

# SDR-ICS-43

## High Power Modular Digital Repeater with Interference Cancellation System

ADRF's SDR-ICS-43 is a revolutionary high-power digital repeater that combines the benefits of the most popular in-building repeater, SDR Series, and the best-in-class high-power outdoor repeater, ICS Series. The modular structure supports any combination of quad-band service in one body and each module is self-sufficient, making it the most flexible and cost-efficient high-power repeater solution.

The patented Interference Cancellation System makes it ideal for enhancing the coverage of any indoor or outdoor application. High gain and output power ensure wireless coverage in even the most remote locations. Through digital signal processing (DSP) filter technology, the SDR-ICS-43 helps eliminate adjacent channel interference.

The SDR-ICS-43 chassis is both rack and wall mountable and can be installed indoors or outdoors. The system can be configured and monitored remotely using a web-based GUI. Remote access and monitoring provides the ability to receive alarm notifications or make minor adjustments instantaneously.



### Product Features

- Each module is a fully functional repeater with independent power supply
- Features patented Interference Cancellation System
- IP66 rated for outdoor use
- 95 dB of max gain and up to 43 dBm max composite output power
- Features digital filtering with sharp roll-off
- Band Equalization function supports multiple subchannels in single module
- Supports remote configuration and monitoring via ADRF's famed Web-based GUI and internal or external modem
- Daisy-chain multiple modules to configure/monitor from a single point of interface

# Product Specifications

## SDR-ICS-43 High Power Modular Digital Repeater with Interference Cancellation System



### Electronic Specifications

		SDR-ICS-43-6	SDR-ICS-43-7FN	SDR-ICS-43-7L	SDR-ICS-43-7U	SDR-ICS-43-S8C
Frequency	DL:	617 - 652 MHz	728 - 768 MHz	728 - 746 MHz	746 - 757 MHz	862 - 894 MHz
	UL:	663 - 698 MHz	698 - 716 MHz 776 - 798 MHz	698 - 716 MHz	776 - 787 MHz	817 - 849 MHz
Band Selection per Filter (SDR and ICS Modes)		LTE/5G NR: 5 - 20 MHz	LTE: 5 - 20 MHz   CDMA: 2.5 - 20 MHz   WCDMA: 5 - 20 MHz			
Simultaneous Filter Support		ICS OFF: 2   ICS ON: 2		ICS OFF: 3   ICS ON: 2		
Gain Flatness (Full Band)		±1.5 dB				
Gain Flatness (Each Band)		±1.5 dB				
Gain Range		55 - 95 dB (Step: - 0.5 dB) (Tolerance: ± 1 dB)				
Frequency Error		±0.05 ppm				
ALC Range		Max Output Power - 20 dB				
Spurious Emissions		Meet 3GPP 36.106, 3GPP TS 36.104, 3GPP TS 36.141				
Out Band Spurious Emissions		-13 dBm / 1 KHz; 9 KHz < f < 150 KHz, -13 dBm / 10 KHz; 150 KHz < f < 30 MHz, -13 dBm / 100 KHz; 30 MHz < f < 1 GHz, -13 dBm / 1 MHz; 1 GHz < f < 12.75 GHz				
Composite Output Power	DL:	+43 dBm				
	UL:	+30 dBm				
Required Minimum Isolation		Gain - 15 dB				
Roll Off		> 50 dBc @ 1 MHz Outside pass-band				
Noise Figure		≤ 5 dB @ 95 dB gain; ≤ 8 dB @ 73 dB gain; ≤ 12 dB @ 65 dB gain				
Delay	< 3.5us @ 5G NR < 5.0us @ LTE		< 4 μs @ LTE			< 4 μs @ LTE < 7.2μ @ CDMA
EVM		Meet 3GPP 36.106, 3GPP TS 36.104, 3GPP TS 36.14				
VSWR		1.5 : 1				
Remote Alarm / Network		Web-GUI, SNMP, SNMP-Traps				
AC Power		100 - 240 V				
AC Frequency		45 - 65 Hz				
AC Voltage Protection		Circuit Protector				
Battery Backup		+24 V				
Power Consumption		<250 Watt				

### Environmental Specifications

Operating Temperature	-22°F to +131°F (-30°C to +55°C)
Relative Humidity	5 - 90%

### Mechanical Specifications

Dimensions Chassis (W x H x D) Modules (W x H x D) 600 / 7L / 7U / S8C 7FN	19.0 x 10.50 x 17.00 in (482 x 266.5 x 430 mm)  4.18 x 10.34 x 17.73 in (106 x 262.5 x 450 mm) 5.28 x 10.34 x 17.73 in (134 x 262.5 x 450 mm)
Weight 600 / 7L / 7U / S8C 7FN	30.8 lbs (14 kg) with Bracket 39.68 lbs (18 kg) with Bracket
RF Ports	4.3-10 Female
Local Interface	RJ-45 (Ethernet)
Cooling	Fan
Weather Resistance	IP66
Mounting Type	19" Rack / Wall / Pole Mounting
Ground	External Threaded Stud

# Product Specifications

## SDR-ICS-43 High Power Modular Digital Repeater with Interference Cancellation System



### Electronic Specifications

		SDR-ICS-43-P	SDR-ICS-43-A	SDR-ICS-43-W	SDR-ICS-43-BT
Frequency	DL:	1930 - 1995 MHz	2110 - 2155 MHz	2350 - 2360 MHz	2496 - 2690 MHz
	UL:	1850 - 1915 MHz	1710 - 1755 MHz	2305 - 2315 MHz	2496 - 2690 MHz
Band Selection per Filter (SDR and ICS Modes)			LTE: 5 - 20 MHz CDMA: 2.5 - 20 MHz WCDMA: 5 - 20 MHz		LTE/ 5G NR: 20 / 40/ 60 MHz
Simultaneous Filter Support			ICS OFF: 3   ICS ON: 2		ICS OFF/ON: 1
Gain Flatness (Full Band)			±1.5 dB		±2.0 dB
Gain Flatness (Each Band)			±1.5 dB		
Gain Range			55 - 95 dB (Step: - 0.5 dB) (Tolerance: ± 1 dB)		
Frequency Error			±0.05 ppm		
ALC Range			Max Output Power - 20 dB		
Spurious Emissions			Meet 3GPP 36.106, 3GPP TS 36.104, 3GPP TS 36.141		
Out Band Spurious Emissions			-13 dBm / 1 KHz; 9 KHz < f < 150 KHz, -13 dBm / 10 KHz; 150 KHz < f < 30 MHz, -13 dBm / 100 KHz; 30 MHz < f < 1 GHz, -13 dBm / 1 MHz; 1 GHz < f < 12.75 GHz		
Composite Output Power	DL:		+43 dBm		
	UL:		+30 dBm		
Required Minimum Isolation			Gain - 15 dB		Gain - 10 dB
Roll Off			> 50 dBc @ 1 MHz Outside pass-band		
Noise Figure			≤ 5 dB @ 95dB gain, ≤ 8 dB @ 73 dB gain, ≤ 12 dB @ 65 dB gain		
Delay		< 4 μs @ LTE < 7.2μs @ CDMA	< 4 μs @ LTE		< 2.4 μs @ 5G NR
EVM			Meet 3GPP 36.106, 3GPP TS 36.104, 3GPP TS 36.141		
VSWR			1.5 : 1		
Remote Alarm / Network			Web-GUI, SNMP, SNMP-Traps		
AC Power			100 - 240 V		
AC Frequency			45 - 65 Hz		
AC Voltage Protection			Circuit Protector		
Battery Backup			+24 V		
Power Consumption			<250 Watt		<236 Watt

### Environmental Specifications

Operating Temperature	-22°F to +131°F (-30°C to +55°C)
Relative Humidity	5-90%

### Mechanical Specifications

Dimensions	
Chassis (W x H x D)	19.0 x 10.50 x 17.00 in (482 x 266.5 x 430 mm)
Modules (W x H x D)	
PCS / AWS / WCS / BT	4.18 x 10.34 x 17.73 in (106 x 262.5 x 450 mm)
Weight	
PCS / AWS / WCS / BT	30.8 lbs (14 kg) with Bracket
RF Ports	4.3-10 Female
Local Interface	RJ-45 (Ethernet)
Cooling	Fan
Weather Resistance	IP66
Mounting Type	19" Rack / Wall / Pole Mounting
Ground	External Threaded Stud

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