

# 200G Multirate Transponder / Muxponder

Up to 200G Rate, QSFP28/QSFP+ to CFP2, M6500 Series Pluggable Module



## Description

The 200G transponder/muxponder provides a high transport capacity of 200G over a single wavelength, and it supports a flexible mix of 10GbE, 40GbE, and 100GbE services in various muxponder and transponder operation modes, combining different protocols and rates over a single 100/200G uplink.

The transponder/muxponder meets market demands for low power consumption and rack space savings, enabling to easily and cost-effectively roll-out service and increasing capacity of enterprise DCI (data center interconnect) and metro networks.

## Highlight

- User-configurable muxponder and transponder operation modes
- Supports 10GbE, 40GbE, and 100GbE services and protocol mix
- Attached CFP2 coherent optic module provides superior optical performance
- Coherent detection removes the need for dispersion
- Highly integrated in M6500 Series managed chassis

## Application

- Metro/Regional transport into/from OTN transport network
- 100/200G link to bolster existing OTN/DWDM infrastructure
- High capacity DCI for enterprise, campus and cloud computing networks

## Technical Specifications

### Line Interface

Parameter	Description
Line Interface Type	1x CFP2
Line Interface Protocol	Coherent CFP2
Coherent Modulation Technology	8/16QAM
Transmit Rate	100G/200G (User-Configurable)
OSNR Sensitivity	20dB 8/16QAM
Wavelength Range of Input Signal	1528~1568nm
Channel Spacing	50GHz & 100GHz
Dispersion Tolerance	20000 ps/nm 8QAM 16000ps/nm 16QAM
FEC Support	G.709 Regular FEC or SD-FEC (100G) Soft-Decision FEC (200G)

### Client Interface

Parameter	Description
Client Interface Type	5x QSFP28/QSFP+
Client Interface Protocol	10G, 40G, 100G, OTU3, OTU4
FEC Support	I.4 and 1.7Super FEC or G.709 Regular FEC(10G OTU2/2e)

### Management

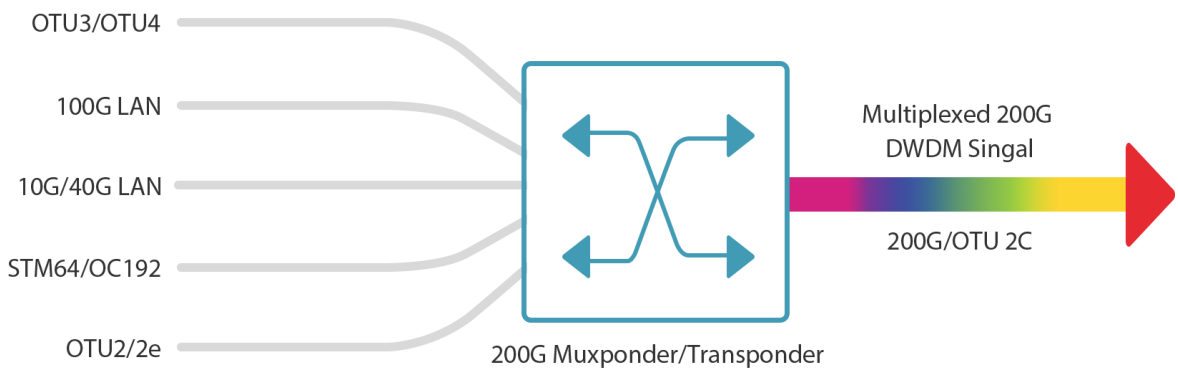
Parameter	Description
Management Interface	RJ45/SFP Port
Out-band Management	WEB, SNMP v2
In-band Management	GCC 0/1/2

## Physical Specification

Parameter	Description
Chassis Type	M6500-CH5U
Chassis Power Supply	Dual power, -40VDC~-72VDC
Power Consumption	Max.1100W
Operating Temperature	0 to 40° C
Storage Temperature	-40 to 70° C
Chassis Dimension(H*W*D)	8.74"x17.5"x9.51" (222x 444.5x 241.5mm)

## Function Diagram

The M6500 200G transponder/muxponder provides a high transport capacity of 200G over a single wavelength, it can aggregate 10GbE, 40GbE, and 100GbE, STM-64/OC-192, OTU2/OTU2e/OTU3/OTU4 OTN multi-protocol services into a single 200G /OTU2C standard OTN trunk.



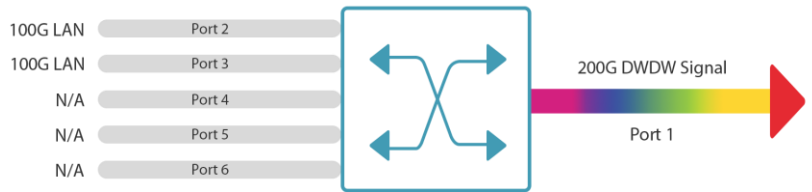
## Flexible and Versatile 200G Muxponder/Transponder

The M6500 200G transponder/muxponder can be flexibly deployed in five operation mode via M Series NMS managed software.

### Mode 1: 2x 100G to 200G

2x 100G QSFP28 on Port 2/3  
1x 200G CFP2 on Port 1

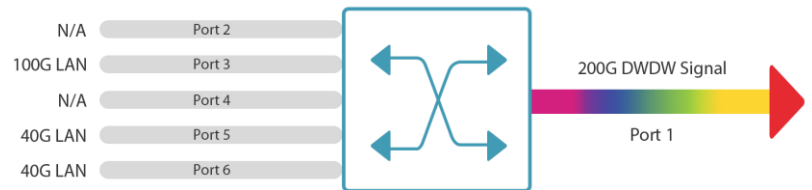
Port 4~6 is spare.



### Mode 2: 1x 100G + 2x 40G to 200G

1x 100G QSFP28 on Port 3  
2x 40G QSFP+ on Port 5/6  
1x 200G CFP2 on Port 1

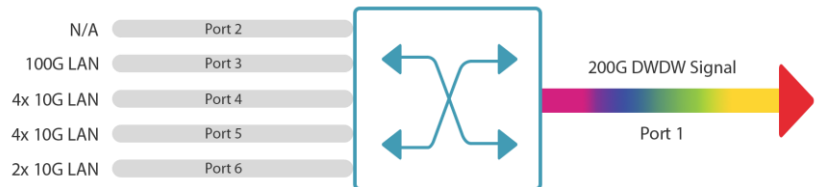
Port 2/4 is spare.



### Mode 3: 1x 100G + 10x 10G to 200G

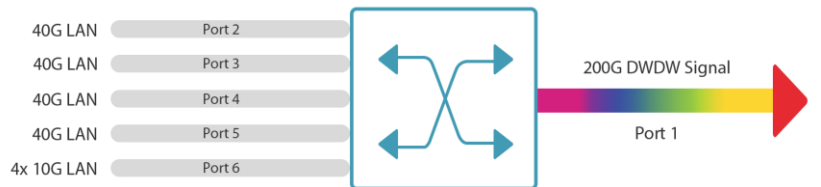
1x 100G QSFP28 on Port 3  
2x (4x10G)\* QSFP+ on Port 4/5  
(2x 10G)\* QSFP+ on Port 6  
1x 200G CFP2 on Port 1

Port 2 is spare.



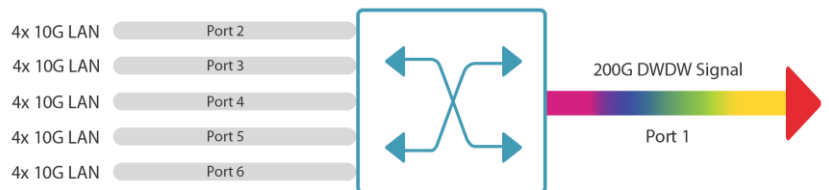
### Mode 4: 4x 40G + 4x 10G to 200G

4x 40G QSFP+ on Port 2~5  
(4x 10G)\* QSFP+ on Port 6  
1x 200G CFP2 on Port 1



### Mode 5: 20x 10G to 200G

(4x10G)\* QSFP+ on Port 2~6  
1x 200G CFP2 on Port 1



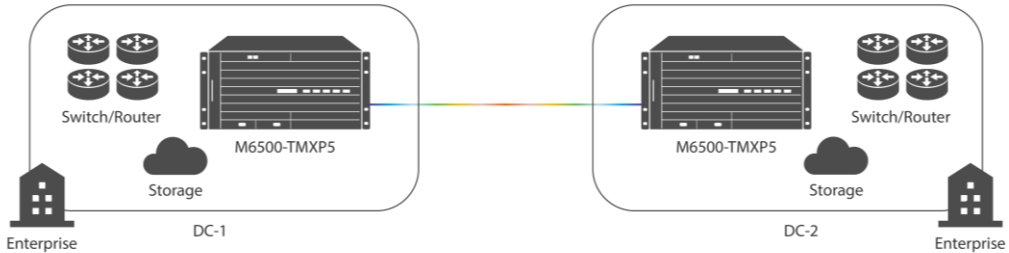
**\* Note:**

1. MTP-LC breakout patch cable should be used with QSFP+ port for 10G rate (4x 10G).
2. When MTP-LC breakout patch cable is used to transmit 4x10G, the not used branches can be spared.

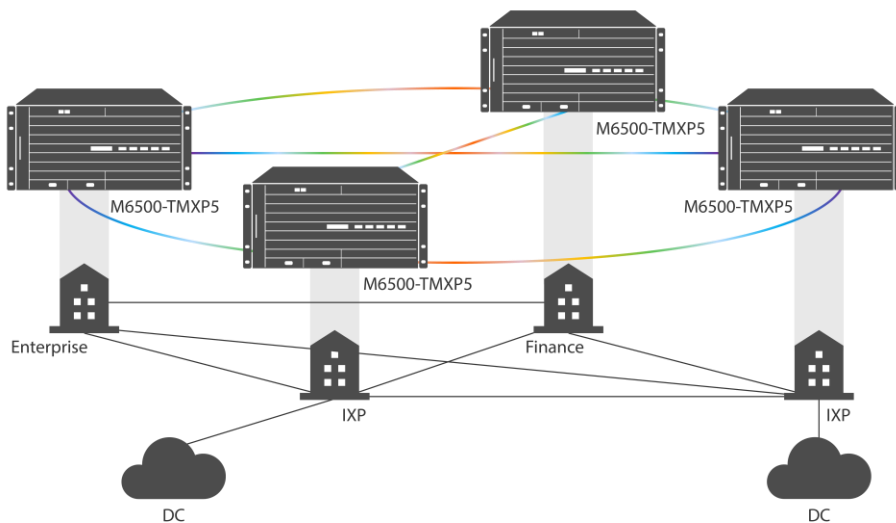
## Applications

M6500 TMXP5 is a 200G multi-protocol multi-rate transponder/muxponder for building high capacity optical transport networks. It delivers carrier grade, high-end 200G solutions, capable of serving multiple applications and protocols for enterprise and data center networks and long-haul DWDM OTN solutions.

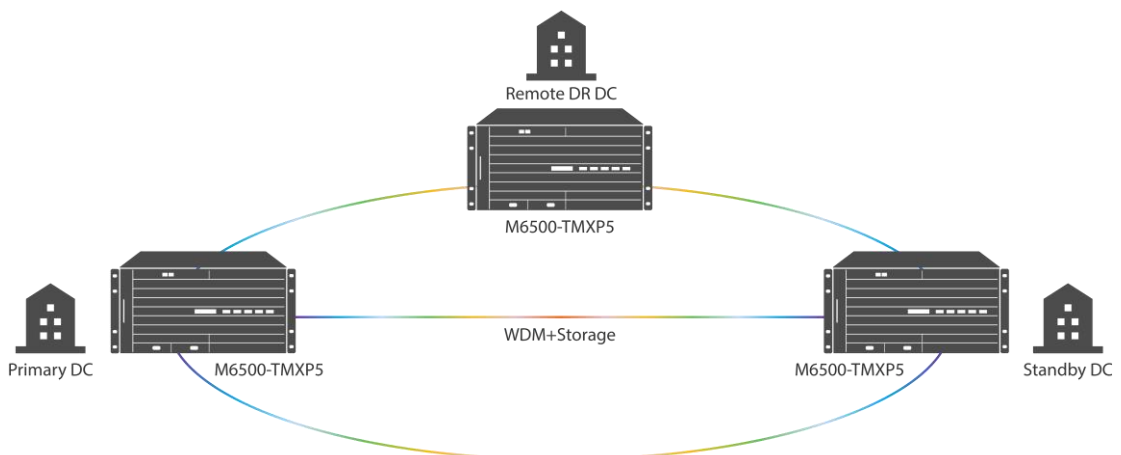
### 1. Small-sized Networks---Point-to-point



### 2. Medium and Large-sized Networks---Mesh

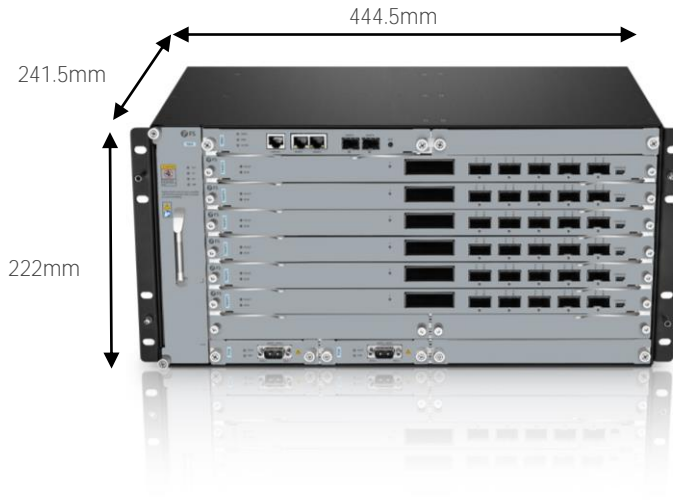


### 3. Disaster recovery---Three centers in two cities



## Matching Managed Chassis

M6500-TMXP5 200G transponder/muxponder pluggable module occupies one slot in M6500 5U Managed Chassis



## Ordering Information

Mux Demux & OADM	
	<p><a href="#">FMU-D402160M3</a> 40 Channels 100GHz C21-C60, with 1310nm and Monitor Port, 3.5dB Typical IL, LC/UPC, Dual Fiber DWDM Mux Demux, 1U Rack Mount #35887</p>
DWDM MUX DEMUX	<p><a href="#">M6200-D2160M</a> 40 Channels 100GHz C21-C60 Dual Fiber DWDM Mux and Demux with Monitor Port, Pluggable Module, LC/UPC, Integrated with M6200 Series Managed Chassis #120424</p>
	<p><a href="#">FMU-D162136EM3</a> 16 Channels 100GHz C21-C36, with Monitor, Expansion and 1310nm Port, LC/UPC, Dual Fiber DWDM Mux Demux, 1U Rack Mount #72430</p>
	<p><a href="#">FMU-MD085360EM3</a> CWDM/DWDM Hybrid Solution, 8 Channels 100GHz C53-C60, with Monitor, Expansion and 1310nm Port, LC/UPC, Dual Fiber DWDM Mux Demux, FMU Plug-in Module #72433</p>
CWDM MUX DEMUX	<p><a href="#">FMU-C182761M</a> 18 Channels 1270-1610nm, with Monitor Port, LC/UPC, Dual Fiber CWDM Mux Demux, 1U Rack Mount #33489</p>
	<p><a href="#">FMU-MC084761EM</a> 8 Channels 1470-1610nm, with Monitor and Expansion Port, LC/UPC, Dual Fiber, Low Insertion Loss CWDM Mux Demux, FMU Plug-in Module #78163</p>
LWDM MUX DEMUX	<p><a href="#">ABS-L042930A</a> 4 Channels 1295.56-1309.14nm, Single Fiber LAN-WDM Mux Demux, Side-A, ABS Pigtailed Module, LC/UPC #97782</p>
	<p><a href="#">ABS-C062737A</a> 6 Channels 1271-1371nm, Single Fiber CWDM Mux Demux, Side-A, ABS Pigtailed Module, LC/UPC #97784</p>
OADM	<p><a href="#">DOADM-DF</a> Customized Dual Fiber &amp; Single Fiber DWDM OADM #70427</p>
	<p><a href="#">COADM-DE</a> Customized Dual Fiber &amp; Single Fiber CWDM OADM #70425</p>
Chassis	<p><a href="#">FMU-1UFMX-N</a> FMU 2-Slot 1U 19" Rack Chassis Unloaded, holds up to 2 Units FMU Plug-in Module #30408</p>
	<p><a href="#">FUD-1UFMX-N</a> FUD 4-Slot 1U 19" Rack Chassis Unloaded, holds up to 4 Units FUD Plug-in Module #106578</p>

## TRANSPONDERS &amp; MUXPONDERERS

8x 200G	<a href="#">M6800-TSP16</a>	16x 100G QSFP28 to 8x 200G CFP2 OTN Managed Transport Platform#111053
100G/200G	<a href="#">M6500-TMXP5</a>	2x 100G QSFP28/4x 40G QSFP+ to 1x 200G CFP2 Transponder/Muxponder#111049
10G	<a href="#">M6200-OEO10G</a>	5 Channels WDM Transponder (Converter), 10 SFP/SFP+ Slots#107365
Chassis	<a href="#">M6500-CH2U</a>	2U Managed Chassis Unloaded Platform, Supports 2x 200G Transponder/Muxponder #96454
	<a href="#">M6500-CH5U</a>	5U Managed Chassis Unloaded Platform, Supports 6x 200G Transponder/Muxponder #111050
	<a href="#">M6200-CH2U</a>	2U Managed Chassis Unloaded Platform, Supports 7x Mux/DEMUX/EDFA/OEO/OLP/DCM Cards #107371
	<a href="#">M6200-CH5U</a>	5U Managed Chassis Unloaded Platform, Supports 15x MUX/DEMUX/EDFA/OEO/OLP/DCM Cards #111052

## OPEN LINE SYSTEM

Amplifiers	<a href="#">M6200-25PA</a>	25dB Gain DWDM EDFA Pre-Amplifier, 16dBm Output#107367
	<a href="#">M6200-20BA</a>	20dBm Output DWDM EDFA Booster Amplifier, 16dB Gain#107366
Dispersion Compensation	<a href="#">M6200-DCM40</a>	40KM DCF-based Passive Dispersion Compensation Module#107370
	<a href="#">M6200-DCM80</a>	80KM DCF-based Passive Dispersion Compensation Module#119071
Line Protection	<a href="#">M6200-OLP2</a>	1+1 Optical Line Protection Switch (OLP)#107368
Red/Blue Filter	<a href="#">M6200-RB</a>	1x2 Single Fiber DWDM Red/Blue Filter#107369
VOA Units	<a href="#">M6200-SFPVOA</a>	SFP Variable Optical Attenuator Module#107373
	<a href="#">AT-M-LCU</a>	Fixed Fiber Optic Attenuators #70009
Chassis	<a href="#">M6200-CH2U</a>	2U Managed Chassis Unloaded Platform, Supports 7x Mux/DEMUX/EDFA/OEO/OLP/DCM Cards #107371
	<a href="#">M6200-CH5U</a>	5U Managed Chassis Unloaded Platform, Supports 15x MUX/DEMUX/EDFA/OEO/OLP/DCM Cards #111052

## WDM TRANSCEIVERS

100G/200G CFP2	<a href="#">M-CFP2-DCO</a>	C14 1566.31nm 100G/200G Tunable CFP2-DCO Coherent Transceiver, up to 1000km #120128
	<a href="#">DWDM-SFP25G-10</a>	25G DWDM SFP28 100GHz 1563.86nm 10km DOM LC SMF Optical Transceiver Module #87000
25G SFP28	<a href="#">CWDM-SFP25G-40S</a>	25G 1270nm CWDM SFP28 40km DOM LC SMF Optical Transceiver Module #100112
	<a href="#">CWDM-SFP25G-10SP</a>	25G 1270nm CWDM SFP28 10km DOM LC SMF Optical Transceiver Module #76003
	<a href="#">LWDM-SFP25G-40</a>	25G LWDM SFP28 1286.66nm 40km DOM LC SMF Optical Transceiver Module #93786
	<a href="#">DWDM-SFP16G-40</a>	Customized 16G DWDM SFP+ C20-C61 100GHz 40km DDM LC SMF Transceiver Module#73084
16G/8G FC	<a href="#">DWDM-SFP16GH-40</a>	Customized 16G DWDM SFP+ 50GHz 40km DDM LC SMF Transceiver Module #73085
	<a href="#">CWDM-SFP16G-40</a>	Customized 16G Fiber Channel CWDM SFP+ 1470-1610nm 40km DDM LC SMF Transceiver Module #80765
	<a href="#">DWDM-SFP10G-80</a>	10G DWDM SFP+ 1559.79nm 80km DOM LC SMF Transceiver Module, Commercial Temperature#31237, Industrial Temperature#113562
	<a href="#">DWDM-SFP10G-40</a>	10G DWDM SFP+ 1560.61nm 40km DOM LC SMF Transceiver Module, Commercial Temperature#38731, Industrial Temperature#113511
10G SFP+	<a href="#">DWDM-SFP10G-C</a>	10G DWDM C-band Tunable SFP+ 50GHz 80km DOM LC SMF Transceiver Module #69267
	<a href="#">CWDM-SFP10G-80L</a>	10G CWDM SFP+ 1470nm 80km DOM LC SMF Transceiver Module #19367
	<a href="#">CWDM-SFP10G-40S</a>	10G CWDM SFP+ 1270nm 40km DOM LC SMF Transceiver Module, Commercial Temperature#22168, Industrial Temperature#112392
	<a href="#">DWDM-SFP1G-EZX</a>	1000BASE-DWDM SFP 100GHz 1563.86nm 100km DOM LC SMF Transceiver Module #54150
1G SFP	<a href="#">DWDM-SFP1G-ZX</a>	1000BASE-DWDM SFP 1563.86nm 80km DOM LC SMF Transceiver Module #47697
	<a href="#">CWDM-SFP1G-EZX</a>	1000BASE-CWDM SFP 1270nm 120km DOM LC SMF Transceiver Module #102776
	<a href="#">CWDM-SFP1G-ZX</a>	1000BASE-CWDM SFP 1270nm 80km DOM LC SMF Transceiver Module #33234

\*Standard products are listed above. Customized specifications are available upon request.





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