



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

easat[®]

RADAR SYSTEMS

Easat Radar Systems Ltd was founded in 1987 as an independent specialist Company to design and build high-performance radar antennas. Since then the Company, a subsidiary of Goodwin PLC, has established itself as market leader in the manufacture of complete radar systems.

Easat offers a full range of radar antennas, pedestals, towers and complete radar systems for Air Traffic Control (ATC) and Coastal Surveillance (CS) applications.

Easat's radar equipment is in service in over 60 countries worldwide, with more than 500 installations.

Products include:

- ATC using permanent or transportable radar systems, Primary Surveillance Radar (PSR) & Monopulse Secondary Surveillance Radar (MSSR).
- Air defence ATC using permanent or transportable systems.
- Airport Surface Movement Radar (SMR) and Advanced-Surface Movement Guidance and Control System (A-SMGCS).
- Automatic Dependent Surveillance - Broadcast (ADS-B) Systems.
- Precision Approach Radar upgrades (PAR).
- Offshore and Coastal Surveillance radar systems.

Easat is able to deliver complete turn-key packages, from site survey to final installation safety case approval of installed system. Scope of supply can include complete radar systems, civil engineering works, project management and long-term equipment support, ensuring the highest levels of support and maintenance.

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.

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.

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.



Advanced Monopulse Secondary Surveillance Radar



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