

# **2<sup>K</sup> HD ASSIST**

## **User Manual**

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# 1 Introduction

## 1.1 Output Formats

The supported output formats for the camera are shown in Table 1.

Interface	Resolution	Output Format	Frame Rate (Hz)
Single 3G-SDI SMPTE 424M	2048 x 1080 (2K)	4:2:2 Y'Cb'Cr' / RAW	47.95, 48, 50, 59.94, 60
	2048 x 1080	4:4:4 R'G'B'	23.98, 24, 25, 29.97, 30
	1920 x 1080 (HD)	4:2:2 Y'Cb'Cr' / RAW	50, 59.94, 60
	1920 x 1080	4:4:4 R'G'B'	23.98, 24, 25, 29.97, 30
Single HD-SDI SMPTE 292M	2048 x 1080	4:2:2 Y'Cb'Cr' / RAW	23.98, 24, 25, 29.97, 30
	1920 x 1080	4:2:2 Y'Cb'Cr' / RAW	23.98, 24, 25, 29.97, 30
	1920 x 1080 Interlaced	4:2:2 Y'Cb'Cr' / RAW	50, 59.94, 60 (field rates 25, 29.97, 30)
	1280 x 7201	4:2:2 Y'Cb'Cr' / RAW	50, 59.94, 60

Table 1. Supported output formats

## 1.2 Camera Highlights

- Superior image quality
- Low noise and high dynamic range
- Multiple output format options
- Multiple image sampling formats, 4:2:2 / 4:4:4 / RAW
- ISO settings in ½ stop increments (3dB)
- Fine gain adjustment up to 48.0dB
- Advanced color processing
- Automatic exposure and gain control
- Optical Low Pass Filter (OLPF) and IR-Cut filter
- Tri-level sync input
- Rugged aluminum case
- RS485 control with host application or handheld remote
- On Screen Display (OSD) menu overlay
- Low power, 3.7W @ 12V

## 2 Remote Control

A handheld remote control can be used to control the camera. The remote body is made from machined aluminum with a 9-button membrane keyboard making it extremely rugged and durable. On three sides of the remote there are 1/4"-20 (tripod) mounting holes and the bottom side has a 4-pin LEMO connector for power and communications.

Figure 1 shows the front view of the remote control, with a description of the button functions.

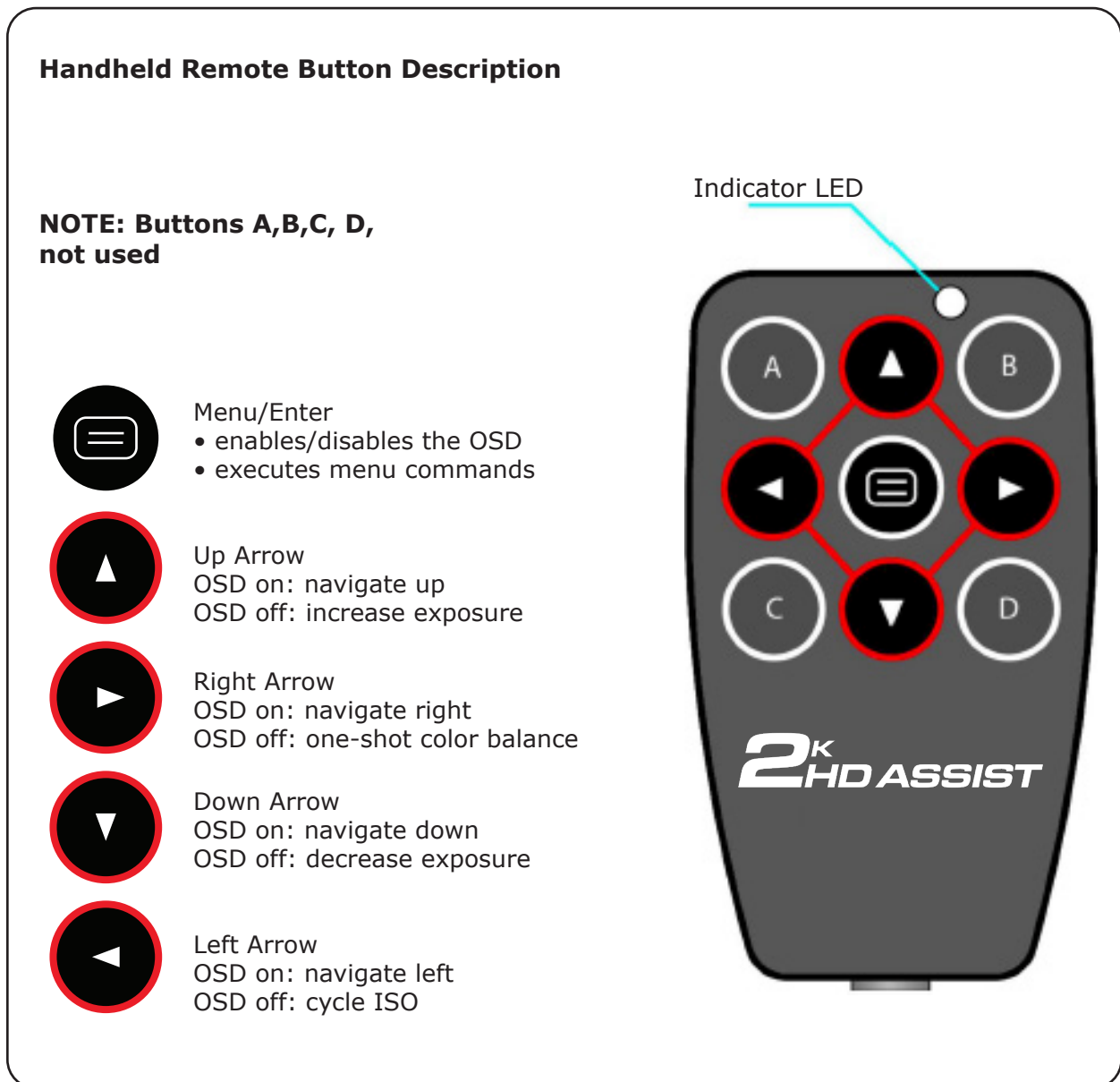


Figure 1. Remote control

## 2.1 On Screen Display

The On Screen Display (OSD) menu overlay is in the top left corner of the output images. The OSD is overlaid on the primary output when the enter button is pressed.

Press the *Enter* button in the center of the remote to open the menu. The main menu is shown in Figure 2.



Figure 2. Main Menu

The main menu is overlaid in the top left of the image, inside the safe action zone. The menu is alpha blended with the luma portion of the image for transparency. The top line or title line of the menu indicates whether the main menu or sub-menu is currently being displayed. The *Enter* button symbol is shown in the top left corner of the main menu to indicate how to exit the main menu. Press the *Enter* button to close the main menu.

Use the *Up* and *Down* scroll keys on the keypad to navigate the main menu, indicated by the up/down arrow in the top right corner of the menu.

The currently selected line is indicated by the mid grey level. The menu background is the lightest grey tone, and the title line is the darkest.

Press the *Right* scroll key to select a sub-menu.

## 2.1.1 Sub-Menus

While in the main menu press the *Right* scroll key to select a sub-menu. The *Exposure* sub-menu is shown in Figure 3.

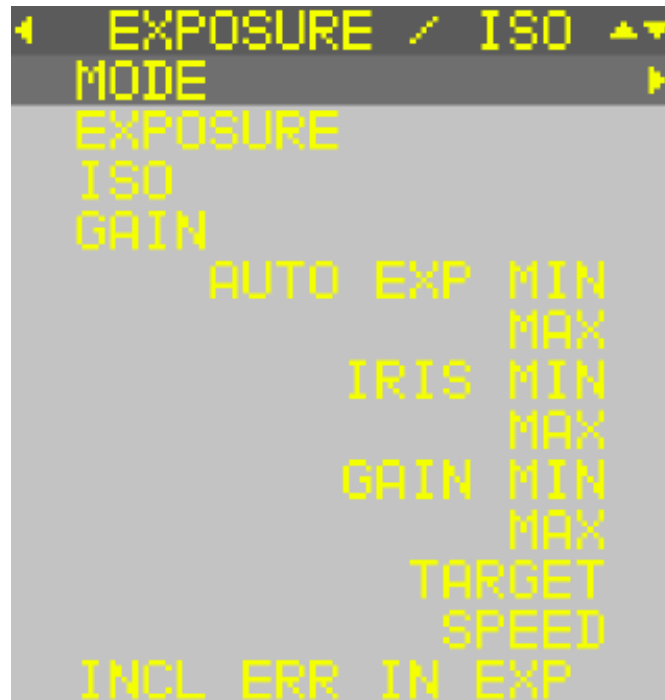


Figure 3. Exposure Sub-menu

The *Left* scroll button symbol is shown in the top left corner of any sub-menu to indicate how to return to the main menu. Press the *Left* scroll button to return to the main menu.

Use the *Up* and *Down* scroll keys on the keypad to navigate the selected sub-menu commands, indicated by the up/down arrow in the top right corner of the menu.

To select a command press the *Right* scroll key while that command is the active line (mid grey tone line). If a command is not selectable the right arrow will not appear when the line is selected. For example changing the exposure is not possible when auto-exposure is enabled.

Figure 4 shows the Exposure sub-menu with the exposure command selected.



Figure 4. Exposure sub-menu with exposure command selected

When a command is selected the current setting is shown to the right of the sub-menu. Only the selected command line is displayed with yellow text and the rest of the sub-menu text is changed to a mid grey value. Use the *Up* and *Down* scroll keys to change the command parameter, indicated by the up/down arrows shown at the end of the parameter line.

When the lowest parameter value for the command is reached only the up arrow will be displayed, and when the highest parameter value is reached only the down arrow will be displayed. If there is only one option for the command neither the up nor down arrow will be shown.

To return to the sub-menu press the *Left* scroll key.

When an exposure related command is selected a secondary overlay is shown to the bottom right of the menu. The exposure command in the camera is set in number of lines. The total number of lines transferred over an SDI interface varies with the resolution and the line time varies with frame rate. The secondary overlay displays the exposure time in commonly used terminology: degrees, fraction of a second and in microseconds.

The Video Format sub-menu with the format command selected is shown in Figure 5.



Figure 5. Video format sub-menu with format command selected

For commands where the *Enter* key is shown at the end of the parameter line, scroll through the list of parameters using the *Up* and *Down* scroll keys and to set the desired parameter press the *Enter* button. After the command completes the on-screen menu will return to the sub-menu. To exit the parameter list for a command press the *Left* scroll key.