



MiniSAR

APPLICATIONS

- Maritime surveillance
- Coastal monitoring
- Long range patrolling
- Early detection of ships
- MTI

SNAPSHOT

- Compact and portable
- Low power
- Real-time imaging and hardware monitoring
- Pre-flight mission preparation
- During-flight control
- Multi-mode of operation
- Automatic aircraft attitude stabilization
- All weather, day and night capabilities
- Cost-effective

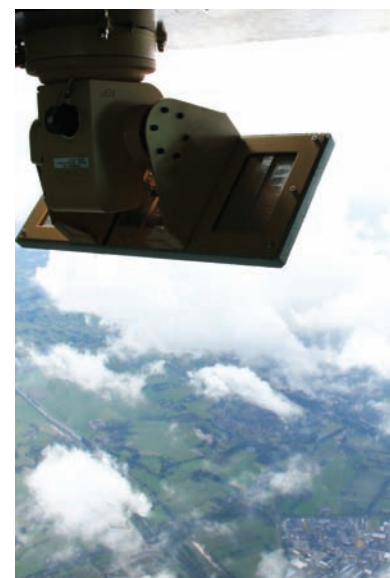
CUSTOMERS

- Defence agencies
- Intelligence
- Public administrations

MetaSensing MiniSAR (Mini Synthetic Aperture Radar) system is a compact radar sensor that combines high quality radar performance and flexible system characteristics. It is the result of several years of experience at MetaSensing in creating and developing SAR system solutions.

The MiniSAR system provides high reliability in terms of hardware components and advanced SAR processing, with superior quality images.

The sensor operates at X-band and can be mounted on a wide range of moving platforms, providing High Resolution Imaging (HRI) and Moving Target Indication (MTI) and permitting all-weather airborne observation and surveillance



MiniSAR in action



Example of SAR imaging



Possible area of application



Example of platform (UAV)

| MetaSensing MiniSAR - technical specification | |
|---|--|
| Aircraft | UAV, multi-aircraft |
| Altitude | Up to 7000 m |
| Frequency | X-band (9.6 Ghz) |
| Polarization | Linear vertical |
| Slant range resolution | Adjustable (max 1 m) |
| Azimuth resolution | Adjustable (max 1 m) |
| Swath width | Up to 15 km |
| Field of view | 30° |
| Aircraft altitude compensation | Automatic (0.5° accuracy) |
| Quantization | 14 bits |
| Maximum mapping range | 20 km / 40 km (resolution dependent) |
| Mapping frame | 1 km x 1 km @ 10 km slant range |
| Mapping processing time | 15 s for 1 m resolution 10 s for 3 m resolution |
| Noise equivalent sigma zero | -30 dB at 20 km slant range |
| Moving target speed | > 15 km/h min |
| Moving target distance | Above 10 km (radial, for RCS=10 dBsm) |
| Size | < 80 cm x 60 cm x 40 cm for fixed radar installation < 80 cm diameter x 40 cm height for moving parts |
| Weight | 20 kg |
| Power consumption | 250 W max (18-32 V DC) |





MiniSAR datasheet



| SAR CONTROL UNIT | | | |
|----------------------------|--------------------|------------------------------|------------|
| Parameter | Value | Parameter | Value |
| Weight | 6.5 Kg | Processor | Dual Core |
| Height x Width x Depth | 132 x 181 x 277 mm | Relative humidity | 5% to 95% |
| Power dissipation capacity | > 100 W | Temp., Vibr., Mechan., shock | Compliant* |
| Ruggedized | Yes | Corrosion resistance | Yes |



| RADIO FREQUENCY UNIT | | | |
|------------------------|-------------------|-----------------------|--------------------|
| Parameter | Value | Parameter | Value |
| Weight | 2.3 Kg | Frequency | 9.6 (±0.1) GHz |
| Height x Width x Depth | 40 x 200 x 180 mm | RX gain | 63 (±0.1) dB |
| TX power | 32 dBm | Phase noise | 140 dBc/Hz @ 1 MHz |
| RX noise figure | 2.8 dB | Temp., Mechan., shock | Compliant* |



| NAVIGATION UNIT | | | |
|------------------------------|--------------------|---------------------------|----------|
| Parameter | Value | Parameter | Value |
| Weight | 2.3 Kg | Start-up time | < 5 sec |
| Height x Width x Depth | 126 x 202 x 260 mm | Gyros scale factor error | 1500 ppm |
| Temp., Vibr., Mechan., shock | Compliant* | Accel. scale factor error | 4000 ppm |
| Ruggedized | Yes | Corrosion resistance | Yes |



| PAN-TILT UNIT | | | |
|------------------------------|--------------------|----------------------------|------------------------|
| Parameter | Value | Parameter | Value |
| Weight | 4.5 Kg | Pan angle rotation, Speed | -105° to +105°, 50/sec |
| Height x Width x Depth | 210 x 450 x 260 mm | Tilt angle rotation, Speed | -90° to +30°, 50/sec |
| Temp., Vibr., Mechan., shock | Compliant* | Pointing accuracy | 0.01° |
| Ruggedized | Yes | Corrosion resistance | Yes |



| POWER SUPPLY UNIT | | | |
|------------------------|-------------------|-------------|--------------|
| Parameter | Value | Parameter | Value |
| Weight | 1.3 Kg | Power input | 18 - 32 VDC |
| Height x Width x Depth | 50 x 135 x 230 mm | Ripple | < 200 mVpp |
| Remote control | LVTTL on/off | EMI/EMC | MIL-STD-416F |
| Efficiency | 90% | Humidity | 95% max |

*Compliant to following specifications: Temperature shock range: -30° to +50°, Vibration Shock: According to Wide-band and narrow-band chart (5Hz to 2KHz), Mechanical Shock: Half-sine wave, 15g, 11ms, three directions.

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