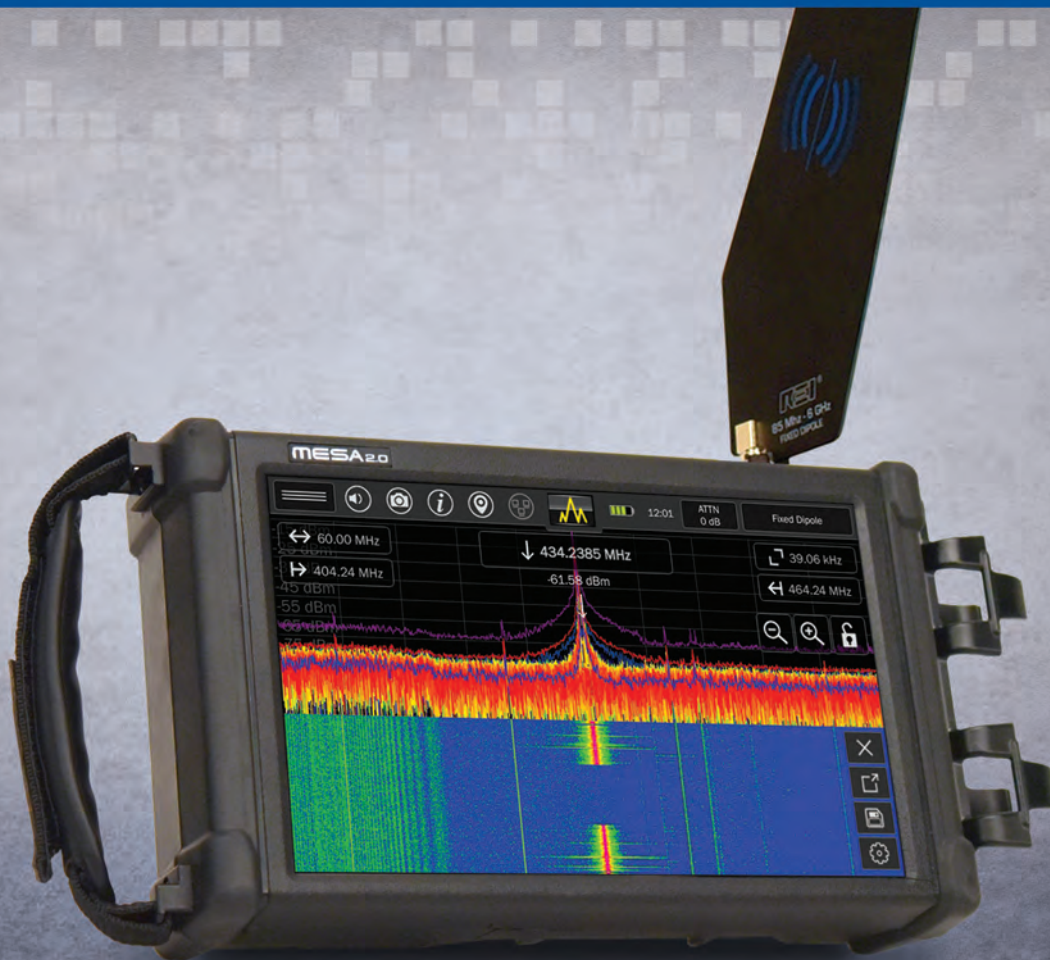




THE INDUSTRY STANDARD IN TSCM EQUIPMENT



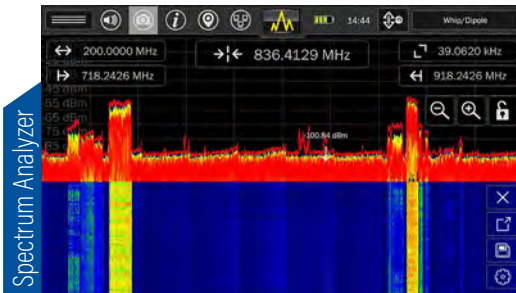
# MESA<sup>®</sup> 2.0

## MOBILITY ENHANCED SPECTRUM ANALYZER

[www.reiusa.net](http://www.reiusa.net)

# MODES/FEATURES

RF applications demand agile, portable, handheld spectrum analyzers to measure the power and frequency of known and unknown transmissions. The **NEW MESA® 2.0** spectrum analyzer has the portability and operational features not available in other spectrum analyzers. MESA® 2.0 has a frequency range up to 6 GHz or 12 GHz depending on the model and sweeps greater than 200 GHz per second.



## SPECTRUM ANALYSIS

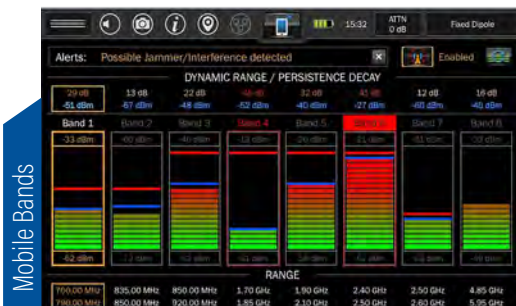
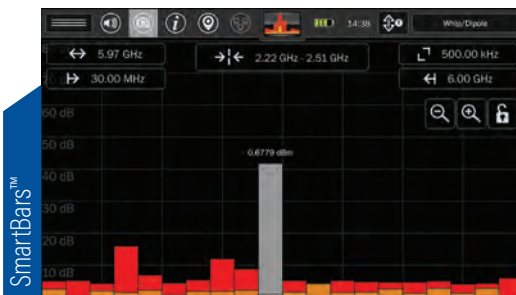
- 10kHz - 6GHz (12 GHz with Downconverter antenna)
- Alert Threshold - audio, visual, & haptic
- Live, Peak, Cached Peak, Average traces
- Raster Waterfall and Persistence display
- I/Q Recording
- AM, FM Demodulation/O-scope
- Dynamic RBW auto adjusts - 312.5 kHz down to .038kHz depending on span, the narrower the span, the greater the resolution.



## SMARTBARS™ PATENTED

SmartBars™ uses non-linear bargraphs to display new signals or increased RF energy compared to a reference trace. New energy is indicated by increased peak and active bars. Drilling down through SmartBars™ will lead to the Spectrum View.

- Quickly detects new or increased energy
- Displays signals in Spectrum Analyzer view



## MOBILE BANDS WITH JAMMER/INTERFERENCE DETECTION

- Quickly see energy levels for specific RF bands (i.e. WiFi, GSM, etc.)
- Customizeable spans
- Jammer/Interference detection with alerts
- Logs details of possible Jammer/Interference events
- Launch spans in Spectrum View



## WIFI DETECTION

- Detects/locates WiFi devices
- APs (Access Points)
- Clients (Connected/Not-connected)
- Portable devices
- Cameras and microphones
- Drones & controllers
- 2.4GHz and 5GHz networks
- RSSI meter for locating devices
- View device in Spectrum View

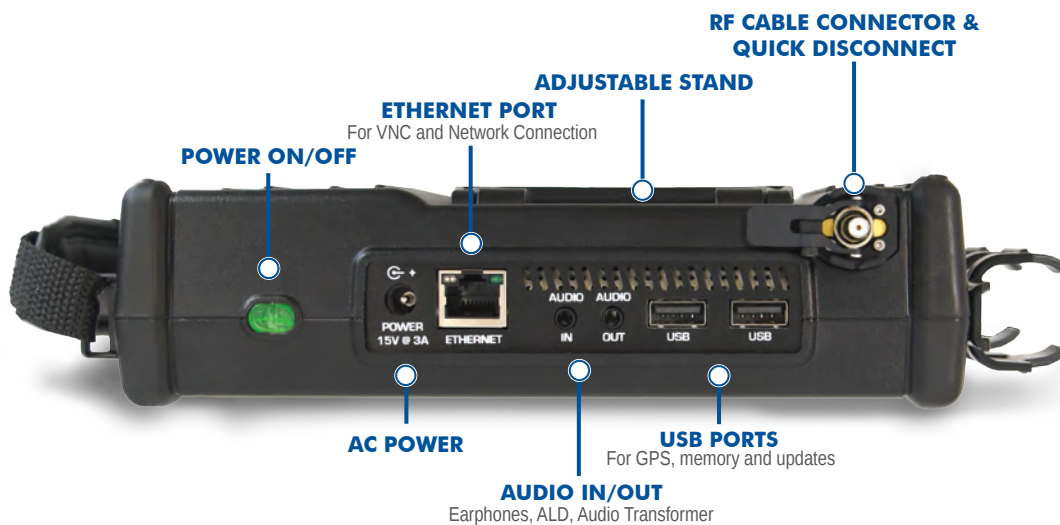
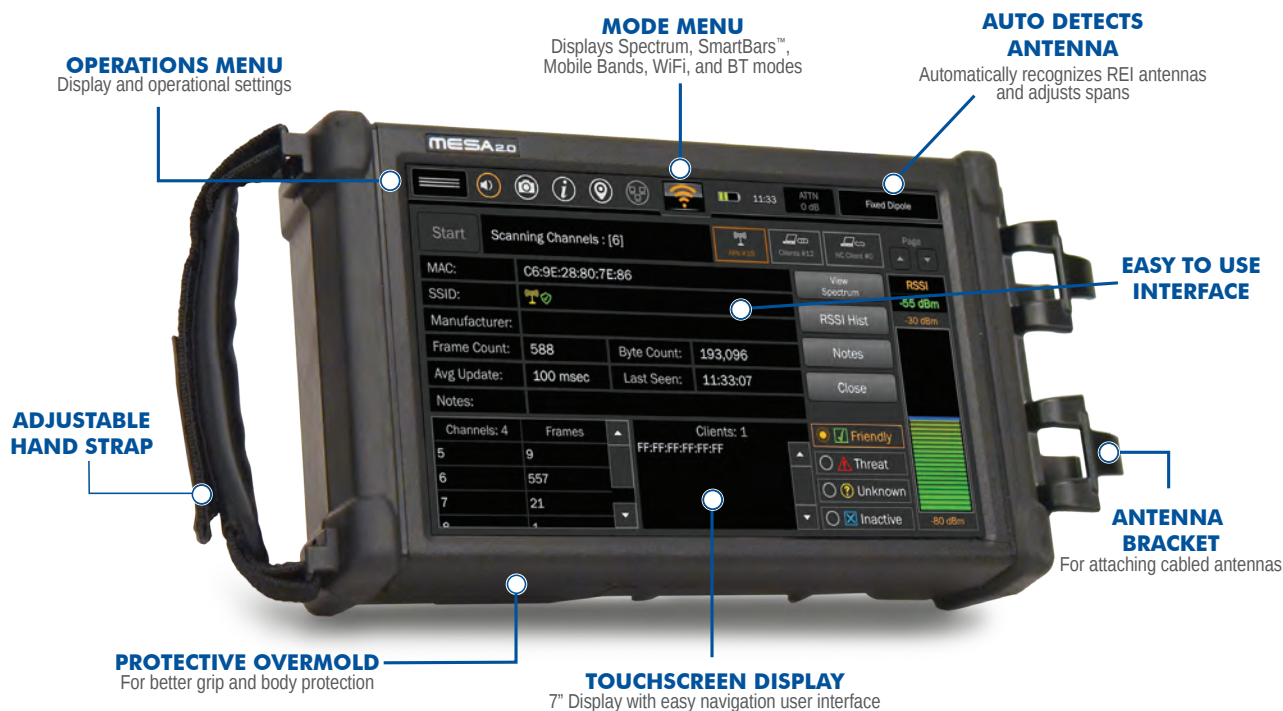


## BLUETOOTH

Detects Bluetooth Classic and BLE devices through version 5.0

- MAC address
- Name
- Power (dBm)
- Address Type
- Power (dBm)
- RSSI meter and histogram
- Export lists
- Detect Trackers & AirTags

# MOBILITY ENHANCED SPECTRUM ANALYZER



Designed with mobility in mind, the MESA® 2.0 is handheld to allow it to be easily carried through a target area.

The 7-inch capacitive touchscreen display provides zoom, and drag capabilities.



## Applications

- Detects RF emissions such as WiFi, Bluetooth, cell phones, illicit transmitters
- Interference detection & troubleshooting
- RF Jammer detection
- RF research and development
- Wireless industry developers
- Hobbyists and RF enthusiasts
- Educational institutions
- Communications Site Surveys
- Detecting illicit eavesdropping signals
- RF emissions analysis
- Spectrum misuse investigation

# ANTENNAS/PROBES



MESA® 2.0 automatically recognizes attached REI antennas/probes, identifies them on the screen, and displays the corresponding frequency span.

- A HYBRID WHIP ANTENNA: 30MHz - 6GHz**  
A hybrid broadband antenna with sensitivity for many applications.
- B FIXED HYBRID ANTENNA: 85MHz - 6GHz**  
A sophisticated hybrid antenna that connects directly to the MESA® 2.0 allowing users to move around freely without cables.
- C DOWN CONVERTER ANTENNA: 500MHz - 12GHz**  
Log-Periodic antenna with built-in down-converter to operate below 6GHz or 6-12GHz.
- D DIRECTIONAL ANTENNA: 70MHz - 500MHz**  
Unique Flag antenna design to provide directional antenna gain for low frequency signals.
- E VLF LOOP: 10kHz - 30MHz**  
Detects very low RF frequencies.
- F LOCATOR PROBE: 20MHz - 6GHz**  
Effective in high RF noise environments within close proximity to transmitter.
- G MULTI CARRIER PROBE (MCP): 100kHz - 60MHz**  
Tests power lines up to 250 Volts for modulated signals. Measures Hot/Neutral, Neutral/Ground, and Hot/Ground pair configurations.
- H VISIBLE LIGHT/INFRARED: 10kHz - 50MHz**  
Detects infrared and visible light transmissions.
- I ULTRASONIC PROBE: 15kHz - 80kHz**  
Detects sound waves operating above the upper limit of human hearing capabilities.
- J AUDIO TRANSFORMER: 300Hz - 20kHz**  
Applies positive and negative bias voltage to activate microphones and tests low voltage wiring for unmodulated signals.
- K ACOUSTIC LEAKAGE DETECTOR: 300Hz - 20kHz**  
Detects acoustic leakage vulnerability on structures (walls, windows, etc.).
- L GPS USB Dongle**  
Acquires live GPS location data.

# ACCESSORIES/FEATURES

| Antennas/Accessories            | Basic | DLX |
|---------------------------------|-------|-----|
| Hybrid Whip Antenna             | ▪     | ▪   |
| Fixed Hybrid Antenna            | ▪     | ▪   |
| Down Converter Antenna          |       | ▪   |
| Flag Directional Antenna        |       | ▪   |
| VLF Loop Antenna                | ▪     | ▪   |
| Locator Probe                   |       | ▪   |
| MCP (Multi-Carrier Probe)       | ▪     | ▪   |
| Visible Light/ Infrared         |       | ▪   |
| Ultrasonic Probe                |       | ▪   |
| Audio Transformer               |       | ▪   |
| Acoustic Leakage Detector       |       | ▪   |
| GPS Dongle                      |       | ▪   |
| External battery charger        |       | ▪   |
| 2 Li-ion rechargeable batteries | ▪     | ▪   |



**CACHED PEAK™** - The MESA® 2.0 automatically adjusts resolution bandwidth depending on viewed frequency span. The Cached Peak™ maintains multiple peak traces to reflect the appropriate frequency span and associated resolution bandwidth.

**PERSISTENCE** - Displays a trace with varying color brightness based on the persistence of signals, and shows when multiple signals occupy the same frequency bands.

**WATERFALL DISPLAY** - Generates a spectrogram view of raster waterfall spectral data.

**SPECTRAL POWER HISTOGRAM / RSSI** - Displays a histogram of average RF power over a user defined spectral bandwidth. Time windows available: 30 sec, 1 min, 2 min, or 4 min.

**AVERAGE TRACE** - Displays averages between 2 and 64 traces.

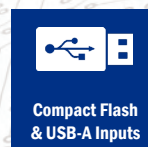
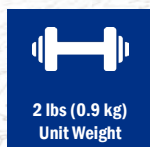
**ATTENUATION** - 0dB, 10dB, 20dB, Auto, and +15dB Preamp.

**SIGNAL LIST GENERATION** - Generate signal lists manually in Spectrum View or automatically in SmartBars™ Signal Resolution mode.

**Antenna Probe Recognition** - The MESA® 2.0 automatically detects and adjusts to REI probes and antennas.

**Alerts** - Visual, Audio, Haptic indications of signal energy exceeding a user defined mask threshold.

**Screen Capture** - Capture screen shots and store to USB.



# PRODUCT CHARACTERISTICS

## Receiver

|                             |                                                                         |
|-----------------------------|-------------------------------------------------------------------------|
| Sweep Speed                 | >200 GHz/second                                                         |
| Operating Freq. Range       | 10 kHz - 6 GHz /*12 GHz                                                 |
| Resolution Bandwidth        | Variable depending on span: 0.0380 kHz to 312.5 kHz                     |
| Instantaneous Bandwidth     | 25 MHz                                                                  |
| DANL - Noise Floor          | 312.5 kHz RBW with Pre-amp: -90 dBm, 9.765kHz RBW with Pre-amp: -110dBm |
| Attenuation                 | 0 dB, 10 dB, 20 dB, Auto                                                |
| Preamp                      | +15 dB                                                                  |
| Spurious Free Dynamic Range | 81.6 dB                                                                 |
| Receiver Type               | Swept-tuned Superheterodyne                                             |
| Audio Demodulation          | AM/FM demodulation with filter options: Auto, 200 kHz, 20 kHz, 5 kHz    |
| Input Port                  | QMA connector (RF input) for included and auxiliary RF antennas         |

## Features

|                        |                                                                                                                                                                                                                                                                                                                      |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation Modes        | Spectrum Analyzer, SmartBars™, Mobile Bands, WiFi, Bluetooth®                                                                                                                                                                                                                                                        |
| Detection Types        | RF, Carrier Current, Acoustic Leakage, IR/Visible Light, Ultrasonic                                                                                                                                                                                                                                                  |
| Alert Types            | Haptic, audible, and visible alerts                                                                                                                                                                                                                                                                                  |
| Display/Controls       | 7in/18 cm capacitive touch screen, brightness control                                                                                                                                                                                                                                                                |
| Display Features       | Zoom, screen lock, frequency span, start/stop frequencies, resolution bandwidth, center frequency, automatic probe recognition. Display types include RF spectral display, Patented SmartBars™ bar graph, Patented Cached Peak™, WiFi/Bluetooth Scanner, Waterfall display, Persistence display, RSSI, Average Trace |
| Remote Access          | Ethernet port for VNC remote access                                                                                                                                                                                                                                                                                  |
| Signal List Generation | Manual or automatic depending on mode                                                                                                                                                                                                                                                                                |
| GPS                    | Removable USB, captures and saves GPS data                                                                                                                                                                                                                                                                           |
| Audio                  | Built-in speaker and external headphones with adjustable volume control.<br>Microphone port for Acoustic Leakage Probe and Audio Transformer                                                                                                                                                                         |
| Data Ports             | 2 USB 2.0 Type A ports for software upgrades, file storage, file transfer and GPS Adapter; Gigabit Ethernet port                                                                                                                                                                                                     |

## Power

|             |                                                                               |
|-------------|-------------------------------------------------------------------------------|
| Supply      | AC: 100-240V/50-60 Hz; rechargeable Li-ion battery (+1 spare)                 |
| Run Time    | ~3 hours (typical) per battery                                                |
| Charge time | ~3 hours per battery (typical), external recharger included with Deluxe model |

## Mechanical

|                       |                                    |
|-----------------------|------------------------------------|
| Unit Dimensions       | 5 x 8 x 2 in /13 x 20 x 5 cm       |
| Unit Weight           | 2.4 lbs/1.1 kg including battery   |
| Case Dimensions       | 6 x 15 x 18.5 in / 16 x 38 x 47 cm |
| Case /Contents Weight | 15 lbs. / 6.8 kg                   |

## Environmental

|                              |               |
|------------------------------|---------------|
| Operating temperature        | -10° to 53° C |
| Battery charging temperature | 5° to 37° C   |
| Storage temperature          | -20° to 60° C |

Note: extended storage at temperatures above 40° C could degrade battery life and performance.

\*Down Converter antenna (Deluxe model)

## Detect/Locate

|                    |
|--------------------|
| Radio Frequency    |
| WiFi               |
| Bluetooth          |
| Mobile Phone Bands |
| Visible Light      |
| Infrared           |
| Ultrasonic         |
| Audio              |
| Acoustic Leakage   |
| Carrier Current    |

## REI Training Center



The largest commercially-available TSCM training facility in the world. REI Training courses teach basic and advanced procedural concepts for conducting a counter surveillance investigation. All courses include hands-on exercises in dedicated project rooms that simulate threat scenarios. Custom, on-site training courses are also available. View course dates and register online at: [www.reiusa.net](http://www.reiusa.net).



@REI\_TSCM



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