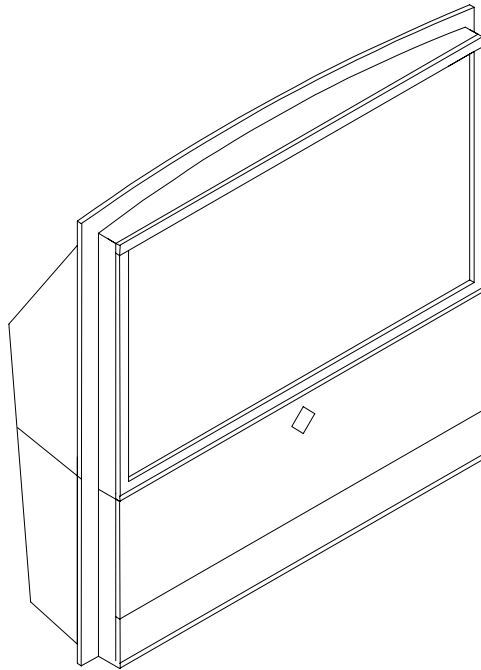




2004

Down to 1™

HIGH SPEED TROUBLESHOOTING
V23L CHASSIS



V23L Chassis
WL-82913

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.
9351 Jeronimo Road, Irvine, CA 92618-1904
Copyright © 2004 Mitsubishi Digital Electronics America, Inc.
All Rights Reserved

Down To 1 - High Speed Troubleshooting

CONTENTS

INTRODUCTION	2
SAFETY PRECAUTIONS	3
V23L - PWB PART NUMBERS, FUNCTIONS AND LOCATIONS	4
TROUBLESHOOTING CHARTS	
V23L Audio	5
V23L Video/Color	6
V23L Front Panel Indicators	7
V23L Shut Down / Self Diagnostics	8

INTRODUCTION

DOWN to 1™ Goal: Isolate the faulty component 9 out of 10 times.

Required tools: Signal Generator such as Sencore VP300 or VP301

DOWN to 1™ High Speed Troubleshooting

The troubleshooting of any PTV chassis involves one of two methods. The first involves an exhaustive checking of all suspect DC and AC voltages, waveforms, and the like. This is all possible given the necessary time and equipment. The second occurs most frequently in field service, where time is often insufficient and equipment unavailable or impractical. It is then that all of a technician's practical experience must be brought to bear in order to make an educated guess as to where the product failure or difficulty may lie.

This second method is the focus of this publication and the ***DOWN to 1™*** discipline.

Color, Pattern and Perception

Observation is key to an overall evaluation strategy. The details gathered from a precise observation can go a long way toward arriving at a repair solution in a timely and efficient manner. With this understanding, MDEA has brought the combined technical expertise of its years to bear in creation of the ***DOWN to 1™*** method. For simplicity and easy memorization, color, pattern and perception are employed as the primary tools.

Color

- Each component has its corresponding unique color.

Pattern

- For each troubleshooting case, the component to replace is identified by an oval color pad at the terminating end of its path.

Perception

- A perceived problem provides deductive reasoning clues to its solution.



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. 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.

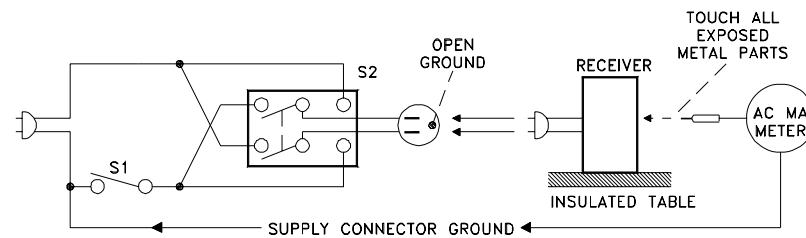
Leakage current check

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

Cold Check - With the AC plug removed, 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 1Mega Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

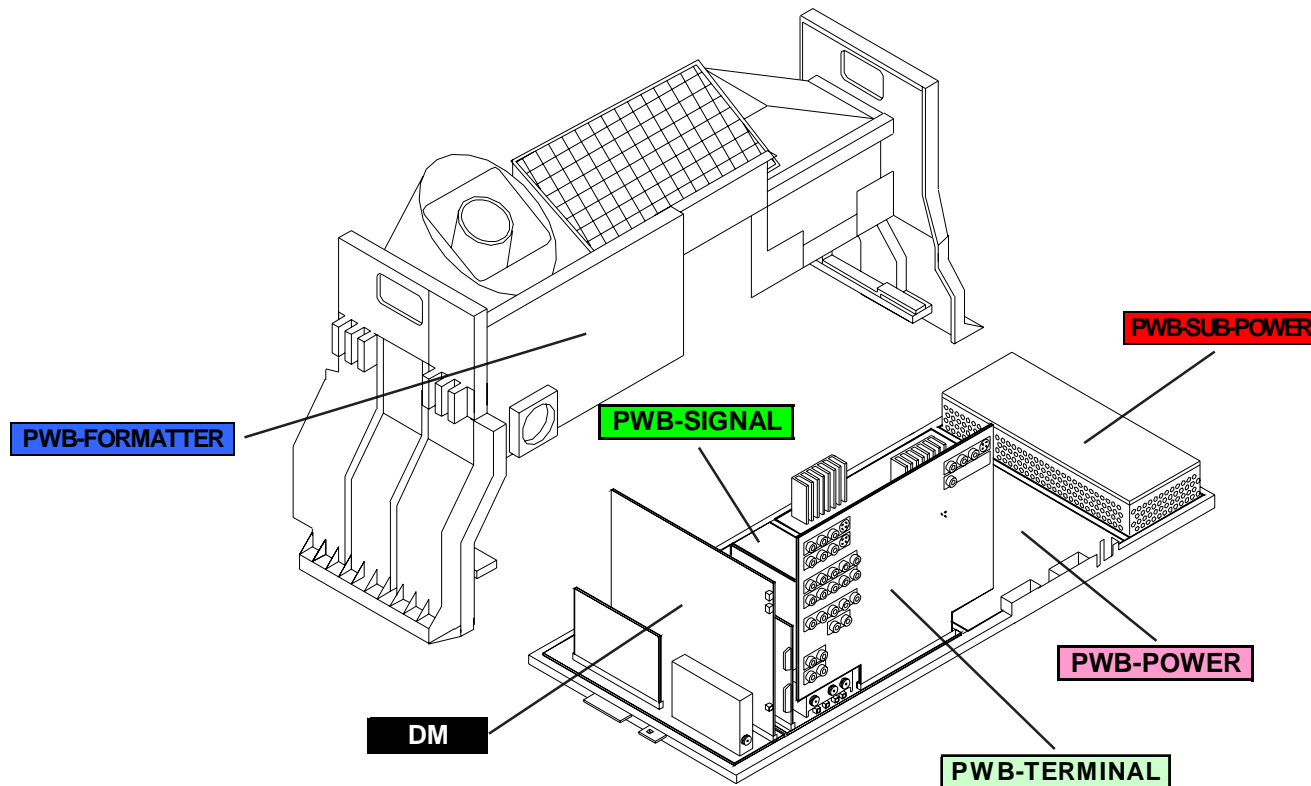
Hot Check... Use the circuit shown below to perform the hot check test.

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 milliampere (mA).**

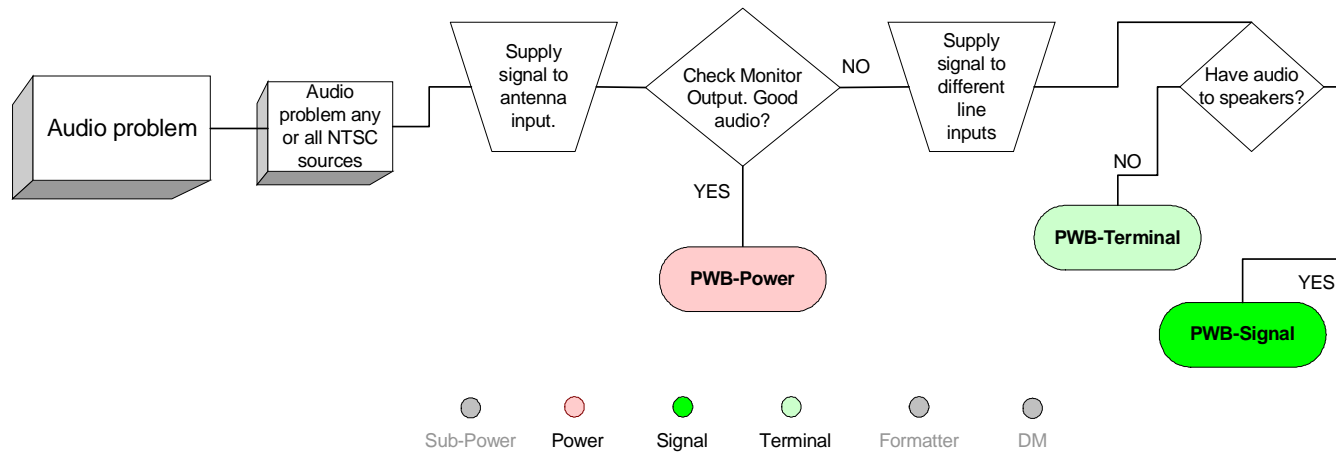


V23L Chassis - PCB Part Numbers, Functions and Locations

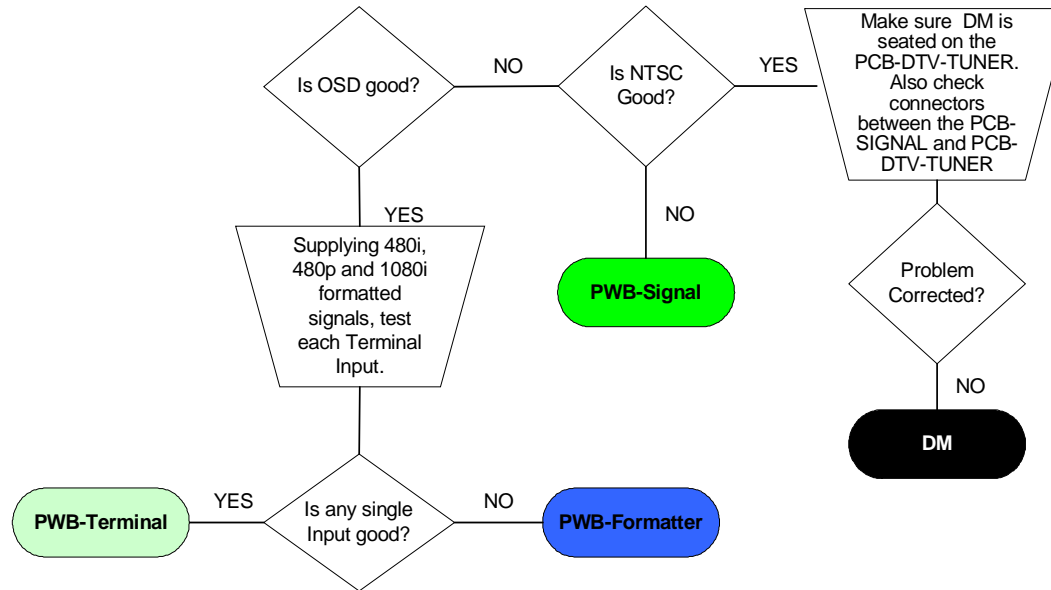
PWB-SUB-POWER	PWB-POWER	PWB-SIGNAL	PWB-TERMINAL	PWB-FORMATTER	DM
930B913001	930B906001	930B905008	934C060008	930B908001	934C067004
Lamp Power Supply	Standby Power Supply	Control uPC	A/V Inputs	PIP-POP	NetCommand
	Main Power Supply	NTSC Tuning	A/V Selection	Picture Format	IEEE1394
			3D-Y/C	Scalar to 1080P	Card Viewer
			NTSC Video Decoders		OSD-Menus
					Digital uPC Control



V23L Chassis - Audio Problem



V23 Chassis - Video/Color Problem



V23L Chassis - Front Panel LED Indicators

FRONT PANEL LED INDICATORS

LED INDICATOR			CONDITION	CORRECTIVE ACTION
POWER/TIMER	LAMP	STATUS		
Off	Off	Off	Power Off	Normal
Green	Off	Off	Power ON	Normal
Slow Blinking Green	Off	Off	Timer is set to turn TV On	Normal
Fast Blinking Green for 1 Minute	Off	Off	Starting Up After AC Loss or Power On in Low Energy Mode	Normal - DM Boot Sequence
Off	Off	Blinking Yellow	Lamp Cooling after Power Off	Normal - Wait For Cooling Before Power On
Fast Blinking Green - Never Stops	Off	Off	Abnormal DM Boot Sequence	Make sure DM is properly seated on the PCB-DTV-TUNER. Also check connectors between the PCB-SIGNAL and PCB-DTV-TUNER
Off	Off	Yellow	Temperature High	Allow to cool. Clean Filter. Check Ventilation. Perform Self Diagnostics.
Off or Green	Yellow	Off	Lamp Usage > 3000 Hrs	Normal - Near Future Lamp Failure Warning
Off	Blinking Yellow	Off	Lamp Cover Open	Perform Self Diagnostics
Off	Blinking Yellow	Off	No Lamp	Perform Self Diagnostics
Off	Red	Off	Lamp Failure	Perform Self Diagnostics
Off	Off	Red	Fan Stop	Perform Self Diagnostics
Off	Off	Red	Circuit Failure	Perform Self Diagnostics

V23L Chassis - Shut-Down Problems / Self Diagnostics

SELF DIAGNOSTICS

On Front Panel, Press and Hold the "DEVICE" and "MENU" buttons for 5 Seconds

LED Blinking	Error Code	Probable Cause	Corrective Action
@ Pause @ @	12	No error detected	Check Power Supply
@ @ Pause @ @	22	Recovery from momentary Reset	Perform System Reset
@ @ @ Pause @	31	Lamp not detected	Install/Re-seat Lamp
@ @ @ Pause @ @	32	Lamp Cover open	Install/Reseat Lamp Cover
@ @ @ Pause @ @ @ @	34	Lamp abnormality	Replace Lamp
@ @ @ Pause @ @ @ @ @	35	Fan failed	Check Fans and Connections
@ @ @ Pause @ @ @ @ @ @ @ @	38	Excess Lamp Temperature	Check Fan & Sensor Connections
@ @ @ Pause @ @ @ @ @ @ @ @ @ @	39	Excess LCOS Temperature	Check Fan & Sensor Connections
@ @ @ @ Pause @	41	Short Detected	Check Power Supply
@ @ @ @ Pause @ @	42	Excess PCS Temperature	Check Fan & Sensor Connections
@ @ @ @ Pause @ @ @	43	Driver Temperature or Voltage abnormal	Check Fan & Sensor Connections