

Multimedia Line Equalizer/Reverse Conditioner 1 GHz – 42/54 MHz Split

Description

The Multimedia Line Equalizer/Reverse Conditioner (LEQ/RC) is utilized in the coaxial portion of the HFC plant to perform two important functions.

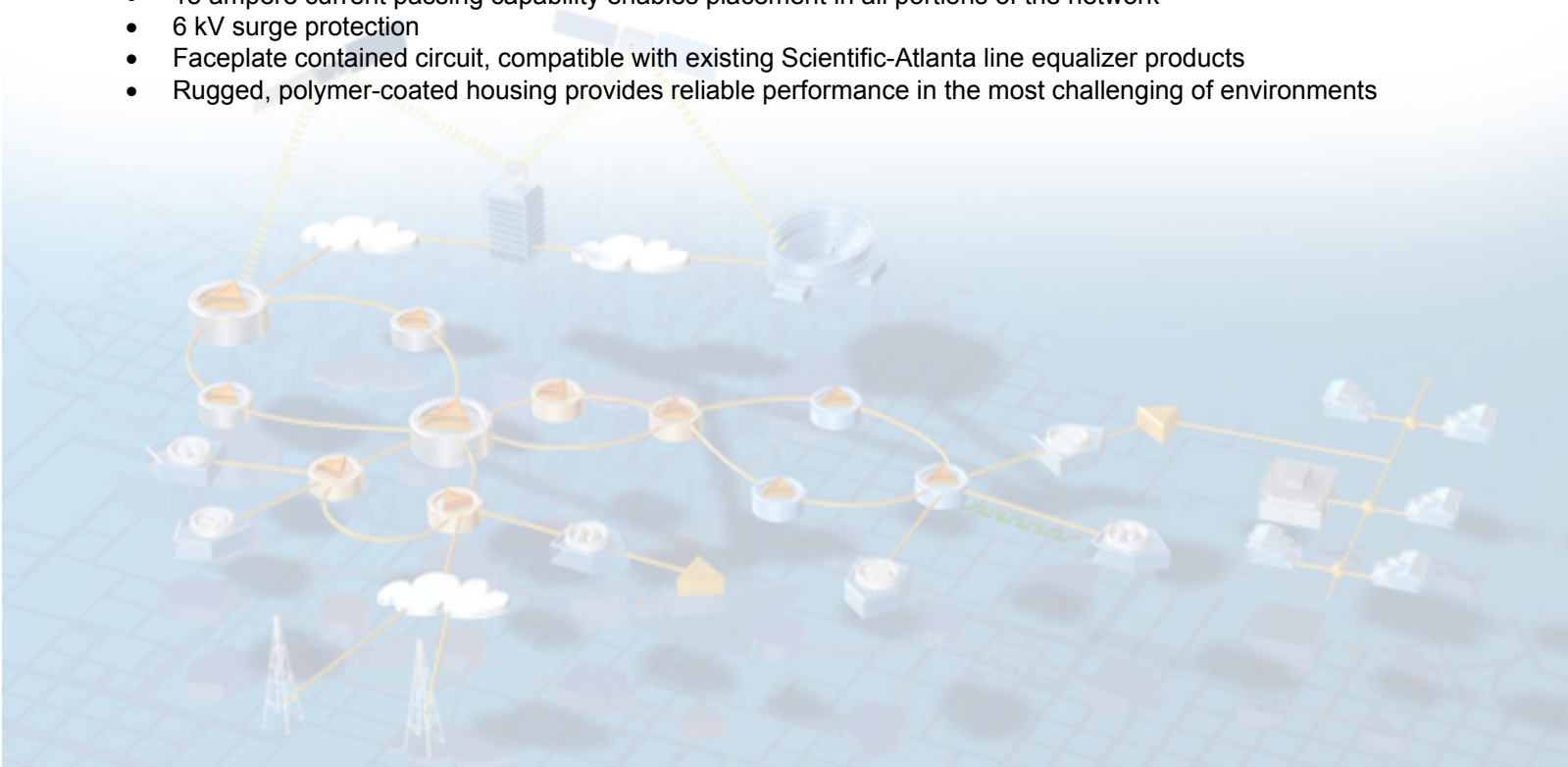
In the forward path, the fixed forward equalizer offsets undesirable down-tilt associated with cumulative cable and passive losses. This allows tap port RF levels to be maintained within desired design limits even at taps located near end of lines.

In the reverse path, the use of plug-in attenuation allows RF levels to be conditioned for optimal performance of critical reverse path services. By selectively adding reverse attenuation at LEQ/RC locations, the range of RF levels transmitted from closed loop customer premise equipment in a given service area can be narrowed considerably. With greater percentages of devices such as high speed data and telephony modems transmitting in the upper end of their RF transmit range, improvements in carrier-to-ingress and carrier-to-noise performance can be realized.



Features

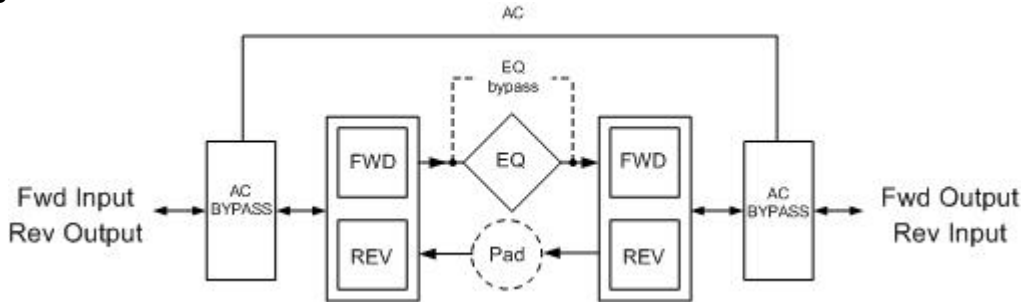
- Fixed 9 or 11 dB forward equalizers
- Plug-in attenuator location for reverse path optimization
- Connection Beam non-interruptible AC/RF bypass maximized network availability during maintenance periods
- Equalizer in/out bypass enables reverse conditioning deployment network locations where forward equalization is not desired
- 15 ampere current passing capability enables placement in all portions of the network
- 6 kV surge protection
- Faceplate contained circuit, compatible with existing Scientific-Atlanta line equalizer products
- Rugged, polymer-coated housing provides reliable performance in the most challenging of environments



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Block Diagram



Performance Specifications

Parameter	Frequency (MHz)	Bypass Mode		9 dB Equalization Mode		11 dB Equalization Mode	
		Typical	Maximum	Typical	Maximum	Typical	Maximum
Bandwidth Split (MHz)	---	42/54		42/54		42/54	
Cable Equalization (dB)	54-1000	none		9 dB		11 dB	
Insertion Loss	5	0.5	1.0	0.5	1.0	0.5	1.0
	10	0.4	1.0	0.4	1.0	0.4	1.0
	40	0.7	1.0	0.7	1.0	0.7	1.0
	42	0.9	1.3	0.9	1.3	0.9	1.3
	54	1.2	1.3	8.9	9.6	10.7	11.4
	100	0.6	1.3	8.1	9.0	9.8	10.5
	450	0.9	1.3	5.7	6.0	5.9	6.7
	550	1.0	1.4	4.5	5.1	4.8	5.8
	650	1.0	1.7	3.7	4.5	4.0	5.0
	750	1.1	1.8	3.1	3.9	3.3	4.3
	870	1.4	2.0	2.3	3.2	2.7	3.5
1000	1.9	2.2	2.4	2.7	2.5	2.7	

Parameter	Frequency (MHz)	Bypass Mode		9 dB Equalization Mode		11 dB Equalization Mode	
		Typical	Minimum	Typical	Minimum	Typical	Minimum
Return Loss (dB)	5-10	17	15.5	17	15.5	17	15.5
	11-42	19	16	19	16	19	16
	54-1000	20	16	18	16	18	16

Parameter	Frequency (MHz)	Bypass Mode	9 dB Equalization Mode	11 dB Equalization Mode
		Typical / Maximum	Typical / Maximum	Typical / Maximum
Flatness (dB)	5-42	± 0.3 typ / ± 0.65 max	± 0.3 typ / ± 0.65 max	± 0.3 typ / ± 0.65 max
	54-1000	± 0.5 typ / ± 0.75 max	± 0.4 typ / ± 0.5 max	± 0.4 typ / ± 0.5 max
Power Passing (amps)	---	15 A (continuous)	15 A (continuous)	15 A (continuous)
Hum Modulation (-dBc) @12 A	5-10	60	60	60
	11-1000	65	65	65

Typical Delay Forward (54-1000 MHz)		Reverse (5-42 MHz)	
Frequency (MHz)	Delay (ns)	Frequency (MHz)	Delay (ns)
55.25-58.83	15	5.0-6.5	40
61.25-64.83	7	6.5-8.0	20
		8.0-9.5	9
		37.5-39.0	7
		39.0-40.5	8
		40.5-42.0	17

Notes:

1. Chrominance/Luminance at 3:58 MHz above the video carrier
2. Propagation delay in 2 MHz bandwidth

Unless otherwise noted, the above specifications reflect typical station performance at stated reference levels in the recommended operating configuration(s). Specifications are based upon measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

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Ordering Information

Description	Part Number
Multimedia LEQ/RC, 42/54 MHz split, 9 dB Forward EQ	4008461
Multimedia LEQ/RC, 42/54 MHz split, 11 dB Forward EQ	4008462

Plug-in Attenuators – (attenuators above 15 dB are not recommended)

Value	Part Number	Value	Part Number	Value	Part Number
0 dB	574475	6 dB	574481	12 dB	574487
1 dB	574476	7 dB	574482	13 dB	574488
2 dB	574477	8 dB	574483	14 dB	574489
3 dB	574478	9 dB	574484	15 dB	574490
4 dB	574479	10 dB	574485	75 ohm	574496
5 dB	574480	11 dB	574486		



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