

DuTCH audio MC1.2 monitor-controller



DuTCH audio MC1.2 manual

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Thank you for purchasing the DuTCH audio MC1.2 monitor controller. In this manual we will explain how this device works and how to use it.

Basics:

The MC1.2 is a 1u 19 inch monitor-controller with durability and easy control in mind.

The MC1.2 is based around a passive 64 steps, 1dB per step, parallel relay-based attenuator. Compared to a standard serial attenuator or even worse, a potmeter, a parallel attenuator keeps the same impedance throughout it's complete range. This means that it's way more transparent because of a constant load. Another plus is that because it has way less resistors in-line, it also reduces the Johnson noise to an absolute minimum.

The MC1 has 4 balanced inputs, 2 balanced outputs, a balanced pre directout (for example as a metering output) a class-A headphone amp and high quality dual color LED lightened pushbuttons for it's functions (dim, mute L/R, diff, mono, monitor 1/2)

Rearpanel:

On the rearpanel you will find 5 balanced inputs, 2 balanced outputs, a balanced buffered pre attenuator direct output and the AC input.

Input 1 and 2 are balanced Neutrik XLR's and input 1B, 3 and 4 have 6.3mm Neutrik jack inputs. Both outputs 1 and 2 and the buffered direct output are balanced Neutrik XLR's.

Below the AC input (100 to 240VAC) you will find the 800ma fuse.

Frontpanel:

On the left side of the frontpanel you will find the headphones output and level potmeter. Next to that you will find the AB function for input 1. In the middle you will find the LED display and rotary encoder. On the right you will find the 6 enlightened push-buttons.

Headphone amp:

The headphone amp is a powerful but clean transistor based amp. The amp is working pre-attenuator which means that the selected input is going directly into the amp and the attenuator between 01 and 64 will not affect the signal of the headphone. When the attenuator is set to 00, the headphone amp will be muted.

Input 1 AB function

Input 1 has 2 inputs on the back of the unit. An XLR which is passive and is send directly to the attenuator and input 1B (6.3mm jack) which is first sent to the active gain compensation circuit. When the 'input 1 ab' pushbutton is set to off (*green*), the passive input is used. When the button is pressed (*yellow*) input 1 switches to 1b and the active circuit becomes active. With the potmeter you can now AB between two sources with level-matched gain. The gain range of the active gain is +/-10dB.

Rotary encoder and display

Monitor level

In the centre of the panel you will find the multifunctional rotary encoder and the LED display. When you turn the encoder, you will change the monitor output level with a 64 steps range. Every step is ~ 1 dB attenuation, 64 is no attenuation and the maximum attenuation at 01 is approximately ~ -64 dB, 00 means silence/muted (also the headphone amp will be muted).

Input selector

The input selection is done by pushing the encoder, the display shows the selected input (C1 to C4). After about 3 seconds the display reverts back to showing the attenuation value.

Balance control

When you push and hold the encoder and at the same time turn it to left or right you have a balance/pan control. The range goes from -9 (left) to 9 (right), centre is shown as 0.

Standby and soft start

When you push and hold the encoder for 2 seconds the attenuator goes in bypass and the display just shows a 'decimal dot' and all push-switches are off. When you push the encoder again, it comes out of standby with a soft start and shows 00 and after about 3 seconds it reverts the last known value again (just like when powering on).

IR Remote

It's possible to use the functions of the encoder with an IR remote control. By default it uses the Philips RC5, RC5X, RC6 and Sony SIRC protocol in its 12-bit and 15-bit version protocols. Other options are possible as well, please contact us for more info.

Push-buttons

Dim

When you push the 'Dim' button, the output signal is instantly attenuated by 15dB. The switch turns red for visual feedback. For more info on changing the 15dB attenuation, see the technical details.

Mute Left

When you push the 'Mute left' button, the signal cuts (Left) and the led in the switch becomes red showing that it's in mute.

Mute Right

When you push the 'Mute right' button, the signal cuts (Right) and the led in the switch becomes red showing that it's in mute.

Diff

When you push the 'Diff' button, the left side will be polarity flipped to check if things might be out of phase, but also when combined with the 'Mono' button you can listen to just the diff/side channel. The switch turns red for visual feedback. *Note: the diff function only works with balanced signals because of its passive nature.*

Mono

When you push the 'Mono' button the left and right signals are summed to mono. The switch turns red for visual feedback.

Monitor 1 / 2

With the 'monitor 1/2' button you can select which monitor output is used. Green is monitor 1, yellow is monitor 2.

Technical:

Specifications:

Input resistance: 10Kohm

Output resistance: between 0 and 4.5Kohm (depending on attenuator setting)

Dynamic range: >110dB(A)

Input voltage 100 to 240VAC 50/60HZ.

Power consumption approx 5 watt

Unit size: standard 1u 19 inch, depth 25cm

Weight: approx 2kg

Some notes on passive circuitry:

This device is built around passive circuits (relays and resistors), basically meaning it's a straight wire. In most cases this works great and by nature 100% transparent. There could be the odd monitor/amp that 'doesn't like' this passive nature. In those rare cases it's possible to add an active buffer (balanced) stage at a small extra fee.

Dim attenuation:

The Dim function by default is set to an attenuation of 15dB, which could be changed by changing the resistors mounted on the sockets on the inside (*with dim adjust written next to it*). There are 8 resistors in total, but in practice only 4 needs to be changed to change the Dim attenuation. The 'to gnd' resistors are 3k3 and the 'serial' resistors are 10k (these can be changed).

Changing the 'serial' resistors to 5k1, changes the attenuation to -12dB.

Changing the 'serial' resistors to 18k, changes the attenuation to -20dB.

You can also change to other resistor values to find your attenuation level 'sweetpot'.

Specifications subject to change because always improving.

Warranty:

We offer a standard 2 year limited warranty on all of our products.

In the event that you or a third party has (partly) altered or repaired anything, the warranty will expire, and you will be held responsible for the damages caused by any possible malfunctioning of the product.

We are not responsible for any malfunction of or damage caused by parts that are not produced by Dutch.audio.

This agreement is governed by Dutch law only. Any disagreement, redemption or any other claim will be judged under Dutch law only.



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