GreenBus™ Testing with the GBDT

Operating GreenBus™ Diagnostic Tool

The GBDT (GreenBus™ Diagnostic Tool) supplied by Encelium is used to test all GreenBus™ wiring.

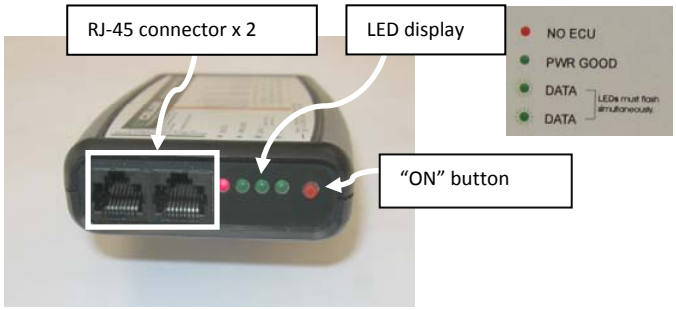

Figure 1: GreenBus™ Diagnostic Tool (GBDT)

Pressing the "ON" button once, turns the GBDT "ON".

As referenced in Figure 2, with no connections, the red **NO ECU** LED should be "ON" and all other LEDs should be "OFF".

Figure 2: LED pattern for GBDT turning "ON"

Testing of ECU ports and GreenBus™ channels are performed in this mode.

If GBDT displays an LED pattern other than what is depicted in Figure 2, press the "ON" button for 3 seconds to turn the GBDT "OFF".

Press the "ON" button again and the GBDT automatically starts testing the GreenBus™ cable connected to it.

Testing the GreenBus™ channels

To test the GreenBus™ channels:

1. Connect power to the ECU.

   The front panel green LED will pulsate slowly. When the green LED begins to flicker quickly, it indicates the ECU is operating.

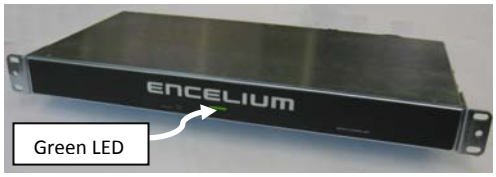

Figure 3: Front view of ECU

2. Plug the first cable run (channel) to one of the ECU ports (numbered 0 – 5) as shown in Figure 4.
3. Turn the GBDT "ON" by pressing the "ON" button once.
4. As shown in Figure 4, go to the opposite end of the cable run and connect the GBDT to start testing.

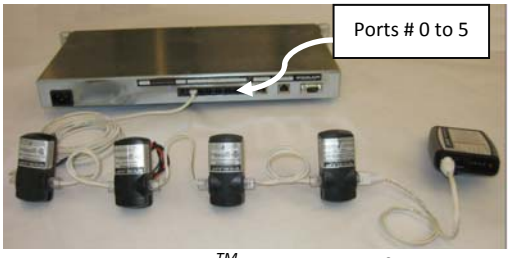

Figure 4: A GreenBus™ channel with four IOMs

If the channel is good, the tool's green **PWR GOOD** LED lights and the two green **DATA** LEDs will begin to flicker simultaneously as depicted in Figure 5.

Figure 5: LED "good" indication

Any other LED patterns indicate **bad crimping of RJ-45 connectors or GreenBus™ cable discontinuity** problems.

5. As you add devices and cables to the channel, you can continue testing at the end of the channel to ensure that the channel is still working.
6. Repeat steps 4 through 5 for each GreenBus™ channel connected to the ECU.

   The ECU may restart each time.
7. Repeat for each ECU.

Recommended GreenBus™ Testing Strategy

There are two main approaches to GreenBus™ testing:

1. *Test as you go in increments, a few IO modules and cables at a time, channel by channel and ECU by ECU.*
2. *Install everything on every channel on every ECU first, and then test at the ends of all the channels.*

Encelium recommends testing as you go.

If testing is not performed until the installation is complete, any problem along a GreenBus™ run will cause a fault and then will have to be located. ***This takes time, and will probably require going back into the ceiling****.*

If testing is performed as you go, the fault can be quickly located while you are in the ceiling and can be corrected immediately.

When you get to the end of the channel run by this process, it will then all be tested and working correctly.

Continued ➔

Turning an IO Module "ON"

IO Modules turn "ON" automatically once the GreenBus™ cable they are attached to is connected to an ECU.

To turn "ON" an IO Module manually (turn a fixture "ON") prior to connecting to an ECU, follow the steps below:

1. Connect GBDT to one of the ports of the IO module with an Encelium GreenBus™ cable as shown in Figure 6.

Figure 6: Turning an IO Module "ON"

2. Press the Tool's "ON" button once to turn it "ON".
3. Press it again to set to "IOM Activation" Mode.

Figure 7: LED pattern when setting in IOM Activation Mode

The IO module will be set to the "ON" state.

GBDT's green **PWR GOOD** LED will flicker for 10 seconds before turning itself "OFF".