

# Alcatel-Lucent 7342 ONT Family

OPTICAL NETWORK TERMINALS | ETSI

Optical access at its best — a complete family of Optical Network Terminals with gigabit speeds, enabling triple play services for a variety of customers



*I-Series*



*O-Series*



*LP-MDU-ONT*



*B-Series*

The Alcatel-Lucent 7342 Optical Network Terminals (ONTs) are part of the industry leading 7342 ISAM FTU product line. Fully compliant with ITU-T standards for gigabit passive optical networks (GPONs), the Alcatel-Lucent 7342 FTU is a robust solution set that extends the bandwidth potential of fiber from the network core to the subscriber's premises. Service providers now have an unprecedented opportunity to deliver triple play services (voice, video and data) with a market leading solution operating at 2.5 Gb/s downstream and 1.25 Gb/s upstream.

The Alcatel-Lucent 7342 ONTs terminate a single fiber to connect individual homes and businesses to the network for ultra-broadband services with gigabit speed.

In addition to the highest performance, Alcatel-Lucent 7342 terminations can be extended up to 20 kilometers and shared by up to 32 subscribers, or up to 64 subscribers per line on shorter distances. Different ONT types can be used concurrently on a PON in a 7342 ISAM FTU GPON network. This allows service providers to mix ONT models in order to meet the needs of their unique subscriber base. Moreover, businesses and homes can share a single GPON termination that provides access to legacy services (POTS, E1), as well as VoIP, Ethernet/Gigabit Ethernet, and video (RF or IPTV).

## FEATURES

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- Largest portfolio of ONTs for all possible network applications, such as single family homes, multi-dwelling homes, businesses, outdoor and indoor installation
- Managed by the Alcatel-Lucent 5523 AWS, a unified management system for fiber and copper solutions
- Optional coaxial interface for RF video over fiber
- IP video with multistage IGMPv3 or IGMPv2 for channel change
- VoIP software client (SIP and H.248) for legacy POTS inter-working
- 28 dB link loss budget (FSAN Class B+ optics) with up to a 20 km reach
- Flexible powering options – local with or without battery backup
- Dynamic Bandwidth Management and QoS

## BENEFITS

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- The wide variety of ONTs enables service providers to serve a variety of subscriber types, e.g., residential and business, and applications using a single GPON-based access platform.
- The unified management system for fiber and copper access reduces complexity and operational expenses.
- Support for both IPTV and RF overlay based TV
- Multistage IGMP processing allows faster IPTV channel changes, reduces the upstream control message flow and access bandwidth requirements.
- Smooth and flexible PSTN replacement strategies using H.248 loop emulation to V5.2, H.248 in softswitch control mode or SIP-based voice
- Long-reach PON enables operationally efficient central office consolidation.
- Flexible and cost-optimized ONTs with battery backup for lifeline services
- Advanced dynamic bandwidth management allows prioritization per service and user with the ability to burst up to the full line rate. This guarantees very high quality of service, future safeness and makes optimal use of electronics, fiber optics and distribution facilities.

## Alcatel-Lucent 7342 ONT Types Indoor Optical Network Terminals (I-Series ONTs)



The Alcatel-Lucent 7342 I-Series ONTs are designed for easy fiber termination inside single-family homes. They are compact in size and can be mounted on walls or stand freely on a desk. Each ONT terminates a GPON interface running at 2.5 Gb/s downstream and 1.2 Gb/s upstream, delivering triple play services. Alcatel-Lucent I-Series ONTs can be powered from AC outlets and can also be equipped with a battery backup for lifeline services. The bottom cover can be easily removed for access to fiber and power terminals while the service interfaces are all designed for external access. External LEDs, indicating the operational states of the ONT as well as individual ports are included for user-friendly maintenance. The I-series ONTs include up to two POTS interfaces, two Ethernet interfaces, and one RF video interface. The I-Series also includes an ultra-compact data-only ONT with two Fast or Gigabit Ethernet interfaces.

## Outdoor Optical Network Terminals (O-Series ONTs)



The Alcatel-Lucent 7342 O-Series ONTs are designed for fiber termination outside single-family homes. They are designed as a hardened telco demarcation point or Network Interface Device (NID). The O-Series ONT enclosures are tamper-resistant to prevent unauthorized entry and include two nested covers. Opening the outer cover provides access to the connectors for the service interfaces while an interior cover protects access to fiber and power terminals. Each ONT terminates a GPON interface running at 2.5 Gb/s downstream and 1.25 Gb/s upstream, delivering triple play services. Battery backup is provided for lifeline services. The O-Series ONTs include up to four POTS interfaces, two Ethernet interfaces and one optional RF video interface. As in other Alcatel-Lucent ONTs, options are available for a connectorized fiber drop as well as a spliced drop, including a removable splice tray. The O-Series ONTs can be ordered with an optional fiber drop storage compartment that mounts flush behind the ONT. The SOHO versions of the O-Series ONTs include 8 POTS and 2 Gigabit Ethernet and one optional RF video interface.

## Low Profile MDU Optical Network Terminals (LP-MDU-ONTs)



The Alcatel-Lucent 7342 LP-MDU-ONTs are designed to deliver triple play services with high bandwidth capacity to homes and small businesses in multi-dwelling units (MDUs) without the need to run fiber cables to each customer. It terminates a GPON fiber interface running at 2.5 Gb/s downstream and 1.25 Gb/s upstream and can connect up to 12 subscribers over either telephone or Ethernet cables. Its low profile (44.2 cm x 30.48 cm x 9.76 cm) design is ideal for installation in terminal rooms in a rack, closet, or outdoor cabinets. Two different versions of the LP-MDU-ONT can be used depending on the in-building cable interface required. LP-MDU-V ONT provides VDSL2 interfaces over telephone wires and LP-MDU-G ONT provides Gigabit Ethernet interfaces over Category 5/6 wires. Either version includes 24 POTS interfaces along with an optional coax interface with high launch power that can be used to distribute RF video.

## Business Optical Network Terminals (B-Series ONTs)

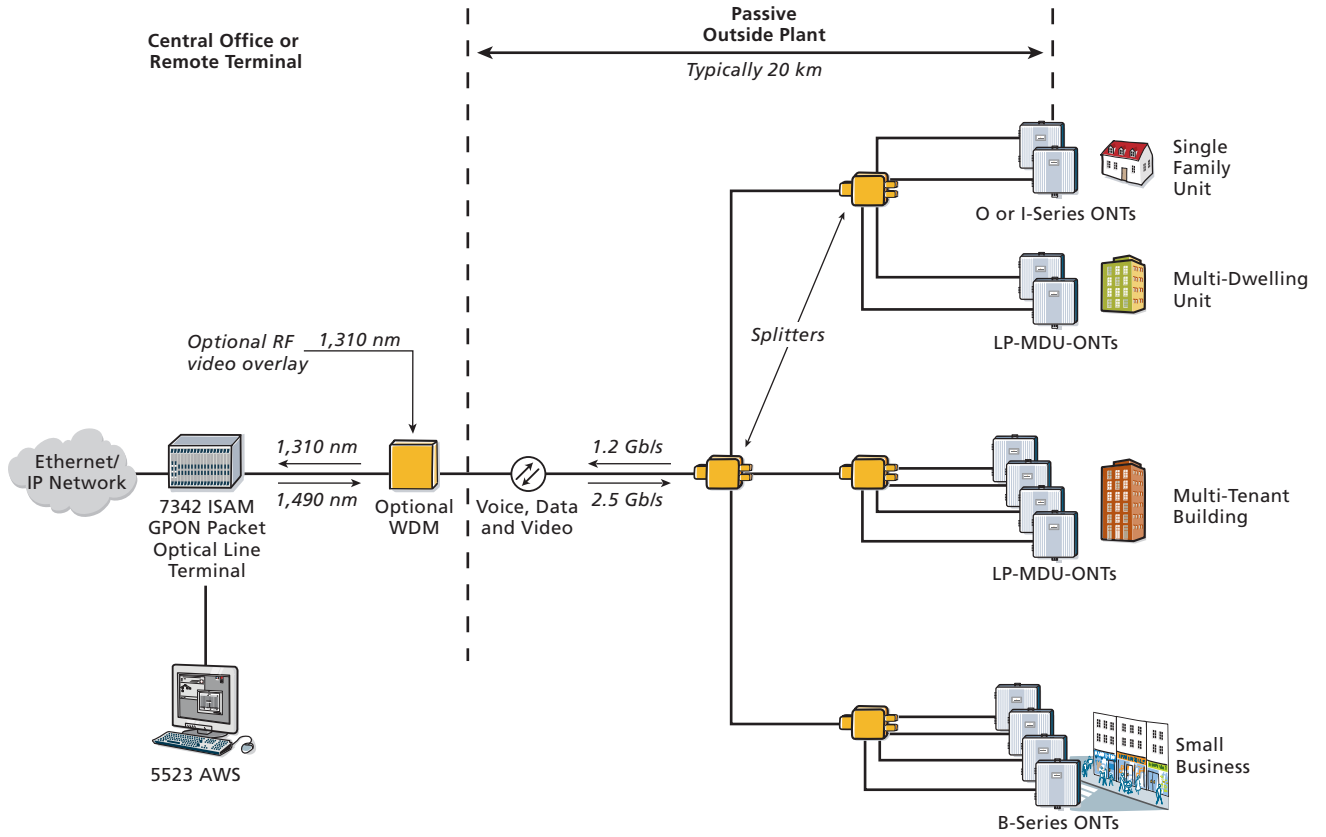


The Alcatel-Lucent 7342 B-series ONTs are designed for small- to medium-sized businesses that require connection to legacy TDM and voice, Gigabit Ethernet and video (optional) services. Service providers can deliver TDM private lines and make applications such as telecommuting, videoconferencing and online collaboration a reality. The B-Series ONTs can be mounted indoors or outdoors because they are hardened for extended temperature range and outdoor environmental conditions. The B-Series ONTs are ideal for communities with a mix of business and residential customers because they operate on the same GPON termination as other Alcatel-Lucent ONTs, providing service providers the flexibility to deploy residential and business services on the same GPON. Each B-Series ONT includes eight POTS interfaces, one Gigabit Ethernet interface, two E1 interfaces, and an optional RF video interface. The Alcatel-Lucent B-Series ONTs can be locally powered and equipped with battery backup for lifeline services.

**Table 1. Alcatel-Lucent 7342 ONT Models**

MODEL NO	SERIES	POTS	FAST ETHERNET	GIGABIT ETHERNET	VDSL2	RF VIDEO	E1
I-220E	INDOOR	2	2				
I-221E	INDOOR	2	2			1	
I-020E	INDOOR		2				
I-020G	INDOOR			2			
O-210E	OUTDOOR	2	1				
O-211E	OUTDOOR	2	1			1	
O-420E	OUTDOOR	4	2				
O-421E	OUTDOOR	4	2			1	
O-24120V	MDU	24			12		
O-24121V	MDU	24			12	1	
O-24120G	MDU	24		12			
O-24121G	MDU	24		12		1	
O-820G	SOHO	8		2			
O-821G	SOHO	8		2		1	
B-8102G	BUSINESS	8		1			2
B-8112G	BUSINESS	8		1		1	2

Figure 1. An FTTH Access Network



## Common Specifications

### NETWORK INTERFACE

- FSAN (G.984.2) compliant GPON interface with 2.5 Gb/s downstream and 1.25 Gb/s upstream
- Integrated Triplexers or bidirectional transceivers for single fiber with 1490 nm downstream, 1310 nm upstream, and optional 1550 nm downstream for RF video overlay
- Single mode fiber (SC/APC connector)
- FSAN Class B+ optics with up to 20 km reach
- Support for up to 1:64 splits per PON
- FSAN (G.984.3) compliant GPON Encapsulation Method (GEM) protocol for efficient IP/Ethernet service traffic transport
- FSAN (G.984.3) compliant packet fragmentation for bandwidth efficiency
- FSAN (G.984.3 and G.983.2) compliant Dynamic Bandwidth Allocation
- Standards-compliant Advanced Encryption System (AES) for downstream and upstream data security
- Standards-compliant Forward Error Correction (FEC) for better performance.

### MANAGEMENT

- FSAN (984.4) compliant OMCI interface for ONT management via OLT using TL1, Alcatel-Lucent 5528 Web-based Access Manager (WAM), Alcatel-Lucent 5523 AWS Network Management System.

### POTS INTERFACE

- Compatible with existing CPEs (e.g., analog phones with rotary and tone dial, cordless phones, fax, modem, caller ID boxes)

- Screw terminal connectors with RJ-11 jacks for inside wiring tests (except on indoor ONT)
- Metallic Loop Testing (MLT)
- Loop Start signaling
- Ringing: 5 REN/line
- Balanced sinusoidal ring signal with 18 V DC offset: 40 VRMS
- Off-hook DC current: 25 mA
- Line impedance: 600  $\Omega$
- DC supervisory range: 500  $\Omega$

### CLASS 5-BASED VOICE SERVICES

- Voice loop emulation over GPON with ITU-T H.248/Megaco signaling
- Dedicated GPON GEM-ports and Allocation-ID for voice traffic prioritization
- Class-5 interface (i.e., V5.2 via PSTN Gateway GenBand G6)

### NEXT-GENERATION NETWORK-BASED VOICE SERVICES

- SIP client software in 7342 ONT for POTS to VoIP interworking
- Softswitch interface (with SIP signaling) via attached routed network
- Compatible or interoperability testing in progress or in completion for Nortel CS2K, Broadsoft, Netcentrix, and Sonus, Alcatel-Lucent FS3000 and FS5000

### FAST/GIGABIT ETHERNET INTERFACE

- IEEE 802.3 compliant 10/100Base-T ports or GigE with 10/100/1000 Base-T port
- RJ-45 jacks
- Link and Mode LEDs
- Full-duplex operation
- Auto-negotiation

### DATA SERVICE INTERFACE

- Managed and unmanaged gateway and service models
- Supports both PPPoE- and DHCP-based service models
- Up to 8 classes of service for traffic prioritization via 802.1p or DSCP marking
- Bandwidth guarantees based on Committed Information Rate (CIR) and Peak Information Rate (PIR)
- IEEE 802.1x port-based authentication

### IP VIDEO SERVICE INTERFACE

- Compatible with 3rd party IP video set-top boxes (STB) connected via ONT Ethernet interface
- IP multicast via Internet group management protocol (IGMPv3) snooping
- Supports both IPoE and PPPoE encapsulated IGMP messages
- FSAN standards-compliant multicast using a single GEM Port-ID for all video traffic
- Maximum of 64 multicast streams per ONT Ethernet user interface or per LP-MDU-ONT VDSL2/GigE user interface.
- Multicast bandwidth allocation and traffic prioritization

### RF VIDEO SERVICE INTERFACE

- Coaxial port (75  $\Omega$  F connector)
- Operating Wavelength Range: 1550 nm to 1560 nm
- Operating RF bandwidth: 47 MHz to 870 MHz
- Video output power: 14 dBmV for I and O-Series ONTs, 33dBmV for LP-MDU-ONTs

### CERTIFICATION

- CE certified

## I-Series ONT



### SYSTEM TYPE

- Indoor wall mount or desktop stand
- One GPON network interface with 2.5 Gb/s downstream and 1.25 Gb/s upstream
- Single-mode fiber connector (SC/APC)

### SERVICE INTERFACES

- Up to two 10/100/1000 Base-T Ethernet interface with RJ-45 jacks
- Up to two POTS via RJ-11 jacks
- Optional coaxial port (75  $\Omega$  F connector) for RF video delivery

### POWER

- Local powering with 12 V DC input
- External power supply: 110/220 V AC input
- Optional UPS for battery backup

### DIMENSIONS

- Height: 20.32 cm
- Width: 22.86 cm
- Depth: 5.33 cm
- Weight: 1.82 kg

### ENVIRONMENT

- Operating temperature range: 0 C to +40 C
- Maximum operating altitude: 3,048 m
- Maximum non-operating altitude: 12,192 m
- Relative humidity (non-condensing) range: 20% to 55%

## O-Series ONT



### SYSTEM TYPE

- Outdoor wall mount, Telco Network Interface Device (NID) design
- Can be mounted with optional fiber storage compartment
- Different hardware configuration options
- One GPON network interface with 2.5 Gb/s downstream and 1.25 Gb/s upstream
- Single-mode fiber (SC/APC)

### SERVICE INTERFACES

- Up to two 10/100Base-T Ethernet interface with RJ-45 jacks
- Up to four POTS via screw-down terminals and RJ-11 jacks for testing in-home wiring
- Optional coaxial port (75  $\Omega$  F connector) for RF video delivery

### POWER

- Local powering with 12 V DC input
- Compatible with multiple UPS with integrated ONT alarms
  - 100-240 V AC input
  - 12 V DC output
  - Up to 8 hours of battery backup
  - Commercially sealed lead acid battery
  - Visual status indicators

### DIMENSIONS

- Height: 34.29 cm
- Width: 30.48 cm
- Depth: 10.9 cm
- Weight: 3.18 kg

### ENVIRONMENT

- Operating temperature range:
  - -40 C to +46 C under maximum solar load
  - -40 C to +60 C without solar load
- Maximum operating altitude: 3,048 m
- Maximum non-operating altitude: 12,192 m
- Relative humidity (non-condensing) range: 5% to 95%

## LP-MDU-ONTs



### SYSTEM TYPE

- Indoor wall mount, rack mount
- Can be mounted in outdoor cabinets
- One GPON network interface with 2.5 Gb/s downstream and 1.25 Gb/s upstream
- Single mode fiber (SC/APC)

### SERVICE INTERFACES

- 12 VDSL+POTS combo ports
- 12 POTS
- VDSL Interface
  - VDSL (G.993.2) profile 30a and 17a capable
  - VDSL line code: discrete multi-tone (DMT)

### POWER

- Local powering with battery backup (single power feed)
- Compatible with FlexNet FMPS –150 W 48 V dc UPS with integrated ONT alarms
  - 120 V AC input
  - 48 V DC output
  - Up to 8 hours battery backup
  - Commercially sealed lead acid battery
  - Visual status indicator

### DIMENSIONS

- Height: 9.76 cm
- Width: 44.20 cm
- Depth: 30.48 cm
- Weight: Enclosure 9.07 kg

### ENVIRONMENT

- Operating temperature range: -40 C to +60 C
- The operating relative humidity range is 5% to 95%, non-condensing.
- The storage temperature range is -40 C to +70 C.
- The storage relative humidity range is 10% to 95% non-condensing.

## B-Series ONT



### SYSTEM TYPE

- Outdoor wall mount, telco Network Interface Device (NID) design
- One GPON network interface with 2.5 Gb/s downstream and 1.25 Gb/s upstream
- Single mode fiber (SC/APC)

### SERVICE INTERFACES

- 1 GigE interface – IEEE 802.3 compliant 10/100/1000 BaseT (RJ-45)
- 2 E1 interfaces – RJ-48 connectors
  - E1 standards: ITU-T G.703, G.704
  - Structured and unstructured services
  - MEF-8 packetization for transport over GPON

- Up to eight POTS via screw-down terminals and RJ-11 jacks for testing in-building wiring
- Optional coaxial port (75  $\Omega$  F connector) for RF video delivery

### POWER

- Local powering with 48 V DC input
- Compatible with multiple UPS with integrated ONT alarms
  - Up to 8 hours battery backup
  - Commercially sealed lead acid battery
  - Visual status indicator
  - Battery alarms

### DIMENSIONS

- Height: 41.37 cm
- Width: 36.55 cm
- Depth: 15.11 cm
- Weight: 4.99 kg

### ENVIRONMENT

- Operational temperature range:
  - -40 C to +46 C under maximum solar load
  - -40 C to +60 C without solar load

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