CASE STUDY

June 2024

Delivering Vital Communication Signals in Mines & Quarries :

Customer Challenge :

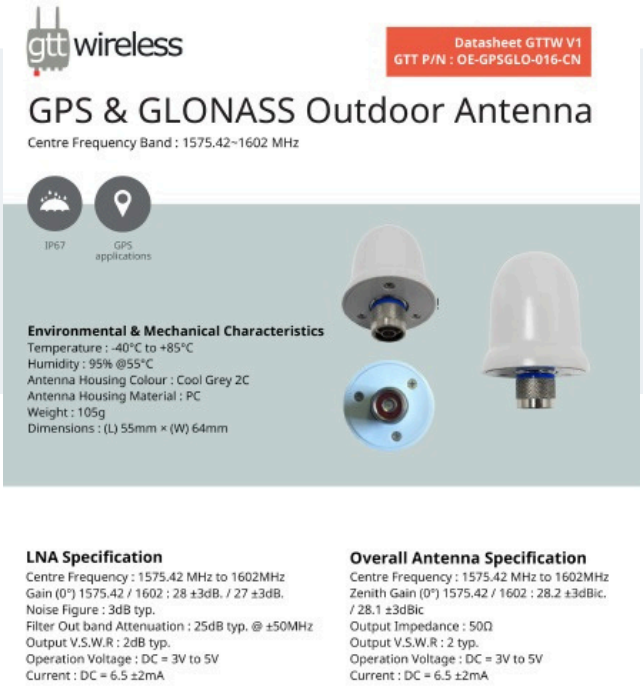
Guaranteed Communication Signal for Transport Management Communications

Nigel Mammatt, Chief Executive Officer at MCM Technologies :

"We urgently needed a compact outdoor GPS GLONASS antenna, robust enough to withstand the harsh mining and quarry environment, but with simple connectivity to our existing electronic devices. It needed to deliver a guaranteed communication signal for the MCM Technologies transport management communication solution...and, help to prevent 'The big trucks running over the little trucks!...'

GTT Wireless Solution :

GTT Wireless Outdoor GPS GLONASS Antenna
Providing Uninterrupted Connectivity for IoT Network Devices in Harsh Environments



Nigel Mammatt continued :

"...Quick sample delivery allowed us to test live in the field within a few days. Easy to pole mount on vehicles and IK09 Robust rated, the N' Type interface gave a one plug connection to our wireless device".

Sales & Technical: sales@gttwireless.com
General: admin@gttwireless.com
Finance: accounts@gttwireless.com
+44 (0)1572 338011

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Delivering Vital Communication Signals in Mines & Quarries

The Right Advice, Products & Responsive Service :

The **GTTW GPS GLONASS antenna** guarantees high quality outdoor performance in the harshest of environments. IK09 Robust, N' Type Interface, 1575-1602MHz proved the ideal solution. Temperature variations are extreme, and working conditions harsh in the mines, but the robust and reliable antenna is ideal and built to last on all type of vehicle. Reliable and consistent communication is priority for onsite traffic management in such a hazardous environment.

IoT network devices rely on continuous connectivity for efficient data transmission. However, in harsh environments such as Mines and Quarries, factors like water, dust, vibration, and temperature changes pose further significant challenges. Therefore, it is crucial to mitigate environmental factors in order to maintain uninterrupted connectivity.

- **Water:** Quarries and mines are damp environments that are exposed to rain, prone to flooding, and slow to evaporate surface moisture. This can cause sudden short-circuits which can destroy valuable assets, leading to water ingress into the enclosure box or slow damage from corrosion and rust, consequently damaging the network device.

- **Dust:** Dust is pervasive in mines and quarries and is made up of various contaminants. This can include powdered concrete, stone, plant material, algae, bird waste, abrasive grit, micro-plastics, engine oil, fuel, grease, and chemical residues. Dust settling on components and circuit boards can degrade the electrical signal leading to compromised performance, premature component failure, and loss of reliability.

- **Vibration:** Plant machinery, vehicles, and quarry explosions generate vibrations that pose a real risk to delicate communications equipment. Prolonged exposure to these vibrations can lead to material fatigue and reduced equipment lifespan.

- **Temperature Changes:** Quarries and mines experience significant temperature fluctuations, such as cold shadows followed by sudden heat during excavation work. Sudden drops in temperature can cause condensation from drops in atmospheric dewpoint crashes.

GTT Wireless mSmart-Box® electronic enclosures, antenna and accessories ensure safe and secure IoT devices in extreme environments. The GTT Wireless range of electronic enclosures, IP67/NEMA6 rated antenna and RF cables can be configured to custom specifications using our online configuration tool and eliminate the risk of potential 'down time' for critical communication, improving safety, productivity and eliminating team frustrations.

With easy installation and minimal maintenance required, mSmart-Box® electronic outdoor enclosures are the best solution to preserve your equipment's functionality amidst the rugged challenges of even the harshest environment.

MCM Technologies, Western Australia, provide innovative monitoring transport management solutions.
For further information please contact MCM Technologies – info@mcmtechnologies.com.au

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