

Marshall

Broadcast A/V Division

VAC-23SHUC

3GSDI/HDMI Video to USB-C Adapter



User Manual

Table of Contents

Introduction 02

Features..... 02

Package Contents 02

System Requirements 02

Connections and Indicators 03

Setup and Quick Start..... 04

Specifications..... 05

Block Diagram..... 06

Tips and Fixes 07

Warranty END

1. Introduction

The Marshall VAC-23SHUC advanced USB-C (USB3.0/2.0) adapter easily connects video and audio sources to a computer for live streaming, video conferencing, video production and recording. Simple to use plug-and-play design seamlessly integrates professional video sources to your choice of PC-based applications.

Select either an HDMI or SDI video source with the flip of a button. Active loop-through outputs keep sources available for other purposes such as feeding monitors, recorders, etc

UVC protocol support allows the video application on the attached computer to control video format, frame rate and other settings independent of the original source format.

Setup couldn't be easier. The VAC-23SHUC becomes fully functional within seconds after it is connected.

Powered by the USB port on the host computer, there are no power adapters to fiddle with.

2. Features

- 3G SDI Input with active loop-through output. Supports formats up to 1080p60
- HDMI 2.0 INPUT with active loop-through output. Supports formats up to 3840x2160p
- Stereo analog audio INPUT. Activates automatically when audio source is plugged in. Replaces existing audio track. (Does not add audio to HDMI when audio track is missing)
- USB 3.0 computer interface with UVC control and scaling (backwards compatible with USB 2.0)
- Efficient design – All power derived from USB port
- Plug-and-Play. Driver installation not required for most applications
- Compatible with popular applications such as: Zoom, Skype, OBS Studio and many more

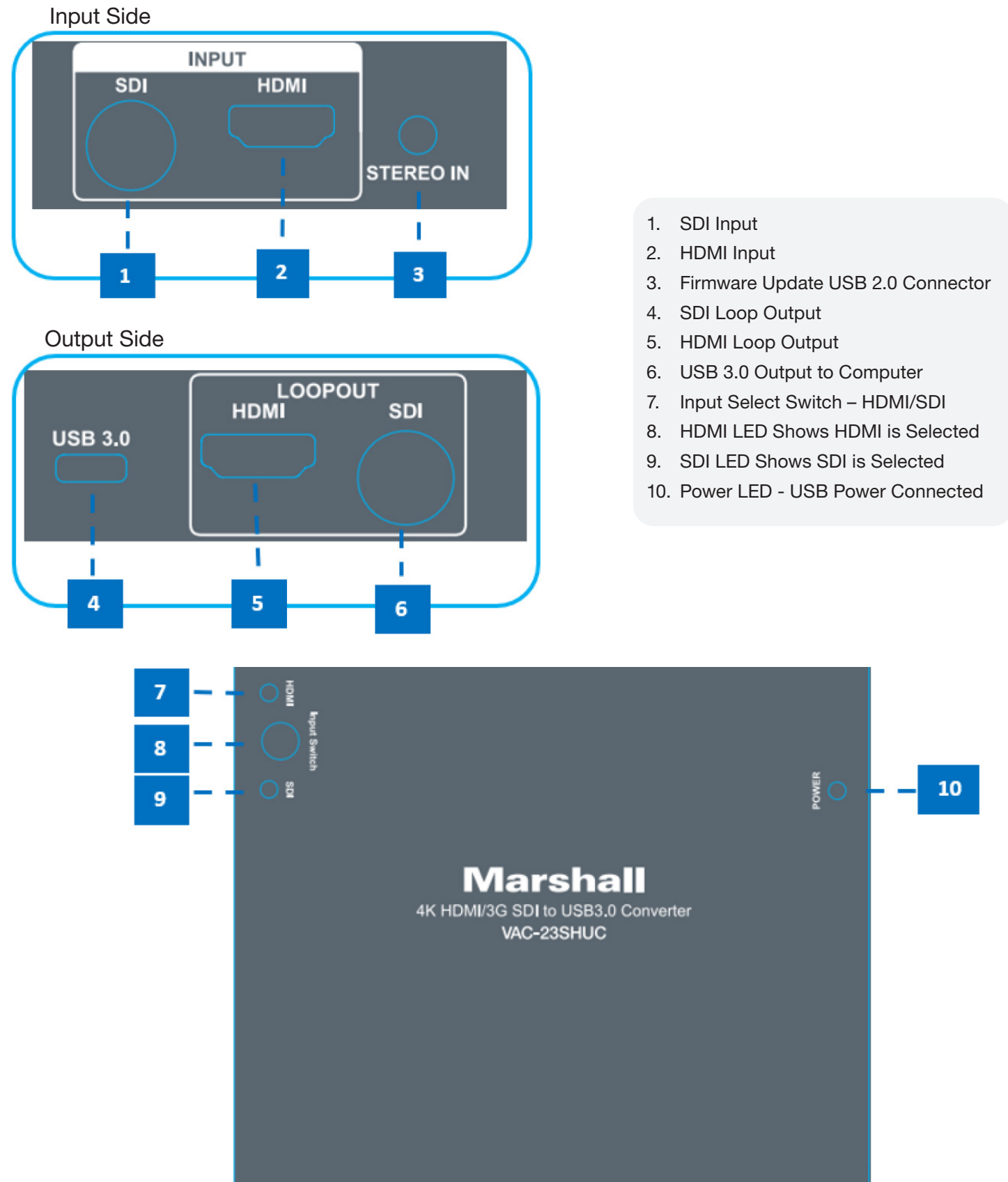
3. Package Contents

- (1) VAC-23SHUC Unit
- (1) USB 3.0 “A - type” to “C - type” Cab
- (2) Mounting brackets with 8 attachment screws

4. System Requirements

- Host computer with recent operating system, such as Windows 10 or Mac OS X
- Available USB 3.0 port (supports SD, HD & 4K up to 3840 x 2160 @ 30fps to host computer)
- Available USB 2.0 port (supports SD, HD up to 1280 x 720p @ 30fps to host computer)

5. Connections and Indicators



6. Setup and Quick Start

1. Computer should be powered and operating. Connect the VAC-23SHUC to the host computer using the USB 3.0 cable provided. The first time the unit is used, please allow about one minute for the computer to identify the unit and setup the drivers. All three LED's on top of the unit will light after about 3 seconds. About 5 seconds later, one of the Input Selection lights will turn off.
2. Open an application such as Zoom, Skype, OBS Studio, etc. and select the Video and Audio devices. The VAC-23SHUC adapter will identify itself as "MEI USB 3.0 Capture Device". Depending on the application used, the unit may appear as a Camera or a Capture Device.
3. Before the SDI or HDMI input is attached, a message similar to the one shown below will appear in the application's video preview window. This message will display until a video source is connected. (The Output format and frame rate may be different depending on the application software)



4. Next, slide the Input Select Switch to HDMI or SDI depending on the source type (an LED on top of the unit indicates the position of this switch). Connect a video source. The on-screen message will change like the one below. This message will disappear after about 8 seconds.



At this point, the VAC-23SHUC is operating and ready to use! **Control of the VAC-23SHUC depends on the capabilities of the software being used for conferencing, recording, streaming, etc.**

Note: Most conferencing applications will automatically set the USB output format to 720p. This does not affect the HDMI and SDI loop through outputs, they will be the same as the inputs.

7. Specifications

HDMI Input and Output

- HDMI Conforms to HDMI 2.0 standard
- HDCP 1.4 and 2.2 compliant
- Video Frame Rates from 23.98 ~ 60 fp
- Video Formats from 480i/p, 576i/p to 4096x2160p (4K) at 30 fps

3GSDI/HDSDI Input & Loop Out

- SMPTE 296M, 274M, 259M, 425M (3G Level A)
- Video Frame Rates from 23.98 ~ 60 fps
- Video Formats from 480i/p, 576i/p to 1920x1080p @ 50/59.94/60 fp

USB-C Output (USB 3.0) and Backwards Compatible to USB 2.0

- Connected via USB-C with formats up to 3840x2160p (UHD) at 30 fps sent to host computer.
- When connecting to a USB 2.0 port, we recommend 1280x720p or below
- USB output format is independent of input video format and is controlled by the particular video application running on the host computer

Audio Input

- All embedded audio channels (HDMI or SDI) are passed through to the matching output. Only channels 1 & 2 are sent to the USB output.
- External audio may be used to replace existing SDI or HDMI audio via the 3.5mm audio jack. Audio cannot be inserted into HDMI sources that do not have an existing audio track.

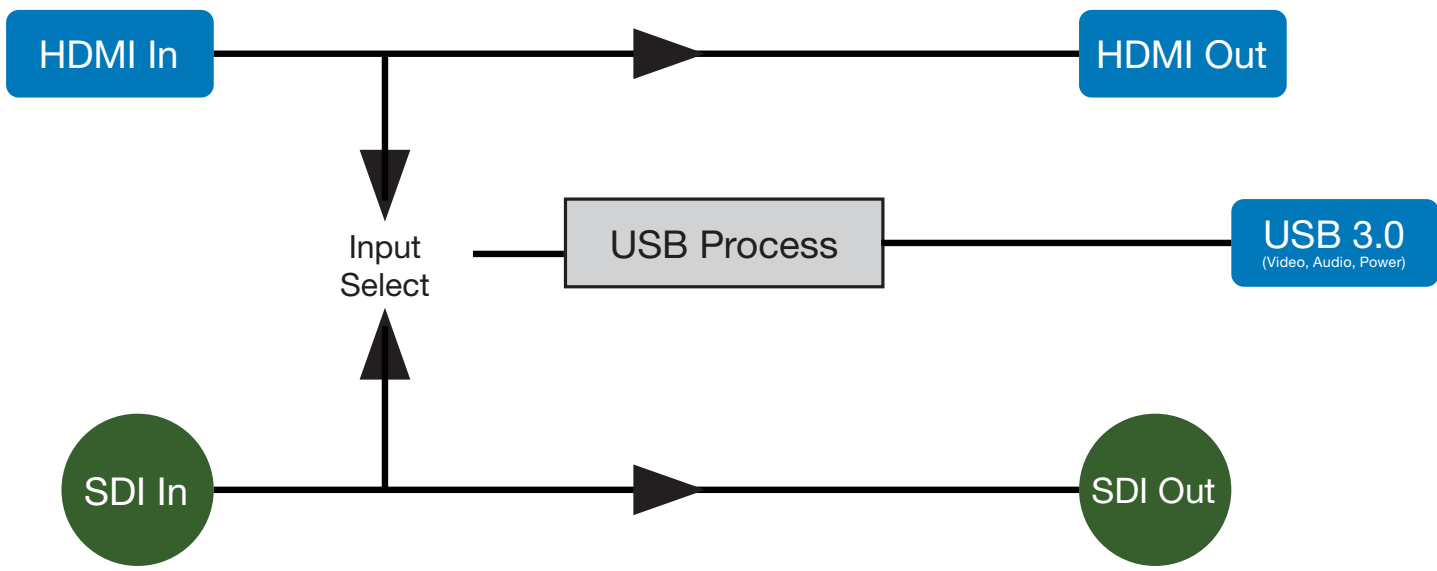
Operating Temperature

- 0~40°C (32~104°F)

Power Rating

- 5 Volts 1.3 Amps powered via USB

8. Block Diagram



VAC-23SHUC Functional Block Diagram

9. Tips and Fixes

My computer says, “the USB device is not recognized” or “the device does not support the required parameters”.

First, be sure to use the USB-C cable that was supplied with the VAC-23SHUC. If it becomes lost or damaged, please replace it with a “USB 3.0 type A-to-C” cable which provides the power and bandwidth necessary for proper operation of the unit. When in doubt, try another cable.

A message like the one above can also occur when the VAC-23SHUC is connected to a USB 2.0 connector. This can be fixed by plugging into a USB 3.0 port on the host computer. USB

3.0 connections are usually identified by blue color inside the connector.

If only a USB 2.0 connection is available, lowering the video source to 1280x720p at 60fp.

The video source is 1080p50 (or 60) but the computer says the incoming video is different (760p for example). Why isn't it the same as the source?

The VAC-23SHU3 is compatible with the USB industry standard UVC control protocol. This allows the host computer to adjust the format and frame rate independently from the incoming source. Many applications have controls that allow changing these parameters. Video conferencing applications typically do not have these controls and simply force the settings that work best. Please consult the instructions that are provided with the application for more information.

The VAC-12HUCHDMI output is connected to a video recorder. The recorder is getting a blank picture.

OR.....

The HDMI output is connected to a video monitor and the picture is perfect, but the picture on the computer is black with the message “Input: HDCP Content”. Can this be fixed?



HDMI video contains a “copy protection” system called HDCP “High Bandwidth Digital Content Protection”. The principle behind HDCP is that copyrighted content should be seen and heard but not recorded or transmitted. What this boils down to is that material containing HDCP “flag” will be visible only on display devices, in other words, monitors, projectors and television sets. A common difficulty is that DVD players, Blue Ray players and set top boxes (cable and satellite) normally force HDCP on even when the material being played is not copyrighted. Video cameras, on the other hand, never use HDCP. Computer outputs may or may not use HDCP depending on the material being output. For details on HDCP, please visit www.hdmi.org.

Note: SDI inputs do not have content protection.

I'm trying to use VLC to test the VAC-23SHU3 but the picture looks wrong and the video format is incorrect as well.

To connect with VLC, follow these steps:

1. Select the MEDIA tab then select OPEN CAPTURE DEVICE
2. In the Window that appears, select MEI USB 3.0 CAPTURE DEVICE for the Video Device Name and Audio Device Name then click on ADVANCED OPTIONS.
3. In the next window, change Aspect Ratio to 16:9
4. If you are connected using USB 3.0, type YUY2 for Video Input Chroma Format. If you are connected using USB 2.0 type MJPG for Video Input Chroma Format. Now click OK. The window will close.

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Warranty

For Warranty information please refer to Marshall website page:

<https://marshall-usa.com/company/warranty.php>

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