VEO-CAP4U
AV INTERFACES
Professional USB Video Capture

USER MANUAL
INDEX

1. IMPORTANT REMARK .................................................................................................................. 3
2. IMPORTANT SAFETY INSTRUCTIONS ..................................................................................... 3
3. IMPORTANT NOTE ....................................................................................................................... 5
4. INTRODUCTION .......................................................................................................................... 5
5. PACKAGE CONTENTS .................................................................................................................. 6
6. PANEL DESCRIPTIONS ............................................................................................................... 6
   6.1 Interface Frontal Panel and Rear Panel ..................................................................................... 6
7. CONNECTION DIAGRAM AND INTERNAL AUDIO ROUTING ................................................. 7
   7.1 Internal audio routing .............................................................................................................. 7
8. HOW TO RECORD AND STREAM WITH VEO-CAP4U AND OBS STUDIO ..................... 8
9. HOW TO USE VEO-CAP4U WITH SKYPE® FOR VIDEOCONFERENCING ......................... 11
10. TECHNICAL SPECIFICATIONS ................................................................................................ 12
11. MECHANICAL DIAGRAM .......................................................................................................... 13
1. IMPORTANT REMARK

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING (If applicable):** The terminals marked with symbol of “⚡” may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.

**WARNING:** To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

**WARNING:** An apparatus with Class I construction shall be connected to a mains socket-outlet with a protective earthing connection.

2. IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Unplug the apparatus during lightening sorts or when unused for long periods of time.

13. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

14. Disconnecting from mains: Switching off the POWER switch all the functions and light indicators of the amplifier will be stopped, but fully disconnecting the device from mains is done unplugging the power cord from the mains input socket. For this reason, it always shall remain readily operable.

15. Equipment is connected to a socket-outlet with earthing connection by means of a power cord.

16. The marking information is located at the bottom of apparatus.

17. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on apparatus.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**WARNING:** This product must not be discarded, under any circumstance, as unsorted urban waste. Take to the nearest electrical and electronic waste treatment centre.

**NEEC AUDIO BARCELONA, S.L.** accepts no liability for any damage that may be caused to people, animal or objects due to failure to comply with the warnings above.
3. IMPORTANT NOTE

Thank you for choosing our Ecler VEO-CAP4U interface!

It is VERY IMPORTANT to carefully read this manual and to fully understand its contents before any connection in order to maximize your use and get the best performance from this equipment.

To ensure optimal operation of this device, we strongly recommend that its maintenance be carried out by our authorised Technical Services.

Ecler VEO-CAP4U comes with a 3 year warranty.

4. INTRODUCTION

VEO-CAP4U is a plug-n-play HDMI to USB video capture device aimed for online media creators, educational and corporate market etc. that require a professional solution for capturing and streaming their audiovisual content. This product is designed to easily record video and audio from an HDMI source, and send it to a PC / MAC over USB 3.0 without the need of an external power supply or installation drivers. A balanced line input automatically mixes an external sound source into the main audio stream. This could be useful in a typical soft-codec application to add a microphone’s conference system signal to an HDMI camera audio feed. VEO-CAP4U also includes an audio de-embedding feature for extracting the HDMI input’s audio data into the stereo unbalanced output.

Features:

- Capture audio and video from HDMI sources
- HDMI pass-through video resolution is up to 4K@60Hz 4:4:4, HDR10
- Supports HDMI pass-through for display device connection
- Capture resolutions up to 1080p@60Hz through USB port
- Compatible with multiple third-party applications on Windows and Mac OS X
- Supports mono balanced line input and stereo unbalanced line output
- UAC, UVC compliant, no driver required
- Powered from USB port, no external power supply required
5. PACKAGE CONTENTS

- 1 x Interface
- 1 x USB 3.0 Cable
- 2 x 3 Pin Euroblock Connector
- 2 x Surface mount ears

6. PANEL DESCRIPTIONS

6.1 Interface Frontal Panel and Rear Panel

1. **HDMI OUT**: Connect this output to a local display or to another HDMI distribution device

2. **HDMI OUT LED**: This LED will be lit green when the HDMI output is correctly connected

3. **HDMI IN LED**: This LED will be lit green when the HDMI input is correctly connected

4. **HDMI IN**: Connect this output to a HDMI Cam or to another HDMI source device

5. **USB 3.0**: Connect this USB port to a PC or Mac for capturing audio and video over third party software (OBS Studio, Skype®...)

6. **USB 3.0 LED**: This LED will be lit green when the device is correctly powered through the USB port

7. **LINE OUT**: Stereo unbalanced line output that provides the de-embedded audio signal from the HDMI input

8. **LINE IN**: Mono balanced line input that allow mixing an external audio source to the main audio stream
7. CONNECTION DIAGRAM AND INTERNAL AUDIO ROUTING

7.1 Internal audio routing

The following scheme shows how the audio signals are internally routed:

- The HDMI audio is de-embedded into the unbalanced stereo Line Out connector. Downmix is not supported.

- The audio signal coming from the balanced Line In is summed to the HDMI audio stream and routed to the USB Record port. VEO-CAP4U will be shown on the operating system as an external microphone peripheral.
8. HOW TO RECORD AND STREAM WITH VEO-CAP4U AND OBS STUDIO

The Ecler’s recommended platform for video capturing using VEO-CAP4U is OBS Studio, which is a free and open source video recording and live streaming software. Please visit https://obsproject.com/ to download the player for Windows, Mac OS X or Linux.

1. Open the software and click on the “+” icon in the “Sources” area, and then click “Video Capture Device”

2. Type the new device name and click “OK” to create the new video source
3. Select USB3.0 VEO-CAP4U as the device in use. Then configure the video parameters and click “OK”

![Configuration Interface]

4. Click on the “+” icon in the “Sources” area and then click “Audio Input Capture”

![Source Selection Interface]

5. Type the new device name, and then click “OK” to create new source
6. Select “Microphone (USB3.0 VEO-CAP4U)” as device in use, configure the video parameters and then click “OK”

7. Click on “Start Recording” in the “Controls” area to begin the video and audio recording.

8. To stop recording simply click on the “Stop Recording” button. By clicking on “File” and selecting “Show Recordings” at the top down menu, the folder with the recorded video files can be opened.

9. It will be possible to start and stop the streaming of captured content just after adjusting the “Stream” parameters in the “Settings” window.
9. HOW TO USE VEO-CAP4U WITH SKYPE® FOR VIDEOCONFERENCING

Skype® is one of the most popular soft-codec platforms for audio and video conferencing.

1. In order to use Skype® or any other soft-codec platforms with VEO-CAP4U (and once the hardware is correctly connected as stated in Chapter 7), just open the settings window in the main menu:

   ![Settings Window](image)

2. Open the “Audio & Video” section. Then select “USB3.0 VEO-CAP4U” as the current camera and microphone

   ![Skype Settings](image)

Now your Skype® camera will be the device connected to the VEO-CAP4U HDMI input and your microphone will be the device connected to the VEO-CAP4U Line In.

**NOTE:** Each videoconferencing softcodec (Skype®, Zoom®, Google Meets®, etc...) manages the AV compression differently and this may change the results in terms of audio and video transmission quality. The AV experience is strongly related to the softcodec platform in use and it does not depend on the VEO-CAP4U performances.
# 10. TECHNICAL SPECIFICATIONS

**VEO-CAP4U**

## Video Performances

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Pass-through Resolutions</td>
<td>Up to 4Kx2K@60Hz 4:4:4 HDR10, Dolby Vision</td>
</tr>
<tr>
<td>Supported Capture Resolution</td>
<td>Up to 1080p@60Hz</td>
</tr>
<tr>
<td>Colour space</td>
<td>RGB, YCbCr</td>
</tr>
<tr>
<td>Chroma Subsampling</td>
<td>4:4:4, 4:2:0</td>
</tr>
<tr>
<td>Color Depth</td>
<td>8-bit, 10-bit, 12-bit</td>
</tr>
<tr>
<td>Signal Bandwidth</td>
<td>18Gbps</td>
</tr>
<tr>
<td>HDCP</td>
<td>2.2</td>
</tr>
<tr>
<td>Video Input Connectors</td>
<td>1 x Type-A Female HDMI</td>
</tr>
<tr>
<td>Video Output Connectors</td>
<td>1 x Type-A Female HDMI</td>
</tr>
</tbody>
</table>

## Audio Performances

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Formats</td>
<td>Dolby Atmos, Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-X, DTS-HD Master Audio, DTS 5.1, PCM;</td>
</tr>
<tr>
<td>Sample Rate</td>
<td>32 KHz, 44.1 KHz, 48 KHz, 88.2 KHz, 96 KHz, 176.4 KHz</td>
</tr>
<tr>
<td>PCM Bit Depth</td>
<td>up to 24-bit</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>20Hz-20KHz, ±3dB</td>
</tr>
<tr>
<td>Max Output Level</td>
<td>2.0Vrms± 0.5dB</td>
</tr>
<tr>
<td>SNR</td>
<td>&gt;85dB, 20Hz - 20KHz bandwidth</td>
</tr>
<tr>
<td>Audio Input Connectors</td>
<td>1 x 3pins Euroblock Connector for Mono Balanced Input (Mixed)</td>
</tr>
<tr>
<td>Audio Output Connectors</td>
<td>1 x 3pins Euroblock Connector for Stereo Unbalanced Output (USB PCM 2.0)</td>
</tr>
</tbody>
</table>

## Control

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Interface</td>
<td>UAC, UVC</td>
</tr>
<tr>
<td>LED indicators</td>
<td>1 x Type-A USB 3.0 connector</td>
</tr>
<tr>
<td>Power ON</td>
<td>1 x LED for USB power supply</td>
</tr>
<tr>
<td>HDMI Input</td>
<td>1 x LED for HDMI Active</td>
</tr>
<tr>
<td>HDMI Output</td>
<td>1 x LED for HDMI Active</td>
</tr>
</tbody>
</table>

## General

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI Distance</td>
<td>up to 10 meters / 33 ft with Ecler VEO cables</td>
</tr>
<tr>
<td>Latency</td>
<td>80ms – 2500mS depending by PC/MAC hardware and software platforms</td>
</tr>
</tbody>
</table>

## Environmental

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Temperature</td>
<td>-5 to +55°C (+23 to +131 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10 - 90% RH (no condensation)</td>
</tr>
</tbody>
</table>

## Power Supply

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains voltage</td>
<td>5VDC via USB 3.0 Type-A Port</td>
</tr>
<tr>
<td>Rated power consumption</td>
<td>Max 3W</td>
</tr>
</tbody>
</table>

## Mechanical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>102mm × 68mm × 12mm (4.02” x 2.68” x 0.59”)</td>
</tr>
<tr>
<td>Weight</td>
<td>75g / 0.165 lbs</td>
</tr>
</tbody>
</table>
11. MECHANICAL DIAGRAM

All product characteristics are subject to variation due to production tolerances. NEEC AUDIO BARCELONA S.L. reserves the right to make changes or improvements in the design or manufacturing that may affect these product specifications.

For technical queries contact your supplier, distributor or complete the contact form on our website, in Support / Technical requests.

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