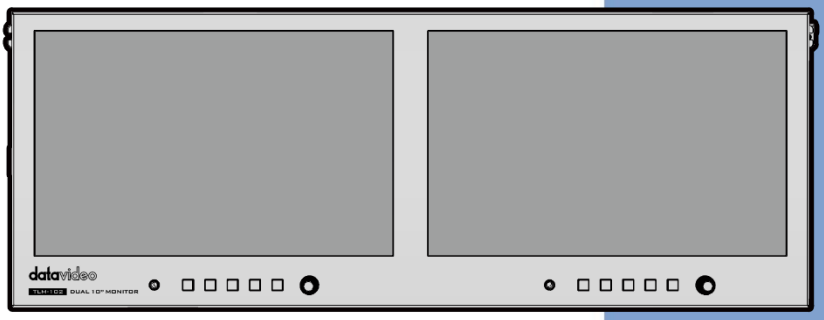
datavideo



4K Dual 10.1” Monitor

TLM-102K

Instruction Manual

www.datavideo.com

Table of Contents

Disclaimer of Product & Services

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Warnings and Precautions

1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.
12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked “Do Not Remove” may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.

13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
    a. When the power cord is damaged or frayed;
    b. When liquid has spilled into the unit;
    c. When the product has been exposed to rain or water;
    d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;
    e. When the product has been dropped or the cabinet has been damaged;
    f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty

Standard Warranty

- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.
- Viruses and malware infections on the computer systems are not covered under warranty.
- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- Cables and batteries are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 are qualified for a free two years extension to the standard warranty, providing the product is registered with Datavideo within 30 days of purchase.
- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Camera module, PCIe Card are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.

Disposal

For EU Customers only - WEEE Marking

This symbol on the product indicates that it should not be treated as household waste. It must be handed over to an applicable take-back scheme for the recycling of Waste Electrical and Electronic Equipment. For more detailed information about the recycling of this product, please contact your local Datavideo office or your local recycling centre.

CE Marking is the symbol as shown on the left of this page. The letters "CE" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.

Introduction

The Datavideo TLM-102K 4K Dual 10” monitor is a 4RU Rack mount dual monitor which is designed for the broadcast quality monitoring application. Datavideo TLM-102K’s 4RU rack design, SDI and HDMI inputs and outputs and different mounting methods make it the best solution for various applications such as live vans, on-site monitoring and video wall.

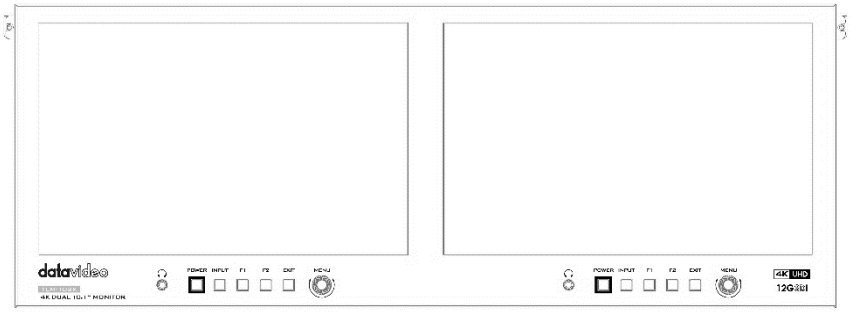
The Datavideo TLM-102K 4K Dual 10” monitor brings high quality and user friendly viewing experience for users via its excellent display quality and advanced auxiliary functions.

Features

- 4K Dual 10” Monitor with 1920*1200 IPS Panel Resolution.
- Dual Monitor with 4RU Rack Mount.
- Support 12G-SDI video input with loop-through output.
- Support HDMI 2.0 video input with loop-through output.
- Support OSD menu for various functions including time code, waveform, vector scope, audio level meter, peaking filter, zoom, pixel to pixel, underscan, check field, etc.
- Individual adjustment of Brightness, Contrast, Color Saturation and LED Backlight Level for each monitor.
- Color temperature menu option has 4 modes (6500K, 7500K,9300K and user defined)
- Support front panel headphone jack.
- Support 15 pin Tally input interface.
- Support user-defined function buttons F1 and F2

Connections and Controls

Front Panel

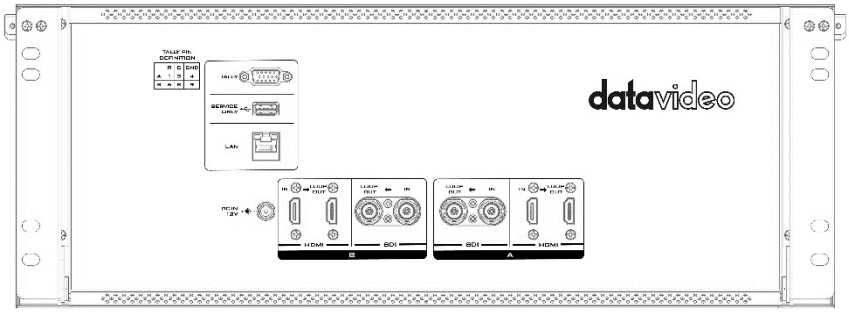


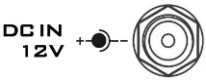
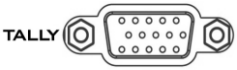
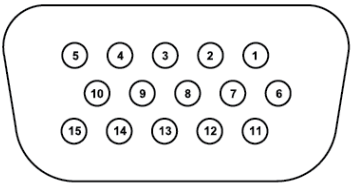
Buttons	Descriptions
	**Headphone Jack** Once the 3.5mm headphone jack is connected, the **internal speaker will be automatically muted**. Follow the menu path **Main Menu** > **Audio** > **Volume** to adjust the audio volume.
POWER 	**Power ON/OFF** This button powers the monitor ON/OFF. The main power connection is located at the rear of the TLM-102K.
INPUT 	**Input Button** Press to select an input source (SDI or HDMI) to view on the monitor. Please note that you can also connect the loop thru port (see ***Rear Panel***) to an external monitor to view the activated input video source.
MENU 	**MENU knob** Press the **MENU** knob to open the OSD menu and make a selection. Rotate the **MENU** knob to navigate.
EXIT 	**EXIT Button** Return/Exit button when the OSD menu is opened.

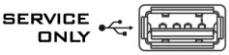
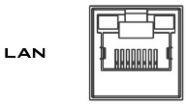
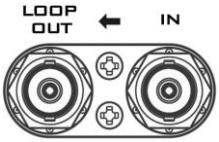
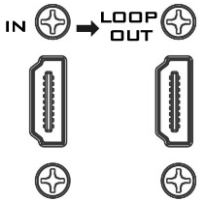
Buttons	Descriptions
F1 F2 	**F1/F2 Shortcut Keys** Press the F1/F2 shortcut keys to access the designated function setting menus. The default function setting menus are shown as follows: F1: Scan F2: Waveform **Customization of Button Functions** The user is allowed to customize or re-assign function setting menus to the F1/F2 shortcut keys. The customization steps are outlined as follows: 1. First press and hold one of the shortcut keys (F1/F2) for approximately 3-5 seconds until a pop-up function list appears on the monitor. The pop-up function list is shown below: • **Center Marker** • **Aspect Marker** • **Check Field** • **Underscan** • **Scan** • **Aspect** • **DSLR** • **Freeze** • **H/V Delay** • **Peaking** • **False Color** • **Exposure** • **Histogram** • **Level Meter** • **Waveform** • **Time Code** 2. Rotate the menu knob left and right to move between options in the pop-up function list. 3. Press the menu knob to assign the highlighted function setting menu to the shortcut key selected at step 1. 4. Press the EXIT button to close the pop-up function list.

Buttons	Descriptions
	Button Reset To reset F1/F2 buttons to the factory defaults, follow the steps outlined as follows: 1. Open the **OSD** menu, and navigate to **SYSTEM**. 2. Press the **MENU** knob to select the **SYSTEM** sub menu. 3. Move down to the **RESET** option and select by pressing the **MENU** knob. 4. Press the **MENU** knob again to enable the reset. **Note: The reset option resets all TLM-102K settings.**

Rear Panel



Ports	Descriptions
	**DC IN 12V** DC in socket connects the supplied 12V PSU. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.
	**Tally Light Input** Tally light information can be supplied to the TLM-102K via the Tally port. The pinout information is provided below. 

<table>
<tr><th>Ports</th><th>Descriptions</th></tr>
<tr><td></td><td>
<table>
<tr><th>Pin No.</th><th>Signal Name</th><th>Descriptions</th></tr>
<tr><td>1</td><td>Red</td><td>Red tally light indicator for monitor A</td></tr>
<tr><td>3</td><td>Green</td><td>Green tally light indicator for monitor A</td></tr>
<tr><td>4</td><td>GND</td><td>Ground for monitor A’s tally signal</td></tr>
<tr><td>6</td><td>Red</td><td>Red tally light indicator for monitor B</td></tr>
<tr><td>8</td><td>Green</td><td>Green tally light indicator for monitor B</td></tr>
<tr><td>9</td><td>GND</td><td>Ground for monitor B’s tally signal</td></tr>
</table>
</td></tr>
<tr><td> 
</td><td>Service Only Port (SERVICE)
For firmware upgrade only; see Firmware Update for more information about firmware upgrade.</td></tr>
<tr><td> 
</td><td>LAN Port
Currently unavailable.</td></tr>
<tr><td> 
</td><td>SDI Input/Output Pair
Connect an SDI video source to the SDI IN port. The Loop Out port is simply a loop thru output of the SDI input.</td></tr>
<tr><td> 
</td><td>HDMI Input/Output Pair
Connect an HDMI video source to the HDMI IN port. The Loop Out port is simply a loop thru output of the HDMI input.</td></tr>
</table>

OSD MENU

The TLM-102K can be set up using an OSD menu system. To display the **OSD menu** press the **MENU** knob. This menu system is navigated by rotating the MENU knob. Rotate the MENU knob to change parameter values as well. Press the **MENU** knob to select an option and the **EXIT** button to close the **OSD menu**.

Main	Sub Options	Parameters	Parameters	
Picture	**BRIGHTNESS**	0 – 100		
	CONTRAST	0 – 100		
	SATURATION	0 – 100		
	TINT	0 – 100		
	Sharpness	0 – 100		
	Color Temp.	6500K		
		7500K		
		9300K		
		User	Red Gain	0 – 255
			Green Gain	0 – 255
			Blue Gain	0 – 255
			Red Offset	0 – 511
			Green Offset	0 – 511
			Blue Offset	0 – 511
Marker	**Center Marker**	ON		
		OFF		
	Aspect Marker	OFF		
		16:9		
		1.85:1		
		2.35:1		
		4:3		
		3:2		
	Safety Marker	OFF		
		95%		
		93%		
		90%		
		88%		
		85%		
		80%		
	Marker Color	Red		
		Green		

		Blue	
		White	
		Black	
	Marker Mat	Off	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
	Thickness	2	
		4	
		6	
Function	**Scan**	Aspect	
		Pixel to Pixel	
		Zoom	
	Aspect	Full	
		16:9	
		1.85:1	
		2.35:1	
		4:3	
		3:2	
	Underscan	ON	
		OFF	
	H/V Delay	OFF	
		H	
		V	
		H/V	
	Check Field	OFF	
		RED	
		GREEN	
		BLUE	
	Zoom	10%	
		20%	
		30%	
		40%	
		50%	

		60%	
		70%	
		80%	
		90%	
	Freeze	ON	
		OFF	
	DSLR (HDMI)	Off	
		5D2	
		5D3	
	3G Format (SDI)	Normal	
		GBRA444 10	
		YCbCrA444 10	
		YCbCrA422 12	
		GBR444 12	
		YCbCr444 12	
Waveform	**Waveform**	Off	
		Multi	
		Y	
		YCbCr	
		RGB	
	Waveform Trans.	Off	
		20%	
		50%	
	Peaking	ON	
		OFF	
	Peaking Color	Red	
		Green	
		Blue	
		White	
	Peaking Level	0 – 100	
	False Color	ON	
		OFF	
	Exposure	ON	
		OFF	
	Exposure Level	0 – 100	
	Histogram	Off	
		Y	
		RGB	

		Color	
	Time Code (SDI)	Off	
		LTC	
		VITC	
Audio	**Volume**	0 – 100	
	Level Meter	ON	
		OFF	
	Audio Ch (SDI)	CH1	
		CH2	
System	**Language**	English	
		Traditional Chinese	
		Simplified Chinese	
	Color Bar	ON	
		100%	
		75%	
	OSD Timer	10s	
		20s	
		30s	
	Back Light	0 – 100	
	Reset	ON	
		OFF	
	Version	V1.0	

Picture

In Picture, you are allowed to adjust basic image settings such as **brightness**, **contrast**, **saturation**, **tint**, **sharpness and color temperature**.

Brightness

Adjust the brightness of the screen from 0 – 100.

Contrast

Adjust the contrast of the screen from 0 – 100.

Saturation

Adjust the saturation of the screen from 0 – 100.

Tint

Adjust the tint of the screen from 0 – 100.

Sharpness

Adjust the sharpness of the screen from 0 – 100.

Color Temperature

Select a color temperature for your scene. Color temperatures available on the TLM-102K are listed as follows:

- 6500°K (Usually for ordinary PC use)
- 7500°K
- 9300°K (TV pictures)
- User Color

Note: Selection of the User Color mode allows you to manually set the color temperature by adjusting the Red Gain, Green Gain, Blue Gain, Red Offset, Green Offset and Blue Offset.

Marker

Aspect ratio is a crucial element in video shooting and it is defined as the proportion of the width and height of any image. You can use different aspect ratios in your video. Therefore, in order to know what will be in frame at different aspect ratios, you can turn on the TLM-102K's aspect marker (a.k.a. guide frame) during shooting so that you can record the entire screen while still knowing where the cut-off will be by putting a mat over it.

Center Marker

The Center Marker, if turned on, will place a crosshair in the middle of the screen.

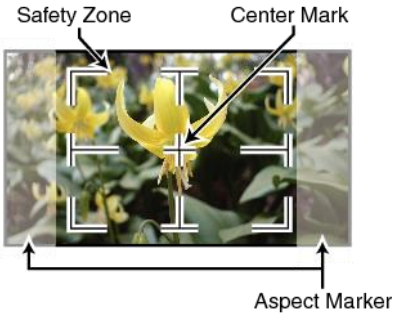
Aspect Marker

Sets the aspect marker display at the aspect ratio selected from the list below:

- OFF
- 16:9
- 1.85:1
- 2.35:1
- 4:3
- 3:2

Safety Marker

This sets the safety zone display, which is the standard viewing range of the recorded video.



The options are listed as follows:

- OFF
- 95%
- 93%
- 90%
- 88%
- 85%
- 80%

Marker Color

The user is also allowed to apply different colors to the aspect marker. The five available marker colors are **Red**, **Green**, **Blue**, **White** and **Black**.

Marker Mat

This sets the transparency of the mat placed over the cutoff at the select aspect ratio. Select from 0 to 7 with 7 being an opaque mat and 0 offering the highest transparency.

MAT 7 **MAT 6** **MAT 4** **MAT 2** **MAT 0**

Thickness

This sets the aspect marker thickness to 2, 4 or 6.

Function

This allows the user to set advanced settings for the TLM-102K, such as the scan mode, the aspect ratio, underscan mode, H/V delay, check field, zoom, etc. Details of how these functions can be configured are described as follows:

Scan

This sets the Scan mode of the TLM-102K.

Zoom: Enlarge the original image according to the ***zoom ratio*** of the TLM-102K.

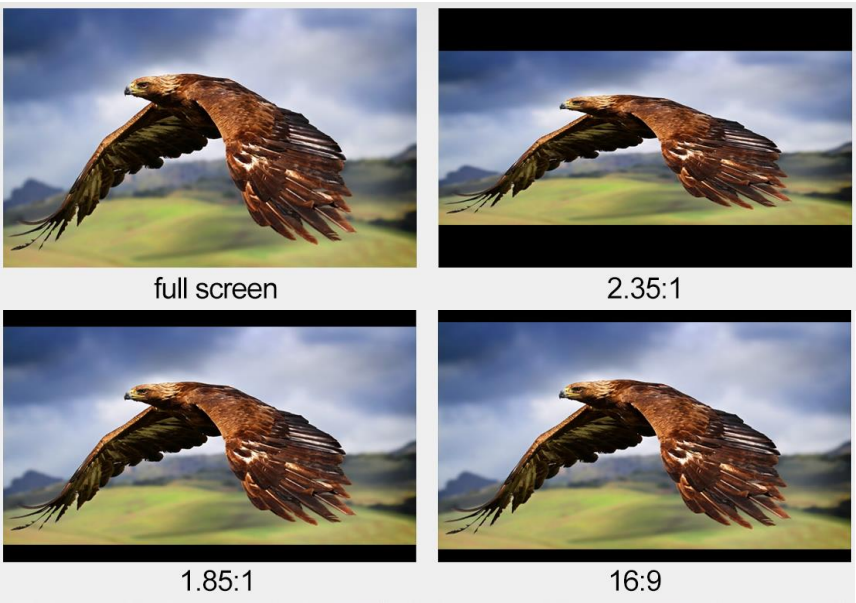
Aspect: Display the image according to the ***aspect ratio*** of the TLM-102K.

Pixel to Pixel: Display the original image resolution without scaling to match a certain resolution or an aspect ratio. For example, when the resolution of the input video is 1920x1080 but the monitor's resolution is only 1280x800, only area equivalent to 1280x800 out of 1920x1080 will be displayed.

Aspect

The aspect control allows you to manually set the aspect ratio of the monitor. You should choose the aspect ratio of your screen to match that of the input video in order to achieve the best viewing experience. Views of different aspect ratios on the TLM-102K are shown in the diagram below.

Note: Aspect ratio control is disabled if the scan mode is set to pixel to pixel.



Underscan

When enabled, the entire image content will be displayed within the visible area of the monitor without any parts being cut off. Enable underscan if the image exceeds the screen size and appears cropped.

H/V Delay

Used to monitor the blanking area for H sync and V sync.

In **H delay mode**, the horizontal sync is delayed so that the horizontal blanking period is displayed on the screen.

In **V delay mode**, the vertical sync is delayed so that the vertical blanking period is displayed on the screen.

In **H/V delay mode**, both horizontal and vertical syncs are delayed, resulting in both horizontal and vertical blanking periods being shown on the screen.

Check Field

The check field function offers the user Red-Only, Green-Only, Blue-Only and Mono modes for screen calibration should you require them.

First turn on the color bar, then turn on the single color mode in the check field as this allows you to do the screen calibration by adjusting the brightness, contrast, saturation, tint and sharpness.

Zoom

The zoom function allows you to enlarge the image by a certain percentage (10 – 90%).

Note: Zoom control is disabled if the scan mode is set to pixel to pixel.

Freeze

The monitor's screen freezes once enabled.

DSLR (HDMI)

The DSLR setting is solely for Canon's EOS 5D series of DSLR cameras. The options are listed as follows:

- 5D2: Canon EOS 5D Mark II
- 5D3: Canon EOS 5D Mark III

3G Format (SDI)

If you are connecting a 3G-SDI video source, select an appropriate color format as well as a bit depth from the list below.

GBRA444 10: This format can be used for high-quality video with an alpha channel, suitable for graphics and overlays.

YCbCrA444 10: This format includes an alpha channel and is designed for high-quality video processing.

YCbCrA422 12: This format is commonly used in professional video environments, particularly for broadcast and production, as it allows for chroma subsampling while maintaining high-quality color information.

GBR444 12: This format provides high color fidelity without an alpha channel, making it suitable for various video applications.

YCbCr444 12: This format is often used in scenarios where the highest quality is required, such as film and television production.

Waveform

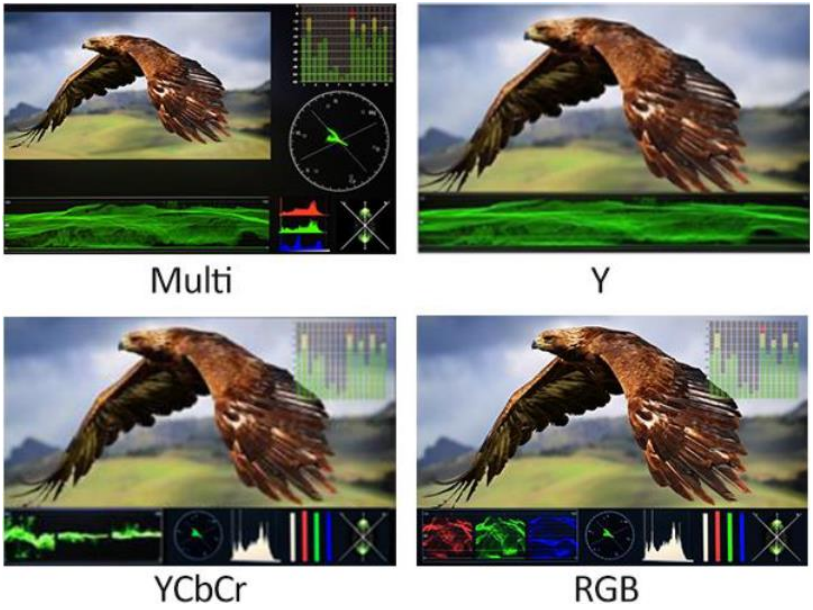
The TLM-102K also allows the user to display the image alongside with different monitoring waveforms such as the vector scope, histogram and audio level meter.

Image quality can be improved using tools such as peaking filter, false color and zebra.

Waveform

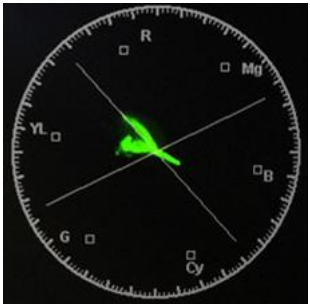
The TLM-102K offers users different waveform options listed as follows:

- Muilt (vector scope, YCbCr waveform monitoring, histogram and audio meter)
- Y (Y waveform monitoring)
- YCbCr (YCbCr waveform monitoring)
- RGB (RGB waveform monitoring and histogram)
- Off



Note: If **Waveform** is set to **Multi**, the **Histogram** is enabled by default.

Vector Scope



The vector scope is used to measure the color information such as **Hue** and **Saturation** in a video image.

Note: For color bars, the vector scope works with 100% color bars and 75% color bars with a 75% white level.

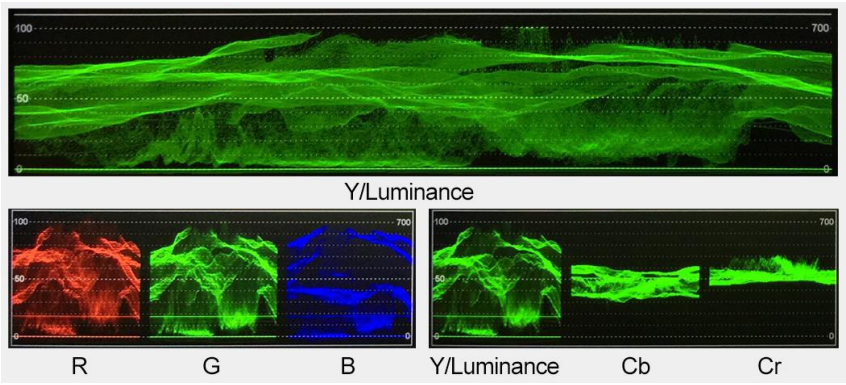
Hue: The color markers are red, magenta, blue, cyan, green, and yellow. The proximity a signal to one of the markers tells you what color it is.

Saturation: A vectorscope shows you how saturated your color is and how far away the signal is from the center indicates how saturated the color is. For example, if the color is close to one of those boxes, then that means that color in the image is very saturated.

Intersecting lines: The line going up towards the yellow and red colors is the skin tone line on which the skin color should fall regardless of the person's race.

Waveform Monitoring

Waveform monitoring consists of RGB and YCbCr waveforms which are used to measure the brightness, luminance and chroma of a video signal as shown in the diagram below.



Waveform monitoring not only warns the user of out-of-range conditions such as overexposure but also serves as a good tool for color correction and white and black balance.

Waveform Transparency

This selects the transparency of the waveform.

- 50% blend effect

- 25% blend effect
- Off: Opaque

Peaking Filter

The peaking filter, once enabled, will place color lines on edges of the subject of the focus in the image. This function works well if the subject of the focus is correctly exposed for high contrast. **Red**, **Green**, **Blue, White** and **Black** are the five available outline colors on the TLM-102K.

The **Peaking Level** determines the sensitivity of the filter. Setting the peaking level to a high value means more areas will be highlighted including lower contrast areas. If the peaking level is set to a low value, then only areas of high contrast will be highlighted.

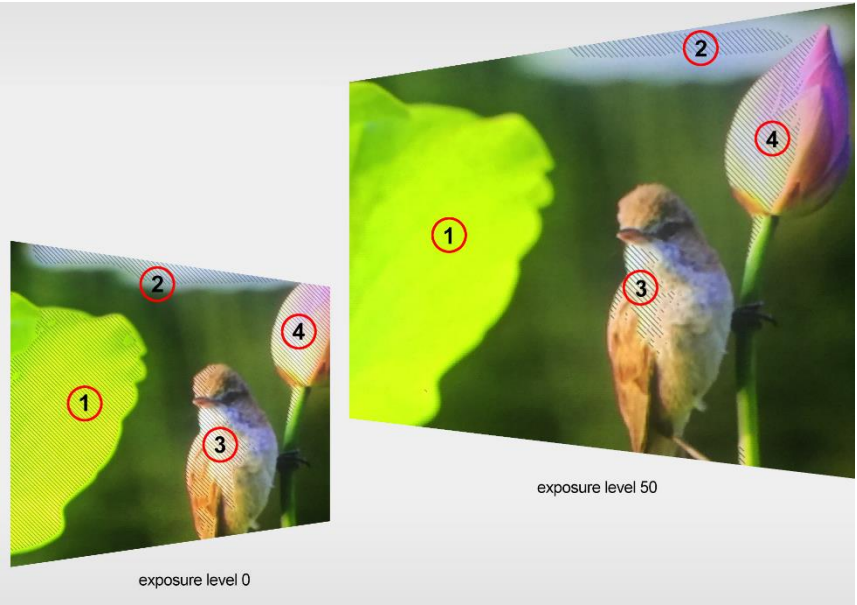
The diagram below illustrates images with peaking filter applied to the subject of the focus. Note the different colors of the outline in each picture.

False Color

Also known as the exposure assist, once enabled, the false color feature will change colors of the elements of the image based on the brightness value. This allows the user to use the monitor's exposure function to achieve proper exposure without the use of costly external equipment.

Exposure

Once the exposure function is turned ON, you will be able to see a zebra pattern superimposed over parts of the image that are exposed to a specific level. In this way, the exposure of the image displayed on the screen can then be adjusted accordingly on the monitor by changing the ***Exposure Level***.



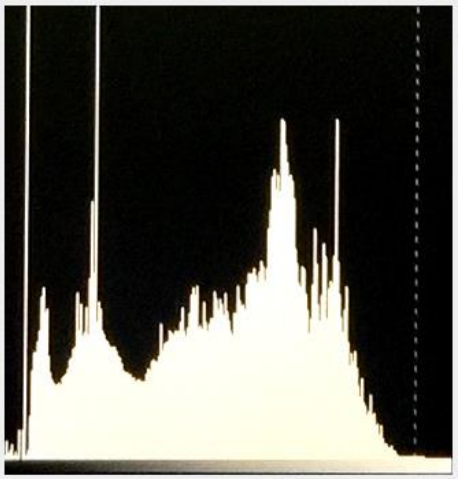
Histogram

The histogram is a great tool that helps improve the overall exposure of an image.

Y (Luminosity)

The Y or luminosity histogram is a graph that describes the human-eye perceived brightness distribution within an image.

To produce the luminosity histogram, the image is first broken down into individual pixels. Each pixel's color is then converted into a luminosity value based on a weighted average of its red, green, and blue components. The human eye is more sensitive to green light, so the green, red, and blue channels contribute 59%, 30%, and 11% to the perceived luminosity, respectively. Finally, the luminosity histogram is generated by counting the number of pixels at each brightness level, as illustrated in the diagram below.

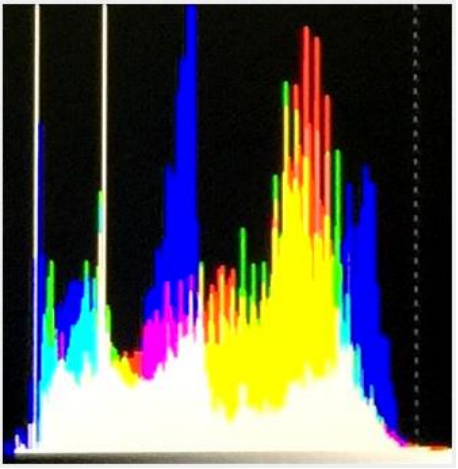


RGB

The RGB histogram is a graph that represents the overall brightness of the entire image.

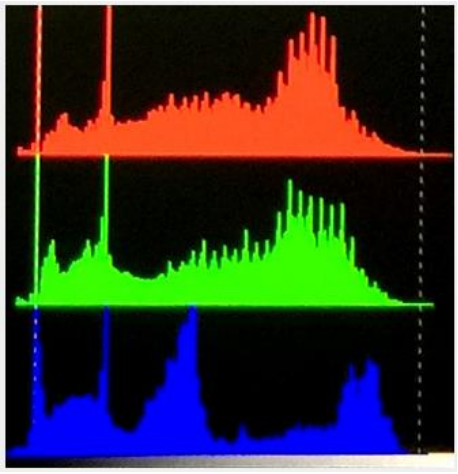
In any digital image, each color is created by combining red, green, and blue lights, with each light represented by a brightness level ranging from 0 to 255. As a result, every color in the image has a specific brightness value based on the mix of red, green, and blue. These brightness values of all the different colors in an image are represented in a histogram which is known as the RGB histogram.

On the TLM-102K, the RGB histogram is shown with the color overlay as depicted in the diagram below.



Color

By setting the histogram to color, you will see one red histogram, one green histogram and one blue histogram. Each color histogram is basically a representation of how that color's intensity is distributed throughout an image, allowing you to evaluate the brightness and exposure of that individual color channel. See the diagram below for an example of the color histogram.



Time Code

The TLM-102K is able to decode the following SMPTE timecode formats:

- **LTC**: Linear timecode.
- **VITC**: Vertical interval timecode.

The decoded time code will be shown at the top of the screen.

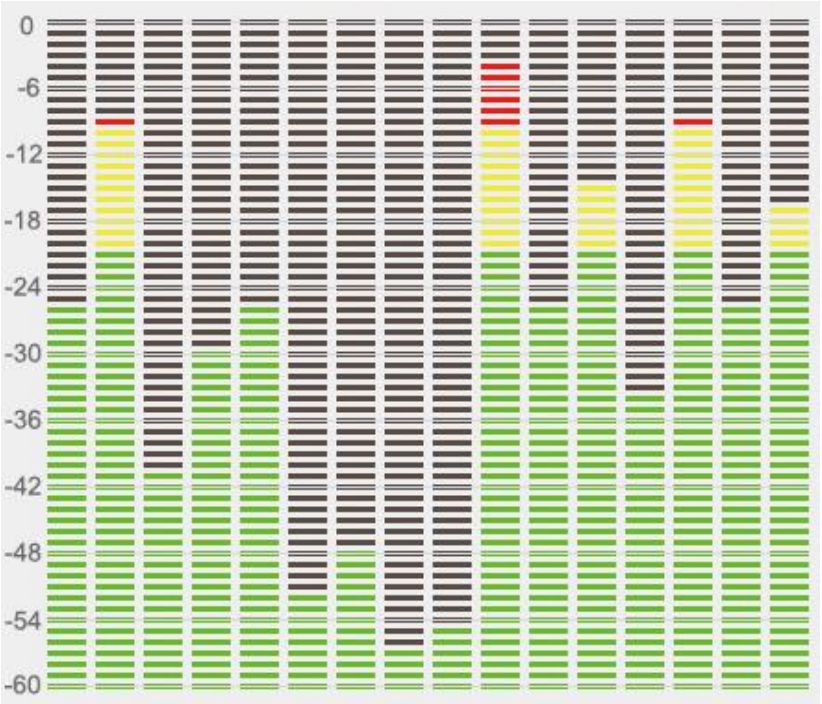
Note: Time code is only available with the SDI input.

Audio

Select your audio output and adjust the volume in this option.

Volume and Level Meter

The Volume option sets the audio level of the input video, which can be viewed visually on the TLM-102K by enabling the **Level Meter**.



Note: If the monitor is in SDI mode, you will see 16 SDI embedded audio channels; in HDMI mode, there will be 8 HDMI embedded audio channels.

Audio Channel

Assign an embedded audio channel of the SDI input to the audio output channel.

System

In the System sub menu, you will be able to do the following:

1. Change the language of the OSD menu
2. Turn on the color bar
3. Set display duration for the OSD menu
4. Adjust the monitor's brightness
5. Reset the entire device's settings
6. View the firmware version installed on the device

Language

The available languages are **English**, **Traditional Chinese** and **Simplified Chinese**.

Color Bar

Available options are listed as follows:

- **OFF: disables the color bar**
- **75% or 100% color bar**

OSD Timer

This sets the OSD menu's ON time; the OSD menu will be automatically turned off after the timer times out.

- **10s**
- **20s**
- **30s**

Back Light

Adjusting the backlight to change the overall brightness of the screen without changing the contrast or color settings. Increase the backlight to make the display brighter or decrease it in low-light conditions.

Reset

Select **ON** to reset the device entirely.

Version

View the firmware version installed on the monitor here.

Firmware Update

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the TLM-102K firmware as they wish or contact their local dealer or reseller for assistance.

This section outlines the firmware upgrade process which should take ***approximately 10 minutes to complete***. **The existing TLM-102K settings should persist through the *firmware upgrade process, which should not be interrupted once started*** as this could result in a non-responsive unit.

Successful firmware upgrade on TLM-102K requires:

- Latest TLM-102K firmware version
- USB Portable Drive
- USB A Cable

To update the TLM-102K firmware

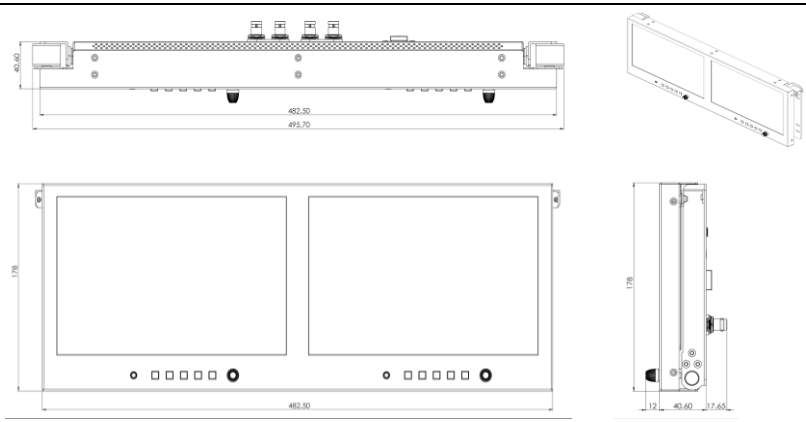
MCU

1. Unzip / extract the firmware file.
2. Rename the bin file to “mcu.bin”.
3. Format the USB pen drive to FAT32.
4. Copy mcu.bin to the USB pen drive.
5. Power off the TLM-102K.
6. At the back of the monitor, plug the USB pen drive into the USB port labelled **SERVICE ONLY**.
7. Power ON the TLM-102K while pushing down the EXIT key.
8. Release the EXIT key when the F1 button LED starts flashing (the firmware is being updated). The TLM-102K should reboot itself after the update is complete.
9. To check the firmware versions, simply follow the menu path, **Main Menu** > **System** > **Version**.

FPGA

1. Unzip / extract the firmware file.
2. Delete the contents of the USB pen drive so it is empty.
3. Copy the fpga.bit to the USB pen drive.
4. Plug the USB pen drive into the USB port labelled **SERVICE ONLY** on the back of the monitor.
5. “Load FPGA…” should appear on the screen as soon as the **TLM-102K** detects the fpga.bit file.
6. fpga.bit is automatically loaded on the **TLM-102K**.
7. The **TLM-102K** reboots itself after fpga.bit is successfully loaded.
8. The firmware update is complete after the **TLM-102K reboots successfully**.

Dimensions



All measurements in millimeters (mm)

Specifications

Model Name	**TLM-102K**
Product Name	**4K Dual 10.1” Monitor**
Screen	Dual 10.1” LCD
Chassis	4RU Rack Mount
Resolution	1920x1200
Viewing Angle	(H) +85/-85° (V) +85/-85°
Luminance/Contrast	1000 cd/m^2 1000:1
Video Inputs	2 x 12G-SDI 2 x HDMI (2.0)
Loop Through	2 x 12G-SDI 2 x HDMI (2.0)
Supported Input Resolutions	4096x2160p 60/59.94/50/30/29.97/25/24/23.98 3840x2160p 60/59.94/50/30/29.97/25/24/23.98 1920x1080p 60/59.94/50/30/29.97/25/24/23.98 1920x1080Psf 30/29.97/25/24/23.98 1920x1080i 60/59.94/50 1280×720p 60/59.94/50/30/29.97/25/24/23.98 720x525i 59.94, 720x625i 50
Aspect Ratio	16:10
Aspect Marker	Yes
Safety Marker	Yes
Tally LED	Live (Red) Cued (Green)
Audio IN/OUT	Embedded Audio (48kHz sampling) Analog Stereo (Phone Jack)
Special Features	Time Code Audio Level Meter Peaking Zoom Pixel to Pixel Underscan
Dimensions (W x H x D)	482 x 178 x 38 mm
Weight	3.6 kg
Operating Temperature	0 – 40°C
Power	DC 12V/28W

Notes

Notes

Notes

Service & Support

It is our goal to make your products ownership a satisfying experience. Our supporting staff is available to assist you in setting up and operating your system. Please refer to our web site www.datavideo.com for answers to common questions, support requests or contact your local office below.

Please visit our website for latest manual update.
https://www.datavideo.com/product/TLM-102K

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