



GMWR WEATHER RADAR SYSTEMS

The GMWR-25 Radar Systems

The GMWR-25-SP / DP is a cost effective, short-range Doppler weather radar designed for reliable operation range of minimum 50 up to 100 km.

It includes the **Enigma IV digital receiver** and signal processor, 2D and 3D rapid scans and analysis products of scientific quality and accuracy

– controlled by **FROG-MURAN Software**



GMWR-25-SP Advantages

TECHNOLOGY

The GMWR-25-SP is equipped with state-of-the-art DOPPLER technology for magnetron radar systems:

- Stable proven ship radar design, used in large quantity all over the world
- Magnetron transmitter
- Solid state modulator and power supplies
- Integrated low noise receiver front-end
- Digital signal processor-receiver

The GMWR-25-SP is the **ONLY** small transportable weather radar on the market, which provides **DOPPLER** wind velocity measurement function!

PERFORMANCE

The low noise integrated receiver front end and the digital Doppler signal processor-IF receiver give best possible phase stability. Digital Doppler velocity measurement gives accurate velocity data over the entire range and optimum clutter cancellation.

GROUND & SEA CLUTTER ELIMINATION

Digital clutter filters, using Pulse-Pair, FFT- and DFT- algorithms and the DIGITAL COHO preserving the magnetron pulse phase reference over the entire radar range, provides 40 dB or better clutter rejection.

RELIABILITY

The GMWR-25 radars employ well-proven design and components, fully solid state (with the exception of the magnetron). Hardware maintenance is performed by any local technical service experienced in ship radar maintenance.

INVESTMENT & OPERATING COSTS

The proven design using ship radar components results in a system with very low investment and small operating costs.

AVAILABLE OPTIONS

- Dual-Polarization - with parabolic dish antenna
- TV interface - to broadcast quality radar and weather graphics images.
- Web interface - Images can also be sent to Internet web server.
- Hydrological software provides full analysis product generation capability including volume scan products and hydro - meteorological rainfall analysis.
- Antennae of the X-Band GMWR-25-SP
- 1,2 m parabolic dish antenna 1.8° pencil beam
- Waveguide array antenna – 6 and 8 feet

MOUNTING

Antenna and pedestal is typically mounted on

- a stationary tower
- a vehicle
- on self erecting pneumatic /hydraulic mast

FLEXIBILITY

The GMWR-25-SP radar systems can be configured also to meet virtually any weather radar requirement for a city, metropolis, water reservoir subcatchments, airport surveillance or other medium range applications. GMR 25 with antenna mount transceiver minimizes waveguide losses at optimum.

- Transmitter output power: 25 KW pulse power
- Parabolic dish antenna, 1,2m (4 feet)

OPTIONAL

- Radome
- Truck or trailer mounted version
- Radar networks
- Multiple user workstations

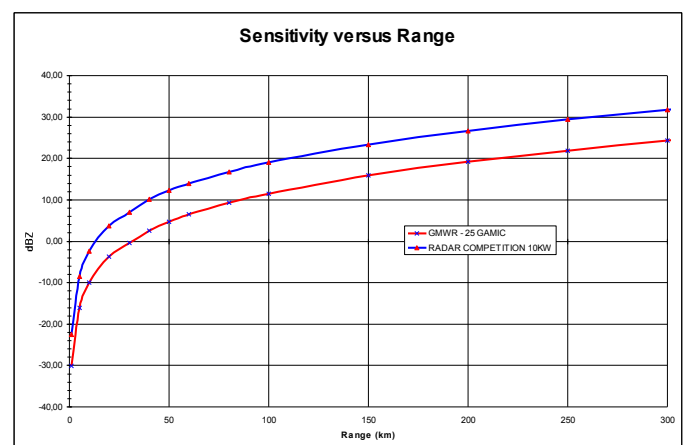
SENSITIVITY IN RANGE

The following table indicates the sensitivity of the GMWR-25-SP magnetron radar out to 300 km range. These sensitivity calculations assume

- 1,2m dish antenna
- 25 KW pulse power
- 1,8 degree (AZ x EL) antenna beamwidth

GMWR – 25 shows a good sensitivity...

- < 10 dBZ @70km range
- < 25dBZ up to 300km





TECHNICAL DATA TO GMWR -25- SP RADAR

Antenna	Parabolic antenna , 1,2m diameter Radome option
Transceiver	Mounted on EL - level
Rotation	AZ: 360 deg continuous EL: -5 to 95 deg
Peak Power Output	25 KW, typ.
Transmitting Frequency	9410 +/- 30MHz
Beam Width	<2°, pencil beam
Range Scales KM	25km to 200km user selectable
Resolution	Up to 1024 x 1024 pixels, 16 colors, Real-time display RTD
Bearing Accuracy	Better than 1%
SCAN-Function	PPI, RHI and Volume scan
Min Detectable Range	Better than 50 Meters at 25km range
Range Discrimination	Better than 100 Meters
Range Accuracy	Internally better than 8 Meters
Pulse Length	PRF 0.05 µs/1800 Hz nominal (Short Pulse) 0.25 µs/1800 Hz nominal (Medium Pulse) 0.75 µs/785 Hz nominal (Long Pulse) Pulse Generator Solid-state with pulse forming network driving the magnetron.
IF Center Frequency	60 MHz
Receiver	Dopler with digital I/Q Low Noise Front End (LNFE) Tuning AFC / Manual IF (Intermediate Frequency) Centred at 60 MHz IF Bandwidth 20 MHz on short and medium pulses (nominal) 3 MHz on long pulse (nominal) Noise Factor 5.0 dB nominal Dynamic Range >80 dB nominal
Power Consumption	1000 Watts or less
Voltage Supply	230V
PC Interface	10/100 ethernet connection - Cat 5 or better
Cable Length Options	2 Meters standard crossover ethernet. (Control box to PC.)
Operating Temperature	-25° to 55° C with aircondition
Wind Force	100 knots relative
Water Resistance	IPX6 (IEC60945)
Transmission Speed	Up to 100 Mbs
Output	Radar images, PNG and other standard formats ENIGMA IV digital Doppler receiver PROGEN algorithms Software FROG RT and COLIBRI III
Input	Radar control by FROG software
Weight	Typ. 200Kg with pedestal
Certification	Radar TX/RX is certified in accordance to : EC Certificate of Type Examination - Module B Marine Equipment Directive - 96/98/EC Commission Directive 2002/75/EC - ITEM A.1/4.35 IP rating IP rating is not applicable for radar equipment covered by Wheel Mark and Commission Directive 2002/75/EC - ITEM A.1/4.35



OPTIONAL

(1) on transportable mast



(2) GMWR – 25 radar installed on the LAPAN research bus

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