AGILE
*Promoting the future*



# SMART THERMAL SOLUTIONS FOR INDIAN RAILWAYS

**Inspection • Monitoring • Protection for Reliable Railway Operations**




## 1 OHE INSPECTION – RMITIS

**Roof-Mounted Infrared Thermal Imaging System**

- **Intelligent OHE Inspection from a Moving Train**
- **Early Detection of Hotspots for Safe & Reliable Operations**



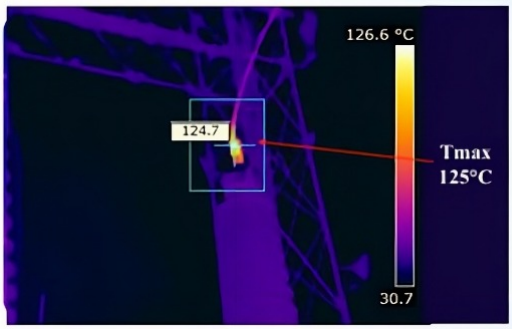

Continuous thermal inspection | Automatic hotspot alerts & event logging | GPS-linked reporting with OHE pole details




## 2 GTRM PRO 2.0

**Grid Thermal Remote Monitoring**

- **24×7 Thermal Monitoring of Traction Substations**
- **Predictive Detection of Abnormal Temperature Trends**




24/7 Continuous thermal surveillance | Configurable multi-level alarms | Intelligent reporting & historical analysis



## 3 CSL RTV SILICONE COATING

**Hydrophobic Insulator Surface Protection for 25 kV Railway OHE**

- **Prevents Tracking, Arcing & Flashover**
- **Long-Term, Low-Maintenance Protection in Harsh Environments**

**15+ Years**
**Proven Service Life**

Hydrophobic (water-repellent) surface | Applicable on existing insulators | 200+ RTV projects with proven field performance

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## AG-OHE 6xx | Roof-Mounted Thermal Unit

# ROOF MOUNTED INFRARED THERMAL IMAGING SYSTEM

**RMITIS | Automatic OHE Hotspot Detection & Location**




## *Intelligent OHE Inspection from a Moving Train*



- Continuous thermal inspection of OHE catenary arrangements during train movement
- Automatic hotspot detection, temperature-based alarms and event logging
- GPS-linked reporting with date, time, section and nearest OHE pole information

## Why Thermal Monitoring?

- Detects abnormal temperature rise rather than relying on visible sparks
- Supports day/night inspections and condition-based maintenance
- Reduces dependence on manual handheld scanning over long rail sections
- Enables prioritisation of defects using recorded thermal evidence

## System Architecture

- High-speed thermal imaging camera
- Rugged pan-and-tilt positioning unit
- IP-rated outdoor camera housing
- GPS interface and OHE pole database
- OHE 2.0 PRO monitoring software
- Configurable alarm and reporting

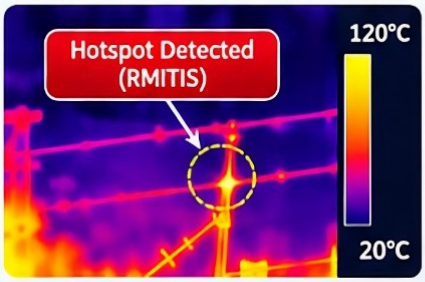
## Successfully Executed Projects

- WR Mumbai (Slow Speed)
- CR Mumbai (High Speed)
- NFR Dibrugarh (High Speed)
- NFR New Alipurduar (High Speed)
- NFR Katihar (High Speed)
- NFR Rangiya (High Speed)
- NFR Lumding (High Speed)

## Key Specifications (Thermal & Positioning)

| | |
|---|---|
| **Detector** | 640 × 512 pixels, uncooled FPA |
| **Spectral range / Pixel pitch** | 7.5–14 µm / 12 µm |
| **Thermal sensitivity** | NETD ≤ 35 mK |
| **Temperature measurement** | -20°C to +500°C (optional up to +1200°C) |
| **Positioning** | 360° continuous pan; motorised tilt |
| **Camera variants** | 30 / 60 / 120 / 240 Hz |
| **Lens options** | 14° × 10° and 24° × 18° |

## Hotspot Detection (RMITIS)







## Application

Locomotives • Tower Wagons • OHE Inspection Vehicles

*Deployment and configuration are subject to railway installation requirements.*

**Scan the QR Codes to Access Detailed Information**

### AGILE's RMITIS Catalogue

Complete solution overview, specifications, and system details.

### Detailed PPT with Frame Rate Calculation

Technical presentation including frame-rate calculations, lens selection and inspection reliability.

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**AG-GTRM 6xx** | **Grid Thermal Remote Monitoring**

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# 24x7 SUBSTATION THERMAL MONITORING

*From periodic inspection to continuous, proactive grid protection*




**CONTINUOUS**
24×7 non-contact thermal surveillance of HV assets

**PREDICTIVE**
Early detection of hotspots and abnormal temperature trends

**SAFER**
Remote inspection reduces the need for patrols in live HV yards

**ACTIONABLE**
Automated alarms and historical records support timely action




## GTRM Pro 2.0 — Configurable Alarms & Intelligent Reporting

- **Custom ROI Alarms**
- **Multi-Level Alerts**
- **Instant Notifications** (Email / SMS / WhatsApp)
- **Historical Logging** (Up to 6 Months)
- **Intelligent Reporting** (Trends & Excel Export)

**AGILE GTRM Catalogue**

**AGILE GTRM PPT**

## Applications

Busbars | Circuit Breakers | CTs | Joints | Terminations

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Authorized Supplier & Applicator of

csl silicones inc.
A Subsidiary of PETRONAS Chemicals Group®

# Experiencing Tracking / Flashover on 25 kV Railway OHE Insulators?



## The Solution: CSL RTV Silicone Coating

*RTV = Room Temperature Vulcanizing silicone coating*







## How RTV Coating Helps?

RTV Silicone Coating transforms the insulator surface from hydrophilic to hydrophobic (water-repellent), preventing the formation of a continuous moisture and pollution layer.

This disrupts conductive leakage current paths, significantly reducing the risk of tracking, arcing and flashover.

## Key Benefits

- Prevents tracking, arcing and flashover
- Effective in dusty, polluted and humid areas
- Applicable on existing insulators after inspection
- Long-term reliability and reduced maintenance
- Proven field performance – **15+ years**

## RTV Coating – Application Process

1. Cleaning (Dry cloth followed by wet cloth)
2. Clean with Isopropyl Alcohol (IPA)
3. Final cleaning & inspection
4. Apply CSL RTV Coating (500 µm DFT)
5. Measure Dry Film Thickness (DFT) — 500 µm

### PROVEN EXPERIENCE IN RTV SILICONE COATING

Successfully completed **200+** RTV Silicone Coating projects on HV Insulators for prestigious customers including **PGCIL, Adani, NPCIL, NTPC, State Power Utilities, Western Railway, North Western Railway** and many more.

**15+ Years Service Life**

Scan for Details

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