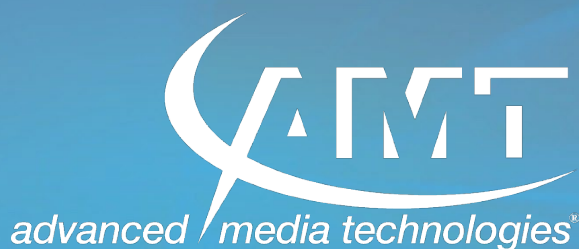# Enabling the hyper-connectedworld

DZS

AMT
advanced media technologies®

H660GM-A

H660GM-A – Advanced GPON ONT

The DZS H660GM-A supports users to enjoy bandwidth-intensive multimedia services with leading-edge G-PON technology.

Features & Benefits

+ Supports 1.25Gbps (Up)/ 2.5Gbps (Down) with G-PON interface

+ 4 ports 10M/100M/1G, 1 port VoIP, Wireless and 1 USB interface

+ Supports IEEE802.11b/g/n/ac compliant (2.4GHz, 5GHz)

H660GM-A optical network terminal is targeted for all subscribers requiring high-speed data interfaces in a cost-effective indoor housing. Fully compliant with ITU-T G.984 standards, the H660GM-A supports data rates of 1.25Gbps upstream and 2.5Gbps downstream. With our 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 H660GM-A provides one GPON uplink port, four Gigabit Ethernet ports, Wireless LAN interface, and one FXS voice port that enhance the ability to deliver demanding data/Wi-Fi/VoIP services. The H660GM-A 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 H660GM-A supports the full triple play of services including voice and high-speed Internet access services.

The H660GM-A 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

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.

Key Service Attributes

+ FSAN ITU-T G.984 GPON Class B+ compliant

+ Four 10/100/1000MBase-T Ethernet ports, RJ45 supporting 1Gbps symmetrical services

+ One voice port, FXS interfaces compliant to ANSI and ETSI standards, SIP

+ 2.4GHz 2x2 802.11ac, 20MHz and 40MHz channels

+ 5GHz 2x2 802.11ac, 20MHz, 40MHz and 80MHz channels

+ Downstream MU-MIMO

+ USB 2.0 port, support of 3G and LTE wireless dongles

+ IPTV multicast, IGMPv2 and IGMPv3 services

+ Any-port, Any-service data model

+ Traffic management including Q-in-Q tagging, 802.1Q VLANs, multiple subscriber VLANs, per-port rate limiting

+ 802.1p priority bits, DiffServ and priority ques based on services types.

+ +12 VDC uninterruptable service power source, option for battery backup

Product Specifications

Hardware

+ Dimensions
   Width: 10.3" (260mm)
   Depth: 6.1" (155mm)
   Height: 1.4" (35mm)
+ Weight 0.81 LB (0.37 kg)
+ 128GByte Flash Memory
+ 256GByte SDRAM (DDR3)
+ GPON WAN Interface
+ Capacity:2.5Gbps Down/1.25Gbps Up

Interfaces

+ WAN: 1 SC/APC port, GPON
+ LAN:4 ports 10/100/1000MBase-T Ethernet (RJ45)
+ Telephone: 1 port 2-wire RJ11
+ Power: 1 2-pin barrel connector, 1 2x4 8-pin battery connector
+ USB 2.0
+ WiFi push button setup (WPS)
+ Recessed RESET button

GPON

+ Class B+ optics, 20km (12.4 miles), reach, max split 64
+ 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
+ Dying Gasp

Wireless

+ 2.4GHz 2x2 802.11ac MIMO, 5GHz 4x4 802.11ac MU-MIMO
+ SSIDs: 4 x 2.4GHz, 4 x 5GHz
+ Authentication WEP, WPA-PSK, WPA2, WPA2-PSK, 802.1x
+ Encryption: WEP (64-bit, 128-bit), AES, TKIP+AES
+ WPS modes: Push-button
+ RADIUS Server support
+ MAC filtering

Ethernet LAN ports

+ Auto-MDI-X crossover control
+ Auto-Speed or manual selection
+ IEEE 802.3ab 1000Base-T
+ IEEE 802.3u 100Base-T
+ IEEE 802.3az EEE
+ IEEE 802.1x Authentication

Telephone

+ SIP (RFC 3261)
+ MGCP
+ Codec: G.711 (u-law and A-law), G.729B, G726
+ RENs per line: 5 maximum
+ Drop length: Residential short loop, 152.4 m (500 ft.)
+ Output max: 25mA
+ Ring voltage: 48Vrms @ 20/25 Hz

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
+ Classified traffic can be tagged with VLAN ID and Ethernet Priority bit, and can be assigned to priority queues
+ Classify packets into different IEEE 802.1p priority queues according to DSCP values (RFC 2475)
+ The range of traffic shaping or rate-limit shall between 64 Kbps to the maximum port rate with 64kbps granularity. The accuracy error shall be less than ±10%.
+ DSCP IP CoS (RFC 2475)

Software Features

+ IEEE802.1D and IEEE802.1Q
+ Address learning with auto aging-L2/BPDU Filter
+ 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

IP Routing and Firewall

+ DHCP, Static-IP and PPPoE
+ NAT/NAPT/Port Foewarding/DMZ
+ DNS Proxy
+ DDNS
+ DHCP Server
+ UPnP, plug and play
+ Multicast : IGMP snooping, IGMP proxy

IPv6

+ IPv4 and IPv6 Dual-Stack-Lite
+ Bridged Mode (transparent pass thru of IPv6 frames)
+ IPv6 support of BRouted and PPPoE Bridged VLANs
+ DHCPv6 client and server
+ Router Advertisement on LAN-side interfaces
+ SLAAC for automatic acquisition of WAN-side IPv6 addresses and GW
+ CLI, HTTP and TR-069

Environmental

+ Operating Temperature: 23~113°F (-5~+45°C) Commercial
+ Storage temperature: -22~140°F (-30~60°C)
+ Operating humidity: 20 to 90% (non-condensing)
+ Altitude: –200 to 10,000 feet (–61 to 3,048 m) above sea level

Powering

+ DC power: +12 VDC nominal, 1.0
+ Input power: 100-240VAC, 50/60Hz
+ Power consumption: ~16W maximum

Management

+ ITU-T 984.2 compliant OMCI interface
+ CPE Manager Web UI
+ CLI over telnet
+ TR-069, TR-104, TR-98
+ LED indications for status

Compliance

+ FCC Part 15 Class B
+ ICES-003 Class B
+ CE Mark
+ Safety ETL/Intertek
+ IEC 62368-1, UL 62368-1, EN 62368-1
+ FDA IEC 60825-1
+ RoHS 2015/863/EU

Ordering Information

Model	
H660GM-A	1x SC/APC port, GPON (Class B+)
	1x POTS RJ11 port, 4x 1G RJ45 ports, 1x USB2.0
	1x 2-pin barrel, 12VDC power input