SCANTER 5000 Series
Surface Movement Radar

TERMA
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Airport Surface Movement Radar

The SCANTER 5502/5602 Surface Movement Radar (SMR) is designed to provide airport ground surveillance integrated as the non-cooperative primary sensor in an airport Advanced Surface Movement Guidance and Control System (A-SMGCS).

The outstanding capabilities of the SCANTER 5502/5602 SMRs ensure reliable detection of very small targets and produce an overall clear, high-resolution radar awareness of the coverage area, day and night and in all weather conditions.

Frequency Diversity functionality further enhances the Probability of Detection (PD), specifically for small targets, and improved Sector Control reduces the risk of Multi-Path.

PRODUCT CHARACTERISTICS

SOLID STATE RADAR
The use of Solid State makes it possible to software define the frequency over the full band (9.0-9.5 GHz) to avoid interference.

Superior range target separation with pulse compression and Frequency Diversity performance with selection within 16 sub-bands.

PLOT EXTRACTION
As a unique feature the plot extraction is performed in a signal processing board taking advantage of the full resolution of the digital processed radar video. The plots are associated plots and are correlated to secondary information such as ADS-B, if available.

EMBEDDED TRACKER
Terma offers a knowledge-based embedded tracker automatically adjusting the number of scans needed to initiate a track depending on the local clutter density and how well a series of consecutive plots describe a possible target trajectory.

AERODROME TRAFFIC AWARENESS
Aerodrome Traffic Awareness is an add-on to the well-known SMR application. It enables detection and tracking of descending aircraft up to 5 NM from the radar as well as non-transponder low-level unidentified flying objects around the airport. It is a 2-in-1 solution not compromising the 60 RPM for a SMR.

A well-known challenge of a modern airport is that the PSR and SSR do not provide coverage below 2-300 m. These radars might also have a limited view to the descending aircraft due to buildings or blind zones. A correlation in the A-SMGCS between the SSR and SMR makes it possible automatically to transfer the label before landing to save time later when ground traffic might be heavy.

LOW LIFE CYCLE COST (LCC)
The SCANTER technology selected, the robust mechanical design, and efficient temperature management ensure a long lifetime of the Solid State Power Amplifier (SSPA) and a high reliability and LLC.

ANTENNA PROGRAM
The Terma SMR systems utilize Line Array Antennas optimized for high gain, low side-lobes, good weather penetration, and high reliability. The antennas come with Fan or Inverse Cosec^2 vertical beam shape as appropriate for the invidual airport. The combination of X-band and Circular Polarization is optimal for rain penetration in SMR applications without need for introducing rain-dependant compensations.

MULTI-SENSOR OPERATION
Radar coverage and resolution can be expanded by introducing multiple sensors allowing for separate presentation or centralized compilation of composite images. Illumination from different angles and distances may enhance target discrimination. Otherwise, obstructed areas can be included and unwanted effects from multi-path propagation eliminated.

BASED ON THE SCANTER RADAR TECHNOLOGY
Terma has more than 60 years of experience in developing and manufacturing radars, and more than 2,200 radar systems are installed worldwide. Terma provides radar sensors to Vessel Traffic Services (VTS), Coastal Surveillance Radar (CS), and Surface Movement Radar (SMR) segments. More than 85% of all major airports around the world and 65% of all coastal shores rely on Terma's sensor technology.

SCANTER 5000 SERIES	5502	5602
Featuring		
SMR Ground Surveillance, Full Coherence, Frequency diversity	•	•
A-SMGCS integration	•	•
Frequency		
Software-defined frequencies within 9.0-9.5 GHz	•	•
Up to 16 sub-bands	•	•
Transmitter		
50 W SSPA, meeting ICAO recommendations using WG lengths up to 15 m	•	
200 W SSPA, meeting ICAO recommendations using WG lengths up to 45 m		•
0-20 kW equivalent pulse power, programmable, also in sectors	•	
0-80 kW equivalent pulse power, programmable, also in sectors		•
Receiver		
Digital sampling on IF, ≥ 140 dB amplitude span of signals handled	•	•
Range cell size: 3 m	•	•
Range cell size: 1.5 m	◦	◦
Design		
Open architecture, wall/bulkhead mounted, ruggedized housing	•	•
Temperature-controlled, environmental enclosure for up-mast mounting	◦	◦
External interfaces		
Digital, Analogue, and IP network radar signals	•	•
Control and monitoring via IP network/Serial communication ports	•	•
Antennas		
21′ High Gain Linear Array, Circularly Polarized, Fan or Inverse Cosec^2, 60 RPM	◦	◦
Embedded Tracking & Extraction		
SMR Plot Extractor	◦	◦
SMR Tracker	◦	◦
Aerodrome Traffic Awareness		◦
CONFORMITY		
EUROCAE ED-116, IEC 60068, IEC 60529, IEC 61000, ITU-R SM 1541, ICAO 1987	•	•

•Standard ◦Add-on (optional)
Specifications subject to change

Operating in the aerospace, defense, and security sector, Terma supports customers and partners all over the world. With more than 1,200 committed employees globally, we develop and manufacture mission-critical products and solutions that meet exacting customer requirements.

At Terma, we believe in the premise that creating customer value is not just about strong engineering and manufacturing skills. It is also about being able to apply these skills in the context of our customers' specific needs. Only through close collaboration and dialog can we deliver a level of partnership and integration unmatched in the industry.

Our business activities, products, and systems include: command and control systems; radar systems; self-protection systems for ships and aircraft; space technology; and advanced aerostructures for the aircraft industry.

Headquartered in Aarhus, Denmark, Terma has subsidiaries and operations in The Netherlands, Germany, India, UAE, UK, Singapore as well as a wholly-owned U.S. subsidiary, Terma North America Inc. Terma North America Inc. is headquartered in Arlington, in the Washington D.C. area, with other offices in Georgia, Texas, and Virginia.

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