Cassia Networks
The Future of Connected Things

DATA SHEET

E1000 Enterprise Bluetooth Router

(Indoor Use)

Cassia Networks E1000 extends your Internet of Things (IoT) analytics and security farther to the edge of the network. This industry-leading long-range Bluetooth router is designed for deployments in industrial automation, health monitoring, senior safety, and other enterprise IoT applications. It extends Bluetooth's range up to 1000 feet open space and enables remote control of up to 40 Bluetooth low energy devices without requiring any changes to the Bluetooth end devices.

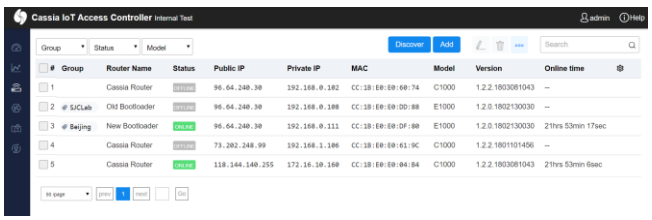
OVERVIEW

The Cassia E1000 is an intelligent router designed to aggregate, secure, analyze, and relay data from diverse sensors at the edge of the network. This capability delivers business insights based on real-time, pervasive data obtained from applications used in industrial automation, healthcare, retail, senior safety, and other enterprise IoT settings.

The E1000's compact and cost-effective design is the ideal solution for indoor usage. It is attached to the ceiling or wall with an included mounting kit, or placed on a desktop or counter space. The E1000 receives power from a Micro-USB adapter or from a switch, using Power-over-Ethernet (PoE).

The E1000 is an enterprise-grade long-range Bluetooth router, extending Bluetooth's range up to 1000 feet and expanding the number of devices that can be paired and controlled up to 40 Bluetooth low energy devices. Its patented smart antenna is optimized for horizontal use. The E1000 is used as a protocol gateway, translating between the Bluetooth protocol and IP protocol. It supports Ethernet, 2.4GHz and 5GHz Wi-Fi, or 3G/4G cellular USB dongle as an internet protocol (IP) backhaul. This enables your Bluetooth low energy devices to be accessible, and controllable, remotely via an Internet application.

The Cassia RESTful APIs enable the integration of proprietary Bluetooth low energy devices to the E1000 without requiring any changes to the end devices. In addition, the Cassia IoT Access Controller (AC) provides easy-to-use device management at scale. Solution providers can use the AC to deploy and manage hundreds of Cassia routers and thousands of connected devices from a single user interface.



UNIQUE BENEFITS

Seamless Bluetooth Coverage

With its smart antenna and RF management technology, the E1000 delivers wall penetrating Bluetooth coverage of up to 1000 feet. Its long-range capability increases "connection density" and reduces cost, allowing solution providers to deploy seamless Bluetooth coverage.

Remote Access and Control

The E1000 connects your Bluetooth low energy devices, uploads the aggregated device data to the AC via your LAN or Internet, and allows them to be controlled remotely.

Easy Integration

Cassia's E1000 provides a set of RESTful APIs which developers can easily integrate into their native mobile app or cloud applications. Cassia partners use the extended range and routing capabilities of the E1000 without a need to make costly changes to their Bluetooth end devices.

Easy Setup and Management

Cassia's E1000 comes with Wi-Fi hotspot mode, which improves a user's overall setup experience when performing an initial installation without network access.

The E1000 can be managed by the Cassia IoT AC. Administrators can quickly provision and check the status of all routers in their network (connected and/or identified sensors, throughput, CPU consumption, device location, and more).

Room-based Location Tracking

Together with the Cassia IoT AC, the E1000 tracks and reports the location of Bluetooth low energy devices, providing geolocation data in real-time.

Edge Computing

Partners can run their own applications inside a container within the router for reduced latency, customized command and control, and better data management. Currently, the E1000 supports Ubuntu OS with built-in packages for Python2 and NodeJS.

Flexible Deployment

In a network restricted environment, the E1000 can be configured in “Stand-Alone Mode”, where the data is sent directly to a local third-party application server. In a remote management scenario, users can setup “AC Manage Mode” in the E1000 router to send data to a remote third-party application via the Cassia IoT AC.

Tx Power

Based on the country code selected, the E1000’s Bluetooth transmit power and Wi-Fi transmit power are limited to the maximum value allowed by that country.

ADVANCED FEATURES

Processor & Memory

- CPU: 4 core ARM Cortex-A5, up to 1.5GHz
- 256MB RAM DDR3, 4GB eMMC storage

Bluetooth

- BLE chip: 2x Nordic nRF52832
- Bluetooth version: 4.0/4.1/4.2, 5 compliant
- LE Connections: Up to 40 connections
- Frequency: 2.400 to 2.483 GHz
- Data rates: up to 2x1Mbps
- TX power: 0 to 8dBm
- RX sensitivity: -105dBm
- Antenna Gain: 5dbi peak
- Increased broadcast capacity (x8) with Bluetooth 5

Wi-Fi (802.11 a/b/g/n/ac)

- Frequency: 2.4 GHz and 5GHz ISM band
- Mode: Wi-Fi client or hotspot (for setup only)
- TX power: 17.5 to 12.5dBm for 2.4GHz band, 15.5 to 8.5dBm for 5GHz band
- RX sensitivity: -96 to -71dBm for 2.4GHz band, -91 to -71dBm for 5GHz band, depending on modulation
- Antenna: Integrated dual band

Multiple Roles

- Supports broadcaster, listener, sender and receiver roles
- Can play multiple roles simultaneously

Security Services

- Supports Bluetooth 4.1 security standards
- Bluetooth Secure Simple Pairing (Just Works, Passkey Entry, OOB)
- Advanced 128bit AES encryption
- Password protected router Webpage
- Communication between the Cassia IoT AC and the router is based on DTLS1.0 over UDP
- MQTT communication between Cassia router and the broker is encrypted.
- Firmware is signed by certificate to ensure authenticity
- Supports HTTPS access to the Cassia AC and router

Power Interface

- Power-over-Ethernet (PoE): 802.3af/at compliant source
- Micro-USB, multi-plug adapter + plugs
  Input: 100-240V (50-60Hz), 0.6A
  Output: DC 5V, 2A

  IMPORTANT: Limited to one power source at a time (PoE or Micro-USB)
- Power consumption: up to 2.5W for normal usage; 3G/4G USB dongle adds up to 2.5W

Other Interfaces

- 10/100 BASE-T Ethernet (RJ-45) uplink
- Reset button
- LED lights: Wi-Fi / BT / System / Power / Ethernet
- USB 2.0 (can be used for 3G/4G dongle)

Mechanical

- Dimensions:
  - 164 mm (W) x 164 mm (L) x 62 mm (D)
  - 6.45 inch (W) x 6.45 inch (L) x 2.44 inch (D)
- Weight: 410 g / 14 oz

Environmental

- Operating:
  - Temperature: 0°C to +40°C (+32°F to +104°F),
  - Humidity: 0% to 90% non-condensing
- Storage and transportation:
  - Temperature: -40°C to +70°C (-40°F to +158°F)

Mounting

- Wall or ceiling mounting kit included

Certification

- FCC (US), IC (Canada), CE (Europe), TELEC (Japan), REACH, CB, BQB, SRRC (China)

Warranty

- 1-year limited hardware warranty

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