

SM PRO



M-Patch V2

Operating Manual

August 2012



SM PRO

SAFETY INSTRUCTIONS

CAUTION: To reduce the risk of electrical shock, do not remove the cover or rear panel of this unit. No user serviceable parts inside. Please refer servicing to qualified personnel only.

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

DETAILED SAFETY INSTRUCTIONS:

All safety and operation instructions of this manual should be read and adhered to before operation.

Retain Instructions:

Please retain all safety and operating instructions for future reference.

Follow instructions:

All operation and user instructions should be followed.

Water, liquid and Moisture:

The appliance should not be used near water, rain or other liquids. Make sure that no liquid can leak, spill or otherwise seep into the appliance.

Ventilation:

Please place the appliance so no obstacles interfere or impede the flow of air through the ventilation openings.

Heat:

The appliance should be situated away from other heat sources such as heaters, radiators, ovens, or other appliances that produce heat.

Power Source:

Make sure your appliance is set to the correct voltage for the country in which it will be use before switching the device ON.

Grounding and Polarization:

Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

Power-Cord Protection:

Power supply cords should be routed so that they are not likely to be walked on, pinched, damaged, worn, or rubbed by any other device or obstacle.

Cleaning:

The appliance should be cleaned only with a light soft cloth. Do not use any damaging or corrosive products on the unit.

Periods of inactivity:

The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time or in case a lightning storm occurs.

Damage Requiring Service:

The appliance should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.

Servicing:

The user should not attempt to service the appliance beyond that is described in the Operating Instructions.

All other servicing should be referred to qualified service personnel.

FOREWORD

Dear Customer,

Thank you very much for expressing your confidence in SM ProAudio products by purchasing this unit. The M-Patch V2 has been designed to be used as a standard tool for home/pro studios, P.A. rental companies, Schools and in many other situations where audio products would be used. With much experience in the audio industry over a long period of time, and along with valuable suggestions from our customers, our engineers have developed a product we know you will be satisfied with. We guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely affordable price.

Regards,
SM ProAudio

It should be pointed out, that extreme output volumes may damage your ears and/or your headphone units. Turn down the LEVEL controls before you switch on the unit.

PLACEMENT

The SM ProAudio M-Patch V2 has an electronic circuit inside as well as isolation transformers. Be sure that there is enough air space around the unit for cooling. As to avoid overheating, please do not place the units on high temperature devices such as power amplifiers or near other units which may have high frequency transmittance such as wireless devices.

MAINS VOLTAGE

The M-Patch V2 can be used with voltages ranging from 100V AC to 250V AC, please make sure that you have selected the correct voltage range on the supplied power supply before switching the unit ON. Any damage occurring as a result of incorrect voltage selection may not be granted a warranty repair.

M-PATCH V2 MAIN FEATURES

Professional, multi-purpose passive volume attenuator with built in headphone amplifier.

- High quality 'passive volume' attenuator
- 2 position switch with 0.1% resistors for increased accuracy across all attenuation levels
- Great monitor switching device
- 2 x Input channels, 2 x Output channels
- Combo, RCA, & 3.5mm input connectors
- XLR outputs(balanced or unbalanced depends on the inputs selected)
- Mono/Stereo summing switch
- System mute function
- Built in headphone amplifier
- Quality components and rugged construction
- Desktop or Rack-mountable installation
- External 16Vac power supply (Supplied. Only required for operation of headphone amplifier)

1. INTRODUCTION

In purchasing the new M-Patch V2, you have acquired a passive volume control device of high class that meets the demands of the home/pro studio.

An affordable high-quality problem solver for mixer-less DAW and nonlinear video production environments, the M-Patch V2 provides an ideal desktop stereo level control solution for any monitoring or distributed sound application.

The M-Patch V2 is essentially a multi-channel stereo attenuator using passive circuitry designed for users wishing to work without outboard mixers or bitdegrading digital volume attenuators. The M-Patch V2 provides stereo level control solutions for any monitor or distributed sound application. Featuring two rotary controls for precise two x stereo channel level adjustments, and housed in a compact desktop or rack-mountable sized chassis, the M-Patch V2 passive volume control and patch control device is perfectly suited to serve in any common capacity in which more control over volume is desired. From desktop media suites, mixer-less DAW and MIDI systems, professional multi-channel installations, distributed sound systems, or any other audio and video post production environments, the M-Patch V2 adds high quality zone and/or channel control wherever it's needed.

2. THE DESIGN CONCEPT

2.1 High quality components and design

The philosophy behind SM ProAudio products guarantees a no-compromise circuit design and employs the best choice of components.

2.2 Inputs and outputs

All inputs and outputs are secured firmly to the exterior chassis housing. This ensures robust quality and confidence in performance under all conditions.

3. INSTALLATION

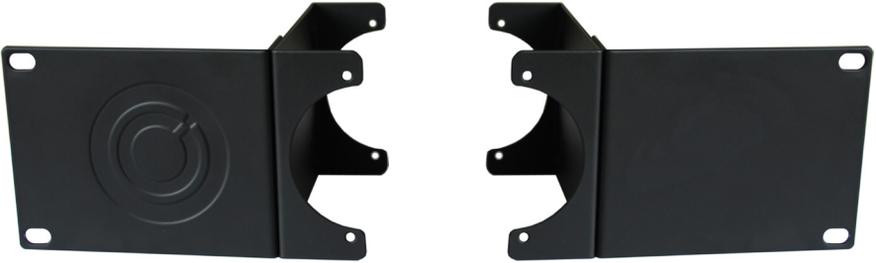
Your SM Pro Audio M-Patch V2 was carefully packed in the factory and the packaging was designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage, which may have occurred in transit.

If the unit is damaged, please do not return it to us, but notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted. Shipping claims must be made by the consignee.

3.1 Desktop or Rack-mount installation

The SM Pro Audio M-Patch V2's compact size enables it to sit comfortably on your desktop. We also include a versatile pair of rack mounting ears which enable standard 19" professional rack-mountable support options.

If you would like to rack-mount the M-Patch V2, simply connect the supplied rack/stand ears to each side of the M-Patch V2 using the included screws. This allows you to rack-mount the unit in a standard 19" professional rack.



Rack-mount configuration

4. CONNECTIONS

The M-Patch V2 features two (2) separate input channels named "Aux" & "Stereo". The connections are found on the rear panel. (Input section on rear panel of M-Patch V2).

** Note: The M-Patch V2 accepts mic or line level input signals. Do not connect your power amplifier outputs to the M-Patch V2 inputs!*

4.1 Stereo Inputs

The Stereo main inputs feature XLR bal/unbalanced combo connectors for L&R input signal. This input is perfect for connection to your main audio interface device (example; MBox 2, etc). Simply connect your cables directly to the unit with either XLR or 1/4 TS/TRS cables.

4.2 Aux Inputs

The Aux input channel features two different connection possibilities in the form of 2 x RCA (L&R) and a stereo 3.5mm mini-jack input. These connections are perfect for devices such as a CD players line output or a 3.5mm stereo mini-jack connection from your PC's standard soundcard.

** Note: You can connect up to three different devices to the three physical connector possibilities simultaneously. The input selector on the front panel allows selection of the desired input!*



4.3 Analog Audio Outputs

The M-Patch V2 features two (2) pairs (L&R) of XLR balanced analog output connectors on the rear panel. These are labeled "1" & "2".

Connect these outputs to your destination device (active monitors, digital recorder, or wherever you need the attenuated output signal sent).

** Note: It is possible to activate or deactivate each desired output pair via the ,output selector switches' on the front panel. It is possible to have both 1&2 outputs active at the same time. This is very useful when connecting the outputs to a recording device and a monitoring device simultaneously!*





4.4 Power Connection

Power to the M-Patch V2 is required only if you wish to use the headphone amplifier, or view the illuminated led indicator lamps.

The included power supply can be connected from mains power to the power connector socket located on the rear panel of the M-Patch V2.

The Blue led on the front panel (next to the mono/stereo control switch) will illuminate when the external power supply is connected and mains power is present.

** Note: All passive attenuation functions operate fully without the connection of the power supply. This enables full portable use of the M-Patch V2 without restriction.*

5. FRONT PANEL CONTROLS



5.1 Stereo/Aux input selection control

The input selection controls on the front panel of the M-Patch V2 allow selection of either ,Stereo' or ,Aux' input source material to be routed to the output pairs for immediate listening and attenuation control.

Select the “stereo” position to activate the main stereo input source connected to the XLR/combo inputs, or select “Aux” position to activate the RCA and 3.5mm stereo mini-jack input source.



5.2 1&2 Output selector switch

The 1/2 output switch on the front panel of the M-Patch V2 is for selecting which desired output pair (1 +/or 2) you would like to route the audio signal to.

Simply change the position of the switch to toggle between output destinations.

** Note: If you have more than one pair of monitor speakers you could create a perfect switching facility for toggling between near-field and larger format active room monitors.*

5.3 Input volume rotary attenuator controls

The Aux input volume rotary attenuator control on the front panel of the M-Patch V2 adjusts the level of monitored output signal for devices connected to the Aux inputs (either the RCA or 3.5mm stereo min-jack) of the M-Patch V2.

The stereo input volume attenuator switch on the front panel of the M-Patch V2 adjusts the level of monitored output signal for devices connected to the stereo inputs (XLR combo connectors) of the M-Patch V2.



5.4 Stereo Volume Control

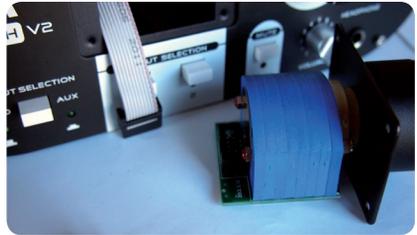
The M-Patch V2 includes 2 master balanced stereo attenuator.

The pre installed attenuator is a unique volume controller specifically designed for the M-Patch range, it is a 12 position switched attenuator with thin film resistors (high accuracy of 0.1%).

The positions have 470ohm resistors to keep impedance to the lowest level we could in a passive system.

The switched attenuator has the following values for the 12 positions: Switch

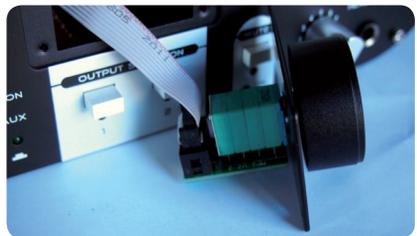
0, -1, -2, -3, -4, -5, -7, -9, -11, -14, -19, -31dB



You can also change the switched attenuator to the variable resistor included with the M-Patch V2 by removing the 4 screws around the Stereo Volume controller and replacing it carefully.

The 12 positions of the variable attenuator

0, -0.25, -1, -3.5, -6.5, -12, -19, -22, -29, -41, -69, -00dB



The main different between the variable and switched attenuator is the accuracy which is achieved between the stereo field and the In PHASE and out of PHASE signal which all effect the image (especially at lower volumes).

The best way to setup the listening environment you are it is to have the M-Patch V2 at full volume and then attenuate your speakers (or amp) to the maximum listening level.



5.5 On/Off Mute Switch

The on/off mute switch on the front panel is for enabling and disabling the M-Patch V2's built in mute function. All audio signal output is disabled when the mute switch is in a depressed position.

The mute led will illuminate when the system is in a current muted state of operation.



5.6 Mono/Stereo Summing Switch

The mono/stereo summing switch on the front panel of the M-Patch V2 allows you to sum a stereo signal to a mono signal. This can be very handy when testing your audio for certain issues like phase cancellation, preparation for AM radio, etc.

Select the desired mode of operation by positioning the mono/stereo switch in the up or down position.

5.7 Headphone amplifier and output connector

A headphone amplifier is provided for monitoring the audio signal selected by the 'Input Selection' control switches.

Simply connect a pair of headphones to the 1/4" TRS headphone connector socket and use the rotary headphone volume control knob to adjust the volume level to your desired setting.

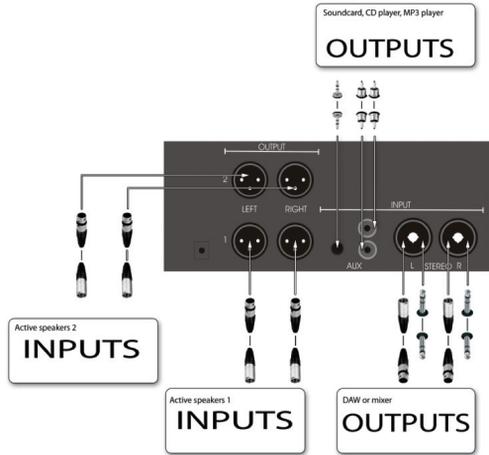
** Note: Use of the headphone amplifier requires the connection of the external power supply.*



6. APPLICATION

6.1 Using the M-Patch V2

You can use M-Patch V2 anywhere you want to trim the amount of gain; ie, reduce the volume of analog audio signals. For example, you could use one to trim the output of a microphone pre-amplifier. With its high-quality potentiometer, the M-Patch V2 passes signal more accurately, and sounds better than most built-in volume controls. Another use might be to trim the levels of a 5.1 or greater multi-channel monitor system -- either one pair of channels, or two, or all of them. You can also use the M-Patch V2 to trim the output level of a Digital to Analog Converter like those found in high end pre-amplifiers. It is also useful as a local volume control for distributed audio systems. The possibilities are endless!



How to connect the M-Patch V2

Handy applications...

The M-Patch V2 is great for those times when you prefer to monitor directly from the outs on your sound card or audio interfaces main outputs directly to your monitors. When your monitors are on they are normally extremely loud. As a result, you may become a bit frustrated as the volume is often simply too high to be comfortable. Your only choice is to hook up through an external mixer and attenuate the signal or to attenuate the signal in the computer outputs, thereby degrading your bit-levels. Neither solution is completely satisfying. Mixers add color to the signal and reducing the digital output in the computer will compromise the fidelity of your audio.

Simple steps for your home workstation...

1. Typically you should connect the output of your soundcard or audio interface to the input of the M-Patch V2 using RCA, TRS or XLR jacks. You could also connect multiple connections at the same time if required. For example, connect the outputs of your audio interface (eg. Digidesign MBox 2) to the balanced combo connectors, and your soundcards mini-jack output to the stereo 3.5mm AUX input on the M-Patch V2. You could also connect your CD or other line level device to the AUX RCA inputs. This enables you to level balance two input sources by passive attenuation!
2. Connect XLR cables from the outputs of the M-Patch V2 to your active monitors or the amplifier that powers the monitors. Remember you have two (2) output destinations so if you have two different monitor pairs (near-field & far field (room speakers)) you can connect one pair to output 1 (L&R), and the other pair to output 2 (L&R).
3. Turn the volume all the way up on your monitors or amplifier, set your software & software volume control panel to Zero dB, and use the M-Patch V2 on your desktop to control your monitor level.

Simple, effective, transparent!

7. SPECIFICATIONS

AUDIO INPUTS

Connectors

- 2 x XLR Combo connectors
- 1 x stereo RCA pair (L&R)
- 1 x stereo 3.5mm jack

AUDIO OUTPUTS

Output Connectors

- 2 x XLR output pairs (A-/L&R, B-/L&R)

HEADPHONE OUTPUT

Output Connectors

- 1 x 1/4" TRS stereo output

Frequency response

- 20Hz - 20kHz +/- 0.5dB

Maximum output level

- 320mW into 32Ω

POWER

External

- DC12-16V adaptor

PHYSICAL

Dimensions

- 22cm x 12cm x 8.6 cm

Net weight

- approx. 1 kg

8. WARRANTY

8.1 Warranty Card

To be protected by this warranty, the buyer must complete and return the enclosed warranty card (signed/stamped by retail dealer) within 14 days of the date of purchase to SM Pro Audio (see address below 3). Failure to return the card in due time (date as per postmark) will void any extended warranty claims.

8.2 Warranty

8.2.1. SM ProAudio warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (3) years from the original date of purchase, in accordance with the warranty regulations described below. If any defects occur within the specified warranty period that are not caused by normal wear or inappropriate use, SM Pro Audio shall, at its sole discretion, either repair or replace the product.

8.2.2. If the warranty claim proves to be justified, the product will be returned freight prepaid by SM Pro Audio within Australia. Outside of Australia, the product will be returned at the buyer's expense.

8.2.3. Warranty claims other than those indicated above are expressly excluded.

8.3 Return Authorization Number

8.3.1. To obtain warranty service, the buyer must call SM Pro Audio during normal business hours BEFORE returning the product (Tel.: +61 3 9555 8081). All inquiries must be accompanied by a description of the problem. SM ProAudio will then issue a return authorization number or by email to service@smproaudio.com

8.3.2. The product must be returned in its original shipping carton, together with the return authorization number, to the following address:

SM Pro Audio
Service Department
W25, 26-28 Roberna St
Moorabbin
Melbourne, Victoria
Australia 3189

8.4 Warranty Regulations

8.4.1. Warranty services will be furnished only if the product is accompanied by an original retail dealer's invoice. Any product deemed eligible for repair or replacement by SM Pro Audio under the terms of this warranty will be repaired or replaced in the best possible manner.

8.4.2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship.

The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, SM Pro Audio shall not be held responsible for any cost resulting from such a modification/adaptation.

8.4.3. Free inspections, maintenance/repair work and replacement of parts are expressly excluded from this warranty, in particular if caused by inappropriate use. Likewise, the warranty does not cover defects of expendable parts caused by normal wear of the product. Expendable parts are typically pots, potentiometers, switches and similar components.

8.4.4. Damages/defects caused by the following conditions are not covered by this warranty:

- Misuse, neglect or failure to operate the unit in compliance with the instructions given in the user or service manuals.
- Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- Damages/defects that are caused by any other condition beyond the control of SM Pro Audio.

8.4.5. Any repair carried out by unauthorized personnel will void the warranty.

8.4.6. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. SM Pro Audio will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 4 weeks after notification, SM Pro Audio will return the unit C.O.D. with a separate invoice for freight and packing. Such cost will also be invoiced separately when the buyer has sent in a written repair order.

8.5 Claim for Damages

Failure of SM Pro Audio to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of SM Pro Audio exceed the invoiced value of the product.

8.6 Other Warranty Rights

This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

The information contained in this manual is subject to change without notice. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording of any kind, for any purpose, without the express written permission of SM Pro Audio.

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SM Pro Audio Service Department

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