TTM Technologies
Time-To-Market Interconnect Solutions

SkySearch

Air Traffic Management Surveillance Solutions

With over 40 years of experience in designing and integrating Air Traffic Control (ATC) and Air Traffic Management (ATM) solutions, Telephonics is relied upon to provide both the equipment and expertise required to safely and reliably control flight operations. Our SkySearch surveillance solutions offer superior target reporting for civil ATC applications and can be found at airports around the globe.

Advanced ATM

Telephonics' SkySearch®-2000M combines our SkySearch Secondary Surveillance Radar (SSR) with our advanced military-qualified Monopulse Secondary Surveillance Radar (MSSR) technology to achieve superior aircraft reporting for civil ATC applications.

Key Features:

- Modes 1, 2, 3/A, C, and S ELS/EHS
- Independent multi-channel Automatic Dependent Surveillance Broadcast (ADS-B)
- Positional accuracy resulting from implementation of amplitude monopulse azimuth calculation
- Automatic adaptive Interrogation Rate Management (IRM) that minimizes interrogations per FAA/CAA requirements
- Unique built-in calibration algorithm eliminates the need for a calibration parrot
- Comprehensive Built-in Test Equipment (BITE) for ease of maintenance

Stripmap land imaging mode

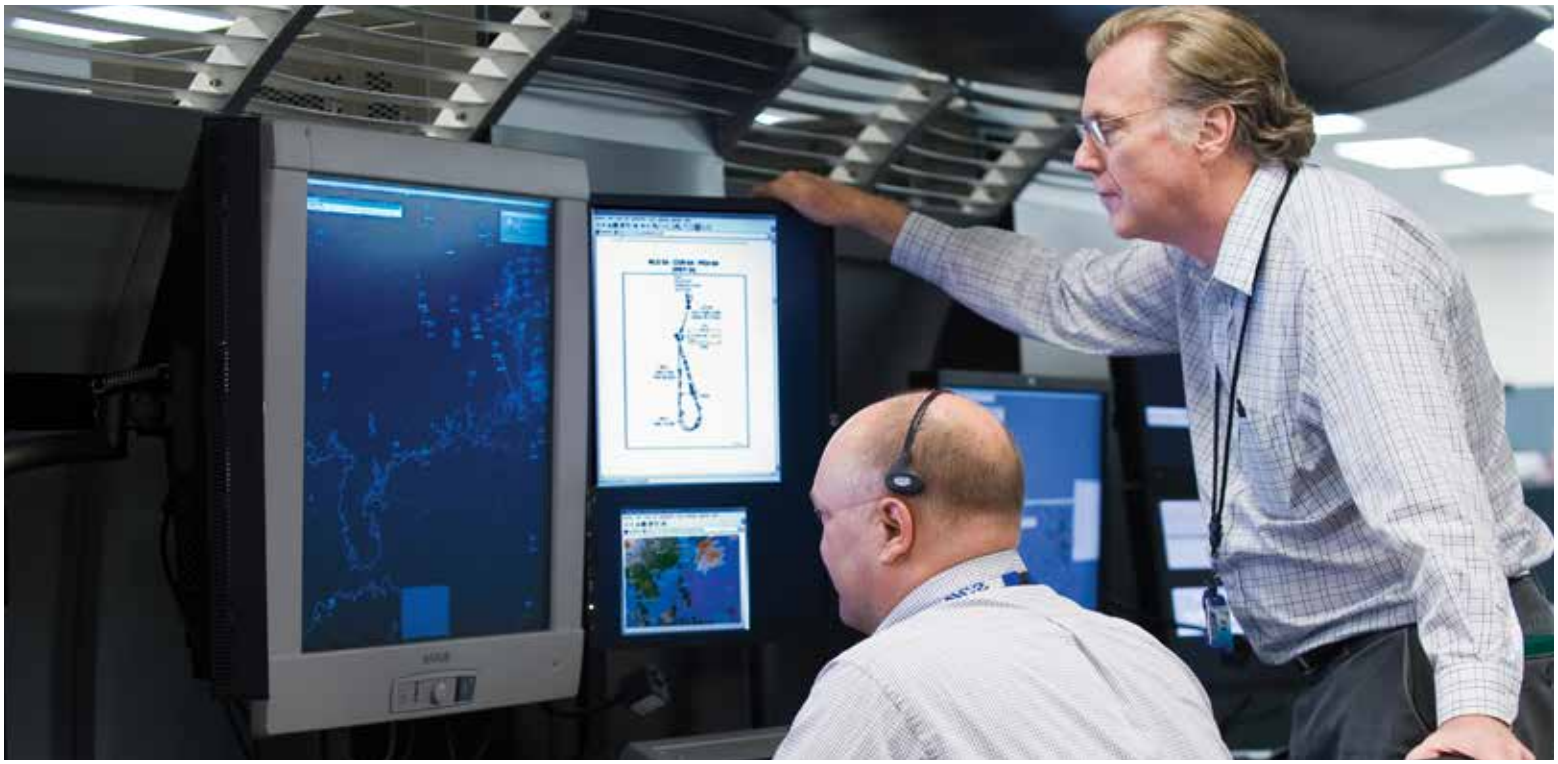
- ≥2000 target capacity advanced code correction algorithms
- Interlace with up to four modes
- Azimuthal sector control
- Use of Commercial-Off-the-Shelf (COTS)components ensures supportability and minimizes life-cycle costs

SkySearch-2000M Specifications

MSSR Transmitters	Transmitter frequency	1030 ±0.01 MHz
	High duty cycle	>2% long term average (All-Modes), >6% short term average (Mode S)
	Peak output power	65 dBm ±1 dBm
	Power control	12 dB range w 1.5 dB steps (with Mode S transmitter)
	Modulations	PPM, MSK and BPSK (Mode S configuration)
MSSR Receivers	Number of channels	3 (Sum, Delta, Omni)
	Receiver type	Linear and log (Mode 5, Mark XII and Mode S)
	Center frequency	1090 ±0.1 MHz
	Frequency response	ICAO, STANAG, DoD AIMS compliant
	Maximum range	256 NM
	Minimum range	0.25 NM between 0 and 50° elevation
MSSR Processors	**Target processor**	
	Probability of detection	>99.9%
	False target report	<0.04%
	Overall multiple SSR target reports	<0.3%
	Code availability	>98.5%
	Systemic errors	
	Slant range bias	<15 m
	Azimuth bias	<0.022°
	Random errors	
	Slant range	15 m
	Azimuth	0.068°
	Target resolution	
	Range	100% for range separations >222 ft.
	Azimuth	100% for azimuth separations of > one effective antenna beam width
	ASR data outputs	
	Format	ASTERIX
	Channels	Dual
	Links	Serial and network
MSSR Antenna	Type	LVA
	Pedestal	
	Redundancy	Dual motors
	Data package	Dual encoders
	Maintenance	Automatic lubrication system, temperature, lube monitoring
	Power	AC Power, 50/60 Hz

MSSR Antenna

SkySearch-3000



Co-Mounted PSR/MSSR

The SkySearch®-3000 is an air surveillance radar system featuring an integrated S-band Primary Surveillance Radar (PSR) with a co-mounted MSSR and passive ADS-B system providing terminal approach control surveillance. The system assures service providers of having a high performing, cost-effective and reliable system to safely and efficiently monitor air traffic.

Key Features:

- Developed in full compliance with ICAO and EuroControl standards
- Digital Signal Processing (DSP) with adaptive parameter management to decrease false target detection
- Solid-state transmitter that is air cooled and fault tolerant
- Weather detection processing dual channel providing six-level intensity classification per ICAO and U.S. FAA standards
- Modern local and remote control and monitoring system, BITE for user-friendly operation and maintenance
- Target output formats per ASTERIX Cat 1
- Linear and circular polarization to increase target detection and reduce the influence of weather clutter

Co-mounted MSSR and passive ADS-B system

SkySearch-3000 Specifications

PSR Transmitters	Frequency band	S-band, 2700 -2900 MHz
	Frequency diversity and agility	Multiple frequencies used in operation with diversity
	Amplifier type	Solid-state fail soft, 12 modules
	Peak power, not less	15 kW typical, up to 28 kW Pulses width 1 us and 40 us
PSR Receivers	Receiver type	Digital receiver with double frequency converter
	Maximum range	80 NM (RCS = 1m2, Pd=0.8)
	Minimum range	0.5 NM
PSR Processors	A-MTD	Yes
	Min/Max doppler speed	20/800 knots
	Clutter maps, automatic	Yes
	Beam switching maps	Yes
	STC maps	Yes
	False alarm rate after tracking	< 4 per scan
	Range accuracy	50 m
	Azimuth accuracy	0.1°
	Range resolution	230 m
	Azimuth resolution	2°
PSR Antenna	Polarization	Linear and circular
	Type	Cosecant square

Superior target reporting for civil ATC applications

Visit www.ttm.com for more information.