



HD Home Theater Matrix Routing System

Service Bulletin: How to Use Diagnostic Modes

To access the diagnostic modes, enter the setup menu and select DIAGNOSTIC MODES at the bottom of the menu screen.

Address Diagnostic for Models 1172, 1176

This diagnostic can be used to determine whether all of your connected AVatrix expanders are set to the correct address. Enter this diagnostic mode and then turn the address dial on the rear of each expander until the “X” on the screen is under the correct address. The Model 1170 does not have an address dial.

Local IR Diagnostic

This diagnostic shows the raw on/off times of the encoded IR signals coming from any remote (other than the 1105) pointed at the front panel IR window of the AVatrix. This diagnostic shows the “bit times” only and does not show carrier frequency information. The first command may result in zeros.

Wallplate IR Diagnostic

This diagnostic shows the raw on/off times of the encoded IR signals coming from any wallplate. It shows the “bit times” as well as the period of the IR carrier. Dividing one (1) by the number of microseconds shown on the screen will give you the detected carrier frequency (see example below). This diagnostic is very helpful for troubleshooting IR response issues in an AVatrix system.

“Waiting for I/R data from Wallplate” appears on the entry screen of this diagnostic. Watch this screen to indicate IR interference from a Plasma TV or other ambient conditions. Do not press any buttons on IR remote controls during the test. If any other message appears during the test, IR interference is present. Go to a wallplate location and press a button on a device remote (other than the 1105). The first command in the test may result in zeros, so press the button twice to get a useful readout.

PORT:	A2	PERIOD:	26.00	uSec		
1:	3460	1740	2:	400	460	
2:	420	1320	4:	400	460	
3:	420	420	6:	440	420	
4:	420	460	8:	400	460	
5:	420	420	10:	440	420	
6:	440	440	12:	400	460	
7:	420	440	14:	420	420	

The AVatrix screen shows details similar to the example above. The top line identifies the remote location from which the command originated and the period of the IR carrier. To determine the detected carrier frequency, divide the number on the screen by 1,000,000. Then divide one (1) by the resulting number.

In this example, the command came from port two on 1176 “A”. The period of the carrier is 26 microseconds. Divide 26 by 1,000,000 to get .000026. Then divide one (1) by .000026 to get a carrier frequency of 38.461kHz. Each decimal number is a “burst pair” in the IR data train. The first signal in this remote command turns the carrier on for 3.460 milliseconds and off for 1.740 milliseconds. The second command was on for 400 microseconds and off for 460 microseconds. Use this information to see what data the remote is sending out and if it looks correct. Zeros, or numbers that don’t show any perceptible pattern may indicate interference.

Network Version Diagnostic

This diagnostic shows what firmware version resides in each expander and component connected to the AVatrix, as well as what version is on the SD card in the 1166 or 1156. This information helps to determine if the AVatrix needs a firmware upgrade or if all processors in the system have been successfully upgraded.