DualGig-2.5/SAT Ethernet over Coax adapter

Installation Instructions

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QuickStart manual (2 Adapters)

Connect your 1e MoCA Adapter (with your Router)

Connect LAN1 or LAN2 of your MoCA Adapter with your Router

- Connect the Power Supply and push the ON/OFF Button (the Blue LED ‘PWR’ is activated)

Connect both MoCA Adapters with the Coax cable

- Connect the Coax cable with both Adapters, use the MOCA Port on *both* Adapters

Connect your 2e MoCA Adapter (with your Internetproduct)

- Connect LAN1 or LAN2 of your 2e MoCA Adapter with your Internet product

- Connect the Power Supply and push the ON/OFF Button in (the Blue LED ‘PWR’ is activated)
- After 15-30 sec. the LEDs ‘MOCA’ on both Adapters start to flash and once the communciation between the Adapters is made LEDs LAN1 or LAN2 flash

What is in the Box?

DualGig-2.5/SAT MoCA® Adapter

DualGig-2.5/SAT Power supply
220VAC/5VDC-1 Amp

F-female/IEC-female Adapter

F-female/IEC-male Adapter

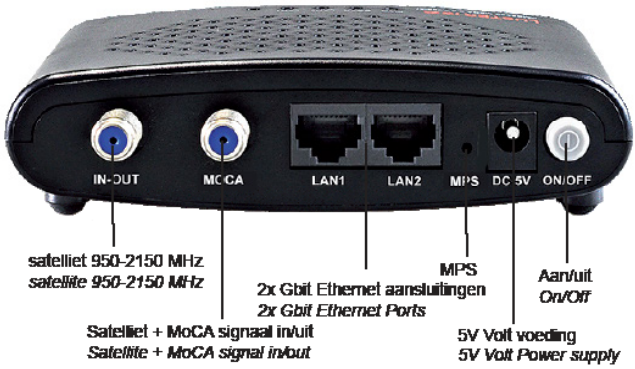
Cable CAT5 Fly lead
140 cm

F-male/F-male Fly lead
60 cm

** Products supplied may differ from images shown, they are functionally the same*

MoCA-2.5 adapters can also be offered per 2 pieces in 1 box with a double set of accessories

DualGig-2.5/SAT Connections



Telecom and Fibre Subscribers

What is MoCA®.

MoCA® is a Technology to connect Internet products via the (existing) Coaxial Cable network. MoCA®adapters communication with each other via Coaxial network to connect the Cable modem with other Internet Products.

What do you need for a MoCA® Communication.

For a first Connection you need 2 MoCA®adapters. The first MoCA®Adapter connect with your Cable modem. The 2nd MoCA®Adapter is connected somewhere to your Cable network.

In this part of the Manual we describe how to connect 2 Adapters in your Coax network and how to test the communication between the Adapters.

Connect your 1st MoCA®Adapter (to the Router)

- Connect one of the free LAN Ports of your Cable modem with a Network cable and connect that Cable to LAN1 or LAN2 of your MoCA®Adapter.
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- Take the Coax Cable intended to connect direct or indirect with your 2nd MoCA®Adapter and mark that Cable.
- Connect that Coaxial Cable to the MOCA port of your 1e MoCA®Adapter.

- Connect the Power Supply with your 1ste MoCA®Adapter and push the ‘ON/OFF’ Button. After some Seconds the PWR-LED turns Blue.

Connect your 2nd MoCA®Adapter

- Connect your 2nd MoCA®Adapter with the 1st MoCA®Adapter with the Coaxial Cable coming from the 1st MoCA®adapter and connect tot MOCA port of that 2nd MoCA®Adapter.
- Connect one or two Internet products with the LAN1 and/or LAN2. You can use both ports simultaneous.

- Connect the Power Supply with your 2nd MoCA®Adapter and push the ‘ON/OFF’ Button. After some Seconds the PWR-LED turns Blue.
- .

As soon as Data is transmitted and received the LAN LEDs start irregular flickering.

Test your Connection

Both MoCA®Adapters are connected via the Coaxial Network. To check Adapters are communicating you can run this Test.

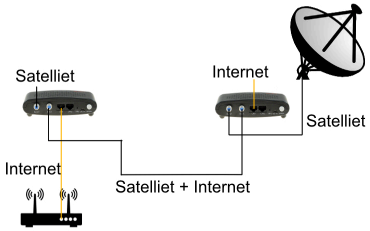
- Connect one of the MoCA®Adapters with your Cable Modem using either the LAN1 or LAN2 Port
- Connect your Laptop either with LAN1 or LAN2 of the other MoCA®Adapter.
- Run a Speed test and compare the result with the data speed of your Internet subscription.

MPS (MoCA® Protected Setup) explained

MPS stands for **M**oCA® **P**rotected **S**etup. MPS is a User friendly way to protect your network with a unique Password. This funtion is disabled for the MoCA-2.5/SAT

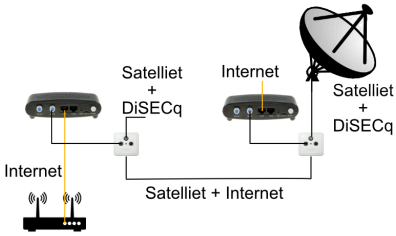
MoCA-2.5/SAT with your Satellite installation

Because the MoCA®-2.5/SAT use the E-band (400-700 MHz) you can get your Internet over Coax together with your Satellite signals working in the 950-2150 MHz IF band. As the MoCA2.5/SAT adapter does not allow DC voltage nor a DiSECq signal to pass it is important that you use Satellite wall outlets that do allow to pass DC voltage and DiSECq signals from your satellite receiver to your Multiswitch or down converter

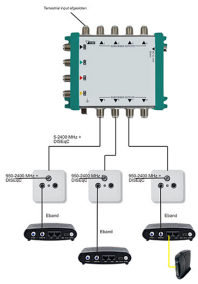


1. Satellite Receiver without DiSECq
In case you do not use DiSECq you can connect your MoCA-2.5/SAT adapters as shown. Your LNB has to be powered with an external power supply.

2. Satellite receiver with DiSECq
Ii case you use DiSECq signals from you Satellite Receiver to select the LNB Polarisation you have to use Satellite Wall Outlets to enable to pass the DiSECq signal and DC voltage from the Satellite Receiver to the LNB.



3. Multiple Satellite Receivers using DiSECq



With a Multiswitch you can connect a number of Satellite Receives each capable of selection the LNB and Polarisation using DiSECq. To build your Internet over Coax connections with MoCA-2.5/SAT adapters
1. Use Wall Outlets that pass DiSECq signal and offer a separate TV port
2. Use a Multiswitch with a Terrestrial input

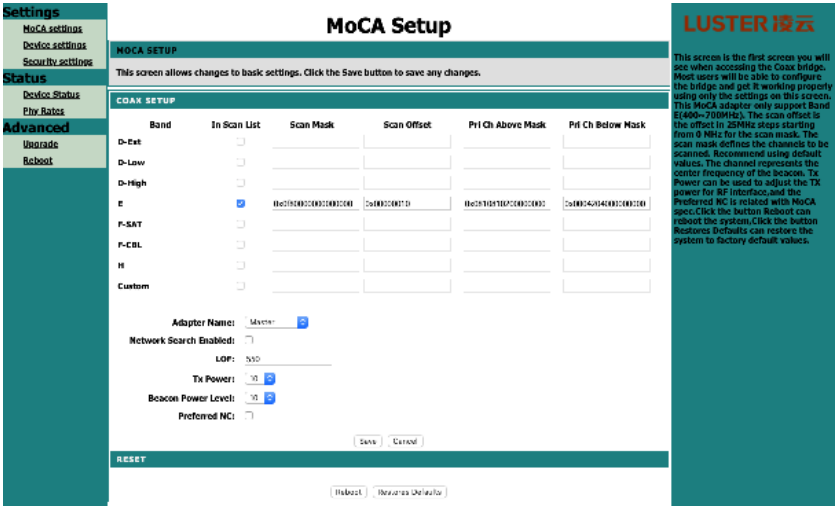
Alternatively you can also connect a MoCA adapter to the Terrestrial input

Setting of the MoCA® adapter

The MoCA Adapters come in a plug and play condition. If you may choose to make changes to the network adapter, changes can be made on the Web menu by following the instructions as illustrated below.

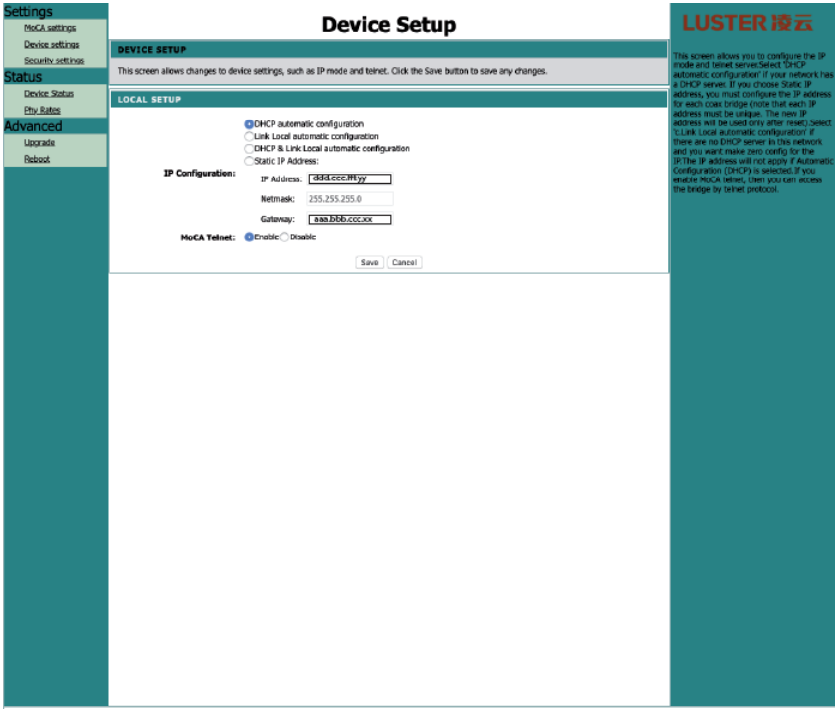
Connect the adapter to your laptop and give your laptop an own IP address of 192.168.144.100. Then go to your browser and enter the IP address 192.168.144.200. This is the IP Address for the web menu of the MoCA adapter.

A screen opens and enter the factory default settings User name (admin) and Password (admin).



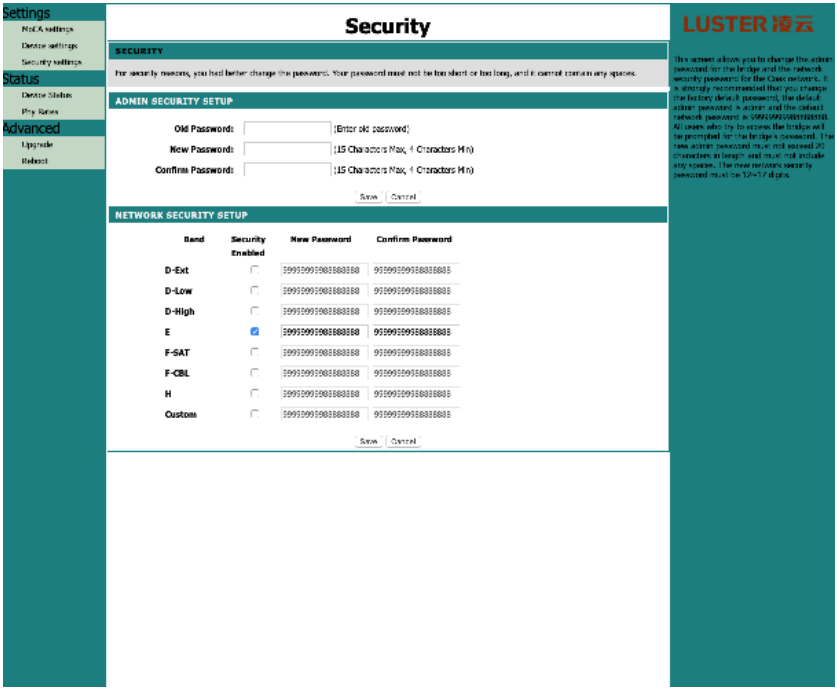
MoCA Settings

1. *Adapter name*. With a drop down list give the adapter its own name.
2. *Network search enabled*. If checked the adapter finds other adapters in the network and can be found by other adapters too. In general search for other adapters starts at the LOF (lowest frequency).
3. *LOF (lowest frequency)*. This function has no meaning for the MoCA-2.5/ SAT model as the adapters only work in the full E-band.
4. *Tx Power*. Set the Transmission Power for the MoCA®Adapter. Default value is 10 (2 dBm).
5. *Beacon Power Level*. With a Beacon Signal the adapter can be detected by other MoCA adapters to establish the communication between the MoCA adapters The Transmission Power of the Beacon Signal can be set.
6. *Preferred NC*. NC stands for Network Coordinator. The primary Adapter is set as ‘preferred NC’. Normally this is the first Adapter coming. If there is no ‘preferred NC’ available then the MoCA®Adapter select one. This process slows down the setup time.



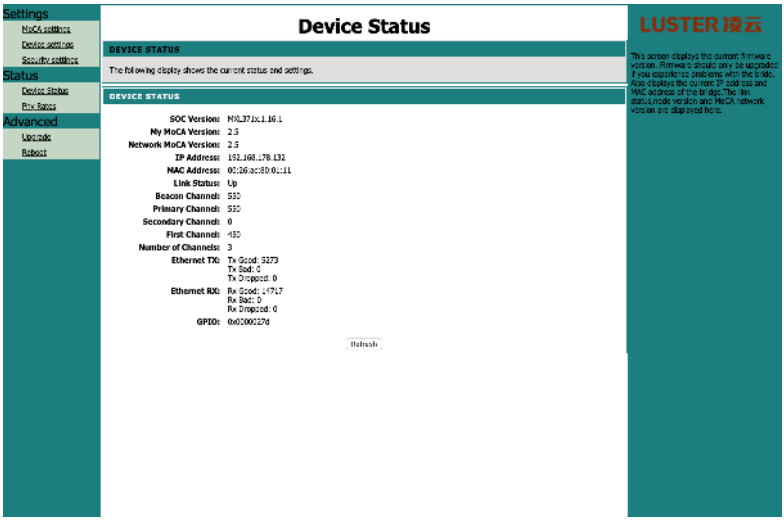
Device Setup

1. *DHCP automatic configuration, Link local automatic configuration, DHCP & Link local automatic configuration en Static IP address.* Select DHCP to enable your Router or Cable modem to decide for the IP address.
2. *IP configuration.* Here you can select the static IP address or select the DHCP option in which case your router will assign an IP address to the adapter.
3. *MoCA Telnet*. Keep the default setting set to ‘Enable’.



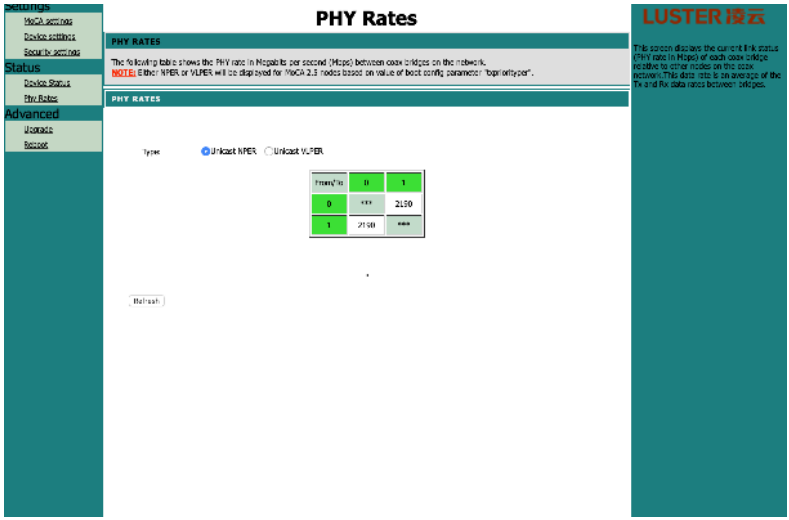
Security

1. *Admin security setup, Old Password, New Password, Confirm Password*. You can change the default login setting. After a factory reset these setting go back to the factory default setting admin/admin.
2. *Network security setup.* You may choose to give each frequency band its own Password to enable only those adapter to connect that have the same Password. Changing the Password take effect after a save en reboot the adapter.



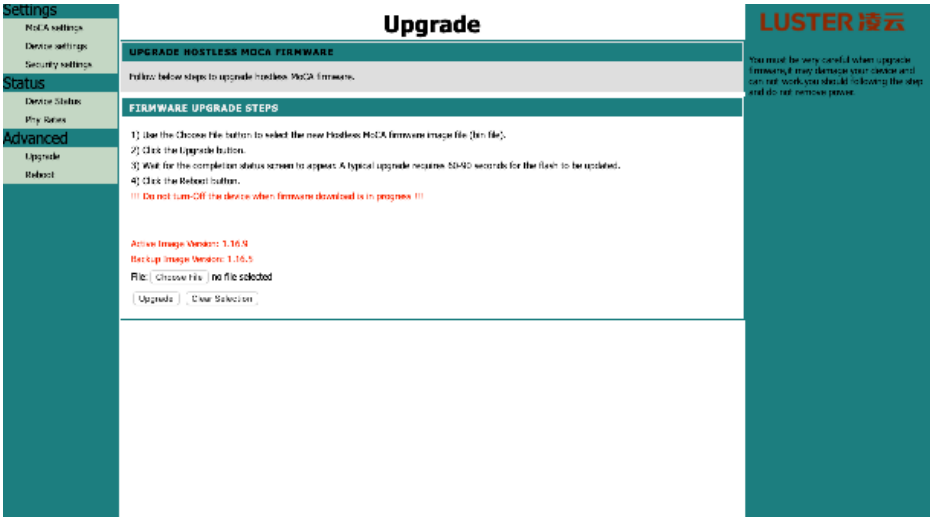
Device Status

You can monitor the satus of the adapter on this Page.



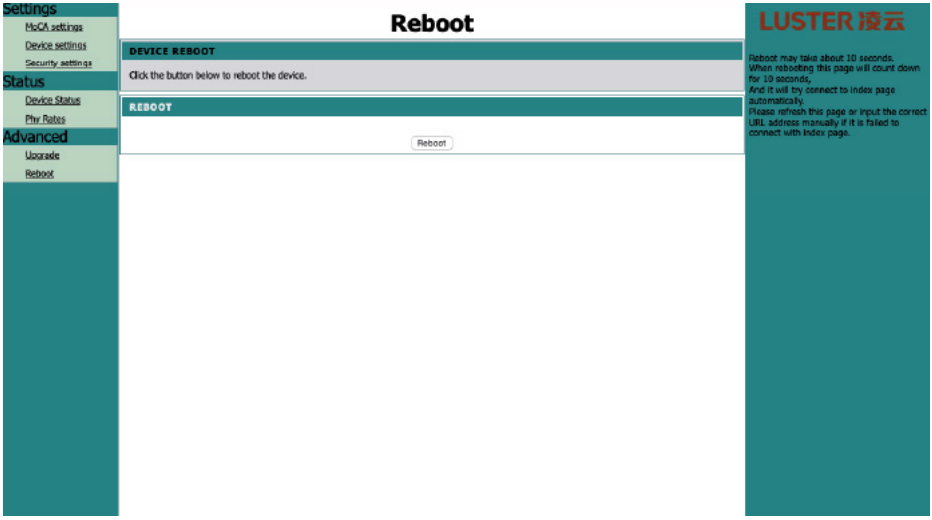
PHY Rates

You can monitor the data rates between the adapters on this Page. These are the so called data rates at the Physical Layer (OSI Layer 1) between the adapters.



Upgrade

If there is a new Firmware upgrade available first download the new Firmware on your computer. Then upload the file by choosing the ‘Choose File’ option. The new Firmware takes effect after a Reboot.



Reboot

After every change go to save + Reboot to take effect permanent.

Hints en tips

I have no communication between MoCA® adapters

- Check that coax cables are not connected crosswise; the coaxial cables with the MoCA® signal must always be connected to the “MOCA” connector.
- Check that the MoCA® adapter (s) are connected to the power adapter and the power light is on continuously
- Check the connection between both MoCA® adapters. There must be no multi-tap, amplifier or loop-through outlet that provides high attenuation in the network between the MoCA® adapters.
- Your Multiswitch must have a Terrestrial port (terminated with a 75 ohm Plug)

Can I make more connections with a MoCA® adapter?
2 MoCA® adapters are required for a first connection. Only one MoCA® adapter is required for each subsequent connection.

Can MoCA® adapters be connected via a multi-tap?
No, that will not be possible. The minimum input level for a data stream at the MOCA input is -63 dBm. If the further attenuation increases, the connection between the MoCA® adapters is slowed down and lost.

The tap-tap attenuation between two ports of a multi-tap can be very high. Add to that the attenuation generated by other passive products (connections, coaxial cable, connection boxes) and then the total attenuation can become too high, which can lead to low connection speeds or dropped connections.
Solution: Redesign the indoor network without using the multi-tap.

Can a MoCA® adapter be connected with a loop-through outlet?
In many cases this causes problems due to the high tap attenuation (of the TV output port), high directivity attenuation (between output port and looped through cable) and poor high-frequency properties of the loop-through outlet.
Solution: replace the loop-through outlet with a splitter or redesign the indoor network without using loop-through outlets or (if the “loop-through” is no longer used) replace the loop-through outlet with a single input outlet and mount the 2nd MoCA® adapter directly onto the TV output of that outlet.

Can a MoCA® adapter be connected before the input of an amplifier?
No, a MoCA® signal does not travel through an amplifier (from input to output). MoCA® adapters must be connected behind the amplifier.

Can I use both LAN ports of the 2nd MoCA® adapter simultaneously?

Yes that is fine. You can connect two internet devices to your 2nd MoCA® adapter.
You also have an advantage if, for example, you only have 1 LAN port left on your cable modem to connect the 1st MoCA® adapter. Then connect that 1st MoCA® adapter to it and a LAN port will become available again on the 2nd LAN port of the MoCA® adapter.

It also works that way with your 2nd MoCA® adapter; for example, you connect your media box to a LAN port and an access point to the other LAN port.

How do I check if the MoCA® adapters can communicate with each other?
Are you unsure whether the MoCA® adapters communicate with each other? Then run this simple test:
- Connect both MoCA® adapters with an Fmale-Fmale coaxial cable and connect it for both MoCA® adapters to the “MOCA” connector.
- Connect one of the MoCA® adapters to an Ethernet connection via a network cable.
- Connect the other MoCA® adapter to your laptop via a network cable
- Connect both MoCA® adapters to the power supply
- Does the PWR LED lit on both MoCA® adapters?
- Does the MOCA LED lit on both MoCA® adapters?
- Does the LAN1 or LAN2 LED flash on both MoCA® adapters?
- Do you have an internet connection on your laptop?
- Do a speed test, do you get the approximate internet speed that you can expect with the internet subscription?
- If this is successful, both MoCA® adapters work properly.

How can I check the MoCA® adapter settings?
For this you need the IP address of the adapter menu of the MoCA® adapter (which you can find in the IP list in your cable modem or try 192.168.144.200). Connect your laptop to the network and type the IP address of the MoCA® adapter in your browser. You will then see the login screen. To access the MoCA® adapter menu you need the password and login details (factory set as admin / admin).

Specifications*)		
Basic information	MoCA standard	MoCA-2.5/SAT
	Networknodes	16 max in 1 network
Communication	Modulation	OFDMA
	Number of Sub-carriers	512
		BPSK, QPSK, 8QAM, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 512QAM, 1024QAM
	MAC layer protocol	TDMA/TDD
RF	RF band / Band width	400 -700 MHz / 100 MHz
	E-band[1)]	400-700 MHz
	Band width per channel	100 MHz
	Up/down RF-band	Bundled, 100 MHz Band width
	Standard Band default	400 - 700 MHz
	Max Transmission power	+ 3dBm (+2 dBm typical)
	Input Sensitivity	- 70 dBm
	Attanuation MOCA to In-Out	< 2 dB
	MOCA input Frequency	5-2400 MHz
	IN-OUT Frequency	950-2400 MHz
	Throughput	1200 Mbps
	PHY dataspeed, max	2000 Mbps
Latency		5 msec max. (typical 3 msec)
Interface	RF interface	F-female, 75 ohm
	Data interface	2xRJ45, 1000Base-Tx Ethernet
	Power Supply	DC 5Volt/1 Amp
	Power Consumption	< 5 Watt
Dimension		129*80*32 mm (LxBxH)
Weight		< 1 Kg
Operation Temperature		-10 - +45 °C
Humidity		5% - 90% without condens

1) total of 3 bands each 100 MHz=300 MHz

** Specifications based on information of Luster. No rights or claims can be derived from this*

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