REUTECH
AUSTRALIA

MSR Esprit 2

A Tactical & Targeted Monitoring Solution for Complex Environments



Designed for rapidly changing slopes & volatile atmospheric conditions

MSR Esprit 2 is Reutech Mining's MIMO staring-array radar, developed for tactical slope stability monitoring in open-pit mining environments where very high temporal resolution is required. It is the industry's only full MIMO slope stability radar and delivers the fastest full-area data acquisition, acquiring its fixed $90^{\circ} \times 60^{\circ}$ monitoring envelope in less than two seconds.

Its operating profile is particularly suited to highly brittle and fast-moving instability, differential movement rates across unstable portions of a slope, and monitoring environments affected by temperature inversions and microclimates. Deployable in less than 30 minutes, with the Reutech Eco PSU supplied as standard, MSR Esprit 2 supports tactical monitoring where rapid deployment is important.

MIMO Staring-Array Technology

MSR Esprit 2 uses Multiple-Input Multiple-Output (MIMO) technology in a fixed staring-array configuration. Multiple transmit and receive antenna elements operate across the defined monitoring envelope, with the antenna deployed in a stationary position. The complete 90° × 60° monitoring envelope is acquired within each measurement cycle, delivering very high temporal resolution.

Georeferencing and Database Continuity

MSR Esprit 2 is fully georeferenced to the mine coordinate system, enabling full 3D identification of alarming points. Auto Georeferencing uses high-accuracy GNSS positioning, improved further through an RTK connection to the mine's base station, and manual georeferencing using total station survey control is also supported. Rapid Align™ supports monitoring database continuity when the radar is redeployed in the same position.

Effective Mitigation of Atmospheric Interference

Fast repetitive observation means atmospheric change is measured at a near-real-time update rate, enabling effective mitigation of atmospheric interference. This is particularly relevant for pit slopes affected by temperature inversions, microclimates and other changing atmospheric conditions. Mitigating atmospheric-induced errors supports a more accurate and precise true movement profile, providing greater confidence when monitoring rapidly developing or complex slope behaviour.

MSR Solo Software

MSR Esprit 2 is operated through MSR Solo, Reutech Mining's web-based monitoring software, with multi-radar operation, a combined 3D scene, live synthetic maps, trends, alarms and system status, geotechnical reporting, Slope Vision integration and an open API.

Greener Power with the Eco PSU

MSR Esprit 2 is supplied as standard with the Eco PSU, the solar-first hybrid power platform shared across Reutech Mining's radar portfolio. By prioritising solar energy and lithium battery storage before the EPA 5 compliant generator is needed, the Eco PSU minimises engine runtime and reliance on diesel, providing a greener, more sustainable power solution.



Technical specifications

- **Radar architecture**
  MIMO staring array
- **Scan envelope**
  90° azimuth × 60° elevation, fixed
- **Operating range**
  50 m to 4,000 m in 2,000 m bins (164 ft to 13,123 ft)
- **Full-area data acquisition**
  Less than 2 seconds
- **Spatial resolution at 1,000 m**
  Range: 0.5 m
  Azimuth: 2.76 m
  Elevation: 1.47 m
- **External power inlet**
  100–240 V AC, 50–60 Hz
- **Accuracy**
  Sub-millimetre
- **Deployment time**
  Less than 30 minutes
- **Operating temperature**
  -30°C to +55°C (-22°F to +131°F)
- **Wind tolerance**
  Up to 120 km/h (75 mph)
- **Communications**
  Wi-Fi, LTE, Starlink
- **Power platform**
  Eco PSU supplied as standard
  Solar-first hybrid with lithium battery storage, EPA 5 compliant backup generator and external power capability

REUTECH AUSTRALIA, (PTY) LTD

www.reutechaustralia.com

Reutech reserves the right to amend the characteristics of its products at any time.