

Model SRDR-33-7080-A-FN

- NFPA/IFC Compliant
- Dual-Band 700/800 MHz
- Channel & Band Selective
- FirstNet Supported
- 2 Watts per Band
- Integrated Battery Charging and Alarming
- “ZeroDelta” Isolation Feature
- Active DAS mode
- Enhanced Filtering for Commercial DAS Colocation
- 60°C + Extended Life Feature
- Near-Far Mitigation



The SOLiD RESPONDER™ goes well beyond today’s fire codes, and is a first in the industry to include patented “ZeroDelta” technology for enhanced oscillation protection.

Combine this with advanced temperature-sensitive, power-saving mode and the RESPONDER will deliver performance and reliability when needed most. The SOLiD RESPONDER™ is built to survive!

This dual-band, dual-mode repeater has a robust flexible design that simplifies traditional configuration issues and addresses today’s interference and performance challenges.

Integrating the battery backup control circuitry simplifies planning and affords system designers more battery choices, better performance, and considerable cost savings.

Active DAS Mode provides low-power separated UL and DL feeds for direct connectivity to fiber DAS head ends. No external RF filtering, attenuation, or expensive NEMA4 enclosures required.

Interference between co-located commercial and Public Safety DAS is a hot topic in today’s DAS world. SOLiD RESPONDER combines sharp DSP filtering with high-Q passive reject filtering to virtually eliminate colocation interference.

RF Specifications

SRDR-33-7080-A-FN			
Output Power at Antenna Ports (N-Female)	700 DL	+33dBm (2W)	
	800 DL	+33dBm (2W)	
	700/800 UL	+30dBm (1W) composite	
Output Power at Active DAS Ports (QMA-Female)	700 DL	-5dBm maximum	
	800 DL	-5dBm maximum	
Gain Range per Band	DL: 65-95dB in 1dB steps		
	UL: 65-95dB in 1dB steps		
Noise Figure - UL & DL	6dB		
Frequency Range	DL: 758-775MHz, UL: 788-805MHz		
	DL: 851 - 861MHz, UL: 806 - 816MHz		
Input ALC	60dB		
Gain Range per Filter - UL & DL	0-10dB in 1dB steps per sub-band/channel		
Smart AGC - UL & DL	0-20dB in 1dB steps per sub-band/channel		
Squelch - UL & DL	-110dBm to -60dBm in 1dB steps per sub-band/channel		
VSWR	1.5:1 max. (donor & service antenna ports)		
Maximum RF Input Power - No Damage	+10dBm		
Band Selective Mode			
Pre-Configured Filter Mode	700MHz Band Selections (DL, UL)	① 769 – 775, 799 - 805MHz (PS NB Only)	
		② 758 – 768, 788 - 798MHz (FN Only)	
		③ 758 – 775, 788 - 805MHz (FN + PSNB)	
	800MHz Band Selections (DL, UL)	① 851 - 854MHz, 806 - 809MHz (NPSPAC Only)	
		② 851 - 860MHz, 806 - 815MHz (NPSPAC + SMR)	
		③ 851 - 861MHz, 806 - 816MHz (NPSPAC + SMR +EB)	
Delay	5.5µsec, roll-off 60dB @1MHz offset		
Semi-Auto & Manual Filter Modes	Number of Sub-Bands	Up to 4 filter sub-bands for 700 band; Up to 4 filter sub-bands for 800 band	
	Sub-Band Bandwidth	300KHz – 1MHz with 100KHz step, 1MHz – 9MHz with 1MHz step	
	Delay Options	7µsec, roll-off 60dB @700 KHz offset 15µsec, roll-off 50dB @100 KHz offset	
Channel Selective Mode			
Number of Channels	36 (any increment can be assigned between 700 & 800 bands)		
Channel Bandwidths	12.5, 25, 50, 75, 100, 150, 200KHz		
Delay Options	16us	50dB @110KHz offset	
	33us	50dB @30KHz offset	
	49us	50dB @20KHz offset	
	95us	50dB @10KHz offset	

Supervisory				
Antenna Port - WiFi	SMA, Female	Local management terminal		
Ethernet Port	RJ45 Port with IP66	SNMP traps		
Alarms Out	MS3102 20-29S (17 PIN)	5 dry contacts		
		① System component malfunction ② VSWR-antenna malfunction, donor & service antenna ③ Normal AC power, loss of normal AC power ④ Battery charger failure ⑤ Low battery capacity (to 70 percent depletion)		
Environmental				
Operating Temperature		-30 - 60°C		
Cooling		Convection (no fan)		
Humidity		10% - 90% condensed		
Enclosure		IP66 / NEMA4		
Installation Site		Indoor & Outdoor		
Compliance		UL, FCC/IC		
Electrical				
Power Supply	AC	100 - 120 (90 - 130) VAC		
	DC	42 - 57 VDC		
	Charger	48V charger for lead-acid batteries with State of Charge detection		
Power Consumption (60°C, Non-charge state)				
Operation Mode		120 VAC	48 VDC	Power-Saving Mode
Passive DAS (PS 700 and PS 800)		< 165W	< 150W	< 130W
Passive DAS (PS 700 or PS 800)		< 140 W	< 125 W	< 110 W
Active DAS Mode (PS 700 and PS 800)		< 110 W	< 95 W	< 88 W
Mechanical				
Dimensions (HxWxD)		24.8 x 18.1 x 9.1 (inches) 630 x 460 x 230 (mm)		
Weight		76 lbs. (34.5 kg)		
Mounting		Wall-mount or Rack-mount (19" rack)		
RF Ports	Antenna, 2 Ports: Donor & Service		N-Female	
	30dB Coupler, 2 Ports: Donor & Service Antenna		SMA-Female	
	Active DAS, 4 Ports: 700 UL & DL, 800 UL & DL		QMA-Female	

Ordering Information

The SOLiD RESPONDER is available from the factory in different configurations as described below. The base configuration can be factory or field upgraded by purchasing the Channel Selective or Echo Cancellation licenses, or both. A configuration is also available that includes both the Channel Selective and Echo Cancellation licenses plus a plug-in module with enhanced system analysis features.

Refer to the following descriptions or consult your local SOLiD Sales Engineer for guidance in selecting the best product configuration for your application.

SRDR-33-7080-A-FN (Base Configuration)

This Part Number represents the base configuration, which includes the Band Selective mode only (FCC Class B Wideband Signal Booster Device). All Class B Signal Booster devices must be registered with the FCC prior to operation. Band selective mode provides four non-contiguous window filters in each band that can be user defined. The minimum bandwidth for each window filter is 300KHz and the maximum bandwidth is 10MHz. This mode is good for RF environments where interference is minimal and window filters can be arranged to sufficiently reject interference while maintaining acceptable system performance.

SRDR-33-L1 (Channel Selective Software Upgrade)

This license upgrade adds a Channel Selective mode allowing the user to switch between Band Selective and Channel Selective operation. When operating at channel bandwidths of 75KHz or less, this device is classified by FCC as a Class A Narrowband Signal Booster Device, and as such, does not require registration with the FCC. Channel Selective mode is typically used in RF congested areas where narrow pass windows are needed to minimize interference from undesired frequencies. In Channel Selective mode, also known as “Channelized” mode, the user can assign up to 36 window filters, in any increment, between the 700 and 800 MHz bands. Filter bandwidths range from 12.5KHz to 200KHz in this mode.

SRDR-33-L2 (Echo Cancellation Software Upgrade)

Echo Cancellation Mode (“ZeroDelta” feature). This license upgrade adds an Echo Cancellation feature to Band and Channel Selective modes. The Echo Cancellation feature includes an advanced patented algorithm that allows the repeater to maintain maximum gain even when system isolation deteriorates to as low as the gain of the repeater. Traditional repeaters require at least 15-20dB more isolation than system gain to prevent oscillation. The “ZeroDelta” feature allows normal operation with 0dB difference between system isolation and system gain. This feature has many advantages such as increased system stability and reliability, easy system commissioning and optimization, and increased coverage footprint and cost savings in applications where weak off-air signals require a high gain setting.

SRDR-33-L3 (System Analysis Module – Hardware and Software Upgrade plus L1 and L2)

System Analysis Module (SAM). This part number includes a hardware plug-in module and software that enables advanced system analysis, like data logging of wideband spectrum, which aids in the application of window filters, and spectrum analyzer features that display near-real-time spectrum readings for both input and output. This upgrade also includes both the Channel Selective (SRDR-33-L1) and Echo Cancellation (SRDR-33-L2) licenses.

License Descriptions	Part Number
Digital Repeater, 2 Watt, 700/800 MHz Public Safety + FirstNet, Band selective, NEMA4, NFPA/IFC Compliant.	SRDR-33-7080-A-FN
Digital Repeater Channel Selective License Upgrade	SRDR-33-L1
Digital Repeater Echo Cancellation License Upgrade	SRDR-33-L2
Digital Repeater System Analysis Module, includes: plugin module and both the Channel Selective and Echo Cancellation licenses.	SRDR-33-L3



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