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“

Smart  
Monitoring for  
the surrounding  
environment is  
important for early  
warning & detection

”



## SURFACE DEFORMATION MONITORING RADAR

G2000  
GBSAR

## SMART SENSING FOR A BETTER TOMORROW

Suitable for geophysical monitoring of landslides, terrain subsidence, falling rocks, glaciers, and volcanoes, as well structural monitoring of bridges, buildings, towers, dams, and roads

## PATENTED DESIGN

Light weight, portable, and affordable GBSAR that can achieve sub-millimeter changes over spans of days to years.



SUB-MM  
CHANGE



ALL WEATHER  
WIDE COVERAGE



24/7 ALL DAYS  
MONITORING

# A SMARTER SOLUTION FOR YOUR ENVIRONMENT MONITORING

Monitor and Inspect Your Site Effortlessly

## iRadar | GBSAR Overview



### Sub-mm Change Detection

GBSAR is capable of sensing and detecting the change of 0.5mm on the region of interest.



### All Weather Operation

GBSAR works well under any weather conditions such as rainy, hazy or windy day.



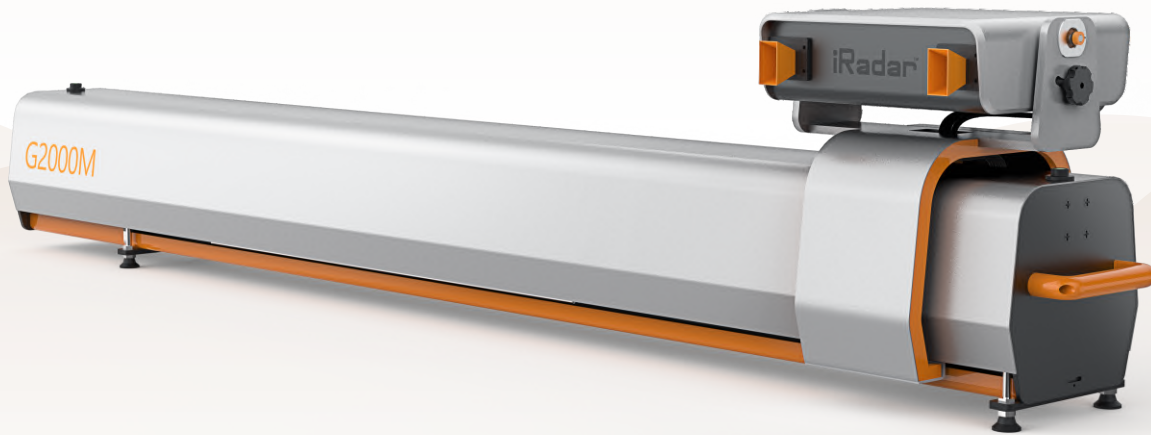
### Greater Precision

Higher accuracy with spatial resolution up to 0.5 m (range) x 5.81 mrad (azimuth) at 1000m.



### 24/7 All Days Monitoring

24/7 periodic monitoring of large area (more than 80,000 m<sup>2</sup>) with the sensing distance of 1-2 km.



The **Ground-Based Surface Deformation Monitoring Radar (GBSAR)** developed by iRadar can detect sub-mm movement on natural and synthetic objects. The high-resolution change detection is beneficial to disaster monitoring, risk assessment as well as for the establishment of early warning framework for hazard management.

G2000 series GBSAR can be applied in various areas to monitor the surface deformation of earth environments such as landslides, terrain subsidence, falling rocks, glaciers, avalanches, volcanoes, as well as man-made structures such as bridges, buildings, towers, dams, roads, etc.

GBSAR provides 24/7 periodic monitoring of large area more than 80,000 m<sup>2</sup> with the sensing distance of 1 to 2 km. Comes with user-friendly software and cloud portal for remote monitoring and hazard management.

### iRadar Sdn. Bhd. (201101029044)



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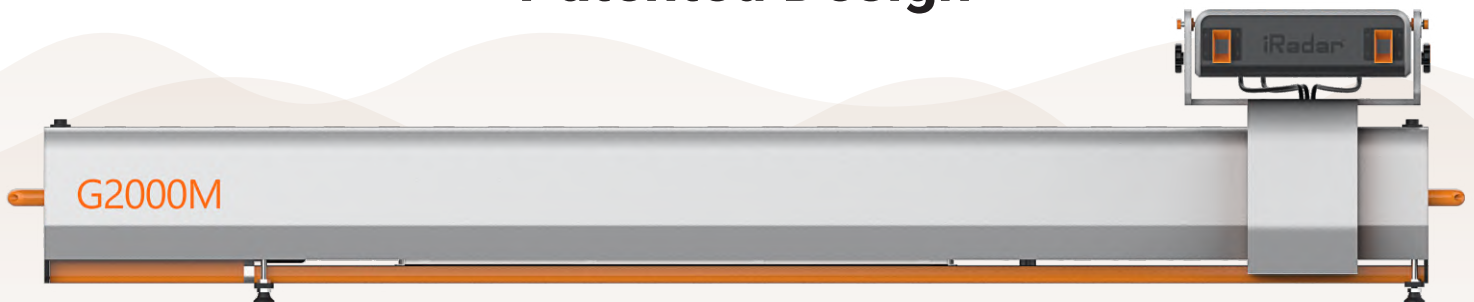
24/7 ALL DAYS  
MONITORING

# EARLY WARNING DETECTION GET PREPARED WITH THE IRREGULARITIES

Use Our Advanced Technology to Easily Monitor and Inspect Your Site

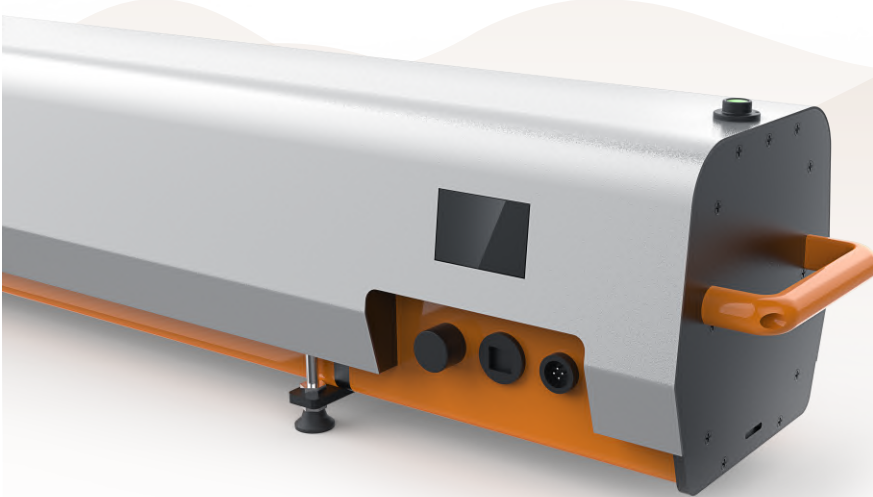
## iRadar | GBSAR Sensing System

### Patented Design



### Feature Highlights

- Interferometric SAR (InSAR) imaging
- Instant risk assessment and early warning
- All weather, 24/7 periodic monitoring
- Quick and easy installation
- Spatial Resolution:  
Range: up to 0.5 m | Azimuth: 5.81\* mrad @ 1000 m
- Change detection: 0.5 mm
- Sensing distance: 100 - 2000 m



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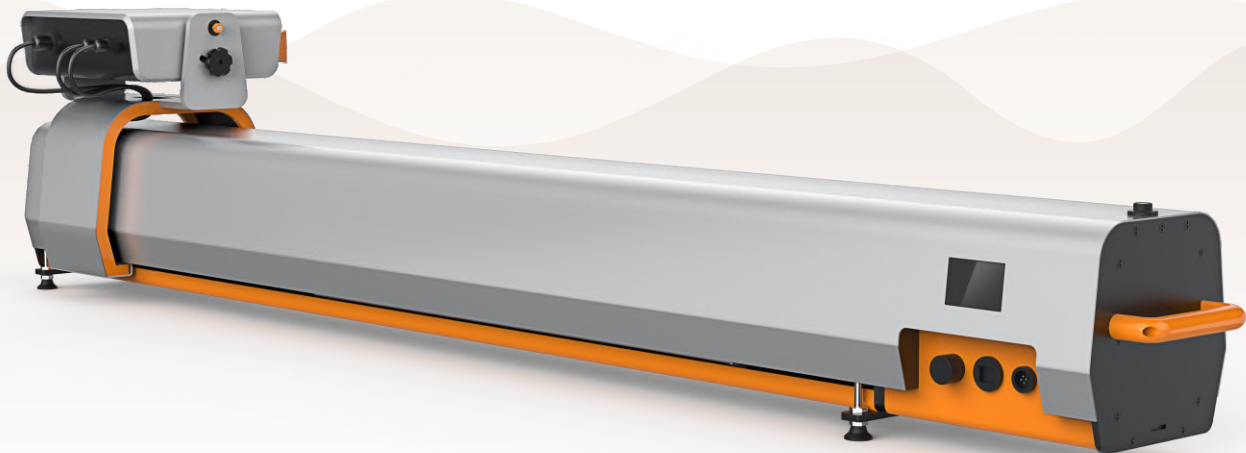
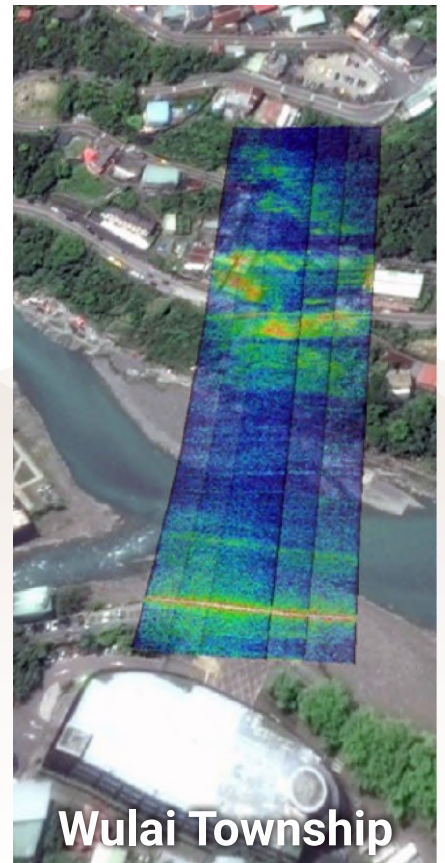
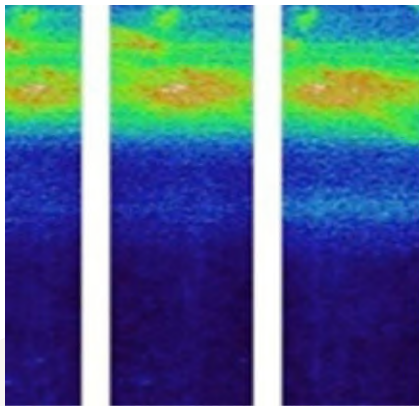


ALL WEATHER  
WIDE COVERAGE



24/7 ALL DAYS  
MONITORING

# SAMPLE SAR IMAGES FOR LAND DEFORMATION MONITORING



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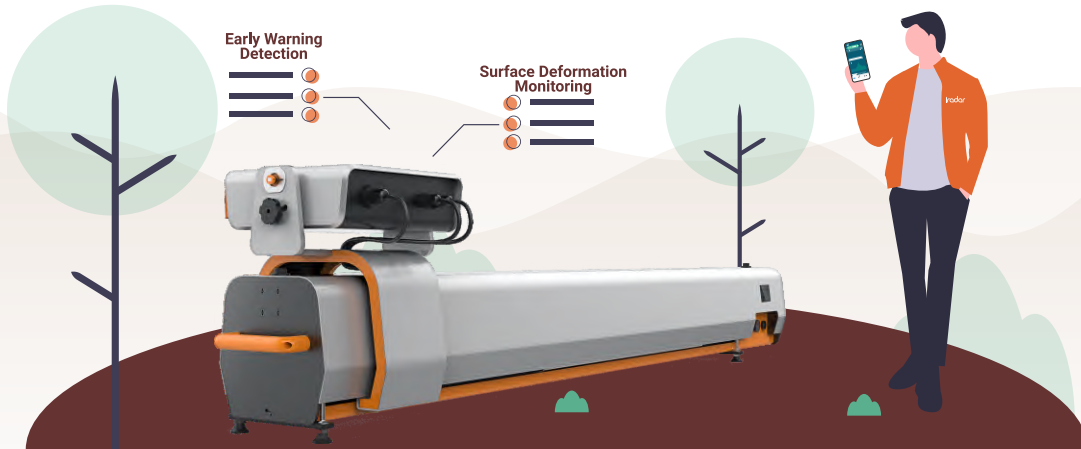
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# GBSAR Technical Specifications



Model	G2000L	G2000M
Operating Frequency	17.2 GHz	17.2 GHz
Bandwidth*	200 MHz-1 Ghz	200 MHz-1 Ghz
Waveform	FMCW/Step Frequency	FMCW/Step Frequency
Polarization	Single	Single
Antenna Gain	15±1 dBi	15±1 dBi
3dB beamwidth	20° (azimuth), 20° (elevation)	50° (azimuth), 25° (elevation)
Synthetic Length	1m	1.5m
Range Resolution**	0.15m - 0.75m	0.15m - 0.75m
Azimuth Resolution**	8.7 mrad	5.8 mrad @ 1KM
Sensing Distance	500m - 1000m	500m - 2000m

\* Can be customised based on client requirements. \*\* Resolution will be affected by bandwidth selection.

## Ordering Information

Product ID	Descriptions	Remarks
G2000M	Slope Stability Monitoring System	Inclusive of radar front end, on-board SAR processor, linear scanner, and standard accessories
G2000L	Light Weight Surface Deformation Monitoring Radar	Inclusive of radar front end, on-board SAR processor, linear scanner, and standard accessories

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