

## RAINSCANNER® WEATHER RADAR

RAINSCANNER® sets the benchmark for cost-efficient precipitation measurement. Simplicity and ease of use are the primary design features, permitting fast installation, radar control and data handling. The entire system is lightweight and portable if mobile operations are required.

### APPLICATIONS

RAINSCANNER® is optimized for the indication of precipitation areas and the classification of precipitation into levels of intensity. The maximum range of operation varies between 50 km and 100 km, depending on the intensity of precipitation.

With its unique price/performance ratio and mobility features, RAINSCANNER® is an efficient solution for users with a need for regional precipitation measurement at varying locations.

Typical applications are:

- Identification and tracking of storm cells and precipitation areas, e.g. at aerodromes, military airfields or public events (concerts and motor races)
- Support of regional hydrological measurement campaigns and forecasting models
- Gap filler in radar networks
- Stand alone weather sensor for remote areas, such as offshore platforms
- Mobile sensor for varying scientific measurement campaigns

### BENEFITS

- Compact, light weight and portable, suitable for fixed and mobile applications
- Intuitive and easy to use application software RainView® (real time PPI)
- Mobile version on mast mountable by 2 people within less than 90 minutes
- Integration with rain gauge data possible for real-time rain intensity calibration
- Variety of geographical underlays for easy and fast adaptation to regional environments

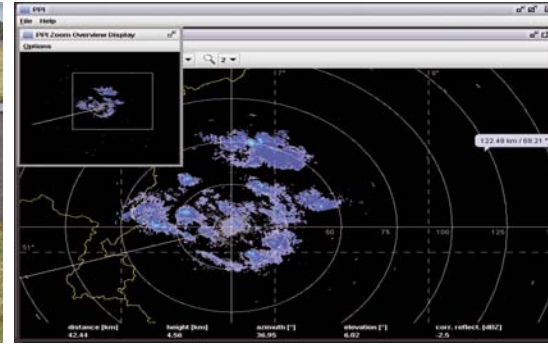
### SYSTEM COMPONENTS

#### Antenna and Head Unit

RAINSCANNER® is available in 3 different antenna configurations.



The basic version features a slotted waveguide design providing a fan beam. Improved resolution in elevation can be achieved with a parabolic antenna featuring a narrow pencil beam. The head unit is based on a commercial off-the-shelf marine radar system. It comprises the antenna, the receiver and the transmitter, featuring a conventional magnetron. Head unit and antenna are designed to withstand hostile and extreme environments.



**Interface Unit and Signal Processing PC**

Interface Unit and Signal Processing PC are installed in a standard 19" case, which can be easily transported. The interface unit comprises subcomponents such as video signal filtering and level adjustments, radar control processor, radar control state machine, LCD status display, transmitter power supply, line interface and lightning surge arrestors and filters.

Signal Processing is based on a standard PC. The PC is equipped with a high-performance, high speed analog-to-digital converter card and a digital I/O card. An analog-to-digital card samples the video signal and transfers the data into the computer memory for data processing. The computer communicates with the Radar Interface Unit via RS232.

**APPLICATION SOFTWARE**

The display of the radar signals is based on the RainView® software package. RainView® provides local and remote real-time radar control and data visualization offering the following features:

- Real-time data acquisition control and display of PPI and A-Scope
- Data displays with 6 data color levels
- Clutter mapping and suppression
- Geographical overlays with free choice of radar location in PPI displays together with raw data zooming
- Printer support
- Built-In Test Equipment (BITE) and control incl. BITE history user interface
- Support of all necessary calibration functions (integration of rain gauge data possible)
- A choice of network interfaces including WLAN and wired Ethernet

**MOBILITY**

Due to its modular design, the RAINSCANNER® system is highly mobile. If an elevated location is not available for installation using a tripod (mobile standard configuration), a sectional mast is available, which can be extended up to a maximum of 30m.

**TECHNICAL SPECIFICATIONS:**

ANTENNA	Fan Beam		Parabolic	
	8 ft	60 cm	120 cm	
Antenna Gain	30.5 dB	32 dB	38.5 dB	
Azimuth Beam Width	1 deg	4 deg	2 deg	
Elevation Beam Width	20 deg	4 deg	2 deg	
Azimuth Accuracy	± 0.5 deg	± 0.5 deg	± 0.5 deg	

**TRANSMITTER**

Peak Power	25 kW		
Frequency	9410 +/- 30 MHz <sup>(1)</sup> or 9375 +/- 30 MHz <sup>(1)</sup>		
Transmitter Mode	PRF	Pulse Length	Resolution
	3000 Hz	70 ns	11 m
	3000 Hz	150 ns	23 m
	3000 Hz	300 ns	45 m
	1500 Hz	500 ns	75 m
	1000 Hz	700 ns	105 m
	833 Hz	1200 ns	180 m

<sup>(1)</sup>Notes: The tube is not tuneable.

**RECEIVER**

Bandwidth	3 MHz
Sensitivity	- 91 dBm
Dynamic Range	70 dB

**SIGNAL PROCESSING PC**

CPU	Intel Pentium Dual Core
Operating System	LINUX
Interfaces	COM1, COM2, Parallel, 4 x USB2.0, PS2
Network Interface	Fast Ethernet 100Mb/s
Radar A/D Converter	14 bit, 20 MS/s

**MOBILITY CHARACTERISTICS**

*(mobility option only available for 8ft fan-beam and 60cm pencil beam antenna)*

Weight of system without mast	130 kg (including transportation boxes)
Weight of mast	190 kg (at 16 m length)
Max. height of mast	30 m
Max. windspeed (mast installation)	120 km/h

