

Surge-Gap™ Drop Amplifier 1 GHz with 42/54 MHz Split

Description

As data, advanced video, and voice services are made available over broadband networks, the demand for signal level at the customer premises has increased. Typically, this increased demand is distributed over various customer segments and is not universal. With that in mind, deployment of amplifiers to high-revenue customers is the most cost-effective solution.

Scientific-Atlanta's Surge-Gap™ Drop Amplifier was specifically designed for the delivery of these advanced services. It provides high-quality RF performance and supports both forward and reverse signal transmissions. Its surge protection, coated housing, and sealed ports ensure reliable operation in harsh environments.



Features

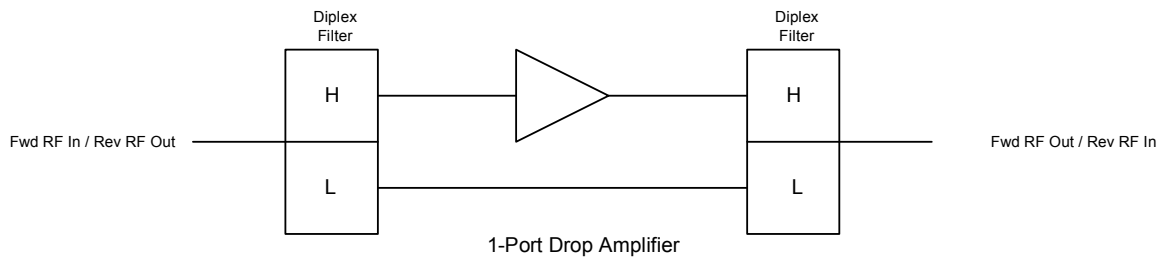
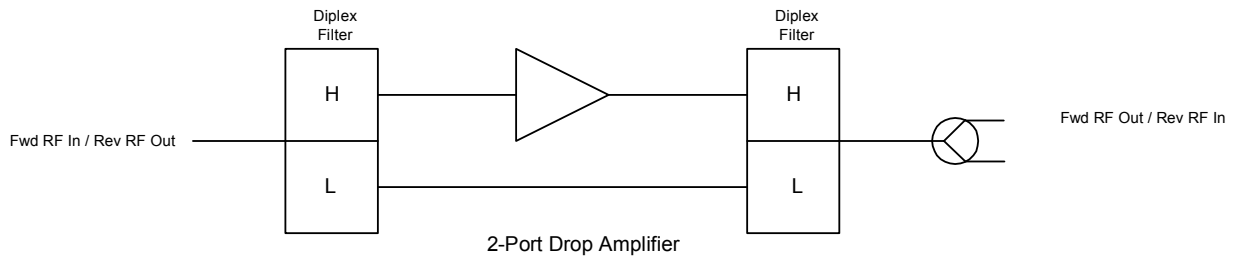
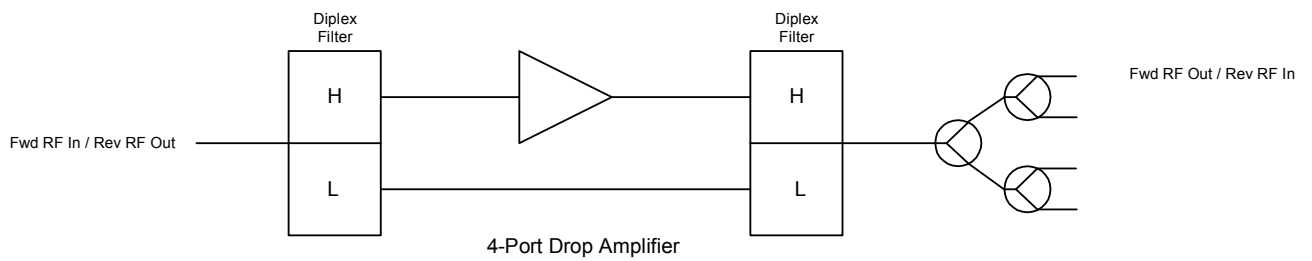
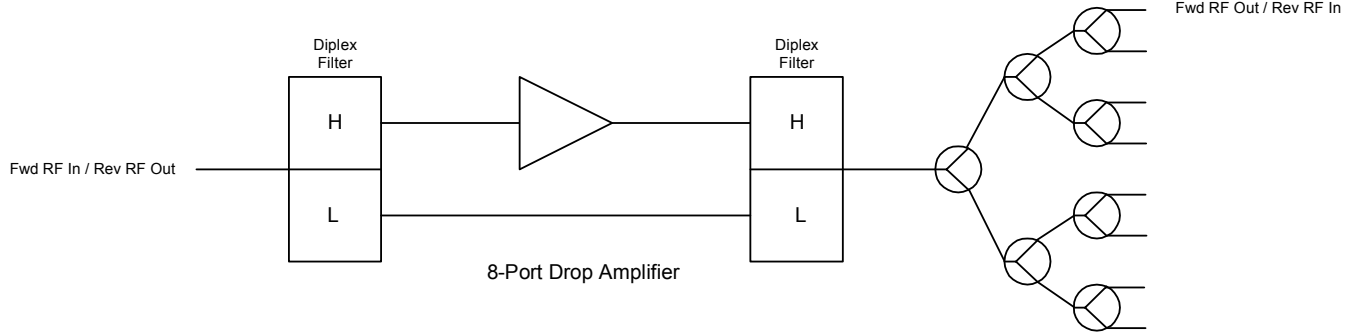
- 6 kV surge resistant input and outputs improve system reliability
- 1 GHz capability minimizes obsolescence concerns
- Available in 1-, 2-, 4-, and 8- output versions
- High-quality RF performance supports digital signal transmission
- Local or remote powering capable
- Improved system reliability
- Coated and sealed housing enables outdoor application
- Advanced heat sinking design enables worry-free indoor application
- Power indicator
- Power supply also available with Positive Temperature Coefficient (PTC) short-circuit protection (optional)



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Block Diagrams



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Specifications

General Station Performance	Units	Forward	Reverse	Notes
Pass Band	MHz	54 - 1000	5-42	
Amplifier Type	---	GaAs FET	N/A	
Frequency Response	dB	± 0.5	± 0.5	
Return Loss (minimum)	dB	18	18	
Port-to-Port Isolation (minimum)	dB	22	22	
Operating Temperature Range	°F (°C)	-40 to +140°F (-40 to +60°C)		
Shielding Effectiveness	dB	110		5

Station Performance	Units	1 Output	2 Output	4 Output	8 Output	Notes
Operational Gain - Forward	dB	15	11	7	3.5	1
Noise Figure	dB	3.0	3.5	3.5	4	
Return Path Insertion Loss	dB	1.5	4.5	7.5	11	1
78 NTSC Channels (CW) with digital						
Composite Triple Beat	dBc	80	80	80	80	2
Cross Modulation	dBc	75	75	75	75	2
Composite Second Order	dBc	64	64	64	64	2
94 NTSC Channels (CW) with digital						
Composite Triple Beat	dBc	78	78	78	78	3
Cross Modulation	dBc	74	74	74	74	3
Composite Second Order	dBc	63	63	63	63	3
110 NTSC Channels (CW) with digital						
Composite Triple Beat	dBc	75	75	75	75	4
Cross Modulation	dBc	73	73	73	73	4
Composite Second Order	dBc	62	62	62	62	4
Electrical Specifications						
RF Input & Output Connectors		"F" - female				
AC Power Input Connector		"F" - female				
Amplifier Voltage requirement	V DC	12-15				
Power Consumption	W	3.0				
Surge Suppression		6 kV Ring Wave, 0.5 kA 2 kV Combination Wave, 1.0 kA 6 kV Combination Wave, 3.0 kA				all ports RF input port & power port
Mechanical Specifications						
Housing Finish		powder paint coated AL360				
Housing Dimensions	in.	5.2 W x 4.7 H x 1.2 D				
Housing Dimensions	mm	132.1 W x 119.4 H x 30.5 D				
Weight	lbs (kg)	1.1 (0.5)				

Power Supply Specifications	Units	120 V Power Supply	120 V Power Supply with PTC	230 V Power Supply	Notes
Input Voltage	V AC	120 @ 60 Hz	120 @ 60 Hz	230 @ 50 Hz	
Output Voltage	V DC	12 ±5% (200mA)	12 ±5% (200mA)	12 ±5% (200mA)	
PTC Specifications					
	Units				Notes
I _{hold}	Amp	0.40			1
I _{trip}	Amp	0.80			2

Notes:

1. I_{hold} = Hold Current: maximum current device will pass without tripping in 20°C still air.
2. I_{trip} = Trip Current: minimum current at which the device will trip in 20°C still air.

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Specifications, continued

Station Delay Characteristics				
Forward Chrominance to Luminance Delay (ns)		Reverse Group Delay in 1.5 MHz bandwidth (ns)		
Frequency (MHz)		Frequency (MHz)	Power Inserter	
			With	Without
55.25 - 58.83	16	5.0 - 6.5	41	30
61.25 - 64.83	7	6.5 - 8.0	23	16
67.25 - 70.83	4	8.0 - 9.5	11	8
77.25 - 80.83	2	37.5 - 39.0	9	9
		39.0 - 40.5	13	14
		40.5 - 42.0	16	16

Notes:

1. Includes loss of internal splitter(s)
2. 78 CW NTSC channels loaded from 55 to 550 MHz, +10 dBmV input, 0 dB Tilt. Digital refers to 550 - 870 MHz loading with QAM carriers at -6dB levels relative to analog video carrier levels.
3. 94 CW NTSC channels loaded from 55 to 650 MHz. Digital refers to 650 - 870 MHz loading with QAM carriers at -6 dB levels relative to analog video carrier levels.
4. 110 CW NTSC channels loaded from 55 to 750 MHz. Digital refers to 750 - 870 MHz loading with QAM carriers at -6 dB levels relative to analog video carrier levels.
5. Using preliminary SCTE test procedure #IPS TP 403A-2 Rev 04, dated October 25th 2002.

Unless otherwise noted, the above specifications reflect typical station performance at stated reference levels in the recommended operating configuration(s). Unless otherwise noted, specifications are based on measurements made in accordance with NCTA Recommended Practices for Measurements on Cable Television Systems using standard frequency assignments and are referenced to 68°F (20°C).

Standards Compliance

Scientific-Atlanta Drop Amplifiers meet or exceed the following industry standards:

Mechanical

- SCTE IPS-SP-400 – F-port interface specification
- Sealed F-Ports

Emission

- FCC - Part 76, Subpart K
- EN 50083-2

Surge Resistance

IEEE C62.41-1991

- All Ports - Category B1, 2 kV Combination Wave and Category B3, 6 kV Ring Wave
- Input Ports - Category B3, 6 kV Combination Wave

Safety

- UL 1409
- EN50083-1/A1
- EN60065

Environmental

- ASTM G 53 - weathering specification
- ASTM B 117 - salt spray specification
- ASTM D 3170 - chip resistance specification

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Ordering Information

Product Description				
	1 Output	2 Output	4 Output	8 Output
Amplifier, 120 volt, 60 Hz AC, with power inserter	N/A	4005041	4005042	4005043
Amplifier, 120 volt, 60 Hz AC, without power inserter	750504	N/A	N/A	N/A
Amplifier, 120 volt, 60 Hz AC, with power inserter, with PTC power supply	N/A	4005346	4005347	4005348
Amplifier, 120 volt, 60 Hz AC, without power inserter, with PTC power supply	4005345	N/A	N/A	N/A
Replacement Power Inserter	562781			
Replacement Power Supply 120 V	591704			
Replacement PTC Power Supply 120 V	4005352			
Replacement Power Supply 230 V	748205			



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