Description: User Manual LumiSplit 1.6.
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Luminex
NETWORK INTELLIGENCE

LumiSplit 1.6
USER MANUAL

LUMISPLIT PRODUCT FAMILY
LumiSplit 1.6

THANKS FOR CHOOSING LUMINEX

MADE IN BELGIUM

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VERSATILE.
EFFORTLESS.
RELIABLE.

WELCOME TO YOUR LUMISPLIT 1.6

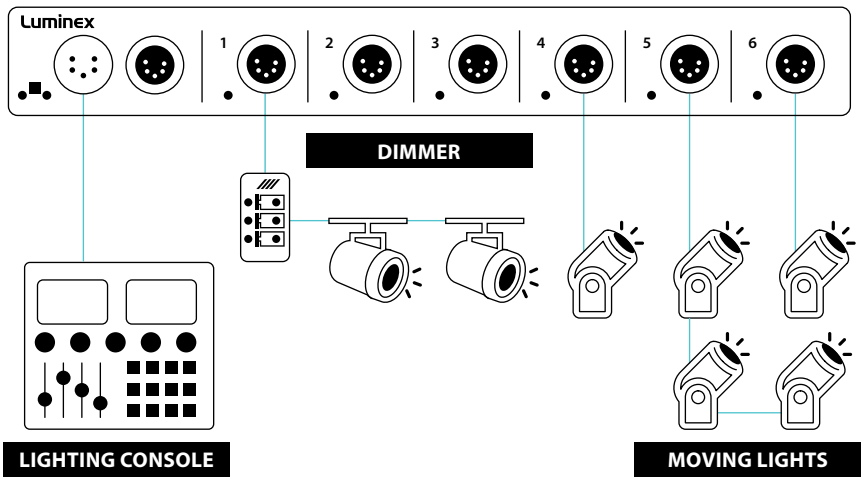
The LumiSplit range can be easily integrated in any lighting system when one requires to split and boost DMX and RDM signals.

1. APPLICATIONS

A few examples of applications where the LumiSplit can be used:

- Live events
- Concert lighting
- Theatre
- TV
- Installations
- Architectural lighting
- Multimedia shows

Typical Application:



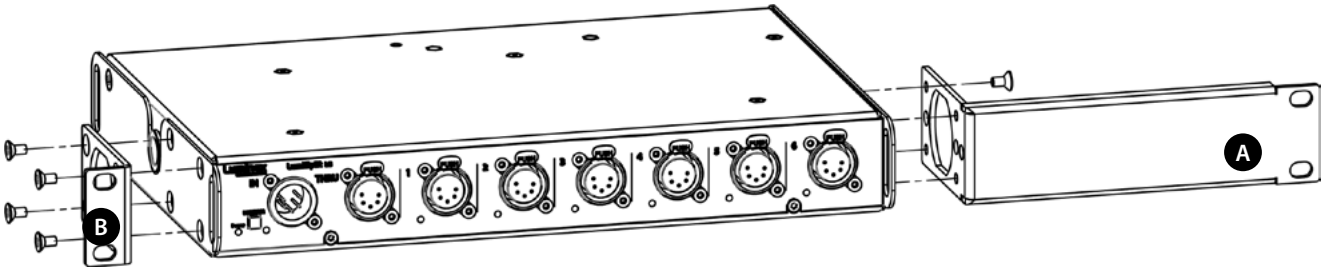
2. INSTALLATION

2.1 Mounting the device

LumiSplit 1.6 is a device that can be mounted in a truss as well as in a rack. Please read the following instructions to make sure the device is mounted and secured correctly.

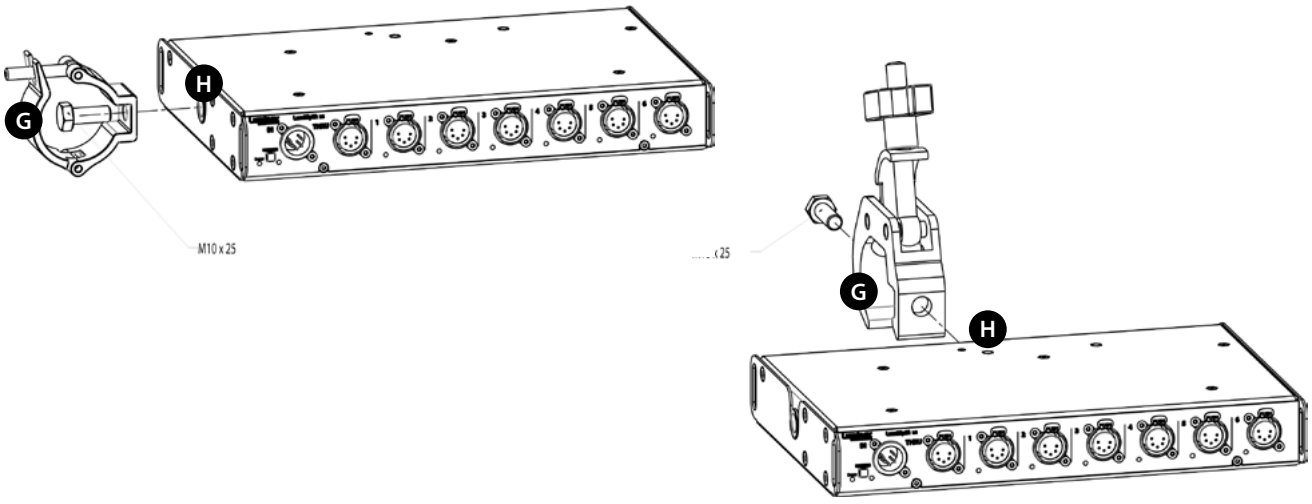
RACK MOUNT

In case you want to mount your LumiSplit 1.6 in a standard 19-inch rack, you must attach the included mounting ears. Connect the longest ear (A) to the right-hand side of the device with 4 screws, re-used from the device. Attach the shorter ear (B) to the left-hand side again with the 4 screws.



TRUSS MOUNT

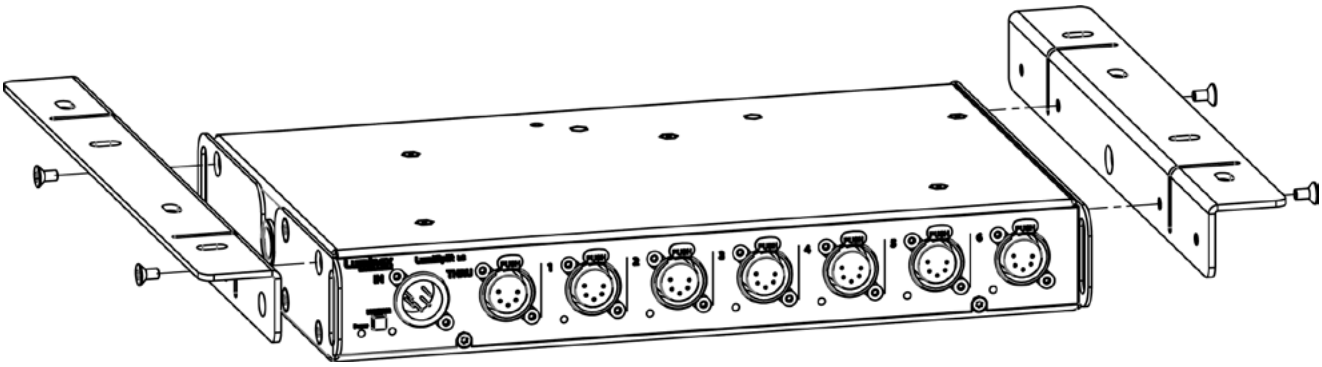
To mount a LumiSplit 1.6 in a truss, you must attach a M10 clamp (G) to the M10 insert (H). After that, you can mount the clamp to the truss bars. Please also secure the device by attaching a safety line directly to the truss bars as well.



WALL MOUNT

To mount a LumiSplit 1.6 on the wall, you must attach the wall mount brackets (LU_10_00126).

Connect the brackets with 4 screws, re-used from the device.



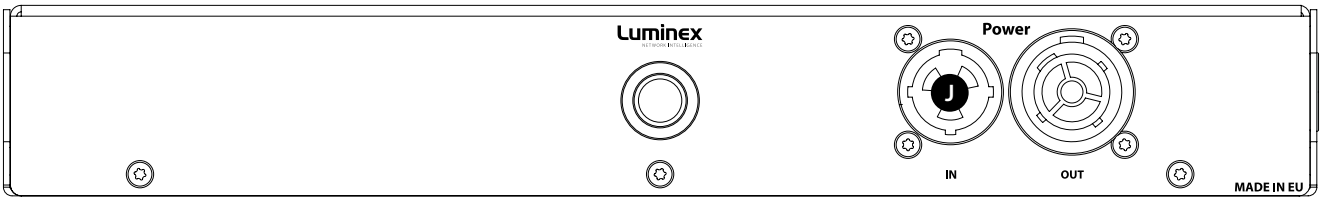
2.2 Power up the device

Power-up the device with a power cable with Neutrik® powerCON® TRUE1 connection (J) (please contact your local dealer if you don't have a suitable power cable on hand). The device will automatically switch on. To shut it down after use, just un-plug the power cable again.
After connecting the power cable correctly, by default the power LED indicator on the front panel will light up in green.

The LumiSplit requires standard AC power distribution from 100-240VAC, 50/60Hz. The mating Neutrik® powerCON® TRUE1 connector is supplied; however, you will need to purchase or construct a cable appropriate for your application.
When installing a new connector please refer to the following wire colour code reference:

WIRE*	CONNECTION
Green/Yellow	AC Ground
Blue	AC Neutral
Brown	AC Line

* International (Harmonised) Standard



2.3 Description

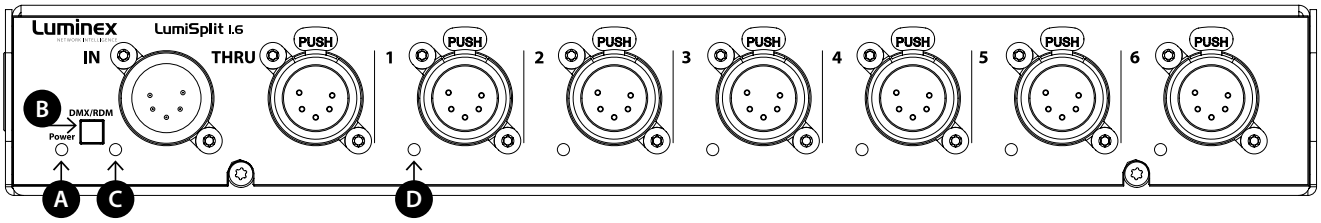
2.3.1 Front Panel

■ (A) POWER LED:
Indicates the general status of the splitter.

■ (B) MODE:
Enable / disable RDM filtering on the input.

■ (C) INPUT LED:
Indicates the input status and the selected mode.

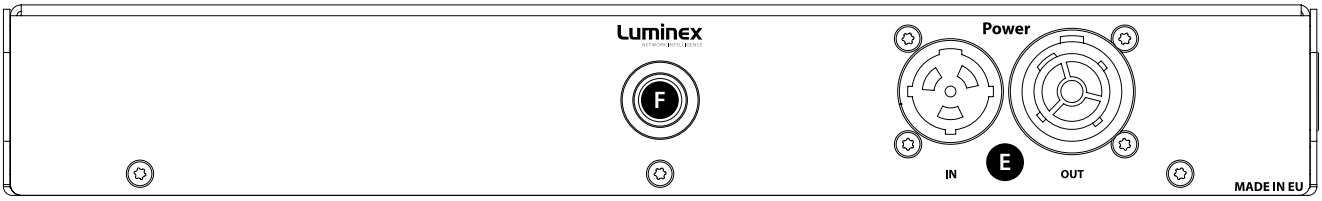
■ (D) OUTPUT LED:
Indicates the output status and the selected mode.



2.3.2 Rear Panel

■ (E) POWER:
- **1x Neutrik® powerCON® TRUE1** inlet.
- **1x Neutrik® powerCON® TRUE1** outlet.

■ (F) M10 THREAD:
- Mounting option for clamp.



2.4 LED indicators:

The LED indicators of the LumiSplit show the following statuses:

POWER LED	COLOUR	DESCRIPTION
Power (General status LED)	Dimmed	Dark Mode
	Green	Normal, unlocked (default) or upgrading
	White	Identify
	Orange	Locked Front Panel
	Red	Port error
	Red blink	Factory Reset
	Blue	DMX fail mode or Startup mode configured
PORT LED	**STATUS**	**DESCRIPTION**
Input	Blue	DMX + RDM
	Cyan	DMX Only
	White blink	RDM activity
	White flashing	Identify
Output ports	Blue	DMX + RDM
	Cyan	DMX Only
	White blink	RDM activity
	White flashing	Identify

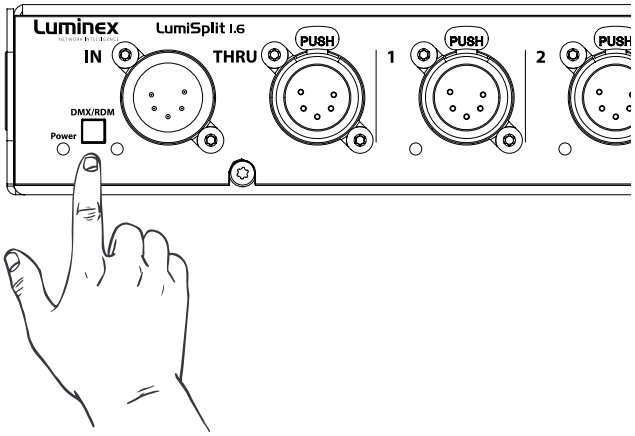
3. LUMISPLIT FEATURES AND MODE SELECTION

After the device has been powered-up correctly, you can start changing the different operating modes and port features through the front panel or via RDM. To change the settings by using the front panel, follow these instructions.

Through the front panel, you can connect 1 input and 6 outputs (1 to 6). Each output has a LED indicator. These are used to display the port status.

3.1 RDM Filtering

The LumiSplit supports RDM filtering to prevent lighting fixtures from being flooded by undesired RDM packets. You can enable or disable RDM filtering on the input.



■ RDM FILTERING PER INPUT:
Press the input button shortly to enable or disable RDM filtering on the input. The input LED indicator colour will change, together with all output LED indicators.

3.2 Mode Selection

The LumiSplit 1.6 offers two operating modes. To change the mode, you require LumiNet Monitor.

3.3 Modes in detail

The LumiSplit 1.6 offers two operating modes. To change the mode, you require LumiNet Monitor.

3.3.1 Splitter mode ●

The LumiSplit now runs in splitter mode. This is the default mode.

3.3.2 Regeneration ●

The LumiSplit will re-generate the incoming DMX signal with some new parameters. These parameters can be selected through LumiNet monitor. (for more information, see 3.7.4) RDM communication with connected endpoints is no longer active.

3.4 Front Panel Lock

For reliability reasons you can lock the front panel. In this way, nobody can accidentally change the settings of the splitter during a live event for example. To lock and un-lock the front panel, **press and hold the input button for 4 seconds**. Once the power LED indicator blinks orange, release the button and the power LED indicator will turn orange. The front panel is now successfully locked. Execute the same procedure to unlock the front panel again.
The front panel can be locked/unlocked from LumiNet Monitor as well.

3.5 Factory Reset

Sometimes it can come in handy to reset the entire device. To do that, press and hold the input button for 10 seconds. Once the power LED indicator blinks red, release the button. This will reset all settings to default.
The LumiSplit can be remotely reset from LumiNet Monitor as well.

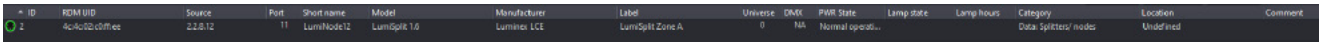
4. THE NEW RDM EXPERIENCE

Not only can the LumiSplit provide you with some great features directly from its front panel, the unit can also be remotely configured and monitored, all through RDM connectivity.
Once LumiNet Monitor is connected to a Luminex LumiNode or Ethernet-DMX converter with RDM enabled, the software will provide you with a comprehensive set of tools to monitor and configure your LumiSplit 1.6.

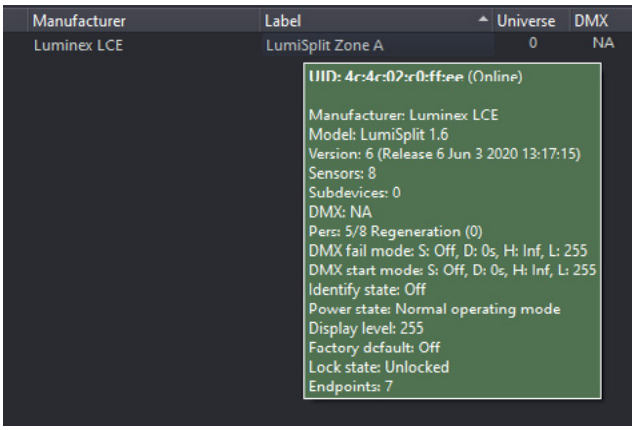
LumiNet Monitor 2.1.6 or higher and LumiSplit firmware v5 or higher are necessary to take full benefit of all the features listed below.

4.1 Discovery

The LumiSplit 1.6 comes with one RDM responder. In the RDM panel, one responder will appear per splitter.

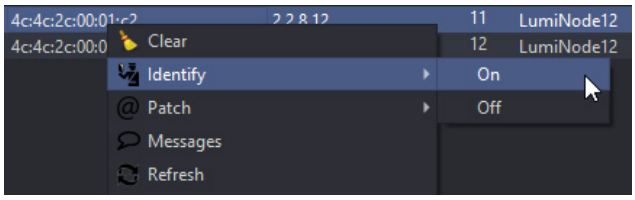


If you hover your mouse over the responder, additional information will be available.



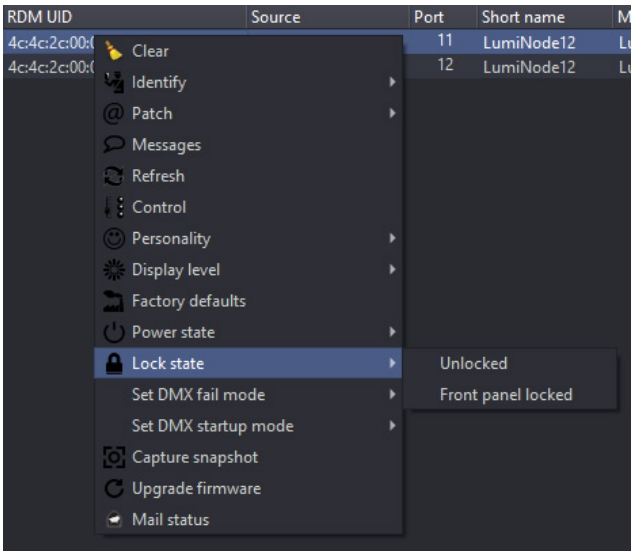
4.2 Identify a LumiSplit

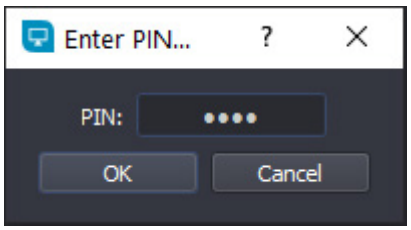
If you have many LumiSplit devices, it can come in handy to identify a unit. Right click on one of the responders and select Identify -> On. All LEDs will turn white and start flashing, to identify the unit. To stop the identification, repeat the same procedure and select "Off", or click on the "Identify OFF" button on the top right-hand side of the RDM panel.



4.3 Lock / Unlock the Front Panel

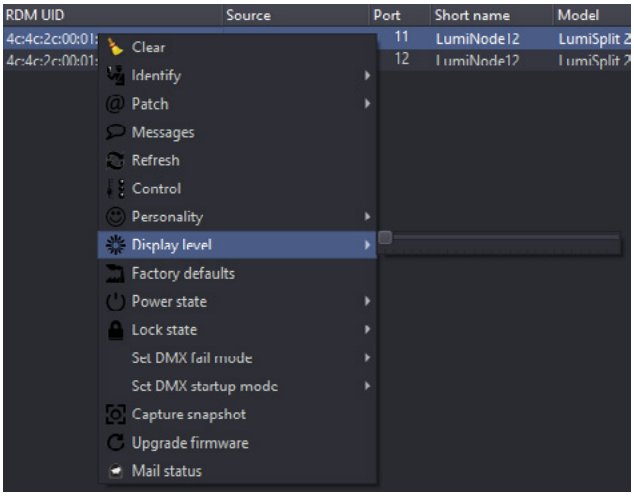
To lock the device, right click on one of the responders and select **Lock state > Front Panel Locked**. To unlock the device, repeat the same operation, and select **Lock state > unlocked**.
LumiSplit doesn't actually use a pin code for locking the front panel, therefor it is not required to enter a 4-digit code. Just click OK to confirm the lock state.





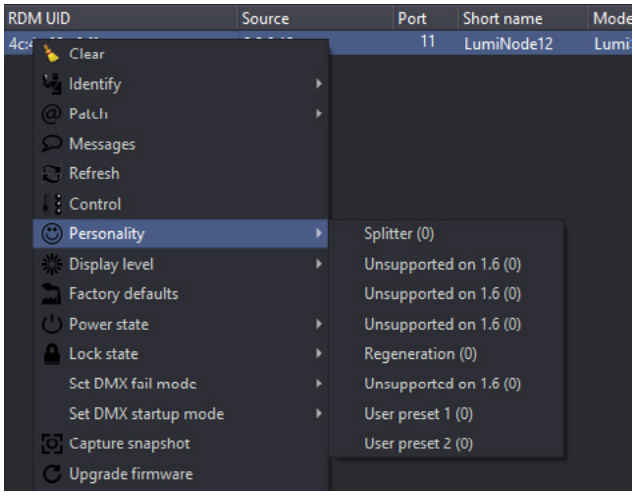
4.4 Dark Mode

The LumiSplit offers you to lower down the brightness of the LEDs. Right click on one of the responders and select display level. Here you can set the brightness either to low or full.
There is no intermediate value available for the brightness of the LEDs.



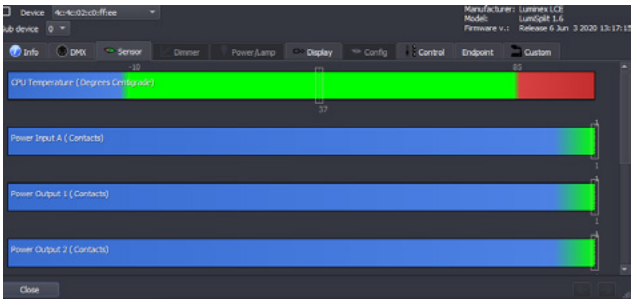
4.5 Mode Selection

You can remotely select one of the modes the splitter offers. Right click on one of the responders and select the desired mode.
More details about each available mode can be found in paragraph 3.3 of this manual.



4.6 Monitoring

The RDM control panel enables you to monitor the status of all sensors embedded in the LumiSplit. The splitter comes with one temperature sensor, and one sensor per DC/DC converter (input and output).



To monitor the status of these sensors, right click on one of the responders, select Control, and then, click on the Sensor tab.

The temperature sensor will indicate the actual inner temperature of the LumiSplit. The contact sensors will display the status of all DC/DC converters. A DC/DC converter's sensor with a value of 1 means the DC/DC converter is working correctly.

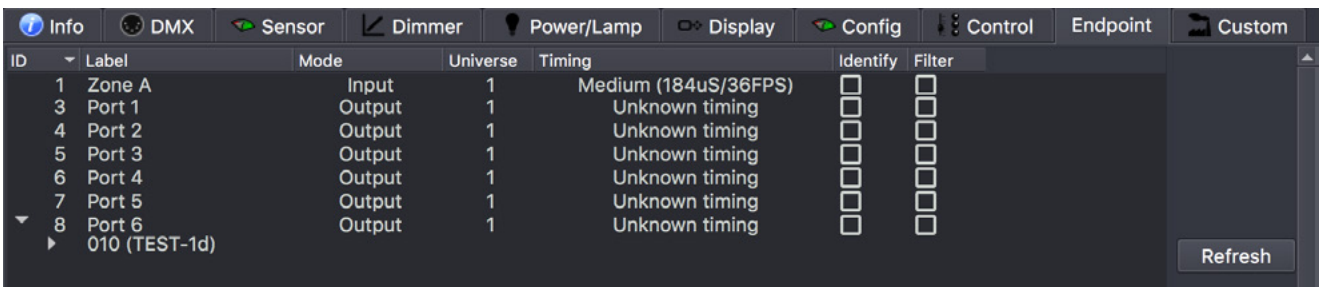
4.7 Endpoint View

The LumiSplit 1.6 is the world's first splitter to offer the endpoint view. Endpoints are any RDM compliant devices such as lighting fixtures, smoke machines, lasers, or any remotely managed devices.
If RDM devices are connected to the ports of the LumiSplit, you'll be able to know which port they are connected to.
By default, any RDM device will be listed in the RDM panel as follows:

RDM UID	Source	Port	Short name	Model	Manufacturer	Label	Universe	DMX	PWR State	Category	Location
4c:4c:02:c0:ff:ee	2.2.8.12	11	LumiNode12	LumiSplit 1.6	Luminex LCE	LumiSplit Zone A	0	NA	Normal operati..	Data: Splitters/ nodes	Undefined
44:45:04:d5:af:b7	2.2.8.12	11		TEST 1d	DEZELECTRIC		0	10		Test: Equipment	

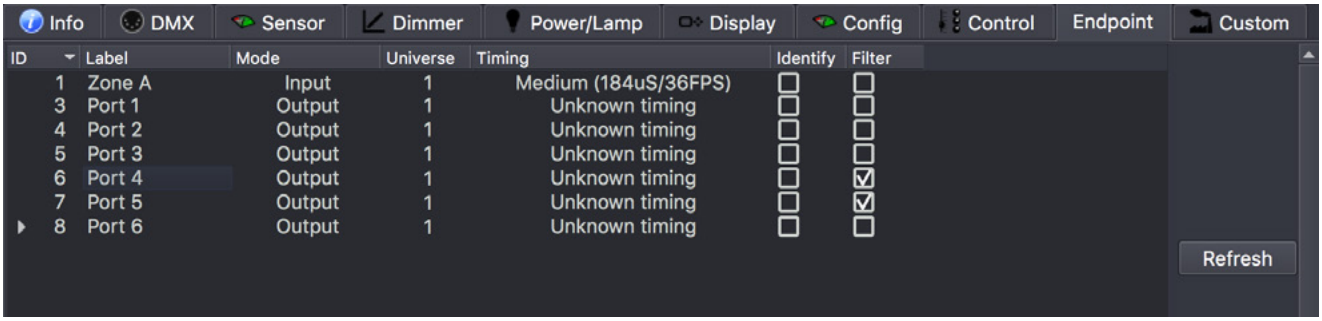
In this example, the RDM test device is connected to port 11 of the converter using 2.2.8.12 as an IP address.
To see which port of the LumiSplit the device is connected to, right click on the responder of the LumiSplit 1.6 and select Control. In the control panel, click on the endpoint tab:

If RDM devices are connected to the splitter, they will appear on each port marked with a white triangle on the left-hand side. Expand these lists, and discover the devices connected to the selected port. This feature makes your life easier when troubleshooting an installation, to follow the complete signal path. Hover your mouse over the discovered RDM device to get some more info about it.



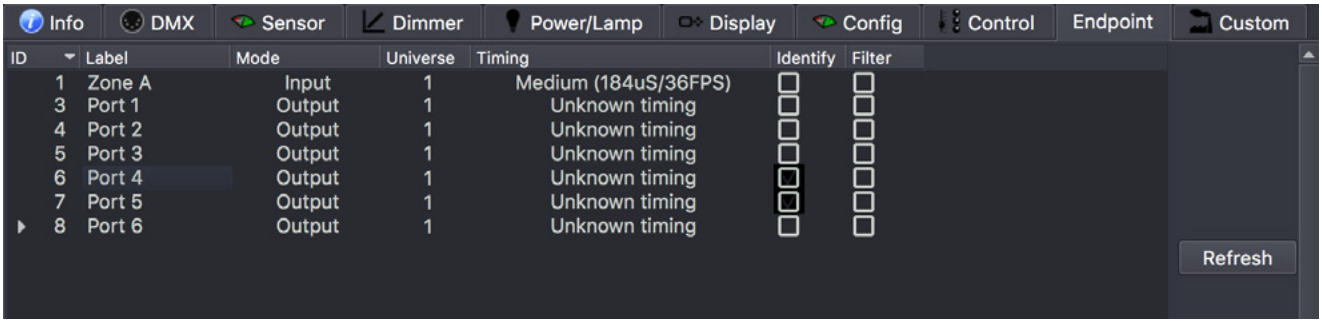
4.7.1 RDM filtering

From this menu, you can enable / disable RDM filtering per port and per zone as well.
Tick the corresponding filter check box to enable RDM filtering. A filtered output will display a light colour on its LED (cyan).



4.7.2 Identify a port

If needed you can identify a port. To do so, tick the corresponding Identify check box, and the LED of the selected port will blink white. This can come in handy when you need to indicate the port to use.



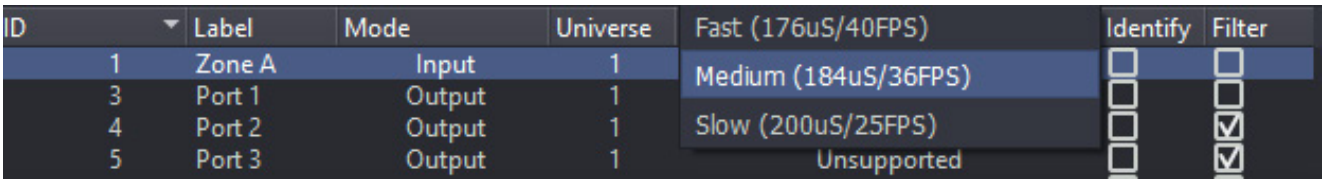
4.7.3 Regeneration

When in regeneration mode, click on the timing field of the selected input(s) to assign the desired regenerating timing.

Three different timings are available (Break Time, Framerate):

- Slow (200µs/25FPS)
- Medium (184µs/36FPS)
- Fast (176µs/40FPS)

The timing set here will be available for all outputs linked to the selected input.



4.8 Snapshot

From firmware version 6 onwards the LumiSplit offers the option to record a DMX snapshot per input. This snapshot can later be used for the DMX Fail mode or Startup mode.
To use this new feature, the user will need LumiNet Monitor v2.3.2 or higher.

4.8.1 Capture Snapshot

To capture the snapshot, an active lighting state needs to be present.
To capture the snapshot please perform the following steps:

- Open LumiNet Monitor and locate the responder of the desired device(s) in the RDM devices list.
- Select the desired responder(s) and right click.
- From the pop-up window, choose Capture Snapshot (option 3 from the bottom)

The snapshot has now successfully been made.

4.9 DMX Fail Mode

In DMX Fail mode, the LumiSplit offers 3 options as output in the unlikely event that something happens to the DMX input signal.
The three options available are:

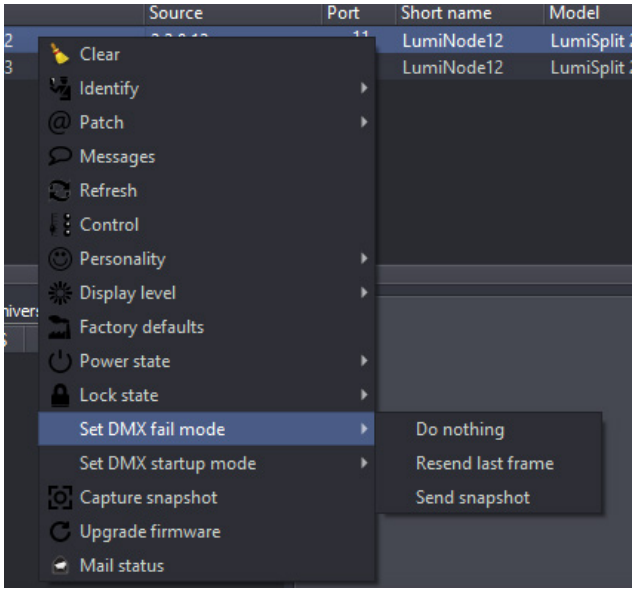
- Do Nothing (default), There will be NO DMX signal forwarded to the outputs of the respected input, until valid DMX signal arrives at the input.
- Resend last frame, will keep repeating the last received DMX frame on all outputs of the respective input (zone). As soon as the DMX input receives valid DMX again, the output will follow that new input again. The frame rate used for resending the last frame is the same as set for the regeneration mode (default: 36 FPS with a break time of 184 µs).
- Send snapshot, makes it possible to send out the captured snap shot as lighting state with defined timings. In this way the snapshot will be send to all concerned outputs until valid DMX input signal is received or until the hold time expires. When a valid DMX input signal is received again, the outputs will follow the input data.

  When the DMX Fail mode is active all the output port LEDs will blink slowly in sync.

4.9.1 Configure DMX Fail mode

To set the DMX Fail mode, use the following steps:

- Select the desired responder in the RDM devices list.
- Right click and select DMX Fail mode.
- Choose the option you want to use.



4.10 DMX Startup Mode

With the DMX Startup mode , you can define the behaviour of the LumiSplit at Startup for each input. If no DMX signal is present, you may choose the following 2 options:

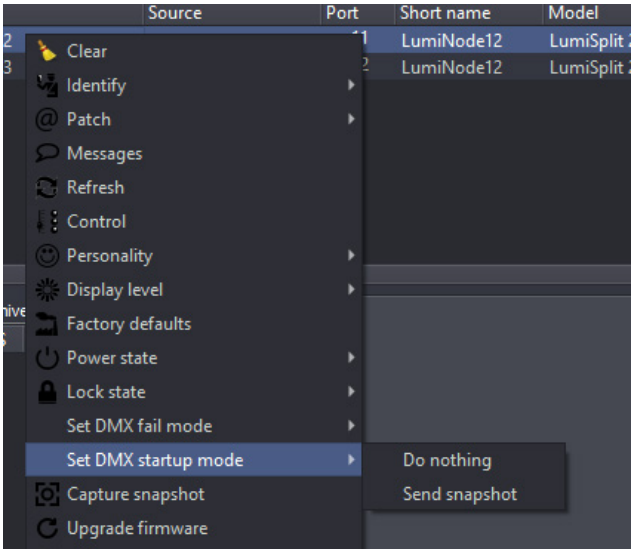
- Do Nothing (default), There will be NO DMX signal forwarded to the outputs of the respected input, until valid DMX signal arrives at the input.
- Send snapshot, makes it possible to send out the captured snapshot as lighting state with defined timings. In this way the snapshot will be send to all concerned outputs until valid DMX input signal is received or until the hold time expires. When valid DMX input signal is received, the outputs will follow the input data.

  When the DMX Startup mode is active all the output port LEDs will blink slowly in sync.

4.10.1 Configure DMX Startup mode

In order to set the DMX Startup mode, use the following steps:

- Select the desired responder in the RDM devices list.
- Right click and select DMX Startup mode.
- Choose the option you want to use.



4.10.2 DMX Fail and Startup detailed timing

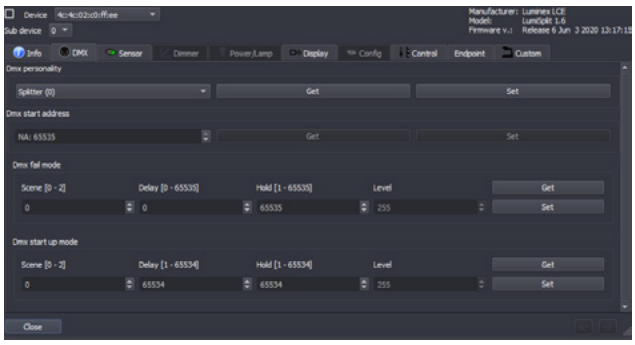
The Startup and DMX Fail features in LumiSplit are based on standard RDM PIDs. These PIDs can be generically controlled in detail via the RDM control panel.
DMX Fail mode and DMX Startup mode both make use of preset info in case available via RDM. The preset info will set the configurable boundaries for setting the details of these modes.

The following attributes can be adjusted:

■ **DELAY:** Number of 0.1 seconds delay before the preset gets active. 65535 (0xffff) represents infinite time. Mind that LumiSplit already takes 800ms (or 0.8 seconds) before detecting DMX signal fail. So, by setting the Delay at 1, you set a time out of: 0.8 + 0.1 = 0.9 seconds.

■ **HOLD:** The hold time defines how long the mode stays active. After the amount of x times 0.1 seconds, the mode will go back to default behavior. In case of LumiSplit the minimum hold time is 0.1 second and the maximum is infinite (65535 or 0xffff). When the hold time has elapsed, the input (zone) of the LumiSplit will go back to "Do nothing". Or as soon the DMX signal has recovered the outputs will follow the incoming DMX again.

■ **LEVEL:** The level is a value that acts as a master level on the captured preset. LumiSplit only supports 255 (full) as level.



4.11 Messages

The LumiSplit can send messages over RDM. You can then be notified about any change on the LumiSplit. To display the message window, right click on one of the responders, and select Messages.
You can save the messages to review later or print them for record keeping.

4.12 Factory reset

The unit can be reset via RDM. To proceed, right click on one of the responders, and select Factory Default.

4.13 Firmware upgrade

The LumiSplit 1.6 is the first splitter to be upgradable through RDM. To upgrade the unit, you will need a Luminex LumiNode (firmware 1.1.0 or higher) or Ethernet-DMX converter (firmware 4.2.0 or higher), and LumiNet Monitor 2.1.6 or higher.
Please bear in mind only one instance of LumiNet Monitor should be running on the network during the firmware upgrade.

5. TECHNICAL SUPPORT

Sometimes it is required to get more help with your device or application. There is a knowledge base available online that gets updated on a regular basis at: https://support.luminex.be

If you need to ask our team for more help or you need to return a device to Luminex for diagnostics or repair, you can also find the option on this page to request an RMA or start a support ticket.

6. APPENDIX

6.1 TECHNICAL DATA	
Mains Voltage:	100 – 240VAC
Main Frequency:	50/60Hz
Power consumption:	Max 15W
Dimensions (W x D x H):	304 x 210 x 44 mm (11.97" x 8.27" x 1.73")
Weight:	2.3 kg
Operating temperature:	0 to 50°C
Storage temperature:	-10 to 70°C
Humidity (non-condensing):	5 to 95%
Certificates / Approvals:	cSGSus Mark, CE, CB certificate
Standards:	IEC 60950-1, EN 60950-1, IEC 62368-1, EN 62368-1, UL 62368-1, CAN/CSA-C22.2 No. 62368-1, FCC Part 15 CFR 47, CAN/ICES-003, EN 55022, EN 55024, RoHS, Reach
Protocol standard:	ANSI E1.11 – 2008 (R2018) (DMX-512) ANSI E1.20 – 2010 (RDM) ANSI E1.37-1 – 2012 (R2017) Additional Message Sets for ANSI E1.20 (RDM) – Part 1 ANSI E1.37-7 – 2019 Additional Message Sets for ANSI E1.20 (RDM) – Gateway & Splitter Configuration Messages
DMX port isolation:	Optical and galvanic isolation per port
Short circuit protection:	Yes
DMX port termination/biasing:	Yes
DMX input:	1x gold plated Neutrik® 5-pin XLR (male)
DMX output:	6x gold plated Neutrik® 5-pin XLR (female)

6.2 SUPPORTED RDM PIDS	
PID VALUE	**RDM Parameter ID's**
0x0001	DISC_UNIQUE_BRANCH
0x0002	DISC_MUTE
0x0003	DISC_UN_MUTE
0x0020	QUEUED_MESSAGE
0x0030	STATUS_MESSAGES
0x0031	STATUS_ID_DESCRIPTION
0x0032	CLEAR_STATUS_ID
0x0050	SUPPORTED_PARAMETERS
0x0051	PARAMETER_DESCRIPTION
0x0060	DEVICE_INFO
0x0080	DEVICE_MODEL_DESCRIPTION
0x0081	MANUFACTURER_LABEL
0x0082	DEVICE_LABEL
0x0090	FACTORY_DEFAULTS
0x00C0	SOFTWARE_VERSION_LABEL
0x00E0	DMX_PERSONALITY
0x00E1	DMX_PERSONALITY_DESCRIPTION
0x0141	DMX_FAIL_MODE
0x0142	DMX_STARTUP_MODE
0x0200	SENSOR_DEFINITION
0x0201	SENSOR_VALUE
0x0501	DISPLAY_LEVEL
0x0641	LOCK_STATE
0x0642	LOCK_STATE_DESCRIPTION
0x0900	ENDPOINT_LIST
0x0901	ENDPOINT_LIST_CHANGE
0x0902	IDENTIFY_ENDPOINT
0x0903	ENDPOINT_TO_UNIVERSE
0x0904	ENDPOINT_MODE
0x0905	ENDPOINT_LABEL
0x0906	START_CODE_FILTER
0x0907	DISCOVERY_STATE
0x0909	ENDPOINT_TIMING
0x090A	ENDPOINT_TIMING_DESCRIPTION
0x090B	ENDPOINT_DEVICES
0x090C	ENDPOINT_DEVICE_LIST_CHANGE
0x090D	BINDING_CONTROL_FIELDS
0x1000	IDENTIFY_DEVICE
0x1010	POWERSTATE
0x1030	CAPTURE_PRESET
0x1041	PRESET_INFO
0x1042	PRESET_STATUS
0x9000	STORE_USER_PRESET
0x9001	RECOVER_BACKUP_MODE
0x9002	BACKUP_AUTORECOVER
0x9003	BACKUP_TIMEOUT
0x9004	STORE_SNAPSHOT

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