an EnerSys® company

XM3.1-HP™ Broadband UPS

Next-Generation Uninterruptible Power Supply

XM3.1-HP 3A, 5A models

- **Advanced Ferro Technology:** Maximum power efficiency under all modes of operation
- **Compact 3A and 5A Models Available:** Optimized for lower power MDU and fiber-deep applications
- **AlphaGuard Embedded Battery Balancing:** Maximize battery life and optimize performance (select models only)
- **Advanced Battery Management:** Dynamic 5-stage charger technology maximizes AlphaCell® battery life
- **Integrated DOCSIS® 3.1 Communications:** Intelligent power management, RF network diagnostics and high speed backhaul
- **AlphaApps+:** Intelligent diagnostics for remote battery maintenance and power train—advanced power monitoring and data logging
- **SFP Optical:** Optical power supply status monitoring for fiber deep architectures
- **Remote Firmware Upgrades:** Latest features and firmware enhancements
- **Smart-Display:** Four-line display with intelligent, virtual keypad for optimal provisioning and diagnostics
- **Digital Step Attenuator:** Automatically or manually adjusts the RF receive power level, simplifies product installation—eliminating the need for external attenuators

The Alpha® XM3.1-HP platform continues to incorporate the ground-breaking transformer design of our award winning XM3-HP power supply with significant technological advancements across the entire power technology platform.

These advancements focus on delivering DOCSIS® 3.1 status monitoring and data backhaul, SFP optical monitoring for new fiber deep architectures and AlphaApps+ for advanced battery and power supply performance metrics. The enhanced XM3.1-HP platform also continues to leverage remote firmware upgrades for the latest power supply features. All of these advancements focus on providing the industry maximum value centered around three primary benefits—improved efficiency, optimized performance and reduced operating costs.

XM3.1-HP™ Broadband UPS Specifications

Model:	903-HP	905-HP
Fine Mode Parameters		
Nominal AC Input Voltage:	120VAC	120VAC, 240VAC (factory ordered)
Nominal Input Frequency:	60Hz	60Hz
Input Frequency Tolerance:	±3%	±3%
Input Voltage Operating Range Tolerance:	−30 to +15% (120VAC)	−30 to +15% (120VAC), −30 to +20% (230VAC)
Input Voltage Range:	84 to 138VAC	84 to 138VAC, 161 to 276VAC
Output Voltage:	60/89VAC	60/89VAC
Output Voltage Regulation:	−4 to +1%	−4 to +1%
Maximum Rated Output Current:	3A	5A
Maximum Output Power:	270VA	450VA
Line Mode Efficiency:	Up to 90%	Up to 90%
Standby Efficiency:	Up to 88%	Up to 88%
Output Waveform:	Quasi-square wave	Quasi-square wave
Short Circuit Protection:	<150% of max current rating	<150% of max current rating
Transfer Characteristics:	Uninterrupted output	Uninterrupted output
Auxiliary Output Voltage:	110VAC	110VAC, 220VAC
Auxiliary Output Current:	0.2AAC maximum	0.2AAC maximum
Battery Voltage:	12VDC single battery or parallel battery configurations	12VDC single battery or parallel battery configurations

Mechanical		
Inverter Module:	Integrated	Integrated
Dimensions W × D × H (in/mm)**:** (Handle Folded)	8 × 11.63 × 8.84 / 203.2 × 295.5 × 224.6	8 × 11.63 × 8.84 / 203.2 × 295.5 × 224.6
Net Weight (lb/kg)**:**	31 / 14.1	31 / 14.1, 32.2 / 14.5
Input Power Connector (IEC 320/C20)**:**	NEMA® 5-15P plug	NEMA® 5-15P, NEMA® 6-15P plug
Input Power Interface:	IEC® 320/C14 inlet connection accepts a variety of detachable cord sets to match country-specific wall receptacles	
Output 1 & 2 Interface:	2-position terminal block	2-position terminal block
Auxiliary Output Interface:	2-position terminal block	2-position terminal block
Vout Selector:	2-position terminal block	2-position terminal block
Battery Connector:	2-position red 50A Anderson™ style	2-position red 50A Anderson™ style
Status Display:	4 line × 20 character white LCD with soft-key menu controls	
Indicators:	LEDs for output status and major/minor alarm status	
Self Test Mode:	Push-to-test switch to initiate local self-test mode	
Tamper Connector:	2-position MTA-100 connector	
Environmental Control Connector (ENV)**:**	10 position connector - input/output sense control	
LRI Connector:	2-position Anderson™ style connector	
Local Ethernet Port:	1 port, auto-MDX, RJ-45, 10/100/1000Mbps, data backhaul: complies with DOCSIS® 3.1 CPE interface operations	
SFP Optical Module Port:	SFP optical module (small form-factor pluggable) may be installed. Optional/supplied by the operator for status monitoring purposes. Supports common SFP module communication standards to 1Gbps.	
SFP Port Power Rating:	Element Monitoring Module (EMM) with red PCBA (p/n 704-00304-20-002) supports SFP modules drawing up to 3.3W. EMM with blue or green colored PCBA (p/n 704-00304-20-001 or 704-00272-20-002) supports SFP modules drawing up to 1.0W.	
Battery Temperature Sensor:	Ring lug fastens to negative terminal on battery	
Finish:	TGIC free polyester powder coat	
Lifting Handle:	Foldable handle	

XM3.1-HP™ Broadband UPS Specifications

Environment	
Operating Temperature:	−40 to 60°C / −40 to 140°F (derate by 2°C / 3.6°F per 1000ft above 3000ft)
Storage Temperature:	−40 to 70°C / −40 to 158°F (derate by 2°C / 3.6°F per 1000ft above 3000ft)
Relative Humidity:	0 to 95% non-condensing

Battery Charger	
Temperature Compensation:	Programmable (0 to 5mV / Cell / °C)
Bulk Charger Current:	10A
Charger Stages:	3 to 5 stages (refresh, bulk, accept, float, rest)
Charger Profiles:	Selectable, AlphaCell® models or other (customized settings)

Advanced Functions	
Advanced Analytics (AlphaApps+) Option (All Models)	
Advanced Analytics:	Battery health, battery remaining runtime, utility event log, PS event log, active drop alarming, system downtime
User Inputs:	Battery model, battery manufacturing date, battery siemens values, technician code/ID
Firmware:	Remote firmware upgrade capable

Agency Compliance	
Safety:	**North America (NRTL):** ANSI®/UL® 62368-1, CAN/CSA-C22.2 No. 62368-1 **International (CB Scheme):** IEC® 62368-1
EMC:	**North America:** FCC CFR47 Part 15 Class B* (US), ICES-003 (Canada)

Cable Modem Specifications					
Hardware					
CPU:	Single chip Intel® Puma™ 7 CE2753i, industrial temperature rated				
Memory:	**FLASH:** 8Gb (NAND) **DRAM:** 8Gb (DDR3L)				
LAN Port:	1Gb/s (2.5Gb/s optional) MDI/MDIX				
Diplexer Options*:	**Modem Model**	**Upstream Range 1**	**Downstream Range 1**	**Upstream Range 2**	**Downstream Range 2**
	CMOA-4285	5 to 42MHz	54 to 1002MHz	5 to 85MHz	108 to 1002MHz**
	CMOA-45204	5 to 45MHz	258 to 1218MHz	5 to 204MHz	258 to 1218MHz
WAN Port:	F connector, 75 Ohm (DOCSIS® 3.0, 3.1 compliant)				
LEDs:	Upstream ranging and registration lock, downstream RF carrier detection and lock, CPE link, CPE activity				

* Dual hardware diplexers per model. Range 1 and Range 2 are software selectable within each model. (Factory default: Range 1)

** A downstream upper limit frequency of 1218MHz available with firmware upgrade.

XM3.1-HP™ Broadband UPS Specifications

Cable Modem Specifications	
Standards	
Regulatory/Standards (Verified with CMOA installed in application product)**:**	• **UL® 60950-1:** Information Technology Equipment - Safety - Part 1 • **UL/CSA® 1778** (5th)**:** Uninterruptible Power Systems as a guide for backfeed • **IEC® 60728-11** (4th)**:** 2016 CATV Networks - Part 11 - Safety (applicable parts) • **EN 50083 2:2006:** EMC requirements for CATV equipment • **EN 62040 2:2006:** Uninterruptible Power Systems (UPS) - Electromagnetic Compatibility (EMC) Requirements - Category C2 • **FCC Part 15 - Class B** • **CISPR24/EN55024:** 10V/m radiated susceptibility • **IEEE® 587 - Category B3:** Surge, test method: 10 positive cycles/10 negative cycles, alternating • **IEEE C62.41:** RF surge, 6,000V peak, combination wave., ten events, alternating positive and negative, using a 2 Ohm source impedance with "Outcome 1" per IEEE 62.45 • **IEC/EN 61000-4-2:** Direct electrostatic contact discharge at 8kV at the RF connector shield without data loss • **RoHS® Compliant/Directive 2002/95/EC**
Advanced Diagnostics	
RF Network:	• Full band capture data available through CableLabs® MIB and internal web server • Micro-reflection diagram available via internal web server
Power Supply Display:	**Power supply display will show advanced network diagnostics including:** Upstream and downstream frequencies and RF levels, IPv4 or IPv6 address assigned by network DHCP server, MAC address, DOCSIS® timeout error codes and firmware versions
Utility Power Diagnostics:	With XM3.1-HP app card, utility performance status including outages, sags, surges and out-of-frequency events
Battery Diagnostics:	With XM3.1-HP app card, power supply diagnostics report when batteries should be serviced including battery string runtime remaining and battery life remaining
Event Logging:	With XM3.1-HP app card, logs include power supply events, power supply configurations and battery events
Status Monitoring	
Standards:	**ANSI®/SCTE® 38-4:** Hybrid fiber/coax outside plant status monitoring SCTE-HMS-PS-MIB management information base **ANSI/SCTE 38-6:** Hybrid fiber/coax outside plant status monitoring • Alpha® proprietary, portable generator management information base • Cheetah proprietary, KPI management information base
Power Supply Monitored Parameters (ANSI-HMS)**:**	Major alarm, minor alarm, input voltage, output voltage, output current, output power, input current, input power, UPS status, charger current, battery discharge current, battery voltage, battery temperature, remote test control, enclosure door
Features	
DOCSIS® 3.0 Bonded Channels:	• Up to 32 downstream, 1,216Mbit/s*** • Up to 8 upstream, 216Mbit/s***
DOCSIS 3.1 OFDM Channels (Receiver)**:**	• 24 to 192MHz OFDM channels downstream, 10Gbit/s*** • Supports (2) OFDM channels and 24 SC-QAM channels • SC channel modulation up to 4096 QAM
DOCSIS 3.1 OFDMA Channels (Transmitter)**:**	• 96MHz maximum OFDMA channel bandwidth upstream, 2Gbit/s*** • Supports (2) OFDMA channels (requires 204MHz upstream split, future version)
WAN/LAN Bridging and Routing:	802.1d transparent bridging OR routing modes configurable
LAN Services over Ethernet:	• IPv4, IPv6, UDP, TCP, DHCP Server, NAT, RIPv2 • DNS address resolution (WAN pass through DNSSEC & EDNS0 requests and responses, dynamic DNS support, SRV & A records supported) • Static IPv4, IPv6 configurable
WAN Services over DOCSIS:	• IPv4, IPv6, UDP, TCP, DHCP, TOD, TFTP, NAT, BPI, RIPv2, SNMPv1, SNMPv2c, SNMPv3, SSH, HTTP • TR 181 parameters over TR 069 and SNMP • BSoD (Business Services over DOCSIS) supports L2VPN encrypted traffic • DNS address resolution WAN LAN pass through modes supported, see LAN DNS • Static IPv4, IPv6 configurable • Full spectrum capture (Cable Labs MIBs and HTML) • Full spectrum diagnostics (proprietary MIB) • Micro reflections (HTML)
Web Page:	• Web interface accessible through WAN interface (Port 80 enabled via TLV) and local IP address LAN port • Write access password controlled (can be disabled using TLV in configuration file) • **Web interface displays operating parameters including:** DOCSIS parameters, Ethernet diagnostics (e.g., RFC 2544, latency, jitter, frame loss), full band capture statistics, micro reflection statistics, application specific parameters
Password of the Day (PotD) **Option:**	Operator provided date and seed; PotD encryption from 3DES/AES algorithm
Software Implementation:	Modem uses RDK-M/RDK-B (reference design kit modem/broadband)
CableLabs® Compliance:	DOCSIS 3.1 cable modem, DOCSIS 3.0 cable modem, IPv4, IPv6 eRouter specifications

***Maximum theoretical DOCSIS payload throughput

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