

GPT12-X Ultra – Technical Specifications

EELINK – Multi-Year LTE-M / NB-IoT GNSS Asset Tracker

This document summarizes the key technical specifications for EELINK's GPT12-X Ultra, a multi-year LTE-M / NB-IoT GNSS asset tracker optimized for cold-chain and unpowered assets. All parameters are based on GPT12-X Ultra lab verification and field testing. For project-specific details and regional variants, please consult the latest official datasheet.

CATEGORY	DETAIL
Product name	GPT12-X Ultra — Multi-Year LTE-M / NB-IoT GNSS Asset Tracker
Core chip	Core Chip: Nordic nRF9161 SiP Inside (Integrated LTE-M / NB-IoT, GNSS, MCU, Security). Single-chip architecture for cellular, GNSS, MCU and hardware security in one SiP package.
Cellular network	LTE Cat M1 / NB2 (NB-IoT), 3GPP Release 14. Typical global bands: B1 / 2 / 3 / 4 / 5 / 8 / 12 / 13 / 14 / 17 / 18 / 19 / 20 / 25 / 26 / 28 / 66.
GNSS	Multi-constellation GNSS: GPS, GLONASS, BDS (BeiDou), Galileo, QZSS. Typical GNSS accuracy: 2 m (open sky).
Positioning modes	GNSS (primary) + Cell-ID based LBS (fallback in GNSS-challenged environments).
Battery	5000 mAh Li-MnO primary cell, near-zero self-discharge, field replaceable. Designed for multi-year operation without charging or external power.
Battery life	3 – 5+ years @ 1 position report / day in long-standby mode (typical field profile), depending on network conditions and ambient temperature.
Power-saving	PSM (Power Saving Mode) + eDRX (Extended Discontinuous Reception). Ultra-low sleep current in microamp range; periodic eDRX listening windows allow quick wake via SMS / downlink without losing network attachment.
Wake-up sources	eDRX network wake (SMS / downlink), 3-axis motion sensor (movement / shock), scheduled timers (periodic reports) and manual button (for commissioning).
Dimensions & weight	Approx. 100 × 53 × 12.5 mm; 80 g (with 5000 mAh battery).
Enclosure & protection	Robust industrial plastic enclosure, sealed design, IP65-rated against dust and water (higher IP ratings available for OEM variants).
Sensors	3-axis accelerometer (motion, shock, drop detection). Light sensor (tamper / enclosure open detection).
Indicators & I/O	Multi-color LED for GNSS and network status; power key for on / off & pairing. USB Type-C for development & debugging (not for end-user daily operation).
Operating temperature	-20 ° C to +65 ° C (extended temperature variants available on request).
Typical reporting modes	Long-standby mode: 1 – 4 reports per day. Trip mode: start / stop & movement-based tracking. Emergency mode: high-frequency tracking on demand (via SMS or platform command).
Installation	Screw-mount, adhesive mount or optional magnetic bracket. Optimized for hidden mounting on trailer chassis, containers, pallets, door frames and other asset surfaces.

Cloud & platform	Fully compatible with EELINK cloud and mobile apps; open protocol for integration with third-party platforms via TCP / UDP / MQTT / HTTP as required.
Firmware & OTA	Secure FOTA (Firmware Over-The-Air) via LTE-M / NB-IoT using nRF9161 security features; remote configuration of reporting profiles, geofences and alarm thresholds.
Certifications	Typical CE / FCC and carrier approvals depending on region (consult EELINK sales for the latest market-specific certifications).

Note: All specifications are based on EELINK GPT12-X datasheet plus GPT12-X Ultra hardware and firmware enhancements using Nordic nRF9161. Values are subject to change as we continuously improve the product; always confirm with the latest official datasheet before deployment.