



XENTA-M

SHORAD RADARS

WEIBEL
DOPPLER RADARS

XENTA-M SHORAD RADARS

With a long heritage of highly accurate instrumentation radars provided to test ranges all over the world, the XENTA-M product line builds on Weibel's advances in Continuous Wave (CW) radar technology.

The XENTA-M is a state of the art X-Band FMCW sensor system, developed for high-performance 3D air surveillance of all types of aerial threats. It is a fully ruggedized MIL-SPEC SHORAD radar capable of simultaneously detecting, tracking, and classifying all types of aerial threats, both fast moving as well as Low-Slow-Small (LSS) targets. The XENTA-M is easily integrated on both fixed and mobile platforms.



Advanced utilization of FMCW with Range Doppler processing, together with highly effective adaptive clutter mapping, provides the ability to acquire, track, and classify targets with high confidence, spanning from hovering drones to high speed anti-radiation missiles.

The XENTA-M SHORAD radars offer the unique feature of a combination of full 360 degree volume surveillance with high precision 3D target tracking for missile engagements.

Enhanced quality and accurate tracking is achieved through stop-and-stare processing. In this mode, the radar shifts from 360 degree volume surveillance to locking onto a high priority track, updating the track in a very narrow sector, resulting in an ultra-high update rate.

The XENTA-M features INS integration for Search-On-The-Move (SOTM) capabilities, as well as IFF integration, as an integrated part of the primary surveillance antenna.

Derived associated track data and comprehensive BIT information are reported to any connected C2 system through the industry standard ASTERIX protocol, enabling remote control and system-of-systems data fusion.

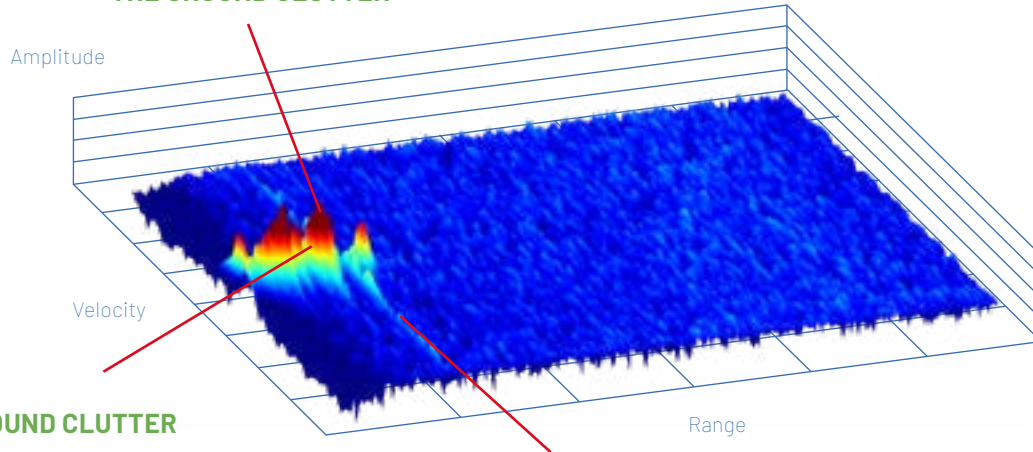




SPECIFICATIONS		
MODEL	XENTA-M3	XENTA-M5
Transmit power	120W medium power	240W high power
Instrumented range	Nominal 60 km	Nominal 75 km
Elevation coverage	60°	
Antenna type	Multiple feeding microstrip subarrays solid state GaN	
Receiver type	Monopulse phase-phase comparison for angle tracking with digital array synthetic beamforming, multi-beam phased array technology	
Processing technology	Digital array synthetic beamforming	
Duty cycle	100% nominal	
Frequency	X-Band	
Beamforming	One programmable transmit beam, multiple synthetic receive beams	
Transmission modes	FMCW with Range Doppler processing	
Operational modes	3D-Surveillance, Stop-Stare, Search-On-The-Move (SOTM)	
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 49°C	
Shock and vibration	MIL-STD-810 (vehicle and army ground)	
EMC/EMI	MIL-STD-461	
Digital data interfaces	ASTERIX	
External interfaces	Gigabit Ethernet	

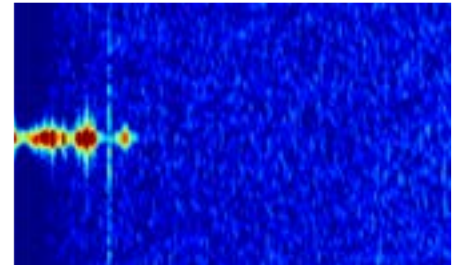
DRONE DETECTION IN SEVERE GROUND CLUTTER

HOVERING DRONE BODY HIDING IN THE GROUND CLUTTER

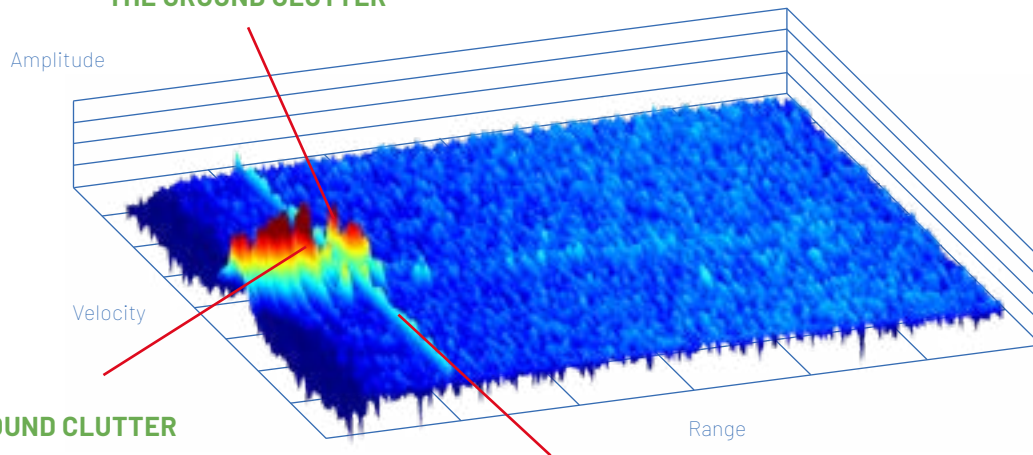


GROUND CLUTTER

DRONE PROPELLERS DETECTED

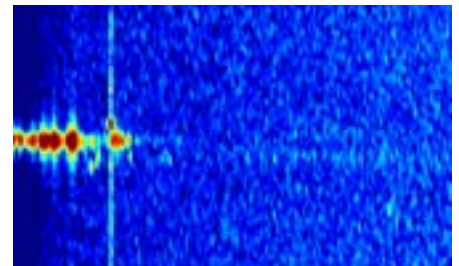


DRONE BODY SEPARABLE FROM THE GROUND CLUTTER



GROUND CLUTTER

DRONE PROPELLERS DETECTED



The XENTA-M SHORAD radar series is specifically designed to meet the full set of traditional Ground Based Air Defense (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
- Precise guidance of effector systems through switching between surveillance tracking and stop-and-stare tracking
- Reliable target classification based on advanced Doppler processing and machine learning
- X-Band 3D digital-array synthetic beamforming technology
- FMCW with Range Doppler processing
- 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 SHORAD radars have specifically been developed to address the need of detecting, classifying and tracking all types of aerial threats, from fast moving targets, such as jets and missiles to low, slow, and small targets, such as fixed-wing aircraft and drones.

The XENTA-M SHORAD radars feature a 60-degree elevation and 360-degree azimuth 3D coverage, designed for surveillance and tracking in stationary or on-the-move GBAD operations in complex clutter environments.



ABOUT WEIBEL SCIENTIFIC

Danish Weibel Scientific is the global leader for advanced Doppler radar systems. For more than 45 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 means that with the exception of standard components, Weibel is independent of subcontractors for the manufacturing of both prime equipment and spares. This allows us to provide outstanding support for our products and avoid obsolescence.

Read more at weibelradars.com.

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