Optoelectronics

Scientific Atlanta

Model 6940/6944
Optoelectronic Node Accessories

Description

The Model 6940 and Model 6944 Nodes utilize plug-in accessories that are common to all Model 6940 and Model 6944 Nodes. They are typically field installed in accordance with system design. The accessories specified in this document include:

Forward Equalizers (linear)

Forward equalizers produce a tilted frequency response opposite of that produced by coaxial cable. Standard forward equalizers produce a tilted frequency response across the specified bandwidth **with** additional shaping to counteract the effects of normal coaxial cable response.

Linear versions of forward equalizers provide a "flat" tilt across the specified bandwidth **without** any additional shaping to counteract normal cable response. Linear forward equalizers are used in node applications where there is no input coaxial cable before the first RF gain stage.

An equalizer's "dB value" indicates the equivalent length of cable (in dB, at rated high frequency) that the equalizer is designed to offset. The dB value and rated high frequency (750 or 870 MHz) are printed on the top of each equalizer.

Inverse Equalizers (cable simulators)

Inverse equalizers produce cable equivalent tilt. An inverse equalizer is normally used in place of a forward input equalizer during station balancing when an amplifier is short spaced, in order to achieve the desired output tilt. An inverse equalizer's "dB value" indicates the length of cable (in dB) that would produce similar tilt (loss differential from low to high frequency). The 870 MHz inverse equalizer values are printed on the top of each inverse equalizer.

Pads (attenuators)

Plug-in pads produce flat (even) loss across the forward and reverse frequency spectrums. Pads are used during station balancing to adjust amplifier signal levels as needed. The (dB) loss produced is equal to the pad value printed on the top of the pad.

Reverse Equalizers

Reverse 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 desired tilt. An equalizer's "dB value" indicates the equivalent length of cable (in dB, at rated high frequency) that the equalizer is designed to offset. The dB value and rated high frequency (42, 55, or 65 MHz) are printed on the top of each equalizer.

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Forward Equalizers - 870 MHz (linear)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
		52	70	86	550	600	650	750	870
0	717929	-	-	-	-	-	-	-	-
1.5	590986	2.5	2.5	2.4	1.6	1.5	1.4	1.2	1.0
3.0	590987	4.0	3.9	3.9	2.2	2.0	1.8	1.4	1.0
4.5	590988	5.5	5.4	5.3	2.8	2.5	2.2	1.7	1.0
6.0	590989	7.0	6.9	6.8	3.3	3.0	2.6	1.9	1.0
7.5	590990	8.5	8.3	8.2	3.9	3.5	3.0	2.1	1.0
9.0	590991	1.0	9.8	9.6	4.5	4.0	3.4	2.3	1.0
10.5	590992	11.5	11.3	11.1	5.1	4.5	3.8	2.5	1.0
12.0	590993	13.0	12.7	12.5	5.7	5.0	4.2	2.8	1.0
13.5	590994	14.5	14.2	13.9	6.3	5.5	4.6	3.0	1.0
15.0	590995	16.0	15.7	15.4	6.9	6.0	5.0	3.2	1.0

Forward Equalizers - 750 MHz (linear)

EQ Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)						
		52	70	86	550	600	650	750
0	717929	-	-	-	-	-	-	-
1.5	590976	2.5	2.5	2.4	1.4	1.3	1.2	1.0
3.0	590977	4.0	3.9	3.9	1.9	1.6	1.4	1.0
4.5	590978	5.5	5.4	5.3	2.3	2.0	1.6	1.0
6.0	590979	7.0	6.8	6.7	2.7	2.3	1.9	1.0
7.5	590980	8.5	8.3	8.1	3.1	2.6	2.1	1.0
9.0	590981	10.0	9.8	9.6	3.6	2.9	2.3	1.0
10.5	590982	11.5	11.2	11.0	4.0	3.3	2.5	1.0
12.0	590983	13.0	12.7	12.4	4.4	3.6	2.7	1.0
13.5	590984	14.5	14.2	13.8	4.9	3.9	2.9	1.0
15.0	590985	16.0	15.6	15.3	5.3	4.2	3.1	1.0

Inverse Equalizers - 870 MHz (cable simulators)

Inverse EQ 870 MHz Value (dB)	Inverse EQ 750 MHz Value (dB)	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
			52	70	86	550	600	650	750	870
1.5	1.4	591010	0.5	0.5	0.5	1.1	1.1	1.2	1.2	1.3
3.0	2.8	591011	0.5	0.5	0.5	1.9	2.0	2.1	2.3	2.5
4.5	4.1	591012	0.5	0.5	0.5	2.8	2.9	3.1	3.4	3.7
6.0	5.5	591013	0.5	0.5	0.5	3.5	3.7	4.0	4.4	4.8
7.5	6.9	591014	0.5	0.5	0.6	4.1	4.4	4.7	5.3	5.9
9.0	8.3	591015	0.5	0.5	0.7	5.1	5.4	5.7	6.4	7.1
10.5	9.6	591016	0.5	0.6	0.8	6.1	6.5	6.9	7.6	8.4
12.0	11.0	591017	0.5	0.7	0.9	6.9	7.3	7.8	8.6	9.5
13.5	12.4	591018	0.5	0.8	1.2	7.9	8.4	9.0	9.9	10.9
15.0	13.8	591019	0.5	0.8	1.2	8.7	9.3	9.9	11.0	12.2

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Plug-in Splitter / Jumpers

Type	Part Number	Typical Insertion Loss (dB) at Various Frequencies (MHz)							
		52	70	86	550	600	650	750	870
2-way Splitter	747951	3.5	3.5	3.5	4.2	4.3	4.4	4.5	4.6
Jumper (0.25")*	716844	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
Jumper (0.50")**	716845	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3

* 0.25" for DCSP1 & DCSP2 location on Model 6940

** 0.50" for Bridger Switch location on Model 6940 and activation of ports 1/2 & 5/6 on Model 6944

Reverse Equalizers – 42 MHz

EQ Value (dB)	Part Number	Typical Insertion Loss (dB)	
		5 MHz	42 MHz
0	591056	-	-
1.5	591057	1.6	1.0
3.0	591058	3.0	1.0
4.5	591059	3.9	1.0
6.0	591060	4.9	1.0
7.5	591061	5.9	1.0
9.0	591062	6.9	1.0
10.5	591063	7.9	1.0
12.0	591064	8.9	1.0

Reverse Equalizers – 55 MHz

EQ Value at 55 MHz (dB)	Part Number	Typical Insertion Loss (dB)	
		5 MHz	55 MHz
0	591071	-	-
1	591072	1.7	1.0
2	591073	2.4	1.0
3	591074	3.1	1.0
4	591075	3.8	1.0
5	591076	4.5	1.0
6	591077	5.2	1.0
7	591078	5.9	1.0
8	591079	6.7	1.0
9	591080	7.4	1.0
10	591081	8.1	1.0
11	591082	8.8	1.0
12	591083	9.5	1.0

Reverse Equalizers – 65 MHz

EQ Value at 65 MHz (dB)	Part Number	Typical Insertion Loss (dB)	
		5 MHz	65 MHz
0	591084	-	-
1	591085	1.7	1.0
2	591086	2.5	1.0
3	591087	3.2	1.0
4	591088	3.9	1.0
5	591089	4.7	1.0
6	591090	5.4	1.0
7	591091	6.1	1.0
8	591092	6.9	1.0
9	591093	7.6	1.0
10	591094	8.3	1.0
11	591095	9.0	1.0
12	591096	9.8	1.0

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Pads (attenuators)

Pad Value (dB)	Part Number	Pad Value (dB)	Part Number
0	279500	0.5	565231
1	279501	1.5	565232
2	279502	2.5	565233
3	279503	3.5	565234
4	279504	4.5	565235
5	279505	5.5	565236
6	279506	6.5	565237
7	279507	7.5	565238
8	279508	8.5	565239
9	279509	9.5	565240
10	279510	10.5	565241
11	279511	11.5	565242
12	279512	12.5	565243
13	279513	13.5	565244
14	504151	14.5	565245
15	504152	15.5	565246
16	504153	16.5	565247
17	504154	17.5	565248
18	504155	18.5	565249
19	504156	19.5	565250
20	504157	20.5	565251
75 ohm terminator	279524		

Unless otherwise noted, all specifications listed reflect typical performance and are referenced to 68°F (20°C).

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