

## Person-portable, fully automatic RESM capability

By passively identifying radar signatures, Electronic Support Measures (ESM) is a vital capability for protecting friendly forces and rapidly locating and addressing threats such as hostile artillery, attack helicopters, vessels and surface and airborne unmanned vehicles. And now, as a result of ESROE's breakthrough technology, MicroESM

enables ESM to become pervasive for the first time. Providing virtually undetectable, real-time Electronic Intelligence (ELINT) capabilities at the tactical edge, very low-SWAP, fully automatic MicroESM systems can be deployed at speed by untrained operators - and operated in transit with no restrictions on manoeuvrability.

### Sensor System at a glance:

- 2 – 18 GHz frequency range
- Fully automatic operation
- Battery powered
- 7° rms bearing accuracy
- Full 360° azimuth coverage from 4 antennas
- Sensor weight < 2kg (excluding tablet/laptop display)
- Highly affordable

The first fully functional Radar ESM systems of their type, the MicroESM 1t and 1l combine an ultra-lightweight, 4-channel, crystal video/digital receiver with ESROE's GLAMDRING automatic processing software running on either a tablet (1t) or laptop (1l) computer. Each system automatically identifies radar emitters that have been programmed into its radar library. To continuously improve the software's situational awareness, it also intelligently reports unknown radar emitters and adds them to its internal library.

The standard systems comes complete with ruggedised tablet display or laptop, two ruggedised battery packs and charger, lightweight carbon fibre tripod and ruggedised cables.



#### Accurate direction finding capability

Direction finding of detected signals is achieved using the sensors four antennas.



#### Intelligent radar libraries

Radar libraries from internal or external storage can be loaded through the tablet touch screen interface. Library entries created automatically by the system for unknown radar emitters can also be saved to internal or external storage.



#### Real-time pulse logging facility

All measured radar pulse data can be continuously saved to internal or external storage for offline analysis. Logged pulse data can also be replayed by the user through the tablet display, providing a typically faster than real-time view of recorded missions.



#### Automated radar identification

Automatic reporting and identification of radar signals on a map display is performed by a tablet-based app that the user can interact with through the touch screen.



#### Convenient power supply

The MicroESM can be powered from an external 12V power supply or an external swappable battery pack that provides power for up to 12 hours of typical continuous operational use.



Functionality	Metrics	Description
Frequency Range	2.0 GHz to 18 GHz	Switches automatically between 2 - 12 and 12 - 18 GHz bands
Frequency Measurement	3.5 MHz (2 - 12 GHz) 2.5 MHz (12 - 18 GHz)	Measurement resolution Accuracy $\leq 2$ MHz rms
Enhanced Frequency Measurement	0.85 MHz	Measurement resolution and accuracy possible for pulse density $< 100\,000$ pulses per second
Azimuth Coverage	360 degrees	
Bearing Measurement	7 degrees	Typical rms accuracy
System Sensitivity	-55 dBm -70 dBm	With bearing measurement For CW signals without bearing measurement
Dynamic Range	50 dB	
Minimum Pulse Width	40 ns (2 - 12 GHz) 50 ns (12 - 18 GHz)	
Time of Arrival	20 ns (2 - 12 GHz) 25 ns (12 - 18 GHz)	Measurement resolution Accuracy $\leq 20$ ns rms
Environment Pulse Density	Up to 200,000 pulses per second*	Fast response time up to stated density, graceful degradation thereafter.
Emitter Library Capacity	200 emitter mode lines*	Capable of expansion
Reported Emitters	100 simultaneous emitters*	Capable of expansion
Operating Voltage Range	10 - 18V DC (12V nominal)	
Power Consumption	$< 20$ W $< 10$ W	Full operating mode (Main unit) Standard mode (Main unit)
Size	180mm x 180mm x 96mm	Length x depth x height
Weight	$< 2$ Kg 1 Kg 0.62 Kg	Main unit Tablet display 9 Ah battery pack
Operating Temperature Range	-20 degrees C to + 48 degrees C	
Environmental Certification	IP 68  IP 65	Main unit - designed for long term operation at sea, it is also tested for vibration, shock and immersion (further details on request).  Tablet display
Operational Battery Life		
LIPS 14 battery BB 2590 battery	Up to 3 hrs Up to 12 hours Up to 8 hrs	Main unit Main unit Tablet display
Data Logging	3 hrs	Continuous logging of pulse data to tablet internal storage at maximum pulse density (22.4MB/sec). Logging also includes emitter track data and library data generated by the system.

\* These values are fundamentally dependent on tablet performance and can be higher with a higher performance tablet

#### For further information please contact:

Email: [microesm@esroe.com](mailto:microesm@esroe.com) Call: +44 (0)1329 237285 Visit: [www.esroe.com](http://www.esroe.com)