

Optical Node Series

DOCSIS® Transponders

Opti Max OM2741, OM4100, OM4120, and OM6000 Nodes
SG4000 Nodes

FEATURES

- Pro-active monitoring allows operators to differentiate between RF problems in the HFC network and headend
- Remote control of ingress attenuators enables technicians to troubleshoot RF return path issues
- Improves network reliability by enabling control of A/B switches to select redundant fiber paths
- Tamper alarm ensures the integrity of network investment



PRODUCT OVERVIEW

ARRIS DOCSIS-based transponders enable cable operators to proactively monitor and control their fiber nodes using their existing DOCSIS infrastructure. ARRIS transponders utilize the standards adopted by the SCTE-HMS subcommittee for fiber node monitoring and provides easy access to information and control through standard SNMP MIBs.

ARRIS offers three transponder options. The DOCSIS Transponder supports Opti Max OM2741 and OM4100 nodes. The DOCSIS Management Module (DMM) supports Opti Max OM4120 and OM6000 1.2 GHz nodes. The NODE-DOCSIS module supports legacy Motorola SG4000 nodes.

DOCSIS MANAGEMENT MODULE (DMM) SPECIFICATIONS (NOTE 1)

Characteristics	Specification
Powering	
Maximum	4.4 W
Typical, assuming < 5% Transmit time	< 4.0 W
RF Characteristics	
Downstream RF Input	-15 dBmV to +15 dBmV, 88 to 860 MHz
Upstream RF Output	+8 dBmV to +58 dBmV, 5 to 42 MHz
Return Loss	Greater than 8 dB typical
Status Table Rebuild/download	At power up and plug-in module change
Alarm limit values (Note 2)	Default values from plug-in module at 1st power up. User values subsequently
Indicators	
DOCSIS Functionality Indicators (LEDs 1 - 5, all green)	Power, DS, US, ONLINE (Link Activity), ENET (E-link Activity)
Status	Varies on SMC Module for OM4120 and OM6000 Nodes
Environmental Operation	
Operating Temperature	-40° to 140°F (-40° to 60°C)
Storage Temperature	-40° to 194°F (-40° to 90°C), compliant to IEC 68
Humidity	0 to 95%, noncondensing
Physical	
Size (L x W x H)	6.0 x 1.2 x 4.84 in. (152.4 x 30.48 x 122.94 mm)
Weight, max.	16 oz. (453.59 grams), typical
Local port connector(s)	RJ-45
Tamper Switch-optical sensor type	Phototransistor sensor

NOTES:

1. The DOCSIS Management Module (DMM) is presently available for Opti Max OM4120 and OM6000 nodes.
2. Alarm limit values are the user alarms if a module of the same part number is substituted; default alarms if a different part is substituted. Remote Factory Reset causes the default alarms to be reloaded.

DOCSIS TRANSPONDER SPECIFICATIONS (NOTE 1)

Characteristics	Specification
Powering	
Power Requirements	PIN 2
Power Consumption, Maximum	4.4 W @ +24 VDC \pm 5%
Power Consumption, Typical, assuming < 5% Transmit time	< 4.0 W @ +24 V, 25°C ambient
RF Requirements (Forward RF in Port A; Return RF out Port B)	
Input Return Loss (75 ohm nominal)	-15 dBmV to +15 dBmV, 88 to 860 MHz, min.
Output Return Loss (75 ohm nominal)	+8 dBmV to +58 dBmV, 5 to 42 MHz
Spurious from Input Return Loss (Note 2)	-55 dBc 50-1000 MHz or < -35 dBmV 50 to 1500 MHz
Spurious from Output Return Loss (+40 dBmV transmitted)	-55 dBc 5-200 MHz or < -15 dBmV 5 to 200 MHz
Return Loss	Greater than 8 dB typical
I²C Requirements and EMS Interface (PIN 19 I²C clock; PIN 3 I²C Data)	
eMAP Rebuild/download (Note 3)	At power up and plug-in module change
Alarm limit values (Note 4)	Default values from plug-in module at 1st power up. User values from daughter card subsequently
Indicators	
DOCSIS Functionality Indicators (LEDs 1 - 5, all green)	Power, DS, US, ONLINE (Link Activity), LOCAL (E-link Activity)
Status (LED 6, green)	Varies (see Table 1.5, in the DOCSIS Transponder Equipment Manual (P/N 1506534))
Environmental Operation	
Operating Temperature	-40° to 185°F (-40° to 85°C)
Storage Temperature	-40° to 194°F (-40° to 90°C), compliant to IEC 68
Humidity	0 to 95%, noncondensing
Physical	
Size (L x W x H)	6.0 x 1.2 x 4.84 in. (152.4 x 30.48 x 122.94 mm)
Weight, max.	16 oz. (453.59 grams), typical
Interface Connector (to node or amplifier)	CVI LUX25W3PCH32175I12 (on transponder)
Local port connector(s)	RJ-45
Programming development/Debug Connector	RJ-45 Ethernet Port (Local Port)
Tamper Switch-optical sensor type	Phototransistor sensor

NOTES:

1. The DOCSIS Transponder is presently available for Opti Max OM4100 and OM2741 nodes.
2. Typical OM4100 Forward DOCSIS RF levels at DC-16 Transponder pick-off are +9/+2 dBmV minimum, 860/55 MHz, with 0 dB, plug-in attenuator in Transponder input. Typical OM2741 Forward DOCSIS RF levels at Transponder input are -4 dBmV/6 MHz flat, minimum.
3. eMAP download-Transponder provides function to download and display eMap data via Telenet.
4. Alarm limit values are the user alarms if a module of the same part number is substituted; default alarms if a different part is substituted. Remote Factory Reset causes the default alarms to be reloaded into the eMAP.

NODE-DOCSIS SPECIFICATIONS

Characteristics	Specification
General Specifications	
DOCSIS	Version 2.0
HMS Monitoring Protocol	SNMP v1
DOCSIS Monitoring Protocol	SNMP v1, v2, v3
RF Interface	Internal
Ethernet Interface	RJ45
EMI/EMC	FCC Part 15 Class A, CE EN50022 Class A
Current Consumption	210 mA DC
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
Bandwidth	6 MHz (-004-00)
	8 MHz (-003-00)
Mechanical/Environmental	
Dimensions	6.5 in L x 1 in W x 2.2 in D
Weight	< 1.0 lb
Operating Temperature	-40° to 140°F (-40° to 60°C)
Humidity	10 to 90% non-condensing

ORDERING INFORMATION

Model Name	Part Number	Description
DOCSIS Transponder	66900-652	DOCSIS Transponder for OM2741 and OM4100 Optical Nodes
DOCSIS Management Module (DMM)	1510058-003	DOCSIS Transponder for OM4120 and OM6000 Optical Nodes
NODE-EURO-DOCSIS	548568-003-00	NODE-EURO-DOCSIS Transponder for SG4000 Optical Nodes
NODE-DOCSIS	548568-004-00	NODE-DOCSIS Transponder for SG4000 Optical Nodes

RELATED PRODUCTS

Opti Max Nodes	Status Monitor Card
SG4000 Nodes	CORView Element Management Software
Daughter Card	Installation Services

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

Note: Specifications are subject to change without notice.

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Node-Transponder