Quality&**Precise**

MAXWELLON SRM080/180

9kHz~8GHz/ 18GHz

RF Sensor

2023

Maxwellon

The SRM080/180 RF sensor provides a cost-effective mobile radio monitoring and positioning solution, with monitoring frequencies ranging from 9kHz to 8GHz/18GHz, and real-time bandwidth up to 40MHz digital IF, frequency scanning speed up to 80GHz/s, built-in GPS/BD time synchronization and positioning module. A single module can be used for wireless monitoring and monitoring, while a combination of multiple modules can be used for network monitoring. Not only can abnormal signals be monitored, but also TDOA positioning method can be used to accurately locate abnormal points. This module is compact in size, easy to install and disassemble, meets the IP65 protection level, and can economically and effectively deploy a fully functional RF monitoring station to the desired location.

Key Feature

- Frequency range 9kHz~8GHz/18GHz
- Adjustable digital intermediate frequency bandwidth, up to 40MHz panoramic intermediate frequency display
- Panoramic scanning speed up to 80GHz/s for quick setup and discovery
- Equipped with panoramic scanning, frequency band scanning, list scanning, and fixed frequency point monitoring functions
- Equipped with AM/FM/LSB/USB/CW audio demodulation mode, providing digital/analog audio stream interface
- Supports multi-objective audio demodulation and field strength measurement, and provides an analog audio stream interface
- Capable of AM/FM modulation analysis, meeting standard ITU measurement requirements for signal storage and playback, facilitating transient signal monitoring, processing, and positioning
- I/Q data stream recording, with storage bandwidth up to 40MHz and real-time storage depth up to 4Gb
- Supports GPS/BD time synchronization function, with data timestamp accuracy better than 40ns
- A comprehensive SDK development kit and API documentation allow users to flexibly develop LAN interfaces for remote control and data output based on their needs
- Compact size, easy to install and disassemble, meeting IP65 protection level

Specifications

Model		SRM080	SRM180
RF			
Frequency Range		9kHz~8GHz	9kHz~18GHz
Input impedance		50Ω	
VSWR (typical value, RF 10dB attenuation)		≤ 2.0:1	≤ 2.5:1
Channel gain control	RF attenuator	Max 30dB	
	IF amplifier	Max 30dB	
Amplitude accuracy		± 1.5dB	
Noise coefficient(Low noise mode)		Typical value 12dB	Typical value 18dB
Third order cutoff point (TOI)(Within the input band)		Typical value 13dBm	Typical value 10dBm
Second order intercept (SOI)		Typical value 45dBm	Typical value 40dBm
Phase Noise(fc = 1.0GHz)		-98dBc/Hz@10kHz	-90dBc/Hz@10kHz
Image Rejection		9kHz~3.6GHz: 90dB (typical value) 3.6 GHz~8GHz: 80dB (typical value)	60dB (typical value)
IF Rejection		9kHz~3.6GHz: 90dB 3.6 GHz~8GHz: 80dB	70dB
Inherent residual response		-110dBm	-95dBm

Model		SRM080	SRM180
IF			
Spectrum Display Range		10kHz~40MHz	
Display Mode		Regular, average, and Max Hold	
IF Demodulation Bandwidth		1.5 kHz~40MHz (20 gears)	
Audio Demodulation		AM, FM, LSB, USB, CW, Pulse	
Demodulation Analysis		AM, FM	
Signal			
Scan Rate(100kHz, RBW)		80GHz/s	
Fast Fourier Transform (IF Spectrum)		2048 point (Blackman Window)	
Data Type	I/Q Data (14bit accuracy)	Bandwidth up to 40MHz	
	Spectrum Data	IF spectrum and sweep spectrum	
	Field-strength Level	Minimum channel bandwidth up to 1.5kHz	
Data Storage		512MB	
SCAN			
Panoramic Scan	Start/End Frequency	User selectable	
	Scanning step	125/250/500/625Hz/1.25/2.5/3.125/6.25/12.5/25/50/100/200/400kHz	
	Step Count	≤ 1500000 points	
Frequency Band Scan	Start/End Frequency	User selectable	
	User setting parameters	Scanning step, dwell time, audio demodulation	
	Step Count	≤ 4000 points	
Storage Scan	Storage location	Up to 1024 channels, users can edit channel frequency, dwell time, IF bandwidth, audio demodulation mode, etc	
Measurement Accuracy and Display Mode			
Frequency Resolution		3Hz	12Hz
Frequency Accuracy		±0.5ppm	
		Aging rate: ±1ppm/ year	
Display Error		±1.5dB	
Time and Location			
Clock synchronization method		GPS	
Time reference accuracy		GPS ≤50ns	
Data timestamp resolution		40ns	
GPS/BD	Working mode	Fixed or mobile (ground)	
	Horizontal accuracy	10 meters	
	Altitude accuracy	15 meters	
	GPS/BD antenna	Passive antenna with 5 meter long cable	
General			
Input/output interface	RF input port	N-type (50 Ω), two RF input ports	
	Power	Standard circular connector (three core)	
	LAN	Ethernet RJ45, sturdy and durable, weather resistant	
	GPS antenna	SMA	
Power		9VDC~13VDC	
Consumption		About 20W	
Shell		Sealed aluminum casing, meeting IP65 protection level	
Size (length × wide × High)		290mm × 240mm × 50mm	
weight		About 3.0kg	
Operation Temperature		-15℃ to +55℃	

Ordering Information

Configure	Describe	Order No.
Main Engine	RF Sensor	SRM080
		SRM180
Standard	CD (user manual, programming manual, upper computer software (basic software package))	
	LAN connection cable (standard Ethernet cable)	
Option	GPS/BD timing module (including antenna)	SRM-GPS
	Compact omnidirectional antenna (0.3~7.5GHz)	OA750
	Handheld directional antenna (0.6~8GHz)	DA800

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