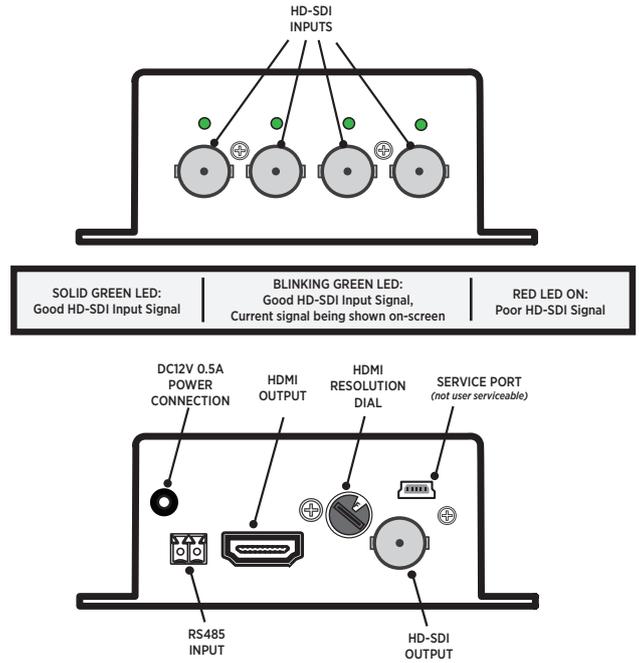
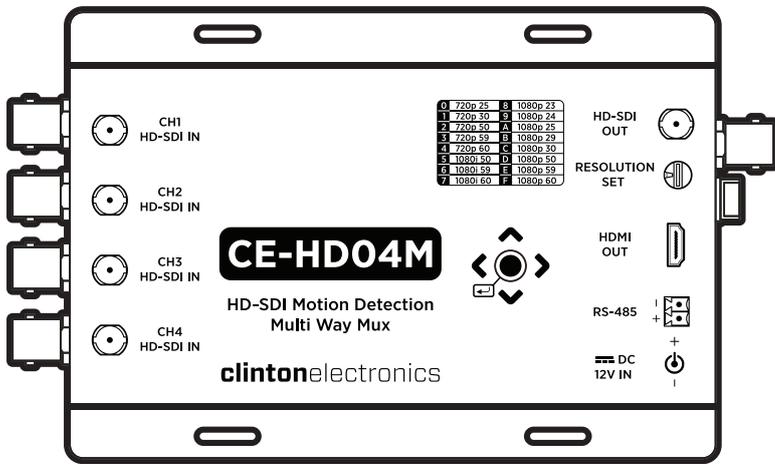


# CE-HD04M User Guide

## HD-SDI Multiplexer

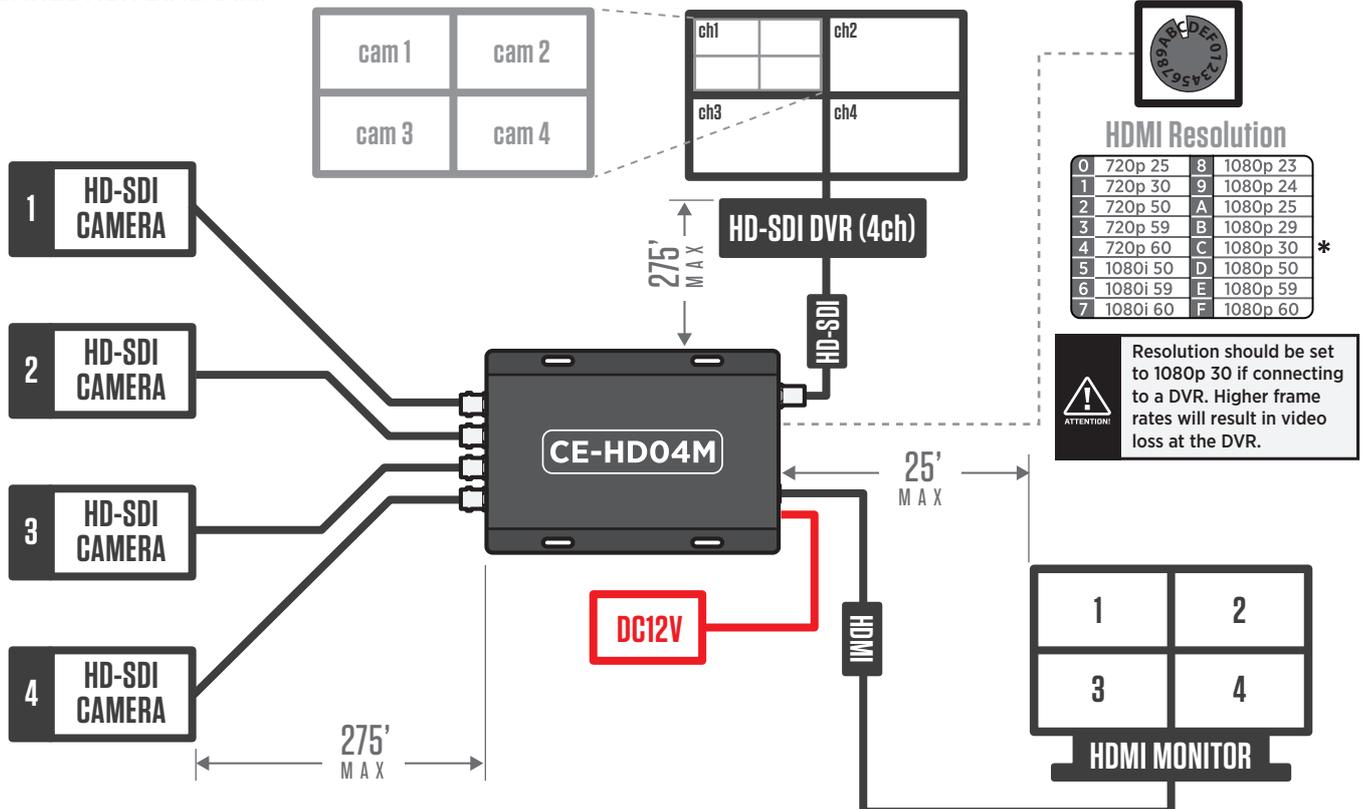
The CE-HD04M Multiplexer enables four HD-SDI signals to be viewed, sequenced and output to a single HD-SDI source, as well as an HDMI source.



### INSTALLATION:

1. Connect the four HD-SDI cables coming from the cameras to the HD-SDI Inputs. Limit each cable distance to a maximum of 275 feet.
2. Connect the HD-SDI cable from the DVR (or HD-SDI monitor) to the HD-SDI Output. Limit this cable distance to a maximum of 275 feet.
3. To view on an additional monitor, connect an HDMI cable from the monitor to the HDMI Output. Limit this cable distance to a maximum of 25 feet.
4. Using the HDMI Resolution Dial, select the desired HDMI display resolution. The output resolution of the device can be found within the resolution setting in the device's OSD. **NOTE: Resolution should be set to 1080p 30 if connecting to a DVR. Higher frame rates will result in video loss at the DVR.**
5. Connect a DC12V 0.5A power supply (sold separately) to the power input.

### CONNECTION DIAGRAM:



\*Distances shown are recommended maximums.

## OSD MENU:

To access the OSD menu, press and hold ENTER (center joystick press) until the menu shows on screen. The current menu selection will be highlighted in yellow. Navigate the menu using UP, DOWN, LEFT, and RIGHT movements on the joystick. To exit the menu, press and hold ENTER until the menu disappears. The menu will automatically disappear after one minute.

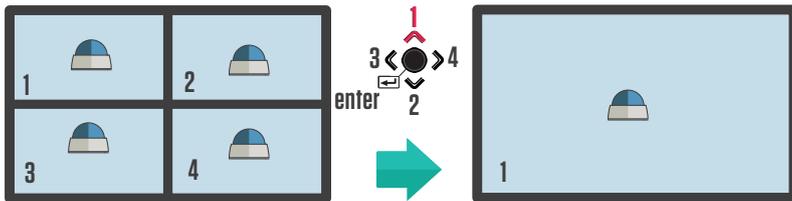


## DISPLAY MODE:

There are multiple display modes available. QUAD, QUAD\_M, SEQ, FULL\_M1, FULL\_M2, DUAL\_N, DUAL\_S, & DUAL\_M.

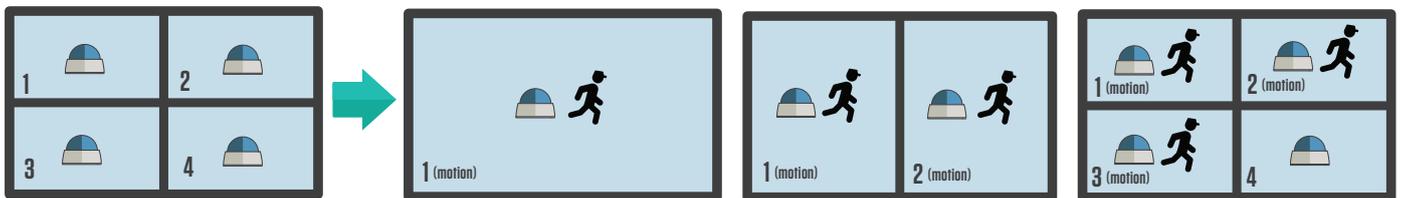
### Quad View (QUAD):

All 4 cameras shown quad view as default. Cameras can be shown full-screen by use of joystick or with an attached RS-485 communication device. Press UP for Channel 1  
Press DOWN for Channel 2  
Press LEFT for Channel 3  
Press RIGHT for Channel 4  
Press ENTER (center press) for Quad View



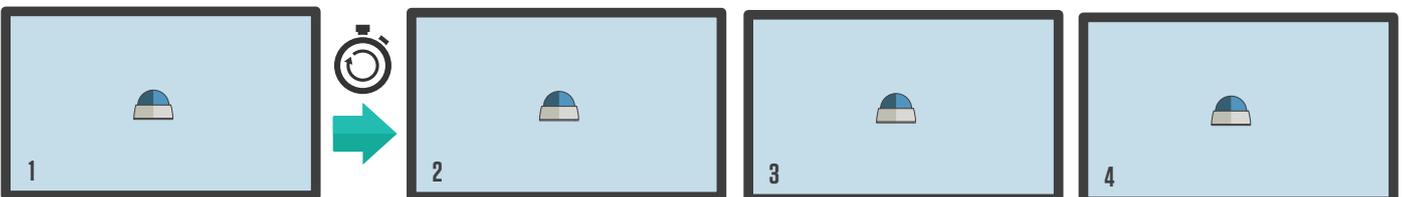
### Quad Motion (QUAD\_M):

All 4 cameras shown quad view as default. Switches to 1 camera full screen if motion occurs on 1 channel. Switches to 2 cameras side-by-side if motion occurs on 2 channels simultaneously. Switches to quad view if motion occurs on 3 or 4 channels simultaneously.



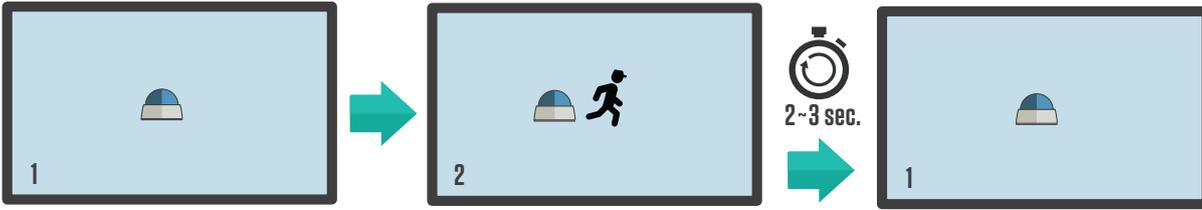
### Sequence (SEQ):

Each channel is cycled through full-screen at the set sequence time. Sequence time can be set from 3-99 seconds.



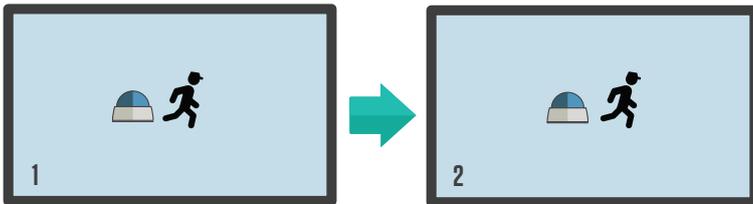
**Motion Mode 1- Default Channel 1 (FULL\_M1):**

The default channel (channel 1) is shown on-screen unless motion is detected on another channel. If motion is detected, that channel will appear on-screen during motion. The default channel will return on-screen after 2-3 seconds after motion stops.



**Motion Mode 2 - Motion Remain (FULL\_M2):**

When motion is detected, the relevant channel is shown on-screen, and will remain on-screen even after motion has ended on that channel. On-screen image will switch to any channel that has motion, and remain on that channel.

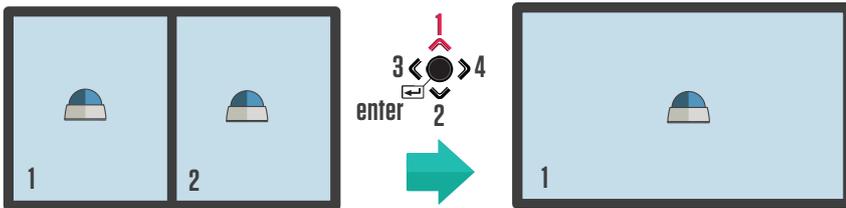


**Dual Mode - Not Condensed (DUAL-N):**

Only 2 channels will be displayed. Each channel will display normal height on the screen (the edges of the camera image will be cropped off, the image will not be condensed). Cameras can be shown full-screen by use of joystick or with an attached RS-485 communication device.

Press UP for Channel 1  
Press DOWN for Channel 2  
Press ENTER (center press) for Dual View.

Channels 3 & 4 will not be shown, and left and right buttons will not function in this mode.

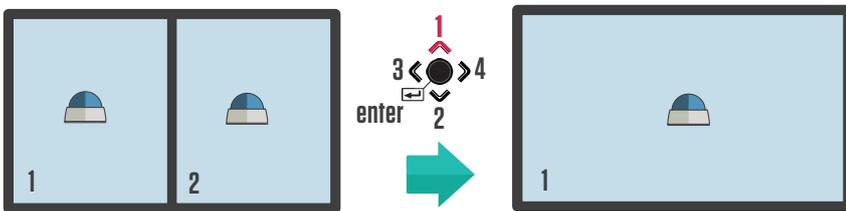


**Dual Mode (DUAL-S):**

Only 2 channels will be displayed. Each channel will be condensed horizontally in order to fit on-screen together. Cameras can be shown full-screen by use of joystick or with an attached RS-485 communication device.

Press UP for Channel 1  
Press DOWN for Channel 2  
Press ENTER (center press) for Dual View.

Channels 3 & 4 will not be shown, and left and right buttons will not function in this mode.



**Dual Mode - Motion (DUAL\_M):**

Only 2 channels will be displayed. Each channel will be condensed horizontally in order to fit on-screen together. Channel 1 & Channel 2 can be shown on-screen by moving the joystick up or down. Pressing ENTER will return to both channels on-screen. Channels 3 & 4 will not be shown, and left and right buttons will not function in this mode.



**SENSITIVITY:**

The motion switching sensitivity level can be set from 1-15. A lower number indicates more sensitive to motion.

**SEQUENCE TIME:**

Duration from 3-99 seconds before on-screen image will change to the next channel in the sequence.

**BORDER LINE:**

Turning Border Line on will show a thin white line around the frame of each channel.

**CH TITLE:**

Turning Ch Title on will show the title for each channel in the lower left corner of each channel's frame.

**CH TITLE SET:**

Select the channel for which you wish to change the title. Press ENTER on the joystick to enter the keyboard screen. Use UP and DOWN to scroll through the letters & symbols. Use LEFT & RIGHT to move the cursor left or right. Press ENTER to select a character. Press & hold ENTER to exit the current menu.

**RESOLUTION:**

Shows the resolution and frames-per-second that is set on the HDMI resolution dial. Resolution should be set to 1080p 30 if connecting to a DVR. Higher frame rates will result in video loss at the DVR.

**SYSTEM ID:**

System ID is used for RS-485 communication. Set to the appropriate setting 1-255 for your RS-485 control.

**BAUDRATE:**

This is the system communication speed used with RS-485 control, which supports 2400, 4800, 9600, and 19200.

**DE-INTERLACE MODE:**

Improve the image quality with De-Interlace compensation, which reduces image noise when inputting an interlaced signal.

**DEFAULT ALL:**

To return settings to their default state, select ON, and press ENTER.

**RS-485 SETTINGS:**

Data Length: 8 Bit  
Start/Stop Bit: 1 Bit  
Parity Bit: None  
Baud Rate: Menu Settings

**COMMUNICATION DATA FORMAT:**

BYTE	VALUE	FUNCTION
1	0xA0	STX (Starting Data)
2	0x16	Device Code: Product Identifying Code
3	0x01 ~ 0xFF	Address (ID for devices)
4	Data Byte	Control Data Code
5	Check Sum	Check Sum = Byte2 + Byte3 + Byte4 (Sub-byte of the sum)

**CONTROL DATA CODE:**

HEX	ASCII	FEATURES	REMARK
0x30 ~ 0x33	0 - 3	CH 01 ~ 04 Full Display	Every channel selected
0x48	H	Menu	Menu Control
0x49	I	Enter	Menu Control
0x50	P	Quad Display	Used in Quad mode
0x51	Q	Dual Display	Used in Dual mode
0x64	d	Down	Menu Control
0x6C	l	Left	Menu Control
0x72	r	Right	Menu Control
0x75	u	Up	Menu Control