



## SSR-SARx

Designed to detect new risks and hazards, the SSR-SARx monitors areas from long ranges with the highest resolution.

A 2D Synthetic Aperture Radar, the SSR-SARx effectively images walls, forming high resolution targets coupled with a longer integration time, aiming to pick up small movements that occur over many months.

### LONG-RANGE MONITORING

For large mine sites where other radar technologies simply cannot effectively image walls out to 4.5km, a long-range solution is required.

SSR-SARx does this best by illuminating the wall, forming high resolution targets.

Even at 4.5km away, the SSR-SARx maintains the highest resolution qualities with a sub-bench pixel size.

### UNRIVALLED APERTURE RESOLUTION

The SSR-SARx boasts stunning aperture resolution with pixels of 0.083 degrees by 75 centimetres; able to detect fast and slow moving failures with 50 per cent more resolution than any other SAR system on the market.

### FASTEST END-TO-END SCAN TIME

The SSR-SARx glides on a 3 metre rail without starting and stopping in an 'on-the-fly' acquisition method, allowing an end-to-end SAR scan speed of just two minutes.

Taking only 40 seconds to acquire the data, coupled with in-built processing at the radar, ensures no latencies or delays in the transfer of data to the Primary Monitoring Point.

The fully-processed data is immediately available for viewing and alarming at the end of every two minute scan; a feature specifically unique to GroundProbe.



# Features and Benefits

## LIGHT DATA AT LIGHTNING SPEED

GroundProbe's renowned, intelligent processing algorithms reduce the size of raw SAR data by 96.5 per cent, to maintain the smallest possible file size, allowing users to critically monitor even over a slow WiFi link.

Its in-built processing and lightweight transfer means there is no need for unreliable laptops to be left in the pit, nor super computers in the office.

## ABILITY TO DETECT VERY SLOW MOVING DEFORMATION

With GroundProbe's propriety radar processing technique, the SSR-SARx can monitor very slow movement, whereby gradual deformation is monitored over long periods of time, which may not otherwise be detected by short-term monitoring campaigns.

By automatically creating three wall folders – scan by scan, 8 hours or 24 hours – long-term or campaign monitoring capabilities are provided.

## ROBUST, LOW NOISE ANTENNAS

The SSR-SARx features cutting-edge patch antennas. A more sensitive antenna that is less noisy, the beam better concentrates power to the target area providing better coverage for the mining environment.

The antennas are more robust and reliable, being unable to bend and protruding less, and are operable in rain without fear of water pooling and disturbing the radar image.

An upgrade from standard horn antennas, the solution has been specifically designed for the Ground-Based Interferometry band 17.2Ghz and can be used worldwide, meeting global GBInSAR ETSI specifications.

## CONTINUOUS MONITORING WITH LOW POWER CONSUMPTION

The SSR-SARx facilitates permanent, continuous 24/7 monitoring over many years through its small and light system with low power consumption.

## DATA AND IMAGE CO-REGISTRATION

The SSR-SARx includes a high resolution, integrated imaging system for real-time photographs that are co-registered with the radar data; a technique unique to and patented by GroundProbe.

When the data is visualised, the deformation heatmap is draped over the high resolution image.



By clicking on any part of the image, movement can be reviewed and assessed live, with confidence.

## PLUG AND PLAY DEPLOYMENT

Without the need for georeferencing, or importing a DTM into the radar, the SSR-SARx can commence monitoring straight away.

## SUB-MILLIMETRE DEFORMATION MEASUREMENT ACCURACY

A key benefit of interferometric-based radar technology, the SSR-SARx doesn't lose measurement accuracy as range increases.

Deploy the radar 10m or 4,500m from the area of interest, and its sub-millimetre deformation measurement accuracy remains.

## SSR-VIEWER AND MONITORIQ COMPATIBLE

The SSR-SARx is fully compatible with GroundProbe's patented SSR-Viewer software, offering the rapid, precise analysis of data to detect trends, and the ability to send alerts for immediate action.

Intuitive and easy to use, the software's live monitoring, visualisation, charting, alarming and analysis capabilities are renowned by Geotechs across the globe.

Furthermore, all data collected by the SSR-SARx can be directly imported into MonitorIQ, allowing its users to view and compare data from a range of monitoring sensors – such as InSAR, piezometers, prisms and more – on the one dashboard.