

# Cisco GS7000 1218-MHz 4-Port Fiber Deep Node

## Product Description

Consumer bandwidth demand continues to grow at a rapid rate every year. As a result, cable operators with devices based on DOCSIS<sup>®</sup> need to prepare their networks for the future. They need to plan for reduced service group sizes and ultimately for double or quadruple (or greater) bandwidth speeds. The Cisco<sup>®</sup> GS7000 1218-MHz 4-Port Fiber Deep Node enables them to implement these plans.

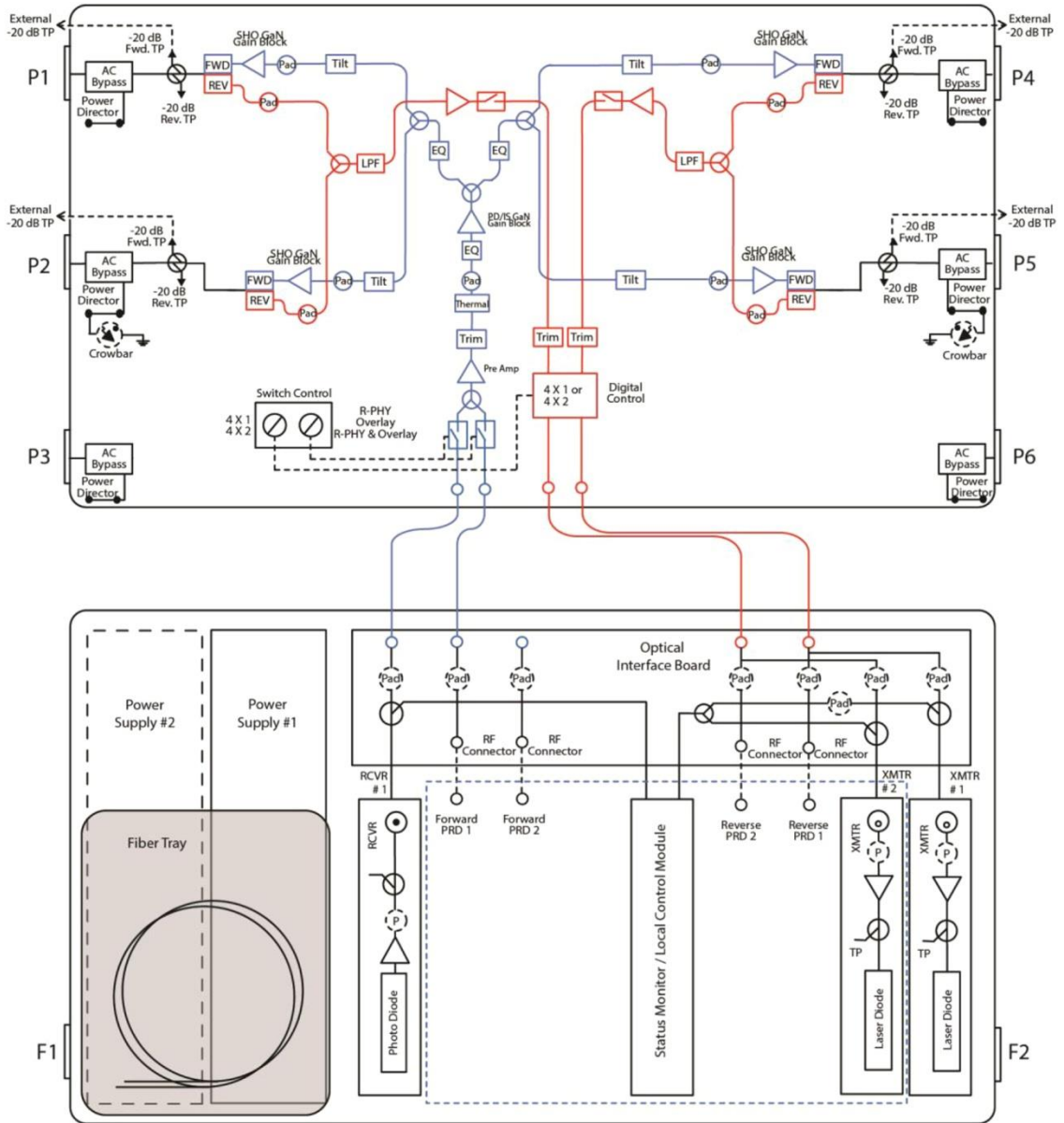
## Features

- Gallium nitride (GaN) gain stages
- Easy forward and reverse RF split changes
- Field-accessible plug-in forward interstage linear equalizers
- 1218-MHz accessories in the Cisco GainMaker<sup>®</sup> style
- Onboard three-state reverse switch (on, off, and 6 dB) allows each reverse input to be isolated for noise and ingress troubleshooting (status monitoring or local control module required)
- Optional status monitoring using a DOCSIS transponder (using standard SCTE-HMS MIBs)
- Fiber entry ports on both ends of housing lid
- Fiber management tray and track for easy access to fiber connections
- Primary and redundant power supplies with passive load sharing
- Spring-loaded seizure assemblies to allow coaxial connectors to be installed or removed without removing amplifier chassis
- Dual or split AC power

## Node Block Diagrams

Figure 1 provides block diagrams of node forward and reverse paths.

Figure 1. Block Diagram



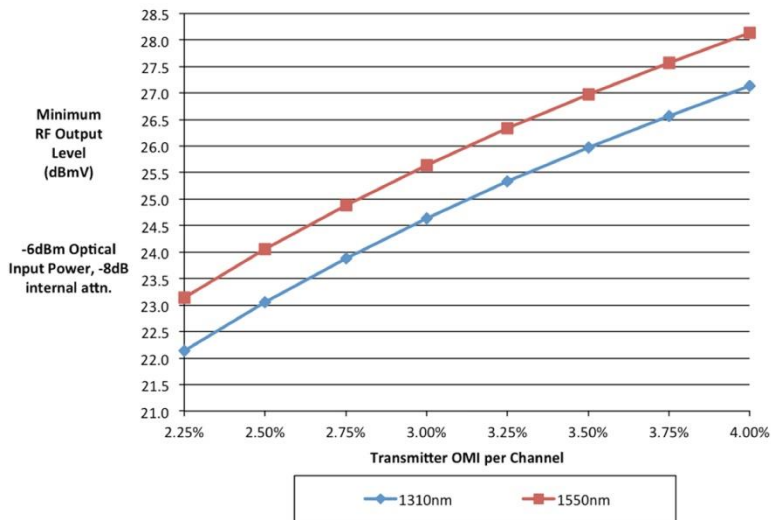
## Optical Section Specifications

Table 1 provides specifications for the optical section of the forward receiver module. Figures 2 and 3 show output levels and optical modulation index (OMI) values at different settings. Tables 2 and 3 summarize station performance characteristics.

**Table 1.** Specifications for Optical Section of Forward Receiver Module

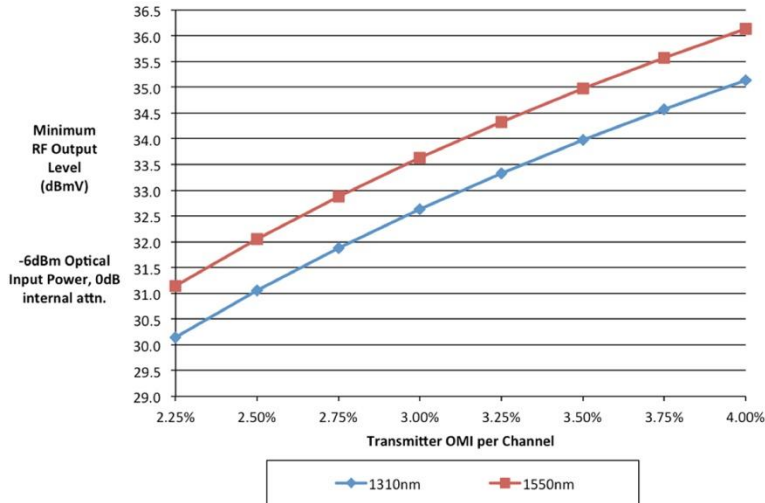
Optical Section: Forward Receiver Module	Units	GS7000 Low-Input Receiver	Notes
Wavelength	nm	1260 to 1620 nm	
Optical input range	<ul style="list-style-type: none"> <li>mW</li> <li>dBm</li> </ul>	<ul style="list-style-type: none"> <li>0.1 to 0.63</li> <li>-8 to -2</li> </ul>	1
RF pass band	MHz	54 to 1218	
Frequency response	dB	$\pm 0.5$	2
Tilt	dB	0 to +1	
Optical input test point ( $\pm 10\%$ )	VDC	1 V per mW	3
Redundant optical receive transponder switching threshold default ( $\pm 1.0$ dB)	dBm	-10	
Receiver RF output level at -2 dBm (or -6 dBm) optical input power	dBmV	Refer to Figures 2 and 3	4
Receiver RF output test point ( $\pm 1.0$ dB)	dB	-20	

**Figure 2.** Low-Input Receiver, RF Output Level Compared to Transmitter OMI: Receiving Switch with -8 dB Setting



Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based on measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

**Figure 3.** Low-Input Receiver, RF Output Level Compared to Transmitter OMI: Receiving Switch with 0 dB Setting



**Notes for Optical Section Specifications:**

- <sup>1</sup> Receiver has a 2-position RF attenuator switch (-8 dB and 0 dB). For the standard receiver, the 0 dB setting is used for -6 to -2 dBm optical input power, and the -8 dB setting is used for -2 to +2 dBm optical input power. For the low-input receiver, the 0 dB setting is used for -10 to -6 dBm optical input power, and the -8 dB setting is used for -6 to -2 dBm optical input power.
- <sup>2</sup> These specifications apply to the forward receiver module only. They do not include frequency response contributions from the forward optical transmitter.
- <sup>3</sup> Optical output refers to a 1310-nm wavelength; for a 1550-nm wavelength, the output is ~1.1 V/mW.
- <sup>4</sup> This specification is the minimum receiver RF output level for the stated transmitter percentage OMI per channel, with the specified receiver optical input power and receiver attenuator setting. To determine RF output levels at other optical input power levels, add (or subtract) 2 dB in the RF level for each 1 dB increase (or decrease) in receiver optical input power.

For reverse optical transmitter and link performance, see the “Analog Reverse Optical Transmitters with Thermal Compensation” data sheet.

**Table 2.** RF Section General Station Performance

General Station Performance	5-85/102 Split	Units	Forward	Reverse	Notes
Pass band		MHz	105 to 1218	5 to 85	
Input and output port return loss		dB	16	16	
Hum modulation at 12A		dB	70 (54 to 870 MHz) 60 (871 to 1218 MHz)	60 (5 to 25 MHz) 70 (26 to 42 MHz)	
Hum modulation at 15A		dB	65 (54 to 870 MHz) 60 (871 to 1218 MHz)	60 (5 to 25 MHz) 65 (26 to 42 MHz)	
Test points (±1.0 dB)		dB	-20	-20	

Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based on measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

**Table 3.** Forward and Reverse Station Performance

Forward Station Performance	5-85/102 Split	Units		Notes
Amplifier type		-	GaN	
Operational gain (minimum)		dB	42	1
Frequency response...				1
	105 to 1002 MHz	dB	±0.5	
	1003 to 1218 MHz	dB	±0.7	
Internal tilt (±1 dB)		dB	21	1, 2
Port-to-port isolation with full segmentation		dB	N/A	1, 7
Port-to-port isolation with left and right segmentation		dB	N/A	1, 7
Noise at:	54 MHz	dB	14.0	1
	1218 MHz		13.0	
Reference output levels at (analog equivalent):	1218 MHz		64	
	1002 MHz		59.9	
	870 MHz		57.4	
	750 MHz	dBmV	55.2	
	650 MHz		53.3	
	550 MHz		51.4	
	105 MHz		43	
Reference output tilt (55 to 1218 MHz)		dB	21	2, 3
<b>78 NTSC Channels (CW) with Digital</b>				<b>6</b>
Composite triple beat		dB	60	4
Composite second order (high side)		dB	62	4
CCN		dB	50	4
<b>All Quadrature Amplitude Modulation (QAM)</b>				<b>6</b>
CCN		dB	51	

Reverse Station Performance	(All Splits)	Units	Reverse	Notes
Amplifier type		-	GaAs FET	
Operational gain (minimum)		dB	2	5
Frequency response		dB	±0.5	5
Internal tilt (+/-1 dB)		dB	0	5
Path-to-path isolation		dB	70 (5 to 85 MHz) 60 (86 to 204 MHz)	5
Noise		dB	7.5 (5 to 85 MHz) 7.7 (86 to 204 MHz)	5

Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based on measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

**Notes:**

1. Forward performance is for the station from the output of the optical receiver to the node RF output port, with 0 dB pad in the optical interface board (OIB), any forward configuration module, 0.5 dB interstage (I/S) pad, 18 dB linear I/S equalization factory-selected output pad, and signal director jumper. This specification includes OIB losses.
2. The reference output tilt and internal tilt are both linear tilt.
3. The forward reference output tilt specified is achieved through field installation of appropriate linear I/S equalization, in conjunction with the internal tilt of the launch amplifier and the tilt associated with the optical link (transmitter and receiver combination).
4. The stated distortion performance is for the launch amplifier section operated at reference output levels and tilts. Full station performance can be determined by combining the optic performance and the launch amplifier performance.
5. Reverse performance is for the station from the reverse input port to the input of the reverse optical transmitter module, with 0 dB reverse input pad.
6. Load with the specified NTSC CW carries from 55 to 550 MHz. "Digital" refers to 550- to 1218-MHz load with QAM carriers at -6 dB relative to analog video carrier levels.
7. Forward path port to port isolation as not specified due to the 1X only downstream configuration for the 4 port fiber deep GS7000 node.

**Other Specifications**

Tables 4 through 7 list other specifications for the GS7000 node.

**Table 4.** Station Delay Characteristics

Station Delay Characteristics		85/102 Split	
Forward (Chrominance-to-Luminance Delay)		Reverse (Group Delay in 1.5-MHz Bandwidth)	
Frequency (MHz)	Delay (nS)	Frequency (MHz)	Delay (nS)
55.25 to 58.83	18	5.0 to 6.5	35
61.25 to 64.83	8	6.5 to 8.0	15
67.25 to 70.83	5	8.0 to 9.5	7.5
		37.5 to 39.0	11
		39.0 to 40.5	14
		40.5 to 42.0	20

**Table 5.** Electrical Data

Electrical	Units					Notes
Maximum AC through current (continuous)	Amps	15				
Maximum AC through current (surge)	Amps	25				
Component DC Power Consumption (Typical)		At +24.5 VDC	At +8.5 VDC	At +5.5 VDC	At -6 VDC	
Launch amplifier configured with 1x4 forward configuration module (with reverse amplifier)	Amps	3.73	0.14	-	-	
1.2 GHz optical receiver (standard and low input)	Amps	0.16	-	-	-	
Reverse transmitter: dense wavelength-division multiplexing (DWDM)	Amps	0.22	-	-	0.10	
Reverse transmitter: 1310 and CWDM	Amps	0.11	-	-	0.09	

Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based on measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

Electrical	Units					Notes
Status monitoring DOCSIS transponder		0.17	-	0.02	-	
Local control module (LCM)		-	-	0.07	-	
1:1 EDR transmitter (CWDM and DWDM)		0.11	-	-	-	
2:1 EDR transmitter (CWDM and DWDM)	Amps	0.26	-	-	-	
Power supply DC current rating	Amps	6.2	1.0	1.3	0.8	

**Table 6.** Station Powering Data

Station Powering Data												
GS7000 Node	I DC (Amps at 24 VDC)		AC Voltage									
			90	85	80	75	70	65	60	55	50	45
With 1 forward receiver, 1x4 forward configuration module, 1 reverse transmitter, and 4x1 reverse configuration module	4.47	AC current (A)	1.7	1.7	1.7	1.8	1.8	2.0	2.1	2.3	2.5	2.8
		Power (W)	119.8	119.45	119.2	119.1	119.0	119.0	119.2	119.3	119.7	120.2

Data is based on the stations configured with the status monitoring transponder. AC currents specified are based on measurements made with a typical CATV type ferro-resonant AC power supply (quasi-square wave).

The DC supply has a fixed undervoltage lockout of 33V AC.

**Table 7.** Environmental and Mechanical Specifications

Environmental	Units	
Operating temperature range	Degrees	-40 to 140°F (-40 to 60°C)
Relative humidity range	Percent	5 to 95%
Mechanical		
Housing Dimensions	Weight	
L x H x D: 21.3 x 11.6 x 11.1 in. (541 x 295 x 282 mm)	Station with 1 receiver, 1 transmitter, 2 power supplies: 50.0 lb. (22.7 kg)	

## Ordering Information

The GS7000 node is available in a variety of configurations, shown in Table 8. You can also select other components during the ordering process (Tables 9 through 13). Consult with your account representative, customer service representative, or system engineer to determine the best configuration for your particular application.

**Table 8.** Cisco GS7000 1.2-GHz Node Configurations

Cisco GS7000 1.2-GHz Node Configurations	Part Number for Ordering
85/102 MHz Split	
GS7K 1.2GHz SHO 85/102, 1P LIRx, 1x4FCM, 4x2RCM, TPA, STDFBRTRY	GS7KH811L13XXXXXXX

Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based on measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

**Table 9.** Cisco GS7000 1.2-GHz Node Accessories

Required Accessories	
<b>Plug-In Pads (attenuators): Available in 1.0 dB Steps from 0 to 20 dB</b> <ul style="list-style-type: none"> <li>• 1 required for Optical Receiver Module installed in the node (for Optical Interface Board)</li> <li>• 1 required for Optical Transmitter Module installed in the node (for Optical Interface Board)</li> <li>• 1 required for each Reverse input path activated unless the 0 dB pads shipped with the node are the correct design value (for Launch Amplifier)</li> </ul>	
Optional Accessories	
<b>Plug-In Forward Linear Equalizers: Available in 1.5 dB Steps from 0 to 24 dB</b> <ul style="list-style-type: none"> <li>• Node ships with one 10.5 dB and two 12.0 dB Linear Equalizers installed for 21 dB of tilt to 1218 MHz (GM-EQL-1.2G-10.5= and GM-EQL-12.G-12=)</li> </ul>	
Plug-In Pads (Attenuators): Available in 1.0 dB Steps from 0 to 20 dB	Part Number for Ordering
GainMaker Plug-in Pad 1.2 GHz, 0dB (Multi=10)	GM-PAD-1.2G-00=
GainMaker Plug-in Pad 1.2 GHz, 1dB (Multi=10)	GM-PAD-1.2G-1.0=
GainMaker Plug-in Pad 1.2 GHz, 2dB (Multi=10)	GM-PAD-1.2G-2.0=
GainMaker Plug-in Pad 1.2 GHz, 3dB (Multi=10)	GM-PAD-1.2G-3.0=
GainMaker Plug-in Pad 1.2 GHz, 4dB (Multi=10)	GM-PAD-1.2G-4.0=
GainMaker Plug-in Pad 1.2 GHz, 5dB (Multi=10)	GM-PAD-1.2G-5.0=
GainMaker Plug-in Pad 1.2 GHz, 6dB (Multi=10)	GM-PAD-1.2G-6.0=
GainMaker Plug-in Pad 1.2 GHz, 7dB (Multi=10)	GM-PAD-1.2G-7.0=
GainMaker Plug-in Pad 1.2 GHz, 8dB (Multi=10)	GM-PAD-1.2G-8.0=
GainMaker Plug-in Pad 1.2 GHz, 9dB (Multi=10)	GM-PAD-1.2G-9.0=
GainMaker Plug-in Pad 1.2 GHz, 10dB (Multi=10)	GM-PAD-1.2G-10.0=
GainMaker Plug-in Pad 1.2 GHz, 11dB (Multi=10)	GM-PAD-1.2G-11.0=
GainMaker Plug-in Pad 1.2 GHz, 12dB (Multi=10)	GM-PAD-1.2G-12.0=
GainMaker Plug-in Pad 1.2 GHz, 13dB (Multi=10)	GM-PAD-1.2G-13.0=
GainMaker Plug-in Pad 1.2 GHz, 14dB (Multi=10)	GM-PAD-1.2G-14.0=
GainMaker Plug-in Pad 1.2 GHz, 15dB (Multi=10)	GM-PAD-1.2G-15.0=
GainMaker Plug-in Pad 1.2 GHz, 16dB (Multi=10)	GM-PAD-1.2G-16.0=
GainMaker Plug-in Pad 1.2 GHz, 17dB (Multi=10)	GM-PAD-1.2G-17.0=
GainMaker Plug-in Pad 1.2 GHz, 18dB (Multi=10)	GM-PAD-1.2G-18.0=
GainMaker Plug-in Pad 1.2 GHz, 19dB (Multi=10)	GM-PAD-1.2G-19.0=
GainMaker Plug-in Pad 1.2 GHz, 20dB (Multi=10)	GM-PAD-1.2G-20.0=
GainMaker Plug-in Pad 1.2 GHz 75ohm Terminator (Multi=10)	GM-PAD-1.2G-75=
<b>Note:</b> Configured nodes ship with 0 dB reverse input pads, but no pads for the OIB. All other standard accessories are shipped from the factory. Four forward launch amplifier output attenuator pads, one launch amp interstage pad, and 3 linear equalizers are shipped with every configured node.	

**Table 10.** Cisco GS7000 Forward Components

Cisco GS7000 Forward Components	Part Number for Ordering
<b>GS7000 Forward Launch Amplifiers</b>	
GS7K Launch Amp 1.2 GHz 85/102 MHz	GS7K-SHO-LA-85=
<b>Forward Linear Equalizers: 1218 MHz (Used in Node Only)</b>	
GainMaker 1.2 GHz Forward Equalizer,0dB (Multi=10)	GM-EQC-1.2G-0=
GainMaker 1.2 GHz Forward Linear Equalizer, 1.5dB (Multi=10)	GM-EQL-1.2G-1.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 3dB (Multi=10)	GM-EQL-1.2G-3=



Cisco GS7000 Forward Components	Part Number for Ordering
GainMaker 1.2 GHz Forward Linear Equalizer, 4.5dB (Multi=10)	GM-EQL-1.2G-4.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 6dB (Multi=10)	GM-EQL-1.2G-6=
GainMaker 1.2 GHz Forward Linear Equalizer, 7.5dB (Multi=10)	GM-EQL-1.2G-7.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 9dB (Multi=10)	GM-EQL-1.2G-9=
GainMaker 1.2 GHz Forward Linear Equalizer, 10.5dB (Multi=10)	GM-EQL-1.2G-10.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 12dB (Multi=10)	GM-EQL-1.2G-12=
GainMaker 1.2 GHz Forward Linear Equalizer, 13.5dB (Multi=10)	GM-EQL-1.2G-13.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 15dB (Multi=10)	GM-EQL-1.2G-15=
GainMaker 1.2 GHz Forward Linear Equalizer, 16.5dB (Multi=10)	GM-EQL-1.2G-16.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 18dB (Multi=10)	GM-EQL-1.2G-18=
GainMaker 1.2 GHz Forward Linear Equalizer, 19.5dB (Multi=10)	GM-EQL-1.2G-19.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 21dB (Multi=10)	GM-EQL-1.2G-21=
GainMaker 1.2 GHz Forward Linear Equalizer, 22.5dB (Multi=10)	GM-EQL-1.2G-22.5=
GainMaker 1.2 GHz Forward Linear Equalizer, 24dB (Multi=10)	GM-EQL-1.2G-24=
<b>GS7000 Forward Low-Current Optical Receivers</b>	
GS7000 1.2 GHz Standard Input Optical Receiver, SCA	GS7K-1.2G-STDRX=
GS7000 1.2 GHz Low Input Optical Receiver, SCA	GS7K-1.2G-LIRX=

**Table 11.** Cisco GS7000 EDR CWDM Transmitter and Optical Pluggable Modules (OPMs)

Digital 1:1 EDR CWDM Transmitter and OPMs	Part Number for Ordering
EDR GS1185 Tx module	4042873
EDR Optical Pluggable Module for 1:1 Tx CWDM-1270nm	4042868.1270
EDR Optical Pluggable Module for 1:1 Tx CWDM-1290nm	4042868.1290
EDR Optical Pluggable Module for 1:1 Tx CWDM-1310nm	4042868.1310
EDR Optical Pluggable Module for 1:1 Tx CWDM-1330nm	4042868.1330
EDR Optical Pluggable Module for 1:1 Tx CWDM-1350nm	4042868.1350
EDR Optical Pluggable Module for 1:1 Tx CWDM-1370nm	4042868.1370
EDR Optical Pluggable Module for 1:1 Tx CWDM-1390nm	4042868.1390
EDR Optical Pluggable Module for 1:1 Tx CWDM-1410nm	4042868.1410
EDR Optical Pluggable Module for 1:1 Tx CWDM-1430nm	4042868.1430
EDR Optical Pluggable Module for 1:1 Tx CWDM-1450nm	4042868.1450
EDR Optical Pluggable Module for 1:1 Tx CWDM-1470nm	4042868.1470
EDR Optical Pluggable Module for 1:1 Tx CWDM-1490nm	4042868.1490
EDR Optical Pluggable Module for 1:1 Tx CWDM-1510nm	4042868.1510
EDR Optical Pluggable Module for 1:1 Tx CWDM-1530nm	4042868.1530
EDR Optical Pluggable Module for 1:1 Tx CWDM-1550nm	4042868.1270
EDR Optical Pluggable Module for 1:1 Tx CWDM-1570nm	4042868.1290
EDR Optical Pluggable Module for 1:1 Tx CWDM-1590nm	4042868.1310
EDR Optical Pluggable Module for 1:1 Tx CWDM-1610nm	4042868.1330
<b>Digital 2:1 EDR CWDM Transmitter and OPMs</b>	
EDR GS2185 Tx module	4042877
EDR Optical Pluggable Module for 2:1 Tx CWDM-1270nm	4042871.1270
EDR Optical Pluggable Module for 2:1 Tx CWDM-1290nm	4042871.1290
EDR Optical Pluggable Module for 2:1 Tx CWDM-1310nm	4042871.1310

EDR Optical Pluggable Module for 2:1 Tx CWDM-1330nm	4042871.1330
EDR Optical Pluggable Module for 2:1 Tx CWDM-1350nm	4042871.1350
EDR Optical Pluggable Module for 2:1 Tx CWDM-1370nm	4042871.1370
EDR Optical Pluggable Module for 2:1 Tx CWDM-1390nm	4042871.1390
EDR Optical Pluggable Module for 2:1 Tx CWDM-1410nm	4042871.1410
EDR Optical Pluggable Module for 2:1 Tx CWDM-1430nm	4042871.1430
EDR Optical Pluggable Module for 2:1 Tx CWDM-1450nm	4042871.1450
EDR Optical Pluggable Module for 2:1 Tx CWDM-1470nm	4042871.1470
EDR Optical Pluggable Module for 2:1 Tx CWDM-1490nm	4042871.1490
EDR Optical Pluggable Module for 2:1 Tx CWDM-1510nm	4042871.1510
EDR Optical Pluggable Module for 2:1 Tx CWDM-1530nm	4042871.1530
EDR Optical Pluggable Module for 2:1 Tx CWDM-1550nm	4042871.1550
EDR Optical Pluggable Module for 2:1 Tx CWDM-1570nm	4042871.1570
EDR Optical Pluggable Module for 2:1 Tx CWDM-1590nm	4042871.1590
EDR Optical Pluggable Module for 2:1 Tx CWDM-1610nm	4042871.1610

**Table 12.** Cisco GS7000 EDR DWDM Transmitter and Optical Pluggable Modules (OPMs)

Digital 1:1 EDR DWDM Transmitter and OPMs	Part Number for Ordering
EDR GS1185 Tx module	4042873
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH17	4042869.17
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH18	4042869.18
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH19	4042869.19
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH20	4042869.20
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH21	4042869.21
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH22	4042869.22
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH23	4042869.23
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH24	4042869.24
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH25	4042869.25
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH26	4042869.26
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH27	4042869.27
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH28	4042869.28
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH29	4042869.29
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH30	4042869.30
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH31	4042869.31
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH32	4042869.32
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH33	4042869.33
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH34	4042869.34
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH35	4042869.35
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH36	4042869.36
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH37	4042869.37
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH38	4042869.38
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH39	4042869.39
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH40	4042869.40
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH41	4042869.41
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH42	4042869.42

EDR Optical Pluggable Module for 1:1 Tx DWDM-CH43	4042869.43
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH44	4042869.44
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH45	4042869.45
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH46	4042869.46
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH47	4042869.48
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH48	4042869.48
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH49	4042869.49
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH50	4042869.50
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH51	4042869.51
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH52	4042869.52
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH53	4042869.53
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH54	4042869.54
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH55	4042869.55
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH56	4042869.56
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH57	4042869.57
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH58	4042869.58
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH59	4042869.59
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH60	4042869.60
EDR Optical Pluggable Module for 1:1 Tx DWDM-CH61	4042869.61
<b>Digital 2:1 EDR DWDM Transmitter and OPMs</b>	<b>Part Number for Ordering</b>
EDR GS2185 Tx module	4042877
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH17	4042872.17
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH18	4042872.18
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH19	4042872.19
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH20	4042872.20
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH21	4042872.21
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH22	4042872.22
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH23	4042872.23
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH24	4042872.24
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH25	4042872.25
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH26	4042872.26
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH27	4042872.27
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH28	4042872.28
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH29	4042872.29
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH30	4042872.30
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH31	4042872.31
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH32	4042872.32
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH33	4042872.33
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH34	4042872.34
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH35	4042872.35
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH36	4042872.36
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH37	4042872.37
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH38	4042872.38
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH39	4042872.39
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH40	4042872.40

EDR Optical Pluggable Module for 2:1 Tx DWDM-CH41	4042872.41
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH42	4042872.42
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH43	4042872.43
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH44	4042872.44
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH45	4042872.45
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH46	4042872.46
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH47	4042872.47
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH48	4042872.48
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH49	4042872.49
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH50	4042872.50
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH51	4042872.51
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH52	4042872.52
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH53	4042872.53
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH54	4042872.54
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH55	4042872.55
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH56	4042872.56
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH57	4042872.57
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH58	4042872.58
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH59	4042872.59
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH60	4042872.60
EDR Optical Pluggable Module for 2:1 Tx DWDM-CH61	4042872.61

**Table 13.** Cisco GS7000 Additional Components

Cisco GS7000 Additional Components	Part Number for Ordering
<b>Housing and OIB</b>	
GS7K 1.2 GHz Housing with OIB and Standard Fiber Tray	GS7K-SHO-HSG-1.2G=
GS7K 1.2 GHz LID with OIB and Standard Fiber Tray	GS7K-SHO-LID=
GS7K 1.2 GHz OIB	GS7K-SHO-OIB=
<b>Optical Fiber Tray Kit</b>	
Brackets for passives used in Expanded Fiber Tray	4027000
Expanded Fiber Tray, without brackets, SCA	4057377
SC APC bulkheads (PKG of 10)	4027740
<b>Power Supply</b>	
GS7000 1.2 GHz Power Supply	GS7K-PS-1.2G=
<b>Local Control Modules and Status Monitoring Modules</b>	
Local Control Module (LCM)	4027113
Local Control Module (LCM) EDR	GS7K-LCM-EDR=
Status Monitoring Module - DOCSIS	GS7K-DOC-TRAN-1.2=
<b>Test Point Cable Kit</b>	
Test Point Cable Kit, (includes the 6 cables required to enable GS7000 housing external test points)	4016084
Test Probe-Long Reach	562580
GS7000 Forward Cable Kit (Kit of 5 Cables)	4019114
GS7000 Reverse Cable Kit (Kit of 5 Cables)	4019115
<b>Frequency Split Kit</b>	
GS7K 1.2 GHz SHO Split Kit 42/54 MHz (QTY=10)	GS7K-SKT-SHO-42=

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