



ADTRAN

1148VXP

48-Port Sealed FTTN with Built-in POTS



Benefits

- Environmentally sealed, temperature hardened standalone Vectored VDSL2 FTTN solution enables rapid deployment of ultra-broadband services
- Built-in POTS, supporting up to 48 subscribers; voice signaling via TDM voice (GR-303/TR-08) and VoIP (MGCP/SIP)
- Delivers 100 Mbps up to 3,000 feet from the node using bonded VDSL2 with vectoring
- Provides silent operation and low profile construction abiding to strict residential zoning rules
- Supports IPTV video service
- Can be mounted on pole, pedestal, cross-box or remote terminal delivering ultra-low Total Cost of Ownership (TCO)
- Device-level vectoring (DLV) supports up to 96 ports without an external vectoring resource module (VRM)
- Field upgradeable to 384-ports of system-level vectoring (SLV) with external VRM
- Supports four GigE or 10GigE uplinks and up to three expansion ports to aggregate other 1148VXP units
- Reduces installation cost via flexible powering options (span, AC, and DC powering)

Overview

Accelerating Gigabit Services

Premium broadband services are fueling the need for pushing fiber deeper into the network and closer to the end user. However, the cost of delivering Fiber-to-the-Home (FTTH) can be both cost-prohibitive as well as time consuming, particularly in remote and rural locations. Next-generation broadband technologies such as Bonded and Vectored VDSL2 allow service providers to utilize existing copper infrastructure in combination with sealed Fiber-to-the-Node (FTTN) solutions to cost-effectively deliver ultra-broadband (100+ Mbps) and IPTV services to subscribers in all areas.

Faster Time-to-Market

The ADTRAN 1148VXP compact sealed FTTN solution allows service providers to realize ultra-broadband speeds with their existing copper infrastructure, economically delivering 100 Mbps+ premium broadband services to the home using Vectored VDSL2.

ADTRAN® designed the standalone, weather-proof 1100 Series FTTN systems to be mounted on a pole, pedestal, cross-box, remote terminal or other challenging locations, eliminating the need for expensive cabinet enclosures, heat exchangers and site construction, which account for a large portion of the total cost of deployment. This allows for ultra broadband services deployment within days, instead of months, dramatically lowering deployment costs.

Support Existing POTS

The 1148VXP supports emerging ultra broadband (100+ Mbps) services with existing services, such as plain old telephone services (POTS), allowing services providers to converge and optimize their network architecture. The 1148VXP provides 48 POTS interfaces to support up to 48 subscribers. The subscriber interface is traditional analog POTS, but the 1148VXP POTS interface converts each analog signal direct to an RFC 3550 IP packet, allowing voice traffic to be carried across the same Ethernet transport architecture alongside next-generation broadband and IPTV services. The 1148VXP also supports SIP and MGCP for native Voice over IP.

Cost-Effectively Expand Footprint

Integrated 10-Gigabit Ethernet switching in the 1148VXP Host units allow connecting up to four 1148VX/1148VXP nodes to create an FTTN system that scales to 192 ports in a single managed node, accommodating long-term growth and lowering initial circuit costs. Built-in device-level vectoring allows connecting two 1148VXPs (96 ports) without the need for an external vectoring resource module (VRM). Up to 384-ports of system-level vectoring is allowed with external vectoring resource module (VRM). This eliminates complex binder management required by the less capable 48-port only board-level vectoring solutions. Ethernet Ring Protection Switching (ERPS) support enables resilient connection of multiple nodes while minimizing aggregation port cost.

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The 1148VXP is a future-proof solution with four 1/10GigE uplink ports. As demand grows the system can easily be upgraded to 10G uplinks to deliver higher broadband speeds and enhance customer satisfaction. Integrated primary protection eliminates the need for extra equipment and provides the absolute smallest footprint for the 1148VXP Vektored VDSL2 system.

Lower Operation and Maintenance Costs

Developed with concern for carrier field needs, the 1148VXP comes with customer-accessible cables that allow for the quick replacement of units in the field. Several cable lengths with MS2 or 710 type connectors or unterminated stub are available to accommodate the

needs of all service providers. The 1148VXP can be remotely provisioned and managed using TL1, Telnet, SNMP, or the Advanced Operational Environment (AOE) management suite, enabling service providers to operate the unit without a truck dispatch.

RFT-V span, 100-240 VAC, and -48 VDC local powering options are offered within the unit, eliminating the need to order and spare different part numbers for different applications. Span powering from the central office allows for the centralization of battery backup and greatly reduces deployment costs. The 1148VXP uses 1 to 8 powering pairs from the central office with the actual pair count dependent on the desired deployment range.

Product Specifications

Mechanical

- **Dimensions:** 21.9 in[≈] x 16.8 in. x 4.54 in. (56.9 cm x 42.8 cm x 11.6 cm) (H x W x D)
- **Weight:** 48lbs (22kg)
- **Outdoor Mounting:** Pole, Pedestal, Cross-box, Remote Terminal, other challenging locations

Mechanical

Access

- 48 subscriber ports of vectored VDSL2 plus POTS interfaces
- Well-suited for 100Mbps services delivery up to 3000 ft (914 meters)

Network

- 4x1/2.5/10GE SFP Interfaces
- Resilient Ethernet Ring per ITU-T G.8032 (ERPS)

DMT Specifications

- **Modulation Type:** Discrete Multi-Tone (DMT)
- **Mode:** Full Duplex, Non-overlapped
- **Standards:** T1.413; G.992.1 Annex A; G.992.2 Annex A; G.992.3; G.992.4; G.992.5
- **Number of Pairs (DSL plus POTS):** 48 (one per loop)
- **Downstream Data Rate:**
 - ◆ **ADSL2:** > 12 Mbps
 - ◆ **ADSL2+:** > 25 Mbps
 - ◆ **VDSL:** > 110 Mbps
- **Upstream Data Rate:**
 - ◆ **ADSL:** Annex A mode – > 1.2 Mbps
 - ◆ **ADSL2+:** Annex M mode – > 2.5 Mbps
 - ◆ **VDSL:** Up to 50 Mbps
- **DSL Service Range:** 18,000 feet (5.5 km)

DSL Standards

- ITU G.993.2 (VDSL2)
- ITU G.992.3 (ADSL2)
- ITU G.992.5 (ADSL2+)
- ITU G.993.5 (G.vector)
- G.998.1 (ATM Bonding)
- G.998.2 (EFM Bonding)

VDSL2 Profiles

- Profiles 8a-d, 12a-b, 17a

IPTV Services Support

- Internet Group Management Protocol (IGMP) v2 and v3
- Dynamic Host Configuration Protocol (DHCP) Support with Option 82

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

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Ethernet Services Support

- Single Stack VLAN and Double Stack VLANs
- (Q-in-Q) Manipulation
- Flexible Traffic Classification
- Ingress Policing and Egress Shaping
- IGMP Snooping and Proxying

Security

- Management AAA via RADIUS and TACACS+
- SSHv1/v2, SFTP, and HTTPS

Diagnostics

- SELT
- DELT
- GR909
- Advance "Service Check" testing via AOE

Management

- **Local:** Local Craft Interface (DB9, USB Type B)
- **Remote:** TL1, Telnet, SNMP, Advanced Operational Environment (AOE) Management Suite

Environmental

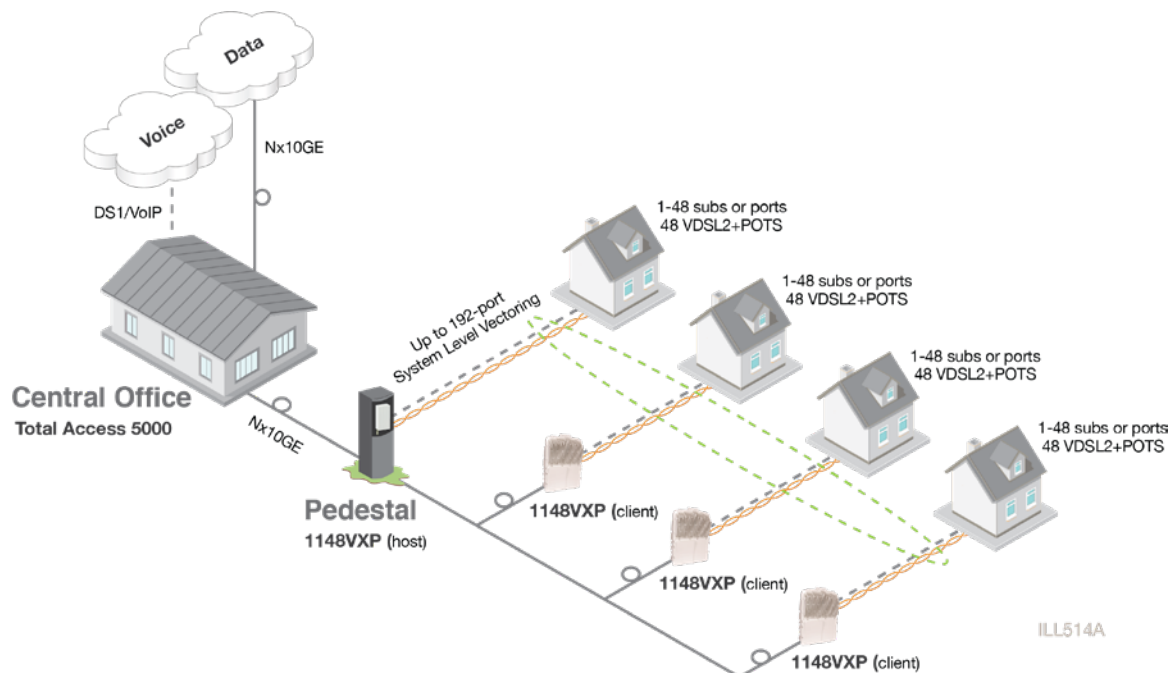
- **Operating Temperature:** -40° F to 149° F (-40° C to +65° C)
- **Storage Temperature:** -40° F to 285° F (-40° C to +85° C)
- **Relative Humidity:** 95%, Non-Condensing
- Environmentally Hardened—Fully Sealed, Watertight

Power

- **Local DC Power:** -48 VDC
- **Local AC Power:** 100-240 VAC, 50/60 Hz, Auto-ranging AC Power Supply
- **Line Power:** 1 to 8 Line-Powering Pairs (+/- 190 VDC per pair)

Regulatory Standards

- GR-487-CORE, Issue 4
- NEBS Level 3
- GR-1089-CORE, Issue 6
- GR-63-CORE, Issue 4
- UL 60950-1/22
- RoHS Compliant
- FCC Part 15



1148VXP

Ordering Information

Equipment	Part No.
1148VXP HOST, ANSI	1179916F1
1148VXP Client, ANSI	1179918F1
1148VXP HOST, ANSI HLDO	1179916F1H
1148VXP Client, ANSI HLDO	1179918F1H
OSP System Level Vectoring (SLV) Resource Module	1179937F1
OSP SLV Adapter Module	1179939F1
OSP SLV Cable	1179852F1
1148VX Host to Client Expansion Cable	1179830G3
384P OSP SLV Resource Module	1179938F1
6th Gen OSP DLV Cable	1179856F1
Accessories	
0.05 in	11971012F1
Back-to-front fan module	11971012F2
Front-to-back fan module	11971012F1
Back-to-front fan module	11971012F2
Cables*	
Power	
DC Power (20 ft cable)	1179810G2
AC Power (20 ft cable)	1179810G7
Span Power (MS2 Connectors) (20 ft cable)	1179814G2
Span Power (710 Connectors) (20 ft cable)	1179814G4
Span Power (MS2, CAT5 Power/DMT) (5 ft cable)	1179817F2
Span Power (710, CAT5 Power/DMT) (5 ft cable)	1179817F1
Alarm Input (10 ft cable)	11798101G5
1148VXP Customer Access Cable	1179818Fx*

*Multiple cable lengths available for quote. Please email support@adtran.com or call 888-4ADTRAN for pre-sales support.



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