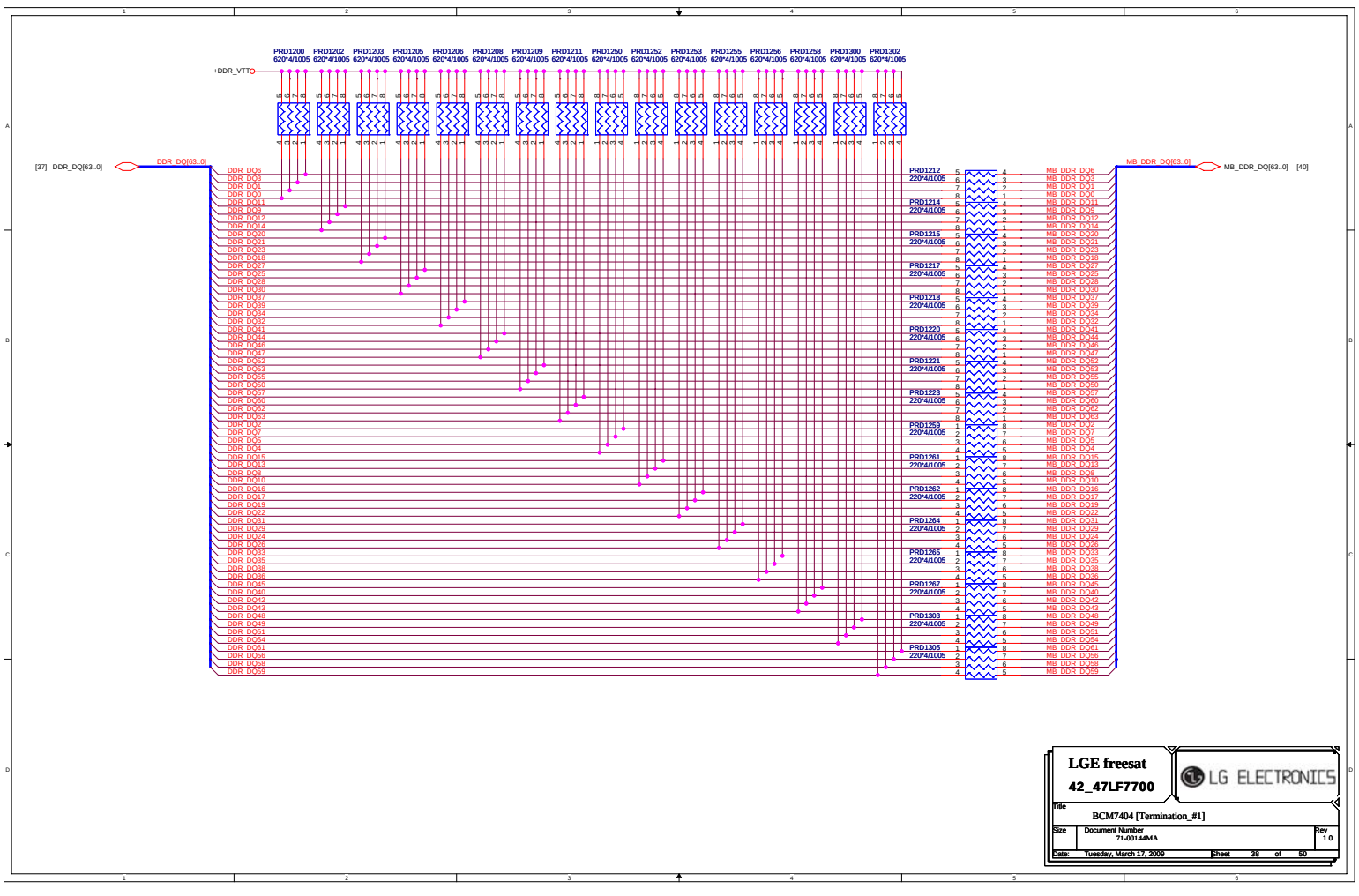


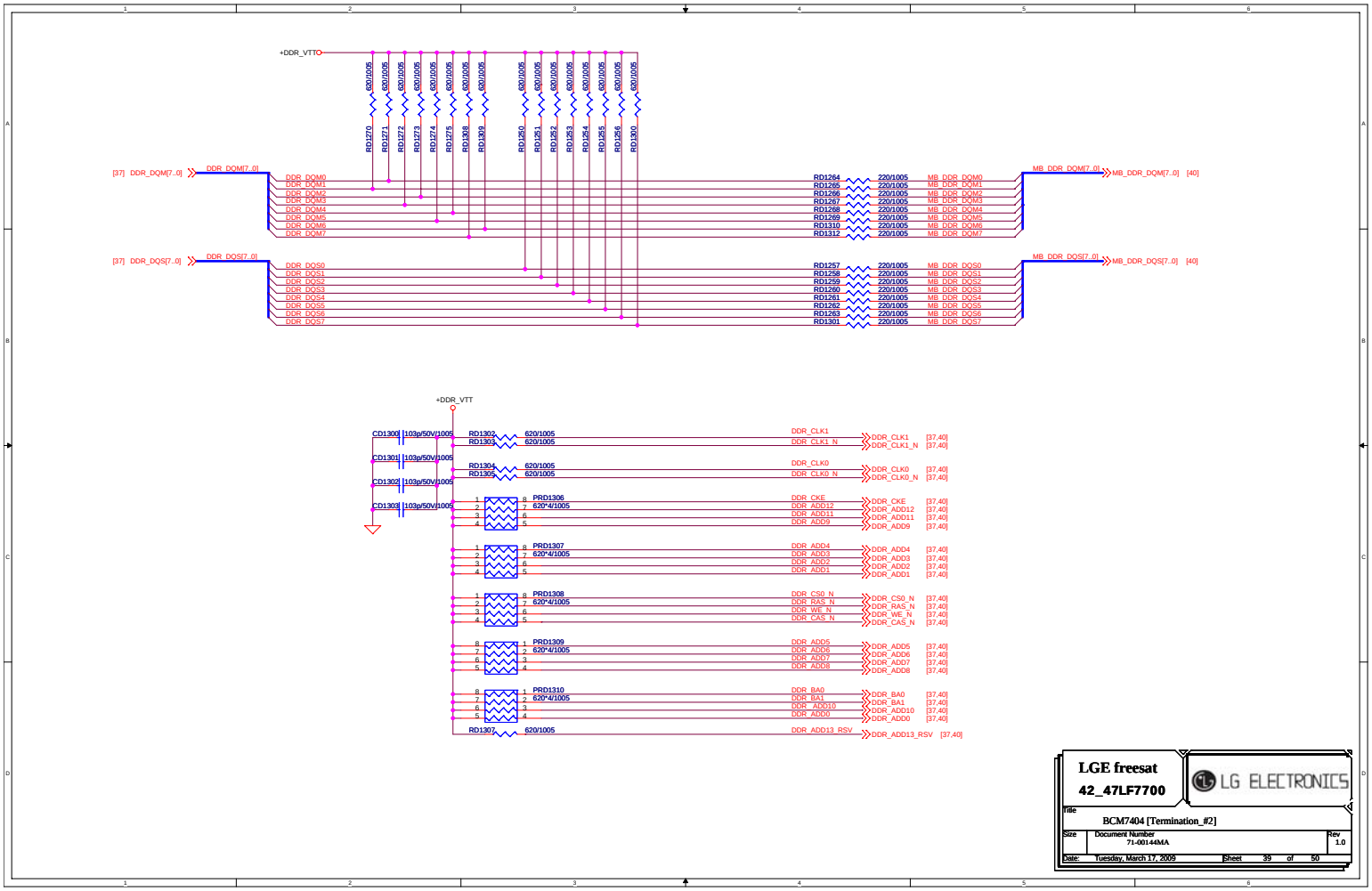
LGE freesat	LG ELECTRONICS
42_47LF7700	
Title	BCM7404 [Smart Card]
Size	Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009	Sheet 35 of 50

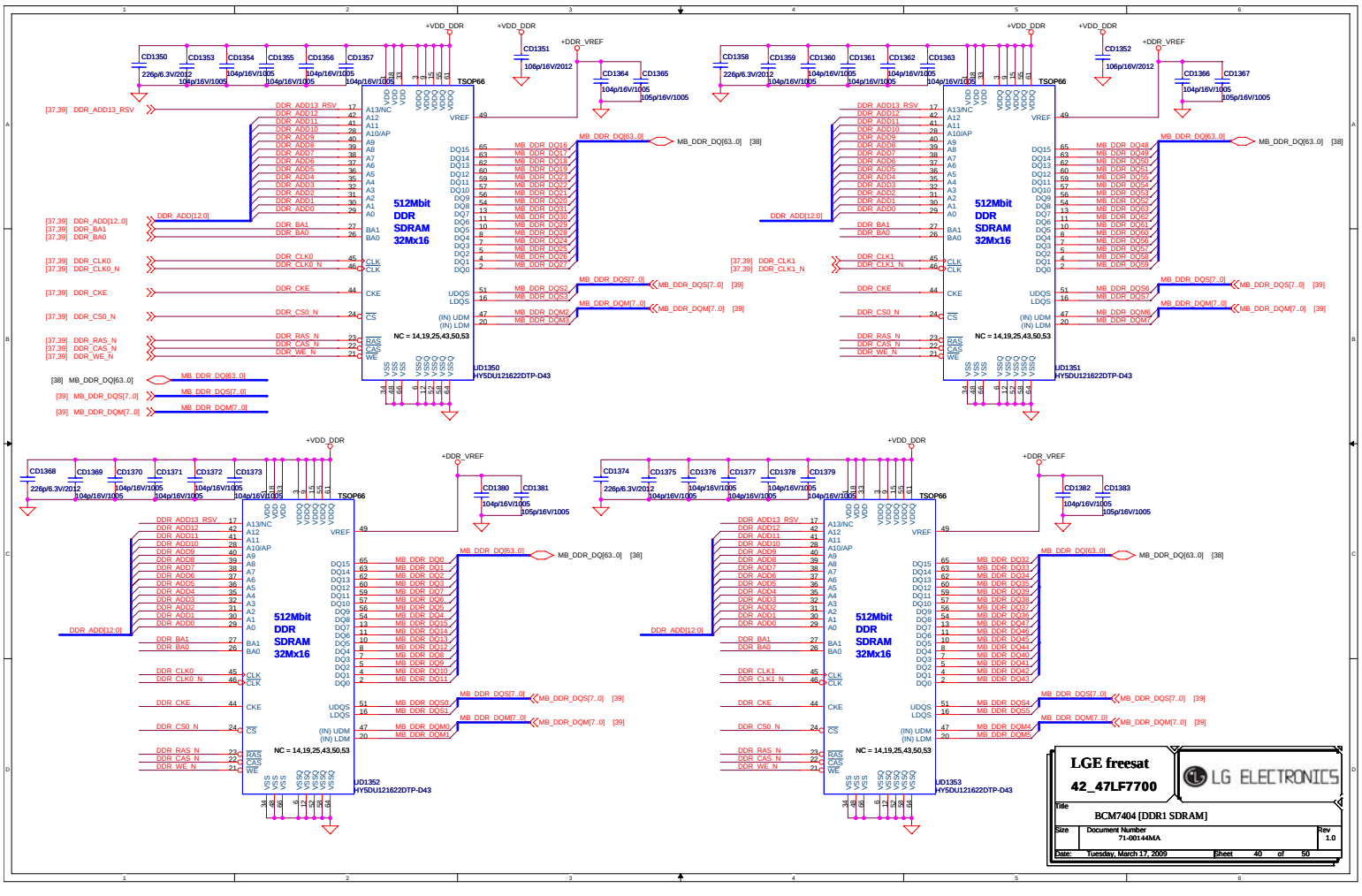


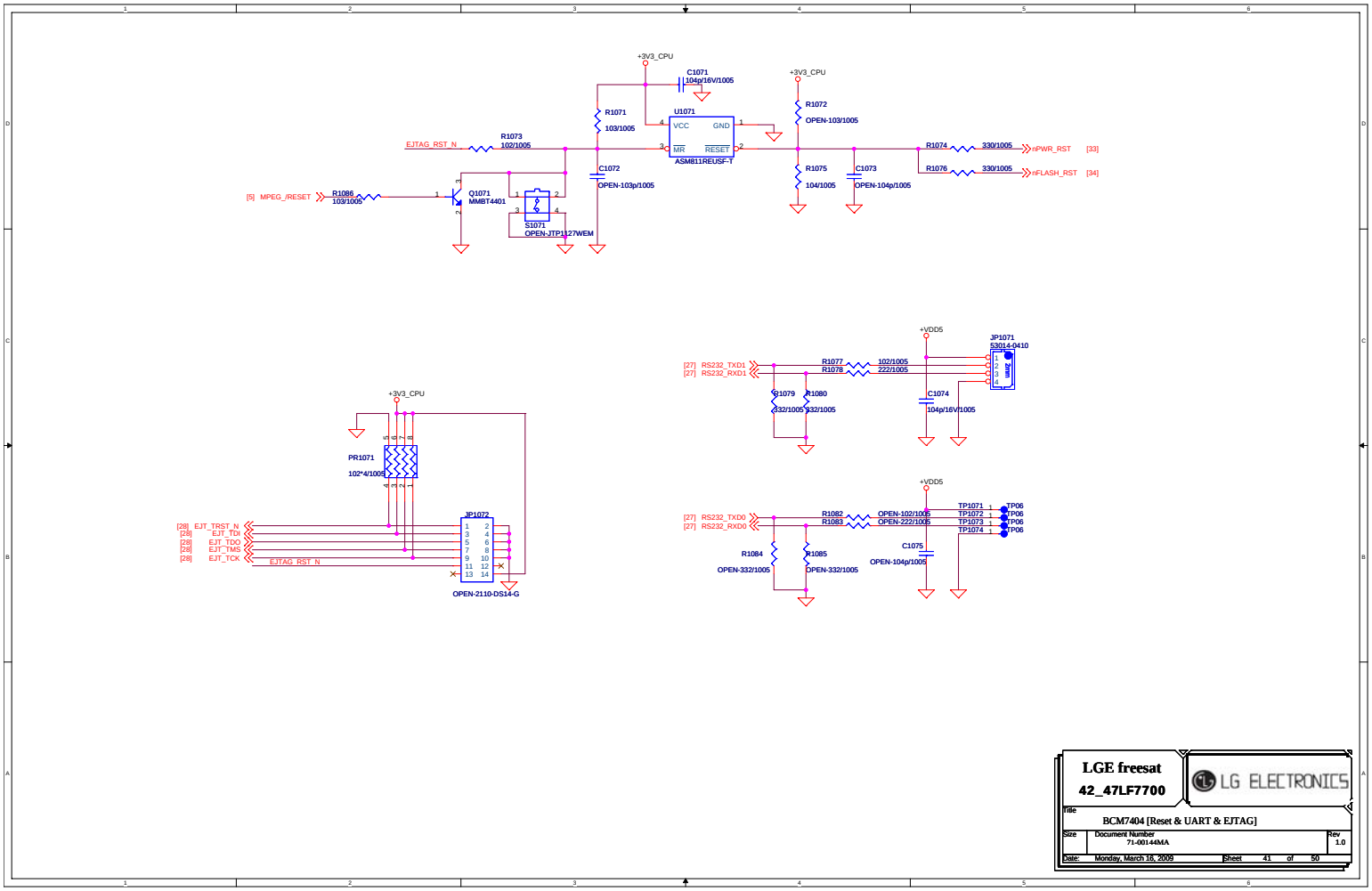
LGE freesat	LG ELECTRONICS
42_47LF7700	
Title	BCM7404 [Miscellaneous]
Size	Document Number 71-00144MA Rev 1.0
Date: Monday, March 16, 2009	Sheet 36 of 50

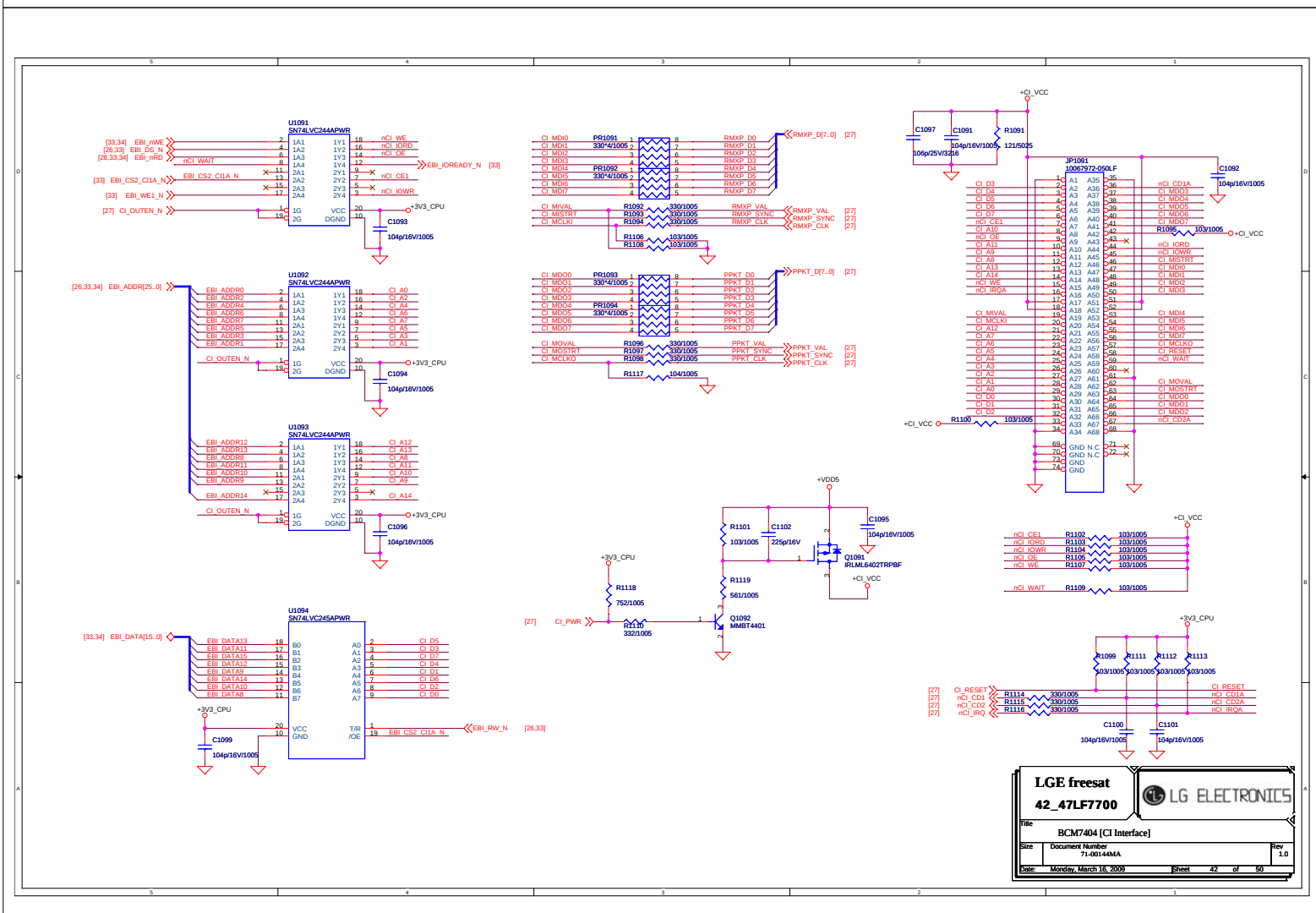

U841-13
BCM7404ZKPB1G
64Bit DDR SDRAM
U841-19
BCM7404ZKPB1G
Reserved
+DDR_VREF
+DDR_VTT
DDR_DQ[63..0]
DDR_DQM[7..0]
DDR_DQS[7..0]
DDR_ADD[12..0]
DDR_ADD13_RSV
LGE freesat
42_47LF7700
LG ELECTRONICS
BCM7404 [DDR]
Document Number
71-00144MA
Rev
1.0
Tuesday, March 17, 2009
Sheet
37
of
50


+DDR_VTT
DDR_DQ[63..0]
MB_DDR_DQ[63..0]
LGE freesat
42_47LF7700
LG ELECTRONICS
BCM7404 [Termination_#1]
Document Number
71-00144MA
Rev
1.0
Tuesday, March 17, 2009
Sheet
38
of
50

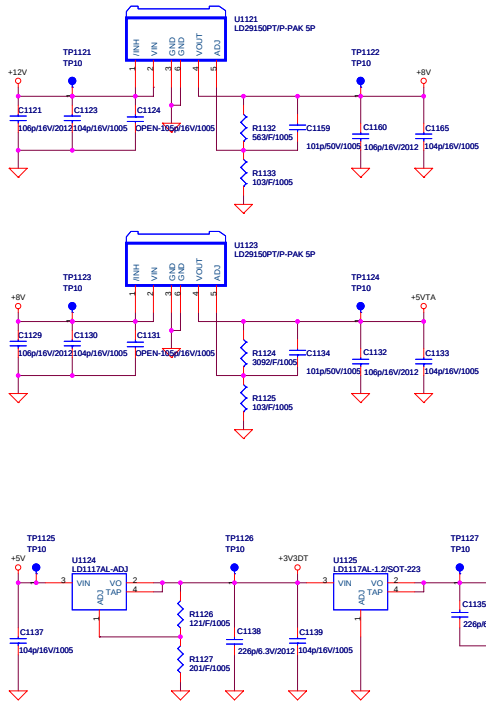

+DDR_VTT
RD1270 620/1005
RD1271 620/1005
RD1272 620/1005
RD1273 620/1005
RD1274 620/1005
RD1275 620/1005
RD1308 620/1005
RD1309 620/1005
RD1250 620/1005
RD1251 620/1005
RD1252 620/1005
RD1253 620/1005
RD1254 620/1005
RD1255 620/1005
RD1256 620/1005
RD1300 620/1005
[37] DDR_DQM[7..0]
DDR_DQM[7..0]
DDR_DQM0
DDR_DQM1
DDR_DQM2
DDR_DQM3
DDR_DQM4
DDR_DQM5
DDR_DQM6
DDR_DQM7
RD1264 220/1005 MB_DDR_DQM0
RD1265 220/1005 MB_DDR_DQM1
RD1266 220/1005 MB_DDR_DQM2
RD1267 220/1005 MB_DDR_DQM3
RD1268 220/1005 MB_DDR_DQM4
RD1269 220/1005 MB_DDR_DQM5
RD1310 220/1005 MB_DDR_DQM6
RD1312 220/1005 MB_DDR_DQM7
MB_DDR_DQM[7..0]
MB_DDR_DQM[7..0] [40]
[37] DDR_DQS[7..0]
DDR_DQS[7..0]
DDR_DQS0
DDR_DQS1
DDR_DQS2
DDR_DQS3
DDR_DQS4
DDR_DQS5
DDR_DQS6
DDR_DQS7
RD1257 220/1005 MB_DDR_DQS0
RD1258 220/1005 MB_DDR_DQS1
RD1259 220/1005 MB_DDR_DQS2
RD1260 220/1005 MB_DDR_DQS3
RD1261 220/1005 MB_DDR_DQS4
RD1262 220/1005 MB_DDR_DQS5
RD1263 220/1005 MB_DDR_DQS6
RD1301 220/1005 MB_DDR_DQS7
MB_DDR_DQS[7..0]
MB_DDR_DQS[7..0] [40]
+DDR_VTT
CD1300 103p/50V/1005
CD1301 103p/50V/1005
CD1302 103p/50V/1005
CD1303 103p/50V/1005
RD1302 620/1005
RD1303 620/1005
RD1304 620/1005
RD1305 620/1005
RD1307 620/1005
PRD1306 620*4/1005
PRD1307 620*4/1005
PRD1308 620*4/1005
PRD1309 620*4/1005
PRD1310 620*4/1005
DDR_CLK1
DDR_CLK1_N
DDR_CLK0
DDR_CLK0_N
DDR_CKE
DDR_ADD12
DDR_ADD11
DDR_ADD9
DDR_ADD4
DDR_ADD3
DDR_ADD2
DDR_ADD1
DDR_CS0_N
DDR_RAS_N
DDR_WE_N
DDR_CAS_N
DDR_ADD5
DDR_ADD6
DDR_ADD7
DDR_ADD8
DDR_BA0
DDR_BA1
DDR_ADD10
DDR_ADD0
DDR_ADD13_RSV
DDR_CLK1 [37,40]
DDR_CLK1_N [37,40]
DDR_CLK0 [37,40]
DDR_CLK0_N [37,40]
DDR_CKE [37,40]
DDR_ADD12 [37,40]
DDR_ADD11 [37,40]
DDR_ADD9 [37,40]
DDR_ADD4 [37,40]
DDR_ADD3 [37,40]
DDR_ADD2 [37,40]
DDR_ADD1 [37,40]
DDR_CS0_N [37,40]
DDR_RAS_N [37,40]
DDR_WE_N [37,40]
DDR_CAS_N [37,40]
DDR_ADD5 [37,40]
DDR_ADD6 [37,40]
DDR_ADD7 [37,40]
DDR_ADD8 [37,40]
DDR_BA0 [37,40]
DDR_BA1 [37,40]
DDR_ADD10 [37,40]
DDR_ADD0 [37,40]
DDR_ADD13_RSV [37,40]
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
BCM7404 [Termination_#2]
Size
Document Number
71-00144MA
Rev
1.0
Date: Tuesday, March 17, 2009
Sheet 39 of 50


+VDD_DDR
+DDR_VREF
CD1350 226p/6.3V/2012
CD1353 104p/16V/1005
CD1354 104p/16V/1005
CD1355 104p/16V/1005
CD1356 104p/16V/1005
CD1357 104p/16V/1005
CD1351 106p/16V/2012
CD1364 104p/16V/1005
CD1365 105p/16V/1005
TSOP66
512Mbit
DDR
SDRAM
32Mx16
UD1350
HY5DU121622DTP-D43
NC = 14,19,25,43,50,53
DDR_ADD13_RSV
DDR_ADD12
DDR_ADD11
DDR_ADD10
DDR_ADD9
DDR_ADD8
DDR_ADD7
DDR_ADD6
DDR_ADD5
DDR_ADD4
DDR_ADD3
DDR_ADD2
DDR_ADD1
DDR_ADD0
DDR_ADD[12:0]
DDR_BA1
DDR_BA0
DDR_CLK0
DDR_CLK0_N
DDR_CKE
DDR_CS0_N
DDR_RAS_N
DDR_CAS_N
DDR_WE_N
MB_DDR_DQ[63..0]
MB_DDR_DQS[7..0]
MB_DDR_DQM[7..0]
[37,39] DDR_ADD[12..0]
[37,39] DDR_BA1
[37,39] DDR_BA0
[37,39] DDR_CLK0
[37,39] DDR_CLK0_N
[37,39] DDR_CKE
[37,39] DDR_CS0_N
[37,39] DDR_RAS_N
[37,39] DDR_CAS_N
[37,39] DDR_WE_N
[38] MB_DDR_DQ[63..0]
[39] MB_DDR_DQS[7..0]
[39] MB_DDR_DQM[7..0]
CD1352 106p/16V/2012
CD1366 104p/16V/1005
CD1367 105p/16V/1005
CD1358 226p/6.3V/2012
CD1359 104p/16V/1005
CD1360 104p/16V/1005
CD1361 104p/16V/1005
CD1362 104p/16V/1005
CD1363 104p/16V/1005
UD1351
HY5DU121622DTP-D43
[37,39] DDR_CLK1
[37,39] DDR_CLK1_N
CD1368 226p/6.3V/2012
CD1369 104p/16V/1005
CD1370 104p/16V/1005
CD1371 104p/16V/1005
CD1372 104p/16V/1005
CD1373 104p/16V/1005
CD1380 104p/16V/1005
CD1381 105p/16V/1005
UD1352
HY5DU121622DTP-D43
CD1374 226p/6.3V/2012
CD1375 104p/16V/1005
CD1376 104p/16V/1005
CD1377 104p/16V/1005
CD1378 104p/16V/1005
CD1379 104p/16V/1005
CD1382 104p/16V/1005
CD1383 105p/16V/1005
UD1353
HY5DU121622DTP-D43
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
BCM7404 [DDR1 SDRAM]
Size
Document Number
71-00144MA
Rev
1.0
Date: Tuesday, March 17, 2009
Sheet 40 of 50

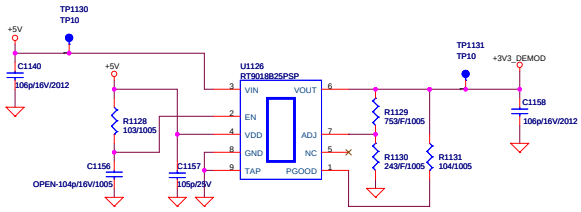

+3V3_CPU
C1071
104p/16V/1005
R1071
103/1005
U1071
VCC
GND
MR
RESET
ASM811REUSF-T
EJTAG_RST_N
R1073
102/1005
C1072
OPEN-103p/1005
[5] MPEG_/RESET
R1086
103/1005
Q1071
MMBT4401
S1071
OPEN-JTP1127WEM
R1072
OPEN-103/1005
R1075
104/1005
C1073
OPEN-104p/1005
R1074
330/1005
nPWR_RST
[33]
R1076
330/1005
nFLASH_RST
[34]
+VDD5
JP1071
S3014-0410
[27] RS232_TXD1
[27] RS232_RXD1
R1077
R1078
102/1005
222/1005
R1079
332/1005
R1080
332/1005
C1074
104p/16V/1005
PR1071
102*4/1005
JP1072
[28] EJT_TRST_N
[28] EJT_TDI
[28] EJT_TDO
[28] EJT_TMS
[28] EJT_TCK
EJTAG_RST_N
OPEN-2110-DS14-G
[27] RS232_TXD0
[27] RS232_RXD0
R1082
R1083
OPEN-102/1005
OPEN-222/1005
R1084
OPEN-332/1005
R1085
OPEN-332/1005
C1075
OPEN-104p/1005
TP1071
TP1072
TP1073
TP1074
TP06
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
BCM7404 [Reset & UART & EJTAG]
Size
Document Number
71-00144MA
Rev
1.0
Date:
Monday, March 16, 2009
Sheet
41
of
50

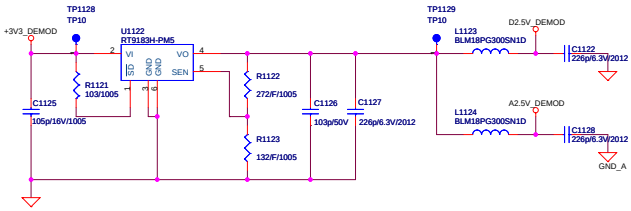

U1091
SN74LVC244APWR
[33,34] EBI_nWE
[26,33] EBI_DS_N
[26,33,34] EBI_nRD
nCI_WAIT
EBI_CS2_CI1A_N
[33] EBI_WE1_N
[27] CI_OUTEN_N
nCI_WE
nCI_IORD
nCI_OE
EBI_IOREADY_N
[33]
nCI_CE1
nCI_IOWR
C1093
104p/16V/1005
U1092
SN74LVC244APWR
[26,33,34] EBI_ADDR[25..0]
EBI_ADDR0
EBI_ADDR2
EBI_ADDR4
EBI_ADDR6
EBI_ADDR7
EBI_ADDR5
EBI_ADDR3
EBI_ADDR1
CI_OUTEN_N
CI_A0
CI_A2
CI_A4
CI_A6
CI_A7
CI_A5
CI_A3
CI_A1
C1094
104p/16V/1005
U1093
SN74LVC244APWR
EBI_ADDR12
EBI_ADDR13
EBI_ADDR8
EBI_ADDR11
EBI_ADDR10
EBI_ADDR9
EBI_ADDR14
CI_A12
CI_A13
CI_A8
CI_A11
CI_A10
CI_A9
CI_A14
C1096
104p/16V/1005
U1094
SN74LVC245APWR
[33,34] EBI_DATA[15..0]
EBI_DATA13
EBI_DATA11
EBI_DATA15
EBI_DATA12
EBI_DATA9
EBI_DATA14
EBI_DATA10
EBI_DATA8
CI_D5
CI_D3
CI_D7
CI_D4
CI_D1
CI_D6
CI_D2
CI_D0
T/R
/OE
EBI_RW_N
[26,33]
C1099
104p/16V/1005
CI_MDI0
CI_MDI1
CI_MDI2
CI_MDI3
CI_MDI4
CI_MDI5
CI_MDI6
CI_MDI7
PR1091
PR1092
330*4/1005
RMXP_D0
RMXP_D1
RMXP_D2
RMXP_D3
RMXP_D4
RMXP_D5
RMXP_D6
RMXP_D7
RMXP_D[7..0]
[27]
CI_MIVAL
CI_MISTRT
CI_MCLKI
R1092
R1093
R1094
330/1005
RMXP_VAL
RMXP_SYNC
RMXP_CLK
R1106
R1108
103/1005
CI_MDO0
CI_MDO1
CI_MDO2
CI_MDO3
CI_MDO4
CI_MDO5
CI_MDO6
CI_MDO7
PR1093
PR1094
PPKT_D0
PPKT_D1
PPKT_D2
PPKT_D3
PPKT_D4
PPKT_D5
PPKT_D6
PPKT_D7
PPKT_D[7..0]
CI_MOVAL
CI_MOSTRT
CI_MCLKO
R1096
R1097
R1098
PPKT_VAL
PPKT_SYNC
PPKT_CLK
R1117
104/1005
+CI_VCC
C1097
C1091
104p/16V/1005
106p/25V/3216
R1091
121/5025
JP1091
10067972-050LF
C1092
104p/16V/1005
CI_D3
CI_D4
CI_D5
CI_D6
CI_D7
nCI_CE1
CI_A10
nCI_OE
CI_A11
CI_A9
CI_A8
CI_A13
CI_A14
nCI_WE
nCI_IRQA
CI_MIVAL
CI_MCLKI
CI_A12
CI_A7
CI_A6
CI_A5
CI_A4
CI_A3
CI_A2
CI_A1
CI_A0
CI_D0
CI_D1
CI_D2
nCI_CD1A
CI_MDO3
CI_MDO4
CI_MDO5
CI_MDO6
CI_MDO7
nCI_IORD
nCI_IOWR
CI_MISTRT
CI_MDI0
CI_MDI1
CI_MDI2
CI_MDI3
CI_MDI4
CI_MDI5
CI_MDI6
CI_MDI7
CI_MCLKO
CI_RESET
nCI_WAIT
CI_MOVAL
CI_MOSTRT
CI_MDO0
CI_MDO1
CI_MDO2
nCI_CD2A
R1100
103/1005
GND N.C
GND
+VDD5
Q1091
IRLML6402TRPBF
C1095
104p/16V/1005
C1102
225p/16V
R1101
103/1005
R1119
561/1005
Q1092
MMBT4401
R1118
752/1005
R1110
332/1005
CI_PWR
nCI_CE1
nCI_IORD
nCI_IOWR
nCI_OE
nCI_WE
nCI_WAIT
R1102
R1103
R1104
R1105
R1107
R1109
103/1005
CI_RESET
nCI_CD1
nCI_CD2
nCI_IRQ
R1114
R1115
R1116
330/1005
R1099
R1111
R1112
R1113
C1100
C1101
104p/16V/1005
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
BCM7404 [CI Interface]
Size
Document Number
71-00144MA
Rev
1.0
Date:
Monday, March 16, 2009
Sheet
42
of
50

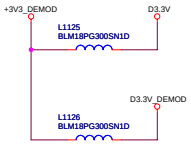
DVB-T POWER

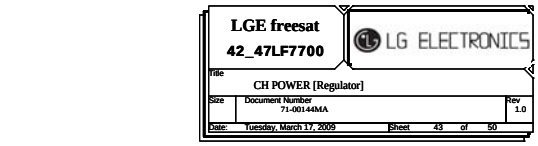


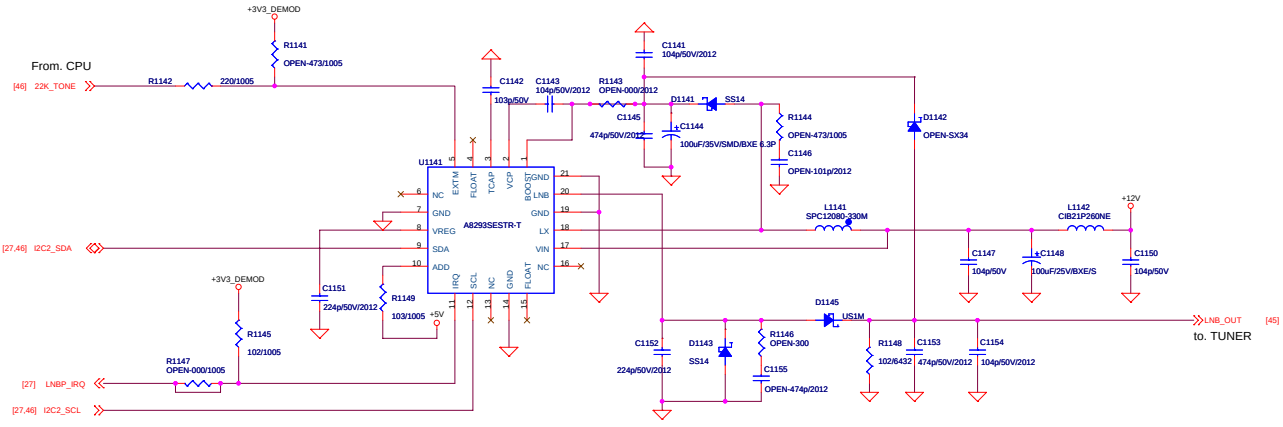
DVB-S2 Power

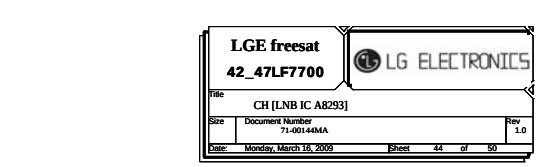


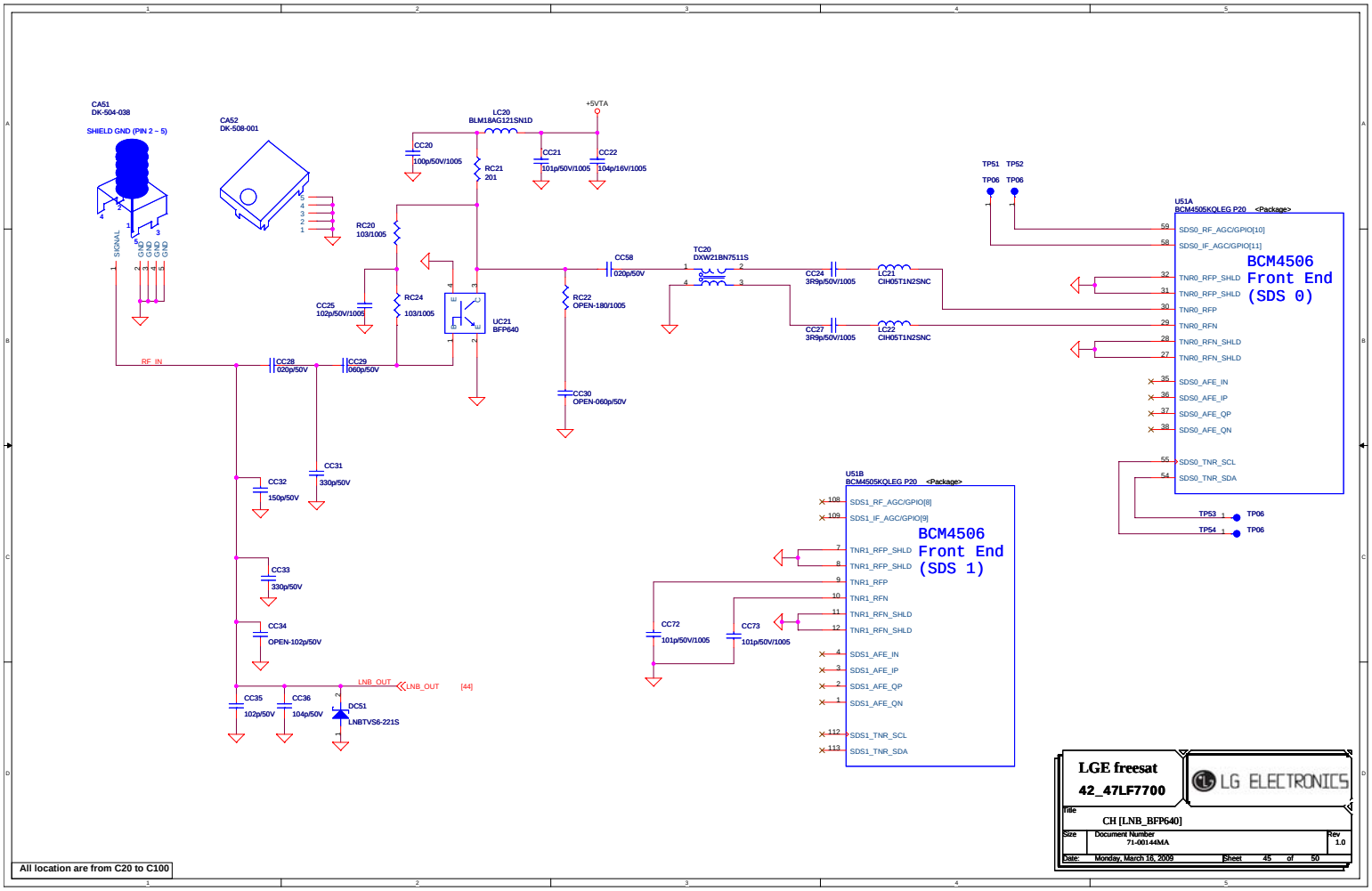


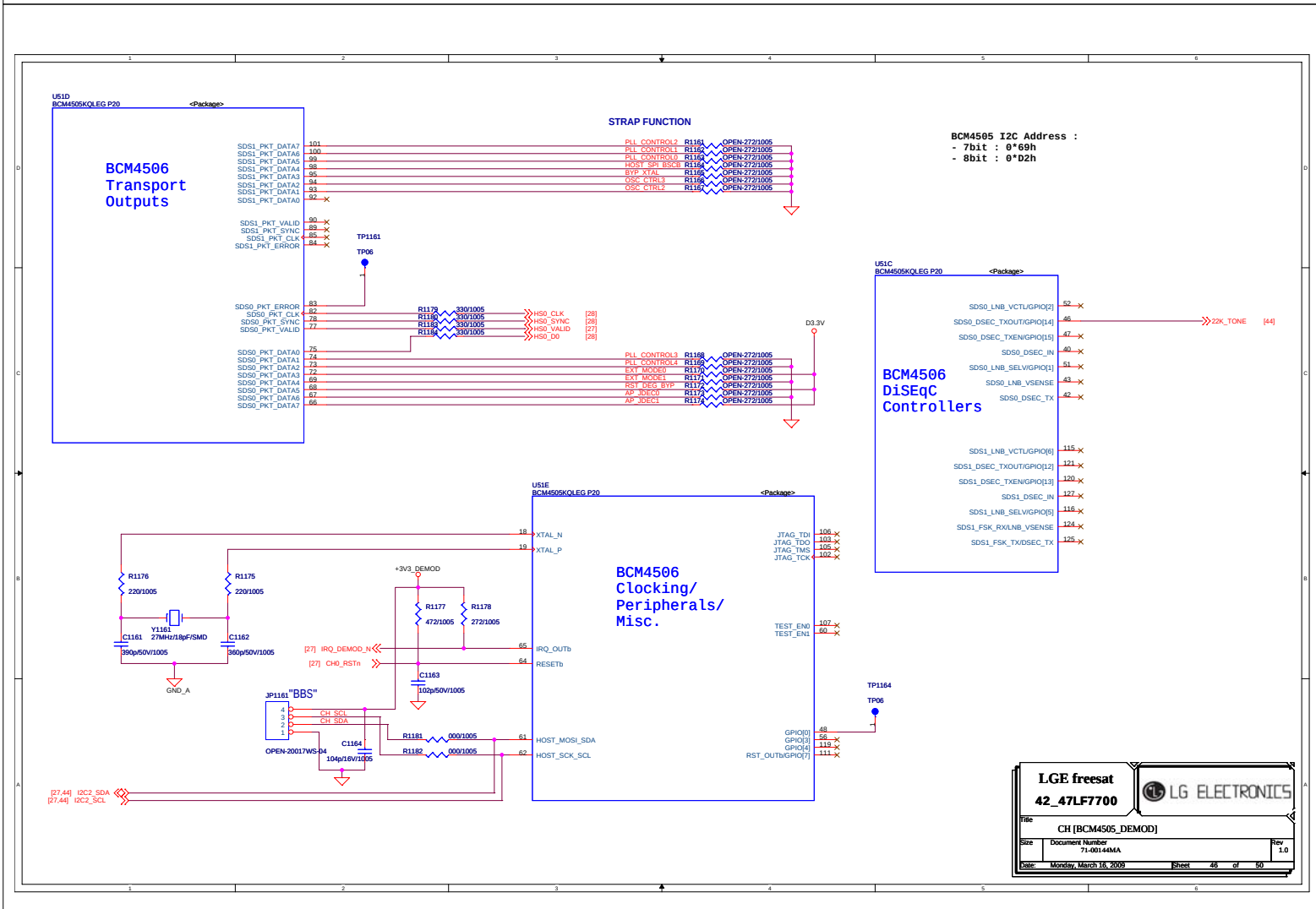









CA51
DK-504-038
SHIELD GND (PIN 2 ~ 5)
CA52
DK-508-001
LC20
BLM18AG121SN1D
+5VTA
CC20
100p/50V/1005
RC21
201
CC21
101p/50V/1005
CC22
104p/16V/1005
RC20
103/1005
CC25
102p/50V/1005
RC24
103/1005
UC21
BFP640
CC58
020p/50V
RC22
OPEN-180/1005
CC30
OPEN-060p/50V
TC20
DXW21BN7511S
CC24
3R9p/50V/1005
LC21
CIH05T1N2SNC
CC27
3R9p/50V/1005
LC22
CIH05T1N2SNC
TP51
TP52
TP06
TP06
U51A
BCM4505KQLEG P20
<Package>
BCM4506
Front End
(SDS 0)
SDS0_RF_AGC/GPIO[10]
SDS0_IF_AGC/GPIO[11]
TNR0_RFP_SHLD
TNR0_RFP_SHLD
TNR0_RFP
TNR0_RFN
TNR0_RFN_SHLD
TNR0_RFN_SHLD
SDS0_AFE_IN
SDS0_AFE_IP
SDS0_AFE_QP
SDS0_AFE_QN
SDS0_TNR_SCL
SDS0_TNR_SDA
TP53
TP54
TP06
TP06
RF_IN
CC28
020p/50V
CC29
060p/50V
CC31
330p/50V
CC32
150p/50V
CC33
330p/50V
CC34
OPEN-102p/50V
LNB_OUT
LNB_OUT
[44]
CC35
102p/50V
CC36
104p/50V
DC51
LNBTVS6-221S
U51B
BCM4505KQLEG P20
<Package>
BCM4506
Front End
(SDS 1)
SDS1_RF_AGC/GPIO[8]
SDS1_IF_AGC/GPIO[9]
TNR1_RFP_SHLD
TNR1_RFP_SHLD
TNR1_RFP
TNR1_RFN
TNR1_RFN_SHLD
TNR1_RFN_SHLD
SDS1_AFE_IN
SDS1_AFE_IP
SDS1_AFE_QP
SDS1_AFE_QN
SDS1_TNR_SCL
SDS1_TNR_SDA
CC72
101p/50V/1005
CC73
101p/50V/1005
All location are from C20 to C100
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
CH [LNB_BFP640]
Size
Document Number
71-00144MA
Rev
1.0
Date:
Monday, March 16, 2009
Sheet
45
of
50


U51D
BCM4505KQLEG P20
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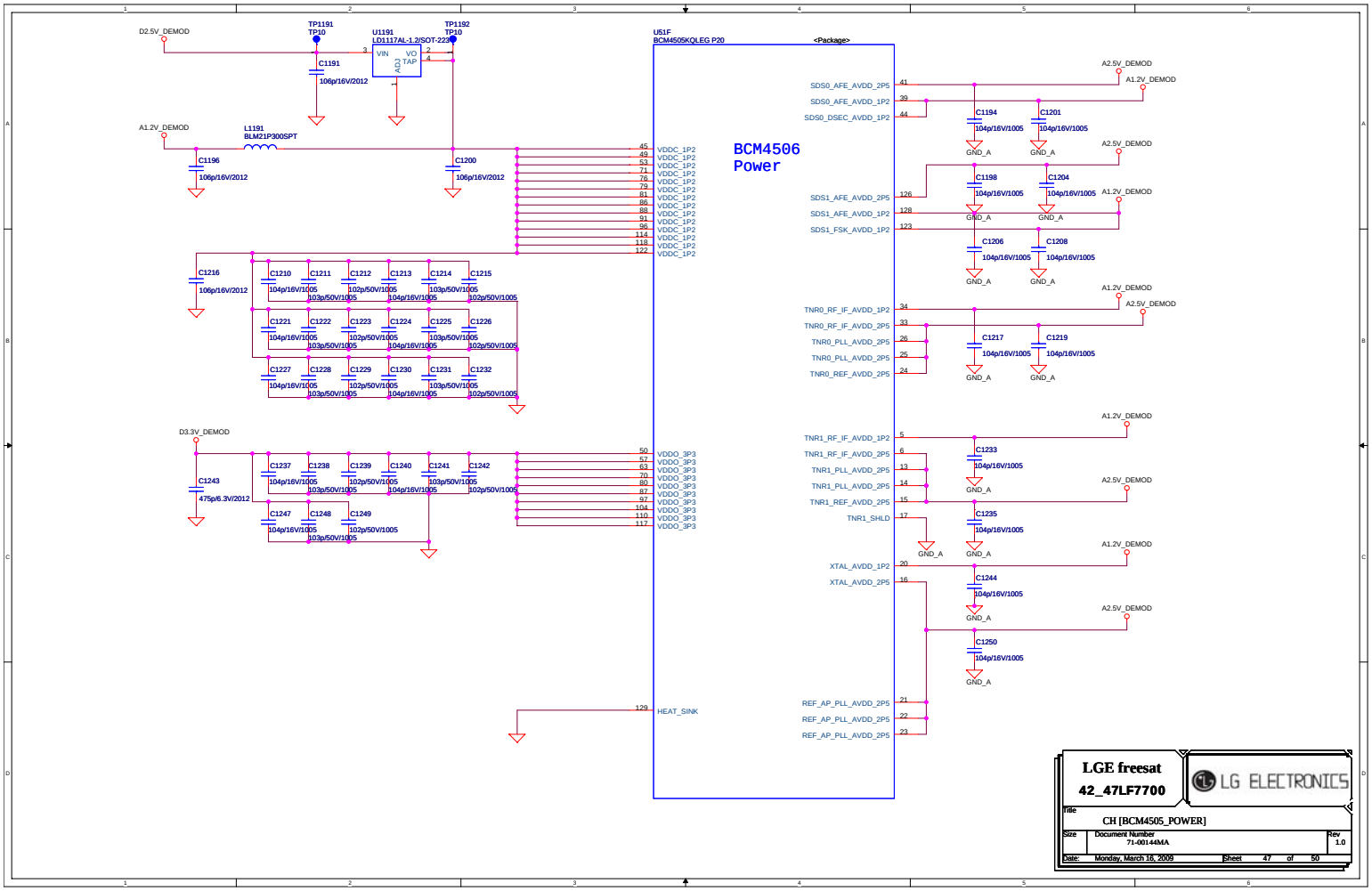
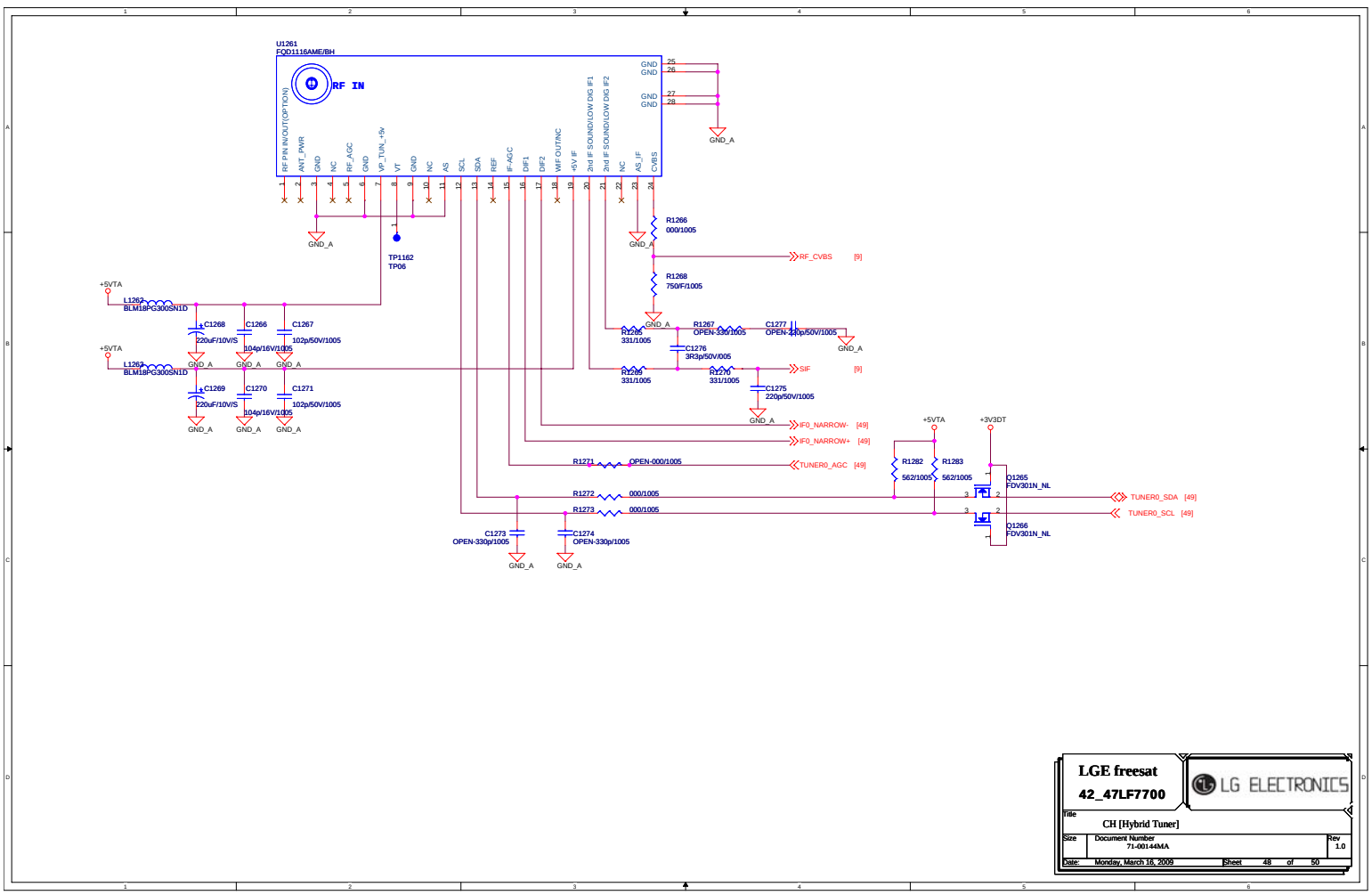
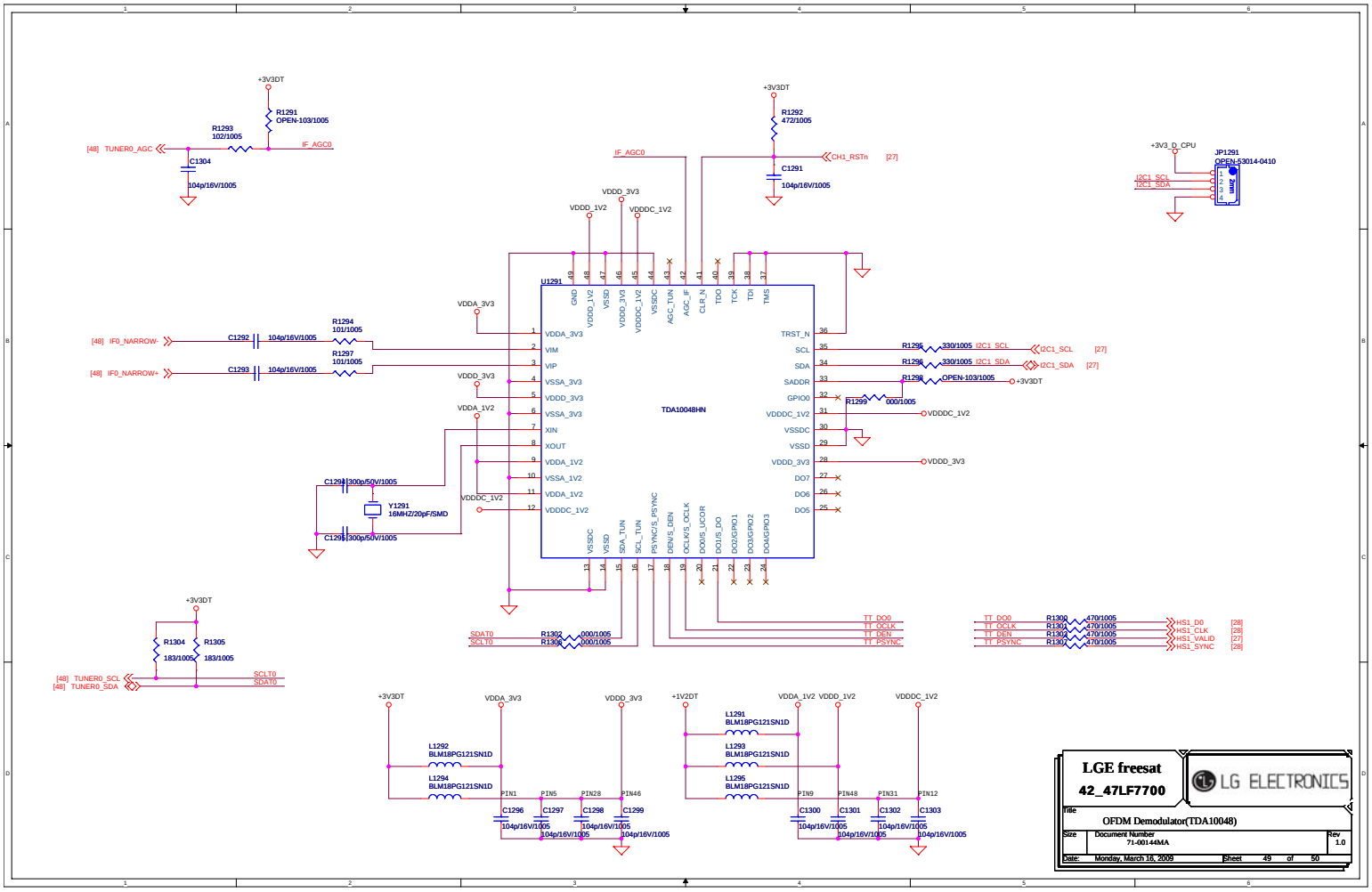
BCM4506
Transport
Outputs
SDS1_PKT_DATA7
SDS1_PKT_DATA6
SDS1_PKT_DATA5
SDS1_PKT_DATA4
SDS1_PKT_DATA3
SDS1_PKT_DATA2
SDS1_PKT_DATA1
SDS1_PKT_DATA0
SDS1_PKT_VALID
SDS1_PKT_SYNC
SDS1_PKT_CLK
SDS1_PKT_ERROR
TP1161
TP06
SDS0_PKT_ERROR
SDS0_PKT_CLK
SDS0_PKT_SYNC
SDS0_PKT_VALID
SDS0_PKT_DATA0
SDS0_PKT_DATA1
SDS0_PKT_DATA2
SDS0_PKT_DATA3
SDS0_PKT_DATA4
SDS0_PKT_DATA5
SDS0_PKT_DATA6
SDS0_PKT_DATA7
STRAP FUNCTION
PLL_CONTROL2
PLL_CONTROL1
PLL_CONTROL0
HOST_SPI_BSCB
BYP_XTAL
OSC_CTRL3
OSC_CTRL2
PLL_CONTROL3
PLL_CONTROL4
EXT_MODE0
EXT_MODE1
RST_DEG_BYP
AP_JDEC0
AP_JDEC1
OPEN-272/1005
BCM4505 I2C Address :
- 7bit : 0*69h
- 8bit : 0*D2h
U51C
BCM4505KQLEG P20
<Package>
BCM4506
DiSEqC
Controllers
SDS0_LNB_VCTL/GPIO[2]
SDS0_DSEC_TXOUT/GPIO[14]
SDS0_DSEC_TXEN/GPIO[15]
SDS0_DSEC_IN
SDS0_LNB_SELV/GPIO[1]
SDS0_LNB_VSENSE
SDS0_DSEC_TX
22K_TONE
[44]
SDS1_LNB_VCTL/GPIO[6]
SDS1_DSEC_TXOUT/GPIO[12]
SDS1_DSEC_TXEN/GPIO[13]
SDS1_DSEC_IN
SDS1_LNB_SELV/GPIO[5]
SDS1_FSK_RX/LNB_VSENSE
SDS1_FSK_TX/DSEC_TX
D3.3V
U51E
BCM4505KQLEG P20
<Package>
BCM4506
Clocking/
Peripherals/
Misc.
XTAL_N
XTAL_P
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_TCK
TEST_EN0
TEST_EN1
IRQ_OUTb
RESETb
HOST_MOSI_SDA
HOST_SCK_SCL
GPIO[0]
GPIO[3]
GPIO[4]
RST_OUTb/GPIO[7]
TP1164
TP06
R1176
220/1005
R1175
220/1005
Y1161
27MHz/18pF/SMD
C1161
390p/50V/1005
C1162
360p/50V/1005
GND_A
+3V3_DEMOD
R1177
472/1005
R1178
272/1005
[27] IRQ_DEMOD_N
[27] CH0_RSTn
C1163
102p/50V/1005
JP1161
"BBS"
CH_SCL
CH_SDA
OPEN-20017WS-04
R1181
000/1005
R1182
000/1005
C1164
104p/16V/1005
[27,44] I2C2_SDA
[27,44] I2C2_SCL
LGE freesat
42_47LF7700
LG ELECTRONICS
Title
CH [BCM4505_DEMOD]
Size
Document Number
71-00144MA
Rev
1.0
Date:
Monday, March 16, 2009
Sheet
46
of
50


BCM4506
Power
U51F
BCM4505KQLEG P20
<Package>
D2.5V_DEMOD
A1.2V_DEMOD
D3.3V_DEMOD
A2.5V_DEMOD
GND_A
HEAT_SINK
LGE freesat
42_47LF7700
LG ELECTRONICS
CH [BCM4505_POWER]
Monday, March 16, 2009
71-00144MA
1.0
47 of 50


U1261
FQD1116AME/BH
RF IN
TP1162
TP06
R1266
000/1005
RF_CVBS [9]
R1268
750/F/1005
R1267
OPEN-330/1005
C1277
OPEN-240p/50V/1005
C1276
3R3p/50V/005
SIF [9]
C1275
220p/50V/1005
IF0_NARROW- [49]
IF0_NARROW+ [49]
TUNER0_AGC [49]
R1271
OPEN-000/1005
R1272
000/1005
R1273
000/1005
C1273
OPEN-330p/1005
C1274
OPEN-330p/1005
TUNER0_SDA [49]
TUNER0_SCL [49]
Q1265
FDV301N_NL
Q1266
FDV301N_NL
LGE freesat
42_47LF7700
LG ELECTRONICS
CH [Hybrid Tuner]
Monday, March 16, 2009
71-00144MA
1.0
48 of 50


+3V3DT
R1291
OPEN-103/1005
R1293
102/1005
[48] TUNER0_AGC
IF_AGC0
C1304
104p/16V/1005
+3V3DT
R1292
472/1005
CH1_RSTn [27]
C1291
104p/16V/1005
+3V3_D_CPU
JP1291
OPEN-53014-0410
I2C1_SCL
I2C1_SDA
VDDD_3V3
VDDD_1V2
VDDDC_1V2
U1291
TDA10048HN
VDDA_3V3
[48] IF0_NARROW-
[48] IF0_NARROW+
C1292
104p/16V/1005
C1293
104p/16V/1005
R1294
101/1005
R1297
101/1005
VDDA_1V2
C1294
300p/50V/1005
C1295
300p/50V/1005
Y1291
16MHZ/20pF/SMD
R1295
330/1005
I2C1_SCL
R1296
330/1005
I2C1_SDA
R1298
OPEN-103/1005
+3V3DT
R1299
000/1005
VDDDC_1V2
VDDD_3V3
TT_DO0
TT_OCLK
TT_DEN
TT_PSYNC
R1300
470/1005
R1301
470/1005
R1302
470/1005
R1303
470/1005
HS1_D0 [28]
HS1_CLK [28]
HS1_VALID [27]
HS1_SYNC [28]
SDAT0
SCLT0
R1302
000/1005
R1303
000/1005
+3V3DT
R1304
183/1005
R1305
183/1005
[48] TUNER0_SCL
[48] TUNER0_SDA
SCLT0
SDAT0
+1V2DT
L1291
BLM18PG121SN1D
L1292
BLM18PG121SN1D
L1293
BLM18PG121SN1D
L1294
BLM18PG121SN1D
L1295
BLM18PG121SN1D
C1296
C1297
C1298
C1299
C1300
C1301
C1302
C1303
104p/16V/1005
LGE freesat
42_47LF7700
LG ELECTRONICS
OFDM Demodulator(TDA10048)
Size
Document Number
71-00144MA
Rev
1.0
Date: Monday, March 16, 2009
Sheet 49 of 50


LG Electronics Inc.