

## MICRO RAIN RADAR (MRR) precipitation profiler

measures the vertical profile of rain rate,  
liquid content and drop size distribution

- profiles up to 6000 m
- detects drop size (0.25 mm - 4.53 mm) and distribution
- user adjustable averaging intervals and height resolution
- no maintenance
- remote/ long term unattended operation
- no wind, sea spray or evaporation induced errors
- battery or mains power

The Micro Rain Radar (MRR) measures vertical profiles of rain rate, liquid water content and drop size distribution. It is a highly reliable system suitable for use in remote and extreme environments, requiring minimal maintenance.

The MRR provides information for now-casting of precipitation, i.e. it will detect the start of rain high above the radar several minutes before the start of rain at ground level.

The MRR system consists of an antenna dish, radar, receiver unit and RS-232 data transmission interface.

PC based software is available for online control, data visualisation, transfer and storage.

The MRR can be used to calibrate other Radars for better performance.

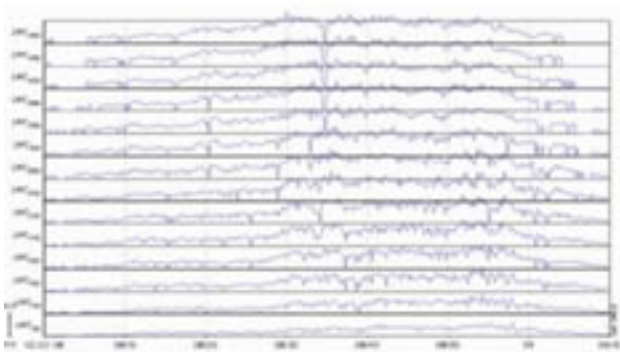
# MICRO RAIN RADAR (MRR)

The MRR is a compact 24.1 GHz FM-CW radar for the direct measurement of profiles of drop size distributions regardless of ambient wind conditions and, derived from this, rain rates, liquid water content and characteristic falling velocity resolved into 30 range gates.

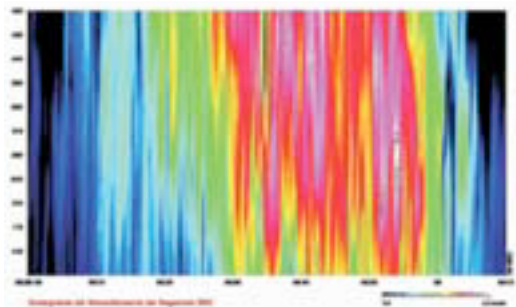
Very small amounts of precipitation (below the threshold of conventional rain gauges) are detectable. Due to the large scattering volume (compared to in situ sensors) statistically stable drop size distributions can be derived within a few seconds.

The droplet number concentration in each drop-diameter bin is derived from the backscatter intensity in each corresponding frequency bin. In this procedure the relation between terminal falling velocity and drop size is exploited.

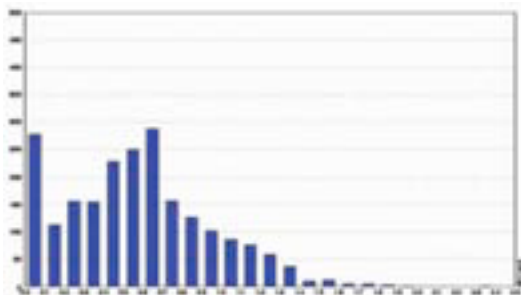
The images below are some examples of the comprehensive illustration facilities provided by the graphic analysis software.



Timeseries of liquid water content for different heights



Contourplot of rain rate



Statistical analysis of rain rate

## APPLICATIONS

calibration of other radars

national weather services

environmental agencies

air traffic control

road weather warning systems

road maintenance control centres

tele-communications

power stations

This range is in continuous development therefore specifications may change without prior notice. E & OE

## Specifications

Transmit power	50 mW
Frequency	24.1 to 24.15 GHz
Averaging interval	10 - 3600 s
Height resolution	10 - 200 m
Number of range gates	up to 30
Accuracy for 1 min average	1/100 mm/h
Power supply AC or 24 VDC	24 VDC, 25 W
Weight	6 kg (without power supply and cable)