

IntegraOptics Pluggables Operability and Compatibility Testing

Testing was completed in Integra's Lab

Devices Under Test

Integra Part Number	OEM Compatible Part Number	Platform Tested	Product Description
QSFP-100G-SR4-AR-IO	QSFP-100G-SR4	Arista 7160	QSFP28, 850nm, SR4 MMF 100m, 100G DDM, Arista QSFP-100G-SR4 Compatible

Responsible Engineers

Name	Email	Organization
Ryan Soler	rsoler@integraoptics.com	Integra

Results Overview

Integra Part Number	OEM	Recognition	Error/Alarm	Link	Compatibility Certified
QSFP-100G-SR4-AR-IO	QSFP-100G-SR4	PASS	PASS	PASS	PASS

Standard Compatibility Test Plan

The IntegraOptics' standard test plan consists of installing transceivers into the required lab elements with their interfaces configured appropriately. Each device then undergoes the following procedure to determine OEM compatibility as well as to verify correct operating performance. All IntegraOptics' transceivers must receive a "pass" rating on each of the below criteria for 100% compatible certification and subsequent GA release.

1. Initial plug in observations

- a. *Verify laser turn on – Laser turn on is typically used as a quick indicator of a transceivers compatibility.*
 - i. *Upon insertion, the transmitter light levels shall be recorded*
- b. *Observe system for error free operation – Errors consist of anomalies that severely impact a transceivers operation. Issues that may flag errors include:*
 - i. *I2C Communication Failures*
 - ii. *Electrical and/or Pin Timing Issues*
 - iii. *Code Issues resulting in host rejection and/or disabled interfaces*
 - iv. *Critical deviations from optical or electrical operating specifications*
- c. *Verify Host Recognition – Host recognition consists of determining if a part is recognized correctly. Successful recognition indicates a transceiver is communicating correctly with the host device. Parameters directly observed include:*
 - i. *Revision, Serial Number, and OEM Part ID*
 - ii. *Vendor Name and Vendor Part Number*

2. CLI Performance Observation

- a. *Observe Alarms and Warnings – General alarms consist of warnings indicating a transceiver is operating out of spec or indicates operation may not be error free, this test is typically performed using an appropriately attenuated fiber loop or active connection to another device. Issues that may flag alarms include:*
 - i. *Operation at an undesirable bit error rate or errored seconds*
 - ii. *DDM related alarms, operation above or below alarm thresholds for:*
 - *Transmit Power and Laser Bias*
 - *Receive Power*
 - *Temperature*
 - *Voltage*

Compatibility Test #1: QSFP-100G-SR4-AR-IO

Results:

1. Initial Plugin Observations
 - a. Verify Laser Turn On
 - i. Result: **Pass**
 - b. Observe System Error Free Operation
 - i. Errors: None
 - ii. Link: **Pass**
 - iii. Result: **Pass**
 - c. Verify Host Recognition
 - i. Revision, Serial Number, and OEM Part ID. Result: **Pass**
 - ii. Vendor Name and Vendor Part Number. Result: **Pass**
2. CLI Performance Observations
 - a. Observe Alarms and Warnings
 - i. Alarms: None
 - ii. Result: **Pass**
 - b. Observe Alarm Thresholds
 - i. Result: **Pass**

```
Et46      notconnect 1 full 25G Not Present
Et47      notconnect 1 full 25G Not Present
Et48      notconnect 4000 full 25G Not Present
Et49/1    notconnect 20 full 100G 100GBASE-LR4
Et50/1    connected 1 full 100G 100GBASE-SR4
Et51/1    notconnect 1 full 25G Not Present
Et51/2    notconnect 1 full 25G Not Present
```

```
46 Not Present
47 Not Present
48 Not Present
49 Arista Networks QSFP100GLR4AR-IO EOQJAH900019 01
50 Arista Networks QSFP100GSR4AR-IO EOQKCL410002 01
51 Not Present
52 Not Present
53 Not Present
54 Not Present
```

```
R1-U14-ARISTA-DCS7160#show interfaces ethernet 50/1 transceiver detail
mA: milliamperes, dBm: decibels (milliwatts), NA or N/A: not applicable.
++ : high alarm, + : high warning, - : low warning, -- : low alarm.
A2D readouts (if they differ), are reported in parentheses.
The threshold values are calibrated.
```

Port	Temperature (Celsius)	High Alarm Threshold (Celsius)	High Warn Threshold (Celsius)	Low Alarm Threshold (Celsius)	Low Warn Threshold (Celsius)
Et50/1	38.56	75.00	70.00	-5.00	0.00

Port	Voltage (Volts)	High Alarm Threshold (Volts)	High Warn Threshold (Volts)	Low Alarm Threshold (Volts)	Low Warn Threshold (Volts)
Et50/1	3.32	3.63	3.47	2.97	3.05

Port	Current (mA)	High Alarm Threshold (mA)	High Warn Threshold (mA)	Low Alarm Threshold (mA)	Low Warn Threshold (mA)
Et50/1	5.95	13.00	12.00	0.50	1.00

Port	Tx Power (dBm)	High Alarm Threshold (dBm)	High Warn Threshold (dBm)	Low Alarm Threshold (dBm)	Low Warn Threshold (dBm)
Et50/1	-2.28	3.40	2.40	-11.60	-7.60

Port	Rx Power (dBm)	High Alarm Threshold (dBm)	High Warn Threshold (dBm)	Low Alarm Threshold (dBm)	Low Warn Threshold (dBm)
Et50/1	-1.37	3.40	2.40	-14.29	-10.30

```
R1-U14-ARISTA-DCS7160#
```