Eco Capture AIO M.2 Technical Specifications

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Input Signal

- HDMI 1.4a (via an accessory cable)
- SD/HD/3G SDI (via an accessory cable)

HDMI Input Features

- 165MHz HDMI receiver, max input: 2048x1080 60fps 4:4:4
- Custom EDID
- Input RGB/YCbCr 4:4:4 8/10/12-bit, YCbCr 4:2:2 8/10/12-bit
- Up to 8-channel 24-bit HDMI-embedded audio at 192kHz
- HDMI interface: HDMI 1.4a

SDI Input Features

- Max input: 2048x1080 60fps 4:2:2 10bit
- Up to 8-channel 48KHz embedded audio
- Support for SMPTE ST 259 (SD-SDI), SMPTE ST 292 (HD-SDI) and SMPTE ST 424 (3G-SDI)（including the Class A, Class B-DL and Class B-DS standards）
- Input RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 10/12-bit
- Input SDI signals transmitted up to 110m for 3G-SDI signals
- Support Closed Caption via SDK

CVBS Input Features

- 12-bit ADC
- Support NTSC, PAL and SECAM standard
- Auto-detect input signal

Process and Capture Features

- ~700MB/s per channel DMA bandwidth in PCIe 2.x system
- ~400MB/s per channel DMA bandwidth in PCIe 1.x system
- Video processing pipelines with ~180Mpixels/s processing bandwidth
- Capture videos up to 2048x1080, frame rates up to 250fps, typical resolution/frame rate include (actual capture frame rate can be limited by the PCIe bandwidth and internal working frequency.):
  - 2048x1080p60
  - 1920x1080p 23.98/24/25/29.97/30/50/59.94/60/75
  - 1280x720p 23.98/24/25/29.97/30/50/59.94/60/100/119.88/120
  - 720x576p25
  - 720x480p30
- Support for 8-bit 4:4:4 video processing
- Support for 4:2:0 8-bit capture formats including NV12, I420, YV12
- Support for 4:2:2 8-bit capture formats including YUY2, YUYV, UYVY
- Support for 4:4:4 8-bit capture formats including V308, IYU2, V408, BGR24, BGR32
- Support for RGB/YUV BT.601/YUV BT.709/YUV BT.2020
- Support video scaling, de-interlacing, color format conversion, frame rate conversion
- Output videos at 8-bit 4:4:4
- 100ns high-resolution clock based on hardware implementation
- Hardware clock synchronization across cards via SDK

Multiple Capture Streams Replication

Unlimited capture streams in the same format for any single input channel

SDK & APIs

- The MWCapture SDK provides functions including signal status extraction, capture configuration and real-time audio & video capture, etc
- Windows DirectShow/DirectKS/Wave API/DirectSound/WASAPI
- Linux V4L2/ALSA

Output Interface

- M.2 2280 Type M (PCIe Gen2 x2)

Multiple Cards per System

- Support for multiple cards plugged to one system
- On-board rotary switch to set card number, with 16 positions from 0 to F
- System hardware device tree will display “01: Eco Capture AIO M2” when rotary switch is set to 1, and so on.
- The video and audio device names displayed in your software will include the card number (set by the rotary switch)

Firmware Upgrade

- Multiple cards in one system can be upgraded simultaneously
- Cards can be upgraded without a system power shutdown (In most cases, even a reboot is not needed)
- Safe upgrade. If power off or system break down occur when the firmware is being upgraded, it will automatically restore to the initial version

Recommended OS

- Windows 10/11/Server 2016/Server 2019/Server 2022/Server 2025 (x86 & x64) and above
- Linux x86, x64 & ARM architecture, with 2.6.35 and above

Compatible Software

- VLC
- VirtualDub
- OBS
- XSplit
- vMix
- VidBlaster
- Wirecast
- Microsoft Media Encoder
- Any other DirectShow/V4L2/AVCaptureSession based encoding or streaming software

Form Factor

- M.2 Type–2280 (22 x 80 mm)

Accessories

- 1 x **FPC** ribbon cables (Part number: 11514)
- 1 x **FPC** to **HDMI type A** adapter (Part number: 11514)
- 1 x **MMCX** to **BNC** cable

Power Consumption

- Max current at 3.3V: ~ 0.89 A
- Max power consumption: ~ 2.94 W

Working Environment

- Operating temperature: 0 to 40deg C
- Storage temperature: –20 to 70 deg C
- Relative Humidity: 5% to 90% (non-condensing)