

BLE Cap Lamp Tag

The Ya Batho BLE Cap Lamp Tag is a compact, rugged, and low-power Bluetooth tag designed for real-time personnel tracking, attendance, access control, and asset monitoring in mining and industrial environments. Equipped with BLE 5.0, RFID, and a 3-axis accelerometer, the device enables accurate location services, long battery life, and remote cloud-based management.



Key Features

- Multi-Protocol Support: iBeacon, Eddystone, Sensor data broadcasting
- Ultra-Low Power: Nordic nRF52 chipset with ARM Cortex-M4 CPU
- Power Requirements: 3V dc - 23µA Current Draw
- Rugged Design: IP65 rated, compact ABS housing
- Flexible Sensors: 3-axis accelerometer ($\pm 2g$ to $\pm 16g$, 1–100 Hz sampling)
- Trigger Modes: Motion or button-based triggers for advertising control
- Secure: AES-128 encryption, configurable password protection
- OTA Firmware Upgrades supported

Technical Specifications

Chipset	Nordic nRF52 series ARM Cortex-M4
Transmission Range	Up to 120 m (80 m with RFID)
RFID	NXP MIFARE Classic EV1 1k
Battery	Uses Caplamp Battery Pack as source
Battery Life	Caplamp Capacity dependant
Antenna	50 Ω Ceramic
Dimensions	65.38 × 42.98 × 5.7 mm
Weight	4 grams
Ingress Protection	IP65
Operating Temperature	−25 °C to +75 °C
Storage Temperature	−5 °C to +35 °C
RFID Sensing Distance	~40 mm (reader), ~5 mm (phone)

Configurable Parameters

- SLOTS: Up to 6 (iBeacon, UID, URL, TLM, Device Info, Sensor data)
- Advertising Interval: 100–10,000 ms (default 1000 ms)
- Tx Power: −40 dBm to +4 dBm (9 levels)
- Accelerometer: Configurable scale and data rate
- Trigger Options: Double-tap, triple-tap, motion triggers

Applications

- Underground Mining Personnel Safety
- Access Control & Attendance Monitoring
- Worker & Equipment Location Tracking
- Industrial IoT & Asset Monitoring

