



DuTCH audio MSM1 manual

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(v1.0 23-08-2021)

Introduction:



Thank you for purchasing the DuTCH audio MSM1. In this manual we will explain how this device works and how to use it.

Important Safety Instructions:

Please follow these precautions when using this product:

- Read and keep these instructions.
- Heed all warnings and follow all instructions.
- Dangerous voltage lives inside this machine. Opening is only allowed by qualified service personnel.
- Unplug this machine during lightning storms or when unused for long periods of time.
- Do not use this machine near water or outside.
- Clean only with a dry, soft cloth. Do not spray any liquid cleaner onto the cabinet, as this may lead to dangerous shocks.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other machines (including amplifiers) that produce heat. Avoid exposure to direct sunlight.
- This machine typically runs slightly warm when operated. Install in a normal ventilated area. If the product will be used in a rack, make certain there is sufficient air movement within the rack. Preferably offer some empty rack space above the unit and do not place it on top of hot equipment.
- Refer all servicing to qualified service personnel. Servicing is required when the machine has been damaged in any way, such as when the powersupply plug is damaged, liquid has been spilled or objects have fallen into the machine, the machine has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **WARNING:** To reduce the risk of fire or electric shock, do not expose this machine to rain or moisture.

Operation:

The MSM1 is a Mid/Side encoder/decoder that lets you process a device connected to the inserts in either stereo mode or M/S mode. When set to stereo (encode/decode off), the MSM1 is 100% passive, when set to MS, it will pass the active mid/side circuitry. Both encoder and decoder can be used separately from each-other. In normal MS mode, both encoder and decoder should be active.

MS encode

When the '*MS encode*' button is pushed, the MS encoder section will become active. The left channel is Mid, right is Side.

MS decode

When the '*MS decode*' button is pushed, the MS decoder section will become active. The MS encoded signal will be decoded to stereo again.

Mute M:

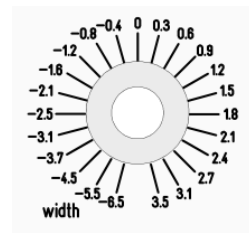
The '*mute m*' button will mute the mid channel so that you listen to just the side information.

Mute S:

The '*mute S*' button will mute the side channel so that you listen to just the mid information.

Width:

When you enable the '*width*' button, the width circuit becomes active and you can change the gain of the side channel and so, making it more wide or narrow. We chose to use a dedicated width enable button for A/B purposes. The width gain range is -6.5/+3.5 with 23 steps. This way you have more precise control than with coarse steps and a big range you probably won't need.



Power:

The '*power*' button powers up the unit. When powered off, the MSM1 still passes audio which runs through the inserts.

Technical:

Hardware:

This device is built around mostly passive circuits, but some sections need to be active, but always with transparency in mind. The sturdy frontpanel-switches have, depending on their function, 2 color leds for visual feedback. All relays are high sensitive, long-life (15.000.000 cycles) Omron Relays.

Stepped switches are military grade Blore Edwards for long life and really nice mechanical feel. In and output connectors are gold-plated Neutrik, DB25 inserts are gold-plated wurth connectors. Active circuits make use of analog devices and THAT drivers. The mid/side circuit is based on the well-known circuit from Wayne Kirkwood, but with additions/modifications.

The internal PSU section is built around industrial-grade Meanwell SMPS's which run way more silent and are way more efficient than old-school linear PSU's. Both the relays/leds and active circuit PSU's are running on their own separate PSU.

When this device is used in passive mode, so with MS encode and decode off, it's 100% passive and only relay-contacts are inline. This means it's basically a straight wire.

Specifications:

Maximum gain passive: >+24dBu
Maximum gain passive: +23dBu
Noise level passive: >118dB(a)
Noise level active: >116dB(a)
Stereo crosstalk (passive): >110dB(a)
Stereo crosstalk mid/side: >80dB(a)
THD passive: 0.00042% (AD/DA limitations)
THD active: 0.00045%

Input voltage 100 to 240VAC 50/60HZ.
Power consumption minimum 5 watt
Power consumption maximum 5 watt
Unit size: standard 1u 19 inch, depth 25cm
Weight: approx 1kg

Specifications subject to change because always improving

Service and 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. Warranty repairs are only made by us or by a workshop we agree upon.
- We are not responsible for any malfunction of or damage caused by parts that are not produced by DuTCH.audio.
- If you choose to ship back a faulty unit to us you must contact us before you do so. We need the serial number (located on the back of the unit) to handle the repair and if warranty is still valid.
- The product should be returned in it's original package or packed in such a way that it is not damaged during the shipment with extra support for the rack ears. We are not to be held responsible for any damages during the shipment.
- The customer always pays the shipping cost to us.
- The customer is responsible for the product until it is delivered to us
- If we find that the product is flawless the customer will be charged 200 euro to cover our costs for examination and handling. The return costs will also be charged.



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