



### Features

Up to 2.7Km (1.7Mi) Line-of-Sight  
Operation Multiple Wavelength  
Detection Multiple Wavelength  
Deterrence Sensor Fusion Processor  
60W Detection, 52W Illumination 20'  
Mast, Integrated Lowering System IP  
Ethernet Communication

### Radar Elements

#### ChaseX1

- Detection - Tracking - Deterrence
- Dual FMCW Pulse-Doppler Radar
- Ranges, 280m to 900m
- LWIR/NIR/VIS Cameras
- \* Precision Stacking Pan/Tilt CL3500™
- \* Illuminator & Deterrent
- \* Software
- \* EDGE Processor
- \* Ethernet - PoE 802.3af\*

#### Platform

- 20' Sensor Platform w/ Lowering System Integrated PoE Radio
- 2 Man Installation, 1 Man Maintenance
- Burial or Non-Penetrating Base

#### Cortex™ Site Correlation Software

- Geo-Sensor FOV Alignment
- Geo-Zones & Defined Rules
- Action Processor & DVR

### Safety & Security Solutions

Automatic Wide Area Protection All  
Weather - Day or Night - 24Hr  
iPad/iPhone  
Command/Control/View Interfaces  
to Central Station Monitor Low  
Power for Remote Installations

#### *Elegant Installation & Operation*

Illuminate Stranded for Rescue  
Repel Intruders and Trespassers  
Outdoor Tracking During  
Accidents Remote Monitoring of  
Daily Activity



# ECSI International Presents



## RS-400 Radar Datasheet



## ***Product Description***

The Radar system is designed for detection and tracking of vehicles, human and drones in ranges of up to 900[m], 500[m] and 300[m] respectively. The radar system provides continuous coverage of 360° over azimuth and up to ±45° over elevation.

The Radar incorporates the patented technology of **ARTSYS360°** namely the direction-of-arrival is obtained by incorporating Multimodal and Interferometry techniques.

The Radar also incorporates multimode operation namely Pulse-Doppler and FMCW techniques to obtain the range of the received object.

The RS-400 system is perfectly suited for commercial-civilian markets.

The operating frequency band is 5.5-5.9GHz and the system is designed to meet FCC Part-18, requirements.

## ***Technical Specifications***

<i>Property</i>	<i>Value</i>
Frequency	5.5-5.9 [GHz]
Radar Type	Dual mode: 1. Pulse-Doppler 2. FMCW
Receiver Bandwidth	40 [MHz]
Minimum Detection Range	5 [m]
Maximum Detection Range	Vehicles 900[m] Human 500[m] Drones 280[m]
Range Resolution	1. Pulse-Doppler: 3.75 [m] 2. FMCW: 1.8 [m]
DOA Method	Multimodal and Interferometry
Antenna Topology	Continuous Aperture
Azimuth Coverage - Transmit mode	Full 360° and Sectorial mode

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Azimuth Coverage - Receive mode	Full 360° and Sectorial mode
Azimuth Accuracy	±1.5°
Elevation Coverage	±45°
Elevation Accuracy	±1.5°
Nominal Target Cross Section (RCS)	Vehicles: +7 [dBsm] Human: -3 [dBsm] Drones: -25 [dBsm]
Minimum Target Velocity	0.5 [m/sec]
Maximum Target Velocity	25 [m/sec]
Clutter Rejection	60 [dB]
Number of simultaneous targets handling and tracking	>8
Power Source	<ol style="list-style-type: none"> <li>1. Electric Power Grid</li> <li>2. Solar Panels – OPT.</li> <li>3. Battery – OPT.</li> </ol>
Operating Voltage	14.8 [V]
Built-in-Tests	Online continuous BIT
Remote control	<ol style="list-style-type: none"> <li>1. Remote zones configuration settings: Set Dead-Zones, High-Priority Zones, etc.)</li> <li>2. Remote Software Upgrades</li> <li>3. Remote Reset</li> <li>4. Remote Power Up</li> <li>5. Power Down</li> <li>6. System Hibernate</li> </ol>
Voltage Sensing	Voltage monitoring sensors
Temperature Sensing	Temperature sensor

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Localization and Stabilization	<ol style="list-style-type: none"> <li>1. GPS Receiver with external antenna – L1 band</li> <li>2. 9-Axis Gyro</li> </ol>
Interface: Two way, Half Duplex Communication	<ol style="list-style-type: none"> <li>1. Ethernet</li> <li>2. USB</li> <li>3. RS-485</li> <li>4. WiFi</li> <li>5. Bluetooth</li> <li>6. 2G, 3G, LTE</li> </ol>
Interface: Logs	Via "Two way, Half Duplex Communication"
Interface: Target Report Block	Via "Two way, Half Duplex Communication"
Interface: Peripherals	<ol style="list-style-type: none"> <li>1. PTZ Cameras – TCP-IP/UDP and "Pelco-D"</li> <li>2. GPIOs and Dry Contact</li> </ol>

Table 1. System Requirements.

### ***Environmental Specification***

The system is designed to meet the standard requirements common in the *Physical-Intrusion-Detection* market.

<i>Property</i>	<i>Value</i>
Operating Temperature – Industrial	-40°C - +85°C
Rugged/waterproof	IP67/NEMA 6P Compliant

Table 2. Environmental Specifications.

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### ***Mechanical Specification***

<i>Property</i>	<i>Value</i>
RADOME Top	ABS
Case Material	Aluminum
Confining Dimensions Dia.xH	35x40[cm]
Weight	App. 3.5[Kg]

Table 3. Mechanical Specifications.

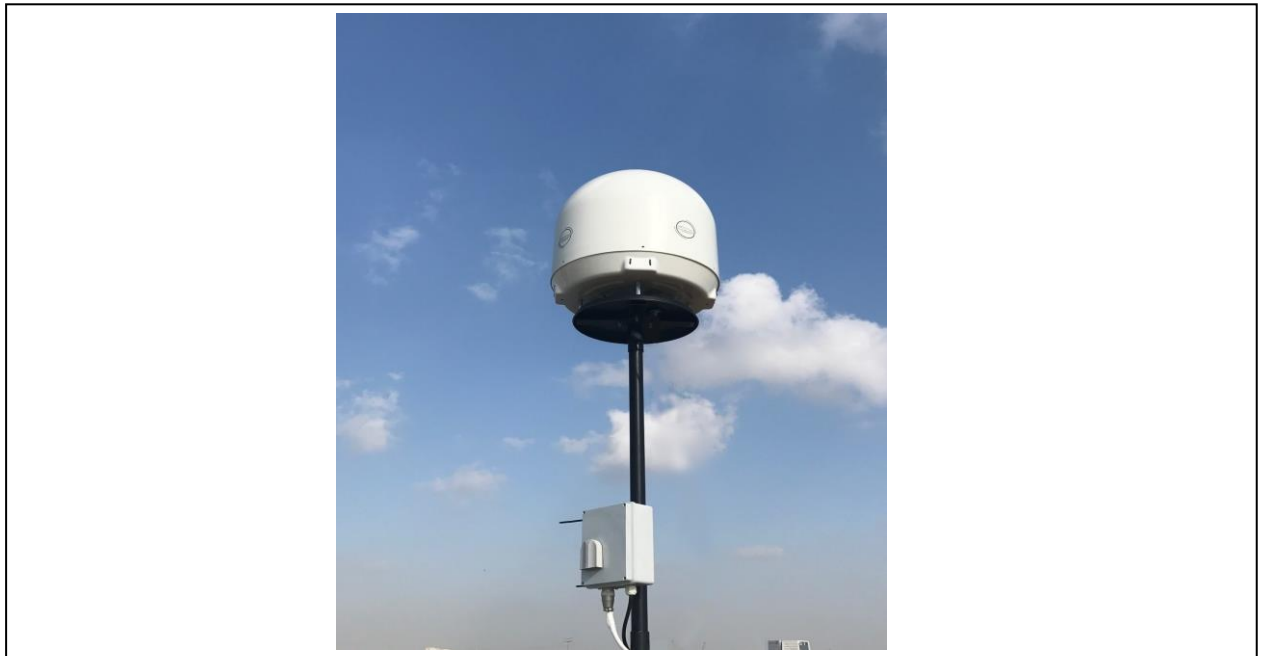


Figure 1. Dimensions.

### ***System Support Package - SSP***

In the system allows easy integration with other sensor and C4I systems

\* ***Interface: Logs***

The system will save log files every pre-determined period of time or pre-determined events in a format seen below.

Log Format:

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- 790 Power Up Time
- 791 Voltage
- 792 Temperature
- 793 GPS Position
- 794 Gyro readings
- 795 Power Source (Electric Power Grid, Solar Panels or Battery)
- 796 Battery Charge Level
- 797 Reset events
- 798 DSP Status (Power Up, Power Down, Sleep)
- 799 Ethernet Adapter Status
- 800 WiFi Module status
- 801 Bluetooth Status
- 802 Cellular Engine Status (2G, 3G and LTE)

The *Logs* can be reported by any of the *two-way half duplex* communication protocols.

- ***Interface: Target Report Block***

The system reports detected targets in a "*Targets Report Block*" in a format seen below.

Target Report Block format:

- System Time Tag
- Operating Mode (Search or Track)
- Pulse Transmit Time Tag (in Search Mode)
- Pulse Receive Time Tag (in Search Mode)
- Pulse Number (in Search Mode)
- Correlated Pulse-Target I.D.
- Range
- Transmitting Sector
- Azimuth
- Elevation
- Range-Rate and Velocity
- RCS
- SNR
- Target or Non-Target Indicator (True or False)

The *Target Report Blocks* can be reported by any of the *two-way half duplex* communication protocols.

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- ***Interface: Peripherals***

The system allows interfacing additional security measures such as PTZ cameras through TCP-IP/UDP and "Pelco-D" protocol output.

In addition, GPIOs and Dry Contacts are available to be connected to other equipment through relays such as siren, lamps and lighting posts and so forth.



