

# MATR-X™ MULTI-MISSION TACTICAL SURVEILLANCE RADAR

MATR-X™ PROVIDES A SMALL FORM FACTOR, MULTI-MISSION (GROUND, SURFACE, AIR), DETECT, CLASSIFY AND TRACK CAPABILITY THAT DIRECTLY SUPPORTS THE NATIONAL DEFENSE STRATEGY CONCERNING NOT ONLY TODAY'S EXISTING THREATS BUT ALSO THE WARFIGHTER REQUIREMENTS FOUND ON THE BATTLEFIELD OF TOMORROW.

MATR-X is a fully digital, multi-mission (ground, air, surface) 3-D Active Electronically Scanned Array (AESA Radar) designed specifically for the detection, classification and tracking of ground or surface targets while simultaneously detecting and tracking unmanned Drones. MATR-X provides precise detection, classification and tracking of biological and non-biological targets of interest combined such as ground/air, surface/air allowing for the tailoring of techniques to specific mission profiles and command authorities. Additionally, the radar is designed for maximum scalability and mission flexibility through emplacement options including man-portable, semi-fixed, fixed (tower) and mobile (vehicle, surface craft) installations. The MATR-X all weather functionality further supports the mission flexibility by offering operational capability in all environments and atmospheric conditions.

The MATR-X radar utilizes standard DoD and DHS data output protocols and provides easy integration of customer specified protocols not included in base configuration. Integration of customer defined external sensors and effectors is accomplished with an open interface.

## CAPABILITIES

Multi-mission AESA Tactical Radar-X Band (MATR-X) incorporates wide beam (110°) transmit and 48 narrow beams of continuous receive. This design allows for a very rapid revisit rate. The continuous wide beam transmits in all sectors, multiple times per second and many staring narrow beam receivers provide constant scanning surveillance in all directions. This design eliminates the need for prioritization and enables 1,000's of tracks while detecting in multiple domains simultaneously. There are no resource constraints in the design.

Due to the high scanning rate, the revisit rate is very fast. This means that MATR-X will detect all targets regardless of domain. MATR-X keeps the same performance regardless of the number of targets, the size and maneuverability of the targets.





# MULTI-MISSION TACTICAL SURVEILLANCE RADAR

## DESIGN CONSIDERATION

SINGLE PANEL	SDR BASED
DIMENSIONS	520 X 378 X 218 (W,H,D)
WEIGHT	27 KG
POWER INPUT	16-33V DC
CONSUMPTION	340W
FREQUENCY BAND	X-BAND 9-10 GHZ
COOLING METHOD	CONDUCTION

## PERFORMANCE CONSIDERATIONS

NUMBER OF SIMULTANIOUS TRACKS	10,000
MINIMUM DETECTION VELOCITY	0.3 M/SEC
AZIMUTH/ELEVATION	110 DEGREES IN AZIMUTH +40 IN THE ELEVATION
OPERATING TEMPERATURE RANGE	-32 - +55C
UPDATE RATE	4 HZ
ENVIRONMENTAL OPERATING	EMI/EMC
POWER INPUT	16V TO 33V DC, MIL-STD-1275E
ENVIRONMENTAL OPERATIONS	MIL-STD-810G
MTBF	> 22,000 HRS
MATURITY	TRL 8

TARGET	AVG. DETECTION RANGE (KM)
Pedestrian	12.2
Light truck	14.6
Heavy truck	19.2
DJI Mavic (Group 1)	4.8
DJI Phantom-4 (Group 1)	6.2
DJI Matrice M600 (Group 2)	8.8
Crewed aircraft, emulates Group 3 UAS	15.2
<b>90-95% POD</b>	

## INTEROPERABILITY CONSIDERATIONS

COMMUNICATION	1 GBPS ETHERNET OR RS 485
PROTOCOL	ASTERIX

## APPLICATIONS

- Counter UAS
- Ground Surveillance
- Surface Surveillance
- Force Protection (FOBS, COPS, AB)
- Port and Harbor Surveillance
- Critical Infrastructure Protection
- State, Local, Tribal & Territorial Protection
- Prison Protection
- Airport Protection

## FEATURES

- SDR and unique antenna design enables very fast revisit rates providing continuous situational awareness in multi-mission domains
- Flexible wave forms detect slow, small, and fast velocity items of interest simultaneously
- X-band design enables the best combination in its class for:
  - SWAP
  - Target location and accuracy
  - All-weather performance
- Uses ASTERIX standards



ELBITAMERICA.COM

MATR-X@ELBITSYSTEMS-US.COM