

QUICK CARD

T1 Bit Error Rate Testing (BERT)





This quick card describes how to configure and run a T1 Bit Error Rate Test to a hard loop, or another similarly configured VIAVI Test Instrument.

- OneAdvisor 1000 equipped with the following:
 - 100G Transport Module
 - BERT software release V30.1.0 or greater
 - C5E1DS1 test option: E1/DS1 Electrical
 - C5DUALPORT test option
- One of the following T1 cable sets to connect the 100G Transport Module DS1 Port(s) to the line under test:
 - Dual Bantam to RJ-48C cable (CB-41645)
 - RJ-48C Patch cable (Straight-through or cross-over depending upon equipment under test)



Figure 1: Equipment Requirements

LAUNCH TEST

1. Press the Power button  to turn on the OneAdvisor.
2. Press the 100G Module **Test** icon  at the top of the screen.
3. Tap the Power button  and click  to launch the 100G Module.

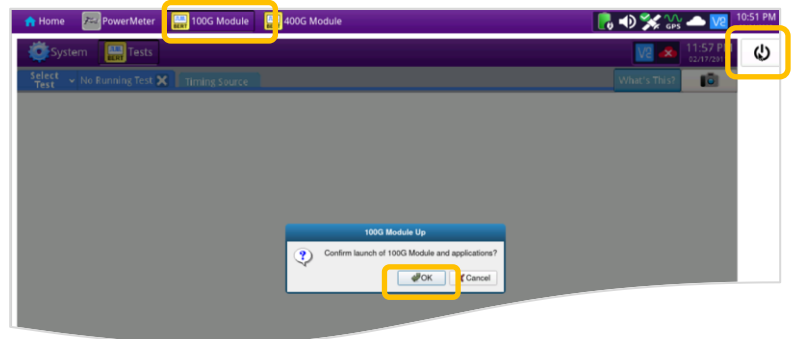


Figure 2: Launch 100G Module

4. Using the **Select Test** menu, Quick Launch menu, or Job Manager, launch the **DS1/DS3►DS1►DS1 BERT►Terminate** test.

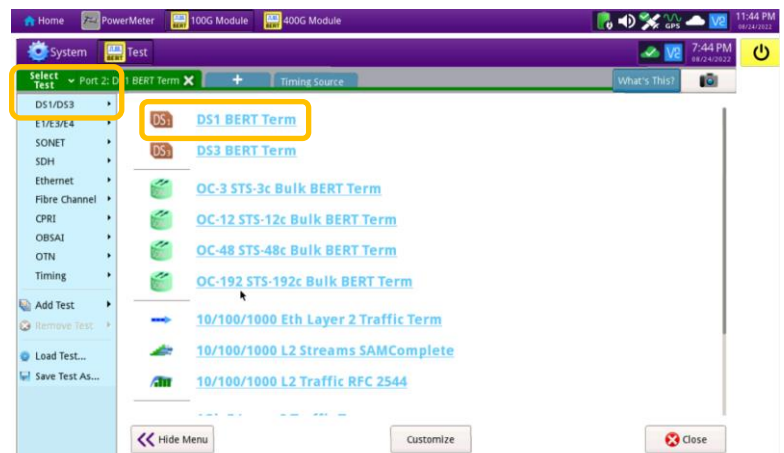


Figure 3: Launch Test

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CONFIGURE TEST

- The following Information is needed to configure the test:
 - T1 Line Code (B8ZS or AMI)
 - T1 Framing (ESF or D4)
 - Clock Source (Internal or Recovered)
 - Test Pattern(s)
 - BER Pass/Fail Threshold



Figure 4: Work Order

- Tap to open the **Tools** Panel and select .
- Press to continue.
- Press the **Setup** soft key on the top right side of the screen.

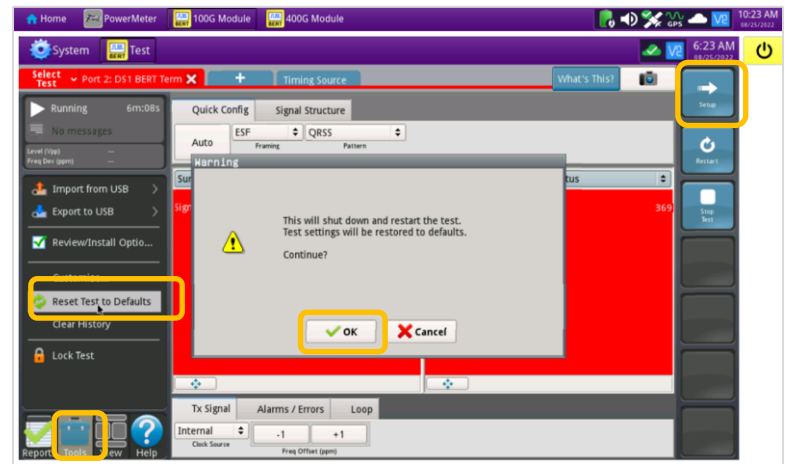


Figure 5: Reset Test to Defaults

- Select the indicated folders and configure your test as follows. Leave all other values at default, unless specified in the work order.

Folder	Option	Value(s)
Interface	Rx Input	Term
	Line Code	If unknown, select "B8ZS"
	Clock Source	If unknown, select "Internal"
	Clock Offset	0 ppm
	LBO	0 dB
Framing	Framing	If unknown, select "ESF"
Pattern	Pattern Mode	ANSI
	Pattern	QRSS

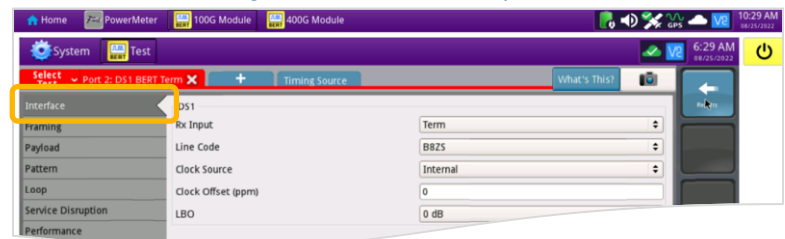


Figure 6: Setup, Interface

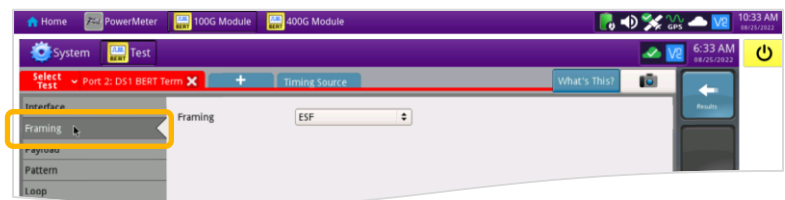


Figure 7: Setup, Framing

- Press the **Results** soft key to view the Test Results screen.

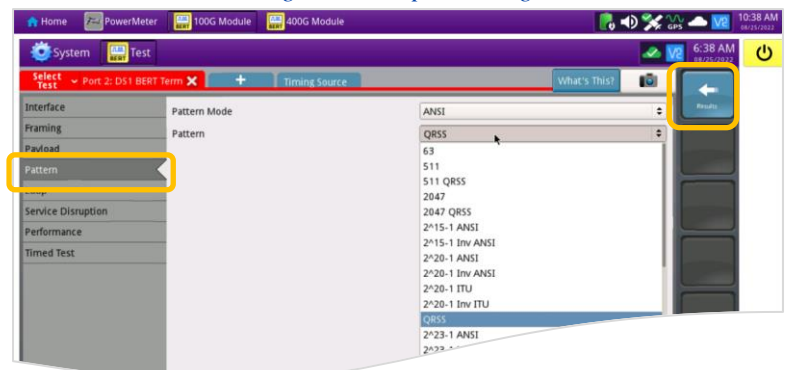


Figure 8: Setup, Pattern

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CONNECT TO LINE UNDER TEST

- The OneAdvisor 100G Transport Module has an RJ-48C port. RJ-48C to Dual Bantam, RJ-48C straight through, or RJ-48C crossover cables may be used to connect to the line under test.

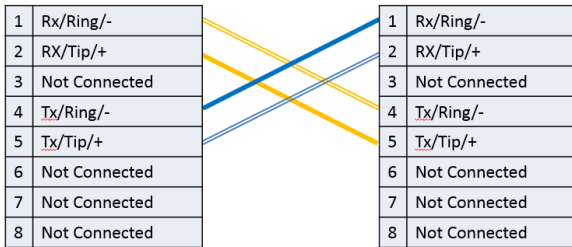


Figure 9: RJ-48C Crossover Cable

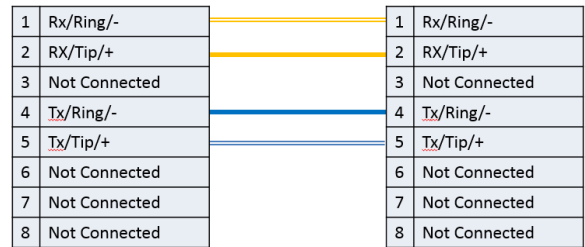





Figure 10: RJ-48C Straight Through Cable

RUN TEST

- Using drop-down menus , select **"Interface/Signal"** for the right results display.
- Press the **Restart** soft key .
- Verify the following:
 - ▶ **Summary** LED is green.
 - ▶ **Signal Present** LED is green. If the LED is red, check your cables. Tx and Rx may be reversed.
 - ▶ **Frame Sync** LED is green.
 - ▶ **RX Frequency (Hz)** = 1544000 +/- 50 Hz.
- Using drop-down menus , select **"Payload/BERT"** for the right results display.
- Allow the test to run for desired duration and verify the following:
 - ▶ **Pattern Sync** LED is green.
 - ▶ **Bit/TSE Error Rate** result does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)

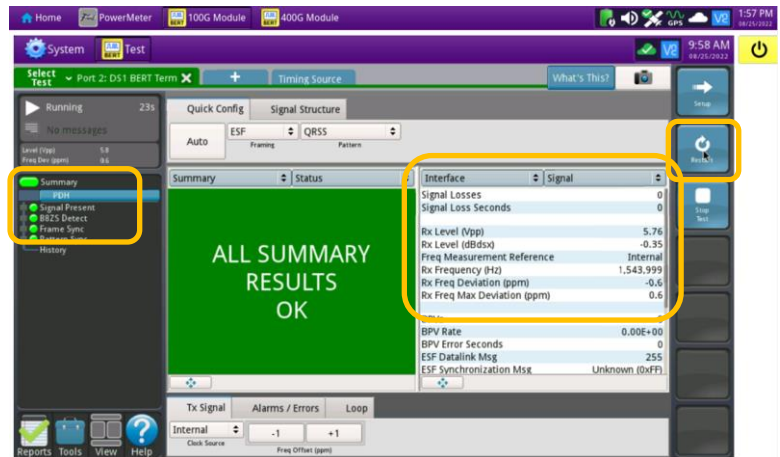


Figure 11: Results, Interface/Signal

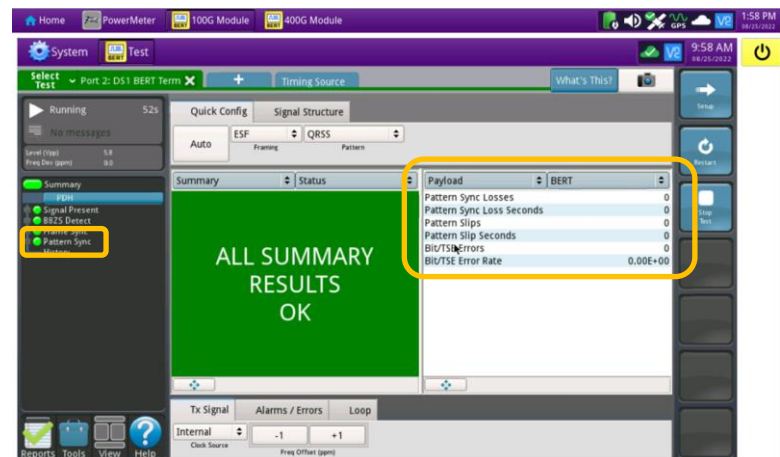



Figure 12: Results, Payload BERT

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- In the OneAdvisor's **Quick Config** menu, change "**Pattern**" to the next value in the test plan.
- Press the Restart soft key  to reset results.
- Allow test to run for desired duration and verify the following:
 - ▶ **Pattern Sync** LED is green.
 - ▶ **Bit/TSE Error Rate** does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)
- Repeat steps 6 through 8 for all **Patterns** in the test plan. Patterns may include:
 - ▶ **QRSS**: Simulates live T1 traffic
 - ▶ **All Zeros**: Tests for equipment mis-optimized for AMI
 - ▶ **Multipat**: Five commonly used test patterns to allow BER testing without having to select each test pattern individually. Patterns are: All Ones, 1:7, 2 in 8, 3 in 24, and QRSS. Results are shown in the "**DS1/Multipat**" results display.
 - ▶ **Delay**: Measures Round Trip Delay (RTD) instead of Bit Errors (RTD values are shown instead of BER in the "**Payload/BERT**" results display)

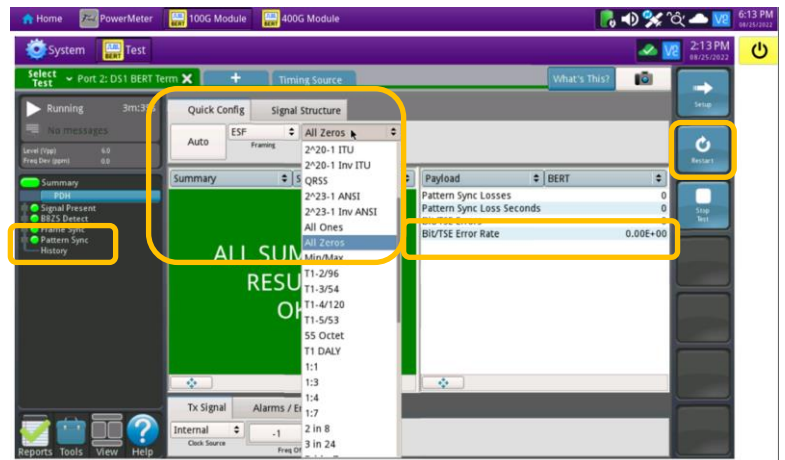


Figure 12: Results, Quick Config

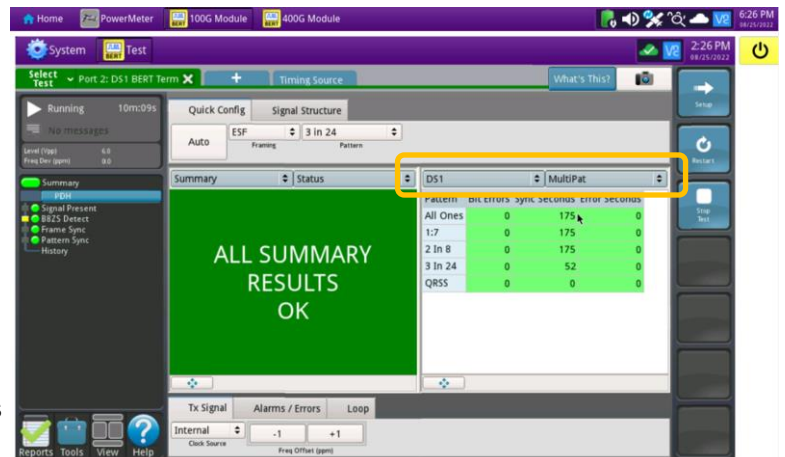

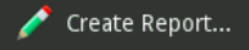



Figure 13: Results, DS1/MultiPat

CREATE REPORT

- Tap  to open the **Reports** Panel and select .
- Tap .
- A report will be saved to the OneAdvisor 1000 100G Transport Module's **/bert/reports** folder.

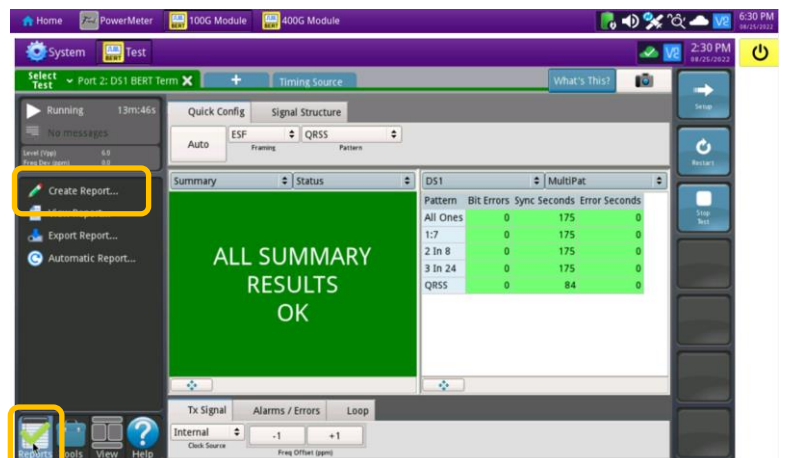


Figure 14: Create Report