

## USER GUIDE





# Gigabit Ethernet over Coax Bridge

## BLAEOC11

Get more out of your existing RF distribution network. Send fast, reliable internet throughout your home or workspace



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# Introduction

## Product summary

**Gigabit networking over an existing coax infrastructure is a fast and easy way to upgrade your network without running new cables.**

You can use your existing TV cables to connect your devices to the internet and to each other. Not only will it save you money and time, but it's also incredibly easy to do.

## Features

- 1 Master - up to 7 clients (bidirectional - each unit can be used as master or client)
- Up to 1Gbps networking speed
- Ideal for IPTV - Sky Glass™, Sky Stream™ & Android™ Box
- Plug & play - simple installation
- Configuration and-management of IP and VLAN settings transparently - no GUI required
- G.hn, Wave2 - high speed home networking
- Splitter included with each unit - duplex TV & IP networks
- 2-200MHz frequency range, compatible with analogue TV, Freeview™ DVB-T/T2, and IPQAM
- OFDM modulation & FEC (Forward Error Correction), ensures stable data transmission in noisy environments
- Saves up to 6 ports on your router by using 1 cable
- Low latency, typically 1ms

## Benefits

- Reduce cost by utilising pre-existing cables and saves time on installation
- Plug & Play installation
- Powered locally - in the event of cable damage or a short circuit you won't encounter any issues with powering these devices
- Compatible with our range of Wi-Fi access points
- No drilling means a clean and simple installation
- Hardwired ethernet connection
- Compact design with F type connections
- No need for power pass over all network

## Kit Contents

- 1 x EoC Bridge
- 1 x Power Supply (12V 1A)
- 1 x 1m CAT5e Cable
- 1 x F Connector
- 1 x Dual Purpose 2-Way Splitter/Combiner



## Applications

- **CCTV and Security Systems:** Many older security camera installations use coaxial cables for video transmission. EoC bridges can enable the use of modern IP cameras without rewiring the entire setup
- **IP Networking:** EoC is ideal for use with computer network systems because it can transmit data over long distances without signal degradation, making it suitable for extending network reach. Its compatibility with legacy infrastructure makes it a cost-effective and efficient choice for network upgrades
- **Residential Internet:** EoC bridges can be employed in residential settings to extend ethernet connectivity to rooms or areas where ethernet cables cannot be directly laid, especially in older homes
- **Hospitality:** In hotels and similar establishments, EoC bridges facilitate high-speed internet access in guest rooms using existing coaxial infrastructure
- **Commercial Buildings:** Retrofitting ethernet cables in an existing commercial building can be expensive and disruptive. EoC bridges provide a cost-effective solution to provide network connectivity
- **Smart TV and Entertainment Systems:** EoC bridges can transmit high-bandwidth signals required for streaming content and online gaming to smart TVs and entertainment systems
- **Points of Sale (POS) Systems:** In retail environments, where ethernet connectivity is crucial for POS terminals, EoC bridges can make it easier to set up the required network infrastructure
- **Industrial Environments:** In industrial settings, where coaxial cables are already laid for other purposes, EoC bridges can enable data communication for various monitoring and control systems
- **Campus Networks:** EoC bridges can be used to extend network connectivity across large educational campuses or corporate facilities using existing coaxial cables
- **Remote Locations:** EoC bridges can be useful in remote areas, where ethernet cables might not be feasible to install, but coaxial cables are present
- **Temporary Setups:** In situations requiring temporary network connectivity, such as events or exhibitions, EoC bridges can be quickly deployed without the need for extensive cabling work
- **Video Surveillance:** Beyond CCTV, EoC bridges can also be used in more advanced video surveillance setups, including multiple cameras with high-definition feeds
- **Telecommunications:** EoC bridges can play a role in telecommunications networks, providing ethernet connectivity over existing coaxial lines
- **Healthcare Facilities:** In hospitals and medical facilities, EoC bridges can assist in providing reliable network connectivity for medical equipment and systems
- **Building Management Systems:** EoC bridges can enable networking for building managements systems that control HVAC, lighting, access control and more
- **Public Wi-Fi Hotspots:** In locations where public wi-fi is offered, EoC bridges can help extend the coverage area while utilising existing coaxial cables



# Safety Instructions

## Overall safety instructions

For EoC bridge safety, power off during maintenance, use surge protectors, and avoid wet hands. Install in a cool, dry place, shielded from extreme conditions. Secure cables to prevent hazards and inspect for damage. Employ ESD protection when handling sensitive parts and keep manuals for reference.

### Electrical Safety

- Ensure the device is powered off before installation or maintenance.
- Always use the power supply provided.
- Use appropriate electrical outlets and surge protectors.
- Avoid handling the device with wet hands.

### Environmental Conditions

- Install the EoC bridge in a cool, dry, and well-ventilated location.
- Protect it from exposure to extreme temperatures, humidity, and direct sunlight.

### Cable Management

- Organise and secure coaxial cables to prevent tripping hazards.
- Inspect cables regularly for signs of wear, damage, or deterioration.

### ESD (Electronic Discharge) Protection

- Use ESD protection measures when handling sensitive components to avoid damage.

### Documentation

- Keep user manuals and documentation for reference and troubleshooting.



# Tips

Follow our advice to fully utilise our products:

- b Check Compatibility:** Ensure that your EoC bridge units are compatible with your existing coaxial cable infrastructure and the devices you plan to connect.
- b Inspect Coaxial Cables:** Examine the quality and condition of your coaxial cables; replace damaged or low-quality cables for optimal performance.
- b Secure Power Connections:** Use surge protectors and appropriate electrical outlets for power connections to safeguard against power surges.
- b Testing:** After installation and configuration, conduct network tests to verify that data transmission is working correctly.
- b Cable Management:** Organise and secure coaxial cables to prevent tripping hazards and to maintain a tidy installation.
- b Interference Mitigation:** Keep the coaxial cables away from potential sources of interference, such as electronic appliances, motors, or fluorescent lights. FM (88-108MHz) or DAB (174-230MHz) signals may interfere with EoC signals (2-200MHz) and visa-versa.
- b Label Connections:** Label the coaxial cables and ethernet cables to easily identify their purpose and connections.
- b Regular Maintenance:** Schedule periodic checks to ensure cables and connections remain in good condition, and update firmware as needed.
- b Connections:** Use SAT2/Q connection as this connection is not triplexed on a quad plate. DO NOT use triplexed outlets.
- b Aerials:** We suggest using our Freeview 5G filtered aerials and 5G filters prior to installation.
- b Amplifier/Splitters/Modems:** Check that any splitters or amplifiers are G.hn compatible. Standard TV distribution amplifier will not pass EoC. Always verify the G.hn modems have power and link lights are on.

# Step-By-Step Instructions

The installation process is simple, no need for any setup process or user interface. This device works **bidirectionally**, working as a sender or receiver. Just connect one unit to the router and the others to the relevant devices and your network data will be transmitted, no further IP configuration needed.

**Please fully read through the instructions and tips section before installing the product.**



## 1. Plan Your Network



a. Determine if you will still need TV distribution



b. Determine the locations where you want to establish the EoC bridge connection



c. Ensure you have access to coaxial cable connections at both locations



## 2. Connect the Master Unit



a. Connect the EoC Master to the existing coax using an F type connector (supplied)



b. If you are also distributing Freeview, use the combiner (supplied) to connect Freeview to 'Aerial IN' and the EoC Master to 'EoC IN'



c. Connect the EoC Master to your network source (e.g., router or switch) using an ethernet cable (supplied)



## 3. Connect the Client Unit



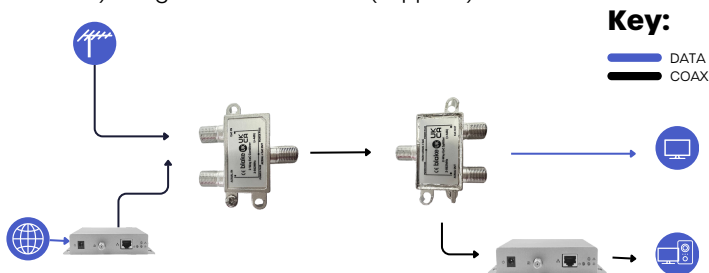
a. At the required location, connect the EoC Client to the existing coax cable using an F type connector (supplied)



b. If you are also distributing Freeview, use the splitter (supplied) to connect the TV to 'Aerial OUT' and the EoC Client to 'EoC OUT'



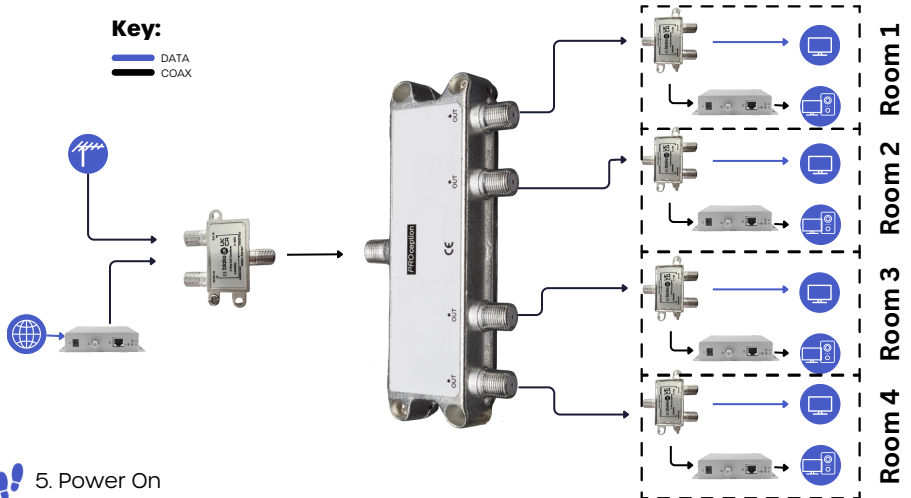
c. Connect the EoC Client to your network device (e.g., computer or IPTV) using an ethernet cable (supplied)



# Step-By-Step Instructions

## 4. Network Topology - Using Multiple Clients

- a. Follow steps 1 & 2
- b. On the existing coaxial cable coming from the combiner, use a splitter that has the required number of outputs (not supplied) to accommodate the desired number of clients
- c. Follow step 3 for each output



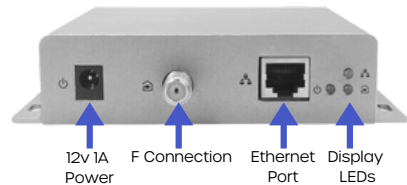
## 5. Power On

- a. Plug in the power adapters and turn on both the master and client/s

## 6. Testing

- a. Test your network connection at the receiver end to ensure data is transmitted and received properly
- b. Check the LEDs on both the master and client:

Icon	Status	Description
	ON	Power on
	OFF	Power off
	ON	Connected to device successfully
	OFF	Connected to device unsuccessfully
	ON	Connected to network successfully
	OFF	Connected to network unsuccessfully
	FLASHING	Data transmission







# Troubleshooting



There is no power or lights to my EoC

- Check the power source and connections to ensure the EoC bridge is receiving power.
- Inspect the power adapter and cables for damage. Replace if necessary.
- Verify that the electrical outlet or power strip is functioning correctly.



There is no network connectivity

- Confirm that both the transmitter and receiver EoC bridge units are powered on and properly connected.
- Check the coaxial cables for secure connections at both ends.
- Ensure the ethernet cables are securely plugged into the appropriate ports.
- Check existing coaxial network for good connections and damaged cables.



I'm experiencing slow or intermittent connection

- Verify the quality of the coaxial cables; damaged cables can result in reduced performance.
- Check for interference sources near the coaxial cables and move them away if possible.
- Review the network topology and cable lengths to minimise signal loss.

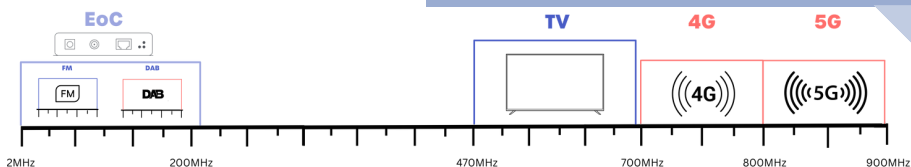


# Troubleshooting



I'm having signal quality issues

- Use high-quality coaxial cables.
- Reduce interference from electronics, motors, or fluorescent lights near cables. FM (88-108MHz) or DAB (174-230MHz) signals can disrupt EoC signals (2-200MHz) and vice versa. 4G/5G can also cause interference.



There is ESD (Electrostatic Discharge) Damage

- Handle sensitive EoC bridge components with ESD protection to prevent damage.
- Avoid static-prone environments when installing or handling the devices.



My Amplifier/Splitter/Modem isn't working with the EoC

- Check that any splitters or amplifiers are G.hn compatible. Standard TV distribution amplifier will not pass EoC.
- Always verify the G.hn modems have power and link lights are on.



# Maintenance

Maintaining the KVM Extender 70m is vital for ensuring its efficient operation and longevity. Regular dusting is crucial to prevent blockages in the ventilation from debris, which can lead to overheating and hardware malfunctions. It's important to consistently check and secure cable connections to avoid signal disruptions and maintain high-quality video and audio transmission. Proper environmental placement is also key; the device should be kept away from extreme temperatures, moisture, and direct sunlight to protect against environmental stress and potential damage. Additionally, keeping the firmware up to date addresses software issues, enhances features, and ensures compatibility with other devices. Effective maintenance thus ensures the extender's reliability and optimal performance.

- b Visual Inspection:** Regularly inspect the EoC bridge components for physical damage, loose connections, or signs of wear. Ensure cables are properly secured.
- b Cleaning:** Keep the EoC bridge and its surroundings clean and free from dust and debris, which can affect performance. Use a dry, lint-free cloth for cleaning.
- b Cable Integrity:** Inspect coaxial cables, connectors, and ethernet cables for any wear, fraying, or damage. Replace damaged cables promptly to maintain signal quality.
- b Environmental Considerations:** Ensure the EoC bridge remains in a suitable environment. Protect it from extreme temperatures, humidity, and direct sunlight.
- b Testing:** Conduct performance tests to ensure that the EoC bridge is functioning as expected. Check network speeds and connectivity between devices.



# Technical Specifications

## What is G.hn?

G.hn, or Gigabit home networking, is a technology created by the International Telecommunication Union (ITU-T) to make your home network faster and more versatile. It lets you use the wiring you already have at home, like electrical, coaxial (like cable TV cables), and twisted-pair (like telephone lines), for high-speed communication.

Here's why it's useful:

**Works with Different Wires:** G.hn works with different types of home wiring, so it's flexible and can be used in various situations.

**Super-Fast:** It can transfer data really quickly, even at gigabit speeds. This is great for streaming HD video, online gaming, and connecting lots of smart devices at the same time.

**Prioritises Important Data:** G.hn makes sure that important content like voice calls and video streams get the best quality on your network.

**Works with Different Brands:** It's designed to work with equipment from different companies, so you have more options and can choose what suits you best.

**Keeps Your Data Safe:** G.hn supports encryption and security features to protect your data while it travels over the network, making your network more secure.

**Works with Your Current Setup:** You can use G.hn without changing your existing wiring, which saves you from having to replace or upgrade everything.

**Flexible Setup:** You can use G.hn to create different types of networks in your home, like point-to-point or mesh networks, giving you flexibility.

**Many Uses:** G.hn can be used for home networks, extending Wi-Fi coverage, sharing multimedia, and supporting smart home devices.

To summarise, G.hn technology upgrades your home network by making the most of the wiring you already have, making it faster, more reliable, and adaptable to your needs.



# Technical Specifications

Model	BLAEoC11
Interface	1 x 100/1000Mbps Base-TX Self-Adaptation RJ45, 1 x F-Type 75Ω, 1 x DC 12V 1A
LED Display Light	PWR, G.hn, ETH
Frequency Band	2-200MHz
Protocol	G.hn, IEEE 802.3, IEEE 802.3u, 10/100/1000Mbps Ethernet Standard
Security	128 bit AES
Transmission Rate	1000Mbps
Modulation	OFDM
Transfer Distance	1000m
Power Consumption	<5W
O/S	Windows 98/ME/NT/2003/7/10/11, Windows XP Home/Pro, Mac OSX, Linux
Size	128.5 x 93 x 28.3mm (L X W X H)
Weight	350g
Operating Environment	Working Temperature: 0 - 70°C
Certification	CE, ROHS
Working Voltage	DC12V



# FAQs

## What is an EoC bridge?

An EoC bridge is a device that allows you to transmit ethernet data signals over existing coaxial cables, typically used in cable TV connections, to create a network connection.

## How does an EoC bridge work?

It converts ethernet data into a format that can travel over coaxial cables and then converts it back into ethernet data at the other end, effectively extending your network through coaxial wiring.

## What are the main advantages of using an EoC bridge?

EoC bridges repurpose existing coaxial cable infrastructure, reducing installation costs. They also provide high-speed, reliable network connections over long distances.

## What types of coaxial cables are compatible with EoC bridges?

EoC bridges typically work with all 75Ω coaxial cables, however we always recommend using a benchmarked type 100 cable for best results.

## Can I use EoC bridges with other types of wiring, like power lines or telephone lines?

No, EoC bridges are specifically designed for coaxial cables. If you want to use other types of wiring, you would need different technologies like powerline communication (PLC) or G.hn over twisted-pair.



# FAQs

## Is EoC bridge installation complicated?

Installation is generally straightforward. Connect the transmitter to your network source, the receiver to your desired device, and ensure both ends are plugged into coaxial cables. There is no GUI set up needed.

## What kind of network speeds can I expect with an EoC bridge?

EoC bridges can provide speeds ranging from 100 Mbps to 1 Gbps, depending on the quality of your coaxial cables.

## Can I use EoC bridges in a commercial or business setting?

Yes, EoC bridges can be used in commercial settings to extend network connectivity, especially when it's not feasible to run new ethernet cables.

## Can I use multiple EoC bridges in the same network?

Yes, you can have up to 7 clients for every master in the same network to connect different devices and extend network coverage over coaxial cables.

## Do EoC bridges work with Wi-Fi networks?

Yes, EoC bridges can be used in conjunction with Wi-Fi networks to extend wireless coverage to areas that may have weak or no signal.



# Warranty & Compliance

BLAEOC11



## Lifetime Guarantee - 5 years

This guarantee covers failure of your product resulting from manufacturing defect within the time period of the product's average lifetime. This guarantee does not cover damage to the product caused by abuse, tampering, defective installation or natural causes such as lightning discharge. Repair or attempted repair, other than by the manufacturer, will render this guarantee void. This guarantee does not affect a consumer's statutory rights.

Take a look at our lifetime guarantee web page for further information:  
[www.blake-uk.com/lifetime](http://www.blake-uk.com/lifetime)

## Compliance statement

Hereby, Blake UK declares that the **BLAEOC11** is in compliance with the relevant statutory requirements.

The full text of the declaration of conformity is available at the following internet address:

[www.blake-uk.com/DoC](http://www.blake-uk.com/DoC)





# Glossary

<b>EoC Bridge</b>	The device that enables ethernet communication over coaxial cables, facilitating network connectivity.
<b>Coaxial Cable</b>	A type of cable with a central conductor, insulating layer, and outer shielding, commonly used for cable TV and EoC connections.
<b>Master</b>	The EoC bridge component at one end of the coaxial cable, responsible for sending data onto the coaxial medium.
<b>Client</b>	The EoC bridge component at the other end of the coaxial cable, responsible for receiving and converting data from the coaxial medium into ethernet signals.
<b>Ethernet</b>	A standard for wired network communication, often used for local area networks (LANs).
<b>G.hn</b>	The ITU-T standard for high-speed, wired communication over existing home wiring, including power lines, coaxial cables, and telephone lines.
<b>Bandwidth</b>	The data transfer capacity of a network connection, typically measured in megabits per second (Mbps) or gigabits per second (Gbps).
<b>Mbps</b>	Megabits per second, a unit for measuring network speed.
<b>Gbps</b>	Gigabits per second, a unit for measuring high-speed network connections.
<b>Encryption</b>	The process of securing data by converting it into a code to prevent unauthorised access.
<b>ESD (Electrostatic Discharge)</b>	A sudden flow of electricity between two objects with different electric potentials, potentially harmful to electronic components.
<b>Network Topology</b>	The arrangement of devices and connections in a network, which can be point-to-point, point-to-multipoint, or mesh in the case of EoC bridges.
<b>Latency</b>	The time delay between the transmission and reception of data packets, affecting network responsiveness.
<b>Router</b>	A device that directs data packets between different networks, often used to connect LANs to the wider internet.

# Additional & Recommended Products



## Pack 12 FTP CAT6 Patch Leads

Pack of 12 FTP Patch Leads with 4 colour variations: black, white, green, and violet.

Available in a pack of 0.25m or 0.5m

- CAT6 shielded plugs
- Pack of 12 (ideal for patch panels)
- Colour blind friendly



## CAT6 FTP Patch Leads

- Copper cable - less attenuation than budget CCA cables
- Foil Twisted Pair (FTP) for reduced crosstalk & EMI
- Shielded RJ45 plugs to maintain shielding integrity
- Available in 0.25m, 0.5m, 1m, 3m, 5m, 10m, 20m



## Heavy Duty RJ45 Tool

- Moulded handle and safety lock
- Toolbelt friendly
- For standard and push through CAT5/6 plugs
- Durable blades
- Cutter and stripper function
- Clean trim finish



## RJ45 Connectors/Plugs

- Available in CAT5 or CAT6
- We supply both standard and push through connectors
- Neat & professional finish
- Gold plated 3U

## Network Cable Couplers



CAT5



CAT6A Shielded



CAT5/6 Krone



CAT6  
Waterproof  
Shielded



RJ45 to Krone  
CAT6 Surface  
Box

# Additional & Recommended Products



## Cable Strippers

- For all common types of cable
- Cable cutter function
- Easy to use



## F Connectors

- Push on
- Crimp on
- Compression
- Coupler



## RF Splitters

- F type connectors
- Frequency range 5-862MHz
- Internal usage
- Available in 2, 4, 6, 8, 12 & 16-Way



## 5G/4G Filter

- F type 25dB inline LTE blocking filter (above channel 48)
- Overcomes interference to broadcast reception from LTE (5G/4G) mobile networks
- Can be used externally if the F connections are sealed with self-amalgamating tape

