

Cheetah CMD-N SA 694X TRANSPONDER

**DOCSIS®-BASED, EMBEDDED TRANSPONDER
FOR CISCO® SA 694X NODES**



- Support for the Cisco SA 694X Series Nodes
- Differentiate between headend problems and RF or optical issues in the HFC network
- Control attenuators (wink switches) 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
- Downstream DOCSIS constellation, MER, EVM and CER measurement ability

Cheetah DOCSIS-based transponders enable cable operators to proactively monitor and control Fiber Nodes using existing DOCSIS infrastructure.

The Cheetah CMD-N SA 694X embedded 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 optional ability to conduct HSIA and display RF information through embedded firmware.

Features include: Ethernet port, optical tamper switch, standard cable modem LEDs and web page access. The transponder continuously monitors and reports out of tolerance conditions via SNMP traps and user definable alarming thresholds.

General Details	
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)

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
CMD-N Transponder Assembly:	66900-0676
Assembly Includes:	
SA694X DOCSIS Transponder:	66950-0390
50 Pin Ribbon Cable:	66980-0265
12 Pin Status Monitoring Cable:	66980-0264

Standard Warranty	
Limited Hardware:	12 Months

Monitored Parameters
Receiver Optical Power (mW)
Transmitter Laser Power (mW)
Power Supply Voltages (24VDC...)
Node Internal Temperature
Receiver Optical Alarm
A/B Switch Status and Alarm
Tamper
Wink Switch Attenuation
Modulation Error Rate (MER), Error Vector Magnitude (EVM) and Codeword Error Rate (CER)
Optical Amplifier Input and Output Power (dBm), Laser Bias Current, and Laser Temperature
Optical Switch Input and Output Power (dBm), Module Temperature, and Switch Temperature

Available Controls
A/B Switch Control
Wink Switch Control

Node Monitoring Applications:
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Ethernet Port
The Ethernet port provides local access to an embedded configuration page for control.

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

Cable Modem LEDs
The cable modem LEDs display registration status of the transponder in 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. Optional HSPA testing is supported through the web page and can be accessed either locally via the Ethernet port or remotely via a web browser application.