



ADVANCED CENTRIC SYSTEMS B.V

**GROUND & COASTAL PERSISTENT
SURVEILLANCE RADAR SERIES**

Product brochure



THE PROBLEM

Persistent area surveillance is a specific type of surveillance activity where the area of interest is constantly under surveillance. Under the circumstances calling for persistent surveillance, the targets must be detected, analyzed and tracked instantly.

The sensor category used most extensively for persistent area surveillance applications is the Radar category. Radar sensors used for persistent surveillance normally utilize the FMCW (Frequency Modulation Continuous Wave) technology. These Radars are required to provide continuous coverage of the area of interest and instant detection and tracking of any target that moves within that area.

Persistent surveillance Radars are used for ranges extending from very short, starting at around 300 meters, to very long – up to dozens of kilometers or more.

Military ground and naval forces, HLS and law enforcement agencies and security organizations will benefit from ground and coastal persistent surveillance Radars providing continuous coverage of large areas of interest along with instant target detection and tracking.

THE SOLUTION

ACS presents GCPSRS – Ground & Coastal Persistent Surveillance Radar Series.

The various solid-state, FMCW Radar models in this series utilize planar (non-rotating) antennae. Each planar antenna covers a 90-degree sector, and four antennae may be integrated to provide 360-degree coverage. Additionally, several Radar units may be linked together to provide an integrated surveillance picture in the context of a C4I system.

GCPSRS Radars have no moving parts and provide continuous multi-beam coverage of large areas of interest with instant target detection and automatic tracking of multiple ground or surface targets under all weather conditions. These Radars excel at detecting and tracking small and slow-moving targets.

All of the Radars in the GCPSRS series are easy to deploy and operate, have a low false alarm rate, low life cycle cost, high MTBF and high track update rate and are fully interoperable with electro-optical surveillance sensors.

All GCPSRS Radars may be operated locally or remotely.

The persistent surveillance Radars of the GCPSRS series were specifically designed and developed for such applications as early warning, battlefield surveillance, coastal & seaport surveillance, border security, strategic infrastructure/installation security and law enforcement.

KEY FEATURES & MAJOR ADVANTAGES

Key Features & Major Advantages

- Cutting Cutting-edge solid-state, multiple beam FMCW Radars
- No moving parts – planar antennae
- Continuous coverage of large areas of interest
- Instant target detection & tracking
- High probability of interception under all weather conditions
- Automatic tracking of multiple targets
- Effective detection & tracking of small and slow-moving targets
- Low false alarm rate
- Easy to deploy, operate & maintain
- Interoperable with electro-optical sensors
- Each planar antenna covers a 90-degree sector, so four antennae may be integrated to provide 360-degree coverage
- High MTBF
- Low life cycle cost
- Fast track updating rate
- Local or remote operation
- Typical applications:
 - Early warning & battlefield surveillance
 - Coastal & seaport surveillance
 - Border security
 - Strategic infrastructure/installation security
 - Law enforcement

GCPSRS Radar Models & Specifications

Model / Characteristic	GCPSRS 1	GCPSRS 2.5	GCPSRS 5	GCPSRS 10	GCPSRS 15
Type	High-resolution FMCW Radar	High-resolution FMCW Radar	High-resolution FMCW Radar	High-resolution FMCW Radar	High-resolution FMCW Radar
Frequency Band	C	X	X	X	X
Detection Range – moving person / rubber dinghy	Up to 1,000 m	Up to 2,500 m	Up to 5,000 m	Up to 10,000 m	Up to 15,000 m

Detection Range – moving vehicle / sailboat	Up to 2,000 m	Up to 5,000 m	Up to 10,000 m	Up to 20,000 m	Up to 30,000 m
Detection Range – medium naval vessel/ship	—	—	Up to 32,000 m	—	Up to 96,000 m
Range Accuracy	< 10 m	< 10 m	< 10 m	< 10 m	< 10 m
Azimuth Coverage (Instantaneous)	90°	180°/360° (according to model)	180°/360° (according to model)	90°	90°
Azimuth Accuracy	2°	1°	0.5°	0.25°	0.25°
Interface Connection	Ethernet TCP/IP	Ethernet TCP/IP	Ethernet TCP/IP	Ethernet TCP/IP	Ethernet TCP/IP
Power Supply	12-24 VDC (internal battery pack)	24 VDC	24 VDC	24 VDC	24 VDC
Power Consumption	12 W	130 W	130 W	250 W	500 W
Emitted Power	—	—	5 W	10 W	50 W
Peak Power	—	1 W	—	—	—
Dimensions (cm)	25x13x31	—	—	—	—
Weight	6 kg (including battery)	28 kg / 40 kg	35 kg	37 kg	45 kg
Maximum Number of Tracks	200	200	200	500	500

Track Update Rate	A few times per second	A few times per second	A few times per second	A few times per second	A few times per second
Remarks	Man-Portable	—	—	—	—
Applications	<ul style="list-style-type: none"> o Early warning & battlefield surveillance o Coastal & seaport surveillance o Border security o Strategic infrastructure/installation security o Law enforcement 				

