METASENSING
Radar Solutions

FASTGBSAR FAST Ground-Based Synthetic Aperture Radar

FastGBSAR is a family of Ku-band ground based radars for deformation monitoring designed to work in all weather conditions. The FastGBSAR comes in two versions: **FastGBSAR-S** and **FastGBSAR-R,** both of them available with four polarimetric channels.

The **FastGBSAR-S** is the solution for continuous monitoring of deformations and displacements in natural and man-made structures, performed at the fastest scanning rate available on the market. Designed to work in harsh environmental conditions, the FastGBSAR-S generates displacement maps of large areas every 10 seconds with sub-millimeter accuracy, up to a distance of 4 km.

The **FastGBSAR-R** operates in Real Aperture Radar (RAR) mode for remote static and dynamic structural health monitoring of man-made structures. Easily transportable, the FastGBSAR-R can quickly be installed on a tripod. In a few minutes the user can obtain displacement profiles along the complete structure with an accuracy of 0.01 mm.

Three gorges Test dam, China

Martinus Nijhof Bridge, the Netherlands

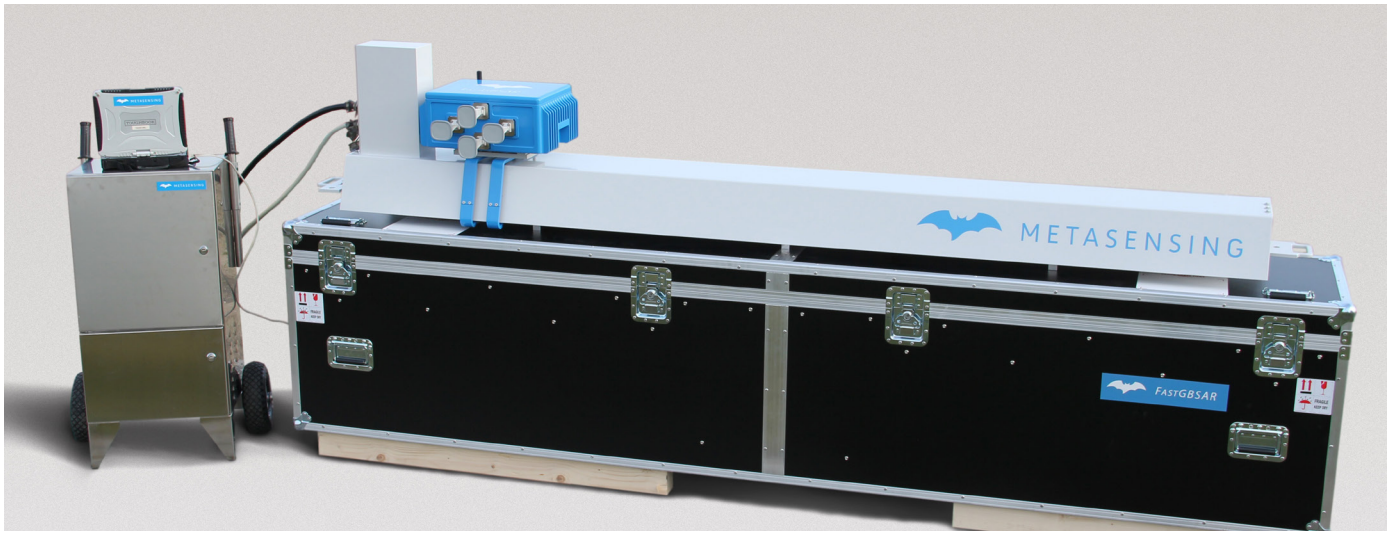
Comiolo Landslide, Italy

WWW.METASENSING.COM

METASENSING FastGBSAR		
Operating mode	**FastGBSAR-S**	**FastGBSAR-R**
Operating frequency	17.2 GHz (Ku Band)	
Range resolution [1]	Up to 0.5 m	
Maximum range	4 km	
EIRP power	19 to 42 dBm	
Operating temperature range	-25˚C to 60˚C	
Environment	IP 65	
Sensor weight	10 kg	
Accuracy [2]	± 0.1 mm	± 0.01 mm
Azimuth resolution [3]	Up to 4.8 mrad	-
Aquisition time	5 s	0.25 ms
Power consumption	< 2oo W	70 W
Rail weight	82 kg	-
Rail length (customizable)	2606 mm	-
Rail effective lenght [4]	1900 mm	-

FastGBSAR-R installed on a tripod

(1) Range resolution depends on the frequency bandwidth allowed by local authorities, which is generally limited to 200 MHz, leading to a range resolution of 0.75 m.
(2) Measurement accuracy depends on target characteristics and distance from the sensor. Listed values are for a corner reflector at 1 km distance.
(3) In SAR Mode, azimuth resolution depends on rail effective length. Effective length is the length over which the sensor moves with constant velocity.
(4) Rail effective length is slightly dependent on sensor velocity. Listed value corresponds to maximum velocity of 0.5 m/s. Effective rail length at minimum velocity of 0.1 m/s is 1900 mm.



Fully polarimetric FastGBSAR-S, with rail, power cabinet and flightcase.

MetaSensing BV
Huygensstraat 44
2201DK Noordwijk
The Netherlands

+31 71 751 5960
info@metasensing.com
www.metasensing.com

METASENSING
Radar Solutions