

Mini-portable Meteorological Radar MMR-42

general description

Mini Meteorological Radar MMR is a unique portable weather radar with large amount of functionality integrated in small device sold for favorable price. It provides real time insight to weather situation up to 80 km range.

MMR answers the increasing demand for water management tools and hazardous meteorological phenomena detection. Watersheds management, global warming adaptation strategies, flood protection, operative weather forecast, military and civil defense actions or aviation safety are supported by this radar. Tourism, media, transport and agriculture benefit from MMR products usage.



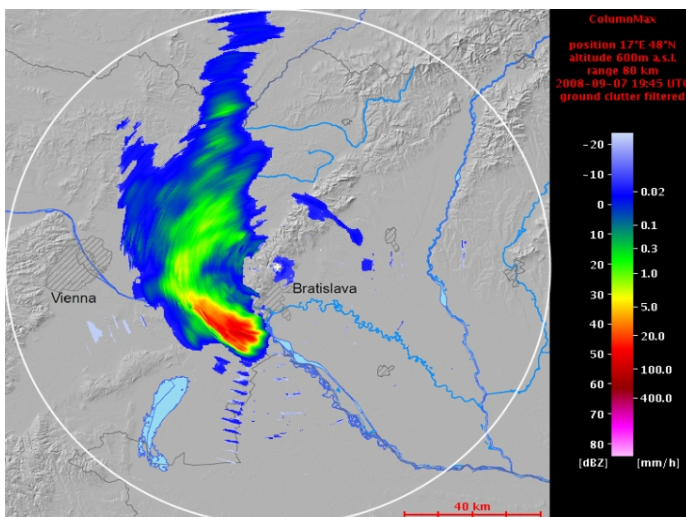
MMR weather radar comes with Radar Processor and MMR Software, displaying meteorological spatial data in user-friendly graphic form.

Basic features of MMR-42

- simple
- small demand on installation and maintenance
- fully automatic operation without servicing personnel
- stationary as well as mobile or portable
- low weight (approx. 110 kg) and small dimensions (332x195x128 mm), antenna diameter 56 cm, optimum reach
- frequency 9345 MHz, low pulse power 7 kW - in accordance with European sanitary standards, receiver sensitivity -111 dBm
- advanced technology and technical equipment
- data transfers over TCP/IP connection (LAN, private networks, internet etc..)
- possibility of connection with radar network
- user-friendly graphic according to requirements and needs of the customer
- easy service
- low price
- PPI, CAPPI, RHI, Composite Reflectivity, Rainfall Accumulation, Echo Tops, VIL

Mini-portable Meteorological Radar provides:

- scan of backscatter from the radar horizon volume
- transformation of data into spatial matrix
- input data processing
- data distribution to customer graphic workstation



MMR-42 Software

The data processing is based on web server architecture and therefore all products are available over the web interface and easily accessible to any user using web browser. The access to the web interface is secured by encrypted (https) protocol, and protected by password.

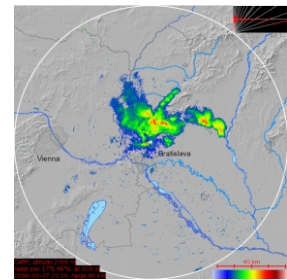
The data processing software takes into account the earth curvature and atmospheric refraction. During the data processing, the non-meteorological data, likeground clutters, are removed from observed data. The data processing software offers interpretation of the 3D data in following standard outputs:

Mini-portable Meteorological Radar MMR-42

general description

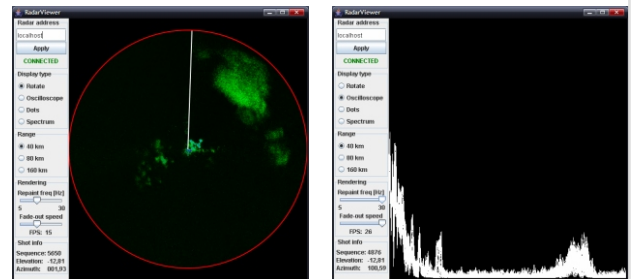
Standard Outputs

- PPI (Plan Position Indicator) one radar elevation
- CAPPI (Constant Altitude PPI) horizontal cross section
- RHI (Range Height Indicator) vertical cross section
- Echo Tops heights of cloud tops
- Composite Reflectivity (Column max) maximas in columns
- VIL (Vertically Integrated Liquid Water) column sums
- Rainfall Accumulation



Real time display

The real time display shows the rotating actual position of the radar beam, or oscilloscope depending on the user selection. To operate the real time display, high bandwidth and low latency connection between the display and RADAR is required. Usually the 10mbit LAN connection is very sufficient for its operation.



Low pulse capacity enables to monitor important dangerous radar meteorological objects up to distance of 160 km and to monitor radar meteorological objects with lower intensity up to distance of 80 or 40 km. The device thus complies with standards for operation in settled areas (towns, airports, highways, yachts, ...).

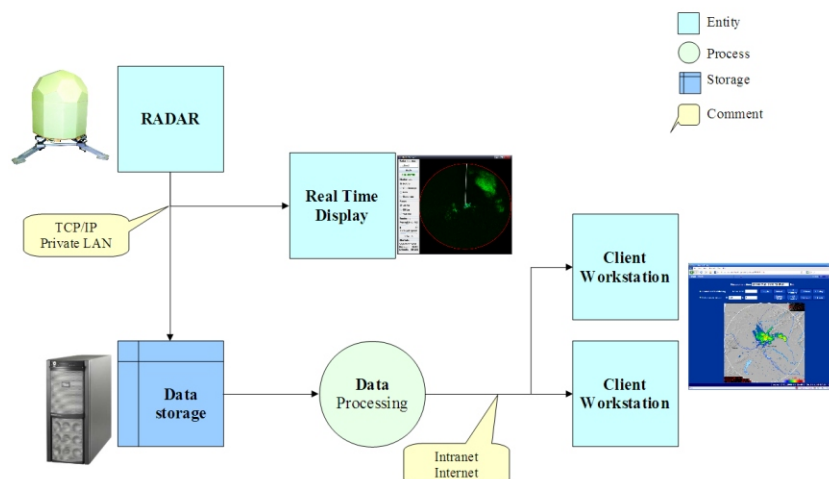
MMR can complete "white spots" in existing large radar network or a complete network of MMRs can be established in areas with no radar coverage. Small size and low weight enables easy installation and operation.

Measurement parameters configuration

- possible also form client workstation (by privileged users with administrative rights)
- angles of elevations (e.g.-0.4, 0.0, 0.5, 0.9, 1.5, 2.5 etc...)

For each angle of elevation following parameters can be configured:

- radar measurement mode (choice of 40/80 km)
- shoot range (data clipping range)
- number of shots per elevation from 0 – 360 degrees
- sample rate (8MHz default, sampling rate)
- samples per shot (number of samples in shot direction)
- azimuth segment start - end in degrees

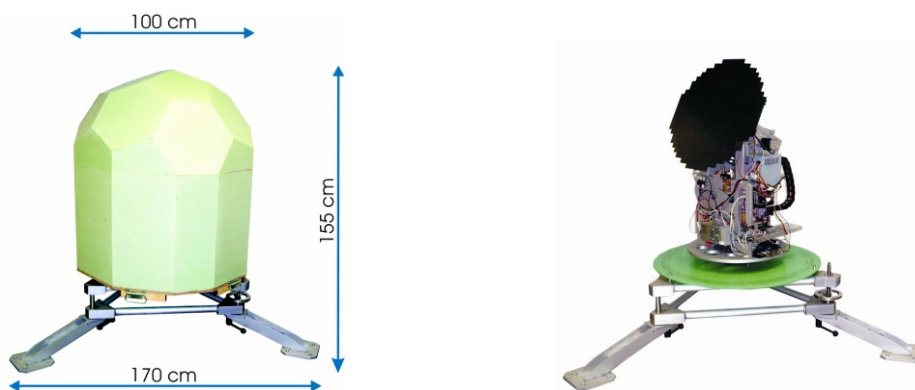


Mini-portable Meteorological Radar MMR-42

technical specification

Technical Data

Dimension	
Height	155 cm
Width	220 x 220 cm
Weight	Approx. 110 kg
Antenna	flat 0.56
Side Lobe Suppression	- 28 dB
Antenna Elevation Angle Span	-3.5 to +90 degree
Antenna Scanning Speed	9 to 50 rpm
Transmitter Tube	Magnetron
Modulator Type	Solid-state
Receiver Sensitivity	- 11 dBm
Dynamic Range	60 dB
Operating Frequency Range	9.345 Ghz
Halfpower Beam Width	5 degree
Polarization	Linear vertical
Antenna Gain, typical	32 dB
Transmitter Power Peak	7 kW
Raw Data Resolution	7 bit
RF Pulse Width	0.5 μ s - 0.66 μ s
Pulse Repetition Frequency	1766 - 1158 Hz
Maximum Range	40 - 80 km
Vertical Resolution	50 - 100 - 200- 400 - 800 m
Horizontal Resolution	50 - 100 - 200 - 400 - 800 m
Transmitter Input Power	27V/ 6A (250W)
Frequency Of Measurement	from 3 minutes (depending on settings)



During the transportation the size of the radar stand can be reduced by casting down the stand feet.

