DuTCH.audio IM1.2(s)

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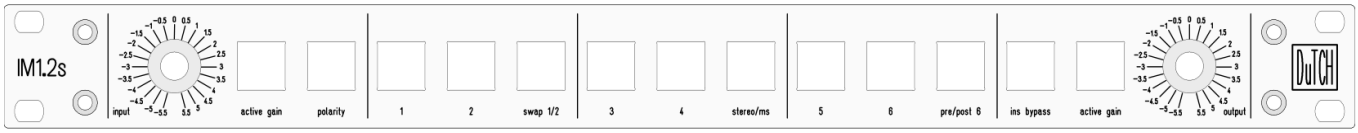
(v1.2 29-06-2021)



Thank you for purchasing the DuTCH audio Insert Machine IM1.2(s). In this manual we will explain how this device works and how to use it. Since this is not really a beginner's device, we will skip the basics and focus on it's functions. We will go from the inputs (left side), to the inserts (middle) and to the outputs (right side), basically how the device handles signals.

The IM1.2 is available in 2 versions, the IM1.2 and the IM1.2s. The only difference is the output section. More on this can be found in the output section of this manual.

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:

Input:

Active gain:
The input is passive with just relays, but by pushing the *'active gain'* button you will enable the active gain stage which enables you to change the input gain to your liking. In the mid/0 position, there is no gain applied though it passes the active gain circuit. You can change the gain in 23x0.5dB steps from +5.5dB to -5.5dB with stepped switches.

Polarity:
The *'polarity'* button will swap the polarity of both Left and Right. Sometimes swapping polarity will give a better response, mostly in the low frequencies. In most cases swapping polarity is not needed, but in the cases where you want to, this button comes in very handy. Keep in mind that obviously this only works with balanced signals.

Inserts:

Insert 1 and 2:
This is a 100% passive insert section with just relays. When disabled, it will directly pass the signal internally to the next stage. When you enable the insert (1 and/or 2), it will pass the signal to the corresponding send/return. It will first pass insert 1 and then it goes into insert 2. When you push the *'swap 1 /2'* button, it will swap the order of the inserts. So instead of 1>2 it will become 2>1.

Insert 3 and 4 (mid/side):
Insert 3 and 4 can be used for Mid/Side processing. When set to stereo, it will be 100% passive, when set to MS, it will pass the active mid/side circuit.

Mid Side:
When the *'stereo/ms'* button is engaged, both inserts 3 and 4 will work in MS mode. Left channel is Mid (sum), Right channel is Side (diff).

Insert 5 and 6:
This is a 100% passive insert section with just relays. Insert 5 is a regular passive insert. With insert 6 you can swap the order of insert 6 from insert 6 to pre insert 1, so it basically becomes insert 0. When you push the '6 pre/post' button, this is what will happen:
6 pre/post **off**: inputs > 1>2>3>4>5>6> outputs
6 pre/post **on**: inputs > 6>1>2>3>4>5> outputs

Output:

Insert Bypass:
When you press the *'ins bypass'* button, all inserts will be bypassed at once. The bypass button becomes red and all other buttons will be 'greyed out'. This way, the input goes directly to the output with nothing inline except for some relays.

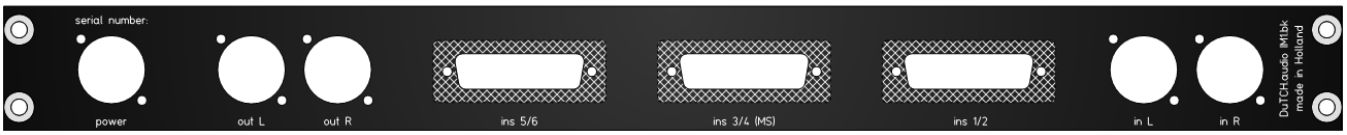
IM1.2
Bypass offset:
When you push the 'bypass offset' button, it will bypass all inserts and the active gain stage *'bypass offset'* comes active. The monitor offset will allow you to change the bypass gain to make up for the processing of the inserts. This way you can A/B between the analog

processing and level-matched bypassed signal. The gain range is set from -10dB to +10dB done with a potmeter instead of a stepped switch for a more precise adjustment. And since this is just an AB function no recall is needed.

** note: the bypass gain range on earlier revisions was -2dB to +8dB*

IM1.2s
Active output gain:
The output is passive with just relays, but by pushing the *'active gain'* button you will enable the active gain stage which enables you to change the output gain to your liking. In the mid/0 position, there is no gain applied though it passes the active gain circuit. You can change the gain in 23x0.5dB steps from +5.5dB to -5.5dB with stepped switches.

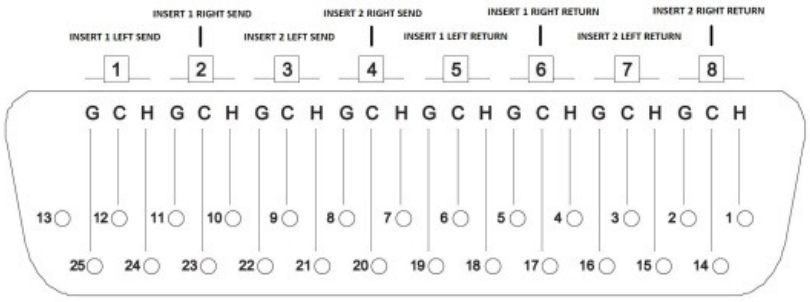
Rearpanel:



Inputs:
The IM1.2(s) has balanced inputs. Both inputs consist of gold-plated Neutrik XLR's.

Inserts:
The IM1.2(s) has 6 balanced inserts connected on the back with industry standard Tascam DB25 analog connectors. Each connector holds 2 inserts corresponding with the frontpanel numbering.

Pin-out for TASCAM DB25 8 Channel Balanced Connector



** Note: Be careful with DB25 tascam standard/premade cables. The digital AES/EBU cables have their inputs and outputs swapped compared to the analog version.*

Outputs:
On the rearpanel you will find the output with balanced gold-plated Neutrik XLR's.

Power:
The *'power'* input is for connecting the external power-supply to the IM1.2(s).

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 external PSU section is build around industrial-grade Meanwell SMPS's which run way more silent and are way more efficient then 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 without active stages, it's 100% passive and only relay-contacts are inline. This means it's basically a straight wire.

Pushswitch labeling:
To have some extra visual feedback on the push-switches you can put labels under the switch-covers. You can simply, but carefully, remove the switch cover with a small screwdriver and put something like a transparent dymo letratag sticker on the white plastic piece inside the switch-cover. *More info and a manual can be found on our website.*

Specifications:
Maximum gain passive: >+24dBu
Maximum gain active gain: +24dBu
Noise level passive: >118dB(a)
Noise level active: >116dB(a)
Stereo crosstalk: >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 20 watt
(Power consumption depends on the amount of inserts, input, output etc activated)
Unit size: standard 1u 19 inch, depth 25cm
Weight: approx 2kg

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 misfunctioning 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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