



QUICK START GUIDE

E210 Series cellular router

Version 1.0

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This E210 series quick start guide applies to below models:

- E213
- E214#02
- E214#358S#158
- E214#078
- E214G#01
- E214G#00
- E215#02
- E218#1JL
- E218#1BI
- E218#04

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1 Safety Precautions

1.1 General precautions

The router generates radio frequency (RF) power. When using the router, care must be taken to ensure safety as well as compliance with all the regulations that surround the use of RF equipment.

Do not use the router in aircraft, hospitals and petrol stations or in places where using GSM, W-CDMA and LTE equipment or any other RF equipment is prohibited, and make sure that the router is not interfering with nearby equipment such as pacemakers or medical equipment.

All antennae of the router should be directed away from computers, office equipment, home appliances, etc., and always keep the router at a minimally safe distance of 26.6cm or more from human bodies.

Do not put the antenna inside metallic boxes or other containers.

1.2 Using the router in vehicles

Check for regulations/law, if any, for authorising the use of GSM, W-CDMA and LTE equipment in vehicles in your country before installing the router.

Installation of the router should be done by qualified personnel. Consult your vehicle dealer for any possible interference concerns to the use of the router.

Battery of the vehicle could be drained after an extended period when the router is powered by the vehicles main battery.

1.3 Protecting your router

Please install and operate the router with care, and complying the following;

Do not expose the router in extreme conditions such as high humidity/rain, high temperature, direct sunlight, caustic/harsh chemicals, dust, or water.

Do not try to disassemble or modify the router as there is no user serviceable parts inside and the warranty would be voided in the case of tampering.

Do not drop, hit, shake the router in extreme vibrations.

Do not pull the power supply cable. Please attach or detach it by holding the connector after switching off the supply.

Install and connect the router in accordance with this document.

Failure to do so will void the warranty.

2 Overview

2.1 **Scope**

This document provides you all the information needed to setup, to configure and to use the Maestro E210 series cellular router.

2.2 **Target audience**

This document is intended for end-users or resellers who understand basic telecommunications and information technology terminologies and concepts.

3 E210 series compatible models

| MODEL NAME | TERRITORIES OR OPERATOR(S) | CELLULAR TYPE ¹ | BANDS ² | FALLBACK MODE(S) ¹ | BANDS ² | LOCATION SERVICES | PLANNED CERTIFICATIONS ³ | FCS ⁴ | ORDER CODE |
|------------|-------------------------------------|----------------------------|--|-----------------------------------|---|-------------------------------------|-------------------------------------|------------------|---------------|
| E213 | World | Dual mode LTE-M1 / NB-IoT | 12 ^a /28/13/20/26 ^b /8/3 ^c /4/2/1 | 2G ^d | 5/8/3/2 | same as E214G's | TBD | Sep. '18 | E213 |
| E214 | EMEA | LTE cat. 1 | 28/20/8/3/1/7 | 3G ^e ; 2G ^f | 8/1; 8/3 | * | CE ^g , GCF | Jul. '18 | E214#02 |
| | Australia & New Zealand; Thailand | | 28/5/8/3 | 3G ^e | 5/8/1 | * | RCM; NBTC | | E214#358S#158 |
| | China; Indonesia; India | | 5/8/3/1/TDD 40/41 ^d | 3G ^e ; 2G ^f | 8/1; 8/3 | same as E214G's | CCC, NAL, SRRC; Postel; WPC | Sep. '18 | E214#078 |
| E214G | Verizon Wireless | 13/4 | * | N/A | IZat™ gen. 8C gpsOne | FCC ^g , Verizon Wireless | E214G#01 | | |
| | AT&T Wireless, T-Mobile USA, Sprint | 12 ^a /5/4/2 | 3G ^e | 5/4/2 | ISED; FCC ^g , PTCRB, AT&T Wireless | E214G#00 | | | |
| E215 | EMEA, [most of] Asia Pacific | 3G ^e | 8/1 | 2G ^d | 8/3 | * | CE ^g , GCF; WPC | Jul. '18 | E215#02 |
| E218 | Asia Pacific | LTE cat. 4 | 28/5/8/3/1/7 | 3G ^e | 5/8/1 | same as E214G's | RCM; NCC; NBTC; SIRIM; IDA | Sep. '18 | E218#04 |
| | NTT docomo | | 19/21/1 | * | N/A | * | JPA, JRF | Jul. '18 | E218#1JL |
| | KDDI | | 18/11/1 | | | | | E218#1BI | |

Please consult us regarding the models or features shown in grey, which are subject to MOQ and other considerations.

¹ Uplink / Downlink maximum data rates

- 2G: ^{A1} 85⁶ / 236⁸; or 236⁸ / ^{A2}236⁸; or ^{A3}296 kbps
- NB-IoT: 65 / 27 kbps
- LTE-M1: 375 / 300 kbps
- LTE cat. 1: 5 / 10 Mbps (FDD); 3¹ / 8⁹⁶Mbps (TDD)
- 3G: 5⁷⁶ / ^{C1} 7²; or ^{C2} 10¹; or ^{C3} 42²Mbps
- LTE cat. 4: 50 / 150 Mbps (FDD); 35 / 130 Mbps (TDD)

² Ranked by increasing frequencies

- ^a Also North America's B17 subset
- ^b Also KDDI's B18 and North America's B5 subsets, the latter containing NTT DoCoMo's B19 subset, itself containing Japan's B6 subset
- ^c Also Japan's B9 subset
- ^d In fact, the 2535 MHz ~ 2655 MHz subset of B41

³ Besides MIL-STD-810G

- ⁴ First customer shipment [date of]
- ⁵ Also EN 60950-1

⁶ Also Class I Division 2 for use in explosive atmospheres as a factory option subject to MOQ and other considerations

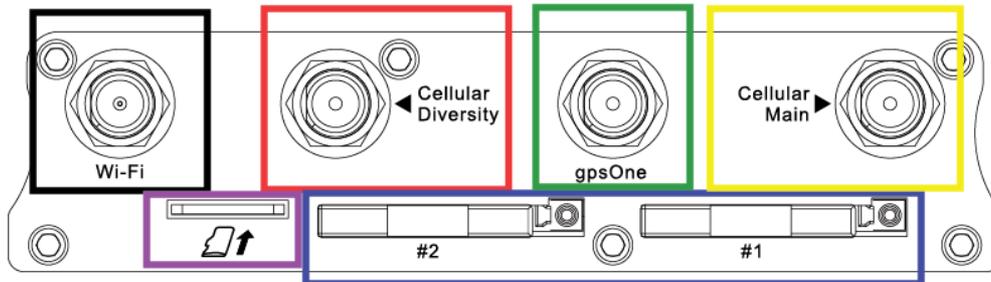
07 August 2018

4 Product overview

4.1 General specification

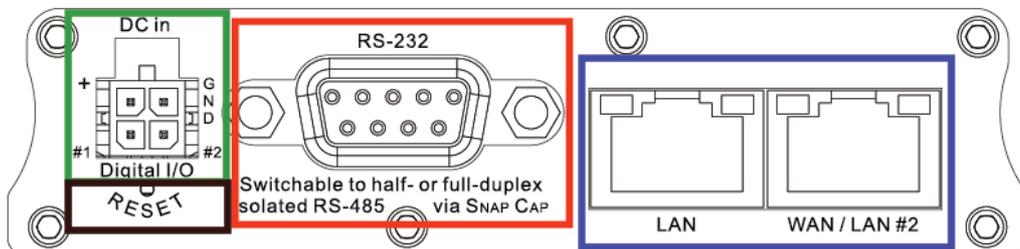
| | |
|------------------------|-------------------------------|
| Casing: | Brushed Aluminum |
| Dimensions: | 92x57x22(mm) |
| Weight: | 150g (approx.) |
| Operating temperature: | -20°C ~ +60°C; up to 95% R.H. |
| Storage temperature: | -40°C ~ +85°C; up to 95% R.H. |
| Flash memory (SPI): | 32MB |
| RAM (DDR2 SD-RAM): | 128MB |
| Ethernet LAN & WAN: | 10/100BASE-T |
| Wi-Fi: | IEEE 802.11b/g/n 2.4GHz |
| GPS: | IZat™ gen. 8C gpsOne |

4.2 Back panel connection



| | | |
|---------------|---|---|
| Black | – | Wi-Fi antenna, RP-SMA connector |
| Red | – | Cellular diversity antenna, SMA connector |
| Green | – | GPS antenna, SMA connector |
| Yellow | – | Cellular main antenna, SMA connector |
| Purple | – | MicroSD-XC card slot |
| Blue | – | Dual SIM slots: Left: SIM 2; Right: SIM 1 |

4.3 Front panel connection



Green – D.C. Power:

4-pin Micro-fit 3.0 connector

Top L/R: 8V~32V dc
Bottom L/R: Two digital I/Os

Digital Input: 0~1V dc as low
1~36V dc as high

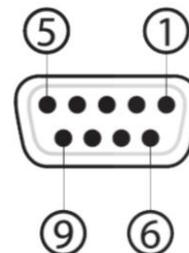
Digital Output: Open collector,
100mA@24V dc max

Black – Reset button:

Back to default settings (push for 10sec)

Red – RS-232:

1. DCD
2. Rx
3. Tx
4. DTR
5. Ground
6. DSR
7. RTS
8. CTS
9. RI



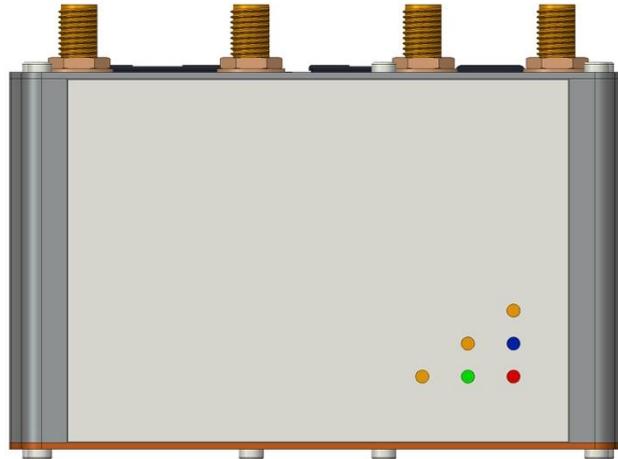
Blue – Ethernet ports:

Left: LAN
Right: WAN or set as 2nd LAN

5 E210 series cable and accessory

| Item | Description |
|-------------------------------|--|
| Power supply/Cable | |
| ACC-CA10 | 4-pin Micro-Fit 3.0(M) to stripped wire with 2.5A fused, 1 meter long cable |
| ACC-PS20-F | 4-pin Molex 1.2A power adapter with Euro plug 2-pin - Europe |
| ACC-PS21-F | 4-pin Molex 1.2A power adapter with NEMA 2-pin plug - America |
| ACC-PS22-F | 4-pin Molex 1.2A power adapter with AS3112 3-pin plug - Australia/NZ |
| ACC-PS23-F | 4-pin Molex 1.2A power adapter with BS1363 3-pin plug - UK |
| Wi-Fi Antenna | |
| ACC-A21 | 5-band 2.4/5.8GHz antenna, hinged RP-SMA (M) |
| Cellular / GPS Antenna | |
| ACC-A11 or A17A | 5-band 850/900/1800/1900/2100MHz magnetic mount antenna, 3 meter cable, SMA(M) |
| ACC-A03 | GPS 1575.42MHz Magnetic mount antenna, 3 meter cable, SMA(M) |
| ACC-A22 | Ultra-wideband 698-960/1575.42/1710-2700MHz L-shaped antenna, hinged, SMA(M) |
| Miscellaneous | |
| ACC-DIN | Metal dual mount DIN Rail clip |
| ACC-CA29 | RJ45(M) to RJ45(M), 1 meter cable length |

6 Status LED Indicator



The E210 operation status is indicated by six LEDs as shown above, and described in the below table;

| Name | Color and Status | Description |
|---|------------------|---|
| Wi-Fi | OFF | Wi-Fi network is inactive |
| | Blue ON | Wi-Fi network is activated |
| | Blue Flashing | Wi-Fi network data transferring |
| Activity | OFF | Cellular data service is not connected |
| | Amber ON | Cellular data service is connected |
| | Amber Flashing | Cellular data transferring |
| Network | OFF | Not registered on cellular network |
| | Amber ON | Registered on cellular network (home) |
| | Amber Flashing | Registered on cellular network (roaming) |
| Signal | OFF | No signal (CSQ=0 to 5, 97, 98, 99) |
| | Amber Flashing | Weak signal (CSQ ≤ 12) |
| | Amber ON | Strong signal (CSQ ≥ 12) |
| Power | OFF | Power off |
| | Green ON | Power on |
| Alert  | OFF | No alert |
| | Red Flashing | Precaution (i.e. SIM not inserted, LAN not connected) |
| | Red ON | Hardware fault (i.e. overheated, memory corruption) |

7 Setup

7.1 Prerequisite

Prior to the E210 series router setup:

Activated SIM card

Ethernet cable

Wi-Fi and cellular antenna

Ethernet port or Wi-Fi connectivity with Internet service

Web browser; Internet Explorer 8+, Google Chrome, Mozilla Firefox or Safari for accessing the Maestro Web Admin Console

DHCP set to enable

Enabling DHCP on Windows:

Start menu → Control Panel → Network and Internet

→ Network and Sharing Center → Change adapter settings

→ Right click on Local Area Connection → Internet Protocol Version 4(TCP/IPv4)

→ Properties

→ Obtain an IP address automatically & Obtain DNS server address automatically

Enabling DHCP on MAC OS:

→ Launch System Preferences, then choose Network.

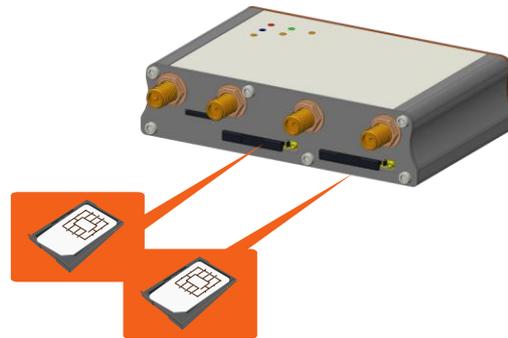
→ Select Ethernet from the adapters list on the left.

→ Set the Configure IPv4 drop-down to Using DHCP

7.2 Connecting the E210 router

Inserting SIM cards

Eject the SIM tray by pushing the yellow SIM tray eject button inwards, take the SIM tray out from the slot, place the mini-SIM card with SIM chip facing up, and insert the tray back in place carefully.

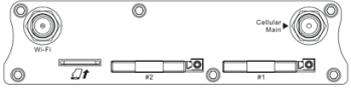
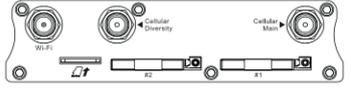
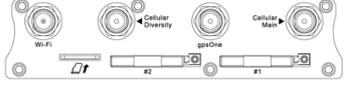


Connecting the AC power

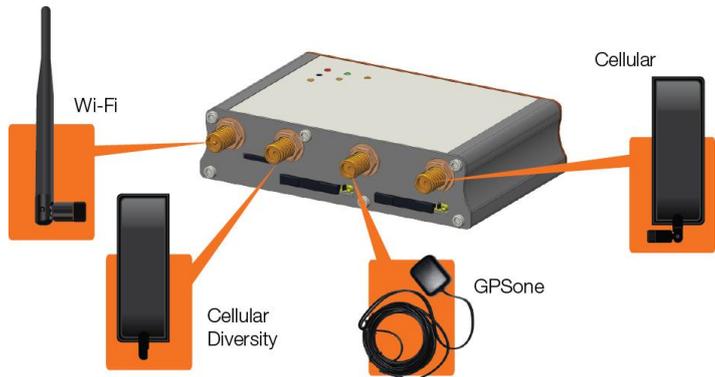
Connect the A.C. power cord as shown below, or you can refer to **Section 4.3** in Green, **D.C. Power**.



Antenna connection

| Main | Series | Auxiliary | Picture |
|---------------|--------------|------------------|--|
| Cellular only | E213 E215 | N/A |  |
| | E214 E218 | Cellular only |  |
| | E214G | GPS and cellular |  |

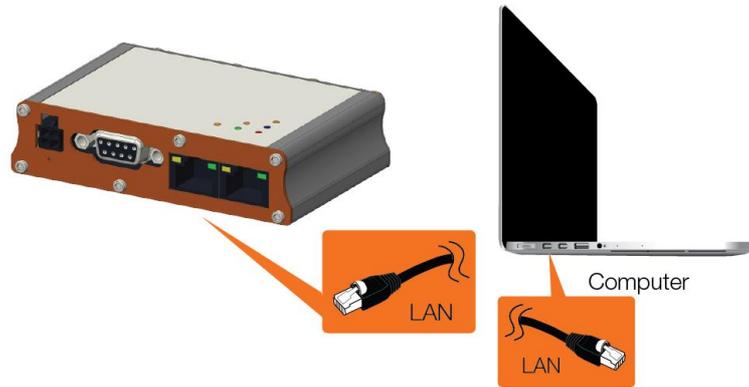
Note: Dual cellular antennae improve data throughput/performance on cellular data transfer rate.



Cellular antenna selections base on frequency bands of cellular networks in individual countries, refer to **Section 3, E210 series compatible models** and **Section 8, Compatible Antenna**, or contact Maestro technical support <https://support.maestro-wireless.com>

Connecting the router to a computer

Connect an Ethernet cable between the LAN port of the Maestro router and a computer as shown below, or refer to section 4.2 in Blue, **Ethernet ports**.



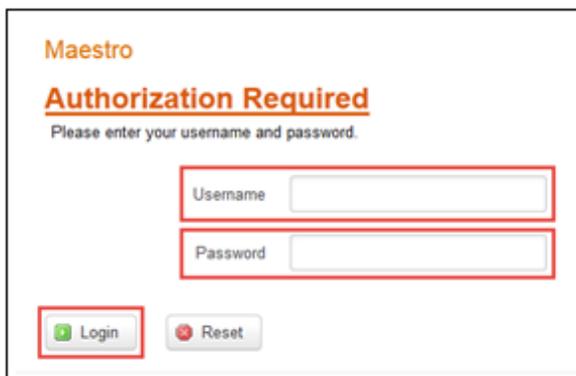
7.3 Software Configuration

Open a web browser, use the below default LAN IP address;

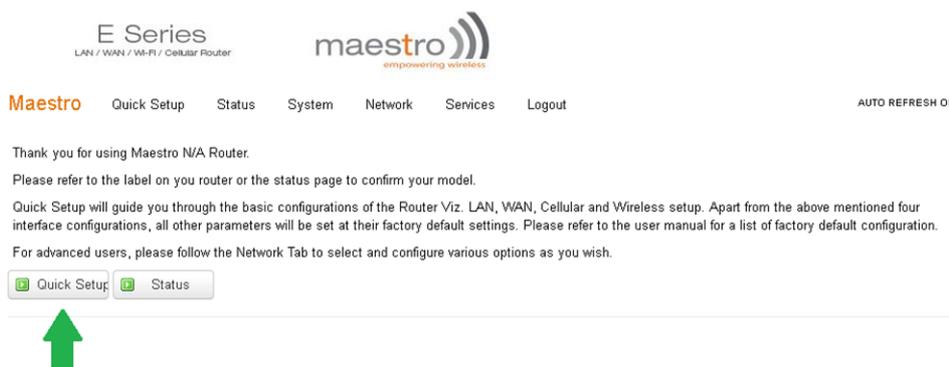
| Parameters | Details |
|------------------|-------------|
| IP Address (LAN) | 192.168.1.1 |
| Username | admin |
| Password | admin |

Note: Username and password are both case sensitive.

Enter the above default login credentials when the below appears on the web browser;



Click **Quick Setup** as shown below to bring the **Network Setup** page;



Network Setup page;



If default settings need to be changed, settings can be manually configured for **LAN, WAN, Cellular** and **Wi-Fi**, then you can click **Save & Apply** to store the configuration.

In **Cellular**, all fields depend on SIM cards provider/cellular network operator, enquire with them for authentication credentials, if needed.

After all of above procedures, cellular connection should be established in about one minute time with adequate signal reception (if the default setting is used).

To see the status of the cellular connection, from the pull-down menu at the top, click **Status** and scroll down to **Cellular** as shown below;

E Series
LAN / WAN / Wi-Fi / Cellular Router



Maestro
Quick Setup
Status
System
Network
Services
Logout
AUTO REFRESH ON

Cellular

| | | |
|-----------------|-----------------|---|
| Cellular Data | Connected |  |
| Signal Strength | 17 | |
| Network Status | Registered | |
| Operator Name | CMHK | |
| Operator Number | 45413 | |
| Operator Type | 3G | |
| Roaming Status | HOME | |
| SIM Status | READY | |
| IMSI | 454120414465673 | |

8 Compatible Antenna

Wi-Fi antenna

5dBi gain
Peak gain: 3.8dBi@2.4GHz ~2.5GHz
RP-SMA(M), hinged
RoHS Compliant

WWAN antenna

2dBi gain (minimum)
Operating frequency in the used LTE bands
SMA, hinged
RoHS Compliant

For further support on Maestro products, please visit Maestro support website,
<http://support.maestro-wireless.com/>