

# Z8

## Vision-Fused Multi-Point Deformation Monitoring System



## ► Vision-Fused Multi-Point Deformation Monitoring System

Z8 utilizes phase-differential measurement and deformation inversion methods to obtain precise displacement changes. By integrating video surveillance, edge computing, and other functionalities, it enables multi-point and areal deformation monitoring. Z8 identifies parameters such as the line-of-sight deformation of the target geological body, while the visual sensor is employed for regular patrol inspections, focused observation of key locations, and auxiliary validation of Z8 data to reduce false alarms. It is well-suited for applications including tailings dam slopes, highway slopes, reservoir dams, and geohazard slopes.



## ► Main Features



Full-Coverage, Contact-Free,  
High-Precision  
Areal Monitoring



Adaptive Data Acquisition  
with Automatic Anomaly  
Reporting



Intelligent Image  
Verification



All-Weather Durability & High  
Protection Rating

## ► All-Weather, 24/7 Monitoring

### IP66

Designed with an IP66 rating to withstand harsh outdoor environmental conditions.



### All-Weather

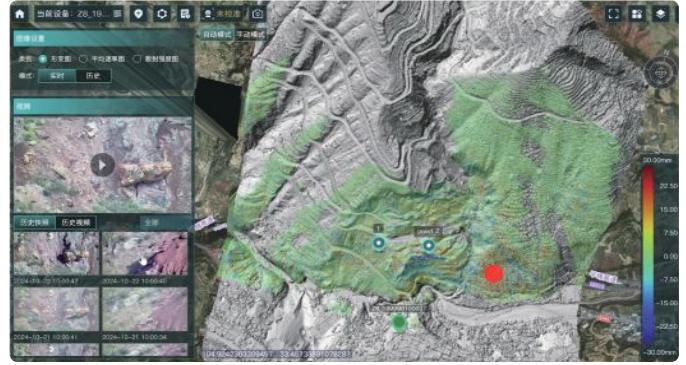
Utilizes active microwave technology, unaffected by rain, snow, fog, or other climatic conditions, ensuring continuous day-and-night operation.

## ► Omni-Directional Areal Monitoring



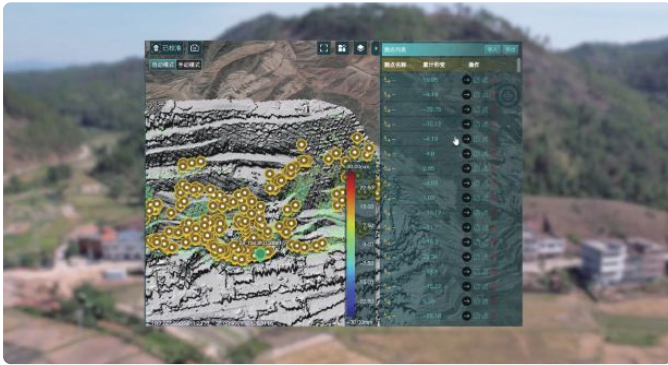
Features horizontal 360° and vertical -30° to 60° adjustment, enabling comprehensive, wide-area areal monitoring. Employs synthetic aperture imaging technology and phase differential interferometric deformation extraction algorithms to achieve sub-millimeter-level high-precision monitoring.

## ► Adaptive Data Acquisition



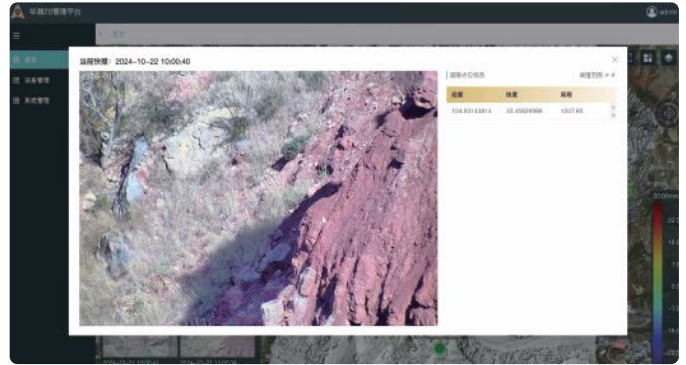
Utilizes adaptive data processing algorithms that autonomously adjust acquisition and upload frequency based on field conditions, enabling "monitor-on-movement."

## ► Automatic Anomaly Reporting



Through internal algorithms, the system can automatically detect and report anomalies outside predefined marked points, alerting users promptly to potential risks.

## ► Intelligent Image Verification



Automatically captures visual evidence upon detecting anomalies, reducing the need for personnel to conduct on-site inspections.

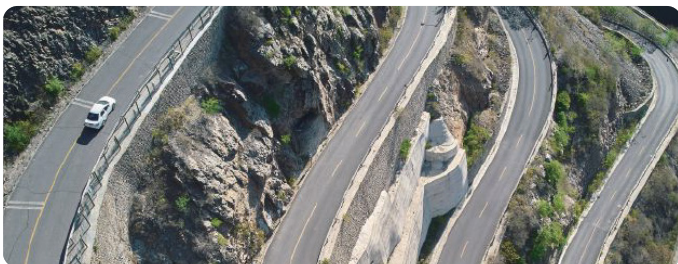
## ► Use Cases



Tailings dam slope



Geohazard Slope



Highway Slope



Reservoir Dam

# SPECIFICATIONS

## ► Technical Parameters

Maximum Monitoring Distance	800 m
Field of view	360°
Antenna adjustment	Vertical: -30° ~ +60°
Displacement Accuracy	Sub-millimeter Level
Distance Resolution	≤ 0.3 m
Angular Resolution	≤ 9 mrad
Image Resolution	≥ 2 Megapixels, Support Zoom
Minimum Sampling Interval	≤ 1 min
Upload Interval	1 min ~ 24 h
Communication Methods	Mobile Communication/Satellite Communication
Operating Frequency Band	Ku
Output Parameters	Displacement, Displacement Acceleration, Deformation Map, Complex Reflection Map, Video Static Image, etc.

## ► Physical Characteristics

Size (L × W × H)	475 mm × 324 mm × 398 mm
Weight	14.5 kg (without support)
Operating Temperature	-20°C ~ +65°C; Customizable for Extremely Cold Areas
Storage Temperature	-40°C ~ +70°C
Protection Class	IP66
Installation Notes	Standard Observation Pier, On-site Concrete Pier, Steel Structure, etc.

## ► Electrical

Average Power Consumption	≤ 20 W
Power Supply	9-36 V DC
Power Supply Mode	Supports 30 Consecutive Cloudy/Rainy Days of Normal Operation; Equipped with Overvoltage/Undervoltage Protection

\*All specifications are subject to change without notice.

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