QUICK CARD

Ethernet Breakout Cable Test

This quick card describes how to configure and run an Ethernet Cable Test to verify proper operation and the stability of QSFP Active Optical Cables (AOC), Active Electrical Cables (AEC), and Direct Attach Copper Cables (DAC) Breakout Cables. The guick card documents a procedure to set up one OneAdvisor to test a 40G QSFP+ to 4x10G SFP+ cable, but a similar workflow may be applied to other breakout cables or to test cables between two OneAdvisor 800s.

EQUIPMENT REQUIREMENTS

- OneAdvisor 800 equipped with the following:
 - TM400GB-QQ 400G Module
 - Transport software release V5.1.0 or greater
 - CA10GELAN 10 Gigabit Ethernet option
 - CA40GE 40 Gigabit Ethernet option
 - CALPBK Layer 1 loopback option

LAUNCH TEST

- 1. Press the Power button on the top panel of the ONA-800 base unit to turn on the OneAdvisor.
- Tap 🔒 Home to display the Home Screen. 2.
- Tap Tests to display the Tests menu. 3.
- Tap 400G Transport > to show the Transport 4. test application.
- Tap the 400G Transport icon. 5.
- 6. If the **Select Test** menu is not displayed, tap >> All Tests in the lower left screen corner.
- 7. Using the Select Test menu or favorite test list, launch the Ethernet Cable Test for the data rate of the breakout/branch cable on Port 1. For example: Ethernet ► 10GigE LAN► Cable Test
 - ► P1 Cable Test.
- Tap the $Go \rightarrow$ button next to "Start a New 8. Configuration (reset to defaults)"



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	G Transport 🗙			💦 📣 📣 🚾 3:59 PM
Select ~ P rt 1: 1	OGigE LAN Layer 2 Traffi	c Term 🗙 🛛 🕇		What's This?
Ethernet	10/100/1000 > 1GigE Optical >	Layer 2 Traffic Term	_	
OTN +	10GigE LAN	 Optics Self-Test 	•	
Unframed +	25GigE	💼 Cable Testa	P1 Cable Test	
Add Test Remove Test Load Test Save Test As	40GigE 50GigE 100GigE 100GigE 200GigE 4x100GigE 4x100GigE 400GigE Single Port	 ✓ QuickCheck a RFC 2544 (RFC 5180) ▲ Y.1564 SAMComplete Layer 2 Traffic 	P2 Cable Test	
		Layer 3 Traffic Layer 3 Multiple Streams)	



Home			💦 📣 🐼 🔽 12:20 PM
	Cable Test Configure		Port 1: 100GigE Layer 2 Traffic Term
	Not Running		Go To 🖬 📫
		*	
		7	
-			
-	Configure		
P B	dit Previous Configuration	Go 🔿	
<mark>-</mark> 1	oad Configuration from a Profile	Go 🔿	
S S	tart a New Configuration (reset to defaults)	Go ⇒	
Ð	xit		

Figure 4: Configure



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CONFIGURE TEST

- 1. Set Cable Type to Breakout.
- Set Test Duration to Recommended. The recommended duration is determined by the line rate, BER Threshold, and a 95% confidence level (CL) using BER theory.
- 3. Set **FEC Type** and **BER Threshold Type** per the following table, based on the breakout interface type.
- Set BER Threshold and Optics Temperature Threshold to match the cable manufacturer specifications or network requirements.
 * Use the recommended values in the following table only if specifications are unknown:

Interface Type	FEC Type	BER Threshold Type	BER Threshold	Optic Temperature Threshold (°C)
200GBASE-SR4	RS (544, 514)	Pre-FEC	1x10^-5*	75*
200GBASE-CR4	RS (544, 514)	Pre-FEC	1x10^-5*	75*
100GBASE-SR4	RS (528,514)	Pre-FEC	1x10^-8*	75 <i>*</i>
100GBASE-CR4	RS (544, 514)	Pre-FEC	1x10^-8*	75 <i>*</i>
25GBASE-SR	RS (528,514)	Pre-FEC	1x10^-8*	75*
25GBASE-CR	RS (528,514)	Pre-FEC	1x10^-8*	75*
10GBASE-SR	No FEC	N/A	1x10^-12*	75*
10GBASE-CR	No FEC	N/A	1x10^-12*	75*

- Tap Launch Other Port to add an Unframed QSFP Loopback test on Port 2 or launch an Unframed QSFP Loopback test on the far end OneAdvisor.
- Tap Next → to display the Report Info screen. If you wish to generate a report, enter Test Report Information.
- 7. Tap **Next** \rightarrow to display the **Cable Test** screen.
- 8. Enter the **Breakout Label** for the first breakout interface (typically 1 or A).
- Tap the blue ? Next to Host Lane CDR for guidance and select the Lane for the first breakout.

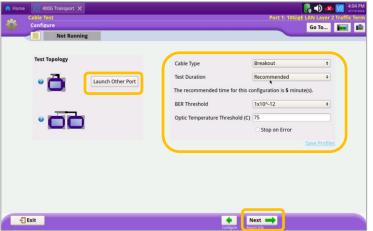


Figure 5: Cable Settings

Cable Test	Port 1: 100GigE Layer 2 Traffic Ter
Report Info	Go To 💵
Not Running	
W Test Report Information	
Customer Name:	
Technician ID:	-
Test Location:	-
Work Order:	
Comments/Notes:	-
Report Logo	Clear Select logo

Figure 6: Report Info

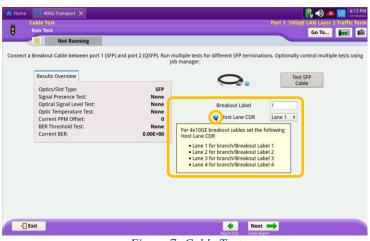


Figure 7: Cable Test



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TEST OPTICS

- Connect the 1st branch of the breakout cable to the Port 1 SFP-DD or QSFP-DD port on the top of the OneAdvisor. Connect the high speed QSFP interface to the Port 2 QSFP-DD port on the top of the OneAdvisor.
- 2. Tap the **Test SFP Cable** or **Test QSFP Cable** button.
- 3. Wait for the test to complete and verify that all tests pass.
- 4. If you wish to save a report:
 - Tap the Next → button to display the Report screen.
 - Tap the Create Report button.
 - Tap the **< Exit** button to close the report.
- If you performed a Pre-FEC test on optics with RS FEC, optionally repeat the test with Threshold Type = Post-FEC. Set BER Threshold to match the cable vendor Post-FEC BER specifications or network requirements. If specifications are unknown, Set BER Threshold to 1x10^-12.
- 6. Repeat the test(s) for the other 3 breakout/branch cables.

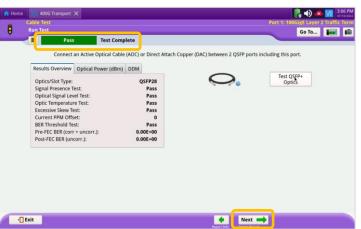


Figure 8: Test Complete

Report	22				Go To
	Pass	Test Complete			
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* PDF	ି CSV	 Text 	ं HTN	AL OX	KML
ile Name					
Cable_Test-2024	-07-10T15.07.33				Select
			✓ View report af ✓ Include messa	And the second	Create Report Report

Figure 9: Create Report

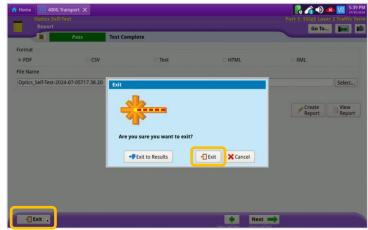


Figure 10: Exit

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