MoCA 2.5 Ethernet Adapter
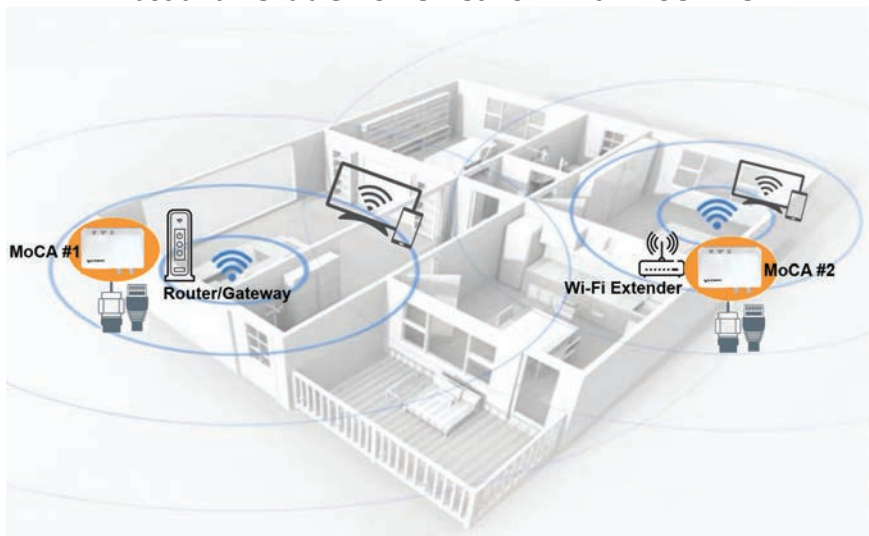### MN2580, MN2550

v1.5
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support@starlink7.com

Start Guide

Introduction

Fast and Reliable Home Network with MoCA 2.5

MoCA 2.5 adapters boost the data speed and performance to reach up to 2.5 Gbps to build high-speed and reliable home mesh network over the existing in-house coaxial network.

MN2580   single 2.5GBase-T Ethernet port to reach 2.5 Gbps line rate. 2.5GBase-T port is backward compatible with 1000Base-T after auto negotiation.

MN2550   dual 1000Base-T Ethernet ports to reach 2.5 Gbps line rate.

The adapter also extends Wi-Fi coverage with high-speed wired connection after coaxial or fiber drop.

Overview

The MN2580/MN2550 MoCA 2.5 adapter is a high-speed network adapter for extending home networking to access Internet. The adapter provides an Ethernet connection anywhere a coaxial outlet is available. The output of the adapter also includes a TV or set-top box port to deliver video content to allow existing TV connection at coaxial outlet.

Package Content

• MN2580 or MN2550 MoCA 2.5 Adapter
• Coaxial cable (RG6)
• Ethernet cable
• AC/DC power adapter
• Start Guide

Installation Requirement

• Available coaxial port
• Available electrical power socket

Peripheral Interface

MN2580
• **2.5G** (2.5Base-T) Ethernet port
• **COM** (Coax In/Out) coax port
• **CATV** (TV/STB In/Out) coax port
• **MPS** button

LED
• **POWER**
glows green when Adapter is powered up
• **ETHERNET**
glows green for link; blinks green for activity
• **COAX**
glows green when Coax (MoCA) links up

MN2550
• **LAN1 and LAN2** (1000Base-T) ports
• **MoCA** (Coax In/Out) coax port
• **TV** (TV/STB In/Out) coax port

LED
• **Power**
glows green when Adapter is powered up
• **LAN1 and LAN2 (on port)**
left: glows green for 1000 Mbps link; dark for 10/100Mbps link
right: blinks green for activity
• **MoCA**
glows green when MoCA links up
• **System**
glows green when the Adapter is online

Up to MoCA #16

Maximum 16 MoCA 2.5 adapters can be connected to the same coaxial network.

Adapter Web Management

① Connect the **ETHERNET** (MN2580) or **LAN1 / LAN2** (MN2550) port of the Adapter and the Ethernet port of a computer with an Ethernet cable. Power on the Adapter.

② Configure the IP address of the computer to be 192.168.144.100.

③ Launch a Web browser on computer and type http://192.168.144.200 to login with *user name:* **admin**, *password:* **maxlinear**

④ On the Web management page of the Adapter, current configurations and operational status, such as frequency range, transmission rate, IP address and other Adapter information, can be reviewed and configured.

MoCA Protected Setup (MPS)

The MPS (MoCA Protected Setup) button is used to copy the password that is currently stored in the ECBs on the Security page under Network Security for the different bands to any new MoCA adapters added to the same coax network.

Connecting the First Adapter

It's a simple plug-and-play process to connect the Adapters. First, connect one Adapter to the TV or set-top box, the broadband modem or router, and the Internet signal is established over the coaxial cable. Then, additional Adapters can be installed throughout the home or the office at any location where Ethernet or Internet access is needed, and an available coaxial port is available.

The first Adapter connected to the TV or set-top box, the broadband modem or router takes the Internet signal from the modem/router and delivers it to the coaxial network, while keeping the TV or set-top box connected.
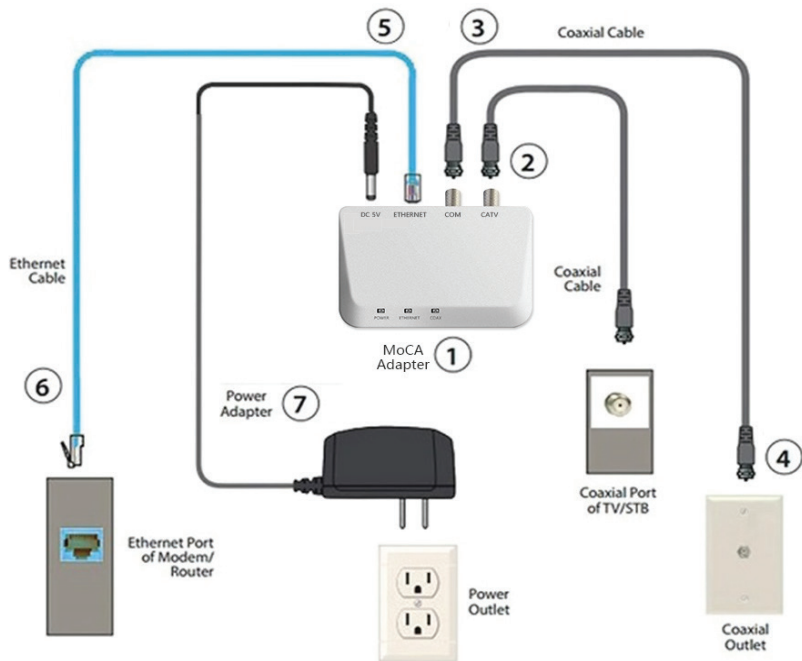

MN2580

MN2550

To connect the first Adapter:

① Locate the coaxial outlet in home desired to place the Adapter. If Web browsing is needed, locate the coaxial outlet nears the home modem or router provided by Internet Service Provider. Unplug the end of the coaxial cable connected to the TV set or set-top box from its coaxial wall outlet. If no TV set or set-top box is plugged into this coaxial outlet, skip to step 3.

② Connect the end of the coaxial cable removed in step 1 into the coaxial port labeled **CATV** (MN2580) or **TV** (MN2550) on the side of the Adapter.

③ Connect one end of another coaxial cable into the coaxial port labeled **COM** (MN2580) or **MoCA (**MN2550) on the side of the Adapter.

④ Connect the other end of the coaxial cable installed in step 3 to the wall outlet left unconnected in step 1.

⑤ Connect one end of an Ethernet cable into the **ETHERNET** (MN2580) or **LAN1** (MN2550) port on the side of the Adapter.

⑥ Connect the other end of the Ethernet cable into the Ethernet port of home gateway or router for Internet access.

⑦ Plug in the provided power adapter into the power port on the side of the Adapter. Plug the other end of the power adapter into an electrical outlet or power source.

The Internet and optional TV signals are now being delivered across the coaxial network.

MN2580   Make sure the **POWER**, **ETHERNET** and **COAX** LED glows or blinks green.

MN2550   Make sure the **Power**, **MoCA** and **System** LED glows green. **LAN1** / **LAN2** Ethernet
port LED glows green and/or blinks green.

Connecting Additional Adapters

Additional Adapter can be placed at locations around the home or the office that need an Internet connection, but currently only have a coaxial port.

To connect additional Adapters:

① Locate the coaxial outlet in home desired to place the Adapter. Unplug the end of the coaxial cable connected to the TV set or set-top box from its coaxial wall outlet. If no TV set or set-top box is plugged into this coaxial outlet, skip to step 3.

② Connect the end of the coaxial cable removed in step 1 into the coaxial port labeled **CATV** (MN2580) or **TV** (MN2550) on the side of the Adapter.

③ Connect one end of another coaxial cable into the coaxial port labeled **COM** (MN2580) or **MoCA** (MN2550) on the side of the Adapter.

④ Connect the other end of the coaxial cable installed in step 3 to the wall outlet left unconnected in step 1.

⑤ Connect one end of an Ethernet cable into the **ETHERNET** (MN2580) or **LAN1** (MN2550) port on the side of the Adapter.

⑥ Connect the other end of the Ethernet cable into the Ethernet port of the device to be connected to Internet. The extra Ethernet port (LAN1 or LAN2) on MN2550 can be connected to additional computer or network device.

⑦ Plug in the provided power adapter into the power port on the side of the Adapter. Plug the other end of the power adapter into an electrical outlet or power source.

The Internet and optional TV signals are now being delivered across the coaxial network.

MN2580   Make sure the **POWER**, **ETHERNET** and **COAX** LED glows or blinks green.

MN2550   Make sure the **Power**, **MoCA** and **System** LED glows green. **LAN1** / **LAN2** Ethernet port LED glows green and/or blinks green.

Repeat this process to install additional Adapters throughout the home or the office.

Specifications   Note: Specifications are subject to change without notice.

MoCA, Ethernet / IP and RF

MoCA 2.5		
Chipset	Maxlinear MXL3710; 32 MBit SPI Flash; 16 Maximum Nodes in Coax Network	
Operating Frequency	1125 MHz to 1625 MHz Configurable Extended D Band	
Channel Bandwidth	5x 700Mbps; 500MHz	
Transmit Return Loss	≥ 6 dB Relative to 75Ω	
Output Power	+7dBm; 5 x 100MHz Channels	
Input Power	-50dBm to +1dBm	
Modulation	OFDM 1024 QAM, TDD	
Forward Error Correction (FEC)	Low-Density Parity Check (LDCP)	
Encryption	128 bit Advanced Encryption Standard (AES)	
Data Rate	MN2550	2 x 1 Gbps
	MN2580	1 x 2.5 Gbps
Application Protocol	VLANs, 802.11p, IGMP v1/2/3 & Snooping	
Management	Web Based Configuration via 1000Base-T Connection	
Ethernet		
Ethernet	IEEE802.3, IEEE802.3az	
Interface	MN2550	2 x 1000 Base-T MDI/MDIX, 2 x 75Ω F
	MN2580	1 x 2.5G Base-T MDI/MDIX, 2 x 75Ω F
Latency	16 Nodes ≤3.6 ms average; ≤ 5.1ms	
Quality of Service (QoS)	Priority QoS; BER ≤ 1.0e-9	
Radio Frequency / TV		
Frequency Range	5 MHz to 1002 MHz	
Transmit Return Loss	≥ 14 dB Relative to 75Ω	
Insertion Loss	RF ≤ 2.0 dB; CATV ≤ 1.0 dB	
Reflection Loss	≥ 16 dB	
Out-of-Band Relection	≥ 45 dB	

Power Supply and Hardware

Power Supply		
Power Supply	100 - 240 VAC, 50/60 Hz; 12 VDC, max. 1A, 1.3 mm PSU Wall Plug	
Power Consumption	< 3 watts	
Hardware		
Dimension W x D X H	4.3" x 2.8" x 1.1" (110 mm x 70 mm x 28 mm)	
Weight	3.2 oz (90 g)	
LED	MN2550	Power (green), System (green), MoCA (green) LAN1/LAN2 Link (green), Activity (amber)
	MN2580	POWER (green), ETHERNET (green), COAX (green)
Connectors	MN2550	DC Input, 2 x 1000Base-T RJ 45, MoCA 75Ω F, TV 75Ω F
	MN2580	DC Input, 1 x 2.5GBase-T RJ 45, MoCA 75Ω F, TV 75Ω F, MPS

Environment and Safety

Environment and Safety	
Temperature	Operating 22°F to 113°F (-5°C to 45°C); Storage -4°F to 185°F (-20°C to 85°C)
Operating/Storage Humidity	Non-Condensing; Altitude < 2000 m Operation 10% to 85%; Storage 5% to 90%
FCC Certificate	CISPR PUB. 22, FCC Part 15 Subpart B
RoHS	RoHS 2.0 Standard 2011/65/EU, Amendment 2015/863/EU
MTBF	> 300,000 hours Telcordia SR-332
AFR in Continuous Operation	< 1.5%

Notes

Warranty

This device has one-year Limited Hardware Warranty and 120-day free software updates after purchase. This Limited Warranty Statement gives the customer specific legal rights. The customer may also have other rights which vary from State to State in the United States, from province to province in Canada, and from country to country elsewhere in the world. To the extent that this Limited Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Warranty Statement may not apply to the customer.

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 indicated in this manual if applicable.

Coaxial Cable

If applicable, the coaxial cable screen shield needs to be connected to the Earth at the building entrance per ANSI/NFPA70, 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 device 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 and correct the interference by implementing one or more of the following measures: Reorient or relocate the device;
- Increase the separation between the device and receiver
- Connect the device to an outlet on a circuit different from that to which the receiver is connected (applicable only to power line 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:
- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation of the device

CE

EN 55032: Electromagnetic compatibility of multimedia equipment - Emission requirements
EN 55035: Electromagnetic compatibility of multimedia equipment - Immunity requirements

Trouble Shooting

The COAX/MoCA LED is not lit or unstable after installing 2 Adapters

Prpblem: No coax network has been established.

• Confirm that the COM or MoCA port on the Adapter is connected to the coax outlet on the wall
• Try another coax outlet in a different room to see if the Adapters connect (COAX/MoCA LED glows solid green)
• Place two Adapters close to each other and connect them with a short coax cable to see if the Adapters connect (COAX/MoCA LED glows solid green)
• Check if a Cable TV or over-the-air TV signal is available on both cable wall outlets
• Check your cable junction box to make sure the rooms are connected on the same splitter
• Check the coaxial cable used to connect the Adapter is 75Ω RG6 or RG11 cable
• Check the splitter(s) between Adapters is MoCA compatible to pass signal in frequency range of 1.1 GHz to 1.6 GHz

My cable modem or set-top box does not work correctly after installing the Adapter

Problem: The Adapter may be incompatible with your Cable TV device.

Don't use the CATV port. Use a coax splitter to go from the coax outlet to the splitter and then run separate coax cables to the cable modem or set-top box and another coax to the Adapter.

If you are still having problems, try to use a MoCA POE (Point of Entry) filter at the input of the cable modem or set-top box, this filter blocks the MoCA signal from passing through to the device.

The Ethernet device I connected to the Adapter is not connecting to the Internet or the connection speed is slow

Make sure that your broadband router is also connected to a MoCA adapter and that the Ethernet port on that adapter is connected to the LAN port on the router.

I have AT&T/DirecTV or DISH network

The Adapter is designed for use with Cable TV or over-the-air TV (e.g. ATSC/8VSB). Contact your Satellite service operator for adapters that are compatible with your TV system.

My Internet speed is too slow

Login the Web management of the Adapter and check the MoCA Link Rate page to check the current link rate. If the link rate is far lower than 2500Mbps, follow the steps described in resolution of **The COAX/MoCA LED is not lit after installing 2 Adapters** section to check the coax cable wirings in the house.

Refer to the resolution of **The Ethernet device I connected to the Adapter is not connecting to the Internet** and **My Internet speed is too slow** sections as well.

My Adapter doesn't work with other MoCA adapters

Although MoCA standards are always backward compatible, but there are many versions of MoCA standards (MoCA 1.0/1.1/2.0) published. Older version of MoCA adapters may have been out-of-date, worn out or under-performed that cause incompatibility with MoCA 2.5 adapters. It's highly suggested to replace the older MoCA adapters with the new ones to reach the best performance expected.