Terrestar solutions

Hybrid IoT connectivity solution powered by NTN Technology

Our Hybrid IoT service combines cellular and satellite networks in one seamless experience, so your devices always stay connected automatically, no matter where you go.

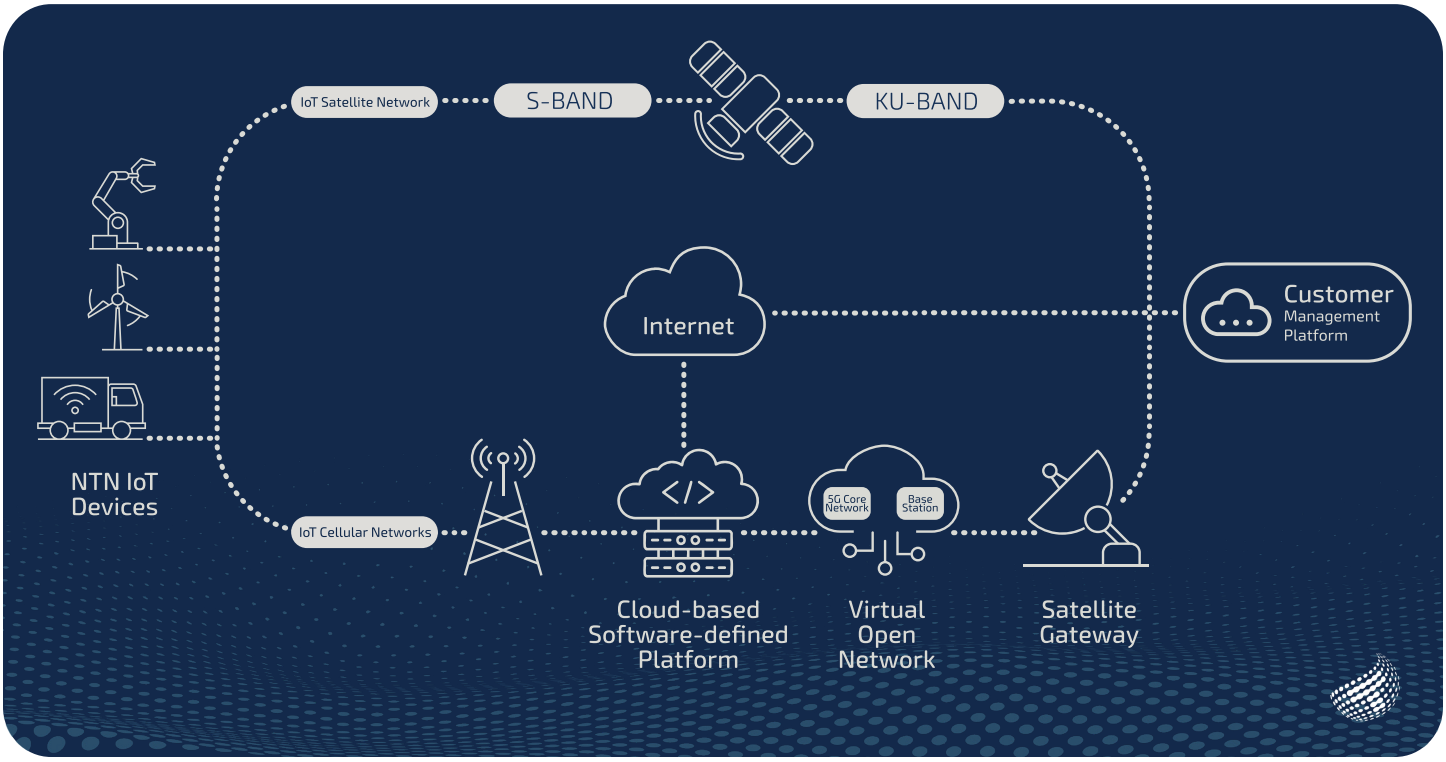
Solution overview

Our solution extends IoT coverage beyond the reach of cellular networks by integrating satellite into standard 3GPP protocols like NB-IoT and LTE-M. With one SIM, one plan, and one platform, our IoT solution switches automatically between cellular and satellite for effortless connectivity and pure productivity.

This seamless handover is fully enabled by 3GPP Release 17 and beyond, delivering reliable, scalable, and cost-efficient connectivity — ideal for remote tracking, monitoring, and smart infrastructure.

Deploy, connect, and manage your IoT devices anywhere, with full control from a single centralized cloud-based management platform.

How it works



Solution key components

Component	Description
NTN Integration	Supports 3GPP Release 17-compliant satellite communication for extended coverage.
Hybrid SIM	Multi-profile SIM supporting cellular and satellite switching.
Hybrid Plan	Our hybrid price plans are built to support your IoT deployments across cellular and satellite networks – all under one subscription.
Management Platform	Cloud-based, software-defined platform for provisioning, monitoring, analytics and APIs for every need.
IoT Modules	Compatible with LTE-M, NB-IoT, and satellite-ready modules.

Technical specifications

Feature	Details
SIM Format	2FF, 3FF, 4FF, eSIM (MFF2)
Network Technologies	LTE-M, NB-IoT, NTN (GEO)
Protocol Support	TCP / UDP (Cellular IoT), UDP (Satellite IoT)
Low Power Modes	PSM and eDRX Support
Antenna gain	Low- to moderate-gain antennas (0–3 dBi)
IoT Chipset & Modules	Qualcomm 9205S, Sony Altair ALT1250, Quectel BG95-S5, Quectel BG770A-SN, Murata 1SC, Simcom 7070G-HP-S, Sierra Wireless HL7810/HL7812 Note: Additional Modules in progress and planned.
Security	End-to-end encryption, secure OTA updates, SIM-level authentication, IMEI locking
Advance networking	IPSEC VPN, Private IP, QoS Monitoring, IP Traffic, NAT and Port forwarding

Built for Canada and Beyond

Our hybrid IoT SIM is designed to keep your operations connected, from Canada's urban centers to its most remote industrial sites. It intelligently navigates between cellular and satellite networks, bridging gaps that traditional networks can't cover. With global cellular reach in 180+ countries, your SIM travels as far as your business does, ensuring secure and uninterrupted connectivity — anywhere, anytime.

A solution for every industry

Transportation & logistics

- End to end fleet and asset tracking (tractors, trailers, containers, gensets) with geofences for yards, ports, and layovers.
- Refer temperature and humidity alerts and door-open events to protect perishables.
- Route-performance insights and proactive dispatch based on real-time position and status, even across coverage gaps.
- Lone-worker safety for drivers running remote routes.

Mining & construction

- Heavy equipment health, fuel, and utilization telemetry on mobile and fixed sites.
- Geofencing for blast zones, haul roads, and exclusion areas with live alerts for supervisors.
- Condition monitoring for pumps, gensets, conveyors, and temporary power.
- Lone-worker check-ins and emergency beacons for remote crews.

Energy, utilities & environmental

- Telemetry for pipeline, powerline, and water-network monitoring.
- Environmental stations for wildfire risk, air and water quality, weather, and wildlife.
- Remote site security: intrusion, gate, and camera-trigger alerts with event metadata.

Agriculture

- Precision agriculture: soil moisture, weather, and irrigation control for water-smart yields.
- Mobile and fixed equipment monitoring fuel, hours, location, and theft prevention.
- Remote infrastructure checks: bins, pumps, troughs, gates, and fence lines.

Livestock monitoring

- GPS collars and tags for pasture-wide tracking with geofences and escape alerts.
- Behaviours and health flags (changes in activity, rumination, heat, or calving indicators).
- Water-point and trough monitoring to catch issues before they affect herd health.

Connected vehicles

- Vehicle telematics: location, geofencing, utilization, and alerts for events or anomalies.
- Condition and health monitoring to support preventative maintenance and up-time.
- Mixed fleet visibility that follows assets from urban routes to remote projects without connectivity gaps.
- Incident notifications to accelerate response and keep crews protected.

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Contact us
www.terrestarsolutions.ca