

Residential Amplifier with Active Forward & Return

FRA Series



Overview

Antronix's new Forward and Return Residential Amplifier (FRA) Series provides both forward and return path amplification. The FRA was designed for applications such as cable modems and two-way set-top boxes. The FRA is the first forward and return amplifier to utilize the patented auto-seizing CamPort[®]. This SCTE compliant F-port provides maximum contact area and reliability for multimedia applications. With the capability to endure multiple high power surges, the FRA can operate in the harshest environments. The lightweight powder coated AL 360 housing provides superior corrosion resistance for quality performance and long life.

Ordering Guide

FRAx-xxxx	
Residential Amp w/ Active Forward & Return	Return Gain 10 (1 output) 00 (8 output)
# of Outputs 1, 8	Forward Gain 15 (1 output) 04 (8 output)
ARPI-2000	Power Inserter for Remote Powering
ARAC-18N	AC Power Adaptor, 120 VAC/60 Hz input, 18 VDC output

Features & Benefits:

- **Bi-directional Amplification**
Provides signal amplification in both the forward and return paths
- **CamPort[®] Auto-Seizing F-Port**
Patented auto-seizing F-port features a "Cam Activated Mechanism" to provide full contact pressure (> 2000 grams) on the center conductor for maximum reliability
- **Low Intermodulation Ferrites**
Proprietary ferrite blend inhibits re-magnetization of the core due to voltage spikes from impulse noise or lightning. This prevents high-level return carriers from affecting forward path video signals
- **15 psi Sealed SCTE Compliant CamPort[®]**
Sealed brass CamPort[®] prevents water migration
- **Weather Sealed Housing with RFI Gasket**
Guarantees repeatable 120 dB RFI shielding
- **Powder Coated AL 360 Aluminum Housing**
Provides the most corrosion resistant protection against salt, fog and rust
- **Ideal for 2-way digital and multimedia applications**
Ideal for two-way systems deploying cable modems and set-top boxes
- **6 kV surge withstand on all ports**
Unique, non arc gap surge protection design, to provide maximum protection while eliminating high impulse noise, which can be caused during an arc gap discharge
- **Local or remote powering**
Power the amplifier locally with supplied adaptor or remotely with an optional power inserter
- **18 VDC UL Listed wall adapter**
Self-resetting circuit protection provides safe protection against short-circuits to minimize maintenance costs
- **5 Year Warranty**

Electrical Specifications

Model Number		FRA1-1510		FRA8-0400		
Forward Specification	Freq. (MHz)	Max.	Min.	Max.	Min.	Unit
Gain	54 - 1000	-	14 ± 1.0	-	4.5 ± 1.0	dB
Return Loss	54 - 1000	-	18	-	18	dB
Flatness	54 - 1000	1.0	-	1.0	-	dB
Noise Figure	54 - 1000	3.0	-	3.0	-	dB
RFI Isolation	5 - 1000	-	120	-	120	dB
AC/RF Input Isolation	5 - 1000	-	100	-	100	dB
Group Delay						
	Channel 2	-	20	-	20	ns
	Channel 3	-	10	-	10	ns
	Other Channels	-	5	-	5	ns
Forward Distortion						
CTB	54 - 1000	-	-75	-	-75	dB
CSO	54 - 1000	-	-62	-	-62	dB
XMOD	54 - 1000	-	-75	-	-75	dB
Hum Mod	54 - 1000	-	-80	-	-80	dB
Return Specification	Freq. (MHz)	Max.	Min.	Max.	Min.	Unit
Gain	5 - 42	-	10.0 ± 1.0	-	0.0 ± 1.0	dB
Noise Figure	5 - 42	5.5	-	5.5	-	dB
Return Loss	5 - 42	-	18	-	18	dB
Group Delay	5 - 8	20.0	-	20.0	-	ns
	39 - 42	5.0	-	5.0	-	ns
Distortions						
1dB Compression Point ¹	5 - 42	74	-	74	-	dBmV
Second Order ²	5 - 42	-	75	-	75	- dBc
Third Order ³	5 - 42	-	60	-	60	- dBc

1. After Amplification
2. Second Order distortion is measured at 12 MHz with three carriers (19, 25, & 31 MHz), each adjusted to +60 dBmV after amplification.
3. Third Order distortion is measured at 37 MHz with three carriers (19, 25, & 31 MHz), each adjusted to +60 dBmV after amplification.

General Specifications

Nominal Impedance	75 Ω
F-connector Type	ANSI/SCTE 01 (Formerly SCTE IPS-SP-400) Compliant Sealed Brass CamPort [®]
Surge withstand	6 kV Ring Wave (IEEE C62.41-1991 Cat. A3, unused ports terminated)
Power Adaptor	18 VDC output, UL Listed, PTC short-circuit protected, self-resetting
Dimensions, Weight	4.9" x 4.0" x 1.0", 1.0 lb.(1-output); 4.9" x 4.0" x 1.8", 1.0 lb. (8-output)

Environmental Specifications

Pressure Seal	15 psi
Operating Temperature	-40 °C to +60 °C
Corrosion Resistance	Meets ANSI/SCTE Specification
Warranty	5 years

Specifications subject to change without notice