

Outdoor GPON ONT with CATV Products

Overview

As the industry pioneer of truly independent Optical Network Terminal (ONT) solutions, iPhotonix is introducing its iVolve Series of Next Gen standards-based ONT family delivers cost effective revenue generating features for today's competitive access market. With the broadest array of proven Optical Line Terminal (OLT) interoperability, iPhotonix's iVolve Series ONT family provides flexibility for a variety of network applications.

The iPhotonix iVolve Series Outdoor GPON ONT with CATV delivers high quality VoIP voice service, Ethernet data service for high-speed internet access and IPTV video plus RF video service.

Features and Benefits:

- Proven OLT interoperability with major OLT vendors
- Voice, data, IPTV, and video services supported over a single GPON passive optical link or Active Ethernet link
- Support for a wide range of revenue generating voice features
- Wire speed 1000Mbps data transfer
- QoS handling including eight traffic classes for triple-play service support
- Extensive Ethernet bridging plus VLAN tagging, switching and filtering capabilities for secure traffic management across services and end users
- Power management for preservation of essential services during AC power outage
- Indoor or Outdoor wall mountable for easy installation
- Up to seven feet of internal fiber storage

Highlights Include:

GPON Service

The iPhotonix iVolve Series Outdoor GPON ONT with CATV terminates GPON fiber via a single SC/APC type optical connector. It complies with GPON Standard ITU-T Rec.G984.2 and G984.2 Amendment. The ONT receives downstream data rate at 2.488 Gbps over a wavelength of 1490 nm, and sends upstream data at 1.244 Gbps over a wavelength of 1310 nm. The optics receives the video signal over 1550nm wavelength.

The iVolve Series Outdoor GPON ONT with CATV supports these physical layer features:

- Support for Class B+ and optionally Class C optics
- Transceiver is a Class I laser product and complies with FDA21 CFR 1040.10 and 1040.11
- Received Optical Power monitoring

POTS (Plain Old Telephone Services)

The iPhotonix Outdoor GPON ONT with CATV supports plain old telephone voice services over RJ-11 or IDC equipped connectors.

- VoIP Softswitch or CLASS 5 based high quality voice service through POTS lines
- High speed internet or VoIP access through four 10/100/1000 Base-T Ethernet interface
- Support for all protocols in one software load (SIP, MGCP, H.248)
- Support for a myriad of GR-303/V5 Gateway protocols

High-Speed Data Services

The iPhotonix iVolve Series Outdoor GPON ONT with CATV supports 10/100/1000 Base-T interfaces and HPNA for high-speed Ethernet. The Ethernet interface operates as an IEEE 802.1d transparent bridge based on RFC-2684. Class of service as well as bandwidth is controlled through provider provisionable options. The Ethernet port supports streaming IP video, IPTV content delivery, Whole Home DVR and meets ITU 802.1p QoS standards at the MAC level.

CATV with RF Return

The iPhotonix iVolve Series Outdoor GPON ONT with CATV supports CATV applications via a coaxial F-connector. This interface serves as primary protection for the video and is capable of handling a 1000 Amp fault current in the shield.

The CATV interface contains a forward path video receiver (CATV – 54 MHz to 1 GHz) with sensitivity up to -9 dB, supports multiple gain stages, AGC and status indications, video power on/off control and AGC gain control. The CATV interface also supports the upstream data channel from set-top boxes.

- Packet based interactive IPTV services including multicast video and video-on-demand
- RF Video with integrated RF Return supporting the 8 to 40 MHz return path frequency band
- An iPhotonix head-end RF modulator is available for upstream data return channels.

**Required for installations that use the Motorola head-end*



FULLY POPULATED UNIT
(7359)

SPECIFICATIONS:

Services and Features:

Optical

- 2.5 Gbps downstream, 1.244 Gbps upstream
- Optical wavelengths: 1490 +/-10nm receive, 1310 +/-20nm transmit, 1550 +/-20nm RF video receive
- Launch power: 0.5 to +5 dBm
- Receiver Sensitivity: -27 dBm
- Input power overload: -8 dBm
- Received optical power monitoring

GPON:

- Serial number discovery and Registration ID provisioning
- ITU-T G.984/G.988 compliance
- DBA support via mode-0 DBRu (piggy-back) reporting
- Downstream Advanced Encryption Standard (AES) support
- Forward Error Correction (FEC)
- Upstream Traffic Management using Priority-based or Rate-controlled scheduling
- Support for up to 8 T-CONTS with multiple priority queues per T-CONT
- Multiple GEM ports with flexible mapping between TCONTS and Priority queues
- pBit based GEM port and upstream Priority queue selection
- IPTV traffic filtering (Multicast GEM port)

OAM:

- ITU-T G.984.4/G.988 based management of all services
- Remote firmware upgrade including automatic rollback
- VOIP configuration from remote server
- TR-69 provisioning

Ethernet L2:

- 10/100/1000 Base-T interface with RJ-45 connectors
- Meets IEEE 802.1 specifications
- MDI/MDIX auto-sensing and auto-negotiation
- Ethernet bridging and switching per 802.1D
- 802.1p marking/remarking, DSCP mapping
- 802.1Q including VLAN translation, filtering, tagging, stacking (QinQ)
- Up to 12 VLAN groups per port
- Automatic MAC address learning, aging and filtering
- Up to 1024 MAC address entries
- MAC address limiting
- Up to 256 multicast groups
- IGMP v2/v3 Snooping
- IGMP snooping with immediate leave
- Downstream pBit and flow based LAN port queue selection
- Downstream Flow and LAN port based Rate Limiting

HPNA based Home Networking

- Operates over coax • HPNA 3.1 (ITU G.9954)
- Bridging between HPNA and LAN interface with file transfer rates of up to 320 Mbps

CATV RF-Video Interface:

- Single F-Type CATV connector
- Operating wavelength: 1550 to 1560nm
- Average optical power: -8 to +2 dBm
- RF Output level: 18dB
- RF Output Impedance: 75 Ohms
- Total RF Output Power: 36 dBmV

RF Return :

- Fully integrated into the ONT
- Three wavelength only solution
- 8 to 40 MHz frequency range
- SCTE 55-1 and 55-2 standards
- 24 to 60 dbmv received power input level

Voice:

- Equipped with RJ-11 and/or IDC connectors
- 5 REN per line
- Loop start
- Balanced and unbalanced ringing
- Country specific coefficients and tones
- DTMF dialing
- Metallic loop testing (GR-909)
- SIP (RFC 3261)
- MGCP (RFC 3435)
- H.248 (RFC 3525)
- DTMF encoding by RELAY or IN-BAND method
- CLASS service support (Caller ID, Call Waiting, Call Forwarding, Call Transfer etc.)
- G.711 (μ & a law), G.726-32, G.722, G.729
- DHCP Client or static IP configuration
- Echo Cancellation
- T.38 and IN-BAND Fax
- Voice Activity Detection and Comfort Noise Generation
- Proven interoperability with major soft switch and voice gateway vendors
- Official Metaswitch and BroadSoft Certifications

Physical:

LEDs:

- Power
- Battery
- Optical Status
- Ethernet Link Activity
- POTS Service Activity

Dimensions and Weight:

- Size: 13 x 11.25 x 4.3 inches (233 x 286 x 110 mm)
- Weight: 5.5 lbs (2.2 kg)

Environmental:

- -40° C/F to +46 °C (114.8°F) ambient + solar load
- Humidity: 5% to 90%
- Outdoor Enclosure sold separately

Power:

- Power Input: 12 to 14 VDC
- Power Consumption: 13.0 to 20 Watts
- Input connection: Phoenix plug
- Dying Gasp Support

Regulatory Compliance:

- Safety: UL/CSA 60950, IEC 60950, ETSI
 - FDA – FCC 47 CFR Part 15, Class B and FDR 21 CFR
 - 1040.10 and 1040.11 Class 1
 - EMC: FCC PART 15, SUBPART B, CLASS B
 - EN 55022, EN 55024, EN 300 386, CLASS B
 - CE: Compliant
 - RoHS6: Compliant
 - WEEE: Compliant
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Ethernet WiFi Router

4 Ethernet Ports | Wireless-N | 300Mbps

WR-5882

Wireless-N Broadband Router



The Comtrend WR-5882 Wireless-N Broadband Router is designed for home and small office environments that require wired and/or wireless connectivity. Utilizing advanced MIMO technology, the IEEE802.11n standard provides great coverage, up to 300Mbps wireless speeds, and is backward compatible with IEEE802.11b/g devices. Additionally, Wi-Fi Protected Setup (WPS) enables instant security and device pairing by pressing the WPS button on both router and client device.

Router FEATURES

- Supports IPv6
- NAT/NAPT IP Sharing
- PPPoE/PPTP/Static IP/DHCP/L2TP/
- DHCP server to assign IP address automatically
- DMZ/Virtual Server/Port Forwarding
- Supports Special Applications (Port Trigger)
- Supports DDNS (DynDNS, TZO)
- VPN Pass Through (IPSec/L2TP/PPTP)
- Anti-DoS Firewall, QoS, IP/MAC/URL Filtering
- Web-based configuration and Firmware Upgrade

WR-5882

4 Ethernet Ports | Wireless-N | 300Mbps



Wireless Features

- Complies with IEEE 802.11b/g/n standards
- Support high data rate up to 300Mbps while connecting with IEEE 802.11n devices
- Supports Green WLAN for smart transmit power saving, Implicit receive power saving and CPU offload
- Support WMM function to enhance multi-media data transmitting and receiving performance
- Support 64/128-bit WEP, WPA, WPA2 and IEEE 802.1x wireless securities
- Support WPS hardware button for easy wireless association

Product appearance and specifications may change without notice.

Specifications

WAN Port

- 10/100M UTP Port x 1 (Auto MDI/MDI-X)

LAN Port

- 10/100M UTP Port x 4 (Auto MDI/MDI-X)

Frequency Band

- 2.4000~2.4835GHz (Industrial Scientific Medical Band)

Data Rate

- 11b: 1/2/5.5/11Mbps
- 11g: 6/9/12/24/36/48/54Mbps
- 11n (20MHz): MCS 0-7, up to 72Mbps
- 11n (40MHz): MCS 0-7, up to 150Mbps
- 11n (20MHz): MCS 8-15, up to 144Mbps
- 11n (40MHz): MCS 8-15, up to 300Mbps

Certifications

- FCC, Wi-Fi Certified



COMTREND CORPORATION

Output Power

- 11n: 12±1.5dBm, 11g: 12±1.5dBm, 11b: 16±1.5dBm

Antenna

- 2 dBi Dipole Fixed Antenna x 2

Power Module

- 5VDC, 1A Switching Power Adapter

Dimension

- 30(H) x 157(W) x 127(D) mm

Temperature

- Operating: 32~104°F (0~40°C)
- Storage: -4~140°F (-20~60°C)

Humidity

- Operating: 10~90% (NonCondensing)
- Storage: Max. 95% (NonCondensing)

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DS_WR5882_R3.62712



DIR-868L Wireless AC1750 Dual Band Gigabit Cloud Router

Package Contents

- Wireless AC1750 Dual Band Gigabit Cloud Router (DIR-868L)
- Ethernet Cable
- Power Adapter
- Quick Install Guide¹

Minimum System Requirements

Computer with:

- Windows[®] 7, Windows Vista[™], Windows[®] XP SP2², or Mac OS[™] X (v10.4)
- Internet Explorer[®] v6, Mozilla[®] Firefox[®], Google Chrome or Safari 4
- Network Interface Card

For Internet Access:

- Cable or DSL Modem
- Subscription with an Internet Service Provider (ISP)

Features

- Remote Access: Remote access for network management in the palm of your hand with the free mydlink app
- Media Sharing: Wireless access your favorite media from a connected USB storage drive with the free mydlink SharePort app
- Coverage: Designed with a high-powered amplifier to provide wireless coverage to every corner of home.
- Performance: Performance with wireless AC1750 and four Gigabit Ethernet ports.
- Easy Setup: Intelligent setup using web browser wizard or with the free Quick Router Setup (QRS) mobile app
- SharePort Plus: Easily share printers, USB storage devices and multi-function devices

benefits of wireless AC without worrying about annoying compatibility issues. Simply download the QRS Mobile to your mobile device, follow the intuitive setup wizard, and you'll have your wireless AC home network up and running in minutes.

Dual Band Advantage

The Wireless AC1750 Dual Band Gigabit Cloud Router delivers dual band performance for intelligent, versatile, interference-free bandwidth. Check your email and surf the Internet on the 2.4GHz band; and game, make Skype calls and stream HD movies to multiple devices using the cleaner, interference-free 5GHz band. Whatever you like to do online, dual band has you covered.

Enhanced Coverage

With its built-in high-powered amplifier, and AC SmartBeam beamforming technology you can enjoy wireless coverage throughout your home. Watch videos in an upstairs room, Skype from your home office, or browse and stream from your couch – with the DIR-868L you can connect wherever and however you want.

mydlink Cloud Services

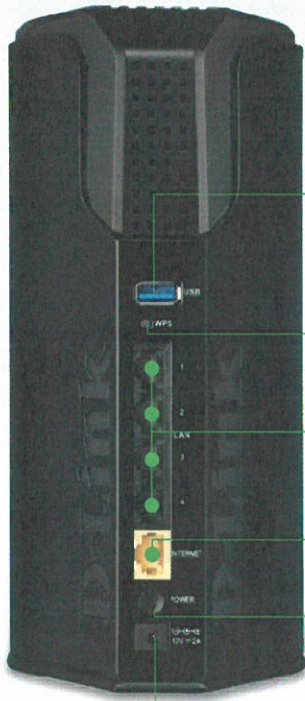
D-Link's Cloud Routers also provide the added benefit of remote network management and remote file access via mydlink Cloud Services. Take advantage of everything mydlink Cloud has to offer through the free mydlink SharePort[™], QRS Mobile, and mydlink Lite apps and web portal (mydlink.com). With the various free mobile apps that are available for iOS and Android devices, you can:

- **mydlink Lite** - Monitor and control your home network from anywhere
- **mydlink SharePort[™]** - Stream and share files and media from a connected USB device to your mobile phone or tablet at home or anywhere with an Internet connection
- **QRS Mobile** - Quickly setup your router from your mobile phone or tablet

	DIR-810L	DIR-820L	DIR-850L	DIR-860L	DIR-868L
Performance					
Range					
Wi-Fi Speed	750Mbps	1000Mbps	1200Mbps	1200Mbps	1750Mbps
Bands	Dual Band 2.4GHz and 5.0GHz	Dual Band 2.4GHz and 5.0GHz	Dual Band 2.4GHz and 5.0GHz	Dual Band 2.4GHz and 5.0GHz	Dual Band 2.4GHz and 5.0GHz
Ports	4 x Fast Ethernet	4 x Fast Ethernet 1 x USB 2.0	4 x Gigabit Ethernet 1 x USB 2.0	4 x Gigabit Ethernet 1 x USB 3.0	4 x Gigabit Ethernet 1 x USB 3.0
Features					
Ideal for E-mail, Web Browsing and Music Streaming	•	•	•	•	•
Ideal for HD Video	•	•	•	•	•
Ideal for Online Gaming		•	•	•	•
Simultaneous HD Media Streaming					•
Advanced Features					
Wi-Fi Protected Setup	•	•	•	•	•
Remote Network Control and Management	•	•	•	•	•
Local File Sharing and Streaming		•	•	•	•
AC SmartBeam (beamforming)				•	•

DIR-868L Wireless AC1750 Dual Band Gigabit Cloud Router

Back



USB 3.0 SharePort™
Share media from a USB external hard drive or thumb (flash) drive

WPS Push Button
Easily and securely connect new devices with the push of a button

4 Gigabit LAN Ports
Connects up to 4 wired devices

Internet Port
Plug your Internet cable in here

Power Button

Power Connector

Technical Specifications

Standards

- 2.4GHz
 - IEEE 802.11n
 - IEEE 802.11g
 - IEEE 802.11b
- 5GHz
 - IEEE 802.11ac (draft)
 - IEEE 802.11n
 - IEEE 802.11a
- LAN/WAN
 - IEEE 802.3u
 - IEEE 802.3ab

Physical Interfaces

- 4 Gigabit Ethernet Ports
- 1 Gigabit WAN Port
- 1 USB 3.0
- WPS Push Button
- Reset Button

Antenna Type

- Internal Smart Antennas
- High-Powered Amplifiers

Ethernet Interface

- 4 10/100/1000 Gigabit Ethernet Ports
- 1 10/100/1000 Gigabit WAN Port

Security

- Wi-Fi Protected Access (WPA/WPA2)
- WPS™

Advanced Firewall Features

- Network Address Translation (NAT)
- Stateful Packet Inspection (SPI)

LEDs

- Power/WPS
- Internet

Power

- DC 12V/3A

Mobile Apps

- mydlink SharePort™
- QRS Mobile
- mydlink Lite

Advanced features

- VPN pass through
- Parental Control Support
- Guest Zone Support
- UPnP™ Support
- Wi-Fi WMM Quality of Service
- IPv6
- SharePort Plus (printer sharing)
- SharePort Web Access Support
- UPnP AV Media Server Support (DLNA)

Operating Temperature

- 30° to 104° F (0° to 40° C)

Operating Humidity

- 10% to 95% non-condensing

Certifications

- FCC
- IC
- Wi-Fi Certified
- CE

Dimensions

- 8.58 x 4.92 x 4.05 inches (218x125x103 mm)

Weight

- 1.17lbs (530g)

Warranty

- 1-Year Limited Warranty³

¹ Latest software and documentation are available at <http://support.dlink.com>.

² Computer must adhere to Microsoft's recommended System Requirements.

³ Maximum wireless signal rate derived from draft IEEE 802.11ac specifications. D-Link makes no warranties as to forward compatibility with future standards or compatibility with draft 802.11ac devices from other manufacturers. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors may adversely affect wireless signal range. Up to 1300Mbps wireless speeds achieved when connecting to other 802.11ac devices.

⁴ 24/7 Basic Installation Support is available only in the USA for the first 30 days from date of original purchase.

⁵ 1-Year Limited Warranty available only in the USA and Canada.

⁶ Zero Configuration requires a D-Link Cloud Router and a Zero Configuration-enabled device.

All references to speed and range, including the performance chart, are for comparison purposes only. Product specifications, size, and shape are subject to change without notice, and actual product appearance may differ from that depicted on the package. See inside package for warranty details.

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D-Link®
Building Networks for People

D-Link®

DUAL BAND
**AC
1750**



Next Generation Wireless Technology – Wireless AC1750 for optimized performance and reliable coverage delivering high-quality HD video streaming, gaming and file transfers.

Dual Band Performance – Up to 450Mbps (2.4GHz) + 1300Mbps (5GHz) to deliver lightning-fast wireless speeds and less interference for maximum throughput

Backward Compatibility – Compatible with wireless 802.11a/b/g/n devices

mydlink™ Cloud Management – Monitor and manage your network from anywhere

Gigabit Speed – Four Gigabit Ethernet ports for superior device connectivity

Wireless AC1750 Dual Band Gigabit Cloud Router

Product Highlights

Wireless AC1750 Dual Band Performance

Backward Compatible with your Wireless Devices

Enhanced Coverage with AC SmartBeam beamforming technology and high-Powered Amplifier

Connect four of your Devices with Gigabit Ethernet Connectivity

USB 3.0 port - up 10x faster than USB 2.0

Stream and Share your Files with mydlink SharePort

App-Enabled Network Control and Monitoring

Upgrade to AC Performance

The D-Link Wireless AC1750 Dual Band Gigabit Cloud Router (DIR-868L) delivers next-generation wireless speed and coverage to all your Wi-Fi devices. With wireless dual band speeds of 450 and 1300Mbps, the DIR-868L avoids interference to deliver the fastest wireless speeds, improved coverage and reliable connections. The DIR-868L is ideal for streaming HD video, gaming, connecting multiple devices, and watching shows on your TV – all at the same time. The DIR-868L is also backward-compatible with your existing wireless 802.11a/b/g/n devices for seamless connectivity. D-Link's free mobile apps provide easy setup, remote monitoring and access to content from anywhere on your Smartphone or Tablet.

Backward Compatibility

While the DIR-868L delivers AC performance to your home network, it is also backward compatible with all of your existing a/b/g/n devices. This means you can enjoy all the

DIR-868L