ClonerAlliance

CLONERALLIANCE UHD HALO

User Manual

ClonerAlliance UHD Halo User Manual

This documentation describes how to use ClonerAlliance UHD Halo (Model: CA-989UH) device.

Copyright Notice

Documentation Version 1.0.0

Trademarks

Safety Notices

Before using ClonerAlliance UHD Halo, please ensure that you read and understand the safety precautions below:

1. Do not attempt to open the case of ClonerAlliance UHD Halo or modify it in any way, as this will void the warranty.
2. Keep ClonerAlliance UHD Halo away from water and other liquids, as this may cause the unit to malfunction.
3. ClonerAlliance UHD Halo may become warm during use. This does not indicate malfunction.
4. Do not place heavy objects on ClonerAlliance UHD Halo, as this may cause the unit to overheat and malfunction.
5. If the exterior of ClonerAlliance UHD Halo requires cleaning, wipe it with a soft dry cloth.
6. Do not dispose of the unit via conventional domestic waste.

ClonerAlliance

Warning:

All ClonerAlliance products do NOT support to display or capture HDCP protected content.
According to the DMCA (Digital Millennium Copyright Act, 17 U.S.C. § 1201), it is illegal to bypass the HDCP protection by using HDMI capture devices.
If you violate the above laws, you may face a lawsuit.

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PRODUCT SUMMARY

Welcome to the ClonerAlliance UHD Halo User Manual. This chapter provides an overview of the product’s key features, target users, and what makes it unique in the capture device market.

1.1 Product Overview

What is UHD Halo?

The **UHD Halo** is a standalone 4K@60fps video capture device designed for **independent recording** without the need for a computer. It features:

- **Dual Input Sources** - HDMI 2.0 and USB Type-C DisplayPort Alt Mode
- **True 4K@60fps Recording** - Hardware H.265/H.264 encoding
- **65W PD Charging** - Charges connected devices while recording
- **3-Channel Audio Mixing** - HDMI + Line In + Microphone
- **Zero-Latency Passthrough** - 50ms lag for gaming
- **Scheduled Recording** - Up to 5 automated recording tasks
- **TO PC Streaming** - UVC-compliant capture to OBS/XSplit
- **Dual Storage** - USB 3.0 port + TF card slot

The Halo bridges the gap between standalone recorders and PC-based capture cards, offering the flexibility to record independently or stream to a computer via USB.

Key Features

1. True 4K@60fps Independent Recording

The Halo is one of the few standalone devices capable of recording true 4K@60fps without a computer. Many competing products only support 1080p@60fps or require PC software.

- **Hardware encoding** using dedicated H.265/H.264 chip
- **No CPU load** - recording happens entirely on-device
- **Stable quality** - 8 to 50 Mbps bitrate range
- **Low power consumption** - 15W max during 4K60 recording

2. Dual Input Sources (HDMI + USB Type-C DP)

Unlike single-input capture devices, the Halo supports two video input standards:

- **HDMI 2.0 Input** - Game consoles, PCs, cameras, Blu-ray players
- **Type-C DP Input** - Smartphones, tablets, laptops, docking stations

This dual-input design makes the Halo versatile for:

- Recording console gameplay (PlayStation, Xbox, Nintendo Switch)
- Capturing laptop/tablet output for tutorials
- Recording smartphone content (Samsung DeX, iPhone 15 Pro+)
- Switching between devices without cable swapping (when both connected)

See *Dual Input Source Switching* and *USB Type-C Recording Guide* for details.

3. 65W USB-C Power Delivery Charging

The Type-C DP input provides **65W charging** to connected devices while recording:

- **Extended Recording Sessions** - No battery drain on smartphones/tablets
- **Laptop Docking** - Single cable for video + power
- **Mobile Gaming** - Record phone gameplay indefinitely

Compatible with:

- iPhone 15 Pro / Pro Max (supports USB-C PD + DP)
- Samsung Galaxy S21/S22/S23/S24 series
- iPad Pro (2018+)
- MacBook Air / Pro
- Surface Pro / Laptop

- Steam Deck, ROG Ally, Legion Go

4. Scheduled Recording + Pause/Resume

Professional-grade recording features:

- **5 Scheduled Tasks** - Set up to 5 recurring or one-time recordings
- **Flexible Timing** - Once, Daily, Weekly modes
- **Auto Start/Stop** - No manual intervention needed
- **Pause/Resume** - Pause recording and continue in the same file

See *Scheduled Recording* for setup instructions.

5. 3-Channel Audio Mixing

Unique audio capabilities for content creators:

- **Channel 1:** HDMI Audio (Game/video sound)
- **Channel 2:** Line In (Background music from phone/MP3 player)
- **Channel 3:** MIC (Microphone/headset commentary)
- **Output:** Mixed to 2.0 stereo AAC audio in recording

Each channel has independent volume control (0-100) via OSD menu.

See *Audio Recording and Extraction* for detailed setup.

6. Ultra-Low Latency Passthrough (50ms)

Critical for competitive gaming:

- **HDMI Passthrough Latency:** 50ms
- **Recording Latency:** ~50ms
- **Comparison:** Typical capture cards have 100-200ms lag

7. H.265 (HEVC) High-Efficiency Encoding

Advanced video compression:

- **H.265 Codec** - 50% smaller file sizes vs H.264 at same quality
- **H.264 Fallback** - Compatible with older playback devices
- **Bitrate Range:** 8-50 Mbps (user selectable)
- **Variable Bitrate (VBR)** - Optimizes quality vs file size

Storage Savings Example:

1-hour 4K@60fps recording:

- H.264 (50 Mbps) = 22.5 GB
- H.265 (30 Mbps) = 13.5 GB (40% smaller)
- Result: Record 60% more content on same storage

2.1 Package Contents

Please ensure all items listed below are included in your package. If any items are missing or damaged, please contact your retailer or ClonerAlliance customer support immediately.

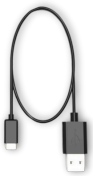
a. ClonerAlliance UHD Halo


b. Power Adapter


c. Remote


d. HDMI Cable


e. DP IN Cable
(USB-C to USB-C)


f. To PC Cable
(USB-C to USB-A)

g. User Manual

Standard Package Includes:

a. **ClonerAlliance UHD Halo Main Unit** × 1
b. **65W Power Adapter** (DC 20V/3.25A) × 1
c. **Remote Control** (with 2× AAA batteries) × 1
d. **HDMI Cable** (1.5m / 5ft) × 1
e. **Type-C to Type-C Cable** (for DP recording & PD charging) × 1
f. **Type-C to USB-A 3.0 Cable** (for TO PC mode) × 1
g. **User Manual** × 1

Note: Important Notice

- USB storage device (flash drive/TF card) is **NOT included** and must be purchased separately
- Recommended: USB 3.0 flash drive or SSD with ≥128GB capacity for 4K60 recording

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2.2 Product Overview

Top View

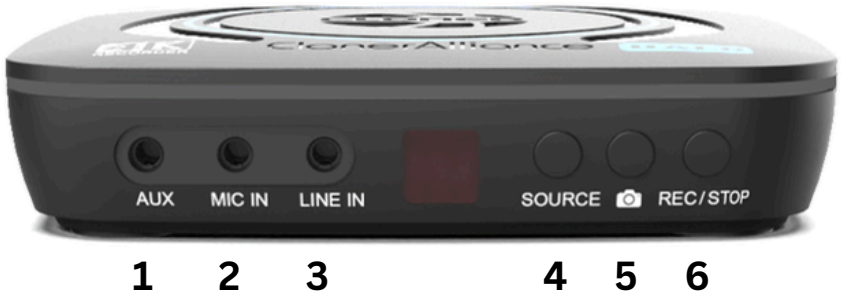
The UHD Halo features a distinctive design with the **CLONER logo** and **blue HALO ring** on the top panel.

Key Visual Features:

- **CLONER Logo**: Large circular logo at the center
- **HALO Ring**: Blue circular ring surrounding the logo (signature design element)
- **Branding**: “4K” and “RECORDER” text printed on the surface
- **Material**: High-quality PVC with smooth finish
- **LED Indicators**: Top LED (input source) and Side LED (storage status)

2.3 Hardware Features

Front Panel



Front Panel Controls and Ports:

1. **AUX Port** (3.5mm TRRS jack)
   - For auxiliary audio input/output
   - Supports 3-ring 4-pole TRRS connectors
2. **MIC Port** (3.5mm TRS jack)
   - Microphone input (mic-level signal)
   - Supports standalone mics, headsets, and earphones with mic
3. **LINE IN Port** (3.5mm TRS jack)
   - Line-level audio input
   - Connect phones, MP3 players, or audio interfaces
   - **Do NOT use for microphones** (use MIC port instead)
4. **SOURCE Button**
   - Switch between HDMI and Type-C DP inputs
   - Press to toggle active input source
   - Top LED indicates active input: Green (HDMI) / Blue (Type-C DP)
   - Both inputs can be connected simultaneously
5. **SNAPSHOT Button**
   - Capture still images during recording or live preview
   - Saves as JPG files to storage device
6. **REC/STOP Button**
   - Start/Stop recording
   - LED indicator lights up during recording

Note: PAUSE Function

UHD Halo **does NOT have a physical PAUSE button** on the front panel. The pause function is **only available via the remote control**.

Rear Panel

Rear Panel Connections:

Note: No Power Switch - The UHD Halo does NOT have a power switch. Power is controlled by connecting/disconnecting the power adapter.

7. **HDMI OUT**
   - HDMI 2.0 output port
   - Supports up to 4K@60fps pass-through
   - Connect to TV/monitor for live preview
   - Pass-through latency: ~50ms
8. **HDMI IN**
   - HDMI 2.0 input port
   - Supports up to 4K@60fps input
   - Connect game consoles, cameras, set-top boxes, etc.

9. **DP IN** (USB Type-C Port)
    - **DisplayPort Alt Mode** input (video via USB-C)
    - **65W PD Charging** output (charges connected Type-C devices)
    - Supports up to 4K@60fps from Type-C devices
    - Use with Type-C phones, laptops, tablets
10. **PWR IN** (USB Type-C Power Port)
    - Input: DC 20V/3.25A (65W)
    - **Use only the included 65W power adapter**
    - USB Type-C connector
    - No power switch - device powers on when connected

Side Panel

12 **13** **14**

Storage and PC Connection Ports:

12. **TF Card Slot** (MicroSD Card)
    - Supports up to 2TB TF cards
    - Recommended: UHS-I U3 or faster (write speed ≥30MB/s)
    - Side LED shows **blue** when TF card is active
13. **STORAGE Port** (USB 3.0 Type-A)
    - Connect USB flash drives or external HDDs/SSDs
    - Recommended: USB 3.0 devices with write speed ≥60MB/s for 4K60 recording
    - Side LED shows **green** when USB storage is active
14. **TO PC Port** (USB Type-C)
    - Connect to PC/Mac for UVC capture
    - Supports up to 4K@60fps over USB 3.0

- Driver-free (UVC standard)
- USB 3.0: “Super Speed” / USB 2.0: “High Speed”

Tip: Storage Priority

If both a USB drive and TF card are inserted, the **first recognized device** will be used for recording. You can manually select the storage device in **OSD Menu → Storage**.

2.4 LED Indicators

UHD Halo features **two LED indicators** to show device status at a glance:

- **Top LED**: Input source status (HDMI or Type-C DP)
- **Side LED**: Storage device status (USB or TF card)

Indicator Positions

Top LED (Input Source Indicator)

The **Top LED** shows which video input is currently active.

LED Color/Pattern	Meaning
Solid Green	HDMI input, signal detected
Solid Blue	Type-C (DP) input, signal detected
Flashing Green	HDMI input, no signal
Flashing Blue	Type-C (DP) input, no signal

Side LED (Storage Device Indicator)

The **Side LED** shows the storage device status and recording activity.

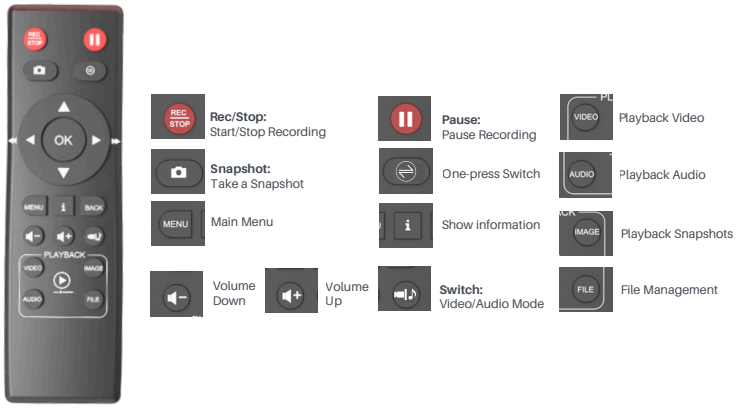
LED Color/Pattern	Meaning
Solid Green	USB storage device connected
Solid Blue	TF card connected
Flashing Green	Recording to USB storage
Flashing Blue	Recording to TF card
Alternating Green- Blue Flashing	Saving file (finalizing recording)
Off (No Light)	No storage device connected

Important: LED Status Quick Reference

- **Top LED Color** tells you the video input source (Green = HDMI, Blue = Type-C)
- **Side LED Color** tells you the storage device (Green = USB, Blue = TF card)
- **Flashing Side LED** = Recording in progress
- **Solid LED** = Connected but not recording

2.5 Remote Control

The included remote control provides full access to all UHD Halo functions.



Remote Control Layout

Top Row (Recording Controls):

- **REC/STOP**: Start/stop recording (same as front panel button)
- **PAUSE**: Pause/resume recording (Remote-only function, not on front panel)

Second Row (Capture & Switch):

- **Snapshot** (camera icon): Capture still image (same as front panel button)
- **One-press Switch** (circular arrow icon): Quick switch between HDMI and Type-C DP inputs

Navigation Section:

- **Arrow Keys (↑ ↓ ← →)**: Navigate menus, adjust settings, browse files
- **OK**: Confirm selection

Function Buttons:

- **MENU**: Open/close OSD menu
- **i (INFO)**: Display current status information (input resolution, bitrate, storage space, etc.)
- **BACK**: Return to previous menu or exit

Volume & Mode Controls:

- **VOL− (Volume Down)**: Decrease HDMI OUT audio volume for monitoring
- **VOL+ (Volume Up)**: Increase HDMI OUT audio volume for monitoring
- **Switch** (headphone icon): Toggle between Video and Audio recording modes

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Note: Volume controls only affect HDMI OUT monitoring audio, NOT recorded audio level.

Playback Section (Bottom):

- **VIDEO**: Quick access to video file list
- **AUDIO**: Quick access to audio file list
- **IMAGE**: Quick access to snapshot/image file list
- **FILE**: Open file manager
- **Play** (button): Play/pause media files during playback

3.1 Video Specifications

HDMI Input (Standalone Recording)

Specification	Details
HDMI Version	HDMI 2.0
Maximum Input Resolution	3840×2160@60fps (4K UHD)
Supported Input Resolutions	• 3840×2160@60/50/30/25/24fps • 1920×1080@60/50/30/25/24fps • 1280×720@60/50fps • 720×576@50fps (PAL) • 720×480@60fps (NTSC)
Input Color Space	RGB 4:4:4, YUV 4:4:4, YUV 4:2:2, YUV 4:2:0
Input Color Depth	8-bit
Input Aspect Ratio	16:9, 4:3
Connector Type	HDMI Type-A (female)

USB Type-C DP Input

Specification	Details
Protocol	DisplayPort 1.2 Alt Mode over USB-C
Maximum Input Resolution	3840×2160@60fps (4K UHD)
Supported Input Resolutions	Same as HDMI input
Power Delivery (PD)	USB PD 2.0, up to 65W
PD Output Voltages	5V/9V/12V/15V @ 3A; 20V @ 3.25A/5A
Connector Type	USB Type-C (female)

Important: Type-C DP Input Requirements

- Device must support **DP Alt Mode** (DisplayPort over USB-C)
- Not all Type-C devices support video output
- See *USB Type-C Recording Guide* for full compatibility list

HDMI Output (Pass-Through)

Specification	Details
HDMI Version	HDMI 2.0
Maximum Output Resolution	3840×2160@60fps (4K UHD)
Supported Output Resolutions	• Auto (matches display capability) • 3840×2160@60/50fps • 1920×1080@60/50fps
Output Color Space	YUV 4:4:4
Output Color Depth	8-bit
Pass-Through Latency	**<50ms** (ultra-low latency)
Connector Type	HDMI Type-A (female)

Tip: Pass-Through Performance

UHD Halo features ultra-low latency pass-through (<50ms), making it ideal for:

- Competitive gaming
- Live events
- Real-time monitoring

The recording process has a separate ~50ms delay, which does NOT affect the pass-through performance.

Recording Specifications (Standalone Mode)

Specification	Details
Video Codecs	H.264 (AVC), H.265 (HEVC)
Maximum Recording Resolution	3840×2160@60fps (4K UHD)
Recording Resolutions	• Auto (matches input resolution) • 3840×2160 • 1920×1080
Video Bitrate Options	8 / 16 / 24 / 32 / 50 Mbps
Default Video Bitrate	24 Mbps
Capture Color Format	YUV 4:2:0
Capture Color Depth	8-bit
Recording Formats	MP4, TS (Transport Stream)
Recording Aspect Ratio	16:9, 4:3

TO PC Mode (UVC Capture)

Specification	Details
Protocol	UVC (USB Video Class) - Driver-Free
Maximum Capture Resolution	3840×2160@60fps (via USB 3.0)
Supported Capture Formats	MJPEG, YUY2, NV12
USB 3.0 Capture	Up to 4K@60fps (MJPEG)
USB 2.0 Capture	Up to 1080p@30fps
Compatible OS	• Windows 7/8/10/11 • macOS 10.10 and later • Linux (kernel 2.6.26+)
Supported Software	OBS Studio, XSplit, vMix, Wirecast, etc.
Connector Type	USB Type-C (female)

Note: USB Connection Quality

- USB 3.0 (“Super Speed”): Best for 4K@60fps capture
- USB 2.0 (“High Speed”): Limited to 1080p@30fps

Check OSD menu (top right corner) to verify connection speed.

3.2 Audio Specifications

Audio Input

Specification	Details
HDMI Embedded Audio	PCM 2.0 stereo (2-channel)
HDMI Audio Sampling Rate	48kHz (default), 44.1kHz (optional)
Line In	3.5mm TRS jack (line-level input)
Mic In	3.5mm TRS jack (mic-level input)
Aux In	3.5mm TRRS jack
Audio Mixing Channels	**3-channel simultaneous mixing**: HDMI + Line In + Mic In
Multi-Channel Audio Support	□ No (5.1/7.1 downmixed to 2.0 stereo)

Audio Recording

Specification	Details
Audio Codec	AAC (Advanced Audio Coding)
Audio Bitrate Options	128 / 192 / 320 kbps
Default Audio Bitrate	192 kbps
Audio Sampling Rate	48kHz (video recording), 44.1kHz (audio-only)
Audio Channels	2.0 stereo
Audio-Only Recording Format	MP3

Audio Output

Specification	Details
HDMI Embedded Audio Output	PCM 2.0 stereo (embedded in HDMI OUT)
HDMI OUT Audio Control	Volume adjustable (0-100) in OSD menu

Warning: Audio Limitations

- UHD Halo does **NOT support multi-channel audio** (5.1/7.1 surround sound)
- Multi-channel audio from HDMI sources will be **automatically downmixed to 2.0 stereo**
- This is a hardware limitation and cannot be changed via firmware

3.3 Storage Specifications

Supported Storage Devices

Storage Type	Specifications
USB Storage (Primary)	USB 3.0 Type-A (female)
Supported USB Devices	• USB flash drives (USB 3.0/2.0) • External HDDs • External SSDs (recommended for 4K60)
TF Card Slot	MicroSD card slot
Maximum TF Card Capacity	Up to 2TB
Recommended TF Card Speed	UHS-I U3 or faster (≥30 MB/s write speed)

File Systems

File System	Support & Limitations
FAT32	□ Supported (4GB file size limit)
exFAT	□ **Recommended** (no file size limit)
NTFS	□ Supported (no file size limit)
Partition Table	MBR (up to 2TB), GPT (>2TB)

Tip: Storage Recommendations

- **For 4K@60fps recording**: USB 3.0 SSD with ≥60 MB/s write speed
- **For 1080p@60fps recording**: USB 3.0 flash drive with ≥30 MB/s write speed
- **File System**: Use **exFAT** for best compatibility (supports files >4GB)

- **Capacity**: 128GB or larger for extended 4K recording

3.4 Type-C Device Compatibility

The DP IN port supports a wide range of Type-C devices with DP Alt Mode. Below is a summary of compatible device categories. For the complete compatibility list, see *USB Type-C Recording Guide*.

Android Devices

Compatible:

- Samsung Galaxy S24/S23 series
- Google Pixel 9/8 series
- OnePlus 12/11
- Selected Xiaomi and other flagship phones

Requirements:

- DP Alt Mode support
- USB-C port with video output capability

iOS Devices

Compatible:

- iPhone 17 Pro Max / 17 Pro
- iPhone 16 Pro Max / 16 Pro
- iPad Pro (M5/M4/M3 with USB-C)
- iPad Air (M2 with USB-C)

Not Compatible:

- iPhone 17 / 16 / 15 / 15 Plus (charge-only Type-C)
- iPhone 14 and earlier (Lightning connector)

Windows Devices

Compatible:

- Windows laptops with Thunderbolt 3/4 or DP-enabled USB-C ports
- Microsoft Surface series
- Gaming laptops (ASUS ROG, HP Omen, Dell XPS, etc.)
- Mini PCs with DP Alt Mode

macOS Devices

Compatible:

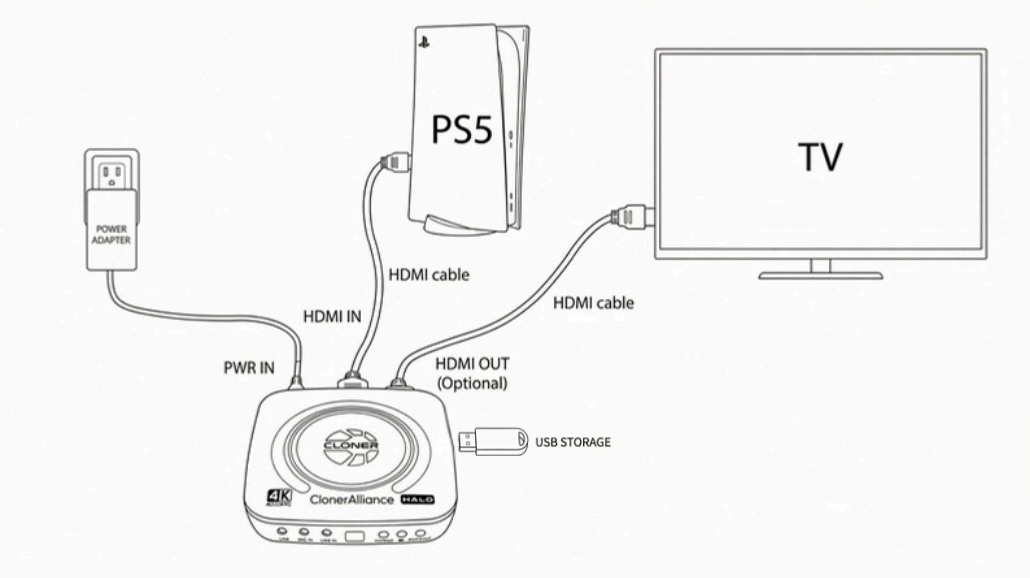
- MacBook Pro (M4/M3/M2/M1)
- MacBook Air (M4/M3/M2)
- Mac mini (M4/M2)
- Mac Studio (M2)

4.1 Scenario 1: Recording PS5/Xbox Game Videos

This is the most common use case for independent recording from gaming consoles.

Required Equipment

- ClonerAlliance UHD Halo main unit
- MicroSD card or USB 3.0 flash drive or external HDD/SSD (recommended: exFAT format)
- HDMI cables × 2 (one for game console, one for display)
- 65W power adapter



Connection Steps

1. **Connect Video Source**
   - Game Console HDMI OUT → Halo **HDMI IN** port
2. **Connect Display**
   - Halo **HDMI OUT** port → TV/Monitor HDMI IN
   - This allows you to see the game while recording
3. **Insert Storage Device**
   - Insert MicroSD card into the **TF** slot, or
   - Plug USB 3.0 storage device into the **STORAGE** port
   - Recommended capacity: 128GB or higher for 4K60 recording
4. **Connect Power**
   - 65W power adapter → Halo **PWR IN** port
   - Wait 3-5 seconds for the device to boot up

Starting Recording

To Start Recording:

Press the **REC** button on the main unit or remote control. The side LED will begin flashing:

- **Green flashing** = Recording to USB flash drive/HDD
- **Blue flashing** = Recording to TF card

To Stop Recording:

Press the **REC/STOP** button again on the main unit or remote control. The side LED will stop flashing and become a solid color.

LED Indicator Guide

Top LED (Input Source Indicator):

- **Solid Green** = HDMI input, signal detected
- **Solid Blue** = Type-C (DP) input, signal detected
- **Flashing Green** = HDMI input, no signal
- **Flashing Blue** = Type-C input, no signal

Side LED (Storage Device Indicator):

- **Solid Green** = USB storage connected
- **Solid Blue** = TF card connected
- **Flashing Green** = Recording to USB storage
- **Flashing Blue** = Recording to TF card

Tips

Tip:

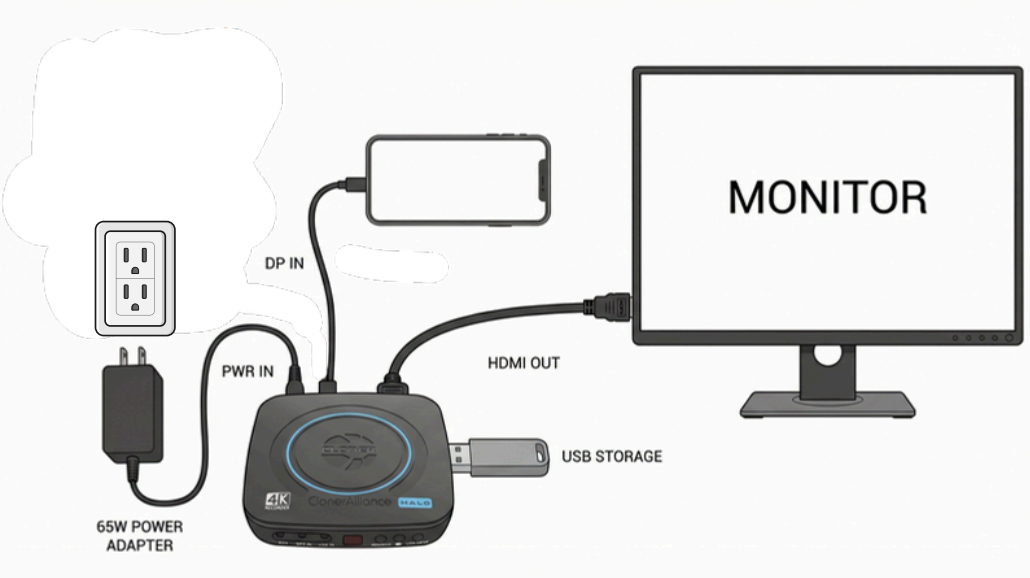
- **Ultra-Low Latency**: HDMI pass-through latency is only ~50ms, perfect for competitive gaming
- **Recording Latency**: The recording process has approximately 50ms delay (does not affect pass-through)
- **4K60 Recording**: Make sure to use a USB 3.0 SSD with write speed ≥60MB/s for smooth 4K60 recording
- **File Format**: Default recording format is MP4 with H.265 codec for best compression

4.2 Scenario 2: Recording Type-C Phone/Laptop

UHD Halo can record directly from Type-C devices that support DP Alt Mode, while simultaneously charging them with up to 65W power.

Required Equipment

- ClonerAlliance UHD Halo main unit
- MicroSD card or USB 3.0 storage device (recommended: exFAT format)
- Type-C to Type-C cable (included in the package)
- Type-C device that supports DP Alt Mode (e.g., Samsung Galaxy S24 series, iPhone 17 Pro Max, MacBook Pro, Windows laptops with DP-enabled Type-C ports)



Connection Steps

1. **Connect Type-C Device**
   - Type-C device → Halo **DP IN** port (using Type-C to Type-C cable)
2. **Connect Display** (Optional but recommended)
   - Halo **HDMI OUT** → Monitor HDMI IN
   - This allows you to preview the recording on a larger screen
3. **Insert Storage Device**
   - Insert MicroSD card or plug in USB 3.0 storage device
4. **Connect Power**
   - 65W power adapter → Halo **PWR IN** port

Key Features

Important: 65W PD Charging

- UHD Halo automatically charges your connected Type-C device
- Output: 5V/9V/12V/15V 3A; 20V 3.25A/5A (USB PD 2.0)
- Perfect for extended recording sessions without draining device battery

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DP Input Indication:

- Top LED will turn **solid blue** when DP signal is detected
- Top LED will **flash blue** if no DP signal (check device settings)

Recording Settings Recommendations

For 4K@60fps recording (if device supports 4K60 output):

- Video Codec: **H.265**
- Video Bitrate: **32-50 Mbps**
- Resolution: **3840×2160**

For 1080p@60fps recording (most phones):

- Video Codec: **H.265**
- Video Bitrate: **16-24 Mbps**
- Resolution: **1920×1080**

Note: Device Compatibility

Your Type-C device must support **DP Alt Mode** (DisplayPort over USB-C). Not all Type-C devices support video output.

Supported devices:

- Samsung Galaxy S24/S23 series
- Google Pixel 9/8 series
- iPhone 17/16 Pro Max/Pro
- MacBook Pro/Air
- Windows laptops with DP-enabled Type-C/Thunderbolt ports

Not supported:

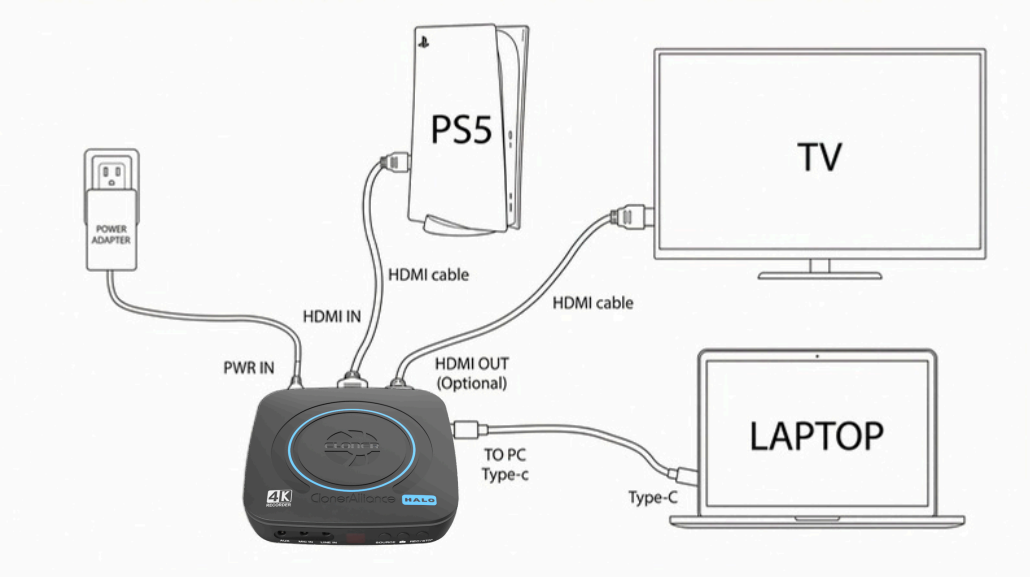
- Devices with charge-only Type-C ports
- Older iPhone models with Lightning ports

4.3 Scenario 3: OBS Live Streaming (TO PC Mode)

Use UHD Halo as a UVC capture device for live streaming with OBS, XSplit, or other streaming software.

Required Equipment

- ClonerAlliance UHD Halo main unit
- Type-C to USB-A cable (included in the package)
- PC/Mac running OBS Studio or similar streaming software
- HDMI video source (game console, camera, etc.)



Connection Steps

1. **Connect Video Source**
   - Game console/Camera HDMI OUT → Halo **HDMI IN**
2. **Connect to Computer**
   - Halo **TO PC** (Type-C) port → Computer USB port
   - Use the included Type-C to USB-A cable
   - **Recommended**: USB 3.0 port for 4K60 capture
3. **Connect Monitor** (Optional)
   - Halo **HDMI OUT** → Monitor HDMI IN for preview

OBS Studio Setup

1. **Add Video Capture Device**
   a. In OBS, click the + button in the Sources panel
   b. Select **Video Capture Device**
   c. Choose **"UHD Halo"** or **"USB Video"** from the device list
2. **Configure Resolution**
   - Select resolution: **3840×2160** (4K) at **60fps**
   - Or **1920×1080** (1080p) at **60fps** for lower bandwidth
   - TO PC mode supports up to 4K@60fps
3. **Add Audio Input**
   - Click + in Sources panel → **Audio Input Capture**
   - Select **"UHD Halo"** or **"USB Audio"**
   - This captures the mixed audio from HDMI + Line In + Mic
4. **Start Streaming**
   - Configure your streaming platform settings (Twitch, YouTube, etc.)
   - Click **Start Streaming** in OBS

USB Connection Indicator

Check the OSD menu (press **MENU** on remote) to verify USB connection quality:

- **"Super Speed"** in OSD (top right): USB 3.0 connection (Best for 4K)
- **"High Speed"** in OSD: USB 2.0 connection (Limited to 1080p30)

Tip: Driver-Free UVC Device

UHD Halo is a standard UVC (USB Video Class) device and requires **no drivers**. It works immediately when connected to:

- Windows 7/8/10/11
- macOS 10.10 and later
- Linux (kernel 2.6.26+)

Streaming Platform Compatibility

UHD Halo works with all major streaming software and platforms:

Streaming Software:

- OBS Studio (recommended, free)
- XSplit Broadcaster
- vMix
- Wirecast
- StreamYard

Streaming Platforms:

- Twitch
- YouTube Live
- Facebook Gaming
- TikTok Live

USB TYPE-C RECORDING GUIDE

The ClonerAlliance UHD Halo features a USB Type-C **DP IN** port that supports **DisplayPort Alt Mode**, allowing you to record video directly from Type-C devices while simultaneously charging them with up to **65W power delivery**.

5.1 Technical Specifications

Input Interface:

- Protocol: **DisplayPort 1.2** (DP Alt Mode over USB-C)
- Maximum Resolution: **3840×2160@60fps** (4K60)
- Connector: USB Type-C female port

Power Delivery:

- Protocol: **USB PD 2.0**
- Maximum Power: **65W**
- Voltage Options: 5V/9V/12V/15V @ 3A; 20V @ 3.25A/5A
- Automatic power negotiation with connected device

Note: Why 65W PD Charging?

65W is sufficient to charge most laptops, tablets, and phones during recording sessions. This eliminates battery drain concerns for extended recordings.

5.2 Supported Devices

Important: DP Alt Mode Required

Your Type-C device must support **DP Alt Mode** (DisplayPort over USB-C) to output video. Not all Type-C ports support video output—many are charge-only.

Confirmed Compatible Devices

Android Devices

Smartphones:

- Samsung Galaxy S24 Ultra / S24+ / S24
- Samsung Galaxy S23 Ultra / S23+ / S23
- Google Pixel 9 Pro XL / 9 Pro / 9
- Google Pixel 8 Pro / 8
- OnePlus 12 / 11
- Xiaomi 14 Ultra / 14 Pro (selected models)

Tablets:

- Samsung Galaxy Tab S10+ / S10 Ultra
- Google Pixel Tablet
- Lenovo Tab P12 Pro

iOS Devices

iPhones (Type-C models only):

- iPhone 17 Pro Max
- iPhone 17 Pro
- iPhone 16 Pro Max
- iPhone 16 Pro

iPads:

- iPad Pro 13-inch (M5)
- iPad Pro 11-inch (M5)
- iPad Pro 12.9-inch (M4/M3)
- iPad Air (M2)

Note: iPhone Compatibility

- iPhone 17/16 Pro Max/Pro: Support DP Alt Mode (can record up to 4K@60fps)
- iPhone 17/16/15/15 Plus: Do NOT support DP Alt Mode (charge-only Type-C)
- iPhone 14 and earlier: Lightning connector (not compatible)

Windows Devices

Desktops:

- Windows PCs with HDMI or DP-enabled USB-C/Thunderbolt ports (Windows 7+)
- Examples: Geekom QS1 Pro Mini PC, Lenovo Legion Desktop

Laptops:

- Microsoft Surface Laptop 7 / Surface Pro 11
- HP Omen series
- ASUS ROG Ally X
- Dell XPS series (with Thunderbolt/USB-C DP)
- Lenovo ThinkPad series (with USB-C DP)

All-in-Ones:

- HP OmniStudio X (2025)

macOS Devices

MacBook:

- MacBook Air 15-inch with M4 chip
- MacBook Air 13-inch with M3/M2 chip
- MacBook Pro 16-inch / 14-inch with M4/M3/M2 chip

Mac Desktops:

- Mac mini M4 / M2
- Mac Studio M2 Ultra / M2 Max

Incompatible Devices

- **Charge-only Type-C ports** (no video output capability)
- **iPhone 15/15 Plus** and older iPhones (Lightning or charge-only Type-C)
- **Budget Android phones** without DP Alt Mode support
- **USB-C accessories** like chargers, hubs without DP Alt Mode

Tip: How to Check Compatibility

1. Check your device's specifications for **"DisplayPort Alt Mode"** or **"DP over USB-C"**
2. Try connecting your device to a USB-C monitor—if it works, it supports DP Alt Mode
3. Look for Thunderbolt logo on the port (Thunderbolt always supports DP Alt Mode)

5.3 Connection Guide

Required Equipment

- ClonerAlliance UHD Halo main unit
- **Type-C to Type-C cable** (included in package, or use any full-featured USB-C cable)
- Storage device (USB 3.0 flash drive / TF card / external SSD)
- 65W power adapter (included)
- (Optional) HDMI monitor for preview

Step-by-Step Connection

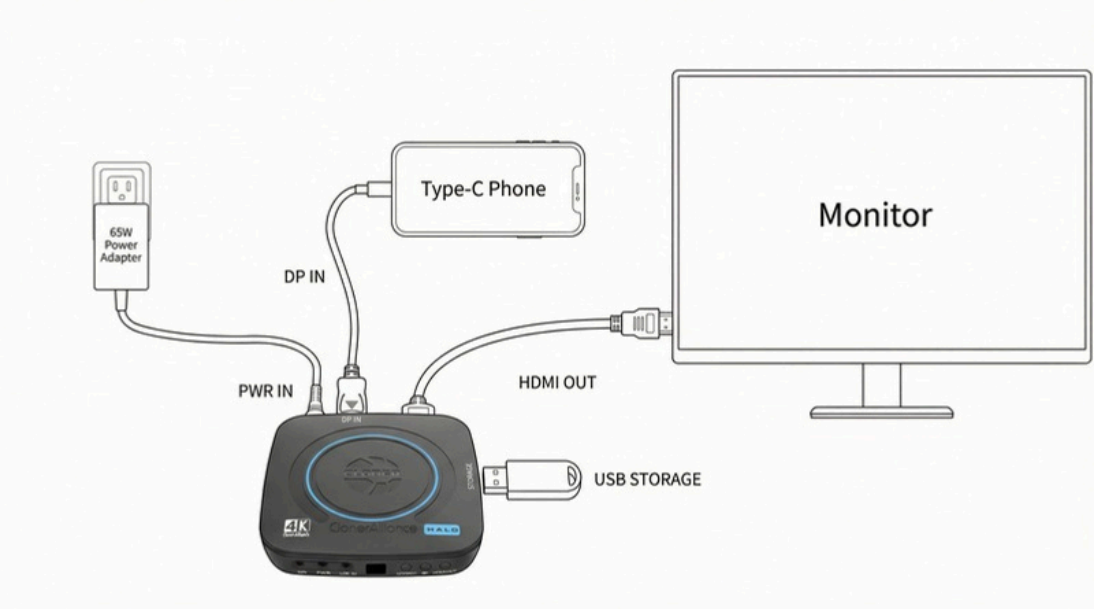
Step 1: Prepare Equipment

1. Ensure your Type-C device supports DP Alt Mode (check specifications)
2. Prepare a **full-featured** Type-C to Type-C cable (data + video + power capable)
3. Insert storage device into Halo (USB or TF card slot)

Step 2: Connect Devices

1. **Type-C Device** → **Halo DP IN** port
   - Use the Type-C to Type-C cable
   - Ensure both ends are fully inserted
2. **Halo HDMI OUT** → **Monitor** (Optional but recommended)
   - Allows you to preview the recording on a larger screen
   - Use a standard HDMI cable
3. **Storage Device** → **Halo**
   - Insert USB 3.0 flash drive into **STORAGE** port, or
   - Insert MicroSD card into **TF** slot
4. **Power Adapter** → **Halo PWR IN**
   - Connect the 65W power adapter

- Wait 3-5 seconds for boot-up



Step 3: Verify Connection

Check the **Top LED indicator**:

- **Solid Blue** = DP signal detected - Connection successful
- **Flashing Blue** = No DP signal - Check device settings or cable

If the LED is **flashing blue**:

1. Ensure your device is unlocked (some phones/laptops require screen unlock to enable video output)
2. Check device display settings (some devices need manual configuration)
3. Try a different USB-C cable (must be full-featured, not charge-only)
4. Verify your device supports DP Alt Mode

5.4 65W PD Charging Feature

Automatic Charging

UHD Halo **automatically charges** your connected Type-C device during recording:

- **Power Protocol**: USB PD 2.0

- **Auto-Negotiation**: Halo automatically selects the optimal voltage (5V/9V/12V/15V/20V)
- **Maximum Power**: 65W (20V @ 3.25A)

Charging Scenarios

Scenario A: Recording from a Phone

- Halo provides 9V-20V charging (up to 27W for most phones)
- Phone battery remains full during extended recordings
- Example: Samsung Galaxy S24 can record for hours without battery drain

Scenario B: Recording from a Laptop

- Halo provides continuous power (up to 65W)
- No need for separate laptop charger during short recordings
- Example: MacBook Air M2 can maintain or charge slowly while recording

Scenario C: Recording from a Tablet

- Halo provides sufficient power to prevent battery drain
- Example: iPad Pro can record while charging simultaneously

Warning: Power Delivery Limitations

- High-performance gaming laptops may require >65W for charging while under heavy load
- UHD Halo's 65W is sufficient for **maintaining battery level** during recording, but may charge slowly if the device is also performing intensive tasks
- For laptops requiring >65W, consider using the laptop's dedicated charger during extended sessions

Output Voltage Explanation

UHD Halo's power output voltage is approximately **5.3V** (slightly higher than standard 5V):

- **Reason**: To provide sufficient power for both the storage device and the connected Type-C device simultaneously
- **Safety**: Fully complies with USB PD specifications—safe and reliable
- **Compatibility**: Works with all USB PD 2.0 compatible devices

5.5 Recording Settings Recommendations

For 4K@60fps Recording

Recommended Settings (if your device supports 4K60 output):

- **Resolution**: Auto or 3840×2160
- **Video Codec**: H.265 (smaller file size)
- **Video Bitrate**: 32-50 Mbps
- **Storage**: USB 3.0 SSD (write speed ≥60MB/s)

Estimated File Sizes (H.265, 32 Mbps):

- 1 minute ≈ 240 MB
- 10 minutes ≈ 2.4 GB
- 1 hour ≈ 14 GB

For 1080p@60fps Recording

Recommended Settings (most phones default to 1080p):

- **Resolution**: Auto or 1920×1080
- **Video Codec**: H.265
- **Video Bitrate**: 16-24 Mbps
- **Storage**: USB 3.0 flash drive (write speed ≥30MB/s)

Estimated File Sizes (H.265, 24 Mbps):

- 1 minute ≈ 180 MB
- 10 minutes ≈ 1.8 GB
- 1 hour ≈ 10.5 GB

5.6 Troubleshooting

Problem: Type-C Port Not Responding, Top LED Not Blue

Possible Causes:

1. **Device does not support DP Alt Mode**
   - Solution: Check product specifications or try a different device
2. **Using a charge-only USB-C cable**
   - Solution: Use a **full-featured** USB-C cable (must support data + video + power)
   - Tip: The cable included with Halo supports all features
3. **Type-C port is charge-only** (no video output capability)
   - Solution: Try a different Type-C port on your device (some laptops have multiple ports with different capabilities)
   - Example: Some Windows laptops have one Thunderbolt port and one charge-only USB-C port
4. **Device screen is locked**
   - Solution: Unlock your phone/tablet (video output may be disabled when locked for security)

Problem: Video Lag or Stuttering

Possible Causes:

1. **Storage device write speed too slow**
   - Solution: Use USB 3.0 SSD with write speed ≥60MB/s for 4K60 recording
2. **Recording bitrate too high**
   - Solution: Reduce bitrate (50 Mbps → 32 Mbps in OSD menu)
3. **Recording resolution too high for storage device**
   - Solution: Lower recording resolution (4K → 1080p in OSD menu)
4. **Storage device nearly full**
   - Solution: Free up space or use a larger capacity storage device

Problem: Cannot Charge and Record Simultaneously

Possible Causes:

1. **Not using the included 65W power adapter**
   - Solution: Use the original 65W power adapter (or equivalent 65W USB PD adapter)
2. **USB-C cable does not support PD charging**
   - Solution: Use a full-featured USB-C cable (must support power delivery)
3. **Device does not support PD charging protocol**
   - Solution: Check if your device supports USB PD (most modern devices do)

Problem: Recorded Video Has No Audio

Possible Cause:

Type-C devices may not embed audio in the DP signal by default.

Solution:

1. Check device audio settings—ensure audio output is set to USB-C/DP
2. Use external audio recording:
   - Connect a microphone to Halo’s **MIC** port
   - Or connect audio source to **LINE IN** port
   - Configure audio mixing in Halo’s OSD menu
3. Add audio in post-production using video editing software

5.7 Cable Selection Guide

Full-Featured USB-C Cable Requirements

To ensure proper functionality, use a USB-C cable that supports:

Required Features:

1. **Data transfer** (USB 2.0 or higher)
2. **DisplayPort Alt Mode** (DP video signal)
3. **USB Power Delivery** (PD charging)

Tip: How to Identify Full-Featured Cables

- Look for cables labeled **"Thunderbolt 3/4"** (always full-featured)
- Look for **"USB4"** cables (always full-featured)
- Check for **"USB-C to USB-C DP Alt Mode"** in product description
- Avoid cables labeled "charging only" or "power only"

Recommended Cable Brands:

- Anker USB-C to USB-C cables (Thunderbolt or USB4)
- Apple Thunderbolt 3/4 cables
- Cable Matters USB-C DP Alt Mode cables
- Belkin Thunderbolt 3 cables

Cables to Avoid:

- Cheap generic cables from unknown brands
- Cables labeled "charging only"
- Thin/ultra-flexible cables (often lack video support)

6.1 Understanding Dual Inputs

Input Source Overview

Available Input Sources:

Input 1: HDMI IN

- Standard: HDMI 2.0
- Connector: HDMI Type-A (rear panel)
- Maximum resolution: 4K@60Hz
- Compatible devices: Game consoles, PCs, Blu-ray players, cameras
- Top LED indicator: Green when active

Input 2: DP IN (Type-C)

- Standard: DisplayPort 1.2 via USB Type-C Alt Mode
- Connector: USB Type-C (side panel, labeled “DP IN”)
- Maximum resolution: 4K@60Hz
- Compatible devices: Smartphones, tablets, laptops, docking stations
- Top LED indicator: Blue when active
- Additional feature: 65W PD charging output

When to Use Each Input

HDMI Input - Best For:

- Game consoles (PS5, Xbox Series X/S, Nintendo Switch)
- Desktop gaming PCs
- Blu-ray players and media boxes
- DSLR cameras and camcorders
- Set-top boxes and streaming devices
- Any device with HDMI output

Type-C DP Input - Best For:

- Smartphones with DP Alt Mode (Samsung Galaxy, Google Pixel, iPhone 15 Pro+)
- Tablets (iPad Pro, Surface Pro, Galaxy Tab)
- Laptops and ultrabooks (MacBook, ThinkPad, XPS, Surface Laptop)
- Handheld gaming devices (Steam Deck, ROG Ally)
- USB-C docking stations
- Devices requiring simultaneous charging (65W PD)

6.2 Source Detection and Priority

Automatic Source Detection

Detection Behavior:

The Halo automatically detects which input source is active:

At Power-On:

1. Halo scans both inputs simultaneously
2. First detected signal becomes active source
3. Top LED indicates active source: - Solid Green = HDMI active - Solid Blue = Type-C DP active
4. Other input remains available (use SOURCE button to switch)

Signal Detection Priority:

- No fixed priority (HDMI or DP)
- First signal detected wins
- Typically depends on which device boots faster
- Press SOURCE button to switch to the other connected input

LED Indicator Meanings:

Table 1: Top LED Status Reference

Top LED Color	Status
Solid Green	HDMI input active with signal
Solid Blue	Type-C DP input active w/signal
Flashing Green	HDMI selected but no signal
Flashing Blue	Type-C DP selected but no signal

Signal Loss Behavior:

When Active Source Loses Signal:

1. Top LED starts flashing (same color)
2. HDMI OUT displays “No Signal”
3. Recording stops (if Auto-Stop enabled)
4. Halo waits for signal to return
5. Does NOT automatically switch to other input

Note: Halo does not auto-switch between inputs.
Manual source change uses SOURCE button or cable reconnection.

6.3 Switching Between Inputs

How to Switch Sources

Method 1: Using SOURCE Button or Remote Control (Recommended)

Quick Toggle Between Inputs:

1. Ensure both HDMI and Type-C DP cables are connected
2. Press either: - SOURCE button on front panel, OR - One-press Switch button (circular arrow icon) on remote control
3. Top LED changes color to indicate active input: - Green LED = HDMI input active - Blue LED = Type-C DP input active
4. HDMI OUT automatically displays the newly selected source
5. Allow 2-3 seconds for source detection

Notes:

- Can switch while recording (recording continues on new source)
- No need to stop recording or power cycle device
- Both sources remain connected
- Remote control provides convenient switching from a distance

Method 2: Physical Reconnection

From HDMI to Type-C DP:

1. Stop any active recording
2. Disconnect HDMI cable from HDMI IN
3. Connect Type-C cable to DP IN
4. Top LED changes from Green to Blue
5. HDMI OUT displays Type-C source

From Type-C DP to HDMI:

1. Stop any active recording
2. Disconnect Type-C cable from DP IN
3. Connect HDMI cable to HDMI IN
4. Top LED changes from Blue to Green
5. HDMI OUT displays HDMI source

Method 3: Power Cycle with Both Connected

Scenario: Both HDMI and Type-C connected

To Switch Active Source:

1. Stop recording (if active)
2. Power off the source you want to deactivate
3. Power off Halo (unplug power adapter)
4. Ensure target source is powered on
5. Power on Halo (reconnect power adapter)
6. Target source should be detected first

Note: This method is less reliable than physical reconnection
Detection order may vary

Method 3: Source Device Control

Some devices allow output control:

Laptops (Windows/macOS):

- Toggle external display output
- Disconnect video output in display settings
- Forces Halo to wait for signal

Smartphones:

- Disconnect/reconnect Type-C cable
- Toggle “Screen Mirroring” or “Desktop Mode”

Result: Removing signal allows manual switch

Connecting Both Inputs Simultaneously

What Happens:

Scenario: HDMI and Type-C both connected

Behavior:

- Only ONE source is active at a time
- Cannot record both simultaneously
- Switch between sources using SOURCE button
- Active source determined by detection priority or button press

Top LED Indicates Active Source:

- Green = HDMI currently active
- Blue = Type-C DP currently active
- Press SOURCE button to toggle between inputs

Use Case Example:

Setup: Gaming PC (HDMI) + Laptop (Type-C) both connected

Workflow:

1. Power on PC first → Halo detects HDMI (green LED)
2. Record PC gaming session
3. Press SOURCE button → Switches to Laptop (blue LED)
4. Record laptop presentation
5. Press SOURCE button again → Back to PC (green LED)

Benefit: Instant switching without disconnecting cables

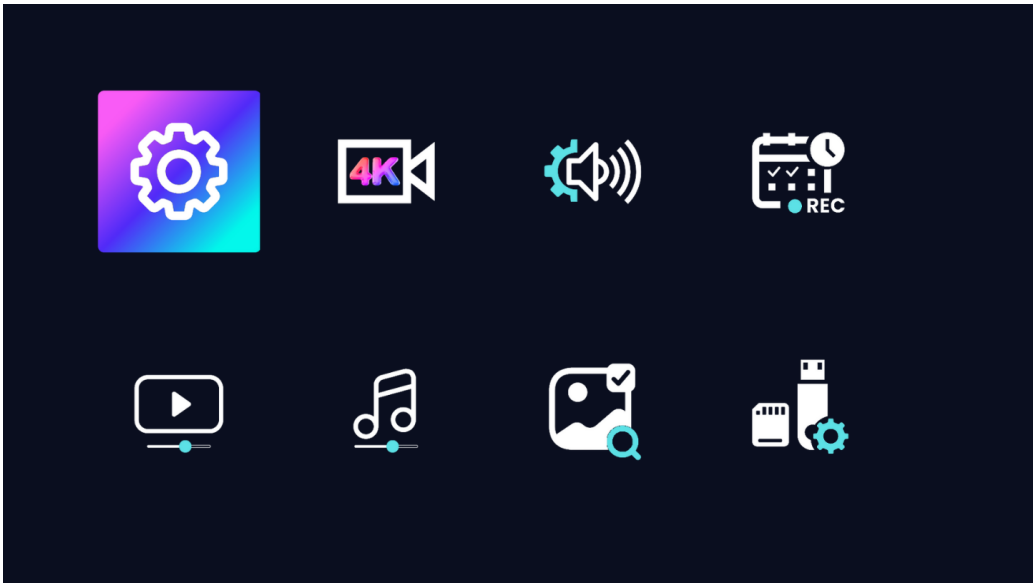
7.1 Accessing the OSD Menu

Basic Navigation:

- Press **MENU** button on remote to open/close OSD menu
- Use **Arrow Keys** (Up/Down/Left/Right) to navigate menu options
- Press **OK** button to confirm selection
- Press **BACK** button to return to previous menu level

OSD Display:

- Menu appears as overlay on HDMI OUT display
- Semi-transparent background for easy viewing
- Current settings shown on the right side of each menu item
- Modified settings are automatically saved



7.2 Complete Menu Structure

System Settings

Access the System Settings menu to configure time, display output, language, and system maintenance options.

System Time

Function: Set current date and time for file timestamps and scheduled recordings

Setting Method:

MENU → System Settings → System Time

- Format: yyyy/mm/dd hh:mm
- Use Arrow Keys to adjust each field
- Press OK to confirm

Usage:

- Adds timestamp to recorded filenames
- Required for scheduled recording feature
- Displayed on time watermark (if enabled)

Time Zone

Function: Set your local time zone

Options:

- UTC-12:00 to UTC+14:00
- Affects scheduled recording time calculations
- Ensures correct file timestamp

Default: UTC+0:00 (Greenwich Mean Time)

HDMI OUT Resolution

Function: Set output resolution for HDMI OUT port

Options:

Table 1: HDMI OUT Resolution Options

Resolution	Description
Auto (recommended)	Auto-detect display’ s best resolution
3840x2160p60	4K 60Hz
3840x2160p50	4K 50Hz
1920x1080p60	1080p 60Hz
1920x1080p50	1080p 50Hz
1280x720p60	720p 60Hz

Recommended: Auto (automatic detection)

Note: HDMI OUT resolution setting does NOT affect recording resolution. Recording resolution is set separately in Record Settings menu.

HDMI OUT Percentage

Function: Adjust display scaling to fit your monitor

Range: 90% - 100%

Usage:

- 100%: Full screen (default)
- 95%: Slight underscan (useful if TV crops edges)
- 90%: More underscan for overscan displays

When to Adjust:

- If parts of the image are cut off on your TV/monitor
- Older TVs may have overscan that crops edges

Screen Saver

Function: Enable screen saver to reduce power consumption and prevent screen burn-in

Options:

- Off: Screen saver disabled
- 1 min: Activate after 1 minute of inactivity
- 5 mins: Activate after 5 minutes
- 30 mins: Activate after 30 minutes

Behavior:

- HDMI OUT displays black screen when activated
- Recording continues normally (not affected)
- Press any button to wake up display

Default: Off

Language

Function: Set OSD menu language

Supported Languages:

- English
- Japanese
- German
- Italian
- Thai
- Traditional Chinese
- Simplified Chinese

Factory Reset

Function: Reset all settings to factory defaults

What Gets Reset:

- All menu settings (video, audio, system)
- Language preference
- Time and date

What Is Preserved:

- Recorded files on storage device
- Firmware version
- Storage device format

> **Warning:** Use Factory Reset only when experiencing persistent issues. All custom settings will be lost.

Reset File Name Suffix Index

Function: Reset file numbering sequence back to 0000

Usage:

- Useful when starting a new project
- Resets VID_xxxx.mp4 numbering to VID_0000.mp4
- Does not delete existing files

Example:

- Current file: VID_0523.mp4
- After reset: Next file will be VID_0000.mp4

Firmware Update

Function: Update Halo firmware from USB storage device

Update Procedure:

1. Download firmware file from ClonerAlliance website
2. Copy firmware file to USB storage device root directory (Filename: ums600_update_ota.img or as specified)
3. Insert USB device into Halo
4. Navigate to: MENU → System Settings → Firmware Update
5. Select firmware file and confirm
6. Wait for update to complete (do NOT power off)
7. Halo will restart automatically

Danger: CRITICAL: Do not unplug power or USB device during firmware update. Interruption may brick the device.

Record Settings

Configure all recording parameters including format, resolution, bitrate, and file management options.

File Format

Function: Select recording file container format

Options:

Table 2: File Format Comparison

Format	Advantages	Disadvantages
MP4	Wide compatibility Playable on all devices	May lose data if power lost during recording
TS	Safer for live recording No data loss on crash	Less compatible with some players

Recommended: MP4 (best compatibility)

Resolution

Function: Set recording resolution

Options:

- **Auto** (recommended): Automatically match input resolution
- 3840x2160: Force 4K recording
- 1920x1080: Force 1080p recording

Behavior:

- Auto mode records at input source resolution
- Forced resolution will downscale if input is higher
- Cannot upscale (1080p input cannot record as 4K)

File Size

Function: Set file size limit or segmentation method

Options:

Table 3: File Size Options

Option	Description
Unlimited	Single file, no size limit (recommended for exFAT/NTFS)
4GB	Split into 4GB files (required for FAT32)
16GB	Split into 16GB files
2 Hours	Split after 2 hours of recording
Loop Recording	Overwrite oldest files when storage full (surveillance mode)

Recommended:

- Use **Unlimited** with exFAT or NTFS file system
- Use **4GB** only if storage device is FAT32 formatted

Auto-Stop on Signal Loss

Function: Automatically stop recording when input signal is lost

Options:

- Off: Continue recording even without signal
- 10 Seconds: Stop after 10 seconds of no signal
- 30 Seconds: Stop after 30 seconds (recommended)
- 1 Minute: Stop after 1 minute

Usage Scenarios:

- 30 Seconds: Good for gaming (handles brief scene transitions)
- Off: Useful for recording TV shows with commercials

File Name

Function: Configure file naming convention

Options:

- **Default**: Standard naming (VID_yymmddhhmmss.mp4)
- **Custom**: Add custom prefix (e.g., MyProject_0001.mp4)

Default Format Examples:

- Video: VID_20260201143025.mp4
- Image: IMG_20260201143025.jpg
- Audio: AUD_20260201143025.mp3

File Index

Function: Choose file numbering method

Options:

- **Index**: Sequential numbers (0000-9999) * Example: VID_0001.mp4, VID_0002.mp4, …
- **System Time**: Timestamp-based * Example: VID_20260201143025.mp4

Recommended: System Time (easier to identify when file was recorded)

Video Codec

Function: Select video compression codec

Options:

Table 4: Video Codec Comparison

Codec	Advantages	File Size
H.264/AVC	Best compatibility Plays on all devices	Larger (1.5x H.265)
H.265/HEVC (recommended)	Better compression Higher quality per MB	Smaller (save 30-50%)

Recommended: H.265/HEVC (better quality, smaller files)

Note: Some older devices may not support H.265 playback. Use VLC Media Player or upgrade player software.

Video Bitrate

Function: Set video recording bitrate (quality vs file size)

Options:

- 8 Mbps: Low quality, small files
- 16 Mbps: Medium quality
- 24 Mbps: High quality (default)
- 32 Mbps: Very high quality
- 50 Mbps: Maximum quality (recommended for 4K60)

Recommended Settings:

Table 5: Bitrate Recommendations

Recording Mode	Recommended	File Size (per hour)
4K@60fps (H.265)	50 Mbps	~22 GB
4K@60fps (H.265)	32 Mbps	~14 GB
1080p@60fps (H.265)	24 Mbps	~10.5 GB
1080p@30fps (H.264)	16 Mbps	~7 GB

Audio Codec

Function: Select audio compression codec

Options:

- **AAC** (fixed, no other options)

Specifications:

- Stereo 2.0 channels
- 48kHz sample rate (or 44.1kHz for HDMI)
- Compatible with all devices

Audio Bitrate

Function: Set audio recording bitrate

Options:

- 128 Kbps: Low quality, small files
- 192 Kbps: High quality (default)
- 320 Kbps: Maximum quality

Recommended: 192 Kbps (excellent quality, reasonable file size)

Note: Higher audio bitrate has minimal impact on total file size. The difference between 128 Kbps and 320 Kbps is only about 0.3 MB per minute.

Time Watermark

Function: Display recording timestamp on video

Options:

- On: Show time watermark in top-left corner
- Off: No watermark (default)

Watermark Format:

- yyyy/mm/dd hh:mm:ss
- Example: 2026/02/01 14:30:25

Usage:

- Useful for documenting when footage was captured
- Cannot be removed after recording (burned into video)

Display "REC" while Recording

Function: Show red REC indicator during recording

Options:

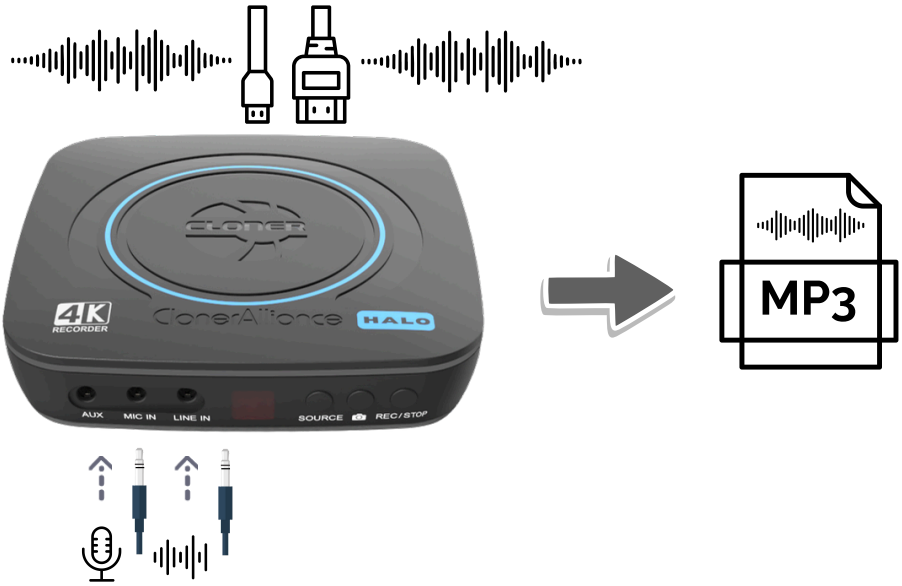
- On: Display red "REC" text in top-right corner
- Off: No indicator (default)

Note:

- Indicator is visible on HDMI OUT display
- Does NOT burn into recorded video
- Useful to confirm recording is active

Audio Settings

Configure volume levels for all audio input channels. The Halo supports 3-channel audio mixing.



Video-In Volume

Function: Control HDMI embedded audio volume

Range: 0-100

Source:

- Audio embedded in HDMI input signal
- Typically game audio, movie soundtrack, etc.

Recommended: 70-80

Usage Tips:

- Start at 70 and adjust based on content
- If gaming commentary, lower to 60-70 to balance with mic
- If music video, raise to 80-90 for emphasis on music

Line In Volume

Function: Control 3.5mm Line In audio volume

Range: 0-100

Source:

- External audio devices (phone, MP3 player, audio interface)

- Line-level signal (NOT microphones)

Recommended: 30-50 (background music)

Important:

- Line In is for LINE-LEVEL devices only
- Do NOT connect microphones (signal too weak)
- Use MIC input for microphones

Mic In Volume

Function: Control 3.5mm Microphone input volume

Range: 0-100

Source:

- Dynamic microphones
- Condenser microphones (with power)
- Headset microphones (3.5mm TRRS)

Recommended: 70-90 (adjust based on microphone sensitivity)

Usage Tips:

- Start at 80 and test recording
- If voice is too quiet, increase to 90-100
- If distorted/clipping, decrease to 60-70
- High-quality microphones may need lower settings (70)

Aux Volume

Function: Control 3.5mm Aux input volume

Range: 0-100

Source:

- Auxiliary audio input device

Recommended: Adjust based on source device output level

HDMI Out Volume

Function: Control audio volume for HDMI OUT port

Range: 0-100

Important:

- This setting ONLY affects HDMI OUT monitoring
- Does NOT affect recorded audio volume
- Does NOT affect TO PC mode audio

Usage:

- Adjust to comfortable listening level on monitor speakers
- Independent from recording volume settings

Schedule Settings

Configure scheduled recordings for automatic unattended recording.

Schedule (Enable/Disable)

Function: Enable or disable scheduled recording feature

Options:

- On: Scheduled recordings active
- Off: Scheduled recordings disabled (default)

Note: Must set system time before using scheduled recording.

Schedule Mode

Function: Set how scheduled task repeats

Options:

- **Once**: Execute one time only on specified date
- **Daily**: Execute every day at specified time
- **Weekly**: Execute on specified day(s) of week

Use Cases:

- Once: Record single event (conference, webinar)
- Daily: Record daily TV show or news broadcast

- Weekly: Record weekly class or meeting

Schedule Task Slots

Capacity: Up to 5 scheduled tasks

Configuration for Each Task:

- Task number (1-5)
- Enable/Disable toggle
- Schedule mode (Once/Daily/Weekly)
- Start date and time
- End time
- Duration

Task Management:

- Edit: Modify existing task parameters
- Delete: Remove task from schedule
- Enable/Disable: Temporarily activate/deactivate

Example Task Configurations:

Task 1: Daily TV Show Recording
Mode: Daily Time: 20:00 - 22:00 Duration: 2 hours Status: Enabled

Task 2: Weekly Online Class
Mode: Weekly (Monday) Time: 18:00 - 19:00 Duration: 1 hour Status: Enabled

Task 3: One-time Conference
Mode: Once Date: 2026/02/15 Time: 14:00 - 16:00 Duration: 2 hours Status: Enabled

Operation:

- Halo must be powered on for scheduled recording to start
- Red REC indicator appears when scheduled recording is active
- Recording stops automatically at scheduled end time

Tip:

Best Practices for Scheduled Recording:

- Always verify system time before setting schedules
- Ensure sufficient storage space available
- Use high-capacity storage for long scheduled recordings
- Test schedule with short duration first

Video / Image / Audio Playback

Browse and manage recorded files directly on the Halo.

Video Playback

Function: View list of recorded video files and play them

Features:

- Lists all .mp4 and .ts files on storage device
- Playback controls: Play, Pause, Fast Forward, Rewind
- Delete files to free up space
- Shows file size and recording date

Navigation:

- Use Arrow Keys to browse file list
- Press OK to play selected file
- Press DELETE to remove file

Image Playback

Function: View captured snapshot images

Features:

- Displays all .jpg files
- Thumbnail preview
- Full-screen view
- Delete unwanted images

Snapshot Button:

- Press SNAPSHOT on remote or front panel during live preview
- Captures current frame as JPEG image
- Saved to storage device (IMG_xxxxxxxx.jpg)

Audio Playback

Function: Play recorded audio-only files

Features:

- Lists all .mp3 files
- Audio playback controls

- Shows file duration
- Delete files

Audio-Only Recording:

- Press Switch button (headphone icon) on remote to toggle to Audio Recording mode
- Records audio without video (smaller files)
- Useful for extracting HDMI audio or recording podcasts

Storage Management

View storage device information and manage storage.

Storage Information Display

Information Shown:

- **Device Type**: USB or TF Card
- **Total Capacity**: Total storage size (e.g., 128 GB)
- **Used Space**: Amount of space used
- **Free Space**: Available space remaining
- **File System**: FAT32, exFAT, or NTFS

Usage:

- Monitor remaining space before long recordings
- Verify storage device is properly detected
- Check file system type

Format Storage Device

Function: Erase all data and reformat storage device

Procedure:

MENU → Storage → Format Storage Device Warning message appears: “All data will be lost. Continue?” Select Yes to proceed Wait for format to complete

File System Options:

- exFAT (recommended for devices >32GB)
- FAT32 (for maximum compatibility, ≤32GB only)

Danger: **WARNING:** Formatting erases ALL data on the storage device permanently. Data cannot be recovered after formatting. Backup important files to computer before formatting.

When to Format:

- Storage device shows errors
- Cannot record or files corrupted
- Converting from FAT32 to exFAT
- Preparing new storage device for first use

7.3 Troubleshooting Common OSD Issues

OSD Menu Not Appearing

Problem: Press MENU button but OSD doesn’t appear

Solutions:

1. Check HDMI OUT is connected to display
2. Verify display is powered on and set to correct input
3. Try different HDMI cable
4. Check if screen saver is active (press any button to wake)
5. Restart Halo (power off, wait 10 seconds, power on)

Cannot Navigate OSD Menu

Problem: Arrow keys don’t move selection in menu

Solutions:

1. Check remote batteries (replace if weak)
2. Point remote directly at Halo’s IR receiver (front panel)
3. Remove obstacles between remote and Halo
4. Ensure distance is within 5 meters
5. Try pressing buttons firmly and deliberately

Settings Not Saving

Problem: Changes to settings don’t persist after reboot

Solutions:

1. Always press OK to confirm changes (don’t just press BACK)
2. Wait 2 seconds after changing setting before exiting menu
3. Avoid powering off immediately after changing settings
4. If problem persists, perform Factory Reset
5. Contact support if issue continues

OSD Language Changed Accidentally

Problem: OSD is in unknown language

Solution: Navigate by menu position (language menu is always in same location)

1. Press MENU
2. Press Down Arrow 1 time (System Settings is first menu item)
3. Press OK
4. Press Down Arrow 7 times (Language is 8th item)
5. Press OK
6. Select your language from list
7. Press OK to confirm

The ClonerAlliance UHD Halo offers multiple recording modes to suit different use cases. Understanding these modes helps you choose the right workflow for your needs.

8.1 Overview of Recording Modes

The Halo supports four primary recording modes:

Table 1: Recording Modes Comparison

Feature	Independent Recording	TO PC Recording	Scheduled Recording
Storage Location	USB/TF card	Computer HDD	USB/TF card
Computer Required	No	Yes	No
Max Resolution	4K@60fps	4K@60fps	4K@60fps
Encoding	Hardware H.265	Software/GPU	Hardware H.265
Overlays/Effects	No	Yes (OBS)	No
Unattended	Manual start	Manual start	Automatic
Best For	Gaming, backup raw footage	Streaming, production	TV shows, surveillance

Audio-Only Recording Mode:

- Available in all modes above
- Press Switch button (headphone icon) on remote to toggle between Video and Audio recording
- Records audio only to MP3 file (smaller file size)
- Useful for extracting HDMI audio or recording podcasts

8.2 Independent Recording Mode

Independent recording mode is the primary mode where the Halo records directly to USB storage or TF card without requiring a computer.

How It Works

Recording Process:

> Video Source → Halo HDMI IN ↓ Halo Hardware Encoder (H.265/H.264) ↓ Recording saved to USB Storage or TF Card ↓ Simultaneous Passthrough → HDMI OUT (zero-latency preview)

Key Characteristics:

- Completely standalone operation (no computer needed)
- Hardware encoding (no CPU load, energy efficient)
- Zero-latency HDMI passthrough for gaming
- Supports 4K@60fps recording with H.265 codec
- Up to 50 Mbps bitrate for maximum quality
- Cannot add overlays, text, or effects during recording

When to Use Independent Recording

Ideal Scenarios:

1. **Gaming Console Recording** - Record PS5/Xbox/Switch gameplay - Zero-latency passthrough ensures no input lag - High-quality 4K60 footage for later editing
2. **Raw Footage Backup** - Capture original uncompressed quality - Maximum bitrate (50 Mbps) for post-production - No software compression artifacts
3. **Field Recording** - Portable setup without laptop - Camera or camcorder capture - Event documentation
4. **Long-Duration Recording** - TV shows, lectures, conferences - Efficient hardware encoding - Large storage capacity (up to 2TB supported)

Not Recommended For:

- Live streaming (use TO PC mode instead)
- Recording with overlays or graphics
- Multi-camera switching

Setup Procedure

Step 1: Hardware Connection

1. Insert USB storage or TF card into Halo
2. Connect video source to HDMI IN or DP IN
3. (Optional) Connect HDMI OUT to monitor for preview
4. Connect 65W power adapter (Halo powers on automatically)

Step 2: Configure Recording Settings

1. Press MENU on remote
2. Navigate to Record Settings
3. Configure: - File Format: MP4 (recommended) - Resolution: Auto (matches input) - Video Codec: H.265 (better compression) - Video Bitrate: 32-50 Mbps (4K) or 16-24 Mbps (1080p) - Audio Bitrate: 192 Kbps - File Size: Unlimited (with exFAT/NTFS)

Step 3: Start Recording

Method 1: Press REC button on front panel Method 2: Press REC button on remote control

Confirmation:

- Side LED starts flashing (green=USB, blue=TF card)

- Red “REC” indicator appears on screen (if enabled in settings)

Step 4: Stop Recording

Press REC/STOP button again

Confirmation:

- Side LED stops flashing, returns to solid color
- “REC” indicator disappears
- File is saved to storage device

LED Indicators During Recording

Table 2: LED Status Reference

Side LED Status	Meaning
Solid Green	USB storage connected
Solid Blue	TF card connected
Flashing Green	Recording to USB storage
Flashing Blue	Recording to TF card
Green/Blue Alt.	Saving file (post-rec.)
Off	No storage detected

Note: Top LED indicates input source: Green = HDMI input, Blue = Type-C DP input. The top LED flashes when there’s no input signal.

8.3 TO PC Recording Mode

TO PC mode transforms the Halo into a USB capture card, allowing the computer to capture video via OBS or other software.

How It Works

Recording Process:

> Video Source → Halo HDMI IN ↓ Halo captures and encodes ↓ UVC Stream → Computer via USB 3.0 ↓ OBS/Software records to Computer HDD ↓ Simultaneous: HDMI OUT → Monitor (zero-latency preview)

Key Characteristics:

- UVC driver-free (plug and play)
- Supports 4K@60fps capture (USB 3.0 required)
- Can add overlays, alerts, text in OBS
- Direct streaming to Twitch/YouTube
- Works with OBS, XSplit, vMix, Zoom, Teams
- Requires computer with sufficient performance
- Computer encoding adds CPU/GPU load

When to Use TO PC Mode

Ideal Scenarios:

1. **Live Streaming** - Twitch, YouTube, Facebook Live - Add webcam overlay, alerts, chat display - Scene switching and transitions
2. **Content Creation** - Add logo, watermark, subscribe button - Picture-in-picture layouts - Real-time color grading
3. **Video Conferencing** - Zoom, Microsoft Teams, Skype - Professional camera input instead of webcam - Better video quality for remote meetings
4. **Multi-Camera Production** - Use multiple Halos for different angles - Switch between sources in OBS/vMix - Professional video production workflow

Not Recommended For:

- Situations where computer is unavailable
- Maximum quality raw backup (use Independent mode)
- Minimizing equipment (computer adds complexity)

Setup Procedure

Step 1: Hardware Connection

1. Connect video source to Halo HDMI IN
2. Connect Halo TO PC (Type-C) to computer USB 3.0 port
3. (Optional) Connect HDMI OUT to monitor for preview
4. Connect 65W power adapter
5. Turn on Halo

Step 2: Computer Recognition

Windows:
- Device appears as “USB Video” or “UHD Halo”
- Notification: “Device is ready”
- No driver installation required

macOS:
- Device appears in System Preferences → Camera
- Automatically available to all UVC apps

Linux:
- Device appears as /dev/video0 (or similar)
- Compatible with V4L2 applications

Step 3: Configure OBS Studio

1. Open OBS Studio
2. Sources → Add → Video Capture Device
3. Device: Select “USB Video” or “UHD Halo”
4. Resolution: 3840x2160 @ 60fps (or 1920x1080 @ 60fps)
5. Video Format: NV12
6. Add Audio Input Capture → Select “Line (USB Video)”

Step 4: Start Recording/Streaming

Recording:
OBS → Start Recording Files saved to computer (configured path)

Streaming:
OBS → Settings → Stream → Enter stream key OBS → Start Streaming

Detailed OBS configuration is covered in *TO PC Streaming Mode*

Dual Recording

The Halo can record simultaneously in both Independent mode and TO PC mode:

Setup:

1. Insert USB storage into Halo STORAGE port
2. Connect Halo TO PC to computer
3. Start recording on Halo (saves to USB storage)
4. Start recording in OBS (saves to computer)

Use Cases:

Table 3: Dual Recording Benefits

Recording	Halo Local Recording	OBS Computer Recording
Quality	Max quality (50 Mbps H.265)	Customizable (10-30 Mbps)
Purpose	Backup/archive/editing	Streaming/upload-ready
File Size	Larger (~22 GB/hour 4K60)	Smaller (~5-10 GB/hour)
Overlays	None (raw footage)	Included (logos, text)

Tip:

Recommended Dual Recording Strategy:

- Halo records high-bitrate 4K60 raw footage for archival and post-production
- OBS records lower-bitrate 1080p60 with overlays ready to upload immediately
- Best of both worlds: quality backup + finished product

8.4 Scheduled Recording Mode

Scheduled recording allows the Halo to automatically start and stop recording at predetermined times without manual intervention.

How It Works

Scheduled Recording Process:

1. User configures schedule in OSD menu (date, time, duration)
2. Halo remains powered on
3. At scheduled time, recording starts automatically
4. Recording stops automatically after specified duration
5. File saved to USB storage or TF card

Key Characteristics:

- Fully automatic (unattended operation)
- Up to 5 scheduled tasks
- Supports Once/Daily/Weekly repeat modes
- Precise timing (requires system time to be set)
- Halo must remain powered on
- Storage device must have sufficient space

When to Use Scheduled Recording

Ideal Scenarios:

1. **TV Show Recording** - Daily: Record news broadcast at 20:00-21:00 every day - Weekly: Record favorite TV show every Friday 20:00-22:00 - Set and forget
2. **Online Classes/Webinars** - Weekly: Record Monday/Wednesday classes at 18:00-19:30 - Once: Record special conference on specific date - Automatic attendance recording
3. **Surveillance/Monitoring** - Daily: Record security camera feed 08:00-18:00 - Loop recording to overwrite old footage - 24/7 surveillance with storage management
4. **Live Event Recording** - Once: Record concert/ceremony at specific time - Ensures recording starts even if you forget - Backup for live broadcast

Not Recommended For:

- Recording that requires manual intervention
- Events with uncertain start/end times
- Situations where Halo cannot remain powered on

Setup Procedure

Step 1: Set System Time

1. MENU → System Settings → System Time
2. Set date and time: yyyy/mm/dd hh:mm
3. Set Time Zone: Select your local time zone
4. Confirm settings

> **Warning:** Scheduled recording will NOT work correctly if system time is not set accurately. Always verify time before configuring schedules.

Step 2: Configure Scheduled Task

1. MENU → Schedule Settings
2. Schedule: Set to ON
3. Select Task Number: Task 1-5
4. Configure task: - Schedule Mode: Once / Daily / Weekly - Start Date: yyyy/mm/dd (for Once mode) - Start Time: hh:mm - Duration: Hours and minutes - Enable: ON
5. Confirm settings

Step 3: Task Examples

Example 1: Daily TV News Recording

Task 1:

Mode: Daily Start Time: 20:00 Duration: 1 hour 0 minutes Enable: ON

Result: Records every day from 20:00 to 21:00

Example 2: Weekly Online Class

Task 2:

Mode: Weekly (Monday, Wednesday) Start Time: 18:00 Duration: 1 hour 30 minutes Enable: ON

Result: Records every Monday and Wednesday 18:00-19:30

Example 3: One-Time Conference

Task 3:

Mode: Once Start Date: 2026/02/15 Start Time: 14:00 Duration: 2 hours 0 minutes
Enable: ON

Result: Records on Feb 15, 2026, from 14:00 to 16:00

Step 4: Verify Schedule

1. Review configured tasks in Schedule Settings menu
2. Ensure storage device has sufficient space
3. Verify Halo will remain powered on during scheduled time
4. Test with short duration first (5 minutes)

Task Management

Editing Tasks:

1. MENU → Schedule Settings
2. Select task number to edit
3. Modify parameters
4. Confirm changes

Disabling Tasks Temporarily:

1. Select task
2. Set Enable to OFF
3. Task remains configured but won’t execute
4. Re-enable when needed

Deleting Tasks:

1. Select task
2. Delete or reset all parameters
3. Frees up task slot

Tip:

Best Practices for Scheduled Recording:

- Use Task 1 for most frequent recording (daily)
- Use Tasks 2-3 for weekly events
- Use Tasks 4-5 for one-time special events
- Always test schedule with 5-minute duration before important recording
- Set reminder to transfer files to computer regularly

8.5 Audio-Only Recording Mode

Audio-only mode records audio without video, creating MP3 files instead of video files.

How It Works

Audio Recording Process:

> Audio Sources (HDMI + Line In + MIC) → Halo Audio Mixer ↓ AAC Encoding ↓ MP3 File saved to storage device
>
> Note: No video encoding, smaller file size

Key Characteristics:

- Records audio only (no video)
- Much smaller file size (192 Kbps = ~1.4 MB/minute)
- Mixes all 3 audio channels (HDMI, Line In, MIC)
- Standard MP3 format, plays on all devices
- Useful for audio extraction or podcast recording
- Cannot capture video simultaneously (switch mode required)

When to Use Audio-Only Mode

Ideal Scenarios:

1. **HDMI Audio Extraction** - Extract audio from Blu-ray player - Capture movie soundtracks - Record video game music
2. **Podcast Recording** - Record voice with microphone - Add background music via Line In - Simple podcast production
3. **Audio Documentation** - Record meetings (audio sufficient) - Lecture recording (save storage space) - Interview recording
4. **Music Recording** - Record live performances via HDMI - Capture DJ mixes - Record musical instruments via Line In

Not Recommended For:

- Situations requiring video
- Professional audio production (use dedicated audio interface)

Setup Procedure

Step 1: Switch to Audio Recording Mode

Method 1: Remote Control
Press Switch button (headphone icon) on remote OSD displays "Audio Recording Mode"

Method 2: OSD Menu
MENU → Record Settings → Recording Mode Select: Audio Only

Step 2: Configure Audio Sources

MENU → Audio Settings

Adjust volume for each channel:

- Video-In Volume: 0-100 (HDMI audio)
- Line In Volume: 0-100 (external audio device)
- Mic In Volume: 0-100 (microphone)

Set to 0 to disable unwanted channels

Step 3: Set Audio Bitrate

MENU → Record Settings → Audio Bitrate

Options:

- 128 Kbps: Lower quality, smaller files
- 192 Kbps: High quality (recommended)
- 320 Kbps: Maximum quality

Step 4: Start Recording

Press REC button

File naming:
AUD_yyyymmddhhmmss.mp3 Example: AUD_20260201143025.mp3

Audio-Only Recording Scenarios:

Scenario A: Extract Movie Soundtrack

Setup:
Blu-ray player → Halo HDMI IN Audio Source: Video-In Volume: 90 Other channels: Line In: 0, MIC: 0

Result: Pure HDMI audio recorded to MP3

Scenario B: Podcast with Music

Setup:
No HDMI input (black screen OK) Microphone → Halo MIC input Phone (music) → Halo Line In Audio Mix: Video-In: 0, Line In: 30, MIC: 85

Result: Voice + background music podcast

File Size Comparison

Table 4: Video vs Audio-Only File Sizes

Duration	Video (1080p60)	Audio-Only (192K)
1 minute	~180 MB	~1.4 MB
10 minutes	~1.8 GB	~14 MB
1 hour	~10.5 GB	~86 MB
10 hours	~105 GB	~860 MB

Note: Audio-only recording uses approximately 130x less storage than video recording. A 128GB USB drive can store over 1,500 hours of audio at 192 Kbps.

8.6 Switching Between Recording Modes

Quick Mode Switching

Video ↔ Audio Mode:

Method 1: Remote Control Switch Button

Press Switch button (headphone icon) → Toggles between Video/Audio Instant toggle, no menu navigation

Method 2: OSD Menu

MENU → Record Settings → Recording Mode Select: Video Recording / Audio Only

Independent ↔ TO PC Mode:

Hardware change required:

Independent Mode:

- USB storage inserted in STORAGE port
- TO PC port not connected

TO PC Mode:

- TO PC port connected to computer
- (Optional) USB storage can remain for dual recording

Add Scheduled Recording:

Scheduled recording works with Independent mode

To enable:

MENU → Schedule Settings → Schedule: ON Configure tasks as needed

To disable:

Schedule Settings → Schedule: OFF

Scheduled recording allows the Halo to automatically start and stop recording at predetermined times, perfect for capturing TV shows, online classes, or any recurring content without manual intervention.

9.1 What is Scheduled Recording?

Overview

Scheduled recording is an automated recording feature that starts and stops recording based on a pre-configured timetable. The Halo supports up to 5 scheduled tasks, each with customizable start time, duration, and repeat mode.

Key Features:

Fully Automatic: Recording starts and stops without manual intervention

Multiple Tasks: Configure up to 5 independent scheduled tasks

Flexible Repeat Modes: Once, Daily, or Weekly scheduling

Precise Timing: Based on system clock (accurate to 1 minute)

Unattended Operation: Ideal for overnight or long-duration recording

Requirements:

Warning:

CRITICAL REQUIREMENTS:

- Halo must remain powered on at all times
- System time must be set correctly
- USB storage or TF card must have sufficient free space
- Video source must be connected and active during scheduled time

How It Works

Scheduled Recording Process:

Step 1: User configures schedule (date, time, duration)

Step 2: Halo remains in standby mode (powered on)

Step 3: At scheduled time, recording starts automatically

Step 4: Recording runs for specified duration

Step 5: Recording stops automatically

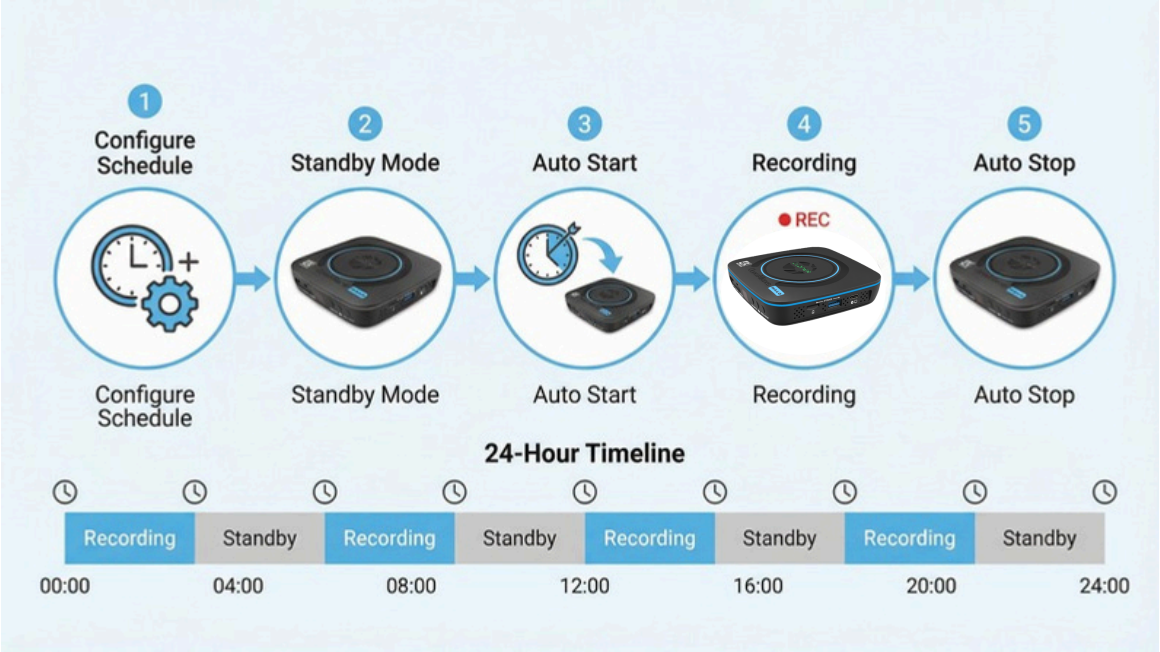
Step 6: File saved to storage device

Step 7: Wait for next scheduled task (if recurring)

LED Indicators During Scheduled Recording:

Table 1: LED Status

Time Period	LED Status
Before Schedule	Top LED: Green/Blue (source) Side LED: Solid (storage ready)
During Recording	Top LED: Green/Blue (source) Side LED: Flashing (recording)
After Recording	Top LED: Green/Blue (source) Side LED: Solid (ready for next)



9.2 Setting Up Scheduled Recording

Step 1: Set System Time

Danger: CRITICAL STEP: System time MUST be set correctly or scheduled recording will NOT work!

Procedure:

1. Press MENU on remote control
2. Navigate to System Settings
3. Select System Time
4. Set date: yyyy/mm/dd - Use Up/Down arrows to adjust - Use Left/Right to move between fields - Press OK to confirm
5. Set time: hh:mm - Use 24-hour format (20:00 = 8:00 PM) - Press OK to confirm
6. Select Time Zone - Choose your local time zone - Example: UTC+8 for Beijing, UTC-5 for New York - Press OK to confirm

Verification:

1. Press INFO on remote control
2. Verify displayed time matches your current time

3. If incorrect, repeat setup process

Tip: Daylight Saving Time: If your region observes DST, manually adjust system time when DST begins or ends. The Halo does not automatically adjust for DST.

Step 2: Configure Scheduled Task

Accessing Schedule Settings:

MENU → Schedule Settings

Enable Scheduled Recording:

Schedule: Set to ON (This master switch enables all scheduled tasks)

Configuring Individual Tasks:

The Halo supports up to 5 independent tasks (Task 1 through Task 5).

Task Parameters:

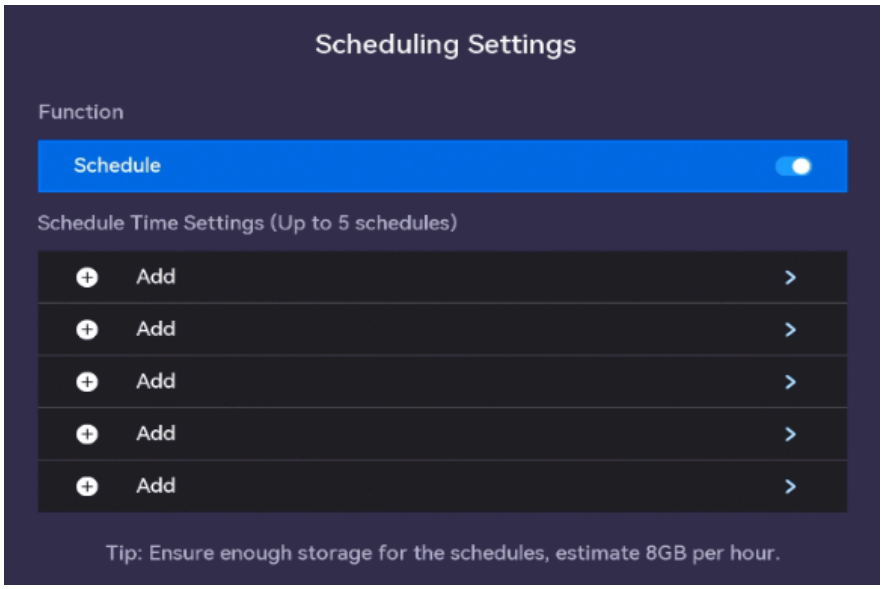
Table 2: Task Configuration Options

Parameter	Options / Description
Task Number	Task 1, Task 2, Task 3, Task 4, 5
Schedule Mode	Once / Daily / Weekly
Start Date	yyyy/mm/dd (Once mode only)
Start Time	hh:mm (24-hour format)
Duration	Hours: 0-23, Minutes: 0-59
Weekly Days	Mon/Tue/Wed/Thu/Fri/Sat/Sun (Weekly mode only, multi-select)
Enable	ON / OFF (task active/inactive)

Configuration Procedure:

1. Select Task Number (1-5)
2. Choose Schedule Mode: - Once: One-time recording on specific date - Daily: Repeats every day - Weekly: Repeats on selected days of week
3. Set Start Date (if Once mode): - Format: yyyy/mm/dd - Example: 2026/03/15
4. Set Start Time: - Format: hh:mm (24-hour) - Example: 14:00 (2:00 PM)

5. Set Duration: - Hours: 0-23 - Minutes: 0-59 - Example: 2 hours 30 minutes
6. Set Weekly Days (if Weekly mode): - Select one or more days - Example: Mon, Wed, Fri
7. Enable: Set to ON
8. Press OK to save configuration



9.3 Managing Scheduled Tasks

Viewing Configured Tasks

Procedure:

MENU → Schedule Settings

Display shows all 5 task slots:
Task 1: Daily 20:00, 1h 0m, ON Task 2: Weekly (Mon,Wed) 18:00, 1h 30m, ON
Task 3: Once 2026/03/15 14:00, 2h 30m, ON Task 4: (Empty) Task 5: (Empty)

Editing Existing Tasks

Procedure:

1. MENU → Schedule Settings
2. Select task number to edit

3. Modify any parameter: - Change mode (Daily → Weekly) - Adjust start time - Change duration - Update weekly days
4. Press OK to save changes

Example: Extend Duration

Original: Task 1, Daily 20:00, 1h 0m Modified: Task 1, Daily 20:00, 2h 0m

Result: Now records 20:00-22:00 instead of 20:00-21:00

Temporarily Disabling Tasks

When to Disable:

- Holiday or vacation (no recording needed)
- Temporary schedule conflict
- Testing other tasks

Procedure:

1. Select task to disable
2. Set Enable to OFF
3. Task configuration is preserved but won’t execute

Re-enabling:

1. Select disabled task
2. Set Enable to ON
3. Task resumes at next scheduled time

Deleting Tasks

Procedure:

Method 1: Disable and Leave

- Set Enable to OFF
- Task slot remains occupied but inactive

Method 2: Clear Configuration

- Reset all parameters to default
- Frees up task slot for new schedule

Task Priority and Conflicts

What Happens When Tasks Overlap?

Table 3: Task Conflict Resolution

Scenario	Behavior
Task 1 ends at 21:00 Task 2 starts at 21:00	Task 1 stops at 21:00 Task 2 starts immediately
Task 1 running (20:00-22:00) Task 2 scheduled (21:00-23:00)	Task 2 waits until 22:00 Then starts 1 hour late

Warning: Avoid Overlapping Schedules: If tasks overlap, the first task takes priority and later tasks may start late or be skipped. Plan schedules with at least 5-minute gaps between tasks.

9.4 Storage Management for Scheduled Recording

Calculating Storage Requirements

Formula:

Total Recording Time (hours) × Bitrate (Mbps) × 450 MB/hour = Required Storage

Example: Daily 2-hour recording at 24 Mbps

- Per recording: 2 hours × 24 Mbps × 450 MB = ~10.5 GB
- Per week: 10.5 GB × 7 days = ~73.5 GB
- Per month: 10.5 GB × 30 days = ~315 GB

Recommended storage: 512 GB or larger

Storage Capacity Guide:

Table 4: Storage Requirements by Recording Profile

Recording	Bitrate	Storage per Hour	512GB Capacity
4K@60fps H.265	50 Mbps	~22 GB	~23 hours
4K@60fps H.265	32 Mbps	~14 GB	~36 hours
1080p@60fps H.265	24 Mbps	~10.5 GB	~48 hours
1080p@30fps H.264	16 Mbps	~7 GB	~73 hours

Loop Recording Mode

What is Loop Recording?

Loop recording automatically deletes the oldest files when storage is full, creating continuous recording without manual file management.

When to Use:

24/7 Surveillance: Keep only recent footage **Long-Term Monitoring**: Automatic file rotation **Limited Storage**: Maximize recording time

Configuration:

MENU → Record Settings → File Size → Loop Recording

How It Works:

1. Storage device fills up
2. Halo automatically deletes oldest file
3. Recording continues with freed space
4. Cycle repeats indefinitely

Example:

Scenario: 128GB USB drive, 1080p60 24Mbps recording

- Total capacity: ~12 hours
- With Loop Recording: Always keeps most recent 12 hours
- Files older than 12 hours are auto-deleted

Warning: Loop Recording Risk: Files are permanently deleted when overwritten. Transfer

important recordings to computer before they are deleted.

File Management Best Practices

Strategy 1: Weekly Transfer

1. Every Sunday, transfer files to computer
2. Delete files from Halo storage
3. Ensures 1 week of buffer space

Strategy 2: Dedicated Storage

1. Use large capacity storage (1TB or 2TB)
2. Check and transfer monthly
3. Minimizes file management effort

Strategy 3: Multiple Storage Devices

Week 1: Use USB Drive A Week 2: Swap to USB Drive B Week 3: Swap to USB Drive C Week 4: Transfer all and reuse

9.5 Troubleshooting Scheduled Recording

Common Issues and Solutions

Issue 1: Scheduled Recording Didn't Start

Symptoms:

- Scheduled time passed but no recording file created

Possible Causes and Solutions:

Table 5: Troubleshooting Steps

Cause	Solution
Master schedule switch OFF	Schedule Settings → Schedule: ON
Task Enable set to OFF	Select task → Enable: ON
System time incorrect	Set system time correctly
Halo was powered off	Keep Halo powered on at all times
Storage device full	Free up space or use loop mode
No video signal	Verify source is active

Issue 2: Recording Started but Stopped Immediately

Symptoms:

- Recording starts but creates very small file (few KB)

Possible Causes:

- Video source lost signal during recording
- Storage device removed or failed
- Auto-Stop on Signal Loss enabled (default: 30 seconds)

Solutions:

1. Verify video source remains active during entire schedule
2. Check storage device health
3. Disable Auto-Stop: Record Settings → Auto-Stop → Off

Issue 3: Recording Time is Wrong

Symptoms:

- Recording starts 1 hour early/late
- File timestamp is incorrect

Possible Causes:

- Time zone not set correctly
- System time not adjusted for DST

Solutions:

1. Verify Time Zone: System Settings → Time Zone
2. Manually adjust for DST when applicable
3. Test with short duration to verify timing

Issue 4: Storage Full Error

Symptoms:

- Recording stops with “Storage Full” message
- Later scheduled tasks don’t record

Solutions:

Solution 1: Transfer and Delete Files

- Copy files to computer
- Delete from Halo storage

Solution 2: Enable Loop Recording

- Record Settings → File Size → Loop Recording
- Automatically overwrites oldest files

Solution 3: Use Larger Storage

- Upgrade to 512GB, 1TB, or 2TB storage device

Issue 5: Scheduled Task Skipped

Symptoms:

- One or more scheduled tasks were skipped

Possible Causes:

Table 6: Skip Scenarios

Scenario	Explanation
Previous task still running	Task waits until slot available
Power interruption during task	Task missed, waits for next
Once mode already executed	Task auto-disables after 1 run

Solutions:

1. Avoid overlapping schedules (leave 5-min gaps)
2. Use UPS (uninterruptible power supply) for power backup
3. Re-enable “Once” tasks if you need to repeat them

Combining with Other Recording Modes

Scheduled + Dual Recording:

Scenario: Scheduled TV recording + computer backup

Setup:

1. Configure scheduled task on Halo
2. Connect Halo TO PC port to computer
3. Set OBS to record simultaneously

Result:

- Halo records locally (auto-start/stop)
- OBS records to computer (manual or scripted)
- Dual backup for important content

Scheduled + Audio-Only:

Scenario: Daily radio show recording (audio only)

Setup:

1. Press MODE to switch to Audio-Only mode
2. Configure scheduled task

Result:

- Records audio to MP3 format
- Much smaller file size (~1.4 MB/min vs ~180 MB/min)
- 128GB can store months of daily 1-hour programs

AUDIO RECORDING AND EXTRACTION

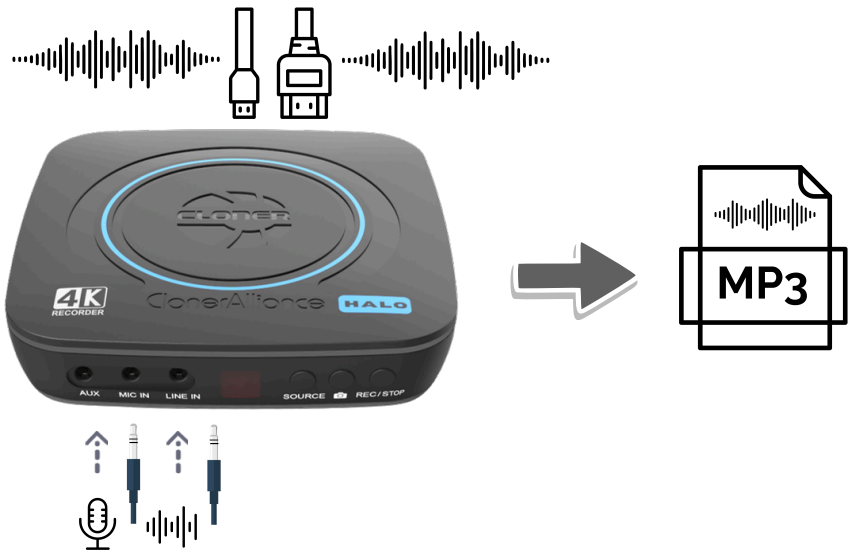
One of the key features of the ClonerAlliance UHD Halo is its advanced **3-channel audio mixing** capability. You can simultaneously mix audio from **HDMI**, **Line In**, and **Mic In** sources to create professional-quality recordings with commentary, background music, and game audio all perfectly balanced.

10.1 3-Channel Audio Mixing Overview

UHD Halo supports **three independent audio input channels** that can be mixed together in real-time:

1. **HDMI Audio** (Video-In) - Embedded audio from your video source (game consoles, cameras, etc.)
2. **Line In** - External audio devices (phones, MP3 players, audio mixers)
3. **Mic In** - Microphones, headsets, or earphones with built-in mics

All three channels are **mixed in real-time** and recorded together into a single audio track.



10.2 Channel 1: HDMI Audio (Video-In)

Source: Embedded audio from HDMI input (game consoles, cameras, set-top boxes, etc.)

Technical Specifications

- **Format**: PCM 2.0 stereo (2-channel)
- **Sample Rate**: 48kHz (default) or 44.1kHz (configurable)
- **Bitrate**: AAC 128/192/320 kbps (default: 192 kbps)
- **Limitation**: Multi-channel audio (5.1/7.1) is automatically downmixed to 2.0 stereo

Volume Control

Adjust HDMI audio volume in the OSD menu:

1. Press **MENU** on the remote
2. Navigate to **Audio Settings**
3. Select **Video-In Volume**
4. Adjust from **0-100** (recommended: 70-80 for balanced mix)

Note: Multi-Channel Audio Limitation

UHD Halo does NOT support multi-channel audio recording (5.1/7.1 surround sound). If your HDMI source outputs 5.1 audio, it will be automatically **downmixed to 2.0 stereo**.

Use Cases

- Game audio (sound effects, music)
- Camera audio (on-board microphone)
- Presentation audio (video narration)
- Music from streaming devices

10.3 Channel 2: Line In

Interface: 3.5mm TRS jack (located on the back panel)

Technical Specifications

- **Connector**: 3.5mm TRS (Tip-Ring-Sleeve) female jack
- **Input Type**: Line-level audio (not mic-level)
- **Supported Devices**: Phones, MP3 players, audio interfaces, mixers, keyboards

Connecting to Line In

Required Cable: 3.5mm male-to-male audio cable (AUX cable)

Supported Devices:

- Smartphones (headphone jack)
- MP3 players
- Tablets
- Laptops (headphone output)
- Audio interfaces
- DJ mixers
- Keyboards/synthesizers

Connection Steps:

1. Use a 3.5mm male-to-male audio cable
2. Connect one end to your audio device’s **headphone output** or **line out**
3. Connect the other end to Halo’s **LINE IN** port
4. Adjust volume on Halo (not on source device for best quality)

Volume Control

1. Press **MENU** → **Audio Settings** → **Line In Volume**
2. Adjust from **0-100**
3. **Recommended**: 30-50 for background music, 60-70 for primary audio source

Warning: Important: Line In vs Mic In

- **LINE IN** is for **line-level** audio devices (phones, MP3 players, audio interfaces)
- **MIC IN** is for **microphones** only
- **Do NOT connect a microphone to Line In**—the signal level is too low and audio will be very quiet

- **Do NOT connect a phone to Mic In**—the signal level is too high and may cause distortion

Use Cases

Background Music:

- Play music from your phone while recording gameplay
- Recommended: Line In Volume 30-40, so it doesn’t overpower game audio

Secondary Audio Source:

- Connect a second camera or audio recorder
- Mix podcasts or interviews from external devices

DJ Mixing:

- Record DJ sets with live mixing console connected to Line In

10.4 Channel 3: Mic In

Interface: 3.5mm TRS jack (located on the back panel, separate from Line In)

Technical Specifications

- **Connector**: 3.5mm TRS female jack
- **Input Type**: Mic-level audio (with microphone preamp)
- **Supported Connectors**: 2-ring 3-pole (TRS) and 3-ring 4-pole (TRRS) microphones

Supported Microphone Types

Compatible Devices:

1. **Standalone Microphones**
   - Desktop USB-powered microphones (with 3.5mm output)
   - Condenser microphones (self-powered or phantom-powered)
   - Dynamic microphones
2. **Earphones/Earbuds with Microphone**
   - Smartphone earphones (Apple EarPods, Samsung earbuds, etc.)
   - Gaming earbuds with mic
   - 3-ring 4-pole TRRS connectors
3. **Headsets**
   - Gaming headsets (with 3.5mm single connector)
   - Call center headsets
   - PC headsets
4. **Lavalier Microphones**
   - Clip-on lapel mics (great for voiceovers)

Note: TRRS vs TRS Connectors

- **TRS (2-ring, 3-pole)**: Stereo audio output (headphones without mic)
- **TRRS (3-ring, 4-pole)**: Stereo audio output + microphone input (earphones with mic, headsets)

UHD Halo supports **both TRS and TRRS** microphones.

Volume Control

1. Press **MENU** → **Audio Settings** → **Mic In Volume**
2. Adjust from **0-100**
3. **Recommended**:
   - **70-90** for most microphones (dynamic/condenser)
   - **50-70** for sensitive microphones (lavalier mics)

- **80-100** for quiet/low-sensitivity microphones

Testing Microphone Level

1. Connect your microphone to **MIC IN** port
2. Press **MENU** → **Audio Settings** → **Mic In Volume**
3. Speak into the microphone and observe the audio level indicator (if available on OSD)
4. Adjust volume until your voice is clear without clipping (distortion)

Use Cases

Gaming Commentary:

- Connect a headset or desktop microphone
- Record your voice over gameplay
- Recommended: Video-In Volume 70, Mic In Volume 80

Live Streaming:

- Add voiceover to live streams via TO PC mode
- Works with OBS, XSplit, etc.

Tutorial Videos:

- Record step-by-step instructions with narration
- Professional voiceover quality

Podcast Recording:

- Interview-style recordings with HDMI video + mic audio

10.5 Audio-Only Recording Mode

UHD Halo can record **audio only** without video, saving files as **MP3 format**.

How to Enable Audio-Only Recording

Method 1: Using Remote Control

1. Press **MODE** button on the remote
2. Select **"Audio Recording"** mode
3. The OSD will display **"Audio Mode"**
4. Press **REC** to start audio-only recording

Method 2: Using OSD Menu

1. Press **MENU** → **Record Settings** → **Recording Mode**
2. Select **"Audio Only"**
3. Press **REC** to start

Audio-Only Specifications

- **Output Format**: MP3
- **Sample Rate**: 44.1kHz
- **Bitrate**: 128 / 192 / 320 kbps (configurable in OSD menu)
- **File Name**: AUD_yymmddhhmmss.mp3 (or custom prefix)

Use Cases for Audio-Only Recording

Audio Extraction from HDMI:

- Extract audio soundtrack from Blu-ray players
- Save audio from streaming devices
- Convert HDMI audio to MP3

Voice Recording:

- Record podcasts or interviews without video

- Smaller file sizes (no video storage required)

Music Recording:

- Record live music performances (audio-only)
- Convert analog audio to digital MP3

10.6 Audio Format and Quality Settings

Audio Codec

- **Codec**: AAC (Advanced Audio Coding)
- **Fixed codec** - no other options available
- AAC provides excellent quality at lower bitrates compared to MP3

Audio Bitrate Options

In **OSD Menu** → **Record Settings** → **Audio Bitrate**:

- **128 kbps** - Good quality, smaller file size
- **192 kbps** - **Default**, excellent quality for most uses
- **320 kbps** - Maximum quality, larger file size

Sample Rate

- **HDMI Audio**: 48kHz (default) or 44.1kHz (configurable)
- **Audio-Only Recording**: 44.1kHz (MP3 standard)

Tip: Recommended Audio Bitrate

- For **voice commentary**: 128 kbps is sufficient
- For **gaming + commentary**: 192 kbps (default) is perfect
- For **music recording**: 320 kbps for highest fidelity

10.7 Monitoring and Playback

Real-Time Audio Monitoring

To hear the mixed audio in real-time:

1. Connect headphones or speakers to your monitor's audio output (Halo HDMI OUT → Monitor)
2. Adjust **HDMI Out Volume** in OSD menu to control playback volume
3. This does NOT affect recording volume

Reviewing Recorded Audio

Method 1: Playback on Halo

1. Press **MENU** → **Audio Playback**
2. Navigate to your recorded audio file (AUD_xxxxxxxx.mp3)
3. Press **OK** to play
4. Use remote control for play/pause

Method 2: Playback on Computer

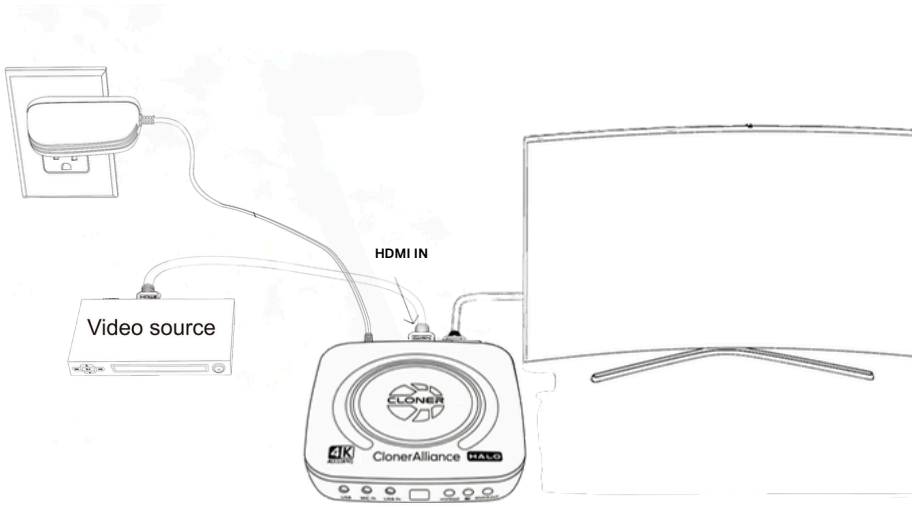
1. Eject USB storage device from Halo
2. Insert into computer
3. Open audio file with any media player (VLC, Windows Media Player, etc.)

PLAYBACK THE RECORDED MEDIA FILES

11.1 Playback the Recorded media files on Cloner-Alliance UHD Halo directly

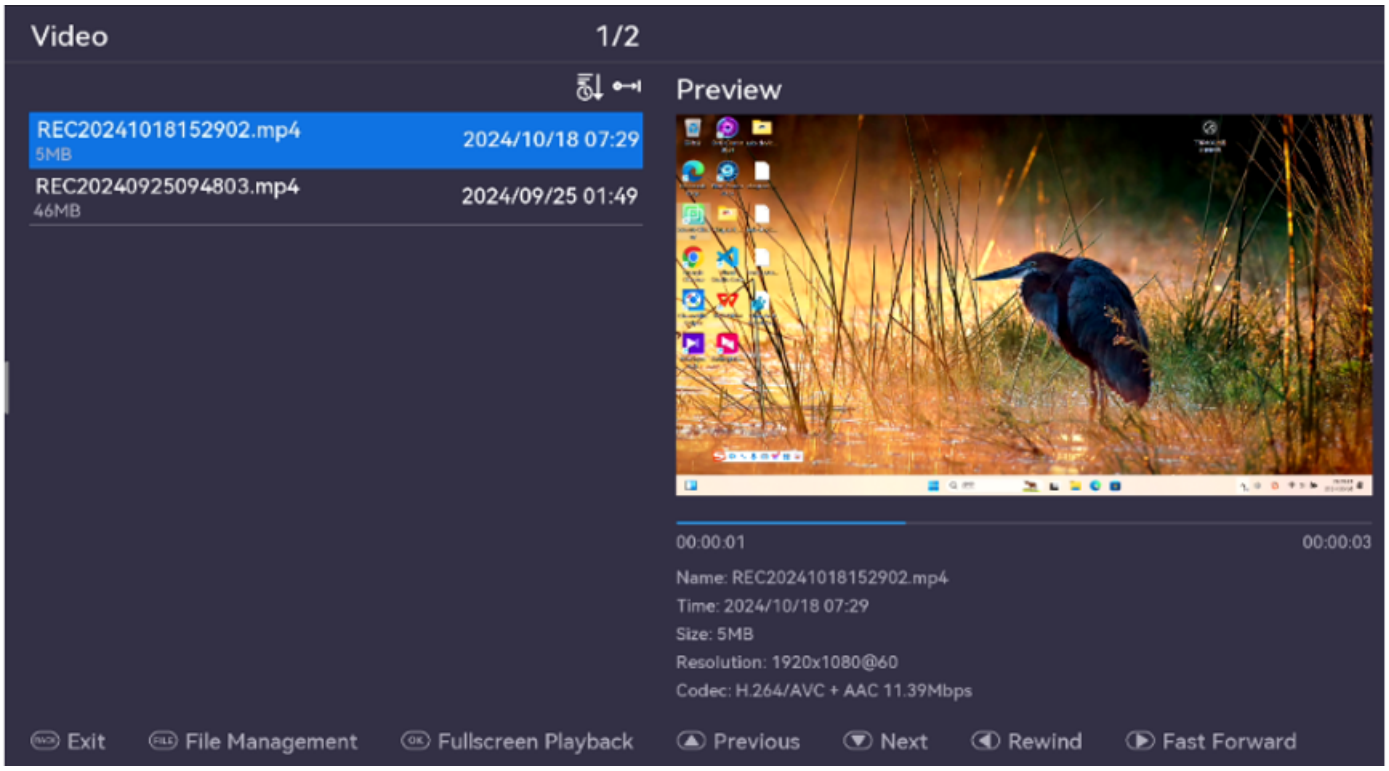
- Connect

1. Connect the video player to “IN” port on ClonerAlliance UHD Halo via an HDMI cable.
2. Connect ClonerAlliance UHD Halo from “OUT” port to TV or monitor via an HDMI cable.
3. Plug the TF card or USB storage device into ClonerAlliance UHD Halo.
4. Plug the power adapter into the power socket and plug the other end into the 12V/1A port of ClonerAlliance UHD Halo.

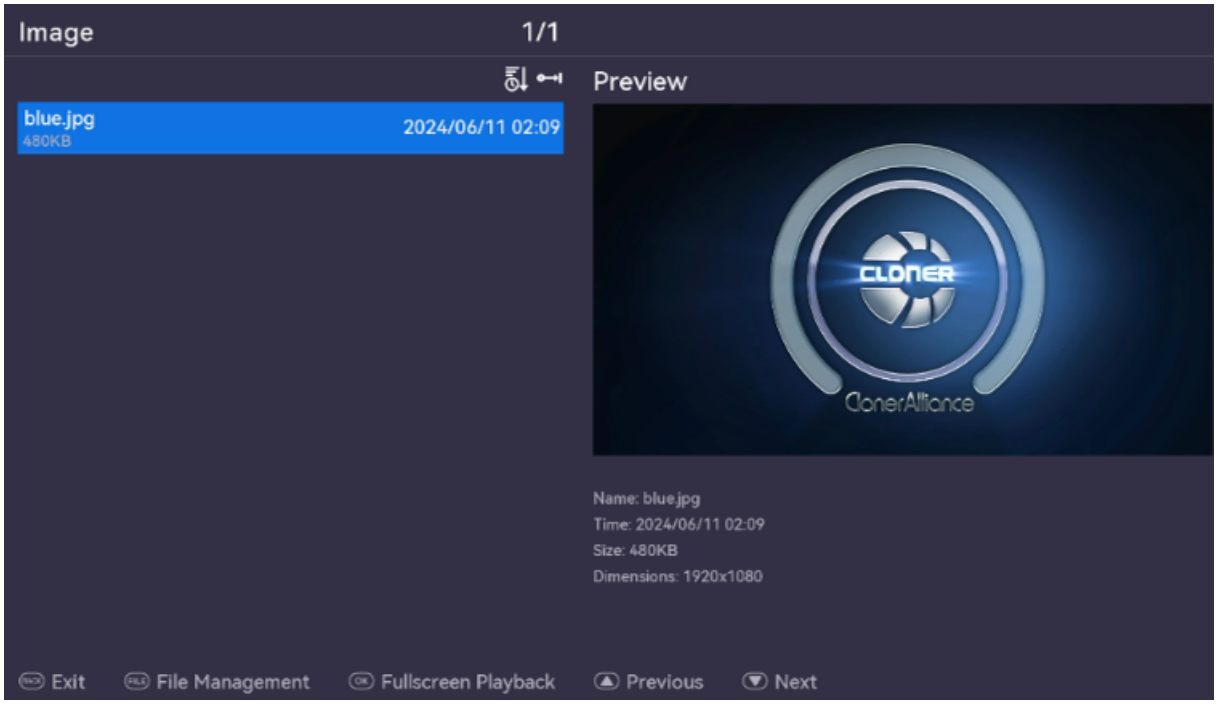


After all devices are connected properly, press the “VIDEO” or “IMAGE” or “AUDIO” button on the remote control to enter the playback menu interface. You will see the file list.

- Video playback



- Image playback



- Audio playback

- Fullscreen playback

  Select your desired file by using the four arrow buttons on the remote control. You can preview the files and press “OK” button to fullscreen playback.
- ATTENTION

  If you got similar situations as below, please click here to reformat your USB external hard drive, the issue can be fixed immediately.

1. When using ClonerAlliance UHD Halo, you cannot use the remote to playback the recorded video after recording. To be more specific, you can use ClonerAlliance UHD Halo to record videos successfully, but you can’t playback it with the remote.
2. During the process of recording, ClonerAlliance UHD Halo stops recording abnormally.

- Quick solutions

  If you got problems in the process of playback, please try the steps below:

1. Please make sure that your USB stick/external hard drive works well. You can change another one to confirm it or format it to resolve it.
2. Please adjust resolution to test again.
3. If the methods don’t work, refer to the link above to format your USB stick/external hard drive to fix it.

11.2 Playback the Recorded media files on TV

- Connect

1. Plug the USB flash drive to the USB socket of a smart TV which has built-in media file playback function.
2. Power on the smart TV

- Steps

1. After files are successfully saved to USB flash drive, plug the USB flash drive to the USB socket of a smart TV which has built-in media file playback function.

2. Launch USB device on smart TV, then playback the files ClonerAlliance UHD Halo recorded.

11.3 Playback/Edit the Recorded media files on PC

- Connect

1. Plug the USB flash drive to the USB socket of PC.
2. Launch USB flash drive on PC.

- Steps:

1. Playback the recorded video files with VLC media player.

Please download VLC media player software and install it on your PC first.

See details about *Install VLC player (Windows, Mac, and Linux Users)*

2. Edit the recorded video files with MP4-Cloner

Please download MP4-Cloner software and install it on your PC first.

See details about *Install and register MP4-Cloner (Windows Users)*

RECORD AND TRIM/COMBINE/CONVERT VIDEOS ON PC

12.1 Install Software

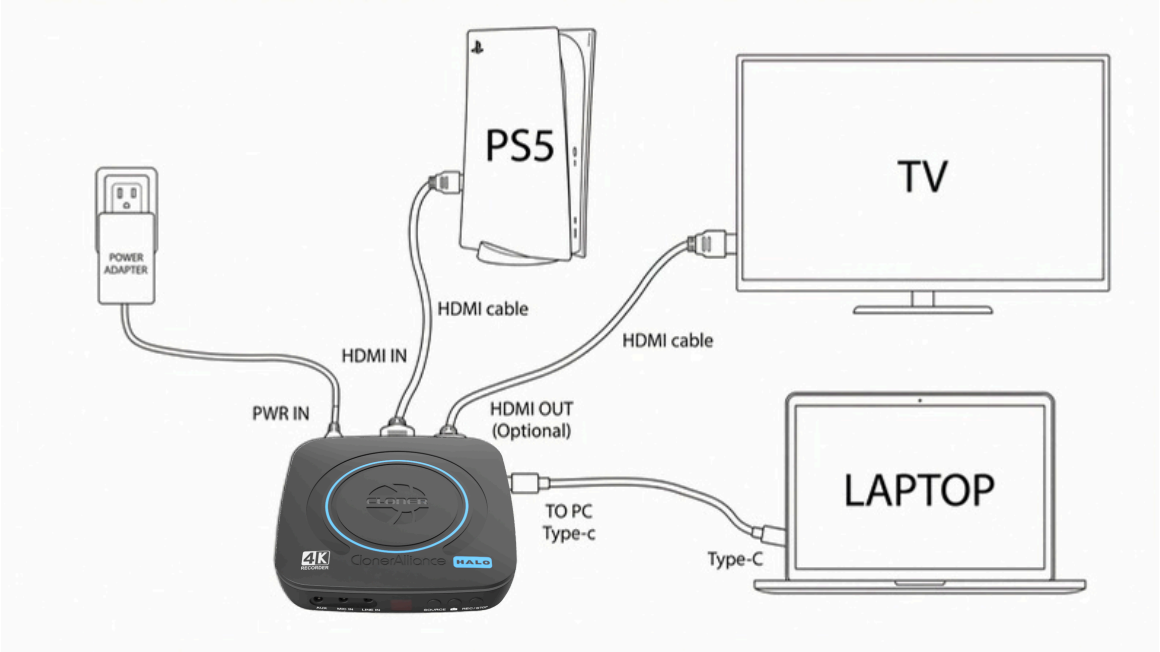
•**ClonerAlliance Helper**

Please download ClonerAlliance Helper software and install it on your PC first. See details about *Install and register ClonerAlliance Helper (Windows Users)*

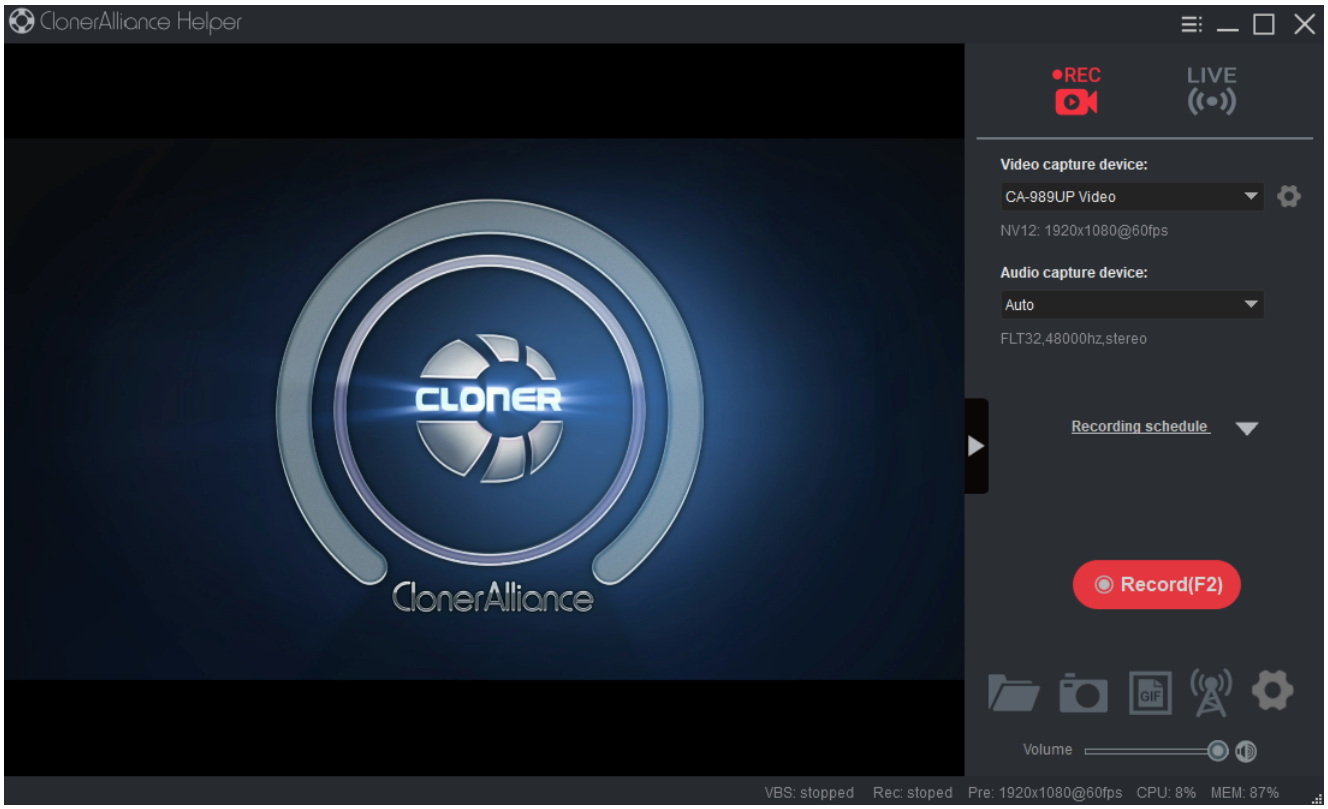
•**MP4-Cloner**

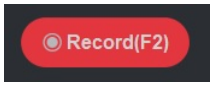
Please download MP4-Cloner software and install it on your PC first. See details about *Install and register MP4-Cloner (Windows Users)*

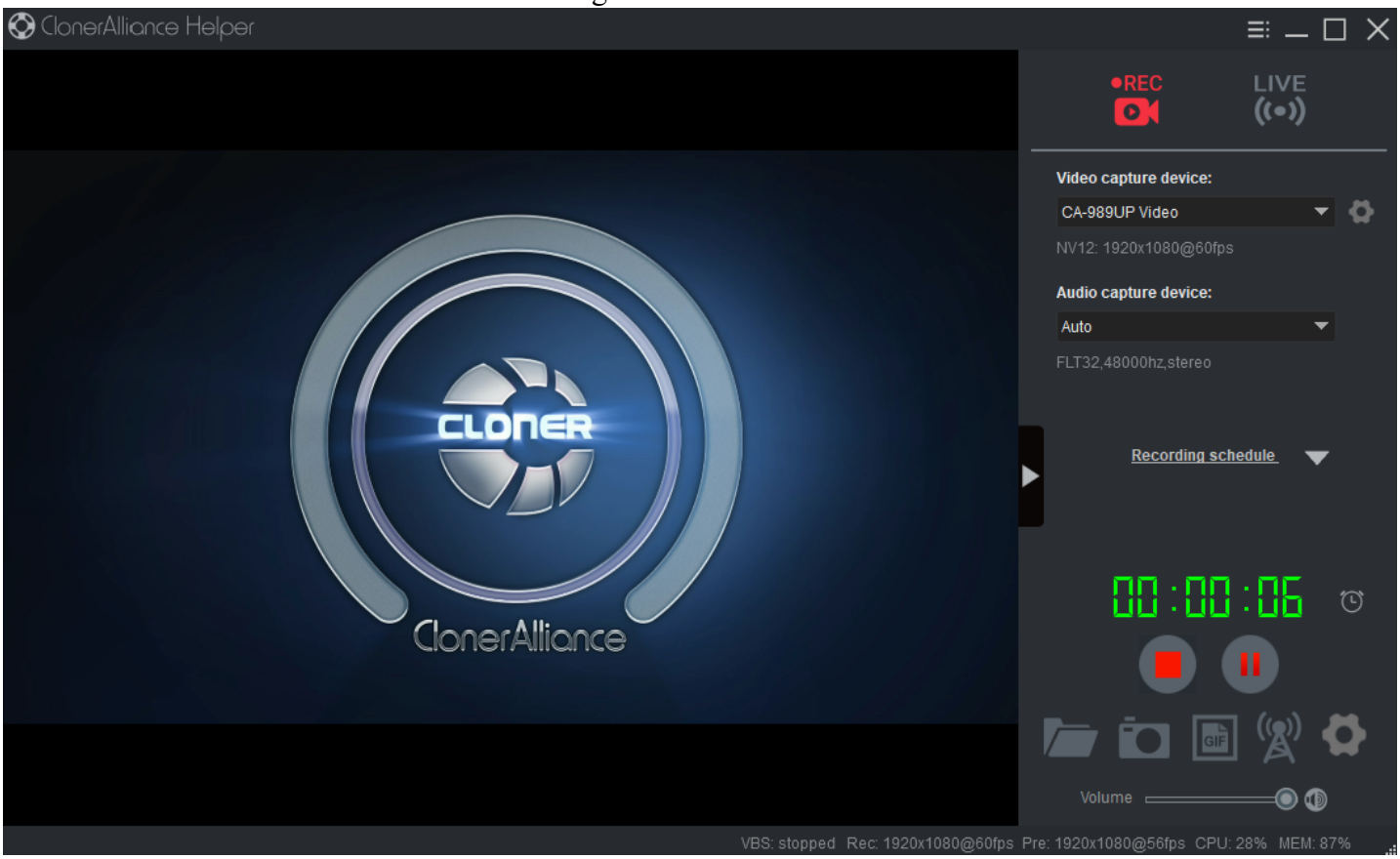
12.2 Record/Capture videos on PC



1. After all devices are connected properly, power on the video source device and launch Cloner-Alliance Helper on PC.
2. If everything is ok and you will see the image of the video source as below:



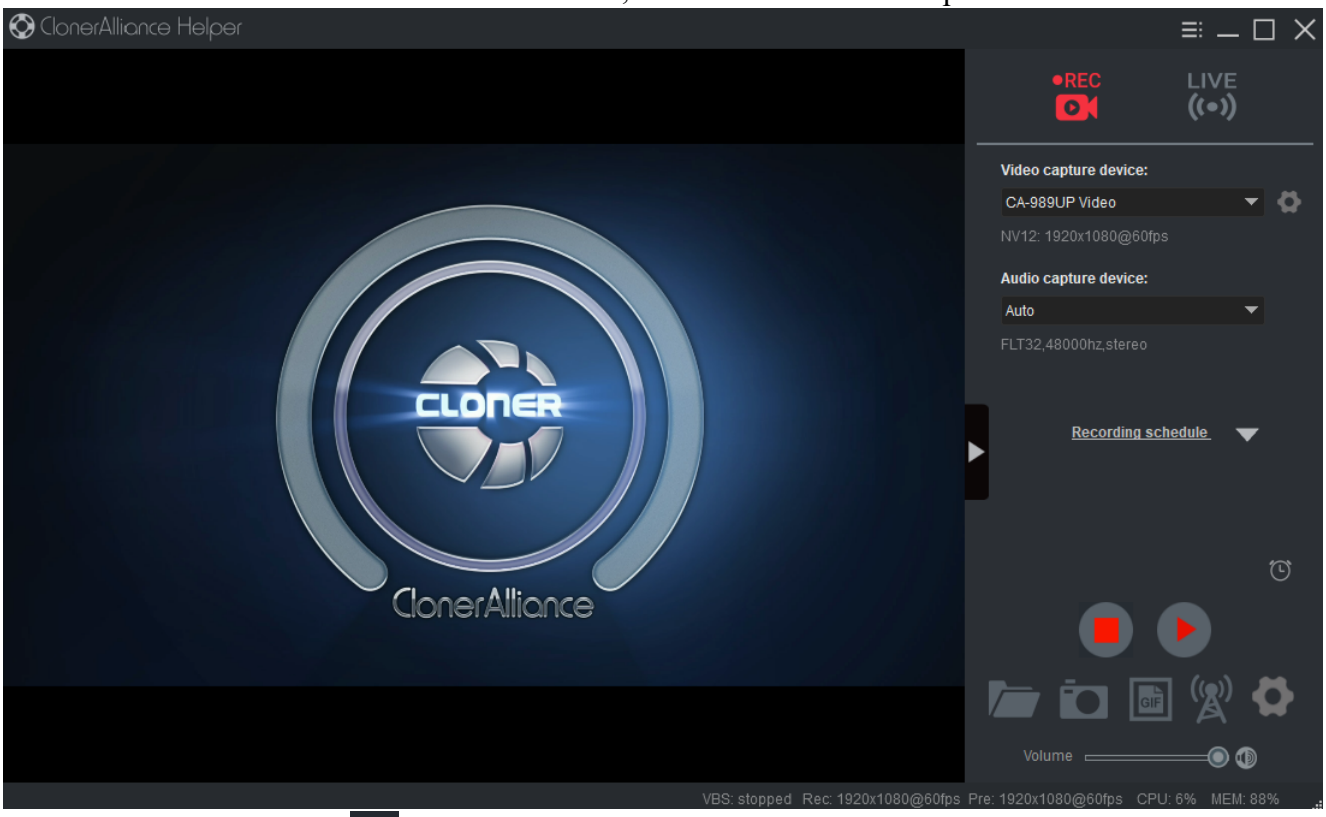
3. Click  to start recording.



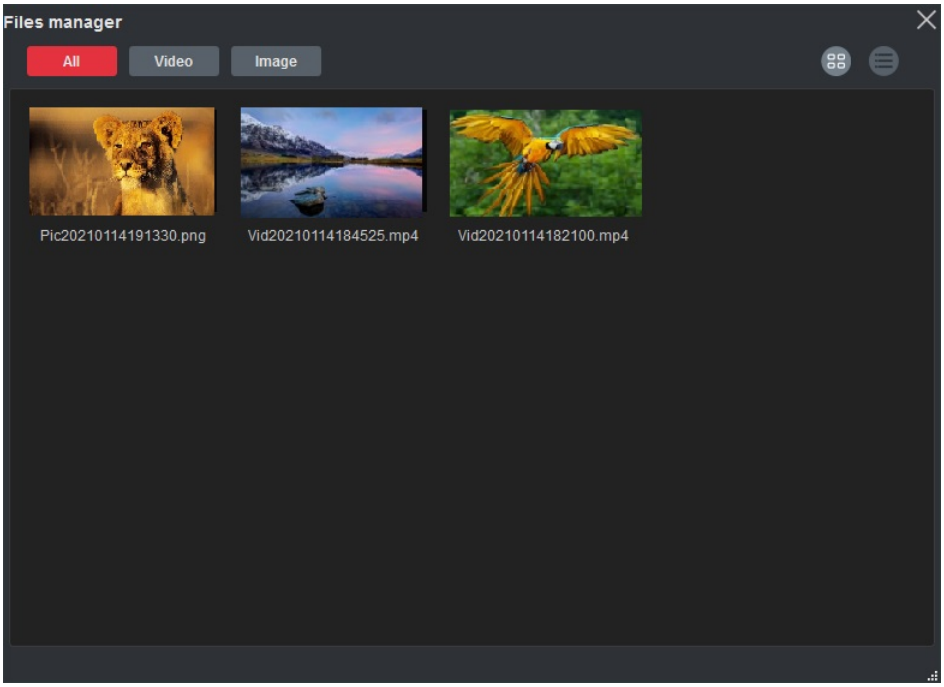
Software interfaces may vary depending on the version.

4. Click  to stop recording.

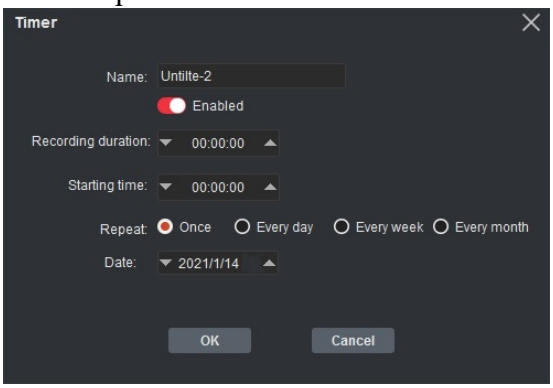
   Tip: During recording, you can also click  to pause at anytime. When you want to resume, please click  to continue recording. Besides, you can Click  to take screenshots, click  to capture GIF animation.



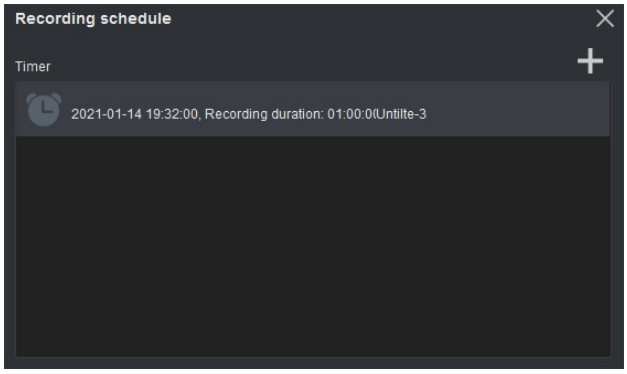
5. After recording, click  to view the captured files, then double click the files to play back directly.



6. ClonerAlliance Helper also supports recording videos at the scheduled time. Click Recording schedule to enter the ”Setup” window. Then click the ”+” button.



Please enable schedule recording first, and set the recording duration, starting time and repeat mode for schedule recording. Then click ”OK”. Then videos will be recorded automatically at the scheduled time.



12.3 Trim video files on PC

•Step 1:

Launch MP4-Cloner and click on the “Trim” button.

•Step 2:

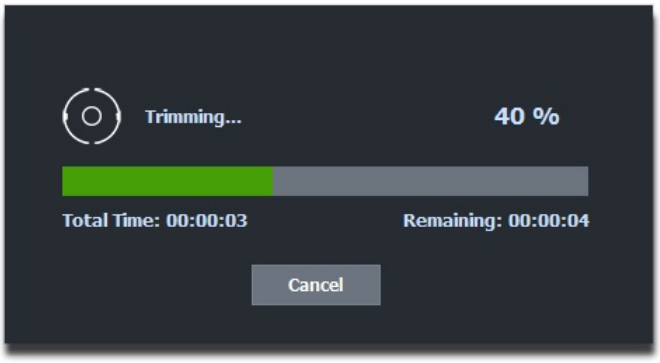
Click on the “Add” button to add a MP4 video. Set the start and end time and then click on the “Start” button.

•Step 3:

Affirm the configuration. Click on the “Browse” button to set the video name and saving path. You can choose the audio codec from Keep AAC, AC3 and MP3.

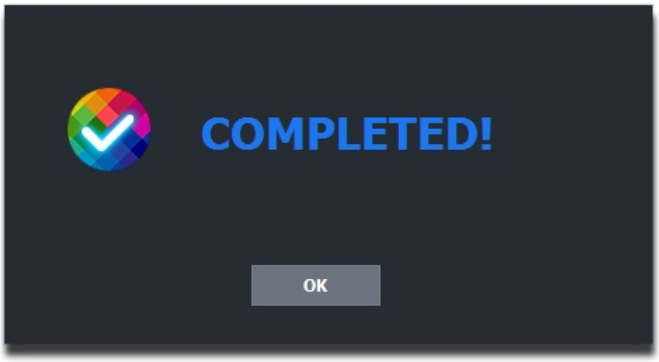
•**Step 4:**

It will start trimming.



•**Step 5:**

Completed!



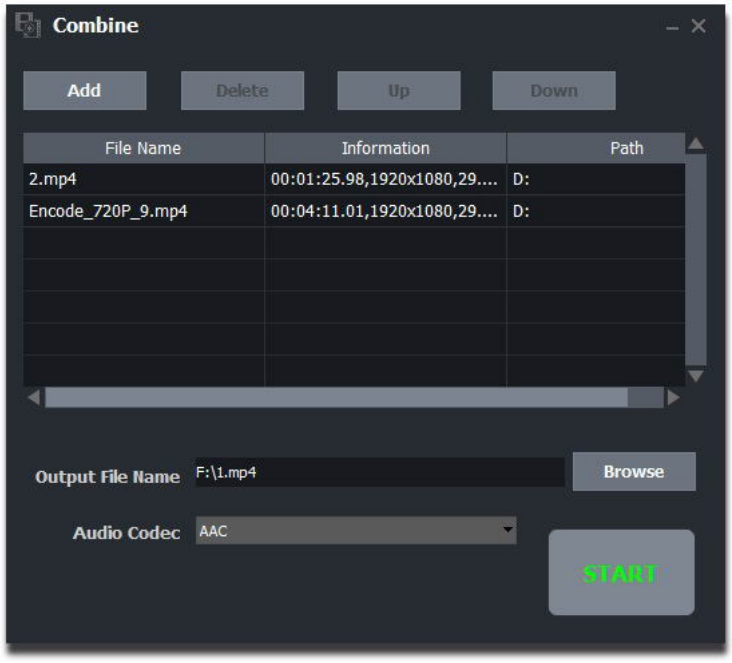
12.4 Combine video files on PC

•**Step 1:**

Launch MP4-Cloner and click on the “Combine” button.

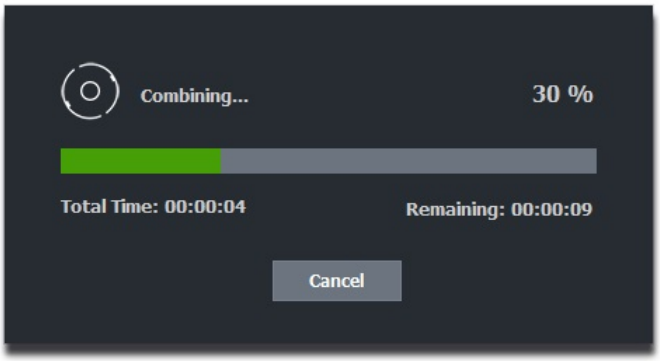
•**Step 2:**

Click on the “Add” button to add at least two MP4 videos to the list and click on the “Browse” button to set the video name and saving path. Then select the audio codec from AAC, AC3 and MP3 and then click on the “Start” button.



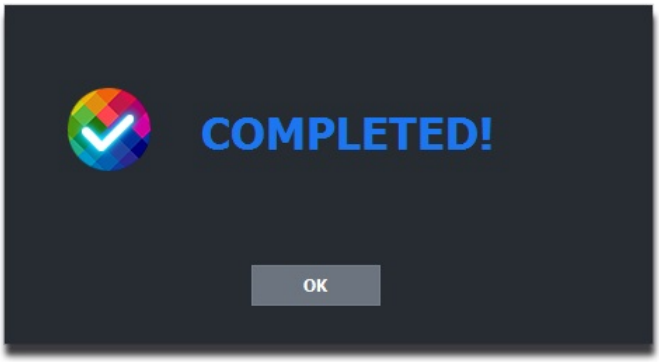
•**Step 3:**

It will start combining.



•**Step 4:**

Completed!



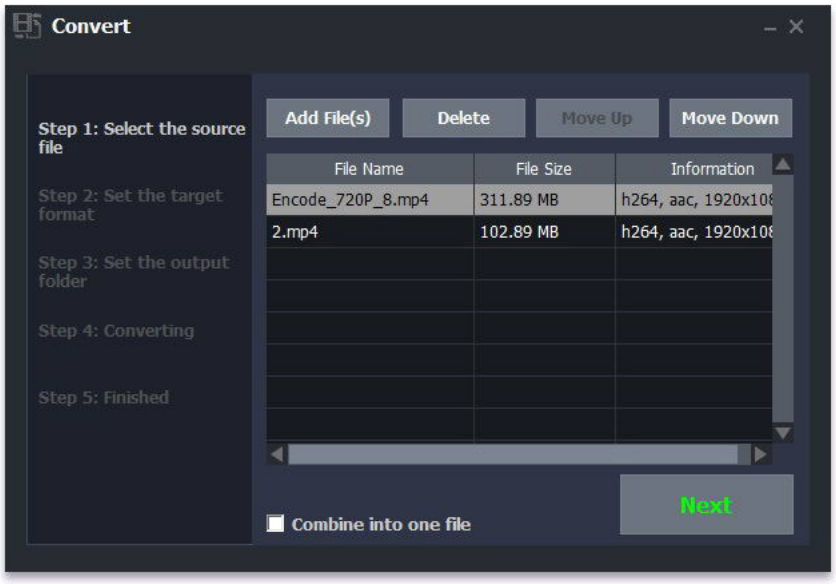
12.5 Convert video files on PC

•**Step 1:**

Launch MP4-Cloner and click on the “Convert” button.

•**Step 2:**

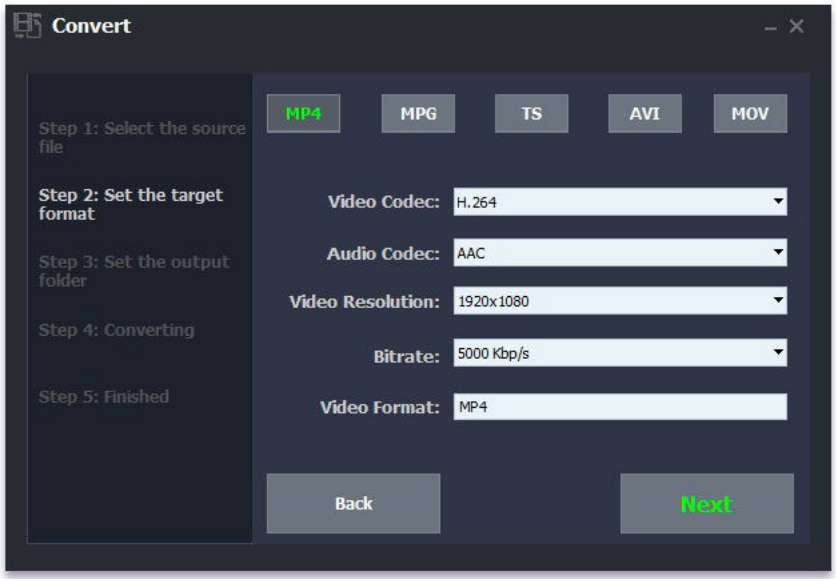
Click on the "Add File(s)" button to add one or more MP4 videos to the list and then click on the "Next" button.



Note: If you add two or more MP4 videos, the option "Combine into one file" at the bottom will be available. This feature enables you to combine the converted videos into one video. You can select to use it or just ignore it.

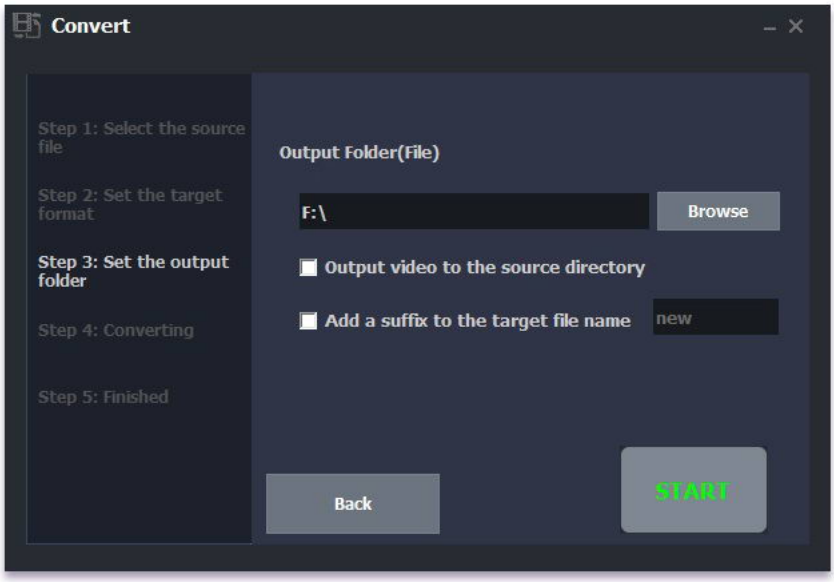
•**Step 3:**

Set the target format. You can set the parameters here and then click on the "Next" button.



•**Step 4:**

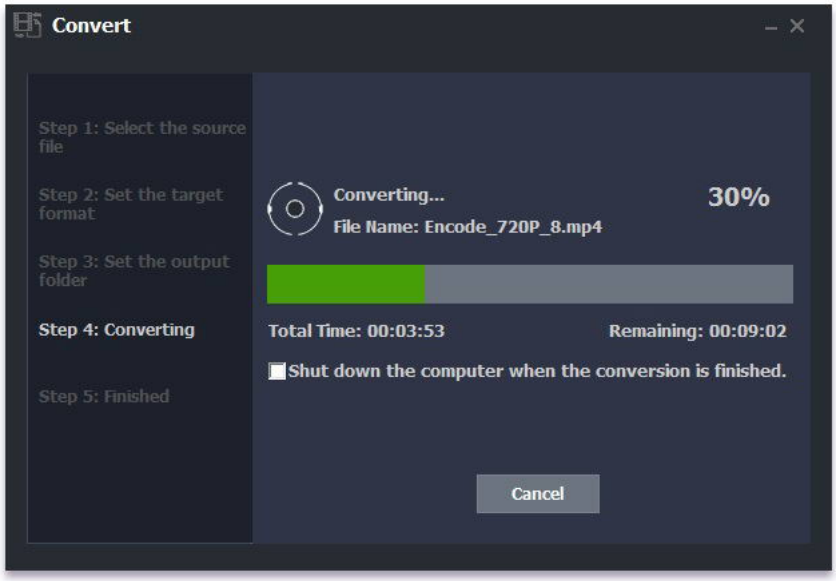
Set the output folder. Click on the "Browse" button to choose the video saving path and then click on the "Start" button.



Note: On this window, there is an option "Output video to the source directory". If you check this option, the video will be saved to the source directory. To avoid the same file name, the option "Add a suffix to the target file name" will be also checked automatically to differentiate the target video and source video.

•**Step 5:**

It will start converting.



Note: If you’d like to shut down your computer after the conversion is completed, please close all the other programs and select “Shut down the computer when the conversion is finished”.

•**Step 6:**

Completed!

The ClonerAlliance UHD Halo supports two types of storage devices: **USB storage devices** (flash drives, HDDs, SSDs) and **TF cards** (MicroSD cards). This chapter explains storage requirements, file systems, capacity planning, and troubleshooting.

13.1 Supported Storage Devices

USB 3.0 Storage (Recommended)

Interface: USB 3.0 Type-A (female port on side panel)

Compatible Devices:

- USB flash drives (USB 3.0/2.0)
- External hard drives (HDD)
- External solid-state drives (SSD) - **Best for 4K@60fps**

Recommended Specifications:

Parameter	Recommendation
Write Speed	≥60 MB/s for 4K@60fps recording
Capacity	128GB or higher
Interface	USB 3.0 or USB 3.1
Brands	SanDisk, Samsung, Kingston, WD, Seagate

LED Indicator (Side LED):

- **Solid Green**: USB storage device connected and ready
- **Flashing Green**: Currently recording to USB storage

Tip: Why USB 3.0 SSD?

- **Fastest write speeds** (≥100 MB/s typical)
- **No overheating issues** (unlike USB flash drives)
- **Most reliable** for long 4K60 recordings
- **Silent operation** (no moving parts)

TF Card (MicroSD Card)

Interface: MicroSD card slot (on side panel)

Maximum Supported Capacity: Up to 2TB

Recommended Specifications:

Parameter	Recommendation
Speed Class	UHS-I U3 or higher (write speed ≥30 MB/s)
Capacity	64GB or higher
Brands	SanDisk, Samsung, Kingston, Lexar

LED Indicator (Side LED):

- **Solid Blue**: TF card connected and ready
- **Flashing Blue**: Currently recording to TF card

Warning: TF Card Limitations

- TF cards have **slower write speeds** compared to USB 3.0 SSDs
- For **4K@60fps recording**, use USB 3.0 SSD instead
- **Cheap/counterfeit** TF cards may cause dropped frames or file corruption
- Always buy from reputable sellers

13.2 File System Requirements

Supported File Systems

UHD Halo supports three file systems. Choose the right one based on your needs:

File System	Max File Size	Max Partition	Recommendation
FAT32	4GB	2TB	NOT recommended (4GB limit too small for 4K recording)
exFAT	Unlimited (theoretical)	Unlimited (theoretical)	Recommended (Best compatibility, no file size limits)
NTFS	Unlimited (theoretical)	Unlimited (theoretical)	Acceptable (Works well, but exFAT is more universal)

Important: Why FAT32 is NOT Recommended

With FAT32, a 4K@60fps recording at 50 Mbps bitrate will hit the **4GB limit in just 10 minutes**. This forces frequent file splitting and is inconvenient for long recordings.

Solution: Format your storage device as **exFAT** for unlimited file sizes.

Partition Table Support

Type	Maximum Capacity	Use Case
MBR (Master Boot Record)	Up to 2TB	Standard partitioning for drives ≤2TB
GPT (GUID Partition Table)	>2TB (theoretically unlimited)	Large drives (4TB, 8TB, etc.)

13.3 Formatting Storage Devices

Formatting on Windows

1. **Insert Storage Device**
   - Plug USB drive into your PC
   - Windows should recognize it automatically
2. **Open File Explorer**
   - Right-click on **This PC** → select your USB drive

3. **Format the Drive**
   a. Right-click the drive → select **"Format…"**
   b. **File System**: Select **"exFAT"**
   c. **Allocation Unit Size**: Leave as **"Default"**
   d. **Volume Label**: (Optional) Enter a name like "UHD_HALO_REC"
   e. **Quick Format**: Check this box (faster)
   f. Click **"Start"**
4. **Wait for Completion**
   - Formatting usually takes 10-30 seconds for quick format
   - Click **OK** when finished

> **Warning: Data Loss Warning**
>
> Formatting will **erase all data** on the storage device. Back up any important files before formatting.

Formatting on Mac

1. **Open Disk Utility**
   - Applications → Utilities → **Disk Utility**
   - Or use Spotlight: Press **Cmd+Space**, type "Disk Utility"
2. **Select Storage Device**
   - In the left sidebar, select your USB drive
   - (Be careful not to select your Mac's internal drive!)
3. **Erase (Format) the Drive**
   a. Click the **"Erase"** button at the top
   b. **Name**: (Optional) Enter "UHD_HALO_REC"
   c. **Format**: Select **"exFAT"**
   d. **Scheme**: Select **"GUID Partition Map"**
   e. Click **"Erase"**
4. **Wait for Completion**
   - Formatting takes 10-30 seconds
   - Click **Done** when finished

13.4 File Size Settings (OSD Menu)

Configure how UHD Halo splits large recordings:

To Access: Press **MENU** → **Record Settings** → **File Size**

Available Options

Unlimited (Recommended)

- No file size limit
- Recordings continue until you stop or storage is full
- **Best for exFAT/NTFS file systems**

4GB

- Automatically creates a new file every 4GB
- Use this **only for FAT32** file systems
- At 50 Mbps bitrate: new file every ~10 minutes

16GB

- Automatically creates a new file every 16GB
- Good for organizing very long recordings
- At 50 Mbps bitrate: new file every ~40 minutes

2 Hours

- Creates a new file every 2 hours of recording
- Time-based segmentation (easier to manage by time)
- Useful for logging or scheduled recordings

Loop Recording

- **Automatically overwrites oldest files** when storage is full
- Useful for continuous monitoring (security cameras, etc.)
- Keeps only the most recent recordings

Note: Recommended Setting

For most users: **Unlimited** (with exFAT file system)

This eliminates the need to manage file splits and works seamlessly for recordings of any length.

13.5 Storage Capacity Planning

File Size Estimates

Calculate how much storage you need based on recording settings:

4K@60fps Recording (H.265, 50 Mbps):

Duration	File Size	Storage Examples
1 minute	~375 MB	
10 minutes	~3.75 GB	
1 hour	~22 GB	
128GB		~5.8 hours
512GB		~23 hours
1TB		~45 hours

4K@60fps Recording (H.265, 32 Mbps):

Duration	File Size	Storage Examples
1 minute	~240 MB	
10 minutes	~2.4 GB	
1 hour	~14 GB	
128GB		~9 hours
512GB		~36 hours
1TB		~72 hours (3 days)

1080p@60fps Recording (H.265, 24 Mbps):

Duration	File Size	Storage Examples
1 minute	~180 MB	
10 minutes	~1.8 GB	
1 hour	~10.5 GB	
128GB		~12 hours
512GB		~48 hours (2 days)
1TB		~96 hours (4 days)

1080p@30fps Recording (H.264, 16 Mbps):

Duration	File Size	Storage Examples
1 minute	~120 MB	
10 minutes	~1.2 GB	
1 hour	~7 GB	
128GB		~18 hours
512GB		~73 hours (3 days)
1TB		~146 hours (6 days)

Tip: Quick Calculation Formula

File Size (MB) = Bitrate (Mbps) × Duration (seconds) ÷ 8

Example: 32 Mbps bitrate for 1 hour (3600 seconds):

32 × 3600 ÷ 8 = 14,400 MB = 14 GB

Storage Recommendations by Use Case

Use Case	Recording Settings	Recommended Storage
Gaming highlights (1-2 hours/day)	4K@60fps, 32 Mbps	128GB USB 3.0 SSD
Live streaming backup recording	1080p@60fps, 24 Mbps	256GB USB 3.0 flash drive
Full gameplay sessions (4+ hours)	4K@60fps, 50 Mbps	512GB or 1TB SSD
Long-form content (tutorials, meetings)	1080p@30fps, 16 Mbps	512GB USB 3.0 drive
24/7 monitoring (loop recording)	1080p@30fps, 16 Mbps	1TB+ with Loop Recording enabled

13.6 Managing Storage Space

Checking Free Space (OSD Menu)

1. Press **MENU** on remote
2. Navigate to **Storage**
3. View:
    - **Device Type**: USB or TF Card
    - **Total Capacity**: Total storage size
    - **Free Space**: Available space
    - **File System**: FAT32 / exFAT / NTFS

Transferring Files to PC

Method 1: Remove Storage and Connect to PC

1. Stop any ongoing recording
2. Wait for side LED to stop flashing (file is being saved)
3. Safely eject storage device from Halo
4. Insert into PC
5. Copy files to PC
6. Delete files from storage if needed
7. Re-insert storage into Halo

Method 2: Keep Storage in Halo (via OSD File Manager)

1. Press **MENU** → **Video** / **Image** / **Audio**
2. Navigate to unwanted files
3. Press **Delete** button on remote
4. Confirm deletion

> **Warning: Safe Ejection Important**
>
> Always wait for the side LED to **stop flashing** before removing storage. Removing storage during recording or while the LED is flashing can **corrupt the file** being saved.

Enabling Loop Recording

To automatically overwrite old files when storage is full:

1. Press **MENU** → **Record Settings** → **File Size**
2. Select **Loop Recording**
3. Press **OK**

Now Halo will automatically delete the oldest files when storage is full, keeping only the most recent recordings.

TO PC STREAMING MODE

The ClonerAlliance UHD Halo supports **UVC (USB Video Class)** driver-free capture to PC, making it a professional-grade capture card for live streaming, video conferencing, and content creation.

14.1 What is TO PC Mode?

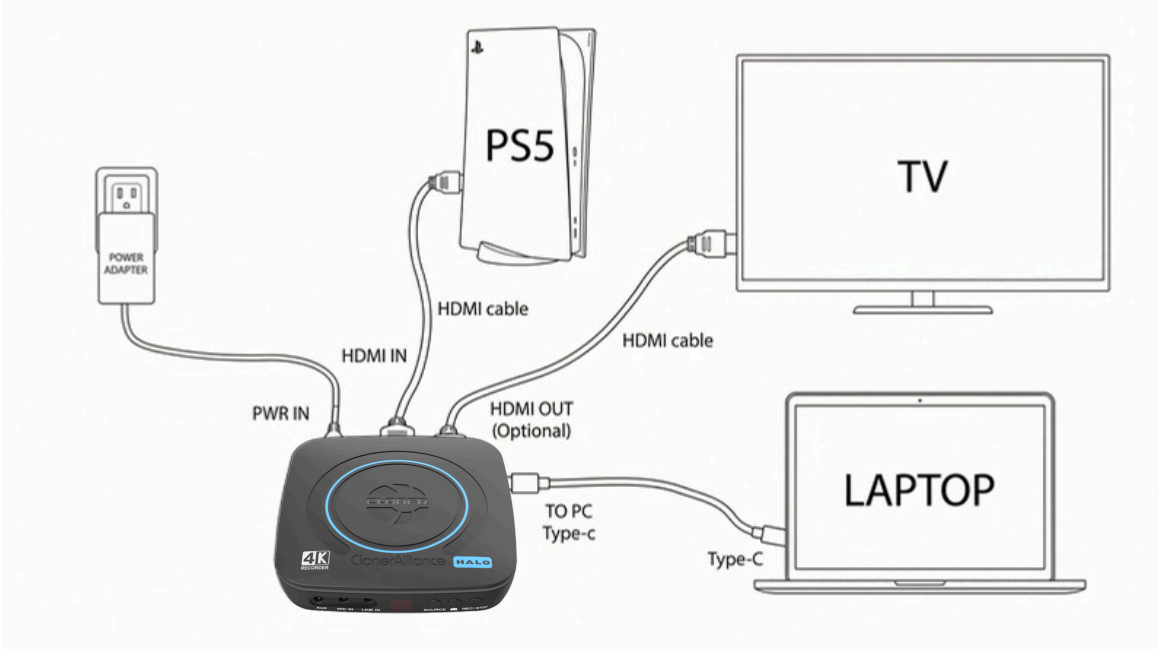
TO PC mode transforms the Halo into a standard USB capture card with the following features:

Core Features:

- **Driver-Free**: UVC standard protocol, automatically recognized by Windows/Mac/Linux
- **Zero-Latency Preview**: Real-time monitoring via HDMI OUT with no encoding delay
- **4K60 Capture**: USB 3.0 interface supports up to 3840x2160@60fps
- **Plug and Play**: No driver or software installation required
- **Universal Compatibility**: Works with OBS Studio, XSplit, vMix, Zoom, and all UVC-compatible software

Typical Application Scenarios:

- Twitch/YouTube live streaming (gaming, IRL, Just Chatting)
- Video conferencing (Zoom, Teams, Skype)
- Online teaching (course recording, remote instruction)
- Medical demonstrations (surgical broadcasts, equipment demos)
- Church services (sermon broadcasts, ceremony streaming)



14.2 Connecting TO PC Mode

Hardware Connection Steps

Required Equipment:

- ClonerAlliance UHD Halo unit
- USB Type-C to USB-A data cable (included)
- Computer (Windows 7+, macOS 10.11+, or Linux)
- Video source device (game console, camera, phone, etc.)
- (Recommended) Monitor or TV for preview

Connection Procedure:

Step 1: Video Source → Halo HDMI IN
(PS5, Xbox, Switch, camera, etc.)
Step 2: Halo TO PC (Type-C) → Computer USB Port
Must use USB 3.0 port (blue port)
Step 3: Halo HDMI OUT → Monitor/TV
(Optional, for zero-latency preview)
Step 4: USB Storage → Halo USB Port
(Optional, simultaneous local recording)

Step 5: Connect 65W power adapter (Halo powers on automatically)

Connection Verification:

- Computer automatically detects “USB Video” or “UHD Halo” device
- Windows displays “Device ready” notification in system tray
- macOS shows device in “System Preferences → Camera”
- Halo top LED turns green/blue (based on input source)
- HDMI OUT displays real-time video (zero latency)

Note: In TO PC mode, the Halo functions as a UVC capture card. The computer receives the video stream without seeing the Halo’s OSD menu interface. All settings must be configured on the Halo directly.

14.3 OBS Studio Configuration Guide

OBS Studio is the most popular free and open-source streaming software. Below is a complete configuration guide.

Installing OBS Studio

Download OBS:

- Official website: https://obsproject.com
- Supported platforms: Windows 10+, macOS 11+, Linux
- Recommended version: OBS Studio 30.0 or higher

System Requirements:

- CPU: Intel i5-4XXX (4th gen) or AMD Ryzen 3 1XXX
- RAM: 8GB (16GB recommended for 4K streaming)
- GPU: DirectX 11 support (NVIDIA GTX 1050 or higher)
- Storage: 500MB available space

Adding Video Capture Device

Step 1: Create Video Source

1. Open OBS Studio
2. Click the + button in the "Sources" panel
3. Select "Video Capture Device"
4. Name it "UHD Halo" or "Game Capture"
5. Click "OK"

Step 2: Select Device

In the device dropdown menu, select:

- **Windows**: "USB Video" or "UHD Halo"
- **macOS**: "USB Video" or "UHD Halo"
- **Linux**: "/dev/video0" or "UHD Halo"

Step 3: Configure Resolution and Frame Rate

Table 1: Recommended Resolution/Frame Rate Settings

Use Case	Resolution/FPS	Bitrate Required
4K Streaming (High)	3840x2160 / 60fps	20-50 Mbps
1080p Streaming (Rec.)	1920x1080 / 60fps	6-10 Mbps
1080p Streaming (Save)	1920x1080 / 30fps	4-6 Mbps
720p Streaming (Low)	1280x720 / 60fps	3-5 Mbps

Configuration Method:

Resolution/FPS Type: Custom Resolution: 3840x2160 (or other) FPS: Match Output (60fps) Video Format: NV12 (recommended) or YUY2

Warning:

Performance Recommendations:

- 4K60 streaming requires powerful PC (i7 8th gen+ / Ryzen 7 3XXX+)
- Network upload bandwidth needs ≥50 Mbps (4K) or ≥10 Mbps (1080p60)
- Most streaming platforms recommend 1080p60 for best viewer experience
- Twitch supports max 1080p60@6Mbps, YouTube supports 4K60

Adding Audio Source

In TO PC mode, the Halo mixes three audio channels and outputs to the computer. You need to add audio in OBS:

Step 1: Add Audio Input Capture

1. Click + in the “Sources” panel
2. Select “Audio Input Capture”
3. Name it “Halo Audio”

Step 2: Select Audio Device

In device dropdown menu, select:

- **Windows**: “Digital Audio Interface (USB Video)” or “Line (USB Video)”
- **macOS**: “USB Video” or “UHD Halo”

Note: The Halo’s three audio channels (HDMI audio + Line In + MIC) are pre-mixed internally.

The computer receives the mixed stereo audio. Volume adjustments must be made in the Halo OSD menu (see *Audio Recording and Extraction*).

Step 3: Audio Sync Adjustment

If you experience audio/video desynchronization:

1. Right-click audio source → Advanced Audio Properties
2. Sync Offset: Adjust -50ms to +50ms
3. Play test video and gradually adjust until synchronized

Output Settings (Streaming)

Step 1: Open Settings

File → Settings → Output

Step 2: Configure Encoder

Table 2: Encoder Selection Guide

Encoder	Advantages	Recommended Config
NVIDIA NVENC	GPU acceleration, low CPU	NVIDIA GTX 1660+
AMD AMF	AMD GPU acceleration	AMD RX 580+
x264	Pure CPU encoding, best compatibility	Intel i7 8th gen+
Apple VT	Mac hardware acceleration	M1/M2/M3 Mac

Recommended Settings (1080p60 Streaming):

Encoder: NVIDIA NVENC H.264 Rate Control: CBR (Constant Bitrate) Bitrate: 6000-8000 Kbps Keyframe Interval: 2 seconds Preset: Quality Profile: high GPU: 0 (select dedicated GPU)

Recommended Settings (4K60 Streaming):

Encoder: NVIDIA NVENC H.264 (or HEVC) Rate Control: CBR Bitrate: 25000-40000 Kbps Keyframe Interval: 2 seconds Preset: Max Quality Profile: high Requires RTX 3060 or higher

Output Settings (Recording)

In TO PC mode, OBS on your computer can also record simultaneously:

Local Recording Settings:

Recording Format: mkv (prevents data loss on crash) or mp4 Recording Encoder: Same as streaming or separate Recording Quality: High Quality, Medium File Size Recording Path: D:Recordings(choose SSD)

** Halo Local Recording vs OBS Recording Comparison:**

Table 3: Recording Method Comparison

Item	Halo Local Recording	OBS Computer Recording
Quality	Original 4K60 lossless	Customizable encoding
File Size	Larger (50Mbps)	Adjustable (10-50Mbps)
CPU Usage	0% (hardware encoding)	10-30% (software)
Overlays	Cannot add	Supports text/images
Storage	USB/TF card	Computer hard drive
Best For	Raw footage backup	Finished video upload

Tip:

Dual Recording Strategy:

- Halo records 4K60 raw footage (50Mbps) for post-production editing
- OBS records 1080p60 finished video (10Mbps) ready to upload to YouTube
- Provides both high-quality source material and ready-to-use content

Video Settings

Base (Canvas) Resolution:

Settings → Video → Base (Canvas) Resolution: 1920x1080

Note: This is the OBS workspace resolution and final output resolution

Output (Scaled) Resolution:

Output (Scaled) Resolution: 1920x1080 (same as base)

If PC performance is insufficient, set to 1280x720 to reduce load

Downscale Filter:

Downscale Filter: Lanczos (highest sharpness, slightly higher CPU)

For lower performance, choose Bilinear (fast)

Common FPS Values:

Integer FPS Value: 60 (recommended)

Options: 30 (save bandwidth) / 60 (smooth)

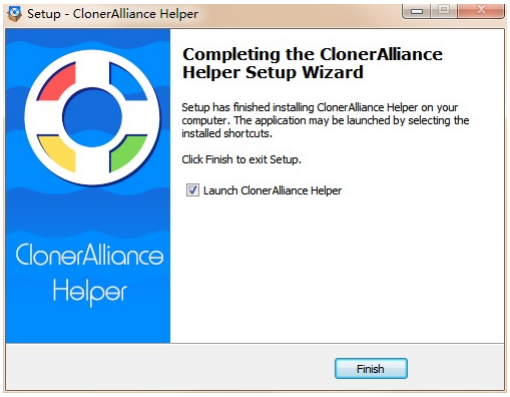
SOFTWARE INSTALLATION

15.1 Install and register ClonerAlliance Helper (Windows Users)

1. Install ClonerAlliance Helper

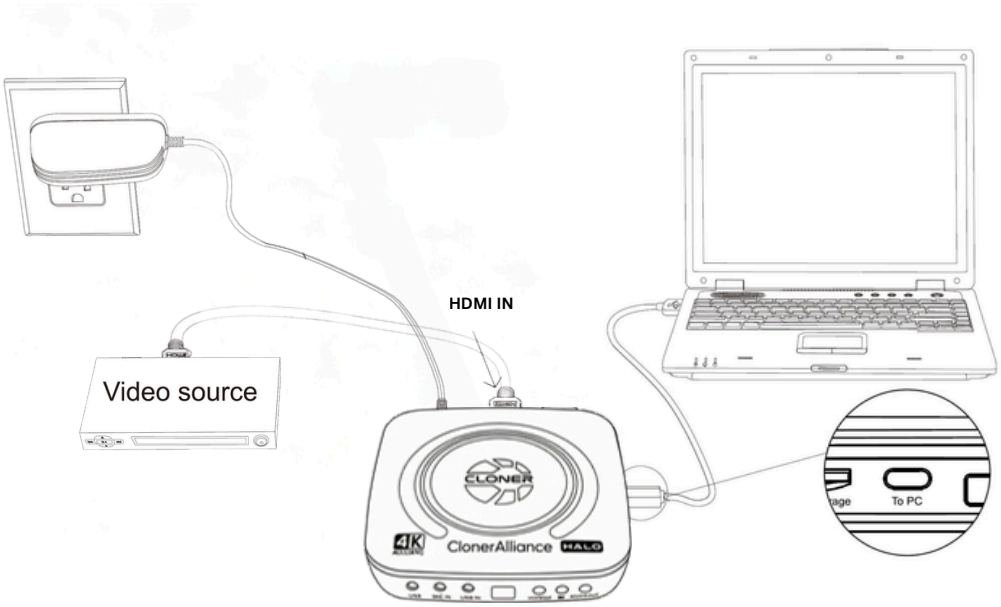
Note: Prior to installing ClonerAlliance Helper, please make sure you are using Windows 7 or later versions and your PC is equipped with USB 2.0 or 3.0 port.

- Download ClonerAlliance Helper 32bit software from https://static.cloner-alliance.com/download/cloneralliance-helper.exe
- Download ClonerAlliance Helper 64bit software from https://static.cloner-alliance.com/download/cloneralliance-helper-x64.exe
- Double click the installation file and the setup wizard window will pop up. Follow the installation wizard to complete the installation process. You do not have to restart your computer after the installation is complete.

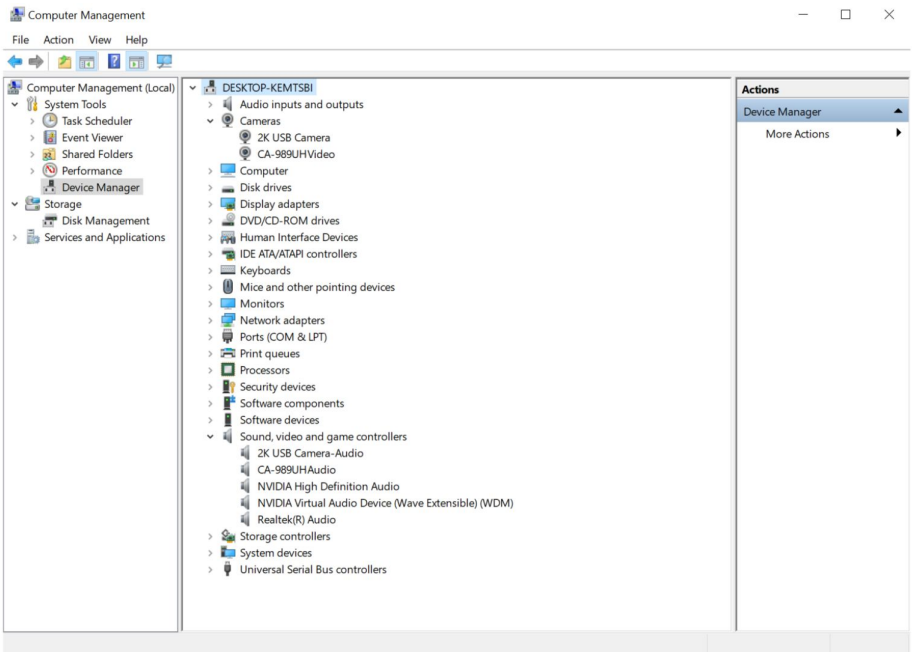


- Connect ClonerAlliance UHD Halo with other devices.

1. Connect the video player to the “IN” port on ClonerAlliance UHD Halo via an HDMI cable.
2. Plug the power adapter into the power socket and plug the other end into the 12V/1A port of ClonerAlliance UHD Halo.
3. Connect the USB Type-C to USB-A cable between the “To PC” port of ClonerAlliance UHD Halo and the USB port of PC.

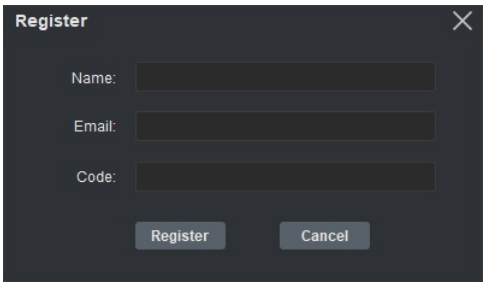


After all devices have been connected properly, please power on all connected devices. The Windows operating system will prompt “Found a new hardware” and install the driver automatically. Please make sure ClonerAlliance UHD Halo is connected successfully and appears in the Device Manager.



2. Register ClonerAlliance Helper

Please register ClonerAlliance Helper first before using, otherwise it can only be used for 7 days. Launch ClonerAlliance Helper. Click ”Input registration code” button in the auto pop-up Register window. Fill in your proper Email address, real name and code. Then click ”OK” to finish the registration.



Scan the QR code below or visit https://www.cloner-alliance.com/register/ to get your registration code of ClonerAlliance Helper. The S/N of ClonerAlliance UHD Halo is in the form of CXXXXXXXXX.

(a)
Click.Here

For more details about registering ClonerAlliance Helper, visit here to read step by step instructions.

15.2 Install and register MP4-Cloner (Windows Users)

1. Install MP4-Cloner

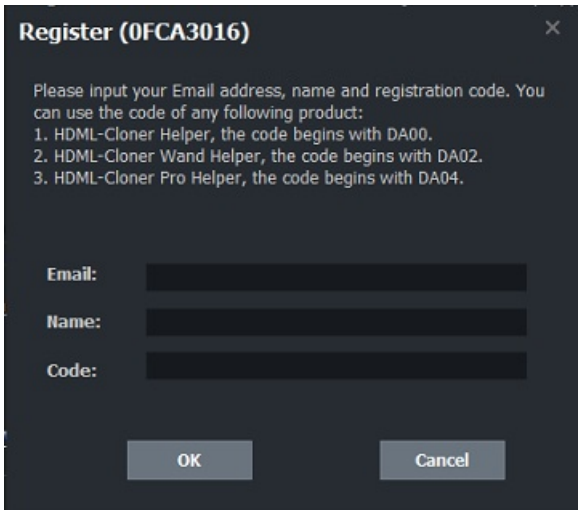
MP4-Cloner is a versatile program to edit MP4 video files recorded with our video capture tool. It enables you to trim, combine, convert and burn your MP4 videos.

- Download MP4-Cloner software from https://static.cloner-alliance.com/download/mp4-cloner.exe
- Double click the installation file and the setup wizard window will pop up. Follow the installation wizard to complete the installation process.

Note: Prior to installing MP4-Cloner, please make sure you are using Windows 7 or later versions and your PC is equipped with USB 2.0 or 3.0 port.

2. Register MP4-Cloner

Once ClonerAlliance Helper is registered successfully, then MP4-Cloner will be registered automatically at the same time (Click on the “i” button of MP4-Cloner, and you can check the registration information).



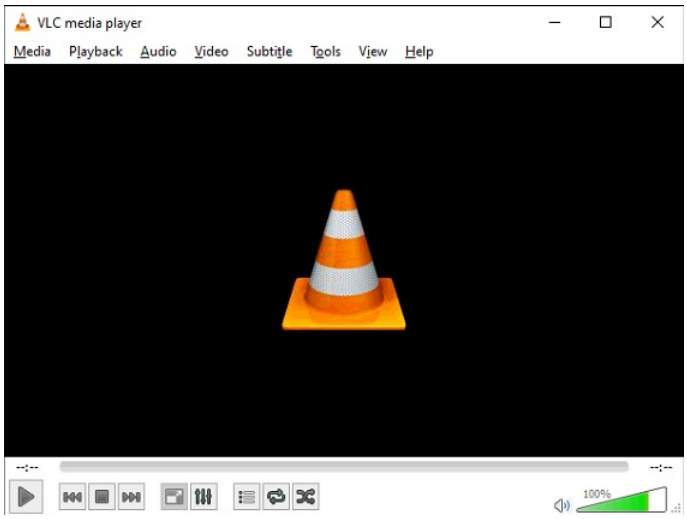
For more details about registering bundled software of ClonerAlliance products, visit here to read step by step instructions.

15.3 Install VLC player (Windows, Mac, and Linux Users)

VLC is a free and open source cross-platform multimedia player and framework that plays most multimedia files as well as DVDs, Audio CDs, VCDs, and various streaming protocols. Download and start streaming quickly and easily on Windows, Mac or Linux.

Please install VLC and run it on your computer.

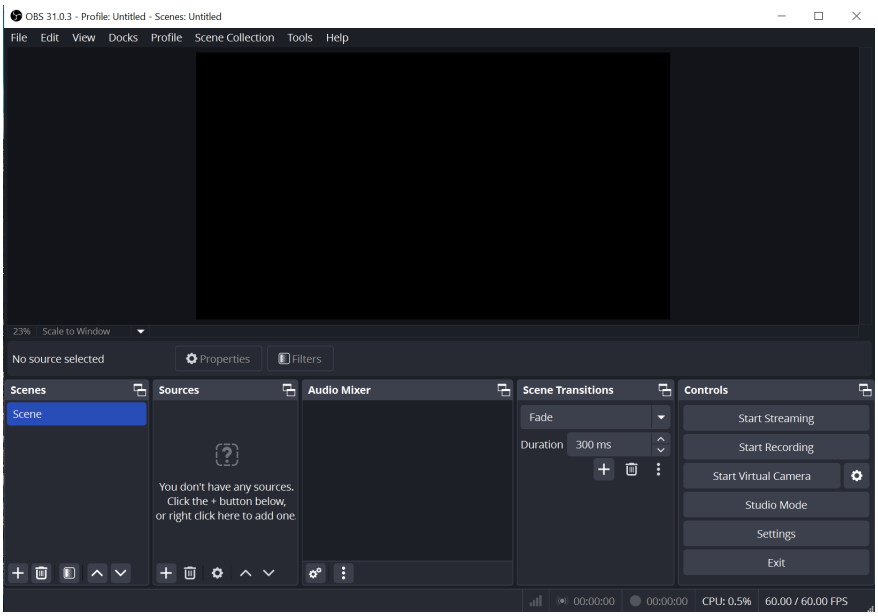
Tip: You can click here to download VLC.



15.4 Install OBS Studio

Please install Open Broadcaster Software (OBS Studio) and run it on your computer. If you are Mac/Linux users, please download OBS Mac/Linux version accordingly.

Tip: You can click here to download Open Broadcaster Software (OBS Studio).



FREQUENTLY ASKED QUESTIONS

This chapter addresses common questions and issues encountered by Halo users. For detailed troubleshooting procedures, see *Troubleshooting*.

16.1 LED Indicator Meanings

What Do the LED Colors Mean?

The Halo has two LED indicators that provide status information:

Top LED (Input Source Indicator)

Table 1: Top LED Status Reference

LED Color	Status Meaning
Solid Green	HDMI input active with signal
Solid Blue	Type-C DP input active w/signal
Flashing Green	HDMI input selected, no signal
Flashing Blue	Type-C DP input selected, no sig.

Location: Top ring LED around HALO logo

Side LED (Storage Device Indicator)

Table 2: Side LED Status Reference

LED Color	Status Meaning
Solid Green	USB storage device connected
Solid Blue	TF card connected
Flashing Green	Recording to USB storage
Flashing Blue	Recording to TF card
Green/Blue Alternate	Saving file (post-recording)
Off	No storage device detected

Location: Side panel near storage ports

Tip:

Quick Reference:

- Top LED = Input source (Green=HDMI, Blue=Type-C DP)
- Side LED = Storage status (Green=USB, Blue=TF card)
- Flashing = Active recording or no signal

16.2 Storage Device Detection

USB Drive Not Recognized, Side LED Off

Symptoms:

- USB drive inserted but side LED remains off
- Storage device not visible in OSD menu
- Cannot start recording

Solution Steps:

Step 1: Correct Power-On Sequence

Proper startup procedure:

1. Insert USB drive into Halo STORAGE port FIRST
2. Connect power adapter to Halo (device powers on automatically)
3. Wait 3-5 seconds
4. Side LED should turn solid green

Danger: CRITICAL: Always insert storage device BEFORE powering on Halo. Inserting storage after power-on may result in detection failure.

Step 2: Check USB Drive Health on Computer

Windows:

1. Insert USB drive into computer
2. If prompted "You need to scan and fix this drive"
3. Click "Scan and fix"
4. Wait for repair to complete
5. Safely eject and re-insert into Halo

macOS:

1. Insert USB drive into computer
2. Open Disk Utility
3. Select the USB drive
4. Click "First Aid"
5. Run repair
6. Eject and re-insert into Halo

Step 3: Format USB Drive to exFAT

Windows:

1. Right-click USB drive in File Explorer
2. Select "Format"
3. File system: exFAT
4. Check "Quick Format"
5. Click "Start"

macOS:

1. Open Disk Utility
2. Select USB drive
3. Click "Erase"
4. Format: exFAT

5. Scheme: GUID Partition Map
6. Click “Erase”

Step 4: Try Different USB Drive

If above steps fail:

- USB drive may be damaged
- Try a different USB 3.0 drive or SSD
- Ensure drive is USB 3.0 compatible (blue port/connector)

Recommended USB Drives:

- SanDisk Extreme Pro USB 3.1
- Samsung BAR Plus USB 3.1
- Kingston DataTraveler USB 3.0
- Portable SSD (Samsung T7, SanDisk Extreme)

16.3 Signal Issues

“No Signal” Displayed on Screen

Symptoms:

- HDMI OUT displays “No Signal” message
- Top LED is flashing
- Cannot see source video

Possible Causes and Solutions:

Cause 1: Resolution Switching (Normal Behavior)

Explanation:

- Video source resolution is changing
- Examples: Game scene transition, menu to gameplay, display mode change

Solution:

- This is normal behavior
- Wait 3-5 seconds for signal to stabilize
- No action required

Cause 2: HDMI Cable Not Properly Connected

Solution:

1. Check HDMI cable firmly inserted at both ends: - Source device HDMI OUT - Halo HDMI IN
2. Try re-seating HDMI cable
3. Try different HDMI cable (HDMI 2.0 certified)
4. Avoid HDMI cable longer than 3 meters (10 feet)

Cause 3: Unsupported Resolution

Explanation:

- Source device outputs resolution Halo cannot process
- Example: PS5/Xbox set to 4K 120Hz (Halo max: 4K 60Hz)

Two Scenarios:

Scenario A: Source Device Forces 4K 120Hz

Result: Halo displays “No Signal”, cannot record

Solution:

1. Access source device settings
2. Manually set output to 4K 60Hz or lower

Example (PS5):

Settings → Screen and Video → Video Output → Resolution → 4K 60Hz

Example (Xbox Series X):

Settings → General → TV & Display Options → Video Modes → 4K 60Hz

Scenario B: Source Device Auto-Negotiates

Result: Halo and source automatically renegotiate

Process:

1. Source detects Halo’s capabilities
2. Source automatically downscales to 4K 60Hz
3. Signal restores within 5-10 seconds
4. Recording proceeds normally

Note: Recommendation: Manually set source device to 4K 60Hz to avoid brief black screen during

auto-negotiation.

How Does Halo Handle Unsupported Resolutions?

Halo Supported Resolutions:

Table 3: Supported Input Resolutions

Resolution	Frame Rate	Recording Support
3840x2160 (4K)	60fps	Full support
3840x2160 (4K)	30fps	Full support
1920x1080 (1080p)	60fps	Full support
1920x1080 (1080p)	30fps	Full support
3840x2160 (4K)	**120fps**	NOT supported
1920x1080 (1080p)	**120fps**	NOT supported

When Source Outputs 4K 120Hz:

Scenario A: Forced Output (Cannot Auto-Negotiate)

Source → Forced 4K 120Hz → Halo Result: “No Signal” displayed Recording: Cannot record

MUST MANUALLY SET SOURCE TO 4K 60Hz

Scenario B: Auto-Negotiation Enabled

Source → Attempts 4K 120Hz → Halo Halo → Responds: “Maximum 4K 60Hz” Source → Auto-adjusts → 4K 60Hz Result: Signal restored, recording works

Brief black screen (3-5 seconds) during negotiation

Tip: Best Practice: Always configure source device to output 4K 60Hz or lower to ensure stable recording without interruptions.

16.4 Storage Formats and Limits

Storage Format and File Size Limits

Q: Is There a Storage Capacity Limit?

Answer: Theoretically unlimited:

- Supports MBR partition table (up to 2TB)
- Supports GPT partition table (over 2TB)
- Tested with 1TB and 2TB portable HDDs successfully

Recommended Capacity:

- Minimum: 128GB for casual use
- Recommended: 512GB for regular recording
- Professional: 1TB-2TB for extensive recording

Q: What Are the File System Limitations?

Table 4: File System Comparison

File System	Single File Limit	Partition Limit	Recommendation
FAT32	4GB maximum	2TB maximum	NOT recommended
exFAT	No practical limit	No practical limit	RECOM-MENDED for 4K recording
NTFS	No practical limit	No practical limit	Also works (Windows default)

FAT32 Single File Limit Explained:

4K@60fps recording at 32 Mbps:

- 4GB file = approximately 3 minutes
- Recording auto-stops when file reaches 4GB
- NOT suitable for continuous recording

Solution: Format to exFAT or NTFS

Q: Why Does 4K Recording Stop After a Few Minutes?

Most Common Cause: FAT32 file system

Symptoms:

- Recording stops automatically after 2-4 minutes
- File size is exactly 4GB
- Multiple 4GB files created for single recording session

Diagnosis:

1. Insert USB drive into computer
2. Right-click → Properties
3. Check “File system” field
4. If shows “FAT32”, this is the problem

Solution:

1. Backup all files from USB drive
2. Format to exFAT (recommended)
3. Configure Halo: Record Settings → File Size → Unlimited
4. Recording will continue without interruption

16.5 Audio Input Differences

Difference Between Line In and MIC Inputs

Understanding Audio Inputs

Line In Input:

- **Purpose:** Connect audio output devices
- **Compatible Devices:** * Smartphones (headphone output) * MP3 players * Audio interfaces * Mixers * Laptops (headphone jack)
- **Signal Level:** Line-level signal (higher voltage)
- **Connection Cable:** 3.5mm male-to-male audio cable
- **DO NOT** connect microphones to Line In (wrong signal level)

MIC Input:

- **Purpose:** Connect microphones
- **Compatible Devices:** * Standalone microphones * Headset microphones * Lavalier mics * Gaming headsets
- **Signal Level:** Mic-level signal (lower voltage)
- **Monitoring:** Supports monitoring with 3-pole microphones
- **DO NOT** connect line-level devices (may cause distortion)

Visual Identification:

Line In: [ICON: Phone/music player] “Line In” label MIC: [ICON: Microphone] “MIC” label

Audio Mixing Scenarios

Scenario 1: Gaming Commentary

Audio Sources:

- HDMI: Game audio from console
- MIC: Voice commentary
- Line In: (Not used, set volume to 0)

OSD Settings:

- Video-In Volume: 70-80 (game audio)
- Mic In Volume: 80-90 (voice)
- Line In Volume: 0 (disabled)

Scenario 2: Streaming with Background Music

Audio Sources:

- HDMI: Game/video audio
- MIC: Voice commentary
- Line In: Smartphone playing background music

OSD Settings:

- Video-In Volume: 75 (main audio)
- Mic In Volume: 85 (voice priority)
- Line In Volume: 30-40 (subtle background)

Scenario 3: Podcast Recording

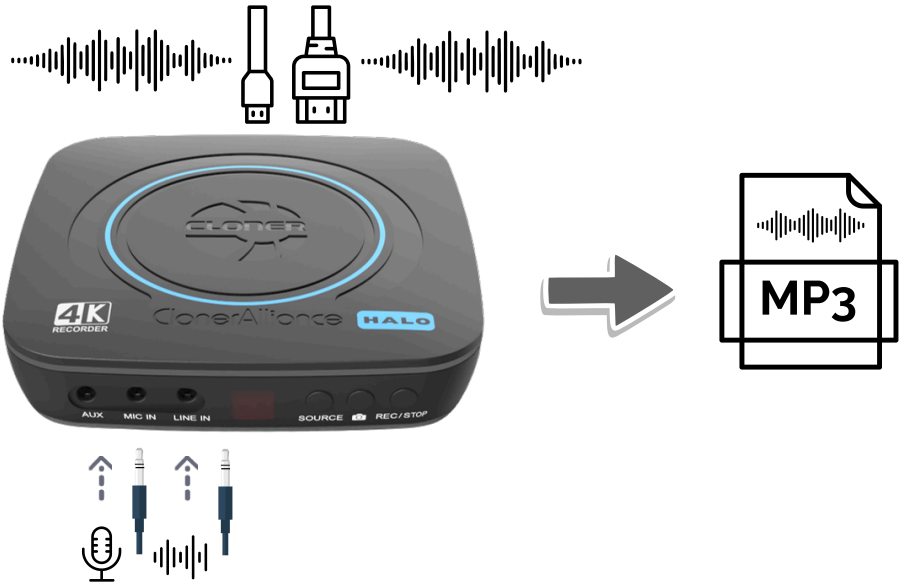
Audio Sources:

- HDMI: (No video source, set to 0)
- MIC: Host microphone
- Line In: Guest phone call or music

OSD Settings:

- Video-In Volume: 0 (no video)
- Mic In Volume: 90 (primary voice)
- Line In Volume: 50-60 (guest or music)

Warning: Common Mistake: Connecting a microphone to Line In will result in very low volume. Always use MIC input for microphones.



16.6 Playback Issues

Recorded Files Won't Play

Symptoms:

- Double-clicking video file does nothing
- Video plays with no picture or no sound
- Player displays error message

Possible Causes and Solutions:

Cause 1: Incomplete Recording (File Corruption)

How It Happens:

- Power loss during recording
- Storage device removed while recording
- Halo powered off without stopping recording

Diagnosis:

Check file extension:

- .mp4 or .ts = Normal file (may still be corrupted)
- .tmp = Temporary file (recording not properly stopped)

Check file size:

- Extremely small (few KB) = Corrupted
- Normal size but won’t play = Partial corruption

Solution:

Unfortunately: Corrupted files usually cannot be recovered

Prevention:

1. Always press REC/STOP to stop recording properly
2. Wait for side LED to stop flashing before power off
3. Wait for “saving file” LED sequence to complete
4. Use UPS (uninterruptible power supply) for critical recordings

Cause 2: Media Player Doesn’t Support H.265

Explanation:

- Halo records in H.265/HEVC codec by default
- Windows Media Player does not support H.265
- Many default media players lack H.265 support

Solution:

Option 1: Install VLC Media Player (Recommended)

- Free and open-source
- Supports all codecs including H.265
- Download: https://www.videolan.org/
- Available for Windows, macOS, Linux

Option 2: Install Alternative Players

- PotPlayer (Windows): https://potplayer.daum.net/
- MPC-HC (Windows): https://mpc-hc.org/
- IINA (macOS): https://iina.io/

Option 3: Change Recording Codec to H.264

- OSD: Record Settings → Video Codec → H.264
- Better compatibility but larger file size

Cause 3: Wrong File Extension

Diagnosis:

Check file name:
Normal: VID_20260201143025.mp4 Normal: VID_20260201143025.ts Problem: VID_20260201143025.tmp

.tmp files = Recording not completed

Solution:

For .tmp files:
1. Try renaming .tmp to .mp4
2. Attempt to play with VLC
3. If still fails, file is likely corrupted

Prevention:
- Always stop recording with REC/STOP button
- Don’t power off during recording

Cause 4: Storage Device File System Error

Solution:

Windows:
1. Insert USB drive into computer
2. Right-click drive → Properties
3. Tools tab → Click “Check”
4. Select “Scan and repair drive”
5. Wait for completion

macOS:
1. Open Disk Utility
2. Select USB drive
3. Click “First Aid”
4. Run repair

Alternative (Using Halo):
1. MENU → Storage
2. Select “Format Storage Device”
3. Choose exFAT format
4. WARNING: This erases all files

16.7 Multiple Storage Devices

Both USB and TF Card Connected - Which Records?

Recording Priority:

Detection Priority:

1. First detected device gets priority
2. Usually USB storage (if inserted first)
3. Side LED color indicates active device: - Green = Recording to USB - Blue = Recording to TF card

Scenario Examples:

Example 1: USB Inserted First

Startup sequence:

1. Insert USB drive
2. Insert TF card
3. Power on Halo

Result:

- Side LED: Solid Green (USB priority)
- Recording saves to USB drive
- TF card ignored

Example 2: TF Card Inserted First

Startup sequence:

1. Insert TF card
2. Insert USB drive
3. Power on Halo

Result:

- Side LED: Solid Blue (TF card priority)
- Recording saves to TF card
- USB drive ignored

Switching Recording Device:

Method 1: Physical Removal

1. Stop recording if active
2. Remove unwanted storage device
3. Only desired device remains
4. Start recording

Method 2: OSD Selection (if supported)

1. MENU → Storage
2. Select target device
3. Start recording

Tip: Best Practice: Use only ONE storage device at a time to avoid confusion about where files are saved.

16.8 Recording Status Indicators

How Do I Know Recording is Active?

Visual Indicators (Multiple Methods):

Indicator 1: Side LED Flashing

Recording Active:

- Side LED flashes (green or blue)
- Flash rate: Approximately once per second

Recording Stopped:

- Side LED solid (green or blue)
- No flashing

Indicator 2: On-Screen "REC" Symbol

If enabled in OSD:

Recording Active:

- Red "REC" symbol in top-right corner
- Recording timer in top-left (optional)

Recording Stopped:

- "REC" symbol disappears

Enable/Disable:

MENU → Record Settings → Display "REC" while recording → ON/OFF

Indicator 3: Recording Duration Timer

If enabled:

- Top-left corner shows recording time
- Format: HH:MM:SS
- Example: 00:15:37 (15 minutes 37 seconds)

Enable:

MENU → Record Settings → Time Watermark → ON

Stopping Recording - Confirmation:

When you press REC/STOP to stop:

1. Side LED stops flashing
2. Side LED may show green/blue alternating (saving file)
3. “REC” symbol disappears from screen
4. Recording timer stops/disappears
5. Side LED returns to solid color (file saved)

Total process: 1-3 seconds

Warning:

DO NOT:

- Remove storage device while side LED is flashing or alternating
- Power off Halo while “REC” symbol is displayed
- Unplug power during file saving (alternating LED)

Wait for solid LED before disconnecting anything

16.9 Miscellaneous

Can I Record and Stream Simultaneously?

Answer: Yes! This is called “Dual Recording”

Setup:

Hardware Connections:

1. Insert USB storage into Halo STORAGE port
2. Connect Halo TO PC to computer USB 3.0
3. Connect video source to Halo HDMI IN
4. Connect power adapter

Recording Configuration:

Halo (Local Recording):

- Press REC on Halo to start local recording
- Records to USB storage at max quality
- File: High-bitrate H.265 for archival

Computer (OBS Recording/Streaming):

- Open OBS Studio
- Add Halo as Video Capture Device
- Start recording or streaming
- File: Customizable quality/format

Benefits of Dual Recording:

Table 5: Dual Recording Advantages

Aspect	Halo Local Recording	OBS Computer Recording
Quality	Maximum (50 Mbps H.265)	Customizable (8-30 Mbps)
Purpose	Archive, editing	Streaming, upload
Overlays	None (raw footage)	Webcam, text, alerts
File Size	Larger (~22 GB/hr 4K60)	Smaller (~5-10 GB/hr)
Backup Safety	Independent storage	Computer HDD

Recommended Strategy:

Streaming Session Workflow:

1. Halo records pristine 4K60 raw footage (no overlays) → For highlights, editing, YouTube uploads
2. OBS records/streams 1080p60 with overlays → For live stream, Twitch VOD

Result:

- Live stream with professional overlays
- High-quality archive for post-production
- Backup in case stream recording fails

Does Halo Support 5.1 or 7.1 Surround Sound?

Answer: No, Halo only supports 2.0 stereo audio

Technical Explanation:

Input Audio Support:
- HDMI: 2.0 stereo (2-channel)
- Line In: Stereo
- MIC: Mono

Output Audio:
- Recording: 2.0 stereo AAC
- HDMI OUT: 2.0 stereo

NOT Supported:
5.1 surround (6 channels) 7.1 surround (8 channels) Dolby Atmos DTS-HD

What Happens with 5.1 Source:

If source outputs 5.1 surround:
- Halo automatically downmixes to 2.0 stereo
- All channels mixed into left/right stereo
- No audio loss, but spatial positioning lost

Recommended:
- Set source device to output stereo/PCM 2.0 for best compatibility

Can I Use Halo While Charging Phone via DP IN?

Answer: Yes! This is a key feature of Type-C DP recording

65W Power Delivery:

DP IN Type-C port provides:
- Video input: DisplayPort Alt Mode
- Charging output: Up to 65W (USB PD 2.0)

Simultaneous Functions:
Receive 4K60 video from phone/laptop Charge connected device at 65W Record video to storage Pass through to HDMI OUT for monitoring

Supported Devices:

Smartphones:
- Samsung Galaxy S24 Ultra/S24+/S24

- Google Pixel 9 Pro/9
- iPhone 17 Pro Max / 16 Pro Max (w/ USB-C)

Laptops:

- MacBook Air M4/M3
- MacBook Pro M4/M3
- Microsoft Surface Laptop 7
- Dell XPS 13/15/17

Tablets:

- iPad Pro M4/M2 (USB-C models)
- Samsung Galaxy Tab S9 Ultra

Note: For complete Type-C recording guide and compatible device list, see *USB Type-C Recording Guide*

16.10 Related Chapters

- *Troubleshooting* - Detailed Problem Diagnosis and Solutions
- *Quick Start Guide* - Basic Recording Setup
- *System Setup and Menu Navigation* - OSD Menu Complete Reference
- *USB Type-C Recording Guide* - Type-C DP Recording Guide
- *Audio Recording and Extraction* - Audio Mixing Configuration
- *Storage Management* - Storage Requirements and File Systems
- *TO PC Streaming Mode* - Dual Recording and OBS Setup

This chapter provides systematic troubleshooting procedures for common issues. For quick answers to specific questions, see *Frequently Asked Questions*.

17.1 Before You Begin

Troubleshooting Checklist

Before diagnosing specific issues, verify these basic requirements:

Power and Connections:

- Power adapter connected (65W, DC 12V 5A)
- All cables firmly inserted
- HDMI cables are HDMI 2.0 certified
- USB cables are USB 3.0 rated (for TO PC mode)

Storage Device:

- USB drive or TF card inserted
- Side LED lit (green or blue)
- Storage formatted to exFAT or NTFS
- Sufficient free space available

Video Source:

- Source device powered on
- Source set to correct output (HDMI/DP)
- Source resolution set to 4K60 or lower

System Settings:

- System time set correctly (for scheduled recording)
- Record settings configured properly
- Firmware version up to date

LED Indicator Reference

Understanding LED indicators helps diagnose issues quickly:

Table 1: LED Quick Diagnostic Reference

LED Status	Location	Meaning
Solid Green (Top)	Top ring	HDMI input active
Solid Blue (Top)	Top ring	Type-C DP input active
Flashing (Top)	Top ring	Input selected, no sig.
Solid Green (Side)	Side panel	USB storage ready
Solid Blue (Side)	Side panel	TF card ready
Flashing (Side)	Side panel	Recording in progress
Off (Side)	Side panel	No storage detected

17.2 Power and Startup Issues

Device Won't Power On

Symptoms:

- No LED indicators light up
- No display on HDMI OUT
- Device appears completely dead

Diagnosis and Solutions:

Step 1: Check Power Adapter

Verify:

- Power adapter plugged into wall outlet
- Outlet has power (test with another device)
- DC connector firmly inserted into Halo
- Power adapter LED lit (if equipped)

Required Specifications:

- Output: DC 12V 5A (65W minimum)

- Connector: DC barrel jack

Test:

1. Try different wall outlet
2. Check power adapter LED indicator
3. Try different power adapter (if available)

Step 2: Check DC Power Jack

Possible Issue: Loose connection

Test:

1. Gently wiggle DC connector
2. If LEDs flicker, connection is loose
3. Try inserting connector more firmly
4. Inspect for physical damage

If Still No Power:

- Power adapter may be faulty → Try replacement
- Internal power issue → Contact technical support
- Warranty service may be required

Device Powers On But No Display

Symptoms:

- LEDs are lit
- HDMI OUT connected but shows no signal
- Monitor displays "No Signal"

Solutions:

Step 1: Check Monitor Connection

1. Verify HDMI OUT connected to monitor
2. Ensure monitor powered on
3. Select correct HDMI input on monitor
4. Try different HDMI port on monitor

Step 2: Check HDMI Cable

1. Use HDMI 2.0 certified cable
2. Try different HDMI cable
3. Cable length ≤ 3 meters recommended

Step 3: Check Video Source

1. Connect video source to HDMI IN
2. Top LED should turn solid green/blue
3. If flashing, source has no signal

Step 4: Reset Display Settings

1. MENU → System Settings
2. HDMI OUT Resolution → Auto
3. Restart Halo

17.3 Recording Issues

Cannot Start Recording

Symptoms:

- Pressing REC button does nothing
- Side LED doesn’ t start flashing
- No recording file created

Diagnosis Steps:

Issue A: No Storage Device Detected

Check:

- Side LED completely OFF = No storage detected

Solutions:

1. Power off Halo (unplug power adapter)
2. Insert USB drive or TF card

3. Power on Halo (reconnect power adapter)
4. Side LED should turn solid green/blue

If still not detected:

- See “Storage Device Not Recognized” section below

Issue B: Storage Device Full

Check:

1. MENU → Storage
2. View available space

If space is low:

Solution A: Delete unwanted files

- MENU → Video/Image/Audio
- Select files to delete

Solution B: Use larger storage device

- Replace with higher capacity drive

Issue C: Wrong Recording Mode

Check:

Press Switch button (headphone icon) on remote to verify recording mode:

- Video Recording mode (records video)
- Audio Only mode (records audio only to MP3)

If in wrong mode:

- Press Switch button to toggle to Video Recording

Issue D: Input Signal Problem

Check:

- Top LED flashing = No input signal

Solution:

1. Verify video source is powered on
2. Check HDMI IN cable connection
3. Confirm source is outputting video
4. Top LED should be solid (not flashing)

Recording Stops Unexpectedly

Symptoms:

- Recording starts normally
- Recording stops after short time
- File created is smaller than expected

Possible Causes:

Cause A: Storage Full

Diagnosis:

- Check OSD for “Storage Full” message
- Check storage capacity in MENU → Storage

Solutions:

1. Transfer files to computer
2. Delete unnecessary files
3. Use larger capacity storage
4. Enable Loop Recording (auto-delete old files)

Cause B: Signal Loss Auto-Stop

Diagnosis:

- Video source lost signal during recording
- Auto-Stop feature triggered

Check Setting:

MENU → Record Settings → Auto-Stop on Signal Loss

- Options: Off / 10s / 30s / 1 min

Solutions:

Option 1: Disable Auto-Stop

- Set to “Off” for uninterrupted recording
- Recording continues even if signal lost

Option 2: Fix Signal Source

- Ensure source device remains on
- Check for loose HDMI connections

Cause C: File Size Limit Reached

Diagnosis:

- Multiple files created from single recording
- Each file exactly 4GB or 16GB

Check Setting:

MENU → Record Settings → File Size

Solutions:

- Set File Size to “Unlimited”
- Ensure storage uses exFAT or NTFS (not FAT32)

Cause D: Storage Device Write Error

Diagnosis:

- Storage device too slow
- Device overheating
- Bad sectors on storage

Solutions:

1. Use faster USB 3.0 drive (≥60MB/s write speed)
2. Replace with SSD for reliable performance
3. Format storage device to resolve errors
4. Run disk check on computer

Recording Quality Issues

Dropped Frames / Stuttering Playback

Symptoms:

- Recorded video stutters during playback
- Frame drops visible
- Audio/video out of sync

Solutions:

Cause 1: Slow Storage Device

Diagnosis:

- USB 2.0 device (too slow for 4K60)
- TF card with low write speed

Solution:

- Use USB 3.0 SSD or high-speed USB drive
- Write speed ≥ 60MB/s required for 4K60
- Check device specifications

Cause 2: Bitrate Too High for Storage

Diagnosis:

- Recording at 50 Mbps on slow device

Solution:

- Reduce bitrate: 50 → 32 Mbps (still excellent quality)
- MENU → Record Settings → Video Bitrate

Cause 3: Storage Device Overheating

Diagnosis:

- USB drive gets very hot during recording
- Performance throttles when hot

Solution:

- Use portable SSD (better heat dissipation)
- Avoid prolonged 4K60 recording on small USB drives

Pixelation / Blocking Artifacts

Symptoms:

- Video looks pixelated or blocky
- Compression artifacts visible in fast motion
- Poor image quality

Solutions:

Cause: Bitrate Too Low

Diagnosis:

- Check current bitrate setting
- MENU → Record Settings → Video Bitrate

Solutions:

Resolution: 4K@60fps

- Minimum: 32 Mbps
- Recommended: 40-50 Mbps

Resolution: 1080p@60fps

- Minimum: 16 Mbps
- Recommended: 20-24 Mbps

Tip: Higher bitrate = better quality but larger files

17.4 Storage Device Issues

Storage Device Not Recognized

Symptoms:

- Side LED remains OFF
- Storage device not visible in OSD
- Cannot start recording

Systematic Troubleshooting:

Step 1: Verify Correct Power-On Sequence

> **Danger:** **CRITICAL:** Storage must be inserted BEFORE powering on Halo

Correct Procedure:

1. Ensure Halo is powered OFF
2. Insert USB drive into STORAGE port (or TF card)
3. Connect power adapter
4. Wait 3-5 seconds
5. Side LED should light up (green or blue)

If inserted after power-on:

1. Power off Halo completely (unplug power adapter)
2. Remove storage device

3. Follow correct procedure above

Step 2: Check Storage Device on Computer

Windows:

1. Insert storage into computer USB port
2. Open File Explorer
3. Right-click drive → Properties
4. Check:
   - File system (should be exFAT or NTFS)
   - Capacity recognized correctly
   - No error messages
5. If errors detected:
   a. Properties → Tools → Error checking
   b. Click "Check" and "Scan drive"
   c. Repair any errors found

macOS:

1. Insert storage into Mac
2. Open Disk Utility
3. Select the drive
4. Click "First Aid"
5. Run repair process

Step 3: Format Storage Device

Windows Format Procedure:

1. Right-click drive → Format
2. File system: exFAT (RECOMMENDED)
3. Allocation unit size: Default
4. Volume label: (Optional name)
5. Quick Format: Checked
6. Click Start

Warning: Erases all data

macOS Format Procedure:

1. Disk Utility → Select drive
2. Click “Erase”
3. Format: exFAT
4. Scheme: GUID Partition Map
5. Click “Erase”

Warning: Erases all data

Step 4: Try Different Storage Device

Test with known-good device:

- Different USB drive
- Different brand/model
- Portable SSD
- Different TF card

If new device works:

- Original device is faulty or incompatible

If new device also fails:

- Possible hardware issue with Halo
- Contact technical support

Files Saved But Cannot Be Found

Symptoms:

- Recording completed successfully
- Files not visible on computer
- Storage shows space used but no files

Solutions:

Issue A: Files in Subfolder

Check:

- Files saved in /DCIM/ or /VIDEO/ folder
- Browse all folders on storage device

Halo default save location:

- Root directory (main folder)

Issue B: Hidden Files

Windows:

1. File Explorer → View tab
2. Check "Hidden items"
3. Files may now appear

macOS:

1. Finder → Press Cmd + Shift + . (period)
2. Hidden files become visible

Issue C: File System Corruption

Solution:

1. Run disk check/repair (see Step 2 above)
2. Use data recovery software if needed
3. Format storage and start fresh

17.5 Video Signal Problems

No Input Signal Detected

Symptoms:

- Top LED flashing
- HDMI OUT shows "No Signal"
- Cannot start recording

Diagnosis Steps:

Step 1: Check Physical Connections

- HDMI cable fully inserted into source device
- HDMI cable fully inserted into Halo HDMI IN
- Cable not damaged (inspect for bends/breaks)
- Try different HDMI cable (HDMI 2.0 certified)

Step 2: Check Source Device

- Source device powered on
- Source outputting video signal
- Source set to correct HDMI output port
- Source display settings active (not sleep mode)

Step 3: Check Source Resolution Settings

Access source device display settings:

PS5:

- Settings → Screen and Video → Video Output
- Resolution: 4K 60Hz or 1080p 60Hz

Xbox Series X/S:

- Settings → General → TV & Display Options
- Resolution: 4K 60Hz or 1080p 60Hz

Windows PC:

- Settings → Display → Resolution
- Set to 3840×2160 60Hz or 1920×1080 60Hz

macOS:

- System Preferences → Displays
- Resolution: Default or 4K 60Hz

Step 4: Test with Different Source

- Try different source device (another console, PC, camera)
- If works with different source → Original source has issue
- If still fails → Halo input port may have issue

Image Flickering or Unstable

Symptoms:

- Video flickers on HDMI OUT
- Image periodically goes black
- Unstable picture quality

Solutions:

Cause 1: HDMI Cable Quality

Solution:

- Use certified HDMI 2.0 cable
- Cable length ≤ 3 meters (10 feet)
- Avoid cheap/damaged cables
- Try different cable to test

Cause 2: Source Resolution Switching

Solution:

- Lock source resolution to fixed setting
- Disable auto-resolution detection
- Set to 4K 60Hz or 1080p 60Hz

Cause 3: HDMI OUT Resolution Mismatch

Solution:

1. MENU → System Settings
2. HDMI OUT Resolution → Auto
3. Or manually set to match monitor capabilities

17.6 Audio Problems

No Audio in Recording

Symptoms:

- Video records successfully

- Playback shows video but no sound
- Audio completely missing

Diagnosis:

Step 1: Check Audio Source

Test HDMI Audio:

1. Connect HDMI OUT to TV/monitor with speakers
2. If no audio on monitor → Source has no audio
3. Check source audio settings

Verify source audio output:

- Source audio not muted
- Source outputting PCM/stereo audio
- Source volume not at 0

Step 2: Check Halo Audio Settings

MENU → Audio Settings

Check levels:

- Video-In Volume: Should be 50-100
- If set to 0 → No HDMI audio recorded

Recommended settings:

- Video-In Volume: 70-80
- Line In Volume: 0 (if not used)
- Mic In Volume: 0 (if not used)

Step 3: Test Playback

- Use VLC Media Player (supports all formats)
- Check player volume is not muted
- Check correct audio track selected (if multi-track)

Audio Out of Sync with Video

Symptoms:

- Audio delayed or advanced relative to video
- Lip-sync issues
- Audio drift over time

Solutions:

Cause 1: Source Device Issue

Test:

- Play file on different device
- If sync problem persists → Issue during recording
- If plays fine → Playback device problem

Solution:

- Update source device firmware
- Use different video output settings on source

Cause 2: Variable Frame Rate Source

Some sources output variable frame rate:

- Webcams
- Some PCs
- Screen recording

Solution:

- Set source to constant frame rate output
- Use 60 fps or 30 fps (not variable)

Cause 3: Playback Software Issue

Solution:

- Try VLC Media Player
- Update media player to latest version
- Check audio delay compensation settings in player

Audio Volume Too Low or Distorted

Symptoms:

- Recorded audio barely audible
- Or audio is distorted/clipping

Solutions:

Problem: Volume Too Low

Check levels in MENU → Audio Settings:

HDMI Audio:

- Video-In Volume: Increase to 80-90

Microphone:

- Mic In Volume: Increase to 80-90
- Ensure using MIC input (not Line In)

Line In (music/phone):

- Line In Volume: Increase to 50-70

Problem: Audio Distorted/Clipping

Diagnosis:

- Audio levels too high
- Input signal too strong

Solutions:

- Reduce volume levels to 60-70
- Decrease source device output volume
- For microphones: Move mic farther from mouth
- For Line In: Reduce source volume

17.7 TO PC Mode Issues

Computer Doesn't Detect Halo

Symptoms:

- Computer shows no new device
- Halo not listed in OBS/software
- USB connection not recognized

Solutions:

Step 1: Check USB Connection

- Using TO PC port (Type-C on side panel)
- NOT using STORAGE port by mistake
- USB cable is USB 3.0 rated (blue connector)
- Connected to computer USB 3.0 port (blue)
- Cable firmly inserted both ends

Step 2: Verify USB Port

Test port:

- Connect different USB device to same port
- If other device works → Port is OK
- If doesn't work → Try different USB port

USB 3.0 required for 4K60:

- Look for blue USB port on computer
- Or SS (SuperSpeed) marking

Step 3: Check Device Manager (Windows)

1. Right-click Start → Device Manager
2. Look under:
   - "Cameras" or "Imaging Devices"
   - "Sound, video and game controllers"
3. Should see "USB Video Device" or "UHD Halo"

If shows yellow exclamation mark:

- Right-click → Update Driver
- Select "Search automatically"

If not listed at all:

- Try different USB port
- Try different USB cable
- Restart computer

Step 4: Check System Information (macOS)

1. Apple menu → About This Mac → System Report
2. Hardware → Camera
3. Should list "USB Video Device"

If not listed:

- Reset SMC (System Management Controller)
- Try different USB port
- Restart Mac

OBS Shows Black Screen from Halo

Symptoms:

- Halo recognized in OBS
- Video preview shows black screen
- No image from Halo

Solutions:

Issue 1: No Input Signal to Halo

Check:

- Video source connected to Halo HDMI IN
- Top LED solid (not flashing)
- Source device outputting video

Test:

- Connect HDMI OUT to monitor
- If monitor shows video → Halo receiving signal

- If black → Fix input signal first

Issue 2: Wrong Device Selected in OBS

Verify:

1. Sources → Video Capture Device → Properties
2. Device: Select "USB Video" or "UHD Halo"
3. NOT selecting webcam or other device

Issue 3: Resolution/Format Mismatch

Configure OBS:

1. Device Properties
2. Resolution/FPS Type: Custom
3. Resolution: 3840x2160 or 1920x1080
4. FPS: 60 or 30
5. Video Format: NV12 (recommended)

If still black:

- Try different resolution
- Try different video format (MJPEG, YUY2)

Issue 4: OBS Using GPU That Doesn't Support Capture

Solution:

1. OBS → Settings → Video
2. Renderer: Try different option (Direct3D 11/OpenGL)
3. Restart OBS

4K60 Not Available in OBS

Symptoms:

- OBS only shows 1080p options
- 4K 60fps not selectable
- Maximum resolution limited

Cause: USB 2.0 connection (too slow for 4K60)

Solutions:

Verify USB 3.0 Connection:

1. Check USB cable is USB 3.0 (blue connector/SS marking)
2. Computer USB port is USB 3.0 (blue color/SS symbol)
3. NOT using USB hub (direct connection only)

Check USB Speed in Halo OSD:

1. Connect Halo TO PC to computer
2. MENU → System Info (if available)
3. Should display "USB 3.0 Super Speed"
4. If shows "USB 2.0 High Speed" → Not USB 3.0

Solutions:

Option 1: Use Correct USB 3.0 Port

- Try different port on computer
- Rear ports often faster than front
- Blue colored ports are USB 3.0

Option 2: Replace USB Cable

- Ensure cable is USB 3.0 certified
- USB-C to USB-C (for USB-C computers)
- USB-C to USB-A 3.0 (for older computers)

Option 3: Update USB Drivers

- Windows Update
- Motherboard manufacturer's website
- USB 3.0 host controller drivers

17.8 Scheduled Recording Issues

Scheduled Recording Didn't Start

Symptoms:

- Scheduled time passed
- No recording file created
- Task didn’t execute

Diagnosis Checklist:

System Time Verification:

1. MENU → System Settings → System Time
2. Verify time is correct (accurate to minute)
3. Verify time zone is set correctly
4. If wrong → Set correct time and retest

Schedule Configuration:

1. MENU → Schedule Settings
2. Schedule master switch: ON (not OFF)
3. Select task number
4. Task Enable: ON (not OFF)
5. Verify start time set correctly
6. Verify date set correctly (for “Once” mode)

Power Status:

- Halo must remain powered on continuously
- If powered off → Scheduled tasks won’t run
- Use UPS for power backup

Storage Device:

- USB/TF card must be inserted and detected
- Side LED lit (green or blue)
- Sufficient free space available

Video Signal:

- Source device must be active during schedule
- Top LED should be solid (not flashing)
- Test source manually before scheduled time

Testing Procedure:

Test with Short Duration:

1. Set test task: 2 minutes from current time
2. Duration: 2 minutes
3. Wait for start time
4. Verify recording starts (side LED flashes)
5. Verify recording stops after 2 minutes
6. Check file created in storage

If test succeeds:

- Configuration correct, safe to use for actual schedule

If test fails:

- Check each item in diagnosis checklist above

17.9 Firmware and System Issues

OSD Menu Appears in Wrong Language

Symptoms:

- Menu text in unfamiliar language
- Cannot navigate due to language barrier

Solution:

Change Language (Visual Guide):

1. Press MENU on remote
2. Navigate down to item with gear/settings icon (Usually System Settings)
3. Look for option with “A 文” or language symbols
4. Select and cycle through options:
    - English
    - Japanese
    - German
    - Italian
    - Thai
    - Chinese Traditional
    - Chinese Simplified
5. Select “English”
6. Press OK to confirm

Settings Not Saving / Reset After Power Off

Symptoms:

- Configure settings in OSD
- After power off/on, settings revert to default
- Changes don’t persist

Possible Causes:

Cause 1: Not Confirming Changes

- Must press OK to save each setting
- Pressing BACK without OK = changes discarded

Correct procedure:

1. Navigate to setting
2. Change value
3. Press OK (confirm)
4. Press BACK (return to menu)

Cause 2: Factory Reset Triggered Accidentally

Check:

- Did you select “Factory Reset” in System Settings?
- This erases all custom settings

Solution:

- Reconfigure settings
- Avoid Factory Reset option

Cause 3: Firmware Issue

Solution:

- Update firmware to latest version
- Contact support if problem persists

Firmware Update Failed

Symptoms:

- Firmware update doesn’t complete
- Device stuck during update
- Error message during update

Safe Recovery:

> **Warning: DO NOT power off during firmware update!** This may brick the device.

If Update Frozen (30+ minutes):

1. Wait at least 30 minutes before intervening
2. If truly frozen (no activity 1+ hour):
   a. Power off by unplugging power adapter
   b. Wait 10 seconds
   c. Reconnect power adapter to restart device
   d. Attempt update again with correct file

Preparation for Update:

1. Download firmware from official source only
2. File name format: ums600_update_ota.img (or similar)
3. Copy to root directory of USB drive (not in folder)
4. File system: FAT32 or exFAT
5. Only one .img file on drive

Update Procedure:

1. Insert USB with firmware file
2. MENU → System Settings → Firmware Update
3. Select file
4. Confirm update
5. Wait patiently (5-15 minutes)
6. Device will restart automatically
7. Verify new version in Firmware Version

17.10 General Tips

Preventive Maintenance

Keep Your Halo Running Smoothly:

Regular Tasks:

- Check for firmware updates monthly
- Clean ventilation holes quarterly
- Inspect cables for damage
- Test storage devices periodically
- Backup important recordings weekly

Avoid Common Mistakes:

- Don’t power off during recording
- Don’t remove storage while recording
- Don’t use damaged HDMI cables
- Don’t exceed storage capacity
- Don’t expose to moisture or extreme heat

Optimal Operating Conditions:

- Temperature: 0°C to 40°C (32°F to 104°F)
- Humidity: 20% to 80% (non-condensing)
- Ventilation: Allow 5cm clearance on all sides
- Surface: Flat, stable surface
- Power: Stable AC outlet (use surge protector)

When to Contact Support

Contact technical support if:

Hardware Issues:

- Device won’t power on (after checking power adapter)
- Physical damage to ports or case
- Burnt smell or unusual noises
- Extreme overheating
- LED indicators behave erratically

Persistent Problems:

- Storage devices never detected (after trying multiple devices)
- TO PC mode never works (after trying multiple computers)
- Video quality always poor (after adjusting settings)
- Firmware update repeatedly fails

Warranty Service:

- Device stopped working within warranty period
- Manufacturing defect suspected
- Authorized repair needed

Support Information:

- See *Contact Us* for contact details
- Have serial number ready (on bottom of device)
- Describe issue in detail with steps attempted
- Include firmware version information

ClonerAlliance Inc. provides 90-Day No Hassle Return(No Additional Fee) and 2-Year Replacement Warranty Service for all hardware. Please rest assured to use ClonerAlliance products.

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ClonerAlliance

Toll free: 1-844-9-CLONER

Support Email: support@cloner-alliance.com

Market Email: market@cloner-alliance.com

www.cloner-alliance.com