



CTDI Products: End-to-End Solutions

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Home4000™ ONT

The **Home4000** line of ONTs is the most advanced and cost-effective in the market today. The Home4000 family of products has been specifically engineered to provide a complete set of voice (TDM and VoIP), video (RF and IP), and high-speed data capabilities for residential and SOHO applications. A temperature hardened design provides high reliability in harsh environments and adds to the flexibility in installation options. Ports are remotely programmable for any service, including entertainment, communications, home/office automation, security, and other legacy and emerging applications. Individual port provisioning and management capabilities allow a single Home4000 ONT to securely serve different subscribers with multiple services from each port.

Benefits

- All service support: Voice (TDM and VoIP), Video (RF & IP) and Data
- Multiple subscriber/multiple service support from single ONT
- Advanced data services via symmetrical high speed throughput, bandwidth guarantees and VLAN service segregation
- Wire speed, full bidirectional data rate on each port
- Flexible voice services support with software selectable port provisioning for VoIP or POTS, as well as supporting both VoIP and POTS together on a single OLT
- Subscriber and service provisioning without OSS changes via DPC™ DOCSIS PON controller
- Remote management facilitates activation and diagnostics
- Temperature hardened for reliability and flexibility in installation
- Standards compliant
- 400Mbps symmetrical ONT throughput



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Home4000™

Features

Range of configurations available

- 0, 2, or 4 POTS telephony ports (TDM and VoIP)
- 4 x 10/100 Ethernet ports
- IP video support for IGMP multicast or VoD on any or all data ports (including HDTV IP Video @ 20Mbps)
- Built in RF video capability

Flexible Installation

- Direct indoor wall mounting
- Snap-in, tool-less mounting in any CTDI outdoor enclosure
- Temperature-hardened for use in exterior weather-tight enclosures
- Up to 20km operating range (dispersion limited)

Comprehensive Remote Management

- Full remote management features
- Service activation, diagnostics, and monitoring for all ports
- Hardware, software, and service inventory
- Symmetrical assignment bandwidth provisioning and priority (64Kbps increments up to 100Mbps/port)
- Pre-provisioning of the ONT for quick installation and turn up
- Intrusion, loss of AC power, and low battery alarms
- Single- or multiple-family applications supported on the same ONT
- Multiple services supported simultaneously on the same port
- DOCSIS Enabled PON support for provisioning via existing DOCSIS control mechanisms

Operations

- Remote control capable
- Alarms with configurable severity
- Optical power threshold alarms
- Software download
- Remote configuration
- TDM line testing
- TDM line loop-back
- Transmission path config testing
- Real time data port statistics
- Auto ONT discovery

Specifications

Physical

- Small size: 1.5"H x 8.5"W x 8"D
3.8cm x 21.6cm x 20.3cm
- Weight: 1.75 pounds (0.8kg)

Indicators/External Alarms

- PON/unit status multi-color LED
- Input for external alarm – Intrusion, high water, other contact closures
- Low battery/charger status alarm input
- Low optical power input alarm
- Low RF video power alarm
- Ethernet port status and activity

Optical Characteristics

PON interface

- SC/APC optical PHY (single-mode fiber)
- 1.25 Gigabit Ethernet PON
- Symmetrical 400Mbps ONT capacity

Downstream PON (receiver)

- Dynamic range: 0 to -24 dBm
- Receive wavelength: 1490nm ±10nm
- Configurable RSSI (Receive Signal Strength Indicator) range: -15 to -25dBm

Return Path PON (transmitter)

- Class 1 laser
- Optical output power level: 1dBm ±1dB
- Optical output wavelength: 1310nm ± 50nm

RF Receiver

- RF receiver dynamic range: 0 to -6dBm
- RF receive wavelength: 1550nm ±10nm
- Low RF input power threshold: -14dBm

Ethernet Data Ports

- 4 x 10/100baseT Ethernet ports
- RJ45 connectors with link state and activity indicators
- Automatic speed detection
- Full or half duplex (automatic or manual setting)
- Guaranteed and best-effort bandwidth controls
- Bandwidth selectivity: 64Kb to 100Mb in 64Kb increments
- Each port supports 100Mbps full duplex
- Reach at 100Mbps: 100 meters on CAT5 cable

Data switching features

- Port bridging
- VLAN trunking
- 1 VLAN + 3 “special services” per port
- IGMP V2 support
- IGMP proxy and snooping with “fast leave”

Port statistics

- Transmit packets/octets
- Receive packets/octets
- Receive errors
- Collisions

Telephony Ports (optional)

Interfaces

- 0, 2 or 4 RJ11 connectors
- TDM POTS/VoIP configurable
- VoIP POTS: SIP and MGCP configurable
- VoIP codecs per G.711 and G.729

Loop characteristics

- Loop voltage: -42 to -56VDC
- Loop current: 20mA (typical)
- Loop impedance: 600 / 900 Ohm
- Ringing Voltage: 40 to 72 Vrms
- Ring capacity: 5 REN/line
- Loop start signaling
- Loop length: 500 feet per GR909
- Receive gain: 0 to -12dB (configurable)
- Transmit gain: -6 to +12dB (configurable)
- A-law / μ -law encoding (configurable)



Home4000™

Specifications

RF Port (optional)

Physical interfaces

- 1 "F" connector, 75 Ohm

RF characteristics

- Output level @ -4dBm optical in: +18dBmV/ch
- Frequency response: 50-870MHz
- RF flatness 50-870MHz range: ±2dB
- Typical load w/o amplification: 4 splits
- CNR @ -4dBm optical in: 48
- CSO @ -4dBm optical in: 55
- CTB @ -4dBm optical in: 55

Power and Environmental

- Operating temperature range: -40°C to +65°C
- Humidity: 5% to 95% (non-condensing)
- Operating voltage: 10 to 16VDC (12VDC nominal)
- Operating power: 18 watts (max)
- Optional battery back-up for critical and lifeline applications

Standards and Certifications

- UL listed, CE mark and FDA certified for safety
- Meets or exceeds FCC part 15b for emissions
- RoHS
- IEC 60825-1:1993+A1: 1997+A2:2001
- Telcordia GR909
- IGMP V2 for IP video support
- 802.3ah compliant

Ordering information

Part #	Description
ONU4020	home ONT with 4 fast Ethernet ports
ONU4021	home ONT with 4 fast Ethernet ports + RF Video
ONU4070	home ONT with 4 fast Ethernet ports + 2 VoIP POTS lines
ONU4071	home ONT with 4 fast Ethernet ports + 2 VoIP POTS lines + 1 RF video
ONU4080	home ONT with 4 fast Ethernet ports + 4 VoIP POTS lines

Compatible power systems

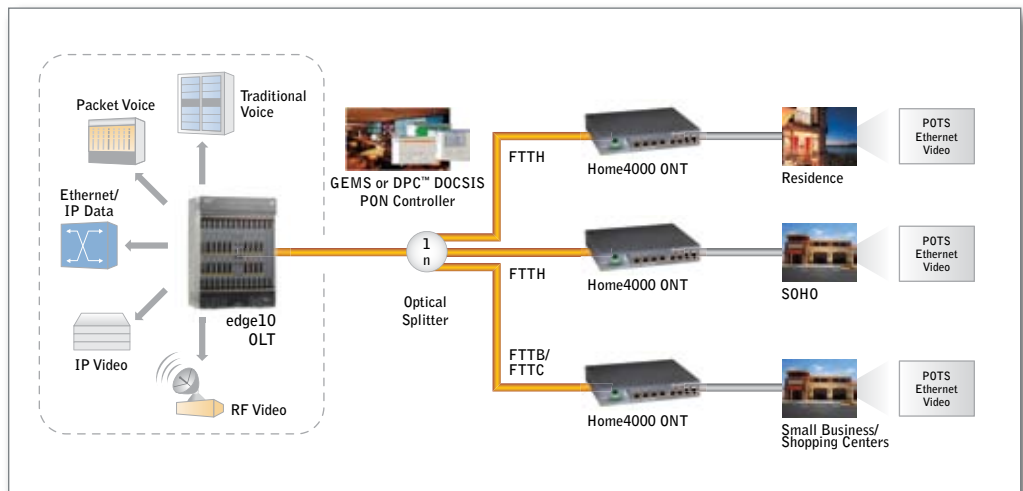
Part #	Description
PSB8000	UPS, 12 Volt, charger and battery
PSB8002	Hardened UPS (charger & battery), 12 Volt
PSB1005	Brick, plug-mount, 12 Volt
PSB1006	Brick, International plug mount, 12 Volt
PSB1009	Hardened UPS (charger & battery) for CTDI OSPE202 enclosure
BAT1002	Temperature-hardened UPS battery, 12 Volt, for CTDI OSPE202 enclosure

Compatible enclosures

The Home4000 ONT operates with or without enclosures. It may be mounted in the following CTDI enclosures and adapters if required.

Part #	Description
OSPE110	Enhanced plastic outside enclosure
OSPE120	Plastic outside enclosure with NID
OSPE121	Plastic outside enclosure with Optifit® & NID
OSPE202	All-in-One metal enclosure
ADPTR03	Wall mount adaptor
ADPTR06	Snap-on wall-mounting adaptor for Home4000 ONT

EPON Service Delivery



Communications Test Design, Inc.
1373 Enterprise Drive • West Chester, PA 19380
610.436.5203 • www.ctdi.com

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PRODUCTS

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