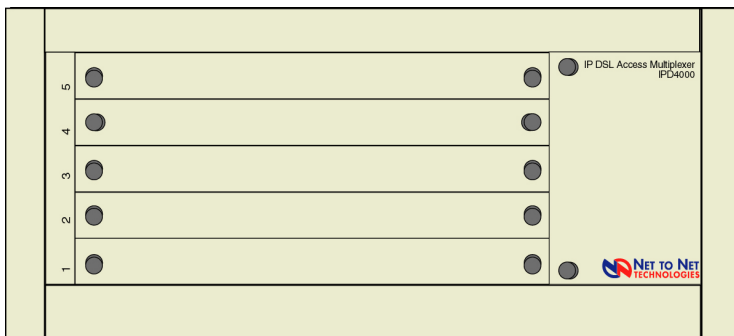


IP DSL Access Multiplexer

Hardware Installation Guide

- IPD12000
- IPD4000



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This document is intended as a usage guide for the IP DSLAM family of products. All features defined herein are subject to change. Any features inferred herein are accurate to the best knowledge of Net to Net Technologies, Inc. Please report any and all discrepancies to contact@nettonettech.com or call toll free at 877-638-2638.

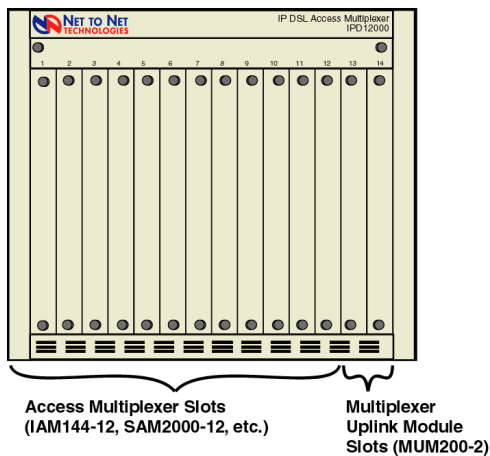
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IP DSL Access Multiplexer Overview

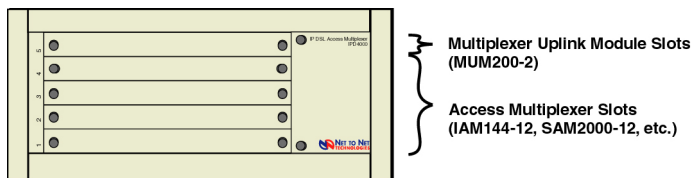
Net to Net Technologies' IP DSLAMs are designed to deliver high-speed data and voice connections over existing telephone copper lines. The IPD12000 and IPD4000 multiplex multiple access technologies (IDSL, SDSL, T1, ADSL, etc.) for upstream delivery to the provider's packet network. The IP DSLAMs achieve this in conjunction with Net to Net Subscriber Units, which are used on the other end of the copper line at the customer premise. This purpose of this guide is to familiarize the user with the chassis and modules, and to inform the user of the proper installation procedures of the IP DSLAM products.

IP DSL Access Multiplexer 12000



The IPD 12000 is a 14 slot chassis. Slots 1-12 are reserved for Multiplexer Access Modules (i.e. the IAM144-12 or the SAM2000-12), and slot 13 and 14 are reserved for Multiplexer Uplink Modules (i.e. the MUM200-2). Access Modules may be placed in any order in slots 1-12. The IPD 12000 requires only one Multiplexer Uplink Module; the second is for redundancy purposes. When using only one Uplink Module, it may reside in slot 13 or 14, and does not matter which slot is chosen. The chassis includes mounting ears for a standard 19" equipment rack, or special mounting brackets are available for 23" equipment racks.

IP DSL Access Multiplexer 4000



The IPD 4000 is a 5 slot chassis. Slots 1-4 are reserved for Multiplexer Access Modules (i.e. the IAM144-12 or the SAM2000-12), and slot 5 is reserved for Multiplexer Uplink Modules (i.e. the MUM200-2). Access

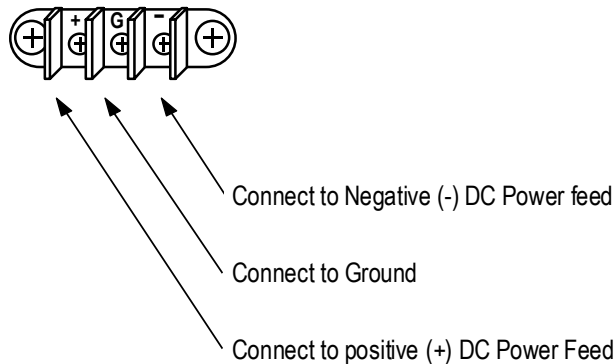
Modules may be placed in any order in slots 1-4. The IPD 4000 houses only one Multiplexer Uplink Module. The chassis includes mounting ears for a standard 19" equipment rack, or special mounting brackets are available for 23" equipment racks.

Installation

Net to Net Technologies strongly recommends using proper grounding techniques when installing the IP DSLAM chassis and modules.

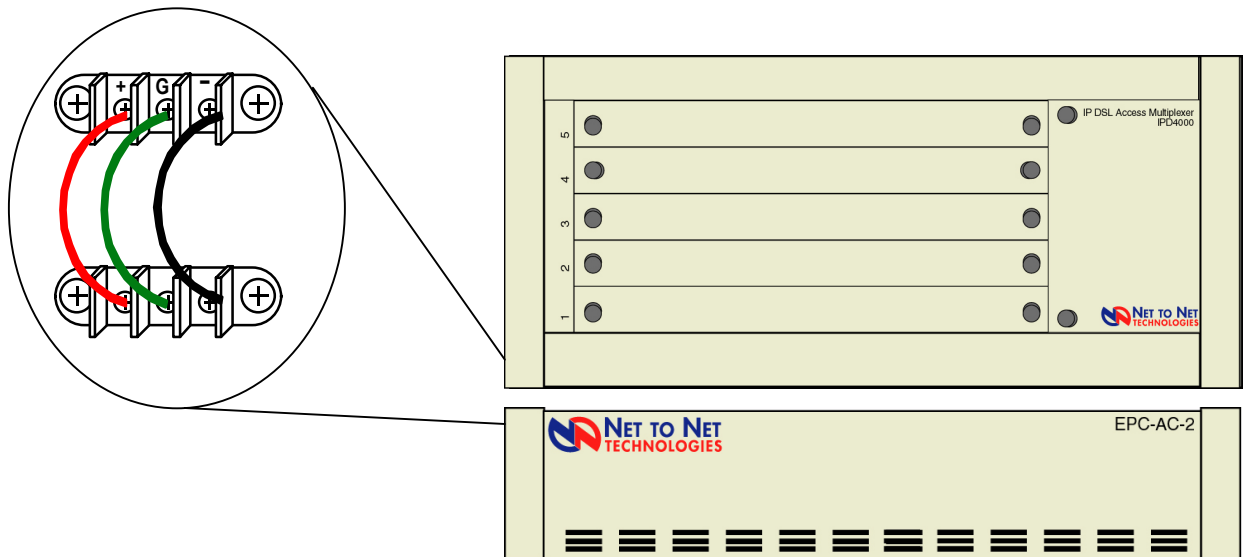
DC Power Installations

1. When mounting unit into an equipment rack please adhere to the following:
 - Maximum recommended ambient temperature is 30°C. Internal temperatures of rack should be considered for continued safe operation.
 - Do not block power supply vents or otherwise restrict airflow when installing unit in rack.
 - Mechanical loading of rack should be considered so that the rack remains stable and unlikely to tip over.
 - Consideration of the overall loading of the branch circuit should be given before installing any equipment in a rack environment.
 - Ensure that a reliable grounding path is maintained in the rack system. This unit is intended for a grounded connection.
2. Attach the -48 VDC power leads and ground connection to the appropriate terminals indicated on the back of the unit and supply power to the unit.



AC Power Installations

An external power converter is required to power the IP DSLAMs. Follow the instructions included with the AC to DC power converter you are using to power the IP DSLAM.



Installing Access and Uplink Modules

1. Ensure that proper grounding techniques are being used when installing modules into the IP DSLAM.
2. Align module with slot module guides and slide module gently but firmly all the way into the chassis.
3. Tighten screws on front of Module.

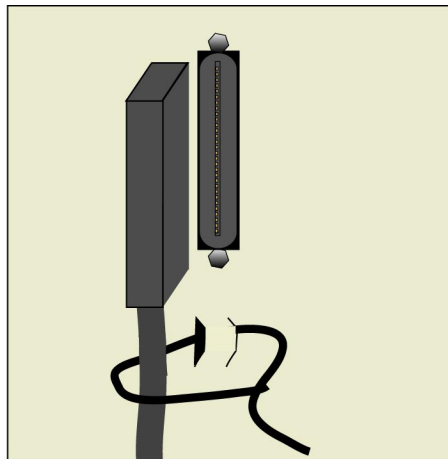
IP DSLAM Access Modules and fan trays are hot swappable; installing or removing an Access Module or Fan Tray while the chassis is powered up does not affect the operational status of other Access Modules within the chassis. There must be a Multiplexer Uplink Module installed in the IP DSLAM chassis in order for Access Modules to operate. Once the Multiplexer Uplink Module and Access Modules have been installed, all configuration settings are software selectable via the IP DSLAM Network Management System (NMS). For further instruction please refer to the IP DSLAM NMS Users Guide. Information such as interface pin-outs and LED indications can be found in module specific Users Guides.

CAUTION: To ensure proper cooling of the chassis, blanking plates must be left in any slots for which an Access Module (or 2nd Multiplexer Uplink Module on the IPD12000) will not be installed.

Connecting Cables to the IP DSLAMs

Cables used to connect copper pairs into the IP DSLAMs may be connected with the chassis powered on or off. Extra caution should be taken when installing cables near the DC terminal blocks. Cable pin-out information is module specific; refer to the User Manual for each module for cable pin-out information.

To install cables on the back of the IP DSLAMs, simply push the RJ-21 connector on to the connector on the back of the chassis. Secure the cable in place using one of the provided cable ties.



Installing and Removing the Fan Tray Module

The fan tray module may be installed when the chassis is either powered on or off. Net to Net Technologies recommends always using the fan tray when an IP DSLAM is in service.

To install the fan tray, simply guide the module into the fan tray slot and tighten the screws. To remove the fan tray, loosen the screws and disengage the fan tray from the backplane. Allow the fan blades to come to a complete stop before completely removing from the chassis.

Caution should be taken when removing the fan tray module. The fan blades take a few seconds to come to a complete stop. Do not touch the fan blades until they come to a complete stop.

Need help?

If you need additional assistance with any of Net to Net Technologies' products, please call 877-638-2638 or (603) 427-0600 for Support. We can also be reached at support@nettonettech.com.