Charter WiFi 6E MDU Router User Guide

- 2023/3/23

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1 Hardware Setup

1.1 Getting To Know Your WiFi 6E Router

This product is designed for the In-Home and Business WiFi services for Spectrum customers. With a custom industrial design, this WiFi Router can be placed in a central location to deliver superior WiFi network coverage.

The WiFi Router provides:

- 1. High performance:
 - Qualcomm IPQ9574A up to 2.2G/2GB DDR4 RAM.
 - Tri-Band wireless up to AX11000 (2.4G * 4 + 5G * 4 + 6E *4).
 - Three 2 x 2.5 Gigabit LAN Port + One 10 Gigabit WAN Port.
- 2. High security: Firewall/VPN supported.
- 3. Ease of setting up: Friendly wizard, visual setup & maintenance (Basic Mode),

complete functions (Advanced Mode).

The WiFi Router is an ideal choice for residential and SMB (Small Business) users who

can enjoy a variety of wireless applications and services.

This chapter contains the following contents:

- Unpacking the WiFi Router's Box
- Hardware Features
- Positioning Your WiFi Router

1.2 Unpacking the WiFi Router's Box

Open the box and remove the WiFi Router, PoE injector, Quick Start Guide, Ethernet

cable, Bracket, and Label Plaque









WiFi Router

PoE injector

Ethernet cable Bracket

label plaque

Figure 1. Check the box contents

The box contains the following items:

- WiFi Router
- Bracket
- PoE injector
- Quick Start Guide
- Ethernet cable
- Bracket and Label Plaque

If any items are missing or damaged, please contact Charter Communications. Please

keep the original packaging materials in case you need to return the product for

repairing.

1.3 Hardware Features

Before you cable your router, take a moment to become familiar with the front and

rear panels. Pay particular attention to the LEDs on the front panel.

1.3.1 Front Panel

The WiFi Router front and back panels feature the status LED and buttons as shown in

the following figures.

Figure 2. WiFi Router front view



Front panel LED status

• Off

Device off.

•	Blue Blinking with 600ms interval	Booting up
•	Blue Breathing with 5s interval	Connecting to the Internet
•	Blue Solid	Connected to the Internet.
•	Red <i>Breathing</i> with 5s interval	Connectivity issues (no Internet connection).
•	Red and Blue cycle	Updating firmware (or any
	breathing with 2.5s interval	scenario where device must not be
		restarted).
•	Red Solid	Critical issues (hardware or otherwise).
		4

1.3.2 Rear Panel

The Ethernet and buttons are shown in the following figure.



Figure 3. WiFi Router rear view

- **Factory Reset (Reset)**: Press and hold the Reset button for over 5 seconds, the WiFi Router will reset to factory setting.
- Ethernet (LAN) Port: Connect network cables into these ports to establish LAN connection.
- Internet (WAN) Port: Connect a network cable into this port to establish WAN connection.
- **Power**: Use the bundled AC adapter to connect your WiFi Router to a power source.
- 1.4 Positioning Your WiFi Router.

The WiFi Router lets you access your network from virtually anywhere within the operating range of your wireless network. However, the wireless communicating

distance varies significantly due to placement of the WiFi Router. For example, the thickness and number of walls the wireless signal passes through can affect and limit the range. For best results, WiFi Router is likely to be placed as follow:

- Near the center of the area where your computers and other devices operate, and preferably within line of sight to your wireless devices.
- Accessible to an AC power outlet and near Ethernet cables for wired computers.
- In an elevated location such as a shelf, keeping the number of walls and ceilings between the WiFi Router and your other devices to a minimum.
- Away from electrical devices that are potential sources of interference. Equipment that might cause interference includes ceiling fans, home security systems, microwaves, computers, the base of a cordless phone, or a 2.4 GHz cordless phone.

Away from any large metal surfaces, such as a solid metal door or aluminum studs. Large expanses of other materials such as glass, insulated walls, fish tanks, mirrors, brick and concrete can also affect your wireless signal.

1)Mount the wall bracket to drywall using provided wall anchors and screws.

6



For Host



For Walls



The suggested dimensions for wall-mount screws



2)Align the wall bracket posts with to the a slot located on the back of the unit .



3)Slide device down to seat the device on to the bracket .



4)Tighten security locking screw located on bottom of device.



2 Sign-In Your WiFi Router Web GUI.

The WiFi Router contains an intuitive graphical user interface (GUI) based on web, which lets administrator easily configure its features through a web browser.

2.1 Sign-In.

- Open a web browser, then key in the WiFi Router's default IP address: <u>https://192.168.1.1</u>, and click Enter key in the keyboard;
- On the sign in webpage, type in its Username and password: root (R3MOT3ACC3\$\$), then click Login button.

OpenWrt					
Authorization Required Pease enter your usemane and password.					
Username	toot				
Paseword	R3MOT3ACC355				
	Login Possit.				

3. Configure wireless.

3.1 Click Network menu then click Wireless.



3.2 Device Configuration change wireless Mode , Channel , Width.

evice Configuration	
General Setup Advanced Set	ings.
Status	Mode: Master SSID: OpenWit dBim Wreless is not associated
Wreless network is enabled	Disable
Description frequencies	Mode Band Channel Width
Observed notionary	
Maximum transmit power	driver default - Current power: unknown
	Specifies the maximum transmit power the wireless radio may use. Depending on regulatory requirements and wireless usage, the actual transmit power may be induced by the driver.

3.3. Interface Configuration change ESSID.

Interface Con	nguratio	1 And the second restriction		
General Setup	Avenue 24001	nly MAG-Phile Advanced	2400 ga	
	Mode	Access Point	~	
	ESSID	OpenWit.		
	Notwork.		t -	
		Choose the network(s) y new network.	ou want to attach to this wireless interface or fill out the custom field to d	lefine a

3.4 Wireless Security change Encryption, Cipher and Key.

General Setup Wireless Secur	rity MAC-Filter Advanced Se	dlings	
Encryption	WPA2-PSK (strong security)	*	
Cipher	Force CCMP (AES)	*	
Key			*

3.5 Wireless Overview click Save&Apply button.

Network	MAC-Address	Heat	Report / Notice		NK Kalo / TX Hale	
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- 4. Configure WAN
- 4.1 Network select Interfaces WAN click Edit .

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matters (State)	£		
Interfaces			
528 6 ² (22 8 8 8 8 8) 5100	Protocol: Stretic address Optime: 16H Silve Hs MAC: 60 28 71 12:208 00 ROI: 14.63 MD (161600 Phos.) 750 27 Bit MP (10000 Phos.) Phot: 107,100 3.1024 IPv4: 107,100 3.1024	Restart Stop 10	Bable
8955 87 (22) 10 1000	Producted: OFICP citizet Updates: TR den Ga MAC: 50:73 T1 12:00:07 RX: 103:53 H 400 (1122 Pites.) TX: 107:00:492 (1112 Pites.) UPvd: 102:102:77.40234	field by	n Ovin
United B B 20-101	Prospeciel: 12HS2Pv6 cliwst MAXC: 401 74 73 12 (26/10P ROI: 12H 36 HS (1122 Piles) TH: 18H 30 HS (1122 Piles)	Restort the	. Debte

4.2 Protocol select WAN type.



4.3 Interfaces click Save&Apply button.



5. Configure BLE

Execute the cpcd -b ecdh command to generate the key file: (Except for burning DUT FW or IOT FW again, there is no need to bind the key again after binding, and cpcd can be started directly)

cpcd –b ecdh



Execute cpcd & run cpcd in the background (There is no need to restart after the CPCD has been started)

cpcd &

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6. Configure Thread

Use the pc-side app: simplicity studio v5, which can be downloaded on the silabs official website (<u>https://cn.silabs.com/developers/simplicity-studio</u>)

Open simple studio v5, and connect the XG24 EVB board that has burned ot-cli-mtd.s37 to the PC, and simple studio v5 will display the following interface :

Water Court and then be been an	The second diversion of the se
And the second second	Welcome to Simplicity Studio
	Get Sharted Shirts a control of device or any 21 for your device on an analysis down or failed, wanted program, and device
	Second second
	Manual Property
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Click start to connect to the XG24 EVB board, and select the option indicated by the arrow

below :

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1 Marriel and a state of the st	EFR30x024 2.4 GHz 20 dBm RB, Win	rizza Pyo Kit Mamboard (ID: 0004402836	47)
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Select the Device Console tool and click LAUNCH:

	EFR32xG24 2.4 GHz 20 dBrc RB, Wireless Prn Kit Meleboard (ID: 000440303647)					
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Select Serial 1 and click enter to enter the thread cli command line :

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Join to the Thread network through the networkkey of the leader device :

> dataset networkkey 3f976dd3411b0dda22c642c1a4196480

3 dataset networkkey 3f976dd3411b0dda22c642c1a4196480 Done

Submit Activity Dataset :

> dataset commit active

Enable thread interface and start thread :

> ifconfig up

> thread start

```
> ifconfig up
Done
> thread start
Done
```

After joining, check whether the device has received the complete active operation dataset

through the dataset active command

> dataset active

```
> dataset active
Active Timestamp: 1
Channel: 18
Channel: Mask: 0x07fff800
Ext PAN ID: 9cb7d0b75532ce7a
Mesh Local Prefix: fdb6 f2ba 56c5:7340::/64
Network Key: 3f976dd3411b0dda22c642c1a4196480
Network Kame: OpenThread-1494
PAN ID: 0x1494
PSKc: 79f49406343c02ca96bb160ce7876b91
Security Policy: 672 onrc
Done
```

View device status :

> state

```
> state
child
Done
```

The status of the device joining the network is child. If the status is detached after joining,

please check later. There will be connection delay.

Get the IP address of the child device :

```
> ipaddr
fdb6:f2ba;56c5:7340:0:ff:fe00:f001
fdb6:f2ba;56c5:7340:e2f7:f8a9.63b:37cb
fe80:0:0:0:a079;a689:bac3:fba4
Done
```

7. Regulatory Compliance Notices

Class B Equipment

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 or more 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.

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.

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.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet.

Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems. This device is restricted for indoor use.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 52cm between the radiator & your body.

- This equipment is to be connected to Power in PoE networks which would be not routing to outside plants.

- Power cord shall be connected to a socket-outlet with earthing connection.
- This product is intended to be supplied by a UL Listed Power Adapter or DC power source marked `L.P.S' or `Limited Power Source', rated 12Vdc, 3 A and Tma 40°C (min.). If you require further assistance, please contact your Askey Computer Corp representative.
- This product is intended to be supplied by a UL Listed PoE Injector or DC power source marked `L.P.S' or `Limited Power Source', rated 56Vdc, 0.714A and Tma 40°C (min.). If you require further assistance, please contact your Askey Computer Corp representative.

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