QUICK CARD

Ethernet Layer 2 Traffic

This quick card describes how to set up the OneAdvisor 800 **400G Module** or OneAdvisor 1000 **400G Module** as a Layer 2 Traffic Generator and measure Metro Ethernet key performance indicators (KPIs).

- OneAdvisor 800 or OneAdvisor 1000 equipped with the following:
 - o 400G Transport Module
 - o Transport software release V4.0.0 or greater
 - Software option for data rate to be tested:
 - ✓ CA10M1GE test option for 10/100/1000M
 Copper or 1 Gigabit Optical Ethernet
 - ✓ CA10GELAN test option for 10 Gigabit Ethernet
 - ✓ CA25GE test option for 25 Gigabit Ethernet
 - ✓ CA40GE test option for 40 Gigabit Ethernet
 - ✓ CA50GE test option for 50 Gigabit Ethernet
 - ✓ CA100GE test option for 100 Gigabit Ethernet
 - ✓ CA200GE test option for 200 Gigabit Ethernet
 - ✓ CA400GE test option for 400 Gigabit Ethernet
- Optical Transceiver supporting the Ethernet data rate to be tested (SFP, QSFP, or OSFP)
- Cables to match the optical transceiver and the line under test
- Fiber optic inspection microscope (P5000i or FiberChek Probe)
- Fiber optic cleaning supplies

Figure 1: Equipment Requirements

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LAUNCH TEST

- 1. Press the Power button to turn on the OneAdvisor.
- 2. Press the 400G Module **Test** icon ^{400G Module} at the top of the screen.
- Using the Select Test menu, Quick Launch menu, or Job Manager, launch the Ethernet Layer 2 Traffic test for the desired data rate on the desired port (P1 or P2). For example: Ethernet ► 400GigE Optical ► Layer 2 Traffic ► P2 Terminate.
- Tap to open the Tools Panel and select Reset Test to Defaults.
- 5. Press **Y** or to continue.

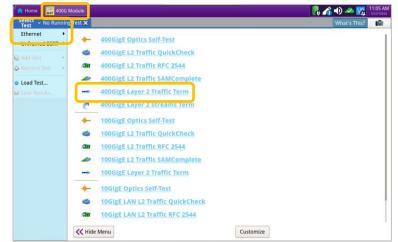


Figure 2: Launch Test



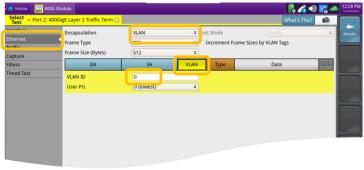
QUICK CARD

CONFIGURE TEST

- 1. Press the **Setup** soft key
- 2. Select the Interface/Connector folder.
- Insert Optical Transceiver into the OSFP, QSFP or SFP slot on Port 1 or Port 2 of the 400G Module, as selected on page 1, step 3.
- 4. Review QSFP or SFP information in the **Connector** tab:
 - Verify that the SFP operates on the correct wavelength (1301nm, 1310nm, etc.)
 - Verify that the SFP supports the required Physical Interface (10GBASE-LR, 100GBASE-LR4, 400GBASE-FR4, etc.)
 - If you are testing 10/100/1000 Electrical or 1GigE Optical interface with auto negotiation disabled, select the **Physical Layer** tab and configure settings to match the Ethernet port under test.
- 5. Select the **Ethernet** settings tab.
 - If you are testing a VLAN, set Encapsulation to VLAN, tap the VLAN field and enter your VLAN ID.
 - If you are testing head-to-head with another OneAdvisor or T-BERD/MTS, tap the SA field to display the Factory Default Source MAC Address of your OneAdvisor. Provide this address to the operator of the other test instrument, upon request.
 - If you wish to measure Frame Loss and Round-Trip Delay, tap the Data field, and set Tx Payload to Acterna.
 - If you wish to measure Bit Error Rate, tap the Data field, and set Tx Payload to BERT.
- Select the Traffic settings tab. Set Load Unit to Bit Rate and set Load to the desired traffic rate or Committed Information Rate (CIR).
- 7. Press the **Results** soft key to return to the Test Results screen.

Select v Port 1: 400GigE La	yer 2 Traffic Term 🗙			What's This?	U
nterface 🤇	Connector Signal RS-FEC Ph	ysical Layer Network Visibility			
raffic	QSPP SFP Expert 12C				
liters	wommal Wavelength (nm)	1301	Rx Power Level Type	Average Power	
imed Test	Vendor	INNOLIGHT	Rx Max Lambda Power (dBm)	6.5000	
	Vendor PN	T-DQ4CNT-N00	Tx Max Lambda Power (dBm)	6.5000	
	Vendor SN	INKAX5320049			
	Vendor Rev	14	Power Class	Class 6 (<< 12.0 W)	
	Date Code	200612	Module ID	QSFP-DD	
	Lot Code				
	Connector Type	LC	Rev Compliance	CMIS 4.0	
	Max Link Length	2km (SMF)	Cable Length	-	
	Transceiver		400G-FR4		
			•		







	Encapsulation	None	•	Test Mode		÷ Re
thernet	Frame Type	DIX	٠			
Capture	Frame Size (Bytes)	512	\$			
ilters	DA	SA		Туре	Data	FCS
imed Test	Tx Payload	Acterna	•	cterna Payload	Fill Byte	
	Acterna Payload Ver.	Acterna		Acterna Fill Byte	AA	
	After changing Acterna Payl	BERT		or accurate latency/FI) results.	



	G Module		_	🦰 🖍 🕩 🌄 🚽	1:48 PM 12/36/2022
Select v Port 2: 4 Test v Port 2: 4 Interface Traffic Filters Timed Test	00GigE Layer 2 Traffic Term × Load Type Constant Load	Constant +	_	What's This?	Results
Timed test	Load Unit Bit Rate Load (Mbps) 400000 Layer L1	e Ulow flooding @	Time		

Figure 6: Setup, Traffic



QUICK CARD

CONNECT TO LINE UNDER TEST

- For Optical interfaces, use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (SFP, attenuators, patch cables, bulkheads)
 - Focus the fiber on the screen.
 - If it appears dirty, clean the fiber end-face and reinspect.
 - If it appears clean, run the inspection test.
 - If it fails, clean the fiber and re-run inspection test. Repeat until it passes.
- 2. Connect the SFP to the port under test using a patch cable compatible with the line under test.
- 3. Select the **Laser** tab in the **Actions** panel.
 - Press ^{Laser} off The button will turn yellow

and be relabeled

- 5. Press the **Restart** soft key
- 6. Verify the following:

4

- **Summary** LED is yellow.
- Signal Present LED is green.
- Sync Acquired LED is green.
- Link Active LED is green.

RUN TEST

- 1. Select the Actions tab in the Actions Panel.
 - If you are testing head-to-head, to a hard loop, or if the loopback device is already in Local Loop Back (LLB) mode, proceed to step 2.
 - If the Loopback device is a OneAdvisor, T-BERD/MTS, or another VIAVI compatible loopback device, press to loop up the far end device.
- 2. Press start . The button will turn yellow and

will be relabeled Started

- 3. Press the **Restar**t soft key . Verify that the Right Results window shows "**Rx Mbps, L1**" is approximately equal to the CIR.
- Allow the Test to run for the desired duration. Verify that the Left Result window displays "ALL SUMMARY RESULTS OK" throughout the test.





Figure 8: Results Screen

st v Port 1: 10Gigs	LAN Layer 2 Traffic Term 🗙		What's This?	10		
	Ethernet Payload					
	Traffic + 512 +					
(dBm) -5.6 Dev (ppm) 0.0	Test Mode Frame Size					
Dev (ppm) 0.0	Summary C Status	Summary	\$ SLA / KPI	•		
Ethernet		Throughput, 0				
nal Present nc Acquired		Rx Mbps, L1 Tx Mbps, L1		9,999.6		
k Active me Detect		TX MBps, LT		9,999.0		
Detect IN Frame Detect		Tx Mbps, L2		9,623.7		
AN Frame Detect		Frame Loss - I		0		
Stacked VLAN Detect Local Fault Detect Remote Fault Detect History		Lost Frames				
	ALL SUMMARY		Frame Loss Ratio Round Trip Delay - FD (us) 🖃			
			Average			
	RESULTS		Current			
		Maximum		< 0.500		
	OK	Packet Jitter -	Packet Jitter - FDV (us) 🖃			
		Average		0.002		
		Max Average	e	0.007		
		Peak	Peak Instantaneous			
		Instantaneo	lus	0.000		
	0	0 0	3			
		1 2 6				
	Laser Actions Peak IFG Alarms En	ors Faults	Capture	1		

Figure 9: Run Test

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