

DATA SHEET

S2000 Enterprise Bluetooth Router (Indoor Use)

The Cassia Networks S2000 Bluetooth router delivers cost-saving, reliable long-range Bluetooth low power connectivity to enterprise Bluetooth IoT solutions. Its patents enable long-range Bluetooth connectivity at up to 1000 ft / 300 m, bidirectional control of 20 BLE devices (and broadcasts to 100s) without requiring changes to existing end devices. The S2000 Bluetooth router is designed for enterprise Bluetooth IoT applications, including: industrial automation, health monitoring, senior safety, smart campuses, buildings, and cities.

OVERVIEW

The Cassia S2000 Bluetooth router reliably delivers the benefits of enterprise Bluetooth IoT connectivity, including: low-cost, worldwide standardization, low-power requirements, multiple connections, remote management, and long-range.

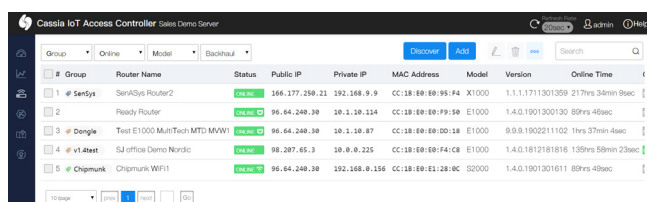
The S2000's compact, cost-effective design makes it the ideal Bluetooth routing solution for indoor applications. The S2000 is an enterprise-grade, long-range Bluetooth router, extending Bluetooth's range up to 1000 ft / 300 m and expanding the number of paired and controlled end devices up to 20. The Cassia RESTful APIs enable easy integration of proprietary end devices to the S2000 without changing the end devices. Its patented smart antenna is optimized for horizontal orientations.

The S2000 is a protocol gateway, translating between the Bluetooth protocol and the IP protocol. Its IP backhaul options include: Ethernet, 2.4Ghz Wi-Fi, and cellular dongle. The S2000 enables remote access and control of end devices via an Internet application or a mobile app.

The Cassia S2000 attaches to the ceiling or wall with an included mounting kit. Placing it on a flat surface is also an option. The S2000 receives power from either a Micro USB adapter or a switch using PoE via the uplink Ethernet port.

Scalable Enterprise Bluetooth IoT Management

The Cassia IoT Access Controller (AC) provides easy-to-use device management for scaling enterprise Bluetooth IoT applications. Using a single user interface, the AC simplifies deploying, updating, and managing hundreds of Cassia S2000 routers and thousands of connected Bluetooth low power end devices.



Group	Router Name	Status	Public IP	Private IP	MAC Address	Model	Version	Online Time
1	SenSys SenSys Router2	Online	166.177.250.21	192.168.9.9	CC:18:80:80:95:F4	X1000	1.1.1.1711301309	21hrs 34min 59sec
2	Ready Router	Online	96.64.249.39	10.1.10.114	CC:18:80:80:F9:50	E1000	1.4.0.1901300130	80hrs 45sec
3	Dongle Test E1000 MultiTech MTD MW1	Online	96.64.249.39	10.1.10.87	CC:18:80:80:00:18	E1000	9.0.9.190221102	1hrs 37min 46sec
4	v1.4test SJ office Demo Nordic	Online	98.287.65.3	10.0.0.225	CC:18:80:80:F4:C8	E1000	1.4.0.1812181818	135hrs 58min 23sec
5	Chipmunk Chipmunk WiFi	Online	96.64.249.39	192.168.0.156	CC:18:80:81:28:0C	S2000	1.4.0.1901301011	85hrs 49sec



UNIQUE BENEFITS

Reliable Bluetooth Connectivity, Cost Savings

With its smart antenna and RF management technology, the S2000 delivers wall-penetrating Bluetooth coverage up to 1000 ft / 300 m. Coupled with an industry-leading number of end device connections per router, the total router costs for deploying seamless Bluetooth coverage are reduced.

Remote Access and Control

The S2000 connects to your end devices and uploads the aggregated end device data to the AC via your LAN or Internet. The end devices are remotely controllable via the AC interface.

Easy Integration

Cassia S2000 RESTful APIs enable developers to easily integrate the S2000 and AC with native mobile app or cloud applications.

Easy Setup and Management

The Cassia S2000 Wi-Fi hotspot mode improves the setup experience when performing an initial installation without network access. Using the IoT AC, provisioning and status-checking routers in an enterprise Bluetooth IoT network is simplified. Status data includes: connected and/or identified sensors, throughput, CPU consumption, device location, etc...

Room-based Location Tracking

Together with the Cassia IoT AC, the S2000 tracks and reports the location of end devices, providing geolocation data in real-time.

Flexible Deployment

In a network restricted environment, the S2000 is configurable to a "Stand-Alone Mode," where the data is sent directly to a local third-party application server. In a remote management scenario, the S2000 in "AC Manage Mode" sends 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 is limited to the maximum value allowed by the country.

ADVANCED FEATURES

Processor & Memory

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

Bluetooth

- Bluetooth low power chip: Nordic nRF52832
- Bluetooth version: 4.0/4.1/4.2, 5 compliant
- 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

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: 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)
- WPA2 enterprise security (PEAP-MSCHAPv2, EAP-TLS, EAP-TTLS)
- Advanced 128bit AES encryption
- Password protected router web console
- Communication between the Cassia IoT AC and the router is based on DTLS 1.2 over UDP
- MQTT communication encryption Cassia router and broker. Router to AC MQTT option supported
- Firmware is signed by a certificate to ensure authenticity
- Supports HTTPS access to the Cassia AC and router
- Dedicated SSL private key and certificate import option

Network 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 (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; cellular dongle adds up to an additional 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 cellular 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), BQB, REACH, CB, SRRC (China), RoHS

Warranty

- 1-year limited hardware warranty