

FiRe-78-8-U

Fight Fire with FiRe™ (Fiber-optic Repeater)



The FiRe-78-8-U is a revolutionary digital public safety repeater designed to protect the lives of first responders and building occupants.

The FiRe-78-8-U is fully compliant with International Fire Code (IFC), National Fire Protection Association (NFPA), and Underwriters Laboratories (UL) and is UL 2524 Certified for In-Building 2-Way Emergency Responder Communication Enhancement Systems (ERCES).

Through the use of digital signal processing (DSP) filtering technology, the FiRe-78-8-U helps eliminate adjacent channel interference to allow band selectivity and support for 700 MHz and 800 MHz Public Safety frequencies including FirstNet Band 14. 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.



Product Features

- Channelized 700/800 MHz Repeater and fiber DAS Head End (HE) in a single unit
- NFPA 72-2013, NFPA 1221-2016/2019, NFPA 1225, IFC 2015/2018/2021 code compliant and FirstNet Band 14 compliant
- Certified to UL 2524, Second Edition, by Underwriters Laboratories
- Up to 32 narrowband and 2 wideband channel support for PS 700 (including FirstNet Band 14) or PS 800
- Natively supports up to 8 Remote Units or up to 36 Remote Units in combination with OEU
- Oscillation detection feature with automatic amplifier shutdown routine
- Supports up to 33 dBm composite output power per Remote Unit (sold separately)
- Type 4 / NEMA 4 Enclosure
- Supports dry contact alarming and up to 24 hours of battery backup (sold separately)
- Alarming output to supervised circuits for antenna, amplifier, AC or DC power supply, battery, and charger failure
- Supports up to two PSR-ANN-L annunciators (one included by default) to provide visual and audible alarms

Product Specifications

Fiber-optic Repeater for Public Safety 700/800 MHz



Electronic Specifications

		Downlink	Uplink
Frequency Range	PS 700 (w/ Band 14)	758 - 768 MHz 769 - 775 MHz	788 - 798 MHz 799 - 805 MHz
	PS 800	851 - 861 MHz	806 - 816 MHz
Composite Output Power of FiRe-78-8-U	PS 700 (w/ Band 14)	-24 dBm	30 dBm
	PS 800	-24 dBm	30 dBm
	PS 700 + PS 800	-21 dBm	30 dBm
Composite Output Power of ADXV-R-3378P-U	PS 700 (w/ Band 14)	33 dBm	-10 dBm
	PS 800	33 dBm	-10 dBm
	PS 700 (w/ Band 14) + PS 800	33 dBm	-10 dBm
System Total Gain (FiRe-78-8-U + ADXV-R-3378P-U)		95 dB	85 dB
System Total Input Power (FiRe-78-8-U + ADXV-R-3378P-U)		-62 dBm	-55 dBm
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	Narrowband	12.5, 25, 75, 100, 150, 200 KHz	
	Wideband	3, 5, 6, 10 MHz	
Filter Roll-off	Narrowband	≥ 60 dBc @ Filter Bandwidth Edge + 3 x Filter BW	
	Wideband	55 dBc @ Filter Bandwidth Edge + 3 x Filter BW	
	Wideband (75 KHz LD)	55 dBc @ Filter Bandwidth Edge + 4 x Filter BW	
Spurious	FCC Rule Compliant		
Passband Ripple	±2 dB		
ALC Dynamic Range	≥ 60 dB		
Gain Dynamic Range	≥ 40 dB		
Channel Setting Resolution	0.025 KHz		
System Group Delay	Narrowband	≤ 46 μs @ 12.5 KHz BW, ≤ 28 μs @ 25 KHz BW, ≤ 18 μs @ 75 KHz BW ≤ 15 μs @ 100 KHz BW, ≤ 13 μs @ 150 KHz BW, ≤ 12 μs @ 200 KHz BW	
Max RF Input Power w/o Overdrive	-20 dBm		
UL Noise Figure @ Max. Gain	≤ 5.0 dB Center Frequency		
No Damage Max Input Power	+10 dBm		
Impedance	50 Ω		
VSWR	< 1.5 : 1		

Mechanical Specifications

Dimension (W x D x H) w/o mounting bracket	11.0 x 12.2 x 21.3 in (280 x 311 x 540 mm)
Weight	72.7 lbs (35.0 kg)
RF Connector	4.3-10 (Female)
Weather Resistance	Type 4 / NEMA 4
Optic Terminal Tray (Internal)	2
Power Supply	100 - 240 VAC, 60Hz (Free Voltage)
Power Consumption	200 W
Enclosure Cooling	Natural Convection
Dry Contacts	NFPA 1, 72, 1221, 1225, IFC Code / UL 2524 Compliant
Remote Alarming / Network Management	Dry Contacts, Web-GUI, SNMP, SNMP-Traps (External Wireless Modem Required)
Annunciator Support	Up to 2 PSR-ANN-L annunciators
Relative Humidity	5% - 90%
Operating Temperature	-22°F to +131°F (-30°C to +55°C)
Certification	UL 2524 Certified, Second Edition by Underwriters Laboratories