MiniMulti-X 3D
3D Video Processor & Multiplexer

/LMP
Lux Media Plan

...completes your 3D workflow.

The MiniMulti-X 3D is a universal and economical stereoscopic video processor used for 3D visualisation and broadcast applications. It enables live 3D monitoring of two HDSDI signals via one single HDMI stream in various configurations. Helpful features such as vertical markers, individual channel shift, the internal synchronizer, independend channel swap, integrates perfectly into any 3D workflow.

For single stream recording or transmission, a transparent output is provided in 3G SDI. The Multi-X 3D internally synchronizes the two input channels to reference channel A. Each channel can be shifted in horizontal and vertical direction via the remote GUI. The HDMI output can be overlayed with vertical markes in a distance of 32 pixels. Most of the common 3D formats are supported - even analyph and frame sequential with frame index.

technical

Input	2x HDSDI SMPTE 292M
Output	2x HDSDI SMPTE 292M loopthrough 2x 3G SDI SMPTE 425 or Dual Link in Line by Line or Frame Sequential
	1x HDMI 1.4 in various modes
frame index	in frame sequential mode 25/29,94Hz TTL
HDMI output selectable by GUI	0 Input 1 1 Input 2 2 horizontal split A/B 3 vertical split A/B 4 Mix 50% A/B 5 difference A - B 6 frame sequential AB 7 anaglyph cyan/red 8 line-by-line 9 checkerboard
Shift range	CH A to CH B
horizontal	+/- 256px in steps of 2px
vertical	+/- 16 lines
Vertical markers	in steps of 64 pixel

physical

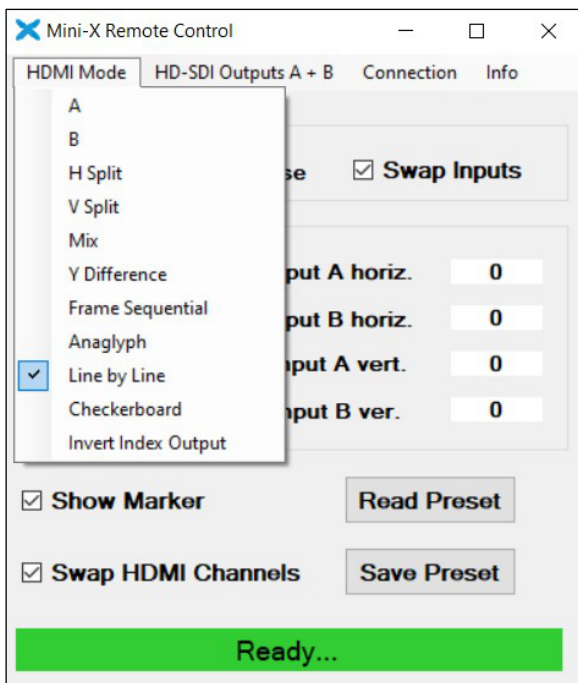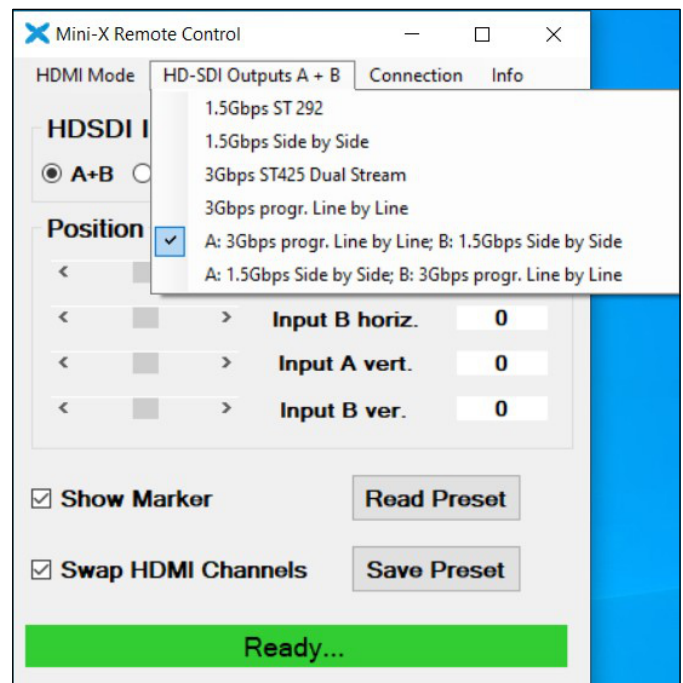|	
Dimensions	106 x 90 x 25 mm
Weight	420 g
Power	12V DC /6Watt
Power connector	Binder 710 3pin M
Remote-Control USB	mini USB
	frame index 25/29,94Hz TTL to ground
Remote GUI	Windows GUI
	COM PORT xx / 1.000.000 Baud
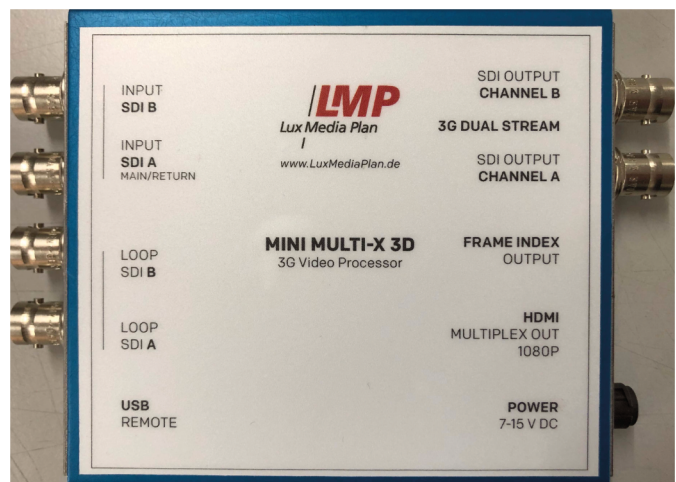
MiniMulti-X 3D
Remote &Configuration Interface
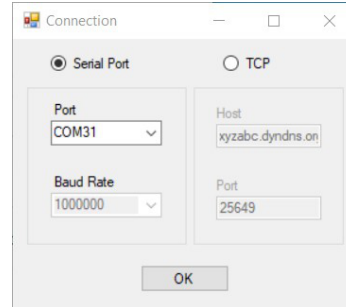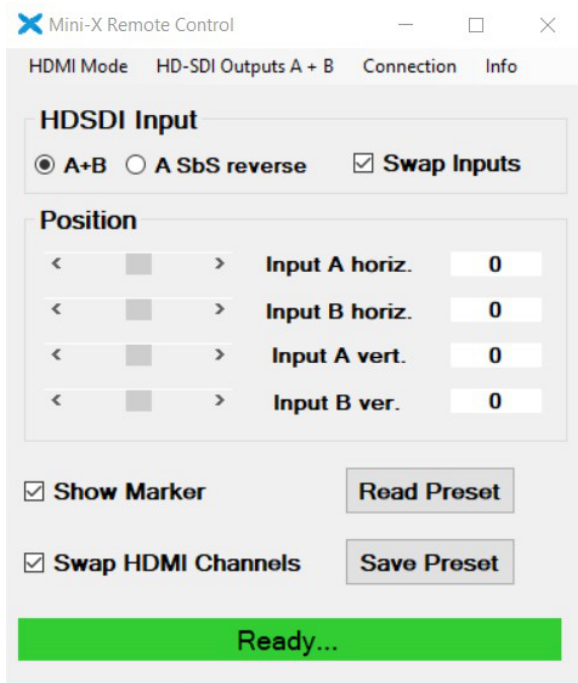
Multi-X 3D GUI
remote control software

Multi-X 3D GUI
HDMI Output Format...

Multi-X 3D GUI
 SDI Output Format A/B..

MINI MULTI-X 3D Specification (based on Firmware Version 0.43)

<u>**Connectors**</u>

Input SDI A: Main Video Input Channel

Accepted video formats are 1080/50i (1.485 Gbps ST-292),

1080/59.94i (1.485/1.001 Gbps ST-292),

1080/50i dual Stream (2.97 Gbps ST-425),

1080/59.94i dual Stream (2.97/1.001 Gbps ST-425)

1080/50p line by line (2.97 Gbit/s level B)

1080/59,94p line by line (2.97 Gbit/s level B

When dual stream- or line by line input in 3G is detected, both processed
channels will be extracted from input SDI A and Input SDI B will be ignored.
Additionally demultiplexing of a side-by-side input signal is supported (1080/50i
and 1080/59.94i) by switching to "SbS reverse A" at the remote panel.
The two source channels can be swapped by remote control.

Input SDI B: Second Video Input Channel

Accepted video formats are 1080/50i (1.485 Gbps ST-292)

1080/59.94i (1.485/1.001 Gbps ST-292)

Since Channel B is internally synchronized to SDI A input via full-frame-
synchronizer, the signal on SDI Input B does not need to be synchronous to SDI
input A but must have the same video format.

LOOP A: Cable-equalized loop-through of Input SDI A

LOOP B: Cable-equalized loop-through of Input SDI B

USB REMOTE: Mini - USB Connector for remote control and firmware update.

The USB chip is a USB UART FT232R from FTDI Ltd., software drivers
for Windows are available at http://www.ftdichip.com.
Parameters for remote control are 1,000,000bps, 8 Data bits, 1 Stop bit ,
no parity bit.

SDI OUTPUT CHANNEL A: 1.5Gbps (ST-292) mode or dual stream 2.97Gbps (ST-425) mode
remotely selectable.
In 1.5Gbps mode this output is fed by the synchronized input SDI B.

In 2.97Gbps mode it contains the multiplexed dual stream signal
(SMPTE ST425) or multiplexed line by line signal of both
SDI inputs.

SDI OUTPUT CHANNEL B: 1.5Gbps (ST-292) mode or dual stream 2.97Gbps (ST-425) mode
remotely selectable.
In 1.5Gbps mode this output is fed by the input SDI A.

In 2.97Gbps mode it contains the multiplexed dual stream signal
(SMPTE ST-425) or multiplexed line by line signal of both
SDI inputs.

FRAME INDEX OUTOUT: 3.3V - LVCMOS Output for HDMI frame-by-frame mode.
Signal is high when input channel A is displayed and can be inverted by remote command.

HDMI MULTIPLEX OUT: HDMI (DVI - mode) monitor output.
Format is 1080/50p for 1080/50i input and 1080/ 59.94p for 1080/59.94i input.
The following multiplex modes are available by remote control:
 - Channel A input
 - Channel B input
 - Horizontal Split A / B
 - Vertical Split A / B
 - Mix 50% A + 50% B
 - Luminance Difference between A and B
 - Frame Sequential Output A-B-A-B
 - Anaglyph red/cyan
 - Line-by-Line A / B
 - Checkerboard (pixel by pixel)
The display positions can be shifted +/- 128 pixels horizontally and +/- 16 lines vertically for both channels independently.
Lost picture content will be filled with black
Signals can be swapped by remote command
Vertical marker lines with 128 pixel distance can be overlaid.

POWER: DC input nom. 12V (7 V – 15 V)
Typical current 12V 0.4A.

Technische Daten

Abmessungen:	120 x 100 x 30 mm (L x B x H)
Gewicht:	350 g
Power	nom. 12 V DC 5VA
Input formats multiplex mode demultiplex mode	2 x HDSDI SMPTE 292M 1080i / 50/ 59,94 /1,485 Gbit/s 1x HDSDI side-by-side compressed SMPTE 292 1,485 Gbit/s or 3G SDI line by line SMPTE ST- 425 Level B or 3G SDI Dual Link SMPTE ST- 425 Level B
Output formats multiplex mode Frame index	2x BNC HDSDI SMPTE 292M loop through 2x BNC HDSDI SMPTE 292M multiplexed side-by-side or 3G SDI multiplexed line by line SMPTE ST-425 Level A or 3G SDI multiplexed Dual Link SMPTE ST-425 Level B 25 Hz Rectangle TTL, "High" selects channel A
HDMI Output modes	1 Input A 2 Input B 3 horizontal split A/B 4 vertical split A/B 5 Mix 50% A+B 6 difference A-B 7 framesequential AB 8 anaglyph cyan/red 9 line-by-line A checkerboard
Shiftrange horizontal vertical **vertical markers**	between input A & B +/- 256 pixels each in steps of 2px +/- 16 lines each in steps of 128 pixels