

WaveRider Connectivity Tutorial

Difficult Cellular Reception Areas

In most cases, WaveRider installations utilize cellular connectivity to reach the Heartland payments processing network. Certain types of laundry installations, such as basement laundry rooms, can pose problems gaining the appropriate level of cellular connectivity to reach the network in a consistent, reliable fashion. When evaluating a location with potentially difficult cellular reception (such as a basement laundry room), operators should follow the following process.

Step One

The WaveController has the ability to assess cellular connectivity strength. Take the WaveController into the room, plug it in, and press the  button (once) as illustrated in Figure 1. Wait at least 45 seconds. The WaveController will display signal strength. A score of 11 to 31 means that connectivity is good, and installation can proceed without further steps being taken. A score of 0-10 means that connectivity is not sufficient and further steps must be taken (the higher the score, the better the connectivity). Press the  button a second time to turn this test off.

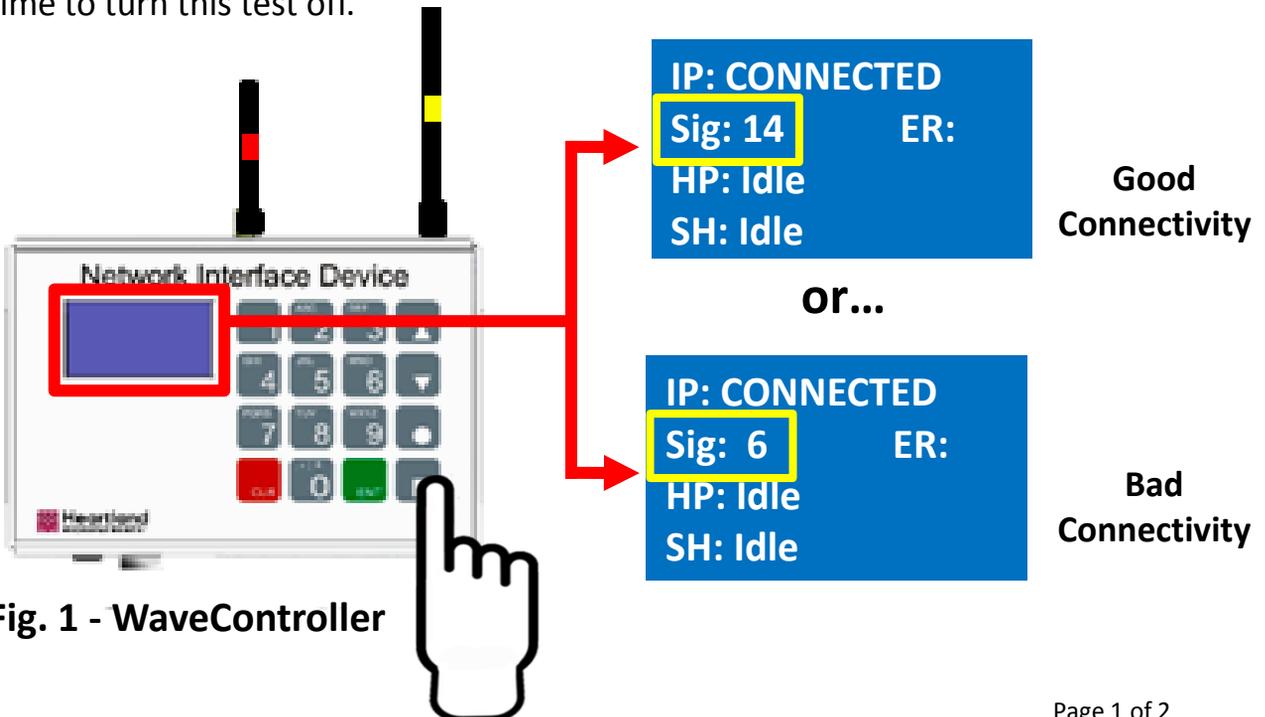


Fig. 1 - WaveController

WaveRider Connectivity Tutorial (cont.)

Step Two

If the connectivity score is 6 to 10, the first option is to augment the WaveController with a range extender from a variety of local sources such as Best Buy. These devices take the cell signal in the room and boost it for better reception. Contact your local supplier for price and availability. Make sure that the range extender will operate with the Verizon Network. One cellular antenna we recommend is the Wilson Inline Signal Booster (approx. \$275) Model: 811225 .

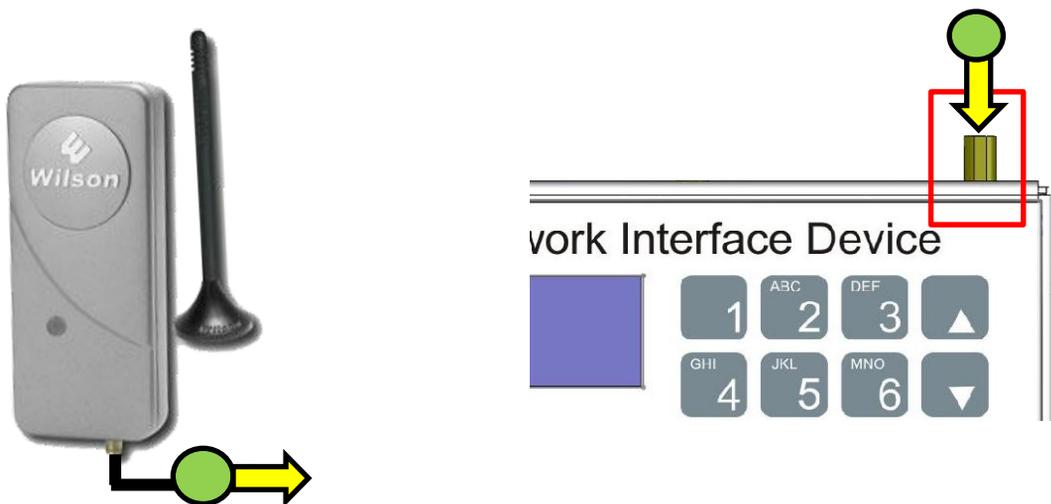


Fig. 2

Remove the factory antenna from the far-right connector as shown in Figure 2, and connect the cellular booster to this connector. When the antenna is in place, re-run the connectivity test on the WaveController as shown in Figure 1.



Step Three

If the connectivity score is **0 to 5**, a cellular booster is unlikely to boost the signal to 11 or higher. In this situation we recommend relocating the WaveController and adding a Zigbee Extender, available from Heartland MicroPayments. Due to settings that are specific to WaveRider, Heartland MicroPayments must supply these devices.

The Zigbee Extender has a stronger Zigbee transmitter that repeats the signal from washers and dryers and boosts the signals on their way to the WaveController. If your connectivity score in the laundry room is weak, take the WaveController to a nearby area, such as a lobby. Test for an improved connectivity score. If your connectivity score is 11 or higher, you have acceptable connectivity.

Depending on the location of your WaveController, one or more Zigbee Extenders may be necessary to boost the signals and allow the machines to connect. The first Zigbee Extender should be placed in or very near the laundry room to boost the machine signals. The Zigbee Extender is a self-contained unit that plugs into any standard electrical outlet and can be secured to the outlet using a tamper-proof screw (see Figure 3).

There may be some situations where both a cellular booster and a Zigbee Extender are required in order to maintain acceptable cellular coverage.

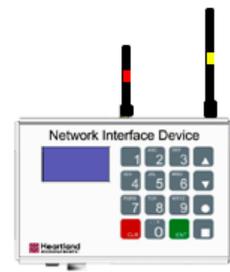


Fig. 3

Step Four

If the connectivity score is 0 to 10, and the range extender and/or Zigbee booster do not solve the problem, a dedicated DSL line (internet protocol line) may be substituted to gain connectivity to the Heartland processing network.

This line must be dedicated to the WaveRider installation, and owned by the merchant (the laundry operator).

Because of data security regulations, the WaveRider installation cannot share a DSL line with any other application, and cannot ride, for instance, the property's Wi-Fi network. See Figure 4.

While more expensive, the DSL line will ensure consistent, reliable connectivity.

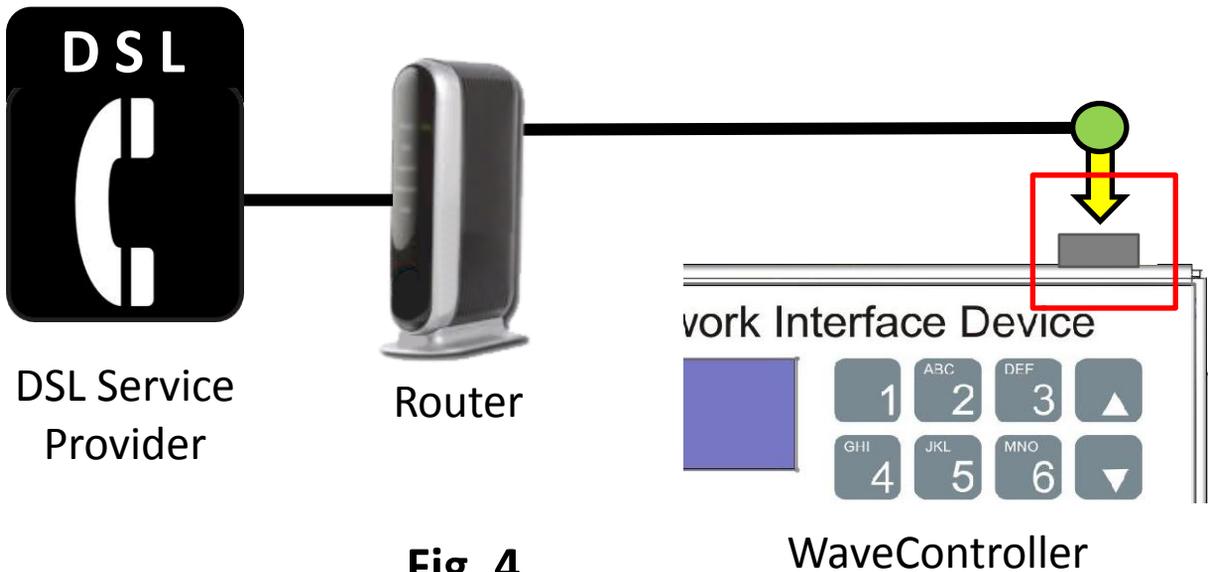


Fig. 4