

# MESH-2100-GE

## Quick Installation Instructions

Document Number: 830-04383-01

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### Package Contents:

- 1 x MESH-2100-GE
- 1 x Quick Install Guide
- 1 x Power supply



## Installation

For installations with more than one MESH-2100-GE, select one unit to be used as the main MESH controller and follow the instructions presented on the current document.

### 1. Mounting

The MESH-2100-GE may be mounted on flat surfaces such as a desktop. The MESH-2100-GE is equipped with an extendable base to enhance stability.

### 2. Connect Power

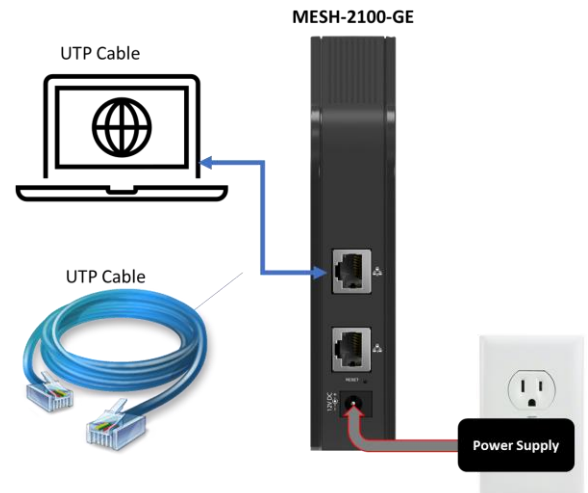
- Plug the round two pin 12V DC power connector of power converter into the MESH-2100-GE power port
- Plug the input of power converter into a live AC outlet
- Verify that the POWER LED on the MESH-2100-GE is solid white indicating local power is on and voltage is good

See **MESH-2100-GE LED Behavior** for a complete description of the LEDs.

### 3. Configuring SSID and Wi-Fi Key (Optional)

This step is optional. Each MESH-2100-GE comes with a set of default Wi-Fi SSID and passphrase located on the bottom information label. If using the defaults, step 3 (this step) may be skipped.

- Power up the MESH-2100-GE as described in the previous step, **Connect Power**. This is the main MESH controller
- Use a UTP cable between MESH-2100-GE Ethernet ports and a PC Ethernet port

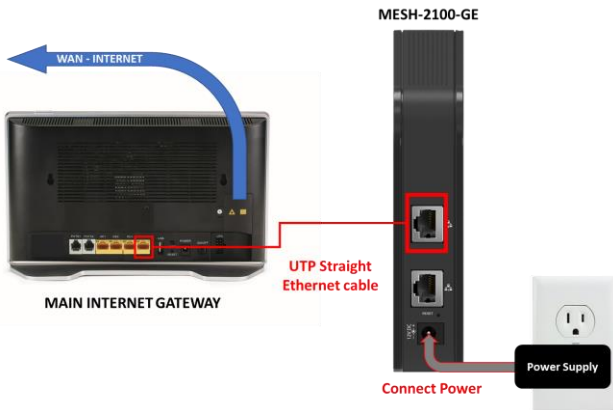


- Configure a fixed IP address on your PC, for example 192.168.1.101 (for detailed instructions refer to your operating system documentation; for Windows OS follow these instructions <https://support.microsoft.com/en-us/help/15089/windows-change-tcp-ip-settings>)
- Open a web browser and input `http://192.168.1.100`
- When prompted for credentials enter "admin" as user and for password "DZSXXXXXXXX" where "XXXXXXXX" is the 9-digit serial number found on the unit label
- Navigate to 5GHz Wi-Fi > Config
- Change **SSID**
- Change Password
- Click **Save**
- If needed repeat for **2.4Ghz Wi-Fi**

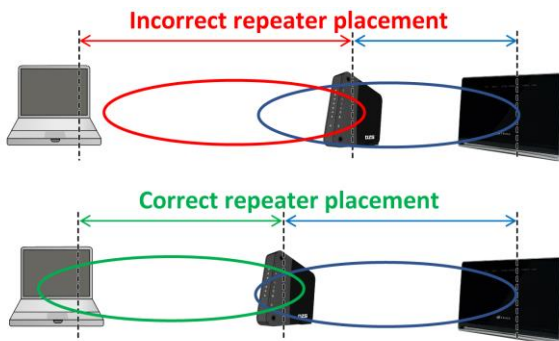
**NOTE:** by default, when changing the configuration of the 5GHz radio, the configuration of the SSID and passphrase will be replicated on all radios and all access points forming part of the MESH ecosystem.

#### 4. Setting Up Your MESH Network

The first MESH-2100-GE is the MESH controller. This procedure assumes that the SSID and the Wi-Fi Key have been configured to match on all MESH-2100-GE devices. If the SSID and Wi-Fi keys for all the MESH devices do not match, follow the instructions in [Configuring SSID and Wi-Fi Key](#).



- Connect the MESH-2100-GE acting as controller to any unused Ethernet port on your home gateway using CAT5E or CAT6 UTP cable; this will become the MESH controller automatically
- Power on the rest of the available MESH-2100-GE devices
- Place each MESH-2100-GE in a strategic location where the signal from the main gateway is still strong enough – For maximum performance the MESH LED should remain SOLID GREEN. If the LED remains AMBER this is an indication that MESH link is still ACCEPTABLE, but signal level is either stronger than it needs to be or not strong enough to reach maximum performance. An ACCEPTABLE MESH link is still capable of delivering user bandwidth in the order of 200Mbps.
- As a rule of thumb, start by placing the MESH-2100-GE halfway between the main home gateway and the location that needs better Wi-Fi coverage. While doing so, make sure that the MESH LED remains solid as this is an indication that the MESH connection with the Master has been established.



When the full MESH network is operating properly, All MESH-2100-GE devices will have its MESH LED solid GREEN or solid AMBER. A solid RED MESH LED indicates that the MESH link quality is too low. While the LED is solid, even if its RED, the MESH link is active. A solid RED MESH LED is still good for internet browsing, email, etc. but Realtime applications like voice and video might suffer from low performance.

For a single MESH-2100-GE (when no remote agents are used) one device solution the indication of proper operation will have the power LED solid white and the MESH LED blinking.

- To connect to the Wi-Fi MESH network, use the Wi-Fi SSID and Password information located in the bottom label on your MESH-2100-GE device acting as controller.

If you want to change the SSID for the MESH Network log into the controller unit and change the 5GHz Wi-Fi SSID and Password, this configuration will be propagated automatically to 2.4GHz and all remote MESH devices.

For instructions on how to change the SSID and Password refer to [Configuring SSID and Wi-Fi Key](#).

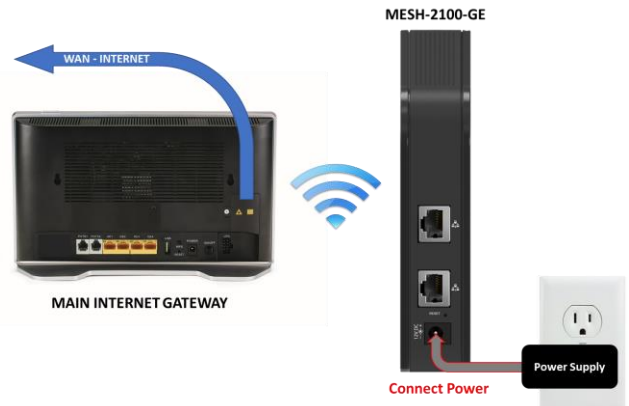
**NOTE:** When building your MESH network consider that the MESH-2100-GE acting as remote agent(s) can also utilize a wired or a wireless backhaul connection. Wired connectivity, if available, should always be the preferred method since it maximizes the performance of the Network as a whole.

#### Universal Repeater Mode Configuration

Universal Repeater Mode does not utilize the repeater MESH capabilities. Instead, the Wi-Fi Extender is configured in repeater mode for 5GHz and access point for 2.4GHz. Universal Repeater Mode operation may be used with any Wi-Fi gateway.

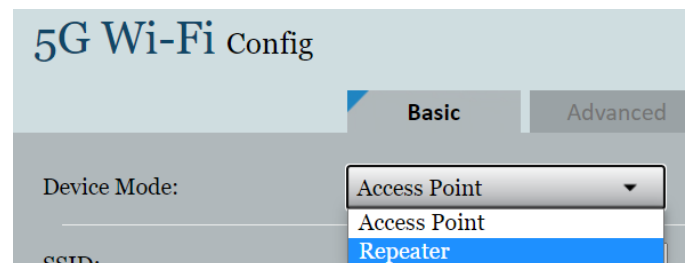
##### 1. Universal Repeater Mode with Wireless Backhaul

The MESH-2100-GE supports operation as a repeater using its 5GHz radio for both backhaul connectivity and access point (repeater mode).



To configure the MESH-2100-GE in universal repeater mode with wireless backhaul:

- Go to 5G Wi-Fi > Config:
- Set Device Mode as Repeater



MESH-2100-GE will reboot and return in repeater mode.

Once the device finishes booting configure the Wi-Fi Network that devices will use to connect to the Repeater (optional):

- In SSID enter the name of the Wi-Fi Network (e.g. "Repeater\_SSID")
- From Channel select the desired 5GHz channel (default recommended: Auto)
- From Encryption select the security encryption system to use on the Wi-Fi Network (default recommended: WPA2-AES)
- In Password enter the shared passphrase used to connect to the Wi-Fi Network (e.g. 87654321)

### Manual SSID Creation

- In STA SSID enter the name of the Wi-Fi backhaul network, for the current example "Main\_SSID"
- In STA Encryption select the security encryption system to use on the Wi-Fi backhaul network
- In STA Password enter the shared passphrase used to connect to the Wi-Fi backhaul network, for the current example "12345678"

After the 5GHz configuration is done the MESH-2100-GE should be ready to accept devices on the 5GHz radio.

## 2. Universal Repeater Mode with Wired Backhaul

When an Ethernet connection is available to use as backhaul for the MESH-2100-GE, the devices that connect to the repeater will exhibit the best Wi-Fi performance.

- Connect the MESH-2100-GE to the Main Home Gateway

Plug a CAT5E or CAT6 UTP cable between the main Wi-Fi router or Home Gateway and one of the MESH-2100-GE Ethernet ports

- Connect a Device to the Repeater
- Use the Wi-Fi SSID and Password on your device information label to connect to the repeater.
- No more configuration is required.

If you wish to change the default SSID and Password, you may do so by following the procedure detailed in [Configuring SSID and Wi-Fi Key](#).

Next, Configure the Backhaul Wi-Fi Connection. This step configures the backhaul Wi-Fi connection between repeater and main home gateway for the 5GHz radio to act as a regular Wi-Fi Station.

There are two options for configuring the backhaul Wi-Fi connection:

- Select an SSID for scan
- Manual SSID Creation

### Select an SSID from scan

- Click **Scan AP** to select the SSID to be used for back-haul Wi-Fi. A pop-up window or tab will appear

No.	SSID	Mac Address	Channel	RSSI	Security
1	Zwifl	00:02:71:b7:b0:54	40	59	Yes
2	Zwifl	00:02:71:b7:b0:75	40	26	Yes
3	Zwifl	00:02:71:b7:b0:42	40	21	Yes
4	BHNTG168aG265A-5G	bc:64:4b:13:ac:1c	149	7	Yes

- Click the desired SSID
- If the desired SSID does not appear click **Rescan**
- Complete the **Passphrase** field

No.	SSID	Mac Address	Channel	RSSI	Security
1	Main_SSID	00:02:71:b7:b0:54	40	59	Yes
2	DZS-MESH-XXXX	00:02:71:b7:b0:75	40	26	Yes
3	DZS-MESH-XXXX	00:02:71:b7:b0:42	40	21	Yes
4	BHNTG168aG265A-5G	bc:64:4b:13:ac:1c	149	7	Yes

AP: Main\_SSID  
Passphrase: 87654321






- Click Connect

## Configuration of the 2.4GHz Wi-Fi Network

It is recommended to use the MESH-2100-GE with the same SSID and passphrase for better user experience. However, the 2.4GHz may be configured with a different SSID and passphrase than the 5GHz radio.

- Navigate to 2.4G Wi-Fi > Config:
- In SSID enter the name of the Wi-Fi Network, the recommended setting is to match the SSID name of the 5GHz radio (e.g. DZS-MESH-XXXX)
- From Channel select the desired 2.4GHz channel (default recommended: Auto)
- From Encryption select the security encryption system to use on the Wi-Fi network (default recommended: WPA2-AES)
- In Password enter select the shared passphrase used to connect to the Wi-Fi network, the recommended setting is to match the Password used for the 5GHz radio

**NOTE:** In order to configure 5GHz and 2.4GHz radios with different SSID, first configure the 5GHz radio, then configure the 2.4GHz radio.

	LED	Status	Description
		Off	
Blinking White			Device is booting
Solid White			Device is connected to power supply
	Solid White		WPS Pairing has been established
	Blinking White		Ongoing/active WPS process
	Off		WPS is not running
	Off		MESH Disabled
	<b>MESH Role Controller or MESH Role Remote Agent with wired connection</b>		
	Solid Green		MESH connected
	Blinking		MESH disconnected – searching
	<b>MESH Role Remote Agent with wired connection</b>		
	Solid Green		MESH Link Quality Excellent
	Solid Amber		MESH Link Quality Acceptable
	Solid Red		MESH Link Quality Low
		Off	
Solid White			Gigabit Ethernet Port connected

**CE Marking:**

When the product is marked with the CE mark on the equipment label, a supporting Declaration of Conformity may be downloaded from the DZS, Inc. World Wide Web site at [www.dzsi.com](http://www.dzsi.com).

**FCC 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 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.

**Note:** changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

This equipment complies with FCC 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. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

**Unique Identifier**

Trade Name: DZS  
Model No.: MESH-2100-GE

**Responsible Party – U.S. Contact Information**

DASAN Zhone Solutions, Inc.  
5700 Tennyson Parkway  
Plano, Texas 75024, USA  
Phone +1 510 777 7000

**NOTE:** Slots and openings in the housing are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.

This unit is also certified to operate effectively under the following conditions: Operating Temperature: 32° F to 104° F (0° C to 40° C). This product may contain copyrighted software that is licensed under the GNU General Public License (“GPL”), a copy of which is available at [www.gnu.org/licenses](http://www.gnu.org/licenses). You may obtain a copy of such software, in source code form, from DZS for a period of three years after our last shipment of the product by following the instructions at [www.dasanzhone.com/gplinfo](http://www.dasanzhone.com/gplinfo).