

DEVISER®



EM860F

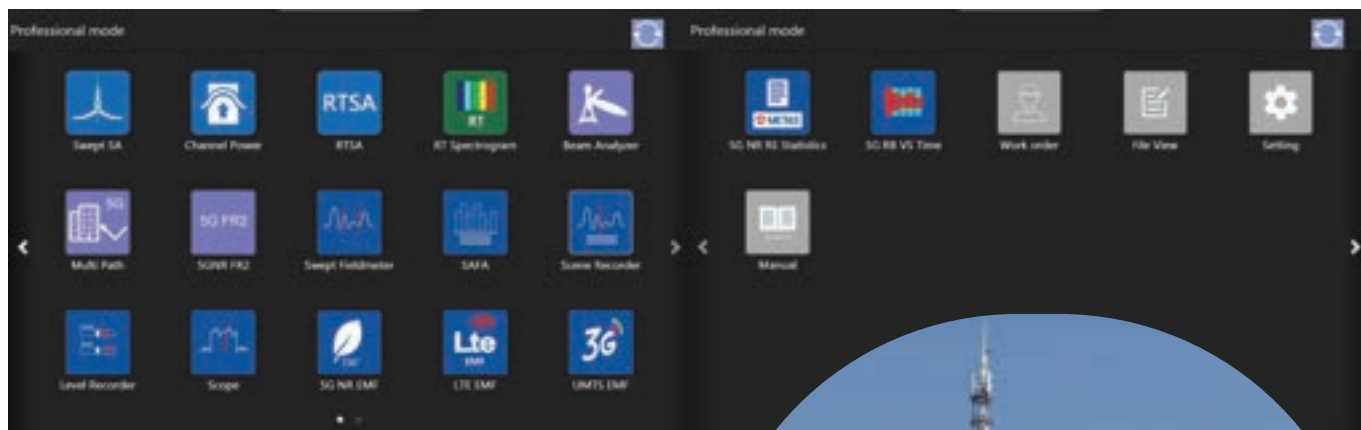
Frequency & Code Selective EMF Analyzer

Key Benefits

- Safety Evaluation
- Spectrum Analysis
- Level Recorder
- Analysis of electromagnetic field strength
- 5G NR code selective EMF measurement
- LTE code selective EMF measurement
- 3G UMTS code selective EMF measurement
- Powerful background data management system
- Attach Field Strength Calibrator EM20 as standard



www.deviserinstrument.com

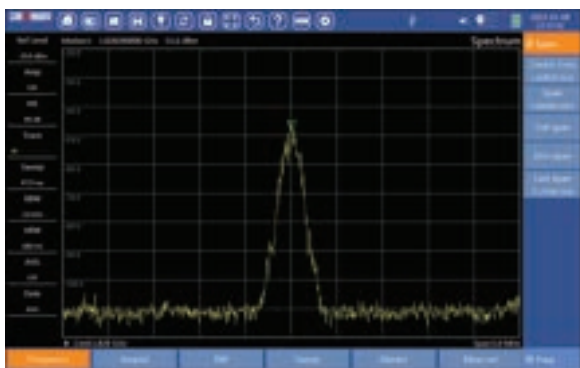


All apps



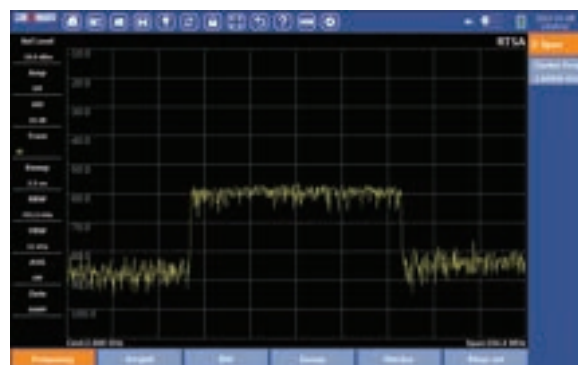
Details

Spectrum Analysis



Spectrum Analysis	
Frequency range	9kHz to 43GHz
Detector	Sample, Posi-Peak, Neg-Peak, Average, RMS
RBW	1Hz to 3MHz
Trace	Write, View, Max Hold, Min Hold
Markers	Up to 6 normal and delta markers. Peak tracking can also be set.
Measurement result	Save image file, trace file or status file in device

Real Time Spectrum



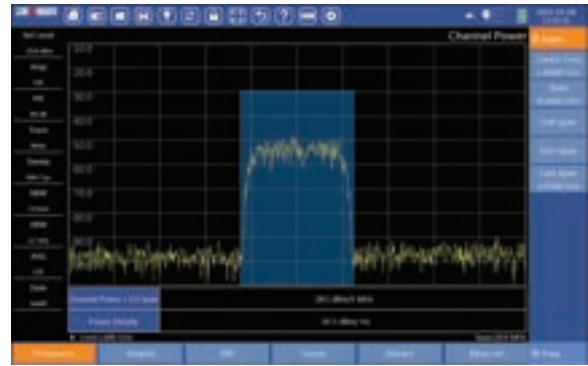
Real Time Spectrum	
Frequency range	Up to 110MHz
Detector	Sample, Posi-Peak, Neg-Peak, Average, RMS
Measurement result	Save image file, trace file or status file in device

Real Time Spectrogram



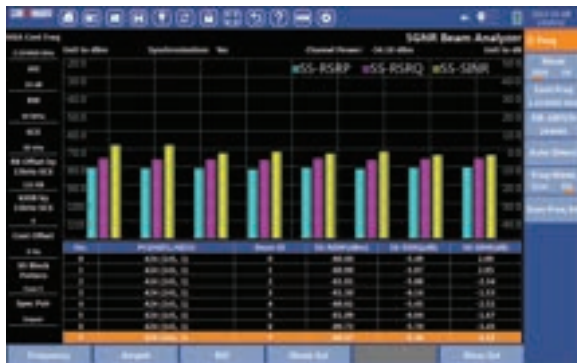
Real Time Spectrogram	
Frequency range	Up to 110MHz
Display	Color window: X-axis frequency domain Y-axis time domain
Detector	Sample, Posi-Peak, Neg-Peak, Average, RMS
Measurement result	Save image file, trace file or status file in device

Channel Power



Channel Power	
Measurement	Channel Power in a specified bandwidth
Measurement result	Save image file, trace file or status file in device

5G NR Beam Analyzer



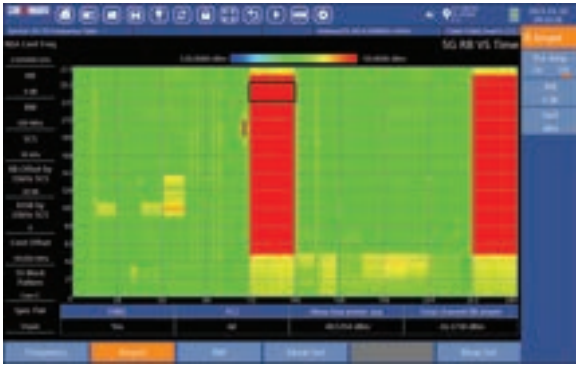
5G NR Beam Analyzer	
Frequency range	FR1 (410 MHz to 7125 MHz)
Measurements	<ul style="list-style-type: none"> Physical cell ID (PCI) Beam ID SS-RSRP, SS-RSRQ, SS-SINR Time offset
Decoding speed	Max 500ms once
Measuring time	Continuous measurement
Measurement result	Save image file, trace file or status file in device

5G NR FR2



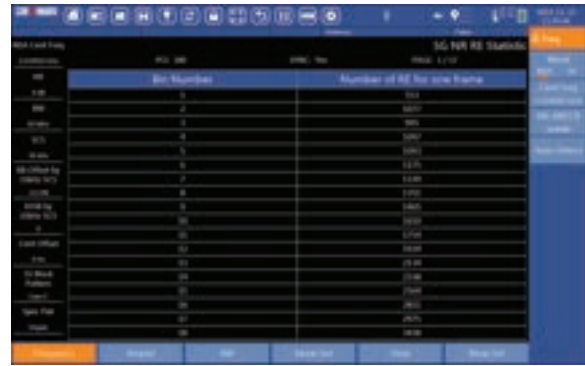
5G NR FR2	
Frequency range	FR2 (24250 MHz to 43000 MHz)
Measurements	<ul style="list-style-type: none"> PCI, Beam Index PBCH constellation, EVM SS-RSRP, SS-RSRQ, SS-SINR Time offset

5G NR RB vs Time



5G NR RB vs Time	
Frequency range	FR1 (410 MHz to 7125 MHz)
Measurement	<ul style="list-style-type: none"> • 5G NR Resource Block Assignment • PCI • Meas box power avg • Total channel RB power
Measurement result	Save image file, status file in device and csv file

5G NR RE Statistic



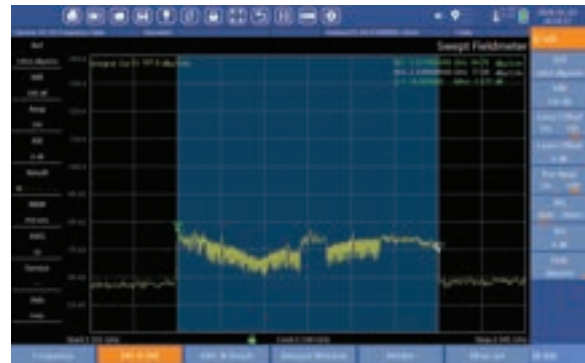
5G NR RE Statistic	
Frequency range	FR1 (410 MHz to 7125 MHz)
Measurements	5G NR Resource Elements Statistic
Measurement result	Csv file

5G NR Multi Path



5G NR Multi Path	
Frequency range	FR1 (410 MHz to 7125 MHz)
Measurement	P-SS RSRP, S-SS RSRP, Delay
Measurement result	Save image file, status file in device

Swept Fieldmeter



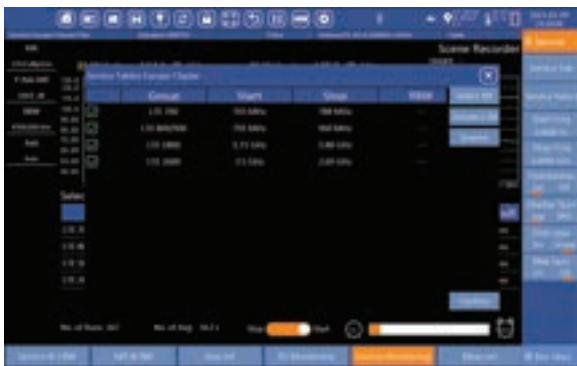
Swept Fieldmeter	
Result	Spectrum Analysis
RBW	1 Hz to 3 MHz
VBW	1 Hz to 3 MHz
Result types	Act : Display instantaneous spectrum Max : Maximum hold function Avg : Average over a selectable number of a selectable time period spectrum Min : Minimum hold function
Detector	RMS
Axis	X, Y, Z axis for single-axis and Three-Axis

Safety Evaluation



Safety Evaluation	
Result	Shows field meter of each service by histogram
Number of services	1 to 100, the parameters of each service is defined by user
Channel bandwidth of one service	1 MHz to 43 GHz
RBW	30 kHz, 100 kHz, 300 kHz, 1 MHz, 3 MHz
Detector	RMS
Axis	X, Y, Z axis for single-axis and Three-Axis

Scene Recorder



Scene Recorder	
Result	Real time display of field strength in GIS
Result types	It supports designated frequency point, field strength measurement of specified axis and display on GIS
Multiple source location modes	Support work order positioning, rangefinder positioning, input latitude and longitude positioning
Data transmission	Support the upload of measurement data to the background system by 4G, WLAN or LAN.
Task distribution	Support the measurement work orders through the background system.
Axis	X, Y, Z axis for single-axis and Three-Axis

Level Recorder



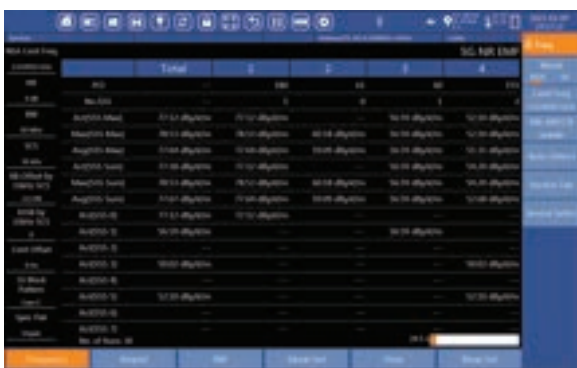
Level Recorder	
Result	Selective level measurement at a fixed frequency setting
RBW	15 Hz to 2 MHz
VBW	1 Hz to 3 MHz
Result types	Peak ACT: Displays the actual peak value Peak MAX : Max hold function for peak value RMS ACT : Averaging over a defined time period RMS MAX : Max hold function for RMS values
Axis	X, Y, Z axis for single-axis and Three-Axis

Field Meter Scope



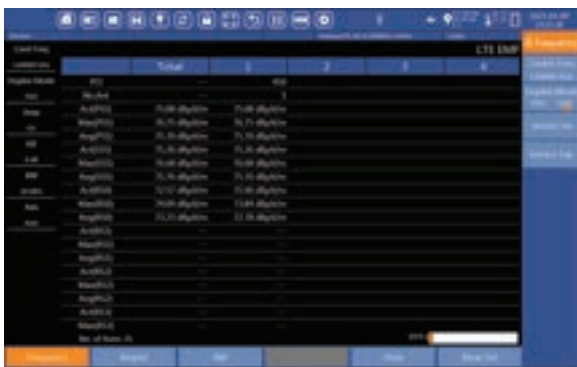
Field Meter Scope	
Result	Time domain signal field strength
Bandwidth	Time RBW: 30kHz, 60kHz, 120kHz, 480kHz, 960kHz, 1.92MHz, 3.64MHz, 7.68MHz, 15.36MHz, 30.72MHz, 61.44MHz, 122.88MHz.
Sweep Time	5ms, 10ms, 20ms, 40ms
Axis	X, Y, Z axis for single-axis

5G NR code selective EMF measurement



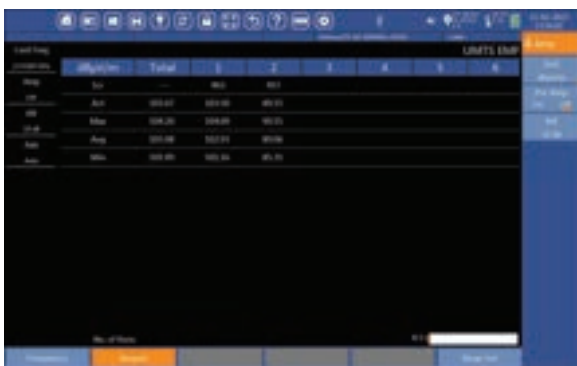
5G NR code selective EMF measurement	
Result	5G NR synchronize signal power of each beam of multiple Cells in the same frequency
Result types	PCI, No.SSS, Act(SSS Max), Max(SSS Max), Avg(SSS Max), Act(SSS Sum), Avg(SSS Sum), Act(SSS0~SSS7)
Channel Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz
Detection	RMS
Axis	X, Y, Z axis for single-axis and Three-Axis

LTE code selective EMF measurement



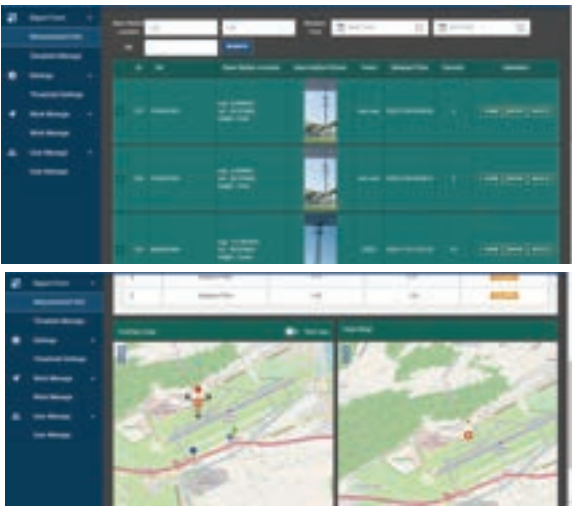
LTE code selective EMF measurement	
Result	LTE synchronize signal and reference signals power of multiple Cells in the same frequency
Result types	PCI, Act(PSS), Max(PSS), Avg(PSS), Act(SSS), Max(SSS), Avg(SSS), Act(RS), Max(RS), Avg(RS), Total values
Channel Bandwidth	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
Detection	RMS
Axis	X, Y, Z axis for single-axis and Three-Axis

3G UMTS code selective EMF measurement



3G UMTS code selective EMF measurement	
Result	UMTS Scr and CPICH channel power
Result types	Scr, Act(CPICH), Max(CPICH), Min(CPICH), Avg(CPICH) and total values
Channel Bandwidth	5 MHz
Axis	X, Y, Z axis for single-axis and Three-axis

Powerful background data management system



Data management system	
Work order management	You can customize the work order, specify the measurement location and surveyor. Simplify the work
User management	Edit different users to work with the work order function
Data management	Query and manage data. You can mark the surrounding buildings and places later
Report template management	Custom report template can be used to generate and export reports according to their own format when exporting reports.
Report export	Export the specified measurement to doc or CSV format to facilitate data management
Support multiple devices	Support for EM9 and EM860F

Multitouch

Multitouch operation with finger movement can adjust marker position and center frequency. Before moving the center frequency, press the lock button at the lower left corner to unlock the screen as illustrated below.



Recording

1. Screen Capture

User can save the information on screen.

2. Screen Recording

User can save the recording video, the device also supports video playback

3. Status and Trace

User can select the Status to save the measurement screen or select Trace to record the spectrum trace. Power level vs. frequency can then be analyzed offline.



Remote Control & Data Transfer

Smart Device Operation

The instrument can be operated remotely on smart device or computer through the connection to Cloud service.

1. Wi-Fi

- 1). Insert USB Wi-Fi dongle and go to System Settings | Network to enable Wi-Fi hotspot and remote control.
- 2). Search for access point from Wi-Fi settings on computer or smart devices to join. Launch VNC Client, enter IP address and password to connect for remote desktop.

Computer or smart devices can also connect through Cloud server to the instrument for remote control to operate and display real-time measurement information.



2. LAN Connection

- 1). In order to connect to the instrument through its LAN port, use an Ethernet cable to connect the computer or smart devices to the instrument and configure its IP address to be the same subnet as the instrument.
- 2). Download VNC Client to install on computing device. Launch the VNC Client, enter the IP address of the instrument and password to connect.



3. Screen Projection

Connect the HDMI port of the instrument to project the instrument screen to HD TV or monitor. It's useful for education or technical training sessions.



Ordering information

Standard Configuration and Accessories (included with instrument)

Description	Part No.	Order No.
EM860F Frequency & Code Selective EMF Analyzer Base Unit	EM860F	0110.0860.06
Scene Recorder (standard feature)	EM860-802	2120.0860.03
Swept Fieldmeter (standard feature)	EM860-800	2120.0860.01
Battery Pack, Rechargeable, 10.8V, 9200mAH, 99.36WH	10.8V,9200mAH,99.36WH	6120.0100.08
Transit Case with shoulder belt (for EM860 Base Unit and up to 2 antennas)	S5040	6120.0600.61
Omnidirectional Antenna	E8000-005	6120.0900.05
Shouler Harness	E8900-BT	0120.8900.37
RF Connector(N/SMA)	N/SMA-JK	6190.0500.37
USB WiFi Module	USB150M	6120.0600.15
Power Supply DC Vehicle Adapter(12V/5A)	12V/5A	6120.0700.04
AC-DC Power Adapter(15V/6A, 90W)	15V 6A	6120.0700.02
Power Adaptor Plug Cord (Europe) Power Adaptor Plug Cord (Unite States) Power Adaptor Plug Cord (United Kingdom) Power Adaptor Plug Cord (Australia) Note: select one from four types of power adaptor plug cord	AE4000-733 AE4000-734 AE4000-735 AE4000-736	6290.0500.03 6290.0500.04 6290.0500.05 6290.0500.06
Field Strength Calibrator EM20 (10V/m @ 1GHz)	EM20	2110.0020.00
Calibration Certificate EM860 Base Unit	EM860-013	6120.0600.69
Quick operation manual (English)	EM860-018	6120.0600.73

Options

Optional Features		
SAFA (Safety assessment)	EM860-801	2120.0860.02
Field Meter Scope	EM860-803	2120.0860.04
Level Recorder	EM860-804	2120.0860.05
LTE EMF(TDD-LTE & FDD LTE code selective) measurement	EM860-810	2120.0860.11
UMTS EMF(UMTS code selective) measurement	EM860-812	2120.0860.13
5G NR EMF(5G NR code selective) measurement	EM860-805	2120.0860.06
5G NR Beam Statistic	EM860-813	2120.0860.16
5G NR Multipath	EM860-814	2120.0860.17
5G NR RE Statistic	EM860-815	2120.0860.18
5G NR RB Vs Time	EM860-816	2120.0860.22
Field Manage System Software (PC)	EM860-806	2120.0860.07
Spectrum Analyzer	E8800-808	2120.8800.08
Channel Power measurement	E8800-809	2120.8800.09
Real Time Spectrum Analyzer (100MHz Analysis Bandwidth)	E8800-814	2120.8800.14
Real Time Spectrogram	E8800-821	2120.8800.21

SSB Constellation(FR2)	E8800-807	2120.8800.07
Optional Accessories - Probe		
Frequency Selective Probe TS-6G (200MHz-6GHz, requires Antenna Kit EM860-201)	TS-6G	2120.0860.00
Calibration Certificate EM860-TS-6G	EM860-011	6120.0600.62
Frequency Selective Probe TS-8G (200MHz-8GHz, requires Antenna Kit EM860-201)	TS-8G	2120.0860.19
Calibration Certificate EM860-TS-8G	EM860-014	6120.0600.70
Frequency Selective Probe HTS-250M (100K-250M, requires Antenna Kit EM860-201)	HTS-250M	6110.0900.04
Calibration Certificate EM860-HTS-250M	EM860-015	6120.0600.71
Antenna Kit for TS-6G, TS-8G and HTS-250M	EM860-201	2120.0860.15
Optional Accessories – Extension Cable		
Extension Cable(2 meters) with control cable (Frequency Range 9kHz~9GHz)	EM860-001	6110.0500.37
Extension Cable(2 meters) without control cable (Frequency Range 9kHz~9GHz)	EM860-009	6120.0500.45
Extension Cable(5 meters) with control cable (Frequency Range 9kHz~9GHz)	EM860-010	6120.0500.46
Extension Cable(5 meters) without control cable (Frequency Range 9kHz~9GHz)	EM860-008	6110.0500.50
Optional Accessories		
Soft Carry Case for EM860 Base Unit	EM860-012	6120.0600.68
Tripod	R2004	6110.0900.05
Antenna Adapter	EM860-016	2120.0860.21
HDMI Cable(4K 60Hz, 3 meters)	HDMI	6120.0500.42
Shouler strap	EM860-000	6120.0600.55
Tripod kit	EM860-200	2120.0860.14



SPECIFICATIONS

Basic Unit

Model	EM860F
Frequency range	9k~43GHz
Operating time	>5 hours(need backup battery)
IF bandwidth	110 MHz
Phase noise (100 kHz offset from 1 GHz)	-103 dBc/Hz
Displayed average noise level (DANL)	preamp off: -140dBm/Hz preamp on: -160dBm/Hz
3rd-order intercept (TOI)	+8.5 dBm
2nd harmonic distortion	-60 dBc
Voltage standing wave ratio (VSWR)	<2.2
Frequency accuracy	± 1 ppm
Amplitude accuracy	±1.5 dB
Sweep Rate	80GHz/s@25kHz
RTSA 100% POI	5us
Dimensions (LxWxH)	292mm*211mm*82mm
Weight	3.7kg
Location	GNSS(Internal or External)
Store	Device internal or USB

Attachment	
Omnidirectional antenna ET101	
TS-6G / TS-8G / TS3-6G / TS3-8G / HTS-250M	
Microwave antenna ET40G (6GHz-40GHz) and antenna handle ET20/ ET30-2	
2.4mm(F) – 2.92mm(F) , adapter	
N (F) - SMA (F), adapter	

Three axis electric field probe TS-6G/TS-8G/TS3-6G/TS3-8G

Frequency range	TS-6G(200MHz to 6GHz) TS-8G(200MHz to 8GHz) TS3-6G(30MHz to 6GHz) TS3-8G(30MHz to 8GHz)
Probe type	E-field
RF connector	N-Connector, 50Ω

Three axis probe (H-field)

Frequency range	HTS-250M(100kHz to 250MHz)
Probe type	H-field
RF connectore	N-Connector, 50Ω



Three axis electric field probe TS-6G/TS-8G



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