SAF

Your RF Spectrum Analyzer Development Kit
For Easy Integration with Your System

Frequency Sweep • Channel Power • Zero-Span

www.spectrumcompact.com

Description:

Spectrum Core is a spectrum analyzer development kit that is perfectly suited for integration with third-party systems. Control of the device and measurement results are obtained by a virtual COM port via a USB interface. Spectrum Core is operator system agnostic and PC can communicate directly to the Spectrum Core without the need for any intermediate software or hardware.

Measurement Setup:

- **Frequency sweep:** Start/Stop
- **Single sweep, Continuous sweep**
- **Power-in-Band**
- **Span:** Full Span, Min Span, Selected Span, Zero-Span
- **Resolution Bandwidth, Video Bandwidth (RBW, VBW)**
- **Attenuation**
- **Low noise amplifier (LNA) ON/OFF**
- **Detector:** Minimum, Average, Maximum

Functions:

- **Power in Band**
- **Sweep:** Continuous, Manual Trigger
- **Zero-Span**

Best for integration:

- **Lightweight and small form factor**
- **Open API**
- **Adaptable physical fixing options**

Frequency

Frequency Range	10 – 3 000 MHz
Frequency Resolution	10 kHz
Frequency Reference	
Aging	±1.0 ppm/1 year
Accuracy *(t: 25 °C ± 2.5 °C)* + aging	±2.5 ppm
Frequency span	RBW to full range, Zero-Span
Resolution Bandwidth (RBW)	10/30/100/300 kHz
Video Bandwidth (VBW)	1/3/10/30 kHz

Sweep time	
RBW: 10 kHz; Span: 0.5 MHz	<= 335 ms
RBW: 300 kHz; Span: 15 MHz	<= 130 ms

SSB Phase Noise *t = 20 °C to 30 °C; F_c = 1 GHz*	
Carrier Offset: 20 kHz	-70 dBc/Hz
Carrier Offset: 100 kHz	-90 dBc/Hz
Carrier Offset: 1 MHz	-110 dBc/Hz

Level

Measurement Range	DANL to +20 dBm
Dynamic Range, REF = 0	>= 75 dB
Second Harmonics Distortion *ATT: 0 dB, LNA: ON, Input Level: -40 dBm*	< -43 dBc typ.
Third-Order Intercept (TOI) *ATT: 0 dB, LNA: ON*	-5 dBm typ.

Input related spurs	LNA ON
ATT: 0 dB, LNA: ON, REF: -52 dBm; Input level: -50 dBm	< -43 dBc

Amplitude Accuracy *ATT: 0 dB ; Detector: AVG ; Input: -50 dBm CW ; RBW, VBW: AUTO*	
20 °C to 30 °C (68 °F to 86 °F)	± 1 dB
-15 °C to 55 °C (5 °F to 131 °F)	± 3 dB

Maximum Safe Input *Level DC voltage: 0 V*		LNA ON	LNA OFF
ATT: 0 dB		+10 dBm	+20 dBm
ATT: 30 dB		+25 dBm	+25 dBm

Typical Actual DANL *ATT: 0 dB, Detector: AVG REF: -12 dB Termination 50 Ω Trace: 16AVG, 20 °C to 30 °C*		LNA ON	LNA OFF
RBW: 10 kHz; VBW: 1 kHz	10-30 MHz	< -123 dBm	< -103 dBm
	30-3000 MHz	< -125 dBm	< -105 dBm
RBW: 30 kHz; VBW: 1 kHz		< -123 dBm	< -107 dBm
RBW: 100 kHz; VBW: 3 kHz		< -119 dBm	< -102 dBm
RBW: 300 kHz; VBW: 10 kHz		< -114 dBm	< -98 dBm

Typical DANL Normalized to 1Hz		LNA ON	LNA OFF
20 °C to 30 °C, ATT = 0 dB, Termin.: 50 Ω Detector: AVG, Trace: 16AVG	10-30 MHz	< -163 dBm/Hz, typ.	< -143 dBm/Hz, typ.
	30-3000 MHz	< -165 dBm/Hz, typ.	< -145 dBm/Hz, typ.

General Data

Data and Power Interface *Input voltage*	USB Type-C 5 VDC, 3A
Additional Power input	USB Type-C 5 VDC, 3A
Operating temperature	*-33 °C to 55 °C (-27 °F to 131 °F)*
Dimensions	135 x 84 x 28 mm 5.32 x 3.31 x 1.1 inch
Weight	0.40 kg / 14.11 oz
Ingress Protection	IP54

RF Input

Impedance	50 Ω (nom.)
Connector	SMA F
VSWR	< 1.5
Input attenuator	0, 5, 10, 15, 20, 25, 30 dB

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