

EMINENT

EM4596
Concurrent AC1200
Dual Band WiFi Repeater and Access point

en

Manual

EM4596 - Concurrent AC1200 Dual Band WiFi Repeater and Access point

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1.0 Introduction

Congratulations with the purchase of this high-quality Eminent product! This product has undergone extensive testing by Eminent's technical experts. Should you experience any problems with this product, you are covered by a five-year Eminent warranty. Please keep this manual and the receipt in a safe place.

Register your product now on www.eminent-online.com and receive product updates!

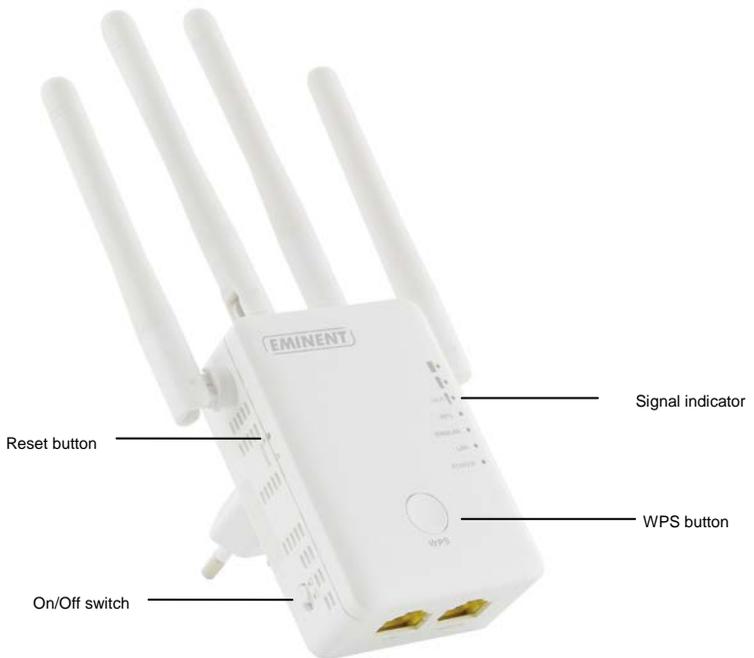
1.1 Packing contents

The following parts need to be present in the packing:

- EM4596
- QIG
- Ethernet cable

1.2 Device Overview

Front and side panel



LABEL	STATE	DESCRIPTION
LED Signal strength		
3 BARS	Connected	90% and above (Excellent)
2 BARS	Connected	55-89% (Recommended)
1 BAR	Connected	10-54% (Weak)

LABEL	DESCRIPTION
WPS Button	Connect EM4596 to any WPS capable devices (5 sec. to connect to router/AP or 2 sec. when connecting a wireless client)
Reset	Press the reset button for 10 seconds to restore the device to default factory settings. Wait approx. 1 minute for the device to reboot

Bottom



LABEL	DESCRIPTION
LAN port	Connect to computers / Ethernet devices
WAN/LAN port	Connect to computers / Ethernet devices/ Connect to router

Side panel

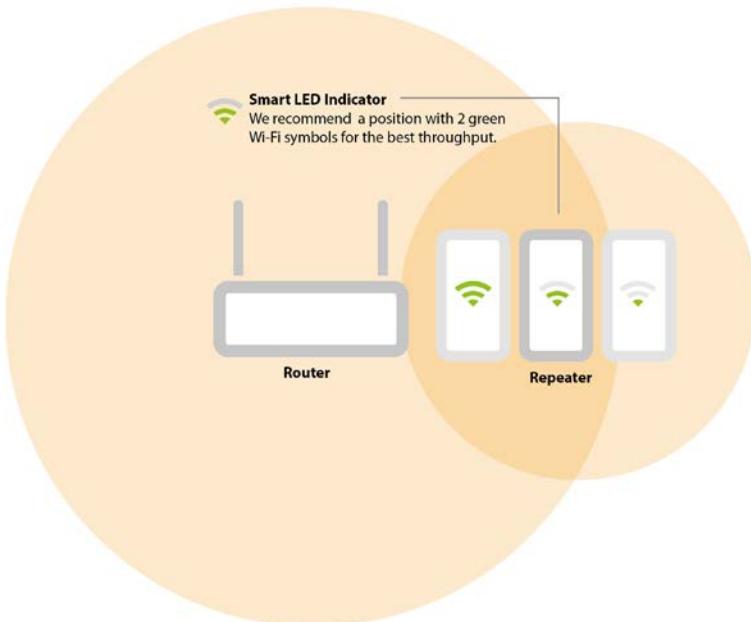


LABEL	DESCRIPTION
AP mode	When mode selector switch has switched to AP, Repeater will work as Access Point
Repeater	When mode selector switch has switched to AP, Repeater will work as Repeater
Router	When mode selector switch has switched to AP, Repeater will work as Router

2.0 Where to place the EM4596 repeater?

The best location to place the EM4596 is approximately half-way between your wireless modem/router and your WiFi client (laptop/smartphone/tablet) which has/have the weakest wireless reception. This way, the signal strength will be as good as possible. Refer to the following images for an example:

Weak 	Recommended 	Excellent 
Throughput less than 30%	Throughput up to 60%	Throughput up to 80%
Wireless Coverage Extended up to 90%	Wireless Coverage Extended up to 60%	Wireless Coverage Extended up to 40%



Hint: Before placing the EM4596 on its destined location, the device needs to be setup. Setting up the EM4596 wireless repeater can be done best, if the EM4596 is located near your wireless modem/router. After setting up the EM4596, you can place the EM4596 at a location defined by using the signal indicator LEDs and the recommended setup as described previously.

3.0 Dual Band explanation.

In chapter 3.1 to 3.4 we will explain the different kinds of setups you can configure with the EM4596, so you will be able to determine what setup will fit best to your situation.

Comparison of the 2 WiFi bands.

- 2.4GHz
 - + best coverage
 - more interference with other wireless devices
 - lower bandwidth.

- 5GHz
 - lower coverage
 - + less interference with other wireless devices
 - + higher bandwidth.

3.1 Connect the EM4596 to your single-band WiFi network and upgrade to a Dual Band WiFi network.

If you do not have a Dual Band modem/router you can upgrade your WiFi network by using the EM4596 to create a Dual Band WiFi network. The EM4596 will be connected to your existing 2.4GHz WiFi connection and will repeat this connection into a Dual Band connection.



3.2 Connect the EM4596 to a Dual Band WiFi network.

If you have a Dual Band modem/router there are a few factors to consider to fit your situation best.

First check which WiFi connection has the best performance in signal strength and connection speed. 2.4GHz band has the best coverage but also has the most interference with other Wireless devices. The 5GHz band has a lower coverage but less interference with other wireless devices and a higher bandwidth.

To get the best performance we advise to connect the EM4596 to the 5GHz band of the modem/router.



To get the best coverage we advise to connect the EM4596 to the 2.4GHz band of the modem/router.



3.3 Cross Band technology

If your performance and signal strength are ok on both bands we advise to determine which band is used by the most (preferably by all) WiFi clients and use the opposite band to communicate between the EM4596 and your modem/router, and connect your WiFi clients to the other band. In this case the EM4596 can provide the best performance between WiFi clients and modem/router.



2.4GHz WiFi clients connected to the EM4596 and the EM4596 connected to the modem/router by 5GHz (see picture Cross-Band 1)



5GHz WiFi clients connected to the EM4596 and the EM4596 connected to the modem/router by 2.4GHz (see picture Cross-Band 2)

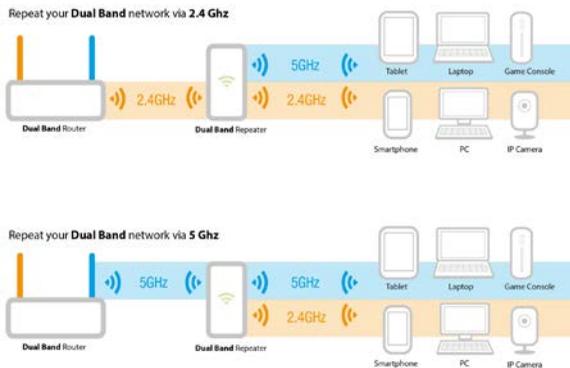
Note: We advise to use the 5GHz band to communicate between the EM4596 and the modem/router for best performance. Please use the 2.4GHz band if you prefer coverage above performance, or when you only have a single band router.

Note: If a WiFi client is connected to the EM4596 and uses the same band as the connection between EM4596 and modem/router. The EM4596 will have to wait for the data package to be send from the WiFi client to the Repeater before it can send the data package to the modem/router this applies for communication in both directions. In this case the network speed is reduced by 50%. If the WiFi client uses the opposite band to communicate with the EM4596 the network speed is not reduced by 50%.

3.4 Mixed WiFi clients

In most cases the Repeater will be used in mixed mode (2.4GHz and 5GHz WiFi clients are connected to the EM4596)

Note: If possible we advise to use gaming and Video devices on the 5GHz Band and other devices preferably on 2.4GHz to provide the best performance to these devices.



- 2.4GHz
 - + best coverage
 - more interference with other wireless devices
 - lower bandwidth.

- 5GHz
 - lower coverage
 - + less interference with other wireless devices
 - + higher bandwidth.

4.0 Connecting the EM4596 to your modem/router

There are three different ways to connect your EM4596 to your modem/router.

4.1 Configure the wireless repeater using the WPS button

1. Please check if your wireless modem/router has a WPS button. Also check whether your wireless router has a properly configured internet connection.
2. Connect the EM4596 to a wall outlet. Please place the EM4596 close to the modem/router during setup.
3. Wait for the LED to turn green (flashing). This will take approx.. 1 minute.
4. Press the WPS button on your wireless router for approximately 3 seconds*.

**Refer to the manual of your wireless router for the exact duration of pressing the WPS button. This can differ from brand or model.*

5. Now press the WPS button on the EM4596 Wireless Repeater for approximately 5 seconds. Refer to the following image for the WPS button:



- The connection between your wireless router and the EM4596 wireless repeater will be established automatically. This will take approx. 1 minute including reboot.

Note: If a modem/router is sending out SSIDs on both 2.4GHz and 5GHz bands at the same time, priority of connection depends on which frequency will be found first. If you prefer to manually choose the corresponding frequency to make a WPS connection between the modem/router and the EM4596 then please connect to the WiFi network using the WebGUI. See chapter 5.2

Note: If the WPS button is used, the SSID and network key and frequencies are the same as used on your wireless router. Some WPS routers will change their original SSID to another SSID if WPS is used. In this installation guide, the SSID of the wireless router is 'Eminent Test 1'. After using WPS button the SSID will automatically change to SSID + (2.4GHz/5GHz) + (R). If you wish to use different settings from your modem/router you will need to setup the EM4596 manually using a web browser.

4.2 Manual configuration using encryption key

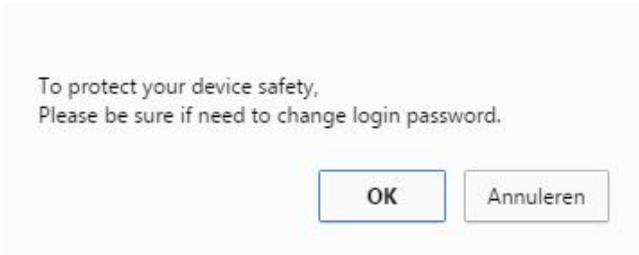
- Connect the EM4596 to a wall outlet (preferably close to the modem/router).
- Wait for the signal indicator to flash green. This will take approximately 1 minute.
- Connect to the EM4596 via Wi-Fi SSID: **Eminent_repeater** or **Eminent_repeater(5G)**, or use the Ethernet cable to connect to the EM4596 directly.
- Open your internet browser and type `http://192.168.10.1` in your internet browser and then hit Enter.
- The login screen will appear. Enter the **Username: "admin"** and **Password: "admin"**, then click **"Login"** to login.



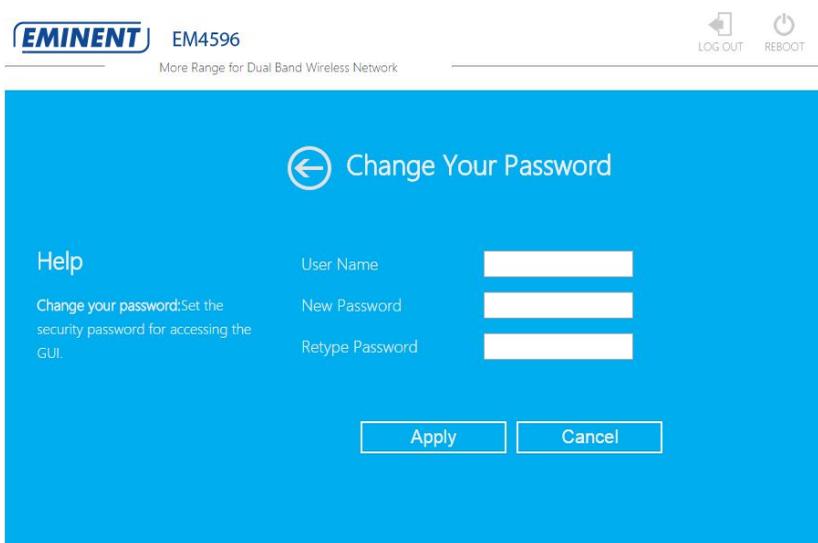
User Name

Password

- The first time you login, you will be asked if you want to change your login password.



- If you would like to change your login password, click on “OK”. The following screen appears:



- Enter your desired Username and Password. Enter your new password again in the Retype Password field. Click on “Apply”. The repeater will redirect you to the login screen. Login in with your new username and password.
- In the next step you will need to enter the WEP or WPA Passphrase of the Wi-Fi network you wish to connect to.

10. Select **"Repeater Wizard"** from the menu.

The screenshot shows the EMINENT EM4596 web interface. At the top, there is a header with the logo and "EM4596" and "More Range for Dual Band Wireless Network". On the right, there are "LOG OUT" and "REBOOT" buttons. The main content area is divided into several sections:

- Repeater Wizard**: This section is highlighted with a red box. It contains icons for "User", "This Device", "AP/Router", and "Internet".
- Repeater Status**: Shows 2.4G SSID as "Eminent_repeater", 5G SSID as "Eminent_repeater(5G)", Clients as "0", Status as "No Connection", and Internet as "Disconnected".
- Wi-Fi Basic Settings**: Includes links for "Basic Settings", "2.4G Advanced Settings", "5G Advanced Settings", and "WPS Settings".
- LAN Settings**: Shows IP Address (192.168.10.1), Gateway, MAC Address (80:3F:5D:72:C4:BB), and DHCP Mode (Auto).
- System Settings**: Includes links for "Password Settings", "Time Zone Settings", "Save/Reload Settings", and "Upgrade Firmware".
- Firmware Version**: Shows RPTA3-ZSW-M4500-01-GD-2019Nov25, Build Time (18:16:37 Nov 25 2019), and Up Time (0 day, 0 hour, 23 mins, 41 secs).

11. You will see a screen with all the available Wi-Fi networks (2.4GHz and 5GHz bands).

The screenshot shows the EMINENT EM4596 web interface. At the top, there is a header with the logo and "EM4596" and "More Range for Dual Band Wireless Network". On the right, there are "LOG OUT" and "REBOOT" buttons. The main content area is a green background with the title "Repeater Wizard" and a back arrow icon.

Help

Repeater Mode: This Device can be connected via Wi-Fi to a Accesspoint or Router to enhance range. Clients can be connected to the repeater via Wi-Fi or LAN cable. Please select a SSID from this list, and press Apply button. Please press Refresh button to refresh this table. If you encounter any error, please try again later. Please enter the key WEP: 5/13 bits (0-9 / a-z) or 10/26 bits (0-9 / a-f) PSK Key: Must be 8 to 63 characters (0-9 / a-z) or 64-bit characters (0-9 / a-f).

	SSID	Channel	Security	Select
📶	Eminent Test 1	6	WPA1/WPA2 PSK	○
📶		6	WPA2PSK	○
📶		6	WPA2PSK	○
📶		6	NONE	○
📶		6	WPA2PSK	○
📶		13	WPA2PSK	○

At the bottom of the screen, there are two buttons: "Apply" and "Refresh".

12. Select the corresponding network you want to connect to in the **"Select"** field.

13. You may notice that the repeater will automatically make a new Wi-Fi SSID name for 2,4GHz and 5GHz SSID. Enter the security key of your wireless network in the “Wi-Fi Key” field.

EMINENT EM4596

More Range for Dual Band Wireless Network

LOG OUT REBOOT

Help

Repeater Mode: This Devices can be connected via Wi-Fi to a Accesspoint or Router to enhance range. Clients can be connected to the repeater via Wi-Fi or LAN cable. Please select a SSID from this list, and press Apply button. Please press Refresh button to refresh this table.If you encounter any error, please try again later. Please enter the key WEP:5/13 bits (0~9 / a~z)or 10/26 bits (0~9 / a~f) PSK Key:Must be 8 to 63 characters (0 ~ 9 / a ~ z) or 64-bit characters (0 ~ 9 / a ~ f).

SSID	Channel	Security	Select
Eminent Test 1 5G	44	WPA1/WPA2 PSK	<input type="radio"/>
	1	WPA2PSK	<input type="radio"/>
	6	NONE	<input type="radio"/>
	6	WPA2PSK	<input type="radio"/>
Eminent Test 1	6	WPA1/WPA2 PSK	<input checked="" type="radio"/>

Connect to: Eminent Test 1

Wi-Fi Key: Hide Characters

2.4G SSID: Eminent Test 1(2.4GHz)(R)

5G SSID: Eminent Test 1(5GHz)(R)

The Repeater Wireless key same as your Wireless AP/Router

Apply Refresh

14. Click “Apply”, the EM4596 will reboot and connect to your router.
15. You can now connect your wireless network adapter(s) to the new made Wi-Fi SSID and entering the wireless encryption key of the wireless network you previously connected.

Note: After the settings have been applied, the EM4596 will reboot. Your device will no longer be connected to the wireless network SSID of the EM4596.

5.0 Connecting a wireless WPS adapter to the EM4596

5.1 Using the WPS button on the EM4596

1. Press the WPS button on the EM4596 for about 2-3 seconds.
2. Now press the WPS button on your wireless adapter.
3. If correct, the connection between the wireless WPS adapter and EM4596 will be established. Depending on the Windows version you are using, you should see a connected icon in the taskbar.

Note: Some wireless WPS adapters require the use of the supplied software to create a WPS connection. Refer to the manual of your wireless WPS adapter for more information.

Note: If you use the WPS button the devices will negotiate the Wireless settings you will not be able to determine what frequency the devices will use. If you wish to determine the frequency band you will need to setup the EM4596 manually using a web browser.

5.2 Using the WPS feature from the web browser

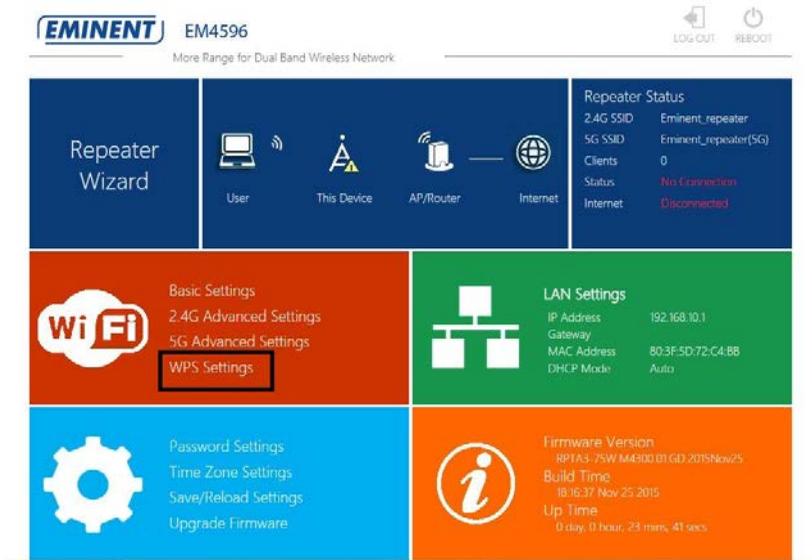
1. Connect to the EM4596 via Wi-Fi SSID or use the Ethernet cable to connect to the EM4596 directly.
2. Open your internet browser and type `http://192.168.10.1` in your internet browser and then hit Enter.
3. The login screen will appear. Enter the **Username**: “admin” and **Password**: “admin”, then click “**Login**” to login.



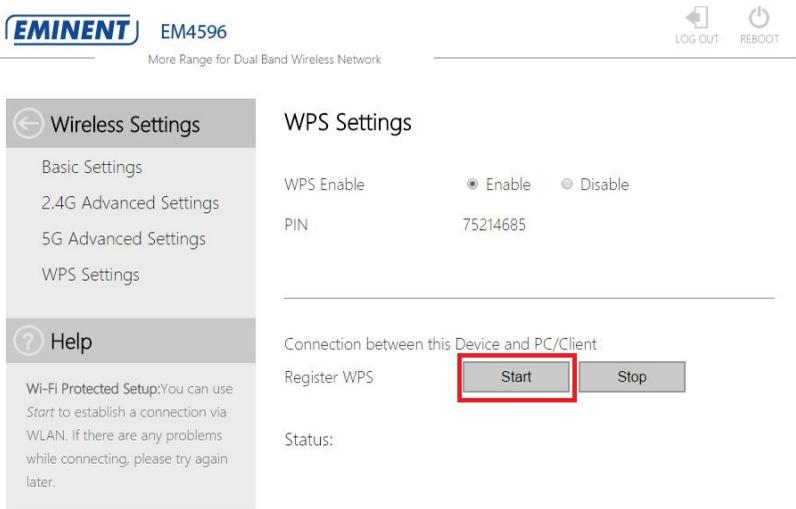
User Name

Password

- Select **"WPS settings"** from the Wi-Fi menu. See picture.



- Click on **"Start"**.



- Now the EM4596 will try to connect to your Wi-Fi client (max. duration 2 minutes)
- Use the WPS push button feature of your Wi-Fi client (please refer to the manual of your Wi-Fi client for the exact procedure).

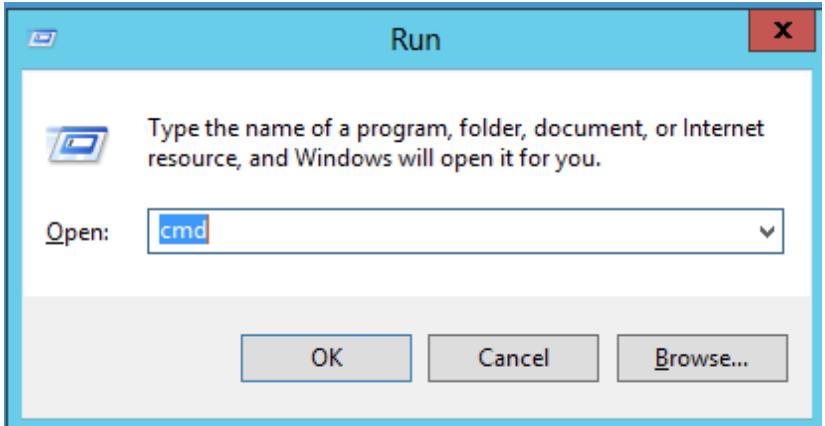
6.0 Changing the wireless network name (SSID) of the repeater.

After you setup the repeater to connect to your home network, the repeater will receive an IP address from your router. You can access the repeaters menu by fill in the repeaters ip address, that has been obtained by your router, into your internet browser. In below picture is shown how you can find your new repeaters IP address for Windows, Android and IOS.

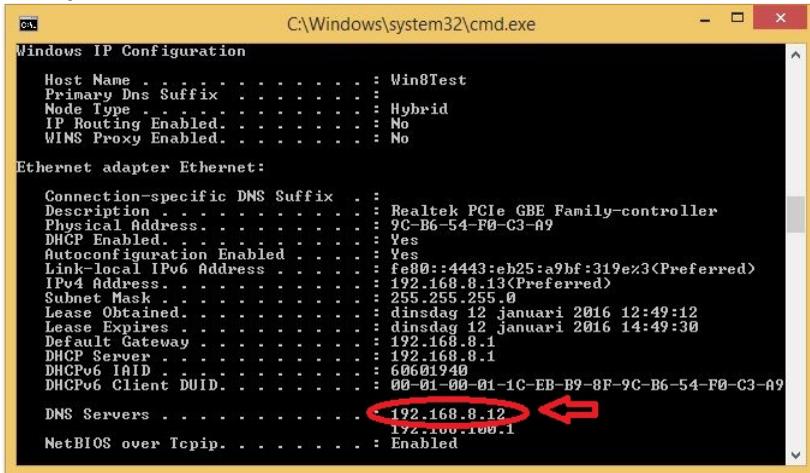
6.1 Find your repeaters IP address

Windows:

1. For Windows Vista and 7, click on “**Start**” button, type “**cmd**” and press “**Enter**”. For windows 8 and 10, right click on “**Start**” button and select “**Run**”
- 2.



Type “**cmd**” and press “**Enter**”. The following screen appears:

Example:

```
cmd C:\Windows\system32\cmd.exe
Windows IP Configuration
Host Name . . . . . : Win8Test
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Ethernet:

Connection-specific DNS Suffix . . :
Description . . . . . : Realtek PCIe GBE Family-controller
Physical Address. . . . . : 9C-B6-54-F0-C3-A9
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::4443:eb25:a9bf:319e%3(Preferred)
IPv4 Address. . . . . : 192.168.8.13(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : dinsdag 12 januari 2016 12:49:12
Lease Expires . . . . . : dinsdag 12 januari 2016 14:49:30
Default Gateway . . . . . : 192.168.8.1
DHCP Server . . . . . : 192.168.8.1
DHCPv6 IAID . . . . . : 60601940
DHCPv6 Client DUID. . . . . : 00-01-00-01-1C-EB-B9-8F-9C-B6-54-F0-C3-A9

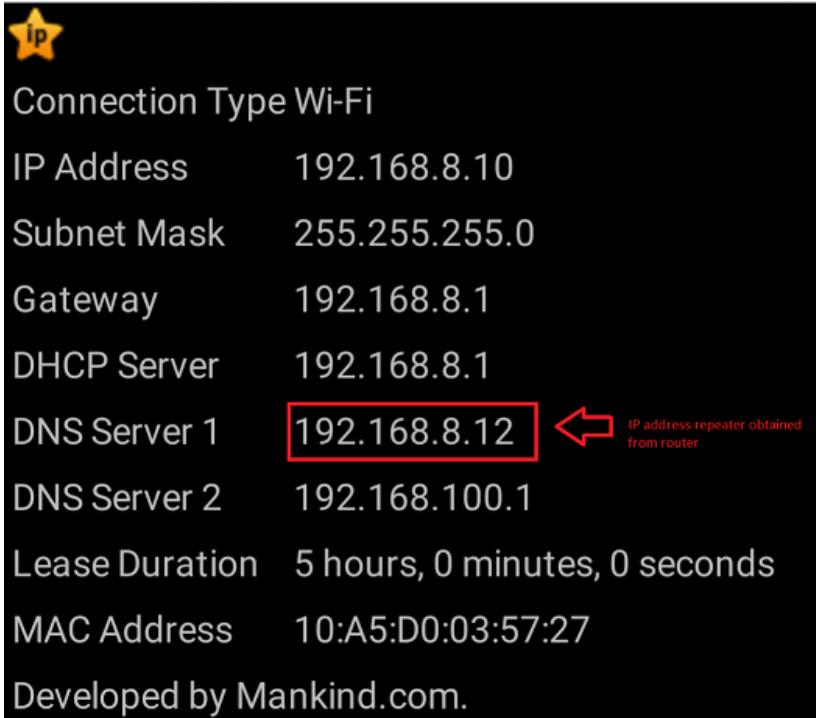
DNS Servers . . . . . : 192.168.8.12
                       192.168.100.1
NetBIOS over Tcpip. . . . . : Enabled
```

3. You will now see the repeaters IP address behind the section DNS Servers

Android:

The easiest way to show your network configuration in Android is by downloading and installing "Ipconfig" in the Google Play Store.

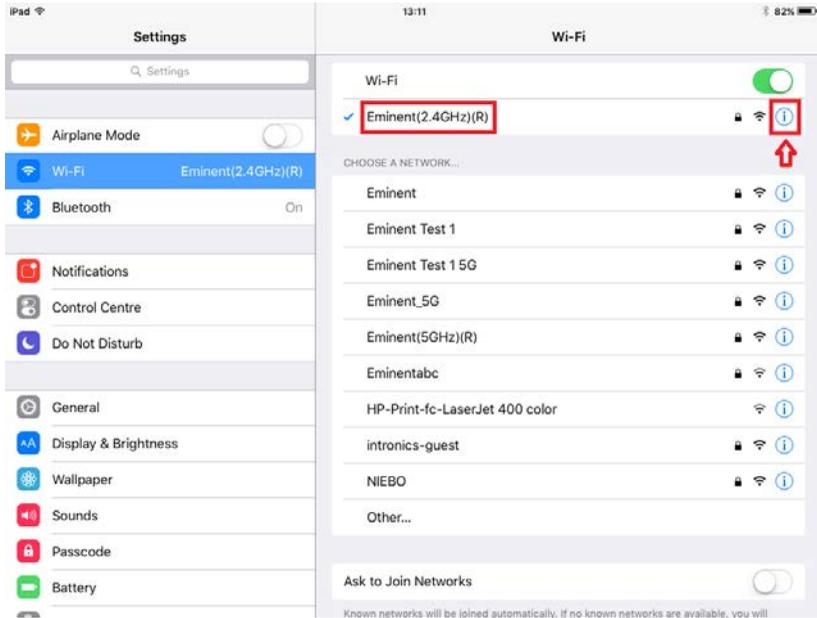
1. After you have installed this app, open it and the following screen will be shown.

Example:

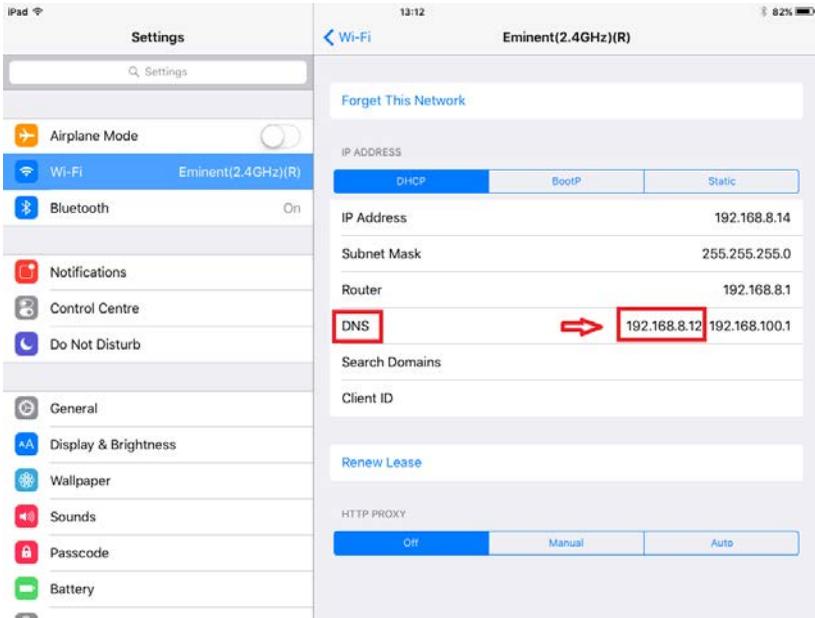
2. You will now see the repeaters IP address behind the section DNS Server 1

IOS:

1. Select “Settings” from the Home screen and enter the Wi-Fi section.
2. In the Wi-fi section you will see the repeaters SSID you are connected with.

Example:

3. Click on the info button next to Wi-Fi icon. The following screen appears:

Example:

4. You will now see the repeaters IP address behind the section DNS.

6.2 Change repeaters SSID name

If you wish to use a different Wi-Fi network SSID name for the EM4596 repeater. You can change this by entering the User Interface of the EM4596.

1. Open your internet browser and type your repeaters IP address in your internet browser and then hit Enter.
2. The login screen will appear. Enter the **Username: "admin"** and **Password: "admin"**, then click "**Login**" to login.

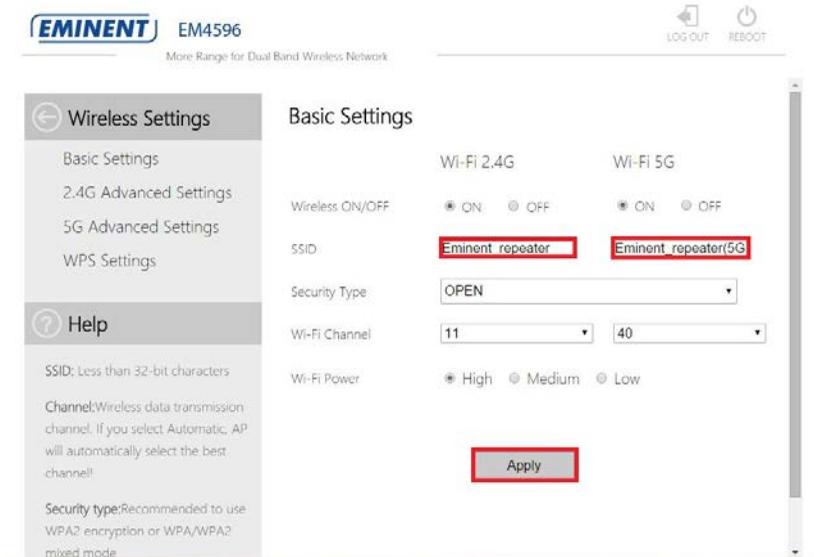


3. Select **"Basic settings"** from the Wi-Fi menu. See picture.



4. Select the frequency you wish to edit the network name for.

- Change the SSID name to the preferred name for the Wi-Fi network of the Repeater. See picture.



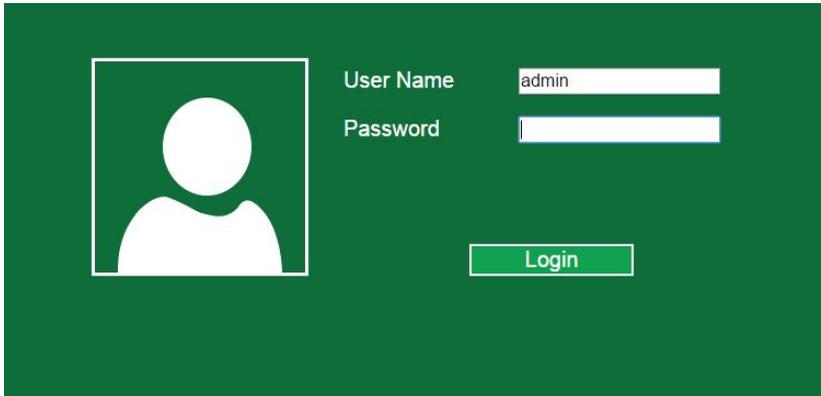
- Click **“Apply”**. (If you wish to change both Network names please repeat step 3 and 4).
- Remove the repeater from the power socket or switch off the repeater by switching the **“On/Off”** button to **“Off”**.
- Connect the EM4596 back to the wall outlet and make sure the **“On/Off”** button is switched to **“ON”**.

Note: After the settings have been applied, the EM4596 will reboot. Your device will no longer be connected to the wireless network SSID of the EM4596. Reconnect your device to the Wireless network (SSID) you entered in step 5.

7.0 Access Point mode

- First make sure the mode selector switch is set to **“AP”** position for **“AP”** mode.
- Connect the EM4596 to a wall outlet (preferably close to the modem/router).
- Wait for the signal indicator to light up all three leds. This will take approximately 1 minute.
- Connect to the EM4596 via WiFi SSID: **Eminent_repeater** or **Eminent_repeater(5G)**, or use the Ethernet cable to connect directly from your PC lan port to the EM4596 LAN port.
- Open your internet browser and type <http://192.168.10.1> in your internet browser and then hit Enter.

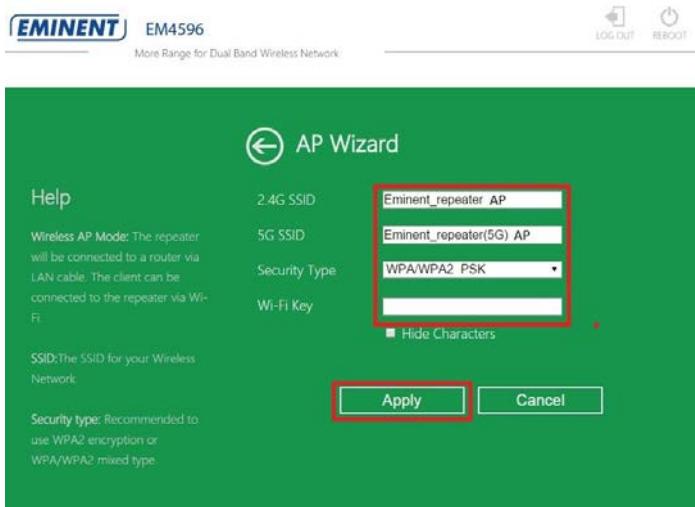
6. The login screen will appear. Enter the **Username: "admin"** and **Password: "admin"**, then click **"Login"** to login.



7. Select **"AP Wizard"** from the Menu.



8. The following screen will appear:



9. You will notice that the repeater will automatically fill in the default SSID name from repeater in to SSID field. It is not necessarily needed but we suggest to rename the SSID name to: SSID name + AP so you will always know that you are connected as Access Point.
10. You also have the option to secure the Wifi network by adding an encryption key. Click in the “**Security Type**” field to change the security. We recommend to use “**WPA/WPA2 PSK**” security. Now enter an encryption key in the “**Wi-Fi Key**” field.
11. Click “**Apply**” to confirm. The repeater will reboot and make the changes. This will take approximately 1 minute.
12. Remove the repeater from the power socket or switch off the repeater by switching the “**On/Off**” button to “**Off**”.
13. Install your Ethernet cable from modem/router or router into the “**LAN/WAN**” port of the repeater.
14. Connect the EM4596 back to the wall outlet and make sure the “**On/Off**” button is switched to “**ON**”
15. Wait until the “signal indicator” lights up the three leds. This will take approximately 1 minute.
16. You can now make wireless connection with new made SSID as Access Point. If you would like to make connection with a PC, you have to repeat step 12 to 15 only now by plugging in a Ethernet cable into “**LAN**” port from your Access point to the LAN port from your PC.

8.0 Frequently Asked Questions and other related information

The latest Frequently asked questions for your product can be found on the support page of your product. Eminent will update these pages frequently to assure you have the most recent information. Visit www.eminent-online.com for more information about your product.

9.0 Service and support

This user manual has been carefully written by Eminent's technical experts. If you have problems installing or using the product, please fill out the support form at the website www.eminent-online.com/support.

You can also contact us by phone. Please check www.eminent-online.com/support for the helpdesk phone number and opening hours.

10.0 Warning and points of attention



Due to laws, directives and regulations set out by the European parliament, some (wireless) devices could be subject to limitations concerning its use in certain European member states. In certain European member states the use of such devices could be prohibited. Contact your (local) government for more information about this limitations.

Always follow up the instructions in the manual*, especially where it concerns devices which need to be assembled.

Warning: In most cases this concerns an electronic device. Wrong/improper use may lead to (severe) injuries!

Repairing of the device should be done by qualified Eminent staff. The warranty immediately voids when products have undergone self repair and/or by misuse. For extended warranty conditions, please visit our website at www.eminent-online.com/warranty.

**Tip: Eminent manuals are written with great care. However, due to new technological developments it can happen that a printed manual does not longer contain the most recent information.*

If you are experiencing any problems with the printed manual or you cannot find what you are looking for, please always check our website www.eminent-online.com first for the newest updated manual.

Also, you will find frequently asked questions in the FAQ section. It is highly recommended to consult the FAQ section. Very often the answer to your questions will be found here.

11.0 Warranty conditions

The five-year Eminent warranty applies to all Eminent products, unless mentioned otherwise before or during the moment of purchase. After buying a second-hand Eminent product the remaining period of warranty is measured from the moment of purchase by the product's initial owner. Eminent warranty applies to all Eminent products and parts, indissolubly connected or mounted to the product it concerns. Power supply adapters, batteries, antennas and all other products not directly integrated in or connected to the main product or products of which, without reasonable doubt, can be assumed that wear and tear during use will show a different pattern than the main product, are not covered by the Eminent warranty. Products are not covered by the Eminent warranty when exposed to incorrect/improper use, external influences or when opening the service parts of the product by parties other than Eminent. Eminent may use refurbished materials for repair or replacement of your defective product. Eminent cannot be held responsible for changes in network settings by internet providers. We cannot guarantee that the Eminent networking product will keep working when settings are changed by the internet providers. Eminent cannot guarantee the working of web services, apps and other third party content that is available through Eminent products. Eminent products with an internal hard disk have a limited warranty period of two years on the hard disk. Eminent could not be held responsible for any data lost. Please make sure that if the product stores data on a hard drive or other memory source, you will make a copy before you return the product for repair.

When my product gets defective

Should you encounter a product rendered defective for reasons other than described above: Please contact your point of purchase for taking care of your defective product.



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