

## Microwave Instruments

# Microwave Radiometers for Airborne and Ground Use

### Features

- High stability and accuracy
- Internal calibration
- Efficient thermal stabilization
- Modular & expandable design
- CE marking
- Optional features
  - Polarimetry
  - RFI detection
  - Frequency sub-banding

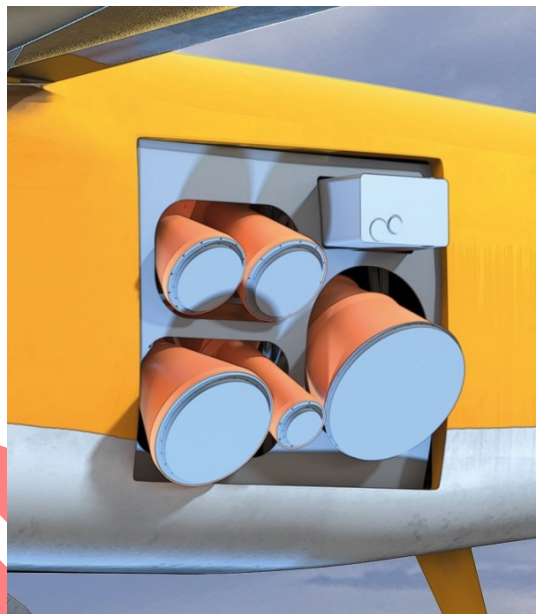
### Typical applications

- Remote sensing
- Atmospheric science
- Spectrum management

### Description

These microwave radiometer modules are designed for various remote sensing applications, where high radiometric stability and accuracy are required. Examples include remote sensing of Earth's surface from tower-based and airborne platforms using frequency bands at 1.4, 6.9, 10.9, 18.7, and 36.5 GHz.

The radiometer designs feature a noise-injection (balanced Dicke switching) architecture with a powerful digital backend. The sensitive RF electronics in the radiometers are thermally stabilized. Current realizations have bandwidths up to 400 MHz, extendable up to 2.5 GHz. Optional features include advanced Radio Frequency Interference (RFI) detection, digital sub-banding, and fully polarimetric operations. Several independent radiometers can be included in a common control unit.



The radiometers can be customized to meet special needs, such as various frequency bands, application specific antennas, demanding operating environments and different mechanical form-factors, and custom digital signal processing and data filtering.

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Microwave Radiometer Instrument					
	L	C	X	K	Ka
Centre frequency (GHz)	1.425	6.875	10.65	18.7	36.5
Bandwidth (MHz)	50	400	100	200	300
Footprint size <sup>1)</sup> (m)	1220	445	445	195	194
Observation angle (deg)	55				
Polarization	Full Stokes vector				
Accuracy (K)	0.5	0.5	0.5	0.6	0.8
Integration time (ms)	500	200	200	100	100
Radiometric resolution (K)	0.08	0.04	0.07	0.28	0.16

