DOCSIS â 2.0 and EuroDOCSIS Embedded Transponder for Alpha* XM2 Power Supplies

Description

The DHT-PS-AT-03 and DHT-PS-AT-07 are hybrid HMS and DOCSIS®–EuroDOCSIS status monitoring transponders, designed to install inside of Alpha* XM2 power supplies.

Like all of Electroline's transponders, these embedded versions offer the same ruggedness and standards compliance that operators require. They are designed to withstand extreme temperature and electrical conditions typical of the outside HFC plant, as well as to meet DOCSIS® and EuroDOCSIS cable modem specifications.

With SNMPv1, v2c and v3 support, the DHT-PS-AT-xx series easily interfaces with up to 10 network management systems to monitor power supply objects defined by HMS. It also monitors several DOCSIS® RF parameters, and supports various user-configurable objects to help operators customize the way they monitor and manage their power supplies. Dual IP capability provides further flexibility for implementation.

Optional accessories enhance the DHT-PS-AT-xx status monitoring capabilities that include an independent tamper switch and an expansion port to accept future add-ons.

Applications

Specifically designed to monitor and control an Alpha* XM2 Series standby power supply, this **embedded** transponder fits inside the communications section of the power supply, without the need for special status monitoring cards. It receives information directly from the power supply's circuitry, translates it to standard HMS performance parameters defined for power supplies, and transports the data over the same channels as subscriber cable modems to an SNMP-based network management system. Operators can then leverage this data to maximize the network's quality of service, identify potential sources of outages before service is affected, and drive a preventive maintenance plan.

The DHT-PS-AT-xx series complements perfectly Electroline's standalone DOCSIS® transponders: the DHT-PS-NA-02 and DHT-PS-NA-06 designed for a variety of HMS and legacy power supplies. Most networks can be outfitted solely with Electroline transponders, thus reducing training and setup costs as well as laying the groundwork to benefit from enhancements available with Electroline's special firmware packages that can monitor VoIP performance and much more.

DHT-PS-AT-xx Series

The Electroline Advantage

As leading pioneers in power supply status monitoring using HMS and DOCSIS® technology, Electroline knows the importance of what is inside a transponder. Electroline uses field-proven DOCSIS® and EuroDOCSIS integrated circuits and builds each unit with components rated for extreme temperatures, thus setting the industry standard for quality and performance.

Features

- Fits inside the Alpha* power supply – no special cards needed
- Proven technology with millions of DOCSIS® and EuroDOCSIS chips deployed
- DOCSIS® 2.0/EuroDOCSIS 2.0 compliant
- Easily upgraded to monitor network and VoIP with optional EnetMonitor™ firmware
- Downloadable VoIP testing functions
- Craft port for local diagnostics
- Internally generated Web pages to view status of power supply and transponder
- Surge protection as per IEEE
- Operating temperature range –40 to +85°C

* "**ALPHA**" is a registered United States trade-mark of Alpha Technologies Inc.

DOCSIS® and EuroDOCSIS Embedded Transponder for Alpha* Power Supplies

Specifications - Cable Modem

Upstream (Transmitter)		
Compliance	**DOCSIS â 2.0**	**EuroDOCSIS 2.0**
Model	**DHT-PS-AT-03**	**DHT-PS-AT-07**
Frequency Band	5 to 42 MHz	5 to 65 MHz
Level Range	TDMA +8 to +54 dBmV (32QAM, 64QAM) +8 to +55 dBmV (8QAM, 16QAM) +8 to +58 dBmV (QPSK) S-CDMA +8 to +53 dBmV (all modulations of S-CDMA)	TDMA +68 to +114 dBuV (32QAM, 64QAM) +68 to +115 dBuV (8QAM, 16QAM) +68 to +118 dBuV (QPSK) S-CDMA +68 to +113 dBuV (all modulations of S-CDMA)
Modulation Type	QPSK, 8QAM, 16QAM, 32QAM, 64QAM and 128QAM	
Modulation Rate (nominal)	TDMA: 160, 320, 640, 1280, 2560 and 5120 KHz S-CDMA: 1280, 2560 and 5120 KHz	
Bandwidth	TDMA: 200, 400, 800, 1600, 3200 and 6400 KHz S-CDMA: 1600, 3200 and 6400 KHz	
Output Impedance	75 Ω	
Output Return Loss	> 6 dB	
Downstream (Receiver)		
Center Frequency	91 to 857 MHz ± 30 KHz	112 to 858 MHz ± 30 KHz
Level Range (one channel)	-15 dBmV to +15 dBmV	43 to 73 dBuV for 64QAM 47 to 77 dBuV for 256QAM
Modulation Type	64QAM and 256QAM	
Symbol rate (Nominal)	5.056941 Msym/sec (64QAM) and 5.360537 Msym/sec (256QAM)	6.952 Msym/sec (64QAM) and 6.952 Msym/sec (256QAM)
Bandwidth	6 MHz	8 MHz
Total Input Power (40 to 900 MHz)	< 30 dBmV	
Input (load) Impedance	75 Ω	
Input Return Loss	> 6 dB (88 to 860 MHz)	
Ports and Connectors		
Craft Interface	USB	
HFC Network Side Interface Connector	Coaxial “F”-type per ISO 169-24	
Surge Protection (F port) .....Ring Wave Combination Wave	IEEE C62.41-1991, cat A3 6KV 200A IEEE C62.41-1991, cat B3 6KV 3KA	IEC 61000-4-12, Level 4 (4KV/133A) IEC 61000-4-5, Level 4 (4KV/2KA)
Power Supply Interface	2x9 header with analog and digital inputs and outputs (internal)	
Batteries, temperature probe, power	2x6 header with analog and digital inputs and outputs(power 21-60 VDC)	
Tamper (optional)	2x4 header with analog and digital inputs and outputs	
Expansion port (optional)	2x7 header with analog and digital inputs and outputs	
Environmental Specifications		
Operating/Storage Temperature Range	-40°C to +85°C (-40°F to 185°F)	
Humidity	0 to 90%, non-condensing	
Mechanical Specifications		
Outside Dimensions	7.88” x 6.70” x 1.26” (20 cm X 16.9 cm X 3.2 cm)	

Main Monitored Parameters (HMS, DOCSIS® and Electroline-specific)

The DHT-PS-AT-03/07 series monitors parameters for the Alpha* XM2 power supplies including:

Power Supply (HMS standard)	**Electroline Enhancements**	**DOCSIS®**
▪ individual battery voltage	▪ limit of inverter test duration	▪ downstream channel
▪ total string voltage	▪ dual or single IP addressing	▪ upstream channel
▪ battery temperature	▪ up to 10 trap destinations	▪ transmit power
▪ tamper switch	▪ trap assurance setup	▪ receive power
▪ output current (x2)	▪ tamper switch (Electroline)	▪ up time
▪ input voltage	▪ SNMP watchdog setup	▪ signal to noise (SNR)
▪ remote inverter test	▪ internal temperature	▪ security (BPI, BPI+)

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