



XENTA-M

SHORAD RADARS

WEIBEL
DOPPLER RADARS

XENTA SHORAD RADARS

NO TIME TO LOSE

When you're faced with responding to an approaching object, the last thing you want to lose is time. The more time your radar system can give you, the greater confidence you can have in making the right decision.

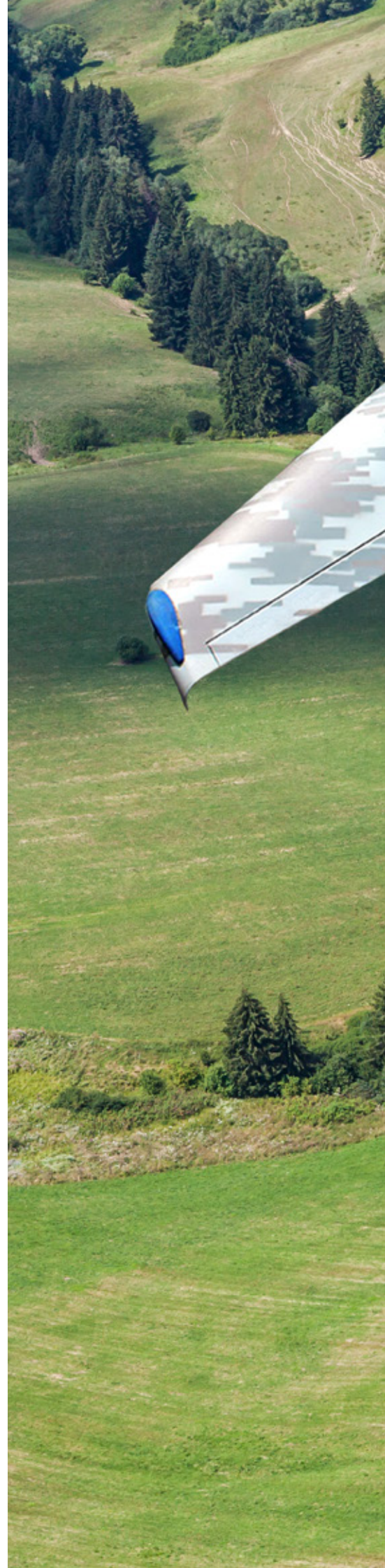
Whether tracking fighter jets, RAMs and missiles or fixed-wing and propelled drones, Weibel's XENTA-M radar gives you the time you need. It is a specialist, MIL-SPEC SHORAD radar capable of detecting and tracking all types of aerial threats, both fast-moving targets and low, slow and small targets.



The XENTA-M product line builds on Weibel's proven expertise in X-Band FMCW/CW sensor systems and is developed for high-performance 3D digital-array surveillance. Advanced use of FMCW/CW, together with highly effective clutter suppression, provides the ability to acquire and track micro-Doppler signals from, for example, propeller-driven drones at long ranges for reliable early classification.

The XENTA-M series SHORAD radars offer the unique feature of a combination of full 360-degree volume surveillance and high-precision 3D target tracking for situations such as missile engagements. The high quality tracking is achieved through stop and stare processing. Here, the radar shifts from surveillance mode acquisition to lock on and track a target. Stop and stare is mechanically supported through an advanced drive system that both turns and fine-positions the antenna.

By combining FMCW/CW and MFCW/CW digital-array processing, the SHORAD guarantees high performance 3D detection, tracking and classification. Range-Doppler processing coupled with dynamic clutter-map suppression and MTI-processing ensures minimal false track reports. Track data (3D position and velocity) is reported to C2 systems at high data rate and with minimal latency through standard ASTERIX protocol. XENTA-M will therefore support a full and exhaustive situational awareness suitable for tactical processing, decision-making and target engagement.

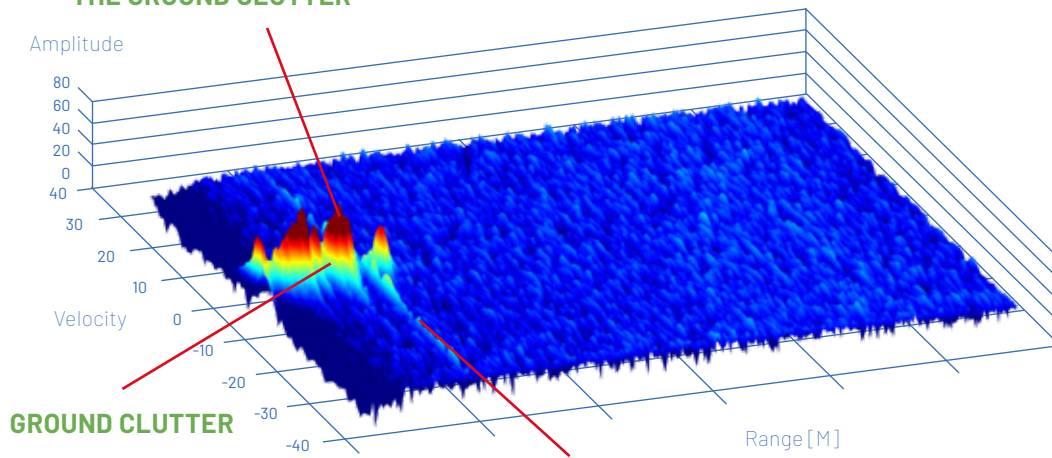




SPECIFICATIONS			
MODEL	XENTA-M1	XENTA-M3	XENTA-M5
Transmit power	60W low power	120W medium power	240W high power
Instrumented range	Nominal 50 km	Nominal 60 km	Nominal 75 km
Elevation coverage	60°		
Antenna type	Multiple feeding micro-strip sub-arrays solid state GaN		
Receiver type	Mono-pulse phase-phase comparison for angle tracking with digital-array synthetic beamforming, multi-beam phased-array technology		
Processing technology	Digital-array synthetic beamforming		
Duty cycle	100% nominal		
Frequency	X-Band 9.0-9.5 / 9.5-10.0 / 10.0-10.5 GHz		
Beamforming	One programmable transmit beam, multiple synthetic receive beams		
Transmission modes	FMCW/CW, MFCW/CW		
RF bandwidth	400 MHz		
Operational modes	Surveillance, sector scan, stop-and-stare		
Rotation rate	0 - 60 rpm		
Operational profiles	16 profiles		
Sector blanking / inhibit zones	10 sectors		
Transmit power management	Flexible sector-based programmable power level		
Polarization	Horizontal		
Stablization	Stabilization up to 7 deg. tilt with INS input (optional)		
IFF	Fully integrated antenna and interrogator (optional)		
Power input	28 V DC or 3 phase 400VAC or 208 VAC + Neutral 50/60 Hz		
Operating temperature	-32°C to 55°C (climate zones A1 - C2)		
Shock and vibration	MIL-STD-810 (vehicle and army ground)		
EMC/EMI	MIL-STD-461		
Digital data interfaces	ASTERIX		
External interfaces	Gigabit Ethernet		

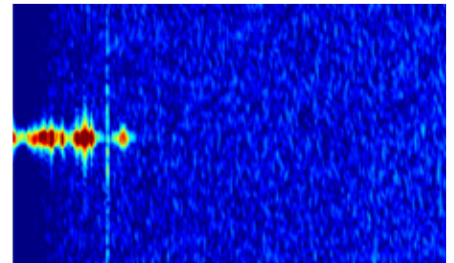
DRONE DETECTION IN SEVERE GROUND CLUTTER

HOVERING DRONE HIDING IN THE GROUND CLUTTER

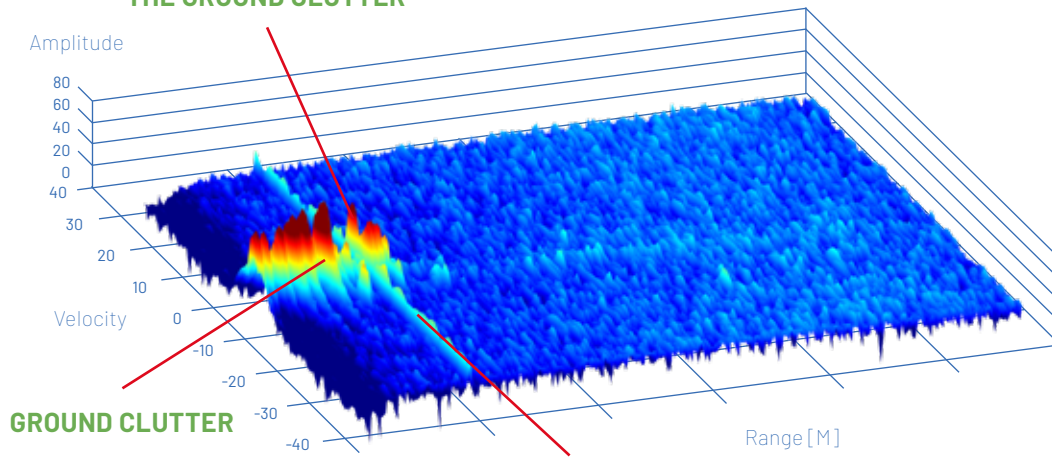


GROUND CLUTTER

DRONE PROPELLERS DETECTED

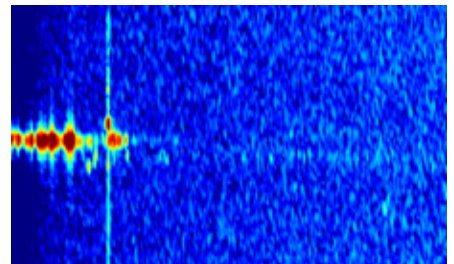


DRONE BODY SEPARABLE FROM THE GROUND CLUTTER



GROUND CLUTTER

DRONE PROPELLERS DETECTED



The XENTA SHORAD radar series is specifically designed to meet the full set of traditional GBAD threats and the growing challenges brought about by the proliferation of UAVs.

HIGHLIGHTED FEATURES OF THE RADAR INCLUDE:

- Stationary and on-the-move detection and tracking of traditional air targets and UAVs
- Switching between surveillance mode and stop-and-stare mode for increased accuracy and precision tracking
- Reliable target classification based on advanced Doppler processing, AI and machine learning
- X-Band 3D digital-array synthetic beamforming technology
- FMCW/CW and MFCW/CW transmission
- Very low false track rate
- Simple integration with control systems through use of Ethernet and standard ASTERIX interfacing
- High reliability with graceful degradation through multiple transmit and receive modules
- Adaptive and dynamic clutter processing

Weibel's XENTA-M radars have been developed as a specialist MIL-SPEC SHORAD radar capable of detecting and tracking all types of aerial threats, from fast-moving targets such as fighter jets, RAM and missiles to low, slow and small targets such as fixed-wing and propelled drones.

XENTA-M1 (low power), XENTA-M3 (medium power) and XENTA-M5 (high power) feature a 60-degree elevation opening angle and 360-degree azimuth coverage. They are designed for surveillance and tracking in stationary or on-the-move GBAD operations in a complex clutter environment.



ABOUT WEIBEL SCIENTIFIC

Danish Weibel Scientific is the global leader in the market for advanced Doppler radar systems. For more than 40 years, we have sold cutting-edge radars around the world for use in space, aerospace, defense, and missile defense systems. We have delivered more than 5,000 radars to more than 40 countries.

As a key approach to ensuring high-quality logistics support, Weibel designs and builds all critical units in-house. In-house design and manufacturing mean that with the exception of standard components, Weibel is independent of sub-suppliers for the manufacturing of both prime equipment and spares. In this way, we are able to offer fast and guaranteed through-life support.

Read more at weibelradars.com

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