VB-Audio Software

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# **VB-AUDIO CABLE**

Virtual Audio Device working as Virtual Audio Cable



# REFERENCE MANUAL

**VB-AUDIO CABLE** 

Non Contractual document

page 1

# Content

Introduction
The simplest Virtual Audio Cable:
Install VB-Cable4
Uninstall VB-Cable5
Set VB-Cable as default device6
Set VB-Cable Audio format7
VB-Cable Control Panel9
Configuring Internal Sample rate:11
Configuring Internal Latency:12
Loopback streaming:13
Windows Volume Control:13
Reset Pin Name and Icon:13
Understanding Latency:14
Finding Optimal Latency in particular cases:15
Hi-Fi Cable and ASIO Bridge:16
HiFi Cable Max Latency:16
Alert when Max Latency is not big enough:17
Alert when ASIO Buffer is too big17
Alert when Sample rate are different17
Alert when ASIO Driver is not started:
Alert on bad ASIO Clock
VB-CABLE Installation under Windows XP20
Select VB-CABLE as default device21
Check the sound is coming into VB-Cable input22
Use Audacity to monitor VB-CABLE output23
Use Audacity to record VB-CABLE output24
VB-CABLE Control Panel:
VB-CABLE customization:

X

## Introduction

VB-CABLE is a Windows Audio Driver (without hardware) so called Virtual Audio Driver working as a simple Virtual Audio Cable transporting audio signal from its input to its output. Then it allows connecting two applications together, a player application to a recorder application.

The VB-CABLE is present in the system like any other audio devices. It is presenting all audio interfaces: MME / WASAPI / KS / Direct X as a playback and recording point.

Sound

🤄 Sound	
Playback	Recording Sounds Communications
Select a	playback device below to modify its settings:
	Digital Audio (HDMI) High Definition Audio Device Ready
	S/PDIF M-Audio Delta AP 192 Ready
	Line 1/2 M-Audio Delta AP 192 Ready
	Speakers Sennheiser USB Headset Ready
C	CABLE Input VB-Audio Virtual Cable Ready
Config	Set Default
	OK Cancel Apply

Playback device (the CABLE Input) can be configured like speaker in different mode (from mono to 7:1 home cinema setup) and supports 44.1 kHz to 96 or 192kHz sample rate (16bits or 24bits resolution).

Like a regular audio device, the CABLE input can be set as system preferred / default device and can be used by several client applications in the same time.

# The simplest Virtual Audio Cable:

Select a recording device below to modify its settings: . Line In High Definition Audio Device Currently unavailable Line 1/2 M-Audio Delta AP 192 Ready S/PDIF M-Audio Delta AP 192 Ready Microphone Ξ Sennheiser USB Headset Default Device CABLE Output Virtual Cable Ready Set Default **V** Properties Configure

Playback Recording Sounds Communications

Recording Device (the CABLE output) can also be configured by properties dialog box and supports 44.1 kHz to 96 or 192kHz samplerate (16bits or 24bits resolution).

OK

Cancel

Apply

This CABLE output is simply providing signal coming in the other side (the CABLE input).

The VB-CABLE is the simplest Virtual Audio Cable, because it takes all audio formats as input and does the conversion for output if needed, automatically. In other words, the VB-CABLE is expected to work in any scenario, without having to configure it. Player application can send audio to the CABLE input in any audio format (16 or 24 bits, 44.1 to 192kHz, 1 to 8 channels) and the Recorder application can capture audio from the Cable output in any other audio format as well.

## **Install VB-Cable**

VB-CABLE can be installed on all Windows from XP SP2 to latest Win11 32 or 64 bits. And for Win10/11 Arm64. The setup program will install the right driver for your current O/S automatically.

STEP 1: Extract all files from the zip to a temporary local folder (on system disc). The setup program cannot be launched directly from de zip package, because require access to all uncompressed files.

STEP 2: Run setup program in Administrator mode (Right click on exe file to get the menu):

- VBCABLE\_Setup\_x64.exe for 64bits O/S.
- VBCABLE\_Setup.exe for 32bits O/S . \_

STEP 3: Follow instruction and wait for the end of the process. Restart your computer after installation (Restart after uninstallation too).

🥩 vbaudio_cable64_2003.cat		02/09/2014 18:01	Security Catalog	9 KB
🚳 vbaudio_cable64_2003.sys		02/09/2014 18:01	System file	41 KB
vbaudio_cable64_vista.cat		02/09/2014 18:01	Security Catalog	9 KB
🚳 vbaudio_cable64_vista.sys		02/09/2014 18:01	System file	41 KB
vbaudio_cable64_win7.cat		02/09/2014 18:01	Security Catalog	9 KB
🚳 vbaudio_cable64_win7.sys		02/09/2014 18:01	System file	41 KB
vbaudio_cable64_win10.cat		08/10/2024 06:09	Security Catalog	13 KB
🚳 vbaudio_cable64_win10.sys		08/10/2024 06:09	System file	138 KB
🚳 vbaudio_cable64arm_win1	0.sys	08/10/2024 06:09	System file	147 KB
VBCABLE_ControlPanel.exe	e	08/10/2024 15:13	Application	909 KB
🚽 VBCABLE_Setup.exe		22/07/2024 10:42	Application	893 KB
불 VBCABLE_Setup_x64.exe		20/00/2024 16:51		916 KB
vbMmeCable_2003.inf		Open	:up Information	5 KB
vbMmeCable_vista.inf	9	Run as administrator	:up Information	5 KB
vbMmeCable_win7.inf		View Dependencies	up Information	5 KB
vbMmeCable_xp.inf		Troubleshoot compatibility	up Information	5 KB
vbMmeCable64_2003.inf	1	WinMerge	:up Information	5 KB
vbMmeCable64_vista.inf	A	Acronis True Image	up Information	5 KB
vbMmeCable64_win7.inf			:up Information	5 KB
vbMmeCable64_win10.inf		Always available offline	:up Information	12 KB
		Restore previous versions		
		Send to	•	
		Cut		
		Сору		
		Create shortcut		
ied: 30/09/2024 16:51		Delete	Offline status: Online	e
ize: 915 KB O		Rename		
		Properties		

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Reference Manual	VB-CABLE	revision 3

# **Uninstall VB-Cable**

If the VB-CABLE is already installed, the setup program will propose you to remove the driver (instead of installing it).



Don't forget to restart your computer after to let Windows finalize the uninstallation. If the driver is not removed after that, you will have to remove it manually by the Windows Device Manager:

🐣 Device Manager			_ 🗆 <mark>_ X</mark>
File Action View Help			
	<b>1</b>		
▷ 🖤 Ports (COM & LPT)			
Processors			
🖌 🖌 🖌 Sound, video and game contro	ollers		
ATI High Definition Audio	Device		
🖌 🔤 High Definition Audio Dev	ice		
Launchpad			
LKMK3 MIDI			
M-Audio Delta AP 192			
Saffire 6 USB 2.0			
teVirtualMIDI - Virtual MID	I Driver x86		
USB MICROPHONE			
VB-Audio Cable A			
VB-Audio Cable B			
VB-Audio Cable C			
VB-Audio Cable D			
VB-Audio Hi-Fi Cable			
VB-Audio Magnetophone	1/0		Ξ.
VB-Audio Mi128 Virtual (	0		
VB-Audio Virtual Cable	Update Driver Software	1	
VB-Audio VoiceMeeter	Disable		
VB-Audio Voicelvieeter	Disable		
	Uninstall		
System devices	Scan for hardware changes		
🔈 - 🏺 Universal Serial Bus contro	Properties		-
Uninstalls the driver for the selected device	e.		

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# Set VB-Cable as default device

After installation, you can set or check your default audio device. With Windows 10 and higher, the last installed audio driver can be automatically set as default device and it's maybe not what you want.



← ≡ Syst	settings em > Sound	- o x
Output		
4))	Choose where to play sound Apps might have their own settings	
	Voicemeeter In 2 VB-Audio Voicemeeter VAIO	>
	Voicemeeter In 3 VB-Audio Voicemeeter VAIO	>
	O CABLE Input VB-Audio Virtual Cable	>
	CABLE In 16ch VB-Audio Virtual Cable	>
	Voicemeeter In 4 VB-Audio Voicemeeter VAIO	>

Default playback device can also be set in Windows Sound Dialog box (playback tab).



Your default microphone will be the VB-CABLE output (so all audio sent to VB-CABLE input).

$\leftarrow \equiv$ Settings	-		×
System > Sound			
Voicemeeter Out A3 VB-Audio Voicemeeter VAIO		>	
Line 2- AudioBox USB 96		>	
Voicemeeter Out A1 VB-Audio Voicemeeter VAIO		>	
CABLE Output VB-Audio Virtual Cable		>	
Voicemeeter Out B2 VB-Audio Voicemeeter VAIO		>	
Voicemeeter Out A5 VB-Audia Voicemeeter VAIO		>	
Voicemeeter Out A2 VB-Audio Voicemeeter VAIO		>	

Default recording device can be selected in Windows Sound Dialog box (recording tab)



VB-CABLE for Win10/11 x64/Arm64 installs 2x different inputs. The first is a speaker playback device (that can be setup with configure button) limited to 8 channel (7.1 speaker config). The Second CABLE input is a Line Out pin able to manage up to 16 channels. Both are setup in stereo 48kHz by default.

# Set VB-Cable Audio format

The VB-CABLE default format is stereo 48 kHz (for Win10/11) and stereo 44.1 kHz for previous version. The VB-CABLE input or output format can be changed by application connected to it, but most of applications are using the current defined format. So it can be useful to change the audio format, especially the number of channels and the sample rate if needed.

For "Speaker" pin, the channel number can be configured by the **configure** button.



For a "Line Out" pin, the channel number must be defined with the default audio format in advanced properties (both cable inputs cannot be used in the same time):



<b>VB-AUDIO CABLE</b>	Non Contractual document	page 7
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VB-CABLE recording devise is a "Line In" pin so the channel number must also be defined with the default audio format in advanced properties:

Sound ×	G CABLE Output Properties     X     X
Playback Recording Sounds Communications	General Listen Levels Advanced
Select a recording device below to modify its settings:	Default Format
Line In Realtek(R) Audio Not plugged in	Select the sample rate and bit depth to be used when running in shared mode.
Realtek (R) Audio Disabled	14 channel, 16 bit, 3200 Hz (FM Radio Quality) 14 channel, 16 bit, 3200 Hz (FM Radio Quality) E 14 channel, 16 bit, 44100 Hz (CD Quality)
CABLE Output VB-Audio Virtual Cable Default Device	14 channel, 16 bit, 48000 Hz (DVD Quality) 14 channel, 16 bit, 88200 Hz (Studio Quality) 14 channel, 16 bit, 96000 Hz (Studio Quality) 14 channel, 16 bit, 176400 Hz (Studio Quality) 14 channel, 16 bit, 19000 Hz (Studio Quality)
Voicemeeter Out A1 VB-Audio Voicemeeter VAIO Ready	14 channel, 24 bit, 4100 Hz (Studio Quality) 4 channel, 24 bit, 44100 Hz (Studio Quality) 4 channel, 24 bit, 48000 Hz (Studio Quality) 14 channel, 24 bit, 48000 Hz (Studio Quality) 14 channel, 24 bit, 96000 Hz (Studio Quality)
Voicemeeter Out A2 VB-Audio Voicemeeter VAIO Ready	14 channel, 24 bit, 176400 Hz (Studio Quality) 14 channel, 24 bit, 192000 Hz (Studio Quality) 16 channel, 16 bit, 11025 Hz (Dictation Quality) 16 channel, 16 bit, 16000 Hz (Tape Recorder Quality)
Configure Set Default V Properties	16 channel, 16 bit, 32000 Hz (FM Radio Quality) 16 channel, 16 bit, 32000 Hz (FM Radio Quality) 16 channel, 16 bit, 44100 Hz (CD Quality) 16 channel, 16 bit, 48000 Hz (DVD Quality) 16 channel, 16 bit, 88200 Hz (Studio Quality)
OK Cancel Apply	16 channel, 16 bit, 96000 Hz (Studio Quality) 16 channel, 16 bit, 176400 Hz (Studio Quality) 16 channel, 16 bit, 192000 Hz (Studio Quality) 16 channel, 24 bit, 44100 Hz (Studio Quality)
	16 channel, 24 bit, 40000 Hz (Studio Quality) 16 channel, 24 bit, 88200 Hz (Studio Quality) 16 channel, 24 bit, 96000 Hz (Studio Quality) 16 channel, 24 bit, 176400 Hz (Studio Quality) 16 channel, 24 bit, 192000 Hz (Studio Quality)

VB-CABLE previous version (XP to Win7) is limited to 8 channels. The 8 channels are also present on VB-CABLE output (recording device) but can be used with MME under XP only. MME is limited to stereo from Vista. But the 8 channels are available though KS interface. WIN10/11 version provides 8 channels (or up to 16) for all interface (MME, WASAPI, KS).

REM: VB-Audio Matrix coconut is able to manage Windows Audio device offering more than 8 channels (up to 64 channels).

**VB-AUDIO CABLE** 

Non Contractual document

page 8

October2024	VB-Audio Software	©V.Burel
Reference Manual	VB-CABLE	revision 3

# **VB-Cable Control Panel**

The VB-Cable Control Panel application can be found in the ZIP package or in the installation folder:

CABLE	× +					- 🗆 X
$\leftarrow$ $\rightarrow$ $\uparrow$	C □ > This PC > Local Disk	: (C:) > Program Files	> VB > CAB	BLE	Search CABLE	٩
🕀 New 🗸		Sort 🗸 📰 View 🗸				Details
📒 VBVAC_imag 🖈	Name	Date modified	Туре	Size		
	🍜 pin_in	6/20/2012 5:54 PM	ICO File	8 KB		
🗸 📮 This PC	🏽 pin_out	6/20/2012 6:18 PM	ICO File	8 KB		
> 🏪 Local Disk (C:)	VBCABLE_ControlPanel	10/8/2024 3:13 PM	Application	909 KB		
> - DATA (D:)	😸 VBCABLE_Setup_x64	9/30/2024 4:51 PM	Application	916 KB		
> 💼 DiskE (\\VBI3)	📓 vbMmeCable64_win10	10/8/2024 2:50 PM	Setup Information	12 KB		
> 🛬 Network						
5 items   1 item selected	908 KB					

The VB-CABLE control panel is basically made to help in some particular cases, or in order to improve audio quality or real time streaming aspects, VB-CABLE control panel allows setting two important system parameters: the **Max Latency** (pipe size) and **internal sample rate** (called 'Internal SR').

VB-Audio Virtual Cable Control Pane	l (Version 3.3.1.7)							
Discharge VD Andia Vistoria	P-11-							
Driver Name: VB-Audio Virtual C	able			Statistics		Input		Output
Driver Version: 3.3.1.7				Buffers: 3514	b128;	14		2401
Max Latency: 7168 smp				ull loss: 1474314	b256	2807	b256:	1424758
Internal SR: 48000 Hz			Ru	sh loss: O	b512:	552	b512:	49386
Latency: 7168 smp				Init: 1 / T2	b1024:	141	ь1024:	2
		-				man		
Input Driver Info		- Andale	- Aller		HE.	- 0		
DMA Size: 4096 / 0 nph					177	0	0	
Error DMA E/H- 0 / 0	S1			•	Aut			51
Buffor Call: 2527	Cable In	iput Part	and the			and the second	C	able Output
Times Olitable 0	ch: 2		A STATE OF THE OWNER	100	11000	-	ch	2
	sr: 4800	0 Hz	100		115.7		er	48000 Hz
Counter Ex/S: 074025	rog: 24 b	ite	- from -		1.1		100	24 bite
Counter ex3: 3550	163. 24 0	113	Pris.		1.40		163.	24 0115
Output Driver Infe		Calculation (						
DIAA Sizes 4000 / 0 anh	Inpu	t Levels			1	Output Levels		
DIVIA 5126. 40967 0 11pb	1	54.7 %	FL		1	55.2 %	%	FL
Error DIMA F/H: 0 / 0	2	49.5 %	FR	Wode:	2	49.9 9	%	FR
	2	0.0.9/	FC	Virtual Cable				
Buffer Call: 2948298	3	0.0 %	10	viitual Gable	3	0.0 %	6	FC
Buffer Call: 2948298 Timer Glitch: 0	3	0.0 %	LF	Virtual Cable	3 4	0.0 % 0.0 %	6	LE
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696	3 4 5	0.0 % 0.0 % 0.0 %	LF	Volume Control:	3 4 5	0.0 % 0.0 % 0.0 %	6 6 6	FC LF RL
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6	0.0 % 0.0 % 0.0 %	LF RL RR	Volume Control: Disabled	3 4 5 6	0.0 % 0.0 % 0.0 % 0.0 %	6 6 6	FC LF RL RR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7	0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL	Volume Control: Disabled	3 4 5 6 7	0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6	FC LF RL RR SL
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8	0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8 9	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8 9 10	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9 10	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 7 8 9 10 11	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9 10 11	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6 6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8 9 10 11 12	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9 10 11 12	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6 6 6 6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8 9 10 11 12 13	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9 10 11 12 13	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	6 6 6 6 6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8 9 10 11 12 13 13 14	0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9 10 11 12 13 14	0.0 % 0.0 %	6 6 6 6 6 6 6 6 6 6	FC LF RL RR SL SR
Buffer Call: 2948298 Timer Glitch: 0 Counter Ex/S: 0 / 2950696 Counter ex3: 2948301	3 4 5 6 7 8 9 10 11 12 13 14 15	0.0 % 0.0 %	LF RL RR SL SR	Volume Control: Disabled	3 4 5 6 7 8 9 10 11 12 13 14 15	0.0 % 0.0 %	6 6 6 6 6 6 6 6 6 6 6 6 6	FC LF RL RR SL SR

VB-AUDIO CABLE Non Contractual document page 9
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VB-CABLE Control Panel shows current system parameters (top-Left):

- Driver Name: VB-Audio Virtual Cable
- Driver Version: 3.3.1.7
- Max Latency: 7168 (is the max allocated memory on driver init).
- Internal SR: 48000 Hz (the working samplerate of the cable).
- Latency: 7168 (can be changed on the fly to improve latency).

Input / Output current settings show the current windows audio format configuration or the audio format used by connected client applications (applications might set/change i/o format, pending on O/S version and audio interface type used by them).

- **S0, S1**... number or system stream connected
- L : Loopback in use.

VB-CABLE Control Panel also shows statistics related to buffering, helpful to optimize latency. These statistics are simple counters for different buffer size:

b128 = number of buffer above or equal to 128 samples = nb buffers < 256 samples. b256 = number of buffer above or equal to 256 samples = nb buffers < 512 samples. b512 = number of buffer above or equal to 512 samples = nb buffers < 1024 samples.

Operating System can use different buffer size for streaming audio. In the picture above we can see that the cable input (which is a playback audio device) has been fed with 128 samples buffers as well as 256, 512 or 1024 samples buffers. To be precise, this statistics mean that VB-CABLE has received buffer with a size between 128 and more than 1024 samples.

Input driver info and Output driver info are for debugging purpose. Error DMA F/H must be 0 / 0.

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#### Configuring Internal Sample rate:

VB-CABLE works internally with a fixed Samplerate (given by Internal SR). It allows managing any audio sample rate format on input and output (independently). Then a DVD Player can send 48 kHz sound on VB-Cable input while another audio application can record at 44.1 kHz on VB-Cable Output. Conversion is automatically made by VB-CABLE.

ໝ VB-Audio Virtual Cable Control Panel (Version 3.3.1.7)		The main menu allows to set different
Options Latency About		options.
Reset Pin Name and Icon		
Enable Windows Volume Control		7168 as default buffer size is usually
<ul> <li>Enable Loopback Streaming</li> </ul>	Puter	enough for any usual workflow because it quarantees a stable stream
Set Max Latency: 4096 smp (requires REBOOT)		if connected applications are using
Set Max Latency: 5120 smp (requires REBOOT)	2	huffor size below 2048 samples
Set Max Latency: 6144 smp (requires REBOOT)	South Carton	bullet size below 2046 samples.
Set Max Latency: 7168 smp (requires REBOOT)		However this can be not enough for
Set Max Latency: 8192 smp (requires REBOOT)		nign samplerate use cases (e.g. 192
Set Max Latency: 12288 smp (requires REBOOT)	Colores Con	KI 12).
Set Max Latency: 16384 smp (requires REBOOT)	Will Cash	
Set Max Latency: 32768 smp (requires REBOOT)		The menu allows to allocate more
Internal Sampling Rate: 44100 Hz		historial later av
Internal Sampling Rate: 48000 Hz	ale	a bigger internal latency.
Internal Sampling Rate: 88200 Hz	48.6 % FL	
Internal Sampling Rate: 96000 Hz	45.7 % FR	Internal sampling rate can be changed
Internal Sampling Rate: 176400 Hz	0.0 % FC	on the fly, but to be persistent (stored
Internal Sampling Rate: 192000 Hz	0.0 % LF	in registry) the Control Panel must by
Reset settings to initial state	0.0 % RR 0.0 % SL	run in administrator mode.

VB-CABLE for Win10/11 supports 8kHz to 192 kHz sample rate on i/o, though standard Internal sample: 44.1, 48, 88.2, 96, 176.4 and 192 kHz.

If both i/o have the same sample rate than the Internal SR, the sound pass through the CABLE without conversion, so with the best audio quality ! That's why it can be useful to set the right Internal sample rate for given use cases.

But according Windows Version and Audio Interface used by client applications (e.g. MME, WASAPI, DX) system components (like kMixer for example) can make required conversion and decrease sound quality (independently from the VB-CABLE).



For example under Win7, conversion is made while under XP VB-Cable Input Samplerate is changed by windows media player.

VB-AUDIO CABLE	Non Contractual document	page 11
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#### **Configuring Internal Latency:**

VB-CABLE can now let you change the latency on the fly or by editing the value on main view, or by using the latency menu.

VB VB-Au	idio Virtual Cable Control Panel (Version 3.3.1.7)				×
Options	Latency About				
Driver	Set Current Latency: 3x 128 smp			Input	Output
Driver \	Set Current Latency: 3x 256 smp		Buffers: 266576	b128: 15	b128: 2603
Max L	Set Current Latency: 3x 512 smp		Pull loss: 1474315	b256: 250113	b256: 1671787
Inter	Set Current Latency: 3x 768 smp		Rush loss: 0	b512: <b>16307</b>	b512: 65246
L	Set Current Latency: 3x 1024 smp		Init: 1 / T2	b1024: <b>141</b>	b1024: <b>2</b>
	Set Current Latency: 3x 2048 smp			and the second	
Input	Set Current Latency: 7168 smp (default)				•
DI	Set Current Latency: 3x 4096 smp				0
Error D	Set Current Latency: 3x 8192 smp			1211	S1
Bu Time	Extra Info	[E] or [*]	the l	11300	ch: 2
Count	er Ex/S: 0 / 266914 sr: 4800	) Hz		1917	sr: 48000 Hz

If the latency is considered too small according statistics (buffer used by applications connected to the cable) the counter becomes red and the sound can become discontinued or simply silence.



Simply enter a bigger value until removing the red display



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#### Loopback streaming:

Microsoft windows provides WASAPI interface to capture the stream of the playback device too (not only the recording device). This has been made to let remoting program to capture the sound playing back for example. This streaming was previously taken in charge by the system but is a special feature in new Win10 Driver Architecture and must be managed at driver level. Activated by default the Loopback option will allow you to capture the VB-CABLE Input.



#### Windows Volume Control:

New VB-CABLE version implements the Windows Volume Control by option to let you change the volume of the VB-CABLE input (Playback device) with the regular Windows Controller. Otherwise the Volume Control has no effect (Mute control can have effect, pending on Windows version).



#### Reset Pin Name and Icon:

Will let you reset the icon and pin name of VB-CABLE device (run VB-CABLE Control Panel in administrator mode).

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#### **Understanding Latency:**

Basically the VB-CABLE needs 3 buffers to make a continuous audio stream (one for input, one for internal, one for output), the difficulty to set the Max Latency is given by the operating system which is using various buffer size to stream audio.

# Max Latency = 3 x Max Buffer Size

**Statistics** are there to let you define rationally the best Max Latency of the cable and first to find the biggest buffer size used by current audio stream. It means you need to play the stream through the cable (with the player application and recorder application if any) to analyze statistics before setting VB-Cable Max Latency.

It's important to understand that audio stream buffering is pending on client applications and audio interface used by these applications (MME, KS, WASAPI behave different). If you set optimal latency for your DVD player and Audacity using KS audio interface, it could not work anymore with other player and recorder application.



#### Finding Max Buffer Size:

According statistics left there, audio stream is never using buffer size above or equal 512 samples.

Consequently this stream should work with 512 samples buffer. 512 can be considered as the max buffer size used by current audio stream.

So MAX Latency =  $3 \times 512 = 1536$ 

This result is true only if sample rate configuration is the same for i/o and internal SR.

This basic formula is working also for Hi-Fi Cable. However, for VB-CABLE where internal sample rate can be different from input sample rate and output sample rate, best Max Latency will need to be scaled by the ratio: InternalSR / (i/o SR).

$$Max \ Latency = 3 \times (Max \ Buffer \ Size) \times \frac{InternalSR}{outputSR}$$

In the example above, if internal sample rate is 96 kHz and i/o SR is 44.1 kHz, then our Max Latency must be scaled by 96/44.1.

$$Max \ Latency = 3 \times 512 \times \frac{96000}{44100} = 1536 \times 2.177 = 3343$$

So, the real MAX Latency in this case must be set to 3343 samples min (4096 recommended).

**VB-AUDIO CABLE** 

Non Contractual document

page 14

October2024	VB-Audio Software	©V.Burel
Reference Manual	VB-CABLE	revision 3

#### Finding Optimal Latency in particular cases:

General formula to compute Optimal Max Latency is much more complicated and would need to be implemented in the Control Panel as a Suggestion for users ... However we can study different possible cases according statistics results.

#### Always take the Maximum Buffer given by statistics:

Statistics	Input	Output	Here, according statistics, the stream of
Buffers: 5195	b128: 31	b128: 15	the Audio Source Application is using 512 sample may buffer while the stream
Push loss: 1548	6256-4635	b256: 1949	of the Audio Recorder application uses
Init: 1	b1024: 0	b1024: 0	1024 samples Max Buffer.
	6		Use biggest value and compute Max Latency with it = $3 \times 1024$ (x SR scale)

**Important remark:** VB-CABLE will work correct if its current Latency is equal or above the computed MAX Latency with Statistics (that's why default value is 7x1024 or 8x1024 samples. This value should work correct for most of the cases, up to 96 kHz stream). However, if the current MAX latency is lower than the computed MAX Latency according statistics, you might get cut in the sound (stream continuity problem).

#### Use Max Latency if Statistics are overloaded:

28: 15	L400-	201		
	D120.	31	b128:	Buffers: 5195
56: 1949	b256;	4635	b256:	Push loss: 1548
2 865	b512:	650	b512:	Pull loss: 0
24: 136	b1024:	26	b1024:	Init: 1
24: 1	b1024:	26	b1024:	Init: 1

If Streaming is using 1024 samples buffer and more, you are obliged to consider using max Latency without being sure it will work correct (streaming might use 2048 or 8192 buffer as well, we cannot see it here because statistics are limited to 1024 buffer size).

Note: for VB-CABLE, you can decrease the Internal SR to increase effective pipe size.

#### Statistics on Hi-Fi Cable:

Buffers:11687	b128:0	b128:2474
Push Lost:0	b256:0	b256:4591
Pull lost:0	b512:11687	b512:0
Init:1	b1024:0	b1024:0
MSR:44106 Hz	b2048:0	b2048:0

Hi-Fi Cable Statistics go up to 2048 buffering because can support bigger sample rate, and audio streaming is usually increasing buffering with samplerate.

REM : When client audio application are using KS or WASAPI audio interface, VB-CABLE usually receive the same buffer size. This is the case here above where only b512 counter is increased on input (because audio sound is sent through KS interface with 512 sample buffer) while MME buffering can use various buffer size to manage audio stream (as we can see it on output statistics – the right column). Consequently, If you are sure about how your audio application are buffering audio stream, you might use it to configure Max Latency (without needing to use statistics – or just to check the consistency of your settings).

VB-AUDIO CABLE	Non Contractual document	page 15
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Reference Manual	VB-CABLE	revision 3
October2024	VB-Audio Software	©V.Bure

### Hi-Fi Cable and ASIO Bridge:

HiFi Cable is a bit different (compared to original VB-CABLE) since it does not include an SRC (Sample Rate Converter). Consequently, it works correctly only if i/o are configured with the same sample rate.



HiFi Cable Control Panel is called **ASIO Bridge** because it also allows routing virtual i/o to an ASIO Device. Per default HiFi Cable is in **Pass Through** mode: The regular mode where all incoming audio on input is going to audio output of the Hi-Fi Cable. In **ASIO Direct** Mode the HiFi Cable Input is routed to ASIO output and the ASIO input is routed to HiFi Cable Output. In a way, ASIO Bridge is an Audio Interface Converter allowing audio application to use ASIO device through its regular audio management (MME, KS, Direct-X or WASAPI).

NOTE : If the ASIO Bridge Application is not launched then the Hi-Fi Cable is PASS Through anyway.

#### HiFi Cable Max Latency:

Since it support up to 384 kHz audio stream, Hi-Fi Cable includes more options to set maximum latency time (up to 32k samples).



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#### Alert when Max Latency is not big enough:

HiFi Cable Control Panel is analyzing statistics every second to check if the pipe size is big enough to support buffering used by the different i/o streams. And if current MAX Latency is too weak, we got a blinking text below LCD proposing a new MAX Latency.



The red text below the LCD is displayed when current Cable Latency is too small to support current audio stream.

#### Alert when ASIO Buffer is too big.

ASIO Buffer size is displayed in a red blinking rectangle if it is too big compared to the cable MAX Latency. Again we must respect the main rule where buffer used must have size below 1/3 of the Cable MAX Latency.



#### Alert when Sample rate are different.

Since the Hi-Fi Cable do not include a sample rate converter, all sample rate must be the same to make the different stream work correctly. These displayed sample rate are blinking on ASIO Bridge Dialog box only if used: it means only if there is an application connected to the virtual audio input out output.

REM: Of course if its blinking you can expect to have a corrupted audio stream, because not working in the right sample rate.

October2024	VB-Audio Software	©V.Burel
Reference Manual	VB-CABLE	revision 3

#### Alert when ASIO Driver is not started:

If ASIO Driver is not started, the device name is followed by the mention (STOPPED). To restart it, reselect ASIO Device in popup menu, or change twice the ASIO Bridge mode (PASS Through and ASIO Direct).



#### Alert on bad ASIO Clock

ASIO Bridge includes a sample rate measurement to check the real sample rate delivered by ASIO driver. This is done to detect wrong hardware configuration: bad sync mode, wrong word clock and whatever clock default if any.

Typical problem comes from hardware input that can use a different sample rate than the one required by the software. If you play a DVD asking for 48 kHz, ASIO Driver can start with this setting but work finally in 44.1 kHz because converter or audio physical connection is driven by another clock.



If there is an ASIO Clock problem, the measured sample rate (here 44100 Hz) is shown in a blinking red rectangle.

# VB-CABLE Under WINDOWS XP

**VB-AUDIO CABLE** 

Non Contractual document

page 19

# **VB-CABLE Installation under Windows XP**

The VB CABLE is a regular MME / KS / Direct X Audio Driver presenting a playback and recording point (exactly like other regular audio devices). To install it, just unzip the package in a folder on your local disk and launch the program **VBCABLE\_Setup.exe** (for 32bit O/S).



After installation you can go on Control Panel / Sound and Audio Properties Dialog Box to check that you have a new Audio Device installed on your system, called **VB-Audio Point**.

REM: (under other O/S above VISTA, the driver name is VB-CABLE input/output).

**VB-AUDIO CABLE** 

Non Contractual document

#### Select VB-CABLE as default device

The VB-CABLE works like a regular audio device and can be selected as a playback device by any audio application handling MME, KS or Direct-X audio interfaces.

To record any sound played on your	Sounds and Audio Devices Properties
Default Playback Device. Then every sound	Volume Sounds Audio Voice Hardware
playing on your computer will be sent to the	Sound playback
VB-CABLE input.	Default device:
WARNING, you will hear nothing anymore in your speaker while the VB-CABLE output is	Volume Advanced
not routed to physical output (with another	Sound recording
	Realtek HD Audio Input
REM: Don't forget to push the APPLY button to confirm your selection.	Volume Advanced
-	MIDI music playback
	Microsoft GS Wavetable SW Synth
	Volume About
	Use only default devices
	OK Cancel Apply

Then you can launch a player application (using default playback device). For example VLC, Windows Media Player, Winamp...



**VB-AUDIO CABLE** 

Non Contractual document

#### Check the sound is coming into VB-Cable input

The VB-CABLE package includes a small Control Panel program that can be useful to check if it works.

🚆 VB-Audio Virtual Cable Control Panel (Version 3.3.1.7)						
Options	Latency About	t				
Drive	r Name: <b>VB-Aud</b>	lio Virtual Ca	able		Input	Output
Driver	Version: 1.0.3.5			Buffers: 898	b128: 5	b128: <b>0</b>
Max L	atency: 7168 sn	np		Pull loss: 0	b256: 887	b256: <b>0</b>
Inte	rnal SR: 48000 H	lz		Rush loss: 880	b512: 0	b512: <b>0</b>
				Init: 1	b1024: <b>0</b>	b1024: <b>0</b>
					and the second	
Input	Levels		The second se	ingene (		
1	66.4 %	FL	Callerta			
2	70.5 %	FR				•
3	0.0 %	FC	Same -			
4	0.0 %	LF	Cable Input		Contraction of the second	Cable Output
5	0.0 %	RL	ch: 2	and the second s	We see and	ch: -
6	0.0 %	RR	or: 44100 Hz		W/ Argent	
7	0.0 %	SL	51. 44100 HZ	-	SAU -	51
8	0.0 %	SR	res: 16 bits			res: -
				19.1		

Here you can see in the input levels section if the audio signal is coming in the cable input (playback device). You can click on it to change the level unit (db or % level).

The Input and Output section show the Audio Point Configuration (Playback and Recording device audio point). Under XP this is set by client applications. In the picture above, the Output configuration is not shown because no client application is connected to this point (Recording Device). Note that the VB-CABLE can handle any format change on both points in real time (user has nothing to configure).

Statistics are there for analyzing purpose (expert user).

#### Use Audacity to monitor VB-CABLE output

Audacity® is free, open source, cross-platform software for recording and editing sounds. (http://audacity.sourceforge.net/).

First of all you may configure AUDACITY device to record the signal coming from VB-CABLE output and play it back in a real audio output (in this example: the Realtek HD Audio output).



You can check that the signal is coming from the VB-CABLE by using START MONITOR function. Then you will see the Level Meters move.

Audacity		
File Edit View Transport Tracks Generate Effect Analyze Help		
	→ -36 -24 -12 0	
	Disable Meter Start Monitoring	· · @. · · · · · <sup>+</sup> ·
MME 🔍 📢 Realtek HD Audio output 🔍 🎤 VB-Audio Point 🔍 2 (Stereo) Input C 🔍	Horizontal Stereo	
- 1.0 0 1.0 2.0 3.0 4.0 5.0 .	Vertical Stereo	8.0
	Linear dB	^
	Preferences	

### Use Audacity to record VB-CABLE output

Simply push the RECORD Button.

Audacity	
File Edit View Transport Tracks Generate Effect Analyze Help	
	2 0
📱 🕨 The The Implementation output and the Implementation of the	t C 🔽
7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0	
X Audio Track ▼       1.0         Stereo, 44100Hz       0.5         Mute       Solo         0.0       0.0         Image: Ima	
	~
Project Rate (Hz): Selection Start: O End C Length Audio Position	
44100 Snap To D 00 h 00 m 00,000 s 00 h 00 m 00,000 s 00 h 00 m 15,256 s	
Click and drag to select audio Actual Rate: 44100	

The Sound coming in VB-CABLE is recorded and after could be played back through a real output audio device (Just Push PLAY).

Routing Diagram :



Player Software

**Recording Software** 

Every player are sending sound in the VB-CABLE input since it's set as Default Playback Audio Device. Then a recorder application can get back the signal from the CABLE-Output, which is a Virtual Recording Audio Device.

VB-AUDIO CABLE	Non Contractual document	page 24
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### **VB-CABLE Control Panel:**

This application, delivered in the Driver Package, allows checking status of the driver: version, configuration, and specific data for diagnostic / debugging purpose. The VB-CABLE control panel for older version is more limited in term of options / functions (than the latest 2024 version for example).



The VB-CABLE works internally with a fixed sample rate and a fixed pipe size (7168 samples per default) and support I/O sample rate range from 8kHz to 96 kHz.

Input Levels give the incoming Signal Level for every possible input channel.

**Input and output** configuration (ch, sr, res) shows the present driver pin configuration. It is pending on O/S and applications using the driver.

**Statistics** give different data related to internal pipe: Buffers counter, Lost buffer in input (push loss) or in output (pull loss). The bxxx value gives the buffering type: how the client applications are feeding the input device and getting output signal (on this example the signal is sent by buffer smaller than 512 samples).

**Latency:** The Max Latency between VB-Cable Input and Output is given by the pipe size: per default 7168 samples. This value has been chosen to let the virtual cable works with most of Client Applications and allows until 2048 samples buffering.

## **VB-CABLE** customization:

VB-CABLE audio device can let you redefine pin name and icon (by the properties dialog box).



#### Driver Name

But only the latest Win10/11 version will allow you to change it and stay persistent. Previous VB-CABLE version (XP to Win7) could reset icon and pin name on Windows startup.



REM: the driver name cannot be changed.

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