



**HT-EM4**

# User Manual

MoCA 2.5 Network Adapter

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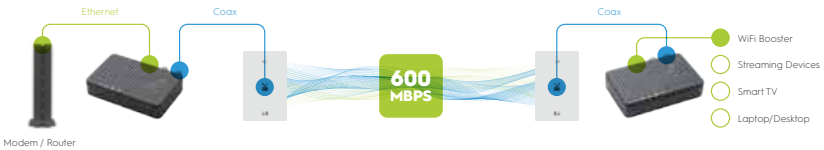
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# Getting Started

## Introduction

Congratulations on purchasing the Hitron HT-EM4 MoCA 2.5 Coax to Ethernet Adapter. This easy-to-use Coax to Ethernet adapter uses your home's existing coax wires to create a wired backbone with speeds up to 1 Gbps. Once you have a MoCA network in place you can enjoy better WiFi, better streaming and better gaming! It uses the latest MoCA 2.5 standard to create a wired MoCA backbone with speeds up to 2.5 Gbps over your home's existing coax wires.

This User Manual explains the procedures needed to connect the Adapter.



## Package Contents

Contents will vary depending on the product purchased from retail. This adapter is sold individually and as a 2-pack Kit

## Requirements

- Available coaxial port in installation areas
- Available electrical outlet in installation areas

## Key Features

- MoCA 2.5 for speeds up to 2.5 Gbps
- Two coax F-type connectors and one Ethernet RJ-45 10/100/1000 Mbps connector
- Compact to discretely fit in any home theater (110mm W x 70mm H x 25mm D)
- Upgradable software over web-based GUI
- Intuitive LEDs clearly display device and network status
- Hardware DES and AES Encryption to keep your data safe from unauthorized access

# Connecting the Adapters

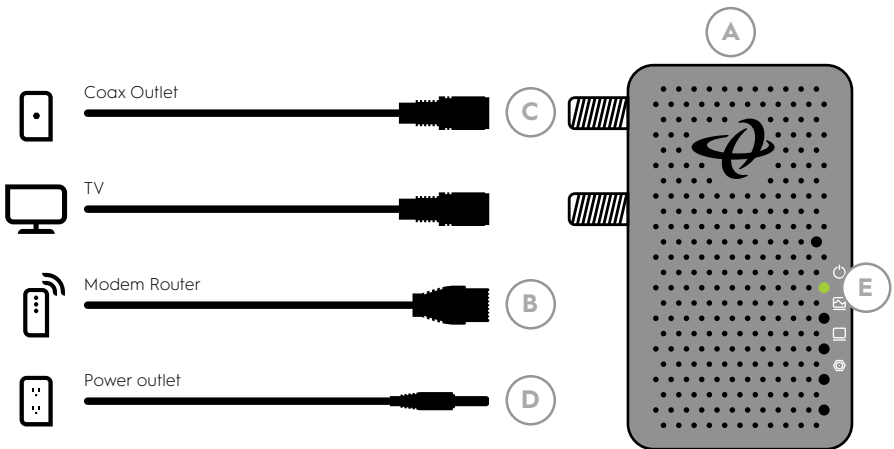
## Connecting the First Adapter

*Note: Not all routers have MoCA built into the router. If your router does not support MoCA, or you are unsure if your router has MoCA, please complete Step 1.*

- A** Get a **MoCA 2.5 Network Adapter** and **Ethernet Cable**.
- B** Connect the Ethernet Cable from the **Modem/Router** to the MoCA 2.5 Network Adapter.
- C** Get the **Coax Cable** and connect the Coax Cable from the **Coax Outlet** on the wall to the **Top Coax Port** on the MoCA 2.5 Network Adapter.

*Note: If you have a TV or cable set top box near your modem/router, connect a coax cable from the 2nd Coax port marked TV to the TV or set top box.*

- D** Get the **Power Adapter** (External, 12V DC, 1A, made by AOEM, Model #ADSO12T-W120100) and connect it from the MoCA 2.5 Network Adapter to a **Power Outlet**.
- E** Wait until the **Power Light** on the front of the adapter is **GREEN**.

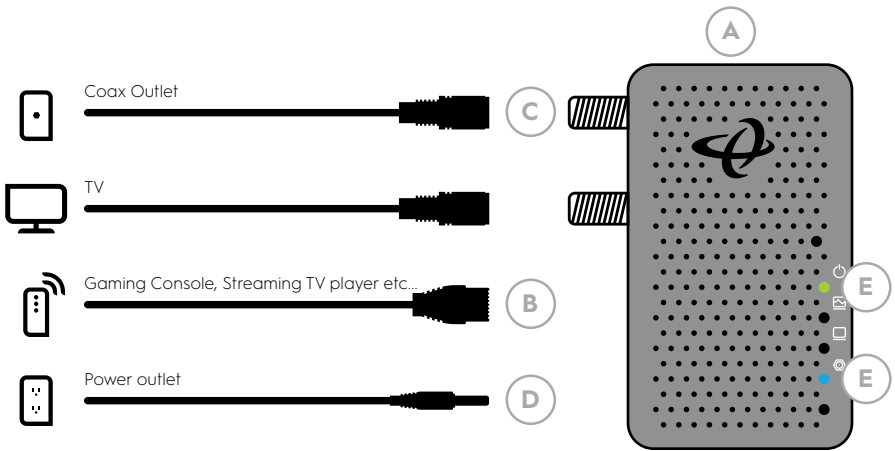


# Connecting the Adapters

## Connecting Additional Adapters

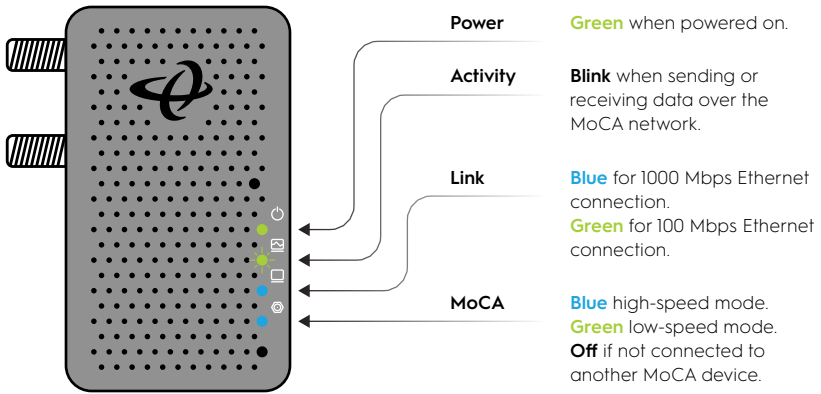
- A** Get a **MoCA 2.5 Network Adapter** and Ethernet Cable.
- B** Connect the **Ethernet Cable** from the **Access Point or Device** (gaming console, streaming TV player, laptop etc.) to the MoCA 2.5 Network Adapter.
- C** Get the **Coax Cable** and connect the Coax Cable from the **Coax Outlet** on the wall to the **Top Coax Port** on the MoCA 2.5 Network Adapter.
- D** Get the **Power Adapter** and connect it from the MoCA 2.5 Network Adapter to a **Power Outlet**.
- E** Wait until the **Power Light** on the front of the adapter is **GREEN** and the MoCA light turns **GREEN** or **BLUE**.

*Note: The MoCA light will turn Green when the MoCA network is in low speed.*



# Connecting the First Adapter

## LEDs Explained



## Troubleshooting

Please visit the following URL for the latest FAQs  
<https://hitron-americas.com/HTEM4>

# Logging in the GUI

## How to login to the GUI

Using Windows-based PC or MAC

1. Connect the HT-EM4 Adapter to a Windows PC or MAC  
Using an Ethernet cable, plug one end of the Ethernet cable into the adapter and the other end into a Windows PC or MAC. Power on the adapter by plugging in the power supply provided.
2. Make sure PC/MAC is on the same network as HT-EM4  
Before you log into the HT-EM4's GUI, your computer's IP address must be in the same subnet as the HT-EM4. This allows your computer to communicate with the HT-EM4.

**NOTE:** You can find the HT-EM4's assigned IP address by logging into your network's gateway device and looking at the list of connected DHCP client devices. The HT-EM4 hostname will display as REV\_A1000000.

3. Log into the HT-EM4 Adapter

Now open a web browser and type in the IP address of the HT-EM4 device in the URL bar. A pop-up will appear prompting you to sign in. Enter admin for the Username and admin for the Password. Click **Sign in**.

Sign in

http://192.168.0.64

Your connection to this site is not private

Username

admin

Password

\*\*\*\*\*

Sign in

Cancel

# Logging in the GUI

## Status

Use this screen to see general information about your HT-EM4's hardware, its software, and its connection to the Internet.

Click Status. The following screen displays.



The screenshot shows the 'Status' page of the HT-EM4 GUI. The navigation bar at the top includes 'Home', 'Status', 'Network', 'MoCA', and 'Admin'. The main heading is 'Device Status:'. Below this, a sub-heading reads 'This screen shows some basic information, such as version, network status.' The data is presented in a table with two columns: 'Property' and 'Value'.

Property	Value
Model Name	HT-EM4
Hardware Version	04
Software Version	1.0.4
ROC Version	830.37 for 1.0.4
Device MoCA Version	2.0
Network MoCA Version	2.0
IP Address	192.168.0.84
MAC Address	bc:3e:67:c7:27:ae
Link Status	Up
Basest Channel	1160
Primary Channel	1171
Secondary Channel	1200
Final Channel	1171
Number of Channels	6
Ethernet TX	Tx Count: 2309 Tx Bct: 3 Tx Dropped: 0
Ethernet RX	Rx Count: 5309 Rx Bct: 6 Rx Dropped: 0

At the bottom of the table, there is a 'Refresh' button.



# Logging in the GUI

- **Model Name** This displays your device's model designation (HT-EM4)
- **Hardware Version** This displays the version number of the HT-EM4's physical hardware.
- **Software Version** This displays the version number of the software that controls the HT-EM4.
- **SOC Version** This displays the version number of the HT-EM4's chipset.
- **Device MoCA Version** This displays the version number of the HT-EM4's MoCA standard.
- **Network MoCA Version** This displays the version number of the current MoCA network.
- **IP Address** This displays the HT-EM4's IP address. This IP address is automatically assigned to the HT-EM4.
- **MAC Address** This displays the Media Access Control (MAC) address of the HT-EM4's radio frequency (RF) module.
- **Link Status** This displays whether or not the HT-EM4 is connected over the cable network.
  - Up displays when the HT-EM4 is connected.
  - Down displays when the HT-EM4 is not connected.
- **Beacon Channel** This displays the channel frequency used to transmit beacons.
- **Primary Channel** This displays the primary channel frequency of the HT-EM4.
- **Secondary Channel** This displays the secondary channel frequency of the HT-EM4.
- **First Channel** This displays the first channel frequency of the HT-EM4.
- **Number of Channels** This displays the number of the HT-EM4's working channel.
- **Ethernet TX** This displays the number of Ethernet packets transmitted by this node since MoCA link up.
- **Ethernet RX** This displays the number of Ethernet packets received by this node since MoCA link up.
- **Refresh** Use this button to have the Status screen reload with new data

# Logging in the GUI

## Network

Use this screen to modify the HT-EM4 IP mode. Click Network. The following screen displays.

**Network Setup:**

This screen allows changes to device settings, such as IP mode. Click the Save button to save any changes.

IP Configuration:

- DHCP automatic configuration
- Link Local automatic configuration
- DHCP & Link Local automatic configuration
- Static IP Address.

IP Address: 192.168.0.64

Netmask: 255.255.255.0

Gateway: 192.168.0.1

Save Cancel

IP Configuration This field allows you to select the IP Mode that you want the HT-EM4 to use.

- **DHCP automatic configuration** Your HT-EM4 will receive a dynamic IP address from your Router.
- **Link Local automatic configuration** Choose it if there's no DHCP server in your network, and you want to make zero-config for the IP.
- **DHCP & Link Local automatic configuration** Your HT-EM4 will receive a dynamic IP address from your Router.
- **Static IP Address** Allow you to configure your HT-EM4's IP address, netmask, and gateway manually.

# Logging in the GUI

## MoCA

Use this screen to view and modify the HT-EM4's MoCA-related settings.

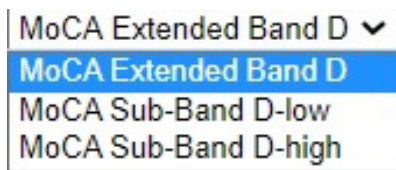
**NOTE:** Do not change any of the settings in this screen unless you have a good reason to do so!

Click MoCA. The following screen displays.

The screenshot shows the MoCA Setup and Security configuration interface. The top section is titled "Coax Setup:" and includes a note: "This screen allows changes to coax settings. Click the Save button to save any changes." Below this are several configuration fields: "System Name" with a dropdown menu set to "Main"; "Network Search Enabled" with a checked checkbox; "Channel Plan" with a dropdown menu set to "MoCA Extended Band 5"; "LSP" with a text input field containing "118"; "Tx Power" with a dropdown menu set to "10"; "Maximum Power Level" with a dropdown menu set to "16"; and "Prefered M3 (Network Controller)" with an unchecked checkbox. The bottom section is titled "Security:" and includes a note: "For security reasons, please change your password. It need be between 10 & 17 characters long and contain spaces." Below this are three input fields: "Security Enabled" with an unchecked checkbox, "New Password" with a text input field containing "\*\*\*\*\*", and "Confirm Password" with a text input field containing "\*\*\*\*\*". At the bottom left of the Security section are "Back" and "Cancel" buttons.

# Logging in the GUI

- **Adapter Name** Select the adapter name that you wish to use from the dropdown list.
- **Network Search Enabled** Use this field to control whether the HT-EM4 should look for a MoCA network to which to connect.
  - Check the box to have the HT-EM4 search for a MoCA network and, if it finds one, connect to it. If the MoCA network to which the HT-EM4 is currently connected goes offline, the HT-EM4 will look for another MoCA network.
  - Uncheck the box if you do not want the HT-EM4 to search for a MoCA network. If the HT-EM4 is currently connected to a MoCA network, it will remain connected. If the MoCA network to which the HT-EM4 is currently connected goes offline, the HT-EM4 will not look for another.
- **Channel Plan** The MoCA specification defines several channel plans for communication on the cable network (see MoCA Overview on page 26). This field allows you to select the channel plan that you want the HT-EM4 to use. Select the channel plan that you wish to use from the dropdown list.



- **LOF** This field allows you to set the Last Operating Frequency that you want the HT-EM4 to use.
- **Tx Power** Use this field to set the power at which the HT-EM4 transmits (TX) over the cable network, from 0 to 10.
- **Beacon Power Level** Use this field to set the HT-EM4's beacon power on the cable network, from 0 to 10. The MoCA beacon allows other devices on the cable network to detect the HTEM4.

# Logging in the GUI

- **Preferred NC(Network Controller)** Each MoCA network has a Network Coordinator (NC) which acts as a manager for all the other devices on the cable network.
  - By default, the NC is chosen from the pool of MoCA devices based on its suitability (signal strength, etc.) To base NC status on merit, or if you have specified another device as “preferred” and do not want the HT-EM4 to compete with it, uncheck the box.
  - When one device is set to be the “preferred” NC, it will be the NC whenever it is available on the network (if multiple devices are “preferred”, the most suitable one will be chosen). Check the box to add the HT-EM4 to the preferred group.
- **Security Enabled** The MoCA specification allows you to secure your network by defining a password that all devices must use before they join the network. Use this to turn encryption on the cable network on or off.
  - Check the box (recommended) to turn cable network encryption on. When encryption is on, only devices that supply the common Password can communicate over the cable network.
  - Uncheck the box to turn cable network encryption off. When encryption is off, any device connected to the cable wiring can communicate over the cable network. The Password you set has no effect.
- **New Password** When Security is enabled, enter the cable network password you want to use. All MoCA devices must be configured to use this password before they may connect to the cable network.
- **Confirm Password** Enter the cable network password again that you want to use.
- **Save** Click this to save your changes to the fields in this screen.
- **Cancel** Click this to return the fields in this screen to their last-saved values without saving your changes.

# Logging in the GUI

## Admin

Use this screen to perform the firmware upgrade, and reboot or reset the HT-EM4.

Click **Admin**. The following screen displays.

The screenshot shows two sections of the GUI. The first section is titled "Upgrade:" and contains instructions for upgrading the firmware. It lists four steps: 1) Use the Choose File button to select the new Hostless MoCA firmware image file (bin file). 2) Click the Upgrade button. 3) Wait for the completion status screen to appear. A typical upgrade requires 60-90 seconds for the flash to be updated. 4) Click the Reboot button. Below the steps is a warning: "!!! Do not turn-off the device when firmware download is in progress !!!". Underneath, it shows the "Software Version:" section with "Active Image Version: 1.0.4" and "Backup Image Version: 1.0.2". There is a "File" field with a "Choose File" button and "No file chosen" text. Below the field are "Upgrade" and "Clear Selection" buttons. The second section is titled "Device Reset:" and contains the instruction "Click the button below to reset the device." Below this are "Reboot" and "Restores Defaults" buttons.

## Upgrade

- Choose File Click Choose File to select the new firmware.
- Upgrade Click Upgrade to perform a firmware upgrade.
- Clear Selection Click Clear Selection to return the fields in this screen to their last-saved values without saving your changes.

## Device Reset

- Reboot Click Reboot to restart your HT-EM4, restoring its settings to their last-saved values.
- Restores Defaults Click Restores Defaults to return your HT-EM4 to its factory default settings. When you do this, all your user-configured settings are lost, and cannot be retrieved.

# Notices

## Warranty

Please go to [hitron-americas.com/legal/limited-warranty-statement/](https://hitron-americas.com/legal/limited-warranty-statement/) for a copy of the warranty statement.

## Important Safety Instructions

Basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and personal injury, including the following:

- Do not use this product near water – for example, near a bathtub, kitchen sink, laundry tub, or swimming pool, or in a wet basement; only clean with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus including amplifiers that produce heat.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- Use only the power cord and batteries indicated in this manual if applicable.

**Note:** you may need to reword for batteries or adapters.

- Do not dispose of batteries in fire, as they may explode – check with local codes for possible special disposal instructions if applicable.

## Coaxial Cable

If applicable, the coaxial cable screen shield needs to be connected to the Earth at the building entrance per ANSI/NFPA 70, the National Electrical Code (NEC), in particular Section 820.93, "Grounding of Outer Conductive Shield of a Coaxial Cable," or in accordance with local regulation.

## FCC 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

# Notices

does cause harmful interference to radio or television reception, which can be determined by turning the equipment of and on, the user is encouraged to try and correct the interference by implementing one or more of the following measures:

- Reorient or relocate the device;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected (applicable only to powerline products);
- Consult the dealer or an experience radio or television technician for help.

## Declaration of Conformity for Products Marked with the FCC logo–USA Only

This device complies with Part 15 of the FCC Rules license-exempt RSS standard(s). Operation is subject to the following two conditions:

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

## Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Actiontec Electronics, Inc, may void the user’s authority to operate the equipment.

## Declaration of Conformity for Products Marked with the Industry Canada (IC)–Canada only

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

3. This device may not cause harmful interference;
4. This device must accept any interference received, including interference that may cause undesired operation of the device.





## Tech Support

To access user manuals, Frequently Asked Questions etc, visit our website at: [www.hitron-americas.com/HTEM4](http://www.hitron-americas.com/HTEM4)

## Warning

- Risk of electrical shock. Do not expose the device to water or moisture.
- The device is a high-performance communications device designed for home and office environments.
- Do not use the device outdoors. Keep the device in an environment between 0°C - 45°C (32°F - 113°F). To avoid overheating, do NOT place any object on top of the device.
- Do not restrict the flow of air around the device.
- The manufacturer assumes no liabilities for damage caused by any improper use of the device.

### Disclaimer

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