DM NUX USB over Network with Routing

The DM NUX USB over Network with Routing (DM-NUX-L2 and DM-NUX-R2) delivers reliable, high-speed USB signal extension and routing for USB 1.0, 1.1, and 2.0 devices throughout a home, business, or campus for distances up to 330 ft (100 m). Featuring Virtual Hub capabilities, up to five DM-NUX-R2 endpoints can be connected to a single DM-NUX-L2 endpoint. Two types of USB endpoints are available:

- DM-NUX-L2 - Provides connectivity for a single USB host (computer, media server, codec, etc.)
- DM-NUX-R2 - Provides connectivity for up to four USB devices (keyboards, whiteboards, mobile devices, etc.) at one location

> **NOTE:** CAT5e (or better) cable is required for connections to and from the DM-NUX-L2 and the DM-NUX-R2. For simplicity within this guide, the term "CAT cable" is used to refer to CAT5e (or better) cables.

In the Box

1	DM-NUX-L2 and DM-NUX-R2

DM-NUX-L2 (6511319)

1	Kit, Mounting Hardware (2041279)
1	Cable, USB, A-B, 5.91 ft (1.8 m) (2053187)

DM-NUX-R2 (6511320)

|	
1	Kit, Mounting Hardware (2041279)
1	Power pack, 24VDC, 0.75A, 100-240VAC (PW-2407WU, 2045865)

Application Scenarios

The DM NUX devices can be used in a variety of applications. For sample application scenarios, refer to the diagrams on the following page.

DM-NUX-L2 and DM-NUX-R2
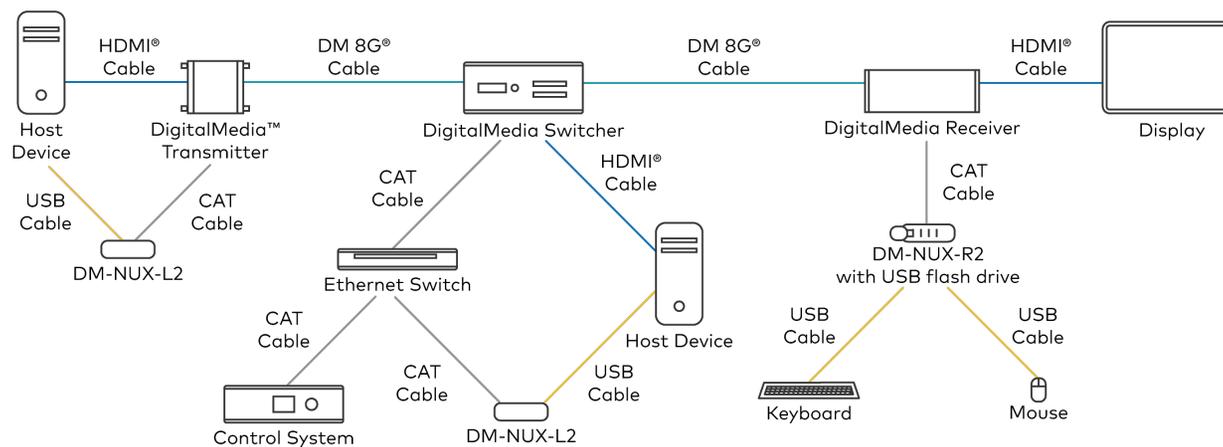
DM NUX USB over Network with Routing

Sample Application of Point-to-Point Configuration over a CAT Cable
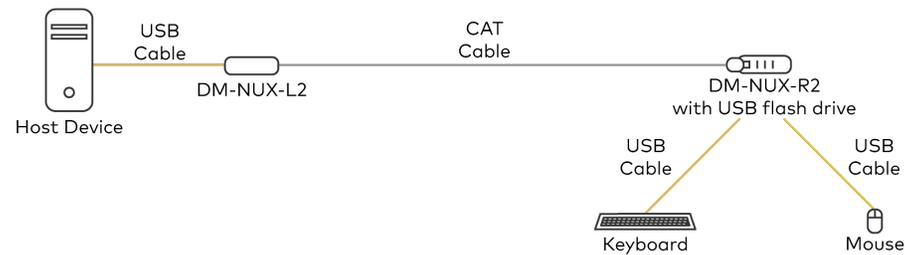
Sample Application of Point-to-Point Configuration over a LAN
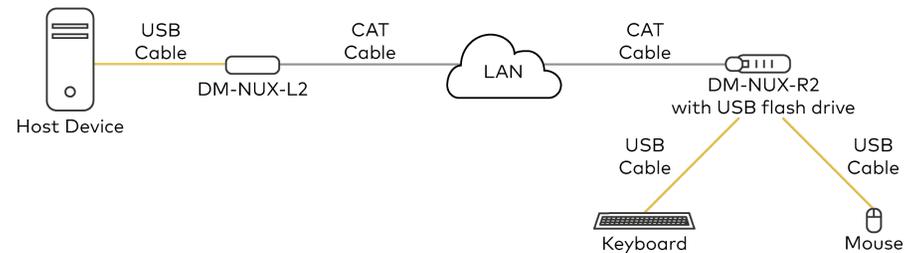
Sample Application of USB Extension with DigitalMedia™ System Integration

DM NUX USB over Network with Routing

Mount the Devices

To mount the device, attach the two supplied mounting brackets to the rear of the device using the four supplied Phillips head screws and locking washers (two screws and washers for each bracket) as shown below.

Once the mounting brackets are attached, mount the device onto either of the following:

- Mount onto a flat surface
- Mount onto a rack rail

(2) Mounting Brackets

(4) Locking Washers

(4) Phillips Head Screws
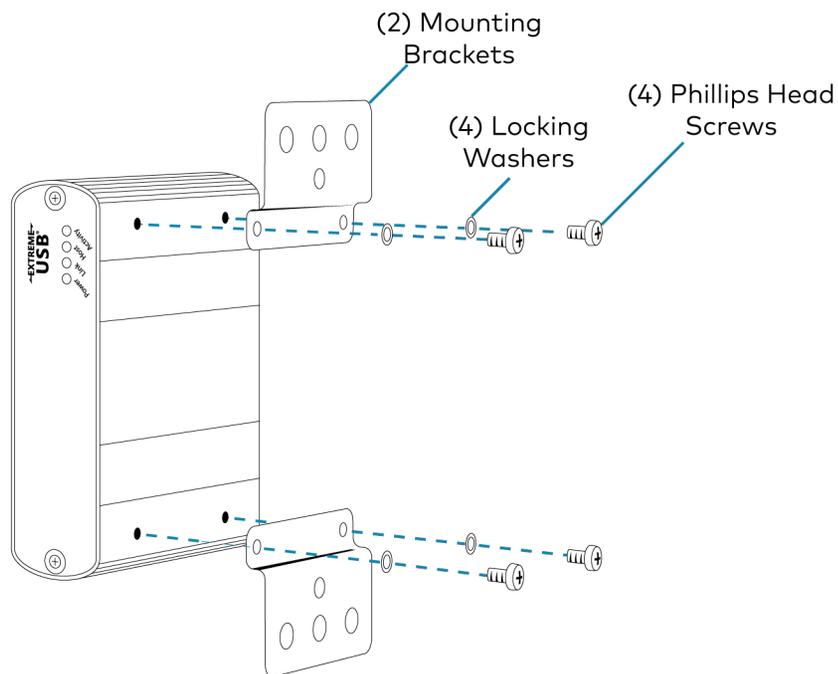
Mount onto a Flat Surface

Attach the device to a flat surface using the outer-middle surface mount hole of each mounting bracket and mounting screws (not supplied).

Surface Mount Holes

Surface Mount Holes

Mount onto a Rack Rail

Mount the device to a rack rail using either the left or right mounting bracket. Attach either bracket to a rack rail using the top and bottom rack mount holes and mounting screws (not supplied).
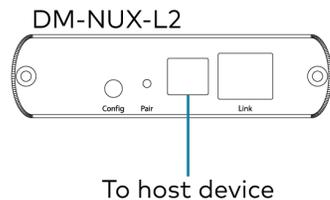
Rack Mount Holes

Rack Mount Holes

DM NUX USB over Network with Routing

Connect the Devices

To connect the devices:

1. Using the included USB cable, connect the DM-NUX-L2 to a host device. The host connection powers the DM-NUX-L2.

DM-NUX-L2

To host device

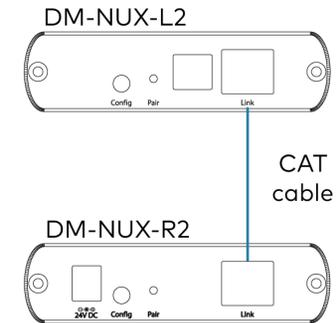2. Using CAT cable, connect the Link port on each device as follows:

CAUTION: Do not connect the DM-NUX-L2 or DM-NUX-R2 to a USB-EXT extender. The USB-EXT extenders are intended for use as point-to-point USB extenders and must not be connected to an Ethernet LAN or any other network device via the Link port.

NOTES:
- To comply with the European Directive (CE), Crestron recommends using high-quality, solid core CAT5e (or better) shielded twisted pair (STP) cable.
- The CAT cable must have a straight-through conductor configuration with no crossovers and must be terminated with 8-conductor RJ-45 connectors at both ends.

- When used in a point-to-point over CAT cable configuration, connect the Link port of the DM-NUX-L2 to the Link port of a DM-NUX-R2.

Point-to-Point Configuration over a CAT Cable

DM-NUX-L2

CAT cable

DM-NUX-R2

- When used in a point-to-point over LAN configuration, connect the Link port on each device to LAN.

Point-to-Point Configuration over a LAN

DM-NUX-L2   DM-NUX-R2

CAT cable   CAT cable

LAN   LAN

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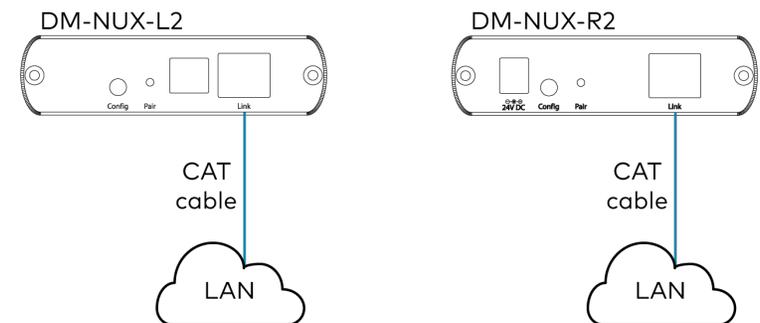
DM NUX USB over Network with Routing

- When used in a DigitalMedia system, connect the Link port on the DM-NUX-L2 to the LAN port of a DM transmitter. Connect the Link port on the DM-NUX-R2 to the LAN port of a DigitalMedia receiver.

DigitalMedia™ System Integration

DM-NUX-L2

DM-NUX-R2

CAT cable

CAT cable

To LAN port of DigitalMedia transmitter

To LAN port of DigitalMedia receiver

> **NOTE:** The DM NUX devices support high-speed (480 Mbps) USB devices. DM 8G+® Ethernet links support speeds up to 100 Mbps only. If higher bandwidth is required, ensure that the DM NUX devices are communicating via a gigabit Ethernet network.

3. Using USB 2.0 cables (not included), connect the USB Type-A device ports on the DM-NUX-R2 to USB devices (USB 1.1 or 2.0 compatible). Connect up to 30 devices using up to three USB hubs.

DM-NUX-R2
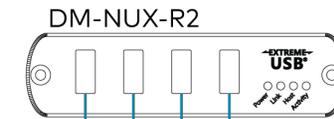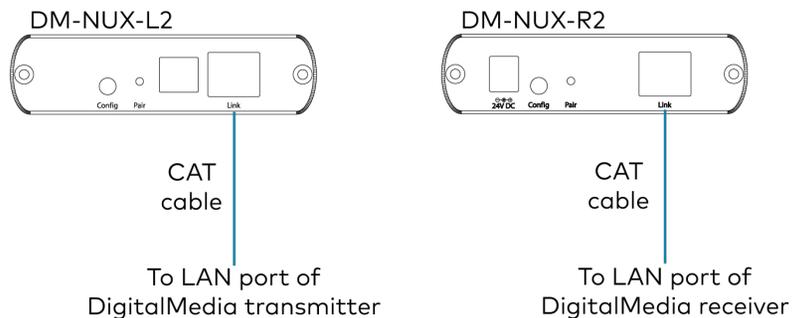
USB Type-A (4):
To remote USB device(s)
(USB 2.0, or 1.1 compatible);
Supports up to 30 USB devices with the
connection of up to three USB hubs
(not included)

> **NOTES:**
> - When five or more DM-NUX-R2 endpoints are paired, do not connect a web camera.
> - Video from two cameras connected to a DM-NUX-R2 may not be viewed on different applications simultaneously.
> - The DM NUX devices are engineered to offer compatibility with the widest possible range of devices. Crestron does not guarantee that all USB devices or hosts are compatible with the DM NUX devices.

DM NUX USB over Network with Routing

4. Connect the DM-NUX-R2 to its included 24VDC power pack, then connect the power pack to an AC power source.

DM-NUX-R2

To 24VDC power pack   To AC power source
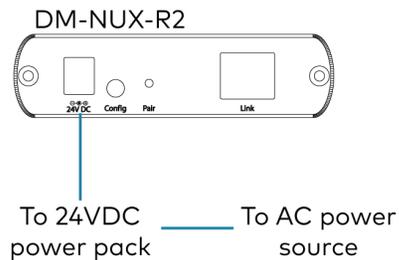
 Pair the Devices

Pairing a DM-NUX-L2 with a DM-NUX-R2 establishes a link between the two devices. Manual pairing is required when the devices are connected in a point-to-point over CAT cable or LAN configuration.

In a point-to-point configuration, USB switching is not performed. In a configuration in which USB switching is to be performed, SIMPL programming automatically pairs the extenders.

To pair a DM-NUX-L2 with a DM-NUX-R2:

1. Ensure that the units are directly connected to each other or are connected to the same subnet on the network.

2. On the DM-NUX-L2, press and hold the **Pair** button for less than 10 seconds. The Link LED on the bottom panel of the extender flashes green when the unit is in Pairing mode.

   NOTE: Press and hold the **Pair** button a second time for less than 10 seconds to cancel Pairing mode.

3. Within 10 minutes of activating Pairing mode on the DM-NUX-L2, press and hold the **Pair** button on the DM-NUX-R2 for less than 10 seconds. The Link LED on the bottom panel of the extender flashes green when the unit is in Pairing mode.

   NOTE: Press and hold the **Pair** button a second time for less than 10 seconds to cancel Pairing mode.

4. The Link LEDs on both units may start flashing slowly before turning solid green. Once the Link LEDs are solid green, a valid link is established between both units.

   NOTE: If more than 10 minutes pass and the units are not yet paired, the units switch back to the regular operation mode and reestablish any previous links.

Unpair a Device

If pairing must be removed from a device, press and hold the **Pair** button for more than 10 seconds.

 Program the Devices

Program the extenders using the DM NUX Control Module in the Crestron Studio® application or SIMPL Windows.

DM NUX USB over Network with Routing

Observe the LED Indicators

The table below provides a description of the LEDs that are provided on the bottom panel of each device.

LED	Color	Description
Power	Blue	The device is receiving power.
Link	Solid green	A valid link is established between the DM-NUX-L2 and the DM-NUX-R2.
	Fast-flashing green	The device is in Pairing mode.
	Slow-flashing green	The device is attempting to establish a link.
Host	Solid green	The host device is recognizing the extender.
	Flashing green	The device is in a suspended state.
Activity	Flashing amber	Data transmission is occurring between the DM-NUX-L2 and the DM-NUX-R2.

Check the Installation

Check to see whether the DM NUX system has been installed correctly on the host device. Refer to the instructions below.

For Windows® software:

1. Open **Device Manager**.
2. Expand the **Universal Serial Bus** controllers node.
3. Check to see if the extender system appears on the list of controllers. If the extender system has been properly installed, it appears on the list as a "Generic USB Hub."

For macOS® software:

1. Open **System Profiler**.
2. In the left column under Hardware, select **USB**.
3. Check to see if the extender system appears in the USB Device Tree at the top right of the System Profiler window. If the extender system has been properly installed, it is listed as a "Hub" under the **USB High-Speed Bus/USB Bus** node.

If the USB extender system does not detect correctly or fails to detect, refer to Troubleshoot the Devices.

DM NUX USB over Network with Routing

Troubleshoot the Devices

The following table provides troubleshooting information for the DM NUX devices. If further assistance is required, please contact a Crestron Customer service representative.

Symptom	Issue	Action
All LEDs on the DM-NUX-L2 are off.	The DM-NUX-L2 is not receiving power from the USB port.	Ensure that the host device is connected to the DM-NUX-L2. If the problem persists, connect the USB cable to another USB port on the host device.
All LEDs on the DM-NUX-R2 are off.	The DM-NUX-R2 is not receiving power from the supplied AC power pack.	Ensure that the AC power adapter is properly connected to the DM-NUX-R2. If the problem persists, check the power pack connection to the AC power source.
The Link LED is off.	There is no connection between the DM-NUX-L2 and the DM-NUX-R2.	Ensure CAT cable is connected between the DM-NUX-L2 and the DM-NUX-R2. Ensure that the cable is UTP or STP with a straight through connector and no crossovers, and 8 conductor RJ-45 connectors are used at both ends.
	CAT cable is defective.	Connect a short CAT patch cable between the DM-NUX-L2 and the DM-NUX-R2 to determine if the original CAT cable is defective. If so, replace the cable.
The Link LEDs are flashing fast.	There is no connection between the DM-NUX-L2 and the DM-NUX-R2.	Ensure that both the DM-NUX-L2 and the DM-NUX-R2 are connected together directly or are connected to active network switches.
	The units may not be paired to each other.	Ensure the units are paired.
	Network switches exist on different subnets.	Ensure that network switches can communicate with each other and are on the same subnet.
	Network switches are blocking traffic from the extenders.	Ensure that traffic is not blocked due to MAC address or traffic patterns. If the problem persists, contact the network administrator.
The Link LEDs are flashing slowly.	The DM-NUX-L2 and the DM-NUX-R2 are paired with each other but have not yet established a link.	If the Link LED does not display solid green after a few minutes, contact the network administrator to determine if any traffic is being blocked between the devices.

DM NUX USB over Network with Routing

Symptom	Issue	Action
The Link LED on the DM-NUX-L2 is on, but the Host LED is off.	The host device is not powered on.	Do the following:
	The DM-NUX-L2 is not connected to the host device.	1. Disconnect all USB devices from the DM-NUX-R2.
		2. Disconnect the DM-NUX-L2 from the host device.
	The host device is not recognizing the DM-NUX-L2.	3. Disconnect the DM-NUX-R2 from the AC power adapter.
		4. Reconnect the DM-NUX-L2 to the host device.
	The host device does not support USB hubs.	5. Reconnect the DM-NUX-R2 to the AC power adapter.
		6. In the Universal Serial Bus controllers section of Device Manager, check that the extender system is recognized as a "Generic USB Hub".
	The DM-NUX-L2 is malfunctioning.	
A remote USB device does not work properly.	Insufficient bandwidth is available on the network to support the device.	Connect the DM-NUX-L2 and the DM-NUX-R2 directly to each other and try the USB device again.
	The DM-NUX-L2 is paired to the wrong DM-NUX-R2.	Pair the DM-NUX-L2 with the appropriate DM-NUX-R2.

DM NUX USB over Network with Routing

Visit the Product Page

Scan the QR code to visit the product page.

DM-NUX-L2

DM-NUX-R2

Additional Information

Original Instructions
The U.S. English version of this document is the original instructions.
All other languages are a translation of the original instructions.

Regulatory Models: M201904002

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