Delivering Gigabit to the Home over Existing Wiring

G.hn to Ethernet with POE/POE+ -- Managed Demarcation Point



G1002-C+ (Front)



G1002-C+ (Back)
POE and GigE ports



G1002-M+ (Front)



G1002-M+ (Back)
POE and GigE ports

"Fiber to the Home" is far from the only and most efficient technology to deliver Gigabit Internet access to subscribers. Retrofitting an existing (brownfield) Multi-Dwelling Unit (MDU) with fiber is complex and expensive. **The G1002-M / G1002-M+ and G1002-C / G1002-C+ series of G.hn to Ethernet adapter complement the popular G1001 series with support for two (2) Gigabit Ethernet ports with one of the ports providing power to Ethernet devices as per the 802.3af / 802.3at standards (G1002-M+ and G1002-C+).**

Introducing G.hn

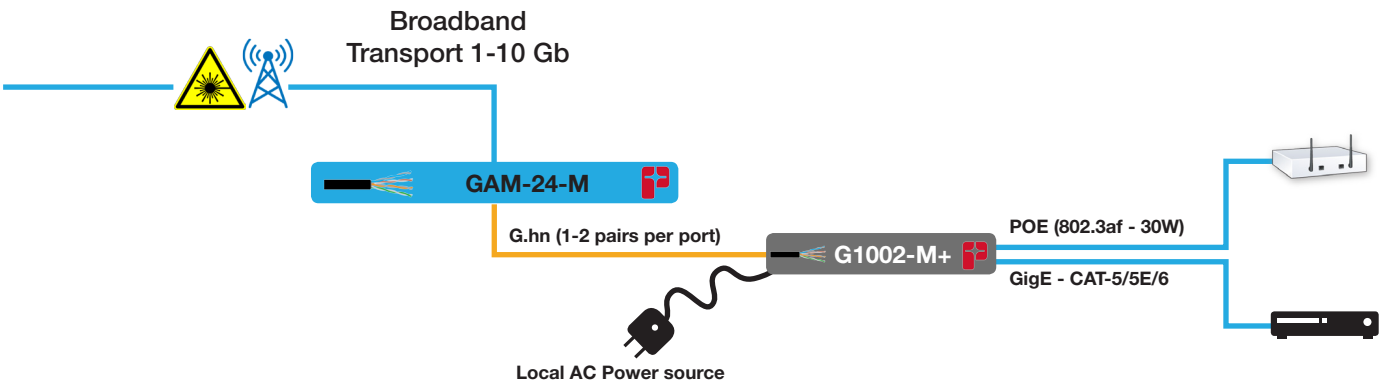
The G1002 series supports the ITU-T G.9960 G.hn Wave-2 standard and is designed to operate over the existing telephone wiring (UTP, CAT-3 or CAT-5/5e) or coaxial cabling and deliver a Gigabit Internet service to each subscriber at a lower cost and without the complexity and delays associated with in-building fiber installation. G.hn is used as an Access technology by Operators looking to simplify their access network and backend infrastructure with an Ethernet-like technology that is highly scalable without some of the inherent complexity of DSL-related technologies. With G.hn as the Access technology, Operators deliver advanced services such as Gigabit High Speed Residential Internet and 4K IPTV.

About the G1002 Series Managed Demarcation Point with POE / POE+ support

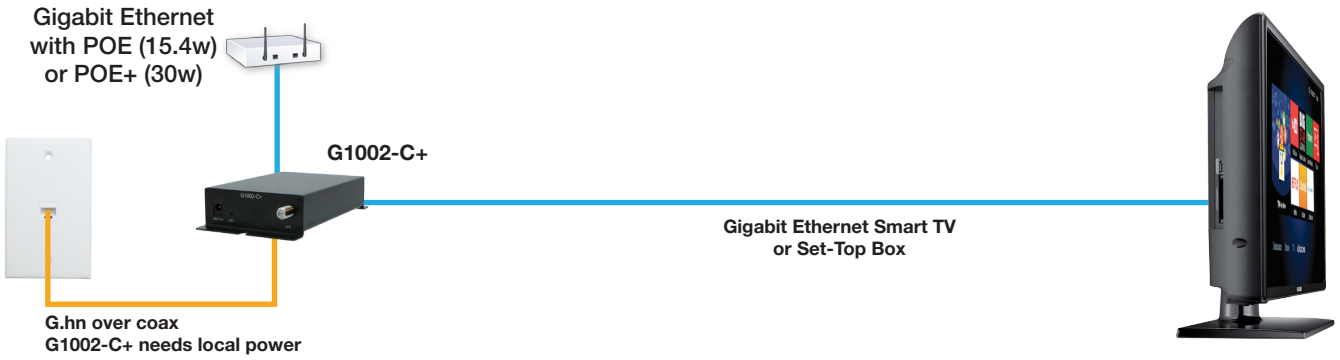
The G1002 series terminates the G.hn link under the control of the Positron GAM, making sure the information transmitted over the G.hn links is protected with strong AES-128 encryption. It offers comprehensive VLAN support as per the IEEE 802.1q standard and the VLAN mode of each port is individually configurable: Trunk, Access or Untagged.

The G1002-M+ and G1002-C+ further add support on GigE port #1 for Power over Ethernet (POE or POE+) as per the IEEE 802.3at standard (30W) to devices such as Wi-Fi Access Points, IP Camera or Residential Gateways (RG).

The following diagram shows the simplicity of using the G1002-M+ to power a Wi-Fi 6 Access Point on port GigE #1 (configurable as a VLAN Trunk) and port GigE #2 to deliver additional services (such as IPTV).



The G1002-C+ offers the same Gigabit Ethernet dual-port capabilities as the G1002-M+ when used over Coax. When used for hospitality coverage, the G1002-C+ delivers a Gigabit feed in the back of the TV set where port GigE #1 can power a Wi-Fi 6 Access Point with support for a VLAN Trunk when needed and port GigE #2 connects directly to the Smart TV or the IPTV Set Top Box (STB).



Ordering Information

Part Number	Description
G1002-M	G.hn Wave-2 to Ethernet Bridge over Twisted Pair Multiple Input Multiple Output (MIMO) mode Two (2) 10/100/1000BaseT RJ45 ports
G1002-M+	G.hn Wave-2 to Ethernet Bridge over Twisted Pair Multiple Input Multiple Output (MIMO) mode Two (2) 10/100/1000BaseT RJ45 ports / one with POE/POE+
G1002-C	G.hn Wave-2 to Ethernet Bridge over Coax Two (2) 10/100/1000BaseT RJ45 ports
G1002-C+	G.hn Wave-2 to Ethernet Bridge over Coax Two (2) 10/100/1000BaseT RJ45 ports / one with POE/POE+

Specifications

Environmental	
Dimensions	3.7” Width x 1.35” Height x 6.7” Depth / 95 mm W x 34.3 mm H x 169.5 mm D
LED	Power, G.hn, Status (STA) and POE
Power Adapter	G1002-M / G1002-C: 110-220 Vac to 12 VdC / 1A power adapter G1002-M+ / G1002-C+: 110-220 Vac to 48 VdC / 1A power adapter
Power Consumption	G1002-M / G1002-C: Up to 6.1W G1002-M+ / G1002-C+: Up to 34.9W in 802.3at (POE+) mode
Certification	CE Mark, FCC Part 15 Class B
Operating Temperature	0˚C to +40 ˚C
Storage Temperature	-25˚C to +80 ˚C
Operating Humidity	5% to 95% relative, non-condensing
G.hn Specification	
G.hn Standards (Wave-2)	Based on GigaWire Alliance specification and fully compliant with the following ITU-T standards • G.9960 Amendment 2 - System Architecture and PHY Layer • G.9961 Data Link Layer • G.9962 Management • G.9964 PSD
Ease of Deployment	Support G.hn operation over telephone wiring (G1002-M / G1002-M+) or coax cabling (G1002-C / G1002-C+)
Point-to-point support	Supports Point-to-point (twisted pair) with with G1002-M / G1002-M+
Point-to-Multipoint support	Supports Point-to-Multipoint on coaxial cabling (up to 16 devices) with G1002-C / G1002-C+
Ethernet Standards	IEEE 802.3, 802.3u, 802.3z, 802.1q (VLAN), 802.1ad (Q-in-Q)
POE Standards	G1002-M+ and G1002-C+ support IEEE 802.3af (POE up to 15.4W), 802.3at (POE+ up to 30W)
POE Management and control	G1002-M+ and G1002-C+ report detailed management information about the state and power consumption of the devices attached to their POE port The GAM integrates control over the POE interface and allows a power cycle to force a restart of the device attached to the POE port to assist with remote troubleshooting and problem resolution with 3rd party devices
Ease of Operation	Automatic firmware and configuration management via the Positron GAM
Encryption	AES-128 encryption with individual keys for each end-node under the control of the Positron GAM acting as the Master Node
Modulation and Frequency Band	Supports OFDM 200 MHz (Singe Input Single Output - SISO) on a single pair or OFDM 100 MHz (Multiple Input Multiple Output – MIMO) on two (2) pairs per port Neighbor Domain Interface Mitigation (NDIM)
CATV co-habitation	The G1002-C / G1002-C+ incorporate a Low-Pass Filter (LPF) to facilitate co-habitation with legacy CATV starting with Channel 30 (250 MHz)
Bandwidth Management	Up to 1.7 Gbps with Dynamic Bandwidth Allocation to optimize throughput based on nature of traffic flows with automatic adjustment of the upstream / downstream ratio
Vectoring (Copper pairs)	The G1002-M / G1002-M+ support VectorBoost™ embedded in the GAM that enables vectoring for Far-End Crosstalk (FEXT) mitigation and improved performance over Telephone wiring
Mitigation of Near-end Crosstalk	Near End Crosstalk (NEXT) Mitigation and support for Neighbor Domain Interface Mitigation (NDIM)
PSD	Programmable PSD mask for coexistence with xDSL / radio and Far End Crosstalk (FEXT) mitigation via Cloud-based VectorBoost™ vectoring
Reliability and Resiliency	State of the art LDPC Forward Error Correction (FEC)

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