



Total Access

5000**48-Port VDSL2 Combo Access Module**

VDSL2



IPTV



POTS



Vectoring

Benefits

- Provides triple play services using RPOTS for voice
- Provides 48 remote POTS interfaces
- Voice signaling via GR-303, TR-08, TR-57, SIP, and MGCP
- Automatic detection algorithm discovers newly installed modules
- Provides 48 ports of VDSL2, ADSL2+, ADSL2, ADSL, or READSL
- VDSL2 Board and System-Level Vectoring (up to 192 ports)
- Full backward compatibility with existing ADSL modems
- Supports separately configurable interface rates for upstream and downstream
- Supports VDSL2 and ADSL2+ PTM Bonding
- Supports ADSL2+ ATM Bonding
- IPv6/DHCPv6, LRDA Capable
- DSL Auto Fallback Capable
- Internet Group Management Protocol (IGMP) proxy
- Supports Transparent LAN Services (TLS)
- Up to 480 ports per Total Access 5000
- Supported by Total Access Advanced Operational Environment (AOE)

Overview

Carriers are moving to simplify and advance the deployment of their next-generation networks. The ADTRAN Total Access 5000 VDSL2 Access Module provides carriers with a dual slot module that offers 48 ports and provides the operator with the flexibility of providing both POTS and broadband VDSL2 services.

This allows carriers to optimise their network infrastructure, providing simplified deployment and provisioning options and lowering overall operational cost.

The subscriber interface is traditional analog POTS, however the Total Access 5000 Combo VDSL2 Access Module card converts each analog signal directly to an RFC 3550 IP packet, allowing voice traffic to be carried across the same Ethernet transport architecture alongside next-generation services like IPTV.

TDM Network interface is provided via the DS1 Voice Gateway Line Module, providing up to 32 DS1 interfaces using standard GR-303 or TR-08 protocols to interface to the PSTN switch. The Combo VDSL2 access module also supports SIP and MGCP for native Voice over IP.

Fully configurable to support up to 48 ports of VDSL2, the Total Access 5000 VDSL2 access module supports a 5-band profile of 8a through 8d, 12a, 12b, and 17a for flexible VDSL2 deployments. In addition, the 48-Port VDSL2 module also supports standard fallback modes including ADSL2+, ADSL2, ADSL, READSL2, and G.Lite.

Flexible and configurable, the VDSL2 Access Module allows operators to configure both upstream and downstream transmission rates or

allows the interfaces to adapt to the best possible rates on the subscriber loop.

The 48-Port VDSL2 access module also supports IGMP proxy and snooping for critical IPTV applications. With networks transitioning to IPv6 addressing schemes, the 48-Port VDSL2 access module provides a seamless upgrade path for network operators. The 48-Port VDSL2 access module supports IPv6/DHCPv6, with Lightweight DHCP Relay sub-options 9 and 18 for subscriber access authentication.

The 48-Port VDSL2 access module supports the latest in vectoring technology compliant with ITU-T G.993.5 (G.vector) which can up to double the bandwidth on short loops. Vectoring improves performance by cancelling the crosstalk from all VDSL2 ports on the access module and across up to four 48-port access modules with the addition of a system-level vectoring resource module.

The 48-Port VDSL2 access module also incorporates flexible any-to-any port bonding allowing operators to deploy legacy ADSL2+ ATM bonded services as well as advanced VDSL2 and ADSL2+ PTM bonded services to the customer premises.

The 48-Port VDSL2 access module supports craft interface management via the Total Access 5000 System Controller Module (SCM). More comprehensive management is available using ADTRAN's AOE. All provisioning data is supported through the SCM communications link. All provisioning data is stored in nonvolatile memory for recovery after a power loss and auto-provisioning is supported via the SCM.

PRODUCT SPECIFICATIONS

Mechanical

- **Dimensions:** 235 mm x 40 mm x 235 mm (9.25 in. x 1.6 in. x 9.25 in.) (H x W x D)
- **Weight:** 0.85 kg (1.9 lbs)

Interfaces

Network Interfaces

- Intra-node and VoIP via Ethernet Transport (GE or EFM)
- Voice Switch Interface via DS1 Voice Gateway Line Module

Client Interfaces

- Requires 48-Port VDSL2 Cable Set Offered in Varying Lengths. See Ordering Section.
- System-Level Vectoring Requires Resource Module and Associated Rear I/O Modules

DSL Performance

- VDSL2 5-Band Profile 8a-d, 12a-b, 17a
- ADSL2+ ITU-T G.992.5
- ADSL2 ITU-T G.992.3/4
- ADSL ITU-T G.992.1; ANSI T1.413-1998 Issue 2
- ADSL G.Lite ITU-T G.992.2
- READSL ITU-T G.992.5 Annex L
- G.vector (ITU-T G.993.5)

POTS Performance

Signaling Modes

- Loop Start
- Ground Start

Impedance

- 600 Ω
- 900 Ω + 2.16 μF
- 220 Ω+ (820 Ω // 115 nF)

- 270 Ω + (750 Ω // 150 nF)
- 270 Ω + (750 Ω // 150 nF), Zin = 600 Ω
- 320 Ω + (1050 Ω // 230 nF)
- 350 Ω + (1000 Ω // 210 nF), Zin = 600 Ω
- 370 Ω + (620 Ω // 310 nF)
- 800 Ω // (100 Ω + 50 nF)
- 1650 Ω // (100 Ω + 5 nF), Zin = 900 + 2.16 μF

Loop Reach: 1560 Ω Including Handset

Regulatory Standards

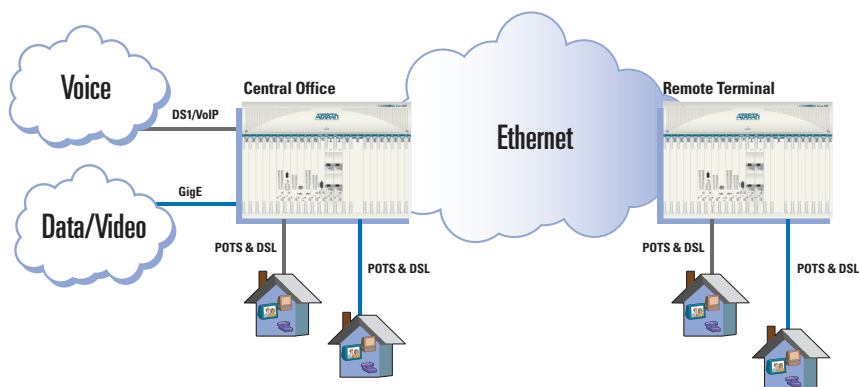
- NEBS Level 3
- GR-1089 CORE
- GR-63 CORE
- NRTL Listed
- FCC Part 15

Management

- Remote Management through SNMP and TL1
- Ethernet Interface for SNMP through System Controller
- Local CLI and Web Management through System Controller
- Supported by AOE

Environmental

- **Operating Temperature:** -40° C to +65° C (-40° F to +149° F)
- **Storage Temperature:** -40° C to +85° C (-40° F to +185° F)
- **Relative Humidity:** Up to 95%, at 50° C (122° F), Non-condensing



ORDERING INFORMATION

	Part Number
Total Access 5000 Module	
VDSL2 48-Port Combo Access Module with Vectoring	1187130F1
VDSL2 48-Port Combo Access Module without Vectoring	1187130F2
Vectoring Support	
192-Port System-Level Vectoring Resource Module for Total Access 5004	1187190F1
Access Module Input/Output Dual 48-port V2 Combo in Total Access 5000	1187434F1
VIO for System-Level Vectoring in Total Access 5004	1187490F1



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ISO 9001
ISO 14001
TL 9000