



## SPEXER® 1500

### Security Radar for Large Perimeter and Border Surveillance

The SPEXER 1500 is a high-performance radar for the surveillance of large perimeters as well as the surveillance of borders where there are geographical limitations such as mountains. It is able to automatically detect and classify ground, sea and low-flying air targets.

The SPEXER 1500 is specifically designed for security missions such as the surveillance of large perimeters and border control. Due to its smaller size and lower weight

compared to the SPEXER 2000 border surveillance radar, the SPEXER 1500 is therefore a portable solution for flexible use in different security scenarios.

The SPEXER 1500 is part of the SPEXER security radar family which has already proven its outstanding performance in integrated security systems in several regions of the world.

The radar combines the surveillance of ground, sea and low air space and is also capable of working under harsh climatic conditions, whereas other sensors such as cameras would fail. Therefore, the SPEXER 1500 is the perfect solution for the protection against contemporary threats. It is a derivative of the SPEXER 2000 Border Surveillance Radar – the unchallenged global leader with regard to technology features and benefits.

The SPEXER security radars represent the first operational land-based ground, sea and low air space surveillance radar family worldwide, which is utilising AESA (Active Electronically Scanned Array). Due to the use of active phased array technology, the SPEXER 1500 replaces conventional mechanically rotating reflector antennas in the area of security applications and facilitates a much higher operational performance. Based on the use of AESA technology, the SPEXER 1500 provides a dual-beam

capability which offers the functionalities of two separate conventional radars in one single, easily portable solution at a competitive price. The multi-tasking capability of the SPEXER 1500 overcomes the classical limitations of mechanical moving systems and enables the simultaneous use of target tracking and sector surveillance. Due to the non-mechanical movement during processing, the SPEXER 1500 produces better operational performance and results for the detection of slowly moving targets such as pedestrians.

The SPEXER 1500 can be deployed as land-based fixed installed system (e.g. on a mast), integrated in a smart vehicle, or portable system (on a tripod), optionally in combination with an air-conditioned radome (protection against sand storms and extreme temperature) or with a camera system.

Functional Data																			
<b>Type</b>	Pulse-Doppler Radar based on AESA technology																		
<b>Frequency</b>	X-band																		
<b>Instrumented range</b>	40 km (24.9 mi; 21.6 NM)																		
<b>Detection ranges</b>	<table border="0"> <tr> <td>Pedestrian (0.5 m<sup>2</sup> RCS):</td> <td>15 km</td> <td>(9.3 mi)</td> </tr> <tr> <td>Truck (10.0 m<sup>2</sup> RCS):</td> <td>30 km</td> <td>(18.6 mi)</td> </tr> <tr> <td>Light aircraft (3.0 m<sup>2</sup> RCS):</td> <td>22 km</td> <td>(13.7 mi)</td> </tr> <tr> <td>Low-level helicopter (5.0 m<sup>2</sup> RCS):</td> <td>30 km</td> <td>(18.6 mi)</td> </tr> <tr> <td>UAV (0.2 m<sup>2</sup> RCS):</td> <td>7 km</td> <td>(4.3 mi)</td> </tr> <tr> <td>Small boat, rubber dinghy (1.5 m<sup>2</sup> RCS):</td> <td>16 km</td> <td>(8.3 NM)</td> </tr> </table>	Pedestrian (0.5 m <sup>2</sup> RCS):	15 km	(9.3 mi)	Truck (10.0 m <sup>2</sup> RCS):	30 km	(18.6 mi)	Light aircraft (3.0 m <sup>2</sup> RCS):	22 km	(13.7 mi)	Low-level helicopter (5.0 m <sup>2</sup> RCS):	30 km	(18.6 mi)	UAV (0.2 m <sup>2</sup> RCS):	7 km	(4.3 mi)	Small boat, rubber dinghy (1.5 m <sup>2</sup> RCS):	16 km	(8.3 NM)
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<b>Coverage</b>	Electronic scanning 120° in azimuth (opt. mechanical rotation 360°) 4.3° elevation beam width; opt. +/- 20° elevation tilt																		
<b>Dimensions</b>	Width: 0.6 m (23.6 in), Height: 0.7 m (27.6 in), Depth: 0.6 m (23.6 in)																		
<b>Interface</b>	Data / Control: 1 Gbit Ethernet LAN electrical (fibre optical interface optionally) for radar control and data output of plots, tracks and equipment status; integrated interface for camera contro																		

Main Characteristics	
<ul style="list-style-type: none"> <li>• Surveillance of large areas / long distances</li> <li>• Very early warning / high level of situational awareness</li> <li>• Detection, tracking and automatic classification of even very small and slowly moving targets such as pedestrians (due to high Doppler resolution)</li> <li>• Multi-tasking and dual beam capability: one compact all-in-one SPEXER 1500 can replace several conventional radars</li> <li>• Multi-mode capability: Time-multiplex and parallel operation (multi-sector scanning, point surveillance, target tracking)</li> <li>• High target location accuracy (in range and azimuth)</li> <li>• Highly portable, low-weight and low-size all-in-one radar</li> </ul>	<ul style="list-style-type: none"> <li>• Interface for easy integration into a C2 system</li> <li>• Ready for multi-radar operation also in combination with cameras (in network)</li> <li>• Very low average radiated power: 7 Watts</li> <li>• Graceful degradation capability (solid state T/R modules) and very high MTBF in particular due to electronic instead of mechanical scanning</li> <li>• Low lifecycle cost due to electronic instead of a permanently rotating antenna</li> <li>• For extreme climatic conditions (e.g. desert), an optional radome is available</li> </ul>