



Product Data Sheet



infraGuard™

Responsive critical asset protection



Responsive: InfraGuard is a sophisticated wireless monitoring solution designed to provide asset owners and stakeholders with near real-time alerts that are automatically triggered based on the severity of an event in relation to user-specified criteria.

Measure and view remotely: It is primarily intended to detect movement, but can include cameras that are triggered by tilt sensors – providing an instant view of potential problems so that users can differentiate between false alarms, small-scale movement and large-scale movement that could represent an emergency. All without visiting the site.

Intelligence: InfraGuard is built around the Senceive FlatMesh™ intelligent communication platform and therefore provides long-term, low maintenance monitoring, with readings taken at set intervals in normal conditions. When the system detects movement, it responds automatically by accelerating sampling and increasing transmission rates, with the extent of the response related to the severity of the event.

Monitor where it matters most: it is ideally suited to sites and structures that are considered valuable and vulnerable, where there is the possibility of sudden, potentially catastrophic movement.



Suitable for many monitoring applications including:

- Sites where there is the possibility of sudden, potentially catastrophic movement
- Sites that are considered valuable and vulnerable
- Monitoring slopes such as road and rail cuttings, embankments, levees and mines
- Sites where early warning of failure such as landslips and rockfall would be needed
- Structures prone to sudden failure

Key features

- **On-site Computation** - data assessment & management is performed in the field without relying on external server analysis.
- **Responsive Alarms** - to save power and maintain the autonomy of the system, data uploads normally take place every 15 minutes. However, through the intelligence of the system, if an alert is received by the Gateway, it will immediately connect to the cellular/Starlink network and upload its data.
- **Sensor Triggering** - if a sensor detects movement that breaches a threshold it will trigger a sample to be taken on all the sensors within its network. This is crucial for interpreting an alert to understand its validity or potential impact.
- **Camera Triggering** - when a camera is deployed it will send images on a pre-set schedule, but will also be triggered automatically by the detection of sudden movement by sensors.
- **Sudden Movement** - the ability to not only understand long-term trends and patterns, but to detect sudden movement in near real-time is fundamental to monitoring critical assets. The network intelligence built into FlatMesh™ nodes enables them to trigger a sample if they detect 1°/second of tilt, regardless of their pre-set sampling schedule. This results in a high level of confidence that a sudden event will be detected.
- **Dynamic Sampling/Reporting** - when movement is detected, a higher sampling rate is often required to understand the rate of change and to plan appropriate steps. Pre-defined parameters and trigger levels can be programmed, which instruct the system to change sampling and reporting rates according to the degree of movement.



Specifications

| Parameter | Value |
|--|--|
| Communication Network Required | FlatMesh 2.4 GHz |
| Compatible Tilt sensors and Camera | FlatMesh Triaxial Tiltmeters, FlatMesh Nano Triaxial Tiltmeters CameraHub |
| Expected Latency | 1-5 min (Cellular/Starlink network quality dependant) |
| Network Requirement | 3G/4G Cellular network or Starlink |
| Sudden Movement Detection Threshold | 1°/sec |
| Maximum Increased Sampling Rate | 1 min |
| Maximum Number of Nodes in Network (including cameras) | 80 |
| Alert Levels | 3 levels on either side of baseline |

Ordering Information and Accessories

| Model | Description |
|----------------|---------------------------------------|
| FM3NT-30 | FlatMesh NanoPlus Triaxial Tilt Node |
| FM3NT-50 | FlatMesh NanoMacro Triaxial Tilt Node |
| FM3N-IX | FlatMesh Triaxial Tilt Node |
| FM3G-LTE | FlatMesh 4G Gateway |
| FM3C-LTE (CH5) | FlatMesh CameraHub |
| FP-SP20 | 20W Solar Panel |
| FP-SP45 | 45W Solar Panel |

The number of sensor nodes, Gateways, and CameraHubs will vary depending on the project. Please consult with Senceive to determine the optimal system configuration.