RBD Enterprises Technical Note

Testing the 147 DR11 Ports

Overview
This document outlines the steps taken to isolate and repair the above listed problem.
<u>**Safety Notice**</u>: Turn the 147 OFF when installing or remoivng 40 pin ribbon cabels to prevent damage to the 147. No high votage is present inside the 147 unit.

The 147 uses DR11 protocol to talk to the electronic units in PHI systems.
To test the 147 DR11 ports we use DR11 D (the "Read") port to read in the data from the DR11 A, B and C write ports.
Normally, the red strip on all of the DR11 cables goes towards the back of the 147. Most of the cables are keyed as well so that they will only go in one way.
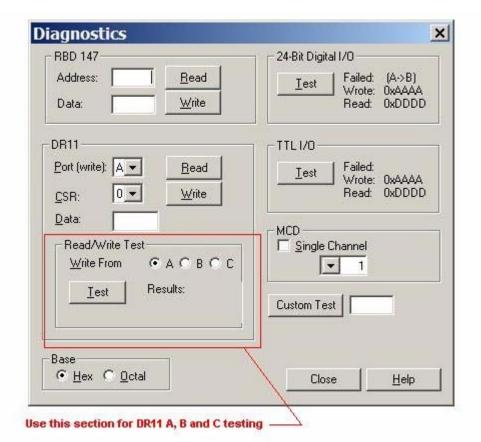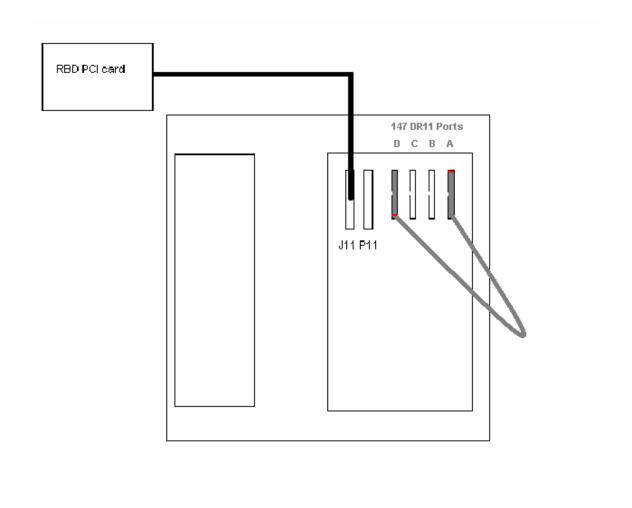
To test the 147 DR11 ports:

1. First, make sure the 147 is talking to the PC. (See attached PDF)
2. Turn the 147 and Card Rack power OFF.
3. Insert a ribbon cable between the DR11 D port and DR11 A. **Note:** The DR11 D port cable needs to be reversed so that the Red strip on the cable points towards the front of the 147. If your cable is keyed, it will still fit in with a slight amount of pressure to the side of the connector on the 147. If you not have an extra ribbon cable you can remove one from the back of the system. TIP: Make sure the DR11 cables are labeled before you remove them so that you can be sure to put them back in the same place.
4. Turn on the 147
5. Open AugerScan and select the Diagnostics Dialog Box.
6. Select Write From DR11 A and press Test. (See next picture)

If it passes then the cable and the DR11A port are working properly. If not, then the cable or the 147 port is bad.
Test DR11 ports B and C in this same manner.
By using combinations of DR11 cables and testing different ports, you will be able to determine whether the cables or ports are working properly.

Diagnostics

RBD 147

Address: [____] [Read]

Data: [____] [Write]

DR11

Port (write): [A ▼] [Read]

CSR: [0 ▼] [Write]

Data: [____]

Read/Write Test

Write From   ● A ○ B ○ C

[Test]   Results:

Base

● Hex   ○ Octal

24-Bit Digital I/O

[Test]   Failed: (A->B)
Wrote: 0xAAAA
Read: 0xDDDD

TTL I/O

[Test]   Failed:
Wrote: 0xAAAA
Read: 0xDDDD

MCD

☐ Single Channel

[▼] 1

[Custom Test] [____]

[Close]   [Help]

Use this section for DR11 A, B and C testing

The above figure shows a DR11 cable connected between DR11D (read) port and DR11A (write) port. Note that the Red stripes on the ribbon cable are reversed.