

FTTdp (G.hn) GbE over Cable Master Switch & Client CPE

AG4200 Series

- FTTdp MDU Application
- “Gigabit-Class” Broadband Services
- ITU G.hn Wave2 with Flexible Bandwidth Allocation
- Existing Coax Network
- 5 to 200MHz Baseband
- Up to 1.7Gbps throughput
- Optional WIFI Client
- Support Remote Monitoring and SNMP



Ascent's AG4200 series FTTdp (G.hn, Wave2) Master Switch and Client products are a series of next generation GbE over Cable devices designed for Ultra HD IPTV over Fibre to the Distribution Point(FTTdp) and cost effective CATV coaxial network, delivering multi-media services into the multi-dwelling units (MDUs).

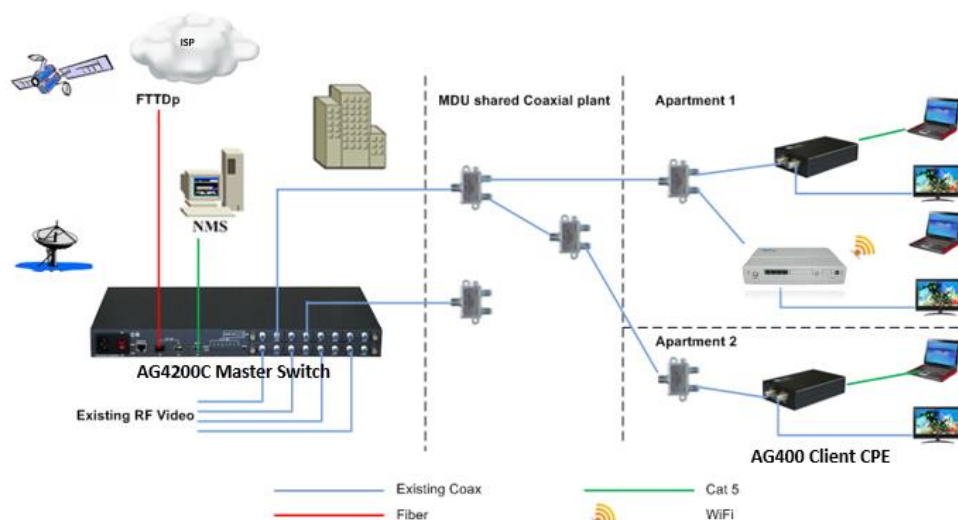
AG4200 series are based on G.hn Wave2 technology that enable physical link data rate up to 2Gbit/s over existing coax cable infrastructure. It offers high quality CATV signal together with high speed broadband data access, which can be managed through the SNMP management system.

AG4200 series G.hn-based FTTdp solution has an impressive performance, is easier to deploy and provides substantial CAPEX savings when compared to traditional FTTH alternatives. It enables service providers to deliver FTTH-like service over coax cables to MDU apartments, while avoiding the costs of replacing them with fiber. The increased data rates ensure the access network on coax cables is future-proof to provide new services such as multi-stream 4K IPTV, cloud-based storage or 802.11ac wireless hotspots.

Key Features

- Advanced Multi-Access Platform designed for Fiber to the Distribution Point application (MDU)
- Retrofit IP-based IPTV, Internet, VoIP over existing coaxial infrastructure
- Up to 1.7Gbps of actual throughput over coax in 2-200MHz
- Support DMT/OFDM line modulation
- G.hn frequency notches management and dynamic bandwidth allocation optimizes throughput based on activity
- Various QoS capability (IEEE 802.1p / Port / Diffserv)
- Classification of different packet formats (IPv6, IPv4, double tagged, HTLS, IEEE 802.1Q, Ether II, IEEE 802.3)
- Egress /Ingress rate management control and broadcast storm control
- IGMP snooping for filtering multicast traffic
- Support port mirroring and port isolate
- Flexible Access Control List (ACL)
- Support SNMP v1/v2c/v3, SNMP trap and SNMP client
- Perfect network management through web browser, CLI, telnet and serial console with three management user level
- Support G.hn EoC CPE devices monitor and configure from EoC master
- Support configuration backup and restore via TFTP

Application Diagram



Specifications

AG4200C



Hardware

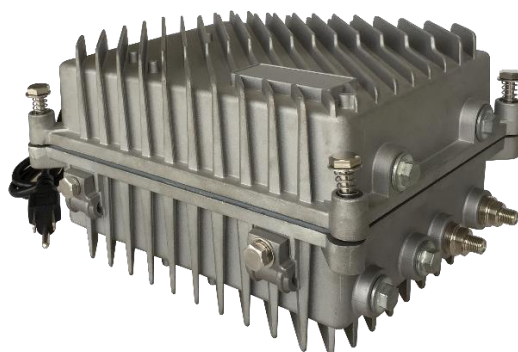
System Architecture	G.hn Wave2 EoC Master 6 × G.hn EoC ports, each port supports up to 16 CPEs 1 × 1000-X /10000-X SFP/SFP+ ports 2 × 10/100/1000BT RJ-45 port 1 × RS232 console port (RJ45)
Physical Dimensions	320 mm × 234 mm × 45 mm
Led	Power, System Active, SFP port link/active Management port link/active, G.hn Link
Weight	1.85Kg
Input Power & Frequency	100 to 240VAC / 50 to 60Hz
Power Consumption	<40 W
Environment Conditions	
Operating Temperature	0 °C to +50 °C
Storage Temperature	-25 °C to +80 °C
Operating Humidity	10 % to 90 % (non-condensing)
G.hn Performance Specifications	
Line Modulation Way	OFDM (Orthogonal Frequency Division Multiplexing)
G.hn Specification	2 to 200 MHz for Baseband Power Mask Notching Dynamic PSD NDIM (Neighbor Domain Interface Mitigation) Radio Band Notching function NEXT (Near End Crosstalk) Mitigation

Software

MAC Address	16K
VLAN Numbers	4K, 256 VLAN groups
Layer 2	802.1W STP, RSTP, MSTP 802.1D Spanning Tree Protocol 802.1Q VLAN 802.3ad Link Aggregation (MAX 8 Groups & 8 members for each group) Jumbo Frame up to 9K
Management	Web-based management GUI CLI Syslog, SNMP v1/v2c/v3, SNMP trap, RMON, TFTP SNTP, Port Mirroring Security by using password for log-in via Console and Telnet Factory restore Reboot Firmware upgrade Configuration backup and restore
Multicast	IGMP Snooping V1/V2 Multicast Group up to 512

	Multicast Traffic Block / Filtering
	Protection of malicious multicast traffic from subscriber port
DHCP	DHCP
	DHCP Request Flooding protection (DHCP snooping rate-limiting) DHCP Option 82
	Circuit-ID: port information user connected
	Remote-ID: MAC address information of Relay device
Security	DLF, Broadcast
	DHCP Filtering, Mac Filtering, NetBEUI, NetBIOS Filtering, NBT Packet filtering
	based on IP address and TCP, UDP port
	flooding protection (static MAC, MAC count) Multicast/Broadcast flooding
	protection
	Service classifying for the Control Packet (Ping, Telnet, SNMP, TFTP etc.) NetBIOS/
	NetBEUI/ NBT filtering
	8 CPU queue, Rate-limit to CPU traffic
	IP/TCP/UDP Port Filtering
QoS / ACL	Layer 2(Source/Destination MAC Address, VLAN ID, COS Field)
	Layer 3(Source/Destination IP Address, DSCP Field) Priority/Parameter based QoS
	8 queue per port
	SPQ, WRR, SPQ + SDWRR: port, queue DSCP marking/remarking Ingress ACL: 128

AG4200N



Hardware

System Architecture	4 port G.hn Wave2 Modular Outdoor EoC Master: 4 × G.hn EoC Ports, each port supports up to 16 subscribers 2 × 1000-X /10000-X SFP/SFP+ ports 1 × 10/100/1000BT RJ-45 port 1 × RS232 console port (RJ45) 1 × Over coaxial power supply module with 40 V _{AC} to 95 V _{AC} (50/60 Hz) or 1 × 110 V _{AC} to 264 V _{AC} (50/60Hz) power module
Physical Dimensions	270 mm × 230 mm × 145 mm (including connector)
Housing	IP65
LED	Power, System Active, SFP port link/active Management port link/active, G.hn Link
Weight	Net weight (excluding package): 4.6 kg Net weight (including package): 5.3 kg
Input Power & Frequency	AC110 to 264V/1.2A max via external power feed, 50/60 Hz or AC60V/2A max via coax cable, 50/60 Hz
Power Consumption	<50 W
Environment Conditions	
Operating Temperature	-20 °C to +60 °C
Storage Temperature	-25 °C to +80 °C
Operating Humidity	10 % to 90 % (non-condensing)
G.hn Performance Specifications	
Line Modulation Way	OFDM (Orthogonal Frequency Division Multiplexing)
G.hn Specification	2 to 200 MHz for Baseband Power Mask Notching Dynamic PSD NDIM (Neighbor Domain Interface Mitigation) Radio Band Notching function NEXT (Near End Crosstalk) Mitigation
Software	
MAC Address	16K
VLAN Numbers	4K, 256 VLAN groups
Layer 2	802.1W STP, RSTP, MSTP 802.1D Spanning Tree Protocol 802.1Q VLAN 802.3ad Link Aggregation (MAX 8 Groups & 8 members for each group) Jumbo Frame up to 9K

Management	Web-based management GUI CLI Syslog, SNMP v1/v2c/v3, SNMP trap, RMON, TFTP SNTP, Port Mirroring Security by using password for log-in via Console and Telnet Factory restore Reboot Firmware upgrade Configuration backup and restore
Multicast	IGMP Snooping V1/V2 Multicast Group up to 512 Multicast Traffic Block / Filtering Protection of malicious multicast traffic from subscriber port
DHCP	DHCP DHCP Request Flooding protection (DHCP snooping rate-limiting) DHCP Option 82 Circuit-ID: port information user connected Remote-ID: MAC address information of Relay device
Security	DLF, Broadcast DHCP Filtering, Mac Filtering, NetBEUI, NetBIOS Filtering, NBT Packet filtering based on IP address and TCP, UDP port flooding protection (static MAC, MAC count) Multicast/Broadcast flooding protection Service classifying for the Control Packet (Ping, Telnet, SNMP, TFTP etc.) NetBIOS/ NetBEUI/ NBT filtering 8 CPU queue, Rate-limit to CPU traffic IP/TCP/UDP Port Filtering
QoS / ACL	Layer 2(Source/Destination MAC Address, VLAN ID, COS Field) Layer 3(Source/Destination IP Address, DSCP Field) Priority/Parameter based QoS 8 queue per port SPQ, WRR, SPQ + SDWRR: port, queue DSCP marking/remarking Ingress ACL: 128

AG421C



Hardware

System Architecture	1 GE ports G.hn Wave2 EoC CPE
	1 × G.hn EoC port, F-type connector
	1 × 10/100/1000BaseT RJ45 Ports
Physical Dimensions	111.5 mm × 83 mm × 24.5 mm
LED	Power, RJ45 ports link/active, G.hn Link
Weight	190 g
Input Power & Frequency	DC12V/1A power adaptor
Power Consumption	<3 W

Environment Conditions

Operating Temperature	0 °C to +40 °C
Storage Temperature	-25 °C to +80 °C
Operating Humidity	5 % to 95 % (non-condensing)

G.hn Performance Specifications

Line Modulation Way	OFDM (Orthogonal Frequency Division Multiplexing)
G.hn Specification	2 to 200 MHz for Baseband Power Mask Notching Dynamic PSD
	NDIM (Neighbor Domain Interface Mitigation) Radio Band Notching function
	NEXT (Near End Crosstalk) Mitigation

AG424C



Hardware

System Architecture	4 GE ports G.hn Wave2 EoC CPE 1 × G.hn EoC port, F-type connector 4 × 10/100/1000BaseT RJ45 Ports
Physical Dimensions	155 mm × 120 mm × 26 mm
LED	Power, RJ45 ports link/active, G.hn Link
Weight	350 g
Input Power & Frequency	DC12V/1A power adaptor
Power Consumption	<4 W

Environment Conditions

Operating Temperature	0 °C to +40 °C
Storage Temperature	-25 °C to +80 °C
Operating Humidity	5 % to 95 % (non-condensing)

G.hn Performance Specifications

Line Modulation Way	OFDM (Orthogonal Frequency Division Multiplexing)
G.hn Specification	2 to 200 MHz for Baseband Power Mask Notching Dynamic PSD NDIM (Neighbor Domain Interface Mitigation) Radio Band Notching function NEXT (Near End Crosstalk) Mitigation

AG424CW



Hardware

System Architecture	4 GE ports G.hn Wave2 EoC CPE with 802.11ac WiFi 1 × G.hn EoC port, F-type connector 4 × 10/100/1000BaseT RJ45 Ports 1 × 2.0/3.0 USB 802.11 b/g/n/ac WiFi 1200Mbps
Physical Dimensions	235 mm × 143 mm × 32 mm
LED	Power, System Active, WiFi, LAN ports link/active, G.hn Link
Weight	405 g
Input Power & Frequency	DC12V/1A power adaptor
Power Consumption	<8 W

Environment Conditions

Operating Temperature	0 °C to +40 °C
Storage Temperature	-25 °C to +80 °C
Operating Humidity	5 % to 95 % (non-condensing)

G.hn Performance Specifications

Line Modulation Way	OFDM (Orthogonal Frequency Division Multiplexing)
G.hn Specification	2 to 200 MHz for Baseband Power Mask Notching Dynamic PSD NDIM (Neighbor Domain Interface Mitigation) Radio Band Notching function NEXT (Near End Crosstalk) Mitigation

Software

WAN	Connection Type: PPPoE, PPPoE Pass through, DHCP Client, Static IP, IPoE, Bridge Service type: Internet, TR-069, VoIP, other Support VLAN Public Multicast VLAN IGMP multicast IP unnumbered
LAN	DHCP server(enable/disable) DHCP relay Reserved IP Lease time settings DHCP address pool display DNS proxy Dynamic VLAN UPnP IGD Ethernet port configuration: 10M half/full, 100M half/full, 1000M half/full
Routing	NAPT

Management	Static Routing RIP V1/V1-c/V2
	Virtual Server ALG
	Port Triggering Multi-NAT
	IGMP Proxy
	IGMP-Snooping
	Web-based configuration GUI
	Remote management, support TR069 and TR098 Syslog, SNMP v1/v2c
	Account management Time settings
	DDNS
	Reboot
Wireless	Factory Restore
	Firmware upgrade: HTTP, TFTP Access control list
	Configuration backup and restore
	802.11 b/g/n/ac Support up to 4 SSID
	Support SSID broadcast enable and disable Support SSID isolation/hidden
	Bandwidth: 2.4G 20MHz, 40MHz, 20/40MHz
	5G 20MHz, 40MHz, 20/40MHz
	Support 64/128 bit WEP, WPA/WPA2/Mixed security Support up to 32 wireless clients
	Support WMM
	Support Lazy mode, repeater mode and bridge mode WDS Support auto channel selection
Security	ACL
IP Tunnel	MAC Filter Port Filter SSH service Diagnostic IPsec VPN
	IPv4in IPv6
USB 2.0/3.0	IPv6 in IPv4 GRE Tunnel
	FTP Client
	Storage user account
	FTP/TFTP/Samba server

Ordering Information

Product Name	Product Description
AG4200C-6F-200-00-AC	AG4200 IP Over Coax G.hn managed switch, 5 MHz to 200 MHz, 6 ports G.hn Wave2 indoor EoC Master, 90 V _{AC} to 264 V _{AC}
AG4200N-4F-200-AC	AG4200N 4 port IP Over Coax G.hn Outdoor EoC Master, 5 MHz to 200 MHz, 110 V _{AC} to 264 V _{AC}
AG421C-HN-200-1	AG400 G.Hn Wave2 IP Over Coax CPE 1 G.hn EoC port, 1 CATV port, 1 GE RJ45 Ports, G.hn 5 MHz to 200 MHz, CATV 240 to 1000MHz
AG424C-HN-200-1	AG400 G.Hn Wave2 IP Over Coax CPE 1 G.hn EoC port, 1 CATV port, 4 GE RJ45 Ports, G.hn 5 MHz to 200 MHz, CATV 240 to 1000MHz
AG424CW-HN-200-1	AG400 G.Hn Wave2 IP Over Coax CPE 1 G.hn EoC port, 1 CATV port, 4 GE RJ45 Ports, G.hn 5 MHz to 200 MHz, CATV 240 to 1000MHz with 802.3ac WiFi

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