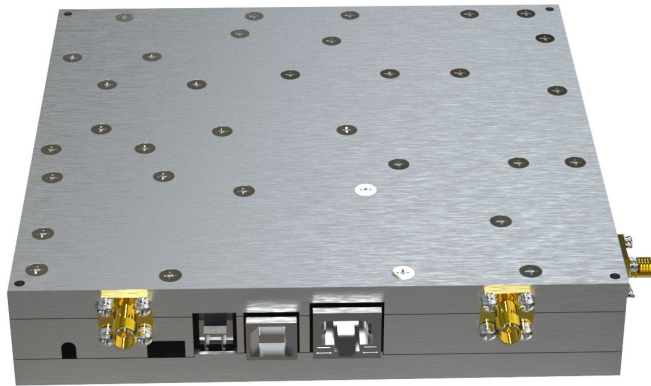




SAM533 Spectrum Analyzer Module

User Manual



Saluki Technology Inc.

1. Quick start

This chapter introduces the main interfaces and user interface of the modular spectrum analyzer, precautions when using it for the first time, and demonstrates its use through a measurement example.

1.1 Module interface description

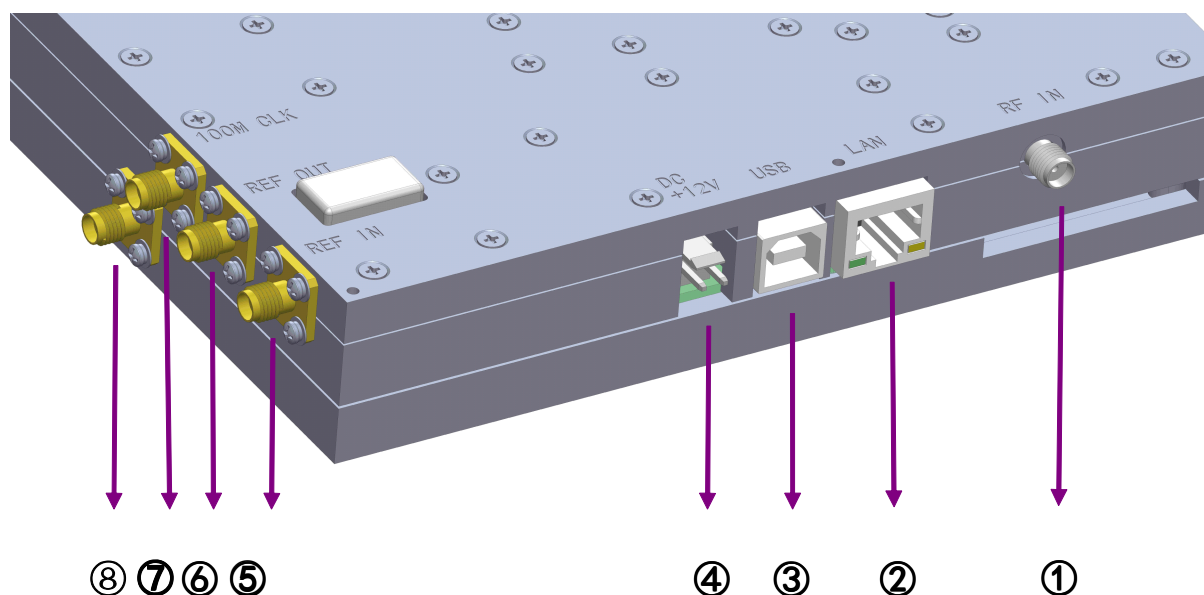


Figure 1-1 Module interface view

A brief description of the appearance interface of the SAM533 modular spectrum analyzer.

① RF IN (RF input 50Ω): The RF input installs an SMA straight connector and is connected to the device under test through a cable.

② LAN communication interface: The spectrum analyzer can be connected to the LAN for remote control through this interface. The instrument complies with LXI Class C instrument standards and can quickly build a test system and easily achieve system integration. And connect to other hosts through this interface.

③ USB interface: The modular spectrum analyzer can be used as a "master device" to connect to external USB devices.

④ Power input: DC power input port, input voltage range +9VDC ~ +13VDC.

⑤ REF IN: Frequency reference input (10MHz)

⑥ REF OUT: Frequency reference output (10MHz)

⑦ 100M CLK: frequency reference output (100MHz)

⑧ IF OUT: IF output (145MHz)

1.2 Host computer interface description

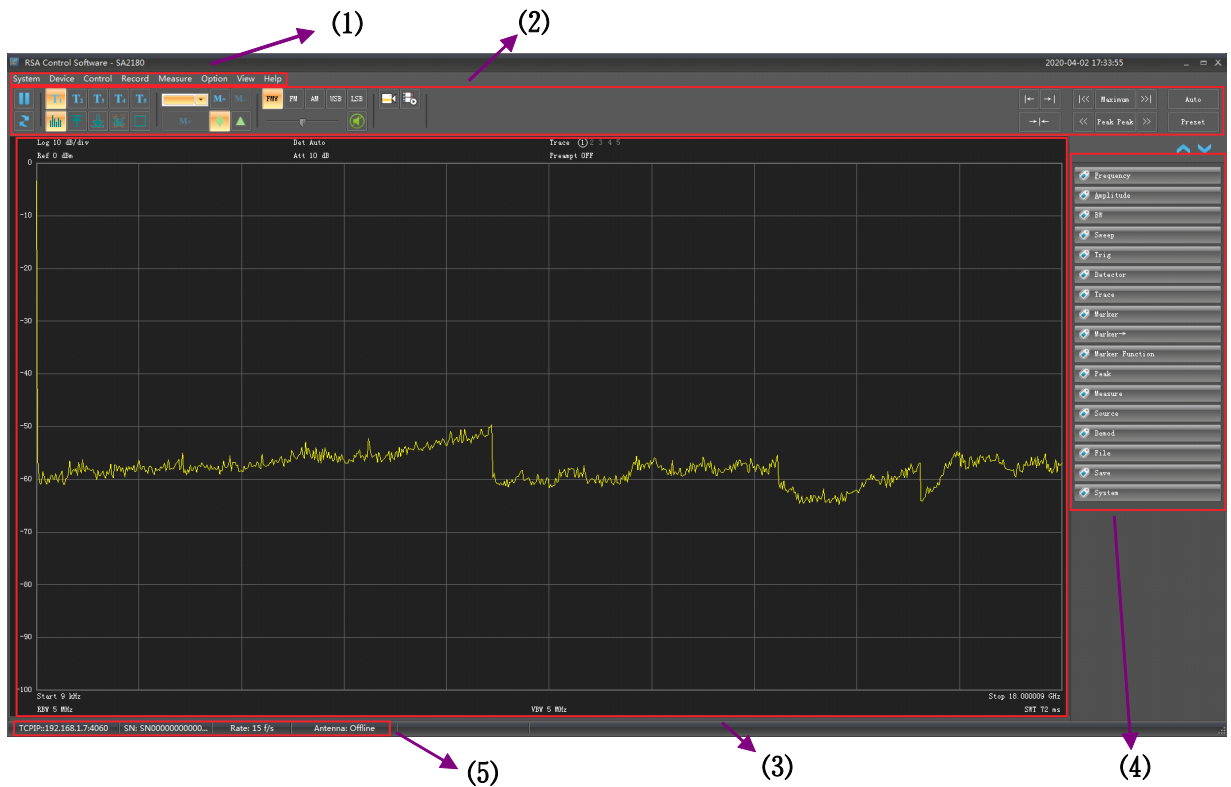


Figure 1-2 Host computer interface

Table 1-1 Host computer interface description

No.	Description	No.	Description
(1)	Menu Bar	(4)	Control bar
(2)	Toolbar	(5)	Status Bar
(3)	Interface area		

1.2.1 Menu bar

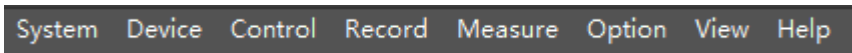








Figure 1-3 Menu bar

Table 1-2 Menu bar diagram

Menu bar	Function description
Commonly used menu keys	
System	Set the host computer connection method, software skin color, and system language.
Device	Connect/disconnect slave computer, SCPI debugging, device restart/reset.
Control	The host computer pauses, single-steps, and continuously refreshes spectrum data.
Record	Record and replay spectrum data.
Measure	Automatic measurement, amplitude threshold setting.
Option	None.
View	Set the display/hide of the scan list, toolbar, control bar, and mark list.
Help	Help documentation, software registration, firmware upgrade, software version.

Toolbar	
	Pause and refresh the spectrum display interface.
	Trace selection and trace attribute settings.
	Marker point selection and Marker point setting.
	Demodulation mode, volume level.
	Spectrum data recording and playback.
	Maximum value search, peak value search, automatic measurement.
Control bar	
Frequency	Frequency attribute settings.
Amplitude	Amplitude property settings.
BW	Resolution bandwidth property settings.
Sweep	Sweep attribute settings.

Trig	Trigger property setting.
Detector	Detection property settings.
Trace	Trace attribute settings.
Marker	Marker attribute settings.
Peak	Peak attribute settings.
Demod	Demodulation attribute settings.
Status Bar	
TCPIP::192.168.1.7:4060	Network connection status.
[SerialNo]	Serial port connection status.
Rate: 10f/s	Transmission rate.
Antenna: Offline	Antenna status.

1.2.2 Host computer user interface

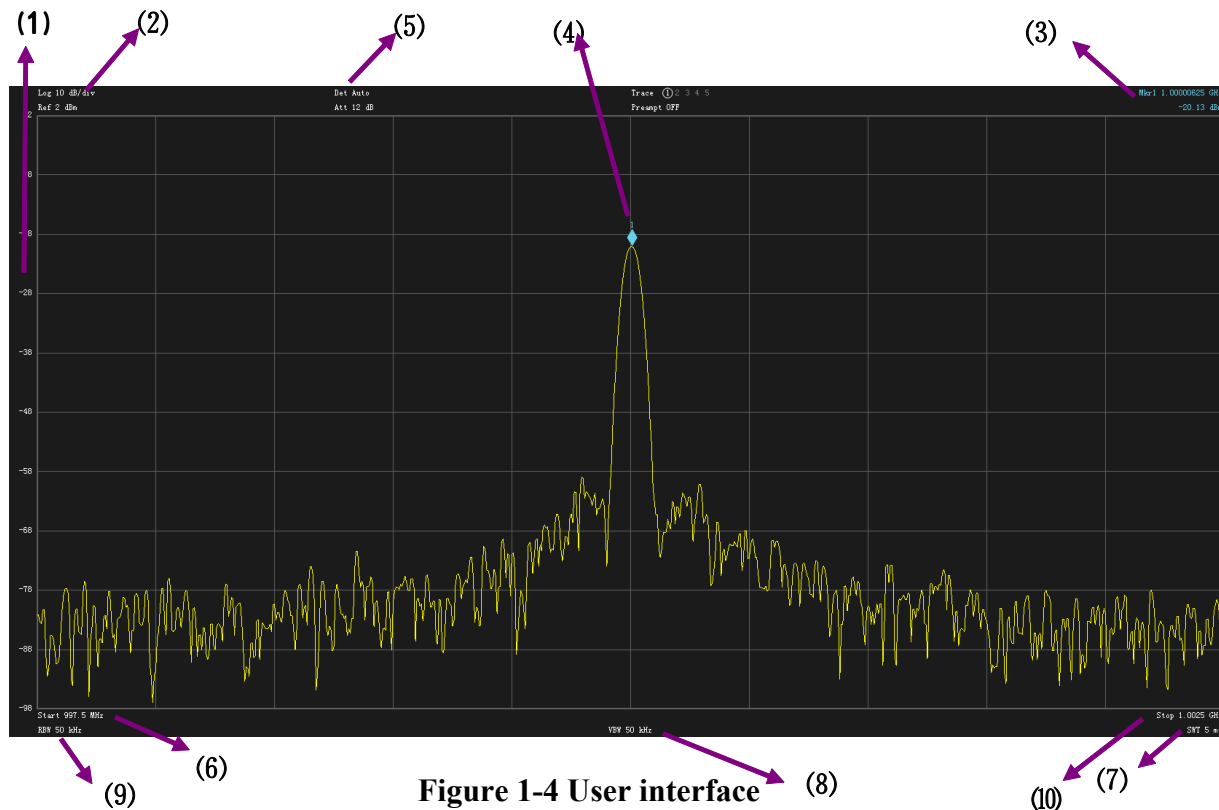


Table 1-3 User interface identifiers

NO.	Name	Description
(1)	Reference scale	Reference scale
(2)	Reference power	Display reference level
(3)	Cursor reading	Data output format logarithmic or linear
(4)	Cursor	Display the cursor position
(5)	Attenuation value	Display the value of the RF attenuator
(6)	Starting frequency	Display starting frequency value
(7)	Scan time	Display scan time

(8)	Video bandwidth	Display video bandwidth value
(9)	Resolution bandwidth	Display resolution bandwidth value
(10)	Termination frequency	Display termination frequency value

1.3 Basic measurements

The basic measurement method of the modular spectrum analyzer is introduced below by demonstrating an example of measuring a continuous wave signal. Use a signal generator (Agilent E4421B) to output a continuous wave signal with a frequency of 10MHz and an amplitude of -10dBm as the measurement source signal.



Note

The input signal amplitude must not exceed +23 dBm to avoid damage to the spectrum analyzer.

The measurement steps are as follows:

1.3.1 Connecting devices

--Connect the signal output terminal of the signal generator to the radio frequency input terminal of the spectrum analysis [RF IN].

1.3.2 Parameter settings

Ⓒ Reset the host computer

--Click [PRESET] on the toolbar. At this time, the host computer will restore all parameters to factory settings.

Ⓒ Set center frequency

--Click the [FREQ] button on the control bar, and the frequency setting menu will appear in the area below the button. Use the computer keyboard to set the [Center] parameter to 100MHz; set the [Span] parameter to 1MHz.

After the above steps are completed, the spectrum curve of 100MHz can be observed on the spectrum analyzer.

1.3.3 Using cursors to measure frequency and amplitude

--Click the [Marker] button on the control bar → select Mkr1 → Normal to activate Marker1.

--Click the [Peak] button on the toolbar, and the cursor will be marked at the maximum peak value of the signal. Then click the [Peak] button on the control bar [Peak→Center], and the peak point of the measured spectrum will be displayed in the middle of the display area of the host computer, and The frequency and amplitude values of the cursor will be displayed in the upper right corner of the display area of the host computer.

1.3.4 Reading measurement results

Input a signal with a frequency of 100MHz and an amplitude of -10dBm. The measurement results of the SAM533 modular spectrum analyzer are as shown in Figure 1-8 below.

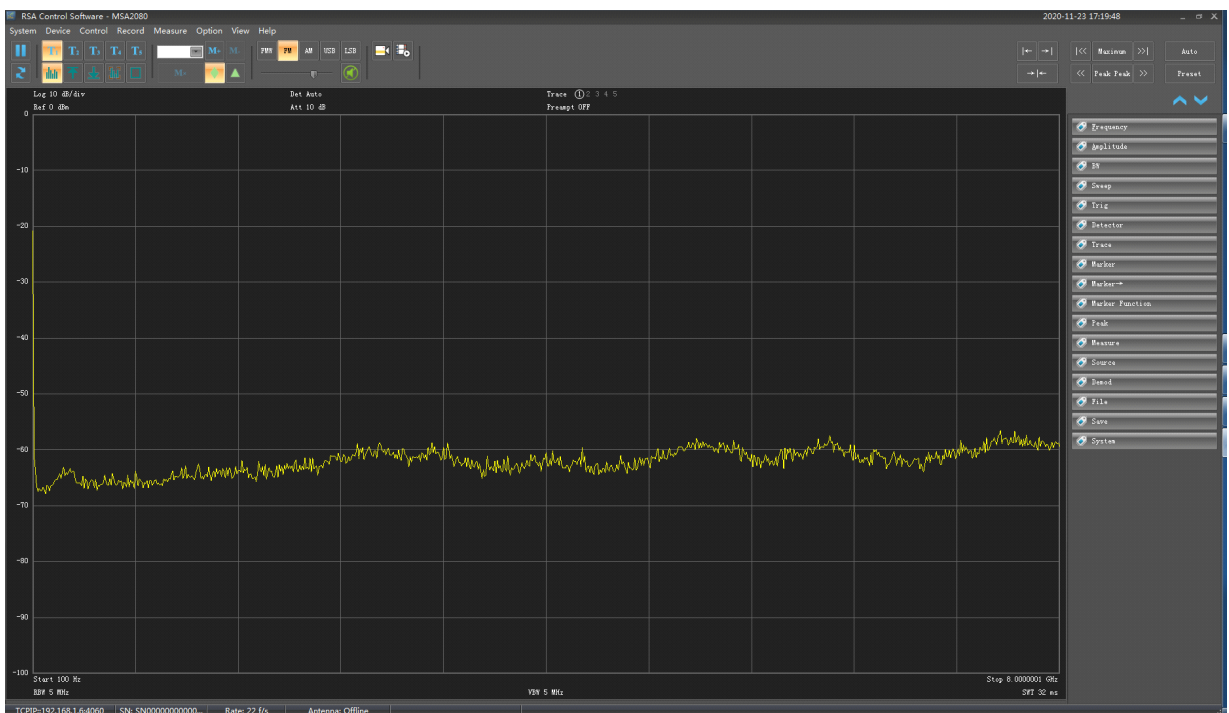


Figure 1-5 Measurement signal view