

# Enabling the hyper-connected world



# AMT

advanced media technologies<sup>®</sup>

# H660GX



## H660GX GPON ONT with WiFi 6

The first generation 802.11ax G-Series ONT enables subscribers to enjoy multimedia services over wireless with *DZS leading-edge GPON technology*:

### Features & Benefits

- + Supports 2.5Gbps/1.25Gbps (Downstream/Upstream) with integrated GPON WAN interface
- + Four gigabit multi-rate 10/100/1000M Ethernet interfaces
- + Two POTS interfaces compliant to SIP telephony standards
- + Dual-band 2.4GHz 2x2 802.11ax, 5GHz 2x2 802.11ax wireless
- + One USB 3.0 port

The DZS H660GX is an advanced GPON compliant Optical Network Terminal (ONT) with integrated Wi-Fi 6 802.11ax, able to support service provider requirements for high-speed data over wireless interfaces. The ONT with integrated Home Gateway features is fully compliant with ITU-T G.984 GPON standard with integrated, Class B+ on-board optics. The H660GX offers data rates of 2.5Gbps downstream and 1.25Gbps upstream able to deliver access edge services and full range of residential wireless use cases required, including whole-home wireless extensions using Wi-Fi Alliance EasyMesh R1 standard. With unique DZS's software management features, subscribers can enjoy hyper-connected multimedia services much easier, faster, and more reliably than ever before.

The DZS H660GX includes one SC/APC GPON interface, four 10/100/1000Base-T ports, two FXS RJ11 voice ports, dual-band 2.4GHz and 5GHz wireless, and one USB compliant port. The ONT supports wire-speed L2 bridging and L3 gateway features, with carrier grade voice services using SIP VoIP protocols.

# GPON ONT with WiFi 6 H660GX



## Service Scenario for GPON

A GPON network consists of an Optical Line Termination (OLT) located at the Central Office and a set of residential Single-Family Unit (SFU) and Multi Dwelling Unit (MDU) locations with Optical Network Terminals (ONTs). Between them is the optical distribution network (ODN) comprised of fibers and passive optical splitters or couplers.

The H660GX ONT supports 2.5G capable downlinks using the GPON standard. Services include High-Speed Internet (HSI), 802.11ax 2x2 wireless, packet Voice, IPTV, OTT video, and cloud enabled services to multi-media devices.

## Key Service Attributes

- + FSAN ITU-T G.984 GPON Class B+ compliant
- + Four 1GBase-T Ethernet ports, RJ45 supporting 1Gbps symmetrical services
- + Two voice ports, FXS interfaces compliant to ANSI standards, SIP
- + 2.4GHz 2x2 802.11ax, 20MHz and 40MHz channels
- + 5GHz 2x2 802.11ax, 20MHz, 40MHz and 80MHz channels
- + Downstream and Upstream MU-MIMO
- + EasyMesh R1
- + USB 3.0 port
- + IPTV multicast, IGMPv2 and IGMPv3 services
- + Traffic management including Q-in-Q tagging, 802.1Q VLANs
- + Multiple subscriber VLANs, per-port rate limiting
- + 802.1p priority bits, DiffServ and priority queues based on service types.

# GPON ONT with WiFi 6 H660GX



## Features, Protocols, Interfaces

### Hardware

- + Dimensions
  - Width: 8.3" (201.5mm)
  - Depth: 7.9" (201mm)
  - Height: 2.4" (60.3mm)
- + 128MByte Flash Memory
- + 256MByte SDRAM (DDR3)
- + GPON WAN Interface
- + Capacity: 2.5Gbps Down/1.25Gbps Up

### Interfaces

- + WAN: 1 port GPON (SC/APC)
- + LAN: 4 ports 10/100/1000 Base-TX Ethernet (RJ45)
- + Telephone: 2 ports 2-wire RJ11
- + Power: 1 port 2-pin barrel connector
- + USB: 1 port USB3.0
- + Button: Power, RESET, WLAN, WPS

### GPON

- + Class B+ optics, 20km (12.4 miles), reach, max split 64ITU-T G.984.2 compliant
- + Maximum ODN Attenuation, +28.5 dB link budget
- + GPON Type B redundancy support
- + xPON co-existence filter
- + Transmitter, 1310nm, +0.5 to +5 dBm, DBF
- + Receiver, 1490nm, -28 dBm, APD/TIA
- + Forward Error Correction (FEC) per G.989.3

### VoIP Features

- + SIP (RFC3261/3262/3264)
- + 5-REN per POTS
- + RTP, RTCP (RFC3550/3551)
- + Multiple codecs: G.711, G.723.1, G729
- + T.38 FAX mod
- + Echo cancellation

### Wireless LAN

- + 2.4GHz 2T2R, 5GHz 2T2R WiFi
- + 2.4GHz 2x2 MU-MIMO, 5GHz 2x2 MU-MIMO (wave 2)
- + IEEE 802.11a/b/g/n/ac/ax compliant
- + Multiple SSIDs
- + Up to 32 devices can accessed simultaneously
- + 64/128bit wireless encryption protocol (WEP)
- + BW: 2.4GHz 20/40 MHz (.11ax), 5GHz 20/40/80MHz (.11ax) channels
- + Security: WEP, WPA-PSK (TKIP) & WPA2-PSK (AES) Wi-Fi Protected Setup (WPS)

### Software Features

- + IEEE 802.1D and IEEE 802.1Q
- + Multiple T-CONTs/GEM ports per ONT
- + Flexible mapping between GEM port and T-CONT
- + Priority queues and scheduling on upstream
- + Activation with automatic discovered serial Number and password
- + IGMP snooping
- + IGMP proxy
- + Dying Gasp

### 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

### IP Routing and Firewall

- + 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
- + Port Forwarding
- + Integrated stateful packet inspection firewall with ACL

### Environmental

- + Operating Temperature 32~104°F (0~+40°C) Commercial
- + Storage temperature -4~149°F (-20~65°C)
- + Operating humidity 5 to 90% (non-condensing)
- + Altitude: -200 to 10,000 feet (-61 to 3,048 m) above sea level

### Powering

- + DC power, +12 VDC nominal, 2.0A
- + Input power, 90-240VAC, 50/60Hz
- + Power consumption, ~12W maximum

### Management

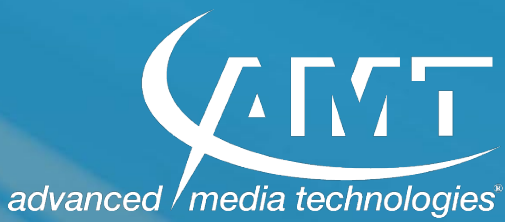
- + ITU-T984.2 compliant OMCI interface
- + IEEE 802.3x flow control
- + LED indications for maintenance
- + Web-based management

### Compliance

- + FCC Part 15 Class B
- + ICES-003 Class B
- + EN55022, EN55024
- + IEC 62368-1
- + FDA IEC 60825-1
- + RoHS 2015/863
- + EasyMesh R1

# Ordering Information

Bases	
H660GX	1x GPON (Class B+, ITU-T G.984.2) 4 x Ports 10/100/1000Base-TX 2 x Ports POTS 2.4GHz 2x2 802.11ax, 5GHz 2x2 802.11ax 1 x USB 3.0 1 x 2-pin Power
HX-H660GX-NA	North America
HX-H660GX-EU	EU
HX-H660GX-UK	UK
HX-H660GX-00	No power supply option



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