



MAXWELLON SA2000

9kHz~3.6GHz/7.5GHz
Spectrum Analyzer
2023

Maxwellon SA2000 series spectrum analyzer reaches max. 7.5GHz with excellent performance. Pre-amplifier, AM/FM demodulation, Interference analysis, limit line, OBW, ACPR etc, all these useful functions are provided as standard. SA2000 series spectrum analyzer is equipped with an optional tracking source. Meanwhile user can also choose a build-in CW source which can extend the ability of SA2000 spectrum analyzer.

■ Key Feature

- Frequency range from 9kHz to 3.6GHz/ 7.5GHz
- DANL <-150dBm, <-161dBm (typ.)
- Audio analysis
- SCPI supported
- Max. 3GHz tracking source and CW source
- Standard preamplifier/ waterfall function/ limit line function

■ Specification

Model		SA2031	SA2070
Frequency Range		9kHz~3.6GHz	9kHz~7.5GHz
Frequency Reading Accuracy		± (Frequency standard reading × Frequency reference accuracy+1% × Sweep width+10% × RBW+0.5 × [Sweep width/(Sweep point -1)] +1Hz)	
Internal Reference (10MHz)		Aging rate: <1ppm/year	
		Temperature drift: <0.5ppm (15 C to 35 C)	
Resolution Bandwidth(RBW)			
Range		1Hz to 500kHz (in continuous steps of 1 to 10), 1MHz, 3MHz	
Selectivity (60db/3db)	RBW≤500kHz	<5:1 typical value (digital implementation, close to Gaussian shape)	
Accuracy		<10% (<5% typical value)	
Video Bandwidth (VBW)		10Hz ~ 3MHz	
DANL (1Hz resolution bandwidth, RF attenuator 0dB)			
Pre Amplifier Off		100kHz~1MHz <-100dBm- 3×(f/100kHz)dB 1MHz ~ 10MHz <-130dBm 10MHz ~ 1GHz <-135dBm 1GHz ~ 3.6GHz<-130dBm	100kHz~1MHz <-95dBm-3×(f/100kHz)dB 1MHz~10MHz <-125dBm 10MHz~2GHz <-133dBm 2GHz~3.4GHz <-130dBm 3.4GHz~5GHz <-133dBm 5GHz~7.5GHz <-127dBm
Pre Amplifier On		100kHz~1MHz <-120dBm- 3×(f/100kHz)dB 1MHz ~ 10MHz <-150dBm 10MHz ~ 1GHz <-155dBm 1GHz ~ 3.6GHz<-150dBm	100kHz~1MHz <-110dBm-3×(f/100kHz)dB 1MHz~10MHz <-140dBm 10MHz~2GHz <-148dBm 2GHz~3.4GHz <-143dBm 3.4GHz~5GHz <-145dBm 5GHz~7.5GHz <-140dBm
Phase Noise			
fc=500MHz (RBW ≤ 1kHz, sampling detection, average number of traces ≥ 10)		-90dBc/Hz at 30kHz frequency offset	-80dBc/Hz at 30kHz frequency offset
		-100dBc/Hz at 100kHz frequency offset	-90dBc/Hz at 100kHz frequency offset
		-115dBc/Hz at 1MHz frequency offset	-110dBc/Hz at 1MHz frequency offset
Sweep Time			
Non Zero Sweep Width		3ms to 3000s	
Zero Sweep Width		1ms to 3000s	
Sweep Mode		Continuous, Single	

Model		SA2031	SA2070
Trigger			
Trigger Source		Freedom, Video, External	
External trigger level		5V TTL level, Nominal Value	
Frequency Counter			
Counting Resolution		1Hz, 10Hz, 100Hz, 1kHz	
Counter Uncertainty		Frequency Reading × Frequency Reference Accuracy+Counting Resolution	
Amplitude Accuracy (20℃ to 30℃)			
Comprehensive Amplitude Accuracy		±1.5dB	
Amplitude			
Measurement Range (fc≥10MHz)		DANL to +27dBm	DANL to +20dBm
Max. Safe Input Level(Average continuous power)		+27dBm	+23dBm
Max. DC Input Voltage		50Vdc	
Input Attenuator Range		0 - 39dB, Steps of 3 dB	0 - 30dB, Steps of 1 dB
Stray and Residual Response			
TOI (third order distortion)	>30MHz	+7dBm	+10dBm
SHI (second-order distortion)	>10MHz	+40dBm	
Input related spurious signal		<-60dBc	
Remaining Response		< -85dBm	
Tracking Signal Source (option)			
Frequency Range		100kHz to 3.6GHz	100kHz to 3.2GHz
Output Power		-30dBm to 0dBm in 1dB steps	
Flatness Output		Tracking source (100kHz to 3.6GHz) ± 3dB	Tracking source (100kHz to 3.2GHz) ± 3dB
		Independent source (150MHz to 3.6GHz) ± 3dB	
Input/Output			
RF Input		N-type female (50 Ω)	
USB		USB 2.0	
LAN		10/100 Base-T, RJ-45 connector	
RS232		9-pin D-SUB (male)	
FM/AM Audio Demodulation		Speaker and Headphone Jack	
Reference Input/Output		10MHz, BNC female; Input power: 0dBm to+10dBm; Output power: 0dBm ± 2dB	
VGA		800 × 600, 60Hz, 15 pin D-SUB (female)	
External Trigger Input		5V TTL level (± 10V, 100mA maximum)	
General			
Display		TFT-LCD, 8.4 inches, 800×600	
Max. Weight		6.5kg	
Dimensions (width × high × deep)		390mm×182mm×230mm	
Working Temperature		0 ℃ to 40 ℃	
Storage Temperature		-30℃ to+70℃	
Power		Input Voltage:100V to 240V	
		AC Frequency: 40Hz to 60Hz	
		Max. Power Consumption: 30W	

■ Ordering Information

Model

Model	Name	Description
SA2031	Spectrum Analyzer	9kHz - 3.6GHz
SA2070	Spectrum Analyzer	9kHz - 7.5GHz

Standard

No.	Name
1	CD-ROM (User Manual, Programming Manual)
2	AC/DC adapter

Options

Option Model	Name
SA2031-TG15	100kHz to 1.5GHz tracking source
SA2070-TG32	100kHz to 3.2GHz tracking source
SA2031-TG36	100kHz to 3.6GHz tracking signal source
SA2000-FS	Field strength measurement
ANT01	Near field probe kit
FD100	Frequency discrimination characteristic testing module
OA750/DA800	Omnidirectional antenna/directional antenna
VB30	Standing wave ratio bridge
UP60	USB power sensor
TR1000	RF demonstration kit



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