

PSR-78-9533-U

Channelized 2W Digital Repeater for Public Safety 700/800 MHz



PSR-78-9533-U is a revolutionary digital public safety repeater designed to protect the lives of first responders and building occupants.

The PSR-78-9533-U is certified to the highest level of code compliance through Underwriters Laboratories and is UL 2524 Listed for In-building 2-Way Emergency Radio Communication Enhancement Systems (ERCES).

Through the use of digital signal processing (DSP) filtering technology, the PSR-78-9533-U helps eliminate adjacent channel interference to allow band selectivity and support for 700 MHz and 800 MHz Public Safety frequencies including FirstNet. Up to two non-contiguous wideband and thirty-two non-contiguous narrowband filters can be supported in the 700 MHz and 800 MHz Public Safety frequencies via ADRF's celebrated web-based GUI, which provides versatility and total control to the user.

The PSR-78-9533-U is the best-in-class public safety repeater with FirstNet support and it is fully compliant with International Fire Code (IFC), National Fire Protection Association (NFPA), and Underwriters Laboratories (UL).



Product Features

- UL 2524 Listed Second Edition by Underwriters Laboratories as comprehensive solution with an annunciator and ADRF-BBx-U Series battery backups
- NFPA 72-2013, NFPA 1221-2016/2019, NFPA 1225, IFC 2015/2018/2021 code compliant and FirstNet compliant
- Alarming outputs to supervised circuits for Loss of Normal AC Power, Battery Charger Failure, Low Battery Capacity, Donor Antenna Malfunction/Disconnection, Active RF Emitting Device Malfunction, and System Component Malfunction
- Isolation Check Routine displays isolation value for 700MHz or 800MHz in the GUI
- Oscillation detection feature with automatic amplifier shutdown routine
- Integrated wiring compartment with pre-drilled conduit holes and terminal blocks for easy installation
- NEMA 4 enclosure for both indoor and outdoor environments
- Supports FCC Part 90 Class A narrowband and Class B wideband repeater designations
- Up to 95 dB of gain and up to 33 dBm downlink and 30 dBm uplink output power per band (PSR-78-9533-U) or Up to 95 dB of gain and up to 27 dBm downlink and 27 dBm uplink output power per band (PSR-78-9533-U-27)
- Supports P25 Phase 1/Phase 2 analog and digital systems

Product Specifications

PSR-78-9533-U (Public Safety 700/800 MHz 2W Channelized Digital Repeater)



Electronic Specifications

Frequency Range	B14 + PS700	758 - 768 / 769 - 775 MHz	788 - 798 / 799 - 805 MHz
	PS800	851 - 861 MHz	806 - 816 MHz
Composite Output Power	B14 / PS700 / B14 + PS700	33 dBm	30 dBm
	PS800	33 dBm	30 dBm
	B14 + PS700 + PS800	36 dBm (33 dBm + 33 dBm)	30 dBm
System Gain		95 dB	95 dB
Filter Selection	Wideband	2 (non-contiguous)	
	Narrowband (N Mode)	Up to 16 (non-contiguous) @ PS700	Up to 16 (non-contiguous) @ PS800
	Narrowband (S1 Mode)	Up to 12 (non-contiguous) @ PS700	Up to 20 (non-contiguous) @ PS800
	Narrowband (S2 Mode)	Up to 20 (non-contiguous) @ PS700	Up to 12 (non-contiguous) @ PS800
	Narrowband (S7 Mode)	Up to 32 (non-contiguous) @ PS700	
	Narrowband (S8 Mode)	Up to 32 (non-contiguous) @ PS800	
Filter Bandwidth	Wideband	3, 5, 6, 10 MHz	
	Narrowband	12.5, 25, 75, 75 (LD), 100, 150, 200 KHz	
Filter Roll-off	Wideband	60 dBc @ Filter Bandwidth Edge + 1 MHz	
	Narrowband	≥ 55 dBc @ Filter Bandwidth Edge + 3 x Filter BW	
	Narrowband (75KHz LD)	≥ 55 dBc @ Filter Bandwidth Edge + 4 x Filter BW	
Spurious Emission		FCC Rule Compliant	
Passband Ripple		± 2 dB	
ALC Dynamic Range		≥ 60 dB	
Gain Dynamic Range		45 dB	
Noise Figure		≤ 5 dB @ Max Gain	
System Group Delay	Wideband	≤ 6.5 μs	
	Narrowband	≤ 46 μs @ 12.5 KHz, ≤ 28 μs @ 25 KHz, ≤ 18 μs @ 75 KHz, ≤ 15 μs @ 100 KHz, ≤ 13 μs @ 150 KHz, ≤ 12 μs @ 200 KHz	
	Narrowband (75KHz LD)	≤ 15 μs @ 75 KHz	
Power Supply		110 - 240 VAC, 60 Hz (Free Voltage, w/ battery backup function)	
Power Consumption		< 163 W	
Max RF Input Power w /out Over Drive		-20 dBm	
Max RF Input Power w /out Damage		+10 dBm	
Enclosure Cooling		Convection	
Impedance		50 Ω	
VSWR		< 1.5 : 1	
Dry Contacts		NFPA 1221/1225, IFC Section 510 Code Compliant	
Remote Alarming / Network Management		Dry Contacts, Web-GUI, SNMP (External Wireless Modem Required)	
Humidity		5% - 95% RH	
Operating Temperature		-40°F to +140°F (-40°C to +60°C)	
Certification		UL 2524 Listed FCC: Part 90 Class A / Class B	
Annunciator Decibel Level		100 dB @ 1m	
Uplink Squelch Control		Narrowband / Broadband: -110 to -80 dBm (5 dB step)	

Mechanical Specifications

Dimension (Repeater Annunciator)	11.0 x 9.0 x 28.0 in (w /out bracket) / 5.91 x 2.84 x 6.32 in (w /out bracket)
Weight (Repeater Annunciator)	60.5 lbs (w /out bracket) / 2.5 lbs (w /out bracket)
RF Connector	4.3-10 (Female)
Weather Resistance	NEMA 4

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