

9kHz~6GHz/9GHz

- SmartSpectrum Analyzer E80A/E80B

- SmartRadioInterferenceFinder

E801A/E801B





E80A/E80B



www.deviserinstruments.com



# E80A/E80B **Smart Spectrum Analyzer**

#### **Measurements and Benefits**

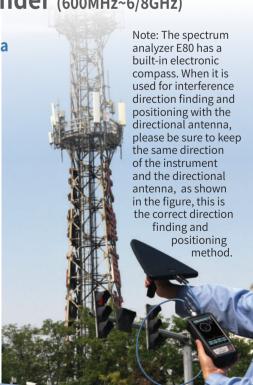
- · M Spectrum Analysis
- 📈 Field Strength
- · Orientation
- **Coverage mapping & Spectrum Clear**
- · 1 Tone approaching search · 1 GNSS Interference Hunting
- Interference Localization · Mac Spurious Emission Measurement
- · Built-in compass and GPS for directional finding and positioning;
- · USB-C interface, SDK with APIs and remote control;
- · Spectrum analysis includes Channel Power, Adjacent Channel Leakage Ratio(ACLR), Occupied Bandwidth (OBW), NdB Bandwidth, Spectrogram, DPS; Field Strength measurement;
- · Interference hunting with angle-of-arrival signal locating and tone approaching search;
- · GNSS function to realize interference hunting at the airport (optional); Spurious Emission Measurement(optional).
- · Work with Deviser Lark series drone system to perform aerial interference hunting rapidly and efficiently;
- · Outdoor signal coverage mapping and spectrum clear;
- · Screen recording and playback make measurement analysis more efficient;
- · Sensitivity -160dBm/Hz (amplifier on);
- · IF bandwidth 20MHz;
- · Battery working time is about 3 hours, weight is about 0.9 kg;
- · Equipped with car charger for outdoor emergency battery charging.



# E801A/E801B Smart Radio Interference Finder (600MHz~6/8GHz)

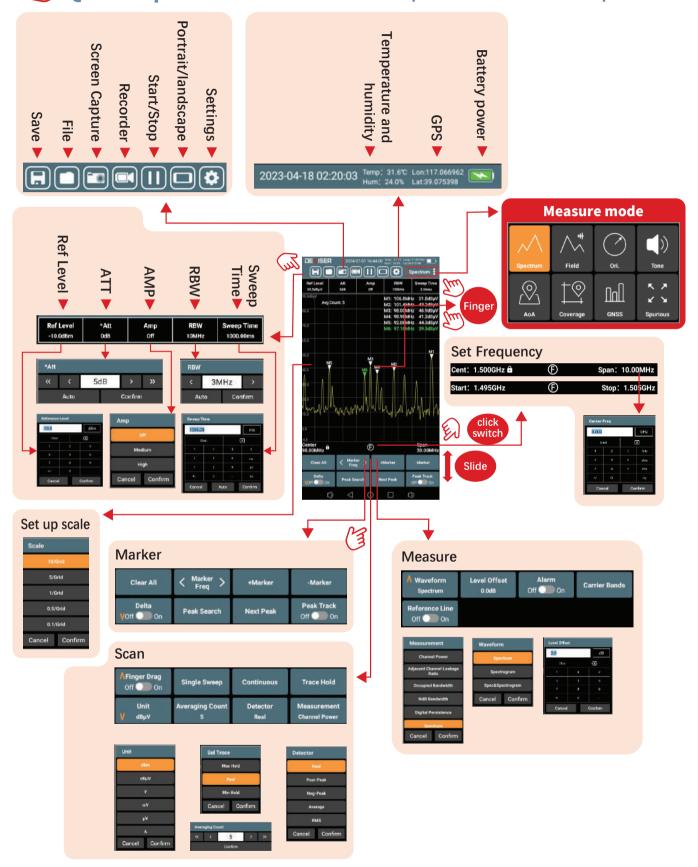
(1) Method of using integrated direction-finding positioning antenna (Install ET6G-2 small triangular directional antenna)







# **Quick Operation Guide of E80A/E80B and E801A/E801B**

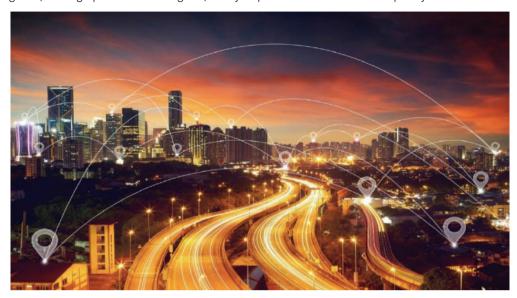




#### Wireless Monitoring. Frequency Resource Management.

Radio stations, telecommunication broadcasting equipment must follow the regulation to limit the transmission power, and most importantly, the spurious emission amplitude has to be managed under threshold value to comply with international standards.

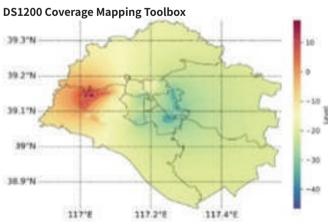
For illegal, ultra regional, and high-power wireless signals, timely disposal and revocation of frequency resources should be carried out.



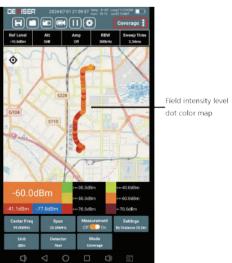
#### **ET107 Electric Rotating Platform**

In order to find and locate interference signal rapidly and efficiently, Deviser provide a vehicle based interference signal location system. Instead of manually performing these tests, when the user is equipped with simple and practical ET107 on-board electric rotating platform, the user can automatically complete the interference screening work in the car, in any environmental conditions. Much higher efficiency at low cost.











### Finding Eavesdropping and Photo Stealing System

E801A is a smart handheld integrated Real Time spectrum analyzer with 20MHz IF bandwidth. The sensitivity can reach to -160dBm/Hz. Used for detecting and locating 2G, 3G, 4G and Wi-Fi signals transmit from mobile phones, smartphones, vehicle trackers, GSM monitoring devices and concealed wireless 3G/4G cameras.

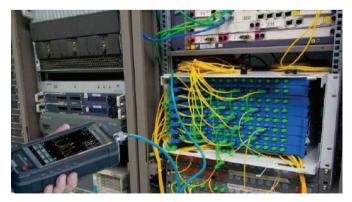
When closing to the transmit equipment, a small infrared thermal imaging detection module (optional) can be provided to quickly detect hidden pinhole camera probes or interference devices.

It is widely used in important workplaces. Such as to detect hidden equipment in conference rooms, to detect the unauthorized mobile phones signals in offices, examination room, hospitals, prisons and large-scale public social activities, etc.



Hidden wireless signal monitoring bag







#### **Interference Hunting**

#### **Various Interference Signals**

- · Mobile Repeater interference to UE
- · RFID Equipment
- · Internet of Things
- · FM spurious emission interference to GNSS
- · Drone countermeasure equipment(GNSS L1 band)
- · Vehicle GPS shield equipment(Taxi, Cash transport truck)
- · GSM-R system interference
- · Data transmission radio station interference LTE system



#### **GPS shield equipment defense Drone**



**Spurious Emission from base station** 



**GNSS Interference Hunting in airport** 



GPS/BeiDou/GNSS Satellite Signal Frequency Table 1561.098 B31 1268.52 20.46 1575.42 B1C 32.736 B2a 1176.45 20.46 B<sub>2</sub>b 1207.14 20.46 L1 C/A 1575.42 2.046 1575.42 LIC 30.69 L2 C 1227.6 2.046 1227.6 20.46 L2 P LS 1176.45 20.46



#### ET20 Passive straight handle and directional antennas (Cover 20MHz to 6000/8000MHz)





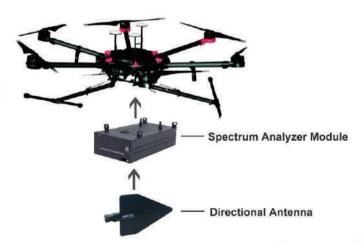
(Straight shank ET20 series antenna 20MHz~8000MHz)

(Antenna box for 3 antennas)

High gain Yagi antenna (1200-1800MHz, Custom)



**High Speed and efficiently Drone Monitor System** 



A "Packaging List" diagram of the E801A/B Smart Radio Interference Finder











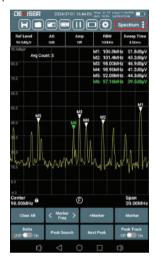


#### **Key Measurements**

# I. Spectrum Analysis

# 1.1 Spectrum analysis and Spectrogram

With the spectrum analysis and spectrogram, users can more easily visualize interference signals and identify/capture frequency bands where the narrow band signals are present.

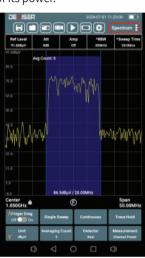


#### 1.2 Channel Power, Occupied Bandwidth, Adjacent Channel Leakage Ratio

**Channel Power:** measure the channel power of any user-defined spectral bandwidth.

## **Occupied Bandwidth:** measure occupied bandwidth.

Adjacent Channel Leakage Ratio: measure the signal channel bandwidth up to 99% of its power.



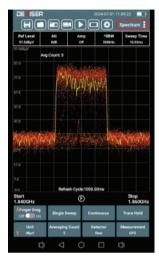
#### 1.3 NdB Bandwidth

NdB Bandwidth is the resolution bandwidth of the measuring instrument, which is represented in a log scale. For example, if the NdB bandwidth is set to -3dB, the level difference between two points is 3dB lower than the maximum value.



#### 1.4 Digital Persistence Signal

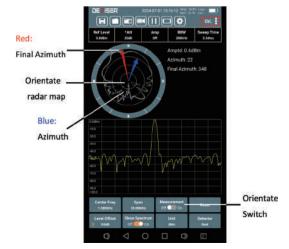
Persistence testing separates the desired signal transmission from underlying low-level inference signals with supreme clarity, and no service interruptions at any point.



## II. Orientation

Orientation measurement allows users to easily point in the direction of interference signal.

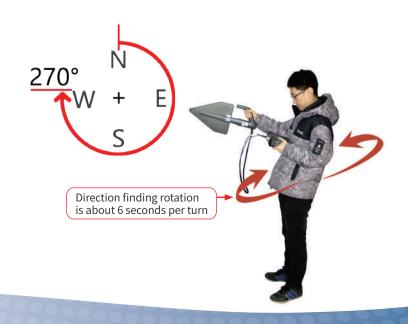
The direction finding instrument should be held in horizontal state, and the internal electronic compass of the instrument should be calibrated after 1 week of rotation, and then the direction finding work should be carried out. Turn on the direction finding switch, turn around for 2 or 3 turns, about 6 seconds per turn, and turn off the direction finding switch at the end. The direction finding radar chart pops up on the interface, showing the blue antenna direction Angle and the red interference recognition Angle respectively.



**Azimuth:** namely the real-time test antenna direction Angle (blue line), refers to the direction Angle of the directional antenna at that time;

**Confirm:** the calculated interference direction angle of the incoming wave signal (red line);

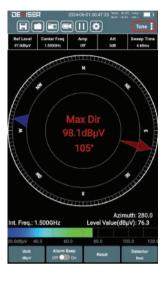
**Definition of direction Angle:** the convention is that the compass refers zero degree to the north(N) position, and increase in a clockwise rotation to 359 degrees.





### III. Tone Approaching Search

Using a directional antenna and built-in audible tone function, users can efficiently detect interference sources based on the audible tone increasing in frequency and level, thus identifying quickly the interfering signals received indoor and outdoor.



## IV. <a> Interference Localization</a>

The source of interference signal can easily be located by using directional antenna, and the E80 built-in GPS, electronic compass, electronic map, and the angle of-arrival (AOA) triangulation.

a.In order to search for interference, first of all, the test point must be selected, the instrument is used for surround measurement, and then the direction line area with large field intensity value is selected, and the AI intelligent direction line aggregation algorithm can quickly complete the search for interference sources.

b. Develop the interference detection path: around the suspected interference signal area,

select several test points 1, 2, and 3...... When the direction finding is done, several red confirmation angular lines will be generated on the map.

c. Automatic positioning software: the Al will automatically analyze the reliability of the interference confirmation Angle of each test point, exclude large deviation from the confirmation direction Angle, converge most of the high reliability direction Angle, and finally automatically form an adaptive interference convergence area (diameter of about 200-1000 meters).

d. Users can delete test point data with low reliability to improve the reliability of interference aggregation algorithm positioning.



#### V. M GNSS Interference Hunting

The interference signals of GNSS can be hidden and weak, it's necessary for a aviation control department to run interference analysis on aviation band near the airport. It's recommended to use Yagi antenna for aviation interference analysis.

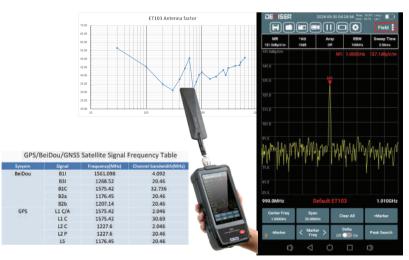
Satellite signals can be normalized to 1MHz for integral calculation of channel power. The interference can be identified once the normalized channel power increases in heatmap. Higher integral power on specific channel indicates the frequency of interference signal is closer to the frequency of specific channel. By using the same theory, directional interference analysis on aviation band can be identified and

### VI. Kield Strength

Connect the omnidirectional antenna ET103 with instrument, select the "field strength" measurement function, and set the frequency of the test field strength. After the instrument automatically compensates the antenna factor AF, the spatial field strength of the frequency is displayed on the spectrum interface  $(dB\mu V/m)$ .



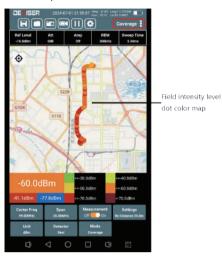
approached with several iterations of measurement.





## 

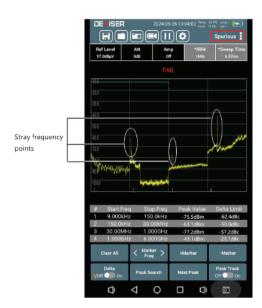
By using the internal GPS module and electronic map, the E80 can perform outdoor coverage mapping measurement and the spectrum clear.



### VIII. Spurious Emission Measurement

Radio stations, telecommunication broadcasting equipment must follow the regulation to limit the transmission power, and most importantly, the spurious emission amplitude has to be managed under threshold value to comply with international standards.

Several frequency bands can be configured for measuring spurious emission. Each band includes center frequency, span, RBW, threshold value ... etc.



## **Recording and Playback**

#### 1. Screen Capture

Information shown on screen can be saved in image file.



#### 2. Screen Recording and Playback

Information shown on screen can be recorded in video file and played back.



#### 3.Status and Trace

Select Status to save the measurement information. Click "File management" to load the test results in the status file, select load playback to restore the original measurement status.



#### **LAN Connection**

Use the USB-C to LAN cable to connect the instrument to a PC for remote control.

## **Programming API**

The software of the instrument does not include SCPI command interface. Contact Deviser Instruments for SCPI command interface and integration.





## **E80A/E80B Specifications**

Technical Parame	ter			
Frequency range	9kHz-6GHz(E80A)/9GHz(E80B) Resolution 1Hz			
IF bandwidth	20MHz			
Scanning speed	5GHz/s@25kHz			
Frequency accuracy	±1ppm			
RBW	10Hz - 10MHz (1:3step)			
Attenuator range	0 to 50dB(1dB step)			
Displayed average noise (DANL)level @1GHz	-160dBm/Hz(High sensitivity mode)			
TOI	+14dBm ( (typical)			
Phase noise	-100dBc/Hz@100kHz offset 1GHz			
Amplitude accuracy	±1.5dB			
Display	5.5 inch, 720x1280			
Operating system	Android			
nterface	USB(Type-C)			
GPS、Compass	Built-in			
Battery	7.4V / 5AH			
Operating time	3 to 4 hours			
Dimensions	215mm x 95mmx 50mm			
Weight	About 0.9kg			

## **E801A/E801B Specifications**

•	-					
Main unit						
Model	E801A/E801B					
Directional antenna						
Model	ET6G-2					
Frequency range	600MHz - 6GHz (It can be extended to 8GHz range)					
Gain	>5dbi					
VSWR	≤1.25dB					
RF interface	50Ω/SMA					
Weight	<300g					
Dimensions	350mm*200mm*25mm					

## Diagram of removing the battery



compartment

cover on the back

battery cable and

remove the battery

#### **Accessories - Antenna**

No.	Model/Type	Picture	Frequency Range	No.	Model/Type	Picture	Frequency Range				
1	Omnidirectional antenna ET101		500MHz-3000MHz	5	ET6G-2 Passive directional antenna		600M-6GHz (It can be extended to 8GHz range)				
2	N(M)-SMA(F) connector		DC - 12.4 GHz	6	N(M)-SMA(M) connector		DC-12GHz				
3	Omnidirectional antenna ET103		30MHz – 6GHz (AF antenna factor 30 - 60dB/m)		1m to1.5m, SMA, RF cable		DC~26G				
4	Metal tripod MT-14		15-21cm, 200g	8							
9	Directional antenna (ET250M/ ET500M/ ET8000M) Passive straight handle ET20	ET20	ET8000M (500MHz~8000MHz)		ET500M MHz~500MHz)	ET250M (20MHz~250MHz)	20MHz ~ 8GHz				

screws on the back shell





### www.deviserinstruments.com

© All rights reserved by DEVISER® 2025.3



ET20 straight handle directional antenna in use

