

Bridge"X TS

# USER MANUAL

TRUBLESHOOTER series: Conversion and Measurement at Once

Bridge X\_TS for All Format Conversion with Measurement

Bridge X\_TS mini for SDI & HDMI with Enhanced Measurement



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HDLive™ Kalypso Bridge" Bridge"X TS

## Bridge X\_TS mini

SDI / HDMI Cross Conversion with Measurement

ENGLISH

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# OVERVIEW

# Chapter 1

## SUMMARY

Bridge X\_TS mini is the Portable Cross-Converting & Measuring Equipment fully supporting up to 1080p60 for SDI(SD/HD/3G) and HDMI(SD/HD/Full HD).

Bridge X\_TS mini provides each one of SDI and HDMI In/Output ports (Total 4 ports : 2 x SDI In/output ports & 2 x HDMI In/output ports), and perfectly performs UP/DOWN/CROSS conversion between SDI and HDMI.

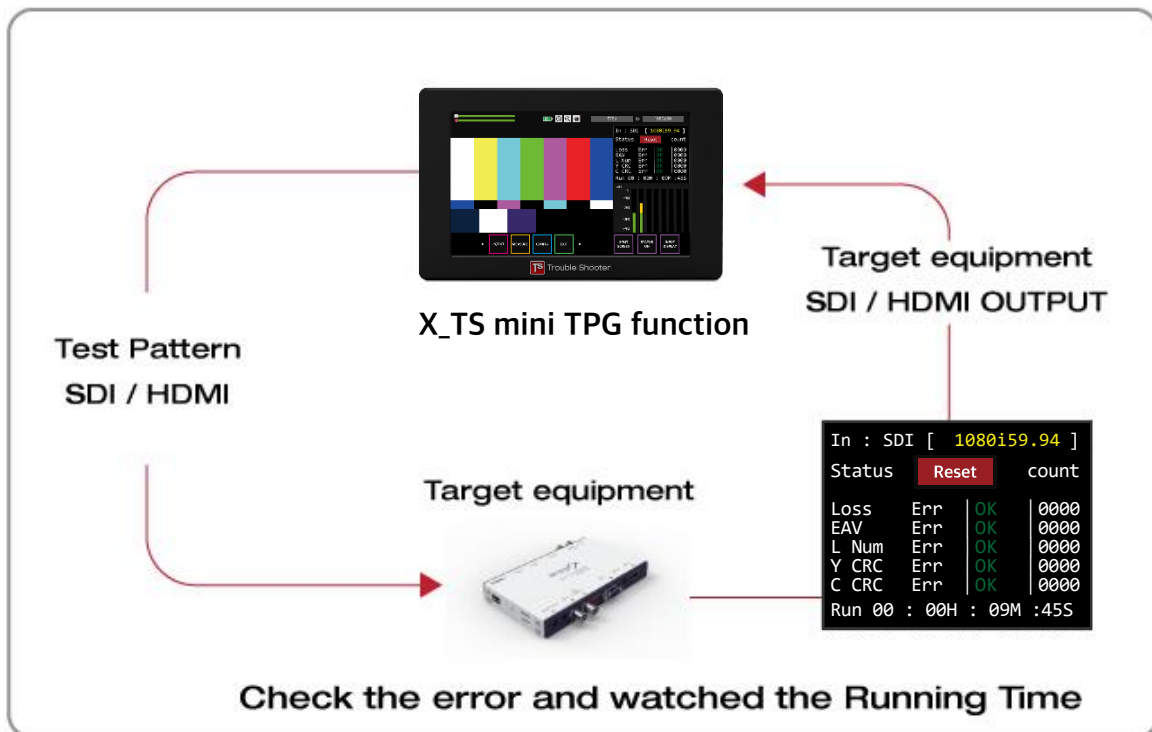
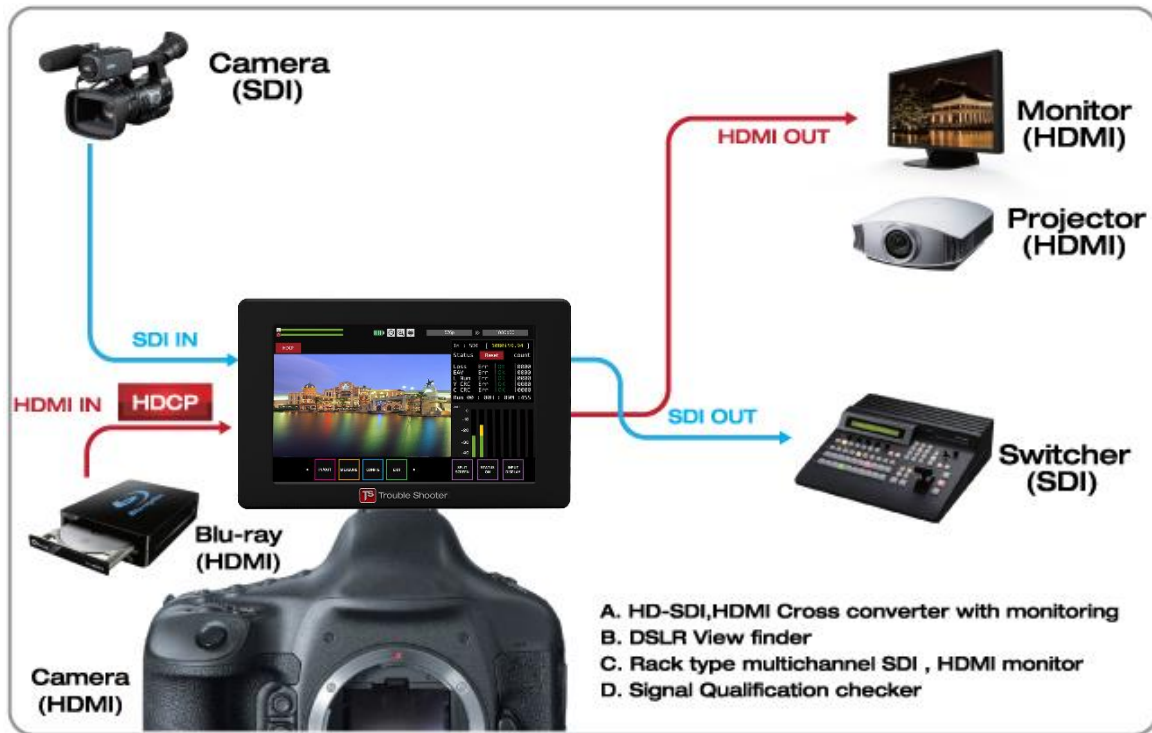
Bridge X\_TS mini provides the powerful measurement functions for Signal Integrity Checks, Audio Level Monitoring(max 8 channels) as well as Test Pattern Generator.



## FEATURE

- SDI to HDMI, HDMI to SDI cross conversion
- SDI In/Output : SD/HD/3G - all standard format supported
- HDMI In/Output : SD/HD/Full HD - all standard format supported
- Test Pattern Generator : 8 types provided - Static/ Pathological/ Moving Box, etc.
- Test pattern generation and measurement at the same time.
- Eye pattern diagram of SDI input signal (720p, 1080i, 1080p)
- SDI signal integrity check (Loss, TSR, CRC, Line number)
- HDMI signal integrity check (Loss, Resolution, HDCP)
- Audio level monitoring (up to 8 channels)
- Audio monitoring earphone output
- 5" Touch Screen LCD (800 x 480)
- (option) Battery Plate provided : compatible with Sony NP-F / Cannon LP-E6
- DC 7V ~ 17V Operation range

## APPLICATION



## Bridge X\_TS mini

SDI / HDMI Cross Conversion with Measurement

## UNPACKING

The following accessories are included with Bridge X\_TS mini :

1pc x Bridge X\_TS mini



1set x Universal Power Supply





# SPECIFICATION

# Chapter 2

## INTERFACE / CONNECTION

5" LCD Touch Panel



1/4" Multi Connection

Earphone Audio Port

Multi-Control Jog Switch

OUTPUT Port : Converted Output

INPUT Port : Source Connection



Cooling Fan

## Bridge X\_TS mini

SDI / HDMI Cross Conversion with Measurement

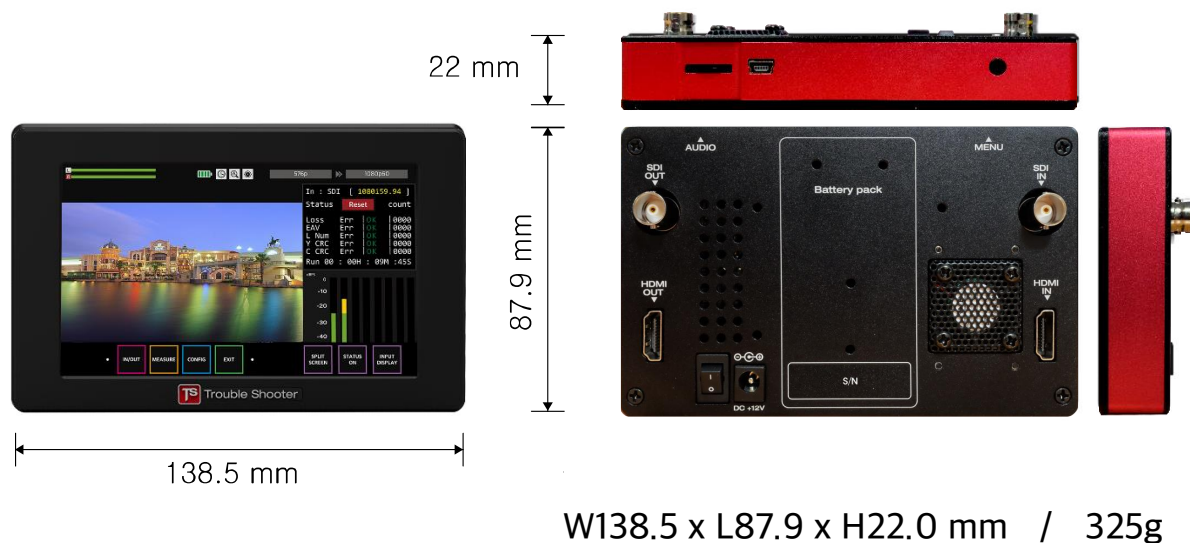
### LCD SPECIFICATION

- Size: 5.0 Inch
- Resolution : 800 x 480
- Pixel area : 0.135mm(W) x 0.135mm(H)
- Display Area : 108mm(W) x 64.8(H)

### VIDEO STANDARDS

- HDMI v1.3 format Support
- Multi-rate SDI format Support
- SD format : 525/29.97(NTSC), 625/25(PAL), 480P, 576P
- HD format : 720P(24/25/30/50/59.94/60)  
1080i(50/59.94/60)  
1080p(24/25/30/sf24/50/59.94/60)

### DIMENSION / WEIGHT



## OPERATING ENVIRONMENT

Supply Power	+ 12 VDC
Power Consumption	9 Watts (Maximum: 10Watts)
Operation temperature	0°C ~ 70°C
humidity	0% ~ 95% RH, Non-condensing

# OPERATION 1

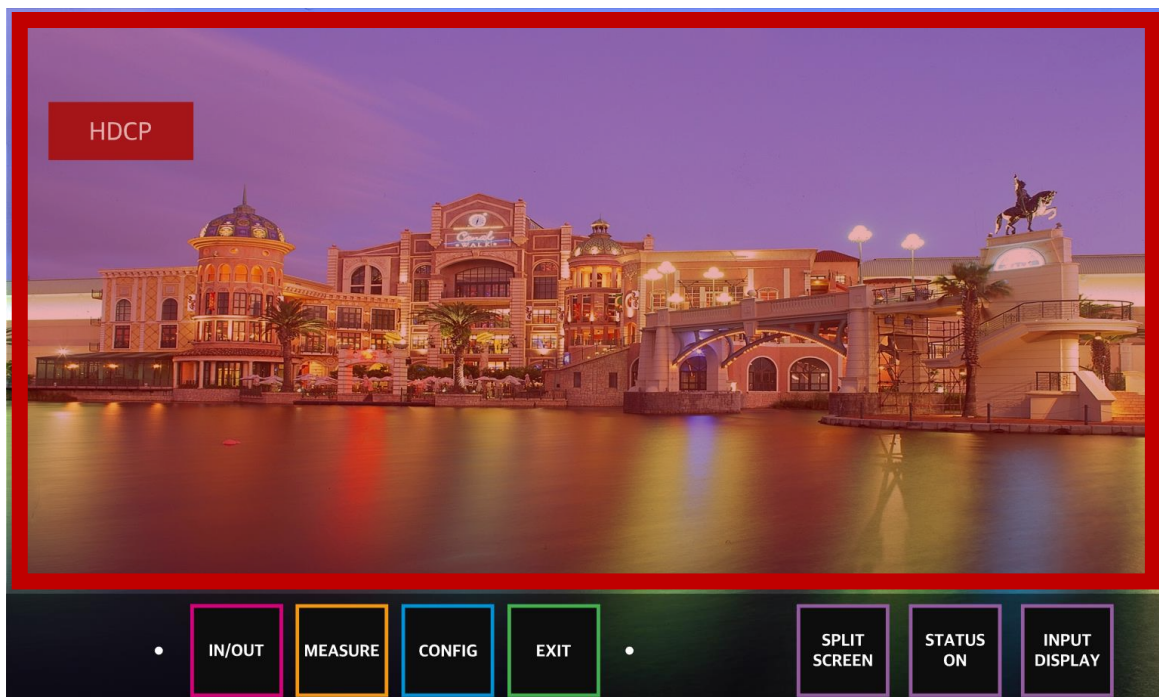
: MAIN MENU

# Chapter 3




## MAIN MENU


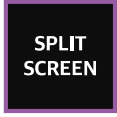



1 Press any RED-marked area of LCD Touch Screen for 1-2 seconds.

2 Then, Main Menu appears as follows.



### FUNCTION MENU

	Selects the Input signal type, Output Resolution/Frame Rate, and Test Pattern Generator.
	Selects the monitoring of Waveform, Audio Level, Vector Scope, Jitter with Error Count.
	Adjusts the LCD Brightness, LCD Contrast, Audio Volume, Auto Sleep.

	Saves the setting, and goes out of Main Menu.
<b>SCREEN MODES</b>	
	Selects whether to display as Full Screen Mode (Video) or Split Screen Mode (Video/Measurements)
	Selects whether to display Status Icons on the top row.
	Selects whether to display the video of Input Signal or Output Signal on the screen.
	Indicates whether HDCP is activated.

# OPERATION 2

: MAIN MENU - SCREEN MODES

# Chapter 4

## FULL/SPLIT SCREEN



**1** Press **FULL SCREEN** button of Main Menu.

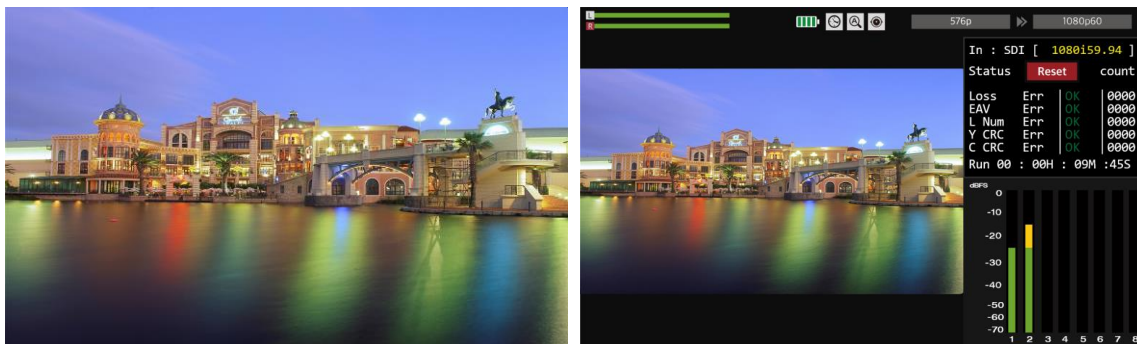
**2** Then, **FULL SCREEN** button changes to **SPLIT SCREEN**.

It displays Measurement Windows and Information Panel on the left area of the screen.

**3** Press **SPLIT SCREEN** button of Main Menu.

**4** Then, **SPLIT SCREEN** button changes to **FULL SCREEN**.

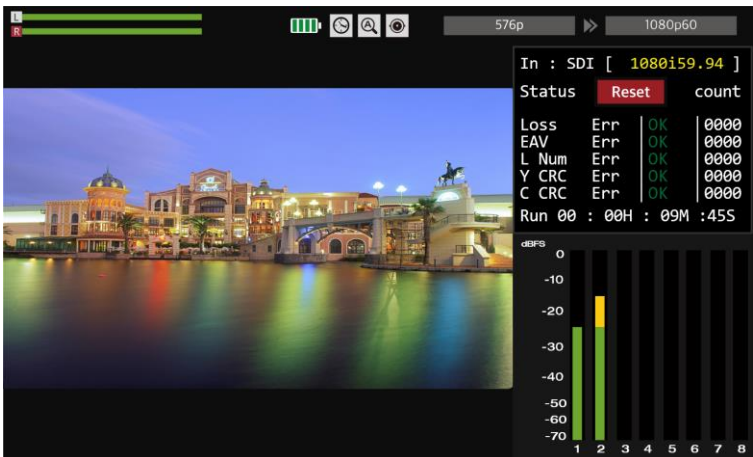
It displays the video on the whole screen.



FULL SCREEN  
MODE

Displays the video on the whole screen.



<p><b>SPLIT SCREEN MODE</b></p>	<p>Displays the video on the left area while the measuring elements are shown on the right area.</p> 
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**STATUS ON/OFF**



- 1 Press **STATUS ON** button of Main Menu.
- 2 Then, **STATUS ON** button changes to **STATUS OFF**.  
LCD Screen disables the Status Icons on the top row.
- 3 Press **STATUS OFF** button of Main Menu.
- 4 Then, **STATUS OFF** button changes to **STATUS ON**.  
LCD Screen enables the Status Icons on the top row.

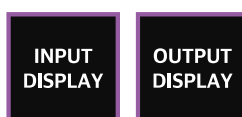


STATUS ICONS	
① Audio Level Bar	Shows the Audio Signal Level Bar of Group 1 : Channel 1, 2 - L/R signal.



② Battery Status	Indicates the residual battery capacity.
③ Auto Sleep Mode	Indicates the activation/deactivation of Auto Sleep Mode.
④ Auto Input Mode	Indicates the activation/deactivation of Auto Input Detection Mode.
⑤ Input Source Type	Indicates the type of Input Signal : SDI, HDMI, Pattern
⑥ Input Resolution /Frame Rate	Indicates the Resolution/Frame Rate of Input Signal
⑦ Conversion Indication	Indicates the direction of Conversion : from a Conversion Source to the Converted Output.
⑧ Output Resolution /Frame Rate	Indicates the Resolution/Frame Rate of Output Signal

## INPUT/OUTPUT DISPLAY



**1** Press **INPUT DISPLAY** button of Main Menu.

**2** Then, **INPUT DISPLAY** button changes to **OUTPUT DISPLAY**.

LCD Screen displays the Video of Output Signal on the screen.

**3** Press **OUTPUT DISPLAY** button of Main Menu.

**4** Then, **OUTPUT DISPLAY** button changes to **INPUT DISPLAY**.

LCD Screen displays the Video of Input Signal on the screen.

INPUT DISPLAY MODE	Displays the video of a selected input signal between SDI and HDMI.
OUTPUT DISPLAY MODE	Displays the video of a selected output signal among SDI, HDMI and Test Pattern(TPG).



# OPERATION 3

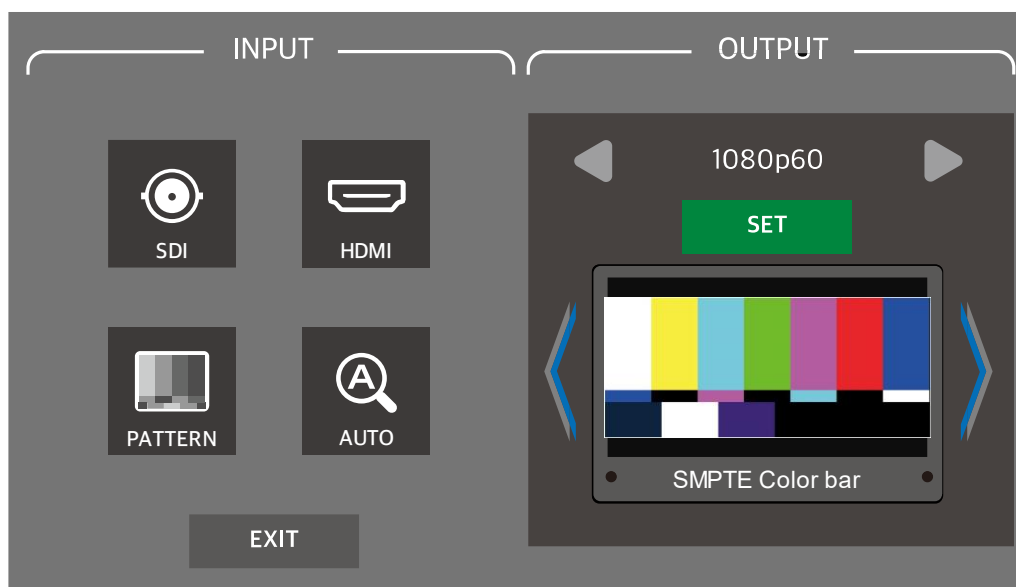
: SUB MENU




# Chapter 5





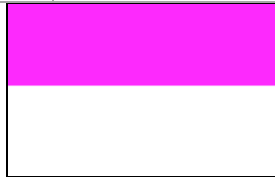
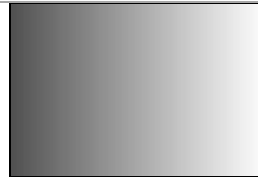
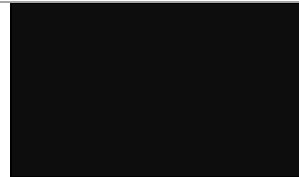

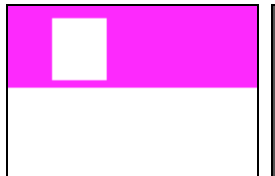
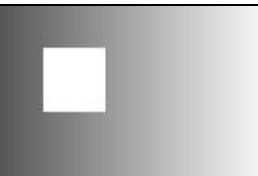


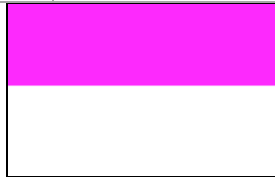
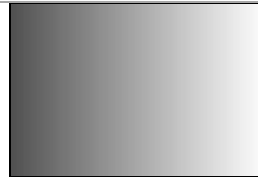
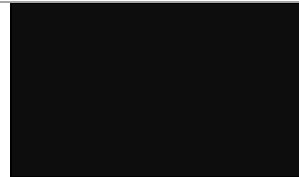

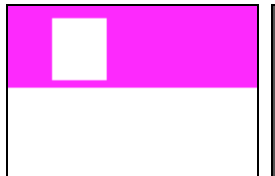
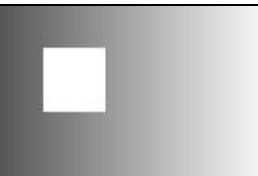


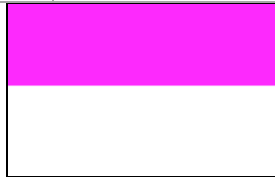
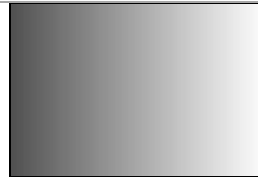
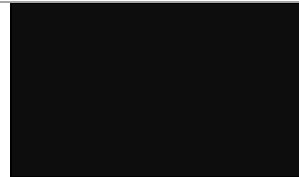

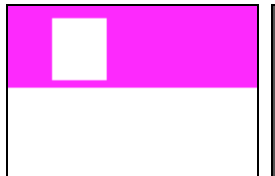
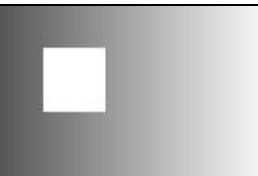

1 Press IN/OUT button of Main Menu.

2 Then, the following Sub Menu appears.



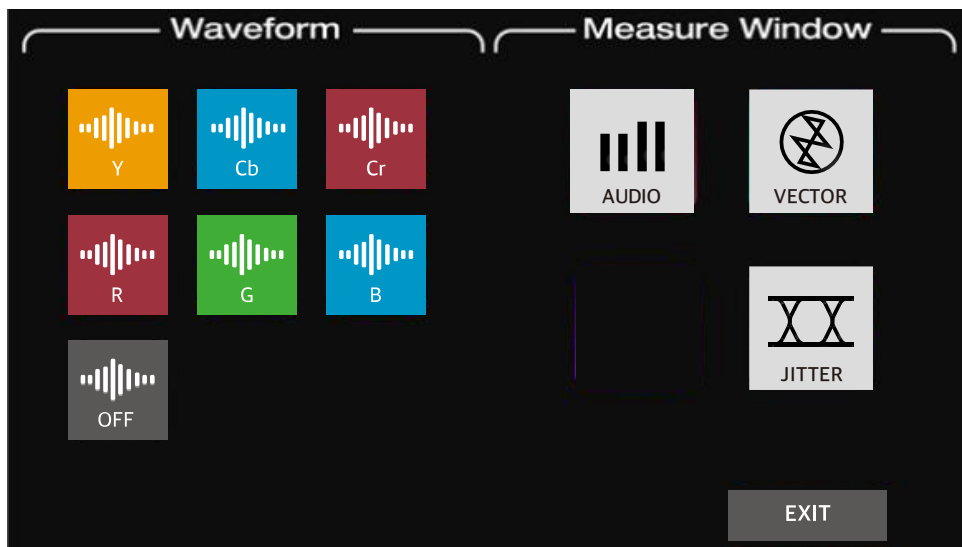
INPUT MODES	
	Selects the SDI signal for Input
	Selects the HDMI signal for Input
	<p>Sets the Auto Detection of Input Signal (Priority : SDI &gt; HDMI &gt; Pattern**)</p> <p><b>**The detection of Input signal is made pursuant to the order of the priority. Ex) when applying SDI EVEN AFTER HDMI already connected, Input changes to SDI preferentially.</b></p>







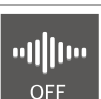
	Sets the Test Patter Generator for Output
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OUTPUT MODES									
(Resolution /Frame rate)	Selects the Output Resolution/Frame Rate up to 1080p60								
(Test Patter Type)	Selects the type of Test Patterns (shown below)								
<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>									
									
									

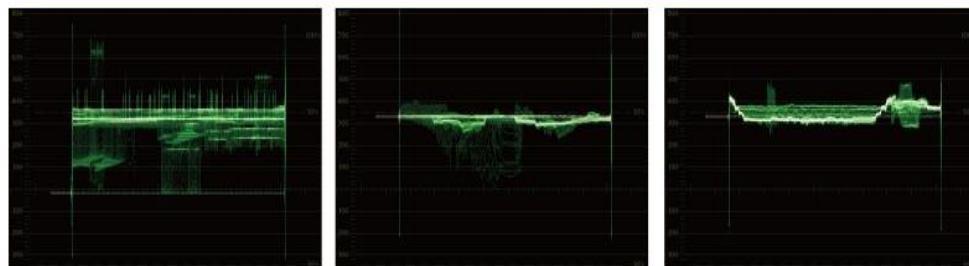


- 1 Press **MEASURE** button of Main Menu
- 2 Then, the following Sub Menu appears.



WAVEFORM ICONS	
	Displays the waveform of Y : Luminance at the bottom left.
	Displays the waveform of Cb : Blue-difference at the bottom left.
	Displays the waveform of Cr : Red-difference at the bottom left.
	Displays the waveform of R : Red at the bottom left.
	Displays the waveform of G : Green at the bottom left.
	Displays the waveform of B : Blue at the bottom left.
	Turns off the waveform display.

**Waveform YUV format**



**Luma Y**

**Chroma Cb**

**Chroma Cr**


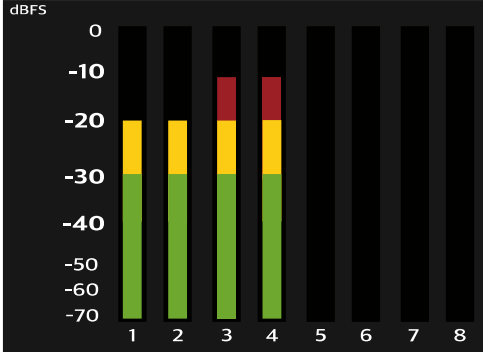





**Waveform RGB format**



**Red**

**Green**

**Blue**

MEASUREMENT WINDOWS							
 <p>AUDIO</p>	<p>Displays the Audio Level in the Split Mode.</p>  <ul style="list-style-type: none"> <li>Up to 8 channel monitoring of Input source.</li> <li>Indicated as dbFS reference</li> </ul>						
 <p>VECTOR</p>	<p>Displays the Vector Scope in the Split Mode.</p>  <ul style="list-style-type: none"> <li>It is indicated as the vector scope.</li> </ul>						
 <p>JITTER</p>	<p>Displays the SDI jitter : EYE PATTERN/ UI value.</p>  <ul style="list-style-type: none"> <li>Indicated as Pseudo Eye Pattern with jitter</li> <li>Peak to Peak Jitter : Physical Eye Jitter Horizontal Eye Opening(HEO)</li> <li>Eye opening monitoring : Monitoring the post-equalization waveform</li> <li>Max 1 UI Check.</li> </ul> <table border="1" data-bbox="954 1525 1337 1626"> <tr> <td>0~0.24</td> <td>0.25 ~0.39</td> <td>0.40 ~0.99</td> </tr> <tr> <td>Good</td> <td>Normal</td> <td>Bad</td> </tr> </table>	0~0.24	0.25 ~0.39	0.40 ~0.99	Good	Normal	Bad
0~0.24	0.25 ~0.39	0.40 ~0.99					
Good	Normal	Bad					
<p>(Length)</p>	<p>Displays the Cable Length and Condition up to 100m in the Split Mode.</p>  <ul style="list-style-type: none"> <li>Indicated as Input SDI cable length</li> <li>Color Gauge Bar indicates the increase of a possibility of error occurrence pursuant to a long distance (used for a parameter, Does NOT indicates the cable condition itself)</li> </ul> <table border="1" data-bbox="954 1957 1337 2029"> <tr> <td>0~39m</td> <td>40~79m</td> <td>80m~</td> </tr> <tr> <td>Good</td> <td>Normal</td> <td>Bad</td> </tr> </table>	0~39m	40~79m	80m~	Good	Normal	Bad
0~39m	40~79m	80m~					
Good	Normal	Bad					

INFORMATION PANEL	
<pre> In : SDI [ 1080i59.94 ] Status  Reset  count Loss  Err    Err    0001 EAV   Err    OK     0000 L Num  Err    Err    0001 Y CRC  Err    OK     0000 C CRC  Err    OK     0000 352M     85:06:00:01 Run 00:00:09:45S                     </pre>	<pre> In : HDMI [ 1080P59.94 ] Status  Reset  count Sync  Err    OK     0000 Hactive    1920 Vactive    1080 MODE       HDMI HDCP       ON AUD Freq   48 KHz Run 00:00:09:45S                     </pre>
① Input Information	Indicates Input source signal type and Resolution/Frame Rate.
② Reset	Initializes the Error Count and Runtime when pressing the button.
③ Error Count	Indicates the count of the relevant error occurrence.
④ Run Time	Indicates the total elapsed operating time as dd/HH/mm/ss.

SDI : ERROR COUNT ITEMS	
<pre> In : SDI [ 1080i59.94 ] Status  Reset  count Loss  Err    Err    0001 EAV   Err    OK     0000 L Num  Err    Err    0001 Y CRC  Err    OK     0000 C CRC  Err    OK     0000 Run 00:00:09:45S                     </pre>	
Loss Err	: Counts the Signal Loss error
EAV Err	: Counts the EAV error of TRS signal
L Num Err	: Counts the Line number marking error
Y CRC	: Counts the CRC error of Y signal
C CRC Err	: Counts the CRC error of Cb,Cr signal
352M	: Shows the SMPTE352M Payload

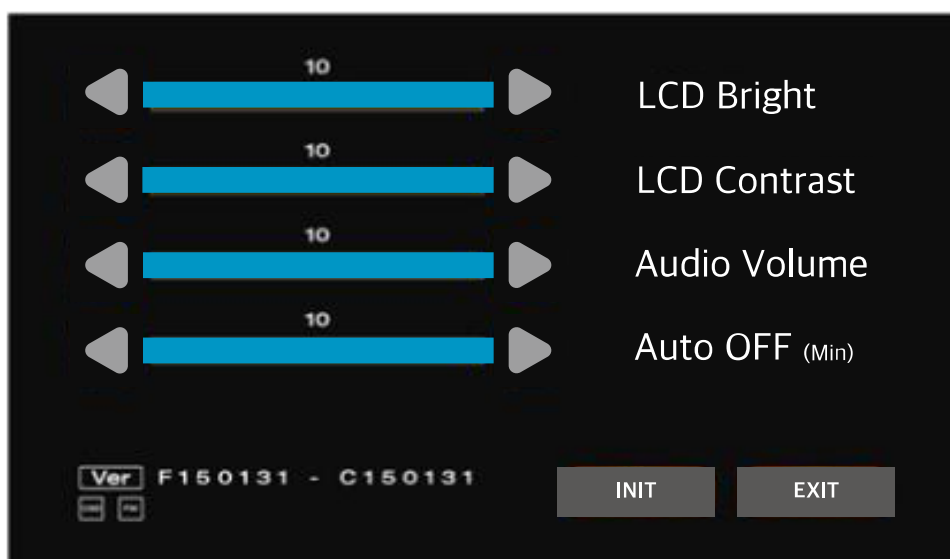
HDMI : ERROR COUNT ITEMS	
<pre> In : HDMI [ 1080P59.94 ] Status  Reset  count Sync    Err     OK     0000 Hactive                    1920 Vactive                    1080 MODE                       HDMI HDCP                       ON AUD Freq                   48 KHz Run 00 : 00H : 09M :45S                     </pre>	
Sync	: Counts the Sync error
H active	: Counts the Horizontal resolution
V active	: Counts the Vertical resolution
MODE	: Shows the status of HDMI or DVI mode
HDCP	: Shows the status of HDCP
AUD Freq	: Shows the Audio sampling frequency

CONFIG

CONFIG

1 Press CONFIG button of Main Menu.

2 Then, the following Sub Menu appears.



LCD Bright	Adjusts the brightness of LCD Touch Screen
LCD Contrast	Adjusts the Contrast of LCD Touch Screen
Audio Volume	Adjusts the Volume of Output Audio on Earphone port
Auto Sleep (Auto OFF)	Sets the time(minute) for the Sleep Mode of LCD Touch Screen. : After the set time, the LCD is automatically turned off for energy saving.
Ver	Indicates the System Version.
(Bottom left)	Indicates FPGA version
(Bottom Right)	Indicates CPU version
INIT	Initiates all the settings in Config menu
EXIT	Goes out of Menu