

G.hn, High-speed Network Solution Using Existing Telephone Wiring

Datasheet

V1.0

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Product Overview

G.hn, high-speed network solution using existing telephone wiring consists of a main telephone line unit HS2310-16GH2GT1XS and a child telephone line unit HA3515-DG, of which the main telephone line unit is installed in the MDF of a building, and the child telephone line unit is installed in a room to provide a Wi-Fi 6 network. The solution adopts G.hn technology to transmit data between the main telephone line unit and the child telephone line unit over telephone lines.

With the G.hn technology, the solution provides Internet access over existing telephone lines (parallel line/twisted pair) with a higher transmission rate than that of ADSL (Asymmetric Digital Subscriber Line) solution or VDSL (Very-high-bit-rate Digital Subscriber Loop) solution. The theoretical maximum physical rate is up to 2 Gbps and the theoretical bandwidth throughput is up to 1.7 Gbps.

High labor costs, difficulties in wiring optical fibers in old buildings and slow promotion are the pain points of the FTTH (Fiber to The Home) solution. Compared with the FTTH solution, the G.hn, high-speed network solution using existing telephone wiring can be operated over legacy telephone lines to provide high-speed networks, making deployment simple and costs lower. The faster transmission rate provided by the solution ensures that the network can withstand futures tests and is able to offer new services such as multi-stream 4K IPTV.



Main Telephone Line Unit: HS2310-16GH2GT1XS



Child Telephone Line Unit: HA3515-DG

Product Features

Gigabit Network

With the G.hn protocol, the solution can operate over 2-core telephone lines (parallel/twisted pair). It adopts SISO (Single Input Single Output) to provide a physical rate up to 2 Gbps and the throughput up to 1.7 Gbps.

The main telephone line unit provides two 1000/100/10Mbps Ethernet copper ports and 1 Gbps bandwidth. Also, one 10/1Gbps optical port is available to provide a building with 10 Gbps bandwidth. The child telephone line unit supports Wi-Fi 6 (AX1800), which can provide a high-speed home network.

Designed for Various Apartment Scenarios

Compact Design

The main telephone line unit is designed for small MDFs. With the compact design, it can be installed in MDFs and 19-inch racks, meeting the needs for various scenario installation.

Quiet Fan Design

The main telephone line unit adopts a quiet fan design to ensure that the operating noise at room temperature is not higher than 40 dB, providing users with a quiet living environment.

Adaptability to Harsh Environment

The operating temperature of the main telephone line unit ranges from -10°C to 50 °C. The wide operating temperature range increases its adaptability to environment and prolongs its operation time.

Coexist with ADSL/VDSL

The main telephone line unit can be installed in a MDF where a ADSL or VDSL device is deployed, which will not produce an impact on the performance of the ADSL or VDSL device, but provide high-speed networks without affecting the quality of voice calls and faxes.

Support All Types of Telephone Services

The solution supports standard PSTN (Public Switched Telephone Network), which comprises all the switched telephone networks, including POTS (Plain Old Telephone Service) and ISDN (Integrated Services Digital Network) to provide high-speed Internet access without affecting the uses of telephones and faxes.

Support an Apartment with up to 48 Units

The solution supports the cascaded connection between three switches, which can provide high-speed Internet access for an apartment with up to 48 units.

Simple Construction

The child telephone line unit is small in size and can be delivered to the door. It supports plug and play and desktop placement, so that residents can install it by themselves without experiencing construction disturbance.

High Reliability

The main telephone line unit supports CPU policies, which distinguishes data stream flowing to the CPU and grade priority queues. Also, it limits bandwidth according the actual needs to fully protect the CPU resources from being wasted by illegal traffic and malicious attacks so as to ensure the security of the CPU and the product.

Technical Specifications

Main Telephone Line Unit	HS2310-16GH2GT1XS
Interface	2* 10/100/1000M Copper Ports; 1* RJ21 Interface, Support up to 16 telephone ports; 16* RJ11 G.hn Ports. 1* Uplink 10G/1G SFP+ Port
Reset Button	Build-in Reset Button
LED	ALM
	LINE (1-16)
	SYS
	GE1/GE2 LED
10G LED	
SYNC Interface	Two SMA clock synchronization interfaces, SYN_OUT and SYN_IN, which are used for synchronizing the clocks of cascaded switches.
Console	1*RJ45 Serial Port
Anti-theft Design	Anti-theft Hole
Working Temperature	-10°C to 50 °C (14°F to 122 °F)
Operating Humidity	10% to 90%
Storage Temperature	-40°C to 70 °C (-40°F to 158°F)
Storage Humidity	5% to 95%
Working Altitude	2000 m
Temperature Control	Supported
Heat Dissipation	Air Cooling
Noise	40dB@25°C, Up to 42dB

Power Supply	External Adapter
Dimensions (W x D x H)	340 mm * 44 mm * 200 mm (13.39 in. * 1.73 in. * 7.84 in.)
Certification	VCCI & JATE
Software Features	
Layer-2 Forwarding	G.hn, VLAN, MAC, Storm Suppression, LLDP, Mirror
Layer-3 Forwarding	ARP, IPv4, IPv6
Security	ACL, QoS, SSH, DoS Protection
Application Protocol Features	DHCP Client, TFTP, FTP, NTP, Web
IPv6 Application Protocol	DHCP Client
Maximum Number of Supported Lines	Up to three main telephone line units can be cascaded to connect with 48 child telephone line units.

Child Telephone Line Unit	HA3515-DG
Dimensions (W*D*H)	200 mm * 131 mm * 30 mm (7.87 in. * 5.16 in. * 1.18 in.)
Weight	Host: <0.5 kg
Installation	Desktop and Wall Mounting
Anti-theft Lock	External Lock
Outer Diameter of DC Adapter	5.5 mm
Inner Diameter of DC Adapter	2.1 mm
Insertion Depth of DC Adapter	9.5 mm
Rack Dimension (W*D*H)	97.1 mm × 66 mm × 28.7 mm (3.82 in. * 2.60 in. * 1.13 in.)
Certificate	VCCI-B, TELEC, JATE
Radio Frequency	
Radio Frequency	2.4G: 2X2 MIMO 5G : 2X2 MIMO
Transmission Protocol	2.4G: 802.11b/g/n/ax 5G: 802.11a/n/ac/ax Supports the standard 802.11ax protocol. With a dual-band dual-radio design, the unit can work in 802.11ax and 802.11a/b/g/n/ac modes at the same time.
Frequency Band	2.4G: 802.11b/g/n/ax 2400~2483.5MHz (b/g/n/ax, HE40) 5G: 802.11a/n/ac/ax 5470~5725MHz (a/n/ac/ax, HE80) 5150~5350MHz (a/n/ac/ax, HE80)
Number of Spatial Streams	4
Transmission Rate	2.4G: Up to 0.574 Gbps 5G: Up to 1.2 Gbps Overall: Up to 1.77 Gbps
Antenna Type	Build-in Antenna
Maximum Transmit Power	23dBm Note: The actual transmit power varies in different countries and regions due to different regulations.
Power Adjustment	1dBm
Modulation Method	OFDM / DSSS / MIMO-OFDM / OFDMA
Receiving Sensitivity	802.11b: -91dBm(1Mbps), -90dBm(5Mbps), -87dBm(11Mbps) 802.11a/g: -89dBm (6Mbps), -82dBm (24Mbps), -78dBm

	(36Mbps), -72dBm (54Mbps) 802.11n HT20: -85dBm@MCS0, -67dBm@MCS7, -85dBm@MCS8, -67dBm@MCS15 802.11n HT40: -82dBm@MCS0, -64dBm@MCS7, -82dBm@MCS8, -64dBm@MCS15 802.11ac/ax VHT20/HE20: -85dBm(MCS0), -60dBm(MCS9) 802.11ac/ax VHT40/HE40: -82dBm (MCS0), -57dBm (MCS9) 802.11ac/ax VHT80/HE80: -79dBm (MCS0), -53dBm(MCS9)
Interfaces	
Bluetooth	Not Supported
USB	Not Supported
Fixed Service Interfaces	Uplink: 1*G.hn interface with the physical rate up to 2 Gbps and the throughput up to 1.7 Gbps. Downlink: 2*10/100/1000Base-T Adaptive Interfaces.
Fixed Management Ports	Not Supported
GPS Positioning	Not Supported
LEDs	5 LEDs: Internet, Status, 2.4G, 5G, Mesh
Buttons	1 reset button and 1 WPS button
Power Supply and Power Consumption	
Power Supply	DC Adapter (Input Voltage: 12V/2A)
External Power Supply	Not Supported
Power Consumption	<15 W
Power Supply Redundancy	Not Supported
Environment and Reliability	
Temperature	Working Temperature: 0°C to 40°C (32°F to 104 °F); Storage Temperature: -40°C to 70°C (-40°F to 158°F). Note: In the range of 3000 to 5000 meters above sea level, the maximum temperature is reduced by 1°C for every 220 meters increase in altitude.
Humidity	Working Humidity: 5% to 95% RH (Non-condensing); Storage Humidity: 5% to 95% RH (Non-condensing)
IP Rating	Not Supported
Explosion-proof Grade	Not Supported
Corrosion Protection Grade	Not Supported
Software Features	
Status Display	Web, CLI, Work Mode, System Information
Wireless	WLAN, Access Control, Wireless Security, RF
Wired	Dynamic IP address on WAN Port, Static IP address, Wired Port Management, VLAN
Network	QoS Speed Limit, DHCP/SSH, IPv6
G.hn	Support G.hn protocol
Mesh	Support forming a Mesh network with HA3515-DG and MA2810.
Capacity	
Number of WLAN SSIDs	6
Maximum Number of Clients	30 (5G: 15; 2.4G: 5)

Typical Application



The G.hn, high-speed network solution using existing telephone wiring is applicable to old apartments where no network cable is wired. The main telephone line unit HS2310-16GH2GT1XS can be deployed with the devices of ADSL/VDSL in the same MDF to provide high-speed Internet access without influencing the quality of telephone and fax services. The child telephone line unit HA3515-DG installed in a room provide a high-speed Wi-Fi 6 network.

Ordering Information

Model	Description
HS2310-16GH2GT1XS	It has two 10/100/1000M adaptive electrical ports, one 10/1G SFP port, one RJ21 interface (16 lines included), 16 RJ11 interfaces, two SYNC interfaces and one power adapter. It supports G.hn protocol, and works with the child telephone line unit HA3515-DG.
HA3515-DG	It is a dual-radio and dual-band 802.11ax wireless access point with the maximum access rate of up to 1.775 Gbps. It can work on 802.11a/b/g/n/ac and 802.11ax. It supports G.hn protocol, and works with the main telephone line unit HS2310-16GH2GT1XS.

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