

2005



Down to 1™

HIGH SPEED TROUBLESHOOTING
V25-V27 CHASSIS



MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.
9351 Jeronimo Road, Irvine, CA 92618-1904
Copyright © 2005 Mitsubishi Digital Electronics America, Inc.
All Rights Reserved

V25 / V27 CHASSIS
Down to 1 - High Speed Troubleshooting

TABLE of CONTENTS

Safety Precautions	2
Cabinet Disassembly	3
Chassis Removal	5
Troubleshooting	6
PCB Locations and Functions	8
PCB Parts Reference	9

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have special safety characteristics are identified in this manual. **The replacement for any safety part should be identical in value and characteristics.**

SAFETY PRECAUTIONS

NOTICE: Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING:

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver's power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
2. Do not install, remove or handle the picture tubes in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

X-Radiation warning

The surface of the cathode ray tubes (CRTs) may generate X-Radiation, so take proper precautions when servicing. It is recommended that a lead apron be used for shielding while handling the CRT. Use this method if possible.

When replacing the CRTs, use only the designated replacement part since it is a critical component with regard to X-Radiation. High voltage must be set as prescribed under the section titled Electrical Adjustments.

Leakage current check

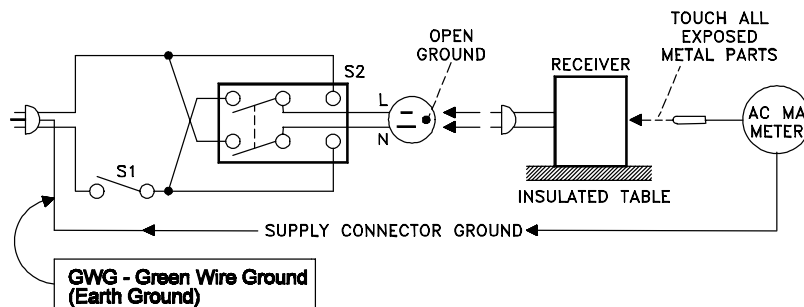
Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check

With the alternating current (AC) plug removed from the AC source, place a jumper across the two AC plug prongs. Connect one lead of an ohm meter to the AC plug and touch the other lead to each exposed metal part (i.e. antennas, handle bracket, metal cabinet, screw heads, metal overlay, control shafts, etc.), particularly any exposed metal part that has a return path to the chassis. The resistance of the exposed metal parts having a return path to the chassis **should be a minimum of 1 Meg Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

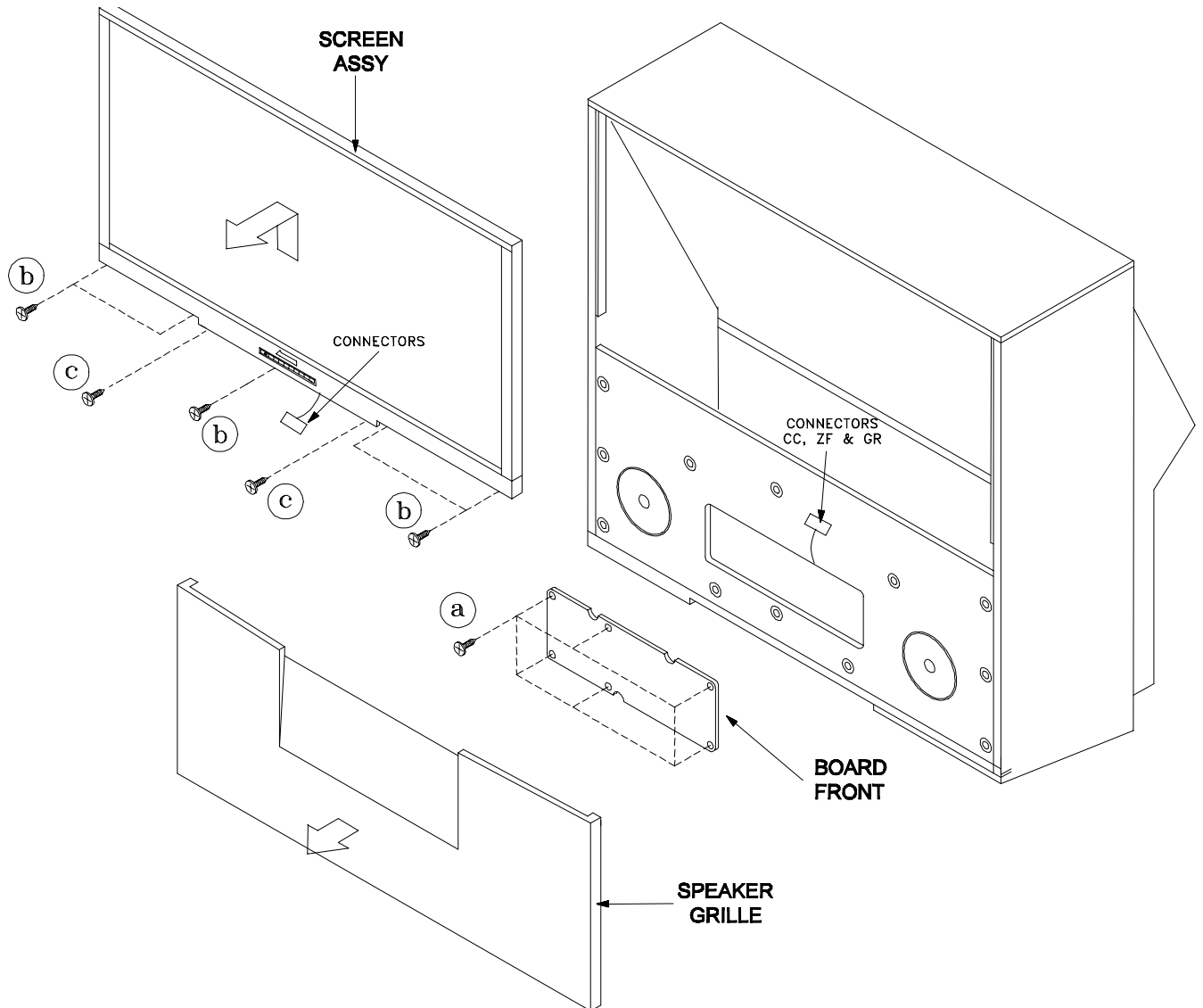
2. Hot Check ...Use the circuit shown below to perform the hot check test.

1. Keep switch S1 open and connect the receiver to the measuring circuit. Immediately after connection, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2.
2. Close switch S1, energizing the receiver. Immediately after closing switch S1, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2. Repeat the current measurements of items 1 and 2 after the receiver has reached thermal stabilization. **The leakage current must not exceed 0.5 milliamper (mA).**



CABINET DISASSEMBLY (FRONT VIEW)

Typical Procedure - Disassembly will vary by model.
For exact procedures by model, refer to the Service Manual.

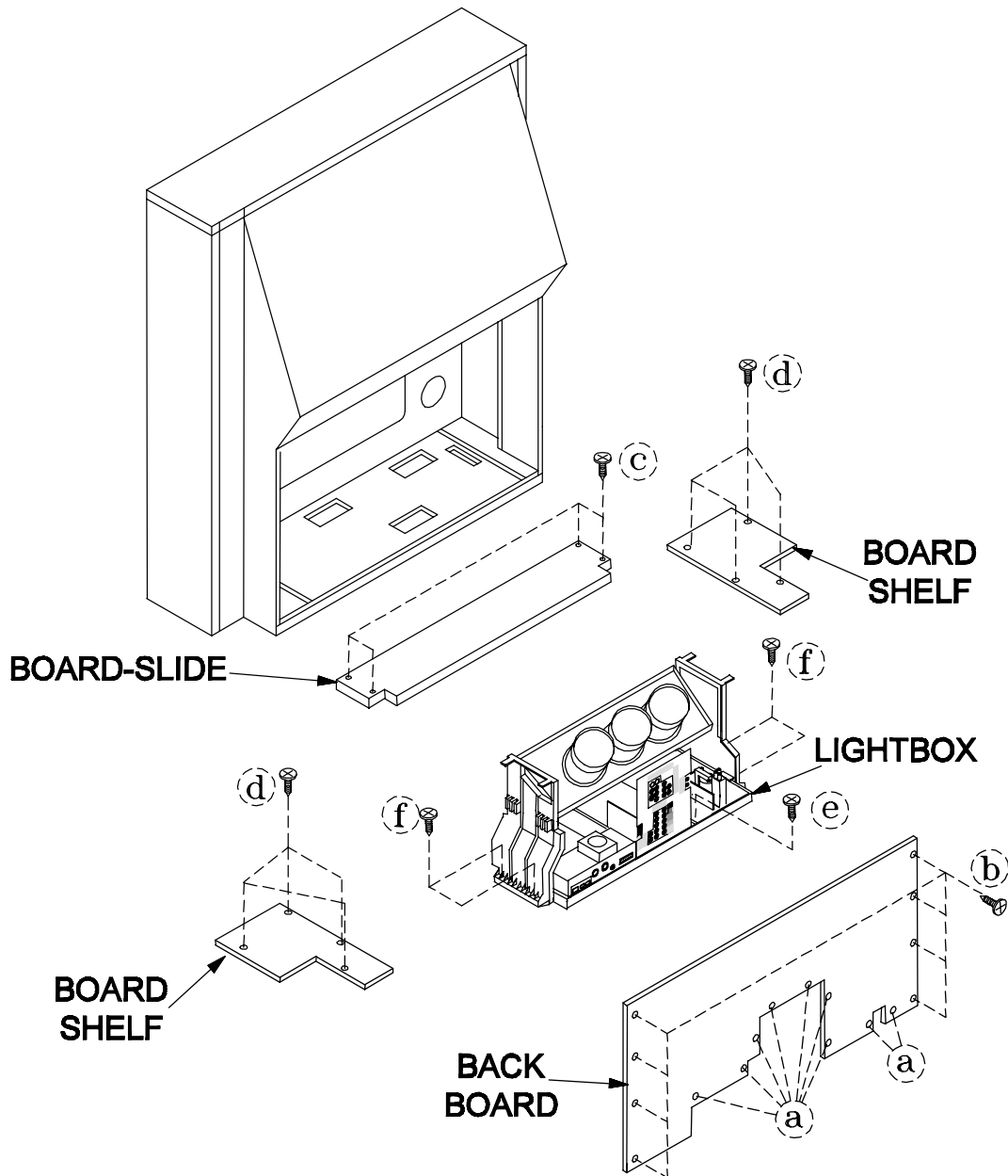


Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove the Board Front by removing screws (a).
3. Remove 4 screws (b) holding the Screen Assembly (all models).
4. Remove screws (c) from the Screen Assembly (65 & 73 inch models only)
5. Unplug the CC, ZF and GR connectors from the Control Panel.
6. Lift the Screen Assembly up and away from the cabinet.

CABINET DISASSEMBLY (REAR VIEW)

Typical Procedure - Disassembly will vary by model.
For exact procedures by model, refer to the Service Manual.



Rear Cabinet Disassembly

1. Remove the Back Board by removing screws (a), and screws (b).
2. Remove screws (c) to remove the Board Slide.
3. Remove screws (d) to remove the Board Shelves.
4. Remove screw (e) holding the chassis.
5. Remove 4 screws (f) securing the Light Box Assembly.
6. Be certain that all cables and connectors between the Light Box Assembly and external items are disconnected (e.g. speaker plugs, etc.), including the USB and 1394 connectors.
7. Slide the Light Box Assembly from the cabinet.

CABINET SEPARATION PROCEDURE

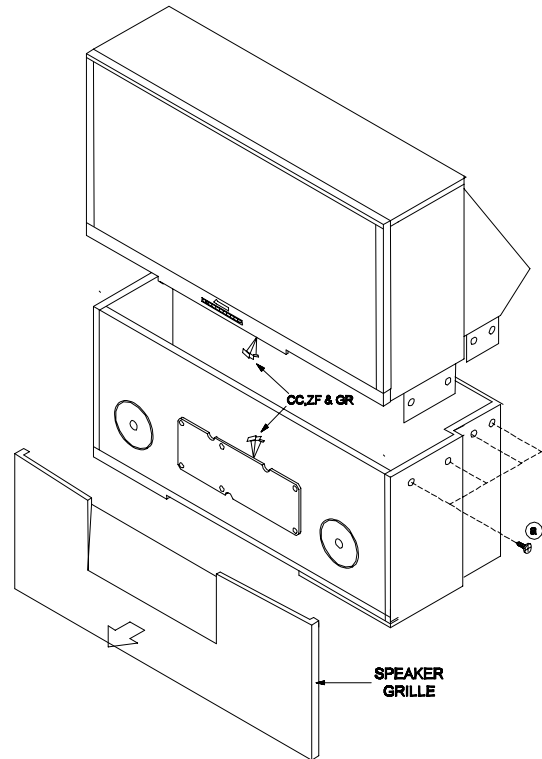
Typical Procedure - Disassembly will vary by model.

For exact procedures by model, refer to the Service Manual.

65 & 73 Inch Models

Cabinet Separation Procedure

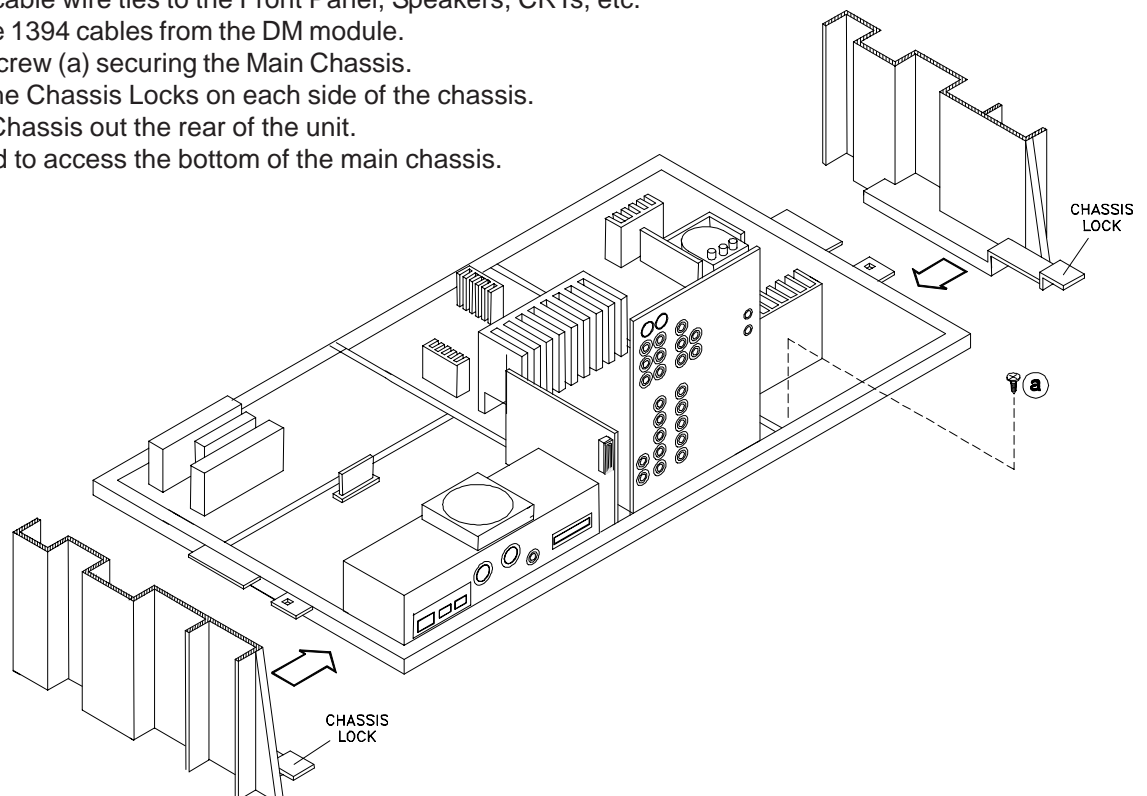
1. Pull the Speaker Grille from the cabinet.
2. Unplug the CC, ZF and GR connectors.
3. Remove 4 plastic covers and screws (a) from each side of the cabinet.
4. Carefully lift the cabinet top and place it on the floor.
5. Place the cabinet bottom in the desired location.
6. Reverse the procedure and mount the cabinet top on the cabinet bottom.



Main Chassis Removal

Chassis Removal

1. Undo the cable wire ties to the Front Panel, Speakers, CRTs, etc.
2. Unplug the 1394 cables from the DM module.
2. Remove screw (a) securing the Main Chassis.
3. Release the Chassis Locks on each side of the chassis.
4. Slide the Chassis out the rear of the unit.
5. Tilt upward to access the bottom of the main chassis.



Troubleshooting

Troubleshooting Steps:

1. If the Power LED is continuously flashing or if other TV controls seem locked, perform a **System Reset** by pressing the front panel button or by removing and re-applying AC power.
2. If the Power LED seems abnormal, use the chart below to determine the condition.

LED Indications	Conditions	Probable Cause
Off	After AC is applied	Standby Power Supply or TV μ PC not running
Fast Blink for 70 sec.	After AC is applied	Normal - DM μ PC is booting up
Fast Blink (doesn't stop)	After AC is applied	TV μ PC is running, but DM3 failed to boot up.
Slow Blink	Set is Off	Normal - Timer is set for Automatic Turn ON

3. If the set will not power on or if the Power LED lights then goes out when the Power On command is given (shut down) perform the **Self Diagnostics**.

While the set is shut down, on the front panel, press the "DEVICE" and "MENU" buttons at the same time and hold for 5 seconds. The LED will then flash denoting a two digit Code.

Note: The front panel buttons must be used, NOT those on the Remote Control.

- The number of flashes indicates the Error Code.
- The LED will flash 1, 2 or 3 times, then pause for about 1/2 second then flash 1, 2, 3 or 5 times.
- The Error Code is repeated a total of 5 times.

Use the table below to help narrow down the problem.

Error Code	Indication	Possible Cause	Circuit Location
12	No Error	Power Supply Failure	PCB-MAIN
21	X-Ray Protection	High Voltage Circuit Failure	PCB-MAIN
22	Short Circuit Protection	Power Supply Failure	PCB-MAIN
23	Deflection Loss Protection	Horizontal or Vertical Deflection Circuit Failure	PCB-MAIN (Horiz) PCB-SIGNAL (Vert)
35	DM Fan Failure	DM Fan or Connector	PCB-DM3

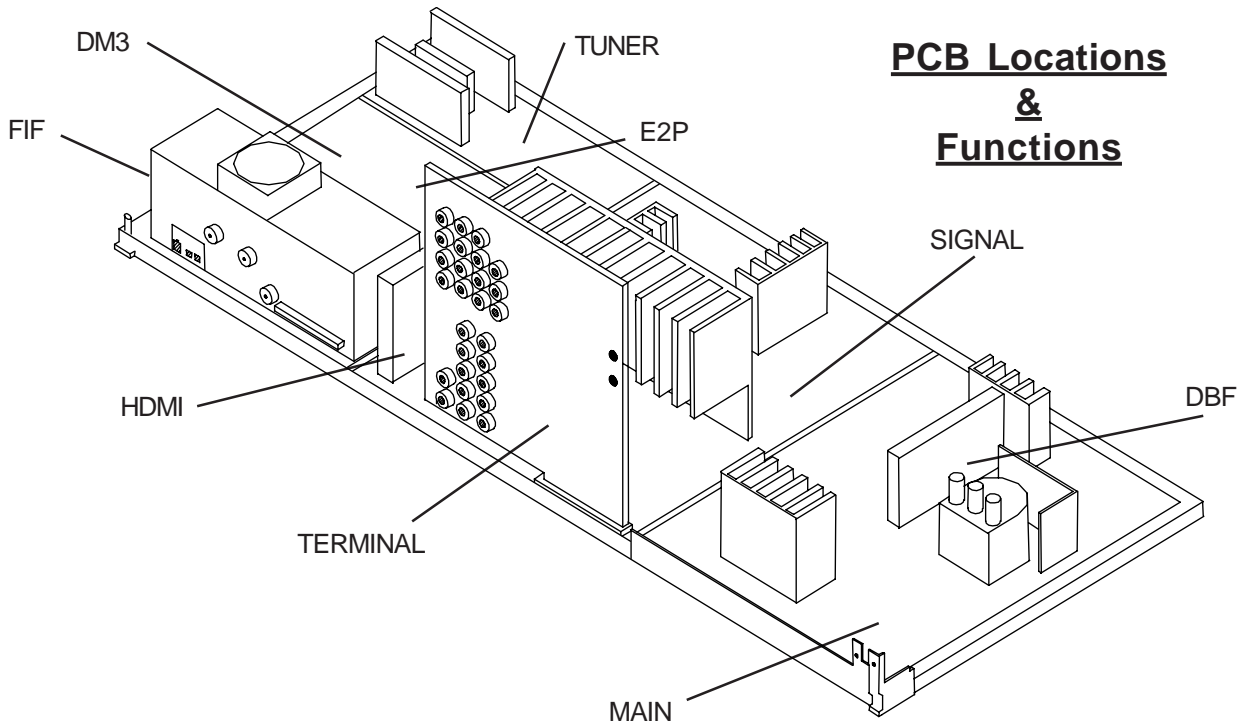
Note: The DM Fan should be running any time the set is plugged in.

4. Other Problems:
 - For picture and/or audio complaints that may be related an improper customer setting or adjustment, press the **A/V Reset** button on the front panel to restore factory default settings.
 - For other feature complaints, reset all user controlled functions by pressing <TV MENU><1-2-3>. Then at the **Reset System Defaults** screen, press <ENTER>. Note: All customer settings, including NetCommand will be reset.
 - If the cable company is requesting information to enable CableCARD™ service, press <TV MENU><9-9-9> to display the host and CableCARD identification. (CableCARD must be installed)
 - To place the remote in the NetCommand™ mode, hold the <POWER> button & press <9-3-5>.
 - To place the remote back into the standard mode, hold the <POWER> button & press <0-0-0>.
5. PCB Level Troubleshooting:
 - Use the Symptom/Cause information to aid in troubleshooting to the PCB level. While this method will not be 100% accurate, checking all items listed in the Symptom column will increase the probability of a successful diagnosis. Symptoms can also be caused by poor or mis-seated connectors between the related PCB's.
 - Additional troubleshooting can be performed by using the PCB Function information to determine the location of a circuit suspected of malfunctioning.
 - PCB locations and part numbers are also provided.
6. Adjustments - For Adjustment Procedures, refer to the Service Manual
 - Option Menu <MENU><2-4-7-0>
 - Service Adjustment Mode <MENU><2-4-5-7> To reset data, press <0>
 - Convergence Adjustment Mode <MENU><2-4-5-9> Coarse <5> Fine <4>

V25 / V27 Chassis Down to 1

V25 & V27 Symptom/Cause Information

Symptom	Most Likely	Other Possibilities
Video Problems, all Inputs & Menu bad. Audio OK	PCB-SIGNAL	PCB-CRTs, PCB-DM3
Video&Audio Problems. All signals bad. HV is OK	PCB-DM3	PCB-SIGNAL
Analog Tuning problems. External Inputs & Digital OK	PCB-SIGNAL	PCB-TERMINAL
Analog Tuning & External Inputs Problems. Digital OK	PCB-TERMINAL	PCB-SIGNAL
Digital Tuning problems. Analog OK	PCB-TUNER	PCB-DM3
1394 Problems	PCB-DM3	
Audio Problems. Speakers, Monitor A/V 1 & Audio 2 Bad	PCB-TUNER	
Audio Problems. Speakers, Monitor A/V 1 Bad. Audio 2 Good	PCB-DM3	
Audio Problems. Speakers Bad. Monitor A/V 1 & Audio 2 Good	PCB-SIGNAL	SPEAKERS
Control Problems	PCB-SIGNAL	PCB-DM3
Control Problems (Front Panel)	PCB-CONTROL	
Control Problems (Remote)	REMOTE	PCB-PREAMP
Won't power on. Power LED blinking constantly. (Boot sequence incomplete.)	PCB-DM3	Bad connection between DM3 & Signal PCBs.
Won't power on. Boot sequence repeats every 30 seconds.	PCB-E2P	
Shut Down Problems - Error Code 12	PCB-MAIN	
Shut Down Problems - Error Code 21	PCB-MAIN	
Shut Down Problems - Error Code 22	PCB-MAIN	
Shut Down Problems - Error Code 23	Q5A37, PCB-MAIN	PCB-SIGNAL
Dead Set - Error Code 35	FAN	Bad connection between the Fan and DM3
Dead Set	PCB-MAIN	
Convergence/Geometry Problems	PCB-SIGNAL	

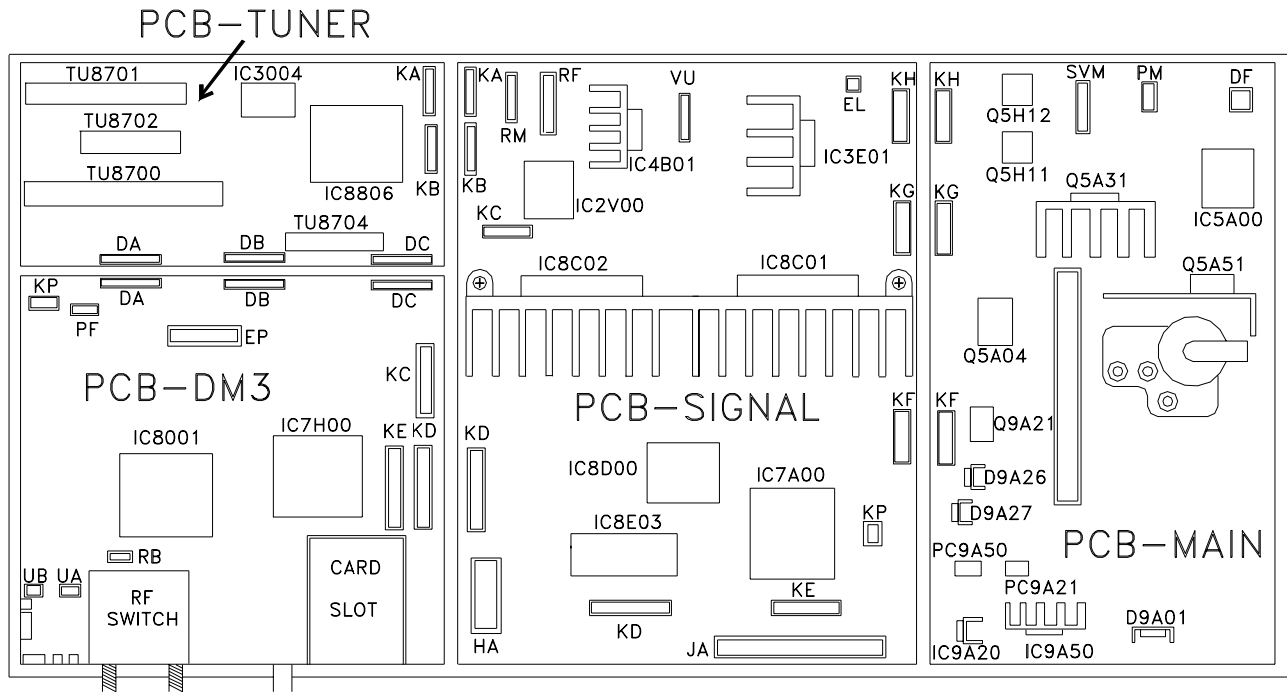


PCB Locations
&
Functions

PCB-DM3		PCB-Terminal	PCB-Signal
NetCommand	PIP-POP	A/V Inputs	Control uPC
IEEE1394	Picture Format	A/V Selection	VCJ
Card Viewer	3:2 Pull Down	3D-Y/C	Convergence
OSD-Menus	Line Double	NTSC Video	Audio Amp
Digital uPC Control	480i to 480p	Decoders	Vertical Defl.
MPEG Decoder	Audio D/A Conv.	Sys 5 - Learning	

PCB-Tuner	PCB-Main	PCB-DBF	PCB-HDMI
Tuners: Main, Sub & OOB	Horizontal Defl.	Dynamic Beam Forming (Corner Focus)	DVI Decoder
Digital Demodulator	High Voltage		
Audio D/A Converter	Power Supplies		
Audio Processor	SVM		
<i>PCB Functions</i>			

PCB, Main Component & Connector Locations (Top View)



V25 / V27 PCB PART NUMBERS

	MAIN	SIGNAL	TERMINAL	DM3	TUNER	DBF
WS-48515	930B918001	930B919001-48	930B920001	934C108001	934C110001	935D767001
WS-55515	930B918001	930B919001-55	930B920001	934C108001	934C110001	935D767001
WS-55615	930B918002	930B919002-55	930B920001	934C108003	934C110001	935D767001
WS-55815	930B918002	930B919006	930B920002	934C108002	934C110001	935D767001
WS-55517	930B918002	930B919002-55	930B920001	934C108003	934C110005	935D767001
WS-65515	930B918002	930B919002-65	930B920001	934C108001	934C110001	935D767001
WS-65615	930B918002	930B919002-65	930B920001	934C108003	934C110001	935D767001
WS-65815	930B918003	930B919007	930B920002	934C108002	934C110001	935D767001
WS-65517	930B918002	930B919002-65	930B920001	934C108003	934C110005	935D767001
WS-73615	930B918003	930B919003	930B920001	934C108003	934C110001	935D767001
WS-73517	930B918003	930B919003	930B920001	934C108003	934C110005	935D767001

	CRTs	HDMI	E2P	PREAMP	FRONT	CONTROL
WS-48515	934C106001	934C107001	934C109001-48	935D762001	935D763001	935D764001
WS-55515	934C106001	934C107001	934C109001-55	935D762001	935D763001	935D764001
WS-55615	934C106001	934C107001	934C109001-55	935D762001	935D763001	935D772001
WS-55815	934C106001	934C107001	934C109001-55	935D762001	935D763002	935D764001
WS-55517	934C106001	934C107001	934C109001-55	935D762001	935D763001	935D772001
WS-65515	934C106001	934C107001	934C109001-65	935D762001	935D763001	935D764001
WS-65615	934C106001	934C107001	934C109001-65	935D762001	935D763001	935D772001
WS-65815	934C106001	934C107001	934C109001-65	935D762001	935D763002	935D764001
WS-65517	934C106001	934C107001	934C109001-65	935D762001	935D763001	935D772001
WS-73615	934C106001	934C107001	934C109001-73	935D762001	935D763001	935D772001
WS-73517	934C106001	934C107001	934C109001-73	935D762001	935D763001	935D772001

