User Manual

Mini Full HD HDMI 4K Multiviewer

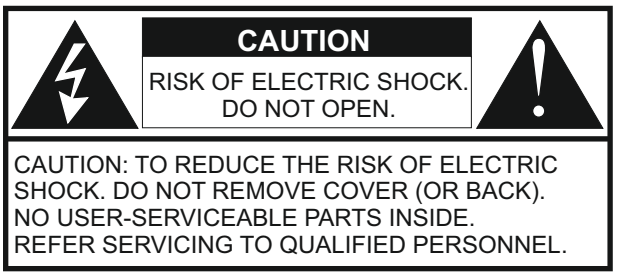
Version 1
Updated 19/10/2018

Please read this manual prior to installation and operation and save this manual for future reference.

CRALTECH
ELECTRONICA, S.L.

IMPORTANT INFORMATION

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the product.

SAFETY INSTRUCTIONS

This product has been designed with the highest priority on safety, however, there are basic precautions that should be taken to avoid injury or damage.

1) Read, keep and follow all these instructions.

2) Water and Moisture. Do not use this product near water and do not expose it to humidity. Keep the unit dry.

3) Handle and operate this product with care, and do not expose the unit to vibrations.

4) Clean only with dry cloth. Do not use liquid or aerosol cleaners to clean the product, and be sure not to spill liquid of any kind into it. Unplug the power cord before cleaning the product.

5) Do not insert anything into or block the ventilation slots, you could get a shock or cause fire.

6) Do not remove cover or back to reduce the risk of electric shock.

7) Keep the product away from heat sources such as radiators, heat registers, stoves, or other aparatus (including amplifiers) that produce heat.

8) Only use accessories specified by the manufacturer.

9) Power Sources: This product should be operated only from the type of power source indicated on the marking label. If you are not sure, check with your dealer or contact us for assistance.

10) Unplug this apparatus during lightning storms or when unused for long periods of time.

11) If any of the following occur, unplug the power cord and seek the assistance of a qualified service personnel for servicing:

Power cord or plug becomes damaged.
When any liquid is spilled on or in the product.
When the product has been exposed to water.
When the product does not operate properly as described in the instruction manual.
When the product has been damaged in any way.

12) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way.

If the product requires replacement parts, make sure that the service personnel uses replacement parts recommended by the manufacturer. Use of unauthorized parts can result in fire, electric shock, and other damage.

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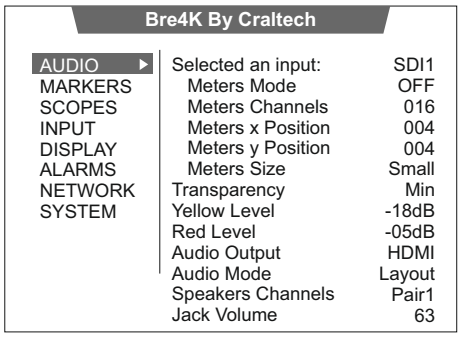
CONTROLS AND CONNECTIONS

1. HDMI Inputs: up to Full HD resolution (NO HDCP)
2. HDMI Output: Up to 4K UHD 60hz
3. Ethernet connector for remote control
4. USB connector for updates
5. Audio Out
6. DC in: 12V
7. ON / OFF mini switch
8. Menu encoder (Click to access menu and keep press to ESC) (For forcing resolution change keep pressing encoder when being outside the menu until you see image on screen and you can then change it using the menu System > output resolution)

ON SCREEN MENU

- **AUDIO:** Select an input / Meters Mode / Meters Channels / Meters x/y Position / Meters Size / Transparency / Yellow Level / Red Level / Audio Output / Audio Mode / Speakers Channels / Jack Volume
- **MARKERS:** Select an Input / Center Marker / Security Area / Markers / Marker H/V / Markers Color / Curtain
- **SCOPES:** Select a Window / Waveform / WFM Mode / WFM x/y Position / WFM Size / Vectorscope / VS x/y Position / VS Size / Transparency
- **INPUT:** Select an Input / UMD / Aspect Ratio / Data Conversion / Hide Image / ATC Timecode / Image Size / Image x/y Position
- **DISPLAY:** Layout / Format Info / Border Color / UMDs Color
- **ALARMS:** Alarm per Input / Video Black / Video Loss / Audio Loss / Silence select chan / Alarm Status / Video Black Mode / Video Black Color / Black Waiting time / Video Loss Mode / Video Loss Color / Audio Loss Mode / Audio Loss Color / Silence Waiting Time / Silence Level
- **NETWORK:** LAN IP / IP MASK / GATE IP / UDP PORT / Apply Config / Default Config
- **SYSTEM:** Equipment ID / Encoder Sensitivity / Tally UMD Source / Display On UMD / Display Squares / OSD Size / OSD x/y Position / OSD Transparency / Display Data Conv / Factory Default / Update Firmware

AUDIO MENU



1. Select the **AUDIO** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

SELECT AN INPUT

Used to select the the input which audio is going to be modified.

MODE

Used to select the audio level meters mode. Available different modes with Scale, No Scale, Pairs/Odds,...

1. Select ***Meters Mode*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to select the mode.
3. Press Menu Encoder again to Exit adjustment.

METERS CHANNELS

Used to select the audio channels to be displayed in the Audio Level Meters.

1. Select ***Meters Channels*** adjustment and use the Encoder up and down to modify value. Values are: 2, 4, 6, 8, 12, 14 and 16 channels.
2. Press Menu Encoder again to Exit adjustment.

METERS x/y POSITION

Used to select position of Audio Level Meters. Audio Level Meters can be located anywhere on the window.

1. Select ***Meters x/y Position*** adjustment and use the Encoder up and down to modify value.
2. Press Menu Encoder again to Exit adjustment.

METERS SIZE

Used to select Audio Level Meters size. Values are: Small, Large

1. Select ***Meters Size*** adjustment and use the Encoder up and down to modify value.
2. Press Menu Encoder again to Exit adjustment.

YELLOW/RED LEVEL

Used to select Yellow / Red Level.

1. Select ***Yellow/Red Level*** adjustment and use the Encoder up and down to modify value.
2. Press Menu Encoder again to Exit adjustment.

AUDIO OUTPUT

Used to select the audio output (Vumeters, Jack, HDMI)

ON SCREEN MENU

AUDIO MODE

Used to select the audio mode (per input, QUAD, LAYOUT (Layout will adapt the audio out depending on the input)

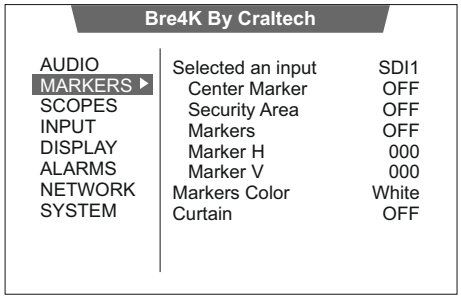
SPEAKERS CHANNELS

Used to select the audio channels (pair) of the audio output (Speakers and Phone Jack).

JACK VOLUME

Used to adjust the audio volume of the audio output (Phone Jack and speakers).

MARKERS MENU



1. Select the **MARKERS** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

SELECT AN INPUT

Used to select the the input which Markers are going to be modified.

CENTER MARKER

Used to enable/disable Center Marker.
1. Select ***Center Marker*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to enable/disable.
3. Press Menu Encoder again to Exit adjustment.

SECURITY AREA

Used to enable/disable Security Area. Options: OFF, 80, 85, 88, 90, 93, 100.
1. Select ***Security Area*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify value.
3. Press Menu Encoder again to Exit adjustment.

MARKER

Used to select the Marker. Options: OFF, 16:9, 4:3, 15:9, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1 and 4:3, User.
1. Select ***Marker Status*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify value.
3.Press Menu Encoder again to Exit adjustment.

MARKER H/V

Select USER option at Markers Adjustment.
1. Select ***Marker H/V*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify value.
3. Press Menu Encoder again to Exit adjustment.

MARKER COLOUR

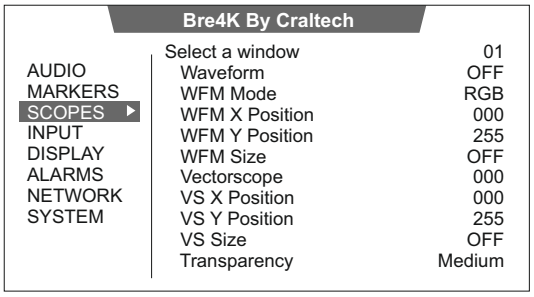
1. Select ***Marker Color*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify color.
3. Press Menu Encoder again to Exit adjustment.

CURTAIN

1. Select ***Curtain*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify color.
3. Press Menu Encoder again to Exit adjustment.

ON SCREEN MENU

SCOPES MENU



1. Select the **SCOPES** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified, and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment, and continue navigating.
3. Press ***ESC*** button to move back to main menu.

SELECT A WINDOW

Used to select the the window which Scopes are going to be modified.

WAVEFORM

Used to enable/disable Waveform.
1. Select ***Waveform*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to enable/disable.
3. Press Menu Encoder again to Exit adjustment.

WFM Mode

Used to select Waveform Selection type. Available types are: RGB, R, G, B, YCbCr, Y, Cb and Cr.
1. Select ***WFM Mode*** adjustment and press the encoder to enter.
2. Use the Encoder up and down modify type of Waveform.
3. Press Menu Encoder again to Exit adjustment.

WFM x/y Position

Used to select position of Waveform.
1. Select ***WFM x/y Position*** adjustment and use the Encoder up and down to modify value.
2. Press Menu Encoder again to Exit adjustment.

WFM SIZE

Values are: Normal, Large.
1. Select ***WFM Size*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify value.
3. Press Menu Encoder again to Exit adjustment.

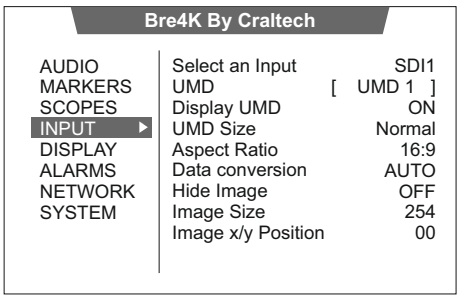
VECTORSCOPE

Used to enable/disable Vectorsope.
1. Select ***Vectorsope*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to enable/disable.
3. Press Menu Encoder again to Exit adjustment.

NOTE: Vectorscope graticules are adapted automatically to HD and SD if ***Data Conversion*** adjustment in **SOURCES Menu** is set to AUTO. If REC 601 is selected, SD graticule is displayed, if REC 709 is selected HD graticule is displayed.

ON SCREEN MENU

INPUT MENU



1. Select the **INPUT** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

SELECT AN INPUT

Used to select the Input which UMD,...is going to be modified.

UMD

16 character UMD per input.
1. Select the ***Input NUMBER*** to be modified and press the encoder to enter.
2. Use the Encoder up and down to modify value.
3. Press Menu Encoder again to Exit adjustment.

Display UMD

Display the UMD of the selected input

UMD Size

Select the size of the UMD (Normal or Large)

ASPECT RATIO

Used to select ***Aspect Ratio.*** Values are 4:3 and 16:9.

DATA CONVERSION

Data Conversion is used to select the mode of data conversion form YCbCr to RGB. Values are REC 601, REC 709 and AUTO. Default Value is AUTO. AUTO mode uses REC 601 data conversion for SD SDI inputs and REC 709 data conversion for HD SDI inputs.

HIDE IMAGE

Used to hide or display the image.

IMAGE SIZE

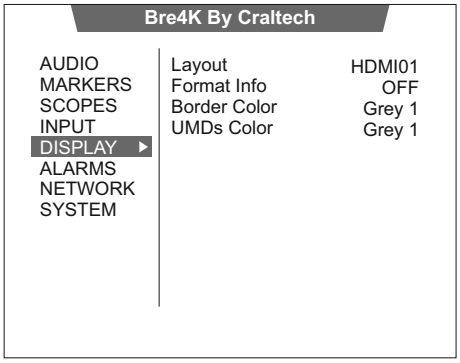
Used to modify image size. Image Size can be modified in Full screen view and in Quad Mode.

IMAGE X/Y POSITION

Used to modify image position.

ON SCREEN MENU

DISPLAY MENU



1. Select the **DISPLAY** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

LAYOUT

Used to select a screen layout. Options are: Quad View, SDI1, SDI2, SDI3, SDI4, PaP, 4K UHD

FORMAT INFO

Used to Enable/Disable visualization of source's format information (resolution). This information will be displayed in right-up corner of the image.

BORDER COLOR

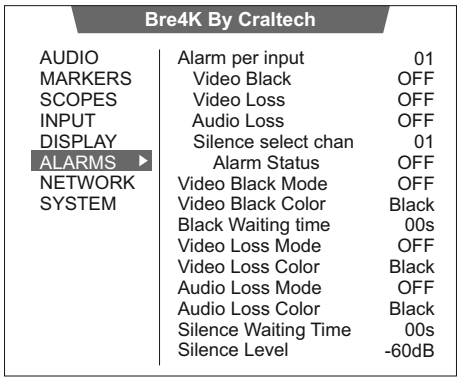
Used to select color of Border/Frame of the image in Quad View.

UMD COLOR

Used to select UMD color

ON SCREEN MENU

ALARMS MENU



1. Select the **ALARMS** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

Video Black, Video Loss and Audio Loss Alarms can be activated “Per Input” or “ALL” inputs.
To activate alarms per inputs, use the ***“Alarm per input”*** selector at the top of Alarm menu, and select the input which alarm is going to be activated or modified. Then select the alarm to be activated. Then select ***“Per Input”*** option at ***“Video Black Mode”, “Video Loss Mode” “Audio Loss Mode”*** adjustment.

To activate alarm in all inputs, select ***“All”*** option at ***“Video Black Mode”, “Video Loss Mode” “Audio Loss Mode”*** adjustment. Silence alarm only can be activated per input.

SELECTED INPUT

Used to select the the input which Alarms are going to be modified.

VIDEO BLACK

Used to Enable/Disable Video Black Alarm per input. This alarm will be only active in the input selected in “ Alarm per input”.

VIDEO LOSS

Used to Enable/Disable Video Loss Alarm per input. This alarm will be only active in the input selected in “ Alarm per input”.

AUDIO LOSS

Used to Enable/Disable Audio Loss Alarm per input. This alarm will be only active in the input selected in “ Alarm per input”.

SILENCE SELECT CHAN

Used to select the audio channel for Silence Alarm. Options are: 01, 02, 03,...16. This option does not activate the Silence Alarm, that must be activated using ***“Alarm Status***”. This alarm will be only active in the input selected in “ Alarm per input”. This alarm will be indicated on screen with a SILENCE text at the right-top of the image and the channel blinking in grey.

VIDEO BLACK MODE

Video Black Alarm can be activated per input or for ALL inputs. Video Black Mode values are: Per Input, ALL and OFF.
- Select **ALL** to activate Video Black Alarm in all the inputs.
- Select **OFF** to disable Video Black Alarm in all the inputs.
- Select **Per Input** to activate Video Black Alarm using ***Alarm per input***.

ON SCREEN MENU

VIDEO BLACK COLOR

Used to select Video Black alarm color.

BLACK WAITING TIME

Used to select Video Black alarm waiting time (period before the alarms is activated). Values form 0 to 60s.

VIDEO LOSS MODE

Video Loss Mode alarm can be activated per input or for ALL inputs. Video Loss Mode values are: Per Input, ALL and OFF.
- Select **ALL** to activate Video Loss Alarm in all the inputs.
- Select **OFF** to disable Video Loss Alarm in all the inputs.
- Select **Per Input** to activate Video Loss Alarm using ***Alarm per input***.

VIDEO LOSS COLOR

Used to select Video Loss alarm color.

AUDIO LOSS MODE

Audio Loss Mode alarm can be activated per input or for ALL inputs. Video Loss Mode values are: Per Input, ALL and OFF.
- Select **ALL** to activate Audio Loss Alarm in all the inputs.
- Select **OFF** to disable Audio Loss Alarm in all the inputs.
- Select **Per Input** to activate Audio Loss Alarm using ***Alarm per input***.

AUDIO LOSS COLOR

Used to select Audio Loss alarm color.

SILENCE WAITING TIME

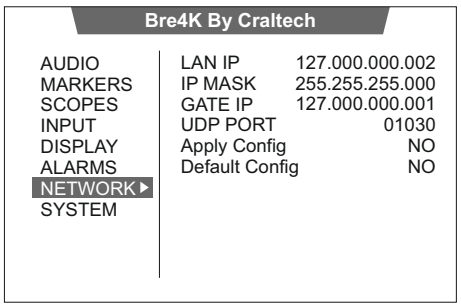
1. Select ***Silence Waiting Time*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify value (form 0 to 60s).
3. Press Menu Encoder again to Exit adjustment.

SILENCE LEVEL

1. Select ***Silence Level*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify value (form -60 to 0dBFS).
3. Press Menu Encoder again to Exit adjustment.

ON SCREEN MENU

NETWORK MENU



1. Select the **NETWORK** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

LAN IP

This option is used to modify LAN IP.
1. Select ***LAN IP*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify values.
3. To apply the new Network configuration Select “Yes” at Apply Config in Network Menu, and unplug (not stand by) the equipment.

IP MASK

This option is used to modify IP MASK.
1. Select ***IP MASK*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify values.
3. To apply the new Network configuration Select “Yes” at Apply Config in Network Menu, and unplug (not stand by) the equipment.

GATE IP

This option is used to modify GATE IP. GATE IP is the router LAN IP.
1. Select ***GATE IP*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify values.
3. To apply the new Network configuration Select “Yes” at Apply Config in Network Menu, and unplug (not stand by) the equipment.

UDP PORT

This option is used to modify UDP PORT.
1. Select ***UDP PORT*** adjustment and press the encoder to enter.
2. Use the Encoder up and down to modify values.
3. To apply the new Network configuration Select “Yes” at Apply Config in Network Menu, and unplug (not stand by) the equipment.

Apply Config

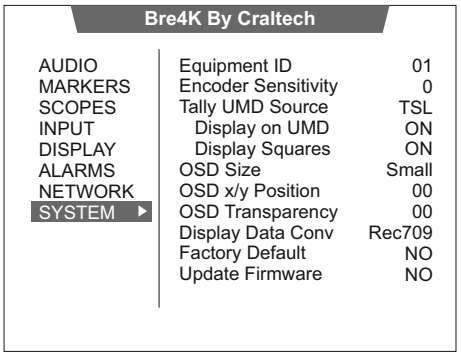
This option is used to apply all the modifications/values of the Network Menu, so after modifying a value of any of the adjustments of the Network Menu select “Yes” at Apply Config and unplug (not stand by) the equipment to apply the new network configuration.

Default Config

This option is used to set to default (factory settings) the monitor.

ON SCREEN MENU

SYSTEM MENU



1. Select the **SYSTEM** menu and press the encoder to enter.
2. Press Menu Encoder to select the adjustment to be modified (adjustment will be marked in white), and use the encoder to adjust the value. Press Menu Encoder again to Exit adjustment (adjustment will be marked in grey), and continue navigating.
3. Long press Encoder to ***ESC*** and move back to main menu.

EQUIPMENT ID

Used to set Equipment ID to identify it for Ethernet communications.
For TSL, the equipment ID is the Offset on the first UMD and Tally that will be used.
For example: To control 2 equipments with 8 inputs, first equipment will have ID 01 and the second equipment will have ID 09.

ENCODER SENSITIVITY

Used to adjust sensitivity of the encoder.

TALLY UMD SOURCE

Used to select Tally and UMD Source. Values are: GPIO, RS-232, TSL. Tally can be displayed on UMD and/or with squares at the bottom of the image.

OSD SIZE

Used to select OSD size. Values are: Small, Large

OSD x/y POSITION

Used to select OSD position.

OSD TRANSPARENCY

Used to select OSD Transparency.

DISPLAY DATA CONV

Display Data Conversion is used to select the mode of data conversion form YCbCr to RGB for the display. Values are REC 601, REC 709. Default Value is REC 709.

FACTORY DEFAULT

This option is used to reset the monitor. **NOTE: This option will set Equipment ID to 01 (Factory value).**

UPDATE FIRMWARE

Used to update the monitor.

SPECIFICATIONS

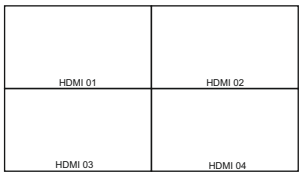
Bre4K SPECIFICATIONS

UMD	16 characters (IMD) TSL comp.
Tally	Green, Red and Amber, TSL comp.
Cabinet	Aluminium. Textured Black Powder Coat
Dimensions	150.00 x 110.00 x 25.00 mm (1U)
Weight	500 gr
Power supply	12V DC
Power Consumption (Approx.)	10W
Operating temperature	5 ºC a 40 ºC
HDMI Output	1 x HDMI. Supported resolutions: 1080i (50Hz / 60Hz), 1080p (25Hz / 30Hz / 50Hz / 60Hz), 4K UHD (25Hz /30Hz / 50hz / 60Hz)
Remote Control	Ethernet Connector
USB connector	Updates

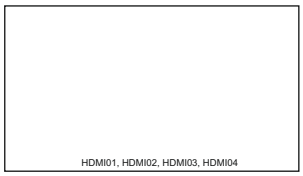
INPUTS

HDMI Inputs Formats	1080p (60 / 59.84 / 50 / 30/ 29.97 /25 / 24 / 23.98) 1080i (60 / 59.94 / 50), 720p (60 / 59.94 / 50)
Aspect Ratio	16.9, 4:3
Audio IN	Embedded Audio.8 Channels Audio Level Meters
UMD	16 characters (IMD)

SCREEN CONFIGURATIONS



QUAD



FULL