Surface Deformation Monitoring Radar

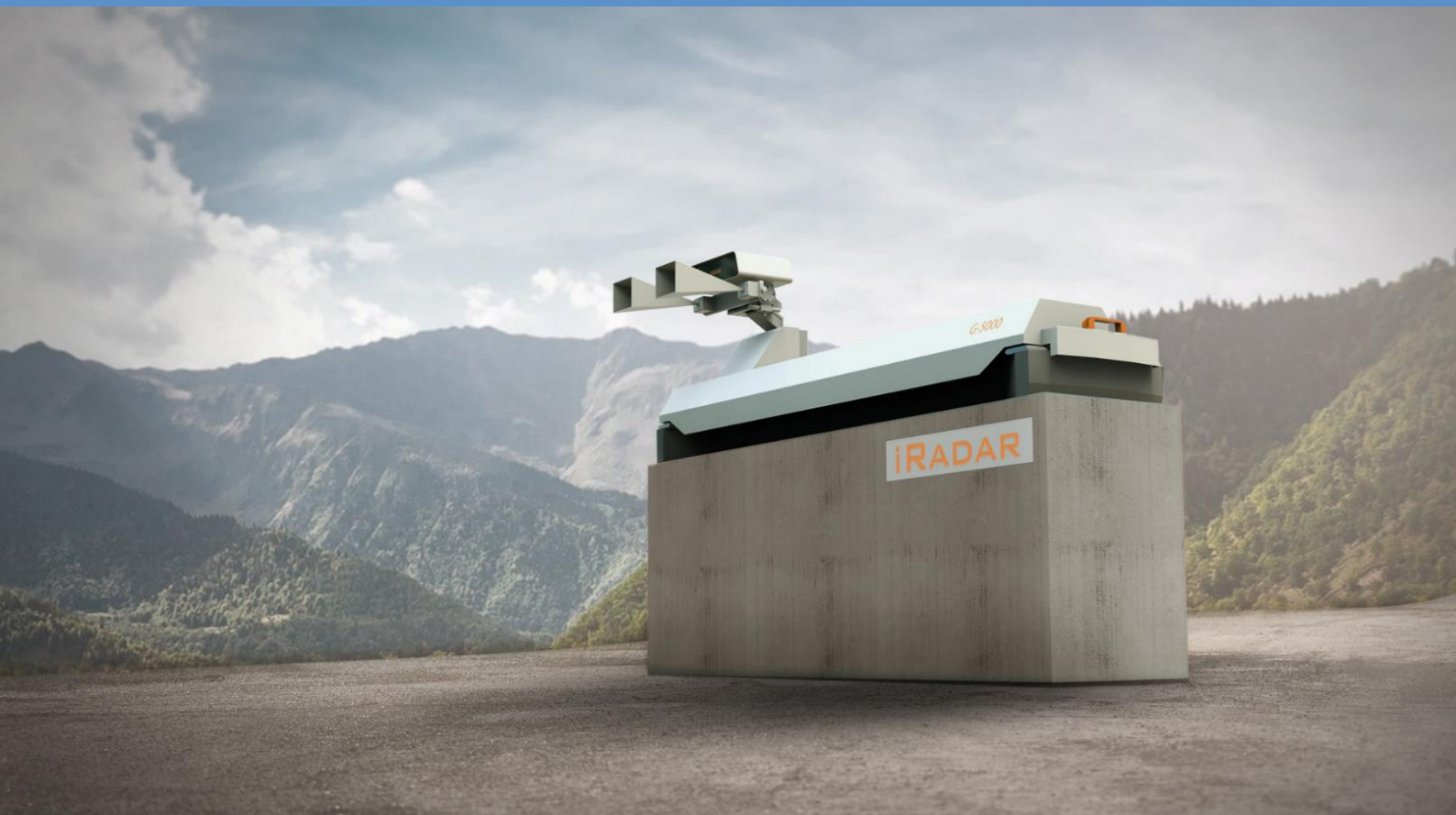
Quick setup ◆ Sub-mm change detection ◆ All weather monitoring

Overview

Interferometric synthetic aperture radar (InSAR) is a radar technique uses two or more synthetic aperture radar (SAR) images to produce images of surface deformation. This technique can achieve sub-millimeter changes in deformation over spans of days to years. Its applications include geophysical monitoring of earth environments such as landslides, terrain subsidence, falling rocks, glaciers, avalanches and volcanoes, as well as remote monitoring of engineering structures such as bridges, buildings, towers, dams and roads.

Feature Highlights (G2000L)

- ✓ Interferometric SAR (InSAR) imaging
- ✓ Spatial Resolution: 0.1875 m (range) x 8.7 mrad (azimuth)
- ✓ Change detection: 1.0 mm
- ✓ Maximum sensing distance: 1000 m
- ✓ Total weight: 25 kg
- ✓ All weather, 24/7 periodic monitoring
- ✓ Quick and easy installation
- ✓ Instant risk assessment and early warning



iRadar™
Surface Deformation Monitoring Radar

Technical Specifications

	G5000	G2000L
Operating Frequency	17.2 GHz (Ku-band)	
Sweep bandwidth	200 MHz[1]	
Waveform	FMCW	
Polarization	Single (VV or HH)	
Antenna gain	25 dBi (Pyramidal Horn)	15 dBi (Pyramidal Horn)
Antenna 3dB beamwidth	10° (azimuth), 10° (elevation)	25° (azimuth), 25° (elevation)
Synthetic length	1.5 m	1.0 m
Resolution	0.75 m[2] (range), 5.8 mrad (azimuth)	0.75 m[2] (range), 8.7 mrad (azimuth)
Change detection precision	0.5 mm	1.0 mm
Sensing distance	Up to 2000 m	Up to 1000 m
Swath width	350 m (at 1000 m), 700 m (at 2000 m)	440 m (at 1000 m)
Transmit power	+26 dBm	+20 dBm
Typical scanning time	30 s per image	
Mode of operation	Auto scan mode / Wide swath mode / Repeat-path InSAR	Auto scan
Total weight	approx. 90 kg	approx. 25 kg
Warranty	1-year standard warranty covers all parts and technical support	

[1] Depending on the bandwidth allocation by local authorities, the highest sweep bandwidth can be configured is 800 MHz
[2] The highest achievable range resolution is 0.1875 m (with 800 MHz bandwidth)

Ordering Information

Product ID	Descriptions	Remarks
G5000	3-axis Surface Deformation Monitoring Radar	Inclusive of radar front end, on-board SAR processor, 3-axis scanner, and standard accessories (cables and adapters).
G2000L	1-axis Surface Deformation Monitoring Radar (Light Weight edition)	Inclusive of radar front end, on-board SAR processor, 1-axis scanner, and standard accessories (cables and adapters).
MMI Software	MicroMovement Imaging (MMI) Software	

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