



S87235 Series USB Average Power Sensor

Datasheet



Saluki Technology Inc.

The document applies to the USB average power sensors of the following models:

- S87235C USB average power sensor (10MHz - 8GHz).
- S87235D USB average power sensor (10MHz - 18GHz).
- S87235F USB average power sensor (10MHz - 33GHz).
- S87235H USB average power sensor (10MHz - 50GHz).

Preface

Thanks for choosing S87235 series USB average power sensor produced by Saluki Technology Inc.

We devote ourselves to meeting your demands, providing you high-quality measuring instrument and the best after-sales service. We persist with “superior quality and considerate service”, and are committed to offering satisfactory products and service for our clients.

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Document Authorization

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Product Quality Assurance

The warranty period of the product is 36 months from the date of delivery. The instrument manufacturer will repair or replace damaged parts according to the actual situation within the warranty period.

Product Quality Certificate

The product meets the indicator requirements of the document at the time of delivery. Calibration and measurement are completed by the measuring organization with qualifications specified by the state, and relevant data are provided for reference.

Quality/Settings Management

Research, development, manufacturing and testing of the product comply with the requirements of the quality and environmental management system.

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Content

1. Overview.....	5
2. Key Features.....	5
3. Specifications.....	6
4. Ordering Information.....	8
5. Standard Package.....	8
6. Options.....	8

1. Overview

Saluki S87235C/D/F/H USB average power sensor is a diode-detection type high-precision, large dynamic range average power measuring instrument based on the USB 2.0 interface, which can accurately measure the average power of signals in various formats. The frequency range of S87235 series average power probe covers 10MHz-50GHz, and the average power measurement accuracy can reach $\leq \pm 0.20\text{dB}$.

S87235 series USB average power sensor is small in size, light in weight, uses USB interface for power supply and communication, and can be connected to a computer for use. It can flexibly expand the power measurement function of electronic measuring instruments and test systems, and is mainly used for field testing, production line testing and system integration.

2. Key Features

➤ **Broadband, large dynamic range power measurement**

The S87235 series includes 4 modules, the frequency covers 10MHz to 50GHz, and the power measurement range covers -70dBm to +26dBm.

➤ **Accurate measurement of average power of signals in various formats**

The S87235 series USB average power sensor has excellent average power measurement accuracy. The signal formats include **continuous wave, pulse modulation, 3G/4G/5G and other vector modulation signals**, which are especially suitable for power testing in communications and other fields.

For example, S87235C is in the range of -40dBm to +20dBm, and the power measurement accuracy is $\leq \pm 0.20\text{dB}$. S87235F is in the range of -45dBm to +20dBm, and the power measurement accuracy is $\leq \pm 0.23\text{dB}$.

➤ **50000 times/second measurement speed**

The S87235 series USB average power sensor can measure up to 50,000 readings per second in buffered mode.

➤ **Compact structure and easy to carry**

The S87235 series USB average power sensor is a full-featured power measurement device. It does not require a power meter host or external power supply. It can be connected to a computer through the USB interface for power measurement, so it is suitable for on-site testing. With the power measurement soft panel, measurement results and data in various display formats can be obtained intuitively.

3. Specifications

Technical Specifications		
Frequency Range	S87235C	10MHz - 8GHz
	S87235D	10MHz - 18GHz
	S87235F	10MHz - 33GHz
	S87235H	10MHz - 50GHz
Power Range	S87235C	-60dBm to +23dBm
	S87235D	-70dBm to +26dBm
	S87235F	-65dBm to +26dBm
	S87235H	-65dBm to +23dBm
Damage Level	S87235C/D/F	Average: +29dBm Peak: +32dBm for <10us duration
	S87235H	Average: +26dBm Peak: +29dBm for <10us duration
Power Measurement Accuracy	S87235C	$\pm 0.20\text{dB}$ ($\pm 4.6\%$)
	S87235D	$\pm 0.20\text{dB}$ ($\pm 4.6\%$)
	S87235F	$\pm 0.23\text{dB}$ ($\pm 5.3\%$)
	S87235H	$\pm 0.25\text{dB}$ ($\pm 5.7\%$)
Maximum VSWR	S87235C	1.20 (10MHz - 8GHz)
		1.20 (10MHz - 6GHz)
	S87235D	1.26 (6GHz - 18GHz)
		1.16 (10MHz - 6GHz)
	S87235F	1.24 (6GHz - 16GHz)
		1.33 (16GHz - 26.5GHz)
		1.41 (26.5GHz - 33GHz)
	S87235H	1.13 (10MHz - 6GHz)
		1.24 (6GHz - 16GHz)
		1.29 (16GHz - 26.5GHz)
1.32 (26.5GHz - 40GHz)		
1.48 (40GHz - 50GHz)		
Calibration Uncertainty	S87235C	3.7% (10MHz - 8GHz)
	S87235D	4.1% (10MHz - 18GHz)
	S87235F	4.1% (10MHz - 18GHz)
		5.1% (18GHz - 33GHz)
	S87235H	4.1% (10MHz - 18GHz)
		5.1% (18GHz - 33GHz)
5.6% (33GHz - 50GHz)		

Connector	S87235C	N-Type(m)
	S87235D	N-Type(m)
	S87235F	3.5mm(m)
	S87235H	2.4mm(m)
Programmable Interface	USB2.0, compatible USB-TMC	
Sampling Rate	50,000/second	
General Information		
Display	Master PC monitor	
Power Supply	+5V, 500mA	
Operation Temperature	0°C to 50°C	
Storage Temperature	-40°C to +70°C	
Operation Humidity	Humidity is not controlled when the temperature is below 10°C, When the temperature range is 10°C - 30°C, the relative humidity is (5 - 95)%, When the temperature range is 30°C - 40°C, the relative humidity is (5 - 75)%, When the temperature range is above 40°C, the relative humidity is (5 - 45)%.	
Altitude	0 - 4600m	
Weight	<0.4kg	
Dimension (W×H×D)	S87235C	52.0mm×34.0 mm×176.0 mm
	S87235D	52.0mm×34.0 mm×161.0 mm
	S87235F	52.0mm×34.0 mm×150.0 mm
	S87235H	52.0mm×34.0 mm×163.0 mm
Vibration	Random vibration: random vibration: frequency 5-100Hz, power spectral density 0.015g ² /Hz; frequency 100-137Hz, slope -6dB; frequency 137-350Hz, power spectral density 0.0075g ² /Hz; frequency 350-500Hz, slope -6dB; Frequency 500Hz, power spectral density 0.0039g ² /Hz.	
Reliable	MTBF (θ ₀)≥5000h	
Calibration Period	1 year (recommended)	
Master PC		
Operation System	Windows 10 32-bit and 64-bit Windows 7 32-bit and 64-bit Windows XP Linux	
Hardware	Processor: 1GHz or higher (2GHz or higher recommended) RAM: 2GB or more (4GB or more recommended) Hard Disk Space: 1.0GB or more Display: 1280×1024 or higher	

4. Ordering Information

Part No.	Frequency Range
S87235C	10MHz - 8GHz
S87235D	10MHz - 18GHz
S87235F	10MHz - 33GHz
S87235H	10MHz - 50GHz

5. Standard Package

No.	Item	Qty.
1	S87235X series USB power sensor	1
2	Power sensor cable, 1.5m	1
3	CD (PC software)	1

6. Options

Option No.	Item	Description
S87235-H01	Power sensor cable, 4.5m	/
S87235-H05A	Hard carrying case	Can carry one set
S87235-H05B	Hard carrying case	Can carry two sets

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