# GranDSLAM®

## 4200IP for Packet Networks

## BENEFITS

- High-speed services up to 28 Mbps supporting ADSL2 and ADSL2+ (Annex A, Annex B)

- Interoperable with low-cost standard ADSL CPE

- ReachDSL 2.2 for trouble-free customer installation and expanded customer base

- Supports voice, video and data services on a single platform

- High processing capability to support bandwidth intensive applications such as broadcast video, VOD, and NVOD

- Environmentally hardened to allow for use in remote cabinets with no additional cooling required

- Stackable configuration allows for lower  initial investment, and pay-as-you-grow migration

- Space saving 1U rack size allows maximum use of central office and cabinet space

## Deploying Video Just Got Easier

Paradyne has just made it easier to get the bandwidth and extensive feature set required for today's applications to the customer premises.  The GranDSLAM family includes a full suite of DSLAMs and cabinets providing multiple ways to get service to customers in remote locations that are traditionally difficult to serve.

## What is the GranDSLAM 4200IP?

The entire GranDSLAM 4200 family supports ADSL, ReachDSL and SHDSL. In addition, this newest version of the GranDSLAM 4200 family the is the first to support the new ADSL2+ standard, allowing fully-interoperable 28 Mbps bandwidth to the end user. The GranDSLAM 4200IP also supports connections directly to IP networks using 10/100/1000BaseT and gigabit Ethernet fiber connections.

## Deploying Video using the GranDSLAM 4200IP

The GranDSLAM 4200IP contains all the processing capability to deliver a minimum of three video streams to the customer premises and the protocol support required to deliver it efficiently with superior quality. Paradyne has gone the extra mile to ensure a successful video deployment for the service provider by adding features such as IGMP Snooping and IGMP Proxy.  These features reduce network traffic, and ensure quick, crisp channel changes.

## Providing Coverage to the entire Subscriber Base

The GranDSLAM 4200IP provides several options to allow the service provider to cover their entire subscriber base.  The GranDSLAM 4200IP is packaged in a small 1U form factor with several mounting options, which means it will fit in any cabinet, requiring a minimal amount of space. The temperature-hardened GranDSLAM 4200IP can be deployed in remote cabinets where space is  at a premium and where temperatures exceed typical central office environments. Paradyne provides universal mounting brackets and lightning protection cables to help you deploy the GranDSLAM 4200IP in the many different types of remote cabinets. In addition, Paradyne has set up special packages for some of the more common cabinets available today. Paradyne has also created the GranDSLAM 4300OSP, a family of cabinets designed specifically for the GranDSLAM 4200. The GranDSLAM 4300OSP has options for –48 VDC power, line powering, and AC power. The GranDSLAM 4300OSP is a watertight cabinet that meets the GR-487 standard,  allowing it to be mounted outdoors when there is no space inside the cabinet.

# GranDSLAM 4200IP for Packet Networks

## FEATURES

- Compact 1U 24-port form factor, universal mounting brackets, and flexible mounting options

- Available with integrated POTS Splitters

- Supports IGMP Snooping and proxy for video applications

- Easily managed using web interface, CLI, Telnet and GrandVIEW EMS

- Supports IEEE 802.1Q VLAN for applications such as transparent LAN services

- Supports IEEE 802.1p to provide prioritization of traffic for voice, video and data applications

- Available with ADSL2+ in support of high bandwidth applications

- Available with ReachDSL for ease of customer installations and expanded customer base

The GranDSLAM 4200IP supports ReachDSL 2.2 in addition to ADSL2+, allowing for additional coverage on long loops and loops where other DSL technologies have not worked.
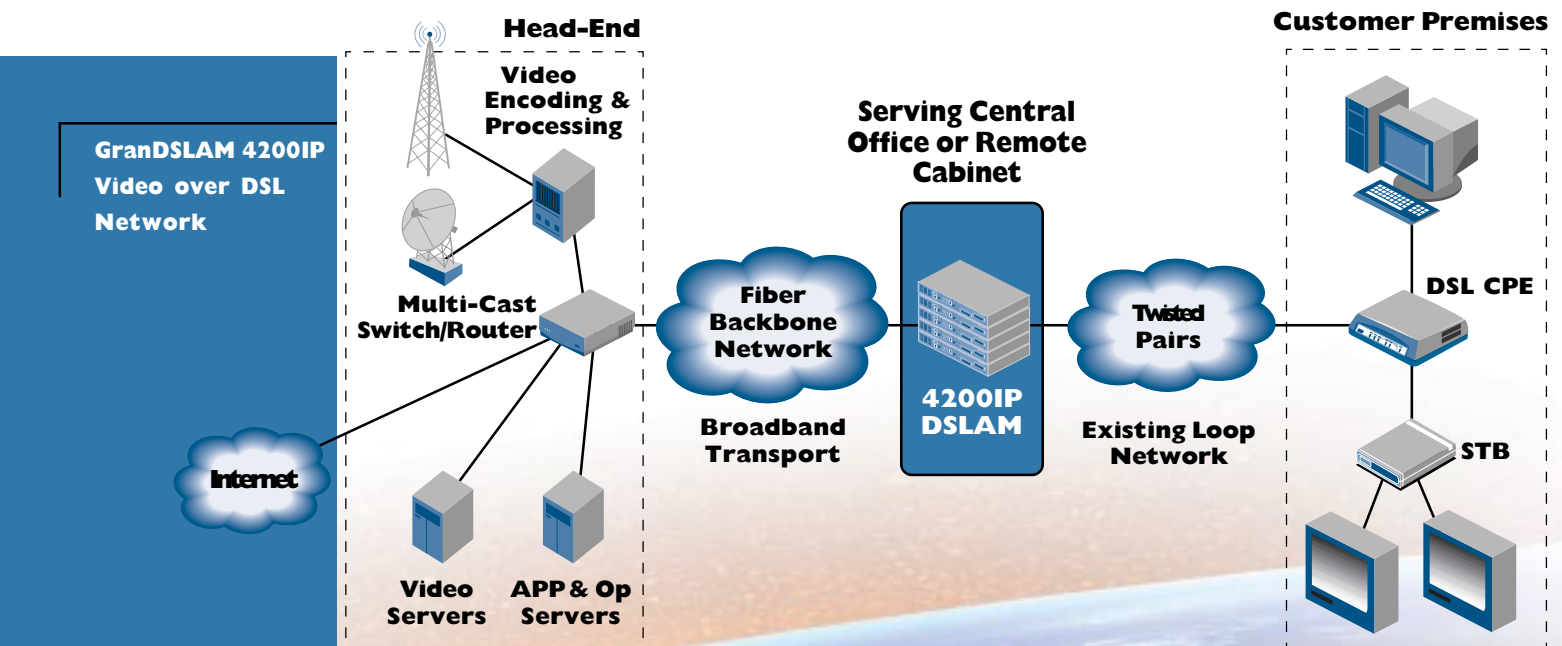
### Pay-As-You-Grow

Each GranDSLAM 4200IP has 24 DSL ports and can be stacked up to eight units using a single aggregated uplink. This means that a service provider can purchase a single unit to start their deployment with minimal initial capital expense. Then, as additional customers are brought online, additional GranDSLAM 4200IP units can be purchased and connected to the original unit, reducing the need to add additional network connections. This means it is now cost-effective to serve customers even in low-density regions.

### Flexible Uplink Options

The GranDSLAM 4200IP supports multiple uplink types. The GranDSLAM 4200IP comes equipped a 10/100BaseT uplink for low cost deployment where large bandwidth is not crucial. It also supports gigabit Ethernet (both copper and fiber), providing enough bandwidth to support at least three high quality video streams. Using any of the uplink types it is also possible to stack the GranDSLAM 4200IP units and aggregate multiple units over a common network connection.

The GranDSLAM 4200IP will support additional uplink types in the future, such as T1/E1 MLPPP.



GranDSLAM 4200IP Video over DSL Network

# GranDSLAM 4200IP for Packet Networks

## What is ReachDSL?

ReachDSL was developed at Paradyne and over 480,000 ports have been deployed worldwide. It is a technology that enables a service provider to deploy services to customers who could not otherwise be reached by standard DSL technologies. These customers may not be able to be reached for many reasons: distance from the central office or remote cabinet, disturbers, mis-loaded loops or bridged taps. Using the ReachDSL technology and the GranDSLAM 4200, service providers have deployed services to customers at distances as great as 49,000 feet from the central office.
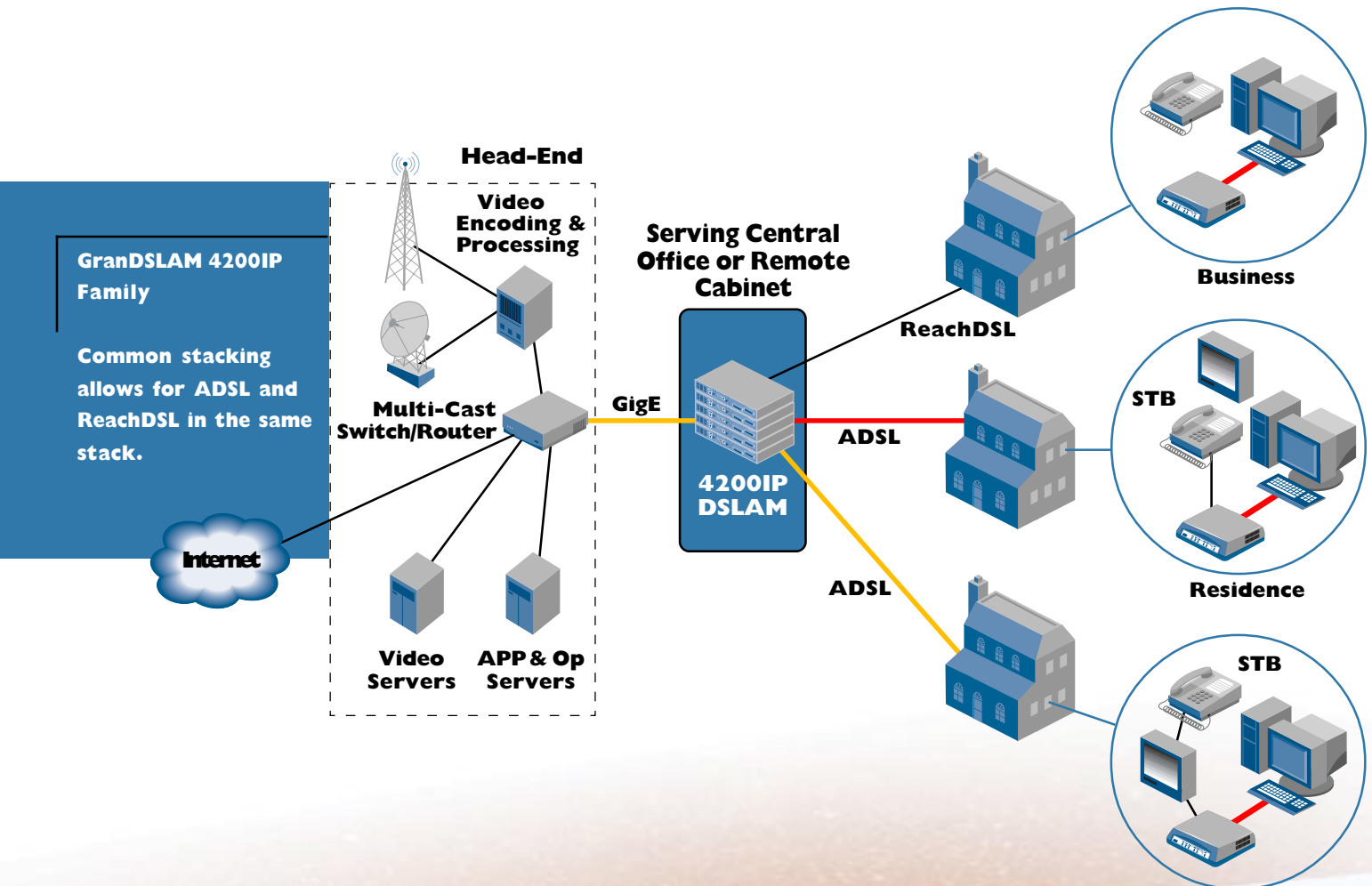
## A GranDSLAM 4200 for all the Service Providers Needs

The GranDSLAM 4200 has been deployed in ATM networks worldwide. Now, with the addition of the GranDSLAM 4200IP Ethernet-based DSLAM, it can also be deployed in Ethernet networks worldwide. This enables service providers to deploy voice, video, and data regardless of whether their network supports ATM or Ethernet.

The GranDSLAM 4200 family has DSLAMs for both cell-based and packet-based networks supporting ReachDSL and ADSL technology.

## Technical Support Programs

Paradyne offers post-sale technical support programs to make maintaining, growing, and upgrading your network easy. Software maintenance, access to online technical help, and a fully–staffed technical support center are a few of the highlights. Please see http://www.paradyne.com/tech_support/index.html for further details.

# SPECIFICATIONS

## Product Configurations
- Available with or without integrated POTS splitters
- Stackable to 8 units using either 10/100BaseT or Gigabit Ethernet uplink
- Operating Temperature: –40°C to 65°C
- Storage Temperature: –40°C to 80°C
- Relative Humidity: 5% to 95%

## Power
- Power Requirements:
- 48VDC & –60VDC, redundant power feeds and fuses
- Power Consumption: 36 watts typical

## Mechanical
- Chassis size: 1.75" (4.4 cm or 1U) high x 17.2" wide x 11.8" (300mm) deep
- Fits in 19" or 23" racks
- Unit Shipping Weight: 14 lbs.
- Front cabling
- Power and Alarm LEDs
- 50-pin connectors for local loop and voice switch connection
- Ethernet and serial craft interfaces
- Alarm Relay connections (inputs/outputs)

## Protocol Specifications
- IGMP v2
- IEEE 802.1Q VLAN
- IEEE 802.1p Priority Output Queuing
- RFC 1483/2684 Bridged Encapsulation
- MAC Address Filtering
- Host Address Filtering

## ATM Specifications
- 8 VCs per DSL Port

## Management
- SNMP
- Embedded Web Server
- Telnet, CLI
- GrandVIEW Element Management System

## ADSL Standards
- ITU G.992.1 (G.dmt)
- ITU G.992.2 (G.lite)
- ITU G.992.3 (ADSL2)
- ITU G.992.4 (G.lite2)
- ITU G.992.5 (ADSL2+ Annex A, B)
- ITU G.994.1 (G.hs)
- ITU G.997.1

## Spectral and Electrical Compliance
- ANSI T1.413
- ANSI T1.417
- UK ANFP
- ETSI TR101 830-1
- NEBS, UL1950, C22.2 No. 950-95, FCC Part 15, EN60950, EN55022, CISPR22, VCCI

## ORDERING INFORMATION

| Model | Description |
|---|---|
| 4219-A1-520 | 24 Port ReachDSL, GigE Uplink, No Internal Splitters |
| 4219-A1-530 | 24 Port ReachDSL, GigE Uplink, Internal Splitters |
| 4229-A2-520 | 24 Port ADSL, GigE Uplink, No Internal Splitters |
| 4229-A2-530 | 24 Port ADSL, GigE Uplink, Internal Splitters |
| 4219-A1-531 | 24 Port ReachDSL, GigE Uplink, 600 ohm Internal Splitters |
| 4229-A2-531 | 24 Port ADSL, GigE Uplink, 600 ohm Internal Splitters |
| 4279-A1-520 | 24 Port G.SHDSL.bis, GigE Uplink |
| 4239-A2-520 | 24 Port ADSL Annex B, GigE Uplink, No Splitters |
| 4239-A2-532 | 24 Port ADSL Annex B, GigE Uplink, ISDN Splitters |

# PARADYNE

For additional information on this or any Paradyne product or service, contact the office nearest you or dial 1-727-530-2000 World Wide; fax 1.727.530.8216. For international locations, visit the Paradyne Web site at **http://www.paradyne.com/buy**