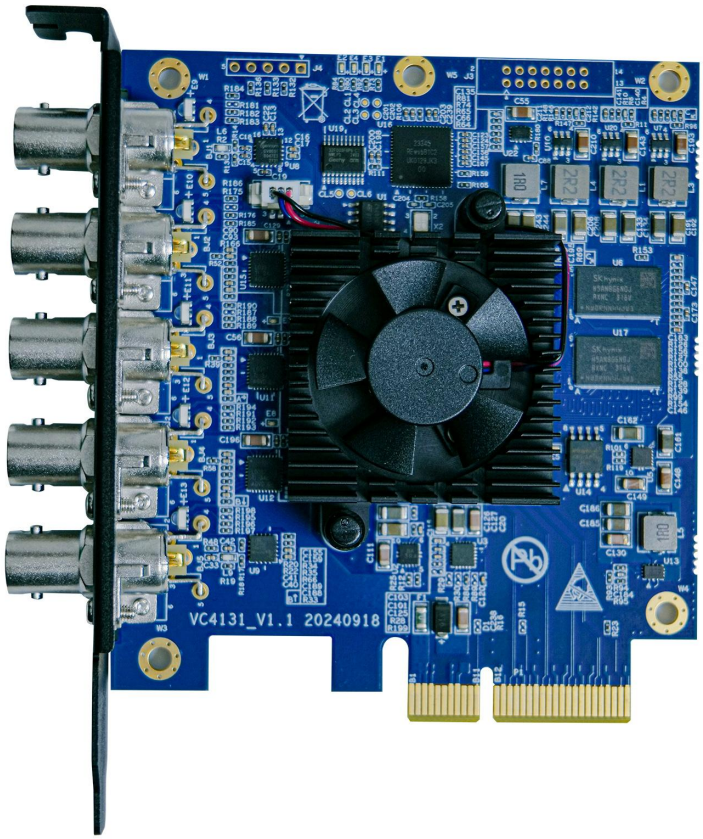
AVMATRIX®



VP51

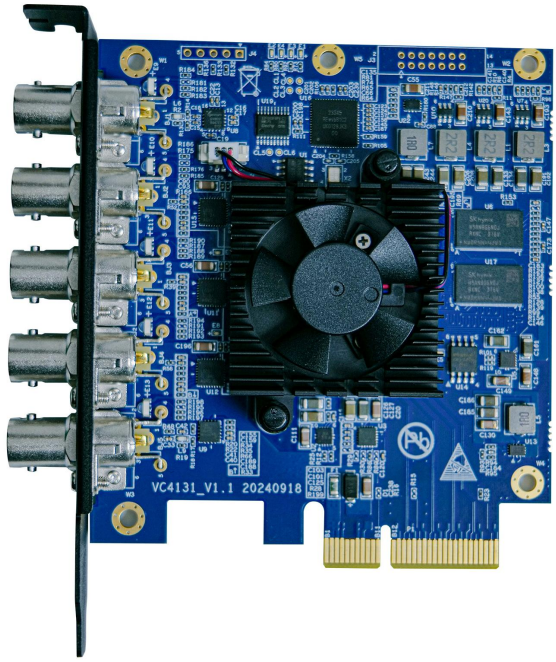
5-CH SDI PCIE Capture&Playback Card

CONTENT

1. Introduction

1.1 Overview

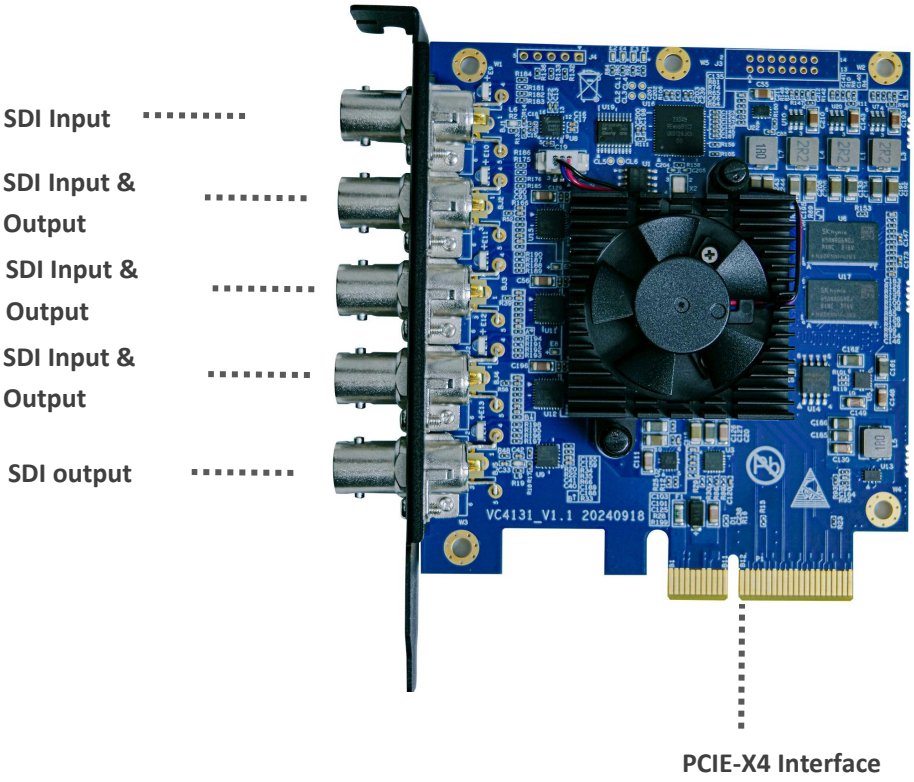
VP51 is a capture and playback card with superior image quality and flexibility. It features 1-CH SDI input, 1-CH SDI output and 3-CH SDI I/O interfaces. It supports 1080p60 resolution output for HD video production and provides ultra-low latency for live streaming and recording. It is compatible with mainstream operating systems, including Windows, Linux, as well as with a wide range of applications such as Vmix, OBS, ZOOM, Teams and Twitch, providing a flexible solution for live streaming and video conferencing.



1.2. Main Features

- 1-CH SDI input, 1-CH SDI output and 3-CH SDI input/output (I/O)
- HD video output up to 1080p60
- Compatible with Windows, Linux systems
- Compatible with Vmix, OBS, ZOOM, Teams, Twitch
- Runs stably and continuously for 24 hours
- Support multiple cards working at the same time

2. Interfaces



3. Specification

Interface	Slot Interface	PClex4 (Gen3)
	Video Output Interface	1x3G-SDI input 1x3G-SDI output 3x3G-SDI inputs and outputs (I/O)
Video Format	3G Video Format	1080p60, 1080p59.94, 1080p50
	HD Video Format	1080p30, 1080p29.97, 1080p25, 1080p24, 1080p23.98, 1080PsF30, 1080PsF29.97, 1080PsF25, 1080PsF24, 1080i60, 1080i59.94, 1080i50
	SD Video Format	525i59.94 NTSC, 625i50 PAL
	Audio Sample	48kHz 24bit
	SDI Color Precision	YUV 4:2:2 8bit
	Color Space	REC 601, REC 709

	SDI Standard	SMPTE 259M, SMPTE 292M, SMPTE 296M, SMPTE 372M, SMPTE 425M, ITU-R BT.656 and ITU-R BT.601
	Equipment Support	Supports XBOX, PS4, SWITCH, Video Players, TV Boxes, and Media Boxes
Support	System Support	Windows 7/8/10/11, 64-bit, Linux (Note: Windows 7/8 requires system digital signatures to be turned off)
	Software Compatibility	OBS, XSplit, VLC, VirtualDub, VMix, VidBlaster, Wirecast, Microsoft Media Encoder, Adobe Flash Media Encoder, any other DirectShow/V4L2
Others	Temp	Working temperature: 5-40° C
	Power	12W
	Relative Humidity	0%~90% Non-condensing
	Size	102.21×89.51mm (PCB)
	Weight	Net weight: 120g, Gross weight:218g
	Warranty	2 years

4. Installation

Note: Only hold the edge of the card or the metal holder when removing the card and do not touch the electronic components to prevent static electricity from harming the chip.

PCIE cards should not be inserted or removed while the system is powered on. Ensure that the computer is off when PCIE cards are added to or removed from the system.

4.1 Hardware Installation

Step 1: Power off the computer device before the pcie capture card installation, unplug the power cable.

Step 2: Remove the cover from the computer case.Insert the PCIE capture card into the PCIe-X4 slot in your computer chassis and lock.

Step 3: Connect the SDI interface device signal source to the PCIE card interface and make sure the cable is connected properly.

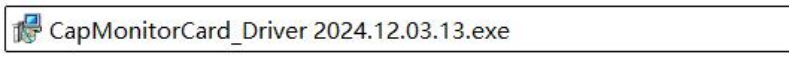
Step 4: Connect the power cable to the power supply, turn on the computer, beginning to install the PCIE capture card drivers.

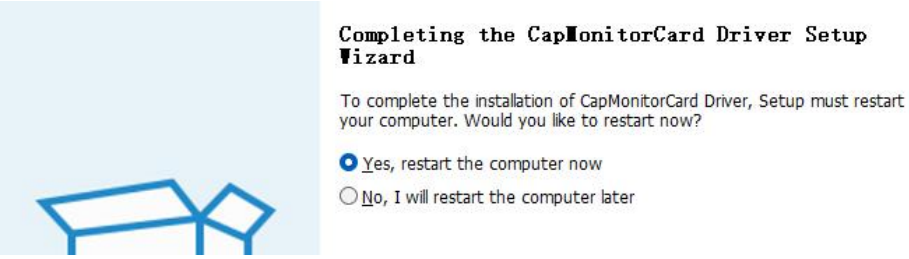
4.2 Driver Installation

Step 1: Download the driver from the AVMATRIX website www.avmatrix.com.

Step 2: Double-click to open the driver installation and follow the prompted steps to complete the installation.

Step 3: After the installation is complete, restart computer. Otherwise the computer may crash.



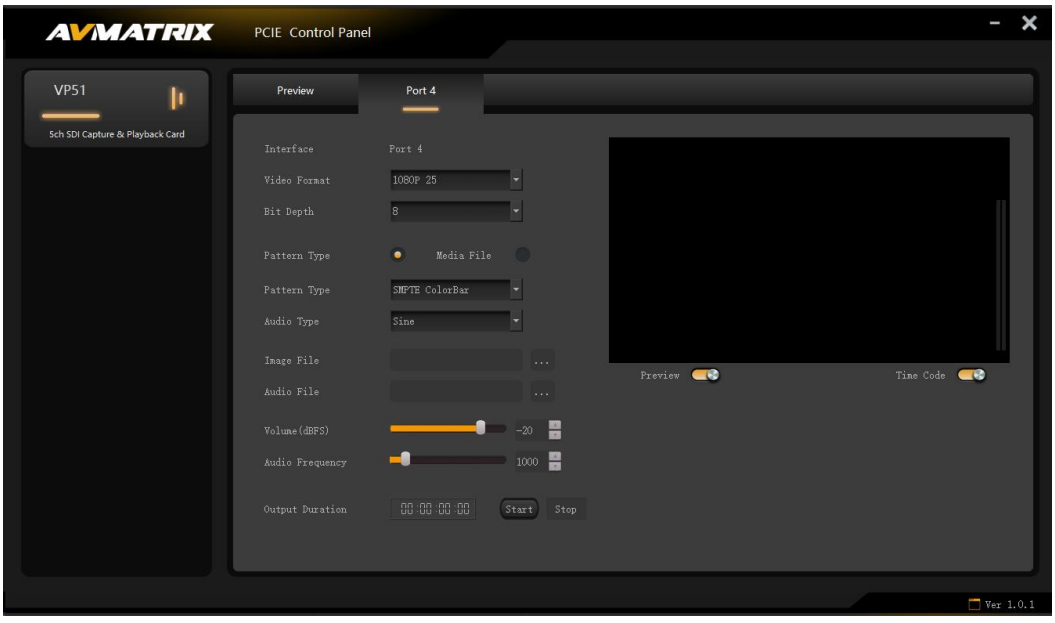


In particular, if any of Blackmagic Design's PCIe capture or output card drivers are already installed on computer, pls uninstall it before installing the AVMATRIX PCIe card driver. Otherwise, the AVMATRIX PCIe card will not work properly.

Note: Supports Windows 7 and above, Linux 18.04 and above.

5. Control Software

Open the control software, the control panel can view the output preview, and set the parameters of the output. (If Vmix, OBS, and other software are needed to set up, a patch programme need to be installed.)



1. Preview screen

The preview screen shows only the interface with the source connected. And those without access to signal sources will not display.

2. Setting parameters

(1) Set the video format and video bit depth according to the user's needs. Users need to stop playing before changing the video format, decibel value, audio period and other parameters.

(2) Pattern Generator

- Pattern Type: Select the pattern type that comes with the control software.
- Audio Type: Select the audio type that comes with the control software.
- Static Image: Users can customize the static image. First, select "imagefile" in the pattern type option, and in the "Static Image" area, click the "..." button to select an image file. Video files cannot be selected.
- Audio File: Users can customize the audio file. First, select "wavefile" in the Audio Type option. And then in the Audio File, click the "..." button to select the audio file. The audio file must be a dual-channel WAV file with a sampling rate of 48kHz and 16bit. Otherwise the output audio is prone to noise or cause the programme to flashback.
- Decibel value: The default decibel value is -20dBFS.
- Audio Period: Range is 10-10000. Default value is 1000.

(3) Media file

Select video files according to user needs. Supports MP4 video files.

After the user has completed the settings, click "Start" to output. Preview and timecode can be turned on or off according to the user's needs.

When the output preview is turned off, the preview screen is paused in the control software and the output screen is not affected.

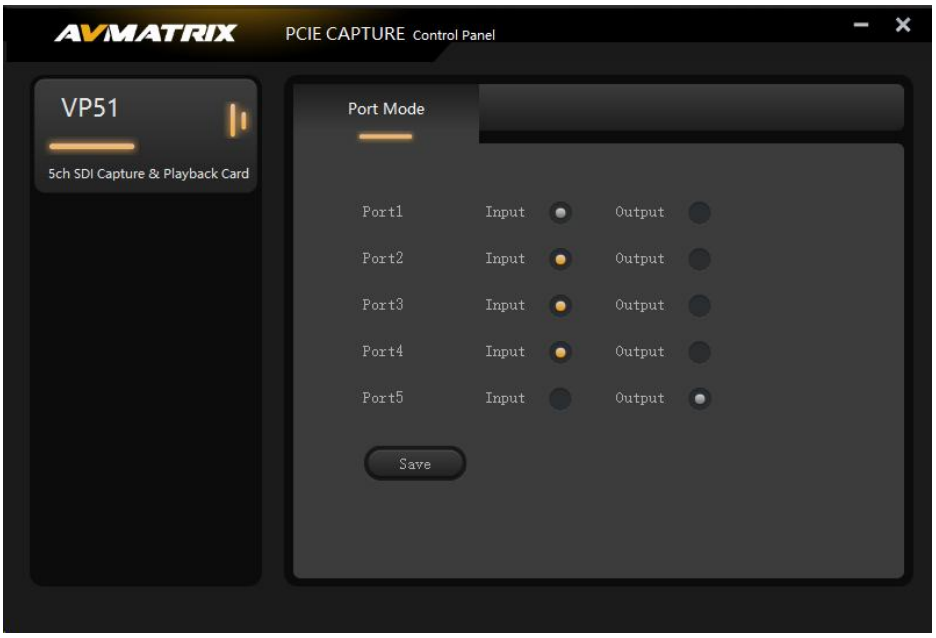
When timecode is off, the timecode is hidden on the output.

(4) Configuring the I/O Interface Mode

After downloading the configuration programme, open the I/O interface configuration application, select the input/output modes of the corresponding interfaces according to the user's needs, then save and close the application. After selecting the settings, re-open the control panel if continue to use it. Re-open the driver control panel will display the input and output interface mode after the completion of the setup, at this time the corresponding indicator will also change to green (input) or red (output) according to the selected mode.

The default mode of the I/O interface is input, and the indicator light of the accessed signal source is green. After switching to output, when the output is stable, the indicator light is always red.

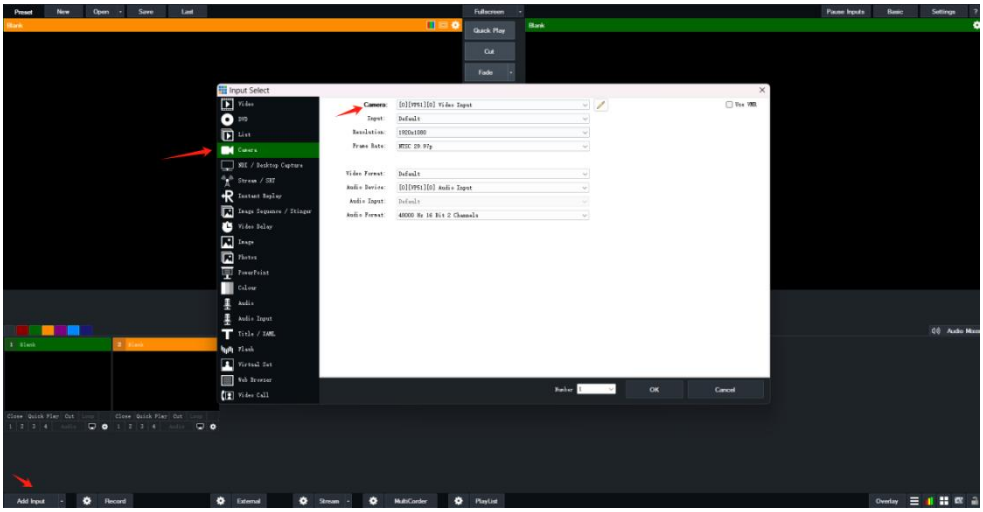
Note: The driver and the configure I/O program must not be opened at the same time.



6.Vmix Operating Instructions

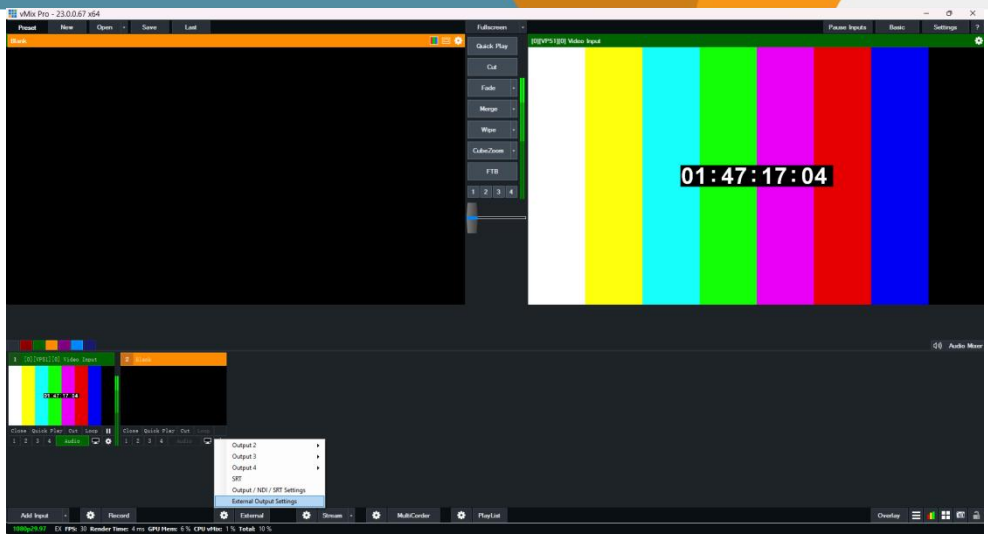
6.1 Vimx Input Acquisition Settings

Steps: Click "Add Input" - "Camera", select the input source to be captured in the camera option, configure the parameters according to the requirements, and click "OK" to complete the capture.

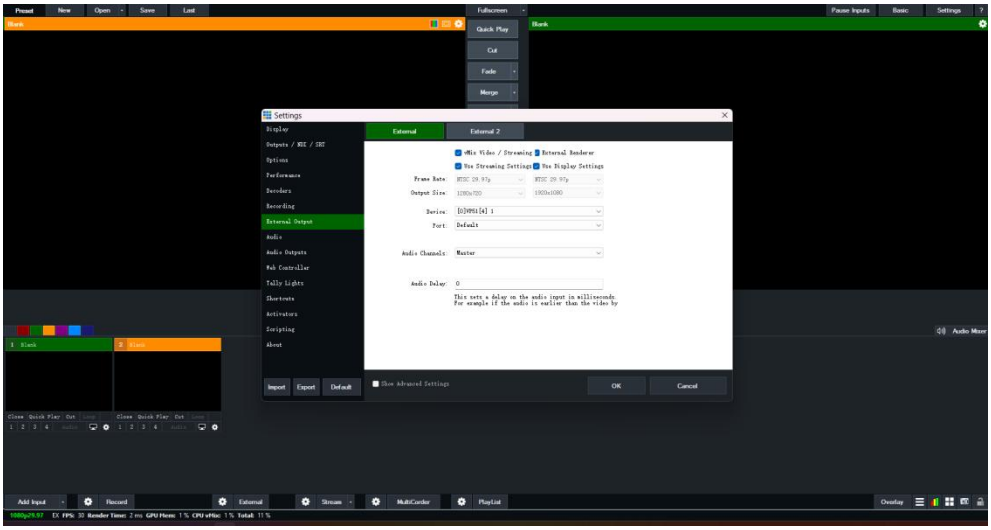


6.2 Vimx External Output Settings

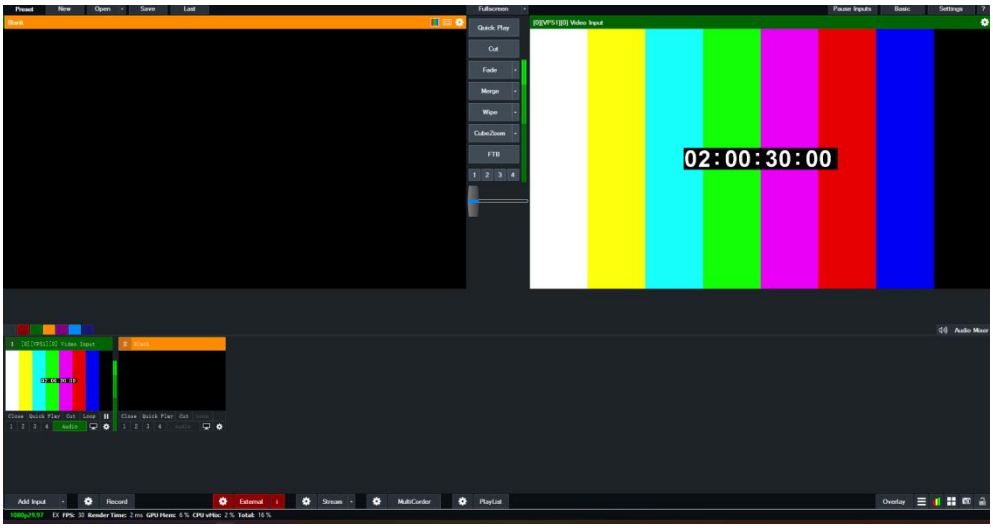
Step 1: Open Vmix, click "External Settings" to select external output settings.



Step 2: Select "V51" as the video output device in the external output settings.



Step 3: When the setting is finished, click "External", the icon will turn red, and the output will start.



Note:

1. If users need to use Vmix, OBS or other software to set up, a patch programme is needed to installed.

Patch Installation: Double click to open the patch programme, follow the instruction to install the patch programme, click "OK" to complete the patch installation.

Restart the computer after completing the installation.

2. Do not repeat the selection of the same signal source after Vmix is configured. There will be an error report if repeat to select.