Monopulse Secondary Surveillance Radar

Advanced Monopulse Secondary Surveillance Radar

- Built-in data processing and combining for MSSR, PSR, ADS-B and MLAT
- Mode 1, 2, 3/A, C and Mode-S up to Level 5, ELS/EHS.
- Remotely controlled SSR Mode-S monitor
- Built-in extended reception channel testing
- Cost-effective and low maintenance cost solution

www.easat.com
Easat’s latest generation Mode-S Secondary Surveillance Radar system is fully compliant with ICAO and Eurocontrol standards.

It is intended for cooperative air traffic surveillance in accordance with elementary and enhanced Mode-S specifications.

Easat’s MSSR can be used either as a stand-alone system or integrated with PSR, ADS-B and MLAT systems (fixed and/or transportable installations). Where part of an integrated surveillance system, a common control and monitoring system (CMS) will display status and performance parameters of all systems simultaneously and the PPI screen will display combined targets processed by an advanced built-in tracking system.

The CMS software is operating system (OS) independent and can be installed on any number of computers. The CMS features user-friendly interface and provides factory remote support capability.

Easat’s MSSR is compact, highly modular and fully solid-state, ensuring high reliability with low life-cycle costs.

Automatic switch-over and hot swapping functions ensure system availability.

**Main Features**

- Developed in full compliance with ICAO and Eurocontrol.
- Mode 1, 2, 3/A, C and Mode-S up to Level 5, ELS/EHS.
- Automatic system reconfiguration and switch-over.
- Built-in data processing and combining for MSSR, PSR, ADS-B and MLAT.
- Built-in track processor and output data formatter.
- BITE for continuous monitoring of MSSR sub-systems and non-radar equipment.
- Diagnostic CMS to provide local and remote control of operation.
- Archiving, playback and statistical analysis of surveillance data.
- Cost-effective and low maintenance cost solution.
- Remotely controlled SSR Mode-S monitor.
- Built-in extended reception channel testing.
- Transportable version is also available.
**Interrogator**
- Dual channel fully redundant system.
- Interrogation, detection and acquisition of Modes 1, 2, 3/A, C and S.
- Mode-S Addressed Elementary Surveillance.
  - ICAO aircraft address.
  - Flight identity.
  - Transponder capability report.
  - Altitude reporting to 25 ft.
  - Flight status.
- Mode-S Addressed Enhanced Surveillance.
  - Lockout protocols.
  - Basic data protocols.
  - Standard length communication protocols.
  - Extended length communication transactions.
  - Aircraft identification protocol.
- Interlace with up to 4 modes.
- Programmable interrogation strategy based on target position.
- Adaptive parameter adjustment including advanced anti-reflector.
- Multiple input tracking and data combining.

**Antenna System**
- Large vertical aperture (LVA) antenna with SUM, DIFF and OMNI channels.
- Compact SSR antennas can be used as an option.
- Encapsulated weatherproof dipole columns.
- Superior RF performance.
- Shaped elevation patterns.
- Meets ICAO requirements.
- Dual motor antenna drive.
- Dual azimuth encoder.
- Antenna drive system includes comprehensive BITE with numerous sensors (oil level, vibration, temperature etc) displayed on CMS.

**Control and Monitoring System (CMS)**
- Fully redundant system.
- Any number of local and remote CMS terminals.
- Supports communication such as serial, optic, LAN, radio links etc.
- Information archiving, replay and analysis.
- Factory remote service support capability.

**Radar Data Display**
- Multiple data (plots and/or tracks) input display including PSR, MSSR, ADS-B and MLAT.
- Display all enhanced Mode-S data.
- Geographical maps and air navigation charts.
- Surveillance data archiving and replay.
## Advanced Monopulse Secondary Surveillance Radar

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Operation Mode</td>
<td>1, 2, 3/A, C and S ELS/EHS</td>
</tr>
<tr>
<td>Antenna Drive</td>
<td>Dual Motor</td>
</tr>
<tr>
<td>Rotation Rates</td>
<td>6-15 RPM</td>
</tr>
<tr>
<td>Coverage</td>
<td></td>
</tr>
<tr>
<td>Maximal range</td>
<td>256 NM</td>
</tr>
<tr>
<td>Minimal range</td>
<td>0.25 NM</td>
</tr>
<tr>
<td>Height</td>
<td>66,000 ft</td>
</tr>
<tr>
<td>Elevation</td>
<td>0.3° – 45.0°</td>
</tr>
<tr>
<td>Maximum Number Of Aircrafts</td>
<td>1000</td>
</tr>
<tr>
<td>Accuracy (random errors)</td>
<td></td>
</tr>
<tr>
<td>Azimuth</td>
<td>0.068°</td>
</tr>
<tr>
<td>Range, Mode A/C</td>
<td>30 m</td>
</tr>
<tr>
<td>Range, Mode-S</td>
<td>15 m</td>
</tr>
<tr>
<td>Detection Probability</td>
<td>≥ 0.99</td>
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<tr>
<td>Code Detection Probability</td>
<td>≥ 0.99</td>
</tr>
<tr>
<td>Probability of Combining</td>
<td>≥ 0.95</td>
</tr>
<tr>
<td>Output Format</td>
<td>ASTERIX</td>
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<tr>
<td>Output Data Link Type</td>
<td>Serial/LAN/optic</td>
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</tbody>
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