



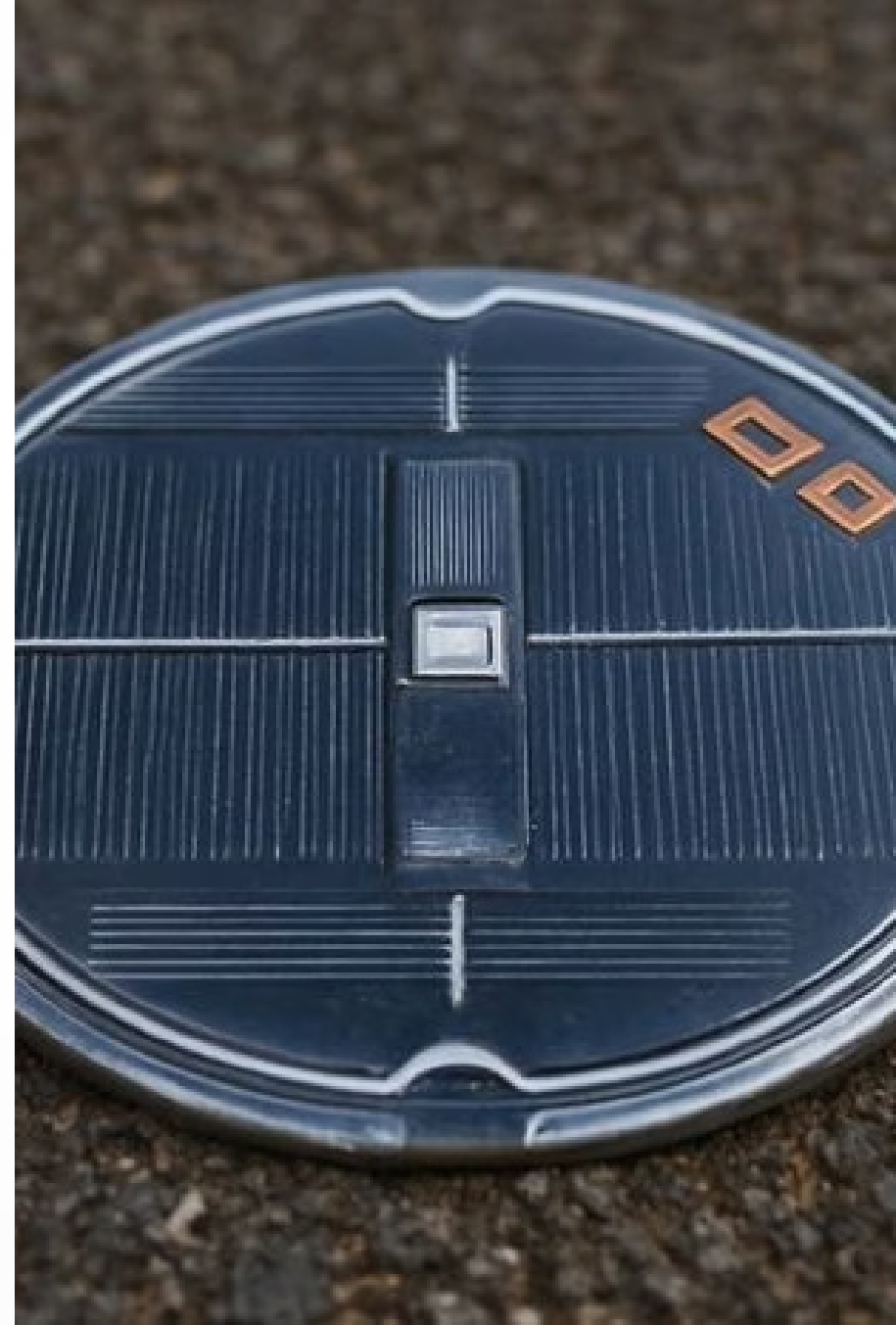
TALLY — Smart Road Sensor

Solar-powered IoT road sensor platform for transport analytics, infrastructure monitoring, asset intelligence and smart city integration.

PRODUCT / TECHNICAL SPECIFICATION

Embedded Intelligence for Smarter Roads

TALLY is a next-generation embedded IoT road sensor platform engineered for real-time transport monitoring, infrastructure analytics, smart city integration and future AI-enabled roadway applications. Designed to scale across urban roads, rural corridors, critical infrastructure networks and smart city environments.



Core Platform Features



Solar Powered

MPPT intelligent solar charging with 5.5V 300mA integrated panel.



GNSS Enabled

Integrated GPS/GNSS for positioning and asset management.



MQTT API

Publish/subscribe architecture for cloud platform integration.



LTE Cat 1 bis

Industrial cellular with asynchronous push notification support.



IP68 Waterproof

Fully sealed housing for all-weather road deployment.



Road Embedded

In-road installation using epoxy or contractor-approved method.

Technical Specifications

Connectivity & Power

Cellular	LTE Cat 1bis, async push
Protocol	MQTT Pub/Sub API
GNSS	GPS + Magnetometer
Solar Panel	5.5V 300mA (~1.65W)
Battery	18650 Li-ion 3.7V 6000mAh
Satellite	Starlink D2D via One NZ

Physical & Environmental

Diameter	165.3mm
Height	48mm / Surface: 8mm
Weight	Approx. 1.3kg
Operating Temp	-30°C to +60°C
Storage Temp	-40°C to +85°C
Enclosure	Anti-flammable PC, UL98 V-0

Durability by Design

TALLY is built to withstand the harshest road environments, with an expected lifespan exceeding typical road surface lifecycles.

50T

Compression Rating

Housing pressure resistance

IP68

Ingress Protection

Fully waterproof housing

500+

UV Hours

No visible discoloration

10yr+

Expected Lifespan

Exceeds road surface lifecycle



Made in New Zealand · Patent Protection Filed: NZ, AUS, EU/UK, USA, CHINA, CANADA

Traffic Analytics & Functionality

TALLY provides embedded roadway analytics using one-direction vehicle sensing technology, delivering actionable transport intelligence in real time.

Vehicle Count

Real-time traffic counting

Speed Detection

From 1 kph / mph and above

Classification

4-bin vehicle length categorisation

Directional

Single-direction monitoring



Vehicle Classification (4-Bin)

TALLY supports vehicle length-based classification aligned with New Zealand transport industry methodologies and heavy vehicle dimension categories.

Bin	Vehicle Length	Typical Vehicle Type
Bin 1	$\leq 6\text{ m}$	Cars, SUVs, utes
Bin 2	$> 6\text{ m to } \leq 13\text{ m}$	Vans, small trucks, buses
Bin 3	$> 13\text{ m to } \leq 21\text{ m}$	Heavy rigid trucks, articulated buses
Bin 4	$> 21\text{ m}$	Truck & trailer / B-train combinations

Classification Method: Vehicle length-based embedded sensor detection algorithms, aligned with NZ transport vehicle length classification methodologies.

Frost & Ice Alerting

TALLY supports intelligent road surface temperature monitoring for frost and ice risk management. Customer-configurable thresholds enable automated early warnings when temperatures approach predefined frost-risk conditions.

→ SMS Alerts

Automated notifications direct to gritting contractors and maintenance teams

→ Push Notifications

Asynchronous alerts triggered on threshold breach

→ Signage Integration

Data transmitted to external roadside warning systems

→ Optimised Gritting

Improves response times and reduces weather-related road risks



Connectivity & Smart Platform

LTE Cat 1bis

Industrial cellular for scalable infrastructure with async push notifications

GNSS & GPS

Location services for deployment visibility and asset management

MQTT Cloud

Publish/subscribe architecture for cloud-based data integration

Bluetooth Telemetry

Short-range diagnostics and roadside telemetry

Edge Processing & Satellite

TALLY's future-ready architecture supports AI-enabled sensing applications, evolving alongside advancing transport intelligence requirements.

A **SpaceX / Starlink** connectivity pathway via One NZ approval enables direct-to-device (D2D) satellite communications — ideal for remote or infrastructure-limited environments where cellular coverage is unavailable.



LEO DTD Capable — Ubiquitous Coverage



TALLY by Iternz

Intelligent Infrastructure Technology

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☐ Specifications subject to continuous improvement and final production validation.