IZI-SplitterMerger+ RDM Manual

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Version

Version	Author	Date	Firmware	Changes
1.0	MZ	16-12-2025	V0.8.1	Initial document

General

The IZI-SplitterMerger+RDM is the next evolution in smart DMX management. It combines a robust DMX splitter and a powerful merger in a single compact module. With two inputs (one doubling as an output in splitter mode) and four dedicated outputs, the module delivers five outputs in splitter mode or four in merger mode. Whether you need LTP, HTP, or backup merge modes, this device is ready for any professional lighting setup.

Fully compatible with existing IZI-Link systems, this new version brings exciting upgrades. Its predecessor already offered the same number of ports, but the new IZI-SplitterMerger+RDM adds full RDM support, unlocking remote configuration and monitoring. Even better, the built-in display with three easy-to-use buttons gives you instant local access. Configure modes, monitor incoming DMX data like a real tester, or send test levels to the outputs—all directly from the module.

Compact, versatile, and smarter than ever, the IZI-SplitterMerger+RDM is built to make every lighting installation faster, clearer, and more reliable.

Splitter

The IZI-SplitterMerger+ RDM can split 3 protocols:

- DMX
- RDM
- IZI-Link

RDM and IZI-Link can only be applied to Input A. If configured as a splitter, input port B becomes an extra output. Both Izi-Link and RDM will also be passed to this port.

The DmxFail configuration is not applied to input port B.

The DMX signal refresh rate on the outputs in splitter mode is determined by the refresh rate of the DMX signal on input port A. So the signal is synced with the signal on input port A. The sync is needed to handle RDM communication with very low latency.

Merger

If used as a merger 2 DMX signals can be applied to Input port A and B, depending on the mode the signals will be merged and passed through to the outputs.

If IZI-Link or RDM is used on input port A, input port B is temporary ignored. In case of IZI-Link input port B is blocked until the connection (with the IZI-Manager) is closed. In case of RDM the input port B signal is ignored until 1.5 seconds after the last RDM command.

The DMX signal refresh rate on the outputs in splitter mode is determined by the refresh rate of the DMX signal on input port A. So the signal is synced with the signal on input port A. If there is no signal is present on input port A, the output will be synced with input port B. The sync is needed to handle RDM communication on input port A with very low latency.

Merge modes

MergerBackup

If DMXA fails, device will switch to DMXB, If DMXA recovers, device will switch back to DMXA.
If both DMXA and B fail, the outputs will be set according to the DMXfail setting.

MergerFlip

If the active DMX input (A or B) fails, device will switch to the other input and remain there until this input fails. If both DMXA and B fail, the outputs will be set according to the DMXfail setting.
At power-up, when both DMXA&B are present, DMXA will be copied to the outputs.

MergerHTP

Highest Takes Precedence. For each DMX channel, the highest value from DMXA or B is copied to the outputs. If DMXA or B fails the other input becomes active. If both DMXA and B fail, the outputs will be set according to the DMXfail setting.

Merger LTP

Latest Takes Precedence. For each DMX channel, the last modified value from DMXA or B is copied to the outputs.
If DMXA or B fails, the active channels from that input will be set according to the DMXfail setting, except NoData and except when the values from DMXA and B are equal.
If both DMXA and B fail, the outputs will be set according to the DMXfail setting.
At power-up, when both DMXA&B are present, DMXA will be copied to the outputs.

Merger LTP Backup

Latest Takes Precedence with Backup. For each DMX channel, the last modified value from DMXA or B is copied to the outputs. If DMXA or B fails, the active channels from that input will be set according to the other channel.
If both DMXA and B fail, the outputs will be set according to the DMXfail setting.
At power-up, when both DMXA&B are present, DMXA will be copied to the outputs.

Merger LTP Changeover

Latest Takes Precedence with Changeover. The input, DMXA or DMXB, with the last modified channel is copied to the outputs. If the active DMX input (A or B) fails, device will switch to the other input. If both DMXA and B fail, the outputs will be set according to the DMXfail setting. At power-up, when both DMXA&B are present, DMXA will be copied to the outputs.

Merger Append

DMX channels from DMXB starting at channel1 are appended to DMXA starting at set Address.
If DMXA and/or B fails, the active channels from that input will be set according to the DMXfail setting, except NoData.

Merger Trigger modes

The merger trigger modes are not available any more in MKII.

Configuration

The configuration IZI-SplitterMerger+ RDM can be done via the Display menu, IZI-Manager (IZI-Link) or via RDM.

The following parameters can be configured:

- Mode (see previous paragraph)   RDM/Display/IZI-Link
- Dmx fail   RDM/Display/IZI-Link
- Name   RDM/IZI-Link
- Channel (for Merger Append mode)   RDM/Display/IZI-Link
- AUX1 and AUX2 actions   RDM/Display
- Scene (1 and 2) Storage by input capture Display

Dmx Fail

The DMX fail determines what should be done when no DMX signals are present (any more). RDM is also handled as 'DMX signal'. Two parameters can be set:

- DMX fail Power-up   What to do when no DMX signal is received at power-up
- Dmx fail Operation   What to do when all DMX signals are lost (for 2 seconds)

There are 5 DMX fail options for both parameters:

- No data   Send nothing on the output   (RDM val: 0)
- Scene   Send a stored scene on the outputs   (RDM val: 1)
- Off   Send all channels at 0   (RDM val: 2)
- Hold   Send the last received valid input values (RDM val: 3)
- Max   Send all channels at 255 / 100%   (RDM val: 4)

Since the inputs are synced to the refresh rate of input port A (or B), removing the last input DMX signal will result in 2 seconds of 'no data' after this the SplitterMerger will generate a DMX signal with 33.3Hz to execute te mentioned DMX fail options (except for No data).

Aux

The IZI-SplitterMerger+ RDM has 2 Auxiliary contact inputs which can trigger 'All channels levels' and scenes. The action executed when the input gets active can be done via RDM and the Display menu. Six actions are available:

- All channels to 100%   (RDM val: 0)
- All channels to 66%   (RDM val: 1)
- All channels to 33%   (RDM val: 2)
- All channels to 0%   (RDM val: 3)
- Scene 1   (RDM val: 4)
- Scene 2   (RDM val: 5)

The scenes can be stored via the display menu by capturing the current input. The actions will overrule the current DMX input and the input will ignored until the contact gets inactive.
Aux 1 has a higher priority than Aux 2.

LEDs

Status LEDs

Both input ports A and B have a status LED to indicate the state of the incoming signal.

Status	LED A	Behaviour A	LED B	Behaviour B
Power-up/reset	Green/Blue	Blink	Blue/Green	Blink
No data	Blue (short)	Heartbeat	Blue (short)	Heartbeat
Bootloader	Red/Magenta	Blink	Red/Magenta	Blink
DMX signal OK	Blue	Blink (rate)	Blue	Blink (rate)
DMX signal not OK	Red	Blink (rate)	Red	Blink (rate)
RDM signal OK	Cyan	Blink (rate)	-	-
IZI-Link signal OK	Lime	Blink (rate)	-	-
DMX signal ignored	-	-	Yellow	Blink (rate)
Identify	Blue/Magenta	Blink	Magenta/Blue	Blink

Update

The IZI-SplitterMerger+ RDM is updatable with the IZI-Manager (v1.8 and higher). The new update principle is used meaning the uploaded firmware is stored in a separate part of flash memory, if the data is complete and validated, the bootloader is entered to copy the new firmware to the application flash area. This means that if the upload is interrupted the module will always be functional.

Display menu

```
SplitterMerger+RDM

Mode: Splitter
Stat: OK
Aux1: Inactive
Aux2: Active
```

The display contains status and configuration possibilities, and is controlled by 3 buttons.

- Up
- Down
- Enter

To exit a menu, there are 2 possibilities, scroll to the 'Exit menu' item, or hold the Enter button for more than 1 sec.

The menus brightness will be reduced after 1 minute of 'no usage' and the menu display will go off after 1 hour. Pressing any key will increase the brightness and restart the menu (if off).

Base menu

The base menu has 3 screens, and contains only status messages.

```
SplitterMerger+RDM

Mode: Splitter
Stat: OK
Aux1: Inactive
Aux2: Active
```

The first screen contains:

- Current mode
- Status of inputs and outputs
    - Inputs: OK if all incoming signals are ok
    - Outputs: Source of output (OK if from DMX, Dmx fail (if no signal), Aux1/Aux2/Menu, if the output is overridden by one of these sources)
- Aux1 active or inactive
- Aux2 active or inactive

```
Protocols

DMX A in   : 37 f/s
DMX B in   : 30 f/s
DMX Out 1-4: 37 f/s
```

The second screen shows the refresh rate of the incoming and outgoing signals. If RDM is present on DMX A in, an extra line will be shown with the RDM refresh rate, in that case the output rate is DMX+RDM frames per second.

```
Information

Serial:  12345
Version: 0.8.1
Boot:    1.0.3
Stat:    Ok
```

The third screen is the information screen about the device, serial, application version, bootloader version and hardware status.

Main menu

The first menu layer, contains 3 items to configure the device.

```
Main menu        1/4

> Device setup
  Test outputs
  Configuration
  Exit menu
```

Device setup

```
Device setup     1/4

> Mode
  Dmx fail pup
  Dmx fail operation
  Exit menu
```
```
Mode             1/9

> Splitter
 *Merger backup
  Merger flip
  Merger HTP
```

In the mode menu, the mode can be changed by selecting the required mode. The dot indicates the current selected mode. Attention, the menu has more than 4 items so it can be the case that the user has to navigate down to see the selected menu is. A new selected mode will be directly activated.

```
Device setup     2/4

  Mode
> Dmx fail pup
  Dmx fail operation
  Exit menu
```
```
Dmx fail pup     1/6

> No data
  Scene
 *Off
  Hold
```

In the 'Dmx fail pup' menu the dmx fail action after power-up can be configured. If scene is selected, this means 'Scene 1'. The dot indicates the current selected dmx fail.

```
Device setup     3/4

  Mode
  Dmx fail pup
> Dmx fail operation
  Exit menu
```
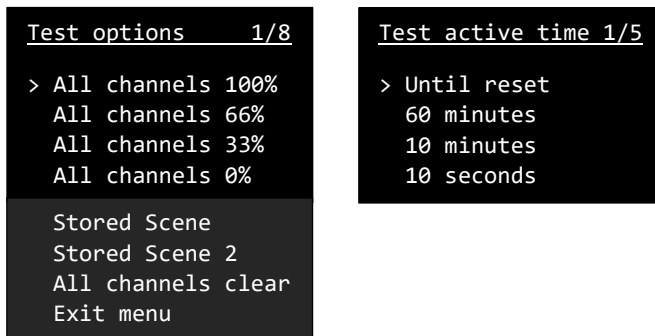```
Dmx fail operat..3/6

  No data
  Scene
> Off
 *Hold
```

In the 'Dmx fail operation' menu the dmx fail action after a valid signal is lost can be configured. If scene is selected, this means 'Scene 1'. The dot indicates the current selected dmx fail.

## Test outputs

Via the test outputs menu fixtures on the output can be tested, by generating DMX with a given level to all channels or a stored scene.

```
Test options    1/8

> All channels 100%
  All channels 66%
  All channels 33%
  All channels 0%

  Stored Scene
  Stored Scene 2
  All channels clear
  Exit menu
```

```
Test active time 1/5

> Until reset
  60 minutes
  10 minutes
  10 seconds
```

A level can be chosen, which will be send on all 512 channels. Second option is to test a stored scene on the output, the scene is stored in the 'Configuration menu' by input capture. A last option 'All channels clear' can be chosen to manually stop the test output.

If a level or scene is selected (with the Enter button), a second option appears to select the time the test output will stay active. When the time is selected, the test output will directly be started.

When the time is chosen, the menu will jump back to the 'Test options' menu and a dot will be shown before the selected option, indicating this is active now.

The test output will overrule incoming DMX signals and AUX settings.

Configuration

```
Configuration   1/6

> Scene storage
  Scene storage 2
  Aux 1 action
  Aux 2 action

  Factory default
  Exit menu
```

```
Scene storage   1/2

> Record scene
  Cancel
```

Two scenes can be stored in the SplitterMerger, the scene stored is based on the current output. When 'Record scene' is pressed the scene is directly stored into memory, replacing the old scene.

```
Configuration   3/6

  Scene storage
  Scene storage 2
> Aux 1 action
  Aux 2 action

  Factory default
  Exit menu
```

```
Aux1 Action     1/7

> All channels 100%
  All channels 66%
  All channels 33%
  All channels 0%

  Stored Scene
  Stored Scene 2
  Exit menu
```

The action can be selected here what to do when an input gets active. A level can be chosen, which will be send on all 512 channels. Second option is to select a stored scene on the output, the scene is stored in the 'Configuration menu' by input capture.

The selected option will be used the next time the Aux gets active.

```
Configuration   5/6

  Scene storage
  Scene storage 2
  Aux 1 action
  Aux 2 action

> Factory default
  Exit menu
```

```
Factory default  1/2

> Default & reboot
  Cancel
```

In this menu, a factory default can be executed, meaning all settings will be set default settings. When activated the device will default and then reboot.

Specifications

DMX timeout: 2 sec

RDM timeout 1: 1.5 sec (only relevant if merging with Dmx on B line)

RDM timeout 2: 10 seconds (10 seconds after last RDM frame -> DMX fail)

RDM delay to Dmx B (splitter): 0 us

RDM delay to Dmx outputs: max 232us (break of 176 + one byte 44 + MAB 12)

Dmx out is synced with DMX A (same speed), to make sure that RDM signals can be merged with DMX and can be directly send to the targets. If only B is present it will be synced to B.
If DmxA receives less than 512 channels then the output will not be complemented with extra bytes to reach 512 channels.

The output has a fixed break time (90us for DMX and 178us for RDM).

DMX fail has a fixed speed of 33.3Hz and is only transmitted on the output ports not port B if in Splitter mode. This way all SplitterMergers cascaded can output their own Scene.
Scene default is all to 50%.

Max DMX input frequency 44Hz.