

# PSR-78-9537-X

## Channelized 5W Digital Repeater for Public Safety 700/800 MHz

The PSR-78-9537-X is a revolutionary digital public safety repeater designed to protect the lives of first responders and building occupants.

Through the use of digital signal processing (DSP) filtering technology, the PSR-78-9537-X 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 simultaneously 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-78-9537-X is the best-in-class public safety repeater with FirstNet support and it is fully compliant with International Fire Code (IFC) and National Fire Protection Association (NFPA).



### Product Features

- Tested and approved under UL 2524, Second Edition by MET Laboratories, Inc. as comprehensive solution with an annunciator and ADRF BBx Series battery backups
- NFPA 72 2016 code compliant and FirstNet compliant
- Alarming output to supervised circuits for: antenna, amplifier, AC or DC power supply, battery, and charger failure including oscillation detection with automatic amplifier shutdown routine
- NEMA 4 enclosure for both indoor and outdoor environments
- Simultaneously supports FCC Part 90 Class A narrowband and Class B wideband repeater designation
- Up to 95 dB of gain and up to 37 dBm downlink and 30 dBm uplink output power per band
- Supports P25 Phase 1/Phase 2 analog and digital systems

# Product Specifications

**PSR-78-9537-X** (Public Safety 700/800 MHz 5W  
Channelized Digital Repeater)



## Electronic Specifications

		Downlink	Uplink
Frequency Range	FirstNet+ PS 700	758 - 768 MHz 769 - 775 MHz	788 - 798 MHz 799 - 805 MHz
	PS 800	851 - 861 MHz	806 - 816 MHz
Composite Output Power	FirstNet / PS 700 / FirstNet + PS 700	37 dBm	30 dBm
	PS 800	37 dBm	30 dBm
	FirstNet + PS 700 + PS 800	40 dBm (37 dBm + 37 dBm)	30 dBm
System Gain		95 dB	95dB
Filter Selection	Wideband	2 (non-contiguous)	
	Narrowband (N Mode)	Up to 16 (non-contiguous) @ PS 700 Up to 16 (non-contiguous) @ PS 800	
	Narrowband (S1 Mode)	Up to 12 (non-contiguous) @ PS 700 Up to 20 (non-contiguous) @ PS 800	
	Narrowband (S7 Mode)	Up to 32 (non-contiguous) @ PS 700	
	Narrowband (S8 Mode)	Up to 32 (non-contiguous) @ PS 800	
Filter Bandwidth	Wideband	3, 5, 6, 10 MHz	
	Narrowband	12.5, 25, 75, 100, 150, 200 KHz	
Filter Roll-off	Wideband	60 dBc @ Filter Bandwidth Edge + 1 MHz	
	Narrowband	≥ 60 dBc @ Filter Bandwidth Edge + 3 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 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	
Power Supply	110 - 240 VAC, 60 Hz (Free Voltage, w/ battery backup function)		
Power Consumption	< 263 W		
Max RF Input Power without Over Drive	-20 dBm		
Max RF Input Power without Damage	+10 dBm		
Enclosure Cooling	Convection		
Impedance	50 Ω		
VSWR	< 1.5 : 1		
Dry Contacts	NFPA 1221 2016 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	MET Classified for UL 2524 Fire & Shock   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)	12.0 x 11.9 x 21.3 in (w/o bracket)   5.91 x 2.84 x 6.32 in (w/o bracket)
Weight (Repeater   Annunciator)	64.0 lbs (w/o bracket)   2.5 lbs (w/o bracket)
RF Connector	4.3-10 (Female)
Weather Resistance	NEMA 4

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