



# S4382 Series Microwave Frequency Counter

## Datasheet



Saluki Technology Inc.

**The document applies to the microwave frequency counter of the following models:**

- S4382A microwave frequency counter (10Hz - 9GHz)
- S4382B microwave frequency counter (10Hz - 12.4GHz)
- S4382C microwave frequency counter (10Hz - 18GHz)
- S4382D microwave frequency counter (10Hz - 26.5GHz)
- S4382E microwave frequency counter (10Hz - 36GHz)
- S4382F microwave frequency counter (10Hz - 40GHz)

**Standard Package of the S4382 series microwave frequency counter:**

No.	Item	Qty.
1	Microwave Frequency Counter	1
2	Test Cable (BNC Q9-J5)	1
3	Test Cable (SMA OR K)	1
4	Power Line	1
5	RS232 Cable Jumper	2
6	RS232 Test Software CD	1

**Options of the S4382 series microwave frequency counter:**

Model No.	Item
S4382-01	High-stability and Constant- temperature Crystal Oscillator $5 \times 10^{-9}$ /day
S4382-02	High-stability and Constant- temperature Crystal Oscillator $3 \times 10^{-9}$ /day
S4382-03	IEEE488 general interface
S4382-04	USB general serial interface
S4382-05	Manual Measurement Module
S4382-06	LAN interface

## Preface

Thank you for choosing S4382 series microwave frequency counter 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.

## Document No.

S4382-02-01

## Version

Rev01 2022.05

Saluki Technology

## Document Authorization

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## Product Quality Assurance

The warranty period of the product is three years 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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## 1. Overview

Saluki S4382 series microwave frequency counter adopts microwave sampling technology to realize microwave measurement. The function control, measurement sequence and data processing of the whole measurement process are completed by the internal microprocessor. It is a new generation of intelligent microwave frequency measurement instrument. The instrument adopts medium and large scale integrated circuits and some monolithic integrated circuits with excellent performance, which makes the design of the instrument more reasonable, with low power consumption and high reliability. The mean time between failures of the whole machine is more than 8000 hours.

It is equipped with RS232 interface, realizes connection and management with computer, and can be remotely controlled to form an automatic test system to realize unmanned monitoring to meet the needs of different users.

S4382 series frequency counter has the characteristics of wide frequency measurement range, high sensitivity, large dynamic range, high precision and convenient use, etc. It meets the requirements of microwave frequency measurement in the fields of national defense, scientific research, and electronic product production.

## 2. Main Characteristics

- Measure frequency up to 40GHz
- Wide measure range and dynamic range
- High accuracy and high performance
- 1Hz-10kHz resolution, optional 9 digits/second
- Advanced design, compact and reliability
- MTBF greater than 8000h
- Multiple measurement functions: average, scale, offset, relative, limit
- Automatic and manual frequency, period measurement
- 3.5 QVGA color LCD screen and soft button operation
- Standard RS232 interface, optional USB and IEEE448 programmable interface
- Mini size and low weight, flexible and easy to use

## 3. Technical Specifications

### 3.1. Input Characteristics

<b>Frequency range</b>	S4382A: 10Hz - 9GHz, S4382B: 10Hz - 12.4GHz, S4382C: 10Hz - 18GHz, S4382D: 10Hz - 26.5GHz, S4382E: 10Hz - 36GHz, S4382F: 10Hz - 40GHz
<b>Measurement error</b>	$\pm 5 \text{ LSD} \pm \text{trigger error} \pm \text{time base error} \times \text{measured signal frequency}$

**Channel A:**

<b>Frequency range</b>	10Hz - 80MHz
<b>Resolution</b>	1Hz, 10Hz, 100Hz, 1KHz, 10KHz, 9digits/sec high resolution is selectable
<b>Input sensitivity</b>	25mVrms (-19.1dBm) 10Hz-50MHz, 50mVrms (-13dBm) 50MHz-80 MHz
<b>Maximum input level</b>	1Vrms (+13dBm)
<b>Burn-out level</b>	3Vrms (+23 dBm)
<b>Input impedance</b>	1MΩ
<b>Low pass filter</b>	The cut-off frequency is about 100kHz, selectable.
<b>Coupled mode</b>	AC

<b>Frequency range</b>	60MHz - 3.2GHz (the typical value of upper frequency limit can reach 3.8GHz, however, there is no technique data provided)
<b>Resolution</b>	1Hz, 10Hz, 100Hz, 1KHz and 10KHz are selectable.
<b>Input sensitivity</b>	25mVrms (-20dBm) ≤3GHz, 40 mVrms (-15dBm) >3GHz
<b>Maximum input level</b>	1V rms (+13dBm)
<b>Burn-out level</b>	3Vrms (+23 dBm)
<b>Input impedance</b>	50Ω
<b>Coupled mode</b>	AC

*Channel A is applicable for input signals that amplitude modulation degree ≤30%, and their enveloping valley value shall meet input sensitivity.*

**Channel B:**

<b>Frequency range</b>	2GHz - 40GHz (Note: 500MHz-2GHz can also be measurable, but there is no technique data provided. The frequency is recommended to be measured with channel A, and its burn-out capacity is stronger, and maintenance costs will be less)
<b>Resolution</b>	1Hz, 10Hz, 100Hz, 1KHz, 10KHz are selectable
<b>Input sensitivity</b>	≤ -20dBm 2GHz-18GHz (-25dBm Typical value), ≤ -15dBm 18GHz-26.5GHz (-20dBm Typical value), ≤ -10dBm 26.5GHz-36GHz (-15dBm Typical value), ≤ -5dBm 36GHz-40GHz (-10dBm Typical value)
<b>Maximum input level</b>	+7dBm (that less than 3GHz are typical values)
<b>Burn-out level</b>	+20dBm
<b>Input impedance</b>	50Ω
<b>Standing-wave ratio</b>	< 3:1 (typical)

### 3. 2. Time Base

<b>Internal crystal oscillator</b>	Nominal frequency	10MHz
	Daily aging rate	1×10 <sup>-8</sup> / day (Standard) 5×10 <sup>-9</sup> /day (Option) 3×10 <sup>-9</sup> / day (Option)
<b>External time base input</b>	Frequency	5MHz or 10MHz
	Amplitude	≥ 1Vp-p
<b>Internal time base input</b>	Frequency	10MHz sinusoidal wave
	Amplitude	≥ 1Vp-p

### 3. 3. Other Characteristics

<b>Save and Recall Functions</b>	The instrument in measuring condition can realize automatic save so its data will not lose after shut-down. In addition, the instrument can also store as many as 9 measuring modes for recalling.
<b>Remote Control Interface</b>	RS232 general serial interface, IEEE488 general interface (option), USB general serial interface (option) and LAN interface (option)
<b>IEEE488 General Interface Function</b>	SH1 (complete source hook function), AH1 (complete recipient hook function), T4 (complete speak function besides only speak), L4 (complete listen function besides only listen), SR1 (complete service request function), RL1 (complete remote control/local function), DC1 (complete device clearance function).
<b>RS232 General Serial Interface</b>	The back panel RS232 gang socket is DB9 nine-needle needle socket.
<b>Program Control Commands</b>	Adopts standard commands for programmable instruments
<b>Power Supply</b>	Voltage: AC 100V-242V, Frequency: 47Hz-63Hz, Power dissipation: 40VA
<b>Dimension</b>	270mm×370mm×110mm (W×D×H)
<b>Weight</b>	About 2.5kg

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