Cassia Networks
The Future of Connected Things

DATA SHEET

S2000 Enterprise Bluetooth Router

(Indoor Use)

The Cassia Networks S2000 brings low-cost, long range and scalable connectivity to enterprise IoT solutions. It is the industry-leading long-range Bluetooth router designed for deployments in industrial automation, health monitoring, senior safety and other enterprise IoT applications. The S2000 extends Bluetooth's range up to 1000 feet open space and enables remote control of 20 Bluetooth low energy devices without requiring any changes to the end devices.

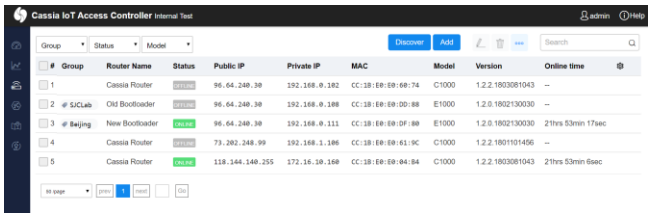
OVERVIEW

The Cassia S2000 Enterprise Bluetooth Router can be deployed in industrial automation, healthcare, retail, senior safety, and many other enterprise IoT applications. It brings significant benefits to IoT connectivity: low cost, worldwide standardized, low power and long range.

The S2000's compact and cost-effective design makes it the ideal Bluetooth routing solution for indoor applications. The Cassia S2000 attaches to the ceiling or wall with an included mounting kit or can be easily placed on a desktop or counter space. The S2000 receives power from either a Micro-USB adapter or a switch, using PoE via the uplink Ethernet port.

The S2000 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 20 Bluetooth low energy devices. Its patented smart antenna is optimized for horizontal use. The S2000 is used as a protocol gateway, translating between the Bluetooth protocol and the IP protocol. It supports Ethernet, 2.4Ghz Wi-Fi, and 3G/4G cellular dongle for IP backhaul. You can access and control your Bluetooth low energy devices remotely via an Internet application or a mobile App.

The Cassia Restful APIs enable the integration of proprietary Bluetooth low energy devices to the S2000 without changing the end devices. In addition, the Cassia IoT Access Controller (AC) provides easy to use device management at scale. Solution providers use the AC to deploy and manage hundreds of Cassia S2000 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 S2000 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 S2000 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 S2000 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 S2000 without a need to make costly changes to their Bluetooth end devices.

Easy Setup and Management

Cassia's S2000 comes with Wi-Fi hotspot mode, which improves a user's overall setup experience when performing an initial installation without network access.

The S2000 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 S2000 tracks and reports the location of Bluetooth low energy devices, providing geolocation data in real-time.

Flexible Deployment

In a network restricted environment, the S2000 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 S2000 router to send data to a remote third-party application via the Cassia IoT AC.

Tx Power

Based on the country code selected, the S2000's Bluetooth transmit power and Wi-Fi transmit power are limited to the maximum value allowed by that country.

ADVANCED FEATURES

Processor & Memory

- CPU: MIPS processor, up to 535MHz
- 64MB RAM DDR2, 16MB flash

Bluetooth

- BLE chip: Nordic nRF52832
- Bluetooth version: 4.0/4.1/4.2, 5 compliant
- LE Connections: Up to 20 connections
- Frequency: 2.400 to 2.483 GHz
- Data rates: up to 1Mbps
- TX power: 0 to 8dBm
- RX sensitivity: -105dBm
- Antenna Gain: 5dbi peak
- Increased broadcast capacity (x8) with Bluetooth 5

Wi-Fi (802.11 b/g/n)

- Frequency: 2.4 GHz
- Mode: WIFI client or hotspot (for setup only)
- TX power: 17.5 to 12.5dBm
- RX sensitivity: -96 to -71dBm
- Antenna: Integrated

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:
  - 150 mm (W) x 150 mm (L) x 62 mm (D)
  - 5.9 inch (W) x 5.9 inch (L) x 2.4 inch (D)
- Weight: 320 g / 11 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

- Mounting kit for wall or ceiling included

Certification

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

Warranty

- 1-year limited hardware warranty

Version: 12122018-BC