SURECOM®

SA-160

HF Vector Antenna Impedance Analyzer
Graphical 0.5-60MHz

USER'S MANUAL

Maintenance

Your SA-160 antenna analyzer is an electronic product of exact design and should be treated with care The suggestions below help warranty will you to fulfill any obligations and to enjoy this product for many years.

- Do not attempt to open the unit. Non-expert handling it. of the unit may damage it
- When using regulated power supply, take notice of power voltage must be 5v to avoid damaging the unit.
- Do not store the Antenna analyzer under the sunshine or in hot areas. High temperatures can shorten the life of electronic devices, and warp or melt certain plastics.
- Do not store the Antenna analyzer in dusty,dirty areas.
- Keep the Antenna analyzer dry . Rainwater or damp will corrode electronic circuits.
- If it appears that the Antenna analyzer diffuses peculiar smell or smoke, please shut off its power immediately and take off charger or battery in the Antenna analyzer. then contact with SURECOM H.K. agency.

Basic operation

Connected antenna

Insert the base of the attached antenna into SMA connector and coincided with each other by clockwise rotate antenna, make sure the antenna has set down. Take out the antenna from the base by counter clockwise rotation until pull out it from BNC connector.you use adaptor exchange other type antenna, (Please be careful to use an adapter to connect the antenna , because it will damage BNC socket)

Turn on and off the power

Turn on the power, Press and hold White botton when the dot disappear from left up angle ,. top Menu appeared on the screen.

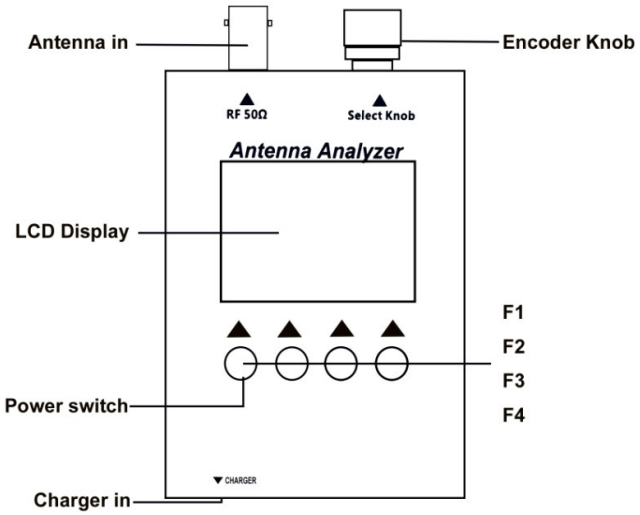
Turn off the power. You have 2 method :

Main Features:

- 2.2 " precision LCD screen,High-lumen LCD brightness, easy to read in direct sunlight.
- Heavy duty Aluminum enclosure,strong anti-interference ability.
- Very compact and convenient for field use.
- Built-in rechargertable Li-ion battery.
- Full Band control ,Quick Scan .
- Easy setup, only four control buttons with convenient on-screen soft menus
- Constant Battery Status Indicator and Auto Shut-off
- Built-in timer shows elapsed time when unit is turned on
- High efficiency IC, low power consumption, the longest working hours.
- More choice measurement frequency Span .
- One botton quick scan mode or Full band by full screen.
- Auto marker the Best s.w.r. level reference .

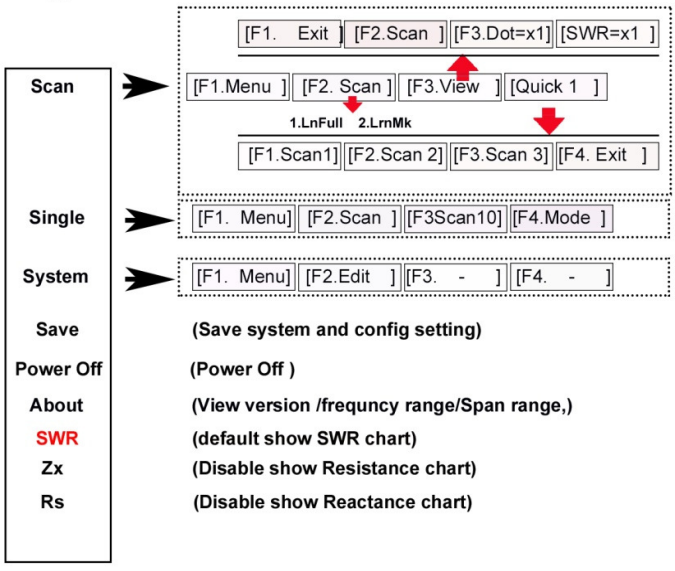
Supplied Accessories

Item	Quantity
SA-160 Antenna Analyzer	1
USB Charger Cable	1
USB Wall Charger	1
User's Manual	1



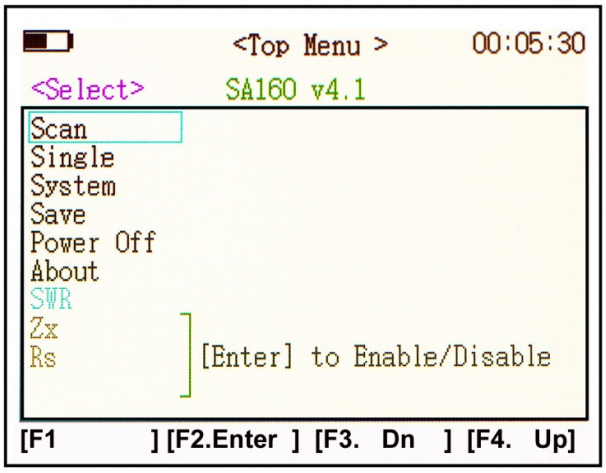
Top Menu function

Power on/off



Save	(Save system and config setting)
Power Off	(Power Off)
About	(View version /frequncy range/Span range,)
SWR	(default show SWR chart)
Zx	(Disable show Resistance chart)
Rs	(Disable show Reactance chart)

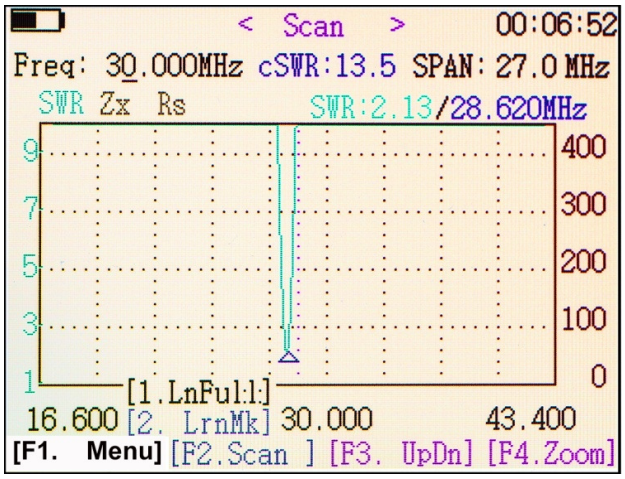
Power Management	
Power Source:	Size 14500 of Lithium battery.
Charge Controller:	Smart charger, LED charging-status indicator
Voltage Monitor:	On-screen DVM, plus battery condition icon
Power Savers:	Auto-off timer, Auto Run/Stop RFgenerator control
Interface	
RF Connector:	BNC -female
Charge Connector:	Micro-USB
Control and Display	
SPAN:	0.27/0.54/1.35/2.7/5.4/13.5/27/62.1MHz
LCD:	2.2 inch high-output color TFT
Function Keys :	4 botton, with on-screen (soft-menu) identifiers
Tuning:	Rotary encoder with press-in tuning-step selection
Weight and Dimensions	
Case:	Aluminum metal
Size:	7 cm wide x12cm height H x 2.5 cm
Weight:	6.1 oz (0.172 kg)



1.0 Function Select

You can turn the knob select you want function and press [F2.Enter] botton .

2.0 ANTENNA TEST EXAMPLES (Scan mode)



2.1 **[Scan] mode**

-In the Top Menu screen: Rotary encoder on "Scan", Press the [F2 Enter] to frequency mode measurement button, enter Scan- (scan mode) screen.

-Press [F.2 scan],button to start the scan operation. During scanning, in order to ensure measurement accuracy, each frequency will stay for short while. one scanning cycle will take about 1-2 seconds.

- Once SCAN is done, it will enter "Present" mode (result) screen

You have results on the screen : Show the SWR curve only (because default setting SWR curve only , Zx curve, Rs curve Disable)

-You can Enable other curve on the screen: On Top Menu page, Rotary encoder on "Zx", Press the [F2 Enter] to enable .

-Other cure will Disable when Power Off , If want enable in the future, Rotary encoder on "Save", Press the [F2 Enter] to save setting .

2.2 **1. Infull=** (default SCAN range 0.56MHz -59.9MHz,span 62.1MHz)

* Long press to [SCAN]and press [F3 UPDn] select "1.Infull",and then release the scan botton.

2.lrnMk=(Learn marker move to center frequency)

* Long press to [SCAN]and press [F3 UPDn] select "2.lrnMk",and then release the scan botton.

2.3 **[View] mode**

-view the scan frequency point on the curve on each scan of the specific parameters of the measurement results.

- Press the [F3.View] button to start the view operation mode. rotary encoder ,the white triangle curve marker is move

- Dot scale will display on screen, Press bottom change the Dot scale,You have 3 options of Dot scale mode for choose,

[Dot =x1] [Dot=x10][Dot= x25] . (230KHz,2.3MHz,5.8MHz)

-SWR Full scale will display on screen,Press bottom change the graphically plot SWR,You have 3 options scale mode for choose,

[SWR=x2][SWR= x 0.5][SWR=x1] .range is (1-9,1-19,1-4.5)

2.4 **[Quick 1] start Scan mode:**

-Quick view the scan frequency point on the curve on each scan

Press the button [Quick 1] to start the Quick 1 operation mode .

You have 3 options scan mode for choose .

1)Press the button [F1. Scan 1] 0.5 to 27.3MHz can of the specific of the measurement results.

2)Press the button [F2. Scan 2] 16.6 to 43.4MHz can of the specific parameters of the measurement results.

3)Press the button[F3. Scan 3] 33.6 to 60.0MHz can of the specific parameters of the measurement results.

3.0 ANTENNA TEST EXAMPLES (Single mode):

In the Top Menu screen: Rotary encoder on "Single", Press botton "F2" single - frequency mode measurement button, enter single- (single scan mode) screen.

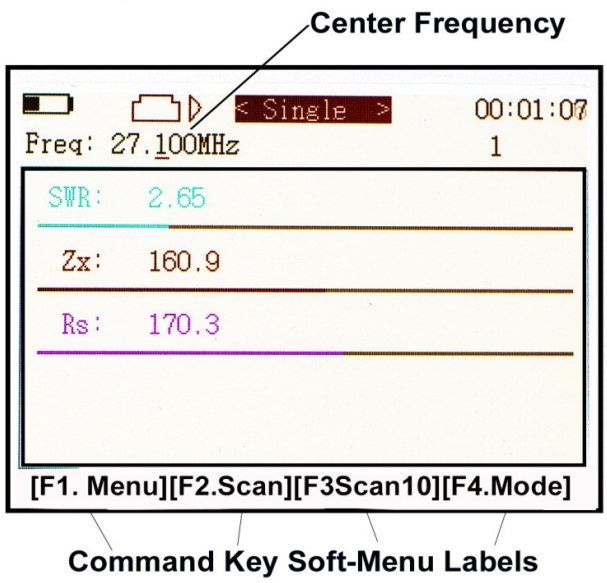
a, Rotary encoder potentiometer enter the center frequency, the specific reference to the above operation "SCAN" sweep measurement mode descriptions.

b, Press the "F2 scan", to start the scan for one time : .

Single -frequency mode provides a single frequency impedance measurement, the measured frequency of the basic parameters are displayed on the screen. And to indicate the form of bars and numbers displayed on the screen quickly.

The scanning one time , will stop, until you press the F2 Scan button or rotary encoder potentiometer enter the center frequency.

In this mode, it can be used as an accurate signal generator, please refer to RF out.

Single Present Procedures:

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