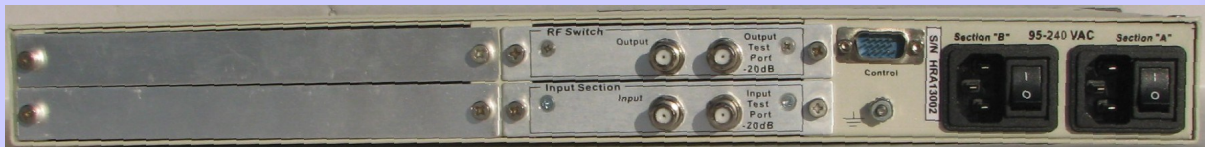


Front Panel View



Rear Panel View



### Features and Benefits:

- Load Sharing Redundant Power.
- Fully modular construction.
- Ideal for critical path point of entry applications.
- Allows for a Single or Dual Input Source Configuration.
- Multiple amplifier dB gain options are available.
- Useful for both forward path and return path scenarios.
- Front Panel Mounted Status Bi-color LED's
- Eliminates many jumper cables.
- Significantly reduces labor costs for setup & balancing.
- Built in Contact Closure Alarms for monitoring the status of RF switch and condition of active elements.
- Reliable components and repeatable technology allows for site design consistency.
- Rear panel allows for ability to increase the number of Inputs or Outputs, or add optional modules for step Attenuation and Equalization.

**THREE YEAR PARTS  
AND LABOR WARRANTY  
INCLUDED**

**CommDev, LLC** is pleased to introduce our all new fully modular Headend Redundant RF Amplifier System; Model Number **HRA-102**. It is especially designed for applications whereby RF redundancy is required. Compare the **HRA-101** device new design has less insertion loss in Input section which helps to reduce Amplifier Noise Figure from 9 dB to 7 dB for same type of Hybrid Amplifier.

The unit occupies a single rack unit of space and is typically utilized in a headend or hub site environment. The redundant system chassis is shipped to the customer fully assembled and is prepared for site installation without any field adjustments required.

The **HRA-102** chassis contains two modular Amplifiers, two modular Power Supplies arranged in a load sharing configuration, and RF sensing Switch circuitry designed with a wide input signal range of approximately 25dB.

The dynamic range of the systems output signal will allow for proper operational support of amplifiers with an Output signal level range from - 4dBm to 22dBm (130 channels with 48dBmV level).

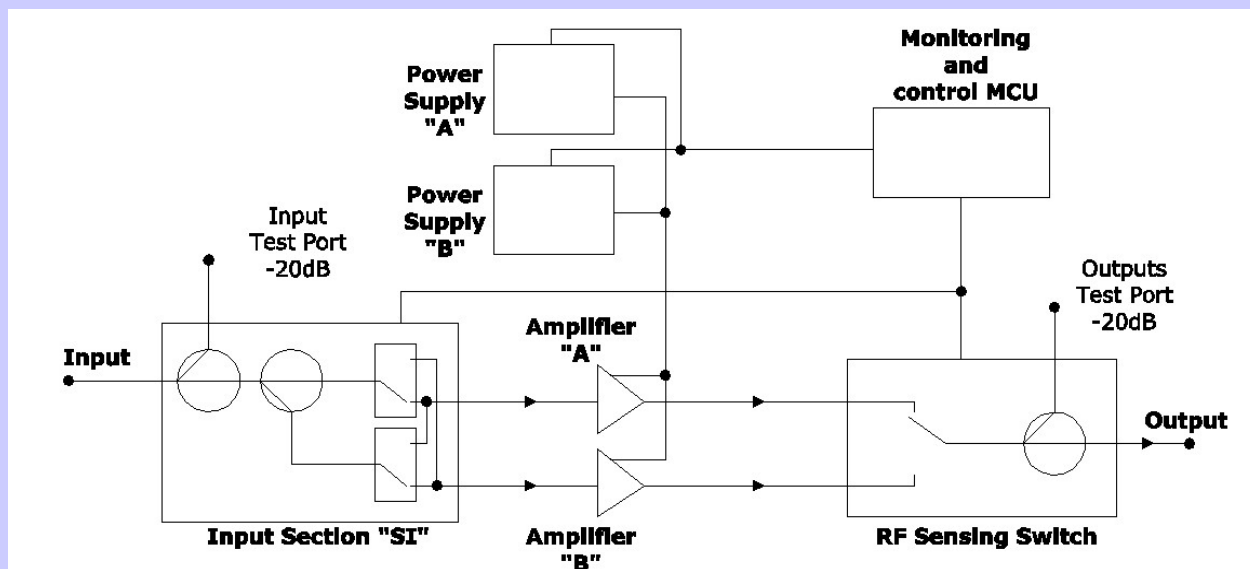
The **HRA-102** is designed to be technician friendly as Input and Output Test ports are included to control and monitor signal quality and signal levels. From a maintenance standpoint, the system is completely modular which will simplify the process of replacing parts for future modification or upgrades. Modifications to the system can be made for all passive and active parts, including the main input section whereas an option is available to accommodate multiple inputs.

The Bi-color front panel mounted LED's are placed for easy viewing of the unit's current status, element condition or RF signal level value after amplifiers.

The RF Switch can be setup to function in either an Automatic or Manual mode: Automatic and Manual connections to amplifier "A" or "B", between the Input and Output of device. The front panel mounted LED section will also indicate which amplifier is connected.

As with all CommDev, LLC products, customized arrangements and configurations can be achieved per customer requirements.

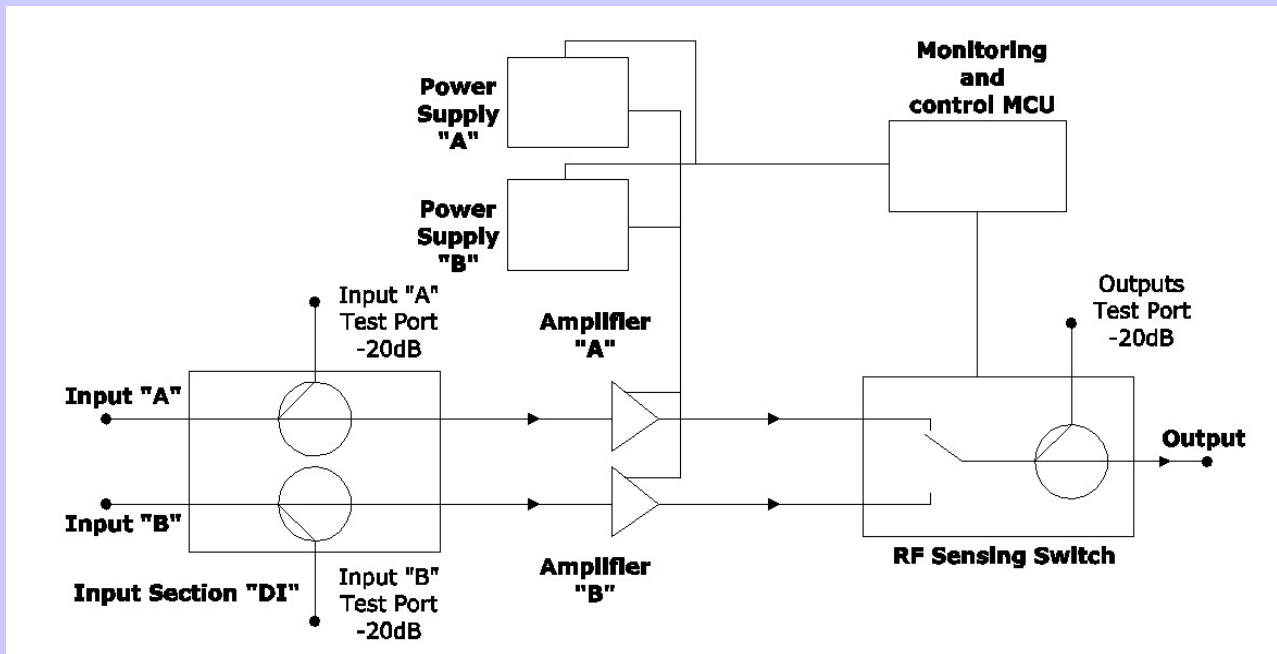
Please call or write to us today for any additional information. We also welcome your specific requirements for any custom designed products.



*Block Diagram HRA-102 with Single Input Section "SI".*

**HRA-101 Technical Specifications (with Input Section "SI"):**

	<i>Parameter</i>	<i>Unit</i>	<i>Specification</i>
1	Frequency Band	MHz	48 - 1002/1218
2	Impedance	Ohm	75
3	Connectors Type		F-connector
4	Number of Inputs		1
5	Number of Outputs:		1
6	Amplifier's Hybrid Modules Gain *		20, 25, 27,30, 32, 39
7	Input - Output Gain Reduction compare Module Gain	dB	5/6
8	Gain Flatness, max	dB	±0.5
9	Input / Output Return Loss,	dB	20/18 min
10	Input / Output Test Ports	dB	-20±0.5
11	Noise Figure, max (30dB Gain Amplifier)	dB	7.0
12	Threshold (factory Installed)	dB	4.0±0.5
13	Output Signal Level: min (single Channel, dBmV) max (132 Channels, flat, dBmV)	dBm (dBmV)	- 4(42) 22(48)
14	Switching Time, max	ms	10
15	Power Supply: Universal Negative (optional)	VAC VDC	90-240/50-60Hz 48
16	Dimensions (WxHxD)	inch	19"x1.74"x14"
17	Weight	lb	9



Block Diagram HRA-101 with Dual Input Section "DI".

### HRA-101 Technical Specifications (with Input Section "DI"):

	Parameter	Unit	Specification
1	Frequency Band	MHz	48 - 1002/1218
2	Impedance	Ohm	75
3	Connectors Type		F-connector
4	Number of Inputs		2
5	Number of Outputs:		1
6	Amplifier's Hybrid Modules Gain *		20, 25, 27,30, 32, 39
7	Input - Output Gain Reduction compare Module Gain	dB	3/4
8	Gain Unbalance between Amplifiers, max	dB	±0.5
9	Gain Flatness, max	dB	±0.5
10	Input / Output Return Loss,	dB	20/18 min
11	Input / Output Test Ports	dB	-20±0.5
12	Noise Figure, max (30dB Gain Amplifier)	dB	6.0
13	Threshold (factory Installed)	dB	4.0±0.5
14	Output Signal Level: min (single Channel) max (132 Channels, flat)	dBm (dBmV)	- 18(30) 22(48)
15	Switching Time, max	ms	10
16	Power Supply: Universal Negative (optional)	VAC VDC	90-240/50-60Hz 48
17	Dimensions (WxHxD)	inch	19"x1.74"x14"
18	Weight	lb	9

## HRA-102 Parts Technical Specifications:

### Single Input Section:

	<i>Parameter</i>	<i>Unit</i>	<i>Specification</i>
1	Frequency Band	MHz	48 - 1002/1218
2	Impedance	Ohm	75
3	Connectors Type		F-connector
4	Number of Inputs		1
5	Number of Outputs:		2
6	Insertion Loss	dB	2.0±0.5/3.0±0.5
7	Insertion Loss, Tilt	dB	2.0
8	Input Output Return Loss, min	dB	20
9	Input Test Port	dB	-20±0.5
10	Isolation between Outputs, min	dB	30

### Dual Inputs Section:

	<i>Parameter</i>	<i>Unit</i>	<i>Specification</i>
1	Frequency Band	MHz	48 - 1002/1218
2	Impedance	Ohm	75
3	Connectors Type		F-connector
4	Number of Inputs		2
5	Number of Outputs:		2
6	Insertion Loss	dB	1.0±0.5/2.0±0.5
7	Insertion Loss, Tilt	dB	2.0
8	Input/Output Return Loss, min	dB	20
9	Input Test Ports	dB	-20±0.5
10	Isolation between Inputs, min	dB	60

## HRA-102 Parts Technical Specifications:

### Amplifier Section:

	<i>Parameter</i>	<i>Unit</i>	<i>Specification</i>
1	Frequency Band	MHz	48 - 1002/1218
2	Impedance	Ohm	75
3	Connectors Type		F-connector
4	Number of Inputs		1
5	Number of Outputs:		1
6	Gain	dB	30.0±0.5
7	Gain Flatness	dB	±0.5
8	Gain Control, Plug In		JXP Pad
9	Slop Control, Plug IN		JXP Pad
10	Input / Output Return Los	dB	20/18 min
11	Noise Figure, max	dB	5.0
12	Distortions:		
	CTB	dBc	-65
	CSO	dBc	-63
	XMOD	dBc	-58
	Measurement conditions 79 Channels, flat, 48 dBmV		
13	Current Consumption (24V)	mA	440 max
14	Technology		PD GaAs

### Switch Section:

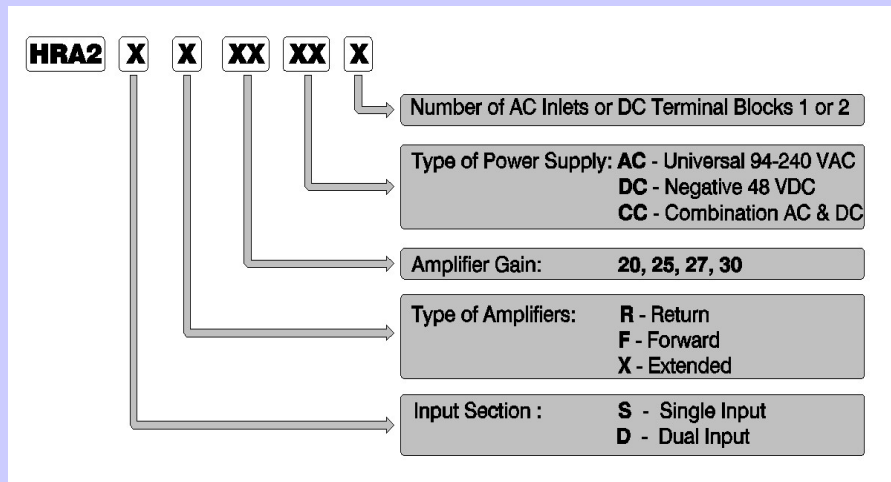
	<i>Parameter</i>	<i>Unit</i>	<i>Specification</i>
1	Frequency Band	MHz	48 - 1002/1218
2	Impedance	Ohm	75
3	Connectors Type		F-connector
4	Number of Inputs		2
5	Number of Outputs:		1
6	Insertion Loss	dB	1.5±0.5/2.5±0.5
7	Insertion Loss, Tilt	dB	±0.5
8	Input / Output Return Loss, min	dB	20
9	Output Test Port	dB	-20±0.5
10	Isolation Between Inputs, min	dB	60
11	Switching Time, max	ms	10
12	Input Signal level Range	dBm	-22÷24
13	Current Consumption, 5VDC	mA	120

The **HRA-102** chassis supplied with different types of amplifiers: **Return, Forward and Extra Frequency** bands. In Table 1 shows the main types of amplifiers and their gains. More detail information about each type of amplifiers in Amplifier's section of Catalog or Web site.

Table 1.

Available Amplifier's Gain		
AR-XX.200	AF-XX.1002	AF-XX.1218
5 - 200 MHz	48-1002 MHz	48-1218 MHz
25	20	22
30	25	24
34	27	27
	30	32
	32	37
	39	

**Ordering Information:**



Part Number Example:

“HRA1”  
 “SI”  
 “F”  
 “30”  
 “AC”  
 “2”

**HRA2-SI-F-30-AC-2:**

HRA-101 device  
 Single Input  
 Forward Amplifier  
 30 dB Gain  
 Universal Power Supplies - 2 pcs  
 Two AC power Inlets