

MAGEWELL

USB Capture SDI Gen 2 Technical Specifications

Copyright (c) 2011–2022 [Nanjing Magewell Electronics Co., Ltd.](http://www.magewell.com) All rights reserved.

Specifications are based on current hardware, firmware and software revisions, and are subject to change without notice.

Windows, DirectShow and DirectSound are trademarks or registered trademarks of Microsoft Corporation. OS X and macOS are trademarks or registered trademarks of Apple Inc.

Revised 08/02/2022

Supported OS

- Windows
 - Windows 7/8/8.1/10/11/Server 2008/Server 2008 R2/Server 2012/Server 2016 (x86 & x64) and above
- Linux (support x86, x64 & ARM architecture)
 - Ubuntu 12.04/14.04/16.04/17.04/17.10/18.04 (x86 & x64)
 - CentOS 6.5/7 (x86 & x64)
 - Fedora 25/26/27 (x86 & x64)
 - Red hat 6.5 and above (x86 & x64)
 - Other Linux OS with kernel version 2.6.35 and above
- Mac
 - OS X 10.9/10.10/10.11
 - macOS 10.12 and above
- Chrome OS

Recommended OS (tested)

- Windows
 - Windows 7 Ultimate/8.1 Enterprise/10 Enterprise/Server 2008 R2 DataCenter/Server 2012 R2 DataCenter/Server 2016 R2 DataCenter (x86 & x64)
- Linux
 - Ubuntu 12.04/14.04/16.04 (x86 & x64)
 - Ubuntu 17.04/17.10/18.04 (x64)
 - CentOS 6.5/7.2 (x86 & x64)
 - Fedora 25/26 (x64)
 - Red hat 6.5 (x86 & x64)
- Mac
 - OS X 10.9.5/10.10/10.11.2/10.11.3/10.11.4
 - macOS 10.12/10.13.2/10.13.3/10.14.3/10.15

Supported APIs

- Windows
 - DirectShow
 - Wave API/DirectSound/WASAPI
- Linux
 - V4L2
 - ALSA
- macOS
 - AVCaptureSession
 - AudioUnit

Compatible Software

- Zoom
- Skype
- Microsoft Teams
- GoToMeeting
- Gstreamer
- VLC
- OBS Studio
- XSplit

- QuickTime Player
- Any other DirectShow/V4L2/AVCaptureSession based encoding or streaming software

Input Interfaces

- MCX
 - SD/HD/3G SDI

Host Interface

- USB 3.0
 - compatible with USB 2.0
 - compatible with USB 3.1 Gen 1

Input features

- Support for up to 2048x1080 input resolution

SDI Specific Features

- Integrated cable equalizer extending the cable length as follows:
 - up to 330m for SD-SDI signals
 - up to 190m for HD-SDI signals
 - up to 150m for 3G-SDI signals
- Support for SD/HD/3Ga/3Gb/3Gb-DL/3Gb-DS standards
- Support for 2K (2048x1080) mode
- Support for RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2 color sampling
- Support for 10/12-bit color depth
- Support for extraction of SMPTE 352 payload identifier
- Support for up to 2 (mono) audio channels at 48KHz
- Support for extraction of audio formation information & channel status data
- Limited support of 3Gb-DS: only the first stream can be captured
- Limited support for capture of the first link of dual link interfaces:
 - YCbCr 4:2:2 10-bit 1080p 50/59.94/60: captured as 1080i 50/59.94/60
 - YCbCr 4:4:4 10-bit: captured as 4:2:2
 - RGB 4:4:4: R/B sub-sampled

Video Capture format

- Support for capture resolutions up to 2048x1080
- Support for capture frame rates up to 120fps (Actual capture frame rate can be limited by the USB bandwidth and internal working frequency. Typical capture frame rates on the Intel USB 3.0 controller are as follows.)
 - 1920x1080 YUY2 (up to 70fps)
 - 1920x1080 RGB24 (up to 60fps)
- Support for YUY2 & UYVY 4:2:2 8-bit
- Support for RGB24 & RGB32 4:4:4 8-bit
- The default capture format is YUY2. More capture formats can be set using USB Capture Utility.

Video Processing Features

- Video processing pipelines with 160 Mpixels/s processing bandwidth
- Video cropping
- Video scaling
- Video de-interlacing
 - Weave
 - Blend top & bottom field
 - Top field only
 - Bottom field only
- Video aspect ratio conversion
 - Auto or manual selection of input aspect ratio
 - Auto or manual selection of capture aspect ratio
 - Three aspect ratio conversion modes: Ignore (Anamorphic), Cropping or Padding (Letterbox or Pillarbox)
- Video color format conversion
 - Auto or manual selection of input color format & quantization range
 - Auto or manual selection of capture color format, quantization range & saturation range
 - Support for RGB, YCbCr 601, YCbCr 709 color formats

- Support for Limited or Full quantization range
- Support for Limited, Full & 'Extended gamut' saturation range
- Video frame rate conversion
- Vertical flip and mirror

Multiple devices on one computer

- Support for connecting multiple USB devices to one system
- Support for setting the device serial number as the device name shown in the system using USB Capture Utility

SDK

- The USB Capture SDK provide functions including signal status extraction, capture configuration and real-time audio & video capture, etc.

Firmware Upgrade

- Multiple devices in one system can be upgraded simultaneously

LED Indicator

- Status LEDs indicate the working state of each channel:
 - Pulsing slowly: input signal unlocked
 - On: input signal locked
 - Double blinks: memory failed or FPGA configuration failed
 - Off: firmware corrupted

Form Factor

- 92.2mm (L) x 40.2mm (W) x 12.3mm (H)

Accessories

- USB 3.0 cable
- MCX to SDI cable

Power Consumption

- 5V max current: ~0.5 A
- max power consumption: ~2.5 W

Working Environment

- Operating temperature: 0 to 50 deg C
- Storage temperature: -20 to 70 deg C
- Relative Humidity: 5% to 90% non-condensing