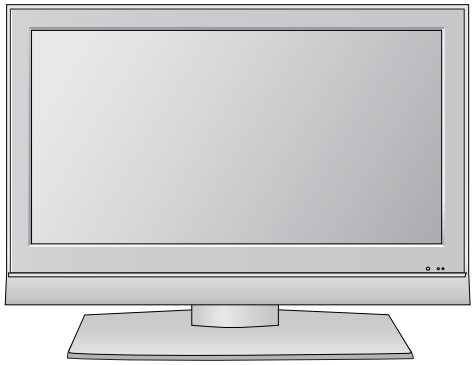
website:http://biz.LGservice.com

LCD TV
SERVICE MANUAL

CHASSIS : LP69C

MODEL : 19LS4R 19LS4R-ZA

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



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 Replacement Parts List.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

General Guidance

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

It will also protect the receiver and 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,

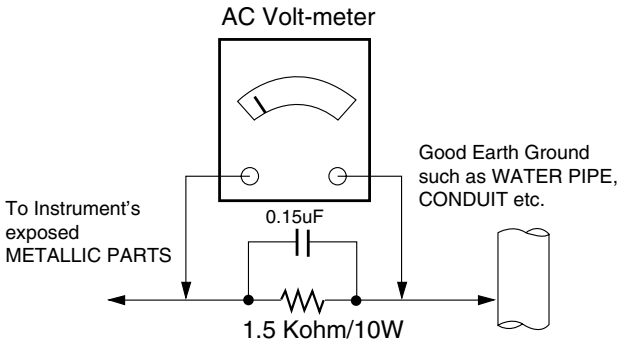
always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

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 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

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

2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe.
   Do not test high voltage by "drawing an arc".
3. Do not spray chemicals on or near this receiver or any of its assemblies.
4. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)
   CAUTION: This is a flammable mixture.
   Unless specified otherwise in this service manual, lubrication of contacts 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 specification is applied to the 19"/ 22" Wide LCD TV used LP69C chassis.

2. Requirement for Test

Testing for standard of each part must be followed in below condition.

(1) Power : Standard input voltage (100-240V~, 50/60Hz)
*Standard Voltage of each products is marked by models.
(2) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.
(3) The receiver must be operated for about 20 minutes prior to the adjustment.

3. Test method

(1) Performance : LGE TV test method followed
(2) Demanded other specification
Safety : CE, IEC Specification
EMC : CE, IEC

4. General Specification(TV)

No	Item	Specification	Remark
1	Video input applicable system	PAL-D/K, B/G, I, SECAM L, NTSC, NTSC. 4.43	(ZA)
2	Receivable Broadcasting System	PAL/SECAM BG PAL/SECAM DK PAL I/I SECAM L/L'	(ZA/TA) EU/Non-EU (PAL Market)
3	RF Input Channel	VHF : E2 ~ E12 UHF : E21 ~ E69 CATV : S1 ~ S20 HYPER : S21~ S41	PAL
		L/L' : B, C, D	FRANCE
4	Input Voltage	100-240V~, 50/60Hz	
5	Market	EU	
6	Tuning System	FVS 100 program FS	PAL, 200 PR.(Option) NTSC
7	Operating Environment	Temp : 0 ~ 40 deg	
		Humidity : 10~90 %RH	
8	Storage Environment	Temp : -20 ~ 50 deg	
		Humidity : 10~90 %RH	
9	Display	LCD Module	

5. Module Specification

5.1. 19” LCD MODULE (CMO M190A1-L02)

No.	Item		Min	Typ.	Max	Unit	Remark
1.	Display area		410.4 (H) *265.5 (V)			mm	
2.	Outline dimension		427.2 (H) x 277.4 (V) x 17.0 (D)			mm	Typ
3.	Number of Pixels		1440 (H) x 900 (V)				1Pixel=3RGB Cells
4.	Cell pitch		0.285mm (H) x 0.285mm (V)			mm	1Pixel=3RGB Cells
5.	Color arrangement		RGB vertical stripe				
6.	Weight(net)		2.5			Kg	Max
7.	Operating Environment	Temperature	0 ~ 50			deg	
		Humidity	10 ~ 90			%	
8	Storage Environment	Temperature	-20 ~ 60			deg	
		Humidity	10 ~ 90			%	
9	Electrical Interface		LVDS				
10	Back light Unit		4 CCFL (4 lamps)				
11	R/T		5ms			Typ.	

5.2. Electro optical characteristic specifications(module standard)

No.	Item	Specification					Remark
				Min	Typ.	Max	
1	Viewing Angle	R/L			85/85		
	<CR≥10>	U/D			80/80		
2	Luminance	Luminance (cd/m^2)		190	250		PSM:Dynamic, CSM:Cool, White(100 IRE)
3	Contrast Ratio	CR		500	850		All white / All black
4	CIE Color Coordinates	WHITE	Wx	Typ.	0.285	Typ.	
			Wy	-0.015	0.293	+0.015	PSM : Dynamic
		RED	Rx		0.640		CSM : Cool
			Ry		0.334		White
		GREEN	Gx		0.286		(85 IRE)
			Gy		0.599		
		BLUE	Bx		0.154		
			By		0.077		

6. Model Specification

No	Item	Specification	Remark
1.	Market	EU	
2.	Broadcasting system	PAL BG/I/DK, SECAM-L/L', SECAM BG/DK	
3	RF Input Channel	VHF : E2 ~ E12 UHF : E21 ~ E69 CATV : S1 ~ S20 HYPER : S21~ S41	PAL
		L/L' : B, C, D	FRANCE
4.	SCART Jack(1EA)	PAL, SECAM, NTSC	
5.	Video Input (1EA)	PAL, SECAM, NTSC	4 System(Rear) :PAL50, SECAM, NTSC, PAL60
6.	S-Video Input (1EA)	PAL, SECAM, NTSC	4 System(Rear) : PAL50, SECAM, NTSC, PAL60
7.	Component Input (1EA)	Y/ Pb/Pr	480i/576i/480P/720P/1080i
8.	RGB Input (1EA)	RGB-PC, RGB-DTV	
9.	HDMI Input (1EA)	HDMI-PC HDMI-DTV	
10.	Audio Input (3 EA)	3EA : CVBS, Scart, PC Audio	L/R Input

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

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
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)
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
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	74.250	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

8. RGB Input (PC)

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed	Remark
1	720*400	31.469	70.08	28.32	DOS	
2	640*480	31.469	59.94	25.17	VESA(VGA)	
3	640*350	31.468	70.090	25.175	DOS	
4	800*600	37.879	60.31	40.00	VESA(SVGA)	
5	1024*768	48.363	60.00	65.00	VESA(XGA)	
6	1280*1024	63.981	60.02	108.0	VESA(WXGA)	
7	1440*900	55.5	59.90	88.75	WXGA+	19LS4R-ZA only
8	1680*1050	65.290	59.954	146.25	WXGA+	22LS4R-ZA only

9. RGB input (DTV)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
1	720*480	31.47	59.94	27.000	SDTV 480P
2	720*480	31.50	60.00	27.027	SDTV 480P
3	720*576	31.25	50.00	27.000	SDTV 576P
4	1280*720	37.5	50.00	74.250	HDTV 720P 50Hz
5	1280*720	44.96	59.94	74.176	HDTV 720P
6	1280*720	45.00	60.00	74.250	HDTV 720P
7	1920*1080	33.72	59.94	74.176	HDTV 1080I
8	1920*1080	33.75	60.00	74.250	HDTV 1080I
9	1920*1080	28.125	50.00	74.250	HDTV 1080I 50Hz

10. HDMI/DVI input (PC)

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)	Proposed	Remark
1	720*400	31.469	70.08	28.32	DOS	
2	640*480	31.469	59.94	25.17	VESA(VGA)	
3	640*350	31.468	70.090	25.175	DOS	
4	800*600	37.879	60.31	40.00	VESA(SVGA)	
5	1024*768	48.363	60.00	65.00	VESA(XGA)	
6	1280*1024	63.981	60.02	108.0	VESA(WXGA)	
7	1440*900	55.5	59.90	88.75	WXGA+	19LS4R-ZA only
8	1680*1050	65.290	59.954	146.25	WXGA+	22LS4R-ZA only

11. HDMI/DVI input (DTV)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
1.	720*480	31.47	59.94	27.000	SDTV 480P
2.	720*480	31.50	60.00	27.027	SDTV 480P
3.	720*576	31.25	50.00	27.000	SDTV 576P
4.	1280*720	37.5	50.00	74.250	HDTV 720P 50Hz
5.	1280*720	44.96	59.94	74.176	HDTV 720P
6.	1280*720	45.00	60.00	74.250	HDTV 720P
7.	1920*1080	33.72	59.94	74.176	HDTV 1080I
8.	1920*1080	33.75	60.00	74.250	HDTV 1080I
9.	1920*1080	28.125	50.00	74.250	HDTV 1080I 50Hz

ADJUSTMENT INSTRUCTION

1. Application Range

This specification sheet is applied to 19"/ 22" LCD TV which is manufactured in TV (or Monitor) Factory or is produced on the basis of this data.

2. Specification

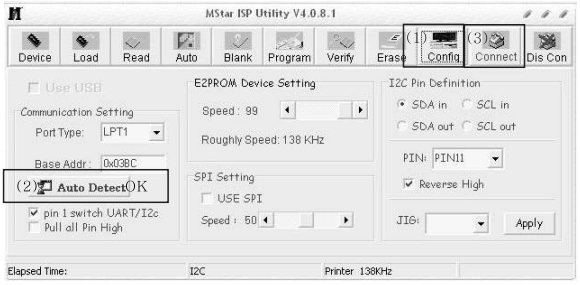
1) The adjustment is according to the order which is designated and which must be followed, according to the plan which can be changed only on agreeing.
2) Power Adjustment: Free Voltage
3) Magnetic Field Condition: Nil.
4) Input signal Unit: Product Specification Standard
5) Reserve after operation: Above 30 Minutes
6) Adjustment equipments: Color Analyzer(CA-210 or CA-110), Pattern Generator (MSPG-925L or Equivalent), DDC Adjustment Jig equipment, SVC remote control

3. Main PCB check process

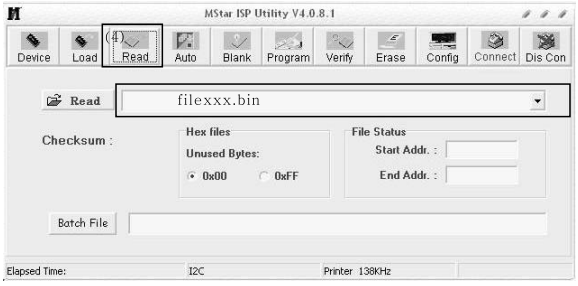
* APC - After Manual-Insult, executing APC

3.1. Download

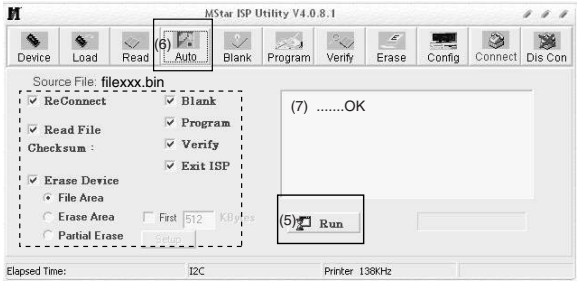
1) Execute ISP program "Mstar ISP Utility" and then click "Config" tab.
2) Set as below, and then click "Auto Detect" and check "OK" message.
   If display "Error", Check connect computer, jig, and set.
3) Click "Connect" tab.
   If display "Can't ", Check connect computer, jig, and set.



4) Click "Read" tab, and then load download file(XXXX.bin) by clicking "Read".



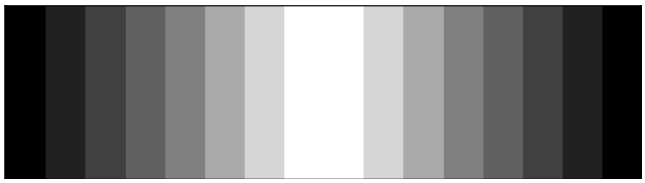
5) Click "Auto" tab and set as below
6) click "Run".
7) After downloading, check "OK" message.



3.2. ADC Process

(1) PC input ADC

1) Auto RGB Gain/Offset Adjustment
   - Convert to PC in Input-source
   - Signal equipment displays
     Output Voltage : 700 mVp-p
     Impress Resolution **XGA** (1024x 768 @ 60Hz)
     Model : 107 in Pattern Generator
     Pattern : 29 in Pattern Generator (MSPG-925 Series)
     [gray pattern that left & right is black and center is white signal (Refer below picture)].



<Adjustment pattern (PC)>

   - Adjust by commanding AUTO_COLOR _ADJUST (0xF1) 0x00 **0x02** instruction.

2) Confirmation
   - We confirm whether **"0x8C" address of EEPROM "0xB4"** is "0xAA" or not.
   - If "0x8C" address of EEPROM "0xB4" isn't "0xAA", we adjust once more.
   - We can confirm the ADC values from "**0x00~0x05**" addresses in a page "0xB4"

   * Manual ADC process using Service Remote control. After enter Service Mode by pushing "INSTART" key, execute "Auto-RGB" by pushing "►" key at "Auto-RGB".

(2) COMPONENT input ADC

1) Component Gain/Offset Adjustment
   - Convert to Component in Input-source
   - Signal equipment displays
     Impress Resolution **480P**
     MODEL :212 in Pattern Generator
     (480p Mode, Y : 100%, Pb/Pr : 75%)
     PATTERN : 08 in Pattern Generator
     (MSPG-925 Series)

- Adjust by commanding AUTO_COLOR_ADJUST (0xF1) 0x00 **0x02** instruction.

2) Confirmation
- We confirm whether **"0x8E" address of EEPROM "0xB4"** is "0xAA" or not.
- If "0x8E" address of EEPROM "0xB4" isn't "0xAA", we adjust once more.
- We can confirm the ADC values from "**0x00~0x05**" addresses in a page "0xB4".

3.3. Function Check

■ **Check display and sound**
- Check Input and Signal items. (cf. work instructions)
  1) TV
  2) AV1 (SCART)
  3) AV2 (CVBS/ S-Video)
  4) COMPONENT (480P)
  5) RGB (PC : 1024 x 768 @ 60hz)
  6) HDMI
  7) PC Audio In and H/P Out

* Display and Sound check is executed by Remote control.

4. Total Assembly line process

4.1. Adjustment Preparation

(1) Above 30 minutes H/run in RF no signal
(2) 15 Pin D-Sub Jack is connected to the signal of Pattern Generator.

4.2. Confirm color coordinate of RGB

(1) Set Input to RGB.
(2) Input signal : (1440 x 900 @ 60Hz) Full white 216/255 gray level (100 IRE, Model : 112, Pattern : 4 at MSPG925L)
(3) Set CSM : Cool
(4) Confirm whether x = 0.283±0.03, y = 0.298±0.03 or not.

4.3. Confirm color coordinate of AV2

(1) Set Input to AV2
(2) Input signal : CVBS, PAL @ 50Hz
Full white 216/255 gray level (85 IRE, Model : 202, Pattern : 78 at MSPG925L)
(3) Set PSM : Dynamic / CSM : Cool
(4) Confirm whether x = 0.283±0.03, y = 0.298±0.03 or not.

4.4. Confirm color coordinate of component

(1) Set Input to COMPONENT.
(2) Input signal : 480P
Full white 216/255 gray level (85 IRE Model : 212, Pattern : 78 at MSPG925L)
(3) Set PSM : Dynamic / CSM : Cool
(4) Confirm whether x = 0.283±0.03, y = 0.298±0.03 or not.

4.5. Other quality

■ Confirm that each items satisfy under standard condition that was written product spec.
■ Confirm Video and Sound at each source.

(1) AV

1) Select input AV1 and whether picture is displayed or not.
- SCART output displayed or not.

2) Select input AV2 (S-video) and whether picture is displayed or not
3) Select input AV2 (CVBS) and whether picture is displayed or not

(2) TV

- Select input TV and check below item

* In Gumi Factory
C05 (E05) – TELETEXT Function Check
; (Applicable to the model that has Teletext code set-up item in Product spec)
C07 (E07) – Nicam DUAL Check.
C52 (E52) – Nicam Stereo Check.
Refer to "7.Preset CH information".

(3) RGB

- Select input RGB and whether picture is displayed or not.

(4) COMPONENT

- Select input COMPONENT and whether picture is displayed or not.

(5)HDMI

- Select input HDMI and whether picture is displayed or not

4.6. DPM operation confirmation

- Check if Power LED Color and Power Consumption operate as standard.
  (1) Set Input to RGB and connect D-sub cable to set.
  (2) Measurement Condition : 230V@ 50Hz (Analog)
  (3) Confirm DPM operation at the state of screen without Signal

4.7 DDC EDID Write

1) Connect D-sub Signal Cable to D-Sub Jack.
2) Connect HDMI Signal Cable to HDMI Jack.
3) Write EDID DATA to EEPROM(24C02) by using DDC2B protocol.
4) Check whether written EDID data is correct or not. (refer to Product spec).

(1) 19LS4R EDID DATA

1) ANALOG DATA 128Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	4D	4B	01	01	01	01
0x01	01	10	01	03	08	29	1A	78	0A	9B	B6	A4	53	4B	9D	24
0x02	14	4F	54	21	08	00	81	80	01	01	01	01	01	01	01	01
0x03	01	01	01	01	01	01	9A	29	A0	D0	51	84	22	30	50	98
0x04	36	00	98	FF	10	00	00	1C	00	00	00	FD	00	3A	3F	1C
0x05	53	0E	00	0A	20	20	20	20	20	20	00	00	00	FC	00	31
0x06	39	4C	53	34	52	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	0A	20	20	20	20	20	20	20	20	20	20	20	20	00	E7

2) DIGITAL DATA 256Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	4E	4B	01	01	01	01
0x01	01	10	01	03	80	29	1A	78	0A	9B	B6	A4	53	4B	9D	24
0x02	14	4F	54	21	08	00	81	80	01	01	01	01	01	01	01	01
0x03	01	01	01	01	01	01	9A	29	A0	D0	51	84	22	30	50	98
0x04	36	00	98	FF	10	00	00	1C	00	00	00	FD	00	3A	3F	1C
0x05	53	0E	00	0A	20	20	20	20	20	20	00	00	00	FC	00	31
0x06	39	4C	53	34	52	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	0A	20	20	20	20	20	20	20	20	20	20	20	20	01	6D

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	02	03	1C	72	23	09	07	02	49	07	16	81	03	05	14	13
0x01	12	04	83	01	00	00	65	03	0C	00	10	00	01	1D	80	18
0x02	71	1C	16	20	58	2C	25	00	BC	F9	10	00	00	9E	01	1D
0x03	80	D0	72	1C	16	20	10	2C	25	80	BC	F9	10	00	00	9E
0x04	01	1D	00	BC	52	D0	1E	20	B8	28	55	40	BC	F9	10	00
0x05	00	1E	8C	0A	D0	90	20	40	31	20	0C	40	55	00	BC	F9
0x06	10	00	00	18	01	1D	00	72	51	D0	1E	20	6E	28	55	00
0x07	BC	F9	10	00	00	1E	00	00	00	00	00	00	00	00	00	95

a. All Data : HEXA Value
b. Changeble Data
* Serial No : Controlled/ Data : 01
** Month : Controlled/ Data :00
*** Year : Controlled
**** Check sum

4.8. HDCP SETTING

(High-Bandwidth Digital Contents Protection)

1) Connect D-sub Signal Cable to D-Sub Jack.
2) Input HDCP key with HDCP-key- in-program.
3) HDCP Key value is stored on EEPROM(AT24C64) which is E00~F20 addresses of 0xBC~0xBE page.
4) AC off/ on and on HDCP button of MSPG925 and confirm whether picture is displayed or not of using MSPG925.
5) HDCP Key value is different among the sets.

4.9. Outgoing condition Configuration

1) After all function test., press IN-STOP Key by SVC Remote control. And Make Ship Condition.
2) When pressing IN-STOP key by SVC remote control, Green and red LED are blinked alternatively. And then Automatically turn off. (Must not AC power OFF during blinking)

4.10. Internal pressure

- Confirm whether is normal or not when between power board's ac block and GND is impacted on 1.5kV(dc) or 2.2kV(dc) for one second.

4.11 Option data setting (SVC OSD setting)

(1) PAL Model (Change by Suffix)

No.	Item	Condition	Remark
Option1			
1	200PR	No	
2	ACMS	YES	
3	TEXT	FLOF	TOP / FLOF
4	CH+AU	0	0 : Except below area 1 : China, Australia
5	BOOSTER	No	
Option2			
1	SYS	No	BG/IDK/L
2	A2 ST	YES	Acting FM-ST after checking Nicam
3	I II SAVE	No	
4	HDEV	No	
5	V-CURVE	No	
6	MONO	No	
Option3			
1	KEY-TYPE	2	2 : 8 key
Option4			
1	Default Lang	3	
2	Lang	0	English Deutsch French Italiano Spanish Nederlands Svenska Norsk Dansk Suomi Portuguese Romaneste Polski Magyar Chesky Русский
3	T-Lang	0	AUSTRIA BULGARIA CROATIA CZECH DENMARK ENGLAND ESTONIA FINLAND FRANCE GERMANY GREECE HUNGARY ITALY LATVIA NETHERLANDS NORWAY POLAND PORTUGAL RUMANIA RUSSIA SERBIA SLOVAKIA SLOVENIA SPAIN SWEDEN SWITZERLAND TURKEY ARAB HEBREW Others
Option5			
1	2 HR-OFF	Yes	
2	TV-LINK-TUNER	No	
3	FACTORY MODE	Yes	
4	CHANNEL-MUTE	Yes	

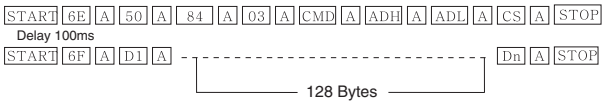
5. Adjustment Command

5.1. Adjustment Commands(LENGTH=84)

Adjustment Contents	CMD (hex)	ADR	VAL	Description
FACTORY ON	E0	00	00	Factory mode on
FACTORY OFF	E2	00	00	Factory mode off
EEPROM ALL INIT.	E4	00	00	EEPROM All clear
EEPROM Read	E7	00	00	EEPROM Read
EEPROM Write	E8	00	data	EEPROM Write by some values
COLOR SAVE (R/G/B cutoff, Drive, Contrast, Bright)	EB	00	00	Color Save
H POSITION	20	00	00 – 100	They have different range each mode, FOS Adjustment
V POSITION	30	00	00 – 100	
CLOCK	90	00	00 – 100	
PHASE	92	00	00 – 100	
R DRIVE	16	00	00 – FF	Drive adjustment
G DRIVE	18	00	00 – FF	
B DRIVE	1A	00	00 – FF	
R CUTOFF	80	00	00 – 7F	Offset adjustment
G CUTOFF	82	00	00 – 7F	
B CUTOFF	84	00	00 – 7F	
BRIGHT	10	00	00 – 3F	Bright adjustment
CONTRAST	12	00	00 - 64	Luminance adjustment
AUTO_COLOR_ ADJUST	F1	00	02	Auto COLOR Adjustment
CHANGE_COLOR _TEMP	F2	00	0,1,2,3	0: COOL 1: NORMAL 2: WARM 3: USER
FACTORY_DEFAULT	F3	00	00	Factory mode off & II_SW is “1” & Input change to “ TV”
AUTO_INPUT CHANGE	F4	00	0,1,2,4	0 : TV 1 : AV1 2 : AV2 3 : Component 4 : RGB 5 : DVI

5.2 EEPROM DATA READ

(1) Signal Table



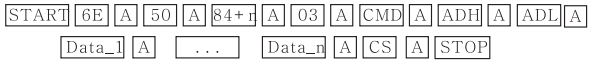
(2) Command Set

Adjustment contents	CMD(hex)	ADH(hex)	ADL(hex)	Details
EEPROM READ	E7	A0	0	0-Page 0~7F Read
			80	0-Page 80~FF Read
		A2	0	1-Page 0~7F Read
			80	1-Page 80~FF Read
		A4	0	2-Page 0~7F Read
			80	2-Page 80~FF Read
		A6	0	3-Page 0~7F Read
			80	3-Page 80~FF Read

* Purpose : To read the appointment Address of E2PROM by 128(80h)-byte

5.3. E2PROM Data Write

(1) Signal Table



LEN : 84h+Bytes
CMD : 8Eh
ADH : E²PROM Slave Address(A0,A2,A4,A6,A8), Not 00h(Reserved by BufferToEEPROM)
ADL : E²PROM Sub Address(00~FF)
Data : Write data

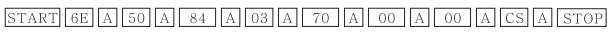
(2) Command Set

Adjustment contents	CMD(hex)	ADH(hex)	Details
EEPROM WRITE	E8	94	16-Byte Write
		84+n	n-byte Write

* Purpose
1) EDID write : 16-byte by 16-byte, 8 order (128-byte) write(TO “00 – 7F” of “EEPROM Page A4”).
2) FOS Default write : 16-mode data (HFh, HFl, VF, STD, HP, VP, Clk, ClkPh, PhFine) write.
3) Random Data write : write the appointment Address of E2PROM.

5.4. VRAM Read

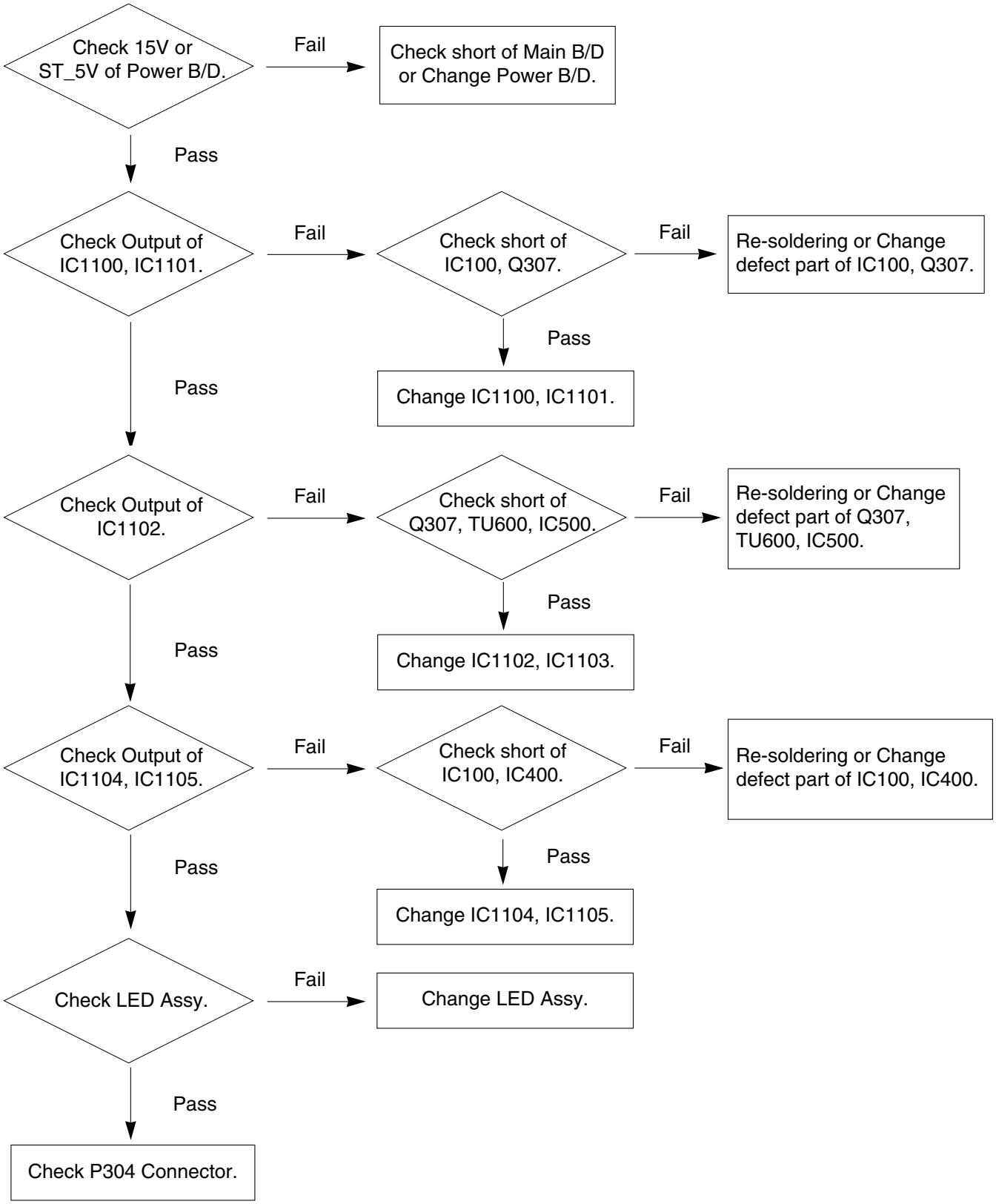
1) Send CMD(70h) to read Video RAM value from MICOM And save its value to 128-Bytes Buffer.(Common Buffer for the use of EDID)



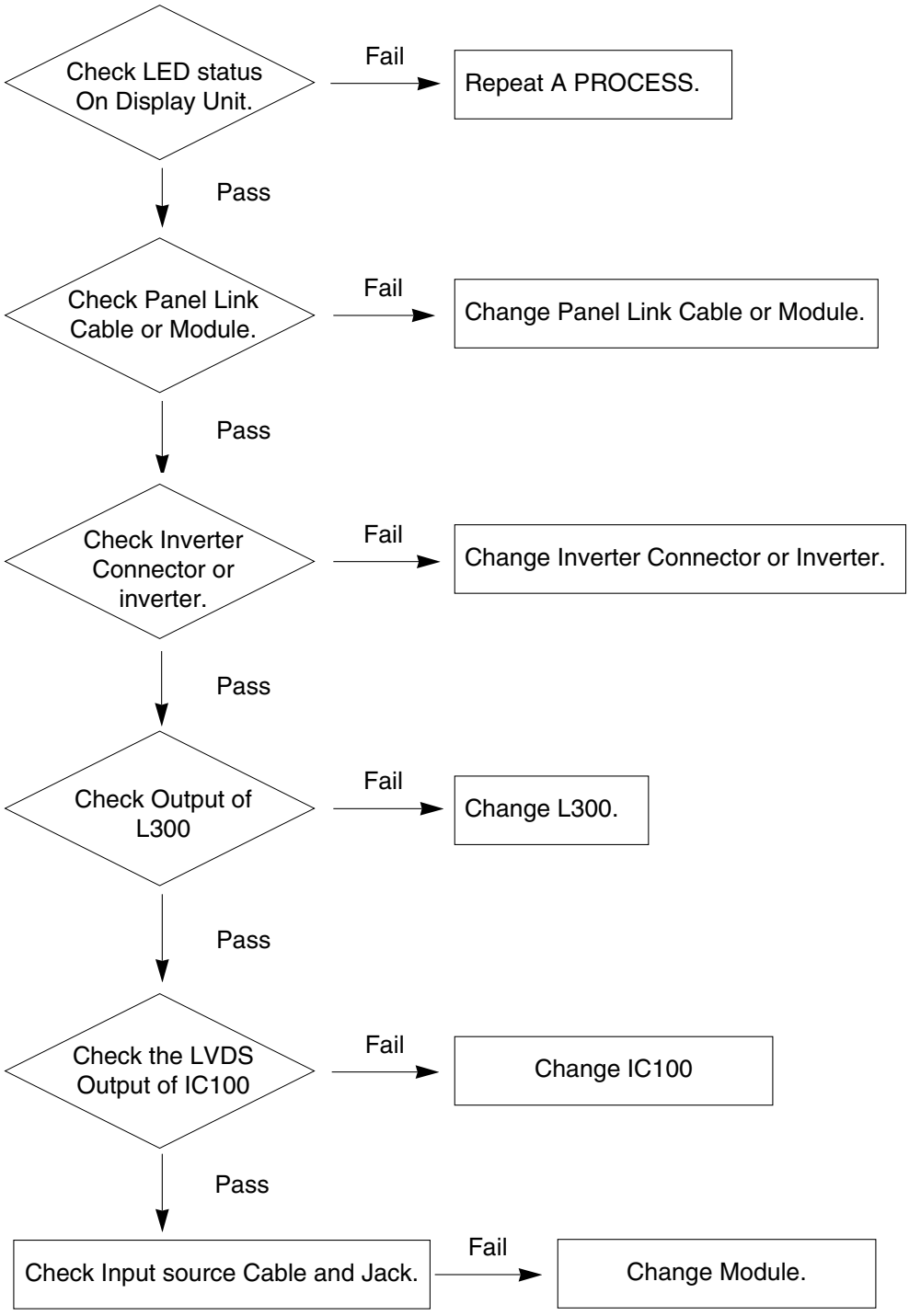
2) Delay 500ms. (Time to Wait and Read Video RAM from MICOM)
3) Be transmitted the contents of MICOM’s 128-bytes Buffer to PC. (128th Data is the CheckSum of 127-bytes data : That’s OK if the value of adding 128-bytes Data is Zero)

TROUBLE SHOOTING

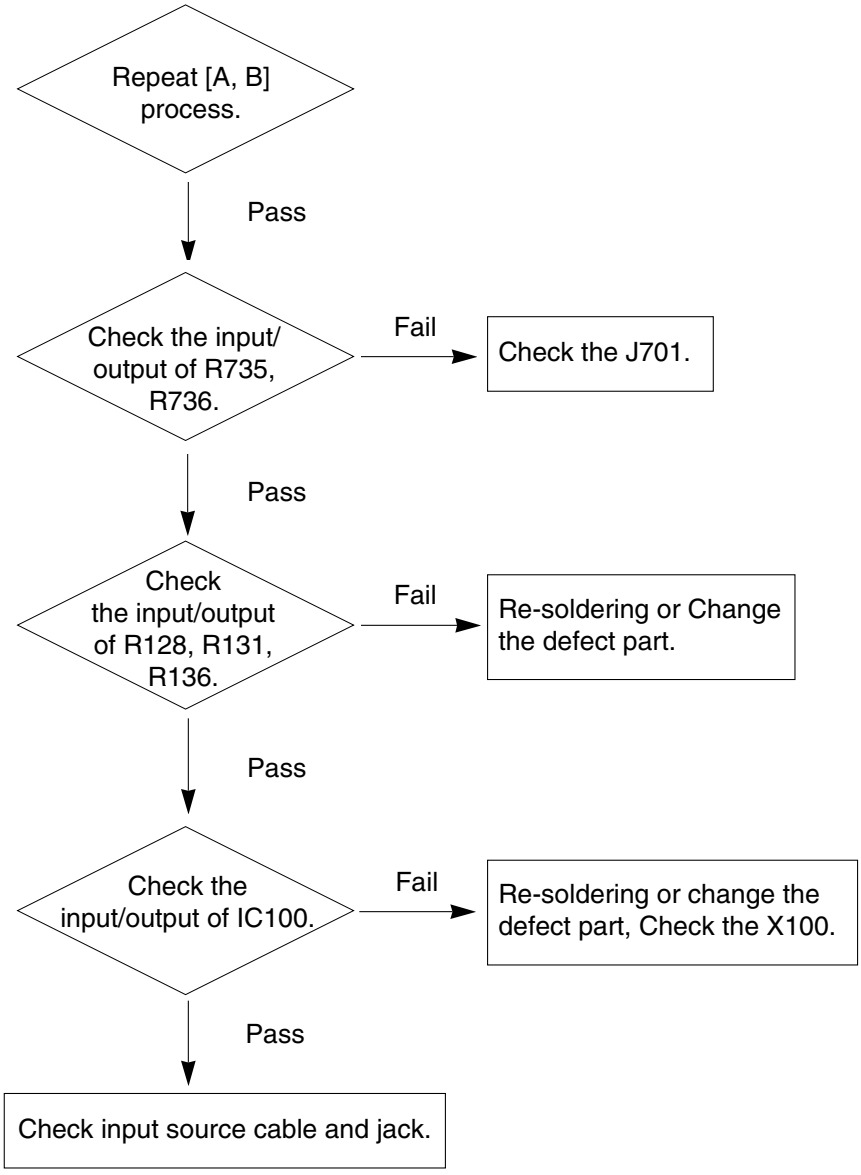
1. No Power (LED indicator off) : [A] Process



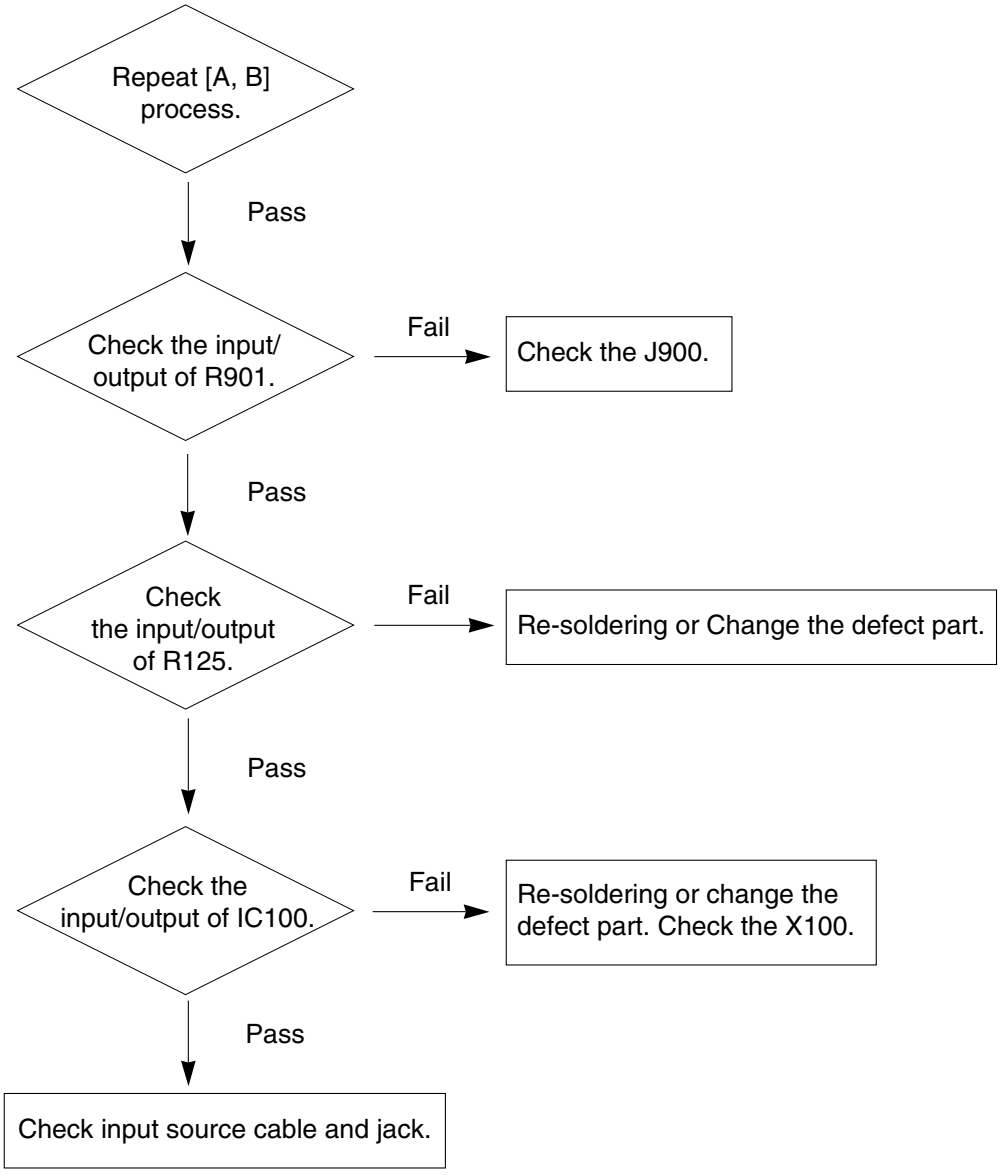
2. No RASTER : [B] Process



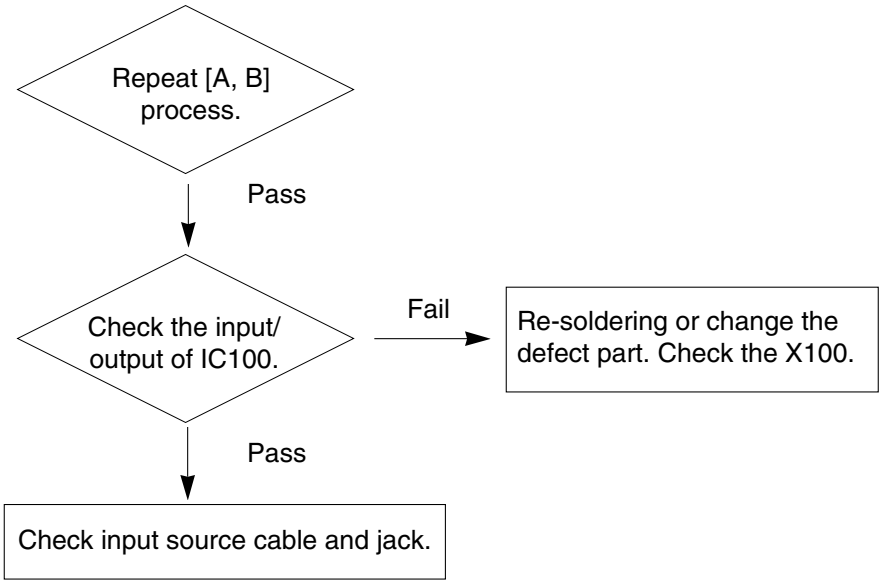
3. No RASTER on PC Signal



4. No Raster on Component Signal

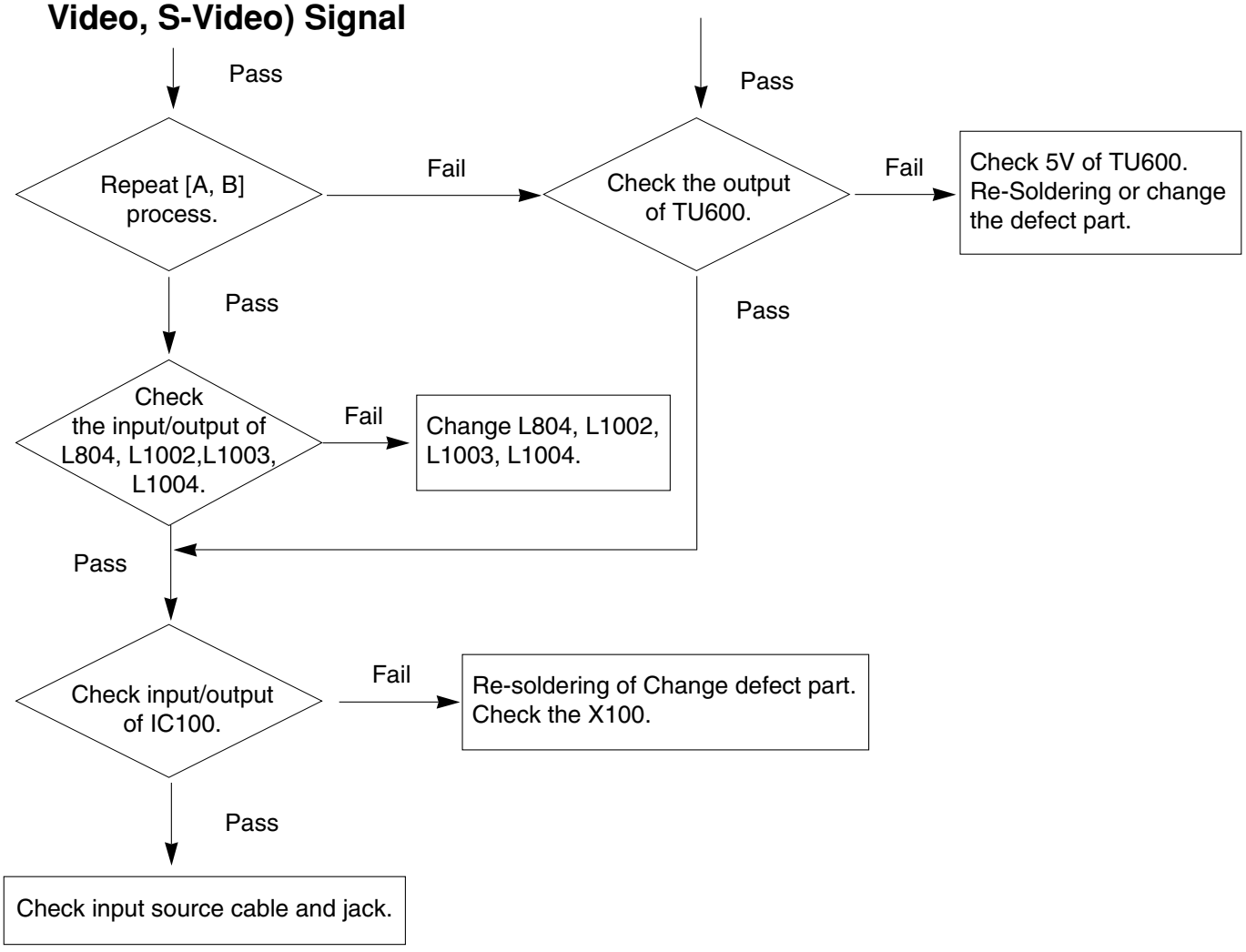


5. No Raster on HDMI Signal

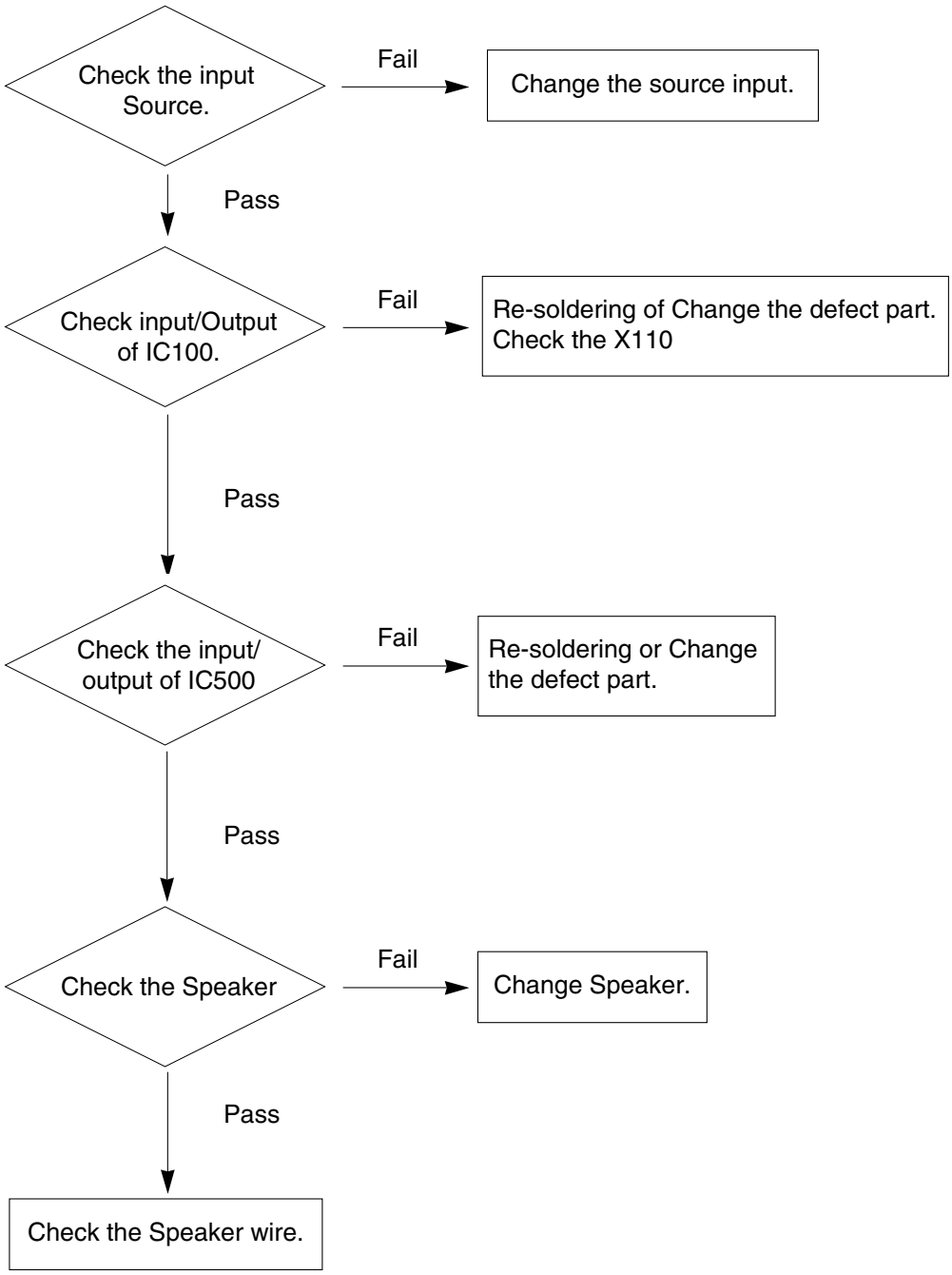


6. No Raster on AV(Scart in Video, S-Video) Signal

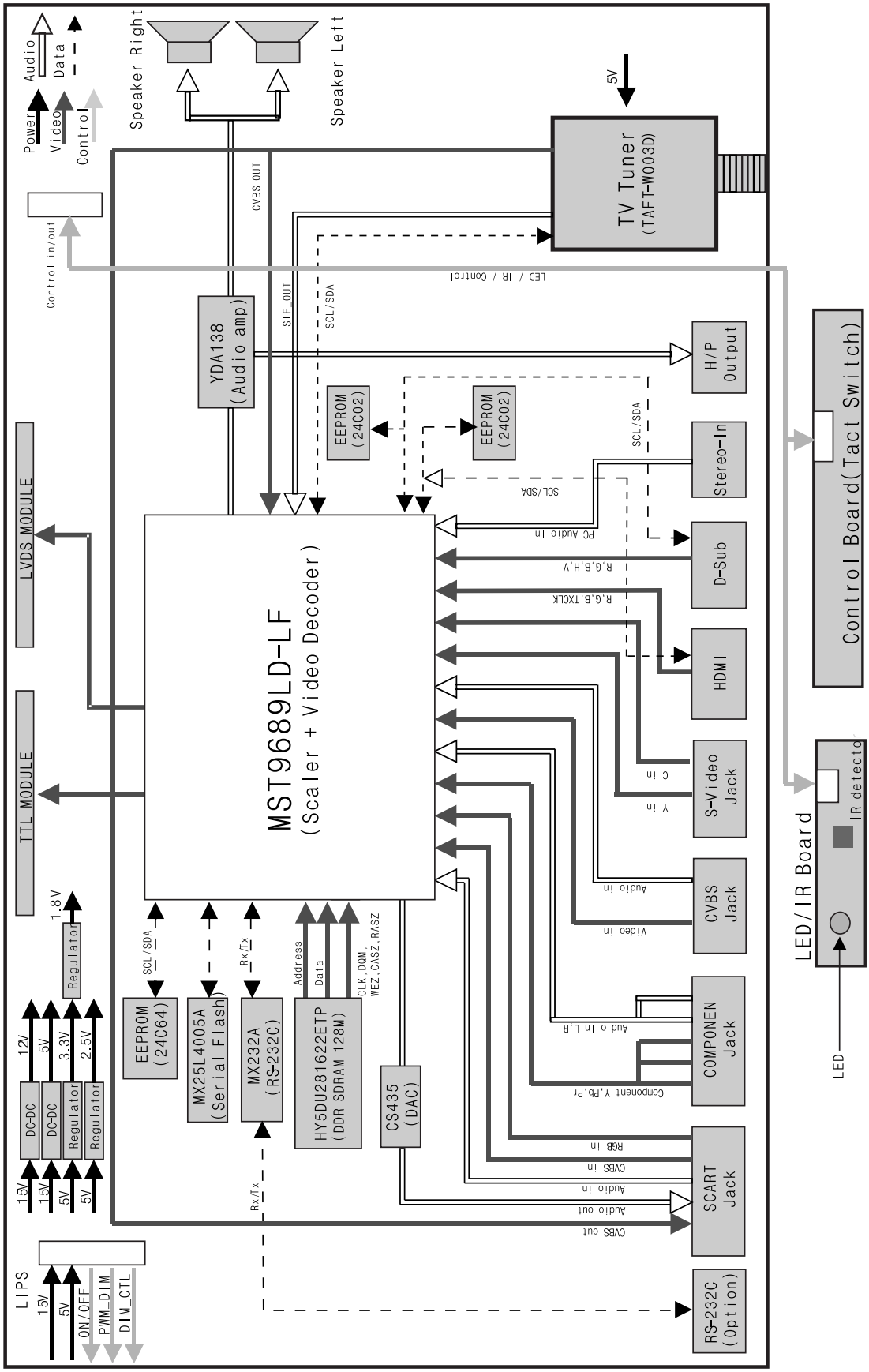
7. No Raster on TV(RF) Signal



8. No sound

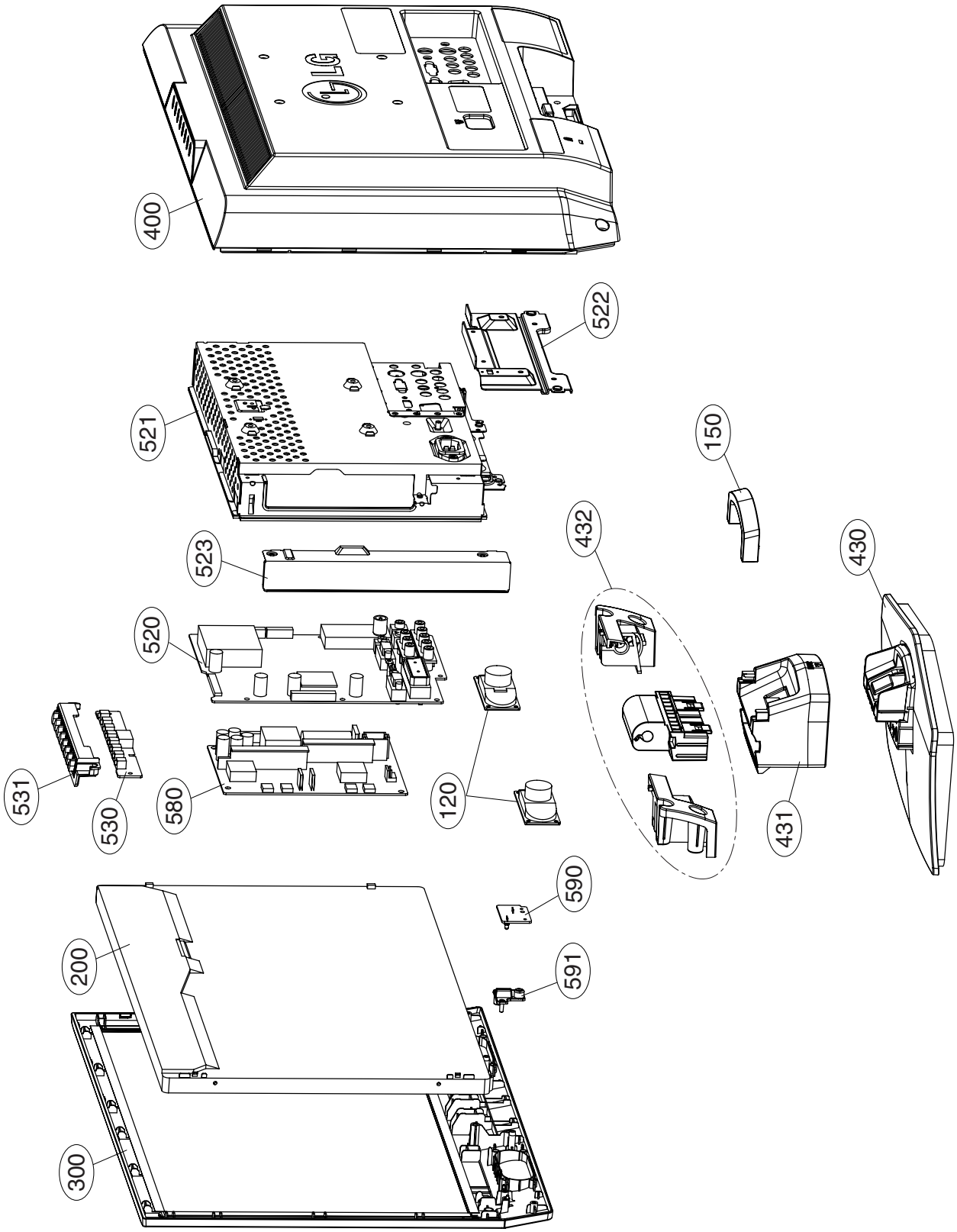

Check the input Source.
Fail
Change the source input.
Pass
Check input/Output of IC100.
Fail
Re-soldering of Change the defect part. Check the X110
Pass
Check the input/ output of IC500
Fail
Re-soldering or Change the defect part.
Pass
Check the Speaker
Fail
Change Speaker.
Pass
Check the Speaker wire.

BLOCK DIAGRAM



MEMO

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

No.	PART NO.		DESCRIPTION
120		EAB32761501	Speaker,Full Range L07030A-027 ND35 3W 16OHM 85DB 300HZ 30 X 70 X 22 SOLDER
150		MCK30233401	Cover MOLD HIPS 51SF LS1R HIPS 51SF LS1R-holder cable management
200	⚠	EAJ33945402	LCD,Module-TFT M190A1-L02 NON-ZBD DRIVER 19INCH 1440X900 300CD
300	⚠	ABJ32770402	Cabinet Assembly 19LS4R CABINET ASSY C/SKD
400	⚠	ACQ32323304	Cover Assembly,Rear BB3 19” 19LS4R BACK COVER ASSY <PAL> 8KEY
430	⚠	AAN32770002	Base Assembly ASSY 19LS4R - 19LS4R STAND BASE ASS’Y C/SKD
431	⚠	MCK36500501	Cover,Rear MOLD ABS 380 19LS4R ABS, HF-380 19LS4R STAND BODY COVER
432	⚠	AAN31022506	Base Assembly STAND M198W/M208W/19LS4R CL81 M198WA/M208WA/19LS4R HINGE
520		EBU36360101	Main Total Assembly 19LS4R BRAND LP69C
521		ADV31008035	Frame Assembly 19LS4R 19” 19LS4R METAL FRAME ASSY BB3 _ PAL [CKD]
522		MGJ35885601	Plate,Shield PRESS SECC 1T SHIELD SECC M198W HINGE FIX BRK.
523		MGJ35722502	Plate,Shield PRESS SBHG 0.6T FRAME EGI M8W LAMP WIRE SHIELD (0.3T) CKD
530		EBR36361901	PCB Assembly CONTROL T.T LP69C 19LS4R AEUGLAX 19LS4R CONTOL T.T ASS’Y
531		MEY36500601	Knob MOLD ABS HF380 SUB CONTROL KNOB LS4R 19LS4R_22LS4R
580	⚠	6871TPT318G	PCB Assembly,Power PLLM-M602B POWER T.T CMO L225W 22” Wide Scaler Dimming
590		EBR36362701	PCB Assembly LED & P/SW T.T LP69C 19LS4R AEUGLAX 19LS4R LED T.T ASS’Y
591		MFB36500901	Lens MOLD PMMA PLUS LENS 19LS4R 19LS4R_22LS4R INDICATOR

REPLACEMENT PARTS LIST

DATE: 2007. 01. 09.

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
MAIN BOARD		
CAPACITORs		
C1001	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C1002	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C1003	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C1004	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C1005	0CC561CK41A	C1608C0G1H561JT 560pF 5% 50V C
C1006	0CC561CK41A	C1608C0G1H561JT 560pF 5% 50V C
C1007	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C1008	0CC561CK41A	C1608C0G1H561JT 560pF 5% 50V C
C1009	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C101	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1010	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C1011	0CC561CK41A	C1608C0G1H561JT 560pF 5% 50V C
C1012	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C1013	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C102	0CH3224K946	C2012Y5V1H224ZT 220nF -20TO+80
C103	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C104	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C105	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C106	0CC200CK41A	C1608C0G1H200JT 20pF 5% 50V C0
C107	0CC200CK41A	C1608C0G1H200JT 20pF 5% 50V C0
C108	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C110	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C1100	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1101	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1102	0CK105DH56A	C2012X7R105KFT 1uF 10% 25V X7R
C1104	0CE477EF638	KMG5.0TP16VB470M 470uF 20% 16V
C1105	0CE477EK618	KMG5.0TP50VB470M 470uF 20% 50V
C1106	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1107	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1109	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1110	0CK474DH56A	C2012X7R1E474KT 470nF 10% 25V
C1111	0CK474DH56A	C2012X7R1E474KT 470nF 10% 25V
C1112	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C1113	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C1114	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1116	0CK272CK46A	0603B272J500CT 2.7nF 10% 50V X
C1117	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1118	0CK272CK46A	0603B272J500CT 2.7nF 10% 50V X
C1119	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C112	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1120	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1121	0CK226FF67A	EMK325BJ226MM-T 22uF 20% 16V X
C1122	0CK226FF67A	EMK325BJ226MM-T 22uF 20% 16V X
C1123	0CE227WF6DC	MVK8.0TP16VC220M 220uF 20% 16V
C1124	0CE477EH618	KMG5.0TP25VB470M 470uF 20% 25V
C1125	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1126	0CE107WH6DC	MVK8.0TP25VC100M 100uF 20% 25V

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C1127	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1128	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1129	0CK105DH56A	C2012X7R105KFT 1uF 10% 25V X7R
C1130	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C1131	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C1133	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1138	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1139	0CE477EF638	KMG5.0TP16VB470M 470uF 20% 16V
C114	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C1140	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C1141	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C116	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C117	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C118	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C119	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C121	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C122	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C123	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C124	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C125	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C126	0CC560CK41A	C1608C0G1H560JT 56pF 5% 50V C0
C127	0CC560CK41A	C1608C0G1H560JT 56pF 5% 50V C0
C128	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C129	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C130	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C131	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C132	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C133	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C134	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C135	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C136	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C137	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C138	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C139	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C140	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C141	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C142	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C143	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C144	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C145	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C146	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C147	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C148	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C149	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C150	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C151	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C152	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C153	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C154	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C155	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C156	0CK473CK56A	C1608X7R1H473KT 47nF 10% 50V X
C157	0CC561CK41A	C1608C0G1H561JT 560pF 5% 50V C
C158	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C159	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C160	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C161	0CC561CK41A	C1608C0G1H561JT 560pF 5% 50V C
C162	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C163	0CK475CC94A	C1608Y5V0J475ZT 4.7uF -20TO+80
C164	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C165	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C166	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C167	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C168	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C169	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C170	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C171	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C172	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C173	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C174	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C175	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C176	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C177	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C178	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C179	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C180	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C181	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C182	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C183	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C184	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C185	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C186	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C187	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C188	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C189	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C190	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C191	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C192	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C193	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C194	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C195	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C196	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C197	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C198	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C199	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C200	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C202	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C204	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C205	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C206	0CK225DFK4A	C2012Y5V1C225MT 2.2uF 20% 16V
C207	0CK106EF56A	C3216X7R1C106KT 10uF 10% 16V X
C300	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C301	0CE227WJ6DC	MVK10TP35VC220M 220uF 20% 35V
C302	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C303	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C304	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C305	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C306	0CC470CK41A	C1608C0G1H470JT 47pF 5% 50V C0
C307	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C308	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C309	0CE226WF6DC	MVK5.0TP16VC22M 22uF 20% 16V 3
C310	0CK105DH56A	C2012X7R105KFT 1uF 10% 25V X7R
C311	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C400	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C401	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C402	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C403	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C404	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C405	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C406	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C407	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C408	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C409	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C500	0CK225DH94A	C2012Y5V225ZFT 2.2uF -20TO+80%
C501	0CE476WH6DC	MVK8.0TP25VC47M 47uF 20% 25V 8
C502	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C503	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C504	0CK474DH56A	C2012X7R1E474KT 470nF 10% 25V
C505	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C506	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C507	0CK475EF56A	C3216X7R1C475KT 4.7uF 10% 16V
C508	0CK475EF56A	C3216X7R1C475KT 4.7uF 10% 16V
C509	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C510	0CE337WH6DC	MVK10TP25VC330M 330uF 20% 25V
C511	0CK475EF56A	C3216X7R1C475KT 4.7uF 10% 16V
C512	0CK105DH56A	C2012X7R105KFT 1uF 10% 25V X7R
C513	0CE337WH6DC	MVK10TP25VC330M 330uF 20% 25V
C514	0CK475EF56A	C3216X7R1C475KT 4.7uF 10% 16V
C515	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C516	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C517	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C518	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C519	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C520	0CK105CD56A	C1608X7R1A105KT 1uF 10% 10V X7
C521	0CK474DH56A	C2012X7R1E474KT 470nF 10% 25V
C522	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C523	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C524	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C525	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C526	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C527	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C600	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C602	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C604	0CK103CK56A	0603B103K500CT 10nF 10% 50V X7
C605	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C606	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C607	0CK273CK56A	0603B273K500CT 27nF 10% 50V X7
C608	0CK273CK56A	0603B273K500CT 27nF 10% 50V X7
C700	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C701	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C702	0CK104CK56A	0603B104K500CT 100nF 10% 50V X

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C703	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C706	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C710	0CC680CK41A	C1608C0G1H680JT 68pF 5% 50V C0
C711	0CC680CK41A	C1608C0G1H680JT 68pF 5% 50V C0
C712	0CC680CK41A	C1608C0G1H680JT 68pF 5% 50V C0
C713	0CC680CK41A	C1608C0G1H680JT 68pF 5% 50V C0
C714	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C716	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C717	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C718	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C800	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C801	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C802	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C803	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C804	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C805	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C806	0CC101CK41A	C1608C0G1H101JT 100pF 5% 50V C
C807	0CE107WF6DC	MVK6.3TP16VC100M 100uF 20% 16V
C810	0CC221CK41A	C1608C0G1H221JT 220pF 5% 50V C
C812	0CC220CK41A	C1608C0G1H220JT 22pF 5% 50V C0
C813	0CC220CK41A	C1608C0G1H220JT 22pF 5% 50V C0
C814	0CC220CK41A	C1608C0G1H220JT 22pF 5% 50V C0
C815	0CC220CK41A	C1608C0G1H220JT 22pF 5% 50V C0
C816	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C817	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C818	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C819	0CE106WH6DC	MVK5.0TP25VC10M 10uF 20% 25V 2
C820	0CC331CK41A	C1608C0G1H331JT 330pF 5% 50V C
C821	0CE106WFKDC	MVK4.0TP16VC10M 10uF 20% 16V 1
C822	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C829	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3uF 20% 50V
C830	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3uF 20% 50V
C831	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C832	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3uF 20% 50V
C833	0CE335WK6D8	MVK4.0TP50VC3.3M 3.3uF 20% 50V
C834	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C835	0CK222CK51A	0603B222K500CT 2.2nF 10% 50V Y
C836	0CK222CK51A	0603B222K500CT 2.2nF 10% 50V Y
C837	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C838	0CK104CK56A	0603B104K500CT 100nF 10% 50V X
C900	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
C901	0CC102CK41A	C1608C0G1H102JT 1nF 5% 50V C0G
DIODEs		
D100	0DS181009AA	KDS181 1.2V 85V 300MA 2A 4NSEC
D1101	0DR340009AA	MBRS340 525MV 40V 4A 0SEC 0F 0
D1102	0DR340009AA	MBRS340 525MV 40V 4A 0SEC 0F 0
D500	0DS181009AA	KDS181 1.2V 85V 300MA 2A 4NSEC
D501	0DS181009AA	KDS181 1.2V 85V 300MA 2A 4NSEC
D502	0DS181009AA	KDS181 1.2V 85V 300MA 2A 4NSEC
D700	0DD184009AA	KDS184 KDS184 TP KEC - 85V - -
D701	0DD184009AA	KDS184 KDS184 TP KEC - 85V - -
D702	0DSON00138A	MMBD301LT1G 600MV 30V - - 1.5p
D704	0DS226009AA	KDS226 1.2V 85V 300MA 2A 4NSEC

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
D705	0DS226009AA	KDS226 1.2V 85V 300MA 2A 4NSEC
D706	0DS226009AA	KDS226 1.2V 85V 300MA 2A 4NSEC
ZD1000	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1005	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1006	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1007	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1008	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1009	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1010	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1011	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1013	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1014	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1015	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1016	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1017	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1018	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1019	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1020	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD1021	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD701	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD702	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD703	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD704	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD705	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD800	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD801	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD802	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD803	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD804	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD809	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD811	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD900	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD901	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD902	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD903	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD904	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD905	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD906	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ZD907	0DZ560009DA	UDZS5.6B 5.6V 5.49TO5.73V 60OH
ICs		
IC102	EAN36363801	19LS4R MICOM VERSION ASS'Y
IC100	EAN33715803	LGE9689AD-LF 300MVTO3.6V,300MV
IC101	0IPRPKE008A	KIA7442F -0.3TO7.5V 4.2V 500MW
IC103	0IMMRAL026C	AT24C64AN-10SU-2.7 64KBIT 8192
IC1100	0IPRPSG025A	LD1086D2M33 4.9TO30V 3.3V - D2
IC1101	0IPMGSG016A	LD1086D2T18TR 3.4TO30V 1.8V -
IC1102	0IMCRMZ001A	MP1583DN-Z,LF 4.75TO23V 21V 0W
IC1103	0IMCRMZ001A	MP1583DN-Z,LF 4.75TO23V 21V 0W
IC1104	0IPMG00107A	AZ1117H-2.5TR/E1 15V 2.5V - SO
IC1105	0IMCRRH001A	BA033FP-E2 4.3TO25V 3.3V 1W TO
IC1106	EAN33594801	CS4352-CZZR 8.55TO12.6 3.13TO3
IC1108	0ISS780500H	KA78M05RTM 7TO20V 5V - DPAK R/
IC400	EAN32205201	HY5DU281622FTP-5 128MBIT 8 x 1

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
IC500	EAN33643401	YDA138-EZ(D-3) 9TO13.5V 7mV 0.
IC700	0IPRP00623A	CM2021-00TR 1VTO5.5V,0VTO0V,0V
IC701	0IMMRAL014D	AT24C02BN-10SU-1.8 2KBIT 256x8
IC702	0IMMRAL014D	AT24C02BN-10SU-1.8 2KBIT 256x8
COILs & FILTERs & INDUCTORs		
L1000	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L1001	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L1002	0LC0233002A	FI-B2012-332KJT 3.3UH 10% - 50
L1003	0LC0233002A	FI-B2012-332KJT 3.3UH 10% - 50
L1004	0LC0233002A	FI-B2012-332KJT 3.3UH 10% - 50
L1005	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L1006	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L1007	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L102	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L103	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L1100	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L1101	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L1102	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L1104	61409B0002A	DBF-1030A 30uH - 2.5A 10.8X10M
L111	6200J00005E	HH-1M2012-601JT 600OHM 2X1.25X
L1111	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L1113	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L1114	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L300	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L304	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L305	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L306	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L307	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L500	61409B0002A	DBF-1030A 30uH - 2.5A 10.8X10M
L501	61409B0002A	DBF-1030A 30uH - 2.5A 10.8X10M
L503	61409B0002A	DBF-1030A 30uH - 2.5A 10.8X10M
L504	61409B0002A	DBF-1030A 30uH - 2.5A 10.8X10M
L505	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L506	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L507	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L508	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L509	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L510	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L511	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L512	6210TCE001G	HH-1M3216-501JT 500OHM 3.2X1.6
L800	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L801	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L802	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L803	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L804	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L805	6200J00005E	HH-1M2012-601JT 600OHM 2X1.25X
L806	6200J00005E	HH-1M2012-601JT 600OHM 2X1.25X
L807	6200J00005E	HH-1M2012-601JT 600OHM 2X1.25X
L900	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
L901	6210TCE001A	HB-1S2012-080JT 8OHM 2X1.25X1M
X100	6202VDT002B	SX-1 14.31818MHZ 30PPM(16PF) 1

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
TRANSISTORs		
Q1102	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q300	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q302	0TR390609FA	KST3906-MTF PNP -5V -40V -40V
Q303	0TR390609FA	KST3906-MTF PNP -5V -40V -40V
Q304	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q305	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q307	EBK32753101	SI4925BDY P-CHANNEL MOSFET -30
Q500	0TR150400BA	2SA1504S(ASY) PNP -5V -50V -50
Q501	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q600	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q601	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q602	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q603	0TR150400BA	2SA1504S(ASY) PNP -5V -50V -50
Q606	0TR150400BA	2SA1504S(ASY) PNP -5V -50V -50
Q607	0TR150400BA	2SA1504S(ASY) PNP -5V -50V -50
Q610	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
RESISTORs		
AR400	0RJ1000C687	RCA86TRJ100R 100OHM 5% 1/16W 4
AR401	0RJ1000C687	RCA86TRJ100R 100OHM 5% 1/16W 4
AR410	0RJ1000C687	RCA86TRJ100R 100OHM 5% 1/16W 4
AR411	0RJ1000C687	RCA86TRJ100R 100OHM 5% 1/16W 4
R1000	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R1001	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R1002	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R1003	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R1004	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R1005	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R1006	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10W 1
R1007	0RJ1502D677	MCR03EZPJ153 15KOHM 5% 1/10W 1
R1008	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R1009	0RJ9101D677	MCR03EZPJ912 9.1KOHM 5% 1/10W
R101	0RJ1004D477	MCR03EZPF105 1MOHM 1% 1/10W 16
R1010	0RJ9101D677	MCR03EZPJ912 9.1KOHM 5% 1/10W
R1011	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R1012	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R1013	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R1014	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R1015	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R1016	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
R1017	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
R102	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R1021	0RJ0152D677	MCR03EZPJ150 15OHM 5% 1/10W 16
R1022	0RJ0152D677	MCR03EZPJ150 15OHM 5% 1/10W 16
R103	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R104	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R105	0RJ1201D677	MCR03EZPJ122 1.2KOHM 5% 1/10W
R106	0RJ3302D677	MCR03EZPJ333 33KOHM 5% 1/10W 1
R1103	0RJ1101D677	MCR03EZPJ112 1.1KOHM 5% 1/10W
R1104	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R1105	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R1106	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R1107	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R111	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R1110	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R1111	0RJ6801D477	MCR03EZPF682 6.8KOHM 1% 1/10W
R1113	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R1114	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R1115	0RJ6801D477	MCR03EZPF682 6.8KOHM 1% 1/10W
R1116	0RJ5902C477	MCR03EZPF5902 59KOHM 1% 1/10W
R1117	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R1118	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R112	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R1123	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R1126	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R1128	0RX0332K665	RSD02F4J33R0 33OHM 5% 2W 12.0X
R1129	0RX0332K665	RSD02F4J33R0 33OHM 5% 2W 12.0X
R114	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R115	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R116	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R117	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R118	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R119	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R120	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R121	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R122	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R123	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R124	0RJ4700D677	MCR03EZPJ471 470OHM 5% 1/10W 1
R125	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R126	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R127	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R128	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R129	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R130	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R131	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R132	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R133	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R134	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R135	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R136	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R137	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R138	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R139	0RJ0472D677	MCR03EZPJ470 47OHM 5% 1/10W 16
R140	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R141	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R142	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R144	0RJ3900D677	MCR03EZPJ391 390OHM 5% 1/10W 1
R148	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R153	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R154	0RJ1202D677	MCR03EZPJ123 12KOHM 5% 1/10W 1
R155	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R156	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R157	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R158	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R159	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R162	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R163	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R165	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R166	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R167	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R168	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R173	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10W 1
R174	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10W 1
R181	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R182	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R183	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R184	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R185	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R186	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R187	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R190	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R191	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R192	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R193	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R194	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R196	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R197	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R198	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R199	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R200	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R201	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R202	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R203	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R204	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/10W
R205	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R206	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R207	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R208	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R209	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R212	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R213	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R214	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R215	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R216	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R217	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R218	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R219	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R223	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R224	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R225	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R228	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/10W
R229	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R230	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R235	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/10W
R238	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R239	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R242	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R245	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R248	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R249	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R250	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R252	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R253	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R254	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R256	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R257	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R258	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R259	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R260	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R261	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/10W
R262	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R264	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R265	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R267	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R300	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R302	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10W 1
R303	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/10W
R307	0RJ3301D677	MCR03EZPJ332 3.3KOHM 5% 1/10W
R310	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R311	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R312	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R313	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R314	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R315	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10W 1
R316	0RJ2202D677	MCR03EZPJ223 22KOHM 5% 1/10W 1
R319	0RJ1601E472	MCR10EZHF162 1.6KOHM 1% 1/8W 2
R320	0RJ1601E472	MCR10EZHF162 1.6KOHM 1% 1/8W 2
R323	0RJ0000G676	MCR18EZHJ000_ 0OHM 5% 1/4W 321
R324	0RJ2201D677	MCR03EZPJ222 2.2KOHM 5% 1/10W
R325	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R402	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R403	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R404	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R405	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R406	0RJ1500D677	MCR03EZPJ151 150OHM 5% 1/10W 1
R407	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R408	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R409	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R500	0RJ1003D677	MCR03EZPJ104 100KOHM 5% 1/10W
R501	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R502	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R504	0RJ1500D677	MCR03EZPJ151 150OHM 5% 1/10W 1
R505	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R508	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R509	0RJ1003D677	MCR03EZPJ104 100KOHM 5% 1/10W
R510	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R511	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R513	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R514	0RJ1003D677	MCR03EZPJ104 100KOHM 5% 1/10W
R515	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R516	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R518	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R600	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R601	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R602	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R603	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R604	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R605	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R606	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R607	0RJ4700D677	MCR03EZPJ471 470OHM 5% 1/10W 1
R608	0RJ3300D677	MCR03EZPJ331 330OHM 5% 1/10W 1
R609	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R610	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R611	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R622	0RJ2700D677	MCR03EZPJ271 270OHM 5% 1/10W 1
R631	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R633	0RJ1500D677	MCR03EZPJ151 150OHM 5% 1/10W 1
R636	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R637	0RJ1500D677	MCR03EZPJ151 150OHM 5% 1/10W 1
R638	0RJ2700D677	MCR03EZPJ271 270OHM 5% 1/10W 1
R700	0RJ1001D677	MCR03EZPJ102 1KOHM 5% 1/10W 16
R702	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R703	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R704	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R705	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R706	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R707	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R708	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R709	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R710	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R711	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R712	0RJ0271D677	MCR03EZPJ2R7 2.7OHM 5% 1/10W 1
R713	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R714	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R717	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R719	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R722	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R723	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R724	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R725	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R726	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R730	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R731	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R733	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R735	0RJ0682D677	MCR03EZPJ680 68OHM 5% 1/10W 16
R736	0RJ0682D677	MCR03EZPJ680 68OHM 5% 1/10W 16
R737	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R738	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R739	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R740	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R741	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R742	0RJ0332D677	MCR03EZPJ330 33OHM 5% 1/10W 16
R743	0RJ1000D677	MCR03EZPJ101 100OHM 5% 1/10W 1
R800	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R801	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R802	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R803	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R804	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R805	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R806	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R807	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R808	0RJ0682D677	MCR03EZPJ680 68OHM 5% 1/10W 16

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R809	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R811	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R813	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R814	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
R815	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
R816	0RJ5602D477	MCR03EZPF563 56KOHM 1% 1/10W 1
R817	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
R819	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R820	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R821	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R822	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R825	0RJ5600D677	MCR03EZPJ561 560OHM 5% 1/10W 1
R827	0RJ5600D677	MCR03EZPJ561 560OHM 5% 1/10W 1
R831	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R833	0RJ4701D677	MCR03EZPJ472 4.7KOHM 5% 1/10W
R836	0RJ0000D677	MCR03EZPJ000 0OHM 5% 1/10W 160
R900	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R901	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R902	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R903	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R904	0RJ0752D477	MCR03EZPF750 75OHM 1% 1/10W 16
R905	0RJ0222D677	MCR03EZPJ220 22OHM 5% 1/10W 16
R906	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R907	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R908	0RJ4703D677	MCR03EZPJ474 470KOHM 5% 1/10W
R909	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
R910	0RJ1002D677	MCR03EZPJ103 10KOHM 5% 1/10W 1
R911	0RJ1102D677	MCR03EZPJ113 11KOHM 5% 1/10W 1
CONNECTORs		
J701	6630TGA004H	KCN-DS-0-0089 D-SUB 15P 2.29MM
P1101	6602T20008K	SMW200-11P 11P 2.00MM 1R STRAI
P300	6630V90219A	SMW200-28C 28P 2.0MM 2R STRAIG
P304	6602T20009D	SMAW200-05P 5P 2.00MM 1R ANGLE
P306	6602T20009B	SMAW200-03P 3P 2.00MM 1R ANGLE
P500	6602T20009C	SMAW200-04P 4P 2.00MM 1R ANGLE
JACKs		
J1000	6612F00099A	PEJ024-01 1P 4P STRAIGHT TR 3.
J1001	6612J10003K	PPJ148-07 14.0MM 1RX3C STRAIGH
J1002	6612F00024C	PSJ014-01 SOCKET 4P ANGLE DIP
J1003	6612F00099A	PEJ024-01 1P 4P STRAIGHT TR 3.
J700	6612B00015B	DC1R019WDH SOCKET 21P STRAIGHT
J900	6612J10031B	PPJ209-01 14.0MM 1RX3C ANGLE B
P800	6612M00010A	PSC003-01 21P 21P/1C 3.81MM ST
OTHERs		
TU600	EBL35311201	TAFT-W003D PAL-B/G+I+D/K SECAM

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		CONTROL BOARD
C4000	0CN1040K949	CH UP050 F104Z-B-B Z 100nF -20
C4001	0CN1040K949	CH UP050 F104Z-B-B Z 100nF -20
P4000	6602T20009B	SMAW200-03P 3P 2.00MM 1R ANGLE
R4000	0RN6801F409	RN-96T1F6K80 6.8KOHM 1% 1/6W 3
R4001	0RN2201F409	RN-96T1F2K20 2.2KOHM 1% 1/6W 3
R4002	0RN1001F409	RN-96T1F1K00 1KOHM 1% 1/6W 3.2
R4003	0RN6801F409	RN-96T1F6K80 6.8KOHM 1% 1/6W 3
R4004	0RN2201F409	RN-96T1F2K20 2.2KOHM 1% 1/6W 3
R4005	0RN1001F409	RN-96T1F1K00 1KOHM 1% 1/6W 3.2
SW4000	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4001	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4002	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4003	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4004	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4005	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4006	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
SW4007	140-058B	EVQPB205K 1C1P 15VDC 0.02A VER
ZD4000	0DZ560009CF	MTZJ5.6B 5.6V 5.45TO5.73V 40OH
ZD4001	0DZ560009CF	MTZJ5.6B 5.6V 5.45TO5.73V 40OH
	6631900022P	SMH200-3P SMH200-3P 400mM 2.00
		LED BOARD
C5000	0CH5101K416	C2012C0G1H101JT 100pF 5% 50V C
C5001	0CH5101K416	C2012C0G1H101JT 100pF 5% 50V C
C5002	0CH5470K416	0805N470J500LT 47pF 5% 50V C0G
C5003	0CH3104K566	0805B104K500CT 100nF 10% 50V X
LED5000	0DLBE0138AA	BL-BUBGE301 ROUND 3MM SUPER RE
P5000	6602T20009D	SMAW200-05P 5P 2.00MM 1R ANGLE
PA5000	6712SCA232A	TSOP34838SO1 2.7TO5.5V 1.5MA 3
Q5001	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
Q5002	0TR387500AA	2SC3875S(ALY) NPN 5V 60V 50V 1
R5001	0RH1501D622	MCR10EZHJ152 1.5KOHM 5% 1/8W 2
R5002	0RH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W 201
R5003	0RH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W 201
R5004	0RH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W 201
R5005	0RH1001D622	MCR10EZHJ102 1KOHM 5% 1/8W 201
ZD5000	0DZRM00178A	UDZS5.1B 5.1V 4.98TO5.2V 80OHM
	6631T20033X	SMH200-05P SMH200-05P 550mM 2.
		MISCELLANEOUS
	6631900109A	Harness, DCE153B-23024 SMH200
		ACCESSORIES
A1	MFL33997808	PRINTING USER LP63A BRAND 19LS
A2	SAC30033604	15/20LS1R-ZK, 20/23LS2R-ZK CD
A3	6410TEW010A	CEE,LP-34A&H05VV-FX3C,LS-60_1.
A4	MKJ32816602	MOLD ABS 380 CL81 20,15LS1R 20

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION

IC100

LGE 9688LD-LF

HDMI

SCART

VGA

COMP

S_Video

CVBS

IF

Serial Flash

DDR SDRAM

IC103 AT24C64AN-10SU-2.7

IC102 MX25L4005AM2C-12G

<Mode Selection>

200mil

CLOSE TO IC

AUDIO

THE ⚠ SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE ⚠ SYMBOL MARK OF THE SCHEMETIC.

CONTROL

IR & LED

THE ⚠ SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE ⚠ SYMBOL MARK OF THE SCHEMETIC.

LVDS

[20" AUO]

[23" LPL AUO]

[19" WFT LPL]

FROM LIPS

GENERAL VOLTAGE

STAND_BY VOLTAGE

COMPONENT

J900 PPJ209-01

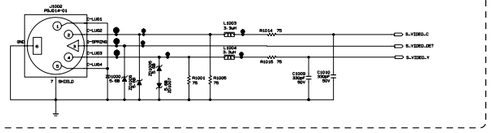
COMPONENT OUTPUT(16ohm)

TUNER

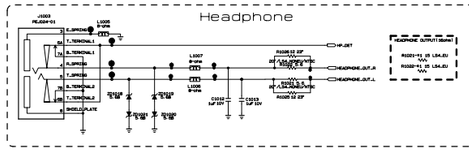
TU600 PAL TAFT-W003D

THE ⚠ SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE ⚠ SYMBOL MARK OF THE SCHEMETIC.

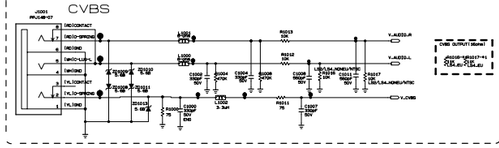
S_Video



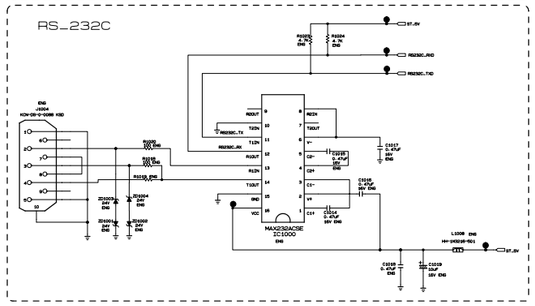
Headphone



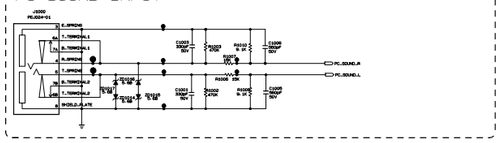
CVBS



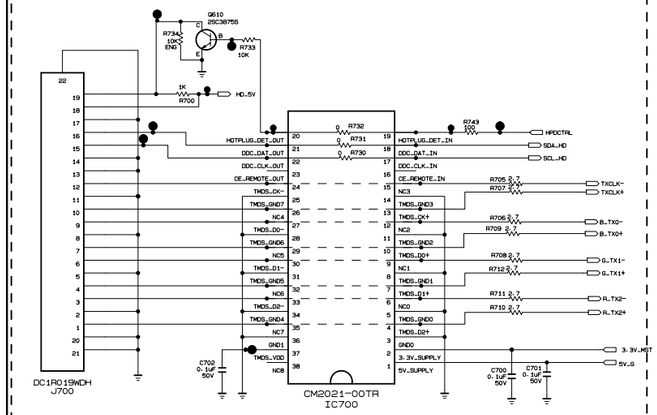
RS_232C



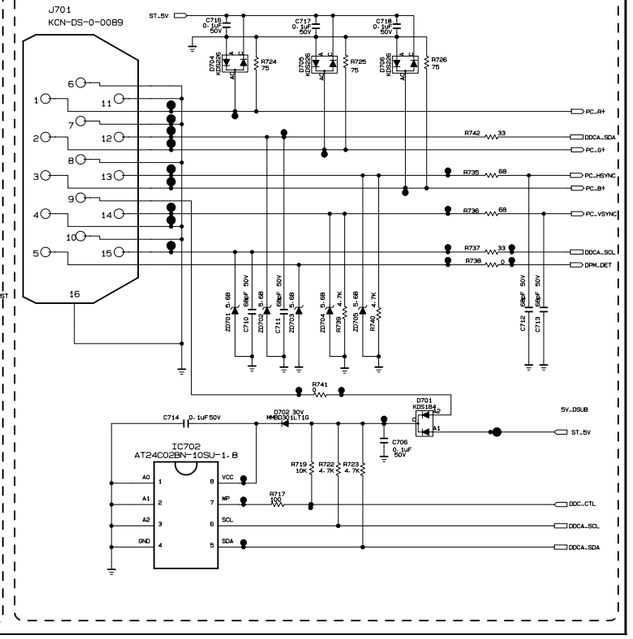
PC SOUND INPUT



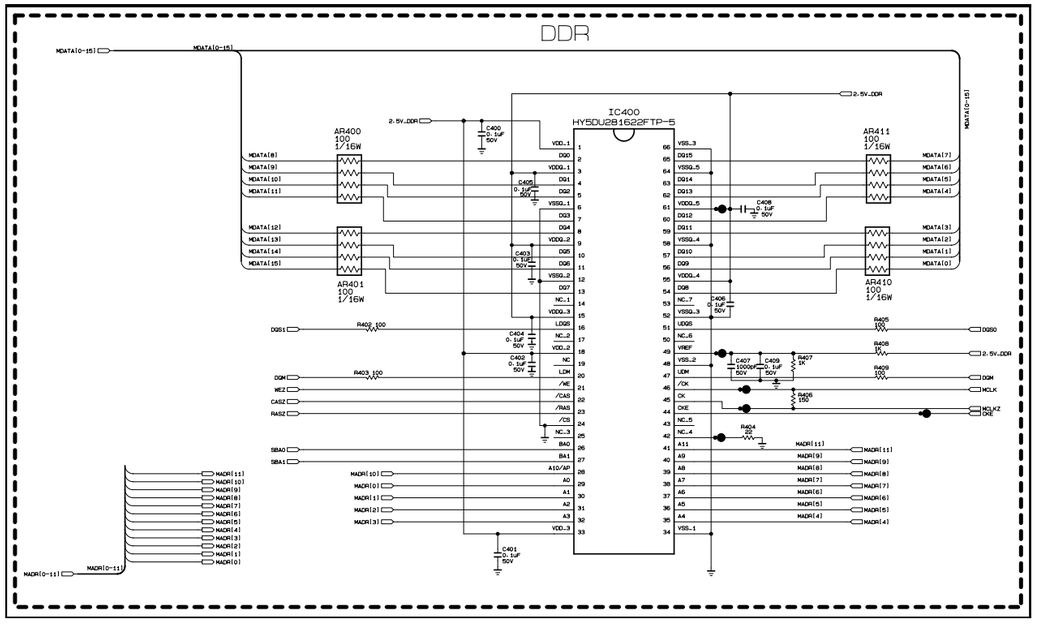
HDMI



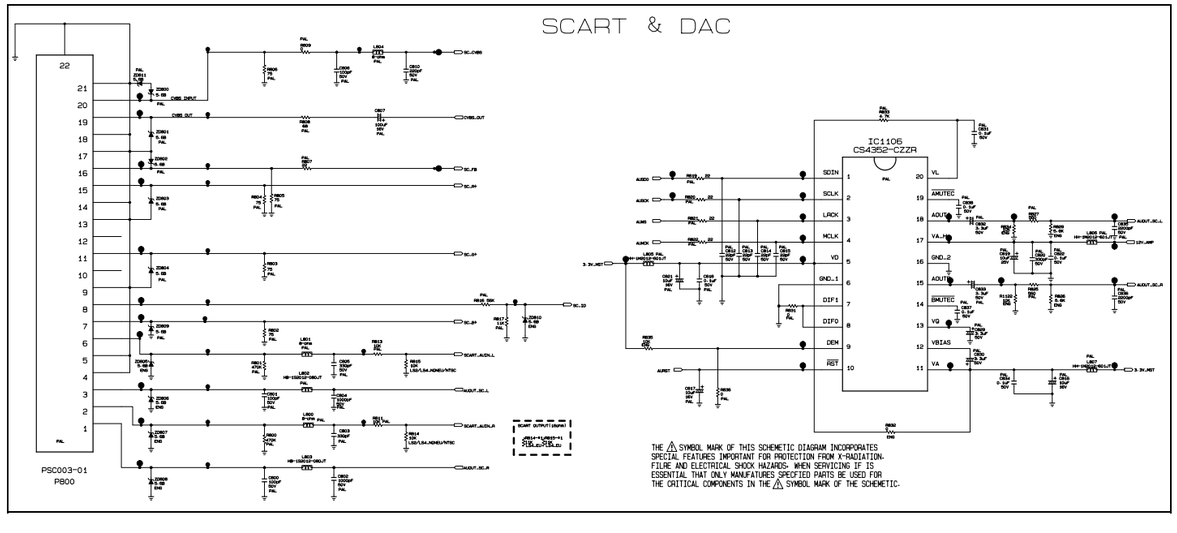
VGA



DDR



SCART & DAC



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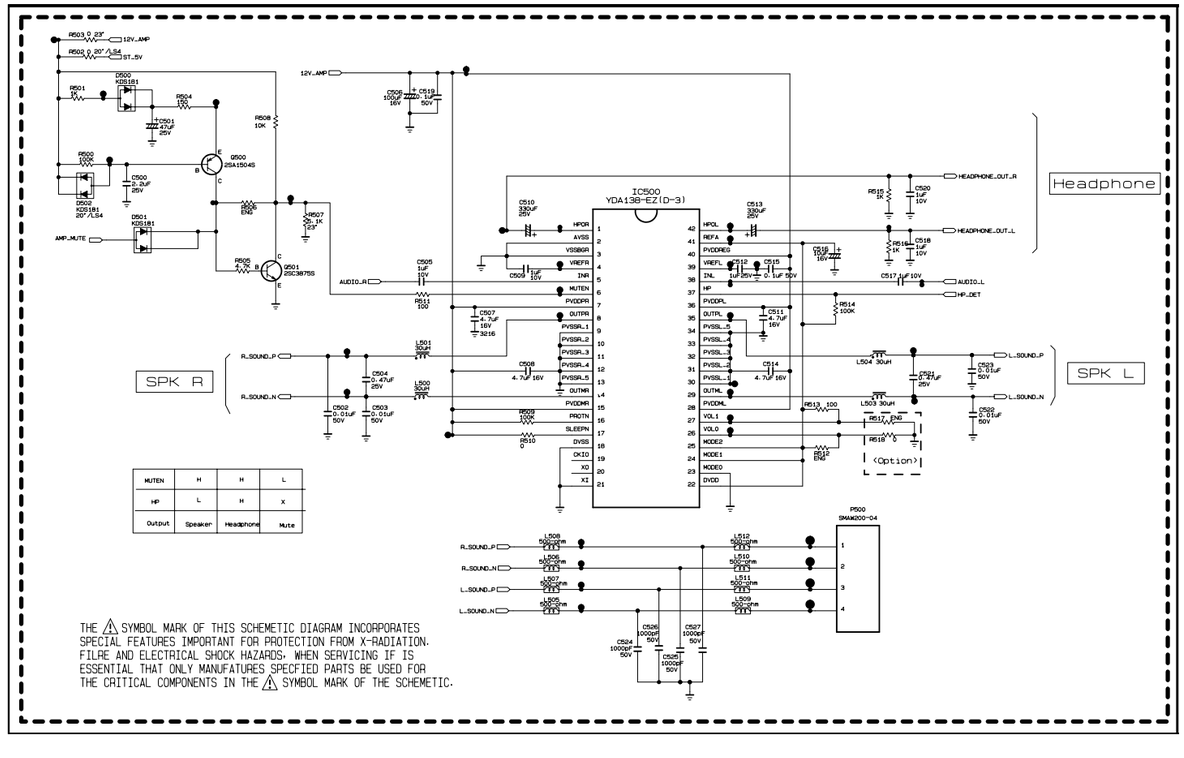

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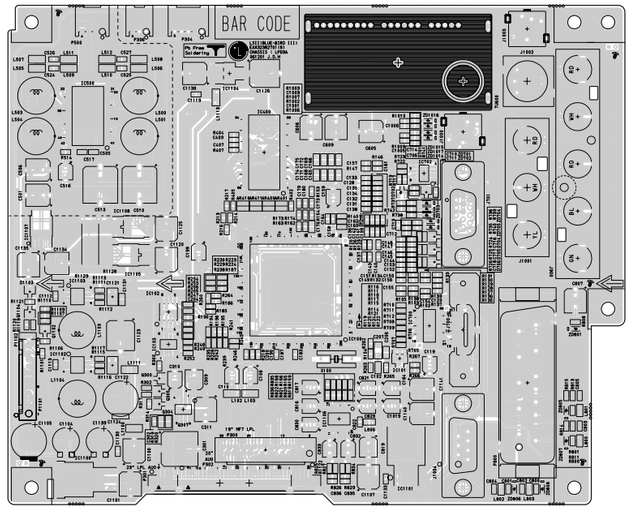
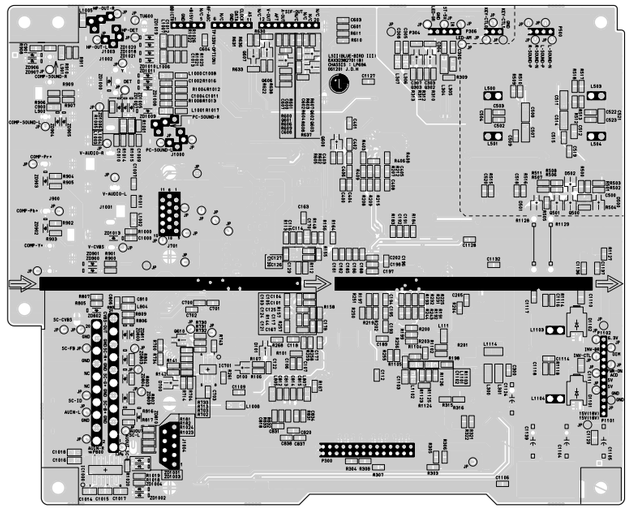
PRINTED CIRCUIT BOARD

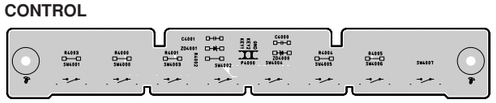
MAIN(TOP)



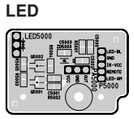
MAIN(BOTTOM)



CONTROL



LED



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