



### ○ Features & Benefits

- LED For Optical Input Status
- Gain and Slope Controls
- Exceptional CNR Performance At Low Optical Input Levels
- 550 and 860 MHz Power Doubling Hybrid Models
- Optical Input Power Jack Scaled 1V/mW

The FRRA is a fiber optic receiver module integrated with a rack mounted broadband distribution amplifier (RMDA). The FRRA is used as a launch amplifier in a coaxial distribution sub-system fed from a single mode broadband fiber network. The FRRA's optical receiver section provides exceptional CNR performance at low optical input levels. This feature is also a cost saving one, since it permits the use of lower optical power transmitters. The FRRA is available in two models with RF bandwidths of 550 MHz and 860 MHz. Both models feature power doubling hybrid amplifier technology for high RF output levels and low distortion. The FRRA operates with the FIBT Series of transmitters as well as those from other leading manufacturers.

### ○ Specifications

#### Optical Receiver

Bandwidth: 45 to 860 MHz  
 Bandpass Flatness: 1 dB P/V  
 Operating Wavelength: 1310/1550 nm  
 Optical Input Range: -6 to +3.0 dBm  
 Input Impedance: 75 Ohm  
 CNR (-1 dBm Input, 40 Ch. Load): 56 dB <sup>(d)</sup>  
 CNR (-1 dBm Input, 79 Ch. Load): 55 dB <sup>(d)</sup>  
 CNR (-1 dBm Input, 110 Ch. Load): 54 dB <sup>(d)</sup>

#### Connectors

Optical Input: FC/APC  
 RF Output and Test Ports: "F"

#### Distribution Amplifier

Impedance - All Ports: 75 Ohms  
 Return Loss Input: 16 dB  
 Return Loss Output: 16 dB  
 RF Gain: 43 dB  
 Test Port Level: -30, ±2 dB  
 Gain Control Range: 10 dBm  
 Slope Control Range: 8 dBm  
 Operating Temperature: -20 to +60 °C  
 Power Supply Requirements:  
 117 VAC, 60 Hz: 28 W  
 Size (WxHxL): 19 x 1.75 x 6.25 in  
 48.26 x 4.45 x 15.88 cm  
 Weight: 5.75 lbs, 2.61 kg  
 Number Of Hybrids: 2  
 Hybrid Technology: Power Doubling

#### Channel Loading

FRRA-550: 77  
 FRRA-860: 110

#### Flatness

FRRA-550: ±0.5 dB  
 FRRA-860: ±0.75 dB

#### Output Level

FRRA-550: 36/44 dBmV  
 FRRA-860: 34/42 dBmV

#### Composite Triple Beat (CTB) <sup>(a, b, c, d)</sup>

FRRA-550: -63 dB  
 FRRA-860: -60 dB

#### Composite Second Order (CSO) <sup>(a, b, c, d)</sup>

FRRA-550: -57 dB  
 FRRA-860: -58 dB

Hum Modulation: -70 dB

Optical Input dBm	mW
-10	0.10
-9	0.13
-8	0.16
-7	0.20

Increase Optical Input Power  
 Orange Optical LED Indication

Optical Input dBm	mW	Attenuator Value
-6	0.25	0 dB
-5	0.32	2 dB
-4	0.40	4 dB
-3	0.50	6 dB Recommended
-2	0.63	8 dB Attenuator Value
-1	0.79	10 dB (4006A-xx)
0	1.00	12 dB
1	1.26	14 dB
2	1.58	16 dB
3	2.00	18 dB
4	2.51	
5	3.16	

Decrease Optical Input Power  
 Red Optical LED Indication

#### NOTES:

- (a) At specified channel loading at rated output capability
- (b) Distortion levels improve as output level is reduced
- (c) Distortion specifications at 8 dB sloped output
- (d) Assumes FIBT transmitter link and -1 dBm optical input

### ○ Ordering Information

Model	Description
FRRA-S4A-550-43PA	Fiber Optic Receiver/RF Distribution Amplifier, Single-mode 47-550 MHz, 1310/1550 nm, FC/APC Conn., 43 dB Gain, Rack Mount Power Doubling
FRRA-S4A-860-43PA	Fiber Optic Receiver/RF Distribution Amplifier, Single-mode 47-860 MHz, 1310/1550 nm, FC/APC Conn., 43 dB Gain, Rack Mount Power Doubling

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