

# AMM 2

## Automatic Microphone Mixer

### Manual



TBProAudio 2024

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# 1 Introduction

AMM is a 64to2 channel automatic microphone mixer. It offers several mixing modes and extensive controls for each channel.

AMM can be used to mix quickly a discussion round, a dialog with several speakers or even an audio conference with up to 32 microphones or mono/stereo lines to a stereo signal.

## 2 Features

AMM offers the following features:

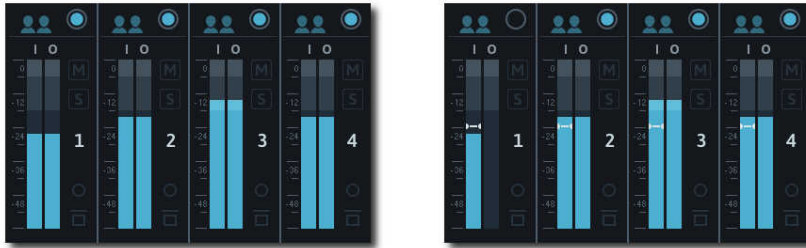
- 32 internal stereo channels
- internal mixing or external mixing with sender/receiver mode
- reverse mixing mode
- speech pre filter
- switchable pre-delay
- envelope controlled channel strength
- noise gate
- mix modes: normal, auto, auto balanced, prio-mix
- moderator mode
- extensive channel controls like mono, trim, bypass, weight, mute, solo and pan
- input/output metering
- write channel strength as automation data to DAW
- multi channel output
- click-free 64-bit internal processing
- Large and easy to use GUI
- Scalable GUI

### 3 Design

AMM mixes automatically 16 stereo channels into one stereo out channel, depending on the mixing modes and channel strength. AMM controls the envelope of the channel strength with the parameter Attack, Hold and Release.

#### Noise gate:

Once a channel is above the noise gate level, it will count into the AMM algorithm.

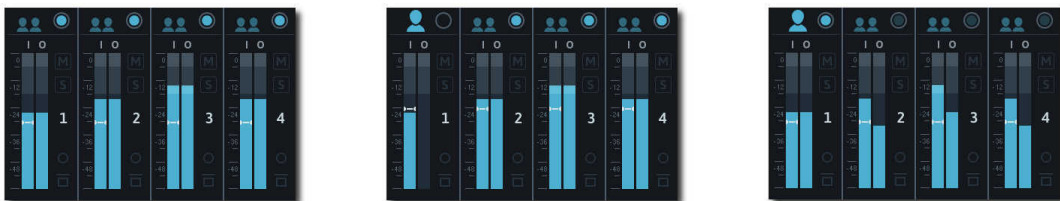


Noise gate off

Noise gate on, CH1 is below

#### Moderator Mode:

A single channel can be defined as moderator channel. This channel has priority over the other channels. As soon as the moderator channel is active, the other channels are dimmed by the value of the *moderator attenuation*. This function is available in all mixing modes.



No channel flagged as moderator channel

CH1 flagged as moderator channel, CH1 is below noise level

CH1 is above noise level, other channels are dimmed by -12dB

#### Mix Modes:

##### *Normal Mixing* (Mix mode **off**)

AMM is used as normal 64to2 mixer including moderator function.

##### *Auto Mixing* (Mix mode **Auto**)

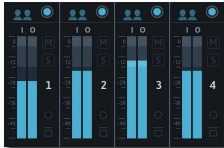
AMM automatically reduces the strength of a channel when it is not being used. It lowers the hiss, rumble, reverberation and other extraneous noise that occur when several microphones operate simultaneously. The strength of suppression is controlled by the parameter *strength*.

### *Auto Balanced Mixing (Mix mode **Auto Bal.**)*

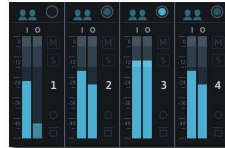
AMM automatically reduces the strength of a channel when it is not being used. The sum of all channels is not louder as the loudest channel. The strength of suppression is controlled by the parameter *strength*.

### *Prio Mixing (Mix mode **Prio**)*

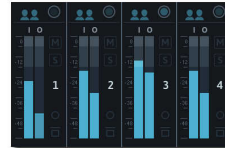
AMM automatically mutes all channels except the loudest channel. It cancels the hiss, rumble, reverberation and other extraneous noise that occur when several microphones operate simultaneously.



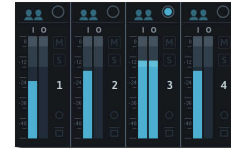
Mix mode off



Mix mode auto, louder channels contribute more



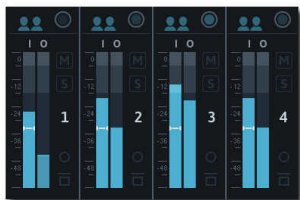
Mix mode auto balanced, louder channels contribute more, but sum is not louder than loudest



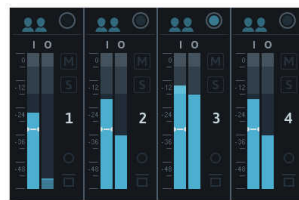
Mix mode prio, loudest channel mutes all other channels.

### Channel strength:

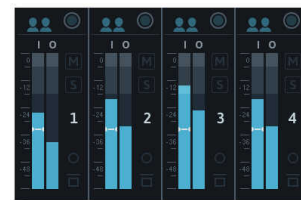
Controls the contribution of each channel to the mixing algorithm. 0.0 means equal contribution, +1.0 means louder channels contribute more, quieter less; -1.0 works the opposite.



Normal channel strength



Positive strength, louder channels contribute more



Negative strength, quieter channels contribute more

## 4 Minimum System Requirements

- Windows 7, OpenGL 2 GFX card
- Mac OS X 10.11, Metal GFX card
- SSE2 CPU
- Win: 32/64 Bit VST, 32/64 Bit VST3, 32/64 Bit AAX
- OS X: 64 Bit VST, 64 Bit VST3, 64 Bit AU, 64 Bit AAX
- Tested with: Cockos Reaper, Steinberg Cubase/Nuendo/Wavelab 6+, FL Studio 12+, PT2018+, Reason 9.5+, Studio One, Ableton Live
- For latest information please visit [www.tbproaudio.de](http://www.tbproaudio.de)

## 5 Plugin Controls

### 5.1 Plugin Mode

Int. Mixer: mixes all available channels of the track into a stereo signal.

Ext. Mixer: mixes all AMM sender instances into a stereo signal. In this mode additional AMM sender instances are needed on different audio tracks. Additionally AMM offers the “reverse mixing” mode. It eliminates channel synchronization issues caused by DAW anticipative FX processing. Please refer to chapter 5.18.

Send X: AMM sends current audio signal to channel x of AMM receiver instance. In this mode one additional AMM receiver instance on a different track is required.

### 5.2 Pre Filter

Toggles speech pre filter for all channels. It helps AMM to focus on speech parts of the audio signal.

### 5.3 Pre Delay

Adds ca. 10ms look ahead to the internal algorithms and compensates measurement delays.

### 5.4 Mix Mode

Off: normal 64to2 mixing

Auto: automatic mixing, AMM automatically reduces the strength of a channel when it is not being used

Auto Bal.: AMM automatically reduces the strength of a channel when it is not in use. The sum of all channels is not louder than the loudest channel.

Prio: AMM automatically mutes all channels except the loudest channel.

### 5.5 Strength

Controls the contribution of each channel to mixing algorithm. 0.0 means equal contribution, +1.0 means loud contributes more, quite less; -1.0 the opposite.

### 5.6 Noise Floor

Level for noise gate, in dB.

### 5.7 Moderator Attenuation

Attenuation of non moderator channels if moderator channel is active.

## **5.8 Attack**

Raise time of loudness level, in sec.

## **5.9 Hold**

Hold time of loudness level, in sec.

## **5.10 Release**

Release time of loudness level, in sec.

## **5.11 Automation**

Toggles writing of automation data to DAW. parameter “OUT: CHx Strength”.

## **5.12 Multi channel output (VST2 only)**

Toggles either mixing the input to 2 channel output or directly to 64 channel output.

## **5.13 Channel Count.**

Number of channels monitored by AMM.

## **5.14 Channel Group**

Toggles display of channel group 1-8/9-16/17-24/25-32.

## **5.15 Main Out**

Adjust main output gain, dB.

## **5.16 Main Meter**

Displays the main output (left/right) levels, dB.

## **5.17 Channel Controls**

### **5.17.1 Trim**

Adjusts the input gain of the signal, in dB.

### **5.17.2 Weight**

Adjusts the strength of the channel, in dB. It can be used at least on the moderator channel to give it more priority.

### **5.17.3 Pan**

Pans the signal from left to right, balanced panning, -3dB pan law.

### **5.17.4 Moderator**

Flags the channel as moderator channel.

### **5.17.5 Prio LED**

Indicates the channel strength.

### **5.17.6 Mute**

Mutes the channel.

### **5.17.7 Solo**

Solos the channels.

### **5.17.8 Mono**

Forces signal to mono.

### **5.17.9 Bypass**

Passes the channel through the mixing algorithm.

### **5.17.10 Meter**

Input (left) and output (right) level meter and noise gate level.

## **5.18 Plugin Menu**



Click on the menu icon to get info about the plugin, online version check, open the online manual and change-log and change GUI size/scale.

Propagate sender gain: if set to on, final channel gain (mixed) is propagated to sender instances. This enables the routing of the mix ready sender signal to an external mixer.

Enable DAW Sync: If set to on, AMM re-syncs all instances at DAW start. Please refer to addition notes in chapter 6.

Reverse Mixing: If set to on, AMM sends the final mix gain back to sender. The track summing is done by the DAW. This modes avoids audio stream sync problems while DAW uses anticipative FX processing, ASIO Guard or any other DAW CPU optimization features.

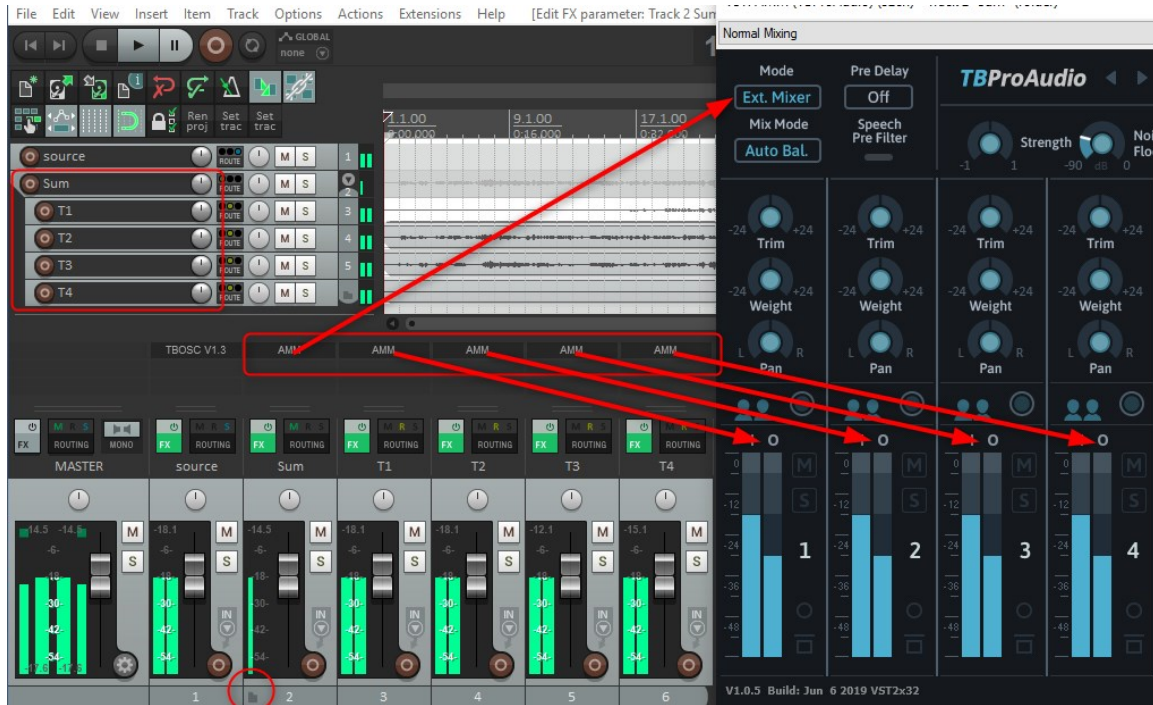


## 6 DAW Setup

Create e.g. 4 microphone tracks, insert AMM into each track and enable AMM mode “Send x”. Then create the mix track, place AMM there as well, but set AMM mode to “Ext. Mixer”. Route the four AMM sender tracks to the mix track. AMM will now receive the signal from the 4 microphone tracks.

See pictures below:

### Reaper:



**ProTools** (use “Aux Input” as mix track, see below):



## Cubase:



### Additional notes:

- Please do not mix sender and mixer of different plugin formats. Otherwise, sender and receiver cannot communicate to each other.
- AMM mix mode "Ext. Mixer": all tracks with AMM sender instance need to be routed into a mix track with AMM mix instance.

## 7 Demo mode versus Registered mode

In demo mode (without activation) the plugin mutes audio every 90 seconds for a short period. This could be circumvented by clicking on the "TBProAudio" label within 90 seconds.

## 8 Registration/Activation

The plugins needs to be registered/activated to remove demo restrictions. Please go to [www.tb-proaudio.de](http://www.tb-proaudio.de) to purchase the activation key. After purchase you will receive an email from TBProAudio with either the (zipped) activation key file or the activation key in text form. Go to the plugin menu->Activate plugin. Please follow the steps described here: <https://www.tbproaudio.de/support/productactivation>. After successful activation the key symbol shown in the GUI appears in golden colour.



## 9 Conclusion

So finally if you have any questions, suggestions or issues just let us know.  
Visit us here: [www.tbproaudio.de](http://www.tbproaudio.de).

Your team from TBProAudio