advanced media technologies®

MODEL

CMD-N MOTOROLA

DOCSIS®- BASED, EMBEDDED TRANSPONDER FOR MOTOROLA® NODES

CHEETAH™ TECHNOLOGIES

Cheetah Technologies' DOCSIS-based transponder utilizing SCTE-HMS Standards to monitor and control fiber nodes.

Cheetah Technologies' Cheetah DOCSIS-based transponders enable cable operators to proactively monitor and control their Fiber Nodes using existing DOCSIS infrastructure. The transponder utilizes the standards adopted by the SCTE-HMS subcommittee for fiber node monitoring and provides easy access to information and control through standard SNMP mibs. The transponder also features the ability to conduct HSIA and VoIP testing through embedded software. Features include: Ethernet port, optical tamper switch, standard cable modem LEDs, web page access, eMTA emulation and optional embedded VoIP testing. The transponder continuously monitors and reports out of tolerance conditions via SNMP traps. All alarming thresholds are userdefinable.

Monitored Parameters:

- Receiver Optical Power (mW)
- Transmitter Laser Bias Current
- Transmitter Laser Power (mW)
- Power Supply Voltages (24, 12, and 5)
- Node Internal Temperature
- Receiver Optical Alarm
- A/B Switch Status and Alarm
- Tamper
- Wink Switch Attenuation

Available Controls:

- A/B Switch Control
- Wink Switch Control

Node Monitoring Applications:

- Support for the Motorola SG4000 and MBN series Nodes
- Transponder automatically detects installation in SG4000 or MBN Nodes
- Differentiate between RF problems in the HFC network and headend problems
- Control attenuators to troubleshoot RF Return Path issues
- Control A/B switches to select redundant fiber paths
- Alarm on loss of light or degradation of fiber path
- Alarm on automatic receiver switching
- Provide VoIP testing capability at the point in the network where fiber becomes RF
- Allow analysis of network congestion via HSIA testing

Ethernet Port:

The Ethernet port can provide local access to the embedded web page for configuration and control.

Optical Tamper Switch:

The optical tamper switch embedded in the transponder will report on the status of the node (open or closed lid).

Cable Modem LEDs:

The cable modem LEDs display the registration status of the transponder in the DOCSIS network.

Embedded Web Page:

The embedded web page can be used to display both cable modem and HMS node data gathered from the transponder. HSIA testing is supported through the web page and can be accessed either locally via the Ethernet port or remotely via a browser application.

eMTA VoIP Testing: (Optional)

The transponder, when configured as a VoIP test point is capable of receiving and/or originating calls, determining MOS scores and measuring RTP statistics through the embedded firmware. At the end of each call, the test results are available through RTCP Extended reports. Some of the measured parameters are:

- MOS Listening Quality
- MOS Conversation Quality
- R factor
- External R factor
- Network packet loss
- Packets discarded due to jitter
- RTP round trip delay (mS)
- End system delay (mS)

CMD-N Specifications

General

DOCSIS . . . . . Version 2.0
HMS Monitoring Protocol . . . . . SNMP v1
DOCSIS Monitoring Protocol . . . . . SNMP v1, v2, v3
RF Interface . . . . . Internal
Ethernet Interface RJ45
Operating Temperature . . . . . –40°C to +75°C
Humidity . . . . . 10% to 90% (non-condensing)
EMI/EMC: . . . . . FCC Part 15 Class A, CE EN50022 Class A

RF Transmit/Receive

Tx Frequency Range . . . . . 5 to 42 MHz
Tx Output Power . . . . . +8 to +58 dBmV
Rx Frequency Range . . . . . 88 MHz to 860 MHz
Rx Input Level . . . . . –15 to +15 dBmV
Channel Bandwidth . . . . . 6 and 8 MHz

Part Numbers

Transponder 66900-0665