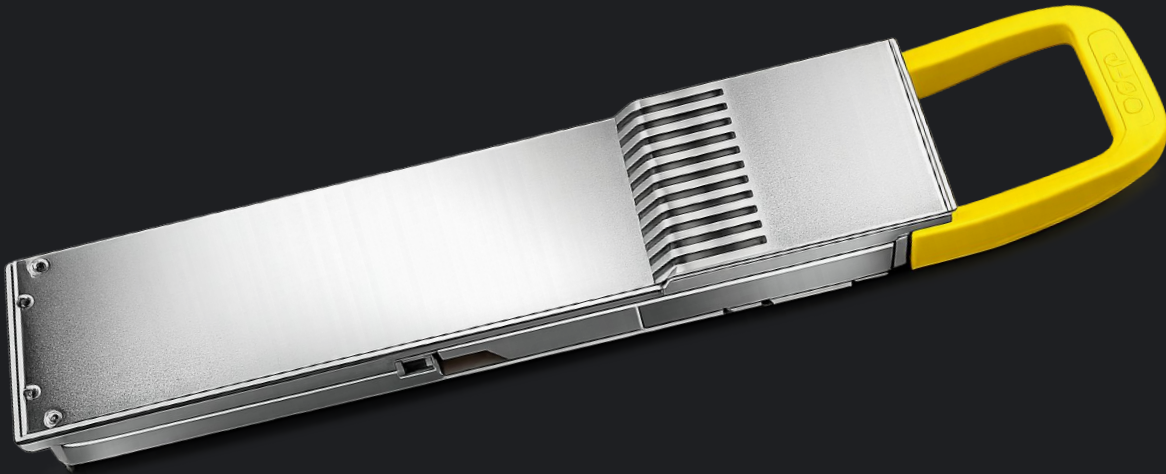


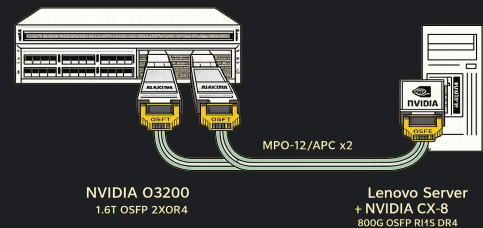
AXIOM 1.6T & 800G OPTICS - NOW FULLY VALIDATED WITH NVIDIA



Axiom 1.6T and 800G OSFP optics have been interoperability-validated across NVIDIA switching and server platforms, confirming stable link behavior, correct DR4 lane operation, and production readiness for mixed-speed AI fabrics.

Validated Configuration

- 1.6T OSFP 2×DR4 (3nm DSP)
- 800G OSFP RHS DR4
- Switch: NVIDIA Q3200
- Server NIC: NVIDIA CX-8 (Lenovo server platform)



What Was Proven In Our U.S. Labs:

- Successful link-up between 1.6T switch ports and 800G server ports
- Verified DR4 lane mapping, FEC, and signal integrity
- Bidirectional traffic passed at expected line rates
- Zero errors observed across full validation runs

This confirms Axiom optics are production-ready for mixed-speed AI fabric deployments



Axiom Interoperability Validation Report

1.6T OSFP 2×DR4 ↔ 800G OSFP DR4 on NVIDIA CX-8 Platforms

Summary

Axiom completed a full interoperability validation between 1.6T OSFP 2×DR4 and 800G OSFP DR4 RHS optical transceivers across NVIDIA-based switching and server platforms. Testing confirmed successful link establishment, stable lane alignment, error-free bidirectional traffic, and consistent optical margins under expected operating conditions.

This validation supports deployment of mixed-speed AI fabrics using 1.6T switching with 800G server I/O, enabling scalable migration paths for next-generation AI and HPC environments.

Test Objectives

The purpose of this test was to validate:

1. Electrical and optical interoperability between 1.6T and 800G DR4 optics
2. Successful link training and lane mapping across mixed-speed endpoints
3. Stable forwarding with no packet loss or error counters
4. Optical diagnostics and margin stability during sustained traffic

Test Environment

Location

- Axiom Engineering Labs – Austin, TX

Validated Platforms

- Switch: NVIDIA Q3200
- Server NIC: NVIDIA CX-8 (installed in a Lenovo server)



Testbed Inventory:

Component	Model	Part Number	Firmware / OS
Optical Transceiver (1.6T)	OSFP224 2×DR4 (3nm DSP)	MMS4A00-XM-AX	FW 43.4.0
Optical Transceiver (800G)	OSFP224 DR4 RHS Flat	MMS4A20-XM800 -AX	FW 22.0.0
Optical Cable	MPO-12/APC	Single / Paired as required	N/A
Switch OS	NVIDIA NVOS	Q3200	NVOS-25.0 2.5002
Server NIC FW	NVIDIA CX-8	900-9X81E-00EX	FW 40.47.1026

Physical & Logical Topology

- Single-link validation between:
 - Q3200 OSFP 1.6T 2×DR4 port
 - CX-8 OSFP 800G DR4 port
- DR4 lane mapping verified across electrical and optical domains
- L2 forwarding enabled
- Bidirectional traffic generation to validate sustained stability

Validated Configuration

- 1.6T OSFP 2×DR4 (3nm DSP)
- 800G OSFP RHS DR4
- Switch: NVIDIA Q3200
- Server NIC: NVIDIA CX-8 (Lenovo server platform)

Physical & Logical Topology

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- L2 forwarding enabled
- Bidirectional traffic generation to validate sustained stability

Validation Methodology

1. Link Initialization

- OSFP modules inserted and detected by NVOS
- Module identifiers, firmware versions, and vendor data verified
- Link training initiated automatically

2. Lane Mapping & Alignment

- DR4 lane breakout validated for correct mapping
- Lane alignment verified during initialization
- FEC enabled and monitored throughout testing

3. Traffic Validation

- Bidirectional traffic generated at expected operational rates
- Sustained forwarding observed across test duration
- Error counters monitored continuously

Results Summary

Link Status

- All DR4 lanes successfully established
- Logical and physical states reported as *LinkUp*

Traffic Results

- Bidirectional traffic passed at expected rates
- No packet loss observed
- No CRC, FEC, or lane errors detected

Error Counters

- Error counters remained at zero throughout testing

Optical Health

- Diagnostics confirmed stable signal integrity
- Supported cable length reported at 500m SMF
- No fault or warning conditions observed

Representative Readouts (Excerpt)

Transceiver Detection

- Identifier: OSFP 8x Pluggable Transceiver
- Vendor Name: AXIOM-NVIDIA
- Vendor PN: MMS4A00-XM-AX
- Firmware Version: 43.4.0

Interface State

- Logical State: Initialize
- Physical State: LinkUp

(Full CLI outputs available upon request.)



Key Technical Conclusions

- Mixed-speed interoperability between 1.6T switch ports and 800G server ports is fully supported
- DR4 lane mapping and FEC operate as expected across NVIDIA platforms
- Axiom optics demonstrate production-grade stability suitable for AI and HPC fabrics
- Configuration supports incremental migration from 800G to 1.6T architectures

Deployment Implications for Advanced Customers

This validation enables:

- High-density AI fabrics using 1.6T switching with existing 800G servers
- Phased upgrades without forklift replacement
- Reduced risk when deploying OEM-alternative optics at scale
- Faster qualification cycles for hyperscale and enterprise environments

Conclusion

Axiom OSFP 1.6T and 800G DR4 transceivers are validated, interoperable, and production-ready on NVIDIA Q3200 and CX-8 platforms. This solution supports scalable, energy-efficient AI infrastructure while maintaining signal integrity and operational stability.

Why Engineers Choose Axiom:

Proven Compatibility. Not Assumptions

- OEM-compatible optics validated for specific platforms, not generic specs
- Tested against real-world systems (NVIDIA, Cisco, Dell, HPE, Lenovo, etc.)
- Designed to drop in cleanly alongside existing infrastructure

Engineering Validation That Reduces Risk

- Interoperability testing performed in Axiom's U.S. engineering labs
- Link training, lane alignment, FEC, and traffic validation verified
- Eliminates guesswork during deployment and scale-out

Faster Deployment, Fewer Surprises

- Optics are stocked, tested, and ready—no long OEM lead times
- Ideal for capacity adds, backfills, and phased upgrades
- Helps teams hit deployment timelines without redesigns or delays

Designed for Real Upgrade Scenarios

- Supports mixed environments, partial refreshes, and legacy platforms
- No forced bundles or artificial platform constraints
- Enables incremental migration (400G → 800G → 1.6T)

Enterprise-Grade Without OEM Lock-In

- Built to enterprise standards with full documentation and support
- Avoids OEM pricing premiums while maintaining performance integrity



Appendix A readouts:

```
admin@nvos:~$ nv show interfac swA9p1platform transceiver interface
```

Interface	State	Speed	MTU	Type	Description	IB Speed	IB Subnet	Logical State	Physical State	Summary
eth0	up	1G	1500	eth						ip.address:
10.0.0.102/24										
eth1	down		1500	eth						
fnm1	down			fnm			infiniband-default	Down	Disabled	
ib0	down		2044	ipoib						
lo	up		65536	loopback						ip.address:
127.0.0.1/16										ip.address:
::1/128										
swA9p1	up		256	ib			infiniband-default	Initialize	LinkUp	
swA9p2	up		256	ib			infiniband-default	Initialize	LinkUp	
swB9p1	up		256	ib			infiniband-default	Initialize	LinkUp	
swB9p2	up		256	ib			infiniband-default	Initialize	LinkUp	

```
admin@nvos:~$ nv show interfac swA9p1platform transceiver
```

Transceiver	Identifier	Vendor Name	Vendor PN	Vendor SN	Vendor Revision	FW Version	
swA9	OSFP 8X Pluggable Transceiver	AXIOM-NVIDIA	MMS4A00-XM-AX	AXDIQ5DA28213	BB	43.4.0	
swB9	OSFP 8X Pluggable Transceiver	AXIOM-NVIDIA	MMS4A00-XM-AX	AXDIQ5DA28212	BB	43.4.0	

```
admin@nvos:~$ nv show interfac swB9p12A9p21platform transceiver detail
```

```
swA9:
```

```
cable-type : Optical module
supported-cable-length : 500m SMF
diagnostics-status : Diagnostic Data Available
status : Inserted
error-status : N/A
vendor-data-code : 2026-01-09
identifier : OSFP 8X Pluggable Transceiver
vendor-rev : BB
vendor-name : AXIOM-NVIDIA
vendor-pn : MMS4A00-XM-AX
vendor-sn : AXDIQ5DA28213
fw-version : 43.4.0
```

```
swB9:
```

```
cable-type : Optical module
supported-cable-length : 500m SMF
diagnostics-status : Diagnostic Data Available
status : Inserted
error-status : N/A
vendor-data-code : 2026-01-09
identifier : OSFP 8X Pluggable Transceiver
vendor-rev : BB
vendor-name : AXIOM-NVIDIA
vendor-pn : MMS4A00-XM-AX
vendor-sn : AXDIQ5DA28212

fw-version : 43.4.0
```

