



Antenna-mounted Receiver

For C-band Weather Radars



Features

Improved data quality

- Quantitative precipitation estimation
- Hydrometeor classification
- Elimination of nonmeteorological targets
- Attenuation correction
- Better detectability of weak precipitation
- Latest software and algorithms

Enhanced data availability

- Remote data monitoring and control
- Remote calibration and maintenance

The antenna-mounted receiver allows you to upgrade, rather than replace, your existing single-polarization system to a dual polarization system in order to improve data quality and availability while greatly reducing maintenance costs.

With their precise rainfall measurement capacity, dual-polarization weather radars have superseded single-polarization radars as the standard for modern systems.

An antenna-mounted receiver makes it possible to send and receive both signal channels through one channel rather than separately through the pedestal.

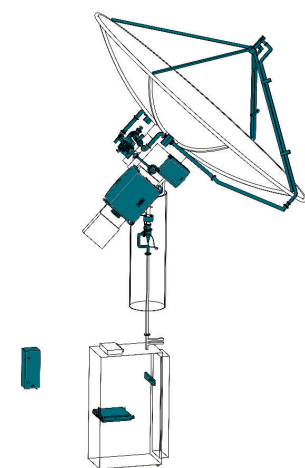
Installation, Upgrade, and Maintenance

After a site survey, the antenna-mounted receiver (AMR) can be easily installed on an existing radar antenna.

The radar system consists of several modules. AMR is installed on the customer's transmitter, antenna, and pedestal.

The solution offers ease of operation and maintenance, as most tasks can be executed remotely.

Because much of the calibration and maintenance can be done online, the need for site visits is reduced when compared to traditional systems.



Updated Components Shown in Blue

Technical Data

Mains Power

| | |
|---------------------------|---|
| Mains power (input power) | 100 ... 240 VAC, 50 ... 60 Hz ±5% Input max 16 A |
|---------------------------|---|

Power Consumption

| | |
|--|-----------------------------------|
| Receiver, mains input of power supply unit | Maximum: 900 W Typical: 400 W |
| Radar server computer | Maximum: 700 W Typical: 200 W |
| Total, mains input of power reset unit | Maximum: 1600 W Typical: 600 W |

System Specifications

| | |
|----------------------------------|---|
| Dual polarization receiver | STAR and LDR |
| Calibration | Built in automatic and remote calibration |
| Supported transmitter technology | Designed for magnetron systems |

WRU911 Power Supply Unit

| | |
|--------------------------------|---|
| AC inputs | 85 ... 264 VAC |
| Operating voltages | |
| Frequency | 50 ... 60 Hz ±5% |
| Current consumption (max load) | 7.9 A ... 3.5 A (120 VAC ... 230 VAC) |
| DC outputs to receiver | +24 VDC 6 A |
| to cooler | +24 VDC 15 A |
| Ethernet switch input power | 12 ... 48 VDC, 13W |
| Protections | ON/OFF switch |
| AC input | Miniature circuit breaker 10A B-curve Mains filter 10A 250 VAC Type 3 arrester, rated voltage 253 VAC |
| Operating temperature | -40°C ... +55 °C |
| Storage temperature | -50°C ... +60 °C |
| Size (w x h x d) | 331 × 386 × 201 mm |
| Weight | 11.9 kg |
| Protection | IP54 |

WRF912/WRF922 Receiver

| | |
|----------------------------|--|
| Type | Dual stage, dual channel IF downconverter and digitizer |
| Noise figure | < 2 dB |
| Dynamic range | > 99 dB (2 microsecond pulse), (option > 115 dB) |
| Storage temperature | -50 ... +60 °C |
| Operating temperature | -40 ... +55 °C |
| Image rejection | > 80 dB |
| Tuning range | 5.5 ... 5.7 GHz |
| 1st intermediate frequency | 442 MHz |
| 2nd intermediate frequency | 60 MHz |
| Cooling / Heating | Thermoelectric module (Peltier elements) with controller |
| Weight | 36.5 kg (WRF912), 37.5 kg (WRF922) |
| Dimensions (w × h × d) | 800 × 564 × 382 mm |

WRW911 Waveguide Matrix

| | |
|------------------------|---|
| Installation | Mechanically fixed to antenna structure |
| Size | 816 x 542 x 259 mm |
| Operating temperature | -40 ... +55 °C |
| Storage temperature | -50 ... +60 °C |
| Transmitted power | |
| Max peak | 300 kW |
| Max average | 600 W (H + V mode) 300 W (H mode only) |
| Max pulse width | 3.0 μs |
| Max duty cycle | 0.0012 |
| Waveguide switch | |
| Operating life | > 1E6 cycles |
| Control signal voltage | +24 VDC, 2 A (latching) |

Options

| | |
|--------------------------------------|----------|
| Optional wide dynamic range receiver | > 115 dB |
|--------------------------------------|----------|

VAISALA

www.vaisala.com

Published by Vaisala | B211403EN-B © Vaisala 2017

All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. Any reproduction, transfer, distribution or storage of information contained in this document is strictly prohibited. All specifications — technical included — are subject to change without notice.