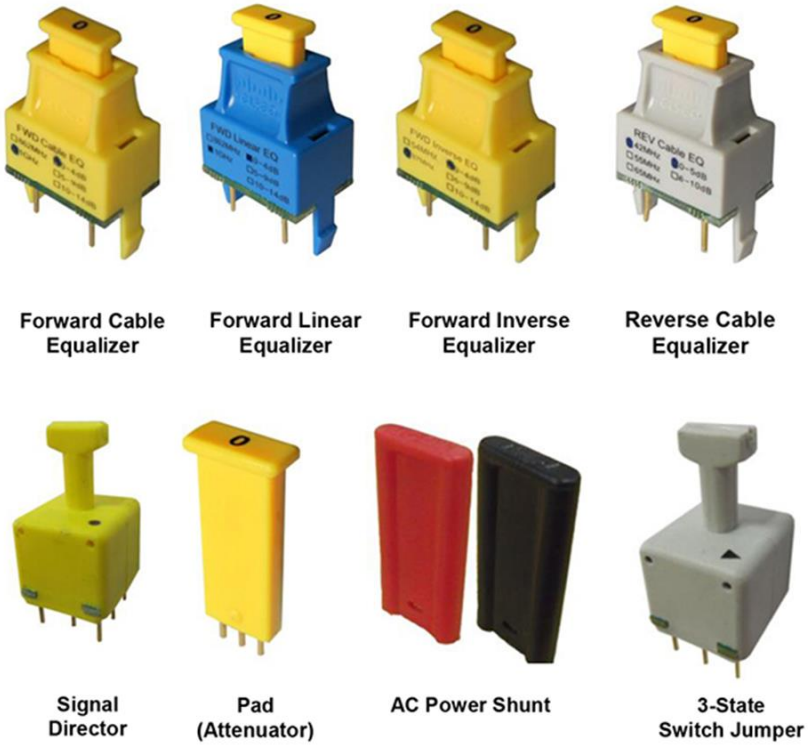
Cisco GainStar Accessories

Cisco® GainStar accessories (Figure 1) are plug-in devices common to all Cisco GainStar nodes, amplifiers, mini nodes, and line extenders. They are typically field-installed in accordance with system design.

Figure 1. Cisco GainStar Accessories



Specifications

Tables 1 through 14 provide product specifications for the Cisco GainStar accessories.

Cisco GainStar Forward Cable Equalizers

Cisco GainStar Forward cable equalizers produce a tilted frequency response opposite of that produced by coaxial cables. To achieve the desired output tilt, they are normally used during station balancing to counteract the tilt produced by coaxial cables. An equalizer's "dB value" indicates the amount of tilt (in dB) that the equalizer produces from 54 MHz to the rated upper frequency. The rated upper frequency (862 MHz or 1 GHz) and rated equalizer (EQ) range are marked on the side of each equalizer. A PAD with the same value (in dB) is selected when a certain EQ value is needed. These accessories are used in the amplifier and line extenders only.

Table 1. Cisco GainStar Forward Cable Equalizers - 1000 MHz (Yellow Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)								
		54	77	86	550	600	650	750	870	1000
0	4034453	0.6	0.6	0.6	0.2	0.2	0.2	0.2	0.2	0.3
1		1.6	1.6	1.6	0.7	0.7	0.6	0.5	0.5	0.6
2		2.6	2.3	2.2	1.2	1.1	1.0	0.9	0.9	0.8
3		3.6	3.5	3.5	1.6	1.5	1.4	1.2	1.0	0.9
4		4.6	4.5	4.4	2.0	1.9	1.8	1.5	1.2	0.9
5	4034454	5.9	5.8	5.7	2.7	2.6	2.3	2.0	1.5	0.9
6		6.8	6.7	6.7	3.1	2.9	2.6	2.2	1.6	0.9
7		7.8	7.7	7.6	3.6	3.3	2.9	2.4	1.7	0.9
8		8.8	8.7	8.6	4.0	3.7	3.2	2.6	1.8	0.9
9		9.8	9.6	9.5	4.3	4.0	3.5	2.8	1.9	0.9
10	4034455	10.7	10.5	10.4	4.7	4.3	3.9	3.1	2.1	1.0
11		11.7	11.5	11.4	5.0	4.6	4.1	3.2	2.1	1.0
12		12.7	12.4	12.3	5.3	4.8	4.3	3.4	2.2	1.0
13		13.6	13.3	13.2	5.5	5.0	4.5	3.5	2.2	1.0
14		14.6	14.2	14.0	5.8	5.2	4.6	3.5	2.2	1.0

Table 2. Cisco GainStar Forward Cable Equalizers - 862 MHz (Yellow Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
		54	77	86	550	600	650	750	862
0	4034450	0.4	0.4	0.5	0.2	0.2	0.1	0.1	0.3
1		1.4	1.4	1.4	0.6	0.5	0.5	0.4	0.4
2		2.4	2.4	2.3	0.9	0.9	0.8	0.6	0.5
3		3.4	3.3	3.3	1.3	1.2	1.1	0.8	0.5
4		4.4	4.3	4.3	1.6	1.5	1.3	1.0	0.5
5	4034451	5.8	5.6	5.6	1.8	1.6	1.3	0.9	0.5
6		6.8	6.6	6.5	2.0	1.7	1.4	0.9	0.5
7		7.7	7.5	7.4	2.3	2.0	1.6	1.0	0.5
8		8.7	8.4	8.3	2.5	2.2	1.7	1.0	0.5
9		9.6	9.4	9.2	2.7	2.3	1.8	1.1	0.8

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
		54	77	86	550	600	650	750	862
10	4034452	10.6	10.3	10.2	3.6	3.1	2.6	1.7	0.8
11		11.5	11.2	11.1	3.7	3.3	2.7	1.7	0.8
12		12.5	12.1	12.0	4.0	3.5	2.8	1.7	0.8
13		13.5	13.1	12.9	4.2	3.6	3.0	1.9	0.8
14		14.4	13.9	13.7	4.4	3.7	3.1	1.9	0.8

Cisco GainStar Forward Linear Equalizers

Cisco GainStar Forward linear equalizers produce linear tilt. A linear equalizer should be used in the plug-in input or output equalizer location if a node output tilt does not have the desired station output tilt. The rated upper frequency (862 MHz or 1000 MHz) and rated EQ range are marked on the side of each equalizer. A PAD with the same value (in dB) is selected when a certain EQ value is needed. These accessories are used in nodes and mini nodes only.

Table 3. Cisco GainStar Forward Linear Equalizers -1000 MHz (Blue Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)								
		54	77	86	550	600	650	750	870	1000
0	4034459	0.6	0.6	0.6	0.3	0.3	0.2	0.2	0.2	0.4
1		1.6	1.6	1.6	0.8	0.8	0.7	0.7	0.6	0.8
2		2.6	2.6	2.6	1.4	1.3	1.2	1.1	1.0	1.0
3		3.6	3.6	3.5	1.9	1.8	1.7	1.5	1.3	1.0
4		4.6	4.5	4.5	2.4	2.3	2.2	2.0	1.8	1.2
5	4034460	5.8	5.8	5.7	2.9	2.7	2.5	2.1	1.6	1.0
6		6.8	6.7	6.7	3.4	3.0	2.8	2.4	1.7	1.0
7		7.8	7.7	7.7	3.8	3.5	3.2	2.6	1.9	1.0
8		8.8	8.7	8.6	4.2	3.9	3.5	2.9	2.0	1.0
9		9.8	9.6	9.5	4.6	4.2	3.8	3.1	2.0	1.0
10	4034461	10.8	10.7	10.6	5.8	5.4	4.9	4.0	2.8	1.0
11		11.8	11.7	11.6	6.1	5.7	5.2	4.2	2.8	1.0
12		12.8	12.6	12.5	6.5	6.0	5.5	4.3	2.9	1.0
13		13.8	13.6	13.5	6.9	6.3	5.7	4.4	2.9	1.0
14		14.7	14.5	14.4	7.2	6.7	6.0	4.5	3.0	1.0

Table 4. Cisco GainStar Forward Linear Equalizers - 862 MHz (Blue Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
		54	77	86	550	600	650	750	862
0	4034456	0.5	0.5	0.5	0.2	0.2	0.1	0.1	0.3
1		1.5	1.5	1.4	0.7	0.6	0.5	0.4	0.6
2		2.5	2.4	2.4	1.1	1.0	0.9	0.8	0.7
3		3.4	3.4	3.3	1.6	1.4	1.3	1.0	0.7
4		4.4	4.4	4.3	2.0	1.8	1.6	1.2	0.7

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
		54	77	86	550	600	650	750	862
5	4034457	5.8	5.8	5.7	2.8	2.7	2.3	1.7	1.0
6		6.8	6.7	6.7	3.3	3.0	2.7	1.9	1.0
7		7.8	7.7	7.6	3.8	3.4	3.1	2.1	1.0
8		8.8	8.7	8.6	4.2	3.8	3.3	2.3	1.0
9		9.8	9.6	9.6	4.5	4.1	3.5	2.5	1.0
10	4034458	10.8	10.6	10.5	5.0	4.5	3.8	2.6	1.0
11		11.8	11.6	11.5	5.3	4.8	4.1	2.7	1.0
12		12.7	12.5	12.4	5.6	5.0	4.3	2.8	1.0
13		13.7	13.5	13.3	5.9	5.3	4.5	2.9	1.0
14		14.7	14.4	14.2	6.2	5.5	4.7	3.0	1.0

Cisco GainStar Forward Inverse Equalizers

Cisco GainStar Forward Inverse Equalizers produce cable equivalent tilt. To achieve the desired output tilt, an inverse equalizer is normally used in place of a forward input equalizer during station balancing when an amplifier is short spaced. An inverse equalizer's "dB value" indicates the amount of tilt (in dB) that would produce similar tilt (loss differential from low to high frequency). The rated lower frequency (54 MHz, 87 MHz, or 105 MHz) is marked on the side of each equalizer. A PAD with the same value (in dB) is selected when a certain EQ value is needed.

Table 5. Cisco GainStar Inverse Equalizers 54 - 1000 MHz (Yellow Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)								
		54	77	86	550	600	650	750	862	1000
0	4035729	0.03	0.06	0.05	0.24	0.27	0.30	0.34	0.39	0.49
1		0.53	0.64	0.65	1.01	1.06	1.10	1.22	1.37	1.60
2		0.63	0.88	0.93	1.67	1.73	1.79	1.95	2.16	2.54
3		0.58	0.92	1.05	2.48	2.57	2.65	2.88	3.16	3.65
4		0.52	0.88	0.98	3.04	3.16	3.26	3.54	3.91	4.51
5	4035730	0.57	0.97	1.12	3.89	4.04	4.20	4.53	4.97	5.68
6		0.53	0.93	1.05	4.49	4.69	4.88	5.31	5.87	6.71
7		0.49	0.88	1.01	5.03	5.29	5.52	6.05	6.67	7.62
8		0.46	0.84	0.96	5.67	5.96	6.24	6.86	7.60	8.74
9		0.42	0.78	0.90	6.27	6.64	6.97	7.69	8.51	9.72
10	4035731	0.60	1.10	1.27	7.44	7.80	8.12	8.89	9.75	10.93
11		0.58	1.08	1.26	7.87	8.29	8.67	9.53	10.50	11.85
12		0.55	1.02	1.17	8.24	8.70	9.12	10.04	11.06	12.38
13		0.53	1.00	1.14	8.59	9.12	9.59	10.69	11.90	13.54
14		0.51	0.96	1.12	8.90	9.52	10.08	11.32	12.74	14.68

Table 6. Cisco GainStar Inverse Equalizers 87 - 1000 MHz (Yellow Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)						
		86	550	600	650	750	862	1000
0	4035732	0.05	0.22	0.24	0.27	0.30	0.35	0.43
1		0.37	0.94	0.99	1.03	1.15	1.28	1.56
2		0.42	1.56	1.63	1.70	1.87	2.10	2.49
3		0.38	2.31	2.41	2.50	2.70	3.01	3.54
4		0.33	2.82	2.94	3.07	3.36	3.80	4.48
5	4035733	0.25	3.43	3.60	3.75	4.11	4.59	5.38
6		0.24	3.97	4.19	4.38	4.84	5.43	6.33
7		0.22	4.42	4.71	4.96	5.55	6.23	7.25
8		0.21	4.93	5.26	5.56	6.24	7.05	8.22
9		0.20	5.40	5.81	6.18	6.97	7.89	9.15
10	4035734	0.68	7.36	7.73	8.07	8.79	9.61	10.72
11		0.63	7.83	8.28	8.68	9.49	10.42	11.68
12		0.60	8.21	8.73	9.21	10.15	11.18	12.49
13		0.58	8.59	9.18	9.73	10.86	12.09	13.69
14		0.56	8.78	9.45	10.08	11.42	12.88	14.85

Table 7. Cisco GainStar Inverse Equalizers 105 - 1000 MHz (Yellow Cover)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)						
		105	550	600	650	750	862	1000
0	GS-FIEQ-105-00-04	0.19	0.33	0.34	0.36	0.42	0.45	0.49
1		0.62	1.10	1.13	1.17	1.27	1.37	1.54
2		0.86	1.88	1.93	2.00	2.15	2.33	2.64
3		0.75	2.50	2.57	2.60	2.86	3.11	3.52
4		0.77	3.14	3.25	3.36	3.62	3.94	4.47
5	GS-FIEQ-105-05-09	0.38	3.55	3.71	3.88	4.25	4.73	5.50
6		0.34	4.19	4.42	4.63	5.09	5.70	6.62
7		0.31	4.79	5.09	5.35	5.91	6.63	7.65
8		0.31	5.07	5.41	5.73	6.40	7.21	8.40
9		0.28	5.46	5.85	6.23	7.00	7.94	9.28
10	GS-FIEQ-105-10-14	0.55	7.03	7.42	7.81	8.52	9.31	10.62
11		0.53	7.64	8.04	8.51	9.31	10.21	11.44
12		0.50	8.24	8.79	9.32	10.27	11.32	12.60
13		0.51	8.47	9.50	10.12	11.21	12.33	13.68
14		0.47	8.81	9.54	10.21	11.52	12.93	14.60

Cisco GainStar Reverse Cable Equalizers

Cisco GainStar Reverse Cable Equalizers produce a tilted frequency response opposite of that produced by coaxial cable. They are normally used during station balancing to counteract the tilt produced by coaxial cable, in order to achieve the desired tilt. An equalizer's "dB value" indicates the amount of tilt (in dB, at the rated high frequency) that the equalizer is designed to offset. The rated high frequency (42 MHz, 65 MHz, or 85 MHz) and rated EQ range are marked on the side of each equalizer. A PAD with the same value (in dB) is selected when a certain EQ value is needed.

Table 8. Cisco GainStar Reverse Equalizers - 42 MHz

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)		
		5	40	42
0	4034465	0.7	0.5	0.5
1		1.7	0.6	0.6
2		2.6	0.7	0.7
3		3.6	0.8	0.7
4		4.5	0.9	0.8
5		5.5	1.0	0.9
6	4034466	6.7	1.0	1.0
7		7.6	1.0	1.0
8		8.6	1.1	1.0
9		9.5	1.2	1.0
10		10.4	1.2	1.0

Table 9. Cisco GainStar Reverse Equalizers - 65 MHz

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)	
		5	65
0	4034462	0.8	0.6
1		1.8	0.7
2		2.8	0.8
3		3.8	0.9
4		4.8	1.0
5		5.7	1.0
6	4034463	6.7	0.6
7		7.7	0.6
8		8.6	0.6
9		9.6	0.6
10		10.6	0.7

Table 10. Cisco GainStar Reverse Equalizers - 85 MHz

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)	
		5	85
0	GS-REQ-85-00-05	0.68	0.31
1		1.68	0.33
2		2.65	0.32
3		3.67	0.34
4		4.65	0.35
5		5.65	0.34
6	GS-REQ-85-06-10	6.71	0.52
7		7.58	0.53
8		8.68	0.55
9		9.66	0.56
10		10.64	0.60

Cisco GainStar Signal Directors

Cisco GainStar Signal Directors are used as a two-way splitter to feed the signal into both “Main” and “Aux” ports, or as a jumper, to route all signals to a selected port (Main port).

Table 11. Cisco GainStar Signal Directors (yellow cover)

Type	Part Number	Auxiliary/Through Leg	Typical Insertion Loss (dB) at Various Frequencies (MHz)								
			52	70	86	550	600	650	750	870	1002
Jumper	4034468	-	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.7
Two-way splitter		Aux 1	3.2	3.2	3.2	3.4	3.5	3.5	3.6	3.7	3.8
		Aux 2	3.2	3.2	3.2	3.4	3.5	3.5	3.6	3.7	3.8

Cisco GainStar Pads (Attenuators)

Plug-in pads produce flat (even) loss across the forward and reverse frequency spectrums. Pads are used during station balancing to adjust signal levels as needed. The (dB) loss produced is equal to the pad value printed on the top of the pad. The pads listed below are rated for operation to 1 GHz. Specially, the pad with “75Ω” printed on the top will work as a 75Ω terminator.

Table 12. Cisco GainStar Pads

Pad Value (dB)	Part Number
0	4036021
1	4036022
2	4036023
3	4036024
4	4036025
5	4036026
6	4036027
7	4036028
8	4036029

Pad Value (dB)	Part Number
9	4036030
10	4036031
11	4036032
12	4036033
13	4036034
14	4036035
15	4036036
16	4036037
17	4036038
18	4036039
19	4036040
20	4036041
75Ω Terminator	4036140

Cisco GainStar AC Power Shunt

To set the power direction, an AC power shunt will be installed for the ports through which the AC power would pass. The red shunt is used to activate the port that supplies power, and the black shunt is used for the output port to supply power for next stage.

Table 13. Cisco GainStar AC Power Shunt

Type	Part Number
Black	4034476
Red	4034477

Cisco GainStar 3 - State Switch Jumper

Cisco GainStar 3 - State Switch Jumper is used in nodes and amplifiers only.

Table 14. Cisco GainStar 3 - State Switch Jumper

Type	Part Number
GainStar 3 - State Switch Jumper	4034473

Ordering Information

To place an order, visit the Cisco Ordering Home Page and refer to the ordering number information provided in Tables 1 through 14.

For More Information

Cisco 1 GHz GainStar accessories offer the industry's most complete range of high-performance components. For additional information on amplifiers, please go to:
http://www.cisco.com/c/en/us/products/video/gainstar-amplifiers/index.html

For additional information on nodes, please go to:
http://www.cisco.com/c/en/us/products/video/gainstar-nodes/index.html

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