PITRADWAR

RM-100
Mobile Radar

The RM-100 Mobile Radar is a survaillence system, which employs a X-Band FMCW CRM-100M quiet maritime radar in conjunction with AIS receiver, data-fusion and data-transmission systems, relaying the data to the automated naval command and control system.

It was designed to detect and automatically track the maritime surface objects and determine their coordinates. It is intended to use for littoral waters monitoring, including the economic zone protection.

Advantages:

- virtually undetectable by the RWRs, therefore ability to work under radar silence
- low-level of output power poses no risk to human health
- very high resolution with no dead zone

The Frequency Modulated Continuous Wave (FMCW) technology ensures low power level of the transmit signal (0.1W to 2 W), which makes RM-100 a stealth Low Probability of Intercept radar. The detection performance is comparable to that of conventional navigational pulse radar, radiating up to 25 kW peak power, what offers a tactical advantage of normal operation under radar silence conditions.

The RM-100 Mobile Radar post, which is furnished with a land navigation system and a communication system enabling operating within automated Naval Command and Control System, is installed within one 15-feet EMC-shielded operational container, fitted onto a Jelcz P66D.43 6 x 6 off-road truck. The antenna array is mounted atop a 20-meter mast, deployed within 30 minutes by a crew of three.

Transmitter / Receiver / Signal processing / Antenna	
Instrumented ranges	0,25 to 48 Mm
Operation frequency	X band
Transmitter power	1 mW to 2 W
Modulation	linear FMCW
Accuracy of measurement of distance	1%
Accuracy of measurement of angle	1°
Frequency deviation	54 Mz
Signal processing	FFT 8192 points, CFAR, binary integration, correlation, differentiation, clutter map, correction of pulse jamming
Antenna aperture	2 m
Beamwidth (H/V)	1,3 / 22°
Antenna rotation rate	12 to 30 RPM set stepwise each 1 RPM

Climatic requirements and standards	
Operation temperature	– 30°C to 50°C (antennas and antenna drives)
Environment requirements	M.1.1, M.1.3, N6 acc. Polish Military Standard, MIL-STD 810E
ARPA Procesor	IMO A.823, IEC 608 72-1
Electromagnetic compatibility	KRE-02, KCE-02, KRS-02 acc. Polish Military Standard NO-06-A200