

MUM200-2

IP DSLAM Multiplexer Module with Dual Uplink Interface Capacity

CAUTION Net to Net Technologies strongly recommends the use of proper electrostatic discharge (ESD) precautions when handling this equipment.

1.0 INSTALLATION

1.1 Unpack and Inspect the Multiplexer Uplink Module (MUM)

If there is visible damage, do not attempt to install the MUM200-2; contact Customer Support at 1-877-638-2638 (001-603-427-0600 for international customers) or Support@NetToNet.com.

1.2 Install an Uplink Interface Module (UIM) on the MUM200-2

A UIM provides the upstream network connection, via the MUM200-2, for Net to Net Technologies' IP DSLAMs; neither an IP DSLAM nor a MUM200-2 can function without a UIM. Any of Net to Net's available UIM models, with the exception of the UIM-1000T and UIM-1000F, may be installed on a MUM200-2 .

- Select a port on the MUM200-2 for UIM installation; either port (1 or 2) may be used. Although not required for operational purposes, if redundancy is desired two UIMs may be installed on a MUM200-2, one in each port.
- Remove the blanking plate from the selected port.

CAUTION Blanking plates should be stored for possible future use: if a UIM is removed from a MUM200-2, it must be replaced with either another UIM or a blanking plate. **DO NOT OPERATE A MUM200-2 WITH AN OPEN UIM PORT.**

- Carefully slide the faceplate of the UIM under the lip of the MUM200-2 faceplate at the selected port opening such that the UIM circuit board is facedown and the label shows through the MUM200-2 port opening with the UIM model name along the right-hand edge.
- Ensure that the mounting holes on the UIM are lined up with the corresponding pems on the MUM200-2 circuit board and that the board-to-board connector key pins are properly aligned.
- Gently press down with even pressure on all four corners of the UIM until the board-to-board connector is fully seated.
- Secure the UIM circuit board to the MUM200-2 circuit board, at the pems, with the (4) provided panhead screws.

- Secure the UIM faceplate to the MUM200-2 faceplate using the (2) provided beige flathead screws.

1.3 Install the MUM200-2 in an IP DSLAM Chassis

The IPD12000 is a fourteen slot chassis; slots 1-12 are reserved for interface modules (such as the SIM2000-24) and slots 13-14 are reserved for MUMs. Although not required for operational purposes, if redundancy is desired two MUMs may be installed in the IPD12000, one each in slot 13 and slot 14. The IPD4000 is a five slot chassis; slots 1-4 are reserved for interface modules and slot 5 is reserved for a MUM.

- Align the MUM200-2 with the slot module guides of the chosen slot for installation (either slot 13 or 14 on the IPD12000 or slot 5 on the IPD4000).
- Slide the MUM200-2 firmly into the chassis. DO NOT USE EXCESS FORCE.
- Tighten the fastening screws on the MUM200-2 faceplate.
- Verify that the PWR (Power) LED on the MUM200-2 faceplate is illuminated.

1.4 Connect the UIM(s) to the Network

Connect the network line(s) according to the UIM model type(s) installed in the MUM200-2:

1.4.1 UIM-10/100

Plug your Ethernet cable into the RJ45 Ethernet port on the UIM-10/100 faceplate. The UIM-10/100 connects to a router or a PC with a straight-through cable and to a hub or a switch with a crossover cable.

Verify the connection: solid illumination of the Lnk (link) LED on the UIM-10/100 faceplate indicates an Ethernet uplink connection has been established. The UIM-10/100 Ethernet port is 10/100 auto-negotiating.

NOTE Net to Net Technologies recommends that the remote device with which you are connecting be configured to auto-negotiate (if applicable) prior to establishing your Ethernet connection.

1.4.2 UIM-T1 and UIM-E1

Plug your T1/E1 cable into the RJ45 T1/E1 port on the UIM-T1 or UIM-E1 faceplate. The UIM-T1 and UIM-E1 connect to a T1/E1 network extender provider unit (TNE1500-P, TNE1500-P-12, ENE2000-P or ENE2000-P-12) via T1/E1 line.

Verify the connection: the Lnk (link) LED on the UIM-T1 or UIM-E1 faceplate will flash green to indicate a network connection has been established.

1.4.3 UIM-DS3 and UIM-E3

Plug your DS3/E3 cables into the corresponding Rx and Tx BNC ports on the UIM-DS3 or UIM-E3 faceplate. The UIM-DS3 and UIM-E3 connect to a DS3/E3 network extender provider unit (DNE4500-P, DNE4500-P-12, ENE3400-P or ENE3400-P-12) via DS3/E3 line.

Verify the connection: the Lnk (link) LED on the UIM-DS3 and UIM-E3 faceplate will flash green to indicate a network connection has been established.

For further information refer to the Installation Instructions for each individual UIM model.

2.0 IP DSLAM MANAGEMENT

The MUM200-2 provides IP DSLAM management capability via Net to Net's web-based Network Management System (NMS) and a scaled-down version of Simple Network Management Protocol (SNMP). For access and configuration instructions, refer to Net to Net's NMS Management User Guide.

3.0 ADDITIONAL INFORMATION

3.1 LED Indications

LED	State	Indication	Additional Information
PWR (Power)	solid green	MUM200-2 is receiving power	Both IP DSLAM power terminals are connected.
	solid amber	MUM200-2 is receiving power	One of the two IP DSLAM power terminals are connected.
	no illumination	no power	The MUM200-2 is not receiving power (the IP DSLAM may not be receiving power either).
Fan	no illumination	all fans are functioning	All four of the fans on the IP DSLAM fan card are functioning.
	solid amber	non-functioning fan	One or more of the four fans on the IP DSLAM fan card are no longer functioning.
Lnk (Link)	solid green	direct Ethernet management connection is established	The Lnk LED applies only to direct physical connections with the MGMT port; it does not apply to uplink network connections. The MGMT Ethernet port runs at 10 Mbps and Half Duplex.
	no illumination	no direct connection via the MGMT port is established	
UIM Lnk (Link)	solid green	UIM-10/100 Ethernet uplink connection is established	For further information regarding UIM-10/100 LEDs, please refer to the corresponding UIM Installation Instructions.
	flashing green	UIM-T1/E1 or UIM-DS3/E3 uplink connection is established	For further information regarding UIM-T1/E1 or UIM-DS3/E3 LEDs, please refer to the corresponding UIM Installation Instructions.
	no illumination	no uplink connection is established	Applicable to all UIM models types.

3.2 Regulatory Compliance for Class A Equipment

The following regulatory compliance information applies to a MUM200-2 as installed in one of Net to Net Technologies' IP DSLAMs.

3.2.1 US Federal Communications Commission (FCC)

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

3.2.2 Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

3.2.3 Europe

This Class A product complies with European Norm EN55022.

Warning: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures to correct the situation.

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