PVM-X1800

18.4-inch 4K HDR TRIMASTER high grade
picture monitor

Overview

Colour matched 4K HDR picture monitors colour with 4K master monitor BVM-HX310 ideal for Various 4K productions

The PVM-X1800 18.4-inch 4K HDR high grade picture monitor incorporates the Sony specified premium LCD panel and offers 1000 cd/m2 luminance and colour matching with 4K HDR master monitor BVM-HX310, making group monitoring easy in onset, Studio and OB van's wall and 19" EIA racks, Editing, Mixing audio, etc.

TRIMASTER realized Accurate colour reproduction, Precise imaging and Quality Picture Consistency

TRIMASTER is a design architecture for accurate picture reproduction, precise imaging and Quality picture consistency.
There are many advantages in the panel control and signal processing system such as fast processing, accurate linearizing of an input signal with Optical Electrical Transfer Function, accurate colour reproduction, etc.

Dynamic Contrast Drive and Black Detail High/Mid/Low

Dynamic Contrast Drive is a new backlight driving system that dynamically changes backlight luminance to adapt for a scene of a frame. You can conveniently check a total balance of highlights and low lights at a glance. This monitor can dynamically perform 1,000,000:1 contrast ratio by this drive.

From 12G-SDI and Quad-Link 3G-SDI to HD-SDI as well as HDMI

The PVM-X1800 can accept 12G-SDI from the latest device and it can input quad-link 3G-SDI and a single HD-SDI for a traditional device. This input utility is HDMI supports from 640x480/60P PC signal to 4096x2160/60P 4:2:2 YCBCR 12bit.

Various scopes

Both waveform monitor and vector scope can simultaneously be displayed with scales for either HDR or SDR. You can conveniently check both input signal level and output luminance by the HDR scales of the WFM. The waveform has three different displays of either Luminance, RGB/YCBCR parade or RGB/YCBCR overlay with the Gamut error display. The waveform of a specified line can also be displayed.

Unique quad view display with User 3D LUT

The PVM-X1800 provides a quad view display, with individual settings of EOTF (SDR/HDR), colour space, transfer matrix, colour temperature, contrast, brightness, SDI/HDMI, RGB/YCBCR, as well as User 3D LUTs for each display view.

New User Interface and Channel select button

OSD is largely changed and operating this monitor is quicker and more intuitive. Design of the menu allow you to review the settings and change some settings very quickly.

The Channel select button protects an operator from inadvertent setting errors.

Handy features for field operation

DC 24V operation allows you to operate it outfield regardless of 18.4" large screen and 1000 cd/m2 very high luminance. The optional protection panel* protects the premium LCD screen from inadvertent shocks. User 3D LUTs and Yoke-mount are also supported. Dynamic Contrast Drive is very useful for night-scene shooting.

* Optional protection panel cannot be used with the monitor in operation for protecting the screen from heat of backlights.

Various mount capability

Regardless of 18.4-inch large screen size, the PVM-X1800 can be installed to 19inch EIA standard rack for studio and OB van uses. Yoke-mount and VESA mount are also convenient for installing it to a C stand for field use and a Desktop arm for editing.

Powerful stereo sound with audio muting

The PVM-X1800 incorporates Stereo speakers(2W+2W) with audio muting.

Features

Sony specified 18.4-inch 4K Premium LCD panel for realizing faithful colour matching with BVM-HX310

The PVM-X1800 has a 18.4-inch 4K Premium LCD panel (3840 x 2160) with a wide colour gamut, high luminance, high contrast, fine grey scale, wide viewing angle and great uniformity. Sony specified the panel to realize 1000 cd/m2 luminance and 100% colour gamut coverage of BVM-HX310 that is an industry-leading Master Monitor. This feature provides a colour matching value in an entire process from camera shooting to finishing in versatile video productions such as Live productions, TV programs, Documentary, Music programs, Movies, Drama, Commercial films, etc. All the professionals in a single project can share a common view and a common understanding to colours and tones of their contents even though they work in another time and place. This allows them to communicate with each other more smoothly than before.

TRIMASTER realized Accurate colour reproduction, Precise imaging and Quality Picture Consistency

TRIMASTER is a design architecture for accurate picture reproduction, precise imaging and Quality picture consistency. There are many advantages in the panel control and signal processing system such as fast processing, accurate linearizing of an input signal with Optical Electrical Transfer Function, accurate colour reproduction, etc.

Dynamic Contrast Drive

Dynamic Contrast Drive is a new backlight driving system that dynamically changes backlight luminance to adapt for a scene of a frame. You can conveniently check a total balance of highlights and low lights at a glance. Another advantage of this new drive is that there is no artificial halo effect caused by this drive and each signal level is displayed as each same display luminance. This monitor can dynamically perform 1,000,000:1 contrast ratio by this drive.

Black Detail High/Mid/Low

Due to the mechanism of LCD panels, backlight leaking from the panel surface is unavoidable. Black Detail mode provides more accurate monitoring of black details in dark, low-APL (average picture level) images. The black level is reduced, but gamma is maintained for correct color and grey scale. However, high luminance areas are clipped due to dynamic range of the monitor. The portions to be clipped can be displayed by either zebra patterns or clipped image.

4K video input versatility for both brand-new and traditional devices

The PVM-X1800 monitor is equipped with built-in standard input interfaces: (12G/6G/3G/HD-SDI) BNC (x2), (3G/HD-SDI) BNC (x2) and HDMI (HDCP2.3/1.4) (x1). 12G simplifies wiring from a large latest system to a simple field system. Quad-link 3G-SDI is truly convenient for a system configuration with many existing traditional devices. HDMI is a mandatory interface to equip with a Rasterizer, Multi-viewer, Digital camera, Set Top Box, UHD Blue ray and Computer, etc.

Various signal settings and Automatic setting by Video payload ID

You can manually set various signal settings that they are ITU-R BT.2020, ITU-R BT.709, DCI-P3, S-Gamut/S-Gamut3, S-Gamut3.Cine as colour space and ITU-R BT.2100(HLG), SMPTE ST2084, S-Log3 and S-Log3(Live HDR) as EOTF. Support for VPID (Video Payload ID) identifies EOTF, colour space and RGB source information embedded in the SDI signal. Monitor settings are adjusted automatically, cutting the risk of human error in pressured live production environments.

New User Interface

OSD menu structure is majorly changed from the existing Sony 4K monitors. It has a shallow layered structure and you can see setting values when OSD comes up and change them quickly. Status menu changes its position from top to lower side. 4K/2K settings and Input settings/User presets are integrated to a single Channel. You can create 30 channels and rename the Channel according to your own convenience. Sony newly introduces Channel button on the Front control panel for operators. You can only select a channel from the list while you see the channel name, colour space, EOTF, input, etc. The Channel can also simply be assigned to a F key as well. When multiple users share the same monitor, each user can memorize his/her setting data to a channel and retrieve this data whenever required. This frees the user from time consuming and repetitive setting tasks. When multiple users share the same monitor, all the data of the monitor can be saved and locked by a password. Those users can freely change values of all the data, but they cannot be overwritten and saved to the memory of the monitor by a user who do not know the password. For improving speed of the F-Key configuration, the user can take a short-cut to the settings menu screen by simply pressing the function key repeatedly. And, For adapting increase of functions, Function key preset is also introduced. You can create some different combinations of Function keys and store them. You can select one of the Function key presets easily and quickly. Not only channel but Function key preset, Colour temperature and marker name can also be named from the OSD keyboard.

4K/HD scopes with HDR/SDR scale and audio level meter display

Both waveform monitor and vector scope can simultaneously be displayed with scales for either HDR or SDR. The scales are automatically changed according to a selected EOTF setting of the monitor. You can conveniently check both input signal level and output luminance by the HDR scales of the WFM. They have various modes, including a zoom function (in an area of either 0 to 20% or 0 to 30%) with the waveform monitor, and a zoom function (in the central black area) with the vector scope, for adjusting white balance of cameras. The waveform has three different displays of either Luminance, RGB/YCBCR parade or RGB/YCBCR overlay with the Gamut error display. The waveform of a specified line can also be displayed. In addition, an audio level meter can display the embedded audio signal from the SDI or HDMI input. It can display on screen either the ch1 to ch8 or ch9 to ch16.

User 3D LUT

User 3D LUT files can be loaded into an internal memory of the monitor via USB port on the front. Either 33 grid points or 17grid points .cube files are supported. You can easily select different user LUTs and compare them in the Quad View display.

Sony's unique Quad View display

The PVM-X1800 provides a Quad View display, with individual settings of EOTF (SDR/HDR), colour space, transfer matrix, colour temperature, contrast, brightness, user LUT, SDI/HDMI and RGB/YCBCR for each display view. You can easily compare with different HD input sources and use it for monitoring different sources as a part of an HD wall system.

DC operation

The PVM-X1800 can be operated with DC 22 V to DC 32 V. The PVM-X1800 provides more flexibility and mobility to users who want a larger size screen for on-set applications. The PVM-X1800 is ideal for field applications.

High reliable mechanical design, Optional protection panel and 19-inch EIA standard rack-mount capability

For long term reliability, Sony made multiple thermal simulations for finding the most efficient cooling system and mechanical structure. And also, Sony made heat load tests frequently for our customer's long usage until the Sony internal strict regulation is passed.

The PVMK-PX18 protection panel saves a premium screen of the PVM-X1800 from some inadvertent scratches and impacts during transportation and preparation*. It can easily and quickly be either attached and detached without tool at a time-critical on-site. This protection panel can be mounted together with the rack-mount bracket PVMK-RX18 and it can be equipped with the PVM-X1800 installed onto a 19-inch EIA standard rack.

* Optional protection panel cannot be used with the monitor in operation for protecting the screen from heat of backlights.

Yoke-mount and Wall-mount capability

The PVM-X1800 has screw holes on its side bezels for yoke-mounting. This type of mounting is convenient when installing a monitor to a camera crane or monitor stand in the field. There are also Wall-mount 100-mm pitch holes on each monitor's rear panel.

Room clearance connector panel design

The connector panel on the rear of each monitor is designed to allow sufficient cord clearance. This design allows protecting connectors, space saving and cabling flexibility with easy identification of the connectors for system integration and maintenance.

4K (4096 x 2160) and 2K (2048 x 1080) input

The PVM-X1800 monitor can display 4K and 2K input. The 4K/2K signal is displayed in two ways – as a full 2K image scaled into a QFHD (3840 x 2160) screen, or as a 2K native display with side cut.

Flexible and Variable area markers, aspect marker and centre marker

You can set either two flexible area markers or variable area markers, and aspect marker on the screen. As their line colours and thickness can be changed, these two markers are easily identified. This second marker enables easier checking of the centre portion's focus. Flexible area marker can be used for a guide of a screen layout for shopping programs.

Power-on setting

Power-on allows users to select setting data when the monitor starts up; this includes last memory, user preset, and factory preset settings. Users can set the monitor accurately and quickly. This function is very useful for rental equipment.

Optimised low-latency I/P conversion

An I/P conversion system delivers automatically optimised signal processing according to input signals, with low latency. This helps with editing and monitoring fast-moving images, and with synchronising audio with lip sync.

Zoom function
The PVM-X1800 can magnify a centre of the screen for checking camera focus.

High sound pressure stereo speakers(2W+2W) with audio muting
Onset monitoring and a Machine room requires high sound pressure because there are some large environmental noises. 2W+2W front stereo speakers are more powerful than a monaural speaker or a rear speaker system and you can get a good stereophonic effect from them. When you need to put the monitor on mute very quickly, you can simply press a Function key that Audio muting is assigned.

Various Basic Functions
The monitor has basic functions such as Contrast, Brightness, Chroma, Aperture, Audio volume, Blue only, Mono, Scan, Marker, Timecode display, RGB cut off, On-screen tally, BKM-17R control and Parallel remote(Fixed pin assignment).

Specifications

Picture Performance	
Panel	α-Si TFT Active Matrix LCD
Picture Size (Diagonal)	469.2 mm (18.4 inches)
Effective Picture Size (H x V)	408.96 x 230.04 mm (16 1/8 x 9 1/8 inches)
Resolution (H x V)	3840 x 2160 pixels
Aspect	16:9
Display colours	Aprox. 1.07 billion colours
Panel frame rate	48 Hz / 50 Hz / 60 Hz (48 Hz and 60 Hz are also compatible with 1/1.001 frame rates)
Viewing angle (panel specification)	89°/89°/89°/89° (up/down/left/right contrast > 10:1)
Colour temperature	D60, D65, D93, DCI*1, and user 1-10 (5,000 K to 10,000 K adjustable)
Luminance (panel specification) (typical)	1000 cd/m2
Colour space (Colour gamut)	ITU-R BT.2020*2, ITU-R BT.709, DCI-P3, S-GAMUT3*2, S-GAMUT3.Cine*2
Transmission Matrix	ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709
EOTF	2.2, 2.4, 2.6, 2.4 (HDR), S-Log3, S-Log3 (Live HDR), SMPTE ST 2084, ITU-R BT.2100 (HLG)

Input	
SDI	(12G/6G/3G/HD-SDI) BNC (x2), (3G/HD-SDI) BNC (x2), Input impedance: 75 Ω unbalanced

HDMI Input	HDMI (HDCP2.3/1.4) (x1)
Parallel Remote	RJ-45 8-pin (x1) (Fixed pin assignment)
Serial Remote (LAN)	Ethernet, 10BASE-T/100BASE-TX RJ-45 (x1)
DC Input	XLR-type 3-pin (male) (x1), DC 22 V to 32 V (output impedance 0.05 Ω or less)

Output

SDI Output	(12G/6G/3G/HD-SDI) BNC (x2) , (3G/HD-SDI) BNC (x2) , Output impedance: 75 Ω unbalanced
Audio Monitor Output	Stereo mini jack (x1)
Speaker (Built-in) Output	2.0 W+2.0W (Stereo)
Headphone Output	Stereo mini jack (x1)

General

Power Requirements	AC 100 V to 240 V, 50/60 Hz DC 22 V to 32 V
Operating Temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (68°F to 86°F)
Operating Humidity	30% to 85% (no condensation)
Storage / Transport Temperature	-20°C to +60°C (-4°F to +140°F)
Storage / Transport Humidity	0% to 90%
Operating / Storage / Transport Pressure	700 hPa to 1060 hPa
Dimensions (W x H x D)	444 x 310 x 148.5 mm*3 (17 3/8 x 12 1/4 x 5 7/8 inches) (without monitor handle and monitor stand) 444 x 368.7 x 168.5 mm*3 (17 3/8 x 14 5/8 x 6 3/4 inches) (with monitor handle and monitor stand)*4
Mass	Approx. 8.2 kg (18 lb 1 oz)
Supplied Accessories	AC power cord (1), AC plug holder (1), CD-ROM (1), Before Using This Unit (1)
Optional Accessories	PVMK-RX18 Rack-mounting bracket PVMK-PX18 Protection Panel BKM-17R

Notes

*1	DCI: x=0.314, y=0.351

*2	The PVM-X1800 does not cover selected colour space in full.
*3	Without projection parts.
*4	Hight without Handle is 331.5.

Gallery