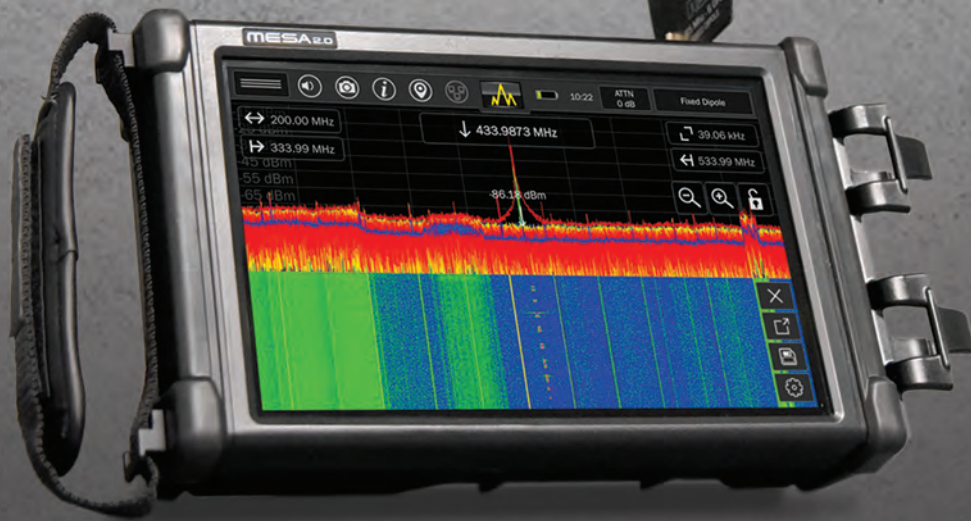




THE INDUSTRY STANDARD IN TSCM EQUIPMENT

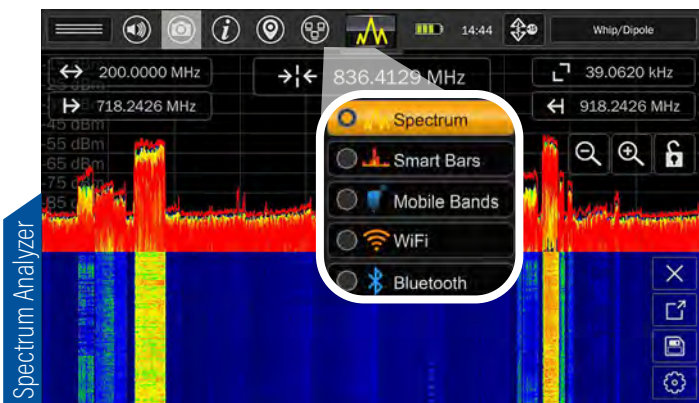


# MESA<sup>®</sup> 2.0

MOBILITY ENHANCED SPECTRUM ANALYZER

# MOBILITY ENHANCED SPECTRUM ANALYZER

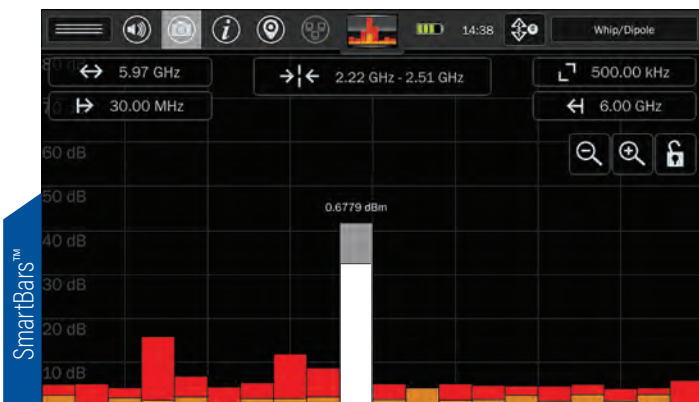
RF applications demand agile, portable, handheld spectrum analyzers to measure the power and frequency of known and unknown transmissions. The **NEW MESA® 2.0** spectrum analyzer has the portability and operational features not available in other spectrum analyzers. MESA® 2.0 has a frequency range up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



The graphic touchscreen interface makes navigating the MESA® easy, improving sweep efficiency.

## Spectrum Analysis

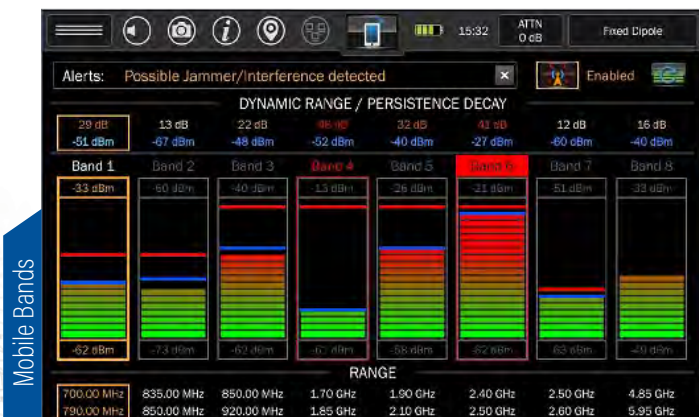
- 10kHz - 6GHz (12 GHz with Downconverter antenna)
- Alert Threshold - audio, visual, and haptic
- Live, Peak, Cached Peak, Average traces
- Raster Waterfall and Persistence display
- I/Q Recording
- AM, FM Demodulation/O-scope
- Dynamic RBW auto adjusts - 312.5 kHz down to .038kHz depending on span, 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.)
- Customizable spans
- Jammer/Interference detection with alerts
- Logs details of possible Jammer/Interference events
- Launch spans in Spectrum View



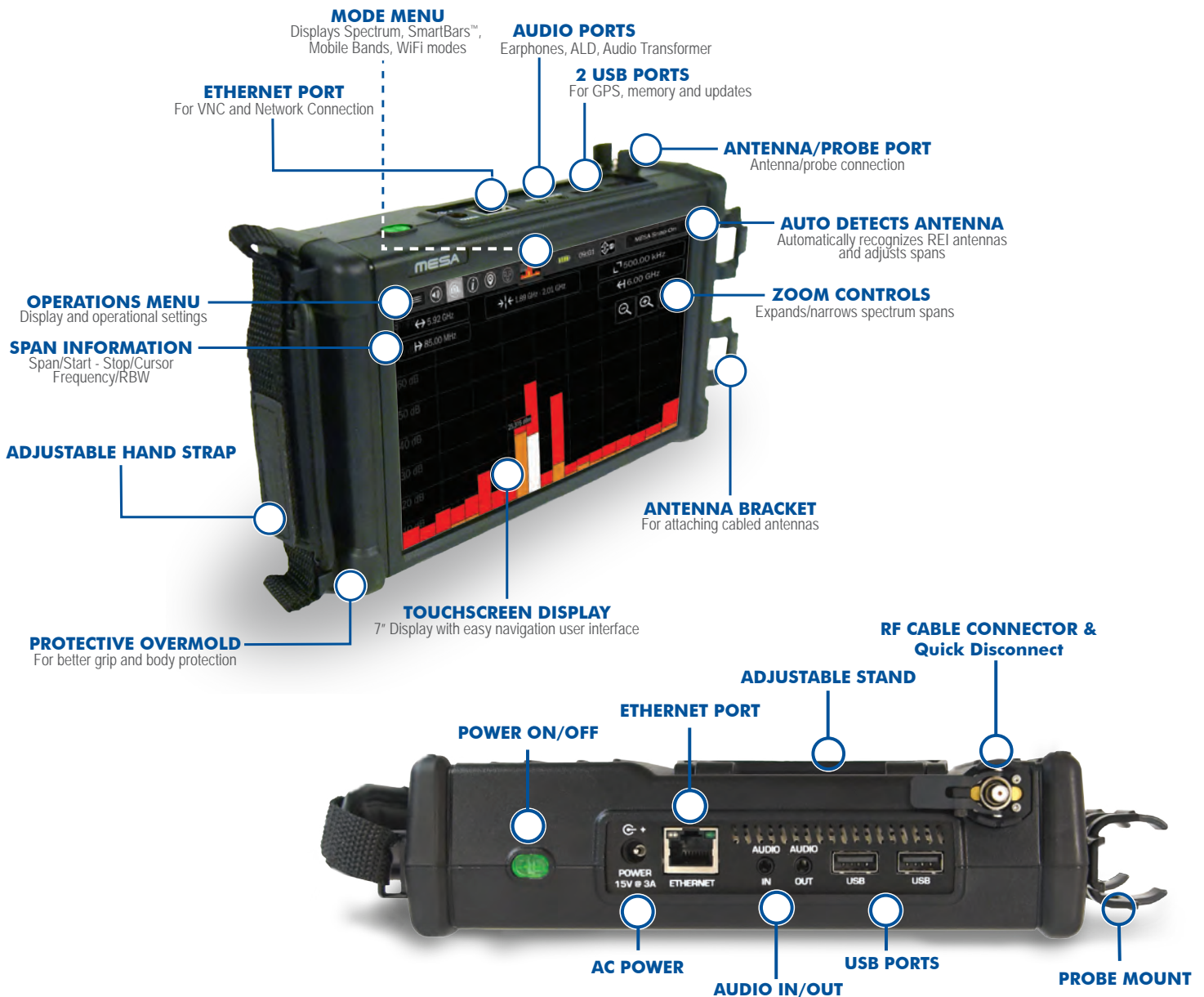
## WiFi

- Detects/locates WiFi devices:
  - APs (Access Points)
  - Clients
  - Portable devices
  - Cameras and microphones
  - Drones & controllers
- RSSI meter for locating devices
- View device in Spectrum View

## Bluetooth®

- Detects Standard and LE Bluetooth pairings
  - MAC address
  - Name
  - dBm
  - RSSI meter for locating devices

# 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 with the response expected on modern touch devices.



## 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™ Patent Pending -

The MESA® 2.0 dynamically 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. This provides the ability to determine if multiple signals occupy the same frequency bands.

**Waterfall Display** - Generates a spectrogram view of raster waterfall spectral data.

**Average Trace** - Displays averages between 2 and 64 traces.

**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.

**Signal List Generation** - Generate signal lists manually in Spectrum View or automatically in SmartBars™ Signal Resolution mode.

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

**Screen Capture** - Take screen shots of display and store to USB.

**Attenuation** - Apply attenuation 0dB, 10dB, 20dB, Auto, and +15dB Preamp.

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

# 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. 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)

## 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.