



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 /8/3/4/2/1	2G ^{A2}	5/8/3/2	same as E214G's	TBD	Sep. '18	E213
E214	EMEA	LTE cat. 1	28/20/8/3/1/7	3G ^{B2} ; 2G ^{A3}	8/1; 8/3		CE ⁵ , GCF		E214#02
	Australia & New Zealand; Thailand		28/5/8/3	3G ^{B2}	5/8/1	*	RCM; NBTC	Jul. '18	E214#358S#158
	China; Indonesia; India		5/8/3/1/TDD 40/41 ^d	3G ^{B2} ; 2G ^{A3}	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 ⁶ , Verizon Wireless		E214G#01
	AT&T Wireless, T-Mobile USA, Sprint		12 ^a /5/4/2	3G ^{B2}	5/4/2		ISED; FCC ⁶ , PTCRB, AT&T Wireless		E214G#00
E215	EMEA, [most of] Asia Pacific	3G ^{B2}	8/1	2G ^{A2}	8/3	*	CE ⁵ , GCF; WPC	Jul. '18	E215#02
E218	Asia Pacific	LTE cat. 4	28/5/8/3/1/7	3G ^{B2}	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

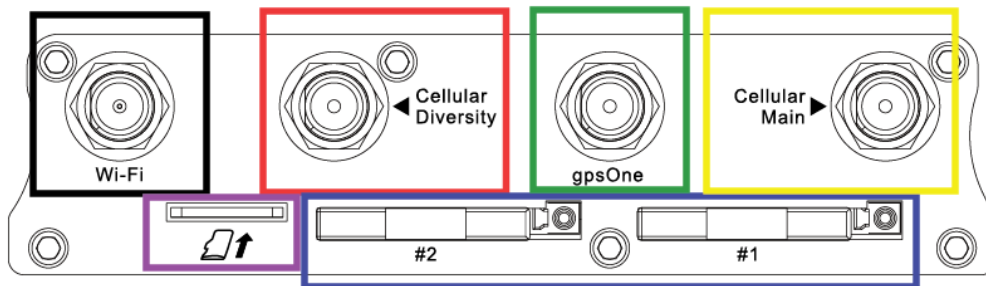
07 August 2018

4 Product overview

4.1 General specification

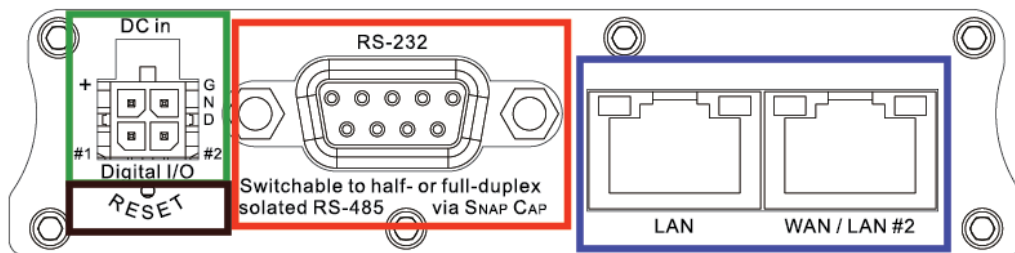
Casing:	Brushed Aluminum
Dimensions:	92x57x22(mm)
Weight:	150g (approx.)
Operating temperature:	-20°C ~ +60°C; up to 95% R.H.
Storage temperature:	-40°C ~ +85°C; up to 95% R.H.
Flash memory (SPI):	32MB
RAM (DDR2 SD-RAM):	128MB
Ethernet LAN & WAN:	10/100BASE-T
Wi-Fi:	IEEE 802.11b/g/n 2.4GHz
GPS:	IZat™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

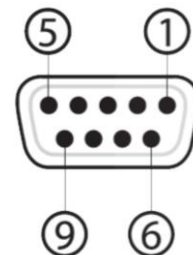
Digital Input: 0~1V dc as low
1~36V dc as high

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



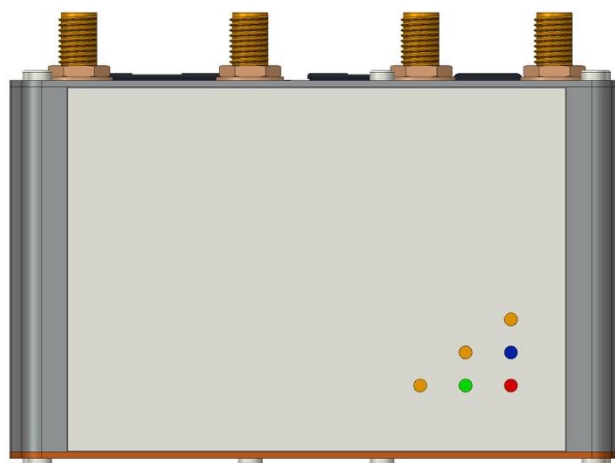
Blue – Ethernet ports:

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.

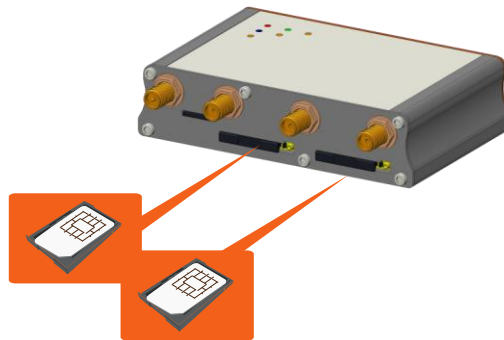
→ Select Ethernet from the adapters list on the left.

→ Set the Configure IPv4 drop-down to Using DHCP

7.2 Connecting the E210 router

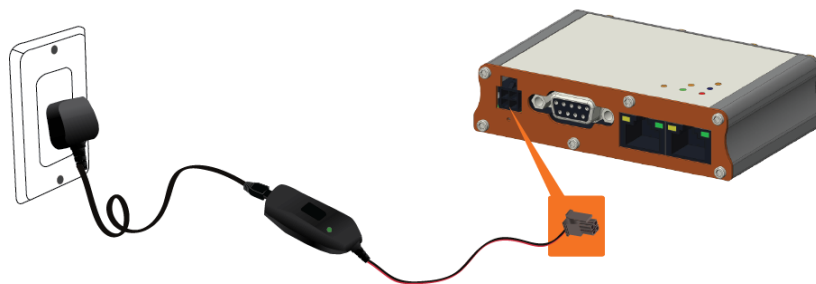
Inserting SIM cards

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.

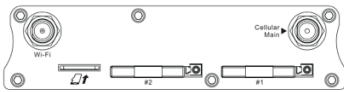
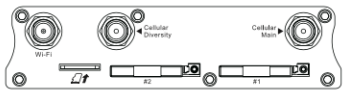
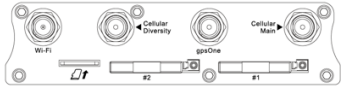


Connecting the AC power

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	

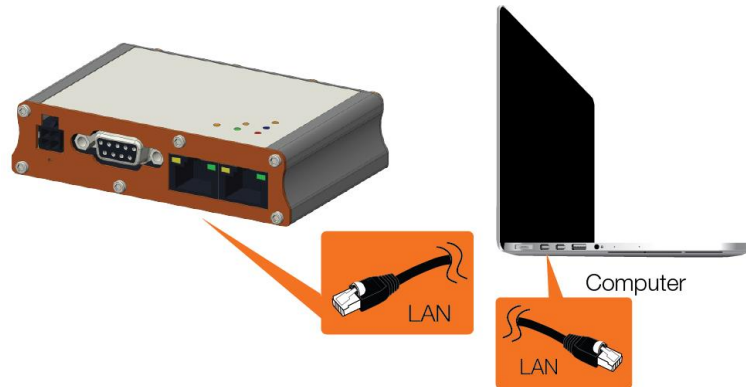
Note: Dual cellular antennae improve data throughput/performance on cellular data transfer rate.



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**.



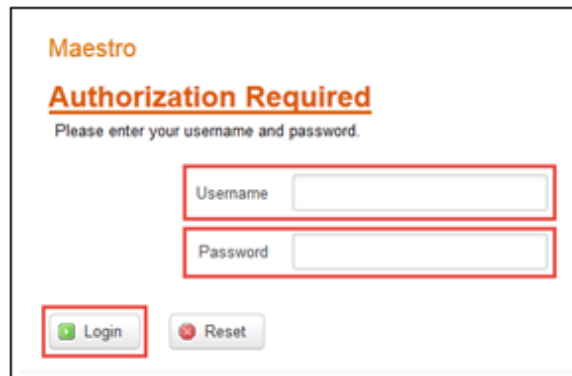
7.3 Software Configuration

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

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

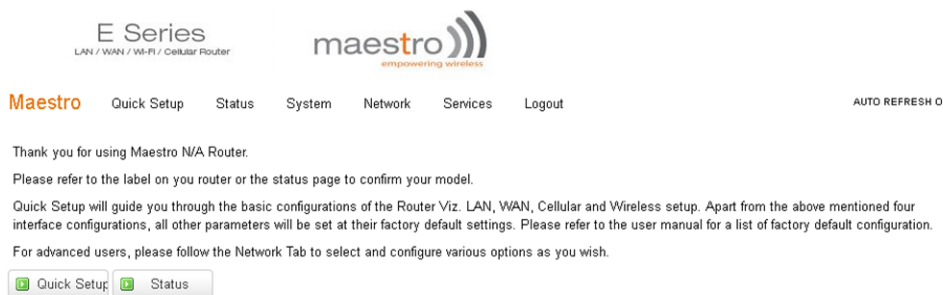
Note: Username and password are both case sensitive.

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



The image shows the Maestro web interface's login screen. At the top, it says 'Maestro' in orange, followed by 'Authorization Required' in bold orange. Below this, it says 'Please enter your username and password.' There are two input fields: 'Username' and 'Password', both outlined in red. At the bottom left, there is a 'Login' button with a green arrow icon, also outlined in red. To its right is a 'Reset' button with a red circular icon.

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



The image shows the top section of the Maestro web interface. It includes the 'E Series' logo and the 'maestro' logo with the tagline 'empowering wireless'. Below the logos is a navigation bar with links: 'Maestro', 'Quick Setup', 'Status', 'System', 'Network', 'Services', and 'Logout'. To the right of the navigation bar is a link for 'AUTO REFRESH ON'. Below the navigation bar, there is a message: 'Thank you for using Maestro N/A Router. Please refer to the label on your router or the status page to confirm your model. Quick Setup will guide you through the basic configurations of the Router Viz. LAN, WAN, Cellular and Wireless setup. Apart from the above mentioned four interface configurations, all other parameters will be set at their factory default settings. Please refer to the user manual for a list of factory default configuration. For advanced users, please follow the Network Tab to select and configure various options as you wish.' At the bottom of this section, there are two buttons: 'Quick Setup' and 'Status', both with green arrow icons. A green arrow points to the 'Quick Setup' button.

Network Setup page;




The screenshot shows the 'Network Setup' page of the Maestro interface. At the top, there is a navigation bar with links: Maestro, Quick Setup, Status, System, Network, Services, and Logout. The 'Network Setup' title is prominently displayed. Below the title, the page is organized into sections: Local Network, WAN, Cellular, and WiFi. The 'Local Network' section contains three input fields: 'IPv4-Address' (192.168.1.1), 'IPv4-Netmask' (255.255.255.0), and 'IPv4-Gateway'. The 'WAN' section has a 'Protocol' dropdown menu set to 'automatic'. The 'Cellular' section includes four input fields: 'APN' (msedclgprs.com), 'PIN', 'Username', and 'Password'. The 'WiFi' section features an 'Enable' checkbox (checked), an 'SSID' input field (admin), and a 'Password' input field (masked with asterisks). At the bottom right, there are three buttons: 'Save & Apply', 'Save', and 'Reset'.


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;





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/>