

VOICEMEETER

Real Time Virtual Audio Mixer for Windows



USER MANUAL

OFFICIAL WEBSITE
www.voicemeeter.com

Official package URL is only based on download.vb-audio.com (and Microsoft Store),
DO NOT DOWNLOAD VOICEMEETER FROM OTHER LOCATION.

This Document is a Step By Step Manual.
Thanks to follow every step until getting the wanted configuration.

USE CASES:

- How to talk and send music in the same time on Skype or Google Voice?
- How to manage 2 headsets on Skype or Google voice?
- How to record Conference-Call in 8 tracks for post production?

INSTALLATION:

Run setup program and follow instructions.

Reboot after installation or uninstallation

FIRST INSTALLATION

As prerequisite, you might have administrator rights otherwise you may run the setup program in administrator mode.

- 1- Run the Setup program and push the button INSTALL.
- 2- If already installed, push the button REMOVE.
- 3- REBOOT AFTER EACH OPERATION (IMPORTANT).
(Virtual Audio Device Driver needs this reboot to finalize uninstallation or installation)

HOW TO UPDATE

Update requires you uninstall Voicemeter first. You can save your current Voicemeeter settings in a file before, but it should normally stay as it is (current settings are not deleted by the setup process):

As prerequisite, you might have administrator rights otherwise you may run the setup program in administrator mode. Close applications that could use Voicemeeter Remote API (Touch portal, Elgato Steam Deck...).

- 1- Run the Setup program and push the button REMOVE.
- 2- REBOOT AFTER (IMPORTANT)

Before re-installing you may check different points:

- In Windows Device Manager you may check that all voicemeeter virtual audio drivers are removed (from the game controller section and from the audio I/O section) - if still present you will have to uninstall them manually from there (right click to get menu option).

- In Windows Sound Dialog box Playback / Recording devices list: Voicemeeter virtual device are surely not present anymore but you may check that possible VB-CABLE are still well installed with the right name and icon.

more info on our forum: <https://forum.vb-audio.com/viewtopic.php?f=7&t=688>

THEN RE-INSTALL:

3- Run the Setup program and push the button INSTALL.

4- REBOOT AFTER (IMPORTANT)

Then you may:

5- Check Windows audio parameters (default playback device, default recording device...)

6- Check soft phone parameters (for example Teams / Zoom / Discord audio device selection).

7- Run the wanted Voicemeeter version and reply to firewall authorization (if VBAN service is running).

8- Possibly re-check some option in menu (System Tray, Run at Startup, Show App on Startup...).

ONLINE SUPPORT

<https://vb-audio.com/Services/support.htm>

Fair Trade, Affordable For Everyone

Voicemeeter is a donationware, free to download and free to use!
It allows you to adjust the license price according to your means or usage.

Thanks for your participation and support!

<https://shop.vb-audio.com>

Windows XP (SP2), VISTA, WIN7, WIN8, WIN8.1, WIN10 32/64 bits
(MME, DX, WDM/WASAPI, KS, ASIO).
www.voicemeeter.com / www.vb-cable.com

Table of Content

INTRODUCTION:	8
Voicemeeter as Universal Virtual Audio Device:	9
Voicemeeter as Audio HUB and Next Gen Audio Engine:	10
Audio Mixing Console Basis:	11
STEP 0: Quick Startup	12
Remarks in case of problem:	12
STEP 1: Select main audio Output Device	13
Windows Sound Panel / Sound Properties to configure device sound format:	14
Windows Sound Panel / Input level and Listen option:	14
STEP 2: Select an Input Device.	15
Monitor Input in Real Time	16
STEP 3: Use Virtual Input as default playback device.	17
Virtual Input is Multi-Channel !	18
Understanding Voicemeeter Virtual I/O in one picture	19
Understanding new Voicemeeter VAIOs driver (Win10 or higher).	20
STEP 4: Send the Mix Output to Skype Input.	21
STEP 5: Enjoy new Audio Controls.	22
INTELLIPAN 3D PANEL: The Binaural effect.	22
Audibility control & equalizer.	23
WINDOWS CONFIGURATION WARNING WITH VOIP	23
Strip Menu.	24
STEP 6: Connecting ASIO Application to Voicemeeter	25
Special Routing Options on Output BUS.	26
M.C. Means "Mute Center"	26
ASIO Routing Capabilities.	27
Voicemeeter Main Menu	28
Other Voicemeeter Tools & Accessories:	29
Preset Scene:	30
WINDOWS AUDIO MAP	31
Device Information and connected applications.	32
Additional information managed by Voicemeeter	33
Windows Audio Map Menu:	34
VAIO options and menu:	35
VAIO Control Panel:	36
VAIO Extension	36

VAIO Loopback Mode:	37
VAIO Volume Control:	37
CASE STUDY #1	39
CASE STUDY #1 – STEP 1	40
CASE STUDY #1 – STEP 2	41
CASE STUDY #1 – STEP 3	42
CASE STUDY #2	44
CASE STUDY #2 – STEP 1	45
CASE STUDY #2 – STEP 2	45
CASE STUDY #3	47
VBAN: VB-Audio Network	49
Open VBAN Configuration dialog box:	49
VBAN Services / Identification	51
Configure VBAN Audio Stream	52
Send audio stream to other computer / device:	52
Receive audio stream from other computer / device:	52
Additional VBAN-MIDI or Command stream	53
VBAN2MIDI application	53
Screen Sharing / mirroring with VBAN-Frame	55
VBAN FRAME outgoing stream:	55
Screen Sharing and remote control:	55
Screen Mirroring:	56
Screen Sharing:	57
VBAN-Screen:	58
MACRO Buttons	60
Configuring MACRO Buttons	61
Button Color	62
Button Image	62
Voicemeeter Event	62
Voicemeeter Remote Requests	63
Input Strip Parameters:	63
BUS Parameters:	64
Special functions to make timed fade in/out:	65
System Settings Option:	65
Special Commands:	66
Button command for button interactions	66

Exclusive Commands.....	67
Wait command to create sequence of requests.....	67
Load Button map.....	67
Show command to Hide/Show the Macro Button Application	67
VBAN Options:	68
AUTO Ducking (Trigger):.....	69
HID Manager:.....	71
GPIO:	72
System Functions (to send command to Windows):	73
System Execute	73
System KeyDown / KeyUp / KeyPress	74
List of Key Name:	75
Send M.I.D.I. Message.....	75
Send VBAN-MIDI or VBAN-TEXT (Voicemeeter script).....	77
Send MIDI command through VBAN Stream.....	78
Send Voicemeeter TEXT Request through VBAN Stream.....	78
Manage your lights Network in DMX 512	80
Voicemeeter Remote API (for developer only)	81
System Settings / Options	83
ASIO Driver support:	84
Getting Optimal Latency:	85
LATENCY WARNING:.....	85
M.I.D.I. Mapping:	86
MIDI Feedback:	87
MIDI Forward:.....	87
MIDI Advanced Feedback:	88
MIDI Control Mode:	88
Specifications:.....	89
Voicemeeter I/O Diagram:	90
Voicemeeter License / About box:	91
VAIO Extension License Dialog Box:.....	92
Hide e-mail address:	93
Use Computer Footprint:	93
Activation Log:	93
License Activation Process	94

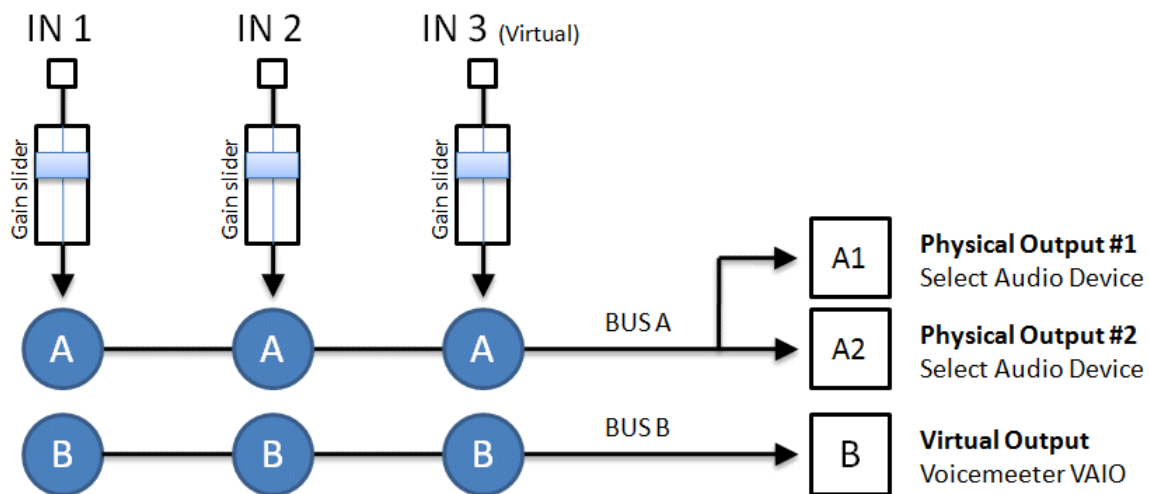
Buy Online	94
Get your Response code.....	95
Activate your license	95
Activate your license manually.....	96
KNOWN ISSUES / RECOMMENDATIONS	98
No sound anymore on my computer!	98
Voicemeeter does nothing if you don't use it	98
Output A1, A2, A3... are not exactly synchronized.	98
Voicemeeter Audio Stream can be stopped (no more sound, no meter display).	98
Voicemeeter Audio Engine works only if the device selected for output A1 is running.	99
Audio Stream becomes bad (sound is choppy, crackling, discontinued):	99
Windows Update can disturb audio:.....	99
VB-Audio Device Checker:.....	100
Audio Device List:.....	100
Where are stored settings files:.....	101
Command Line Installation:.....	102
Voicemeeter Command Line:	102
Registry Parameters:.....	103

INTRODUCTION:

Voicemeeter is a virtual mixing console able to manage 3 audio inputs (2 physicals and 1 virtual) and 3 audio outputs (2 physicals and 1 virtual) through 2 busses A & B.



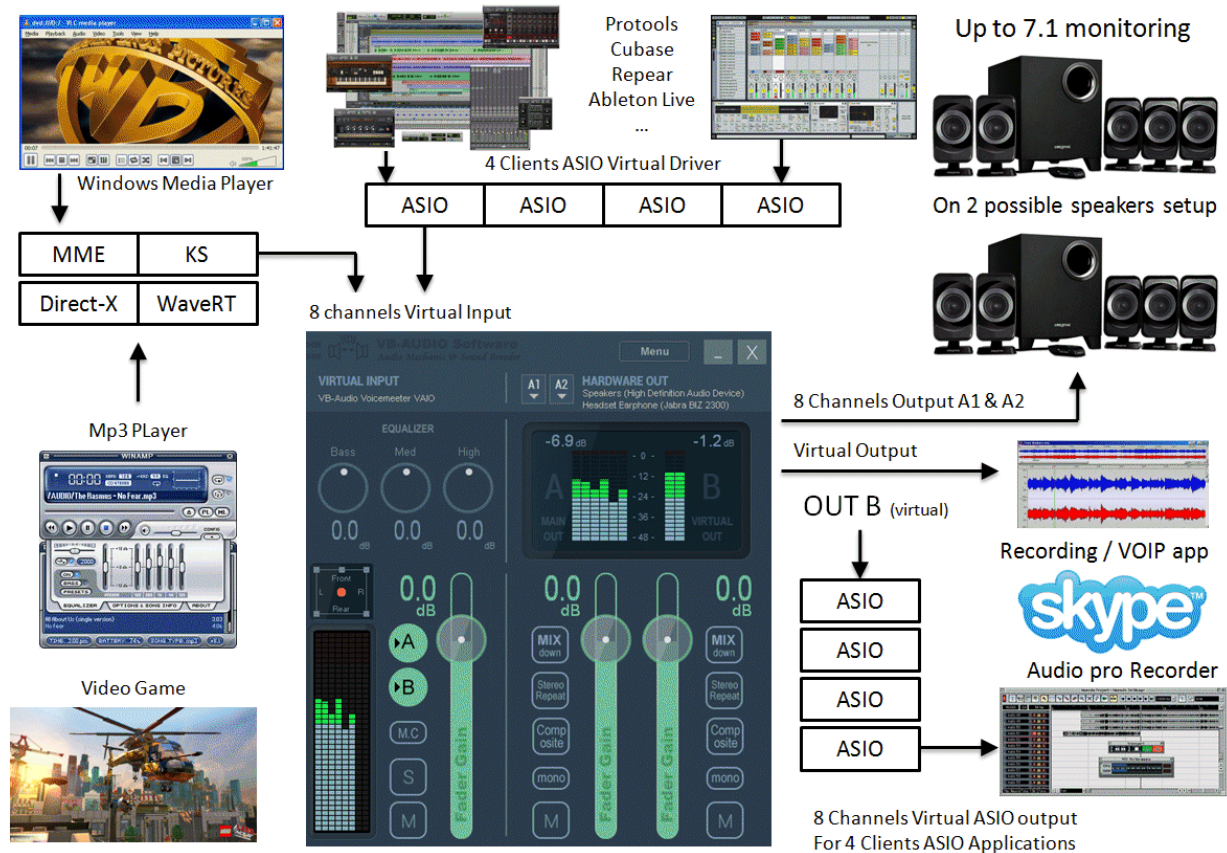
As Mixing Console, Voicemeeter offers large amount of use case combinations: To mix in real time your voice with your music, your movie, your video game or web radio and share it on internet through VOIP applications. Voicemeeter is also able to let you manage 2 Headsets and create new VOIP experiences ...



Voicemeeter General Diagram (3 inputs / 2 Buses Mixing Console)

Voicemeeter as Universal Virtual Audio Device:

Voicemeeter offers Virtual Audio Point on Input #3 and on BUS B (Output B). This Virtual Audio I/O (VAIO) supports all possible Audio Interfaces and allows connecting any audio applications, including audio pro DAW or musical instrument working with ASIO devices.



Audio interfaces type supported by Voicemeeter Virtual audio I/O (Voicemeeter VAIO).

Interface Type	Description
MME	The MME API or the Windows Multimedia API (also known as WinMM) was the first universal and standardized Windows audio API. This audio interface type is expected to work with any audio device but with latency time possibly around 100ms.
WDM	That we call WDM (Windows Driver Model) audio interface in Voicemeeter is handled by WASAPI : the Latest Microsoft Audio Functions to get best audio performances and small latency (< 30ms) – available since Windows VISTA
KS	Kernel Streaming or Direct Kernel streaming API allows low latency audio streaming, since Windows XP, but unfortunately not all audio devices provides this interface.
WaveRT	The WaveRT miniport driver is supported in Windows Vista and later Windows operating systems and can offers good audio performances and small latency (comparable to KS).
Direct-X	Direct-X Audio Interface is used by Video Game and some audio software. Latency is usually comparable to MME,
ASIO	Audio Stream Input/Output (ASIO) is a computer sound card driver protocol for digital audio specified by Steinberg, providing a low-latency and high fidelity interface between a software application and a computer's sound card.

Voicemeeter as Audio HUB and Next Gen Audio Engine:

Voicemeeter now includes VBAN features and Voicemeeter Remote API. VBAN allows to send / receive audio stream to / from any computers of a local network. Voicemeeter Remote API allows developing client applications and taking advantage of all Voicemeeter features, inter connection with all audio interfaces type, audio device aggregation, mixing/routing functions, MIDI and VBAN features, to create new powerful audio applications.



Voicemeeter is installed with Macro Buttons Application offering programmable buttons to act on Voicemeeter by simple request script

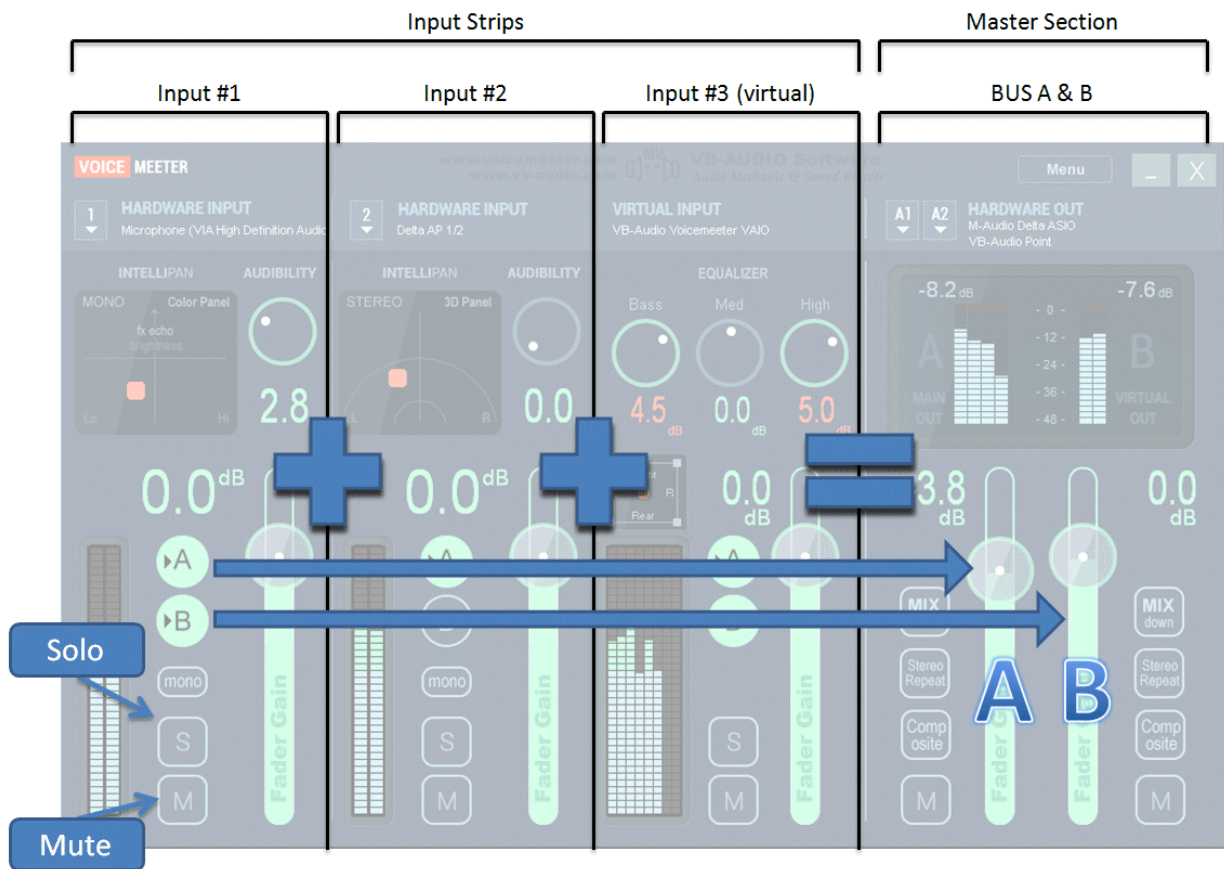
Voicemeeter package also installs VoicemeeterRemote.dll and VoicemeeterRemote64.dll for client application willing to control Voicemeeter by program.

More information and SDK download on our forum:

<https://forum.vb-audio.com/viewtopic.php?f=8&t=346>

Audio Mixing Console Basis:

An audio mixing console is a device able to sum different audio signals (audio sounds) coming from different inputs and route them to different outputs. Mixing desk is usually composed by Strips and Busses. While strips are connected to Inputs, busses are connected to outputs.



This schema above shows how basically Voicemeeter can mix 3 inputs into 2 busses (in BUS A if button A is switched on, on BUS B if button B is switched on). Typically BUS A can be used for monitoring (speakers) and BUS B for VOIP or audio recording applications.

Each strip (each input) can go through different processing before summing to the busses. Voicemeeter includes funny panels to tweak the sound on input #1 and #2 and a regular 3 bands Equalizer on input #3 (the Virtual Input).

Again on usual Mixing Console, we have on each strip a SOLO button (to listen one or several strips only) and a MUTE button to simply mute the signal of the Strip or Bus.

Finally the Fader Gain allows to adjust the sound volume for each Strip and Bus.

Other controls will be explained later, but basically we have described here the outlines of what is an Audio Mixer, generally speaking.

STEP 0: Quick Startup

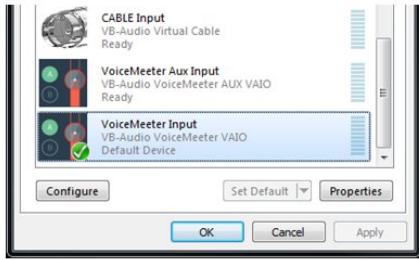
Voicemeeter is a virtual audio mixer intended to replace the Windows Mixer. The quickest way to configure Voicemeeter is to simply use it as default device and connect it to your main playback device. Then all PC sounds will go through Voicemeeter before playing back to your speakers.

1 Install Voicemeeter...



...and REBOOT your computer

2 Configure default Audio Device...



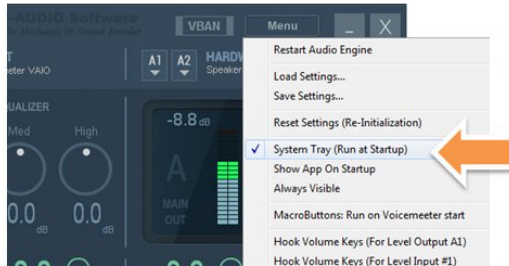
...set Voicemeeter Input as default

3 Launch Voicemeeter Application...



...select Audio Device for output A1

4 Set Voicemeeter In System Tray...



...to replace Windows Audio Mixer

Remarks in case of problem:

Installing Voicemeeter means installing audio driver. In some cases, the system might declare this new driver as default driver (as default playback device for example). Consequently you do not hear anything anymore since you do not run and configure Voicemeeter and your system audio correctly (as it is shown above).

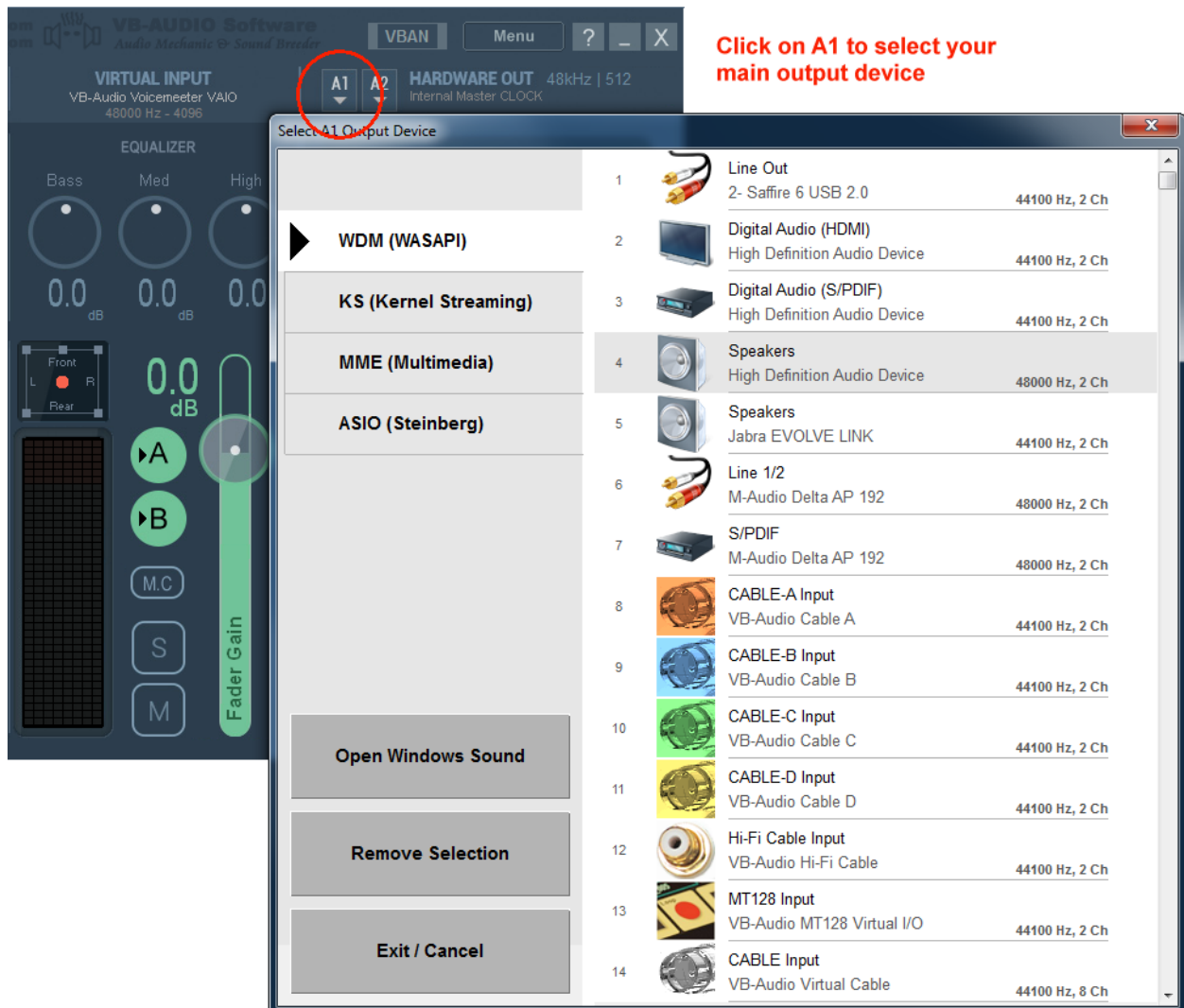
Windows System Audio Configuration is mainly located in Windows Control Panel / Sound Dialog Box. This is where you have to go to check or set what is your default playback device and what is your default recording device (and the Communications option has to be set to "Do Nothing" if you use Voicemeeter with VOIP applications).

In all cases, all is a question of audio configuration and it does not need to remove Voicemeeter in case of problem. Voicemeeter is a simple Application endowed with an audio device driver, if you don't use it, there is no way to get trouble. But if you do, you need to avoid possible audio device conflict and connect everything to Voicemeeter (to prevent other application to use audio playback device already used by Voicemeeter).

STEP 1: Select main audio Output Device

Voicemeeter can now work without audio device by running on its own internal clock (if no device is selected on output A1). If you have an audio output device, you can select it as output A1 for monitoring and give the master clock to Voicemeeter Audio Engine.

Just click on A1 button to select the main output device used for BUS A (A1). We recommend to select first ASIO (if exists) or WDM device type to get best Latency. WDM / KS playback device are used in exclusive mode per default, bypassing the windows mixer and possibly its Volume Control.

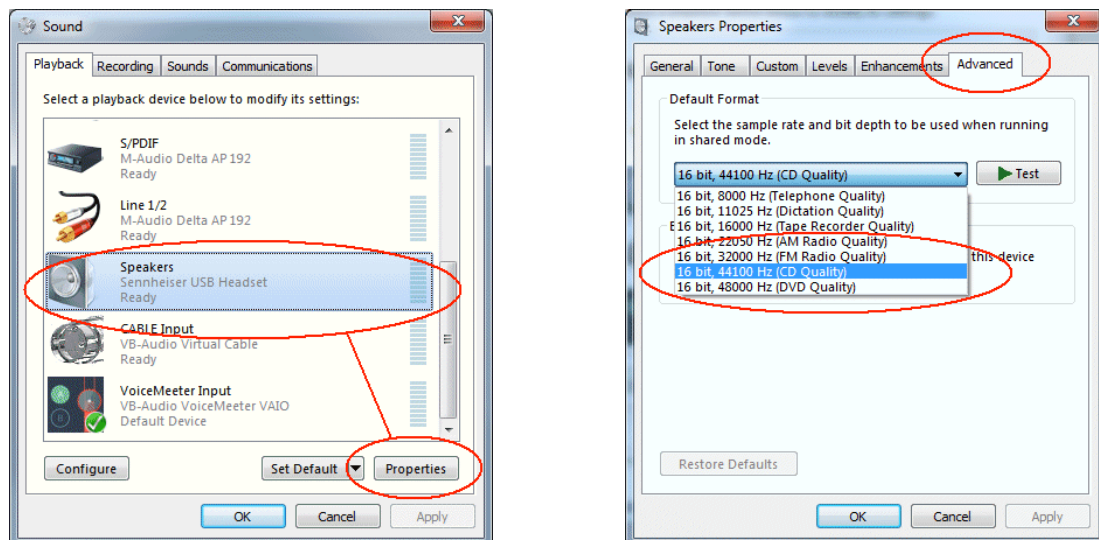


The device selector is now displaying your different audio devices by audio interface (WDM, KS, MME and ASIO) and driver name sorted by alphabetic order. Icons also help to find quickly the right device to select.

The main audio output device (A1) can work in 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz or 192 kHz. This will also be the main sample rate of the entire mixing process and Virtual ASIO points (Voicemeeter will support any sample rate on other inputs or outputs points).

“Open Windows Sound” button will open the Windows Sound Dialog Box to let you configure some audio system aspect and adjust the audio format of your audio devices.

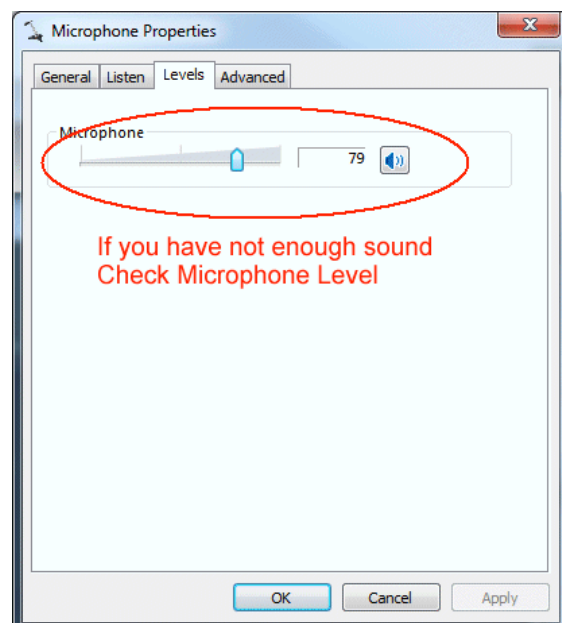
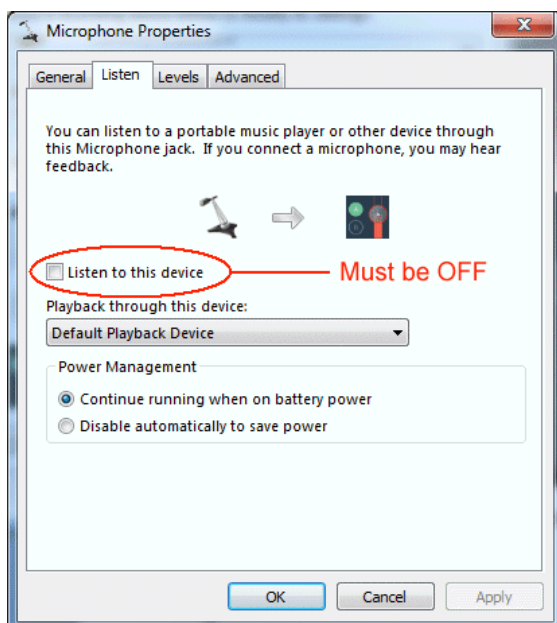
Windows Sound Panel / Sound Properties to configure device sound format:



Windows Sound Panel / Input level and Listen option:

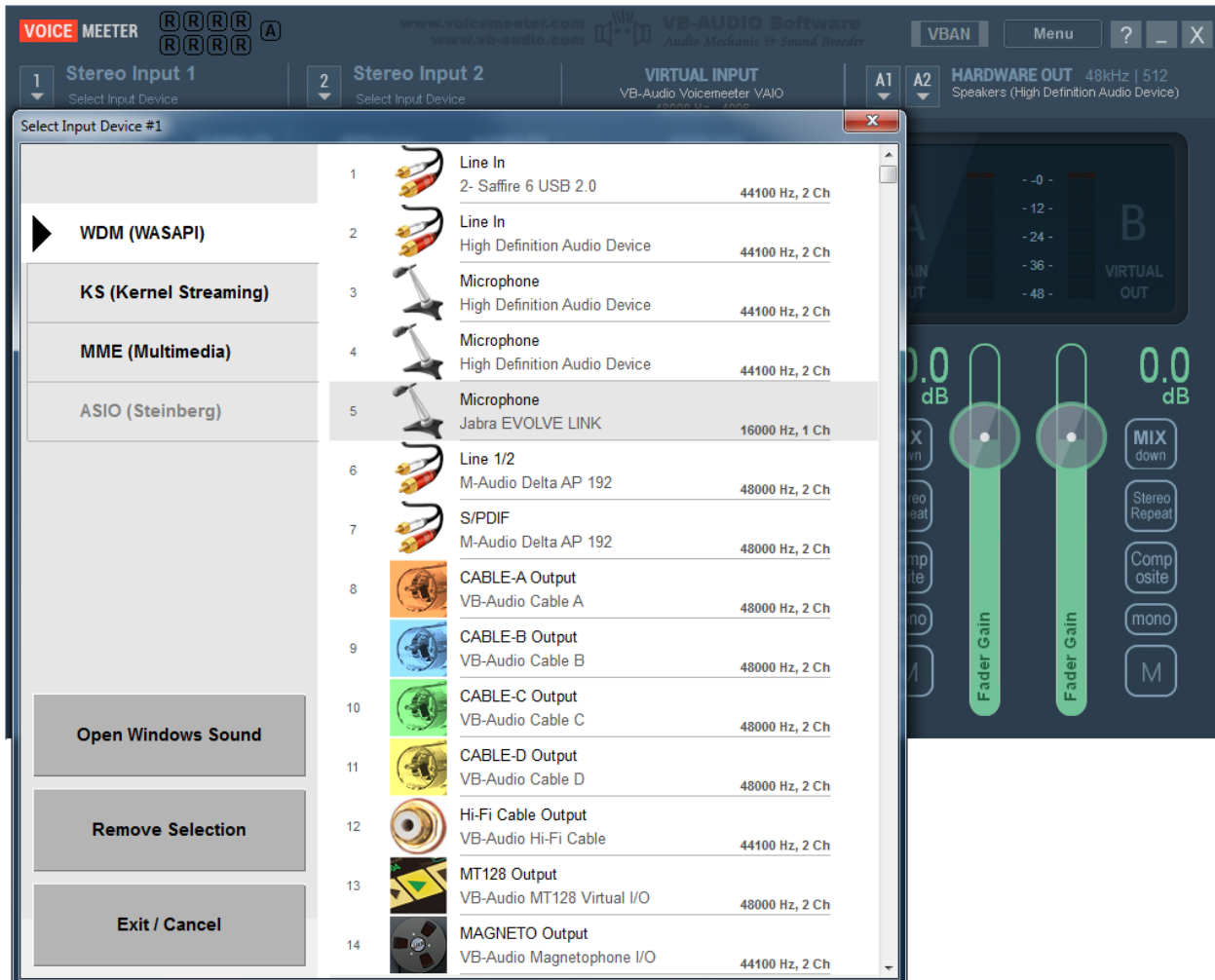
Windows “Listen” option can disturb Voicemeeter routing, so be sure that this option is disabled or makes sense for you.

If your input level is too weak (or too loud), check the level of the selected input device. (Adjust possible pre-amp gain if any).

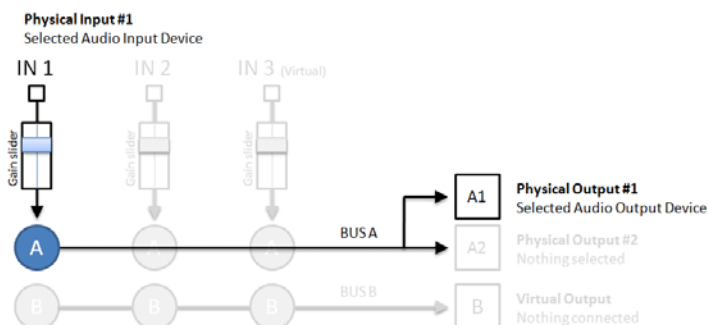


STEP 2: Select an Input Device.

An audio device can be selected for every physical strip by clicking on Stereo input area. Select audio input device on strip #1, for example your microphone! Then you will be able to listen to your voice in real time.



REM: it's better to select WDM driver (present since Windows VISTA) to get best latency and audio performances. If using MME driver you might have a bigger delay between input and output. Use MME driver only if WDM are not present or does not work correctly with your audio hardware configuration.



After Step 2, Voicemeeter is routing signal from selected input (e.g. Microphone) to A1 selected Output. Then you can hear from this audio output the sound coming in input #1. A & B button are switch to send signal in BUS A or/and BUS B.

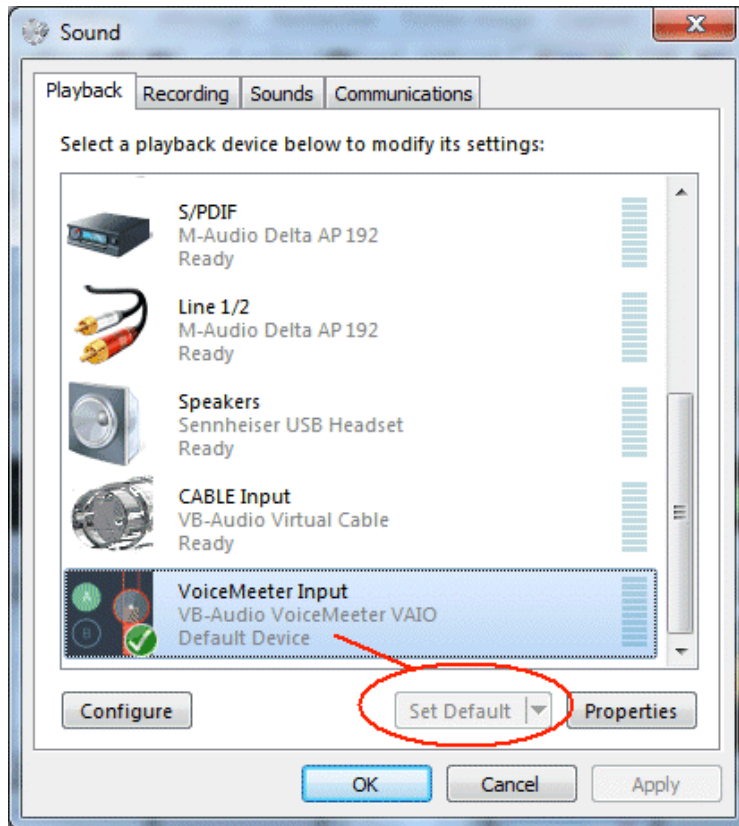
Monitor Input in Real Time

After Step 2, you can hear what is coming in selected input. Blue VU-meter will show you level in real time. Input signal is per default sent to both busses (A & B) and we have routed the BUS A to an output device in Step 1.



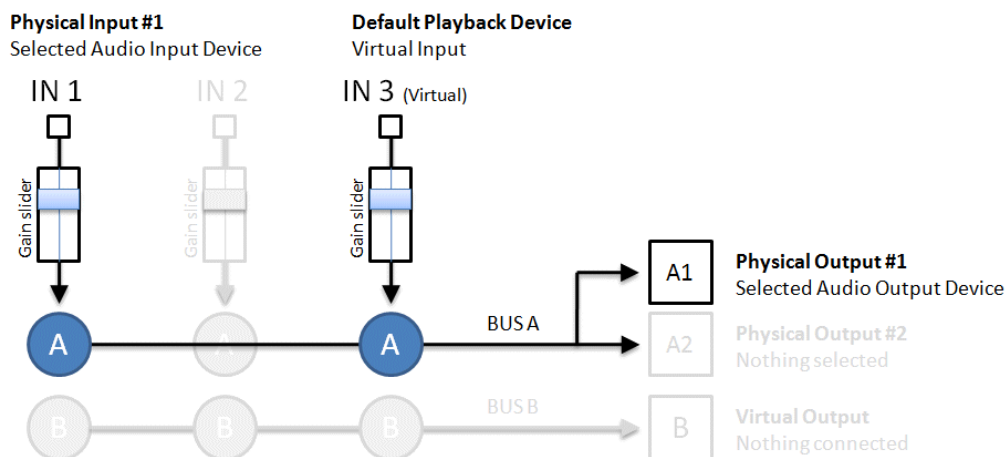
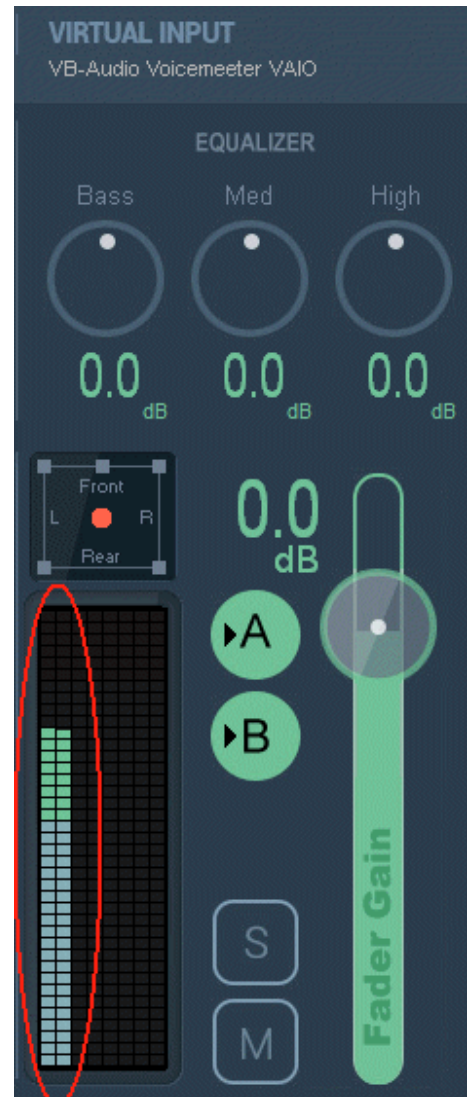
STEP 3: Use Virtual Input as default playback device.

Strip #3 is the virtual input of Voicemeeter. It is shown as regular system audio device and can be used by another application as playback audio device.



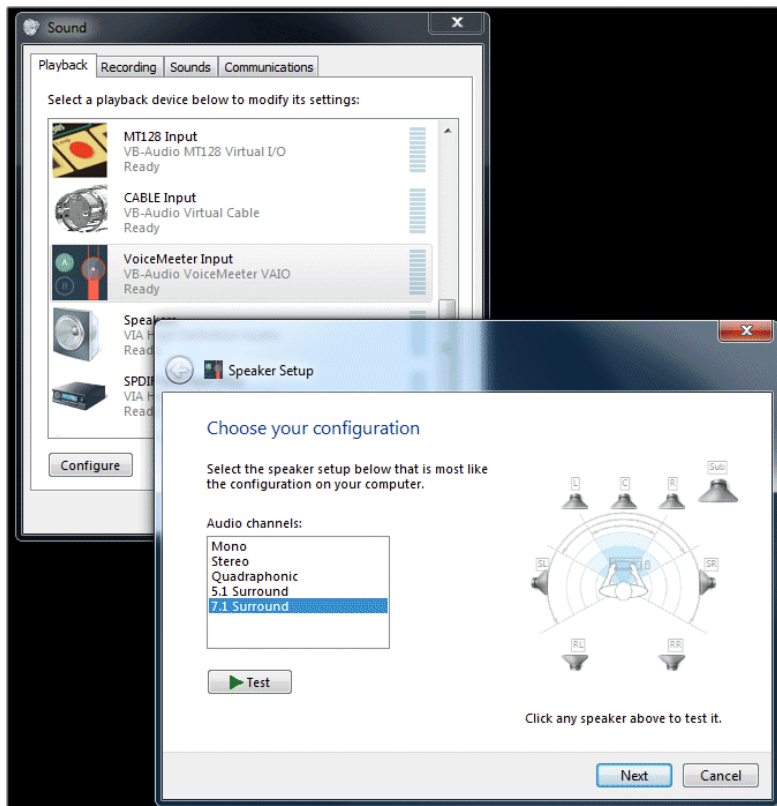
If Voicemeeter Input is set as default audio device, every sound played on the computer will go on the Virtual Input (Strip #3) of Voicemeeter Mixing Console.

You can launch a Media Player or Web Radio and check that you can hear the sound coming from it on the Voicemeeter Virtual Input (IN 3).



Virtual Input is Multi-Channel !

Strip #3, the virtual input of Voicemeeter can manage until 8 channels and get 5.1 audio from DVD for example.



Windows Control Panel /Sound Dialog Box allows configuring Audio device (playback and recording devices).

To get multichannel audio from DVD player you need to configure the Voicemeeter Input in multi-channel (click on configure button on the left bottom after having selected the Voicemeeter input).

When playing DVD you will see 5.1 audio signal incoming on Voicemeeter Virtual Input and also on possible A output level (if your output device supports the same number of channels).

Note that BUS B is also multi-channel but level meter shows always 2 first channels only.



Understanding Voicemeeter Virtual I/O in one picture.

Voicemeeter virtual inputs and outputs are simply given by the virtual audio driver playback and recording devices installed on your operating system with Voicemeeter.

Voicemeeter Virtual I/O

Voicemeeter playback device is used to get Virtual Input signal

BUS B sends signal to Voicemeeter recording device used as Virtual output

Understanding new Voicemeeter VAIOS driver (Win10 or higher).

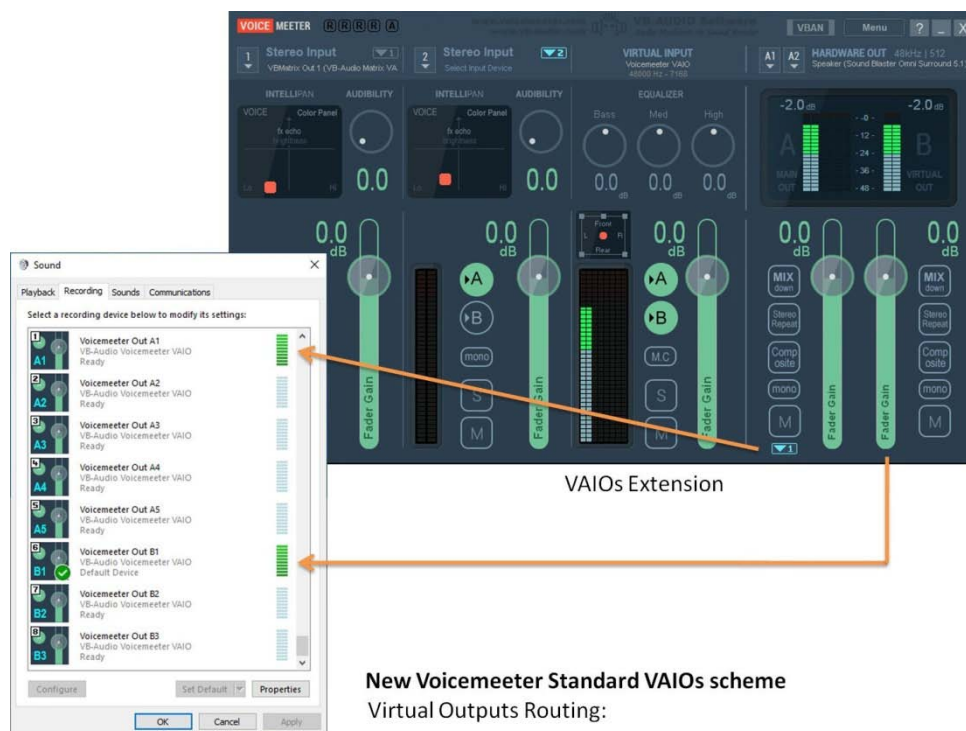
Voicemeeter now offers up to 8 Virtual I/O. I/O 1 to 5 are VAIO extensions. Voicemeeter input is also the Virtual input 6.

New Voicemeeter Standard VAIOS scheme

Virtual Inputs Routing:



Voicemeeter Output is now called “Voicemeeter out B1” (Virtual output 6).

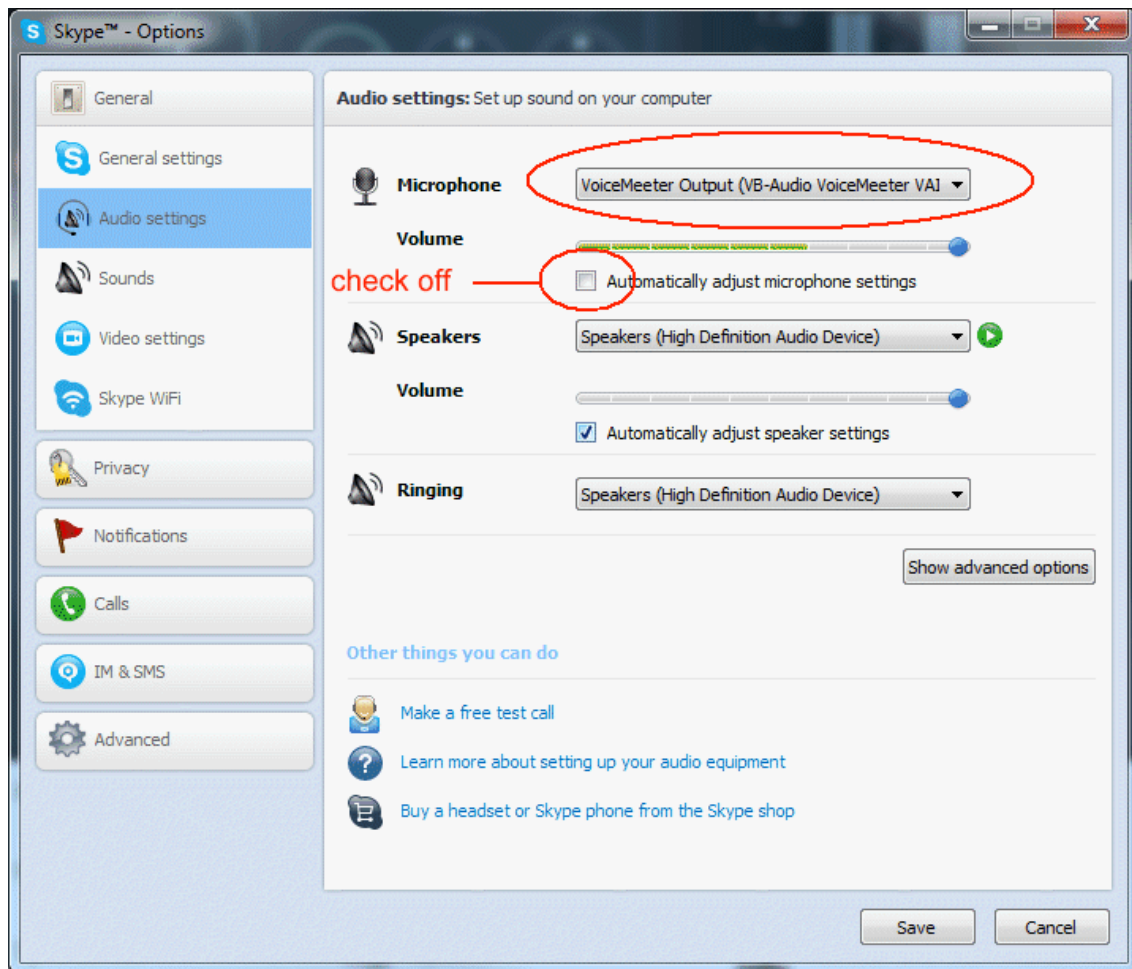


New Voicemeeter Standard VAIOS scheme
Virtual Outputs Routing:

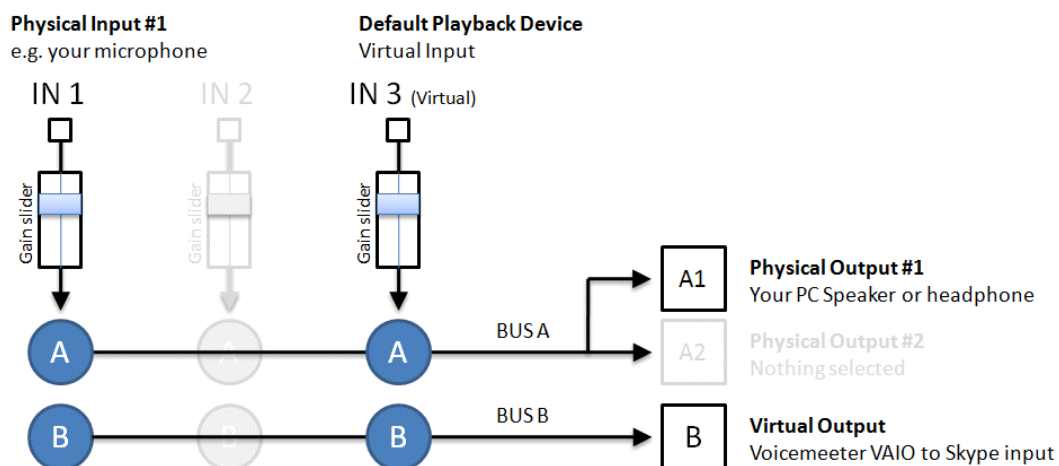
VAIO Extensions can be activated by an additional license (see Voicemeeter menu).

STEP 4: Send the Mix Output to Skype Input.

BUS B, not used yet, can be used to send the mix to virtual output that can be connected to another application (typically a recording or VOIP application).

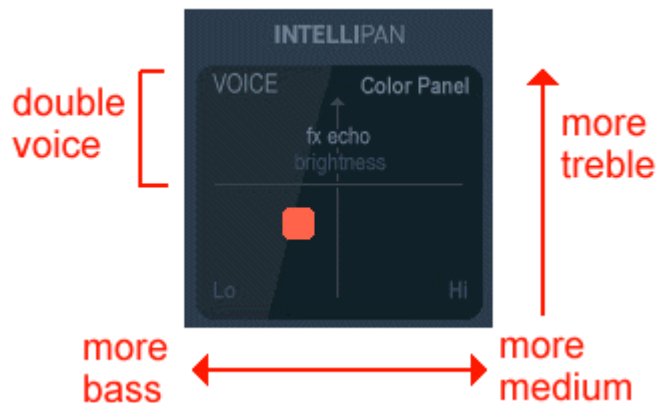


For example in Skype you can select the Voicemeeter Virtual Output as Microphone.



STEP 5: Enjoy new Audio Controls.

While you are talking you can tweak your voice in real time with different controls; 2D Panel, Audibility knobs or simple 3 bands Equalizer...



INTELLIPAN COLOR PANEL

Based on basic equalizer, this panel will allow you to change the color of your voice in a quick way.

It gives a spectral identity to your voice by acting on 3 frequency bands and a tiny reverb on the half top.

INTELLIPAN 3D PANEL: The Binaural effect.

If you right click on panel you can switch to another effect able to position audio sources with a simple room effect (works in stereo only).



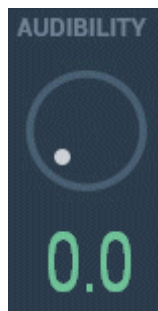
VoiceMeeter includes a binaural effect able to give a spatial identity to audio sources and then increase dialog intelligibility (especially when everyone is talking in the same time).

This effect works in stereo, so can be used when recording a stereo stream to improve the sound of the global mix. This also can be used to simply enhance your voice to stereo.

This kind of “psycho acoustic” effect is used a lot since decades in audio production to create a better “audio scene” by positioning some music tracks on different virtual location. Today several FOH live mixing consoles are proposing such advanced Pan Pot, mainly because it allows saving audio energy – while the regular pan pot could completely remove the sound from left or right.

Audibility control & equalizer.

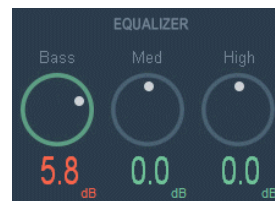
On both hardware input strips, there is an Audibility control and on virtual input there is a regular 3 bands Equalizer.



AUDIBILITY CONTROL

This single knob controls a compressor / gate allowing to boost your voice and manage noisy talk.

It needs to be adjusted according microphone capabilities and sound environment.

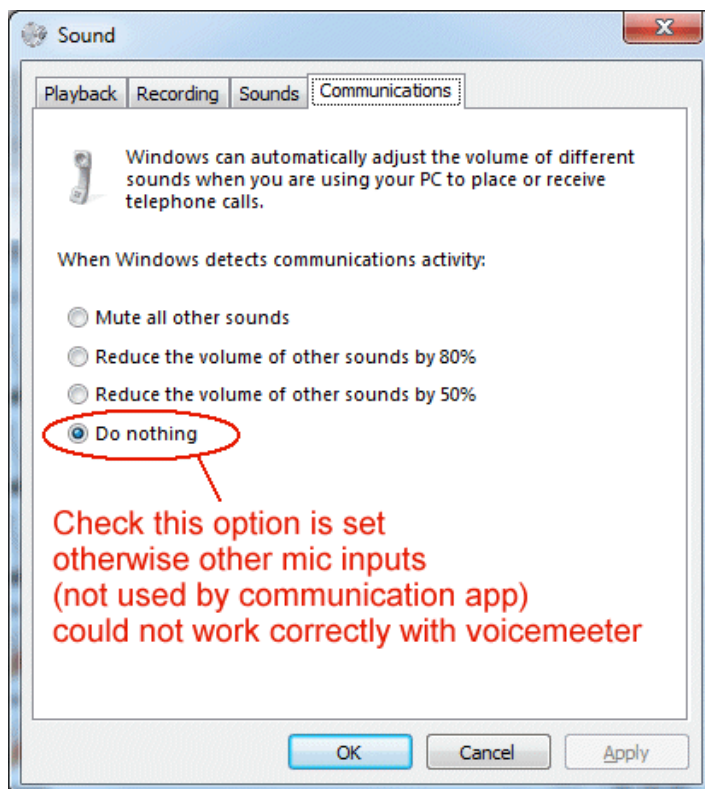


EQUALIZER

3 Bands Equalizer to boost or remove bass, medium and high frequency (treble).

Trick: All controls go back to default value if double click on it !

WINDOWS CONFIGURATION WARNING WITH VOIP



Communication options can mute audio device not used by VOIP Application like our microphone connected to Voicemeeter and no more on Skype.

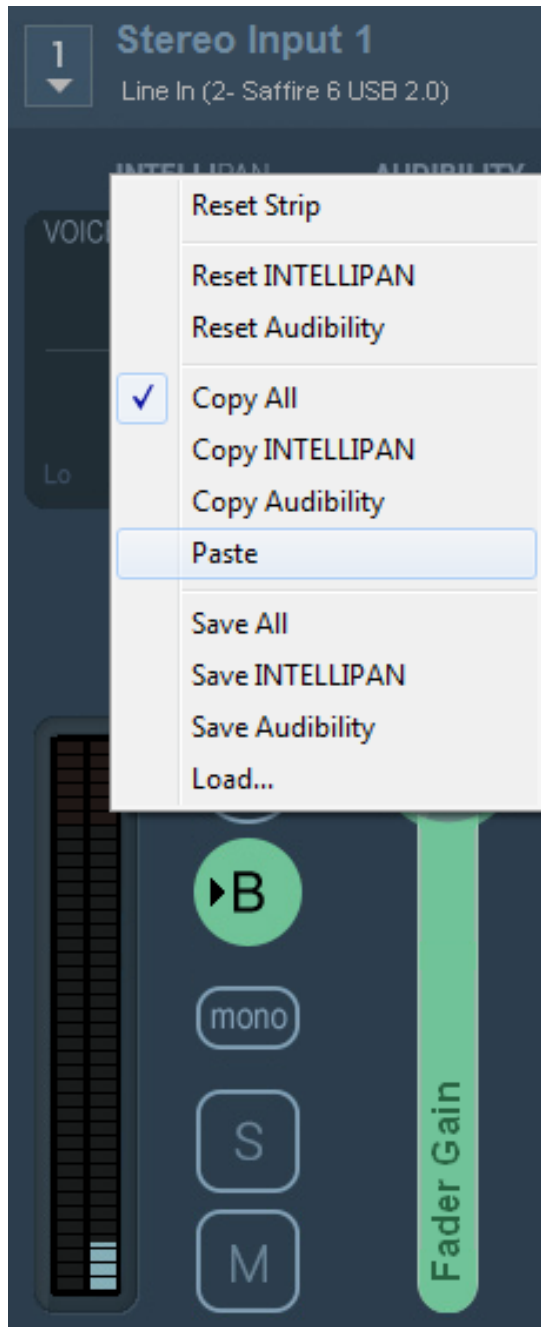
About Built In Microphone:

Built in Microphone can also work not as well as expected: First, speaker in notebook can be captured by built in microphone and generates feedback loop. Secondly built in microphone can have strange behavior according different exotic options present to manage this microphone and communication functions.

We recommend using USB headset or external microphone to also improve sound quality.

Strip Menu.

Right click on top of the input strip to display the Strip Menu (Right Click on INTELLIPAN label for hardware inputs, Click on EQUALIZER label for virtual Inputs).



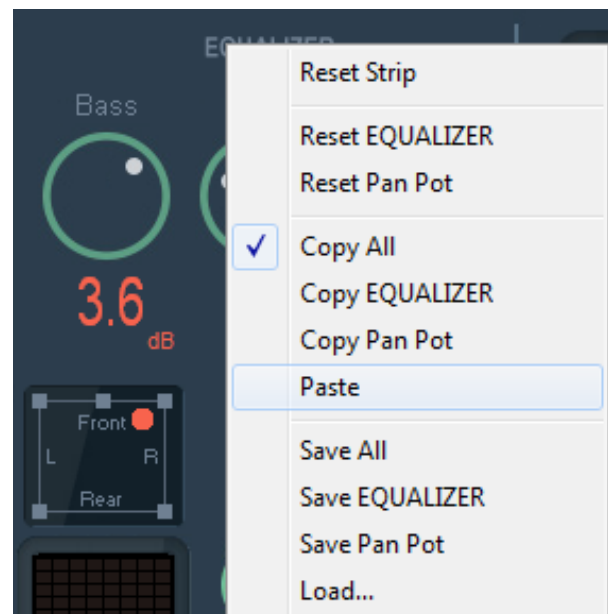
The strip Menu allows performing 3 kinds of operation on all parameters of the strip (except slider, Solo / Mute and BUS assignation).

RESET : to reset all parameters or just a particular effect to default values.

COPY / PASTE: to copy / paste all parameters or just a particular effect from a strip to another.

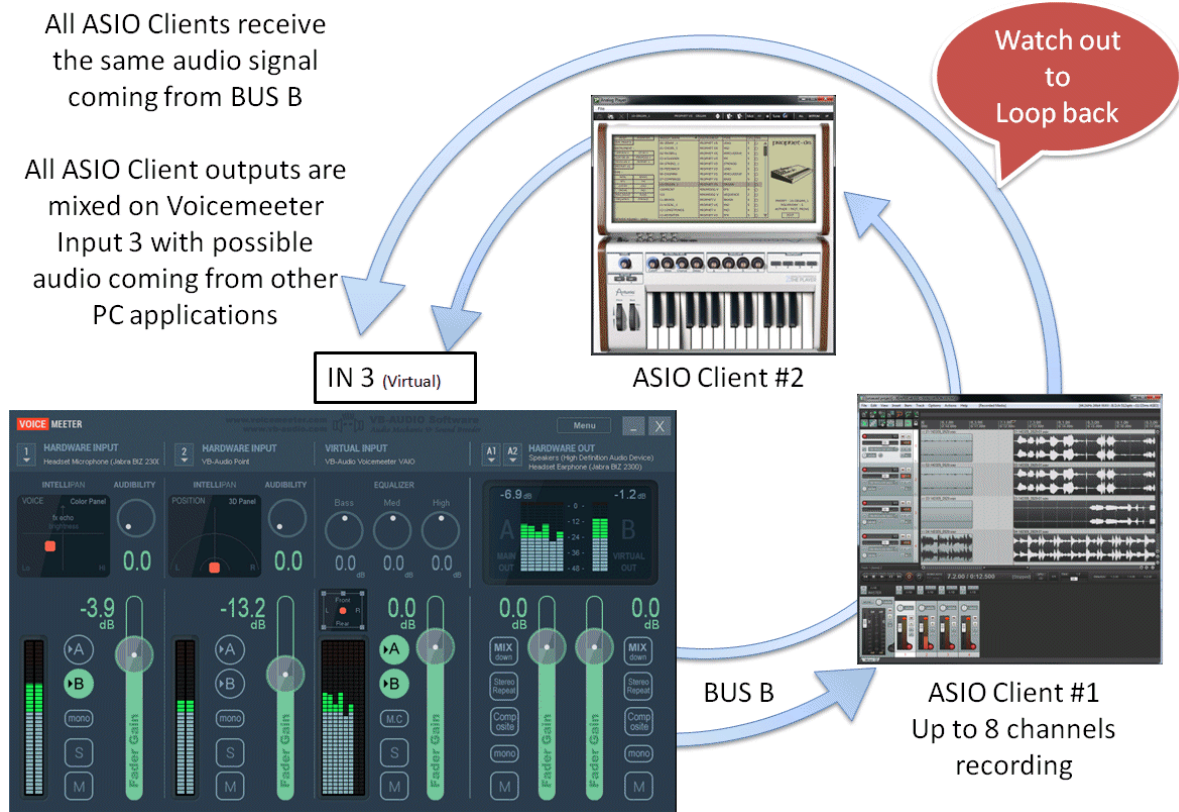
LOAD / SAVE: to save / load all parameters or just a particular effect from a strip to another, through a xml file, that you can also share with other users / computers.

Strip menu is different for Virtual Input than for Hardware input since it offers different strip tools.



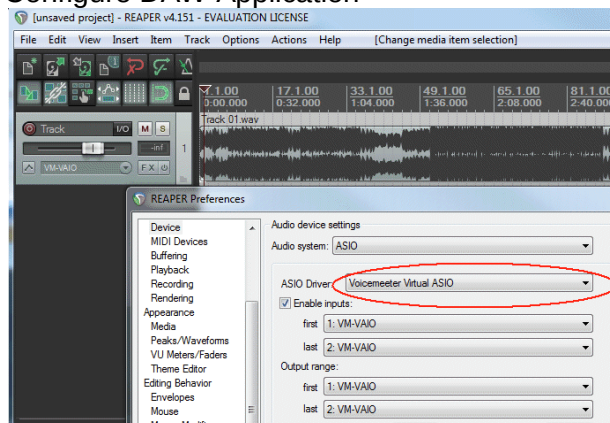
STEP 6: Connecting ASIO Application to Voicemeeter.

Each Voicemeeter Virtual I/O also supports an ASIO interface able to manage 4 client applications. These 4 possible sources get signal from BUS B1 (for Voicemeeter Virtual ASIO) and their outputs are mixed together on the related Virtual Input (with possible PC Sound already coming from usual windows audio interfaces).



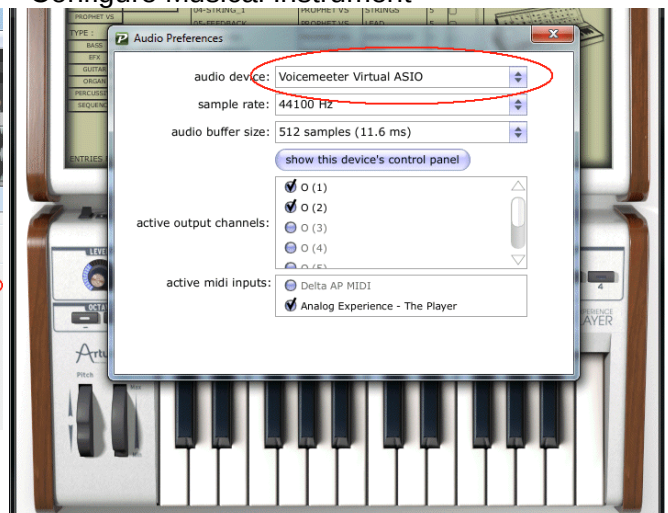
For Recording Applications, take care about the loop back! You might have MUTED outputs or disable monitoring otherwise output signal will come back on input infinitely.

Configure DAW Application



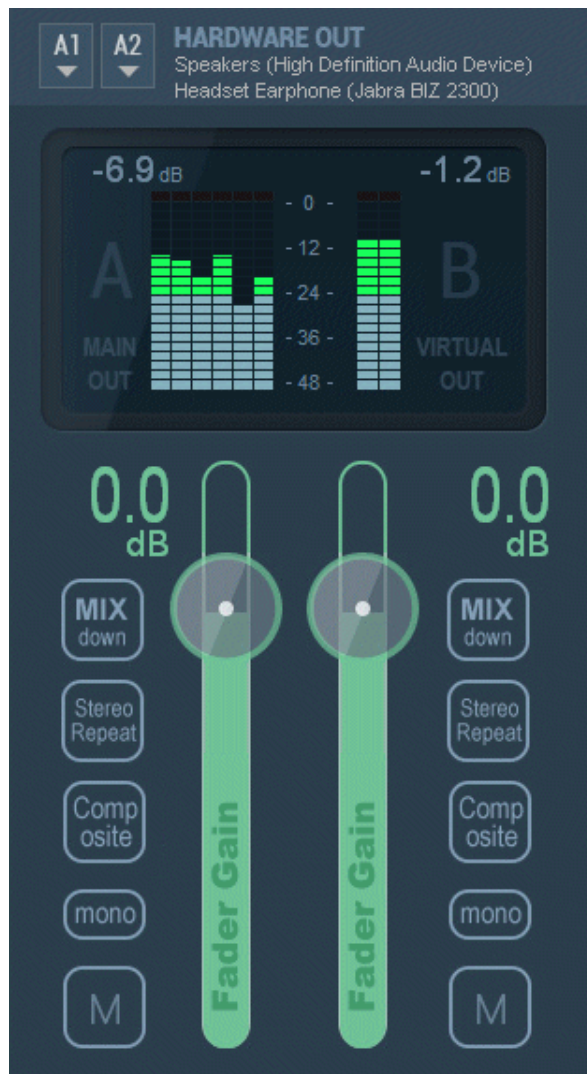
Select Voicemeeter Virtual ASIO device
In any audio applications supporting ASIO

Configure Musical Instrument



Special Routing Options on Output BUS.

Voicemeeter provides 3 additional routing modes for each Busses A (Physical) & B (Virtual) in order to use the possible 8 output channels in different ways.



MIX DOWN

This button is made to make a stereo mix-down with 5.1 or 7.1 sound coming from DVD player on virtual input (strip #3). Left and right channels, Center, Sub and rear are combined to output on stereo speakers.

STEREO REPEAT

This button is made to use possible 8 outputs channels with a stereo signal. This stereo signal is repeated to channel 3,4 / 5,6 and 7,8.

COMPOSITE

This last button is made for audio post production. The 8 channels are composed in this way:

- ch 1,2 : usual BUS stereo output
- ch 3,4: Voicemeeter input #1 before gain fader
- ch 5,6: Voicemeeter input #2 before gain fader
- ch 7,8: Virtual input channel 1,2 before gain fader

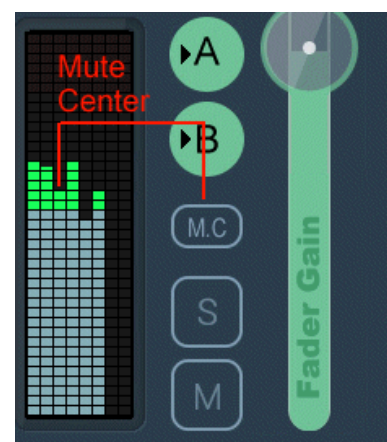
With composite signal, it's possible to record all Voicemeeter Inputs (each in stereo) with a DAW connected to Voicemeeter virtual ASIO for example. It allows recording VOIP interview or conference and making post production process after with the 3 audio stereo tracks.

MONO button simply merges channel 1 & 2 to make mono signal in both channel 1 & 2. Made for single speaker monitoring.

M.C. Means “Mute Center”.

The MUTE CENTER button on Virtual input is made to mute dialog on DVD played in multichannel mode like 5.1 or 7.1.

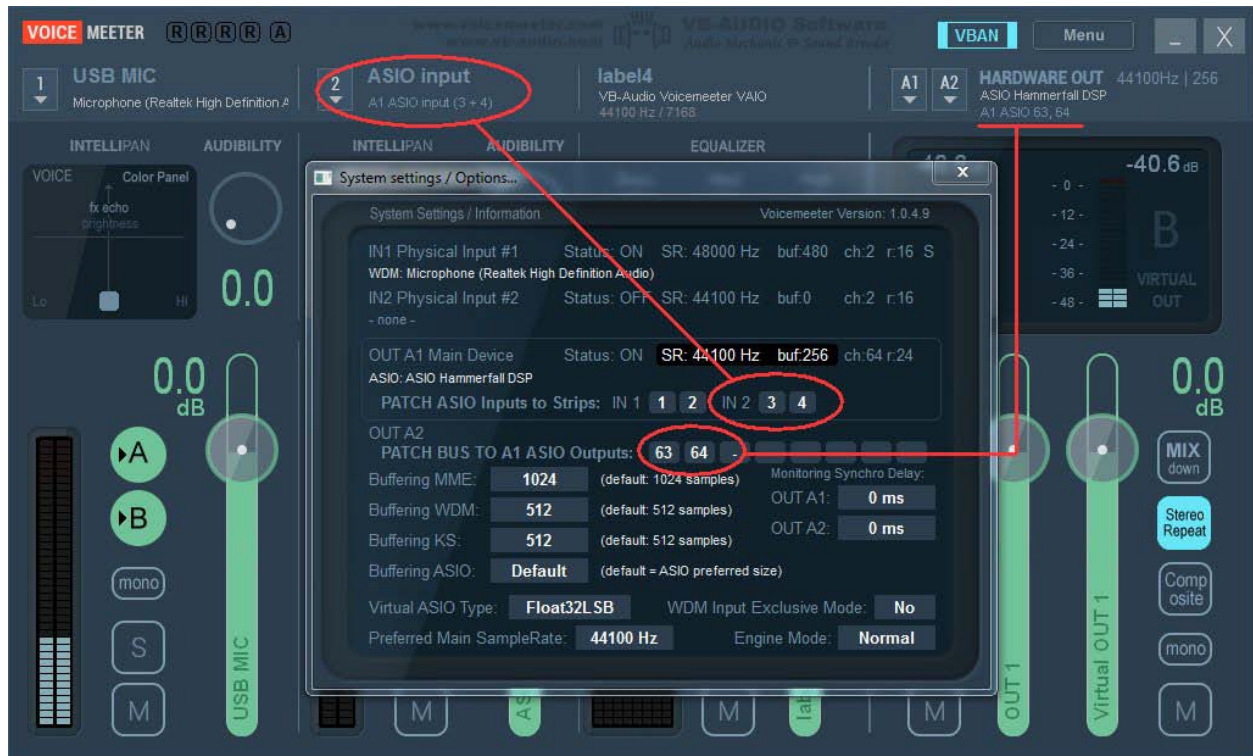
It allows over dubbing your favorite movies for example...



ASIO Routing Capabilities.

With Voicemeeter 1.0.5.0 / 2.0.3.0 it is possible to route all physical inputs and busses to possibly 64 I/O of the ASIO Driver selected as output A1. It is the optimal way to use Voicemeeter with a professional audio board.

This is possible by selecting no device for physical input / physical bus. Then the system settings dialog box proposes to select input channels / or output channels for bus A2 (BUS A1 always uses the 8 first output channels of the ASIO driver):



In this example:

- Physical Input #2 gets audio from ASIO input channels 3+4
- BUS A1 automatically uses 8 first output channel of the ASIO board
- BUS A2 will send audio to ASIO output channels 63+64

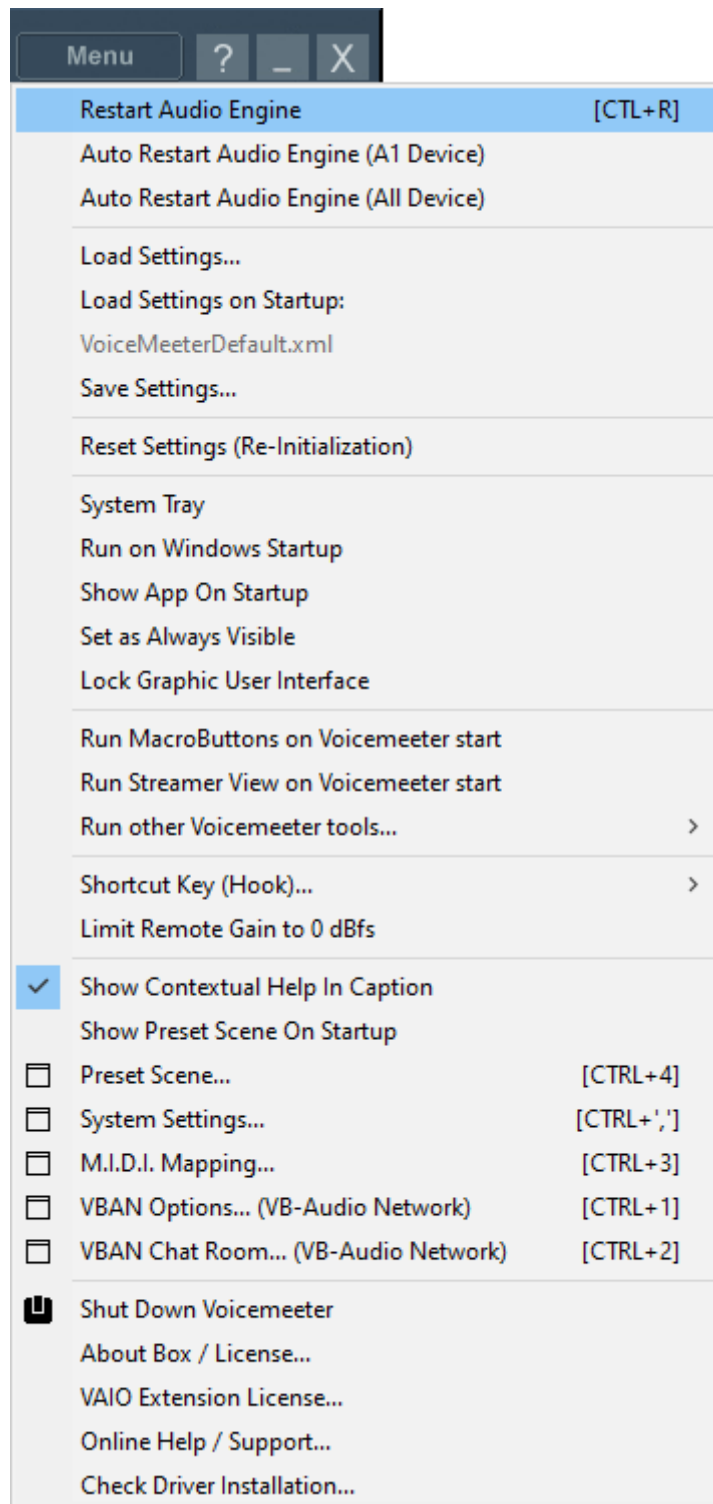
WARNING: BUS outputs are copied in the ASIO output channels in logical order A1, A2, A3. It means that A1 channels (1 to 8) could be replaced by A2 channels (if overlapping). For example if A2 is routed to channel 1+2, it will overwrite output A1 channel 1+2 (you won't hear the BUS A1 anymore, since it is replaced by A2).

Voicemeeter Main Menu

By clicking on “menu” area, user gets access to different functions:

The additional menu is there to provide additional functions:

- To Restart Audio Engine.
- To Automatically Restart Audio Engine if the Output A1 if disconnected.
- To Automatically Restart Audio Engine if any device is disconnected.
- To load or save current settings in a given filename.
- To Load a particular settings file on startup, then you restart with the same settings anyway.
- To reset Voicemeeter complete settings.
- To set Voicemeeter in system tray.
- To run it on system startup.
- To show Voicemeeter on launch.
- To set Voicemeeter as always visible (window on top).
- To Lock main graphic user interface to prevent to change settings.
- To Run Macro Button or Streamer View on Voicemeeter launch. To run other applications installed with Voicemeeter.
- To hook key to control volumes on Voicemeeter with keyboard (Output A1 or A2 or Strip #1 level).
- To limite the remote gain (MIDI control) to 0dB (instead of +12 dB).
- To Show contextual help in caption (enabled by default).
- To Show Preset Scene dialog box on startup.
- To open different configuration dialog boxes (System settings, Recording options, M.I.D.I. mapping, VBAN Dialog Box).
- To shutdown the application.
- The About Box will show you some link to get more information and donate on our webshop.



- VAIO Extension License Dialog box is present on Win10 64bit and higher version, when the new VAIO driver is installed and when extra virtual I/O (1 to 2) can be activated by a specific activation code.
 - System Settings Dialog Box allows to configure parameters related to audio device management..
 - M.I.D.I. Mapping Dialog Box allows to connect a M.I.D.I. Remote surface to Voicemeeter.
 - VBAN Dialog Box will help you to configure the VB-Audio Network functions, to send/receive audio stream to/from any computer of your local network.
 - Click on "Check Driver Installation" to run the VBDeviceCheck.exe program and get a detailed diagnostic on VB-Audio Driver Installation. This program is executed on each Voicemeeter Launch to check that there has been no corruption due to WIN10 Update.
- More information on our forum: <https://forum.vb-audio.com/viewtopic.php?f=6&t=442>

Other Voicemeeter Tools & Accessories:

To demonstrate Voicemeeter Remote API audio callback mechanism, Voicemeeter is installed with two audio plug-ins applications (8x8 Gain Matrix & Graphiq EQ). A standalone application called VBAN2MIDI to convert physical MIDI stream into VBAN protocol is also installed.



8x8 Gain Matrix:

This simple application provides a single 8x8 gain matrix applicable on the selected BUS.

This can be helpful to re-distribute audio channels into different multi channel speaker systems.

This application has been developed with the gain matrix example provided in the Voicemeeter Remote API SDK:

<https://forum.vb-audio.com/viewtopic.php?f=8&t=346>

15 Bands graphic EQ :

This simple application provides a 15 bands graphic EQ applicable on the selected BUS.

This can be helpful to adjust the sound of your P.A. System (stereo only).



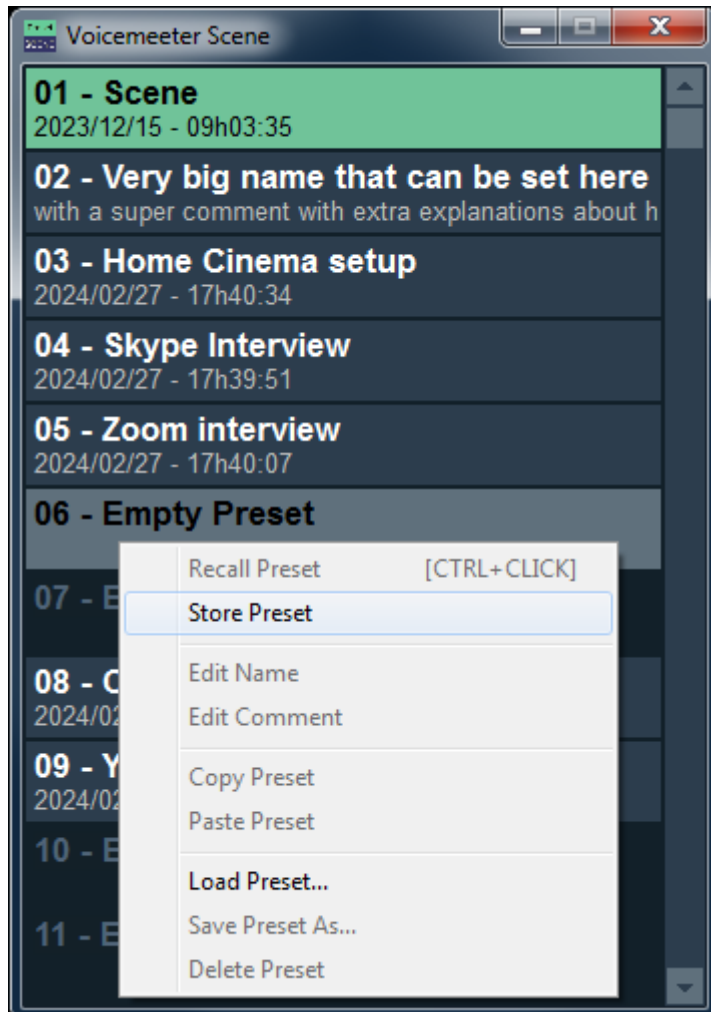
VBAN2MIDI :

Standalone application to send VBAN-MIDI stream from a MIDI input device or send MIDI message to physical MIDI Output from an incoming VBAN-MIDI Stream.

Warning: 2 applications cannot use the same UDP port in the same time.

Preset Scene:

Each Voicemeeter version offer a Preset List (64 presets) automatically stored in My Document \ Voicemeeter dedicated folder. "Scene_Standard" for Voicemeeter Standard, "Scene_Banana" for Voicemeeter Banana, "Scene_Potato" for Voicemeeter Potato.



Voicemeeter Scene is an independent resizable window.

Click ENTER or CTRL+Click to recall a preset. F1 to F24 key can be used to recall first 24 presets.

Right Click to get the contextual menu and store the Voicemeeter current setting in an empty preset (or overwrite already defined preset).

You can define a Name and a comment. If the Comment is not defined, it displays date and hours of the preset creation.

Preset can also be exported or imported thanks to Load/Save functions. Or copy / paste

Preset contains all mixing settings. All audio controls in main Voicemeeter graphic user interface and audio fx.

Presets do not contain device selection, system settings, MIDI or VBAN parameters...

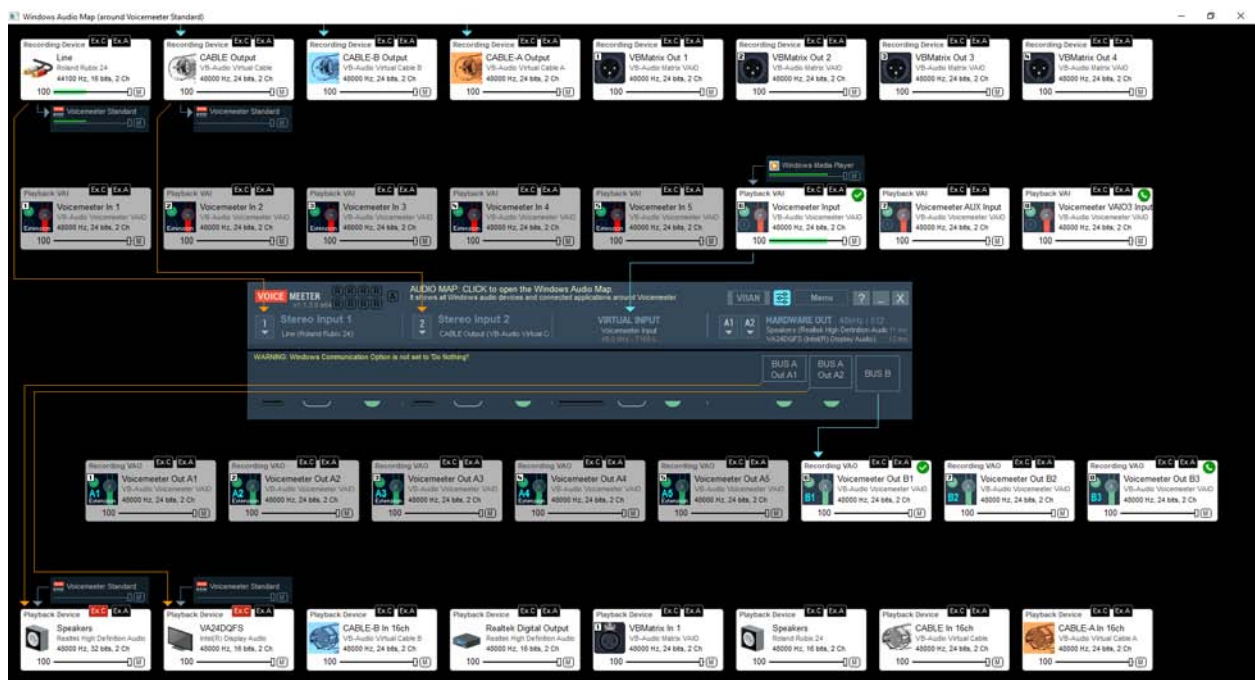
WINDOWS AUDIO MAP

With Voicemeeter 1.1.3.0 come the windows audio map dialog box showing all Windows Audio paths and options around Voicemeeter. This view is interesting to see what's happening around Voicemeeter according current different Windows options (Listen, Spatial, Exclusive mode, Audio path by application and devices...).



Click on this button on top, to open the Windows Audio Map, Right click to get this contextual menu to open most of Windows audio settings dialog box.

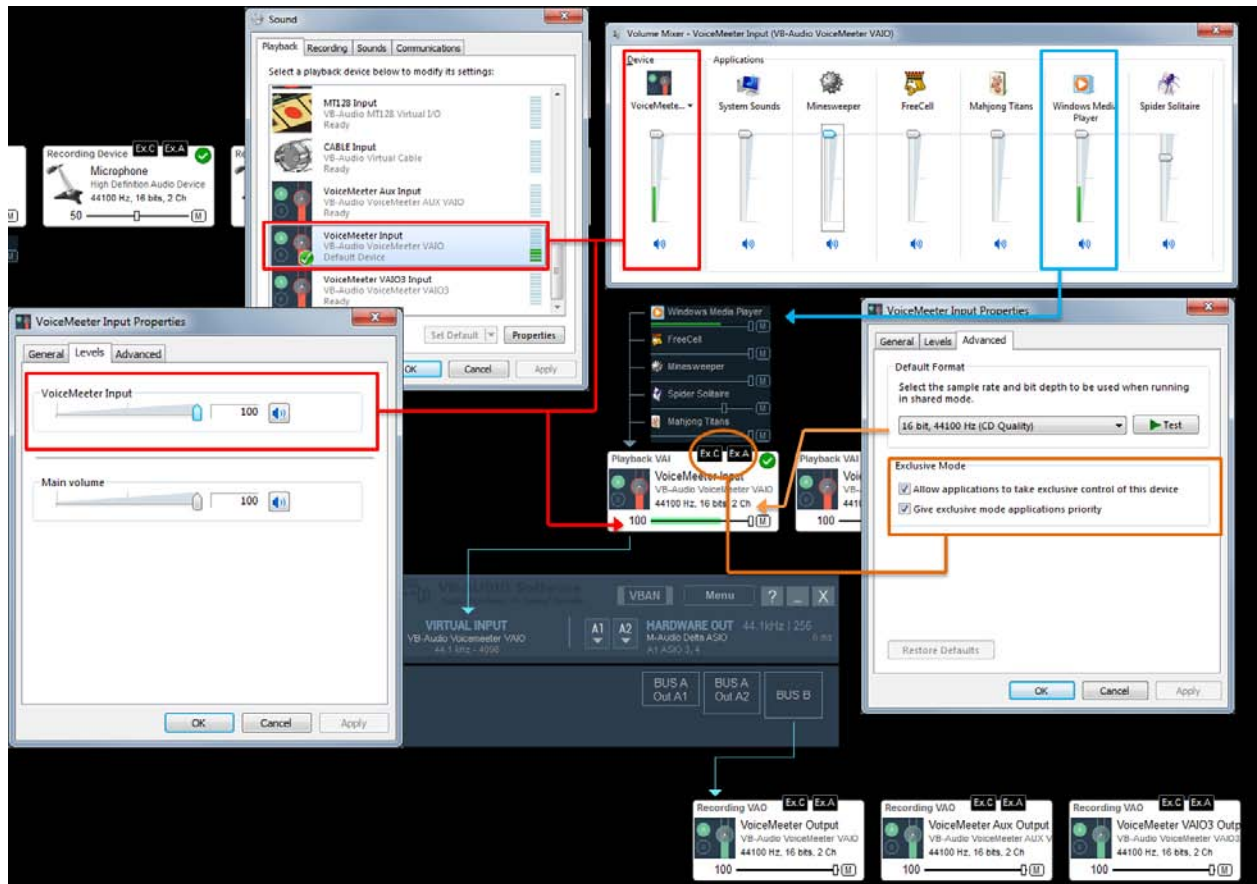
Audio Map is a big workspace where you can move in by mouse dragging, zoom in/out with the wheel. By default it shows all devices around Voicemeeter, (possibly used by Voicemeeter): The recording devices on top, the virtual in and out around Voicemeeter and the playback devices on bottom.



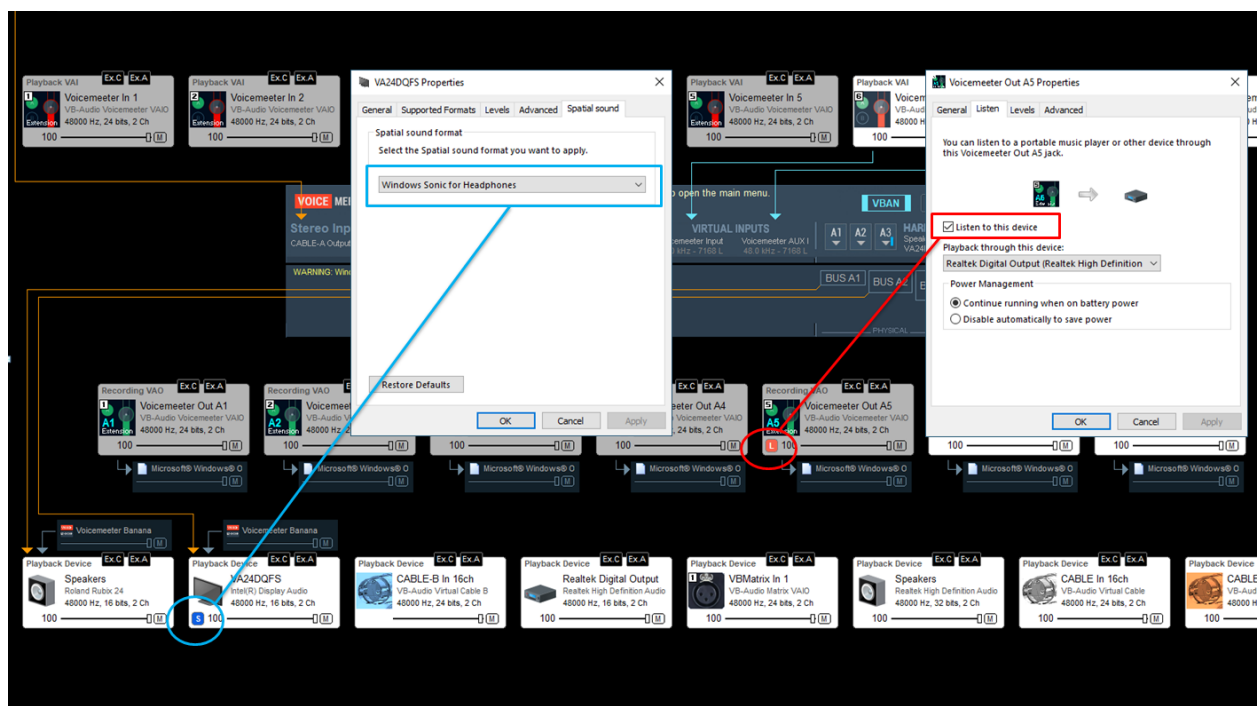
Voicemeeter standard is represented by screen capture of its caption and bottom to take minimal place on this map. Orange and blue arrows are giving the audio path for physical and virtual devices.

Device Information and connected applications.

All devices show many Windows parameters, level and connected applications:



Spatial and Listen option are also shown by a small blue or red icon:

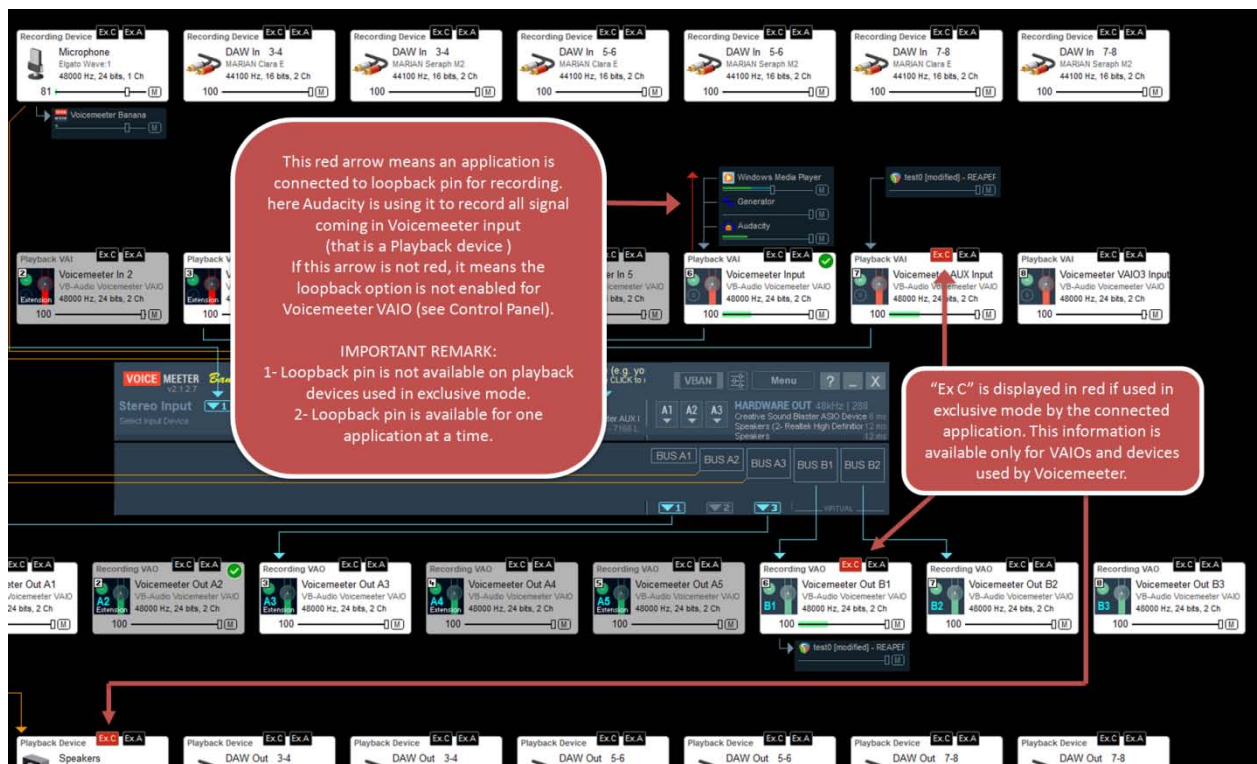


LISTEN option is capability to route a recording device to a playback device. This option managed by Windows can bring chaos in audio routing if not known by user.

Applications and device Level can be set by CTRL+Mouse.

Additional information managed by Voicemeeter

Loopback and exclusive use is not given by Windows, but Voicemeeter knows if their virtual input is used with a loopback stream (represented by a red arrow) and if it uses output device in exclusive mode ("Ex C" shown in red). Voicemeeter also knows if their VAIO are used in exclusive mode.



Loopback streaming is the capabilities of an application to capture audio from a playback device (instead of a recording device). OBS, Audacity and other capture applications can propose to get audio from a playback device. In Windows Audio Map we can see if an application is connected through this loopback pin.

REM: VAIO Loopback option is enabled by default in Voicemeeter.

Windows Audio Map Menu:

Right click in audio map to get the contextual menu. The “Refresh” option updates all display with current parameters (all settings are gathered again on refresh). This is useful because not all settings are real time updated. Some information requires a “refresh” to be updated.

Zoom level can be change by Mouse Wheel or keyboard ‘+’ and ‘-’. Type ZERO PAD to reset zoom to 100%

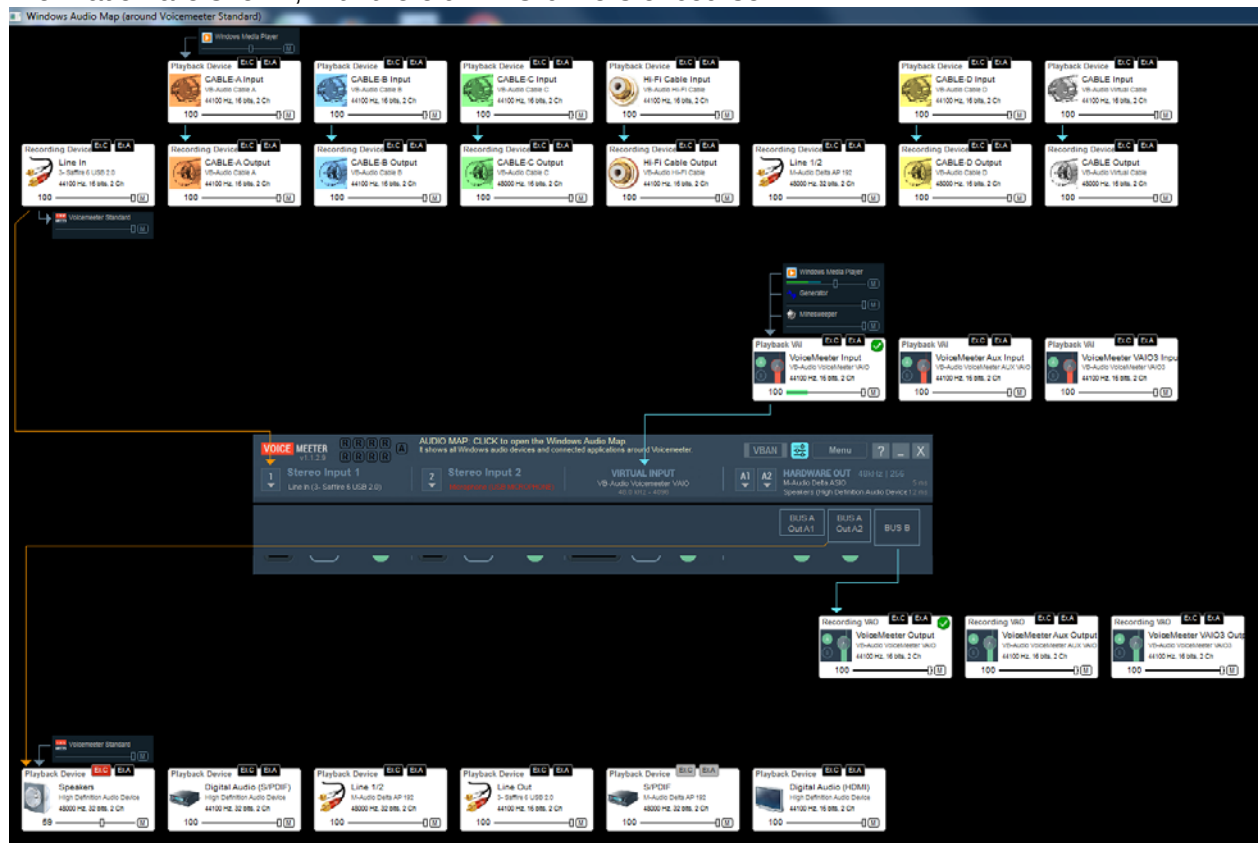
When you are on a VAIO device, the option “Open VAIO Control Panel” is available.

Refresh Display	[F5]
Reset Position	[Home]
Open VAIO Control Panel...	
Zoom 100%	
Zoom 90%	
Zoom 75%	
Zoom 60%	
Zoom 50%	
Windows Sound Settings...	
Windows Apps Volume and Device Preferences...	
Windows Privacy for Microphone...	
Windows Sounds Playback Devices...	
Windows Sounds Recording Devices...	

We also retrieve access to different windows settings dialog box:

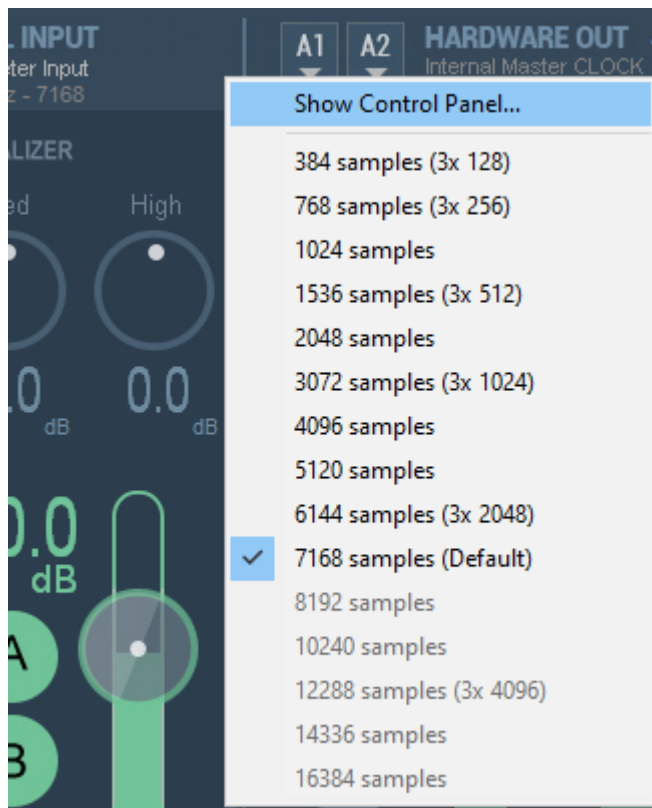
- Windows Sound Settings
- Windows Apps Volume and Device Preferences.
- Windows Privacy for Microphone.
- Sound Dialog box (playback devices thumbnail).
- Sound Dialog box (recording devices thumbnail).

The 3 first Windows audio settings dialog box are not present under Windows 7 but most of information are shown, with the old VAIO drivers of course:



VAIO options and menu:

VAIO latency are now stored as system parameter and recalled on each Audio Engine Start.



RIGHT + CLICK on Virtual Input caption to display the latency menu.

VAIO must have an internal latency not below 3x time the buffer size used by Voicemeeter Audio Engine and the Applications connected to the Virtual I/O.

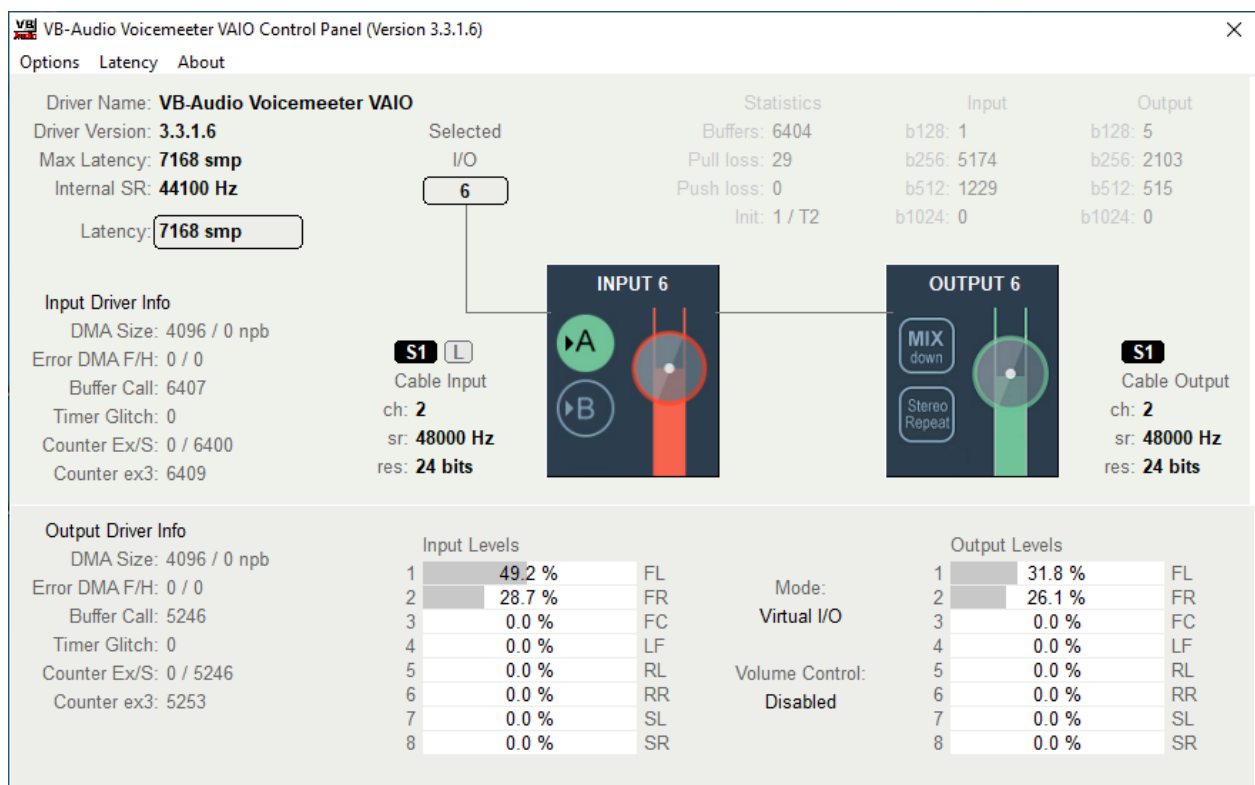
7168 samples value is expected to work 100% but you can try 3072 or less sample to reduce the latency on Virtual Audio Input and related output.

It means the latency is applied to the

- Virtual input stream
- Possible loopback stream
- Virtual output stream

If you modify the latency for Voicemeeter input for example, it will be modified for the output B1 too.

Select Show Control Panel to display the VAIO control panel (here below)



VAIO Control Panel:

VAIO Control Panel (shown in the previous page) displays all information about the 8 Virtual I/O provided by the new audio driver.

You can change latency here for test. Statistic could be displayed in red if the latency is considered as too small according current running stream. But the final latency must be set by the Voicemeeter VAIO Latency menu, because Voicemeeter stores its own parameters to recall them on Audio Engine Start.

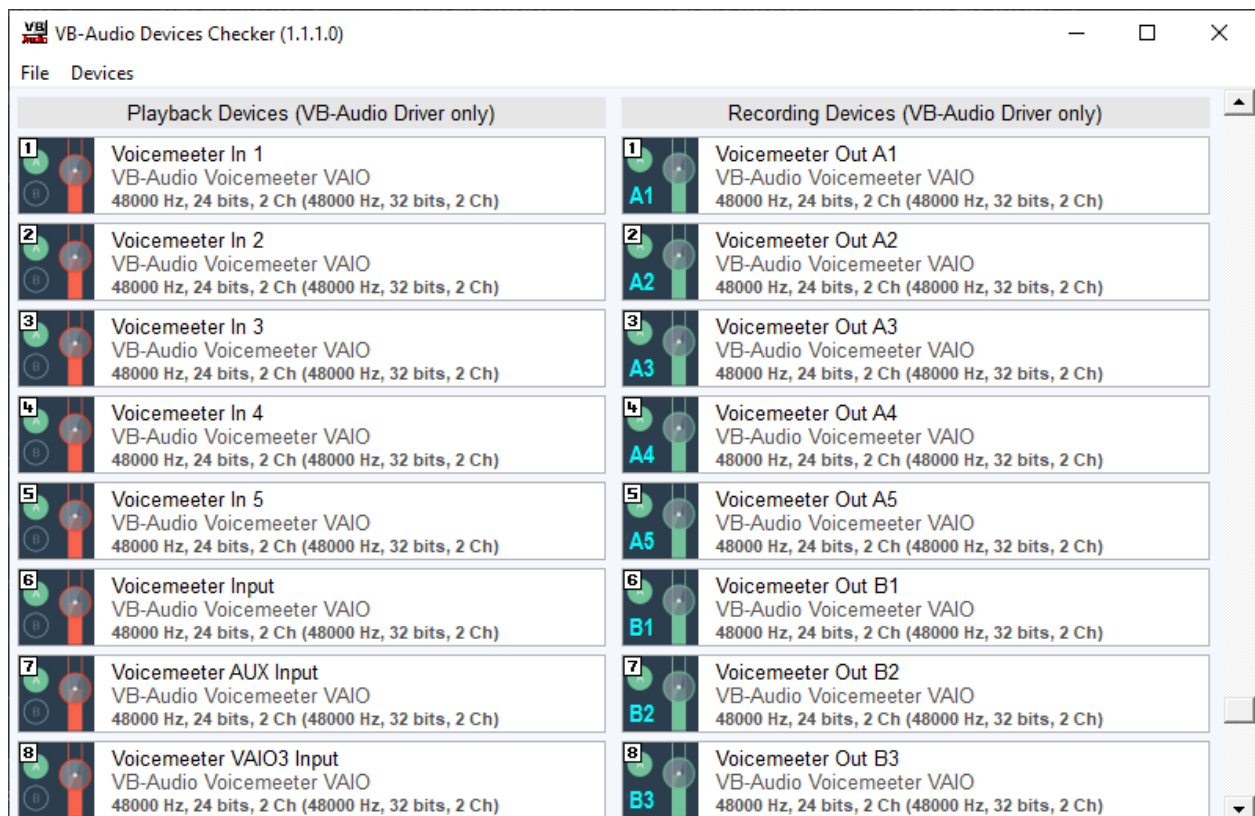
New Voicemeeter Audio driver is offering 8 couples of I/O where VAIO 1-5 are VAIO extension, and VAIO 6,7,8 are related to initial Voicemeeter Virtual inputs or B BUS

Virtual Input	Voicemeeter input	Virtual Output	Voicemeeter Output
VAIO in 6	Voicemeeter input	VAIO out 6	Voicemeeter BUS B1
VAIO in 7	unused	VAIO out 7	unused
VAIO in 8	unused	VAIO out 8	unused

VAIO Extension

If activated (by a specific license), other VAIOs can be used by physical input and output BUS

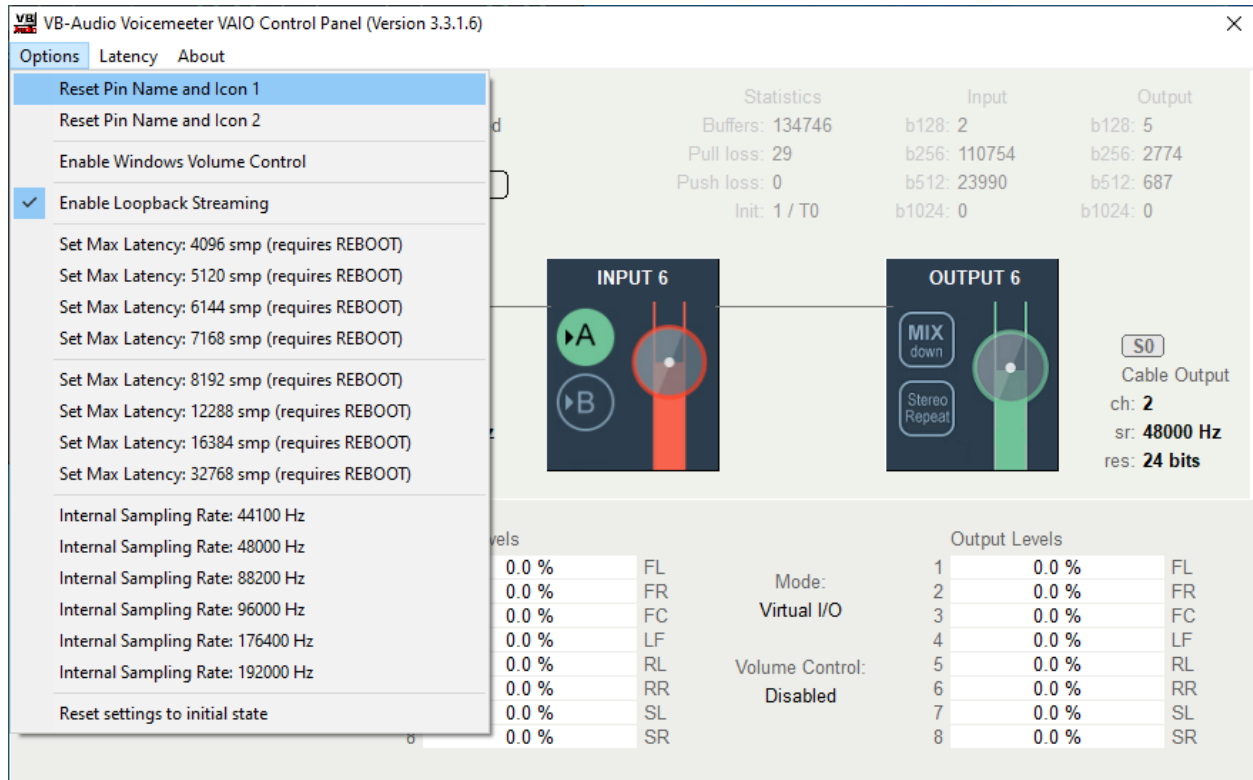
Virtual Input	Voicemeeter input	Virtual Output	Voicemeeter Output
VAIO in 1	Voicemeeter input #1	VAIO out 1	Voicemeeter BUS A1
VAIO in 2	Voicemeeter input #2	VAIO out 2	unused
VAIO in 3	unused	VAIO out 3	unused
VAIO in 4	unused	VAIO out 4	unused
VAIO in 5	unused	VAIO out 5	unused



VAIO Loopback Mode:

VAIO Loopback mode is normally activated by default. It allows capture applications like OBS to get audio from the Voicemeeter input directly.

This option can be checked in the Voicemeeter VAIO control panel menu as shown below:



Reset Pin Name and Icon can be useful to reset all Voicemeeter virtual I/O Name and Icon. Or because this has been changed or not set correctly.

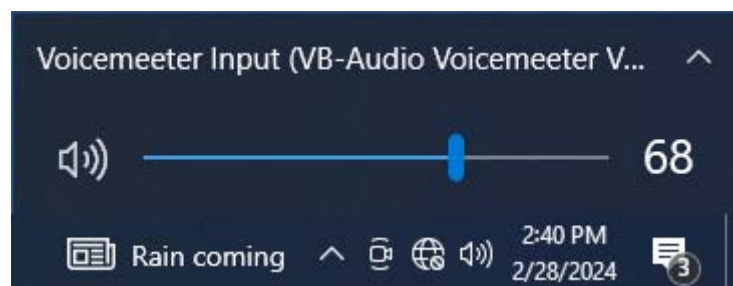
Run this application in administrator mode if you want to change any option (because requires access to the system registry).

VAIO Volume Control:

The option "Enable Windows Volume Control" will enable the volume control on all Voicemeeter inputs (all playback devices). If set as default playback device, it will be possible to change the volume by the Speaker Windows Control:

By default Windows Volume Control has no effect on Voicemeeter VAIOs inputs (playback devices). To make this windows control work, you have to enable it in the VAIO Control panel application.

Voicemeeter outputs provide no gain management.

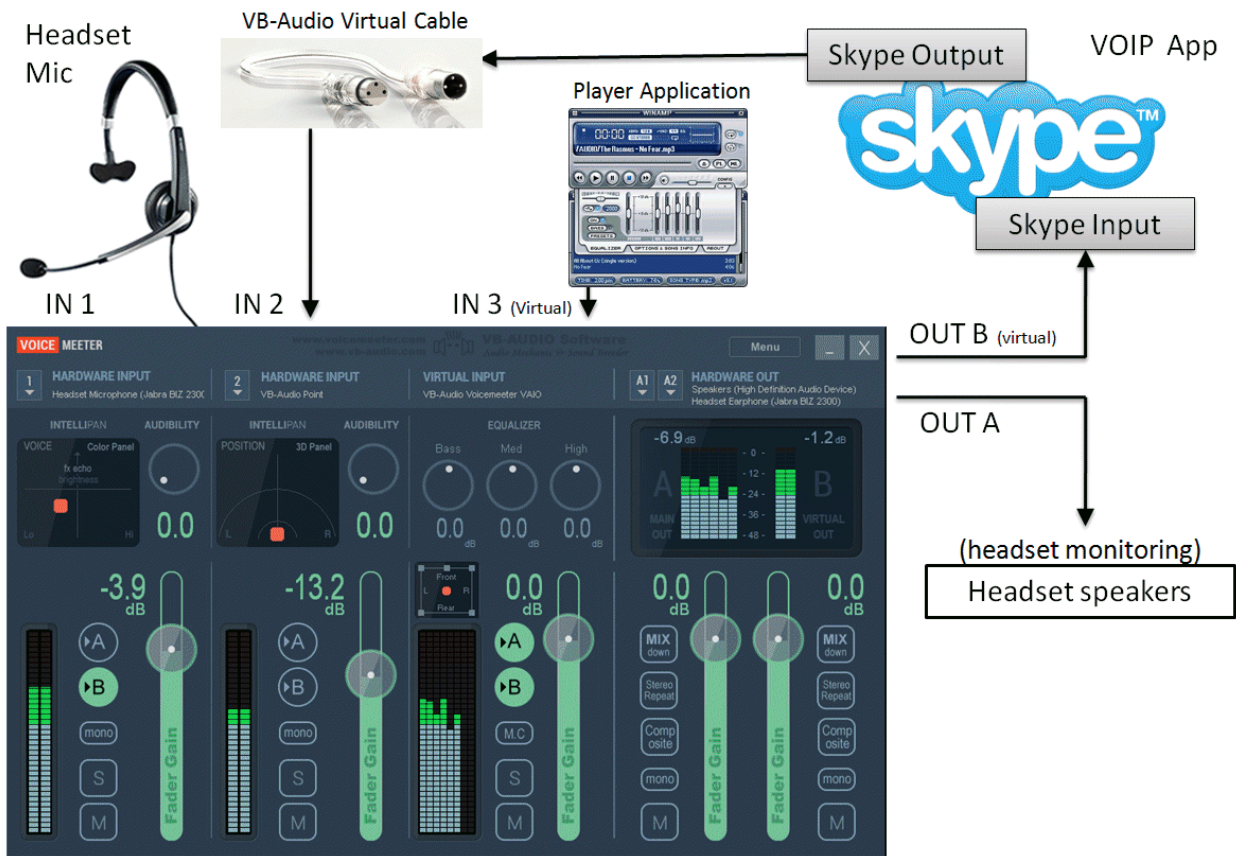


CASE STUDY #1

How to talk and send music in the same time on Skype?

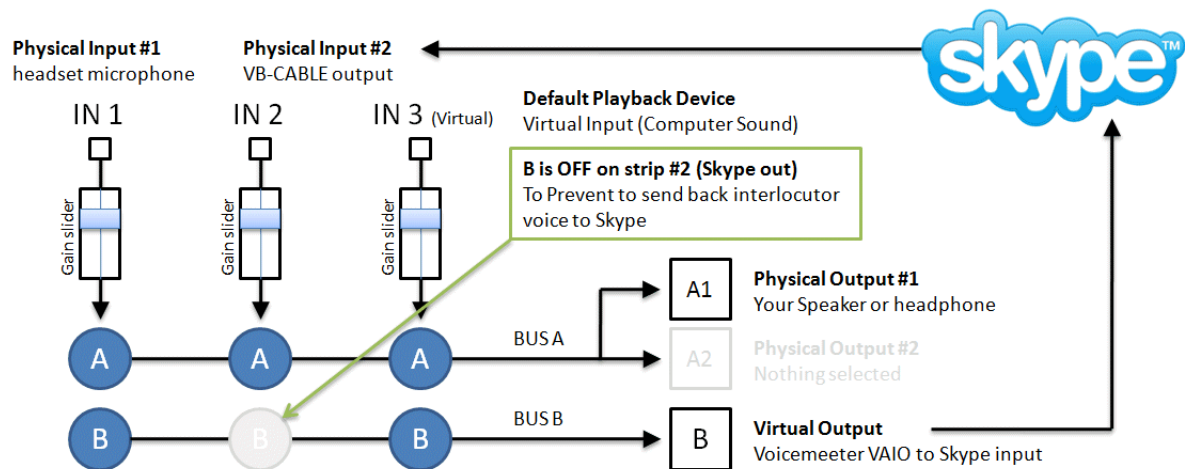
CASE STUDY #1

How to talk and send music in the same time on Skype or Google Voice? To make it, we will use a configuration very closed to our current setup after Step 5 of this document.



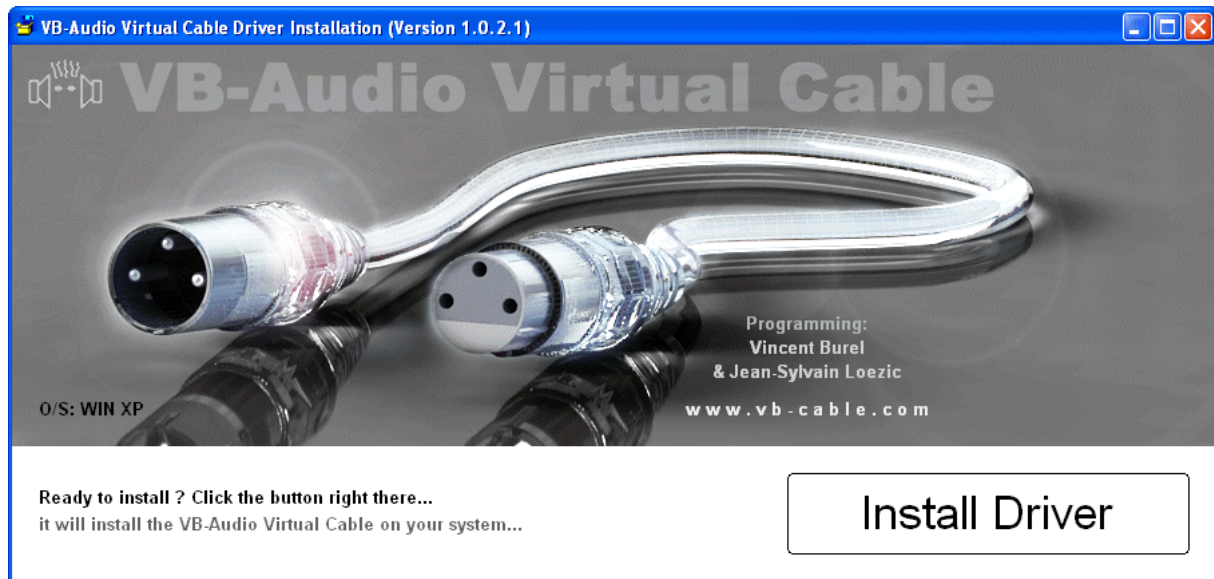
For this configuration, we need to install VB-Audio Virtual Cable, it makes the things more comfortable since we have control on the 3 sounds: our voice (IN 1), Skype output (IN2) and computer sound (IN 3).

VB-Audio Virtual cable will be used to connect the Skype output to Voicemeeter Input #2.

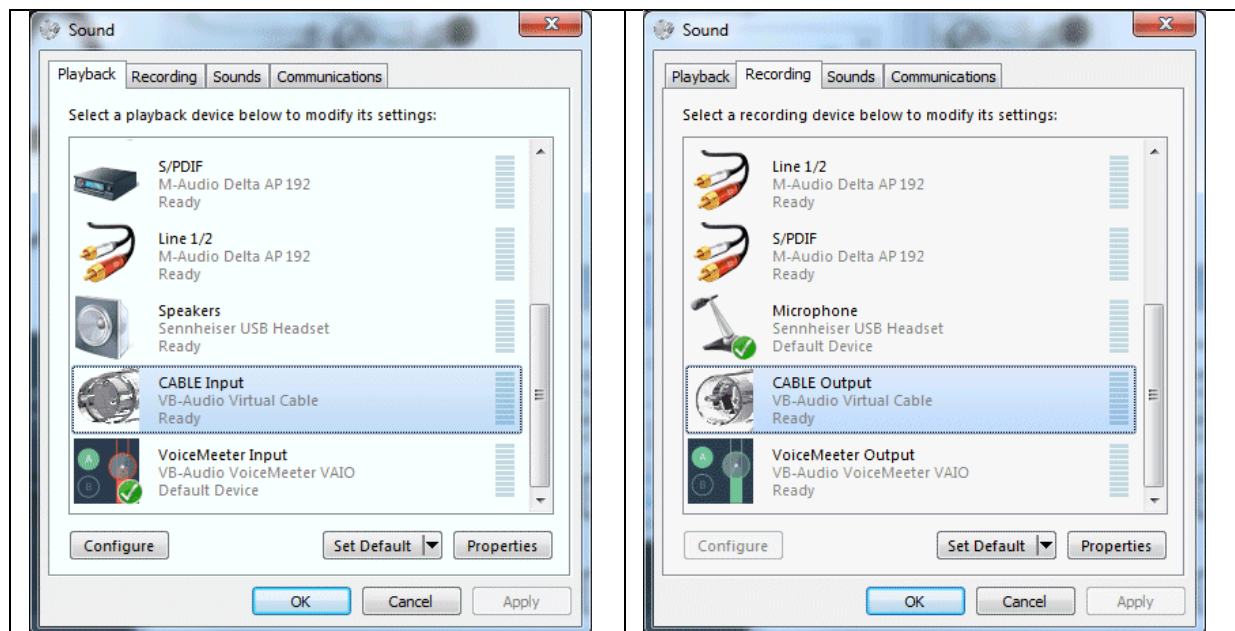


CASE STUDY #1 – STEP 1

Install VB-AUDIO Virtual Cable: download it on www.vb-cable.com

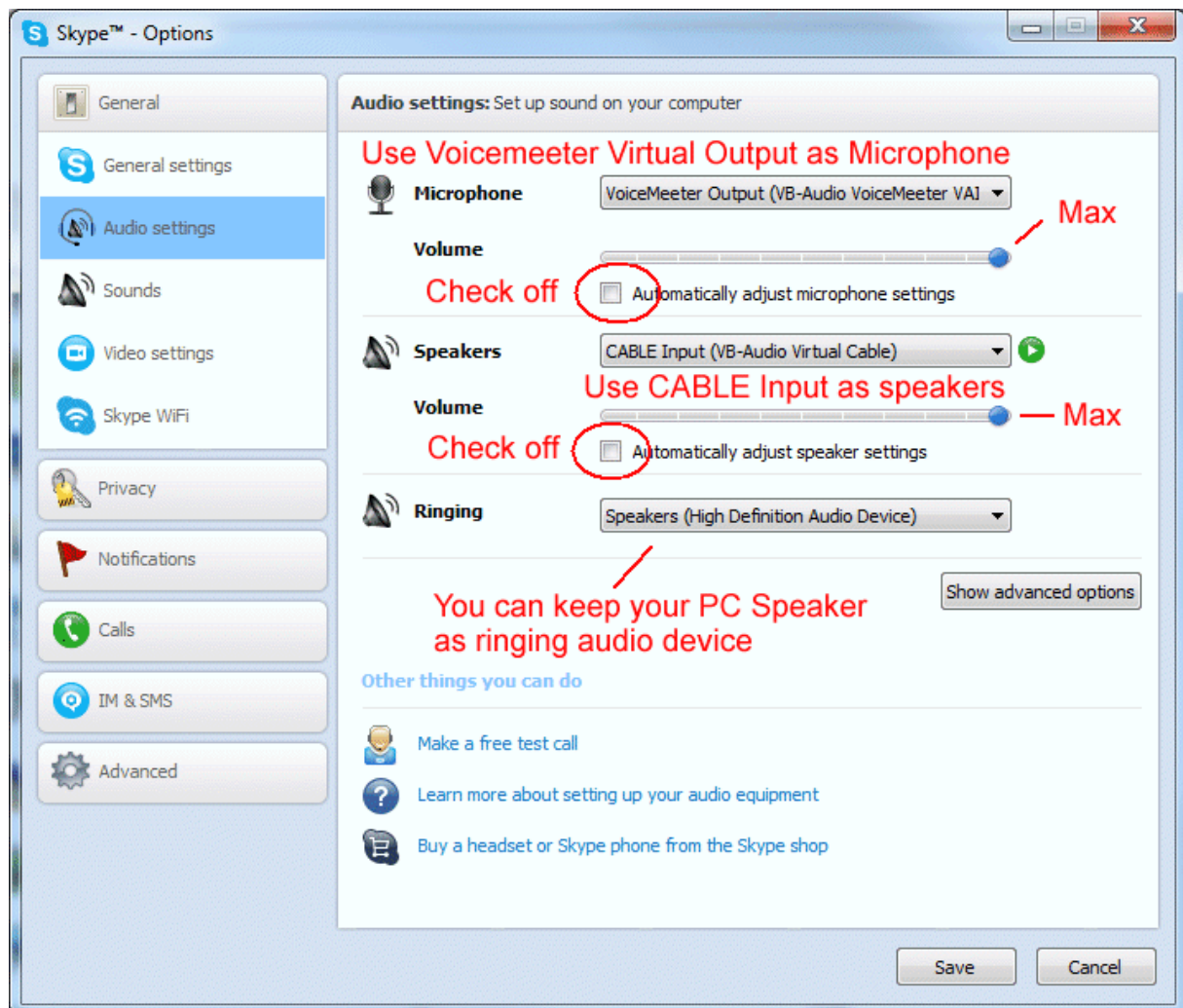


After Installation, you have a new audio installed driver called CABLE Input (as playback device) and CABLE Output (as recording device). These are the two ends of the cable, and like every cable, all sounds sent to cable input will go on cable output.



CASE STUDY #1 – STEP 2

Configure Skype to receive audio from Voicemeeter B Output (Virtual Output) and send audio to CABLE (newly installed).



Note it's important to check off "Automatic gain control" because it's now Voicemeeter mixing console which takes care about levels. Also you can set level to max for the same reason.

In this above configuration, Skype will still continue to use your PC speaker to ring you, but for communication, you will need to launch Voicemeeter to make it work of course (see menu to set Voicemeeter in system tray and run on Windows startup)..

CASE STUDY #1 – STEP 3

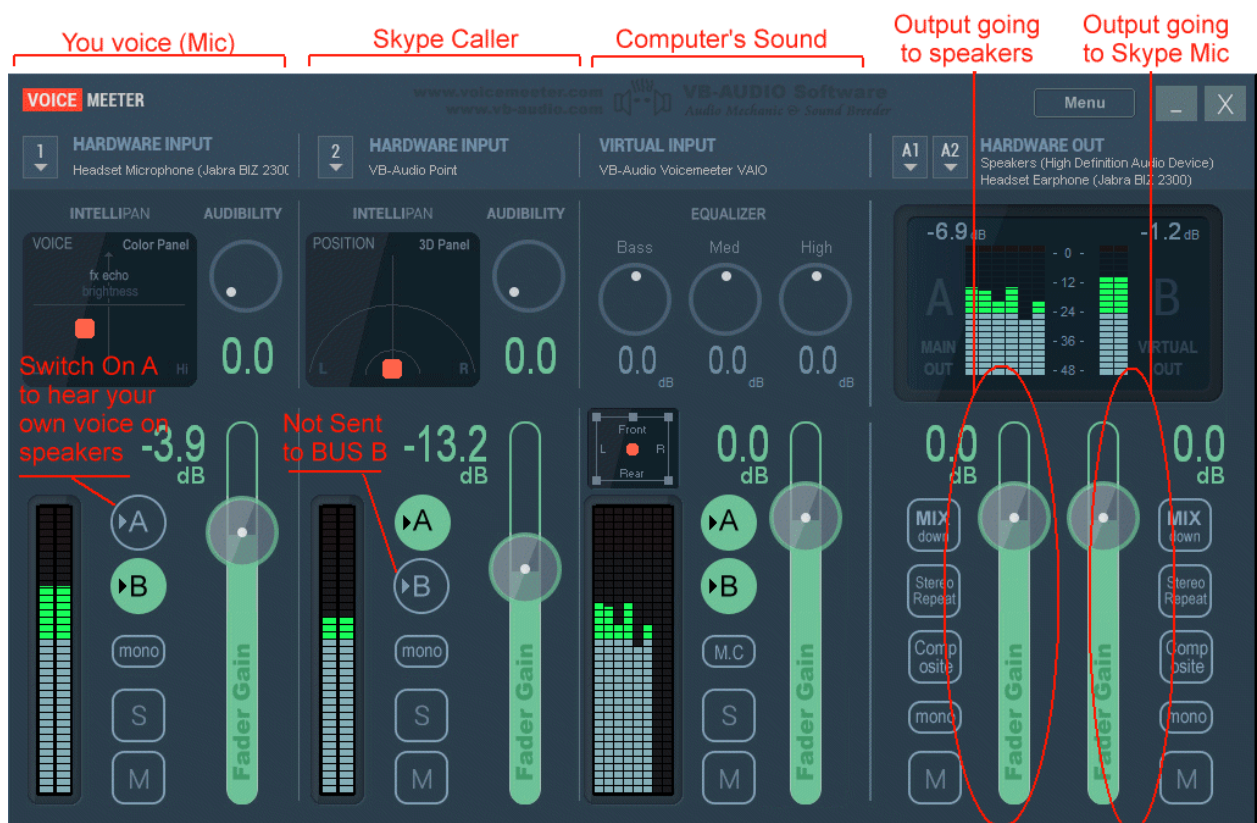
Configure Voicemeeter to connect it to skype through the VB-CABLE.

Already done in last document steps:

- Select A1 Output device: your headphone/headset speakers.
- Select Input device IN1: your headset microphone.
- Set Voicemeeter Virtual Input as default playback device (to get all computer sound in IN3 – all computer sound played on default playback device of course).

To be done to get skype output:

- Select Input device IN2: CABLE output (where Skype output is routed to).



With A / B Switches, you can decide what sound you send to monitor (speaker) and what you send to Skype (through Bus B).

Basically you will send to your headphone everything but your voice (except if you want to also hear your own voice in speaker). That's why A is off on strip #1.

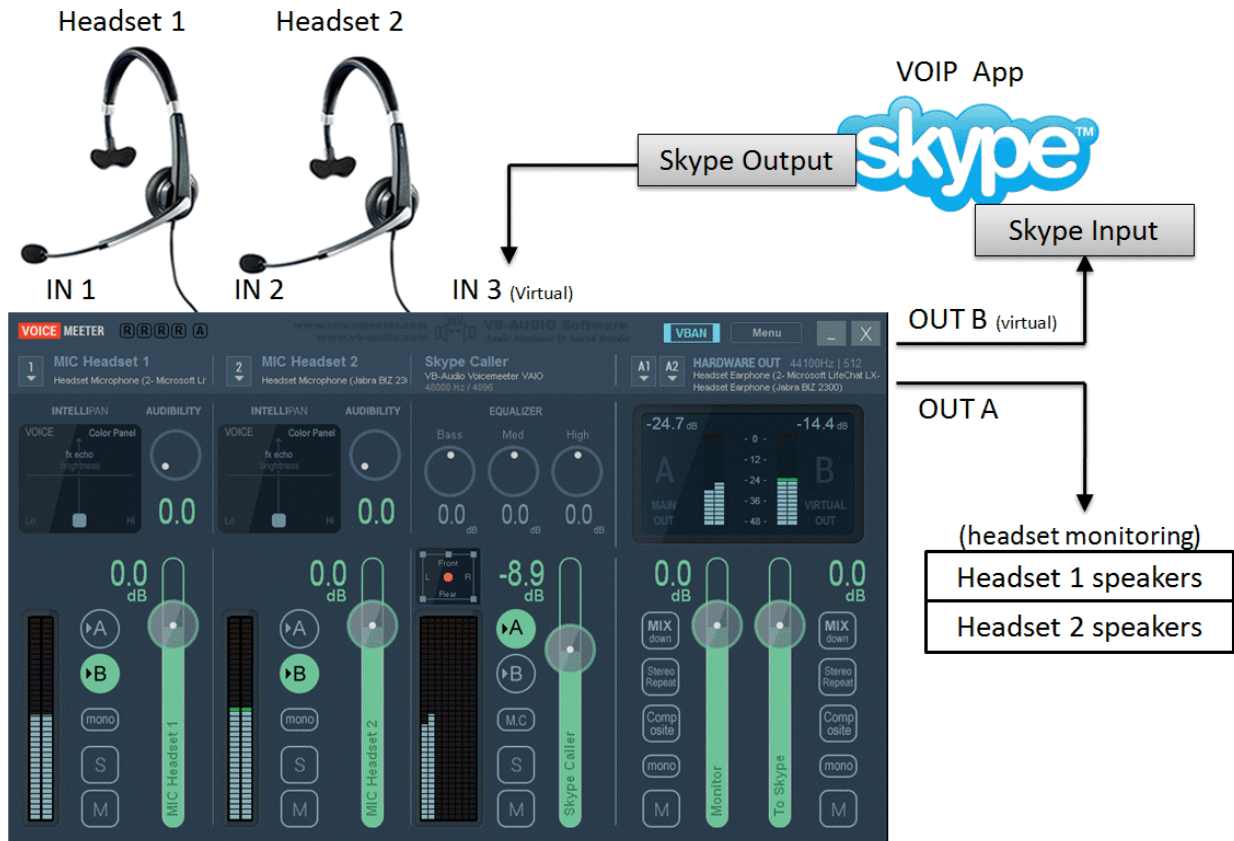
Regarding Skype, you will want to send everything (your voice and music) but skype sound (Skype caller coming in input 2). That's why B is off on strip #2. Otherwise we could have a loop back and the caller could hear his own voice again and again and again...

CASE STUDY #2

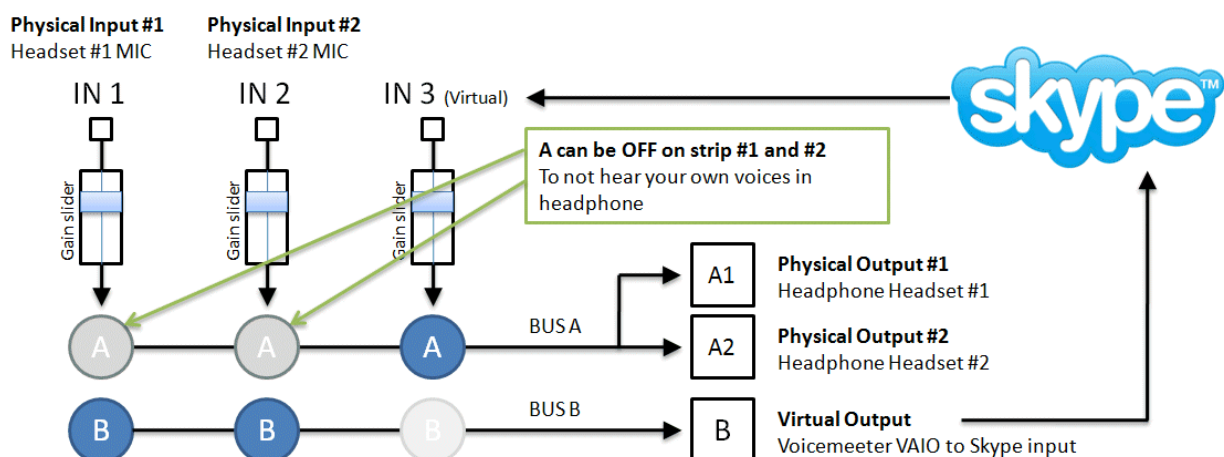
How to manage 2 headsets on Skype?

CASE STUDY #2

How to manage 2 Headsets in the same time on Skype or Google Voice? To manage 2 headsets is maybe simpler than the previous case, since we don't need additional VB-Cable.



To manage 2 Headset, we need to manage 2 different microphones, but also 2 different headphones. That's why Voicemeeter allows selecting 2 physical output devices on BUS A outputs (A1 and A2). Then both headset speakers will give the sound coming from Skype (IN3).



B button on strip #3 must be OFF to avoid Skype feedback (otherwise audio coming from Skype on strip #3 would be sent again to Skype through Voicemeeter Virtual Output).

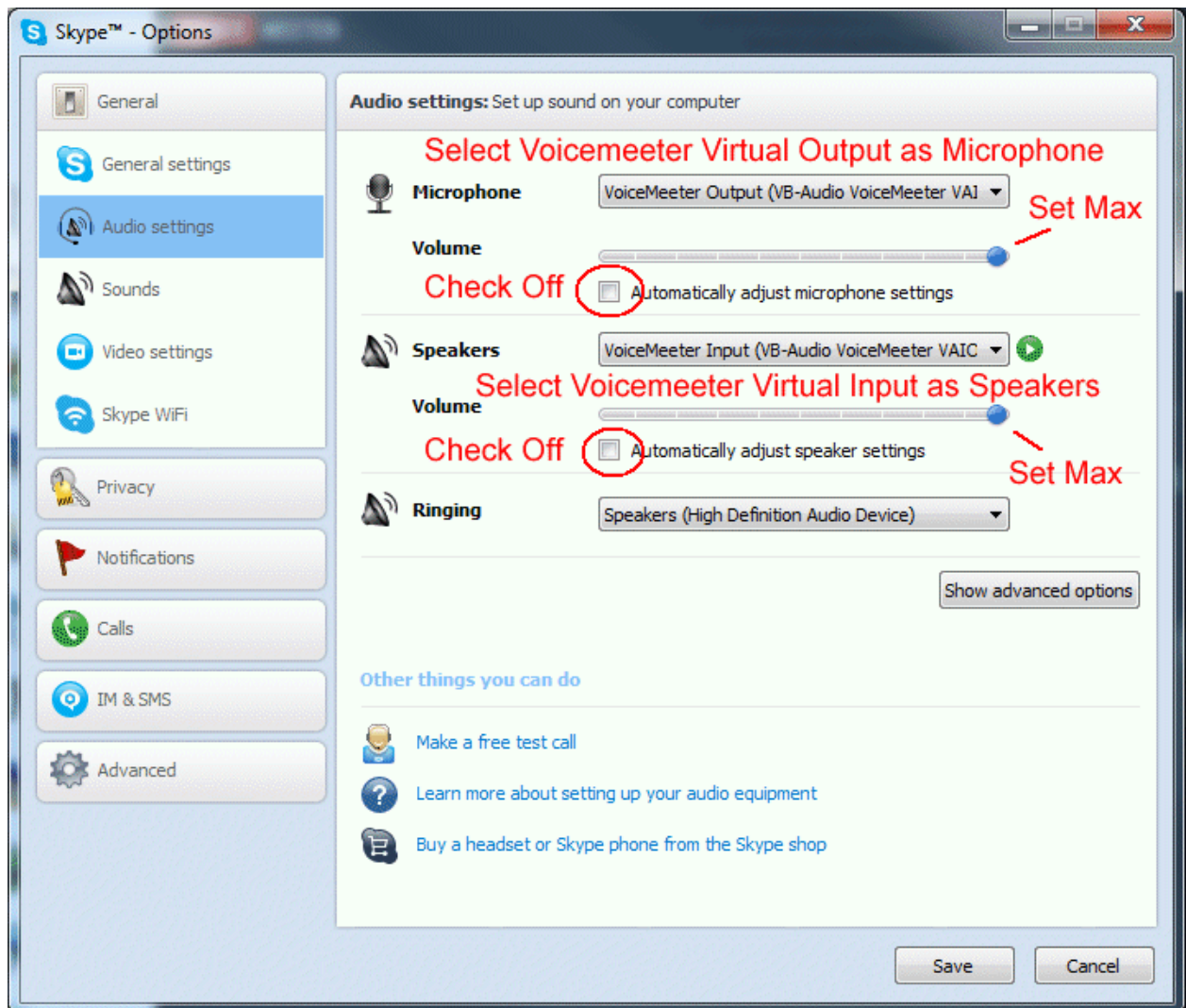
CASE STUDY #2 – STEP 1

Configure Voicemeeter to manage 2 headsets

It just means to select audio output A1 and A2 for your headphone 1 and 2. Then Select Input Device 1 for your microphone headset #1 and Device 2 for your microphone headset #2.

CASE STUDY #2 – STEP 2

Configure Skype Audio Settings to use both Voicemeeter virtual audio i/o :



Do not forget to click on SAVE button to validate your settings. Now you are ready to use VOIP application with 2 Headsets.

CASE STUDY #3

How to record Conference-Call
in 8 tracks for post production?

CASE STUDY #3

Since Voicemeeter is providing ASIO interface, we can connect audio pro DAW to Voicemeeter, not only to playback into Voicemeeter Virtual input, but also to record the Voicemeeter Virtual Output (which is composed of 8 channels).



If we connect for example REAPER to the Voicemeeter Virtual ASIO point, we can manage 8 channels recording. And the COMPOSITE buttons is there to feed these 8 channels with the 3 Voicemeeter inputs before fader (pre fader).

Of course channel 1,2 remain unchanged compared to other modes, but the 6 other channels are replaced by Voicemeeter inputs. This allows for example to make multi track recording of interview made on Skype or Google Voice and record everything on a pro audio DAW to make post production after.

Be careful to disable input monitoring in your recorder application to avoid feedback loop (prevent signal to go again into Voicemeeter virtual input).



REAPER recording 4 stereo tracks coming from Voicemeeter virtual ASIO output.

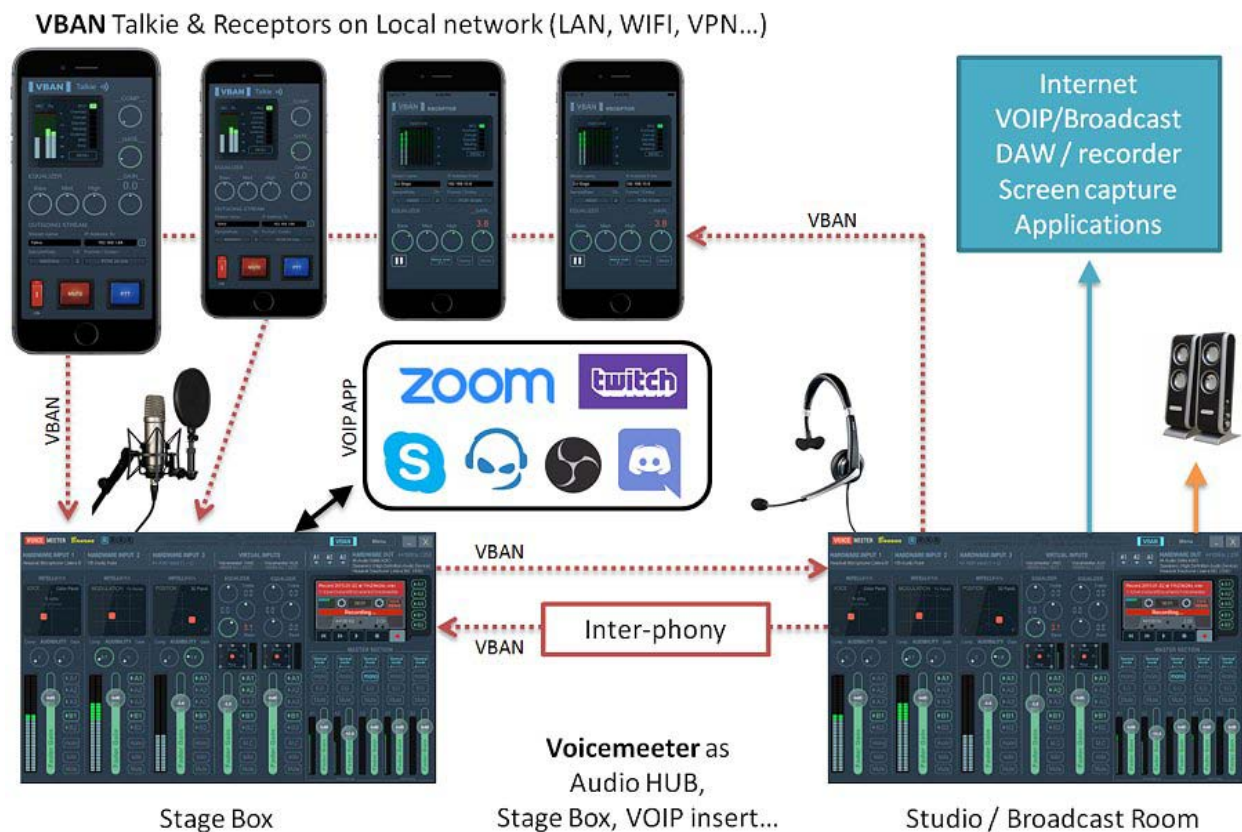
VBAN

VB-Audio Network

VBAN: VB-Audio Network

VBAN Protocol, based on a simple UDP protocol, has been designed for real-time transport of digital audio stream in IP-based network environments. It provides an easy ways to send / receive audio to / from any computers on a **local network**.

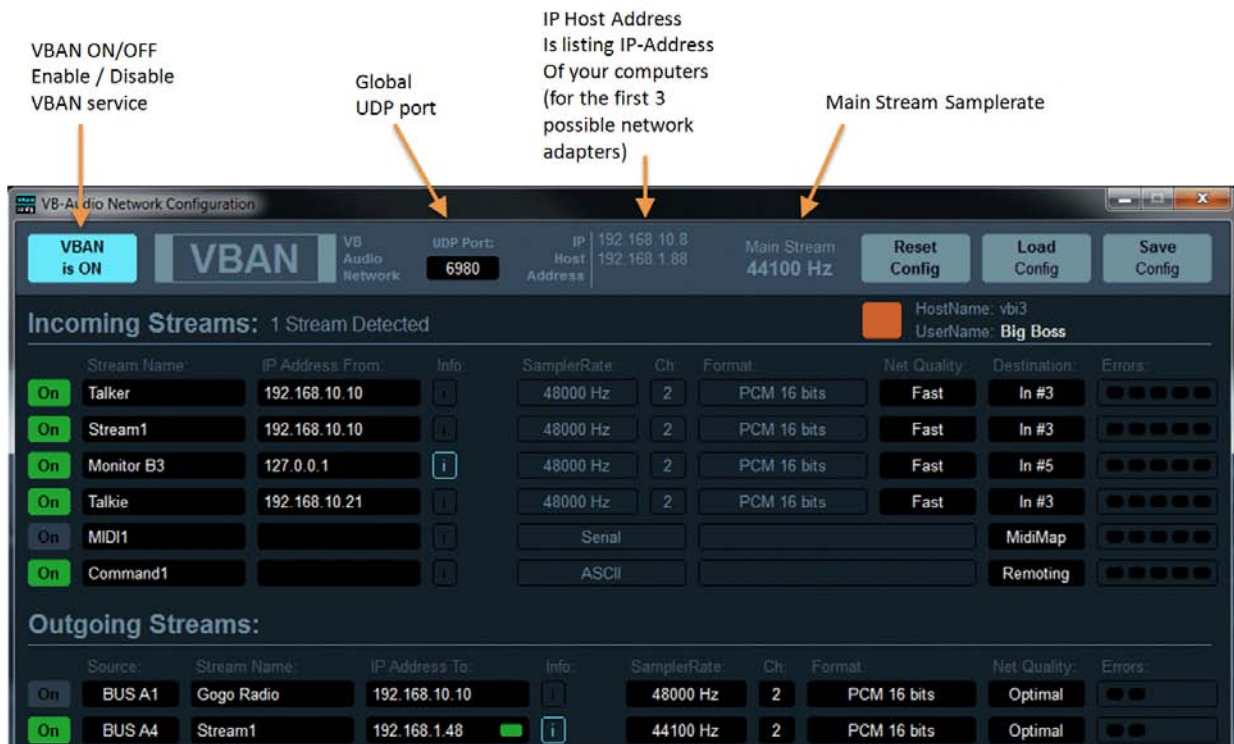
VBAN-Talkie and VBAN-Receptor are applications for mobile device (iOs / Android) also implementing the VBAN Protocol to send and receive audio stream from or to Voicemeeter.



VBAN Protocol is free to use to be implemented everywhere. The PCM native Audio protocol, the VBAN-TEXT protocol and the VBAN-MIDI protocol are public. You can get specification document on our support page: <https://vb-audio.com/Services/support.htm> and find numerous projects using it on GitHub.

Open VBAN Configuration dialog box:

Click on VBAN icon to open the configuration dialog box below and configure your incoming stream (the audio stream from other computer you want to hear) and your outgoing stream (the audio stream you want to send to other computers).



With Voicemeeter, it is possible to listen to 4x streams (on any input) and send 4 streams to different computers or mobile device (audio source is given by BUS A or BUS B Source).

A VBAN Stream in Voicemeeter can be set in any standard samplerate from 11025 Hz to 96 kHz in 16 or 24 bits resolution with 1 to 8 channels (mono sound to 7.1). It allows transporting high quality audio in native PCM format on your local network.

It is possible to broadcast an audio stream by using the 255 IP Address. For example giving 192.168.1.255 as destination address will send stream to all computers of the network 192.168.1.xxx (REM: such broadcast UDP stream could not pass through router or WIFI Access Point – usually forbidding UDP broadcast)

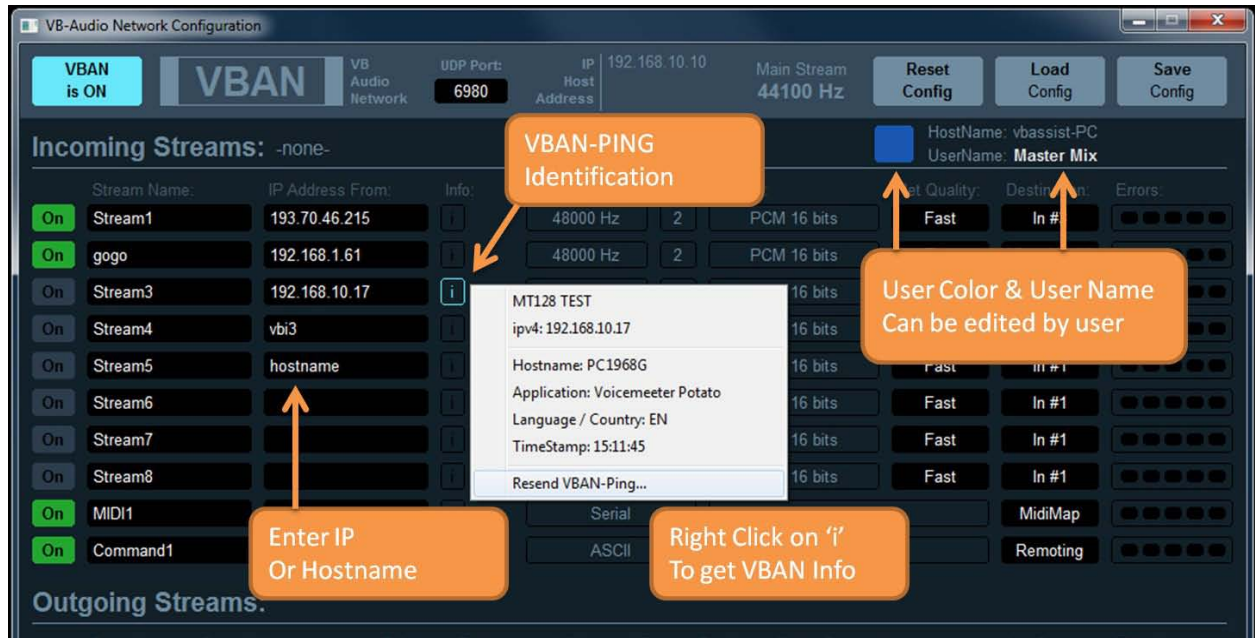
VBAN can also transport serial and text to remote Voicemeeter with MIDI message or specific request script. That's why Voicemeeter also offers a Serial and an ASCII incoming stream.

For VBAN identification / VBAN-Chat service, it is also possible to define a USER NAME and a color.

VBAN outgoing stream section now includes a VBAN-MIDI stream, getting MIDI stream from the MIDI-Mapping. It allows sending all incoming MIDI or a particular MIDI source (including MIDI output for MIDI Feedback) through the network. Then it is possible to use a MIDI Controller on the network (by using VBAN2MIDI application) with both VBAN MIDI-IN and VBAN-MIDI Out

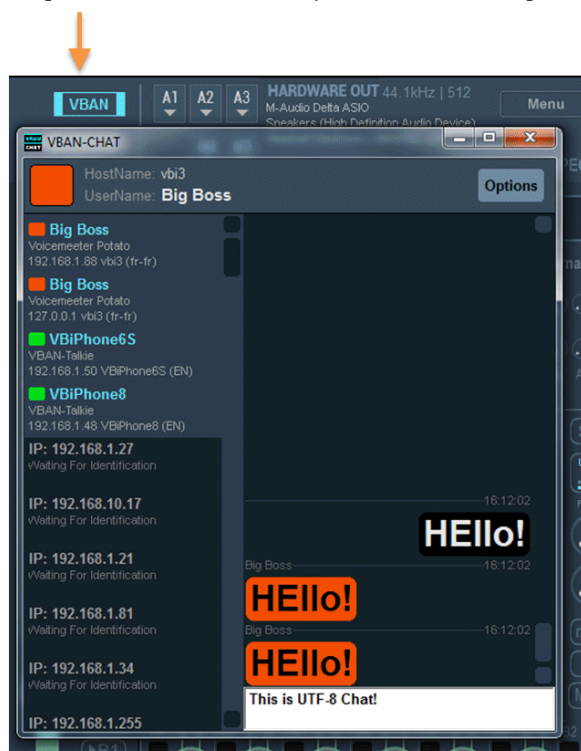
VBAN Services / Identification

New services have been implemented to simplify user experience, especially to validate connections. The 'i' right after the IP-Address field is highlighted when the connection is validated by a VBAN-Ping hand check. Right click on 'i' to get further information about distant VBAN unit.



IP-Address field also accept hostname (instead of IP-Address).

Right click on VBAN icon to open VBAN-Chat dialog box



The VBAN Chat service is implementing basic CHAT functions to talk between VBAN-units.

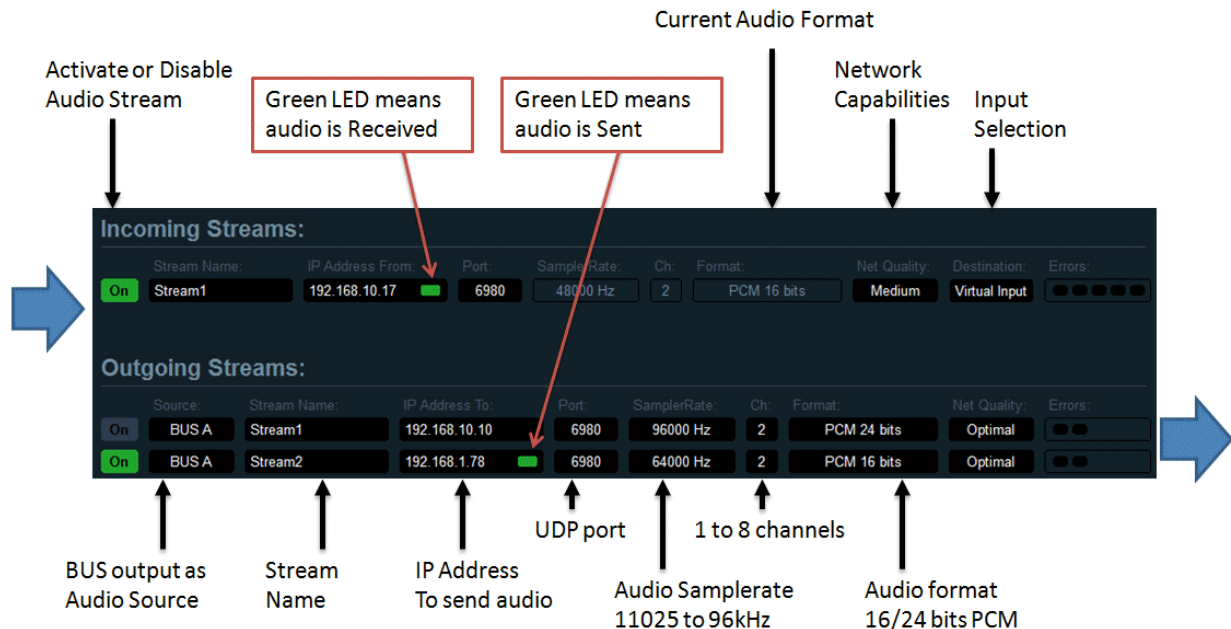
VBAN-Chat is list all IP-Address used by the VBAN configuration dialog box and all IP-Address identified by a VBAN-Ping. Then you may see all connected unit around.

When sending a TEXT message, all connected VBAN-unit will receive it and automatically display the VBAN-Chat Dialog box.

OPTION menu allows changing some display option and font size. It is also possible to send <nudge> and <alert>.

Configure VBAN Audio Stream

We can configure VBAN stream just by clicking on black fields in the dialog box. An edit box or popup menu will appear to let you define parameters. UDP port used by VBAN is 6980 per default. An Audio Stream is defined by its NAME, IP-ADDRESS FROM (and UDP port). To receive an audio stream these 3 parameters must be the same on receiver.



Send audio stream to other computer / device:

To select an outgoing stream, define stream name and destination IP-address of the target computer of your local network and switch it ON. The audio stream being sent will come from the selected source (BUS A or BUS B)

Receive audio stream from other computer / device:

On incoming stream, RIGHT CLICK on "Stream name" area or "IP Address from" area to get the list of current detected incoming stream and select it directly. Otherwise it is possible to edit Stream Name and IP-Address manually. Switch ON the Stream to receive audio on virtual input strip.

NETWORK QUALITY: This parameter, more useful on incoming stream, allows tweaking the audio stream stability in case of bad or busy network. FAST means the network is able to transport audio without delay or error, SLOW is made for busy network, where audio packet can be delayed or lost more often than usual.

ERROR LED: shown on the right are blinking red in case of reception errors:

- 1- Overload: we received too much packets (audio stream comes too fast)
- 2- Corrupt: we received corrupted packets
- 3- Disorder: we received older packets
- 4- Missing: we missed packets (lost)
- 5- Underrun: not enough packets received (audio stream comes too slow or is stopped).

REM: If too much overload & underrun errors are appearing, you may change the Network Quality parameter to FAST or more SLOW settings.

Additional VBAN-MIDI or Command stream.

Incoming streams section offers 2 other specific VBAN Streams to receive MIDI or TEXT. Opposite to Audio Stream, MIDI or TXT streams do not need an "IP-Address From" and can manage any message coming from anywhere. This is typically done to allow remoting Voicemeeter from several points in the same time. Note the MIDI Stream also feeds Voicemeeter MIDI Mapping (that is also received by MacroButton).

Incoming Streams: -none-

	Stream Name:	IP Address From:	Port:	SamplerRate:	Ch:	Format:	Net Quality:	Destination:	Errors:
On	Stream1	192.168.10.17	6980	48000 Hz	2	PCM 16 bits	Fast	Virtual In #1	●●●●●●
On	Stream1	192.168.10.11	6980	48000 Hz	2	PCM 16 bits	Fast	In #3	●●●●●●
On	Stream3	192.168.10.10	6980	48000 Hz	2	PCM 16 bits	Fast	In #3	●●●●●●
On	Room 3	192.168.10.52	6980	48000 Hz	2	PCM 16 bits	Fast	In #2	●●●●●●
On	Stream5	192.168.10.53	6980	48000 Hz	2	PCM 16 bits	Fast	In #2	●●●●●●
On	Stream6		6980	48000 Hz	2	PCM 16 bits	Fast	In #1	●●●●●●
On	Stream7		6980	48000 Hz	2	PCM 16 bits	Fast	In #1	●●●●●●
On	Stream8		6980	48000 Hz	2	PCM 16 bits	Fast	In #1	●●●●●●
On	MIDI1		6980	115200 bps Serial		90 00 00		MidiMap	●●●●●●
On	Command1		6980	256000 bps UTF8		strip(0).mute=1,strip(1).mute=1,strip(2).mute=		Remoting	●●●●●●

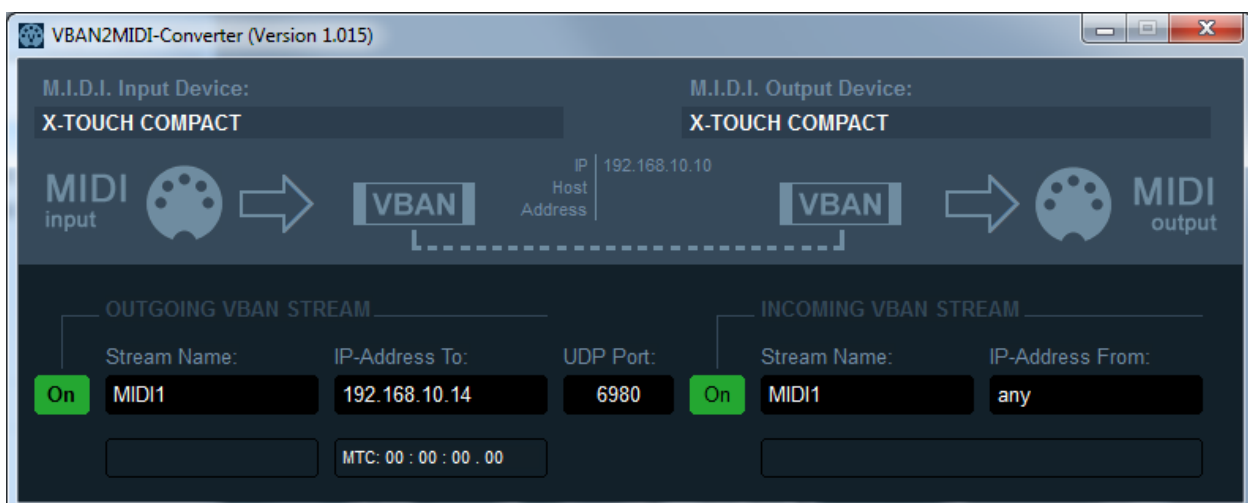
No address = any Last received TXT message Last received MIDI message

VBAN MIDI messages and TEXT commands can be sent by MacroButton (see next pages).

VBAN MIDI messages can also be sent by VBAN2MIDI application (installed with Voicemeeter).

VBAN2MIDI application.

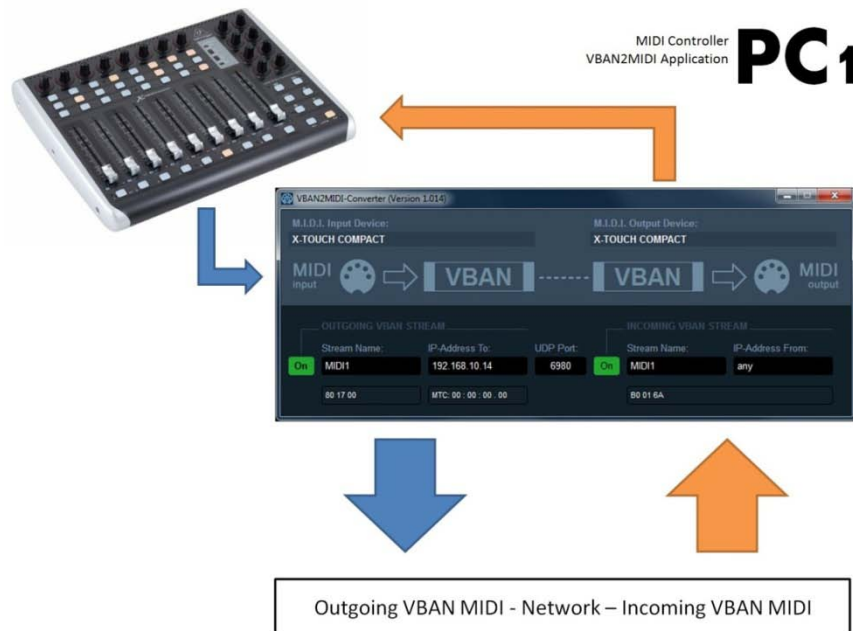
This simple standalone application allow converting a physical MIDI input into a VBAN outgoing stream (LEFT Side) and the opposite: from a VBAN MIDI Stream, send incoming data to a physical MIDI output (Right Side).



This application can also be used to connect a MIDI controller on second PC through the network with Voicemeeter MIDI mapping as explained in the next page...

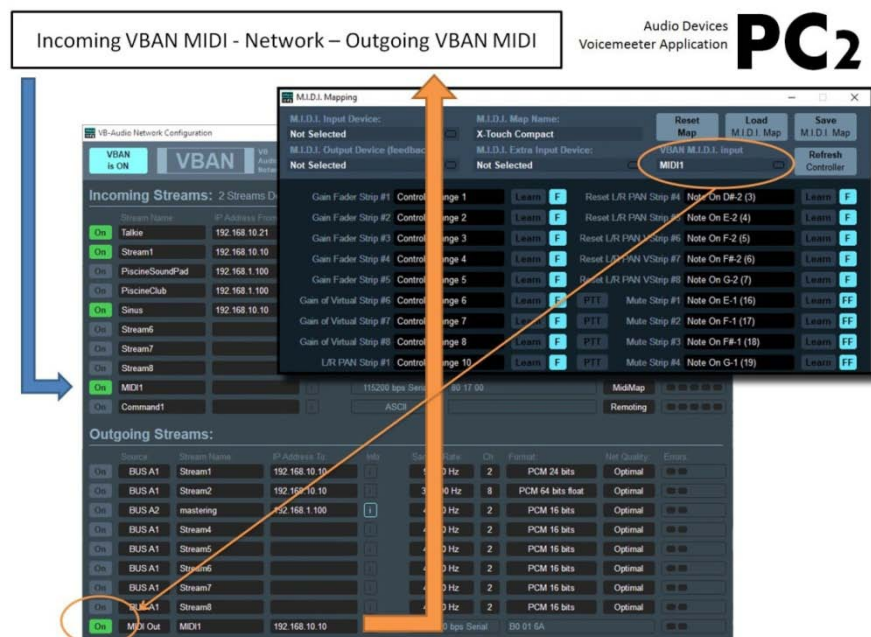
1- Connect your controller on PC1 with VBAN2MIDI to manage outgoing and incoming VBAN MIDI STREAM.

On the left side, the outgoing stream: MIDI Controller out -> MIDI Input Device -> VBAN2MIDI -> Target IP Address On the right side, the incoming stream (MIDI feedback) from any IP Address -> VBAN2MIDI -> MIDI output device -> MIDI Controller In.



2- The MIDI mapping always take in account the incoming VBAN-MIDI stream activated in the VBAN -Dialog BOX (check the name is MIDI1 on transmitter and on receptor side).

You can see incoming MIDI message in VBAN Dialog box and go in MIDI mapping to learn on desired control. "VBAN MIDI Input" in MIDI mapping dialog box is an info box related to VBAN MIDI outgoing stream and should be labeled "VBAN MIDI Output" instead.

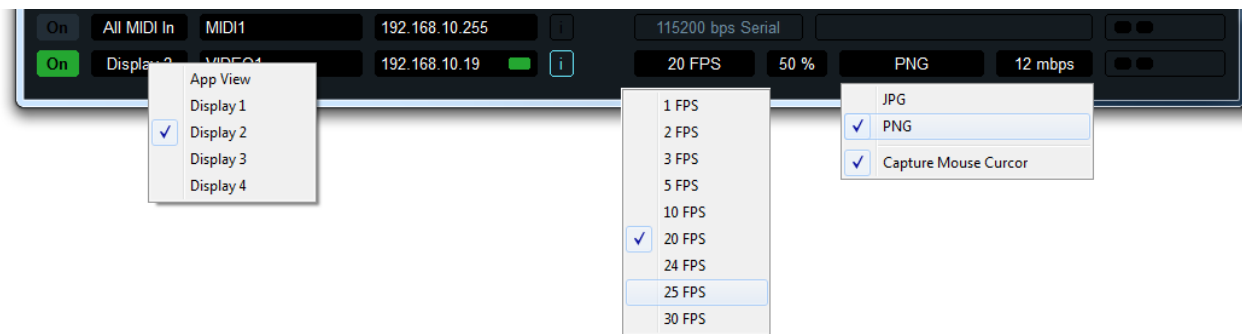


Screen Sharing / mirroring with VBAN-Frame.

Thanks to the new VBAN-Frame protocol, it is possible to send video stream on your local network from a screen capture. Voicemeeter can screen capture one of your 4 possible display or its own main view to mirror the Voicemeeter main view on another device.

VBAN FRAME outgoing stream:

As last outgoing stream, Voicemeeter offers the VBAN-Frame stream, allowing sharing screen with another computer using VBAN-Screen application.

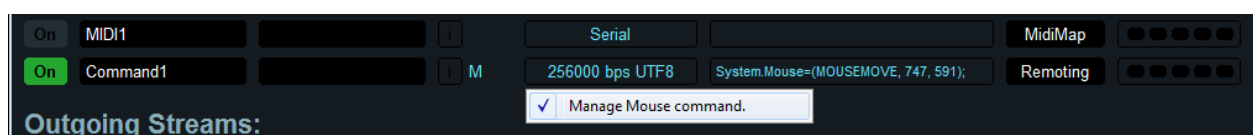


It can capture an entire display (from 4 connected screens – 4K resolution max) or the main window interface only (app view). It is done by sending PNG or JPG frame up to 30 times per second to the destination address through VBAN-Frame protocol.

The percent parameter is for JPG quality. The net quality is a theoretical limitation to give the priority to audio stream (12 mbps by default, does not prevent having 30mbps or more).

Screen Sharing and remote control:

If using VBAN-Screen application to display VBAN-FRAME sent by Voicemeeter, Voicemeeter can receive Mouse events from VBAN-Screen application (by the VBAN-TEXT stream) to be controlled remotely.



To do so, right-click on the samplerate or format field (on incoming VBAN-TEXT stream) to activate the "Mouse Management". "M" is displayed to notify that Voicemeeter is processing Mouse Event so that it can be controlled remotely by VBAN-Screen.

Screen Mirroring:

By using "App View" as source, you can share your Voicemeeter main view with VBAN-Screen application through VBAN-Frame Stream (on your local network).

Outgoing Streams:

Source	Stream Name	IP Address To	Port	Samplerate	Ch.	Format	Net Quality	Errors
On	BUS A		6980	48000 Hz	2	PCM 16 bits	Optimal	
On	BUS B		6980					
On	BUS C		6980					
On	BUS D		6980					
On	BUS E		6980					
On	BUS F		6980					
On	BUS G		6980					
On	BUS H		6980					
On	BUS I		6980					
On	BUS J		6980					
On	BUS K		6980					
On	BUS L		6980					
On	BUS M		6980					
On	BUS N		6980					
On	BUS O		6980					
On	BUS P		6980					
On	BUS Q		6980					
On	BUS R		6980					
On	BUS S		6980					
On	BUS T		6980					
On	BUS U		6980					
On	BUS V		6980					
On	BUS W		6980					
On	BUS X		6980					
On	BUS Y		6980					
On	BUS Z		6980					
On	BUS AA		6980					
On	BUS AB		6980					
On	BUS AC		6980					
On	BUS AD		6980					
On	BUS AE		6980					
On	BUS AF		6980					
On	BUS AG		6980					
On	BUS AH		6980					
On	BUS AI		6980					
On	BUS AJ		6980					
On	BUS AK		6980					
On	BUS AL		6980					
On	BUS AM		6980					
On	BUS AN		6980					
On	BUS AO		6980					
On	BUS AP		6980					
On	BUS AQ		6980					
On	BUS AR		6980					
On	BUS AS		6980					
On	BUS AT		6980					
On	BUS AU		6980					
On	BUS AV		6980					
On	BUS AW		6980					
On	BUS AX		6980					
On	BUS AY		6980					
On	BUS AZ		6980					
On	BUS BA		6980					
On	BUS BB		6980					
On	BUS BC		6980					
On	BUS BD		6980					
On	BUS BE		6980					
On	BUS BF		6980					
On	BUS BG		6980					
On	BUS BH		6980					
On	BUS BI		6980					
On	BUS BJ		6980					
On	BUS BK		6980					
On	BUS BL		6980					
On	BUS BM		6980					
On	BUS BN		6980					
On	BUS BO		6980					
On	BUS BP		6980					
On	BUS BQ		6980					
On	BUS BR		6980					
On	BUS BS		6980					
On	BUS BT		6980					
On	BUS BU		6980					
On	BUS BV		6980					
On	BUS BW		6980					
On	BUS BX		6980					
On	BUS BY		6980					
On	BUS BZ		6980					
On	BUS CA		6980					
On	BUS CB		6980					
On	BUS CC		6980					
On	BUS CD		6980					
On	BUS CE		6980					
On	BUS CF		6980					
On	BUS CG		6980					
On	BUS CH		6980					
On	BUS CI		6980					
On	BUS CJ		6980					
On	BUS CK		6980					
On	BUS CL		6980					
On	BUS CM		6980					
On	BUS CN		6980					
On	BUS CO		6980					
On	BUS CP		6980					
On	BUS CQ		6980					
On	BUS CR		6980					
On	BUS CS		6980					
On	BUS CT		6980					
On	BUS CU		6980					
On	BUS CV		6980					
On	BUS CW		6980					
On	BUS CX		6980					
On	BUS CY		6980					
On	BUS CZ		6980					
On	BUS DA		6980					
On	BUS DB		6980					
On	BUS DC		6980					
On	BUS DD		6980					
On	BUS DE		6980					
On	BUS DF		6980					
On	BUS DG		6980					
On	BUS DH		6980					
On	BUS DI		6980					
On	BUS DJ		6980					
On	BUS DK		6980					
On	BUS DL		6980					
On	BUS DM		6980					
On	BUS DN		6980					
On	BUS DO		6980					
On	BUS DP		6980					
On	BUS DQ		6980					
On	BUS DR		6980					
On	BUS DS		6980					
On	BUS DT		6980					
On	BUS DU		6980					
On	BUS DV		6980					
On	BUS DW		6980					
On	BUS DX		6980					
On	BUS DY		6980					
On	BUS DZ		6980					
On	BUS EA		6980					
On	BUS EB		6980					
On	BUS EC		6980					
On	BUS ED		6980					
On	BUS EE		6980					
On	BUS EF		6980					
On	BUS EG		6980					
On	BUS EH		6980					
On	BUS EI		6980					
On	BUS EJ		6980					
On	BUS EK		6980					
On	BUS EL		6980					
On	BUS EM		6980					
On	BUS EN		6980					
On	BUS EO		6980					
On	BUS EP		6980					
On	BUS EQ		6980					
On	BUS ER		6980					
On	BUS ES		6980					
On	BUS ET		6980					
On	BUS EU		6980					
On	BUS EV		6980					
On	BUS EW		6980					
On	BUS EX		6980					
On	BUS EY		6980					
On	BUS EZ		6980					
On	BUS FA		6980					
On	BUS FB		6980					
On	BUS FC		6980					
On	BUS FD		6980					
On	BUS FE		6980					
On	BUS FF		6980					
On	BUS FG		6980					
On	BUS FH		6980					
On	BUS FI		6980					
On	BUS FJ		6980					
On	BUS FK		6980					
On	BUS FL		6980					
On	BUS FM		6980					
On	BUS FN		6980					
On	BUS FO		6980					
On	BUS FP		6980					
On	BUS FQ		6980					
On	BUS FR		6980					
On	BUS FS		6980					
On	BUS FT		6980					
On	BUS FU		6980					
On	BUS FV		6980					
On	BUS FW		6980					
On	BUS FX		6980					
On	BUS FY		6980					
On	BUS FZ		6980					
On	BUS GA		6980					
On	BUS GB		6980					
On	BUS GC		6980					
On	BUS GD		6980					
On	BUS GE		6980					
On	BUS GF		6980					
On	BUS GG		6980					
On	BUS GH		6980					
On	BUS GI		6980					
On	BUS GJ							

Screen Sharing:

By using "Display" as source, you can share your entire screen with VBAN-Screen application through VBAN-Frame Stream (on your local network).

Outgoing Streams:

Source	Stream Name	IP Address To	Port	Samplerate	Ch	Format	Net Quality	Errors
On	BUS 1		6980	48000 Hz	2	PCM 16 bits	Optimal	
On	BUS 2		6980	48000 Hz	2	PCM 16 bits	Optimal	
On	BUS 3		6980	48000 Hz	2	PCM 16 bits	Optimal	
On	BUS 4		6980	48000 Hz	2	PCM 16 bits	Optimal	
On	MIDI1		6980	115200 bps Serial				
On	Display 1	127.0.0.1	6981	20 FPS	50 %	JPG	12 mbps	

Destination IP address
Use 127.0.0.1 to send the stream on the same PC

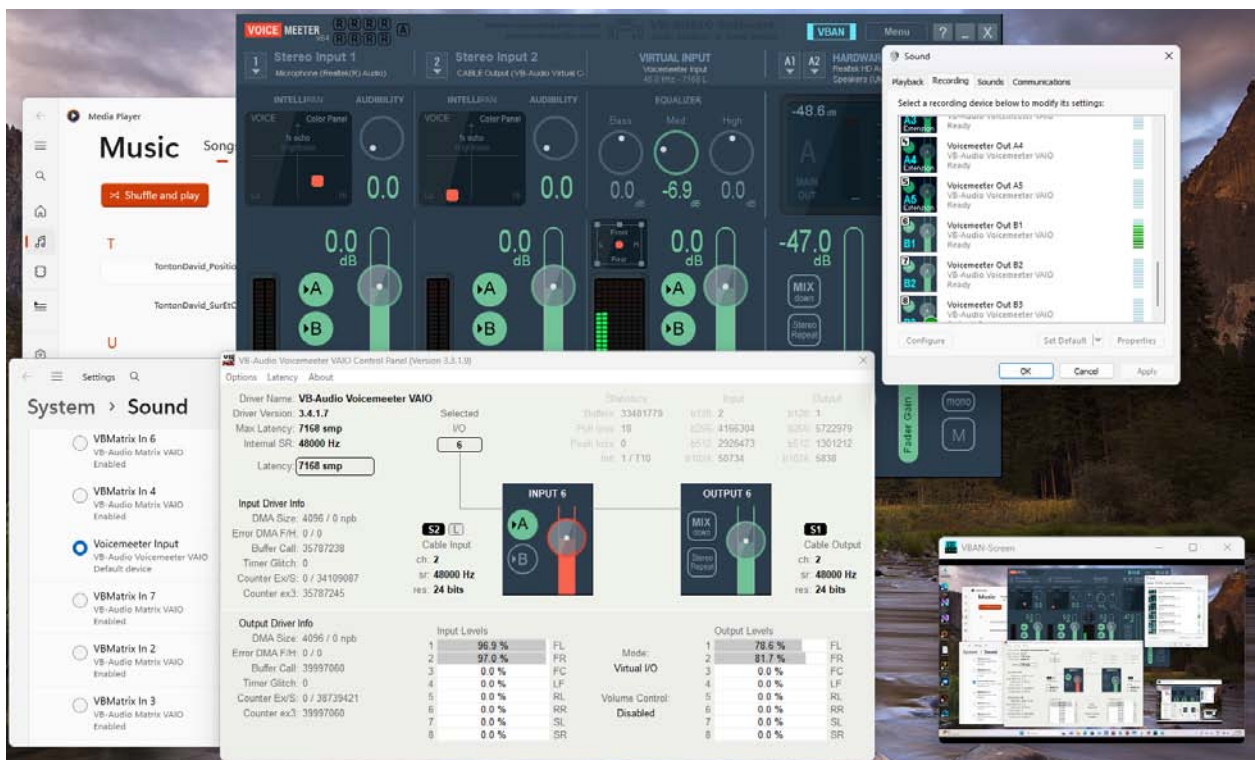
Define UDP Port
If VBAN-Screen is running on the same PC, you may use a different UDP port

Display #1
Capture Your entire first display

JPG Quality
Adjust percent from 1 to 100 %

Image Format
Use JPG to reduce network bandwidth

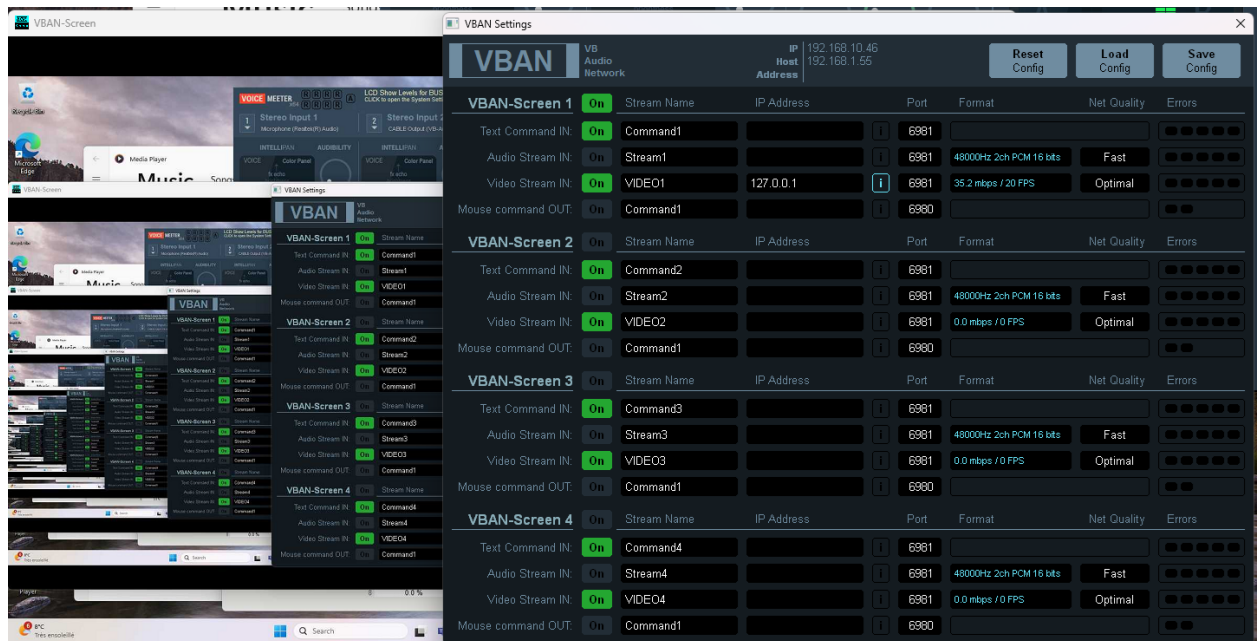
As you can see on the following screenshot, VBAN-Screen application now shows the entire captured screen



VBAN-Screen application is installed with VB-Audio Matrix package but can also be downloaded from our VBAN web page: <https://vb-audio.com/Voicemeeter/vban.htm#DownloadVBANSscreen>

VBAN-Screen:

To monitor a VBAN-Frame stream, you need to use VBAN-Screen application, available for PC (but will be available for MAC and other device soon). VBAN-Screen can monitor up to 4 video stream through VBAN-Frame and VBAN-Audio stream.



VBAN-Screen can also display some drawing through the VBAN-Text incoming stream (to be used as magic board).

Finally, VBAN-Screen also offers an outgoing VBAN-TEXT stream to send Mouse Command. Mouse Move, Left and Right Click (by using the CTRL key).



MACRO-Buttons

Voicemeeter Remote API

MACRO Buttons

Delivered and installed with Voicemeeter, MACRO BUTTONS Application allows creating programmable buttons to control Voicemeeter parameters. It is displaying several (4 to 80) push or 2 positions buttons with a title / sub title and the possibility to assign a keyboard shortcut / mouse / Game pad / MIDI message or even Audio Trigger.



MACRO Button is an independent application using Voicemeeter Remote API. It is also demonstrating the capability to develop a client application to control Voicemeeter by program. This is made to allow creating any new applications, with custom graphic user interface, to make automation, to make VCA or Auto Ducking process or even to process audio directly inside Voicemeeter thanks to the different possible audio interfaces and API's.

MACRO BUTTON application has been designed for Voicemeeter users, to make custom action, or group of actions on the different Voicemeeter controls and parameters:

- To mute a strip or a bus.
- To change the gain on one or several strips / busses.
- To change or toggle BUS assignations on one or several strips.

It is also possible to combine different requests to create a complex action on Voicemeeter. For example a PUSH TO TALK or AUTO DUCKING function could set the MUSIC Gain to -10db and mute other talker in the same time.

- To change voices color/audibility to make special announces.
- To Restart Audio Engine.
- To save or load a complete configuration file.

On Voicemeeter BANANA version, it is also possible to:

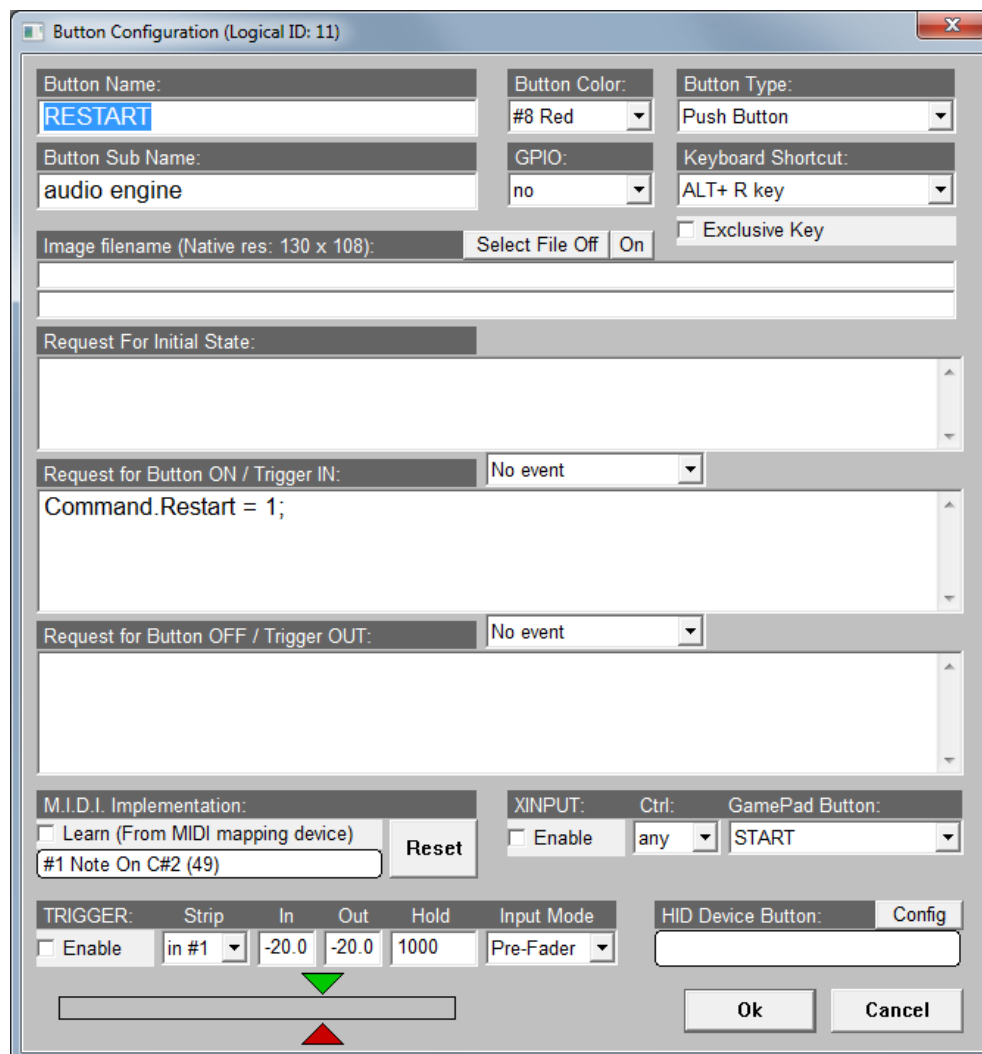
- Make voice FX by changing Modulation and Color Panel.
- Launch Sound by the integrated audio player
- Make special correction with the bus parametric EQ
- Remote all VBAN functions

Finally MACRO Buttons also provides system functions to:

- Send Keyboard Event to System Queue (to remote other applications).
- Execute any program (with possibly a command line).
- Send M.I.D.I. Message to 2x possible devices.
- Send VBAN-MIDI / VBAN TXT requests.

Configuring MACRO Buttons

Right click on the button to open the dialog box below and configure your button. It is basically possible to define 3 scripts of request(s); one for initial condition(s) (sent on startup), one sent when the button is pushed and one when the button is released.



Button type can be PUSH or 2 POSITIONS. Keyboard shortcut dropdown list proposes different Key and Mouse buttons combinations. Button color proposes 9 different buttons backgrounds.

M.I.D.I. Implementation allows assigning one M.I.D.I. Event to the button as well. The M.I.D.I. codes are coming from the M.I.D.I. device selected in the Voicemeter M.I.D.I. Mapping Dialog Box and possibly incoming VBAN MIDI stream. Check LEARN box to get message from M.I.D.I. Device. Click on RESET to remove the M.I.D.I. Code.

TRIGGER will allow handling the button according 2 thresholds on a selected input strip level. IN threshold (green cursor) will push the button when level goes over... OUT threshold (red cursor) will release the button when the level goes under. HOLD time define a minimal time to let gate opened.

XINPUT section will let you use up to 4 game pad to control a button.

HID Device Button allows connecting directly to any HID device (see details on next pages).

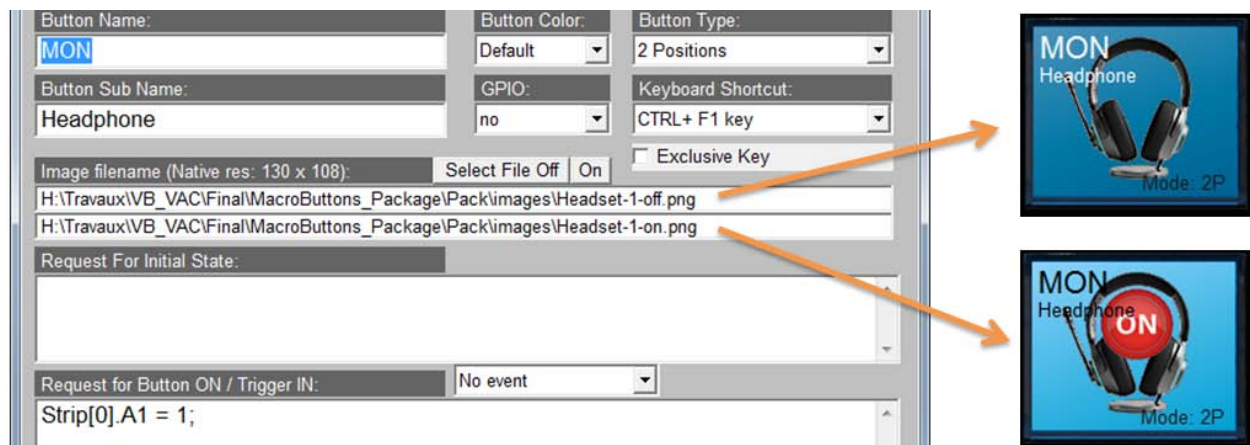
Button Color

The parameter called "Button Color" allows selecting 8 other background colors for the button.



Button Image

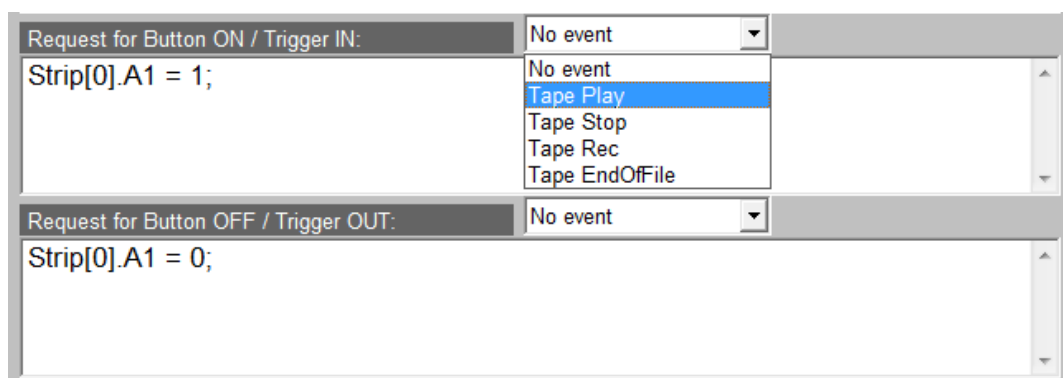
A button can display an image (one for OFF state, one for ON state). The button "Select File Off" allows selecting image for the button OFF state (button "On" for ON State). Native resolution is 130 x 108 pixels but any image size can be loaded in BMP, PNG, JPG or TIF format. If bigger than 130 x 108, the image is reframed and scaled, otherwise the image is centered.



Transparent layer (including shadow effect) is managed correctly only for PNG smaller than the native resolution (130 x 108). When an image is selected, the keyboard shortcut is not displayed.

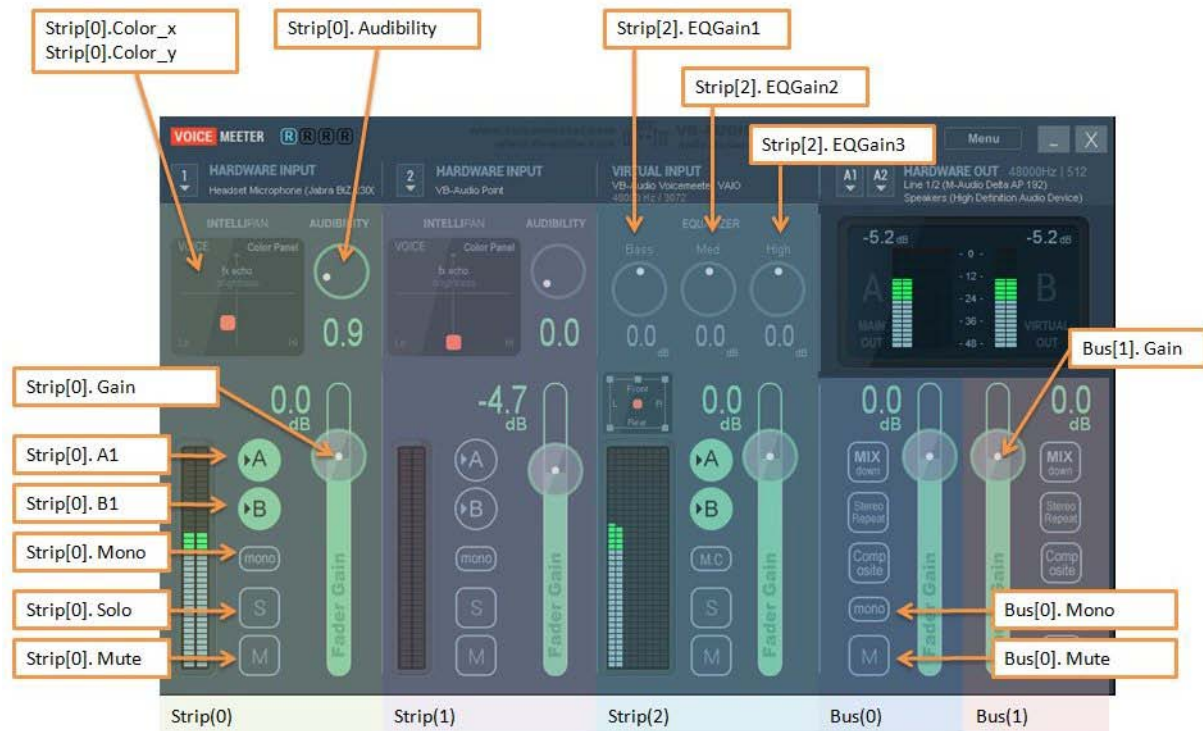
Voicemeeter Event

The button can also react according some event coming from Voicemeeter, especially the tape recorder (Tape PLAY, STOP, REC and EndOfFile).



Voicemeeter Remote Requests

Request is composed by a structured name (related to voicemeeter control or parameter) and a value or a string behind. Some instruction can be case sensitive so we recommend writing all instructions with a capital letter of each word first letter.



Request example with numbers:.

```
Strip(0).mute=1;      // MUTE ON the first strip of Voicemeeter
Strip(0).mute=0;      // UNMUTE the first strip of Voicemeeter
Strip(0).mute +=1;    // Change the current state of the Mute button

Bus(0).mono=1;        // Set the first BUS in Mono mode

Bus(0).gain=-10.0;    // set BUS Slider Gain to -10.0 dB
Strip(0).gain+=6.0;   // set Strip Slider Gain to +6.0 dB

Bus(0).gain +=3.0;    // Add 3 dB to current BUS Slider Gain
Strip(0).gain -=3;    // Remove 3 dB to current Strip Slider Gain

Command.Restart = 1;  // request to restart audio engine
```

Request example with string:.

```
Command.Load= "C:\My Documents\VMConfig1.xml"; //load Config File in Voicemeeter
```

Input Strip Parameters:

Strip index is a zero based index related to Voicemeeter version (3 strips on Voicemeeter, 5 on Voicemeeter Banana)

Strip functions/parameters

Parameter Name	Value Range	Remark	Ver.
Strip[i].Mono	0 (off) or 1 (on)	Mono Button	1
Strip[i].Mute	0 (off) or 1 (on)	Mute Button	1
Strip[i].Solo	0 (off) or 1 (on)	Solo Button	1

Strip[i].MC	0 (off) or 1 (on)	Mute Center Button	1
Strip[i].Gain	-60 to +12 db	Gain slider	1
Strip[i].Pan_x	-0.5 to +0.5		1
Strip[i].Pan_y	0 to 1.0		1
Strip[i].Color_x	-0.5 to +0.5	Physical Strip Only	1
Strip[i].Color_y	0 to 1.0	Physical Strip Only	1
Strip[i].Audibility	0 to 10	Voicemeeter 1 only	1
Strip[i].EQGain1	-12 to +12 db	Virtual Strip Only	1
Strip[i].EQGain2	-12 to +12 db	Virtual Strip Only	1
Strip[i].EQGain3	-12 to +12 db	Virtual Strip Only	1
Strip[i].Label	String	Strip Label	1
Strip[i].A1	0 (off) or 1 (on)	Out BUS Assignment	1
Strip[i].B1	0 (off) or 1 (on)	Out BUS Assignment	1
Strip[i].FadeTo	String	(dBTarget, msTime);	1
Strip[i].FadeBy	String	(dB relativechange, msTime);	1
Strip[i].VAIO	0 (off) or 1 (on)	Physical strip only	1

i= strip zero based index. J= Bus zero based index.

Strip Audio Devices (physical strip only)

Parameter Name	Value Range	Remark	Ver.
Strip[i].device.wdm	Device Name	String	1
Strip[i].device.ks	Device Name	String	1
Strip[i].device.mme	Device Name	String	1
Strip[i].device.asio	Device Name	String	1

i= strip zero based index.

BUS Parameters:

Bus index is a zero based index related to Voicemeeter version (2 busses on Voicemeeter, 5 on Voicemeeter Banana)

Bus functions/parameters

Parameter Name	Value Range	Remark	Ver.
Bus[i].Mono	0 (off), 1 (mono) 2 (stereo reverse)	Mono Button	1
Bus[i].Mute	0 (off) or 1 (on)	Mute Button	1
Bus[i].Gain	-60 to +12 db	Gain slider	1
Bus[i].Label	String	Strip Label	1
Bus[i].mode.normal	0 (off) or 1 (on)	BUS Mode	1
Bus[i].mode.Amix	0 (off) or 1 (on)	BUS Mode	1
Bus[i].mode.Repeat	0 (off) or 1 (on)	BUS Mode	1
Bus[i].mode.Composite	0 (off) or 1 (on)	BUS Mode	1
Bus[i].FadeTo	String	(dBTarget, msTime);	1
Bus[i].FadeBy	String	(dB change,msTime);	1
Bus[i].VAIO	0 (off) or 1 (on)	Physical BUS only	1

i= bus zero based index.

BUS Audio Devices (physical bus only)

Parameter Name	Value Range	Remark	Ver.
Bus[i].device.wdm	Device Name	Write only	1
Bus[i].device.ks	Device Name	Write only	1
Bus[i].device.mme	Device Name	Write only	1

Bus[i].device.asio	Device Name	Write only	1
--------------------	-------------	------------	---

i= bus zero based index.

Special functions to make timed fade in/out:

Strip().FadeTo or Bus().FadeTo function allow to set the gain slider with a progressive fade by settings a dB value and a time to reach it (time in ms between 0 and 120000). The parameter is a string since it needs 2 parameters, example:

```
Strip(0).FadeTo= (-10.0, 500); //will set the slider to -10 dB in 500ms
Strip(0).FadeTo= (-20.0, 2000); //will set the slider to -10 dB in 2 seconds
Bus(0).FadeTo= (0.0, 1500); //will set the bus slider to 0 dB in 1,5 seconds
```

Same remark is valid for the instruction FadeBy

System Settings Option:

Voicemeeter remote API also allows changing different configuration parameters: Patch and System Settings.

Patch Options

Parameter Name	Value Range	Remark	Ver.
Patch.asio[i]	0 to ASIO input	ASIO Patch	1
Patch.composite[j]	0 to 22 (1 = first channel)	0 = default BUS	2
Patch.insert[k]	0 (off) or 1 (on)	Virtual ASIO insert	2
Patch.PostFaderComposite	0 (PRE) or 1 (POST)	COMPOSITE Mode	2
Patch.PostFxInsert	0 (PRE) or 1 (POST)	Virtual INSERT Point	2

i= input channel zero based index (for physical strips only – 2 channels per strip).

j= composite channel zero based index (0 to 7) COMPOSITE mode is made of 8 channels.

k= input channel zero based index (0 to 21).

System Settings

Parameter Name	Value Range	Remark	Ver.
Option.sr	44.1, 48, 88.2, 96, 176.4 or 192 kHz	Preferred samplerate	1
Option.ASI0sr	0: default ASIO Samplerate 1: preferred samplerate.	For ASIO driver connected on output A1	1
Option.delay[i]	0 to 500ms max	BUS output delay	1
Option.buffer.mme	128 to 2048	MME buffer size	1
Option.buffer.wdm	128 to 2048	WDM buffer size	1
Option.buffer.ks	128 to 2048	KS buffer size	1
Option.buffer.asio	128 to 2048	ASIO Buffer Size	1
Option.mode.exclusif	0 (off) or 1 (on)	WDM input exclusive	1
Option.mode.swift	0 (off) or 1 (on)	WDM swift mode	1

i= output zero based index (for physical bus only)

Special Commands:

Special Commands are not made to change parameter but to make an action. Here some command presented in the menu (write only of course).

Command Name	Value Range	Remark	Ver.
Command.Shutdown	1 (unused)	Shutdown Voicemeeter	1
Command.Show	0 = Hide 1 = Show 2 = ShowTop	Show / Hide Voicemeeter	1
Command.Show	1 (unused)	Show Voicemeeter	1
Command.Restart	1 (unused)	Restart Audio Engine	1
Command.Reset	1 (unused)	Reset All configuration	1
Command.Save	String	Complete filename (xml)	1
Command.Load	String	Complete filename (xml)	1
Command.Lock	0 or 1	(Un)Lock GUI (Menu option)	1
Command.Button[i].State	0 or 1	Change Macro Button State	1
Command.Button[i].StateOnly	0 or 1	Change Button State only	1
Command.Button[i].Trigger	0 or 1	Change Trigger Enable State	1
Command.Button[i].Color	0 to 8	Change the Button Color	1
Command.DialogShow.VBANCHAT	0 or 1	Show VBAN-Chat Dialog	1
Command.SaveBUSEQ[j]	String	Complete filename (xml)	2
Command.LoadBUSEQ[j]	String	Complete filename (xml)	2
Command.Preset[k].Recall	1 (unused)	Recall Preset Scene	1
Command.Preset[k].Store	String	Update Preset Scene (with a new name if the string is not empty)	1
Command.RecallPreset	String	Recall Preset by Name (Recall current preset if string is empty)	1
Command.UpdatePreset	String	Update Preset by Name (Update current preset if string is empty)	

i= MacroButton ID (zero based index). j = BUS index (zero based index).

Typical use:.

```
Command.Restart = 1; // request to restart audio engine
```

```
Command.Load= "C:\My Documents\VMConfig1.xml"; // load Config File in Voicemeeter.
```

NOTE: command requests are prior to other requests. It means other type of request could not be processed if in the same request packet than a command request. For example Shutdown Request, simply closes the program without processing next request. LOAD request reset all possible previous or next requests present in the same packet.

WARNING: "Command.Button" must be used in VBAN-TEXT request only, see next chapter.

Button command for button interactions

It is also possible to change the state of one or several other buttons by using the following commands, to change the state only of a button, or emulate PUSH / RELEASE function.

```
Button(5).State = 1; //PUSH the button ID 5
Button(5).State = 0; //RELEASE the button ID 5
```

```
Button(5).StateOnly = 1; //set the button ID 5 in pushed state
```

This instruction below works only in INIT Script:

```
Button.State = 0; //change the state of the current button
```

To change the Trigger option on a given button you may use the following instruction

```
Button(5).Trigger = 1; //Enable Audio Trigger on button ID 5
Button(5).Trigger = 0; //Disable Audio Trigger on button ID 5
```

Exclusive Commands

MacroButtons offers some local command instruction, executed in MacroButton (command are not send to Voicemeeter but managed by MacroButton application directly).

Wait command to create sequence of requests

With the September 2019 version, the Wait command allows to introduce timing pause between requests and finally create a sequence of requests.

```
Strip(0).gain=-12.0; // will be send on button push
Wait(2000);
Strip(0).gain=0.0; // will be sent 2 seconds later
Wait(1000); // wait one second again
Strip(0).FadeTo= (-10.0, 1000);
Wait(1000);
Strip(0).FadeTo= (0.0, 1000);
```

Load Button map

With the Mars 2020 version, the Load command allows to use a button to load another Button Map (MacroButtons config file) previously stored with the SAVE function in the system menu of the MacroButtons application.

```
Load("filename"); //load button map in MacroButtons
```

Show command to Hide/Show the Macro Button Application

With the October 2021 version, the Show command allows to Hide / Show the MacroButtons Window (Graphic User Interface).

```
Show(0); // Hide Macro Buttons Windows
Show(1); // Show Macro Buttons Windows
```

Warning: think to implement the Show(1) command to be sure to show the application again.

VBAN Options:

Voicemeeter remote API allows controlling VBAN features and all parameters presented on the VBAN dialog Box. Then it is possible to remote VBAN functions to route/send/receive audio to/from different computers.

VBAN Options

Parameter Name	Value Range	Remark	Ver.
vban.Enable	0 (off) or 1 (on)	VBAN functions	1
vban.instream[i].on	0 (off) or 1 (on)	Stream On/Off	1
vban.instream[i].name	String	Stream Name	1
vban.instream[i].ip	String	IP Address from	1
vban.instream[i].port	16 bit range	PORT (Ethernet)	1
vban.instream[i].sr	11025 to 96 kHz	Read only	1
vban.instream[i].channel	1 to 8	Read only	1
vban.instream[i].bit	VBAN data type	Read only	1
vban.instream[i].quality	0 to 4	0 = Optimal	1
vban.instream[i].route	0 to 8	Strip Selector	1
vban.outstream[i].on	0 (off) or 1 (on)	Stream On/Off	1
vban.outstream[i].name	String	Stream Name	1
vban.outstream[i].ip	String	IP Address To	1
vban.outstream[i].port	16 bit range	PORT (Ethernet)	1
vban.outstream[i].sr	11025 to 96 kHz		1
vban.outstream[i].channel	1 to 8		1
vban.outstream[i].bit	VBAN data type	1 = 16 bits PCM	1
vban.outstream[i].quality	0 to 4	0 = Optimal	1
vban.outstream[i].route	0 to 8 0 to 4 0 to 7	BUS selector Screen capture select MIDI source select	1
vban.outstream[i].vfps	1 to 30	Video FPS	1
vban.outstream[i].vFormat	1(PNG) / 2(JPG)	Video Image Format.	1
vban.outstream[i].vQuality	1 to 100 %	Video JPG quality	1
vban.outstream[i].vCursor	0 (off) or 1 (on)	Video Cursor Capture	1

i= zero based index (0 to 7).

MIDI Source can be set by route instruction with this bit combination:

- MIDI Input : 0x01 / MIDI Aux input : 0x02 / VBAN IN : 0x04 / MIDI OUT : 0x08
- For example: ALL MIDI IN = 0x01+0x02+0x04 = 7

The following parameters change are producing an Audio Engine Restart:

- vban.Enable
- vban.instream[i].port
- vban.instream[i].quality
- vban.outstream[i].quality

VBAN SampleRate:

11025, 16000, 22050, 24000, 32000, 44100, 48000, 64000, 88200, 96000 Hz

VBAN Quality:

0 (Optimal), 1 (Fast), 2 (Medium), 3 (Slow), 4 (very slow). Quality parameter is conditioning the size of internal stack (also the latency) to cope to possible network instability and then increase the stream stability if required. **Optimal** quality considers the network is able to transmit packet in real time (with a good regularity), while **very slow** quality considers the network can have timing problem and unexpected waiting cycles. This parameter is more useful on receiver side while the transmitter is supposed to work always in OPTIMAL mode.

VBAN Bit Resolution / data format:

Allowed Format are 1 (16 bit PCM) or 2 (24 bits PCM).

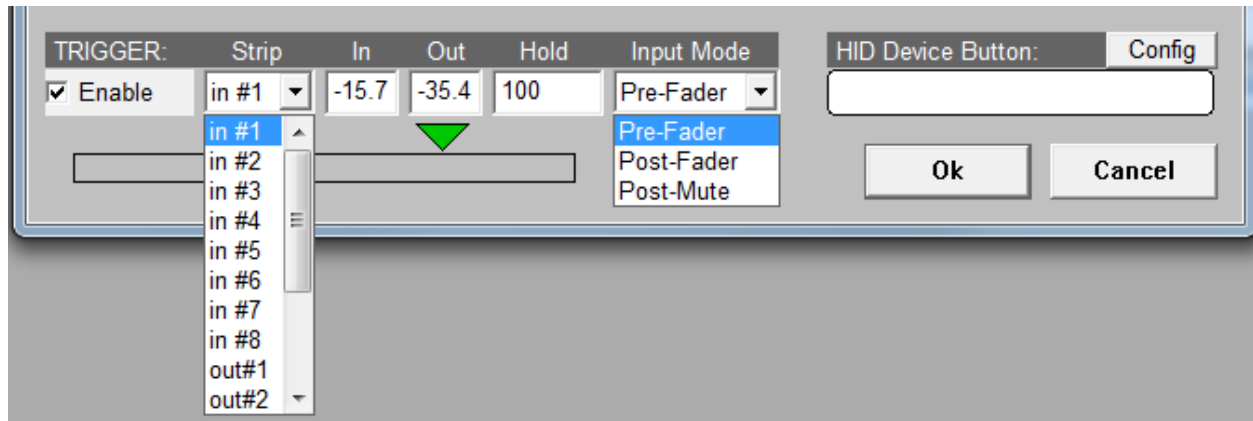
AUTO Ducking (Trigger):

With the TRIGGER, it is possible to make auto ducking and control any parameters or function (REC button for example) according an input level.

In this example above, the hardware input in#1 is the Microphone and the Strip(3) is the virtual input of Voicemeeter Banana (used to get music). This virtual input will be faded to -15 dB and medium EQ by -12 dB when the user will talk in the microphone, more precisely, when the microphone level will go over -15 dB (to be adjusted according microphone level).

Green cursor shows the “IN” threshold (level to go over to generate a trigger in). Red cursor shows the “OUT” threshold (level to go below to generate trigger out).

HOLD parameter keeps the trigger open during this minimum time in ms.

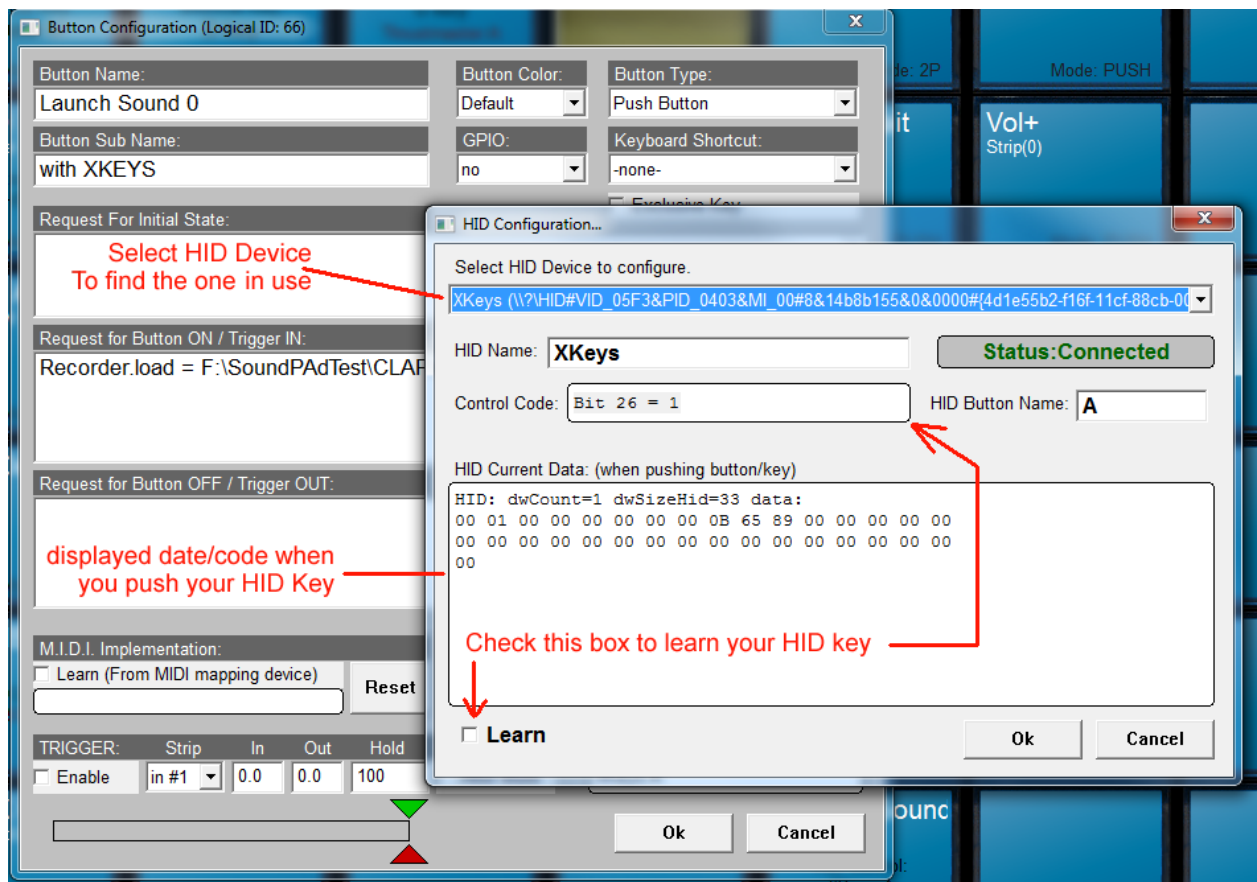


The trigger can be dependent from an input Strip level (in #1 to #8) or from the output BUS level (out #1 to out #8).

If the trigger level is pending on input, 3 mode can be applied to get level from pre-fader, post fader (pending on slider gain) or post mute (pending on mute button).

HID Manager:

HID Device button configuration allows to basically connect to any HID device to control the Button. This is particularly useful to manage different devices, special devices and special keys.



You can find your HID Device by selecting it and push the key you want to detect, HID Current Data will be shown when acting on your HID device. Then you can give a friendly name to your device (HID name field).

Enable learn check box to detect the control code of your key and possibly give a friendly name to your key (HID button Name).

Then click OK to Confirm the HID configuration. Click again on OK to confirm the Button Configuration and finally make your HID works.

REM: you can use the HID manager to manage you regular keyboard and mouse as well. This is sometimes useful to manage special keys, not listed in Keyboard Shorcut List.

GPIO:

The GPIO combo box allows to select one of the 16 GPI (general purpose input) provided by an extra USB module called GPI8-USB.



The DB9 connector allows connecting 8 simple electric switches, foot pedal or anything able to create an electric contact. It is possible to connect a second DB9 connector for the Line 9-16.

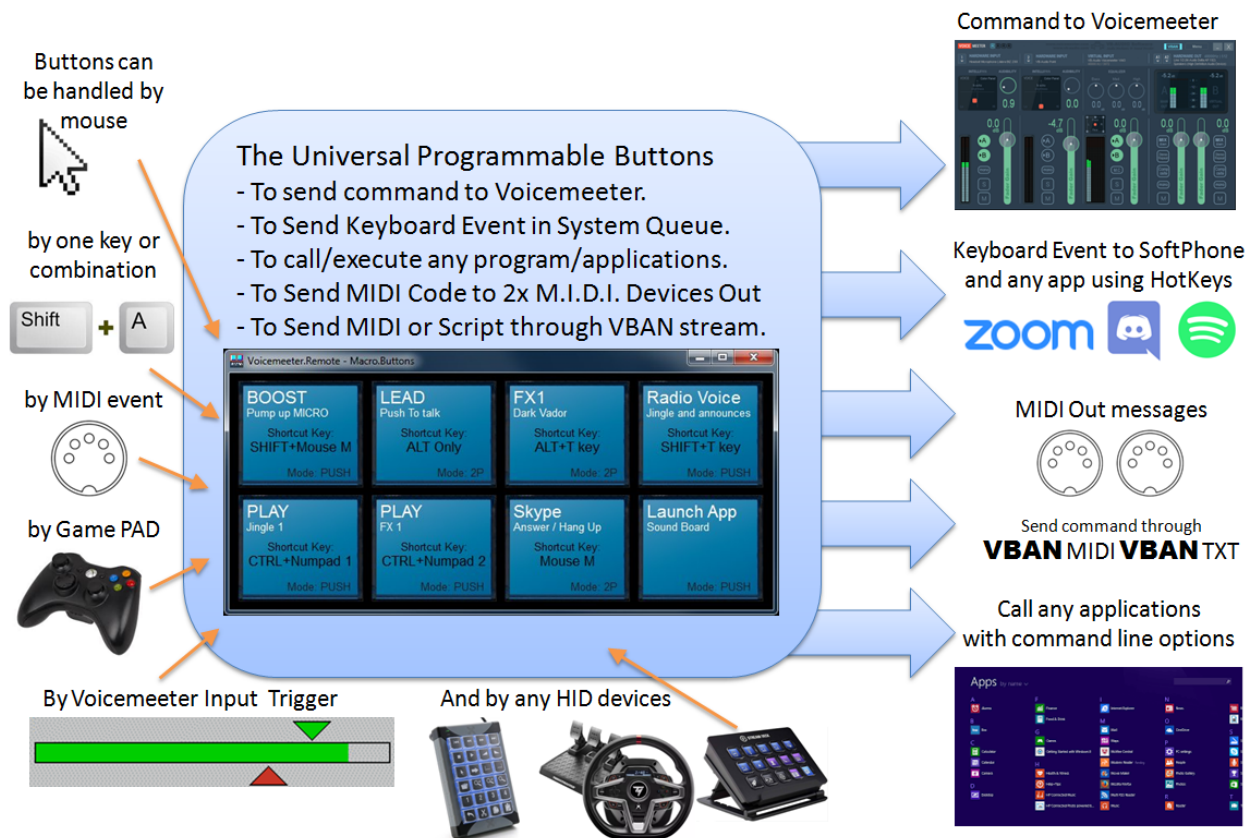


HOW TO BUY THIS GPI8-USB MODULE?

Check our website www.vb-audio.com to get more information.

System Functions (to send command to Windows):

In Macro Buttons application, some instructions are made for operating system to send Keyboard Event or run "command line" like program. These special instructions, following a "function" like syntax, can be inserted in the request script, with instructions for Voicemeeter.



System Command

function Name	Value Type	Remark	Ver.
System.KeyDown("Key")	String		1
System.KeyUp("Key")	String		1
System.KeyPress("Key")	String	Send Key Down + Key Up	1
System.SetFocus("ApplicationName")	String	Set keyboard focus	
System.ResetFocus()		Reset keyboard focus	
System.Mouse("Action")	String	LBUTTONDOWN, LBUTTONUP, RBUTTONDOWN, RBUTTONUP, MBUTTONDOWN, MBUTTONUP	1
Example : <code>System.Mouse("LBUTTONDOWN");</code>			
System.Execute(exe, dir, arg)	Strings		1

These commands are not sent to Voicemeeter.

System Execute

This function works like a "CreateProcess" or ShellExecute under windows and allow to start any application with a command line argument.

```
System.Execute(szprogram, szworkdir, szcommand);
```

Example to open a web page with the internet explorer:

```
System.Execute("C:\Program Files\Internet Explorer\iexplore.exe",
    "", "-new www.voicemeeter.com");
```

Special chars like double quotes can be inserted by this sequence %' (percent + simple quote): then %' will be replaced by ". To insert a percent char, simply enter it double: then "%" will be replaced by a single '%'.

ENVIRONMENT VARIABLES

It is also possible to use system environment variable by using %envname% syntax.

Example to run the Microsoft WRITE Editor application

```
System.Execute("%windir%\write.exe", "%TMP%", "");
```

RUNNING DOS APPLICATION

To run command line program, you need to launch cmd.exe with /K command to specify you want to execute the command after...

Example to run ipconfig in a DOS window:

```
System.Execute("%windir%\system32\cmd.exe", "%windir%\system32", "/K ipconfig");
```

/C Carries out the command specified by string and then terminates

/K Carries out the command specified by string but remains

Example to ping your internet router (usual address is 192.168.1.1):

```
System.Execute("%windir%\system32\cmd.exe", "%windir%\system32", "/K ping 192.168.1.1");
```

System KeyDown / KeyUp / KeyPress

This functions allow to send a combination of 1 to 4 keys by a simple string describing this keyboard combination, like "CTRL+SHIFT + F10" or simply "0".

```
System.KeyDown(szKey);
System.KeyUp(szKey);
```

Example:

```
System.KeyDown("A");
System.KeyDown("SHIFT+T");
```

```
System.KeyUp("A");
System.KeyUp("SHIFT+T");
```

```
System.KeyDown("CTRL+NP1");
System.KeyDown("ALT+F8");
```

```
System.KeyUp("CTRL+NP1");
System.KeyUp("ALT+F8");
```

KeyPress function send Down and UP message in a single function.

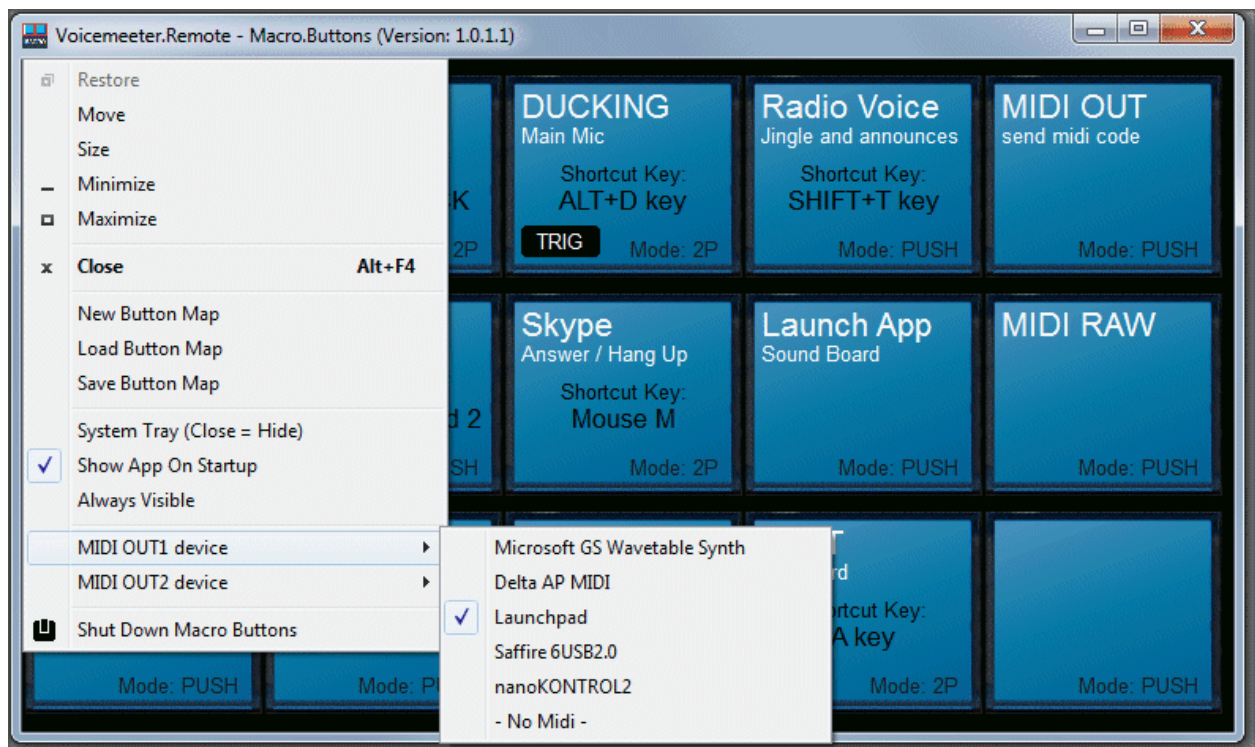
```
System.KeyPress("CTRL+NP1");
System.KeyPress("ALT+F8");
```

List of Key Name:

Regular Keys	NUM PAD	Special Key	FUNCTION
0 to 9	NP0 to NP9	BROWSERBACK	SHIFT
A to Z	NPMUL	BROWSERFORWARD	CTRL
BACK	NPADD	BROWSERREFRESH	ALT
TAB	NPDOT	BROWSERSTOP	
RETURN	NPSUB	BROWSERSEARCH	LWIN
ESC	NPDEC	BROWSERFAV	RWIN
SPACE	NPDIV	BROWSERHOME	LSHIFT
PAGEUP	NUMLOCK	VOLUMEMUTE	RSHIFT
PAGEDOWN	SCROLLLOCK	VOLUMEDOWN	LCTRL
END	CAPSLOCK	VOLUMEUP	RCTRL
HOME	PRINTSCREEN	MEDIANEXT	LMENU
LEFT	PAUSE	MEDIAPREV	RMENU
UP	CLEAR	MEDIASTOP	
RIGHT	SELECT	MEDIAPAUSE / MEDIAPLAY	F1 to F12
DOWN	PRINT	LAUNCHMAIL	F13 to F24
INSERT	PRINTSCREEN	MEDIASELECT	
DELETE	HELP	LAUNCHAPP1	
	APP	LAUNCHAPP2	
	EXECUTE	PLAY	

Send M.I.D.I. Message

In Macro Buttons 1.0.1.1 it is possible to select 2x MIDI output devices, defining out1 and out2 MIDI device. Then it is possible to send MIDI messages to these devices by a simple script.



4x request types are implemented (channel 1 to 16):

```
System.SendMidi("out1", "note-on", channel, note, velocity);
System.SendMidi("out1", "note-off", channel, note, velocity);
```

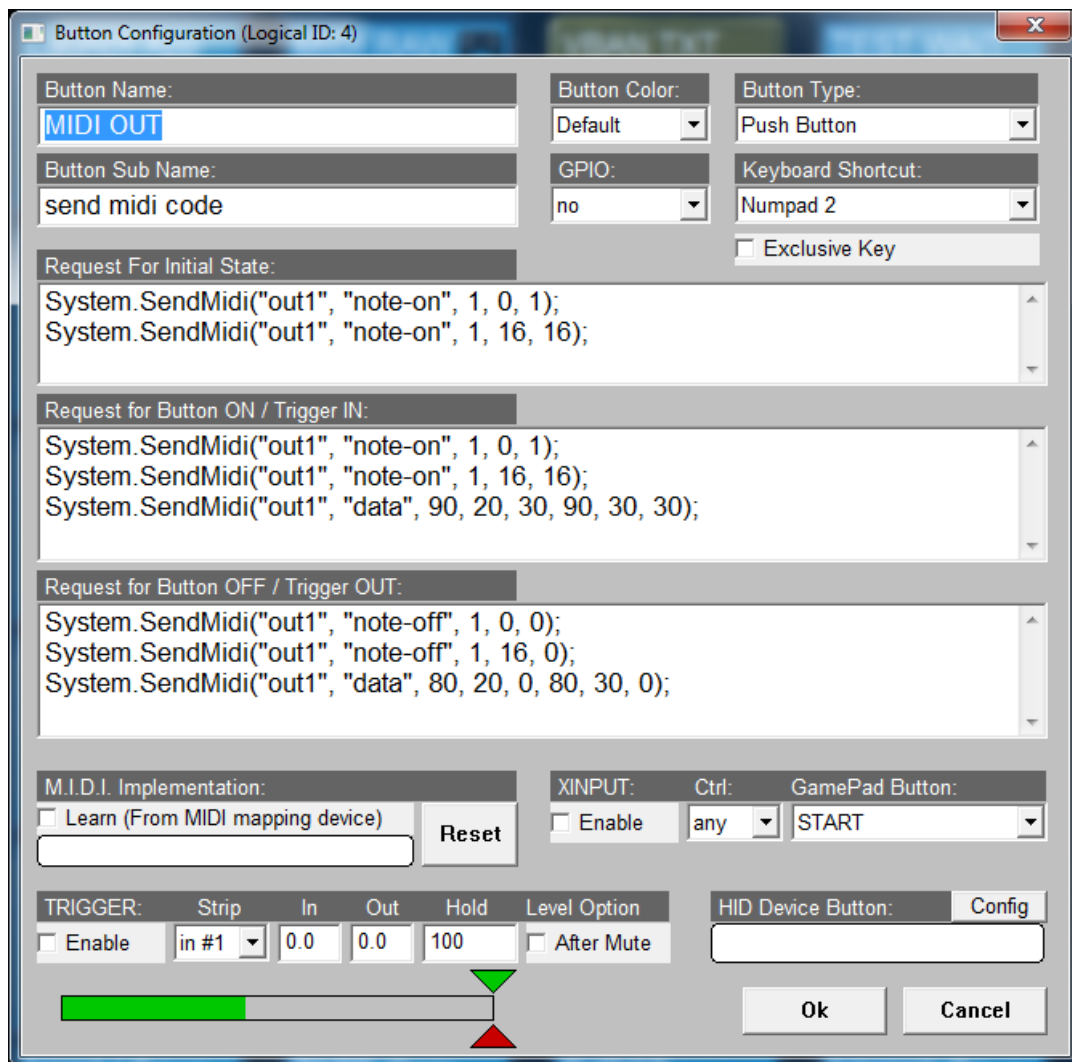
```
System.SendMidi("out1", "ctrl-change", channel, ctrl, value);
System.SendMidi("out1", "prg-change", channel, nPrg);
```

There is also a RAW DATA function to send any M.I.D.I. Message (including sys-ex).

```
System.SendMidi("out1", "data", aa, bb, cc, ee, ff, gg, ...);
```

(In this function only, values are in HEXA-Decimal: 00 to FF)

Note that values are in decimal (0 to 127) in MIDI function except for data message, value are in hexa decimal (16 based 0 to F / e.g. 90 = 9 x 16 + 0 = 144)



With October 2020 versions, it is possible to use directly the instruction SendMidi without "system" prefix:

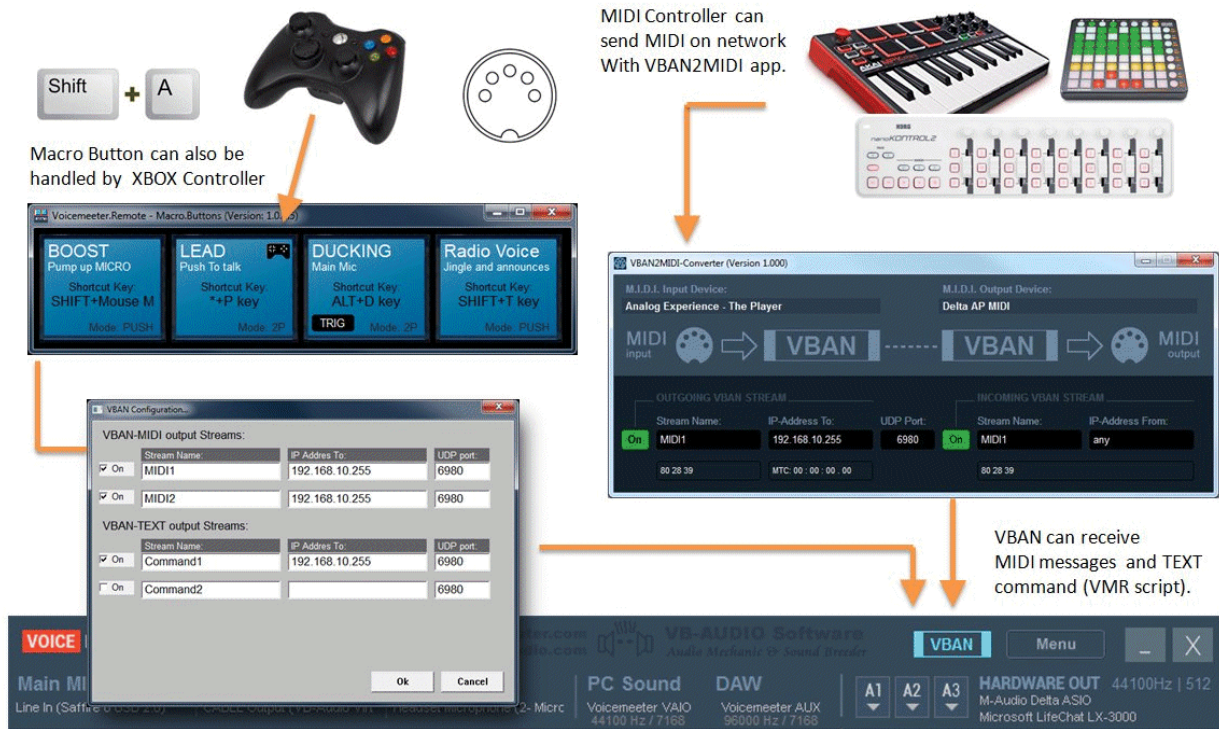
```
SendMidi("out1", "note-on", channel, note, velocity);
```

It is also possible to send MIDI command to the output device selected in Voicemeeter MIDI mapping by using "vmout" parameter:

```
SendMidi("vmout", "note-on", channel, note, velocity);
```

Send VBAN-MIDI or VBAN-TEXT (Voicemeeter script)

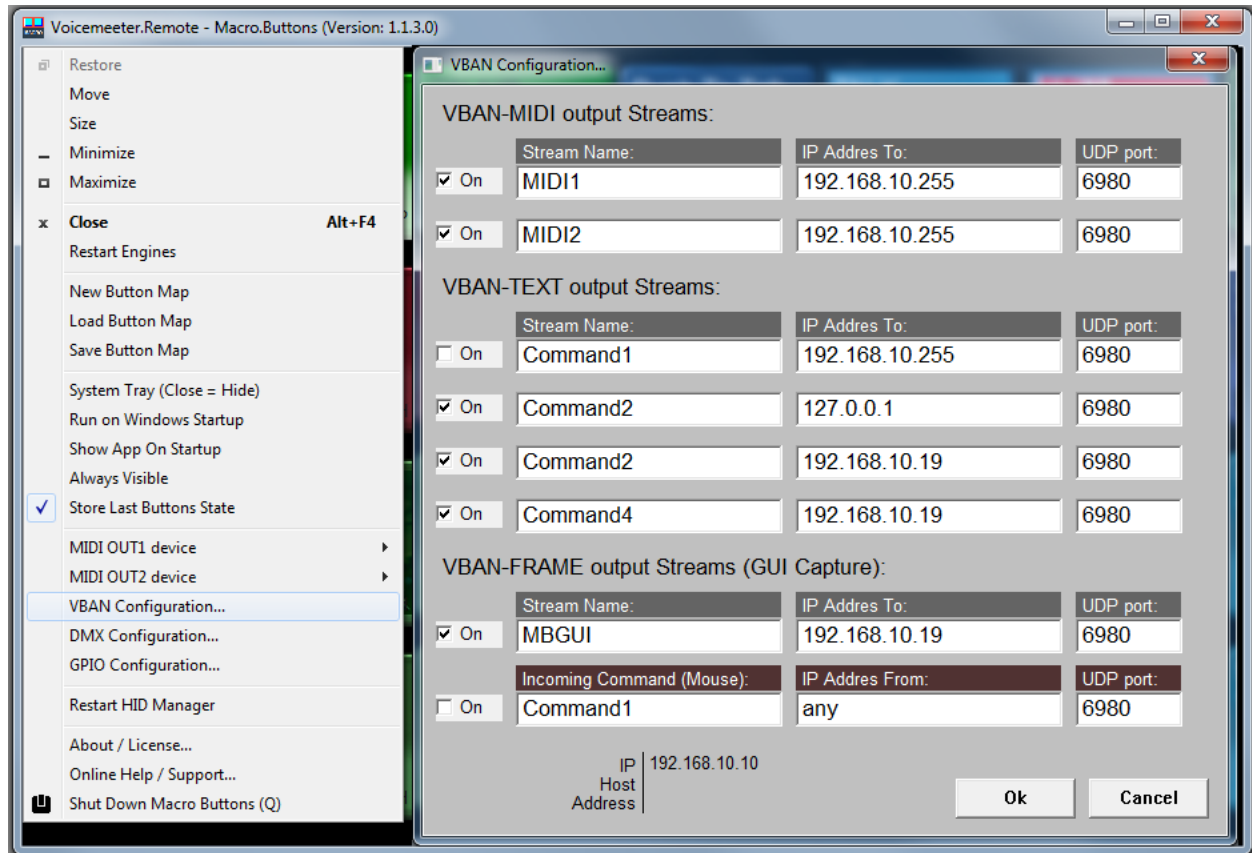
With Voicemeeter version 1.0.3.5 / 2.0.3.5 it is possible to send MIDI message through VBAN-MIDI and Voicemeeter Script through VBAN-TEXT protocol. And the MacroButton application can also learn MIDI code coming from incoming VBAN-MIDI stream. Note that MIDI2VBAN application is also installed with Voicemeeter to convert physical MIDI I/O into VBAN-MIDI Stream.



Macro Button can also send its own graphic user interface to another device thanks to VBAN-Frame protocol to VBAN-Screen application. This can also be used to send drawing command to VBAN-Screen, through VBAN-TEXT stream.



To send message through VBAN protocol, you have first to activate and configure your VBAN output streams. This is located in MacroButton system menu: VBAN Configuration Dialog Box will allow to setup 2x VBAN MIDI streams and 4x VBAN TXT Streams:



A VBAN-Frame output stream can also be configured to send the MacroButton view to another computer of the network. The last VBAN-Stream is a VBAN-TEXT incoming stream to possible receive Mouse command from VBAN-Screen (to make screen sharing with remoting).

Send MIDI command through VBAN Stream

Once you have configured output VBAN MIDI Stream, you can use the same instruction to send MIDI message to VBAN1 or VBAN2 stream:

4x request types are implemented (channel 1 to 16):

```
System.SendMidi("vban1", "note-on", channel, note, velocity);
System.SendMidi("vban1", "note-off", channel, note, velocity);
System.SendMidi("vban1", "ctrl-change", channel, ctrl, value);
System.SendMidi("vban1", "prg-change", channel, nPrg);
```

There is also a RAW DATA function to send any M.I.D.I. Message (including sys-ex).

```
System.SendMidi("vban1", "data", aa, bb, cc, ee, ff, gg, ...);
```

Send Voicemeeter TEXT Request through VBAN Stream

Once you have configured output VBAN TEXT Stream, you can send a command script by using a section bloc starting by BEGIN_SECTION and ending by END_SECTION instruction:

```
BEGIN_SECTION("vban1")
Strip(0).mute=1; Strip(1).mute=1;
Bus(0).gain= 0.0;
END_SECTION
```

All Voicemeeter script written inside the section will be sent to VBAN1 TEXT Stream defined in the VBAN configuration Dialog Box. While the section below will send the script through VBAN2 TEXT stream:

```
BEGIN_SECTION("vban2")
Strip(0).mute=1; Strip(1).mute=1;
Bus(0).gain= 0.0;
END_SECTION
```

Regular function style syntax is also possible (to fit the syntax used in VBAN-Button app for Android):

```
SendText("vban2",Strip(0).mute=1; Strip(1).mute=1;Bus(0).gain= 0.0;);
```

Or written on several lines as well: last parenthesis will close the entire request.

```
SendText("vban2",
Strip(0).mute=1;
Strip(1).mute=1;
Bus(0).gain= 0.0;);
```

VBAN-MIDI output Streams:			
	Stream Name:	IP Address To:	UDP port:
☒ On	MIDI1	192.168.10.255	6980
☒ On	MIDI2	192.168.10.255	6980

VBAN-TEXT output Streams:			
	Stream Name:	IP Address To:	UDP port:
☐ On	Command1	192.168.10.255	6980
☒ On	Command2	127.0.0.1	6980
☒ On	Command2	192.168.10.19	6980
☒ On	Command4	192.168.10.19	6980

"vban1"

"vban2"

"vban1"

"vban2"

"vban3"

"vban4"

Manage your lights Network in DMX 512

With Macro Buttons 1.0.2.7 it is possible to send DMX 512 requests through a DMX serial interface (COM) selected in DMX configuration dialog box in MacroButtons system menu by a simple set of 2 functions:

The simple function to set a DMX value according device address and channel:

```
System.DMXSetValue(addr, channel, value);
```

or can be used with several values which will automatically fill the next channels:

```
System.DMXSetValue(addr, channel, value1, value2 , value3, value4...);
```

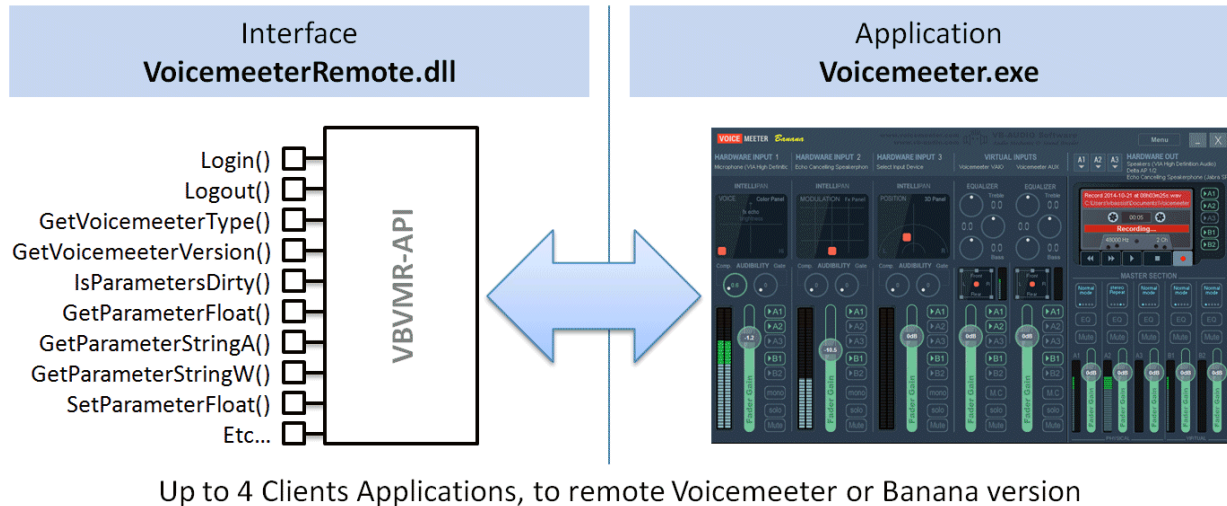
To send the newly modified DMX frame:

```
System.DMXCommit();
```

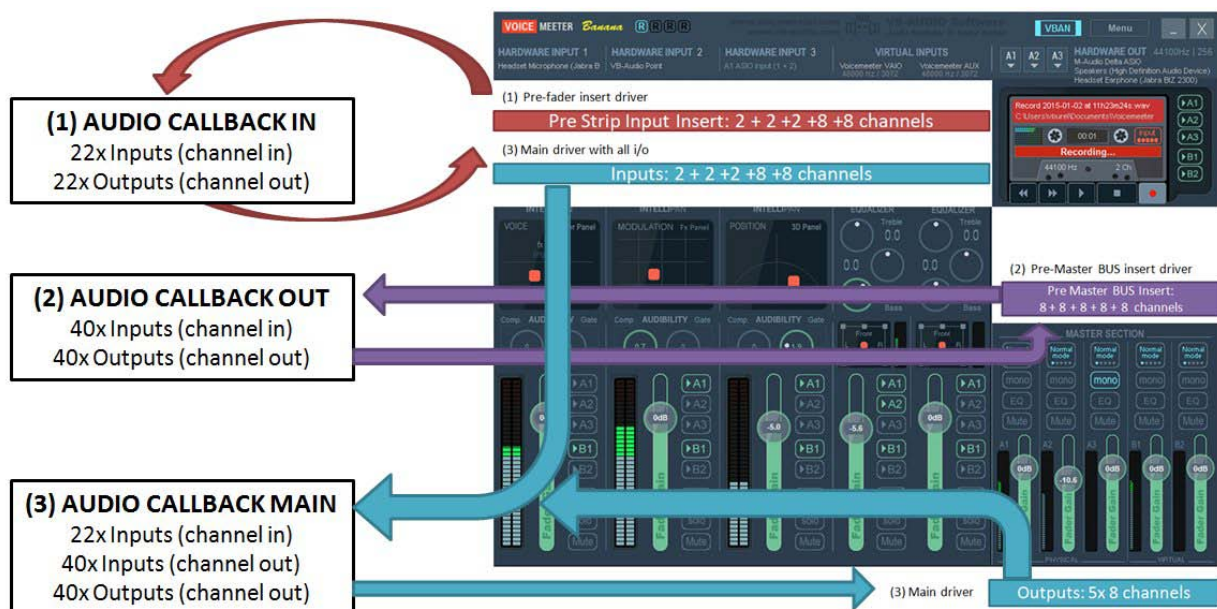
Example of tested DMX serial interface: Enttec Open DMX USB Interface

Voicemeeter Remote API (for developer only)

The requests described above are based on Voicemeeter remote API (delivered and installed with Voicemeeter as VoicemeeterRemote.dll). This API can be used by any third part application programmed in any language to control Voicemeeter and take advantage of all its features.



Since Voicemeeter 1.0.5.0 / 2.0.3.0, Voicemeeter Remote API provides an AUDIO API to process audio inside Voicemeeter in 3 Different point. Download SDK and get more information on our forum: <https://forum.vb-audio.com/viewtopic.php?f=8&t=346>



EXTRA OPTIONS

Voicemeeter Latency

M.I.D.I. Mapping

Specifications

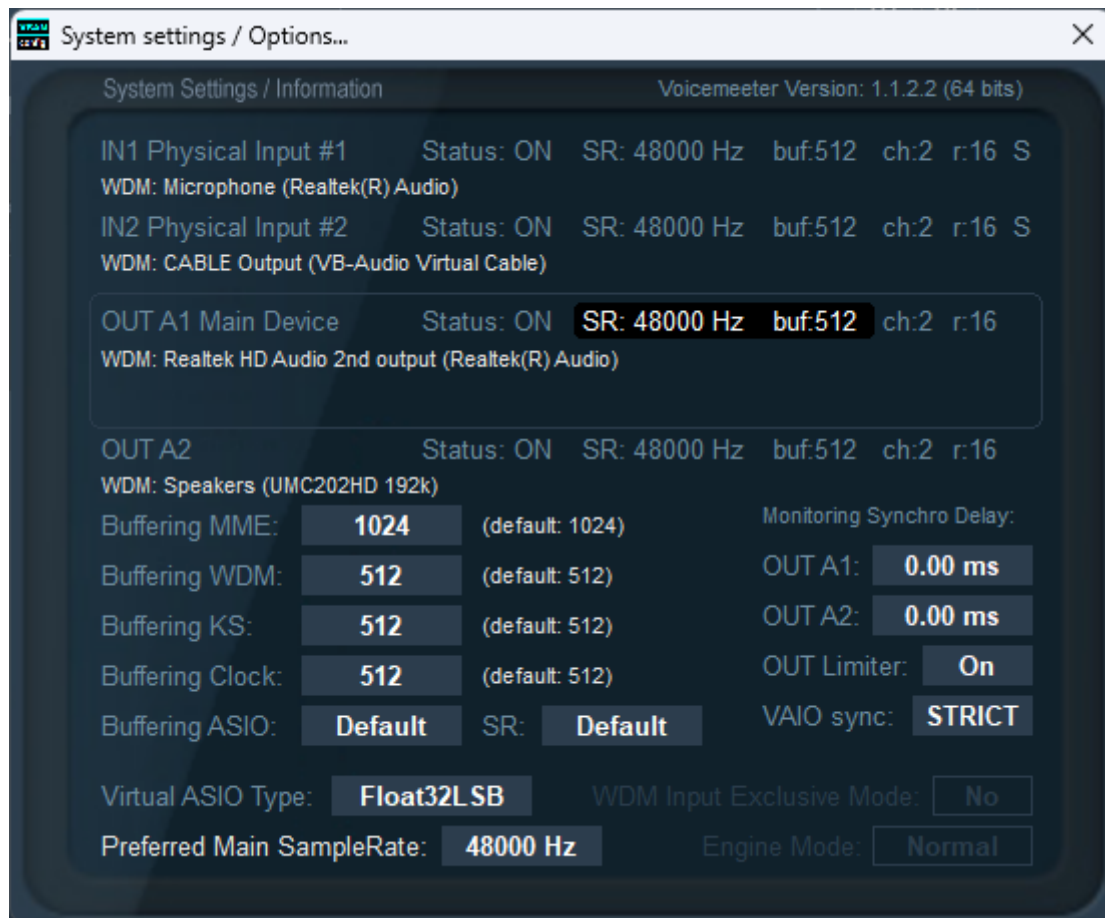
VAIO Extension

Known issues

Command line Installation

System Settings / Options

Click on Master Meter LCD Section to open the Options Dialog Box.



This modal dialog box will show you the status of the different audio devices currently used by Voicemeeter.

- **SR:** is giving the current samplerate of the device (which can be different for each device, Voicemeeter is based on multi points and multi formats audio engine able to manage most of audio system configurations).
- **buf** gives the current buffer size used by the audio device (Voicemeeter Audio engine support different buffering on all audio points).
- **Ch:** gives the number of channel managed by the devices (Voicemeeter can manage 1 to 2 channels on inputs and up to 8 channels on outputs).
- **r :** gives the bit resolution of the device (Voicemeeter uses 16bits resolution per default).
- **S:** means "share mode" (applicable for WDM device only. KS is usually in exclusive mode and MME in share mode. For WDM it depends on devices and audio engine mode).

Note: Output A1 device configuration gives the main audio configuration of Voicemeeter and the configuration of Voicemeeter virtual ASIO driver (Sample rate and buffer size). It also means that all audio processing done in Voicemeeter will be based on this sample rate (if some audio points work in another sample rate, conversion will be done automatically to this main sample rate.).

INTERNAL CLOCK: if no device is selected as output A1, Voicemeeter run with an internal clock running with the preferred Samplerate and the Buffering Clock parameter. It allows running Voicemeeter without physical audio output device.

In this dialog box, you can change the latency used by MME, WDM and/or KS audio drivers. Basically MME driver support buffering between 512 and 2048 samples, while WDM and KS can go down to 256 samples (that makes audio processing very closed to the real time – practically usable to sing on a song in real time – karaoke – or to play digital piano on music in real time).

Some PC configurations (or some audio devices) will work very well with minimal buffering values while other will not (the sound stream could be not stable and generates too much sound's cut). That's why per default MME device uses 1024 samples buffering while WDM device is using 512 samples (these default settings should work for 100% PC configuration cases).

Preferred Main Sample Rate can be used as a wish to make Voicemeeter run output device A1 in the wanted sample rate (44.1, 48, 88.2, 96, 176.4 kHz or 192 kHz). But it also depends on the audio device current configuration (that could stay in its own sample rate anyway).

Engine mode provides a SWIFT mode to possibly improve real time (experimental option). WDM Input devices are driven in SHARED mode per default to avoid possible WASAPI Exclusive mode bug (see known issues). These both modes have been disabled because generating too much support.

Out Limiter: Enabled per default, this option enables brick wall limiters (based on VB-Audio C-Limiter) on every output BUS. Otherwise a simple peak remover will be applied.

VAIO sync: Enabled STRICT synchronization mode for VAIOs. In this mode all virtual I/O are strictly synchronized with the Voicemeeter main stream (given by the output A1 device). This mode is expected to bring more stability (especially for small latency). If Displayed in Yellow, STRICT mode could not work perfectly in some cases.

ASIO Driver support:

Voicemeeter can use an ASIO driver as Output A1 (the main output). Then Voicemeeter will run in audio pro conditions (like any DAW using ASIO device).



If ASIO device is selected as output A1, Voicemeeter will send audio to the 8 first output channels. Other BUS could be routed to other ASIO output channels. It is also possible to get the first input channels of the ASIO device routed to Hardware Inputs of Voicemeeter. This is done by the ASIO PATCH allowing to select which ASIO channel will be used for IN#1 left & right, IN#2 left and right...

ASIO Buffering and ASIO samplerate are pending on two parameters:

- Buffering ASIO can use the default buffer size (given by ASIO driver) or be forced to a given buffer size (but the ASIO driver can refuse or not work correct for some values).
- SR parameter allows to use the default sample rate given by the ASIO driver or to force the sample rate defined by the preferred sample rate.

It is also possible to open the ASIO Control panel of the main output device by clicking on its name.

Getting Optimal Latency:

The choice of the Output A1 is critical to get the best global latency, since it gives the master sample rate and main buffer size. So we recommend to select your best audio device as output A1 (preferred ASIO if possible, WDM or KS otherwise) – with ASIO device the buffer size is given by the ASIO driver itself (that can usually be set by the ASIO Specific Control Panel of your audio board). But it is possible to specify a preferred ASIO buffer size (used if the driver accepts it).

To improve latency, you can also decrease the latency buffer size (for example down to 256) especially with WDM or KS devices. If using WDM devices, you can again reduce global latency (the time between microphone and speaker) by using SWIFT mode (but not recommended because might be unstable).

DISABLED OPTION: Activating WDM Input Exclusive mode (and Swift mode) will force audio engine to use smallest buffer with WDM input devices. But this exclusive mode could not be stable and produce various potential problems in the time (from audio crash to system freeze/crash – pending on audio driver and O/S – see known issues section at the end of this document).

Virtual I/O latency can also be optimized by decreasing the Internal Latency of the Voicemeeter VAIO driver by using specific VBCABLE Control Panel program. However decreasing internal latency can produce discontinued or non-working stream in some cases, pending on different buffering constraints (see VB-CABLE technical documentation).

Virtual ASIO driver are adding a single buffer to the global latency (the size of this buffer is given by the buffering of the output A1)

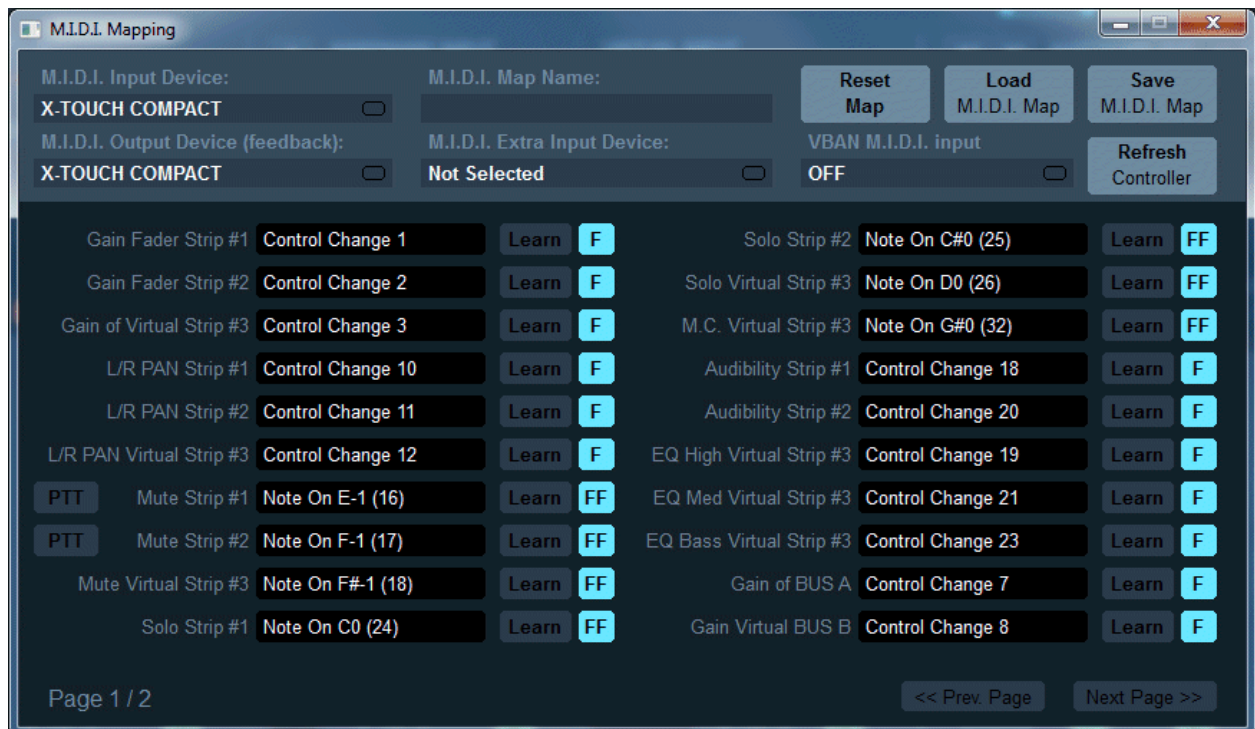
LATENCY WARNING:

CHANGING DEFAULT LATENCY, BY REDUCING BUFFER SIZE CAN DECAY THE AUDIO STREAM, BRING UNSTABILITY, FREQUENT AUDIO CUT, STATIC, SYNCHRO LOST (ROBOTIC VOICE).

If you get such problem, come back to default buffer size.

M.I.D.I. Mapping:

Voicemeeter allows connecting a MIDI remote surface to control gain, mute, solo buttons of every strips and busses (with MIDI Feedback) and a secondary MIDI Controller (MIDI Extra Input Device).



You just need to select the right MIDI device and enter in Learn process to configure the M.I.D.I. Mapping. This is expected to work with any M.I.D.I. Remote. You can even give a title to your mapping and store it on disk or recall it from XML files.

Click on Learn (use TAB or up/down arrow key to learn next/previous control) and move your M.I.D.I. Control.

Click on M.I.D.I. Code area (black) to reset the M.I.D.I. Implementation (as it was before learning process).

PTT option means “Push To Talk” and un-mute the related strip when pushing the button, mute it when release it.

RESET MAP: reset entire M.I.D.I. mapping

LOAD / SAVE allow to recall and save M.I.D.I. Map from or to file (xml file).

REFRESH Controller: allows to send all MIDI message related to the current Voicemeeter state. This feature also exists as MIDI function (assignable to a MIDI button) – see last MIDI Mapping page.

M.I.D.I. Map name is a name defined by user to identify precisely the remote surface (stored in M.I.D.I. Map XML file).

MIDI Feedback:

With e March 2021 Version Voicemeeter manages a MIDI Output Device to send back MIDI code and move motorized Fader or highlight LED Button. This is made automatically with the 'F' or 'FF' mode.



F: Simple feedback:

The single 'F' mode is for simple feedback. The MIDI controller is receiving MIDI message when there is a change on related control only, but change made by Mouse or VBan request or anything but the MIDI controller itself. 'F' Mode is usually enough for movable control like knobs and faders... But some remote surface can use motorized fader needing a MIDI feedback to confirm the position (like a acknowledgement) in this case 'FF' will be needed.

FF: double feedback:

Double feedback is useful for MIDI controller LED Buttons. When you push a LED button, it must change its color to fit the state of the related Voicemeeter button. So it needs double feedback: FF. Some motorized fader can also require this mode to acknowledge the position (otherwise the fader automatically goes back to initial position). This is pending on remote surface type).

MIDI Forward:

MIDI mapping can get MIDI message from two different MIDI controller and from VBan-MIDI Stream. All received MIDI message are also forwarded to MacroButtons application.

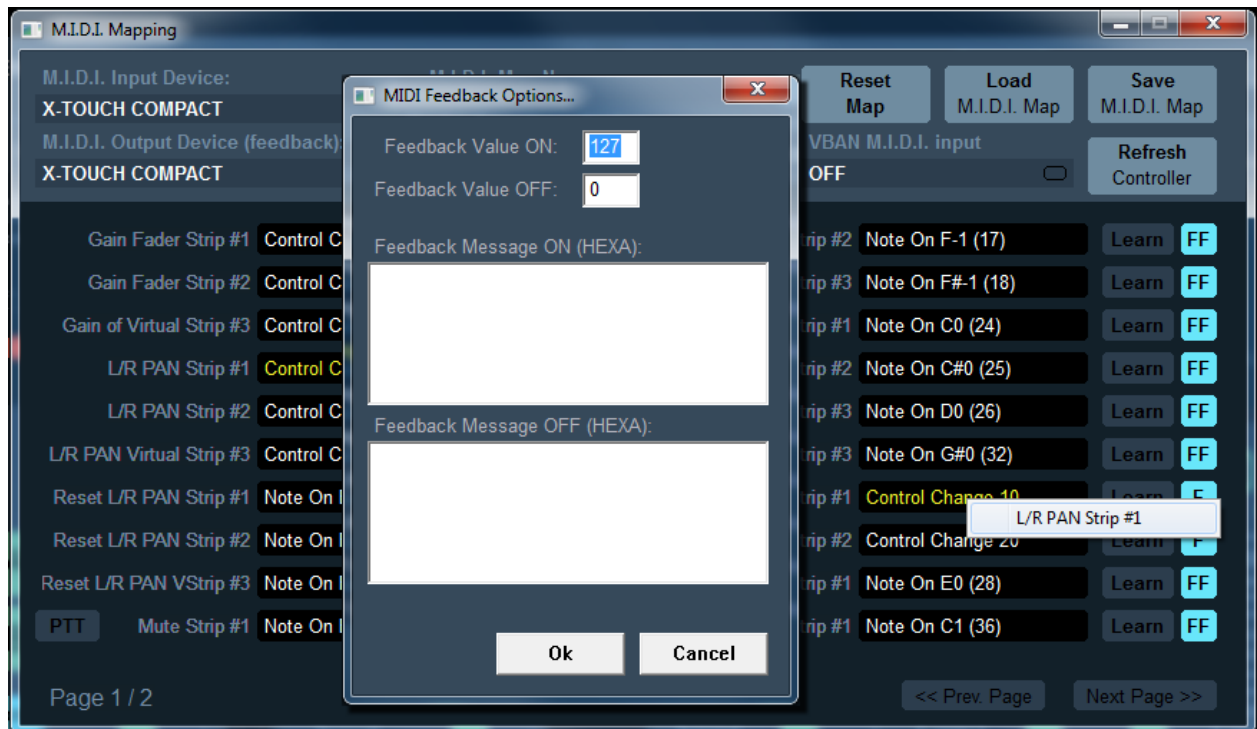
With March 2021 version, it is possible to also forward MIDI message through an outgoing VBan MIDI stream (see VBan Configuration Dialog box: last outgoing stream is a MIDI Stream). This is made to forward MIDI message on network (including MIDI feedback if your MIDI controller is on other computer).

MIDI Advanced Feedback:

With the November 2022 Version Voicemeeter MIDI mapping allows to define feedback value for 2 positions control. Per default the feedback value is 127 for ON and 0 for OFF state, but for MIDI control able to display different colors, it can be interesting to define other value here.

RIGHT CLICK on 'F' button to open the MIDI Feedback Options dialog box.

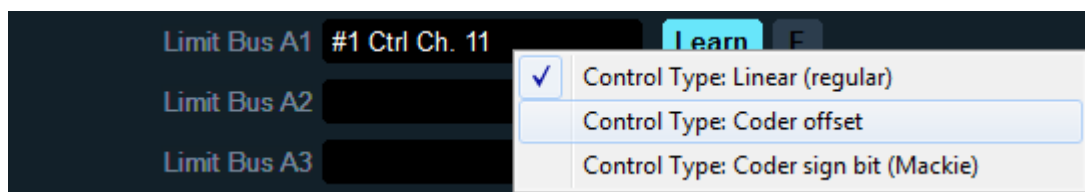
It is possible to define complex MIDI feedback message (including SYS-EX) to send MIDI command to other MIDI device, or MIDI LCD or MACHINE CONTROL...



MIDI messages displayed in yellow mean this message is already used by one or several other MIDI map parameters. RIGHT CLICK on it to get the first parameters using the same MIDI message.

MIDI Control Mode:

With the September 2026 Version Voicemeeter MIDI mapping allows to define how Control Change is managed. When the CTRL-CH message is identified, right click on it to open the menu below and select how MIDI code must be interpreted.



Specifications:

Device Type:	PC-Core Virtual Audio Mixing Console
Compatibility:	Windows XP, VISTA, WIN7, WIN8, WIN10 (32 / 64 bits)
PC Configuration:	Min: Celeron / Duo Core 1.8 GHz - 512 MB RAM - Disk < 100 MB
Number of Audio Device I/O:	3 Inputs (2 physicals / 1 Virtual). 3 Outputs (2 physicals / 1 Virtual)
BUS / Layer:	2x BUS (A and B) / Single Layer
Audio Engine Capabilities:	32, 44.1, 48, 88.2, 96, 176.4 or 192 kHz DSP Processing (defined by Output A1 configuration)
Output A1 (Main):	WDM, KS, MME, ASIO (32 kHz to 192 kHz) - 1 to 8 channels
Output A2:	WDM, KS, MME (8 kHz to 192 kHz) - 1 to 8 channels
2x Physical Inputs:	WDM, KS, MME (8 kHz to 192 kHz) - mono or stereo.
1x Virtual I/O:	WDM, KS, MME, DirectX, WaveRT (8 kHz to 192 kHz) 1 to 8 channels 8 channels on virtual input, 2 on virtual output
1x Virtual ASIO I/O:	ASIO (32 kHz to 192 kHz) 8 Channels (in and out) / 4x Client Applications. Virtual ASIO configuration is given by Main Output A1 (SR and Buffering)
M.I.D.I. Implementation (remoting):	Gain faders, Mute, Solo, M.C. Audiobility, 3 Bands EQ (Configuration by Learn process).
Strip Processing:	- "Color Panel" Control (Equalization). - 3D Panoramic Control (source positioning by binaural effect). - Audibility Knob (Compressor / Gate effect). - 3 Bands Graphic Equalizer (on Virtual Input). - Mute / Solo.
BUS Processing:	- Integrated 0 dBfs Limiter and Peak Remover. - Mix Down to convert 5.1 or 7.1 to Stereo. - Stereo Repeat (Stereo signal copied on ch 3,4 / 5,6 / 7,8) - Mute / Mono
Others:	- Physical Output Synchronization Delay in system settings dialog box.

Voicemeeter I/O Diagram:

Like a regular mixing console, Voicemeeter can be represented with a usual I/O Diagram even if connections are not made by real wire, principles stay the same.

Note that Virtual I/O provide Windows Interface (MME, KS, WASAPI, DirectX...) and ASIO Interface (defined by Steinberg gmbh). It allows connecting regular windows audio application as well as audio pro DAW using ASIO devices only.



Voicemeeter License / About box:

Voicemeeter Standard version is distributed as "Simple donationware". Just click on "I already made a donation" button if you already paid for it. Note if you paid a Voicemeeter Potato license, you can also consider having paid for Voicemeeter Standard.

"Simple donationware" means the application is free to use, with all functions available (except optional features), but you are expected to pay your license if you find it useful or if you make any professional use. The donationware model allows selecting the price amount according your means or usage.

The simplest way to get your license is to click on "Donate" button. You will be re-directed to our webshop on the right product page. The webshop is proposing 5 different amounts: The smallest price can be considered as a renewal license price, the default price as the recommended license price, the highest price as a generous support to our R&D team. Thanks for your participation!



If re-installing Voicemeeter, this about box can appear again to invite you to donate again. This is a way for us to encourage you to support our maintenance and R&D effort.

For professional use, we remind you are expected to pay your license for Voicemeeter anyway. More info on our licensing page: <https://vb-audio.com/Services/licensing.htm>

VAIO Extension License Dialog Box:

Voicemeeter Standard offers an optional feature distributed as “donationware for activation code”. Once you have activated your License, VAIO extension will be activated (for both Banana and Standard version).

The simplest way to get your VAIO extension license is to display the related dialog box (by Voicemeeter menu) and click on the “BUY ONLINE” button. You will be re-directed to our webshop with the Challenge Code already set. While the Challenge code is given by your PC, the Response code is given by the webshop after donation, and is also related to your e-mail used for your webshop account.

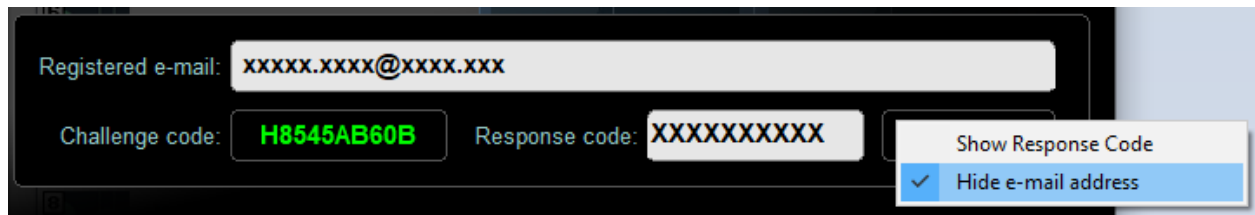


For each VAIO Extension license purchased, a license slot is created in your webshop account “My License” page where you can retrieve your current Response code and possibly generate another one, for example in case of PC change or for a second PC. This REGEN option works for any VAIO extension license and any PC. Simply click on it and enter carefully your new Challenge code to get another Response code.

Your challenge code is not expected to change for a given PC configuration, even after windows update (but can change after a Windows re-installation). The challenge code is also expected to change if you change the CPU or possibly Motherboard or all Ethernet devices. This license is given for one PC configuration and is not transferrable (as specified in our general terms).

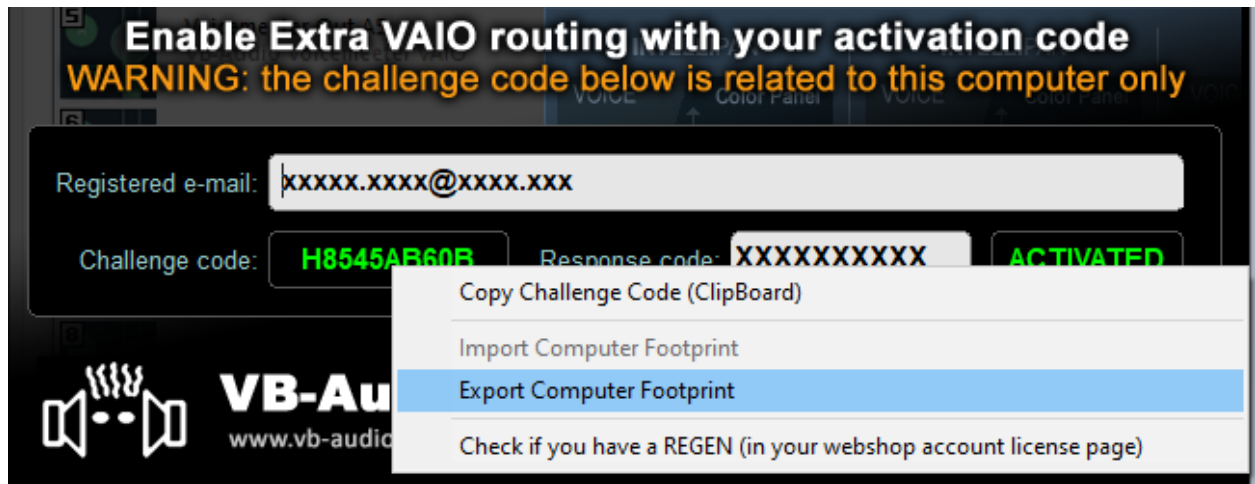
Hide e-mail address:

If you right click on ACTIVATED area, you can see the option to hide your e-mail address if needed. This option is stored in registry and keeps your e-mail hidden until you change it here.



Use Computer Footprint:

If your license is activated (and if your computer has a network adapter), you can store your computer footprint on a USB key for example. Right Click on the challenge code to make appear the related menu (shown on the following screenshot).



After re-installing Windows and later Voicemeeter applications, you may import this footprint if your challenge code is not the expected one.

- 1- Enter your registered e-mail and previous response code.
- 2- Load the footprint to retrieve your previous challenge code and use your previous response code.

Activation Log:

You can also keep your Voicemeeter_ActivationLog.dat (located in My Document \ Voicemeeter folder) from a Windows installation to another. It records the history of your different activations on the same computer and can be useful for us to understand what's happening if you get frequent problem with your activation code.

Simply copy the file Voicemeeter_ActivationLog.dat in a extra disk
Simply paste it in "My Document \ Voicemeeter" folder after Windows installation.

License Activation Process

On first or new installation, your license activation fields are empty. You get a unique challenge code given by your PC. Currently the H-Code is composed by 8x hexadecimal digits + a suffix letter as shown below.

Buy Online

Clicking on BUY ONLINE button will drive you to the right VB-Audio webshop page with your challenge code automatically filled. See in the red ellipse below:

WIN APPS **MAC APPS** **IOS / ANDROID** **AUDIO PRO** **MISC** **VB-AUDIO.COM**

Home > Misc > VAIOS Extension

VAIOS Extension

FOR VOICEMEETER STANDARD & BANANA ONLY

VAIOS extension is a special feature for Voicemeeter Standard and Banana giving the ability to use Virtual Audio I/O 1, 2, 3 on hardware inputs and physical Buses. This is possibly replacing or adding 3x virtual audio cable for Voicemeeter Standard (for 2x hardware inputs and 1x physical Bus) and 6x virtual audio cable on Voicemeeter Banana (for 3x hardware inputs and 3x physical Buses)

This new feature has been introduced with the new Voicemeeter VAIO driver running under Win10 64bits and higher with voicemeeter 1.1.0.0 and 2.1.0.0 and higher version.

This optional feature is distributed as donationware, it means you can select the price level you would like to pay according to your means or usage. Thanks for your participation!

Voicemeeter Download & User manual: voicemeeter.com

15,00 € tax excl.

Select your contribution

- ☐ P1 - I'm a fan
- ☐ P2 - I use it occasionally
- ☒ P3 - I use it regularly
- ☐ P4 - I use it professionally
- ☐ P5 - I support the R&D team!

Permanent license for a given PC configuration.

Challenge code *

H8545AB60B

Add to cart

MasterCard VISA PayPal

Read LICENSING INFORMATION section before selecting your contribution level, and then click “Add to cart” to continue your purchase.

Once you have paid your order, you can go in your account “My License” page to get your current response code and other information about all your VB-Audio licenses.

Get your Response code

In your webshop account “My License” page, you will find download link and activation code for all your licenses:

My account > My licenses

MY LICENSES

Here are the licenses you own.

Application	Challenge	Response	Download link	Order reference	Regen left	
VAIOs Extension	H8545AB60B	84D2291DFA	Download	AGLMRDYTL	1	Regen Certificate
Software			Download link	Order reference	Licenses	
Voicemeeter			Download	QSTRCZUBU	1	
VB-Cable A+B			Download	OPGYVRQR	1	

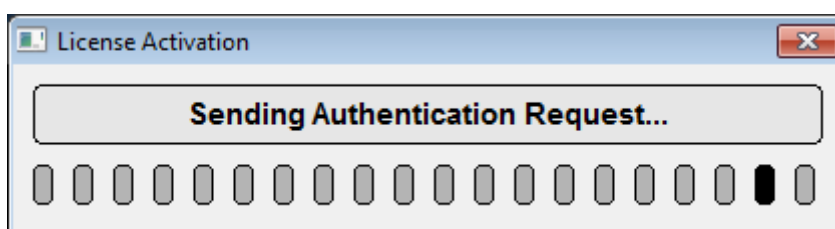
In License dialog box, enter carefully your e-mail (registered for your webshop account) and your response code. You can copy / paste to avoid bad char or reading mistake.

Registered e-mail:

Challenge code: **H8545AB60B** Response code:

Activate your license

To activate your license, just click on the ACTIVATE button. It will ask to our server to generate an authentication certificate that will be stored in your computer to confirm that your license is valid.



When your license is activate, your License Dialog box is saying ACTIVATED in green

Registered e-mail:

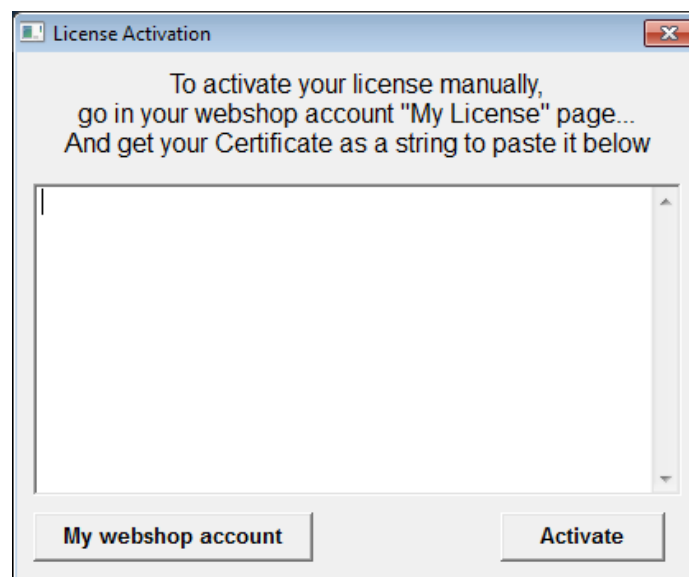
Challenge code: **H8545AB60B** Response code:

Activate your license manually

If you are not connected to internet or if there is a problem to reach our server, the ACTIVATE process will propose you to enter the certificate manually.



After getting the error box above, the following dialog box appears to let you enter your certificate manually (by PASTE function CTRL+V):



Click on “my webshop account” to directly come to your License pages here below. You will see the button “Certificate” on the right of the related license.

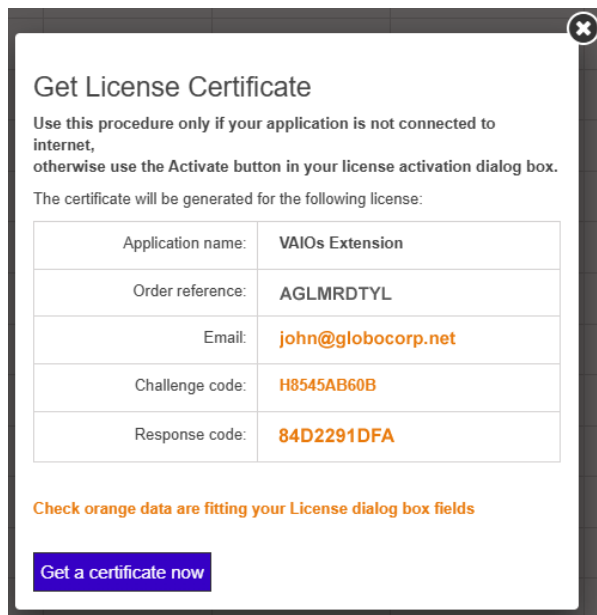
MY LICENSES

Here are the licenses you own.

Application	Challenge	Response	Download link	Order reference	Regen left	
VAIOs Extension	H8545AB60B	84D2291DFA	Download	AGLMRDTYL	1	Regen Certificate
Software			Download link	Order reference	Licenses	
Voicemeeter			Download	QSTRCZUBU	1	

If you own several licenses, take care to select the right line, related to the right license. The certificate will be generated for current challenge / response code only.

The dialog box to get certificate will appear and will first ask you to confirm data.



Get License Certificate

Use this procedure only if your application is not connected to internet, otherwise use the Activate button in your license activation dialog box.

The certificate will be generated for the following license:

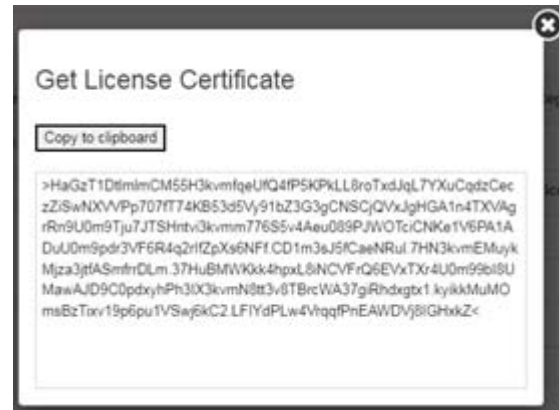
Application name:	VAIOs Extension
Order reference:	AGLMRD TYL
Email:	john@globocorp.net
Challenge code:	H8545AB60B
Response code:	84D2291DFA

Check orange data are fitting your License dialog box fields

Get a certificate now

Check the information in orange are exactly the same than you entered in your license dialog box and click "Get a certificate now"

Then you get your certificate in this box



Get License Certificate

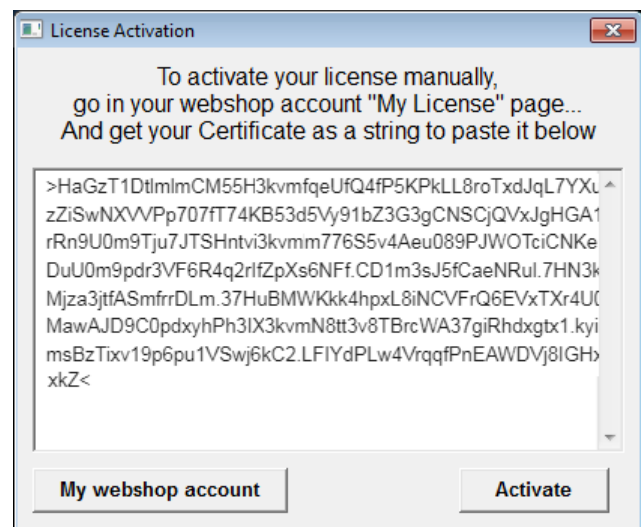
Copy to clipboard

```
>HaGzT1DtlmCM55H3kvmfgeUfQ4fP5KPkLL8roTxdJqL7YXuCqdzCec
zZiSwNXVVPp707fT74KB53d5Vy91bZ3G3gCNSCjQVxJgHGA1n4TXVAg
rRn9U0m9Tju7JTShtvi3kvm776S5v4Aeu089PJWOTciCNKe1V6PA1A
DuU0m9pdr3VF6R4q2rlfZpXs6NFf.CD1m3sJ5fCaeNRul.7HN3kvmEMuyk
Mjza3jtfASmfrDLm.37HuBMWKKk4hpxL8iNCVFrQ6EVxTXr4U0m99bi8U
MawAJD9C0pdxyhPh3IX3kvmN8tt3v8TBrcWA37gIRhdxgtx1.kyikkMuMO
msBzTixv19p6pu1VSwj6kC2.LFIYdPLw4VrqfPnEAWDVj8IGHx
xkZ<
```

Simply copy / paste it in the application License activation box and click on "Activate" button.

REM: The certificate start with the char '>' and finishes with the char '<'.

This certificate will be store in your computer to authenticate your license (internet is not needed).



License Activation

To activate your license manually,
go in your webshop account "My License" page...
And get your Certificate as a string to paste it below

```
>HaGzT1DtlmCM55H3kvmfgeUfQ4fP5KPkLL8roTxdJqL7YXu
zZiSwNXVVPp707fT74KB53d5Vy91bZ3G3gCNSCjQVxJgHGA1
rRn9U0m9Tju7JTShtvi3kvm776S5v4Aeu089PJWOTciCNKe
DuU0m9pdr3VF6R4q2rlfZpXs6NFf.CD1m3sJ5fCaeNRul.7HN3k
Mjza3jtfASmfrDLm.37HuBMWKKk4hpxL8iNCVFrQ6EVxTXr4U
MawAJD9C0pdxyhPh3IX3kvmN8tt3v8TBrcWA37gIRhdxgtx1.ky
msBzTixv19p6pu1VSwj6kC2.LFIYdPLw4VrqfPnEAWDVj8IGH
xkZ<
```

My webshop account **Activate**

KNOWN ISSUES / RECOMMENDATIONS

Voicemeeter has been validated on different levels and should work 100% in most configurations. However we have notified some few issues, mainly related to general system configuration and Windows Audio Scheme understanding.

No sound anymore on my computer!

Voicemeeter is like a mixing console, it must be connected correctly to work correctly. If you set Voicemeeter audio device as default device, Voicemeeter must be running (like switching ON your mixing console) otherwise there might be no sound on your computer. When Voicemeeter is running, it can get exclusive access to selected output device (A1, A2, A3...) and prevent other applications to use these playback devices. As Virtual Audio Mixer, all audio sources should be connected to Voicemeeter to avoid possible conflict. When you connect your mixing console to your amplifier, you connect nothing else to this amplifier and all sources are connected to your mixing console. It's the same with Voicemeeter.

Voicemeeter does nothing if you don't use it

Voicemeeter application and Voicemeeter virtual audio device drivers do nothing if you don't use them and they cannot disturb or corrupt your system. If there is no sound anymore, it's because a bad audio configuration. Then you just have to check your default audio device in Windows Control Panel / Sound Dialog Box (what is your default playback or communication device? What is your default recording device ?...), and check the audio configuration of some possible application that you previously configured to work with Voicemeeter (typically Zoom, Discord, Spotify, Games, OBS...).

Output A1, A2, A3... are not exactly synchronized.

On Voicemeeter every i/o are independent and we can hear more or less delay between them, especially when using up to 5 different audio output devices: if A1,A2 and others BUS are routed to several audio devices, the sound might be not exactly synchronized (one speaker output can be late and produce a small echo with other speaker output). This is normal (according technical constraint) but can be corrected by compensate one audio output with a delay line (see System Settings Dialog Box).



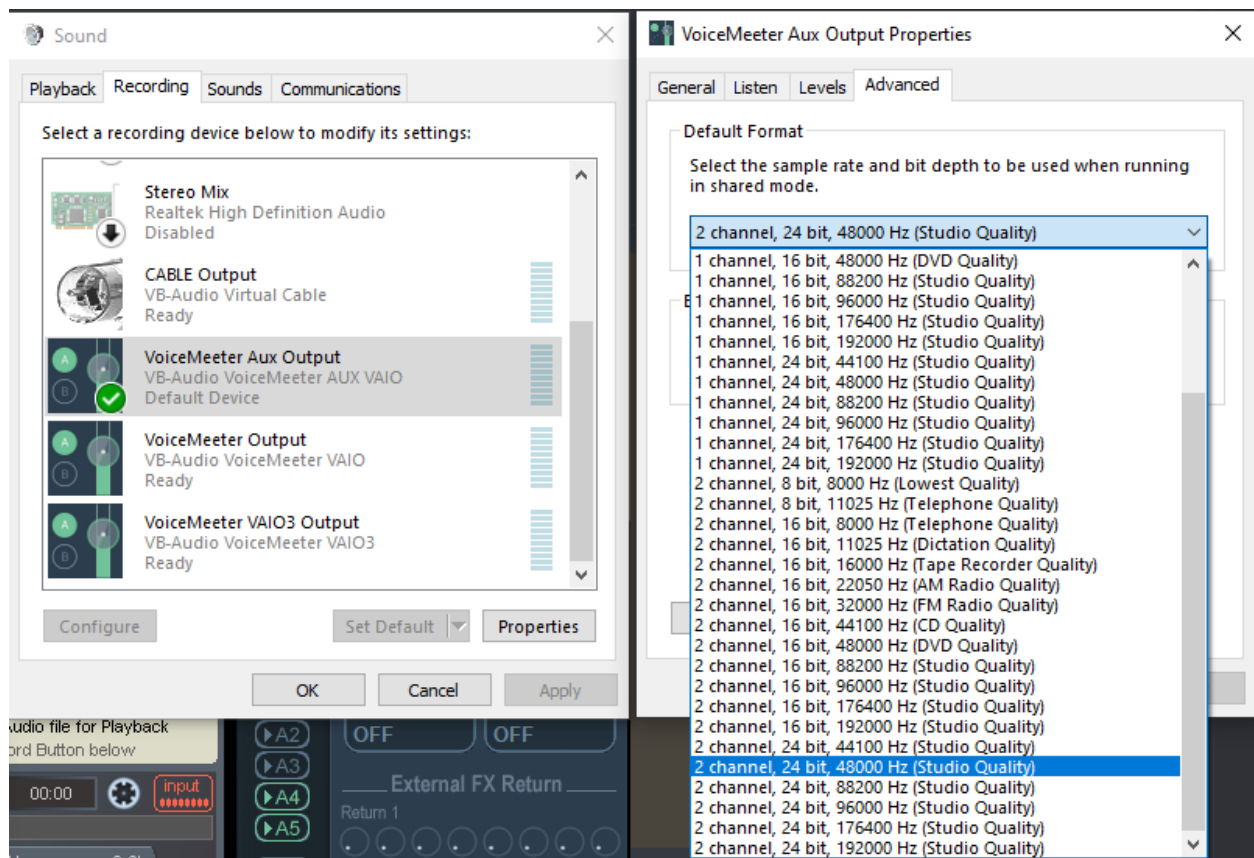
Voicemeeter Audio Stream can be stopped (no more sound, no meter display).

It can happen when changing audio system configuration (in Windows Control Panel / Sound properties) or when plug or unplug USB device or when launching other program that could use same audio device ... In this case, simply restart audio engine or re-select an audio device out A1 or input 1 or any other in Voicemeeter. It will restart audio stream automatically (otherwise it could mean that audio device are used by other process and cannot be used anymore by Voicemeeter).

Voicemeeter Audio Engine works only if the device selected for output A1 is running. This is possible to select nothing as output A1 to run Voicemeeter on its internal clock (made for PC configuration without output device available).

Audio Stream becomes bad (sound is choppy, crackling, discontinued):

If the audio stream is not stable in the time, with too much cut in the sound, it means you did not find the right audio configuration and you must try to change audio interface or buffer size to get stable audio stream. Some application like Discord could not work correct with other sample rate than 48kHz so you may set Voicemeeter Virtual output (recording device) used by Discord in 48 kHz.



Windows Update can disturb audio:

In some cases, WIN10 or WIN11 update can bring some problems by changing some default settings or rules. For example Privacy settings regarding microphone can prevent Voicemeeter to use recording devices. The new power throttling option coming with Win11 can generate unstable stream when the application is minimized...

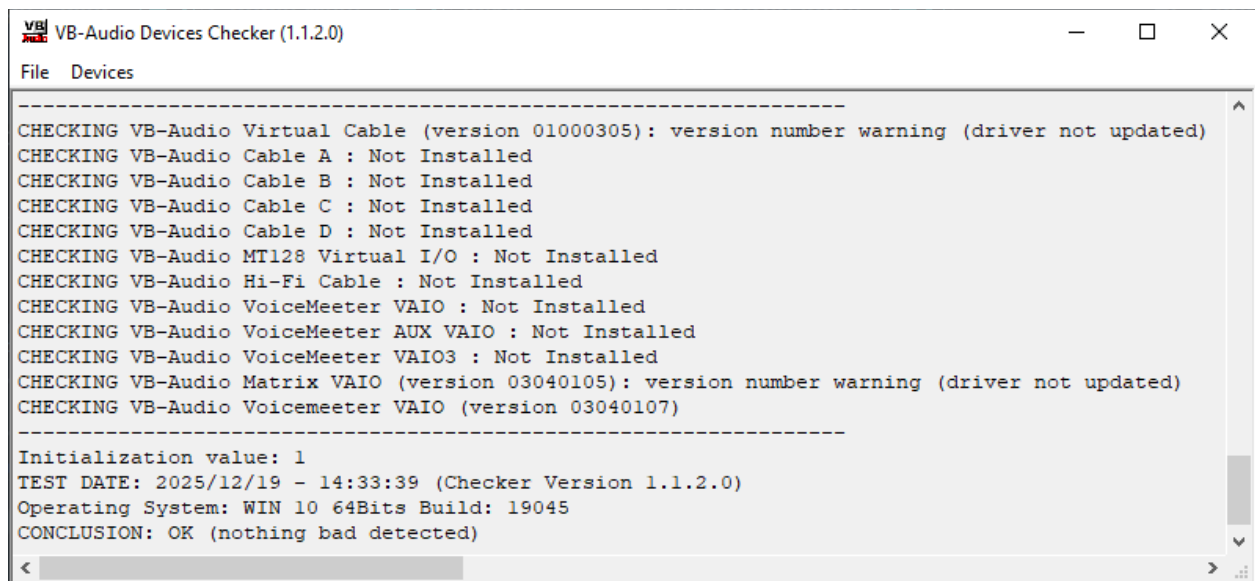
More info on our forum topic:

<https://forum.vb-audio.com/viewtopic.php?f=6&t=442>

VB-Audio Device Checker:

The VBDeviceCheck.exe is still proposed in Voicemeeter menu but it's not run on startup as it was with previous version. This was made to check installation of our previous generation of virtual audio drivers. Today Voicemeeter VAIOs or VB-CABLEs are expected to be updated for Win10 and higher O/S version.

This checking was originally made to detect a problem of re-installation by Win10 or Win11 automatic update (that could re-install audio driver not correctly). To detect this problem, the Device Checker was checking the Icon, pin Name and different driver information expected to not change. But today, user can change Pin name and icon with our latest driver version.



```

VB-Audio Devices Checker (1.1.2.0)
File  Devices
-----
CHECKING VB-Audio Virtual Cable (version 01000305): version number warning (driver not updated)
CHECKING VB-Audio Cable A : Not Installed
CHECKING VB-Audio Cable B : Not Installed
CHECKING VB-Audio Cable C : Not Installed
CHECKING VB-Audio Cable D : Not Installed
CHECKING VB-Audio MT128 Virtual I/O : Not Installed
CHECKING VB-Audio Hi-Fi Cable : Not Installed
CHECKING VB-Audio VoiceMeeter VAIO : Not Installed
CHECKING VB-Audio VoiceMeeter AUX VAIO : Not Installed
CHECKING VB-Audio VoiceMeeter VAIO3 : Not Installed
CHECKING VB-Audio Matrix VAIO (version 03040105): version number warning (driver not updated)
CHECKING VB-Audio Voicemeeter VAIO (version 03040107)
-----
Initialization value: 1
TEST DATE: 2025/12/19 - 14:33:39 (Checker Version 1.1.2.0)
Operating System: WIN 10 64Bits Build: 19045
CONCLUSION: OK (nothing bad detected)

```

Note the 3x VoiceMeeter drivers are no more installed on Windows 10 or higher. Only Voicemeeter VAIO driver is installed instead. This is normal, since we made a single driver with 8 I/O to simplify the maintenance and bring more power.

Warning can be ignored. More info on our forum topic:

<https://forum.vb-audio.com/viewtopic.php?f=7&t=688>

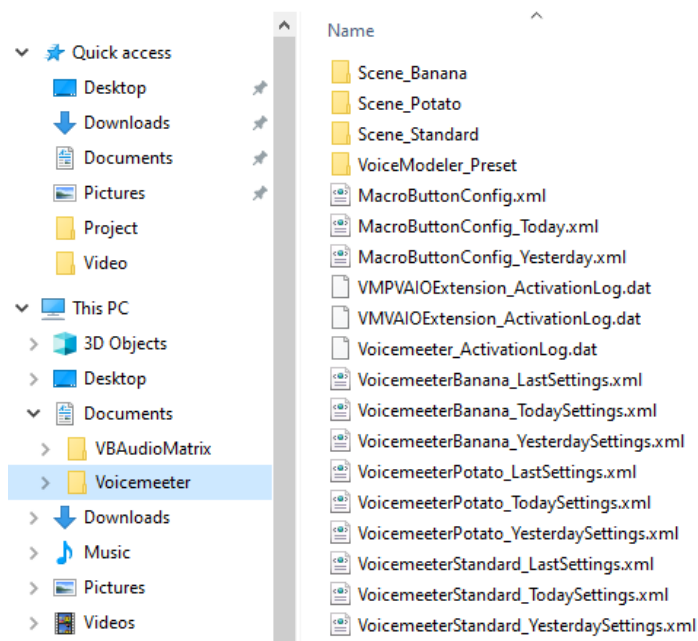
Audio Device List:

VB-Audio Device Checker also offers the possibility to display all VB-Audio Virtual Audio device installed. Playback devices and recording devices are shown like in Windows Sound dialog box with their current default audio format for the pin and audio engine (in parenthesis).

Each displayed device, show their current audio format (MIX Format in parenthesis) and Exclusive properties (not always displayed – parameters seems to be not always updated correctly).



Where are stored settings files:



All Voicemeeter and MacroButtons current settings file are stored in "My Documents \ Voicemeeter folder as XML files.

For Macro Buttons, Voicemeeter Standard, Voicemeeter Banana and Voicemeeter potato, the config file manager is maintaining two copies of your settings (called "today" and "yesterday").

Today settings is the configuration state at the beginning of the current day.

Yesterday settings one is the configuration file in use yesterday.

Command Line Installation:

It is possible to make an automatic installation (or uninstallation) by using command line options. However it will need to reboot after installation (and after uninstallation). So it's recommended to first call the setup program to uninstall possible previous version, then reboot, and then install new version (and reboot again).

-h : to hide GUI
-i : to install
-u : to uninstall

Voicemeeter Command Line:

Voicemeeter.exe and VoicemeeterPro.exe support some command to restart audio engine or to run Voicemeeter with a pre-defined configuration file. It allows for example to add different shortcut on the desktop to run Voicemeeter for different jobs.

To Restart Audio Engine by a shortcut use the following command line.

`Voicemeeter.exe -R` (or `"-r"`)

It can be useful to restart audio engine from a shortcut, for example to re-activate a known USB headset already connected to one Voicemeeter hardware input, but not physically plugged to the computer. When re-plugged to the computer, Voicemeeter Audio Engine has to be restarted to make it work again.

To run Voicemeeter with a specific configuration file, use these following command lines (Voicemeeter must have been shut down before – if Voicemeeter is already running, it will do nothing):

`-l"filename.xml"` or `-L"filename.xml"`

If the xml is in the same directories of voicemeeter.exe

`-l"filename.xml"` or `-L"filename.xml"`

If the xml is in the same sub directories of voicemeeter.exe

`-l"subfolder\filename.xml"` or `-L"subfolder\filename.xml"`

Or you can use absolute path

`-l"c:\folder\filename.xml"` or `-L"c:\folder\filename.xml"`

To generate a log file in c:\temp folder only (the directory must exist).

`-v` or `-V` (verbose mode)

This can also be activated by using the registry DWORD value: `VerboseMode` (set to '1').

Registry Parameters:

Some parameters in the registry (regedit.exe) can be interesting for some expert users in very specific use case or rare technical problems. Do not modify these values without having getting advice on our support resource (Forum, Discord).

We are talking here about some values present in the following registry directory

`HKEY_CURRENT_USER\VB-Audio\VoiceMeeter`

DelayedStartS

This value gives the countdown in second before starting audio engine on Voicemeeter Startup (5 second per default). This is represented by a growing bar with a countdown displayed on the A1, A2... device selection area when launching Voicemeeter. This is done to let the time to all audio services and drivers to be started before Voicemeeter start its audio engine. If a driver is not ready when Voicemeeter Audio engine starts, this device won't work until restarting Voicemeeter Audio Engine (Menu -> Restart Audio Engine).

preferredResolution

This value gives the preferred bit resolution used by Voicemeeter Banana & Potato (24 bits per default). Voicemeeter Standard is always using 16bits per default with Windows Audio Interface. In any cases, the final bit resolution is the result of a negotiation with the audio interface (that can force to use other resolution than the preferred one).

MaxMonDelayMS

500 ms per default to optimize memory allocation, this value gives the maximum delay for BUS monitoring delay options (in the system settings dialog box). It can be redefined by this registry key in millisecond, from 500 ms to 5000 ms (5 seconds max).

PreRecordingTimeMax

10 to 60 seconds (20 per default), this value define the pre-recording buffer memory allocation on Voicemeeter Startup. (for example around 90 MB for 60 seconds at 48 kHz).

TimerResolution

This value is by default set to '1' to force Voicemeeter to set the system timer resolution to 1 ms. Remove it or set it to 0 to use the 0.5ms system timer resolution.

AutoUpMixMode

If set to 1, this mode act on upmix BUS MODE by detecting signal level and deduce if the signal is stereo or multichannel (it is considered as multi channel if signal above -80 dBfs is detected in channel 3,4,5 ... in this case the UpMix is not applied).

WARNING: Other registry values must not be modified directly.

AUDIO EXPERT / DEVELOPPERS

EngineMode

This value gives a bit field of feature related to WASAPI audio engine. Must be ZERO per default. These historic modes are not tested anymore in our dev cycle.

0x00000001 : MODE_SWIFT

0x00000100 : INPUT EXCLUSIVE MODE

0x00000200 : OUTPUT EXCLUSIVE MODE //set anyway in Voicemeeter