

Now Available for Pre-order

Haystack™ Gateway 1.0 for LoRa®

Low Cost, Convenient LoRa Connectivity



Basic Features:

- Real-time, two-way communication with HayTag 2.0 LoRa endpoints
- Communication range between 0.5 and 10 miles
- Supports multiple real-time geolocation techniques including GNSS/GPS

EXCELLENT RANGE

Using Semtech's LoRa™ LPWAN radio technology, the HayTag gateway offers outdoor communication range of 1/2 to 10 miles, depending on terrain, with battery-powered LoRa endpoints running DASH7.

UNSURPASSED GEOLOCATION CAPABILITIES

Real-time, low power, high-precision GNSS/GPS, RSSI, and TDOA-based geolocation capabilities. High precision wireless clock sync.

FULL DASH7 NETWORKING FOR LoRa

Fully bi-directional, low latency DASH7 communications over LoRa. Supports real-time queries, broadcast/multicast messaging, OTA firmware updates and key refreshes. LDPC error correction minimizes lost packets.

DENSE ENDPOINT SUPPORT

Supports up to 30,000 concurrent HayTags per gateway.

BUILT FOR CUSTOMIZATION

The HayTag gateway can accommodate multiple power, backhaul, and firmware configurations, as well as custom form factor and branding options.

Specifications

- 900 MHz band Semtech LoRa® connectivity
- Haystack DASH7 networking engine for LoRa, including LDPC two-way error correction.
- Fully bi-directional communication, including real-time queries, broadcasting, P2P messaging.
- u-Blox AssistNow Assisted GPS provides “hot start” GNSS/GPS location acquisition to HayTags.
- OpenWRT-based Linux operating system
- 2.45 GHz WiFi 802.11n internet connectivity
- 580 MHz CPU, 128 MB RAM
- Convenient form factor: 11cm x 9cm x 4cm. Mains (USB) powered.

API & Middleware

- Integrates with most cloud PaaS providers via HTTP and/or MQTT
- Internal web server for driving HTML5 and Javascript GUI's that work in a client's browser
- Haystack middleware provides device management and data synchronization microservices to bridge real-time, non-REST low-level networking into customary RESTful, JSON-based applications run either on the edge, in the cloud, or on a remote client.
- Internal gateway database can support up to 30,000 endpoints per gateway.
- AES cryptography with EAX ciphering. Shared-key, one-time-key, and per-device-key cryptographic key management facilities provide highest level of endpoint data security in LPWAN industry.
- Supports multiple real-time, high precision geolocation functions including GNSS/GPS/A-GPS, RSSI, and TDOA-based techniques for maximum endpoint battery life. Supports customizable geofencing, real-time location alerts, community finding features

Tech Specs:

- DASH7 on 915 MHz ISM band, with adaptive data rate: 1 - 50 kbps
- 152 dB real-world link budget @ 1kbps, <1% PER, exceeds that of any other LoRa endpoint.
- FCC, Industry Canada