MAGEWELL

Ultra Encode AIO Technical Specifications

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

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Input & Loop-through

- HDMI
    - Supports HDMI 1.4a, DVI-D
    - Typical resolution/frame rate:
        - 4096x2160 30fps 4:4:4/4:2:2
        - 4096x2160 60fps 4:2:0
        - 2048x1080p/2048x1080i 23.98/24/25/29.97/30/47.95/48/50/59.94/60
        - 1920x1080p/1920x1080i 23.98/24/25/29.97/30/47.95/48/50/59.94/60
        - 1280x720p 25/29.97/30/50/59.94/60
        - 720x576 25p/50i (PAL SD)
        - 720x480 29.97p/59.94i (NTSC SD)
    - Color depth: 8/10/12-bit
    - Color sampling: RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2
    - Custom EDID
- SDI
    - Supports SD (ST 259)/HD (ST 292)/3Ga (ST 425)/3Gb (ST 425)/3Gb-DL(ST 425)/3Gb-DS(ST 425) standards
    - Typical resolution/frame rate:
        - 2048x1080p/2048x1080i 23.98/24/25/29.97/30/47.95/48/50/59.94/60
        - 1920x1080p/1920x1080i 23.98/24/25/29.97/30/47.95/48/50/59.94/60
        - 1280x720p 25/29.97/30/50/59.94/60
        - 720x576 25p/50i (PAL SD)
        - 720x480 29.97p/59.94i (NTSC SD)
    - Color sampling: YCbCr 10-bit 4:2:2, YCbCr 10-bit 4:4:4:4, YCbCr 12-bit 4:2:2, YCbCr 12-bit 4:4:4
- Audio
    - SDI embedded audio: 16-Channel, 24-bit, 192kHz sample rate
    - HDMI embedded audio: 8-Channel, 24-bit, 192kHz sample rate
    - Audio from 3.5 mm LINE IN: 2-Channel, 24-bit, 192kHz sample rate

Encode

- Video
    - Bitrate:
        - NDI$^{®}$|HX3: up to 62.0Mbps, down to 1.5Mbps
        - Others: up to 32.0Mbps, down to 256kpbs
    - Dual-stream encoding: main stream and sub stream
    - Main stream
        - Resolution/frame rate:
            - 4096x2160p/3840x2160p 30/29.97/25/24/15/10/5
            - 2408x1080p/1920x1200p 60/59.94/50/30/29.97/25/24/15/10/5
            - 1920x1080p/1920x720p 60/59.94/50/30/29.97/25/24/15/10/5
            - 1664x936p/1600x1200p/1600x900p 60/59.94/50/30/29.97/25/24/15/10/5
            - 1440x1080p/1440x900p 60/59.94/50/30/29.97/25/24/15/10/5
            - 1280x1024p/1280x960p/1280x800p/1280x720p 60/59.94/50/30/29.97/25/24/15/10/5
            - 1024x768p 60/59.94/50/30/29.97/25/24/15/10/5
            - 960x540p/800x600p 60/59.94/50/30/29.97/25/24/15/10/5
            - 768x576p/720x576p/720x540p/720x480p 60/59.94/50/30/29.97/25/24/15/10/5
            - 640x480p/640x360p 60/59.94/50/30/29.97/25/24/15/10/5
            - 480x360p/480x270p 60/59.94/50/30/29.97/25/24/15/10/5
        - Native CEA–608/608 over 708 captions for SDI
    - Sub stream
        - Supports enabling/disabling sub stream

- Resolution/frame rate:
  - 1920x1080p/1920x720p 60/59.94/50/30/29.97/25/24/15/10/5
  - 1664x936p/1600x1200p/1600x900p 60/59.94/50/30/29.97/25/24/15/10/5
  - 1440x1080p/1440x900p 60/59.94/50/30/29.97/25/24/15/10/5
  - 1280x1024p/1280x960p/1280x800p/1280x720p 60/59.94/50/30/29.97/25/24/15/10/5
  - 1024x768p 60/59.94/50/30/29.97/25/24/15/10/5
  - 960x540p/800x600p 60/59.94/50/30/29.97/25/24/15/10/5
  - 768x576p/720x576p/720x540p/720x480p 60/59.94/50/30/29.97/25/24/15/10/5
  - 640x480p/640x360p 60/59.94/50/30/29.97/25/24/15/10/5
  - 480x360p/480x270p 60/59.94/50/30/29.97/25/24/15/10/5
- H.264/H.265 (HEVC) Codec:
  - System timecode or RP–188 standard timecode for SEI Message setting
  - H.265 (HEVC) SEI message supports carrying interlacing signal mark
  - Video aspect ratio conversion
  - Image rotation: 0°, 90°, 180°, 270°
  - Cropping
- Audio
  - Encode up to 4 audio streams
    - SDI
      - Up to 8 channels can be selected for mapping when SDI input carries more than 8 audio channels
      - Supports mapping between source channels and encoded audio channels
      - Contains 1 x 8-channel stream and 3 x 2-channel streams
    - HDMI
      - Supports up to 8 source channels
      - Supports mapping between source channels and encoded audio channels
      - Contains 1 x 8-channel stream and 3 x 2-channel streams
  - Bitrate: 256/192/128/96/64/48/32/16 kbps
  - Output source embedded audio and line in through LINE OUT

Live stream

- Natively supports streaming to:
  - Twitch
  - YouTube (HLS/RTMP), publishing to timeline or a new event and setting "made for kids".
  - Facebook, enabling backup stream and publishing to timeline or a new event.
  - WOWZA over RTMP, adding token and publishing to timeline or a new event.
  - WOWZA over SRT, setting AES encryption (AES–128/192/256) and publishing to a channel or a new event.
- Supports streaming protocols:
  - RTSP
  - RTMP/RTMPS
  - SRT Caller/SRT Listener
  - NDI®|HX2/NDI®|HX3
  - HLS
  - TS over UDP/TS over RTP
  - TVU ISSP
- Supports streaming to 6 destinations simultaneously, containing 1 session of RTSP/SRT Listener/HLS/ISSP (if included), or 2 NDI®|HX2 sessions (if included)
- Supports 1 NDI®|HX3 sessions exclusively
- Supports specifying a video stream and an audio stream for each streaming session
- Supports live stream scheduler

Record

- Supports setting and managing recording function and tasks
- Supports recording to external SD card
  - Supports format and performance test
  - Supported system format: FAT32, exFAT and NTFS
  - Automatically upload files to remote file storage platform
- Supports recording to external USB storage
  - Supported system format: FAT32, exFAT and NTFS
- Supports recording to network attached storage (NFS/CIFS)
  - Supported system format: NFS, CIFS
- Supports loop recording and normal recording
- Supports saving recording files in MP4, MOV or TS format
- Supports specifying a video stream and an audio stream for each recording task
- Supports customizing recording file name and prefix
- Supports splitting recording files by time

- MP4, MOV: up to 4 hours
  - TS: no limit
- Supports exporting or downloading files through Web UI
- Supports recording scheduler

LCD

- 1.9 inch LCD display with 320x172 resolution
- View real-time system information including preview image, audio meter, record and live status, IP address and QR code (Web UI).
- Tap to start/stop recording/live streaming

Web UI

- Access Web UI via PC and smartphone
- View real-time device status
- Preview encoded video
- Set input sources
- Customize encoding parameters
- Manage streaming destinations, start/stop streaming, view streaming status
- Manage recording tasks and recorded files
- Set up to 8 overlays for each stream, including text, picture, and clock
- Set LCD touch screen
- Update firmware
- Supports registering Magewell Control Hub for centralized management
- Supports Microsoft Edge/Firefox/Chrome/Safari/Opera web browsers

API

- Provides APIs for 3rd party control system

Network Connections

- Ethernet: 1x RJ45 port, 10/100/1000 Mbps Base-T
- PoE+ (IEEE 802.3at)
- Wi-Fi: 802.11 a/b/g/n/ac, Station and AP modes supported
- 4G/5G USB modem (not supplied)
- USB Net

Input/Output Ports

- 2 x SD/HD/3G BNC ports
  - 1 x Input
  - 1 x Loop-through
- 2 x HDMI ports
  - 1 x Input
  - 1 x Loop-through
- 1 x 3.5mm LINE IN
- 1 x 3.5mm LINE OUT
- 1 x USB Type-C (config)
- 1 x SD card slot
- 2 x USB Type-A

Storage

- SD card (not supplied): FAT32, NTFS, exFAT
- USB flash drive (not supplied): FAT32, NTFS, exFAT
- NAS (not supplied): NFS/CIFS

LED Indicators

- LED indicators show the status of network connections, power, input signal, recording and streaming

Power Supply and Consumption

- DC 9 ~ 18 V, max current: ~ 1.15 A
- Max power consumption: ~ 11.5 W

Dimensions

- 214.9mm x 128.2mm x 44.55mm
- Support to mount onto a standard 1U rack with provided rack-mount kit

Accessories

- 1 x Screw locking DC power adapter
- 2 x Wi-Fi antenna
- 1 x HDMI cable
- 7 x M2.5 screws
- 1 x Retainer plate
- 1 x 1U short rack ear
- 2 x 1U long rack ears

Working Environment

- Operating temperature: 0 to 40 deg C
- Storage temperature: –20 to 55 deg C
- Relative humidity: 5% to 90% non-condensing