

## RRA1-10

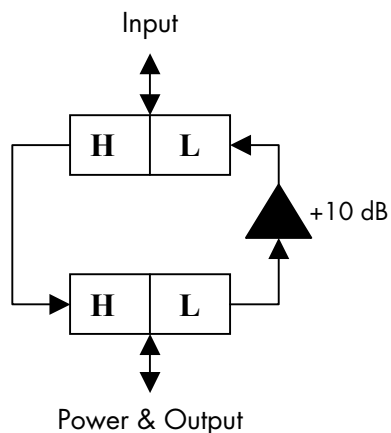
### Return Path Residential Amplifier



### Overview

Antronix's new Return Residential Amplifier (RRA) Series was designed for reliable subscriber premise return path amplification such as cable modems and two-way set-top boxes. The RRA is the first return amplifier to utilize the patented auto-seizing CamPort<sup>®</sup>. This SCTE compliant F-port provides maximum contact area and reliability for multimedia applications. With the capability to endure multiple high power surges, the RRA was engineered to withstand the harshest environmental threats. The lightweight powder coated AL 360 housing provides superior corrosion resistance for quality performance year after year.

### Block Diagram



### Features & Benefits:

- **CamPort<sup>®</sup> 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 Distortion Amplifier**  
Provides improved distortion and noise performance
- **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<sup>®</sup>**  
Sealed brass CamPort<sup>®</sup> 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
- **Supports 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
- **Blocking capacitors on all RF ports**
- **Local or remote powering**  
Power the amplifier locally with supplied adaptor or remotely with an optional power inserter
- **18 VDC UL Approved wall adapter**  
Self-resetting circuit protection provides safe protection against short-circuits to minimize maintenance costs
- **Power on LED**
- **5 Year Warranty**

### Ordering Guide

RRA1-10/PS	1 output amplifier, 10 dB return gain, 120 VAC/60 Hz
ARPI-2000	Power Inserter for Remote Powering
ARAC-18N	AC Power Adaptor, 120 VAC/60 Hz input, 18 VDC output

## ■ ■ ■ Electrical Specifications

Model Number		RRA1-10		
Return Specifications	Frequency (MHz)	Max.	Min.	Unit
<b>Gain</b>	5 - 42	-	10.0	dB
<b>Return Loss</b>	5 - 42	-	18	dB
<b>Flatness</b>	5 - 42	1.0	-	dB
<b>Group Delay</b>	5 - 7	12.0	-	ns/1.0 MHz
	7 - 36	5.0	-	ns/1.0 MHz
	36 - 42	12.0	-	ns/1.0 MHz
<b>Distortions</b>				
1dB Compression Point <sup>1</sup>	5 - 42	74	-	dBmV
Second Order <sup>2</sup>	5 - 42	-	75	- dBc
Third Order <sup>3</sup>	5 - 42	-	60	- dBc
Forward Specifications	Frequency (MHz)	Max.	Min.	Unit
<b>Noise Figure</b>	5 - 1000	5.5	-	dB
<b>RFI Isolation</b>	5 - 1000	-	120	dB
<b>Insertion Loss</b>	54 - 1000	1.0	-	dB
<b>Return Loss</b>	54 - 1000	-	18	dB
<b>Group Delay</b>	5.0 - 6.5	25	-	ns/3.58 MHz
	6.5 - 8.0	15	-	ns/3.58 MHz
	8.0 - 34	5	-	ns/3.58 MHz
	34 - 40	15	-	ns/3.58 MHz
<b>Forward Distortion<sup>4</sup></b>	54 - 1000	-50	-	dBmV

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.
4. Forward distortion is measured at 56 MHz with three carriers (19, 25 & 31 MHz), each adjusted to +60 dBmV after amplification

## ■ ■ ■ General Specifications

<b>Nominal Impedance</b>	75 Ω
<b>F-connector Type</b>	ANSI/SCTE 01 (Formerly SCTE IPS-SP-400) Compliant Sealed Brass CamPort <sup>®</sup>
<b>F-Connector Torque Spec</b>	30 in. lbs. (max)
<b>Surge withstand</b>	6 kV Ring Wave (IEEE C62.41-1991 Cat. A3, unused ports terminated)
<b>Power Adaptor</b>	18 VDC/400 mA output, UL Approved, PTC shot-circuit protected, self-resetting
<b>Dimensions &amp; Weight</b>	4.9" x 4.0" x 1.0", 1.0 lb.

## ■ ■ ■ Environmental Specifications

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

Specifications Subject to change without notice