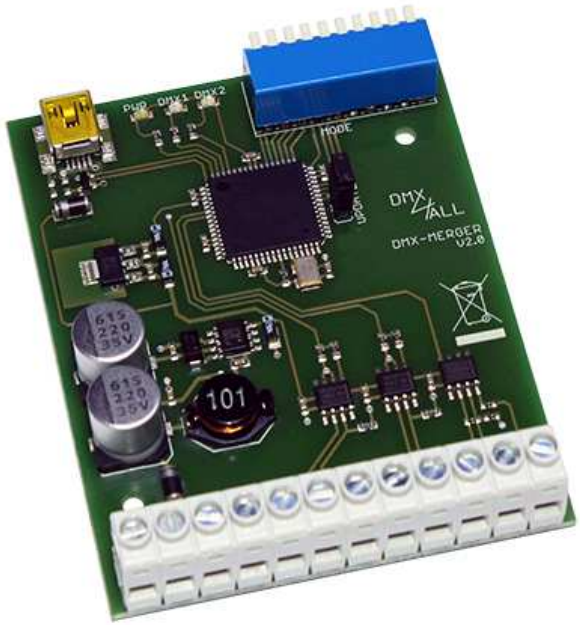
DMX-Merger

2x DMX IN / 1x DMX OUT

User Manual



DMX4ALL®

For your own safety, please read this user manual and warnings carefully before installation.

Description

DMX-Merger are needed when 2 DMX-Signals have to join to control DMX-Devices on one DMX-Bus.

An application takes place everywhere where different DMX-Equipment is used for an overall control.

Join 2 DMX-Sources
If more than 2 DMX-Sources are to be joined, several DMX-Merger can be connected in a row. In this case the signal transit time is added.

COMBINE Universes
This mode combines both input signals one after the other. At first the DMX-Channels from the first input (DMX1) are transferred to the DMX-Output.
The second DMX-Input signal (DMX2) is then added from the channel set via DIP switches 1 to 9.

HTP (Highest takes precedence)
In this mode the highest DMX-Value of both input signals is outputted at the output (HTP).

LTP (Lowest takes precedence)
In this mode the lowest DMX-Value of both input signals is outputted at the output.

Last changed channel
In this mode the DMX-Value that changed last is always outputted.

Last changed universe
This DMX-Universe is outputted in which a value change has executed last.

ADD channels
The two input signals are added together and output at the output.
If the maximum value of 255 is overstepped, it this value is output.

Backup to DMX2 if DMX1 fail
At the DMX-Output the DMX-Signal of input 1 is preferentially output as long as it is present. If no DMX-Signal is present at DMX1, DMX2 is output.

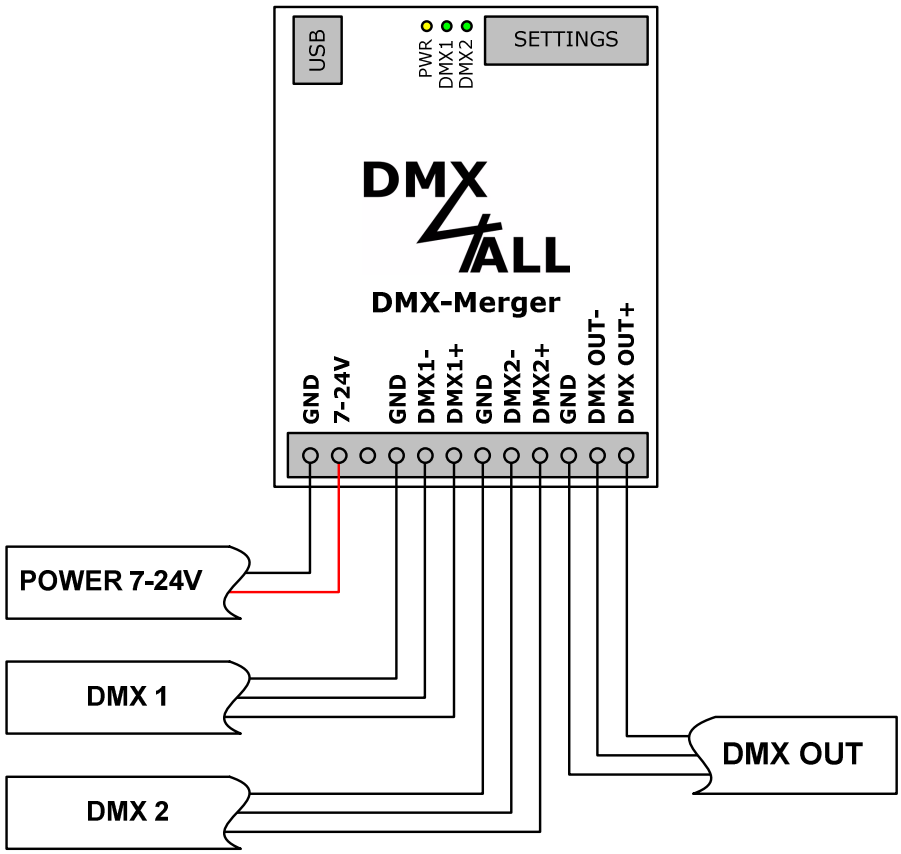
Top hat rail mounting available
Suitable to the DMX-Merger the Top hat rail mounting 700 is available as accessory.

Firmware-Update-Function
To use future functions the DMX-Merger provides a Firmware-Update-Function.

Technical Data

Power supply:	7-24V DC / 200mA
DMX-Input:	2 DMX-Inputs / 512 Channels
DMX-Output:	1 DMX-Output / 512 Channels
Modes:	Highest value Lowest value Last changed value Last changed universe Add both value Combine Backup
DMX-Fail Option:	HOLD ALL OFF ALL ON NO DMX
Connection:	Screw terminals
Board dimensions:	64,2mm x 82mm

Connection



LED-Display

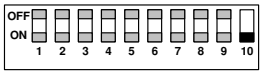
The integrated LEDs display the current operating state.
In particular the LEDs have the following function:

PWR	A DMX-Signal is present at the output. The DMX-Merger operates.	
DMX1	Lighting:	A DMX-Signal is detected at input 1.
	Flashing:	No DMX-Signal, maybe twisted data line.
DMX2	Lighting:	A DMX-Signal is detected at input 2.
	Flashing:	No DMX-Signal, maybe twisted data line.

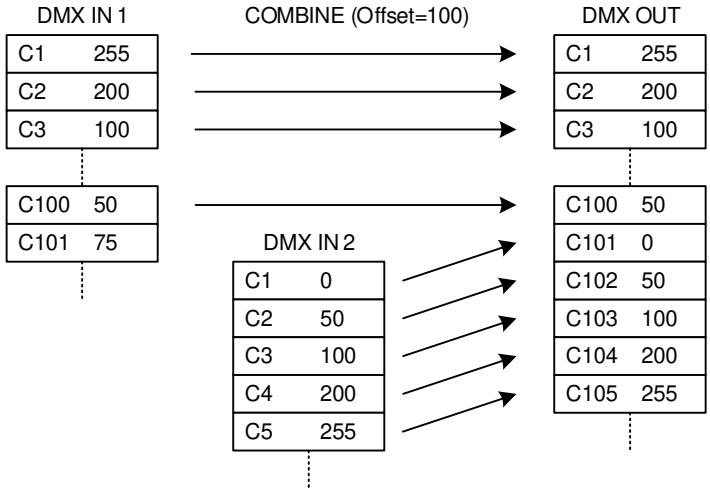
Operating modes

The operating mode is selected by the switch on the DMX-Merger.

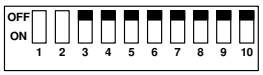
COMBINE Universes



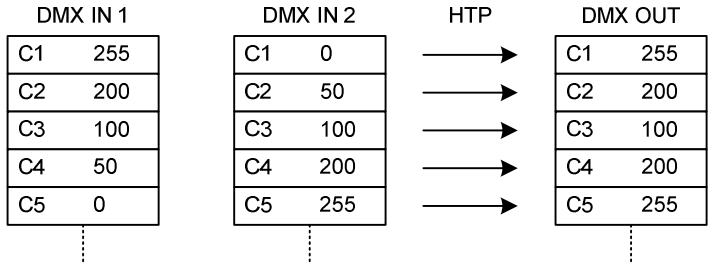
This mode combines both input signals.
The number of channels (offset) set via DIP switches 1 to 9 indicates how many DMX channels are output from the first DMX input (DMX1). Then the DMX output of the DMX channels takes place from the second DMX input (DMX2).



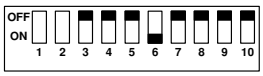
HTP (Highest takes precedence)



In this mode, the highest DMX-Value from both input signals is always outputted (HTP).



LTP (Lowest takes precedence)



In this mode, the lowest DMX-Value from both input signals is outputted always.

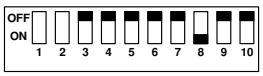
DMX IN 1		DMX IN 2		LTP	DMX OUT	
C1	255	C1	0	→	C1	0
C2	200	C2	50	→	C2	50
C3	100	C3	100	→	C3	100
C4	50	C4	200	→	C4	50
C5	0	C5	255	→	C5	0

ADD channels

Both input signals added are outputted at the output. If the maximum value of 255 is overstepped, so this is outputted.

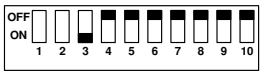
DMX IN 1		DMX IN 2		ADD	DMX OUT	
C1	255	C1	0	→	C1	255
C2	200	C2	50	→	C2	250
C3	100	C3	100	→	C3	200
C4	200	C4	200	→	C4	255
C5	10	C5	50	→	C5	60

Last changed channel



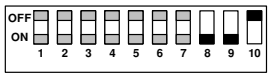
In this mode, the last changed DMX-Value is outputted.

Last changed universe



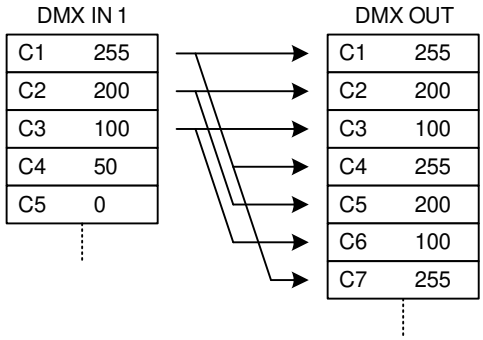
The DMX-Universe in which a value change occurred last is displayed.

Repeat channels (Firmware V4.04 or higher)



The DMX signal from input 1 is output at the DMX output, which is repeated in the entire DMX universe after the set number of DMX channels.
The number of DMX channels to be repeated (repeat number) is set in binary form using DIP switches 1 to 7.

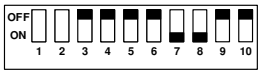
In the sample the repeat numer is 3:



Backup to DMX2 if DMX1 fail (from V3.22)

The DMX-Signal by input 1 is outputted at the DMX-Output favored, as long as it is available. If there is no signal at DMX1 so DMX2 is outputted.

Backup to DMX2 if DMX1 fail or is zero (from V4.05)



The DMX-Signal by input 1 is outputted at the DMX-Output favored, as long as it is available and minimum one DMX value is not zero.

If there is no signal at DMX1 or all DMX values at DMX input 1 are zero DMX2 is outputted.

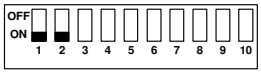
DMX-Fail Option

(from V3.22)

The DMX-Merger provides several DMX-FAIL Options in the case that there is no DMX-Input signal.

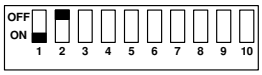
The DMX-Fail setting can be combined with other operating modes. One exception is the COMBINE mode, which does not have a DMX-Fail option.

Hold DMX channels



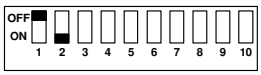
All DMX-Channels are hold on the last outputted value if there is no DMX-Input signal.

All channels ON



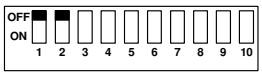
If there is no DMX-Input signal all DMX-Channels are set on value 255 (100%).

All channels OFF



If there is no DMX-Input signal all DMX-Channels are set on value 0 (0%).

NO DMX Output



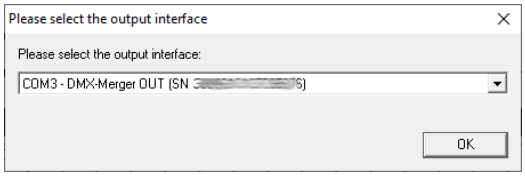
There is no DMX-Signal generated if there is not DMX-Input signal.

Setup DMX framerate

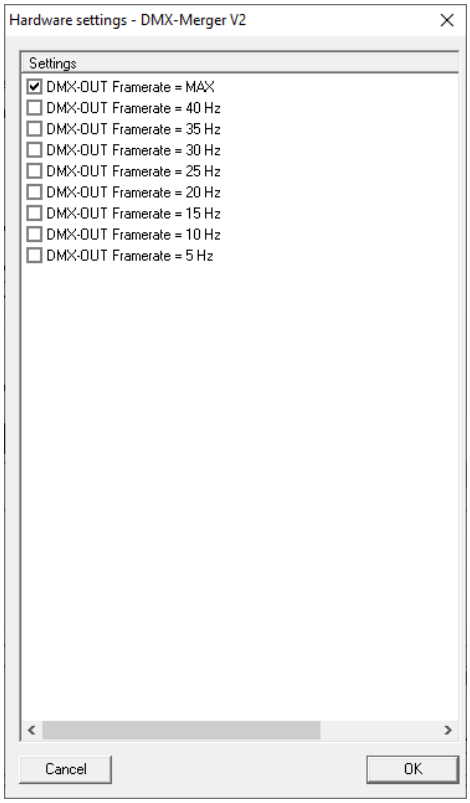
The DMX frame rate at the DMX output of the DMX-Merger can be set to various maximum values.

To do this, proceed as follows:

- Connect the DMX-Merger to the PC via USB
  ⇨ A USB cable with a MiniB connector is required (not included)
  ⇨ Install the USB driver if it is not already available
- Start the program DMX-Configurator
  ⇨ This is available as a download from www.dmx4all.de
- Establish a connection with the DMX-Merger in the DMX Configurator



- Call up the menu item *Settings→Hardware Settings*
- The settings can be made here



- By clicking on OK, the setting is transferred to the DMX-Merger and saved

Execute Firmware-Update

The **DMX-Merger** has an Update-Function allowing to transfer future Firmware-Versions.

Please proceed as follows:

- Turn off the device (Disconnect the power supply and USB!)
- Remove UPDATE-Jumper
- Occur USB-Connection to PC
- Start the Update-Software **DMX4ALL USB-Updater**
- Select the DMX-Merger from list
- Click *Firmware-Update*
- Select Firmware-Datei (.bin) and confirm
- Wait until the update has finished
- Reconnect UPDATE-Jumper

If an error occurs during the update you can start at the beginning at any time. To do this, you must switch off the DMX-Merger and close the software before executing the Firmware-Update.

Equipment

Top hat rail housing 700

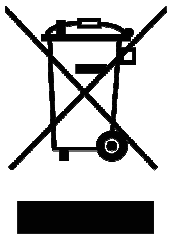
Power supply 12V

USB cable A / MiniB

CE-Conformity

This assembly (board) is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

Disposal



Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations. Information on this can be obtained from your local waste disposal company.

Warning

This device is no toy. Keep out of the reach of children. Parents are liable for consequential damages caused by nonobservance for their children.

Risk-Notes

You purchased a technical product. Conformable to the best available technology the following risks should not excluded:

Failure risk:
The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

Initiation risk:
For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

Operating risk:
The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

Misusage risk:
Any nonstandard use could cause incalculable risks and is not allowed.

Warning: It is not allowed to use the device in an operation, where the safety of persons depend on this device.

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