sonible

universal.
flexible.
independent.

ml:mio manual

welcome

Ever since MADI took over professional sound technology, audio engineers have faced the same problem: different kinds of MADI devices need to be connected, but their connectors aren't compatible. The ml:mio provides the missing link that enables you to create a stage setup with any MADI format you need.

The compact and durable device allows for the conversion of MADI streams between coaxial, optical (SC) and twisted pair signals. Thanks to a fully bit-transparent routing of incoming MADI streams, the ml:mio is compatible with all MADI formats on the market and will preserve any proprietary control data. In this way, the ml:mio compensates for the missing standard in the conversion of MADI data – flawlessly.

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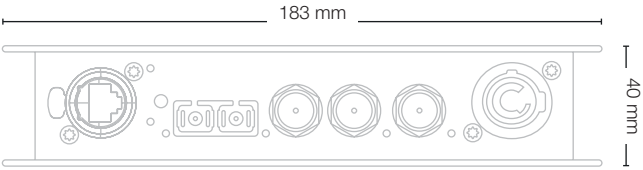
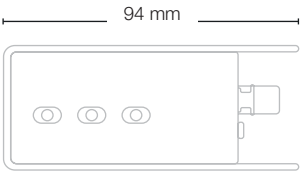
technical data





weight
1 kg

input voltage & frequency
100 - 240 VAC
50 - 60 Hz

MADI inputs
1 twisted pair
1 optical SC (50 / 62.5 µm)
1 coaxial BNC

MADI outputs
1 twisted pair
1 optical SC (50 / 62.5 µm)
2 coaxial BNC

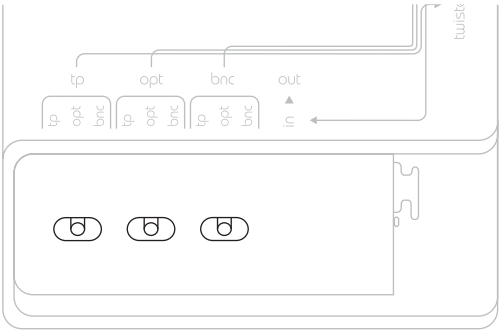
delivery contents
1 ml:mio MADI converter
1 Neutrik PowerCon to CEE 7/3 power supply

overview

1. source selector for twisted pair out
2. source selector for optical out
3. source selector for BNC out
4. twisted pair in/out
5. RX/TX button
6. optical out
7. optical in
8. BNC out 1
9. BNC out 2
10. BNC in

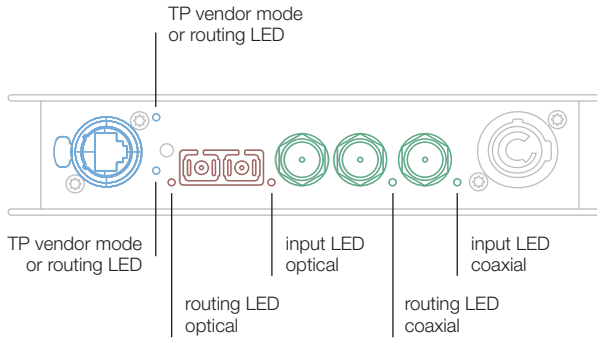
routing switches

The ml:mio operates fully autonomously without any external control software. The routing is set by three built-in switches. Each input can be routed to as many outputs as required. The two BNC outputs always carry the same signal.



The three routing switches allow you to select an input for each corresponding output. They are laid out in the same way as the inputs; the leftmost switch controls the routing of the TP output, the middle switch controls the routing of the optical output and the rightmost switch controls the routing of the BNC outputs.

control LEDs



LED color scheme

To facilitate the usage of the ml:mio, different colors are assigned to the three MADI formats TP, optical SC and BNC:

TP (blue / white)
optical SC (red)
BNC (green)

routing LEDs

input LEDs

The input LEDs are always set to the color of the related input type (TP, optical SC, BNC) and indicate the state of the input:

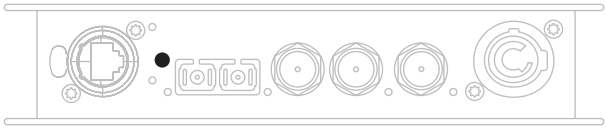
If the LED is glowing constantly, a valid carrier has been detected within the MADI stream.

If the LED is off, no valid carrier could be detected (e.g. if no cable has been plugged into the corresponding input).

If the device detects the loss of a valid carrier, the LED will flash for a short period of time before turning off.

The color of the routing LEDs indicates which input signal is currently routed to the respective output.

RX / TX button



press & hold

2 - 4 seconds for
RX/TX swapping

4 - 7 seconds for
vendor mode swapping

vendor mode

Since different vendors use different implementations of MADI over TP, the ml:mio is able to switch between vendors to guarantee maximum compatibility.

The two possible vendor modes are:

- Soundcraft / Studer
- DiGiCo

To switch the vendor mode, press the RX/TX button between 4 and 7 seconds. The LEDs will start blinking faster, showing that the ml:mio is ready to switch the vendor mode.

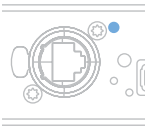
When a new vendor mode has been selected, the color of all LEDs indicating TP signals are set accordingly:

Soundcraft / Studer (white)
DiGiCo (blue)

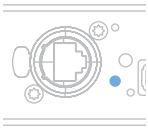
RX/TX swapping

When using CAT cables to establish a bidirectional MADI connection, the two MADI streams are using two of the four twisted pairs available. As there are two possible pinouts for the RX/TX pairs, the ml:mio offers RX/TX pair swapping to support both configurations.

To swap the sending and the receiving twisted pair, press the RX/TX button until the LEDs start blinking slowly. Afterwards the routing LED changes its position.



ml:mio is connected to a **peripheral device**



ml:mio is connected to a **mixing desk**

If the ml:mio is connected to a peripheral device, the color of the upper LED will tell you the vendor mode and the input signal status. The lower LED the current TP output routing.

If the ml:mio is connected to a mixing desk, the upper LED tells you the current TP output routing and the lower LED the vendor mode and input signal status.

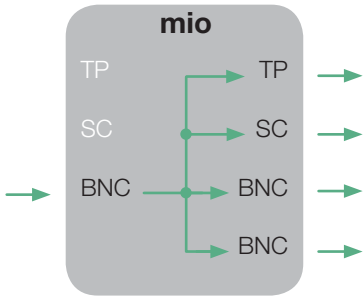
The ml:mio will of course remember the last RX/TX pairing and vendor mode in case of power loss.

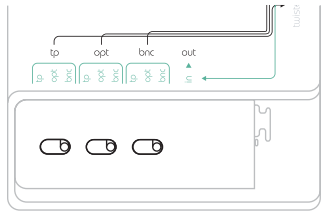
use cases

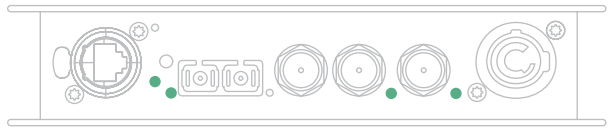
example 1: BNC to all outputs

In this example, the ml:mio is connected to a peripheral device and the vendor mode is set to DiGiCo.

The BNC signal is being routed to all outputs.
Every routing LED lights up green, every switch is set to BNC.
The BNC input LED lights up green.



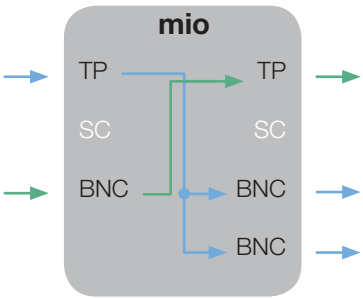


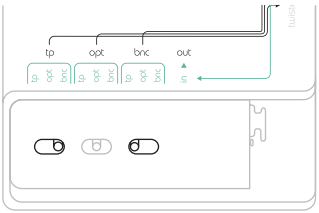


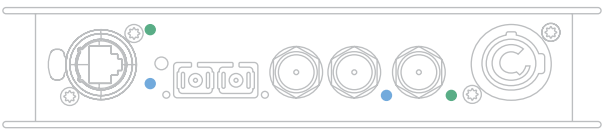
example 2: TP to BNC, BNC to TP

In this example, the ml:mio is connected to a monitoring desk and the vendor mode is set to DiGiCo.

TP is converted to BNC, BNC is converted to TP.
The BNC output LED lights up blue, the TP output LED lights up green. The input LEDs of the BNC and TP output lights up green and blue respectively.



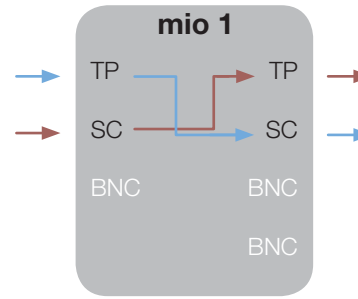


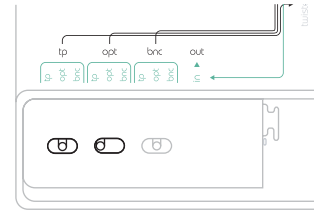


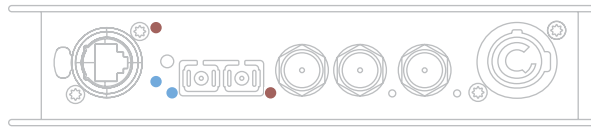
example 3: bidirectional connection with two ml:mio

In this example, the vendor mode is set to DiGiCo.

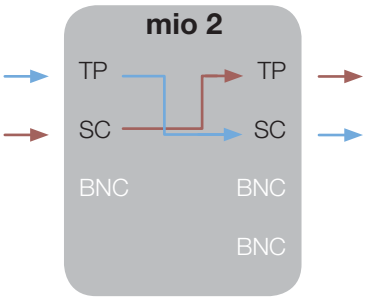
At many venues, you want to overcome the limited reach of TP cables and connect, for example, a stage box to a FoH-console via optical cables. For this reason, we use two ml:mio - each converts between optical and TP signals.

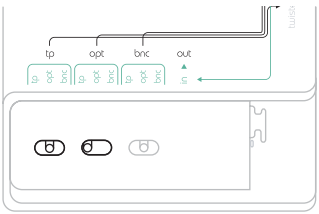


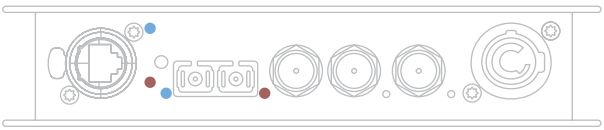




The TP socket of the first ml:mio is connected to a FoH - console, while the second one is connected to the stage box. Both convert TP to optical output and optical input to TP. The difference is the RX/TX configuration depending on the connected device. That means, the upper TP LED of the first ml:mio shows the input signal, the lower the vendor mode. The configuration of the second ml:mio is complementary.







legal information

CE Declaration of Conformity

The product ml:mio by sonible was tested by an independent test laboratory and found to comply with the limits of the European Council Directive on the approximation of the laws of the member states relating to the following standards.

RoHS

EN 61000-6-3:2007/A1:2011 Radiated RF emission test
EN 61000-6-1:2007 Immunity against radiated RF disturbances
EN 61000-6-1:2007 Immunity against electrostatic discharges (ESD) EN 2006/95/EG Low Voltage

Access to the individual test report will be granted on request.

This device has been soldered lead free and all of its internal components comply to the european RoHS directive.

WEEE / Note on Disposal

Following the European directive RL2002/96/EG (WEEE – Directive on Waste Electrical and Electronic Equipment) this product has to be recycled at the end of its lifetime. Never dispose this product in an inadequate manner, e.g. general trash, but use appropriate collection stations for electronic waste.

In case where no appropriate disposal is possible, you may also return this device in a prepaid shipment to sonible.

Warranty

sonible‘s manufacturer warranty covers all substantial defects in materials and workmanship for a period of 24 months from the date of purchase. Liability claims can only be accepted if a proof of purchase is presented.

In case of warranty case please contact sonible (see contact details on the back of this manual).

CAUTION: To reduce the risk of electrical shock, grounding of the centre pin of this plug must be maintained.

WARNING: To reduce the risk of fire or electrical shock, do not expose this application to rain or moisture.

AVIS: Risqué De Choc Electrique – Ne Pas Ouvrir

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

RoHS COMPLIANT

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