IPLOC DZ-POM - User Guide





Table of Content

- 3 Security Note
- 4 Quick Start Guide
- 5 Introduction
- 5 Overview
- 5 MoCA Coax Network Example
- 6 Interface
- 7 Installing IPLoC D2-POM
- 7 Overview
- 7 Minimum installation
- 7 Practical installation of a IPLoC unit
- 8 Own house with antenna
- 8 Own house or a apartment with Cable-TV

9 Web Interface

- 9 Overview
- 9 Windows Configuration
- 9 Logon to IPLoC D2-POM Webserver
- 10 MoCA Setup
- 12 Device Setup
- 13 Security Setup
- 14 Device Status
- 15 PHY Status
- 16 Upgrade
- 17 Reboot
- 18 Firmware upgrade
- 21 Installations examples
- 23 Technical Data

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Security Note

To insure proper internet security with IPLoC, then you need to install the product correct.

As the IPLoC signal use the coaxial cable to transport the IP-signal in all directions, you need to insure that the signal stay inside your network.

To do that you need to install a filter or use IPLoC behind an amplifier.



Example 1: Filter



2. Own house with Cable-TV



3. Apartments



You need a filter or an amplifier on the incoming cable

See example 1 or 2



Example 2: Amplifier



Quick Start Guide

The following items should be found in your package:



Plug in IPLoC to the existing ADSL / Broadband router with an Ethernet cable in LAN socket.



Install the IPLoC on the existing TV socket. (if you have a TV cord in the socket, remove it and put it in the IPLoC instead).



Plug the supplied mains adapter to IPLoC



To connect an additional device, open an second unit and connect the device to the TV socket in which you want an Internet connection.



Connect the network cable to the device.

if you have a TV cord in the socket, remove it and put it in the IPLoC instead



When the second device is connected, it will be configured automatically. Could take up to 3 min. For the function of the device, please check the LED indicator lights on the side of IPLoC

	Name:	Status:	Indication:
	Power	Green	Power on
		Off	Power off
	MoCA	Green	Link
		Off	No link
		Green	Ethernet connected
	LAN	Blinking	Activity

IPLoC push-on module has a Reset/Default function.



IPLoC - example



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Introduction

Overview

IPLoC D2-POM is a Ethernet over Coax Adapter wich bridges the Ethernet traffic present on its Ethernet port to other IPLoC D2-POM connected to the home coaxial wiring. It is compatible with the MoCA®2.0 standard (Multimedia over Coax Alliance).

With IPLoC D2-POM you can use your existing coax network in your home and turn it in to an Ethernet Network for distributing Internet.

It will make a stabil link for Ethernet traffic with high demand such as 4K-TV.

IPLoC D2-POM Features

- Easily installed into existing home coaxial networks
- Web based network management
- Remote Network Monitor Tools
- Field upgradeable software
- Password protection for access control
- Operate in any valid MoCA®2.0 channel frequency in these RF Bands: -Extended D-Band (1125 -1675 Mhz)
 -D-Band Low (1125 -1225 Mhz)
- The Web GUI's Net Status page display's network packet counts and line PHY rates
- Status LEDs shows LAN port connectivity and Coaxial Network Link Up

MoCA Coax Network - Example



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Interface



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Reset Button

• When pressing the reset button, the device make a new search for other units in the MoCA network.

Default Button

• With the help of a paper clip, you can reset the device to factory settings.

Power Supply

- Input 100-240VAC, 0,2A max
- Output 5VDC, 1A



Installing IPLoC D2-POM

Overview

The IPLoC D2-POM can be installed into any home with coaxial cables by simply connecting the device to a coaxial cable outlet as the IPLoC D2-POM is pre-configured with default parameters that will allow operation without any additional configuration. Up to 16 units is possible in a MoCA network.

Below we will go through some installations examples of IPLoC D2-POM for creating a Ethernet network over coax.

Minimum installation

Using 2 pcs of IPLoC with a single coaxial cable for distribute Ethernet signal.

This is not a normal way, only to show minimum configuration of a MoCA coax network.



Practical installation of a IPLoC unit

• Find the TV-Outlet that is nearest your home router and install your first IPLoC D2-POM there.

You also need a 220V outlet for the power supply.

- If you have a antenna cable in the outlet to a TV set, remove that and push on the IPLoC D2-POM and re-install the TV-set cable in the IPLoC D2-POM unit
- Connect the power supply unit. The diode for power will light up green.
- Connect a Ethernet patch cable between your home router and IPLoC D2-POM.
- Find your second TV-Outlet and repeat the procedure but instead of a router connect to your other items that need an internet connection, such as a Smart-TV.
- When you have powered up your second IPLoC D2-POM there should be a green MoCA diode and LAN diode if everything is ok.
 Note! It can take up to 3 minutes before





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there is a link.

Own house with antenna

Normally you can just install the IPLoC as described in "Practical installation of a IPLoC unit" and the network will be up and running.

However if you not have a antenna amplifier, then it could be a good idea to install a POE filter to prevent the MoCA signal go backwards to antenna and "out in the air".

A antenna amplifier will block the MoCA signal.



Own house or an apartment with Cable-TV

If you have an incoming Cable-TV signal you shall install a POE filter to prevent the MoCA signal go backwards to the Cable-TV provider network.

If you do not do this, other people may get access to your network and it is possible that you interfere with Cable-TV provider network.

Install your units as described in "Practical installation of a IPLoC unit"

For more examples see "Installations examples"



Web Interface

Overview

The IPLoC D2-POM is pre-configured with default parameters that will allow operation without any additional configuration. However, if network security is required during operation, then the default parameters need to be modified or if you need to make any other change to the IPLoC D2-POM configuration, then you need to access the web interface on the unit.

Prior to configuring the IPLoC D2-POM , you will need to configure your Windows PC's network interface in order communicate with the IPLoC D2-POM.

Please confirm that your PC has an Ethernet card or network adapter already installed before proceeding to the "Windows Configuration" section below to configure the network settings of a Windows PC.

Windows Configuration

To be able to "talk" to the IPLoC unit, you need to set your computer in a static IP mode. The webserver IP address on IPLoC is preset to 192.168.100.101

So your computer needs to have a address between 192.168.100.0 to 192.168.100.100 or between 192.168.100.102 to 192.168.100.254

In our brief example we use a computer with windows 7.

Example

- Open the start menu and click Control Panel.
- Under Network and Internet, Click on "View Network Status and Tasks".
- Single click "Change adapter settings" on the left side of your screen You might have more than one Internet connection listed here and you need to determine which adapter is your connection to the Internet if this is the case.
- Right click on your network adapter and choose properties to open up the properties window of this internet connection.
- Click "Internet Protocol Version 4(TCP/IPv4)" and then the Properties button.
- Tick "Use the following IP address"
- Change the IP address to a value between 192.168.100.x (1≤x≤100 or 102≤x≤254) Do not use 192.168.100.101 which is IPLoC D2-POM webserver address.
- Save your settings.

For further information how to change an IP address, search on the Internet.

Logon to IPLoC D2-POM Webserver

- Open a web browser on the computer and open the address 192.168.100.101
- A login window appears
- Enter User name: admin
- Enter Password: moca-ecb
- Click on Log In button

After you logon the MoCA Setup screen will appear.



MoCA Setup

This screen allows changes to basic settings. Click the Save buttons to save any changes.

Settings MoCA settings	MoCA Setup	IPLOC DZ-POM		
<u>Device settings</u> <u>Security settings</u>	MOCA SETUP	DKTCOMEGA		
Status	This screen allows changes to basic settings. Click the Save button to save any changes.	Band:		
Device Status	COAX SETUP	Default: D-Ext 1125-1675 In special cases D-Low or D-High		
Phy Rates	Band: D.Evt 1125.1675MHz T	may be used to limit the frequency range.		
Upgrade	Adapter Name: Master	Adapter name:		
Reboot	Network Search Enabled:	Default name Master. The Adapter name only serves as		
	Last Operating Frequency: 1150 V	help to installers who wish to note location of the device, it will not		
	Tx Power: 10 V	use of names are not a problem.		
	Beacon Power Level: 10 V	Network Search Enabled:		
	Preferred NC:	The device will auto select suitable		
	Save Cancel	range defined in Band.		
	RESET	the device will operate on the		
	Reboot Restores Defaults	Operating Frequency.		
		Last Operating Frequency: Default for D-Ext: 1150 Default for D-Low: 1150 Default for D-Hoji: 1400 Last operating frequency sets the frequency in MHz were device will initially attempt.		
		TX Power and Beacon Power level Default: 10 In special cases were other devices are sensitive to transmit power it is possible to lower the output power by selecting a lower value. The ability form MoCA networks at high attenuation will be best at 10		
		Preferred NC		
<u>Contact Customer Support</u>				

Coax Setup Band:

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You can choose between 3 band.

- D-Ext 1125-1675 MHz (default)
- D-Low 1125-1225 MHz
- D-High 1350-1675 MHz

In special cases D-Low or D-High may be used to limit the frequency range.



Save Cancel

Adapter name:

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Default name is Master.

The adapter name only serves as help to installers who wish to note location of the device. I will not impact network operation and re-use of names are not a problem.

The value is fixed and cannot be changed.





Network Search Enable:

Default is ticked.

The device will auto select suitable channel within the frequency range defined in band.

When network search is not ticked, the device will operate on the frequency specified in last operating frequency.

Last Operating Frequency:

- Default for D-Ext = 1150 MHz
- Default for D-Low = 1150 MHz
- Default for D-High = 1400 MHz

Last operating frequency sets the frequency in MHz were device will initially attempt.



Tx Power:

Default is value 10.

In special cases were other devices are sensitive to transmit power it is possible to lower the output power by selecting a lower value. The ability from MoCA networks at high attenuation will be best at 10.

The value is fixed and cannot be changed.



Beacon Power Level:

• Default is value 10

In special cases were other devices are sensitive to transmit power it is possible to lower the output power by selecting a lower value. The ability from MoCA networks at high attenuation will be best at 10.

The value is fixed and cannot be changed.



Preferred NC:

• Default is not Ticked.

The nodes with "Preferred" ticked have a preference over the other nods in the coaxial network to become the NC (Network Coordinator) node. If there are multiple nods with ticked "Preferred NC", a most suitable NC will be chosen based on certain characteristics.

<u>Reset</u>

Reboot:

Reboot the device. After a reboot you need to logon again.

Restore default:

Restore to the latest firmware configuration. After a "Restore default" you need to logon again.

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Device Setup

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

Settings MoCA settings	Device Setup	IPLOC DZ-POM
Device settings Security settings	DEVICE SETUP	DETCOMEGA
Status	This screen allows changes to device settings, such as IP mode and telnet. Click the Save button to save any changes.	This screen allows you to configure the IP
Device Status	LOCAL SETUP	mode and telnet server.Select 'DHCP automatic configuration' if your network
Advanced	DHCP automatic configuration	has a DHCP server. If you choose Static IP address, you must configure the IP address for each coax bridge (note that each IP address must be upique. The new IP
<u>Upgrade</u> <u>Reboot</u>	IP Configuration Provide Link Local automatic configuration Prov	address multiples uniques, mer new IP. address will be used only after reset). Select 'c.Link Local automatic configuration' if there are no DHCP server in this network, and you want make zero config for the IP.The IP address will not apply if Automatic Configuration (DHCP) is selected.If you wable MoCA teniet, then
	MoCA Teinet: Enable Disable	you can access the bridge by telnet protocol.
	Save Cancel	
	Contact Customer Support	

Local Setup

IP Configuration:

DHCP automatic configuration

• Select DHCP automatic configuration if your network has a DHCP server.

Link local automatic configuration

• Select Link local automatic configuration if there are no DHCP server in this network and you want make zero configuration for the IP address.

DHCP & Link local automatic configuration

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Static IP address

- If you choose static IP address, you must configure the IP address for each coax bridge
- Not that each IP address must be unique
- The new IP address will be used only after a reset

MoCA Telnet:

There are two options:

- Enable (Default)
- Disable

If you enable MoCA telnet, then you can access the bridge by telnet protocol.

Security Setup

This screen allows changes to security settings, such as for Admin and Network. Click the Save buttons to save any changes.

Settings MoCA settings	Security			IPLOC D2-POM	
Device settings	SECURITY			DUTCOMICA	
Security settings	For security reasons, you ha	d better ch	ange the password. Your	password must not be too short or too long, and it cannot contain any spaces.	DKICOMEGA
Device Status					This screen allows you to change the admin password for the bridge and the
Phy Rates	ADMIN SECURITY SET	IUP			network security password for the Coax network. It is strongly recommended that
Advanced	Old Passwo	ord:	(En	nter old password)	you change the factory default password, the default admin password is entropic and
<u>Upgrade</u>	New Passwo	ord:	(20	0 Characters Max, 4 Characters Min)	the default network password is 999999999888888888. All users who try to
<u>Reboot</u>	Confirm Passwo	ord:	(20	0 Characters Max, 4 Characters Min)	access the bridge will be prompted for the bridge's password. The new admin
				Save Cancel	password must not exceed 20 characters in length and must not include any spaces.
	NETWORK SECURITY	SETUP			The new network security password must be 12~17 digits.
	Band	Security	New Password	Confirm Password	
	1	Enabled			
	D-Ext		99999999988888888	9999999988888888	
	D-Low		99999999988888888	9999999988888888	
	D-High		999999999888888888	9999999988888888	
				Save Cancel	
				Contact Outcomer Support	
				Contact Customer Support	

Admin Security Setup

Admin Password is the password used when you log in to IPLoC. It is strongly recommended that you change the factory default password for Admin and Network.

• Admin password is default: moca-ecb

In order to change the password, enter the old and new password in the fields and click on the Save button. Click the Cancelbutton to start over.

Admin password must not exceed 20 characters in length and must not include any spaces.

Note that the "Username" is always admin and cannot be changed.

Network Security Setup

The Network Security allows the user to enable or disable network encryption on the coaxial network. This feature is disabled by default.

It is strongly recommended that you change the factory default password for the Network.

• Network password is deafault: 99999999888888888 (Nine 9's, eight 8's)

Network security password must be between 12 to 17 digits.

Note that there can be different passwords on different frequency band.

Device Status

The following display shows the current status and settings.

Settings MoCA settings Device settings	1	Devi	ce Status	IPLOC D2-POM
Security settings	The following display shows the	current status and settings.		DKTCOMEGA
<u>Device Status</u> <u>Phy Rates</u>	DEVICE STATUS			version. Firmware should only be upgraded if you experience problems with the bridge. Also displays the current IP address and MAC address of the bridge The link
Advanced Upgrade Reboot	SOC Version: My MoCA Version: Network MoCA Version:	EN2850.1.53.02.89 2.0 2.0		status, node version and MoCA network version are displayed here.
	IP Address: MAC Address: Link Status:	192.168.100.101 08:e6:72:00:95:76 Down		
	LOF: Ethernet TX:	1150 Tx Good: 0 Tx Bad: 0 Tx Dropped: 0		
	Ethernet RX:	Rx Good: 0 Rx Bad: 0 Rx Dropped: 0		
			Refresh	
			Contact Customer Support	

SOC Version:

• The version of the embedded software running in the IPLoC processor.

My MoCA Version:

• The IPLoC will display 2.0 to indicate it is a MoCA @2.0 device.

Network MoCA Version:

• Any one MoCA®1.x node introduced into the network will cause the network MoCA version to be 1.1.

IP Address:

• The IP address of this IPLoC. The factory default is 192.168.100.101.

MAC Address:

• The MAC address of this IPLoC. This is also used for creation of PQoS flows.

Link Status:

• Gives real time indication that the IPLoC is part of a MoCA network

LOF:

• This is the "Last Operating Frequency" if the node has joined a network, and current frequency if it is actively in a network

Ethernet TX:

• Live count of the ethernet packets transmitted onto the MoCA network by this IPLoC

Ethernet RX:

• Live count of the ethernet packets received from the MoCA network and forwarded to the host.

PHY Status

The following table shows the PHY rate in megabits per second (Mbps) between coax bridges on the network.



This screen displays the current link status (PHY rate in Mbps) of each coax bridge relative to other nods on the coax network.

This data rate is an average of the Tx and Rx data rates between bridges.

Upgrade

This screen shows how to upgrade the IPloC firmware



For further information how to upgrade firmware on an IPLoC device, please see Firmware Upgrade.

Reboot

This screen has only one function and that is to reboot the IPLoC

Settings MoCA settings	Reboot	IPLOC DZ-POM	
Device settings	DEVICE REBOOT	DVTCOMECA	
Status	Click the button below to reboot the device.	DKICOMEGA	
Device Status	BERAAT	When rebooting this page will count	
Phy Rates	KEBUUT	And it will try connect to index page	
Advanced	Reboot	Please refresh this page or input the	
<u>Upgrade</u>		correct URL address manually if it is failed to connect with index page.	
Reboot			
<u>Contact Customer Support</u>			

A Reboot may take about 10 seconds.

When rebooting this page will count down for 10 seconds, and it will try to connect to the index page automatically.

Please refresh this page or input the URL address manually if it is failed to connect with the index page.

Firmware upgrade

It is possible to update the firmware on IPLoC D2-POM if there is a new firmware release. The steps below will help you through a firmware update on an IPLoC D2-POM unit.

You need to have following:

Hardware:

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- Ethernet crossover cable
- Computer
- IPLoC D2-POM
- Power supply for IPLoC D2-POM

Software:

- New firmware for IPLoC D2-POM
- Web browser

Step 1 Download the Firmware file

- Navigate to the following URL: http://dkt.net.dynamicweb.dk/Support/Firmware.aspx
- Look at the label on the product to be able to choose the right firmware
- Save the file to the Computer (Ex. file "IPLoC D2-POM_FW_v1.53.02.89.bin")

Step 2 Connect the hardware

- Connect a crossover cable between computer and IPLoC
- Connect the power supply

You need to connect IPLoC D2-POM directly to the computer via a crossover cable and NOT via a network.



Step 3 Setting static IP on a computer

To be able to "talk" to the IPLoC unit, you need to set your computer in a static IP mode. The webserver IP address on IPLoC is preset to 192.168.100.101

So your computer need to have a address between 192.168.100.0 to 192.168.100.100 or between 192.168.100.102 to 192.168.100.254

In our brief example we use a computer with windows 7.

Example

- Open the start menu and click Control Panel.
- Under Network and Internet, Click on "View Network Status and Tasks".
- Single click "Change adapter settings" on the left side of your screen You might have more than one Internet connection listed here and you need to determine which adapter is your connection to the Internet if this is the case.
- Right click on your network adapter and choose properties to open up the properties window of this internet connection.
- Click "Internet Protocol Version 4(TCP/IPv4)" and then the Properties button.
- Tick "Use the following IP address"
- Change the IP address to a value between 192.168.100.x (1≤x≤100 or 102≤x≤254)
 Do not use 192.168.100.101 which is IPLoC D2-POM webserver address.
- Save your settings.

For further information how to change an IP address, search on the Internet.

Open a web browser on the computer and 192.108.100.101 ■ ▲ ● ● ● ● 192.168.100.101 open the address 192.168.100.101 A login window appears Authorization required Enter User name: admin User name: Enter Password: moca-ecb Password: Log in Cancel Click on Log In button В MoCA Setup window appears In the left menu, click the Upgrade • tab С Upgrade window appears Do not remove power during upgrade Δ The unit will not work if there is a power failure during the loading of the firmware file. D Use the Browse...button to select the Active Image Version:1.53.2.89 new osimage.bin file Backup Image Version:1.51.9.71 The name of the file you choose will appear to the right of "Browse button" Click the Upgrade button. File: Choose File: No file is selected Upgrade Clear selection

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Yes

Cancel

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You will be asked if you want to upgrade Site 192.168.100.101 ask: the firmware, click yes. Are you sure that you want to upgrad the firmware?

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Step 4

Α

Update firmware

 Wait for the Completion status screen 	City 102 100 100 101
to appear. A typical upgrade requires 60	Site 192.168.100.101 ask:
seconds for the flash to be updated. You	Firmware upgrade succesfully, do you want to reboot?
will be asked if you want to reboot.	Ver Cancel
 Click the ves button. 	Yes Cancel

Step 4

4 Update firmware continue...



After a firmware upgrade it may take up to 3 minutes for devices to find each other and establish a link.

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Installations examples

These examples will show different way to install IPLoC correct and NOT correct.

Information



Example 1

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Using 2 pcs of IPLoC with a single coaxial cable for distribute Ethernet signal. This is not a normal way, only to show how it works.



Example 2



Example 3



IPLoC D2-POM - User Guide 2015-12-01. Ver. 1 Specifications are subject to change without notice. DKT is not responsible for any typographical errors or wrong.

Example 4



Example 5



This setup will not work

Example 6



Example 7



Technical Data

IPLoC D2-POM Features

- Easily installed into existing home coaxial networks
- Web based network management
- Remote Network Monitor Tools
- Field upgradeable software
- Password protection for access control
- Operate in any valid MoCA®2.0 channel frequency in these RF Bands: -Extended D-Band (1125 -1675 MHz)
 -D-Band Low (1125 -1225 MHz)
- The Web GUI's Net Status page display's network packet counts and line PHY rates
- Status LEDs shows LAN port connectivity and Coaxial Network Link Up

Product specifications:	
Standard:	IEEE802.3az , 802.1p , MoCA 2.0
Transmission PHY rate:	Up to 400 Mbps PHY rate
LAN port data rate:	156Mbps (50dB att.) >(T/TCP) 166Mbps (50dB att.) >(UDP)
Frequency band:	CATV frequency: 5MHz-1002MHz Insertion loss : 3dB (Max.) Return loss: 8dB(Min.) MoCA D-Band: 1125-1525MHz (Total 8 channel) Insertion loss: 3dB(Max.) Return loss: 8dB(Min
Nodes:	Up to 16 devices
Interface:	10/100/1000 Mbps Ethernet port(RJ-45) X 1 Wall outlet Radio: Male IEC(Plastic / non-functional) Wall outlet: Female IEC Output TV: Male IEC
MoCA RF Output level:	D-Band : -9.7dBm Normal. (75 ohm)
LEDs:	3pcs, Power / MoCA / Ethernet
Button:	1pcs, Reset/Reset to Default
Temperature:	0-40°C(Working) / -5~65°C (Storage)
Communication distance:	300feet Max., cable between root node and outlet (RG-59)
OS:	Supports Windows OS, Linux OS, MAC OS
Power supply:	100-240VAC , 50/60Hz Input 5VDC +/-5% , 1A Output
Power consumption:	<5 W
Power saving mode:	ErP Level-V(lot 6)
Dimensions:	95x50x27 mm