AlphaGateway SMG-HP

100W HFC Power Delivery | DOCSIS 3.1 Backhaul

Features:

- Industrial hardened DOCSIS 3.1 cable modem
- Flexibility for up to 100W power delivery
- GPS-compatible GNSS receiver
- Remotely manage and control power on each port
- Layer 3 routing (NAT/PAT, DNS, Static IP)
- CableLabs Business Services over DOCSIS (BSoD)

Forward compatible, the AlphaGateway SMG-HP is purpose-built to provide our customers with a flexible and scalable enablement platform to provide revenue-generating services today, and for what's next.

The small form factor and flexible interface architecture enables multiple applications and deployment options. As with all AlphaGateways, the AG100D is constructed with I-temp hardened materials, including an Alpha-designed DOCSIS 3.1 Modem.

The AlphaGateway SMG-HP takes all that Alpha has learned in developing the award winning (BTR Diamond) AlphaGateway SMG and AlphaGateway BSC, and adds the value proposition of "thin to win"—today and tomorrow.

AlphaGateway SMG-HP Specifications

10/2018

Design	
Model:	AG100D-PoE+
MTBF:	>438,000 hours at ambient; >100,000 hours at the maximum operating ambient temperature
Outdoor Hardened:	Component-level designed for the most rugged environments

Input Power	
Input Voltage Range:	44 to 90VAC @ 50/60Hz
Input Voltage Waveforms:	Sine, trapezoidal, quasi squarewave
Input Voltage Turn On:	44VAC
Input Loss Hold-up Time:	≥ 16.7ms

Power/Ethernet Delivery	
Number of Powered Ethernet Ports:	2
Connection:	100/1000 BASE-T auto sensing/auto-MDIX (8P8C modular jack)
Bulkhead Interface for Ethernet:	Secure grommet (0.17 to 0.25in outer diameter cabling)
Power over Ethernet:	**Compliance:** IEEE 802.3at (PoE+) **Output Voltage:** 52.5VDC ± 0.5VDC **Max Current:** 600mA per port **Max Power Out:** 31.5W per port
Maximum Total Power Delivery:	70W

LAN	
Protocols:	TCP, IP, UDP, RIPv2, SSH, HTTPs
LAN Services:	IPv4, IPv6, DHCP Server, DNS Proxy, HTTP
Ethernet Compliance:	IEEE 802.3at (PoE+)
L2VPN (BSoD)**:**	Allows creation of L2VPN connection from a cable modem to a northbound ethernet trunked switch port

Backhaul (WAN)	
Compliance:	DOCSIS 3.0, 3.1
CPU:	Single chip Intel Puma 7 CE2753i (industrial grade)
Downstream Frequency Range:	**DOCSIS 3.0:** 108 to 1002MHz **DOCSIS 3.1:** 108 to 1218MHz
Upstream Frequency Range:	**Software selectable:** 5 to 42MHz / 5 to 85MHz
Automatic Attenuation Adjustment:	• Independent, transmit and receive digital step attenuators (DSA) • 0 to 31.5dB attenuation range in 0.5dB steps • Software controlled
WAN/LAN Bridging:	802.1d transparent bridging
Routing:	• RIPv2 (RFC 2453) over the WAN interface • Routing IP over Ethernet to LAN CPEs • Static IP addressing on both the WAN and LAN side of the device

Mechanical	
Mounting Options:	Strand (vertical and horizontal orientation), pole, wall, vault
Dimensions H x W x L (in/mm)**:**	3.7 x 8.11 x 13.5 / 93.98 x 206 x 343
Weight (lb/kg)**:**	9 / 4.08

System Management	
LEDs (Internal)**:**	• System Power • DOCSIS (downstream, upstream, online) • CPE (link, activity)
Management Protocols:	SNMPv1, 2c, 3, HTTPs, SSH, GNSS
Remote Output Power Control:	On, off, reset (per port)
Remote PoE Port Status:	Link up/down, link speed, power up/down, PoE device class, PoE power consumption
Remote PoE Device Status:	MAC address, IPv4/IPv6 address
System Management (SNMP)**:**	Standard DOCSIS & Mib2 SNMP MIB support (e.g. sysDescription, sysObjectID, ifTable) CM, other sub-components, GPS, ports and services (when applicable)
Environmental Status Parameters (SNMP)**:**	• Input voltage, power • Output voltage, power, current (per port) • Internal temperature • Link up/down, link speed, power up/down
Alarming:	SCTE-HMS MIBs and alarming
Network Quality of Service:	RFC 2544, Y.1564, and Y.1731 for turn up, remote monitoring and remote troubleshooting of key Ethernet metrics (e.g. latency, frame loss, jitter)
HTTPS:	HTTPS web interface (diagnostics and device management)
GPS:	GNSS for inventory tracking; < 50ft Accuracy, Proprietary MIBs
CLI:	SSH for diagnostics and device management
Network Quality of Service:	TR-181 for LAN/WAN/device management
TR-069:	TR-181 for LAN/WAN/device management
Advanced Diagnostic Features:	• Full spectrum capture (Cable Labs MIBs and HTML) • Full spectrum diagnostics (proprietary MIB) • Micro-reflections (HTML) • Constellation diagrams (HTML, proprietary MIB)

Agency and Environment	
Operating Temperature:	-40 to 60°C
Storage Temperature:	-40 to 70°C
Humidity:	5 to 95% non-condensing
Operating Altitude:	-60 to 4,000m (-196 to 13,123 ft)
Enclosure Protection:	**UL50E / Type 6 / IEC 60529 IP67** **Salt Fog:** Tested to ensure functional, operational and mechanical performance with minimal deterioration after subjected to 1000 hour Accelerated Salt Spray Test (ASST) per ASTM B117
Safety:	**UL/CSA 60950-1, UL/CSA 60950-22: ED1:** NRTL/C Cert (US/CAN), Safety - general requirements
EMC Emissions:	**FCC Class B (FCC CFR 47 Part 15 Class B):** EMC emissions requirements (US) **ICCES-003:** EMC emissions requirements (Canada) **CISPR 32 (IEC/EN 55032):** Electromagnetic compatibility of multimedia equipment - Emission requirements (EU/Global)
EMC Immunity:	**CISPR 24 (IEC/EN 55024):** Information technology equipment, immunity characteristics, limits and methods of measurement, radiated, radio-frequency, electromagnetic field immunity test and immunity to conducted disturbances induced by radio-frequency fields **CISPR 35 (ICE/EN 55035):** Electromagnetic compatibility of multimedia equipment - Immunity requirements (EU/Global)
Surge Immunity:	**IEC 61000-4-5:** Surge Immunity: 6kV/3kA on COAX input port, 4kV on ethernet port (1.2x50/8x20) **UL/CSA 60950-1:** Line Cross: 277VAC on ethernet ports
RoHS:	**RoHS Directive 2011/65/EU Compliant:** Restriction of hazardous substances directive

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