

# BRD21 Quick Start Guide

OpenThread Border Router/OpenThread Mesh Extender



## MMB Networks

25 Adelaide St. E, Suite 400  
Toronto, Ontario, Canada  
M5C 3A1  
(416) 636-3145

### FCC

Note: 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 not 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: (1) reorient or relocate the receiving antenna. (2) Increase the separation between the equipment and receiver. (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. (4) Consult the dealer or an experienced radio/TV technician for help.

Federal Communications Commission (FCC-US): 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.

To comply with FCC RF Exposure requirements, users of this device must ensure that the device be installed and/or configured to operate with a separation distance of 20cm or more from all persons. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### ISED

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The radiated output power of this device meets the limits of FCC/ISED Canada radio frequency exposure limits. This device should be operated with a minimum separation distance of 20 cm (8 inches) between the equipment and a person's body.

La puissance de sortie rayonné de cet appareil est conforme aux limites de la FCC/ISDE Canada limites d'exposition aux fréquences radio. Cet appareil doit être utilisé avec une distance minimale de séparation de 20 cm entre l'appareil et le corps d'une personne.

### European Health and Safety Compliance (CE)

The BRD21 device has been tested against the relevant harmonized/designated standards and are in conformity with the essential requirements and other relevant requirements of the EMC-Directive (2014/30/EU) and the Radio Equipment Directive (RED) (2014/53/EU).

The products are entitled to carry the CE Mark and a formal Declaration of Conformity (DoC) is available at the product web page which is reachable starting from <https://www.mmbnetworks.com/BRD21>.

### UK Conformity Assessment (UKCA)

The BRD21 device has been tested against the relevant harmonized/designated standards and are in conformity with the essential requirements and other relevant requirements of SI 2016 No. 1091 ("The Electromagnetic Compatibility Regulations 2016") and SI 2017 No. 1206 ("The Radio Equipment Regulations 2017").

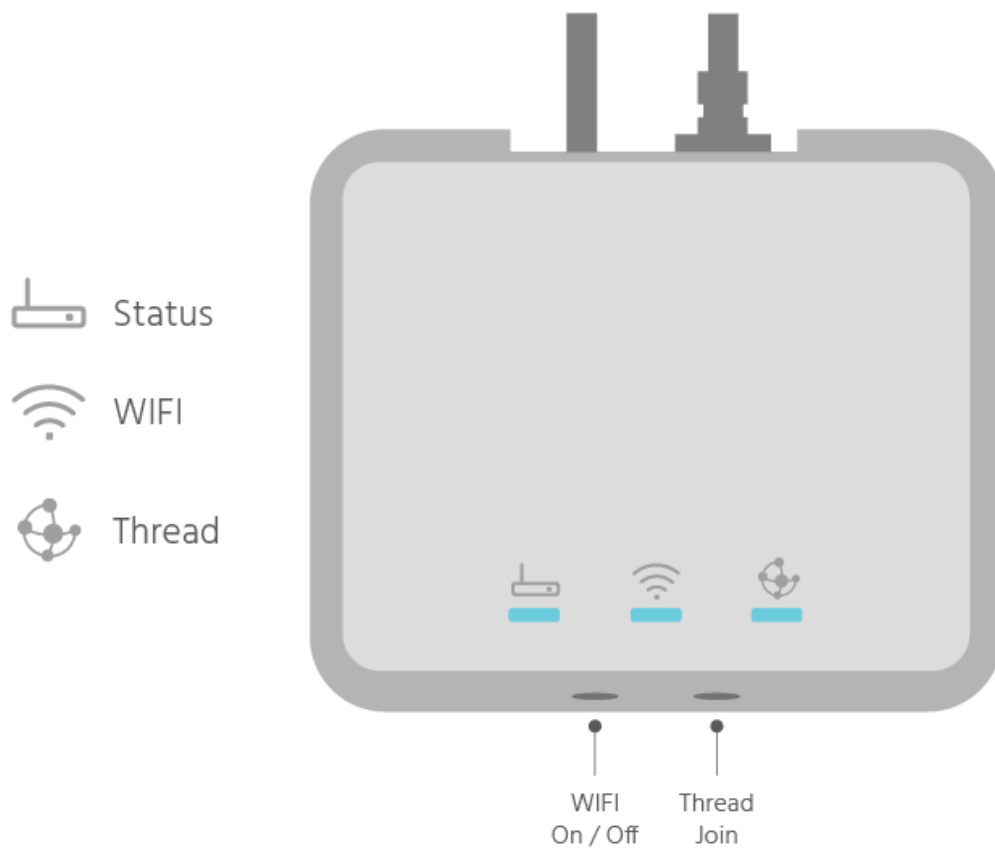
The products are entitled to carry the UKCA Mark and a formal Declaration of Conformity (DoC) is available at the product web page which is reachable starting from <https://www.mmbnetworks.com/BRD21>.

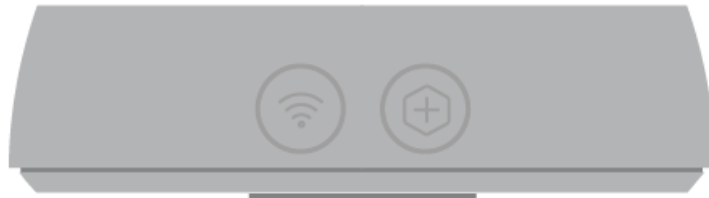
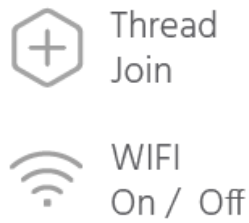
## Box Contents

1. BRD21 Device
2. USB-C Power Adapter

## Getting Started

### BR21 Device Overview





### LED Patterns

Status LED	WIFI LED	Thread Network LED
Startup (Fast Flashing Green)	Switched ON (Solid Green)	Not Commissioned (Solid Yellow)
Normal Operation (Solid Green)	Switched OFF (Solid Yellow )	Joining (Flashing)
	Traffic (Fast Flashing Green)	Commissioning Mode (Fast Flashing Green)
		Network Lost (Solid Red)

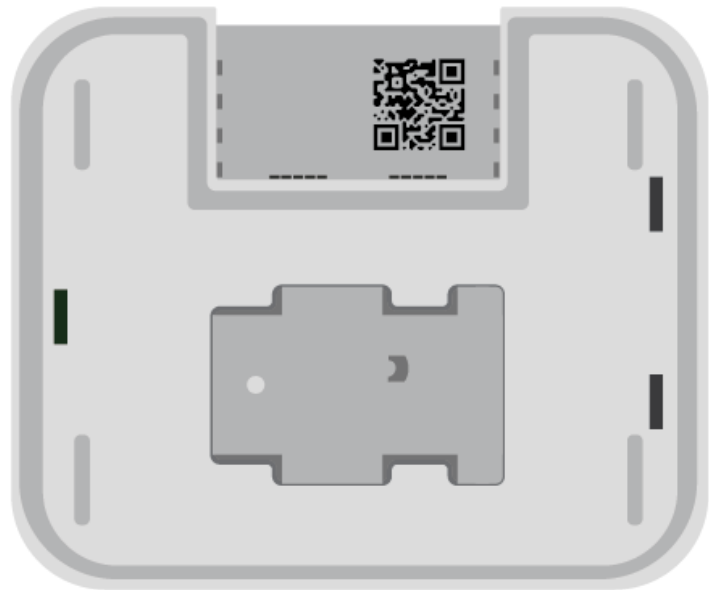
### Button Patterns

WIFI ON/OFF Button	Thread ON/OFF Button
Factory Reset (Press > 20 seconds)	Start Thread Join (Toggle: Press < 2 seconds)
WIFI ON/OFF (Press 5-20 seconds)	

Full LED and Button pattern specifications can be found at [MMBNetworks.com/BRD21](http://MMBNetworks.com/BRD21)

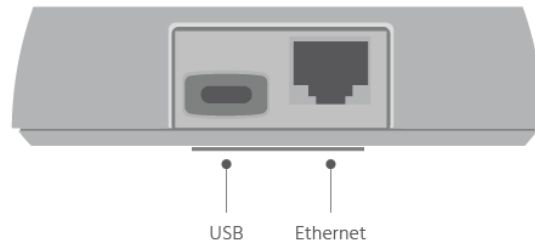
## Setup BRD21 OpenThread Border Router

1. Download and set up a Mobile Commissioning App on your device.
2. Using the mobile commissioning App, scan the WIFI QR Code on the underside of the BRD21



Scan QR Code under the BRD21

3. On the rear of the BRD21, connect the Ethernet Cable from your LAN Router and then connect the USB-C- Power Adapter. Wait for the Status LED to turn Solid Green..



4. Press and Hold the 'WIFI ON/OFF' button for 5-20 seconds to start the BRD21 access point. The WIFI Status LED will turn solid green once the access point is available.
5. Using your mobile device WIFI, search for the BRD21 SSID and connect.
6. Use the passphrase scanned earlier to connect and access the BRD21 using your mobile device browser by going to **192.168.4.1**
7. Go to [MMBNetworks.com/BRD21](https://MMBNetworks.com/BRD21) to learn more about the BRD21 and how to connect to your Thread network.

### Setup BRD21 OpenThread Mesh Extender

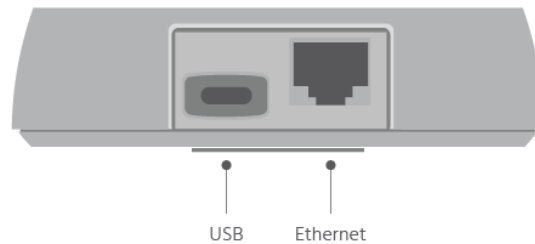
1. Download and set up a QR-Code Reader on your mobile device.
2. Using the reader, scan the QR Code on the front of BRD21.



3. Upload the TME's device's Thread joiner credentials to the BRD21 Thread Border Router's WebUI. If not using a BRD21 Thread Border Router enter the BRD21 TME's

Thread joiner credentials into the target Thread network's on or off mesh commissioner.

4. On the rear of the BRD21, connect the USB-C- Power Adapter. Wait for the Status LED to turn Solid Green.



5. Press the 'Thread ON/OFF' button. The 'Thread Network' LED will flash.
6. The TME's 'Thread Network' LED will light solid when joining is complete.
7. Verify TME device has been commissioned onto the network via the Edge device.
8. Go to <https://mmbnetworks.com/> to learn more about the BRD21 and how to connect to the Siemens Edge Device.

## Mounting Instructions

**Note: The BRD21 should be commissioned onto the Thread network before mounting if access to the BRD21 buttons will be restricted once installed.**

### What you'll need

1. Drill or Screwdriver
2. #4 Flat Head Screws
3. Wall Plugs (optional, depending on material mount is affixed to)
4. Safety and Protective Equipment

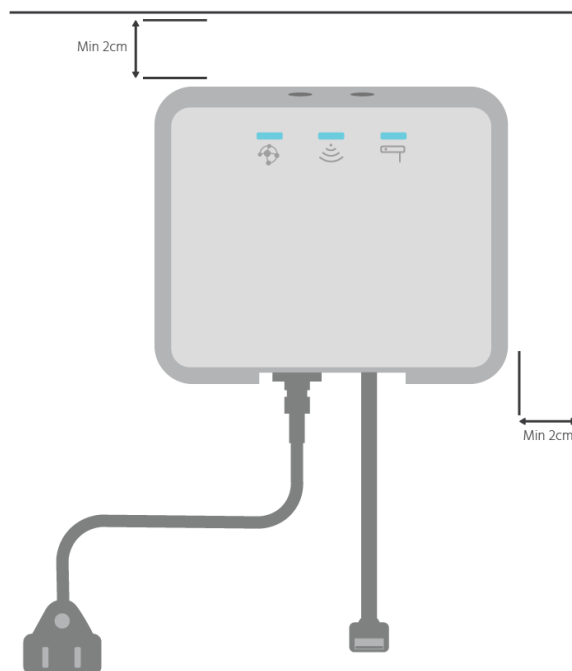
### Installation

The BRD21 can be mounted easily and securely.

As a wireless networking device, some considerations for placement should be taken to give the best possible range and performance of your Thread networking devices.

### Placement and orientation

The BRD21 can be mounted on walls or ceilings. The ideal orientation is vertically on a flat wall, with Power and Ethernet cables facing down. A clearance of 2cm on all sides should be maintained.

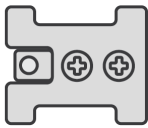




The BRD21 should:

1. Not be installed in a cabinet or metal container.
2. Not be installed behind walls or other obstructions which would interfere with line of sight to other Thread devices on your network.
3. Not be installed low to the ground
4. Be installed in a central location which offers best coverage for devices in the premise.
  - a. BRD21 Repeater devices can be added to your Thread network to improve network coverage.
5. Not be installed on rough or uneven surfaces.

### Installing The Mounting Bracket

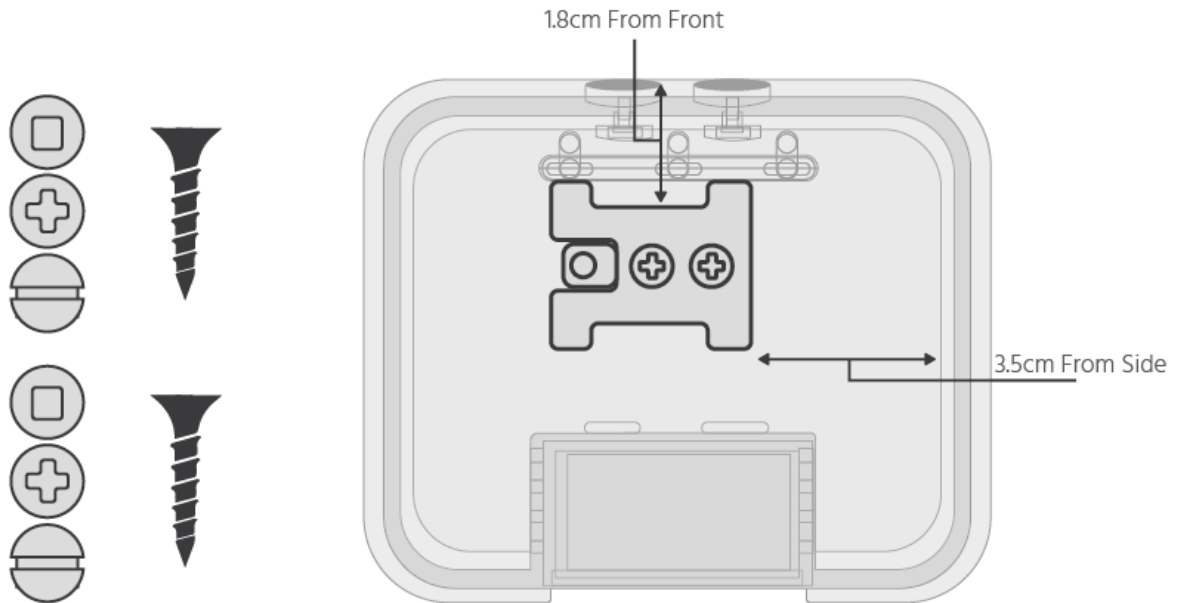


The Mounting Bracket is installed using 2 x #4 Flat Head Screws.

All safety precautions should be taken by you before installing the mounting bracket.

When choosing a location for the mounting bracket, ensure final placement of the device is not obstructed.

Please ensure the mounting bracket is installed with enough clearance for the BRD21 to slide onto the mounting bracket. Final placement of the BRD21 in respect to the Mounting bracket can be seen below.



**Caution: Do not overtighten screws. Screws must be flush with the mounting bracket. # 4 Flat Head screws only. The mounting bracket should be level and installed flush to the wall or ceiling surface material.**

### Attaching BRD21

Once the mounting bracket is correctly installed, and with Ethernet and Power cables connected to the BRD21, slide the BRD21 onto the bracket from left to right to mount..

