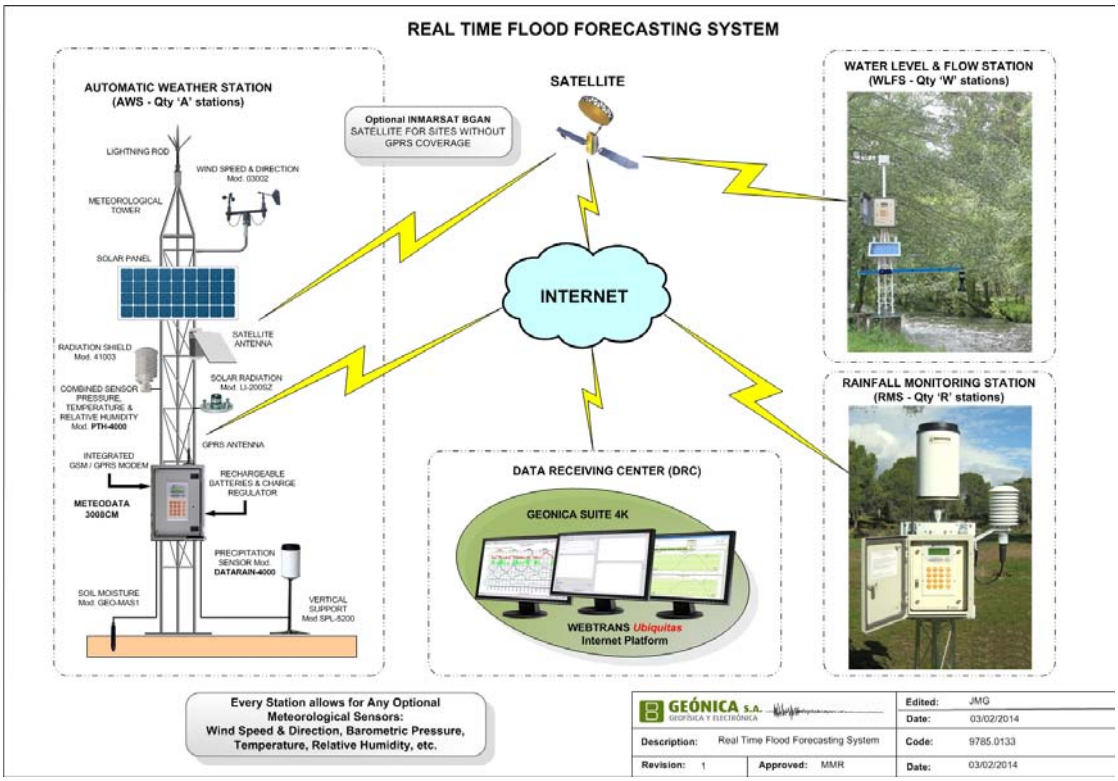
Model GEO-MRR-2

Micro Rain Radar

- Vertical profiling of drop size distribution, rain rate, liquid water content and further microphysical parameters
- Height range up to 6000 m with 30 range gates
- Adjustable time resolution
- Adjustable height resolution
- Very low maintenance efforts – high system reliability
- High quality measurements not affected by wind, surrounding structures or sea spray



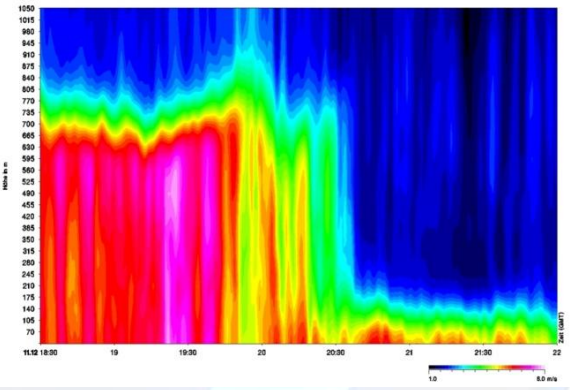
The Micro Rain Radar GEO-MRR-2 measures profiles of Doppler spectra and derives drop size distributions, rain rates, liquid water contents, radar reflectivity factors, Doppler velocities, path integrated attenuation.
Due to the easy set up and the insensitivity to surrounding structures as mast, buildings or trees the GEO-MRR-2 represents a ideal, practically maintenance-free measuring platform in all kinds of hydrometeorological installations - even at remote sites.

The raw data of the GEO-MRR-2 radar front end are transmitted via RS422 serial line or Ethernet port to a standard pc device over a distance up to 100 m for further data calculation, data storage and remote access. Alternatively single board pc units with low power consumption can be used.

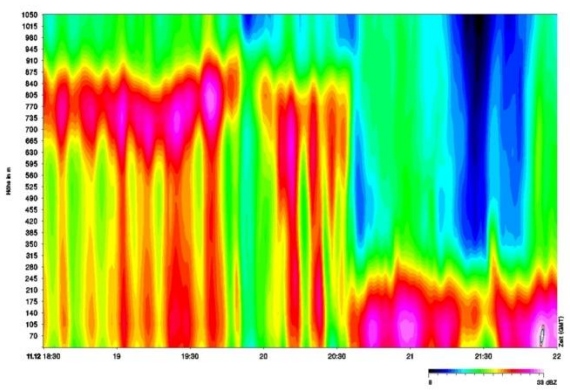
An automatically controlled antenna heating allows also for operation under winterly conditions or at sites with snow and icing events.

Typical applications include the unattended long term measurement of rain, real time calibration of weather radar and monitoring of melting zone.

Time height cross sections during a rain event with melting zone



Doppler velocity:
During passage of the melting zone the fall speed of hydrometeors increases. Therefore the melting zone shows up in a step like change of the Doppler velocity from 2 to 6 ms^{-1}. The height of the melting zone is between 700 and 800 m until 20 UTC. Then it descents down to 70 m within 30 min indicating the arrival of colder air mass.



Radar reflectivity:
During the melting process the radar reflectivity of the hydrometeors is enhanced. Therefore the melting level is also called „bright band“.

Technical Specifications

Transmit power	50 mW
Frequency	24,23 GHz
Beam width	1,5
Averaging interval	10 - 3600 s
Height resolution	10 - 200 m
Number of range gates	up to 30
Detection threshold (height 500 m, height resolution 100 m, time resolution 10 s)	1/100 mm/h
Antenna heating (option)	230 VAC
Interface optional	RS422/RS232 LAN
Power supply	24 VDC, 25 W
Weight (without power supply and cable)	6 kg