# Product Overview

The H665GR optical network terminal (ONT) is targeted for all subscribers requiring high-speed data interface in a cost-effective indoor housing. Fully compliant with ITU-T G.984.x standard, the H665GR supports data rates of 1.25Gbps upstream and 2.5Gbps downstream. With DASAN's leading-edge GPON technology, users can enjoy bandwidth-intensive multimedia services such as real-time audio and gaming much easier and faster than ever before.

The H665GR provides one GPON uplink port, one Gigabit Ethernet (10/100/1000Base-T) port, and one RF output interface that enhance the ability to deliver demanding data/video services. The H665GR supports high-speed Internet access and video services.

The H665GR 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
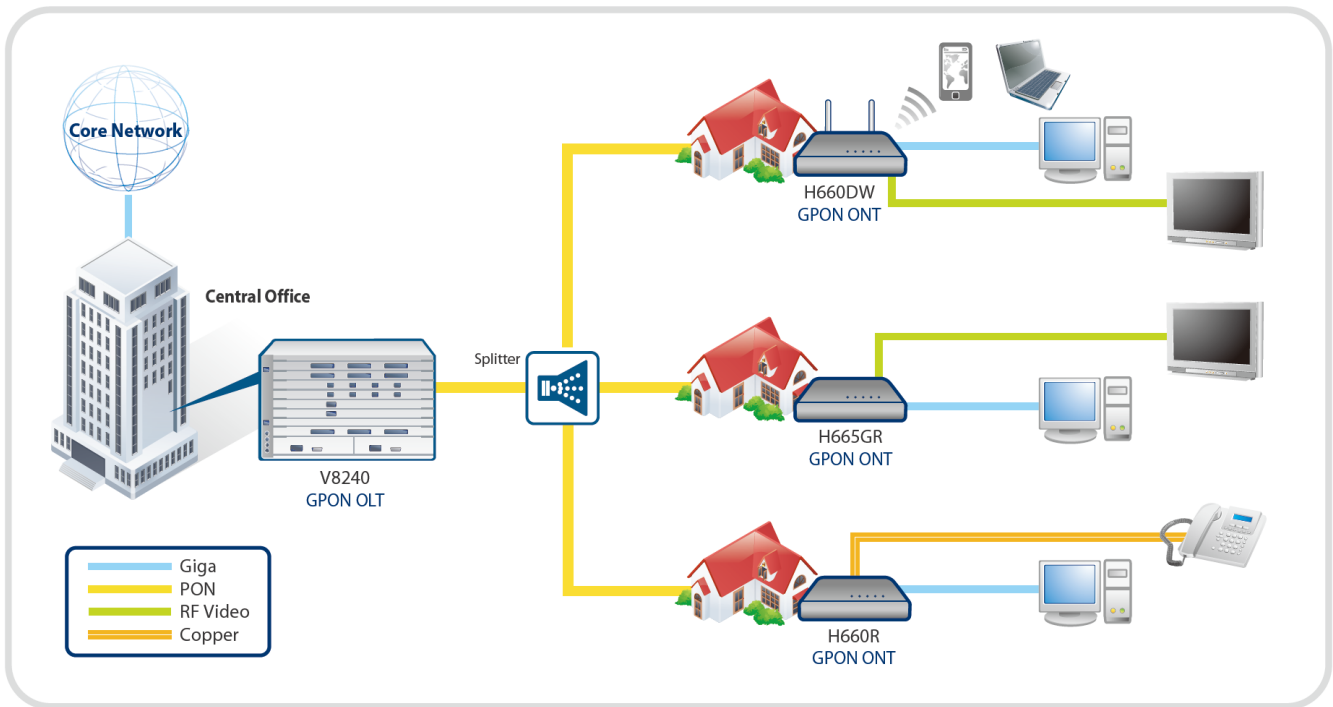
A PON consists of an Optical Line Termination (OLT) located at the Central Office and a set of Multi Dwelling Units (MDUs) or Optical Network Terminals (ONTs) located at the customer's premises. Between them is the optical distribution network (ODN) comprised of fibers and passive optical splitters or 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.
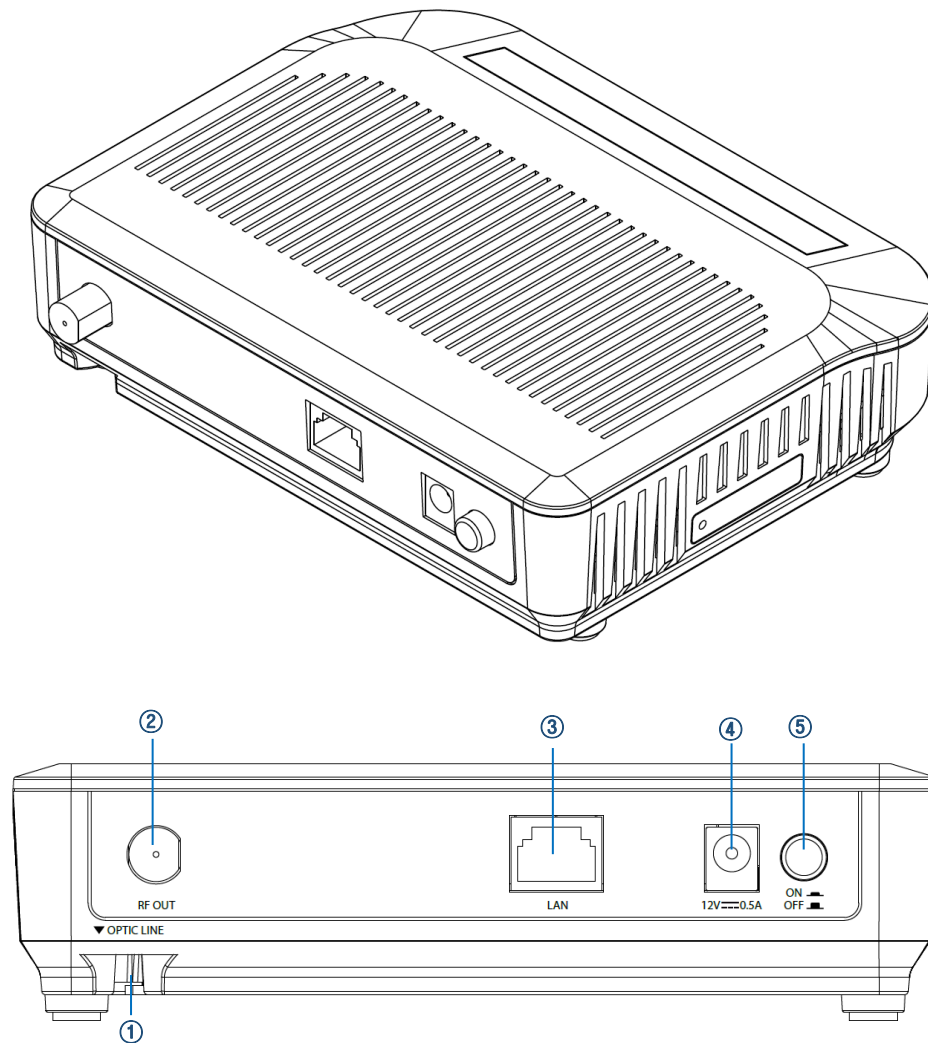
Interface Name	Description	Connector Type
① Optical Line	To connect to OLT via a passive optical splitter 1 GPON uplink interface	SC/APC
② Video Interface	To connect to TV for video service	F-connector, Coax
③ LAN	To connect to the PC or LAN 1 x 10/100/1000Base-T interface for data communication	RJ45
④ Adapter Jack	To connect the external power supply	-
⑤ ON/OFF Button	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.

● ● ●   ● ● ●
PWR PON ALM   SPD DPX CATV

Label	Color	Status	Description
PWR	Green	On	The system is turned on.
		Off	The system is turned off.
PON	Red	On	No optic signal. And the unit has not been registered.
	Green	On	Optic signal normal. Normally registered.
		Blinking	Firmware being downloaded. Do not turn off the unit.
ALM	Red	On	No optic signal, firmware update failure or other faults.
		Blinking	Error rate high. Required to check optic cable routing or vending.
	Orange	Blinking	Loopback test being performed.
	Off		ONT is normally operating.
SPD	Green	On	The 1G link is up on LAN interface.
		Blinking	The 1G transmit or receive activity is present on the service port.
	Orange	On	The 100M link is up on LAN interface.
		Blinking	The 100M transmit or receive activity is present on the service port.
	Red	On	The 10M link is up on LAN interface.
		Blinking	The 10M transmit or receive activity is present on the service port.
	Off		Link is down.
DPX	Green	On	Full duplex
	Orange	On	Half duplex
	Off		Link is down.
CATV	Green	On	Power in -8 to 2dBm
	Red	On	Power in < -8dBm or > 2dBm
	Off		Admin disabled

Product Specifications

Capabilities

System

- 128MB Flash Memory
- 128MB SDRAM
- GPON Interface Capacity:
  Up 1.25Gbps / 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
- Priority queues and scheduling on Upstream
- Activation with automatic discovered serial number and password
- Dying Gasp

L2 Switch

- Untagged port configuration
- IEEE802.1D and IEEE802.1Q bridging
- Standard Ethernet bridging
- MAC address learning with auto aging (Up to 4K 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
- ONT service provisioning (on the OLT-side)

VLAN

- VLAN port filtering
- Destination address port filtering

Video (RF) Receiver Feature

- Standard F-Type connector
- Analog RF video over dedicated 1550nm wavelength
- RF output level of +18dBmV
- RF Frequency Range: 47 ~ 1,000MHz
- 17 dBmV/ch with 4 dB positive title RF Output
- RF Output level AGC Adjustment

Residential Gateway Unit Features (L3 Routing mode)

- PPPoE client: multiple clients per RG ONT
  - Automatically initiating the session
  - Automatically keep alive
- DHCP server / client
- DNS Relay server (DNS relay, DNS transparent)
- NAT and NAPT
- NAT session up to 16K
- Port forwarding
- Integrated stateful packet inspection firewall with ACL

Physical Specifications

Mechanics

- Dimensions (W x H x D)
  6.29 x 1.75 x 4.92 in
  (160 x 44.5 x 125 mm)

Environmental Conditions

- Operating temperature
  23 to 122°F (-5 to 50°C)
- Operating humidity
  5 to 90% (non-condensing)

Power Voltage (AC/DC Adapter)

- Input: 100-240VAC, 50/60Hz
- Output: 12VDC/0.5A

Interface Parameter

- GPON Interface
  1 GPON port (SC/APC type)
- Gigabit Ethernet Interface
  1 10/100/1000Base-T port
  (RJ45)
- Video Interface
  1 RF Video port (F-connector,
  coax)

Operating Indicators (LED)

- PWR   ON / OFF
              Power status
- PON   ON / Blinking / OFF
              ONT registration status
- ALM   Blinking / OFF
              Optical signal status
- SPD: ON / Blinking / OFF,
              Port speed status
- DPX: ON / OFF,
              Full / Half duplex status
- CATV   ON / OFF
              RF power status

Ordering Information

Base Standard
H665GR   1-Port G-PON (Class B+, ITU-T G.984), 1-Port 10/100/1000Base-T, RF overlay   - PON MAC: Flash 128 MB and SDRAM 128 MB   - SC/APC Connector type   - Power Adaptor : Input 100~240VAC, Output 12V/0.5A   - CE Certification   - Overseas specification