

CriticalPoint™ Public Safety Bi-Directional Amplifier

UHF BDA (AC Version)



Features

- Supports P25 P1/P2, digital and conventional analog communications simultaneously
- Simplex and internal Duplexing supported
- Up to 32 narrow band filters (Class A)
- Up to 4 wide band filters (Class B)
- Channelized Auto Level Control (ALC) supported (Class A)
- Channelized uplink squelch supported (Class A)
- **NetProtect™** Uplink PA shutdown during no traffic periods to minimize noise being introduced to the network (Class A)
- Built-in mandatory isolation test to prevent BDA oscillation
- Auto shutdown with alarm upon oscillation detection
- Web based GUI for intelligent configuration, SNMP supported
- NFPA 1221 / IFC compliant dry contact alarms
- NFPA 1221 / IFC compliant NEMA 4 enclosure
- **FCC Class A: PX8-RX4122-A, Class B: PX8-RX4122-B**
- **UL 60950-1 & UL 60950-22 Standards Certified – SGS Certificate No.: SGSNA/18/GZ/00076**



Specifications

Electrical		
Frequency Range	MHz	450 - 512
Total Output Power, Uplink	dBm	27 (Typical TX/RX duplexed), 30 (TX/RX separate)
Total Output Power, Downlink	dBm	33 (Typical TX/RX duplexed), 36 (TX/RX separate)
RF Passbands (RF windows)		Up to 3 *See Note below
Maximum System Gain	dB	95
Gain Adjustment Range (1dB step)	dB	0-30
Pass Band Ripple, p-p	dB	≤3
Uplink Noise Figure	dB	≤7
Intermodulation	dBm	≤ -13
Spurious	dBm	FCC Compliance
Maximum RF Input Level without Damage	dBm	0
Maximum RF Input Level without Overdrive		-10
Input VSWR		≤ 1.5
Impedance	Ω	50

***Note:**

A set of contiguous downlink/uplink channel pairs count as one passband (one window)

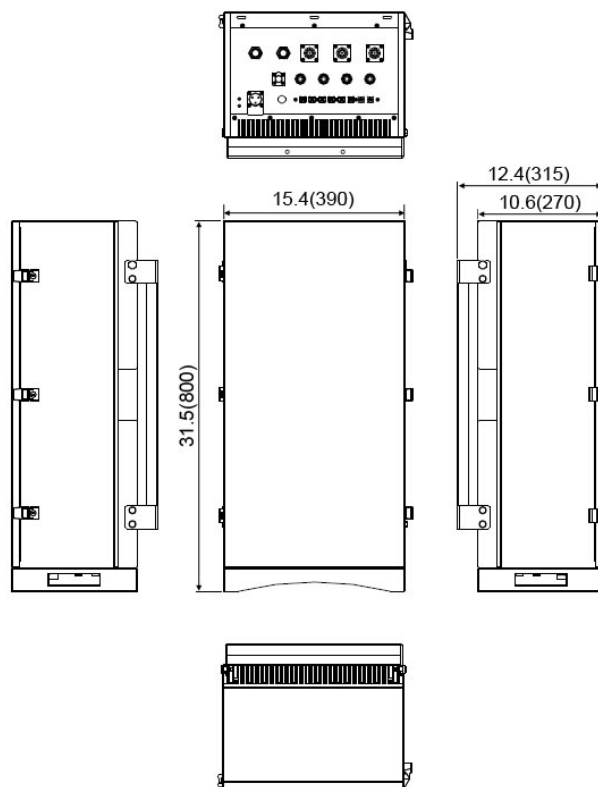
Consult with a Comba technical representative for passband and window configurations before ordering

Class A		
Number of Filters		32
Filter Bandwidth / Out-of-Band Suppression / System Group Delay	Bandwidth: 6.25KHz	$\geq 60\text{dBc @ filter center} + 60\text{KHz}, 35\mu\text{s}$
	Bandwidth: 12.5KHz	$\geq 60\text{dBc @ filter center} + 65\text{KHz}, 35\mu\text{s}$
	Bandwidth: 25KHz	$\geq 50\text{dBc @ filter center} + 75\text{KHz}, 27\mu\text{s}$
	Bandwidth: 75KHz	$\geq 60\text{dBc @ filter center} + 200\text{KHz}, 15\mu\text{s}$
Class B		
Number of Filters		4
Filter Bandwidth		200KHz – 5MHz
System Group Delay	μsec	6.5
Out-of-Band Suppression		$\geq 45\text{dBc @ filter edge} + 0.6\text{MHz}$ $\geq 60\text{dBc @ filter edge} + 1\text{MHz}$

Mechanical		
Dimensions, H x W x D	in(mm)	31.5x15.4x12.4 (800×390×315)
Weight(without bracket)	lb(kg)	77 (35) without filter, 140 (63.5) with filter
Power Supply	VAC	120
Power Consumption	W	85
RF Connectors		N-Female
Operating Temperature	°F(°C)	-27 to +140 (-33 to +60)
Operating Humidity		$\leq 95\%$
Environmental Class		NEMA 4

Note: Typical specifications at room temperature

Outline Drawing



Part Numbers

Part Number	Description
RXUHF-A36AC-SPX	Class A, AC, 36/30dBm Downlink/Uplink Power, 95dB Gain, Simplex DT/MT, No Filter
RXUHF-B36AC-SPX	Class B, AC, 36/30dBm Downlink/Uplink Power, 95dB Gain, Simplex DT/MT, No Filter
RXUHF-A36AC-1WA	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 1A
RXUHF-B36AC-1WA	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 1A
RXUHF-A36AC-1WB	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 1B
RXUHF-B36AC-1WB	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 1B
RXUHF-A36AC-1WX	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 1X
RXUHF-B36AC-1WX	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 1X
RXUHF-A36AC-2WA	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 2A
RXUHF-B36AC-2WA	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 2A
RXUHF-A36AC-2WB	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 2B
RXUHF-B36AC-2WB	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 2B
RXUHF-A36AC-2WX	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 2X
RXUHF-B36AC-2WX	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 2X
RXUHF-A36AC-3WA	Class A, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 3A
RXUHF-B36AC-3WA	Class B, AC, 33/27dBm Downlink/Uplink Power, 95dB Gain, Duplexed DT/MT, Filter Type 3A

Filter Types

Filter Type	Number of Windows	Filter Passband	Filter Guardband	Window to Window Guardband
1A	1	< 2.0MHz in 450-470MHz < 1.0MHz in 470-512MHz	≥ 3.0 MHz in 450-470 MHz or ≥ 2.0 MHz in 470-512 MHz	N/A
1B	1	< 2.5MHz in 450-470MHz < 1.5MHz in 470-512MHz	≥ 2.5 MHz in 450-470 MHz or ≥ 1.5 MHz in 470-512 MHz	N/A
1X	1	1 Window Customized Bandwidth, Confirm with Comba		
2A	2	Each window meets: < 2.0MHz in 450-470MHz or < 1.0MHz in 470-512MHz	Each window meets: ≥ 3.0 MHz in 450-470 MHz or ≥ 2.0 MHz in 470-512 MHz	> 3.0 MHz in 450-470 MHz or > 2.0 MHz in 470-512 MHz
2B	2	Each window meets: < 2.5MHz in 450-470MHz or < 1.5MHz in 470-512MHz	Each window meets: ≥ 2.5 MHz in 450-470 MHz or ≥ 1.5 MHz in 470-512 MHz	> 2.5 MHz in 450-470 MHz or > 1.5 MHz in 470-512 MHz
2X	2	2 Window Customized Bandwidth, Confirm with Comba		
3A	3	3 Window Customized Bandwidth, Confirm with Comba		