

Specification

Radar Sensor Parameter

Working Frequency Band	Ku Band
Operating Range	≥800m
Horizontal Coverage	360°(Horizontal, or specified sector)
Deformation Accuracy	≤0.5mm (Any angle within 360° azimuth)
Distance Resolution	≤0.3m
Angular Resolution	≤9mrad
Data Acquisition Period	≤1min
Pitch Adjustment Angle	±45°
Data Upload Rate	1min~24h (Configurable)
Communication	Built-in 4G/5G, equipped with mobile communication/WAN communication/satellite communication interfaces, supports local device networking and interconnection
Power Consumption	≤15W
Weight	≤5kg
Maximum Size of Radar Host	≤0.6m
Working Temperature	-40°C~ +65°C
Maximum Altitude	≥6000m
Water- & Dustproof	IP65
Windproof	≥12 Level
Front-End Calculation	Host adopts edge-front calculation, completing all processing internally without the need for external processing equipment
Power Supply	Supports multiple power supply options including mains, solar, and batteries, equipped with overvoltage and undervoltage protection

Application



(Railway) Tunnel/Railway Slope



(Geohazard) Landslide



(Hydropower) Reservoir Dam

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MS-SAR1000

UNIVERSAL SLOPE MONITORING RADAR

All-weather, Non-contact, High-precision

| MS-SAR1000

The Universal Slope Monitoring Radar MS-SAR1000 is based on Synthetic Aperture Radar (SAR) imaging technology and interferometric/differential interferometric techniques. It is specifically designed for monitoring and alert of geohazard risks such as landslides, collapses, and cave-ins. The radar features a low-cost, low-power, and universal design, offering 360° full coverage, sub-millimeter level deformation measurement, and all-weather, 24/7 non-contact remote sensing scanning capabilities. MS-SAR1000 addresses the need for "long-term online, unmanned monitoring" at geohazard risk points. The design emphasizes automation, ultra-low power consumption, multi-radar access, multiple power supply options, and multi-platform integration. MS-SAR1000 can conduct periodic inspections and focus on key locations for observation and assistance in judgment. It is capable of performing area-based, multi-point, long-distance, and long-term monitoring and deformation scanning of observation scenes (such as geohazard risk areas, water conservancy projects, railways, highways, and other geological bodies and major projects), enabling long-term unmanned monitoring and automated early warning.



Feature

Universal Equipment for Geohazards

Custom-designed for widespread application in geohazard monitoring scenarios



Arc Imaging and Continuous Wave Radar

Capable of monitoring 360° or a specified sector, with no angular or distance blind spots



No Protective Setup Required

Operates in outdoor conditions such as wind, sun, rain, dust, and snow without the need for a monitoring shelter. With IP65 protection, it works normally at -40°C and withstands up to level 12 wind resistance



Integrated 4G Communication and Wireless Routing Function

Quick setup and configuration, multiple radars cloud integration, centralized management



All-weather, All-time, Area-based Monitoring

Includes multi-point monitoring capabilities with strong penetration, unaffected by rain, snow, fog, smoke, bright light, or nighttime conditions

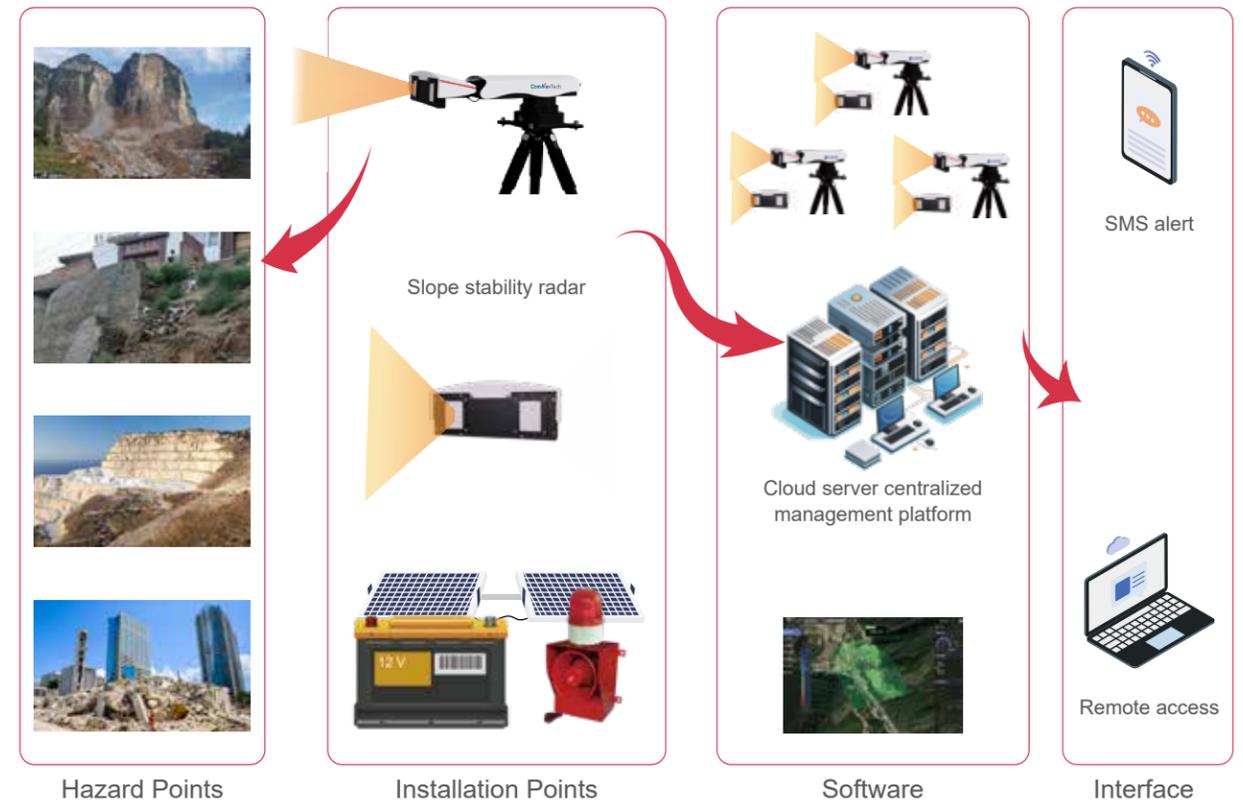


Lightweight Design

Weight < 5kg, length < 0.6m, can be carried or worn by one person to the installation site

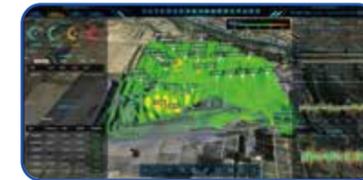


| System Composition



Monitoring Intelligent Alert Cloud Platform

- Compatible with multiple sensor types
- Built-in landslide alert model and algorithms
- Multiple alarm methods
- 3D display of monitoring results
- Alarm area shielding
- Detailed monitoring reports



Principle

