

# OSFP-DR4-400G-FL TEST REPORT



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## 1. List of Test Items

Test Items	Test Sub-items	Test Contents	Test Results
Test Lanes	Test Lanes	Lane0~Lane3	/
Product Photoelectric Testing	Optical Transmitter Test	Actual Transmission Power	Pass
		Central Wavelength	Pass
		Maximum -20dB Spectral Width	Pass
	Traffic Transmission Test	Raw Physical BER	Pass
		Symbol Errors	Pass
		Link Down Counter	Pass
	DDM Data Test	Temperature	Pass
		Voltage	Pass
		Bias Current	Pass
		Tx_Power	Pass
		Tx_Power Accuracy	Pass
		Rx_Power	Pass
Adaptability Test	Brand Compatibility Test	Brand Equipment Compatibility Test	Pass
Business Network Testing	Port Splitting Application	Port Splitting Application Testing	Pass

## 2. Product Photoelectric Testing

### 2.1 Optical Transmitter Test

#### 2.1.1 Test Introduction

Device Type	Brands	Test Items	Test Results	Testing Environment
Optical Channel Oscilloscope	Keysight	Actual Transmission Power	Pass	
Optical\Electrical Clock Recovery		Central Wavelength	Pass	
Adjustable Attenuator				
Optical Power Meter		Maximum -20dB Spectral Width	Pass	

#### 2.1.2 Test Procedures

Steps	Summary of Test Steps
1	Connect the optical modules to the test environment as per the above networking diagram.
2	Test the optical output signal using an optical oscilloscope, a CDR and other equipment.
3	Record the actual transmission power, central wavelength and maximum -20dB spectral width of each channel.

#### 2.1.3 Test Results

Table 2-1: Optical Transmitter Test Results

No.	Actual Transmission Power (dBm)	Central Wavelength (nm)	Maximum -20dB Spectral Width (nm)
1-Lane 0	0.450	1310.83	0.331
1-Lane 1	1.400	1310.90	0.319
1-Lane 2	0.480	1310.58	0.335
1-Lane 3	0.090	1310.21	0.326

NOTE: Lane 0, 1, 2, 3 represent each channel of the module

## 2.2 Traffic Transmission Test

### 2.2.1 Test Introduction

Device Type	Brands	Test Items	Test Results	Testing Environment
Traffic Tester	NVIDIA	Raw Physical BER	Pass	
		Symbol Errors	Pass	
		Link Down Counter	Pass	

### 2.2.2 Test Procedures

Steps	Summary of Test Steps
1	Configure a traffic tester and generate data streams through optical modules.
2	Measure the forward error correction pre-error rate and frame loss rate of each channel in the test environment.
3	Verify whether the results meet the specification requirements.

### 2.2.3 Test Results

Table 2-2: Traffic Transmission Test Results

No.	Raw Physical BER	Symbol Errors	Link Down Counter
SN 1	4.00E-08	0	0
SN 2	2.00E-08	0	0

## 2.3 DDM Data Test

### 2.3.1 Test Introduction

Device Type	Brands	Test Items	Test Results	Testing Environment
Switches	NVIDIA	Temperature	Pass	
		Voltage	Pass	
		Bias Current	Pass	
		Tx_Power	Pass	
		Tx_Power Accuracy	Pass	
		Rx_Power	Pass	

### 2.3.2 Test Procedures

Steps	Summary of Test Steps
1	Access DDM data through the module interface.
2	Record parameters such as temperature, voltage, bias current, emission power, emission power accuracy and reception power.
3	Compare the results with the module specifications.

### 2.3.3 Test Results

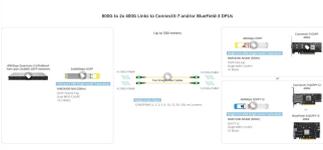
Table 2-3: DDM Data Test Results

No.	Temperature (°C)	Voltage (V)	Bias Current (mA)	Tx_Power (dBm)	Tx_Power Accuracy (dB)	Rx_Power (dBm)
1-Lane 0	48	3.3212	58.556	2.3434	0.1566	2.4856
1-Lane 1	48	3.3212	80.712	2.3492	0.4092	1.7880
1-Lane 2	48	3.3212	84.996	1.9557	0.0457	2.4544
1-Lane 3	48	3.3212	76.940	2.2750	0.4250	1.9761

## 3. Brand Compatibility Test

### 3.1 Brand Compatibility Test

#### 3.1.1 Test Introduction

Device Type	Brands	Test Items	Test Results	Testing Environment
Switches\NICs	NVIDIA	Brand Equipment Compatibility Test	Pass	

#### 3.1.2 Test Procedures

Steps	Summary of Test Steps
1	Insert the optical module into the switch/network card port.
2	Verify the connection status, alarm information, type information and DDM information.
3	Ensure compatibility with the device software version.

### 3.1.3 Test Results

Table 3-1: Brand Compatibility Test Results

Equipment Brand	Device Version	Software Version of The Equipment	Warning Message	Connectivity	Type Information	DDM Information
NVIDIA IB	MQM9700-NS2F	31.2012.1024	No Warning	Link Up	Active optical cable	Pass
NVIDIA IB	MQM9790-NS2F	31.2012.1068	No Warning	Link Up	IB NDR, 400GBASE-DR4	Pass
NVIDIA IB	MCX75310AAS-NEAT	28.43.2026	No Warning	Link Up	IB NDR, 400GBASE-DR4	Pass
NVIDIA ETH	MCX75310AAS-NEAT	28.43.2026	No Warning	Link Up	IB NDR,400GBASE-DR4	Pass

## 4. Business Network Testing

### 4.1 Port Splitting Application Test

#### 4.1.1 Test Introduction

Device Type	Brands	Test Items	Test Results	Testing Environment
Switches\NICs	NVIDIA	Port Splitting Application Test	Pass	

#### 4.1.2 Test Procedures

Steps	Summary of Test Steps
1	Configure the switch to adopt port splitting mode (such as 400G to 400G IB&ETH, 800G to 2*400G IB&ETH).
2	Use test equipment to verify the running information, port module information, and information such as port count\ bit error rate.
3	Take screenshots to record the output results of the tool.

#### 4.1.3 Application Testing

Table 4-1: Port Splitting Application Testing

Split Mode	Test Equipment	Tool and Device Info	Operational Info	Supported Info	Physical Counters and BER Info
400G to 400G IB	NVIDIA 715105A to NVIDIA 715105A	Tool Information ----- Firmware Version : 28.43.2026 amBER Version : 3.3 MFT Version : mft 4.29.0-131	Operational Info ----- State : Active Physical state : Disabled Speed : 1B-NDR Width : 4x FEC : N/A Loopback Mode : No Loopback Auto Negotiation : ON	Supported Info ----- Enabled Link Speed : 0x00000080 (NDR) Supported Cable Speed : 0x00000080 (NDR)	Physical Counters and BER Info ----- Time Since Last Clear [Min] : 2.1 Symbol Errors : 0 Symbol BER : 15E-255 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 208404,583314,56070,31944 Raw Physical BER : 1E-8 Link Down Counter : 0 Link Error Recovery Counter : 0
		Tool Information ----- Firmware Version : 28.43.2026 amBER Version : 3.3 MFT Version : mft 4.29.0-131	Operational Info ----- State : Active Physical state : Disabled Speed : 1B-NDR Width : 4x FEC : N/A Loopback Mode : No Loopback Auto Negotiation : ON	Supported Info ----- Enabled Link Speed : 0x00000080 (NDR) Supported Cable Speed : 0x00000080 (NDR)	Physical Counters and BER Info ----- Time Since Last Clear [Min] : 2.8 Symbol Errors : 0 Symbol BER : 15E-255 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 284430,765398,78833,42288 Raw Physical BER : 1E-8 Link Down Counter : 0 Link Error Recovery Counter : 0

400G to 400G ETH	NVIDIA 715105A to NVIDIA 715105A	<p>Tool Information</p> <p>Firmware Version : 28.43.2026 amBER Version : 3.3 MFT Version : mft 4.29.0-131</p>	<p>Operational Info</p> <p>State : Active Physical state : LinkUp Speed : 400G Width : 4x FEC : Standard_RS-FEC - (544,514) Loopback Mode : No Loopback Auto Negotiation : ON</p>		<p>Physical Counters and BER Info</p> <p>Time Since Last Clear [Min] : 0.8 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 94385,214205,21282,9143 Link Down Counter : 0 Link Error Recovery Counter : 0 Raw Physical BER : 1E-8</p>
		<p>Tool Information</p> <p>Firmware Version : 28.43.2026 amBER Version : 3.3 MFT Version : mft 4.29.0-131</p>	<p>Operational Info</p> <p>State : Active Physical state : LinkUp Speed : 400G Width : 4x FEC : Standard_RS-FEC - (544,514) Loopback Mode : No Loopback Auto Negotiation : ON</p>		<p>Physical Counters and BER Info</p> <p>Time Since Last Clear [Min] : 0.9 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 132,154,896,992 Link Down Counter : 0 Link Error Recovery Counter : 0 Raw Physical BER : 1E-10</p>
800G to 2*400G IB	NVIDIA 9700 to NVIDIA 715105A	<p>Tool Information</p> <p>Firmware Version : 31.2012.1024 amBER Version : 3.3 MFT Version : mft 4.29.0-131</p> <p>Device Info</p> <p>Part Number : MQM9700-NS2F Part Name : GorillaB400 Serial Number : MT2342T00LEC Revision : AH FW Version : 31.2012.1024</p>	<p>Operational Info</p> <p>State : Active Physical state : Disabled Speed : IB-NDR Width : 4x FEC : Standard_RS-FEC - (544,514) Loopback Mode : No Loopback Auto Negotiation : ON</p>	<p>Supported Info</p> <p>Enabled Link Speed : 0x00000080 (NDR) Supported Cable Speed : 0x00000080 (NDR)</p>	<p>Physical Counters and BER Info</p> <p>Time Since Last Clear [Min] : 4.1 Symbol Errors : 0 Symbol BER : 15E-255 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 265395,655238,1448732,1484519 Raw Physical BER : 4E-8 Link Down Counter : 0 Link Error Recovery Counter : 0</p>
		<p>Tool Information</p> <p>Firmware Version : 28.41.1000 amBER Version : 3.3 MFT Version : mft 4.29.0-131</p>	<p>Operational Info</p> <p>State : Active Physical state : Disabled Speed : IB-NDR Width : 4x FEC : Standard_RS-FEC - (544,514) Loopback Mode : No Loopback Auto Negotiation : ON</p>	<p>Supported Info</p> <p>Enabled Link Speed : 0x00000080 (NDR) Supported Cable Speed : 0x00000080 (NDR)</p>	<p>Physical Counters and BER Info</p> <p>Time Since Last Clear [Min] : 7.8 Symbol Errors : 0 Symbol BER : 15E-255 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 208738,612944,12227256,3411936 Raw Physical BER : 1E-8 Link Down Counter : 0 Link Error Recovery Counter : 0</p>
800G to 2*400G ETH	NVIDIA 5600 to NVIDIA 715105A	<p>Tool Information</p> <p>Firmware Version : 34.2014.1108 amBER Version : 3.2 MFT Version : mft 4.28.0-97</p>	<p>Operational Info</p> <p>State : Active Physical state : LinkUp Speed : 400G Width : 4x FEC : Standard_RS-FEC - (544,514) Loopback Mode : No Loopback Auto Negotiation : ON</p>		<p>Physical Counters and BER Info</p> <p>Time Since Last Clear [Min] : 3.7 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 269472,998499,1582094,1179048 Raw Physical BER : 4E-8</p>
		<p>Tool Information</p> <p>Firmware Version : 28.41.1000 amBER Version : 3.3 MFT Version : mft 4.29.0-131</p>	<p>Operational Info</p> <p>State : Active Physical state : LinkUp Speed : 400G Width : 4x FEC : Standard_RS-FEC - (544,514) Loopback Mode : No Loopback Auto Negotiation : ON</p>		<p>Physical Counters and BER Info</p> <p>Time Since Last Clear [Min] : 9.9 Effective Physical Errors : 0 Effective Physical BER : 15E-255 Raw Physical Errors Per Lane : 136962065,17565509,2471707,20468973 Link Down Counter : 0 Link Error Recovery Counter : 0 Raw Physical BER : 3E-8</p>