# Product Overview

The H640GV is Optical Network Terminal (ONT) compliant with ITU-T G.984 standard. DASAN Networks has developed H640GV for all clients on the basis of Gigabit Passive Optical Network (GPON) technology. With DASAN's leading-edge GPON technology, users can enjoy bandwidth-consuming multimedia services such as real-time video, audio and gaming much easier and faster than ever before.

The H640GV supports one GPON uplink port and four Gigabit Ethernet (10/100/1000Base-T) ports and two FXS voice ports that enhance the ability to deliver demanding VoIP services. The H640GV 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 H640GV utilizes technology for intelligent IP-based access resulting in reliable network deployment models and management.

The H640GV contains both built-in wire-speed L2 switch and L3 routing gateway with port forwarding, NAT and NAPT address translation, PPPoE client support for high speed Internet service.

Service Scenario for PON
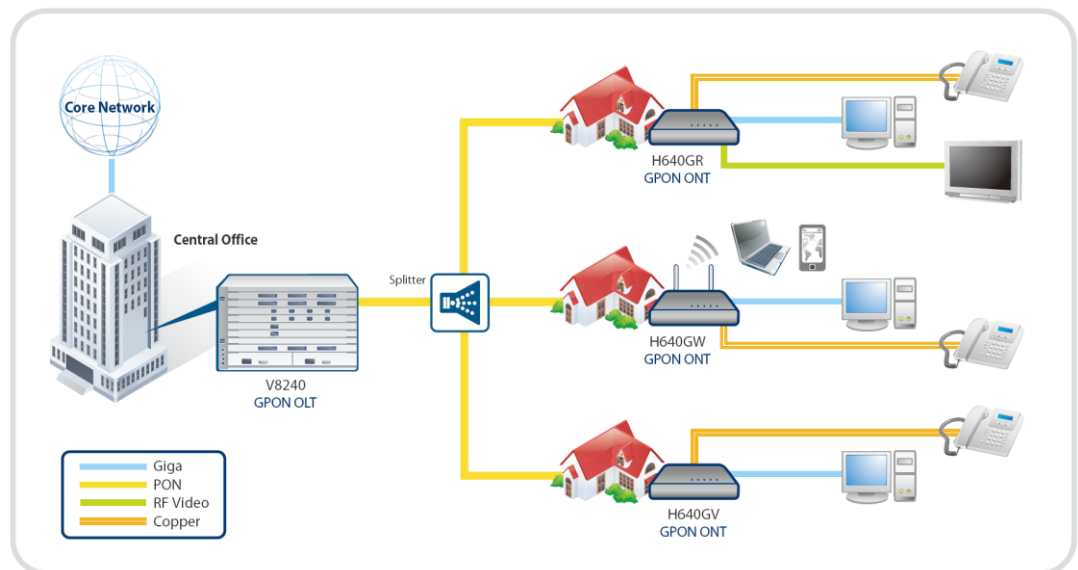
A PON consists of an Optical Line Termination (OLT) located at the Central Office and a set of Multi Dwelling Units (MDUs) or Optical Network Terminals (ONTs) located at the customer's premises. Between them is the optical distribution network (ODN) comprised of fibers and passive optical splitters or 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.

The following table describes each interface as indicated in the drawing above.

Interface Name	Description	Connector Type
① Uplink port	To connect to OLT via a passive optical splitter 1 GPON uplink interface	SC/APC
② LAN1-4	To connect to the PC or LAN 4 10/100/1000Base-T interfaces for data communication	RJ45
③ TEL1-2	To connect telephone	RJ11
④ Adapter Jack	To connect the external power supply	-
⑤ Power ON/OFF Button	To turn on/off the 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.
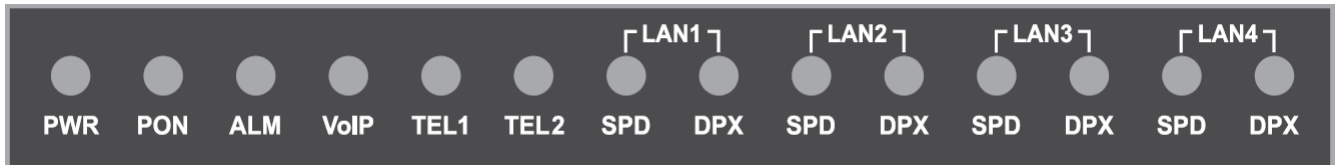
Label	Color		Status	Description
PWR	Green		On	The system is starting up to boot and operation.
			Off	The system is turned off.
PON	Green		On	Register OK. The PON port link is up.
			Off	Not register. The PON port link is down.
ALM	Red		On	No optical signal
			Off	Optical signal detected
VoIP	Green		On	Register OK
			Off	Not registered
TEL 1-2	Green		On	Off-hook
			Off	On-hook
LAN 1-4	SPD	Orange	On	The 1G port link is up.
			Blinking	The 1G transmit or receive activity is present on the service port.
		Green	On	The 100M port link is up.
			Blinking	The 100M transmit or receive activity is present on the service port.
		Red	On	The 10M port link is up.
			Blinking	The 10M transmit or receive activity is present on the service port.
		Off		The port link is down.
	DPX	Green	On	Full duplex.
		Orange	On	Half duplex.
		Off		The port 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
- Spanning tree protocol
- 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

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, G729
- T.38 FAX mode
- Echo cancellation

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)
  6.30 x 1.58 x 4.91 in
  (160 x 40 x 124.5 mm)

Environmental Conditions

- Operating temperature
  32 to 122°F (0 to 50°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/1A

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)

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
- LAN   ON / Blinking / OFF
            LAN port link status
            activity status

Ordering Information

Base Standard
H640GV 1-Port GPON (Class B+, ITU-T G.984), 4-Port 10/100/1000Base-T (RJ45), 128MB SDRAM, and 128MB NAND Flash. 12V/1A AC power adapter. - NOS : Dual OS - ONT for 20km distance - SC/APC connector type - Routed mode (PPPoE/NAT) - CE Certified

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