

DATA SHEET

X1000 Enterprise Bluetooth Router (Outdoor and Indoor Use)

The Cassia Networks X1000 is the most reliable long-range Bluetooth router for demanding and outdoor enterprise Bluetooth IoT applications. It extends Bluetooth's range up to 1000 feet and enables remote control of 22 Bluetooth low power devices (and 100's in broadcast mode) without requiring changes to end devices. The Cassia X1000 acts as an Internet gateway working with the IoT Access Controller (AC) for easy deployment and management.



OVERVIEW

The Cassia X1000 enterprise Bluetooth router delivers cost-effective connectivity to demanding indoor/outdoor enterprise Bluetooth IoT environments. It supports Power over Ethernet (PoE) with power received from the uplink Ethernet port. It attaches to a pole or wall with an included mounting kit, or places on a flat space. The weather-proof, IP65-rated X1000 is ideal for school campuses, sports fields, stadiums, shipping and manufacturing yards, and parks.

The X1000 extends Bluetooth connectivity up to 1000 ft / 300 m in open space using a patented filtering and smart antenna array. Importantly, the range extension does not require replacing existing Bluetooth low power end devices, nor is it dependent on Bluetooth 5.0 or Mesh. In bi-directional mode it simultaneously pairs and connects with up to 22 end devices. While in broadcast mode, it listens to 100s of end devices. It can be used as a protocol gateway, which translates between Bluetooth protocol and IP protocol. The X1000 Internet Protocol (IP) backhaul options include: Ethernet, 2.4GHz Wi-Fi, and cellular. As a result, end devices are remotely accessible and controllable via an Internet application.

The Cassia IoT Access Controller (AC) provides easy-to-use device management at scale. The IoT AC user interface simplifies deploying and managing hundreds of Cassia X1000 routers and thousands of connected end devices (Figure 1).

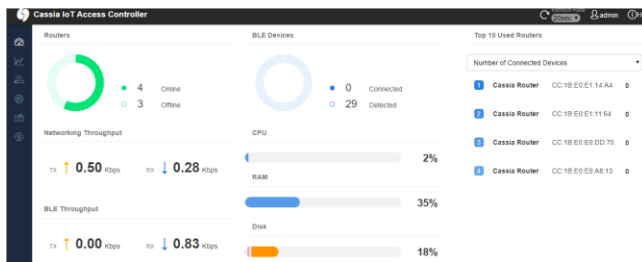


Figure 1 - Cassia IoT Access Controller (AC)

UNIQUE BENEFITS

Reliable long-range Bluetooth, Seamless Coverage

The X1000 delivers wall-penetrating Bluetooth coverage of up to 1000 ft / 300 m via an omnidirectional smart antenna along with radio frequency filtering and management for seamless coverage. With the highest number of end device connections per router, total "connection density" costs are the lowest in the industry.

Remote Access and Control

The X1000 connects to end devices, uploads the aggregated device data to the IoT AC via a LAN or the Internet, which enables remote control of the Bluetooth low power end devices.

Edge Computing

The X1000 can run an application on the router within a container for edge benefits such as: reduced latency and cloud costs, and customized IoT application and data management. Supports Ubuntu OS with built-in packages for Python and NodeJS.

Cost-savings, Easy Integration

Using Cassia's X1000 RESTful APIs, developers can easily integrate end devices with the X1000 and AC for native mobile apps or cloud applications. The X1000 does not require costly custom end devices or changes to existing end devices.

Easy Setup and Management

The X1000's Wi-Fi hotspot mode improves the setup experience when performing an initial installation without network access. The X1000 is managed by the Cassia IoT AC. Administrators can quickly provision and status-check all routers in an enterprise Bluetooth IoT network through the Cassia IoT AC, including: connected and/or identified sensors, throughput, CPU consumption, device location, container status, etc...

Room-based Location Tracking

Together with the Cassia IoT AC, the X1000 tracks and reports the location of BLE devices, providing real-time geolocation data.

Tx Power

Based on the country-code selected, the X1000's Bluetooth and Wi-Fi transmit power is limited to the maximum value allowed by that country.

Flexible Deployment

In network-restricted environments, the X1000 is configurable to a “Stand-Alone Mode,” and data is sent directly to a local third-party application server. In a remote management scenario, the X1000 in “AC Manage Mode” sends data to a remote third-party application via the Cassia IoT AC.

ADVANCED FEATURES

Processor & Memory

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

Bluetooth

- Bluetooth low power chip: 2x CSR8811
- Bluetooth version: 4.0/4.1
- Connections: Up to 22 connections
- Frequency: 2.400 to 2.483 GHz
- Data rates: up to 2x1Mbps
- Tx power: 0 to 10dBm
- Rx sensitivity: -105dBm
- Antenna Gain: 5.7dbi vertical polarized

Wi-Fi (802.11 b/g/n)

- Frequency: 2.4 GHz
- Mode: Wi-Fi client or hotspot (for setup only)
- Tx power: 12.5 to 17.5dBm
- Rx sensitivity: -96 to -71dBm
- Antenna: Omnidirectional

Multiple Roles

- Supports broadcaster, listener, sender and receiver roles, and multiple-roles simultaneously.

Security Services

- Supports Bluetooth 4.1 security standards
- Bluetooth Secure Simple Pairing (Just Works, Passkey Entry, OOB)
- WPA2 enterprise security (PEAP-MSCHAPv2, EAP-TLS, EAP-TTLS)
- Advanced 128bit AES encryption
- Password protected router web console page
- Communication between the Cassia IoT AC and the router is based on DTLS 1.2 over UDP
- MQTT communication encryption between Cassia router and broker. Router to AC MQTT option supported
- Firmware is signed by certificate to ensure authenticity
- Supports HTTPS access to the Cassia AC and router
- Dedicated SSL private key and certificate import options

Additional Features

- Diagnostic tools: Ping, Traceroute, TCP dump and NetCat on router’s console
- Configurable statistic report interval: for reducing backhaul traffic between AC and router



Power Interface

- Power-over-Ethernet: 802.3af/at compliant source
- Power consumption: up to 2.5W for normal usage; cellular dongle adds an additional 2.5W

Other Interfaces

- 10/100 BASE-T Ethernet (RJ-45) uplink
- Reset button
- LED lights: Power / System
- USB 2.0 (can be used for cellular dongle)

Mechanical

- Dimensions:
 - 154 mm (D) x 259 mm (H)
 - 6.1-inch (D) x 10.2 inch (H)
- Weight: 800 g / 28 oz

Environmental

- Operating:
 - Temperature: -40°C to +65°C (-40°F to +149°F)
 - Humidity: 0% to 90% non-condensing
- Storage and transportation:
 - Temperature: -50°C to +70°C (-58°F to +158°F)
- Wind resistance:
 - Up to 85-MPH sustained winds
 - Up to 135-MPH wind gusts
- IP rating: IP65

Mounting

- Wall or pole mounting kit included

Certification

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

Warranty

- 1-year limited hardware warranty