

VDSL2 24-Ports CO Module

“XENON”



Introduction

The Metanoia Communications' XENON is a VDSL2 24-Ports Layer 2+ CO module with two 10/100/1000BaseX Ethernet ports or two 10/100/1000Base-X Fiber Optics and 24 VDSL2 ports (on RJ-21 connectors). For Annex A bland plan over 26 AWG UTP copper wires, profile 30a can reach over 100/80 Mbps data rate within 750ft and profile 17a can reach over 40/10 Mbps within 1K ft providing ultra-high performance to the pervasive telephone line network. XENON has the advantage of minimum installation time and minimum expense by allowing video streaming and data to share the same telephone pair without interference.

The module is a DSLAM (Digital Subscriber Line Access Multiplexer) accommodating well proven Fiber, Ethernet and VDSL2 technologies with Layer 2+ switch controller feature including 802.1D self-learning bridge, Rapid Spanning Tree Protocol, Spanning Tree Protocol, 802.1Q VLAN, GVRP, 802.1p traffic priority, 802.3ad Aggregation of Multiple Link Segments and management features such as SNMP, MIB counters and port mirroring. For today's broadband access switch, **XENON** supports packet buffer which improves its ability to handle network congestion caused by high uplink port speed and low user download speed. Therefore, **XENON** can reduce dropping high priority packets and support reliable network real-time multimedia applications.

The **XENON** CO device can be easily configured through either web-based management software or Linux command line interface. The intelligent web-based management software, allows for streamlined configuration of the **XENON**, as well as ARGO CPE devices through a single IP address. The **XENON** can be configured on a per-link basis for transmission mode, rate limitations, and signal-to-noise (SNR) margin. The module provides comprehensive hardware diagnostics, and it is easy to maintain and easy to build in the 1U rack-unit. The resulting compact and cost-effective form factors offer systems integrators, small business and building owners an attractive DSLAM solution.

The Metanoia Communications MDU solution including the CO (Central Office) site module **XENON** and CPE (Customer Premise Equipment) site module ARGO delivers everything needed to quickly deploy a high-speed IP-based network for providing high-speed Internet access and video-on demand services, and voice services.

VDSL Features

- ◆ Compliant with ITU VDSL2 standard G.993.2
- ◆ VDSL2 profiles: 8a/8b/8c/8d/12a/12b/17a/30a
- ◆ Supports Annex A, Annex B, Annex C
- ◆ Upstream/Downstream connection rates greater than 150/150 Mbps at short loop lengths.
- ◆ Loop diagnostic mode
- ◆ UPBO, DPBO, SRA, DRR, OLR
- ◆ US0 with configurable start and stop frequencies
- ◆ Compatible with POTS, ISDN
- ◆ VDSL2 MIB
 - Configurable band plan
 - Configurable PSD
 - Configurable SNR, INP, 64Kb rate limit
- ◆ Interoperable with CPE devices from Infineon, Ikanos and Broadcom

SWITCH Features

- ◆ Ethernet switch controller-24 10/100BaseX Ethernet ports and 2 10/100/1000BaseX Ethernet ports
- ◆ Supports SMII or SS-SMII for 10/100BaseX ports, GMII/MII/TBI for 10/100/1000BaseX ports.
- ◆ Broadcast storm filtering based on ingress port bandwidth
- ◆ HOL blocking prevention
- ◆ Deadlock relief
- ◆ Jumbo packets supported on per port and per VLAN basis
- ◆ Auto-polling via MDC/MDIO management interface for auto-configuration of speed, duplex mode, and flow control capability of all Ethernet ports
- ◆ Four priority egress queues per port
- ◆ Four RMON groups (1,2,3,9)
- ◆ MAC address table synchronization assistance
- ◆ Port-based ingress rate policing and egress rate pacing
- ◆ SMAC/SIP bindings for IPv4 packets can be implemented
- ◆ Four 4K VID spaces can be emulated on one switch
- ◆ Asymmetric VLAN membership for better network security
- ◆ Supports Independent VLAN Learning (IVL) , Shared VLAN Learning (SVL)
- ◆ Flexible per-port VLAN classification option supports co-existing of port-based VLAN domain and 802.1Q VLAN domain
- ◆ Supports 64 VLAN-dependent Spanning Trees
- ◆ Flexible per-port VLAN classification option supports co-existing of port-based VLAN domain and 802.1Q VLAN domain
- ◆ Supports port tunneling / mirroring

- ◆ Supports Layer 2/3/4 (Layer 2+) classification
- ◆ Supports 802.3ad Aggregation of Multiple Link Segments
- ◆ Supports 802.1D bridge self-learning, storing up to 8K+ 256 unicast or multicast addresses
- ◆ Supports 802.1D Spanning Tree Algorithm and Protocols
- ◆ Supports 802.1p Traffic Priority
- ◆ Supports 802.1w Rapid Reconfiguration
- ◆ Supports 802.1x Port-based Network Access Control
- ◆ Programmable LED output provides
- ◆ 8/16-bit PIO interface, supported with LQFP package
- ◆ 32-bit PCI 2.2 complaint bus interface, selectable only with BGA package

Application features

- ◆ Support VDSL2 and switch features by CLI and Web
- ◆ 1 serial (RS-232) port for console management
- ◆ Support up to 9KB jumbo frame
- ◆ Command line interface (CLI) and browse-independent, secured web-based managements (HTTPS)
- ◆ Up to 13-group and 8-member per group of static and LACP link aggregation (trunk)
- ◆ Up to 512-group of port-based and tag-based (802.1q) VLAN
- ◆ GVRP for tag-based VLAN
- ◆ Per-port storm control for flooded unicast, multicast, IP multicast, broadcast and control packets
- ◆ Spanning-tree protocols: STP (802.1d), RSTP (802.1w), MSTP (802.1s)
- ◆ IGMP Snooping & Query (IGMP v1/v2)
- ◆ SNMP v1/v2c/v3 management and trap function
- ◆ Support MIB tables: MIB-II (RFC 1213), Bridge MIBs (RFC 1493), Ethernet-like MIB (RFC 1643 & RFC 2665), private-MIB, USM-MIB (RFC 2574), VACM-MIB (RFC 2575) and RMON-MIB 1, 2, 3, 9 groups (RFC 1757& RFC 2819)
- ◆ Telnet/SSH function for remote console management (SSH is optional)
- ◆ TFTP and HTTP firmware update and configuration backup/restore
- ◆ Remote syslog function
- ◆ Static and dynamic MAC table management
- ◆ MAC filtering function
- ◆ MAC limit function
- ◆ Port sniffer (mirroring)
- ◆ Forwarding scope (Protected port)
- ◆ Port status, control, security and statistics
- ◆ Static or DHCP (dynamic) IP address setting
- ◆ DHCP relay & option 82 function
- ◆ Ingress and egress rate control with 128Kbps resolution

- ◆ QoS with 8-level port priority to 4-level queue mapping and strict / 802.1p / WRR priority options
- ◆ User login management
- ◆ 802.1x port access control supporting EAP-MD5, EAP-TLS and EAP-PEAP authentication types
- ◆ Layer 2/3/4 access control list (ACL) with 220 rule entries
- ◆ Source IP-MAC and port binding access control
- ◆ Q-in-Q VLAN function
- ◆ LLDP protocol

Application

