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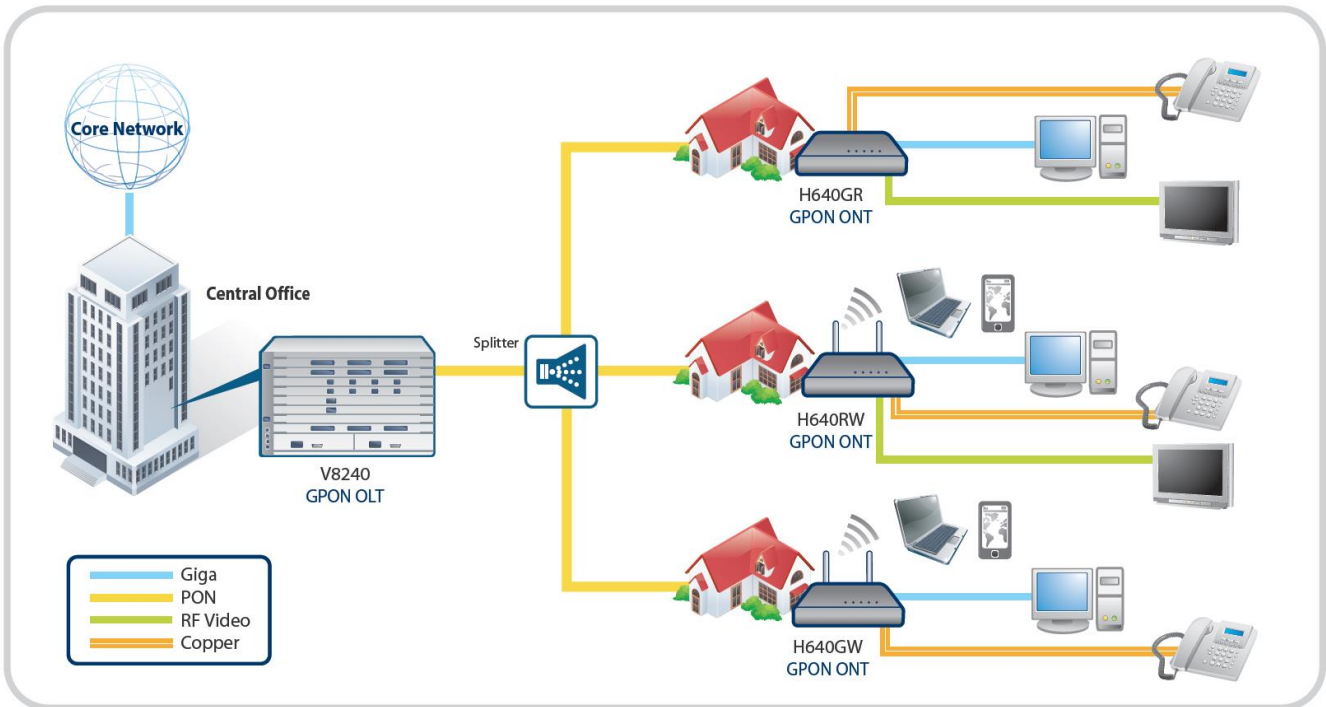
## **Product Overview**

Dasan Networks' H640RW optical network terminal is targeted for all subscribers requiring multiple POTS and high-speed data interfaces in a cost-effective indoor housing. Fully compliant with ITU-T G.984 standards, the H640RW supports data rates of 1.2Gbps upstream and 2.5Gbps downstream. With DASAN's leading-edge GPON technology, users can enjoy bandwidth-intensive multimedia services such as real-time video, audio and gaming much easier and faster than ever before.

The H640RW provides one GPON uplink port, four Gigabit Ethernet (10/100/1000Base-T) ports, one RF video port that provides analog video service, Wireless LAN interface and two FXS voice ports that enhance the ability to deliver demanding VoIP/Wi-Fi services. The H640RW uses Session Initiation Protocol (SIP) to terminate VoIP calls so that in-home wiring does not change and standard telephone sets may be used. The H640RW supports the full Triple Play of services including voice, video (IPTV), and high speed internet access service.

The H640RW contains both built-in wire-speed L2 switch and L3 routing gateway with port forwarding, NAT and NAT address translation, PPPoE client support for high speed Internet service.

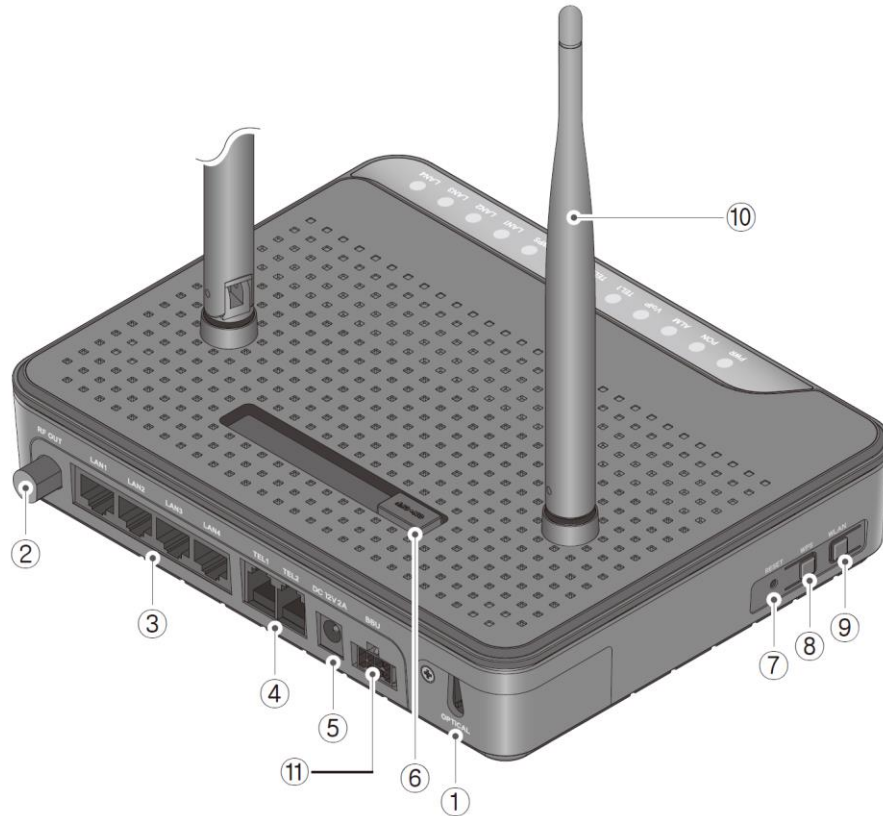
## Service Scenario for PON



A PON consists of an Optical Line Termination (OLT) located at the Central Office and a set of Multi Dwelling Units (MDUs) or Optical Network Terminals (ONTs) located at the customer's premises. Between them is the optical distribution network (ODN) comprised of fibers and passive optical splitters or couplers. A splitter is a device that divides an optical signal into two or more signals. The OLT connects the PON to the IP network that controls and manages the PON clients. An MDU (ONT) connects the user-specific network to the PON. The ONT can be utilized by a single subscriber or used as a multi-dwelling gateway for a local network.

## Interface Layout

The following drawing shows the interface layout of the product.



Interface Name	Description	Connector Type
① Optical	To connect to OLT via a passive optical splitter 1 GPON uplink interface	SC/APC
② Video interface	To connect to TV.	F-connector
③ LAN 1-4	To connect to the PC or LAN 4 10/100/1000Base-T interfaces for data communication	RJ45
④ TEL 1-2	To connect to the telephone 2 FXS interfaces for phone service	RJ11
⑤ Adapter Jack	To connect the external power supply	-
⑥ ON/OFF Button	Turn on/off the unit.	-
⑦ RESET button	Reboot the unit.	-
⑧ WPS	Enable WPS process.	-
⑨ WLAN	Enable wireless function.	-
⑩ Antenna	Transmit and receive wireless packets	-
⑪ BBU	To connect battery backup unit.	-

## Operating Status LEDs

The status of the ONT is indicated by the LEDs located on the front of unit. LED indicators illuminate to show normal ONT operation, and will blink and/or turn off to indicate the current status or errors. Refer to the following table for details of each LED state.



Label	Color	Status	Description
PWR	Green	On	The system is starting up to boot and operation.
		Off	The system is turned off.
PON	Green	On	Register OK. The PON port link is up.
		Off	Not register. The PON port link is down.
ALM	Red	On	No optical signal
		Off	Optical signal detected.
VoIP	Green	On	Register OK
		Off	Not registered
TEL 1-2	Green	On	Off-hook
		Off	On-hook
WLAN	Green	On	Wireless function enabled
		Off	Wireless function disabled
WPS	Green	On	WPS connection successfully established (for 5 seconds).
		Blinking	WPS in progress
	Off	Disabled or process finished	
LAN 1-4 (LNK/ACT)	Green	On	The 1G port link is up.
		Blinking	The 1G transmit or receive activity is present on the service port.
	Orange	On	The 100M port link is up.
		Blinking	The 100M transmit or receive activity is present on the service port.
	Off	The link is down.	

## Product Specifications

### Capabilities

#### System

- 128MB Flash Memory
- 128MB SDRAM
- GPON Interface Capacity:  
Up 1.2Gbps / Down 2.5Gbps

#### GPON ONT

- ITU-T G.984.x compliant
- Forward Error Correction (FEC)
- Multiple T-CONTs/GEM ports per device
- Flexible mapping between GEM port and T-CONT
- Dying Gasp

#### L2 Switch

- Untagged port configuration
- IEEE802.1D and IEEE802.1Q bridging
- Standard Ethernet bridging
- MAC address learning with auto aging (Up to 1K MAC addresses)

#### Multicast

- IGMP snooping

#### Quality of Service

- HW-based internal IEEE 802.1p (CoS)
- Strict Priority (SP)
- 802.1Q (VLAN tag) QoS mapping, ToS/CoS
- 8 queues per port

#### Management

- ITU\_T 984.4 compliant OMCI interface
- IEEE802.3x flow control
- LED indications for maintenance
- Web-based management

#### VLAN

- VLAN port filtering
- Destination address port filtering
- 16 active VLANs

#### Wireless LAN

- IEEE802.11b/g/n compliant
- Multiple SSIDs
- 64/128bit wireless encryption protocol (WEP)
- Bandwidth: 2.4GHz
- Two Transmit and Two Receive path (2T2R)
- Max. data rate
  - 54Mbps in 802.11g
  - 300Mbps in 802.11n
- Security: WEP, WPA-PSK (TKIP) & WPA2-PSK (AES)

#### VoIP Features

- SIP (RFC3261/3262/3264)
- 5-REN per POTS
- RTP, RTCP (RFC3550/3551)
- DTMF dialing / Pulse dialing
- Multiple codecs: G.711, G.723.1, G.729
- T.38 FAX mode
- Echo cancellation

#### Analog Video Service

- Standard F-Type connector
- Analog RF video over dedicated 1550nm wavelength
- RF output level of +18dBmV
- RF passband: 54 ~ 1,000MHz
- Basic services: 50~435MHz
- Premium services: 465~770MHz, pass or block, software provisionable
- Switched on/off by remote control

#### Residential Gateway Unit Features (L3 Routing mode)

- PPPoE client: one client per RG ONT
  - Automatically initiating the session
  - Automatically keep alive
- DHCP server
- DNS server (DNS relay, DNS transparent)
- NAT and NAPT
  - 16K session (US 8K, DS 8K)
- Port forwarding
- Integrated stateful packet inspection firewall with ACL

## Physical Specifications

### Mechanics

- Dimensions (W x H x D)  
7.48 x 2.44 x 5.91 in  
(190 x 62 x 150 mm)

### Environmental Conditions

- Operating temperature  
32 to 104°F (0 to 40°C)
- Storage temperature  
-4 to 140°F (-20 to 60°C)
- Operating humidity  
5 to 90% (non-condensing)

### Power Voltage (AC/DC Adapter)

- Input: 100-240VAC, 50/60Hz  
2-PIN type
- Output: 12VDC/2A
- BBU: Backup Battery Unit

### Interface Parameter

- GPON i/f  
1 GPON port (SC/APC SFF type)
- Gigabit Ethernet i/f  
4 10/100/1000Base-T ports (RJ45)
- FXS i/f  
2 FXS ports (RJ11)
- Wireless LAN  
IEEE802.11b/g/n compliant  
Dual antenna
- Video i/f  
1 RF Video port (F-connector, coax)

### Operating Indicators (LED)

- PWR ON / OFF, power status
- PON ON / OFF  
ONT registration status
- ALM ON / OFF  
optical signal status
- VoIP ON / OFF  
FXS registration status
- TEL ON / OFF  
Off/On-hook status
- WLAN ON / OFF  
Wireless function status
- WPS ON / Blinking / OFF  
WPS connection status
- LAN ON / Blinking / OFF  
LAN port link status  
activity status

## Ordering Information

### Base Standard

#### H640RW

1-Port G-PON(Class B+, ITU-T G.984), 4-Port 10/100/1000Base-T, 2-Port POTS, RF Overlay, WiFi, Backup Battery Unit Interface

- PON MAC(Broadcom), Flash 128MB and SDRAM 128MB
- SC/APC Connector type
- 2T2R Wi-Fi (IEEE 802.11b/g/n)
- Adaptor : Input AC100~240VAC, Output 12V/2A, Europe standard
- CE Certification
- Overseas specification

*Maximum wireless signal rate derived from IEEE standard 802.11 specifications. Actual data throughput and wireless coverage will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate and wireless coverage.*

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