

SV6301A

Handheld Vector Network Analyzer

SPECIFICATIONS

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1. About SV6301A

SV6301A is a handheld Vector Network Analyzer (VNA) with frequency range of 1MHz ~ 6.3GHz. It can be used for S11 and S21 measurements. The S21 dynamic range of SV6301A is 75 dB, while the S11 dynamic range is 50 dB.

SV6301A is suitable for antenna testing of MF/HF/VHF/UHF/SHF bands, such as shortwave antennas, ISM band antennas, WiFi antennas, bluetooth antennas, GPS antennas, etc. It can also be used to measure filters, amplifiers, attenuators, cables, power dividers, couplers, duplexers and other RF components. SV6301A supports a variety of display formats: Log Mag, Linear Mag, Phase, Smith R+jX, Smith R+L/C, VSWR, Polar, Group delay, Resistance, Reactance, etc. In addition, SV6301A supports TDR function which is useful for cable lengths measurement.

SV6301A is designed with metal case, which is durable and can effectively shield electromagnetic interference. The dimension of SV6301A is 190mmx130mmx30mm, and a back bracket is designed for desktop use. The RF interface of SV6301A is N-type female connector and come with a pair of N-to-SMA adapters, which can be used to connect DUTs with SMA interfaces.

With the optimally designed signal processing system, the scan speed of SV6301A is up to 500 points/s, which enables a quasi-real-time measurement, and the maximum scanning points is up to 1001.

The screen of SV6301A is a 7-inch high-brightness IPS with capacitive touch panel, which allows users to see the screen contents clearly in outdoor. SV6301A adopts a full touch screen design, with 4 physical buttons, users can quickly set frequency range, scale, turn on/off traces, add/delete markers, screenshots, and so on. The operation is quite convenient and smooth.

The SV6301A has two built-in 3350mAh 18650 lithium-ion batteries with a battery life of up to 3 hours. The charging interface is USB Type-C, and the Type-C cable can be used to charge the device and also for data transfer. At the same time, the SV6301A has a built-in 8GB memory card, which can be used to store calibration status, snp files, screenshots, etc.

2. Features

- Frequency range: 1MHz – 6.3GHz;
- S21 dynamic range: 75dB, S11 dynamic range: 50dB;
- 7-inch high-brightness IPS display with capacitive touch panel;
- Metal case, effectively shield electromagnetic interference;
- N-type RF connector, stable and durable;
- Full touch screen and 4 physical buttons, convenient and smooth operation;
- Dimensions: 190mmx130mmx30mm;
- Designed with a back bracket for desktop operation;
- Supports local screenshot, able to save the screenshot to the built-in memory card;
- Built-in 8GB memory card to store calibration status, snp files, screenshots, etc;
- 2 built-in 3350mAh 18650 lithium-ion batteries with a battery life of up to 3 hours;
- TDR function, which can be used to measure cable length;
- Up to 2 reference traces;
- Up to 8 markers, and the marker table can be dragged to anywhere on the screen;
- 18 save/recall slots, and supports save/recall calibration state from files;
- Charging via USB Type-C, and the charging voltage is 5V DC;
- Designed with a 5V/1A USB power output port;
- Firmware upgrade via virtual U disk with USB Type-C cable;
- Comes with SMA calibration kit and 2 x 60cm SMA-JJ SS405 coaxial cable;
- Backlight brightness adjustable;
- Automatic sleep to save power;
- Supports console commands and PC software;
- Comes with a storage bag;

3. Specifications

Parameter	Specification	Remark
Frequency range	1MHz ~ 6.3GHz	
RF power out	-40dBm ~ -10dBm	Step: 1dB
RF Connectors	N-type female	Come with N-to-SMA adapters
RF power in	-10dBm (Max)	DC<5V
Frequency accuracy	<±1 ppm	
Frequency step	10kHz (Min)	
S21 Dynamic range ¹	75dB	< 3GHz
	65dB	> 3GHz
S11 Dynamic range ¹	50dB	< 3GHz
	40dB	> 3GHz
Scan points	1001	Can be set to 101-1001
Scan speed	500 pts/s	frequency > 25MHz
IFBW	12.5kHz (default)	6.25k/3.12k/1k/300Hz/100Hz/30Hz
Smoothing	Arithmetic mean	Average: 1 ~ 25
Traces	7	4 data traces, 2 reference traces, 1 TDR trace
Markers	8	
Calibration state storages	18	Calibration states can be stored as files to the built-in memory card
Storage capacity	8GB	Built-in memory card
Display	7-inch IPS LCD	Resolution: 1024x600
Operation mode	Capacitive touch and physical buttons	
Screenshot	On device	
Power	6.5W	

consumption		
Battery life	3 hours	50% brightness
Battery	18650 lithium battery	3.6V / 3350mAh×2
Charge/Data port	USB Type-C	
Charge voltage	4.7V ~ 5.5V	Recommended to charge with 5V/2A
USB power output	5V/1A	
Dimensions	190mmx130mmx30mm	RF connector not included
enclosure material	Iron	
Weight	1.2kg	
	1.7kg	Includes accessories and packaging
Operating Temperature	0°C -45°C	

- Dynamic range specifications are reported under the condition of 12.5kHz IFBW and 1x averaging. Reducing the IFBW and increasing the averaging times will improve dynamic range, while the scan speed will drop.

4. Appearance





5. Shipping list

- SV6301A ×1
- N to SMA adapter ×2
- SMA OPEN/SHORT/LOAD calibration kit ×1
- SMA-KK adapter ×2
- SMA-JJ adapter ×1
- 60cm SMA-JJ SS405 coaxial cable ×2
- USB type-C cable ×1
- Storage bag ×1