MOTOROLA

1 GHz SG4000 Modular Optical Node Platform

Scalable Network Solution

Motorola's 1 GHz SG4000 modular node features the latest technology to allow cable operators to support advanced fiber node architectures.

FEATURES

1 GHz E-GaAs performance

Up to four optical receivers

Up to four optical transmitters

High-speed digital return technology

Six RF/AC port locations

Status monitor transponder

- CheetahNet
- HMS-compliant

Hot-swap modules

User-friendly fiber management

Redundant powering capability

15 A power passing

Ingress control switches

The Motorola SG4000 modular optical node provides an unprecedented level of performance and flexibility. The SG4000 is now available with a 1003 MHz forward path passband to accommodate increased bandwidth requirements. With provisions for up to nine optics modules in the lid, the SG4000 scales from its most basic version to full 4x4 capability without any loss of initial investment and with minimal service interruptions. Independent RF modules in the base are the foundation for total segmentation and provide excellent port-to-port isolation. Unique configuration boards plug in to the lid router to direct the signal flow as the station expands to handle increased network demands.

The SG4000 features CWDM or DWDM return path transmitter modules to facilitate node segmentation with the optimum re-use of existing fibers. With the addition of optical passives, forward and return path signals can be Wave Division Multiplexed (WDM) onto a single fiber. The SG4-DRT-2X is Motorola's high-speed digital return solution that combines two independent 5 to 65 MHz RF inputs into a single wavelength based on the ITU frequency grid. The SG4000 supports plug-in diplex filters to allow a shift to an NGNA diplex split when appropriate.

The SG4000 supports status monitoring, either with the Tollgrade CheetahNet platform or with an HMS-compliant version. Redundant power supplies and optics modules provide the reliability and performance required for supporting advanced services.

SPECIFICATIONS

OPTICAL RECEIVER	
Optical Wavelength	1310±20 nm, 1550±30 nm
Optical Input Power Range	–3.0 to +2.0 dBm continuous
Optical Connector Type	SC/APC or E2000
Optical Input Return Loss	45 dB minimum
RF	
Operational Bandwidth	F_{min} to 1003 MHz
Flatness	±0.75 dB F_{min} to 1003 MHz
Output Slope	14.5±1.0 dB
Level Stability	±1.5 dB over operating temperature range
RF Output Test Points	–20±0.5 dB (internal)
RF Output Impedance	75 Ω
RF Output Return Loss	16 dB minimum
STATION PERFORMANCE	
Output Level	55 dBmV @ 1003 MHz with –3 dBm optical input power
Power Consumption	130 W maximum
Hum Modulation @ 15 A	(–55 dBc, 5 to 10 MHz) (–60 dBc, 11 MHz to $F_{maxret,}$ 871 to 1003 MHz) (–65 dBc, F_{minfwd} to 870 MHz)
Isolation	65 dB, port-to-port
AC Bypass Current	15 A
Measured with 79 channels NTSC at 48 dBmV @ 547.25 MHz with digital loading 6 dB below analog, 550 to 1003 MHz, 20 km optical link, 0 dBm optical input power, GX2 transmitter	
Composite Triple Beat (CTB)	–65 dBc
Composite Second Order (CSO)	–62 dBc
Carrier to Composite Noise (CCN)	51 dB
MECHANICAL/ENVIRONMENTAL	
Dimensions	22.8"L x 11"W x 10.6" D (57.9 cm x 27.5 cm x 26.9 cm)
Weight	48.0 lbs (21.77 kg)
Mounting	Aerial or pedestal
RF Connector Types	SCTE-compliant housing, accepts 1.6" 5/8 stinger
Operating Temperature Range	–40 °F to 140 °F (–40 °C to 60 °C)

1 GHZ STANDARD NODE MODELS	
600000-081-00	SG4-100SS/SXX-CNN-S
600000-077-00	SG4-100SS/SAA-EES-R
600000-079-00	SG4-100SS/SBB-CNN-R
1 GHZ RF MODEL	
525407-001-00	SG4-RF-100-S
1 GHZ RECEIVER	
525408-001-00	SG4-R-100/SC
1 GHZ FORWARD CONFIGURATION BOARDS	
503855-011-00	SG4-100-FS, Forward Split Board, 1 GHz
503855-012-00	SG4-100-FRS, Forward Redundant Split Board, 1 GHz
503855-013-00	SG4-100-FWD-2X, Forward 2X Segment Board, 1 GHz
503855-014-00	SG4-100-FWD-2X-RED, Forward 2X Segment Redundant Board, 1 GHz
503855-015-00	SG4-100-FWD-4X, Forward 4X Segment Board, 1 GHz
1 GHZ LINEAR MID-STAGE EQUALIZERS (LME)	
532002-003-00	LME-100-3
532002-004-00	LME-100-4
532002-005-00	LME-100-5
532002-006-00	LME-100-6
532002-007-00	LME-100-7
532002-008-00	LME-100-8
532002-009-00	LME-100-9
532002-010-00	LME-100-10
1 GHZ PORT ENTRY ASSEMBLY	
525412-001-00	SG4 Port Entry 1 GHz

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