

X2000-MP

(Optimized for Industrial IoT)



ADVANCED FEATURES

Processor & Memory

- CPU: 4 core ARM Cortex-A5, up to 1.5GHz
- RAM: 1GB DDR3 (approximately 700 MB for container)
- Storage: 4GB eMMC

Bluetooth

- Bluetooth low power chip: 2x nRF52840
- Version: Bluetooth Low Energy 4.0/4.1/4.2/5.0
- Connections: up to 40 connections
- Frequency: 2.400 to 2.483 GHz
- Data rates: up to 2x2Mbps
- Tx power: configurable in 3~19dBm (limited by local regulatory requirements)
- Rx sensitivity: -105dBm

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

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

Multiple Roles

- Supports peripheral, central, broadcaster and observer roles, and plays multiple roles simultaneously.

Security Services

- TPM (Trusted Platform Module) chip based security
- Supports Bluetooth 4.2 security standards
- Bluetooth Secure Simple Pairing (Just Works, Passkey Entry, Legacy OOB, Secure OOB, Numeric Comparison)
- WPA2 enterprise security (PEAP-MSCHAPv2, EAP-TLS, EAP-TTLS)
- Advanced 128bit AES encryption
- Password protected gateway web console page
- Communication between gateway and AC is based on TLS 1.2 (MQTT) or DTLS 1.2 (CAPWAP)
- Firmware is signed by certificate to ensure authenticity
- Supports HTTPS for Cassia RESTful API and gateway web console access
- Dedicated SSL private key and certificate import options

Power Interface

- Power over Ethernet: 802.3af/at compliant source
- Optional: 12V DC power adapter
- Power consumption: up to 2.5W for normal usage

Other Interfaces

- 10/100 BASE-T Ethernet (RJ-45) uplink
- LED lights: BT/AC/4G/Wi-Fi/Ethernet/System/Power
- IPEX ports for BLE and Wi-Fi antennas
- Reset button
- USB 2.0 with reset circuit (can be used for optional USB cellular modem)

Mechanical

- Dimensions: 150 mm x 100 mm
(5.91 inch x 3.94 inch)

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)

Warranty

- 1-year limited, replacement hardware warranty

Federal Communications Commission (FCC) Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RF exposure warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

Industry Canada (IC)

CAN ICES-3 (B)/NMB-3(B)

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme RSS d'Industrie Canada. Son fonctionnement est sujet aux deux conditions suivantes:

(1) le dispositif ne doit pas produire de brouillage préjudiciable, et

(2) le dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé.

Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

Available Antennas

Antenna Type	Model No.	Manufacturer	Frequency Band (MHz)	T _x Paths	Ant Gain (dBi)
BLE (External Antenna)					
Directional	DF24-30V14F	DIPOLE COMMUNICATIONS LIMITED	2402 ~ 2480	1	14.0
Directional	DB24-40V14A				14.0
Directional	DB24-120VH14A				14.0
Directional	DB24-65V12A				12.0
Directional	DF24-60V12M				12.0
Directional	DB24-90V11A				11.0
Directional	DF24-90V11M				11.0
Directional	DF24-110V10F				10.0
Directional	DB24-120V10A				10.0
Directional	DB24-120VH09A				9.0
Directional	TDJ-2400BKC14	Kenbotong Technology Co., Ltd.			14.0
Directional	TDJ-2400BFE				14.0
Directional	KBT120VP13-24RT0				13.0
Directional	TDJ-2400BKCH70				11.0
Directional	SPDG16T2	SuperPass Company Inc.			12.2
Directional	OSCAR18	Siretta Ltd			10.0
Directional	iANT214-2400	Extronics Ltd.			8.5
Directional	iANT214-2400D				8.0
Directional	iANT221				7.5
Wi-Fi (Internal Antenna)					
PCB	N2420DTS	Airgain	2412 ~ 2462	1	3.70
			5150 ~ 5725	1	6.60

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			5725 ~ 5850	1	7.30
Wi-Fi & BLE (External Antenna)					
Omni	iANT213-2400	Extronics Ltd.	2402 ~ 2480	1	6.0
			2412 ~ 2462	1	6.0
			5150 ~ 5850	1	6.0
Omni	iANT216M	Extronics Ltd.	2402 ~ 2480	1	6.0
			2412 ~ 2462	1	6.0
			5150 ~ 5850	1	6.0
Omni	iANT212	Extronics Ltd.	2402 ~ 2480	1	2.0
			2412 ~ 2462	1	2.0
			5150 ~ 5850	1	2.0
Omni	MHODB24490507NM-IP	PCTEL, Inc.	2402 ~ 2480	1	5.0
			2412 ~ 2462	1	5.0
			5150 ~ 5850	1	7.0