VENUS X1PRO-E

USER MANUAL

RGBlink®

CONTENTS

Thank you for choosing our product!

This User Manual is designed to show you how to use this video processor quickly and make use of all the features. Please read all directions and instructions carefully before using this product.

Declarations

FCC/Warranty

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation

RGBlink provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. RGBlink must be informed immediately in writing of any complains.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, RGBlink can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other service provided by RGBlink, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of RGBlink.

If the purchaser or a third party carries out modifications or repairs on goods delivered by RGBlink, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by RGBlink either.

The environmental conditions as well as the servicing and maintenance regulations specified in this

manual must be complied with by the customer.

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse

To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere.

Installation Safety Summary

Safety Precautions

For all VENUS X1PRO-E processor installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment.
To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power Cord.

The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening VENUS X1PRO-E processor shipping box, inspect it for damage. If you find any damage, notify the shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative.
Once you have removed all the components from their packaging and checked that all the listed components are present, visually inspect the system to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

The environment in which you install your VENUS X1PRO-E should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Chapter 1 Your Product

1.1 In the Box

AC Power Cord

DVI Cable

DB9 to RJ11 Cable

Screw Driver

Antistatic Bag
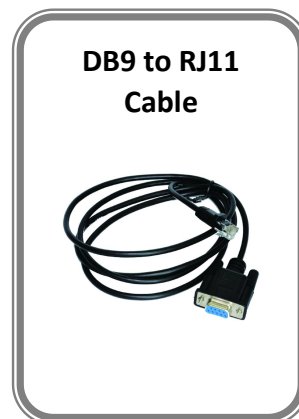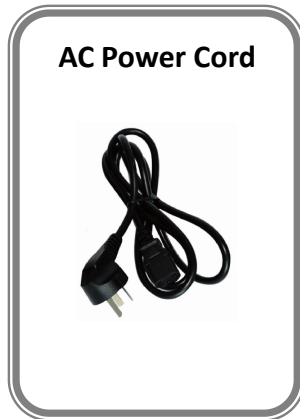
Note:

AC Power Cable supplied as standard according to destination market.

Screw driver color is random.

1.2 Product Overview

Professional 4K scaling and switching.

VENUS X1PRO-E enables 4K switching, scaling and signal distribution to 2k display devices. It supports up to 4K input signals with Dual Link DVI, HDMI and Display Port. With independent scaling for each output, support Matrix for input and output, up to 8K1K or 4K2K pixel-to- pixel output.

VENUS X1PRO-E with features like LOGO capture and standard test pattern built in, EDID management. Seamless switching between the inputs. Support remotely configured and control by XPOSE and XPOSE mobile.

Modular design is based on replaceable input optional modules structure, provide 3 slots for input option modules, you can reach more possibility and application range.

1.2.1 Rear Panel
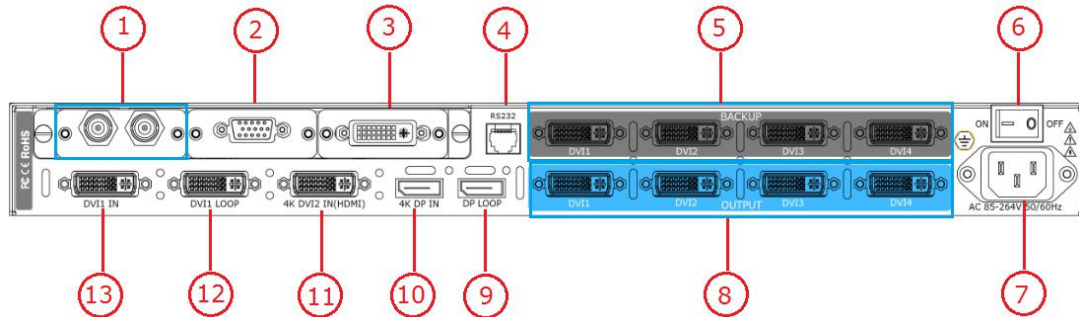
Input Connectors

13	**DVI-I DVI** Standard DVI signals can be input, compatible HDMI1.3
11	**4K DVI2 IN(HDMI)** Standard DVI and 4K DVI signals can be input, compatible HDMI1.4 & 4K HDMI signals.
10	**4K DP IN** Standard DisplayPort and 4K DisplayPort signals can be input.

Input Option Slots

1.2.3	**Input Optional Slots** Range of inputs are available for user fitting. DVI\SDI\HDMI\VGA\USB\CVBS\DP

Output Connectors

5	**DVI1-DVI4 Output Backup** 4 x DVI output, connect to the monitor.
8	**DVI-I – DVI** 4 x DVI output, connect to the monitor or LED display which has DVI interface.
9	**DP Loop Output** Connect to the DP input of the next VENUS X1PRO-E or the device with DP input.
12	**DVI Loop Output** Connect to the DVI input of the next VENUS X1PRO-E or the device with DVI or HDMI input.

Control Connectors

4	**RS232 Interface** Use for system upgrade or remote control by windows software.

Power Connection

6	**<u>Power Switch</u>** Illuminated power switch.
7	**<u>IEC – Power Input</u>** Main power input AC 85-264V Max 65W.

1.2.2 Front Panel
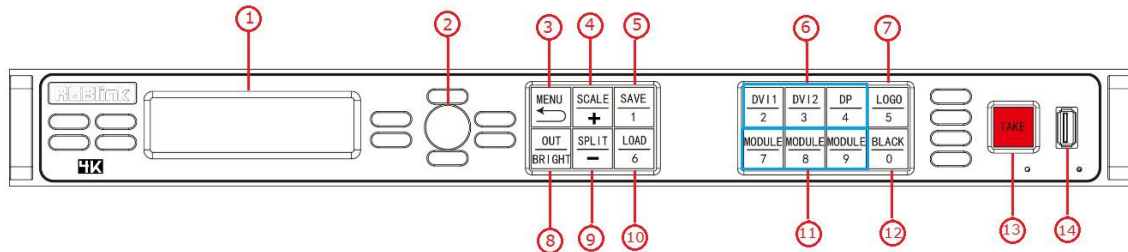
Display

1	**OLED Display:** Displays current status of the product, and for feature selections provides interactive choices in conjunction with buttons on the front panel.

Multi-Function Buttons

2	**Rotary Button:** This button used for menu selections and confirmation.

Illuminated Buttons

3	**MENU Button** Menu and back button. Push the button again will return to the last level menu or exit the menu. Push the button twice to enter the effect switch function menu. Push the button for 3 seconds will lock the front panel, and push the button for 5 seconds to unlock. Push the **MENU** and **TAKE** button for 3 seconds will switch the language.
4	**SCALE Button** This button used for size and position adjusting. It reused as the stop and play button for the USB signal.
5	**SAVE Button** Save all current settings with the VENUS X1PRO-E to 1 of the 36 available slots. Additionally, this button is used for direct numeric entry for numbers 1.
6	**Dedicated Signal Buttons** For each of inputs on the back panel a dedicated back-lit buttons are provided. When lit, the signal is selected for use, when red light is flashing, signal is in preview or the signal is not available. Additionally, each button is numbered and can be used as direct number entry when

	values such as resolution and size.
7	**LOGO Button** LOGO load &LOGO Capture shortcut button.
8	**OUT BRIGHT** Shortcut button for output Setting, output Brightness Setting, and 4K Input Signal switch.
9	**SPLIT Button** Split function button.
10	**LOAD Button** Restores/Loads all current settings with the VENUS X1PRO-E from 1 of the 24 available slots. Additionally, this button is used for direct numeric entry for numbers 6.
11	**MODULE Buttons** If optional input module is fitted, then these three buttons operate as per Dedicated Signal Buttons above. Additionally, these buttons are used for direct numeric entry for numbers 7/8/9.
12	**BLACK Button** Black button. Additionally, this button is used for direct numeric entry for number 0.
13	**TAKE Button** To preview the selected signal and take it to output.
14	**USB Connector** For system upgrade.
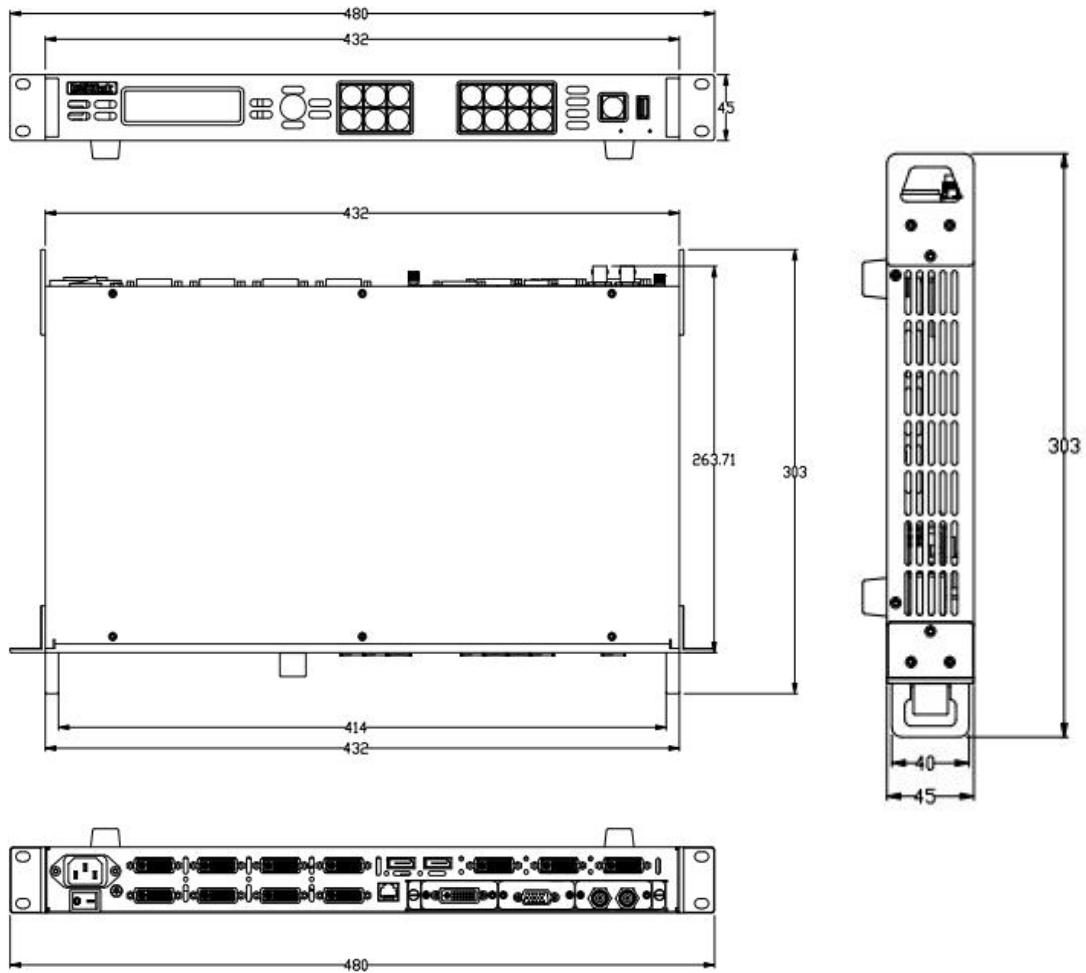
Chapter 2 Installing Your Product

2.1 Plugging in Signals

Connect signals to the product (ensure all devices are powered off first). Tighten connector screws/locks where provided.

For connector protection and for additional cable support this product is fitted with protection frames on either side of the device. For cable support use cable ties to attached to the protection frames to avoid stress on signal connectors.

2.2 Plugging in Main Power

Connect IEC cable to device and plug into wall socket. Turn on power at wall socket.

2.3 Turning on Your Product

Turn the power switch on the rear of the product to the ON position.

OLED display will show as below, completing initialization before loading last settings and input/output configuration.

VENUS X1PRO-E

Init Device   Finished!

Input 1   DVI1:NO INPUT
SV: 0.99   SN:1397
System Mode   :Standard
Output Resolution   :720x480x60
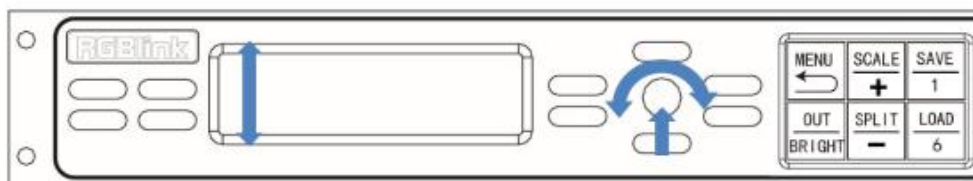
Chapter 3 Using Your Product

3.1 Using the MENU Button

Push the [MENU] button to enter the menu display.

Turn the rotary knob to navigate to the menu item required. The → symbol shows the current item. Push the knob to select and enter into the menu item.

As shown in the figure below:

3.2 Understanding the MENU Structure

The MENU structure is shown in the figure below:
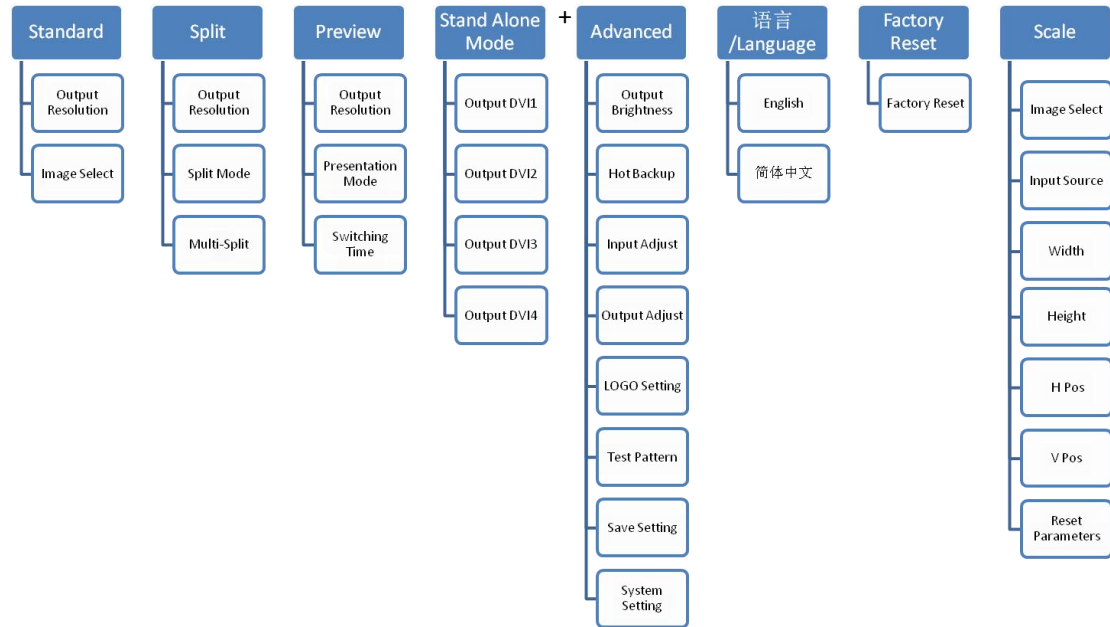
3.3 Using the Menu

Use the menu system for convenient and intuitive operation. VENUS X1PRO-E OLED display shows the menu items. The OLED display will show the default state when the menu is not in use, or the operation has timed out. Using the MENU button and rotary knob in the front panel, the OLED display will show the corresponding menus according to user selections.

3.3.1 Understanding the Display

Turn the power switch to the ON position, the OLED display will show the start-up interface and show the default menu after completing initialization as below:
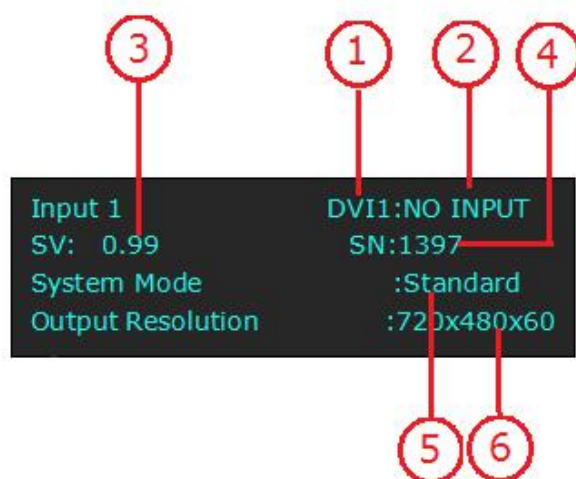
Introduce for the above information:

1	**Input Signal** Shows the current **In**put signal that is selected. The related dedicated signal button will be lit red.
2	**Input Resolution** Show the current input resolution from the selected **In**put source. To configure input resolutions, use the EDID Management features. A wide range of input resolutions are supported depending the input – refer to Specification. If a # symbol is show after the resolution, then a custom resolution is being used.
3	**Software version** Shows the software version of the product. When not displayed here, the serial number can be found via the TECH SUPPORT menu.
4	**Serial Number** Shows the serial of the product. When not displayed here, the serial number can be found via the TECH SUPPORT

	menu.
5	**System Mode** Show the default system mode.
6	**Output Resolution** Show the current output resolution. To configure output resolutions, use the OUTPUT menu. A wide range of resolutions are supported – refer to Specification. If a # symbol is show after the resolution, then a custom resolution is being used.

3.3.2 Understanding the Main Menu

Push the MENU button in the default state and turn the rotary knob, the OLED display will show the main menus as below:

```
->Standard                          >>
   Split                            >>
   Preview                          >>
   Stand Alone Mode                 >>
```

```
->Advanced                          >>
   语言/Language                   English
   Factory Reset                    >>
```
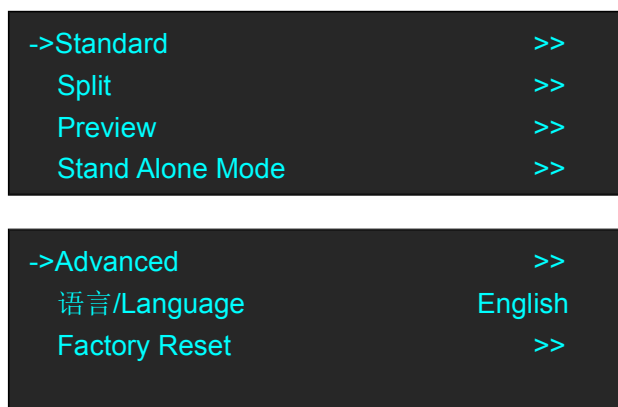
There are 7 menu items in the main menu, and display in 2 pages. Turn the rotary knob, and select any menu above, push the rotary knob to confirm, the OLED display will show the submenu. If push the MENU button, the OLED display will return to the last level menu.

3.3.3 Mode Menu

```
->Standard                          >>
   Split                            >>
   Preview                          >>
   Stand Alone Mode                 >>
```
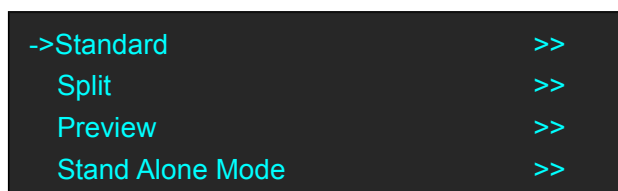
Standard Mode	Select standard resolution or custom the resolution. Thirteen Image Select Modes for selection. For details, please refer to Standard Mode.
Split Mode	Select standard resolution or custom the resolution. Twelve Split Mode and Multi-Split Mode for selection. For details, please refer to Split Mode.

Preview Mode	Select standard resolution or custom the resolution. Four Presentation Modes for selection. For details, please refer to Preview Mode.
Stand Alone Mode	Setting four DVI Alone output and EDID setting. For details, please refer to Stand Alone Mode.

3.3.4 Advanced Menu

```
->  Output Brightness              >>
    Hot Backup                      >>
    Input Adjust                   >>
    Output Adjust                  >>
```

```
->  LOGO Setting                   >>
    Test Pattern                   >>
    Save Setting                   >>
    System Setting                 >>
```

Output Brightness	Adjust four DVI output Brightness alone or together, adjustment Brightness range within 0-128.
Hot Backup	**Hot Backup** Enable or Disable function **Hot Backup input** Input signal backup. Hot backup total 1 to 3.
Input Adjust	**Input Details** Display the input source and resolution. **Image Quality** Adjust Image Brightness, Contrast, Saturation, Sharpness, Color Red/Green/Blue, Reset Parameters. Only adapt to DVI2 and DP input. **Zoom** Zoom Up Image to up zoom. Zoom Down Image to down zoom. Zoom Up & Down Image to up and down zoom. Zoom Left Image to left zoom. Zoom Right Image to right zoom. Zoom Left & Right

	Image to left and right zoom.
	Zoom Centre
	Image from center to the edges zoom.
	Mask
	Mask Top
	Setting Image top corp value.
	Mask Bottom
	Setting Image bottom corp value
	Mask Left
	Setting Image left corp value
	Mask Right
	Setting Image right corp value
	Reset Mask
	Reset Image to original status.
	VGA Adjust
	H POS, V POS, CLOCK and PHASE setting, or select auto adjust.
	USB Control
	USB PORT
	Select PORT A or PORT B.
	PLAY MODE
	Select video or photo, default video.
	PLAY FILE
	Select the file to play.
	PLAY ORDER
	Select REPEAT ALL, RANDOM, ORDER, SINGLE CYCLE, SINGLE TRACK or PLAY LIST.
	PLAY STATE
	Select play or pause.
	EXT CVBS Control
	CVBS PORT
	Select PORT A or PORT B.
	INPUT FORMAT
	Display the input format of CVBS.
Output Adjust	Adjust 4 output port separately.
	DVI Mode
	DVI or HDMI
	Bit Depth
	8 bit default.
	Data Range
	Select Image(default) or Video.
	DE ON/OFF
	Enable of disable DE function. Setting De scale H Pos, V Pos, Width, Height, H Polarity, V Polarity.

	Reset Parameters
	If image quality distorts by improper operation, it can be recover by reset.
LOGO Setting	**LOGO Load**
	Select Layer
	Select layer A, B, C or D.
	LOGO Select
	Select LOGO 1 to LOGO 10.
	LOGO On/Off
	Enable or disable LOGO load function.
	LOGO Capture
	Save to
	LOGO 1 to LOGO 10.
	Select Layer
	Select layer A, B, C or D.
	Select Input
	Select Input signal to capture LOGO
	LOGO Freeze
	Enable or disable LOGO Freeze function.
	LOGO On/Off
	Start Capture LOGO
	Starting to Capture
Test Pattern	**TP Mode**
	Enable or disable TP Mode, and select Color Bar or Solid Color.
	Red/Green/Blue
	Adjust Range between 0~255.
Save Setting	**Save To**
	Save all current settings with the VENUS X1PRO to 1 of the 36 available slots.
	Load From
	Restores/Loads all current settings with the VENUS X1PRO from 1 of the 36 available slots
	Delay Recall
	Delay output time setting.
	Real-Time Save Mode
	Enable or disable the real-time save function.
System Setting	**SN**
	Display the serial number of the device.
	VERSION
	Display the software and hardware version of the device.
	Technical Support
	Display sales, after-sale service, email, website and telephone.
	DATE/TIME
	Display the date, time, work time, total time and boot times. User can also

	change the date and time.
	LOCK FRONT PANEL
	Lock front panel function. If the key is locked, the equipment will remind: "Buttons are locked! Press MENU button and hold 5s Unlock Button!"
	LICENSE SETUP
	The device will not work if excess the prescribed time, there are no signal output, it needs to input password and modify the using time to continue to work.
	USER Defines Button
	Default Black Key or LOGO Key.
	OLED BRIGHTNESS
	OLED Brightness adjust, the adjustment range is 1~15.
	Fans Control
	Adjust Fans Speed.

3.3.5 Language Menu

```
->语言/ LANGUAGE                    English
   Factory Reset                      >>
```

Language	Select Chinese or English.

3.3.6 Factory Reset Menu

```
->Factory Reset                       >>
```
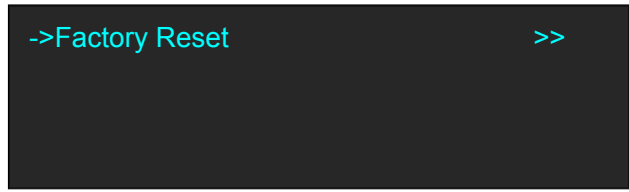
Factory Reset	Select "YES" or "NO". Select "YES" to restore default settings.

3.4 Standard Mode

In standard mode, four output channels output the same signal and resolution. Each Output port support maximum 4 layers. This is the default mode following a reset and adapt to 1920x1080 screen.

3.4.1 Single Image Switching

Default DVI1 for the current input source, if another signal is needed, for example, DP, push the DP button.

DVI button light will be off after pushing the DP button, and DP button light will be on if the DP signal is effective and stable. If the DP signal is invalid or no input, DP button light will flash.

Same with above, switch the signals among DVI1, DVI2, DP and input optional signals.

3.4.2 Set the Output Resolution

3.4.2.1 Select the Output Resolution

1. Push the [MENU] button, and enter to menu items, turn the rotary knob, select <Standard>.

```
->Standard                      >>
   Split                        >>
   Preview                      >>
   Stand Alone Mode             >>
```

```
->Advanced                      >>
   语言/Language             English
   Factory Reset                >>
```

2. Turn the rotary knob to select <Output Resolution>, <Standard> or <customs> can be selected.

```
->Standard                        >>
   Custom                         >>
```

3. Default <Standard> option, push the knob to confirm. Turn the rotary knob, and select the output format according to actual need.

```
Output Resolution
*1920x1080x60
```

3.4.2.2 Custom the Output Resolution

1. Push the [MENU] button, and enter to menu items, turn the rotary knob, select <Standard>.

```
->Standard                    >>
   Split                      >>
   Preview                    >>
   Stand Alone Mode           >>
```

```
->Advanced                    >>
   语言/Language          English
   Factory Reset              >>
```

2. Turn the rotary knob to select <Output Resolution>, and select <customs>, push the knob to

confirm, and enter to the menu items as follows:

```
   Standard                   >>
->Custom                      >>
```

```
   Customs:
->1920×1080@60
```

3. Turn the knob on each digital position, and change the value of the digital by the digital buttons on the front panel. For example, input 1536 as following:

```
   Customs:
*1536×
```

4. After the digital, push the knob will add *, means before the * is the horizontal size. Same operation for vertical size, for example input1536 as following:

```
   Customs:
*1536×1536@
```

5. After the digital, push the knob will add @, means before the @ is the vertical size, and after the @ is the refresh rate. Only digital 50 or digital 60 supports for the refresh rate. Use the digital buttons to finish the settings, for example, input refresh rate 60:

```
Customs:
->1536×1536@60
```

6. After input all the values, push knob to enable VENUS X1PRO-E to output this resolution. VENUS X1PRO-E will take 5~10 seconds to enable this output resolution.

3.4.3 Set the Image Select

1. Push the [MENU] button, and enter to menu items, turn the rotary knob, select <Standard>.

```
->Standard              >>
  Split                 >>
  Preview               >>
  Stand Alone Mode      >>
```

2. Push the knob to confirm, select <Image Select>, confirm again, and enter to the menu items as follows:

```
->Image Select         Mode 1
  Image 1 Source        DVI1
  Width                 1300
  Height                1080
```

```
->H Pos                 0
  V Pos                 0
  EDID                  >>
  Reset Parameters
```

Image Select: Total 13 layout Modes, These Modes mean each output port supports:

(1) Single image, PIP, three images or four images and can be quickly layout on 1920*1080 LED screen.

(2) Setting image position and size as needed.

The layout modes and image as follow:

Mode 1 Single Image: Each Output has same single image.

Mode 2 Horizontal two same Images:

Mode 3 Vertical two same Images:

Mode 4 Horizontal three same Images:
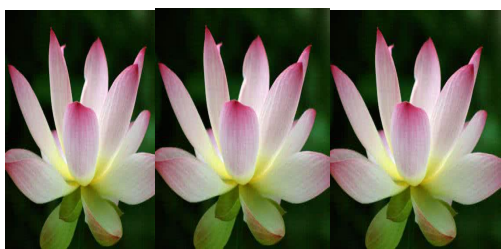
Mode 5 Vertical three same Images:

Mode 6 Left&Right1+Middle 1 three same Images

Mode 7 Left 2+Right1 three same Images:

Mode 8 Left1 + Right2 three same Images:
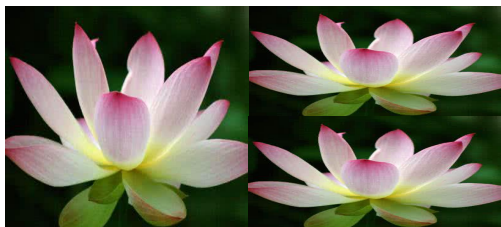
Mode 9 Left 2+ Right 2 four same Images:

Mode 10 Horizontal four same Images:

Mode 11 Vertical four same Images:
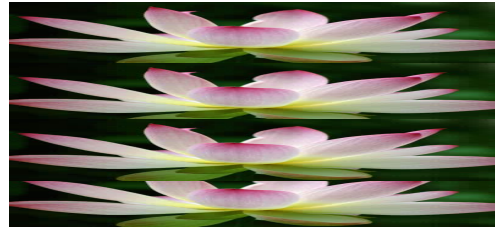
Mode12 Left 3 + Right 1 four same Images:

Mode13 Left1 +Right3 four same images:

Image Source: Select Input signal for each image.

Width: Setting Image Width value.

Height: Setting Image Height value.

H Pos: Horizontal phase setting

V Pos: Vertical phase setting.

EDID: Setting DVI1, DVI2, DP Port to follow other input signal resolution.

Reset Parameters: If image quality distorts by improper operation, it can be recover by reset.

3.5 Split Mode

Push the [SPLIT] button, and enter to the output mode menus. Turn the rotary knob to select <SPLIT MODE>, and enter to the menu items as follows:

```
    Output Resolution              >>
  ->Split Mode                     >>
    Multi - Split                  >>
```

Output Resolution: Setting same as Standard Mode.
Split Mode: Split mode for One device
Multi-Split: Split mode for 2 or more than 2 devices cascade.

3.5.1 Split Mode

VENUS X1PRO-E equipped with 4K module, and the output resolution can up to 4K×1K.
There are 12 split modes:
H1/2, V1/2, H1/4, V1/4, CROSS, H 2 In/2Out, V 2 In/2Out, H 2 In/3Out, H 2 In/4Out, 3D Normal, 3D Split H 1/2, 3D Split V 1/2.
Realize up to 8K1K, 4K2K, 6K1K single device split.
Follows will provide samples for 3 modes setting: H 1/2, CORSS, H 2 In/3Out.

H 1/2 Split

1. Push the <Menu> button, turn the rotary to select <Split>, push the knob; Or Push the [SPLIT] button, both ways will enter to the split mode as follows.

```
    Output Resolution              >>
  ->Split Mode                     >>
    Multi - Split                  >>
```

2. Select <Split Mode>, press the knob, shows the follows, select H1/2.

```
  ->Split Mode                   H 1/2
    PIP Config                     >>
    H Total                       3840
    V Total                       1080
```

```
    Width 1                       1920
    Details                        >>
    EDID                           >>
    Reset Parameters               >>
```

3. Press the shortcut button on front panel, select <4K Mode>:

Standard	>>
Custom	>>
-> 4K Mode	Regular
Output Brightness	>>

4. Press the knob, select "4K1K Mode" or "4K2K Mode", shows the follows:

Standard	>>
Custom	>>
-> 4K Mode	4K1K Mode
Output Brightness	>>

5. Back to <Split Mode>, press the knob, shows the follows, select <H 1/2>.

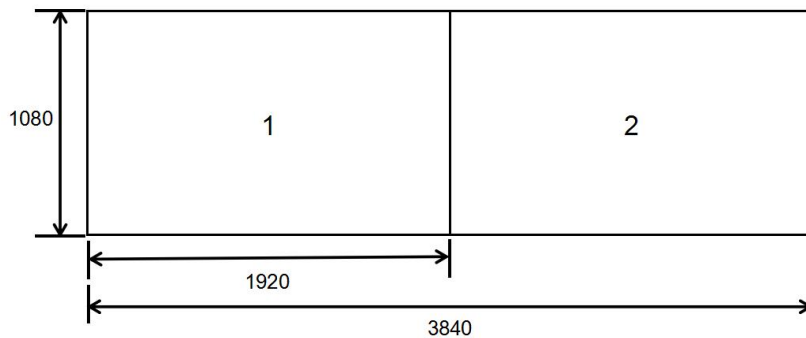|	
->Split Mode	H 1/2
PIP Config	>>
H Total	3840
V Total	1080

Width 1	1920
Details	>>
EDID	>>
Reset Parameters	>>

Set H total, V total, width1 of screen according to actual need.

For example, set H total as 3840, V total as 1080, Height 1 is 1080, same with V total.

Set Width 1 as 1920 and Width 2 will be 1920, (H total <3840> - Width 1 <1920> = Width 2 <1920>).

As shown in the figure below:

CROSS

Turn the rotary knob, and select <CROSS>, push the knob to confirm, enter to the menu items as follows:

```
->Split Mode              CROSS
   PIP Config                >>
   H Total                  3840
   V Total                  2160
```

```
   Width 1                  1920
   Height 1                 1080
   Details                    >>
   EDID                       >>
```

Set H total, V total, width and height of each screen according to actual need.

For example, set H total as 3840, V total as 2160, Width 1 as 1920 and Height 1 as 1080, then Width 3 will be 1920 (H total <3840> - Width 1 <1920> = Width 3 <1920>).

Height 2 will be 1080 (V total <2160> - Height 1 <1080> = Height 2 <1080>).

As shown in the figure below:
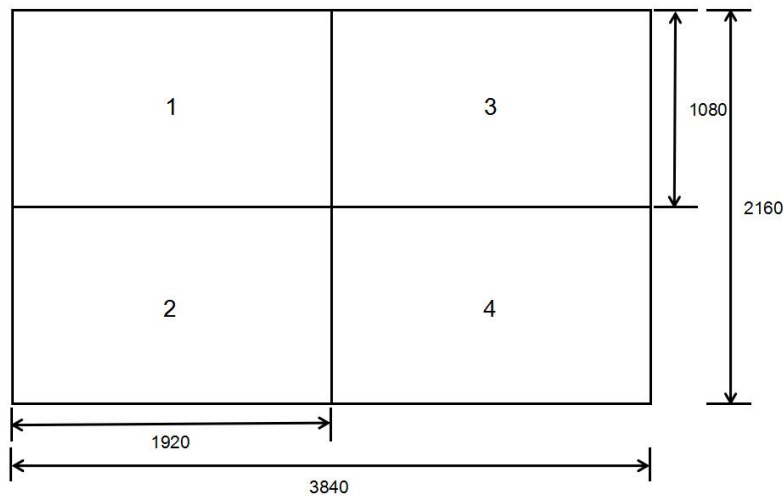
H 2 In/3Out

1. Turn the rotary knob, and select <H 2 In/3 Out>, push the knob to confirm, and enter to the menu items as follows:

```
->Split Mode          H 2 In/3 Out
   Left Source                DVI1
   Right Source               DVI2
   H Total                    5760
```

```
->V Total                    1080
   Width 1                   1920
   Width 2                   1920
   Details                     >>
```

```
  ->EDID                          >>
     Reset Parameters             >>
```

Turn the rotary knob, select <Left Source> and <Right source>, push the knob to confirm.

Set H total, V total, width1 and width2 of each screen according to actual need.

For example, set H total as 5760, V total as 1080, Width 1 as 1920 and Width2 as 1920, then Width 3 will be 1920 (H total <3840> - Width 1 <1920> -Width 2<1920>= Width 3 <1920>).

2. Select <Details>, the menu items as follows:

```
  ->Layer A                       >>
     Layer B                      >>
     Layer C                      >>
     Layer D                      >>
```

```
  ->Output DVI4 Copy From         >>
```

3. Select <Layer A>, the menu items as follows:

```
  ->Scale                         >>
     Crop                         >>
     Crop Edge                    >>
```

4. Push the Knob enter into <Scale>, <Crop>, <Crop Edge> to set Parameters separately:

```
     Width                      1920
     Height                     1080
     H Pos                         0
     V Pos                         0
```

```
     Reset Scale
```

3D Split H 1/2

Turn the rotary knob, and select <3D Split H 1/2>, push the knob to confirm, enter to the menu

items as follows:

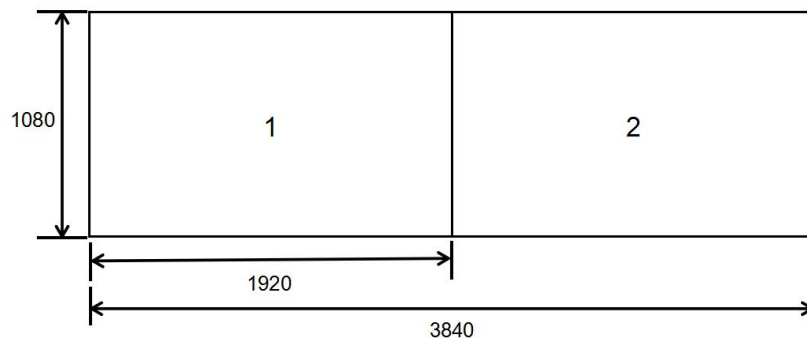| ->Split Mode	3D Split H 1/2
Source Type	3D
H Total	3840
V Total	1080

->Width 1	960
Details	>>
EDID	>>
Reset Parameters	

Set Source Type is 3D, H total, V total, width1 according to actual need.

For example, set H total as 3840, V total as 1080, Width 11 is 1920, same with V total.

Set Width 1 as 1920 and Width 2 will be 1920, (H total <3840> - Width 1 <1920> = Width 2 <1920>).

As shown in the figure below:

3.5.2 Multi- Split

Allows splitting an input signal across both output channels, and also provides setting where the source is to be split across more than one device. Follows will connect 2 devices as example.

3.5.1.1Connecting

(1) The 1st VENUS X1PRO-E input signal DVI1, and DVI Loop out connect to the 2nd VENUS X1PRO-E DVI1 in, the input signal can be DVI1 or input optional signal SDI or HDMI or DP, but DP have to match DP Loop out.

(2) Each VENUS X1PRO-E connecting 4 *DVI output.

3.5.1.2 Split Setting

(1) Push the <Menu> button, turn the rotary to select <Split>, push the knob to confirm, and Select <Multi - Split>, enter to the menu items as follows:

```
->Multi - Split Source          DVI1
   Sync                          ON
   Split Mode                    >>
```

Multi - Split Source: Two VENUS X1PRO-E select the same source from input signal. E.g. DVI1

Sync: Enable the Sync function for all connecting devices.

Split Mode: Same as single device mode.

(2) Select <Split Mode> button, push the knob to confirm, enter to the menu items as follows:

```
->Split Mode                    H 1/4
   H Total                       15360
   V Total                       1080
   Here Scale H Pos              0
```

```
->Here Scale V Pos              0
   Here Width                    7680
   Here Height                   1080
   Width 1                       1920
```

```
->Width 2                       1920
   Width 3                       1920
   Details                       >>
   EDID                          >>
```

```
->Reset Parameters
```

1st device parameters setting as follows:

Split Mode: Select the same split mode or same type mode for two devices, e.g. H1/4

H Total: Setting the total Horizontal size, 1ST device H size+ 2nd device H size, here equals
        8*1920=15360

V Total: Setting the total vertical size: 1080

Here Scale H Pos: 1st device H Pos=0

Here Scale V Pos: 1st device V Pos= 0

Here Width: 1st device all output port width 4*1920=7680

Here Height: 1080

Width 1: 1st output port width 1920

Width 2: 2nd output port width 1920

Width 3: 3rd output port width 1920

Details: Adjust Layer A to D for Scale or Crop

EDID: Setting DVI1, DVI2, DP Port to follow other input signal resolution.

Reset Parameters: If image quality distorts by improper operation, it can be recover by reset.

2nd device parameters setting as follows:

Split Mode: Select the same split mode or same type mode for two devices, e.g. H1/4

H Total: Setting the total Horizontal size, 1ST device H size+ 2nd device H size, here equals
        8*1920=15360

V Total: Setting the total vertical size: 1080

Here Scale H Pos: Equals to =H Total- 1st device Width=15360-7680=7680

Here Scale V Pos: 0 (In horizontal split Mode, same Height)

Here Width: 2nd device all output port width 4*1920=7680

Here Height: 1080

Width 1: 1st output port width 1920

Width 2: 2nd output port width 1920

Width 3: 3rd output port width 1920

Details: Adjust Layer A to D for Scale or Crop

EDID: Setting DVI1, DVI2, DP Port to follow other input signal resolution.

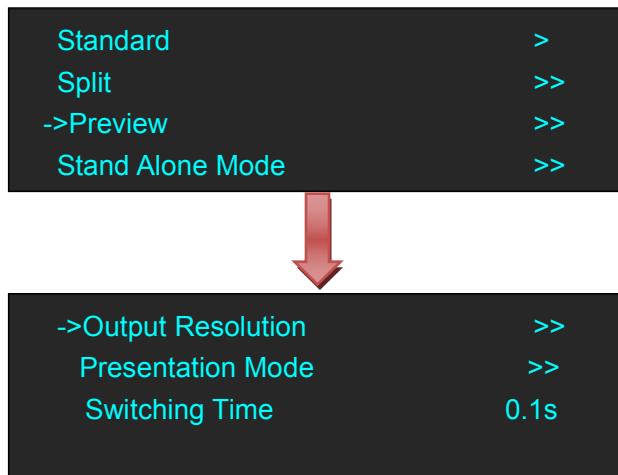**Reset Parameters:** If image quality distorts by improper operation, it can be recover by reset.

(3) Finish two VENUS X1PRO-E Split mode H1/4 setting, come true 16K1K split.

3.6 Preview Mode

Each of two output channels can have individually resolution, Output port DVI 1 & DVI 2 default as PST output, DVI 3 & DVI 4 default to PGM output.

Scale the image, zoom the image and image quality setting.

1. Push the [MENU] button, turn the rotary knob, select <Preview>.Push the knob button, and enter to preview mode, the mode including three functions: <Output Resolution>, <Presentation Mode>, <Switching Time>. turn the rotary knob, select different function to set parameters.
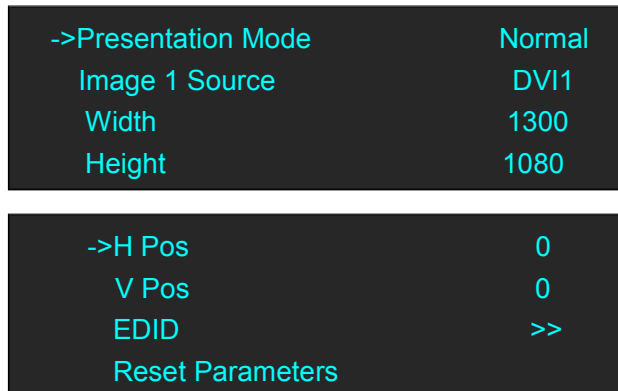
```
   Standard                    >
   Split                       >>
 ->Preview                     >>
   Stand Alone Mode            >>
```

```
 ->Output Resolution           >>
   Presentation Mode           >>
   Switching Time            0.1s
```

Output Resolution setting same as standard mode.

2. Turn the rotary knob, select <Presentation Mode>.

```
   Output Resolution           >>
 ->Presentation Mode           >>
   Switching Time            0.1s
```
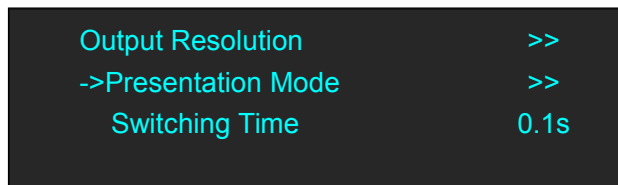
3. There are four modes, <Normal>, <PIP>, <Split H>, <Split V>, select different mode, items menus will show as follows:

Normal Modes

```
 ->Presentation Mode        Normal
   Image 1 Source             DVI1
   Width                      1300
   Height                     1080
```

```
 ->H Pos                       0
   V Pos                       0
   EDID                       >>
   Reset Parameters
```

PIP. Set H total, V total, width of each screen according to actual need. Image source setting to different input source.

->Presentation Mode	PIP
Image 1 Source	DVI1
Width	1300
Height	1080

->H Pos	0
V Pos	0
Image 2 Source	DVI2
Width	1300

->Height	1080
H Pos	650
V Pos	0
EDID	>>

Reset Parameters

Split H

1. Select <Split H>, press the knob, shows the follows.

->Presentation Mode	Split H
H Total	3840
V Total	1080
Width 1	1920

Details	>>
EDID	>>
Reset Parameters	

2. Set H total, V total, width1 of screen according to actual need.

For example, set H total as 3840, V total as 1080, Height 1 is 1080, same with V total.

Set Width 1 as 1920 and Width 2 will be 1920, (H total <3840> - Width 1 <1920> = Width 2 <1920>).

As shown in the figure below:
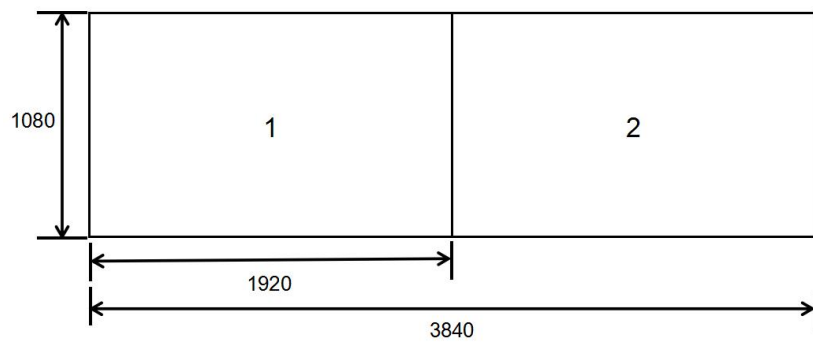
Split V

1. Select <Split V>, press the knob, shows the follows.

->Presentation Mode	Split V
H Total	1920
V Total	2160
Height 1	1080

Details	>>
EDID	>>
Reset Parameters	

Set H total, V total, Height 1 of screen according to actual need.

For example, set V total as 2160, Height 1 is 1080, same with H total.

Set Height 1 as 1080 and Height 2 will be 1080, (V total <2160> - Height 1 <1080> = Height 2 <1080>).

2. Select <Details>, the menu items as follows:

->Layer A	>>
Layer B	>>
Layer C	>>
Layer D	>>

3. Select <Layer A>, the menu items as follows:

->Scale	>>
Crop	>>
Crop Edge	>>

4. Push the Knob enter into <Scale>, <Crop>, <Crop Edge> to set Parameters separately:

Width	1920
Height	1080
H Pos	0
V Pos	0

Reset Scale

Switching Time Setting

Enter to <Preview Mode>, select <switching Time>, the setting range within 0.1 to 3 seconds

Output Resolution	>>
Presentation Mode	>>
->Switching Time	0.1s

3.7 Standard Alone Mode

Each of output channels can have same resolution, individually input signal, scale and position setting.

There is no PIP in this mode.

1. Push the <MENU>, turn the rotary to select <Stand Alone Mode>, push the knob to confirm, enter menus as follows:

Standard	>>
Split	>>
Preview	>>
->Stand Alone Mode	>>

->Output DVI1	>>
Output DVI2	>>
Output DVI3	>>
Output DVI4	>>

2. Each Output DVI can be set the parameter for input signal, scale and crop.

->Input Source	DVI1
Scale	>>
Crop	>>

Input Source: can be DVI, DVI2, DP and any optional input signals.

Scale & Crop: set the Width, Height, H Pos, V Pos and Reset Parameters.

->Width	1920
Height	1080
H Pos	0
V Pos	0

Reset Parameters	

```
->   DVI 4                              128
```

User can adjust the following items by the rotary knob or number buttons.

Change Mode: Change the all port output brightness Alone or together.

DVI 1: The output brightness adjustment range within 0~128.

DVI 2: The output brightness adjustment range within 0~128.

DVI 3: The output brightness adjustment range within 0~128.

DVI 4: The output brightness adjustment range within 0~128.

3.8 Output Brightness

1. Push the <MENU>, turn the rotary to select <Advanced>, push the knob to confirm, enter menus as follows:

```
->   Output Brightness               >>
     Hot Backup                      >>
     Input   Adjust                  >>
     Output   Adjust                 >>
```

```
->   LOGO Setting                    >>
     Test Pattern                    >>
     Save Setting                    >>
     System Setting                  >>
```

2. Turn the rotary to select <Output Brightness>, push the knob to confirm, enter menus as follows:

```
->   Change Mode                   Alone
     DVI 1                          128
     DVI 2                          128
     DVI 3                          128
```

```
->   DVI 4                          128
```

Change Mode: Select "Alone" or "Together" to adjust brightness for each port or all ports.

DVI 1: The output port brightness adjustment range within 0~128

DVI 2: The output port brightness adjustment range within 0~128

DVI 3: The output port brightness adjustment range within 0~128
DVI 3: The output port brightness adjustment range within 0~128

3.9 Logo Setting

Push the [Logo/5] button or Push [MENU], Select <Advanced>and push rotary to confirm, then select <Logo Setting>, enter into menus as follows:

```
-> LOGO Load                        >>
   LOGO Capture                     >>
```

LOGO Load

Select <Logo Load> and enter menus as follows:

```
-> Select Layer                Layer A
   LOGO Select                 LOGO_1
   LOGO On/Off                 Off
```

Select Layer: Layer A to D can be selected.
Logo Select: Total LOGO1~10 can be selected.
LOGO On/Off: Enable or disable Logo load function.

LOGO Capture

Select <Logo Load> and enter menus as follows:

```
-> Save to                     LOGO_1
   Select Layer                Layer A
   Select Input                DVI1
   LOGO Freeze                 Off
```

```
-> LOGO On/Off                 Off
   Start Capture LOGO
```

Save to: Total can be save 10 Logos, from LOGO_1~LOGO_10
Select Layer: Layer A to D can be selected.
Select Input: DVI1, DVI2, DP and input option signal can be selected.

LOGO Freeze: Enable or disable Logo freeze function.

LOGO On/Off: Enable or disable Logo load function.

Start Capture LOGO: Setting above info then push this button to confirm, enable to capture logo.
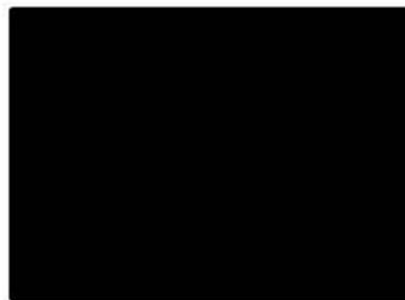
3.10 Using Black Out

Black out descriptions:

Black signal realizes one-key-touch to a black screen.

VENUS X1PRO-E provides black effect processing for output with cut black effect. Operation is as below:
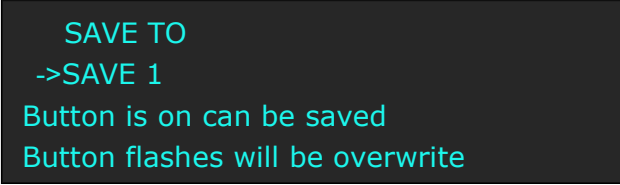
Push the [BLACK/0] button, then output will cut to BLACK, shown as below:

3.11 Saving Views
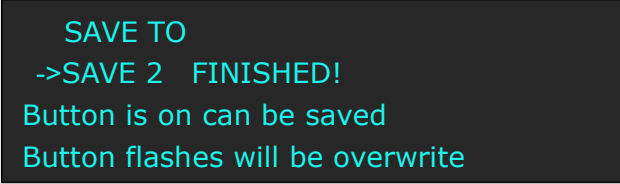
VENUS X1PRO-E provides 24 positions for saving or recording parameters. To save current parameters and settings:

1. Push the [SAVE/1] button, the button light is on, and enable the SAVE function.

```
   SAVE TO
 ->SAVE 1
Button is on can be saved
Button flashes will be overwrite
```

2. Turn the rotary knob, and select the position that will save, push the knob to confirm.

3. The number button 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 means SAVE1~9, push any button on to save. For example, push number button 2 and save to SAVE 2, the OLED panel will show as follows after saving.
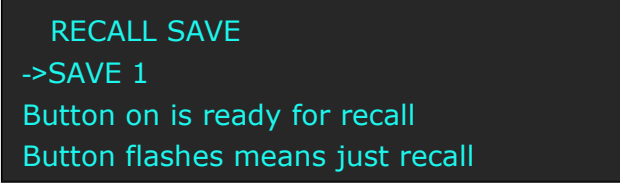
```
   SAVE TO
 ->SAVE 2   FINISHED!
Button is on can be saved
Button flashes will be overwrite
```

4. Push the [SAVE/1] button again, the button light is off, and disable the SAVE function.

3.12 Recall Saved Settings

VENUS X1PRO-E provides 24 positions for saving or recording parameters. To recall saved settings:

1. Push the [LOAD/6] button, the button light is on, and enable the LOAD function:

```
  RECALL SAVE
->SAVE 1
Button on is ready for recall
Button flashes means just recall
```

2. Turn the rotary knob, and select the position that will load, push the knob to confirm.
3. Push the [LOAD/6] button again, the button light is off, and disable the LOAD function.

Chapter 4 Ordering Codes

4.1 Product

110-0001-21-0   VENUS X1PRO-E with EXT module fitted

4.2 Options

4.2.1 Input Options

190-0001-03-2   Display Port Input (DP1.2)

1 × Display Port

190-0001-04-2   DVI Input

1 × DVI

190-0001-07-2   3G-SDI Input /Loop Out

1 × SDI (with loop)

190-0001-10-2   USB In/Backup

1 × USB + USB BACKUP

190-0001-13-2   RS232 Comm. Module (Standard)

1 × RS232

4.2.2 Output Options

190-0003-21-0   4 × DVI Output Module

Chapter 5 Support

5.1 Questions and Troubleshooting

Q: Turn on the VENUS X1PRO-E，but the LED light all lit or all not, how to deal with it？
A：Maybe caused by follows：
(1) MCU procedure lost，but still can be use XTOOL to communication and connecting, just restart and upgrade MCU procedure.
(2) Flat cable on front panel is loose, connecting again.
(3) Boot procedure lost, pls contact with production support team to get VENUS X1PRO-E Boot upgrade guard line.

Q: VENUS X1PRO-E 4K signal input can not come true pixel to pixel image output under split mode ?
A：Pls refer to follows access: Out   BRIGHT→4K Mode→Regular /4K1K Mode/4K2KMode, then enter into Split Mode to set parameters

Q: Any limit for 2K input signal select under multi-in to multi-out mode?
A：DVI1 input only collocation with option input DVI& HDMI, if DVI1 collocation with DVI2&DP, the image will out of sync.；DVI2 input only collocation with DP input；

Q: Any limit for VENUS X1PRO-E Split mode H2 In/4 Out？
A：Limits as follows：
Input Source Select：Left screen limit to select input signal DVI1, right screen limit to select option input signal, current unsupported input two 4K1K signal and 8K1K split.

Q: VENUS X1PRO-E DVI or HDMI signal input, output resolution is 1920*1080@30，input signal via Black magic transfer to SDI format，the white, yellow, cyan shown abnormal, how to deal with it?
A：If EDID format of input signal is RGBDVI would caused some color abnormal, change EDID format to RGBHDMI can be solved it.

Q: VENUS X1PRO-E Split mode H1/2, requested to crop the up & down black edging and come true Full size, adjusted as Advanced-->Input Adjust-->Zoom-->Zoom Up & Down ,but image no any change?
A：The above method only effected under Standard Mode, but Split mode request to adjust each layer extra. For split mode H1/2, enter into split mode-->Details-->Layer A & B-->Crop-->adjust Width & Height & V Pos.

Q: User has 4 LED screen，all screen height is 1080，width1 ~4 are：1024,384,1024,1024。

Front end use CP 3072PRO 4KIK Split mode，output two signal to VENUS X1PRO-E for Split Mode H 2 In/4 Out, found different font size shown on left and right screen.

A：For Split Mode H 2 In/4 Out,，if input two signal, the default crop parameters is equally spaced, the scale size is different once left screen size is not equal to right one. There two methods to solve it: 1) Select two screens with same size and pixel. 2) Change the split mode to H2 In/3 Out for current screen size.

Q: VENUS X1PRO-E 4Ksignal input, the split position shown a bright line

A：This situation only shown when do 4K split not for 2K split.　When do 4K split, the image would be compress may be shown a bright line. Setting output resolution to standard resolution e.g.1920 x 1080 then scale it. Customs resolution not recommended in 4K input mode.

Q: Customer feedback: When use DVI2 port input 2K signal but none 1080p signal format(e.g. 1300*1680) to do Cross split, the output image is not very clear, sometime shown dislocation.

A：DVI2 processing IC default to transfer other signal format to 1080P format which cause pixel dot lost, especially select Cross split mode and zoom up. Recommended to use DVI1 input or option DVI/HDMI input for non-1080p format signal.

Q: Split mode V 2 In/ 2 Out, output image has black edge and cause dislocation.

A：When make equal divide split, requested to adjust V Pos value when crop layer C; For en-equal parts Split, requested to adjust V Pos value of layer A to D.

5.2 Contact Us

Contact Us

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Support   support@rgblink.com

Social Media

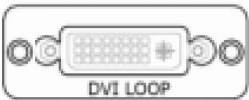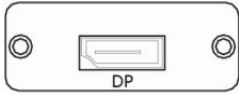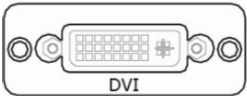@RGBLINK   /rgblink   +rgblink   /rgblink   rgblink   rgblink

Chapter 6 Appendix
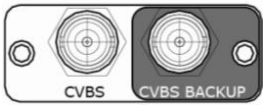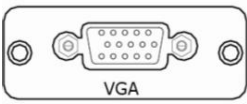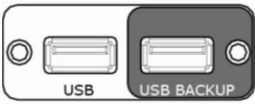
6.1 Specification

DVI Input (Standard)	
Number of Inputs	1
Connector	Standard DVI-I socket
Supported Resolution	SMPTE：625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA：800×600@60 | 1024×768@60 | 1280×768@60 | 1280×1024@60 | 1600×1200@60 | 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	HDMI 1.3
4K DVI Input (Standard)	
Number of Inputs	1
Connector	Standard DVI-I socket
Supported Resolution	SMPTE：625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA：800×600@60 | 1024×768@60 | 1280×768@60 | 1280×1024@60 | 1600×1200@60 | 1920×1080@60 | 3840×1080@60 | 3840×2160@30
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	HDMI 1.4
4K DP Input (Standard)	
Number of Inputs	1
Connector	Standard
Supported Resolution	VESA: 3840×2160@24 | 3840×2160@25 | 3840×2160@30 | 4096×2160@24 SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60
Supported Bandwidth	21.6Gb/s
Format Standard	DP 1.2
DVI Output (Standard)	
Number of Outputs	4
Connector	Standard DVI-I Socket
Signal Level	TMDS pw, 165MHz bandwidth
Supported Resolution	SMPTE：1080P50/60 | 720p50/60 VESA:

	800×600@60 | 1024×768@60 | 1024×768@75 | 1280×720@60 | 1280×720@50 | 1280×768@60 | 1280×800@60 | 1280×1024@60 | 1360×768@60 | 1366×768@60 | 1400×1050@60 | 1440×900@60 |1600×1200@60 | 1680×1050@60 | 1920×1080@60 | 1920×1200@60 | 2048×1152@60 | 2560×816@60

DVI BACKUP (Standard)	
Number of Outputs	4
Connector	Standard DVI-I Socket
Signal Level	TMDS pw, 165MHz bandwidth
Supported Resolution	SMPTE：625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 1280×720@23.98 | 1280×720@24 | 1280×720@25 | 1280×720@29.97 | 1280×720@30 | 1920×1080@23.98 | 1920×1080@24 |1920×1080@25 | 1920×1080@29.97 | 1920×1080@30 VESA: 800×600@60 | 1024×768@60 | 1024×768@75 | 1280×720@60 | 1280×720@50 | 1280×768@60 | 1280×800@60 | 1280×1024@60 | 1360×768@60 | 1366×768@60 | 1400×1050@60 | 1440×900@60 |1600×1200@60 | 1680×1050@60 | 1920×1080@60 | 1920×1080@50 | 1920×1200@60 | 2048×1152@60 | 2560×812@60 | 2560×816@60 | 1536×1536@60

DVI LOOP (Standard)	
Interface Appearance	
Board Size	52 (L)×19.5(W)（mm）
Number of Loop Out	1
Connector	Standard DVI-I socket
Supported Resolution	SMPTE：625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60,1080i50/59.94/60, 720p50/59.94/60 VESA：800×600@60 | 1024×768@60 | 1280×768@60 | 1280×1024@60 | 1600×1200@60 | 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	HDMI 1.3

DP Loop (Standard)	
Number of Loop Out	1
Connector	Standard
Supported Resolution	VESA: 3840×2160×24 | 3840×2160×25 | 3840×2160×30 | 4096×2160×24 SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60,

	720p50/59.94/60
Supported Bandwidth	21.6Gb/s
Format Standard	DP 1.2
3G-SDI Input (SDI optional module)	
Interface Appearance	
Board Size	52(L)×19.5(W)（mm）
3G-SDI Input	
Number of Inputs	3
Connector	Standard BNC Socket
Data Rate	2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2: 1920×1080/60 (1:1) I 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) | 1920×1080/50 (2:1) SMPTE 296M (HD): 1280×720/50 (1:1) I 1280×720/50 (1:1) SMPTE 125M (SD): 1440×487/60 (2:1) I 525-line 487 generic SMPTE ITU-R BT.656 (SD): 1440×576/50 (2:1), 625-line generic.
Balance	Belden 1694A cable: 150m at 2.97Gb/s 250m at 1.485Gb/s 480m at 270Mb/s
SDI Loop Out	
Number of Loop Out	3
Connector	Standard BNC Socket
Data Rate	2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2: 1920×1080/60 (1:1) | 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) | 1920×1080/50 (2:1) SMPTE 296M (HD): 1280×720/50 (1:1) I 1280×720/50 (1:1) SMPTE 125M (SD): 1440×487/60 (2:1), 525-line 487 generic SMPTE ITU-R BT.656 (SD): 1440×576/50 (2:1), 625-line generic.
Balance	Belden 1694A cable: 150m at 2.97Gb/s 250m at 1.485Gb/s 480m at 270Mb/s

DP Input (DP optional module)	
Interface Appearance	
Board Size	52(L)×19.5(W)（mm）
Number of Inputs	1
Connector	Standard
Supported Resolution	VESA: 3840×2160×@24 | 3840×2160@25 | 3840×2160@30 | 4096×2160@24 SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60
Supported Bandwidth	21.6Gb/s
Format Standard	DP1.2
HDMI IN+HDMI LOOP (HL optional module)	
Interface Appearance	
Board Size	52(L)×19.5(W)（mm）
HDMI Input	
Number of Inputs	3
Connector	Standard HDMI-A socket
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 | 1080i50/59.94/60, 720p50/59.94/60 VESA: 800×600@60 | 1024×768@60 I 1280×768@60 | 1280×1024@60 | 1600×1200@60 | 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	HDMI 1.3
HDMI Loop Out	
Number of Loop Out	3
Connector	HDMI standard type A interface
Supported Resolution	SMPTE：625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA：800×600@60 | 1024×768@60 | 1280×768@60 | 1280×1024@60 | 1600×1200@60 | 1920×1080@60
Format Standard	HDMI 1.3
DVI Input (DVI optional module)	
Interface Appearance	

Board Size	52(L)×19.5(W)（mm）
Number of Inputs	3
Connector	Standard DVI-I socket
Supported Resolution	SMPTE：625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA：800×600@60 | 1024×768@60 | 1280×768@60 | 1280×1024@60 | 1600×1200@60 | 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	HDMI 1.3
CVBS Input (CVBS optional module)	
Interface Appearance	
Board Size	52(L)×19.5(W)（mm）
Number of Inputs	3
Connector	Standard BNC Socket
Supported Standards	PAL/NTSC
Signal Level	1Vpp±3db　(0.7V Video+0.3v Sync) 75 ohm
Multiplex	480i,576i
VGA Input (VGA optional module)	
Interface Appearance	
Board Size	52(L)×19.5(W)（mm）
Number of Inputs	3
Connector	Standard DB15 Socket
Supported Standard	VGA-UXGA
Signal Level	R, G, B, Hsync, Vsync:0 to1Vpp±3dB　(0.7V Video+0.3v Sync) 75 ohm black level: 300mV Sync-tip: 0V
Supported Resolution	VGA-UXGA (800×600@60 | 1024×768@60 | 1280×1024@60 | 1440×900@60 | 1600×1200@60)
USB Input (USB optional module)	
Interface Appearance	
Board Size	52(L)×19.5(W)（mm）
Number of Inputs	3
Connector	Standard USB port
Supported Standard	Support general Image and video formats
Extras	

Communication	RS232 USB TCP/IP
Power Supply	85-264V IEC-3
Working Environment	0°C~45°C
Stored Environment	10% to 90%
Product Warranty	3 years parts and labor warranty

6.2 Software Upgrade

VENUS X1PRO-E can be upgrade by Use XTOOL to upgrade or USB disk .

6.2.1Use XTOOL to upgrade the software.

1. At first, Connecting RS232 Port of VENUS X1PRO-E with USB port of computer.

2. Installing XTOOL

Environment Requirements:

Processor: 1 GHz or above 32 bit or 64 bit processor

Memory: 2 GB or more

Graphics: Support DirectX 9 128M or above (open AERO effect)

Hard disk space: Above 16G (primary partitions, NTFS format)

Monitor: Resolution must be 1280 x720 pixel or above (it can not display normally if the resolution is lower than 1280 x720)

Operating system: Windows 7 or above (full version, not Ghost version or compact version)

Double click icon, it will pop-up the installer language box, select the language, for example, select "English", and click "OK" to confirm.
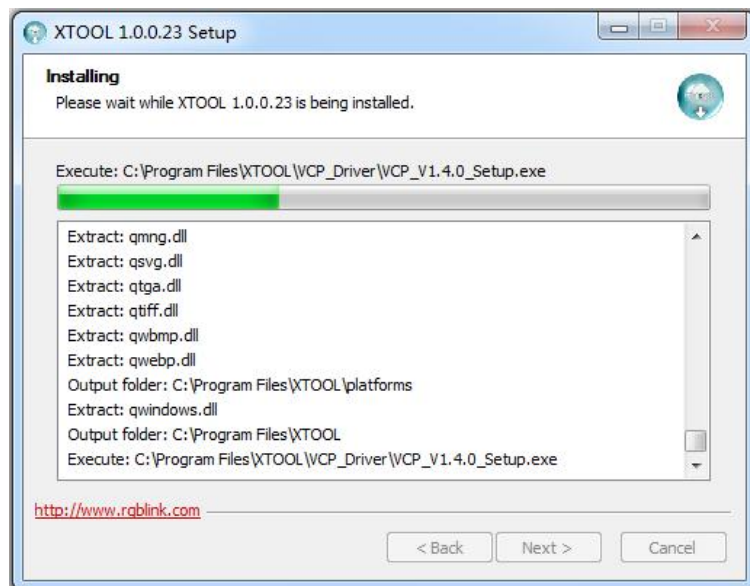
Click "Next" to install:

Select "Browse…" to select the XTOOL software installation path:
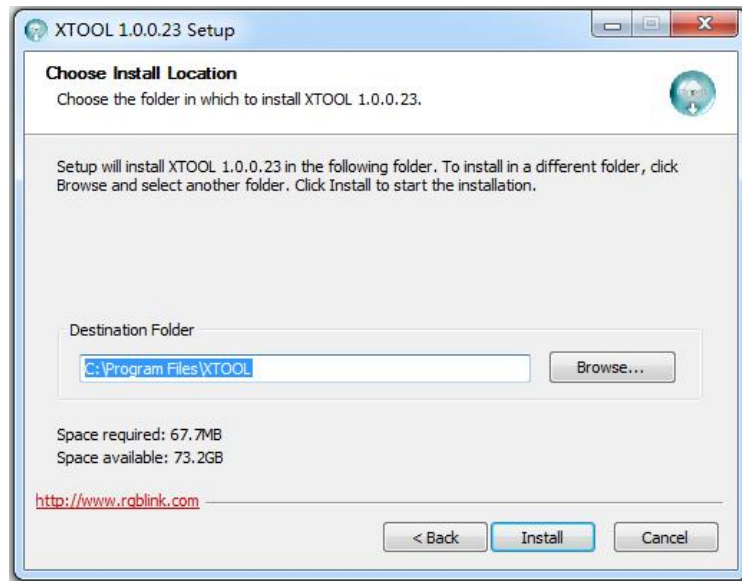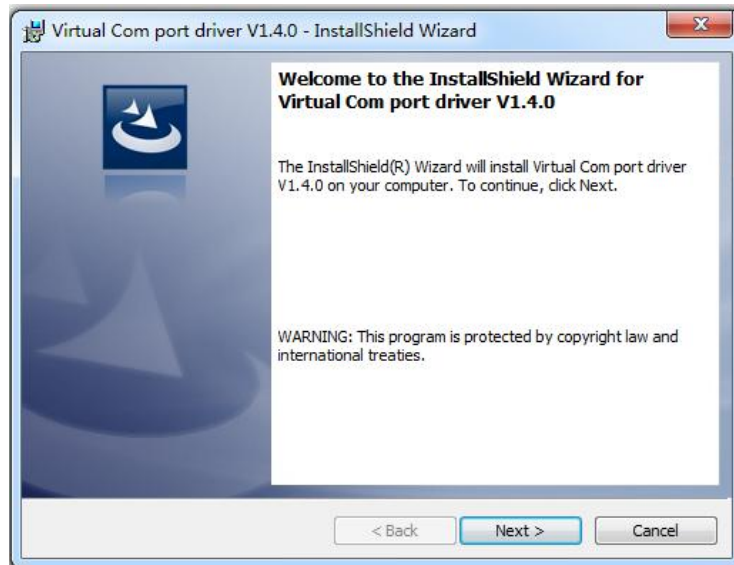

Note:

User should get the rights in "Roles Management" when installing the software to disk C if the system is Windows 7 or above.
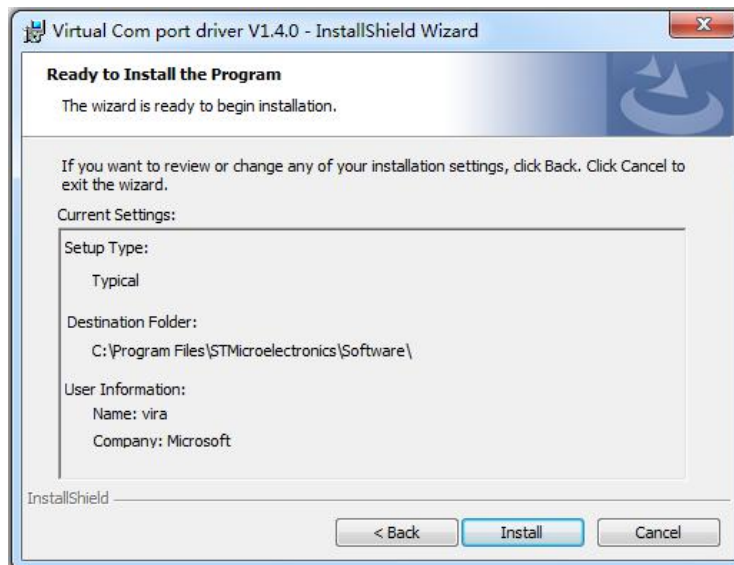
Click "Install":

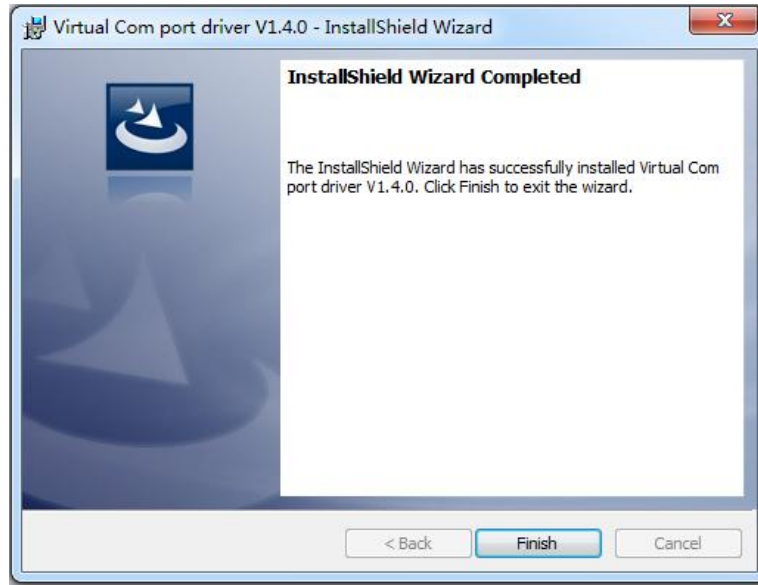During installation, it will pop up the window of Install Shield Wizard for Virtual Com port:

(1) If user install the XTOOL software for the first time, click "Next":

Then click "Install", as shown in the figure below:

Click "Finish" and complete the installation, as shown in the figure below:
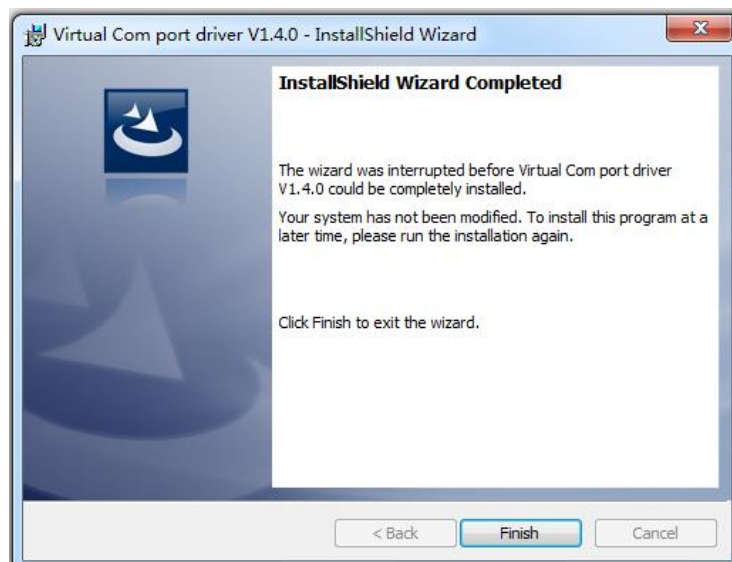

Then it will pop up the window of installation wizard for device driver, click "Next" to complete the installation.

(2) If user have installed the XTOOL software before, click "Cancel", and it will pop up the window as below:

Click "Yes" to cancel installation.

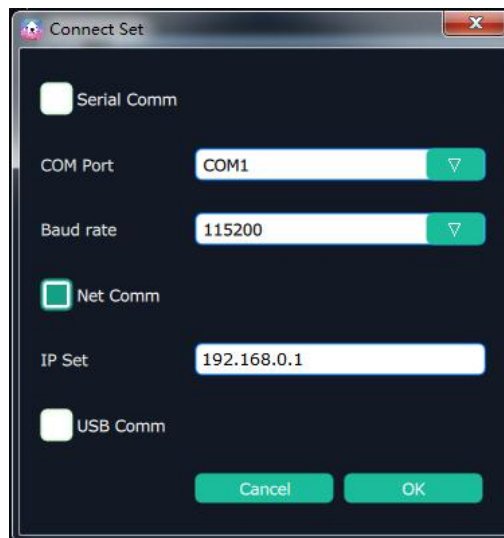Click "Finish" to exit installation.

Then it will pop up the window of installation wizard for device driver, click "Cancel" to exit the installation.

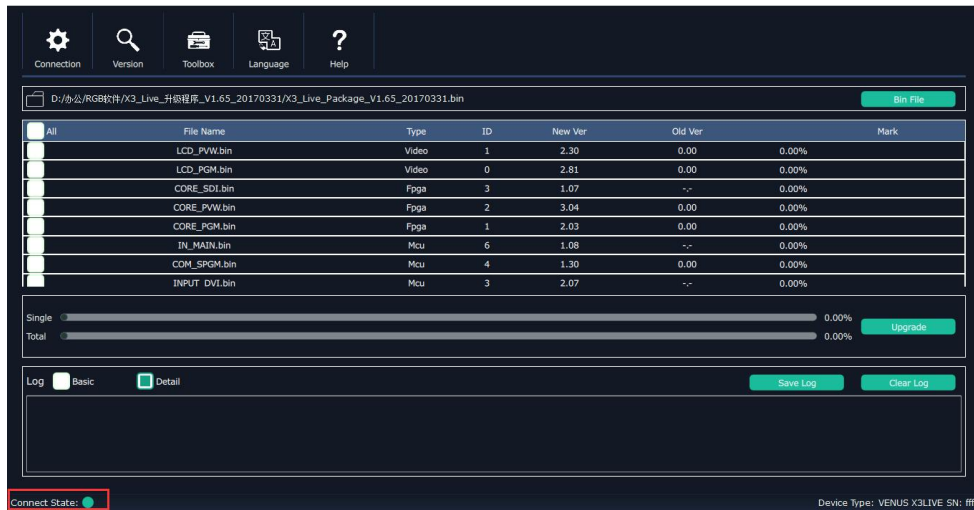Click "Finish" and is ready to run the XTOOL software:

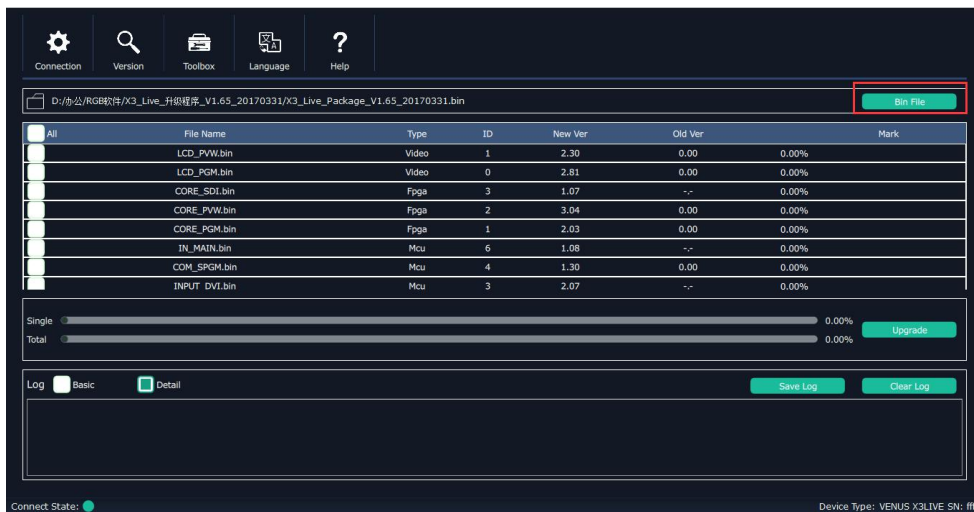## 3. Upgrading the device

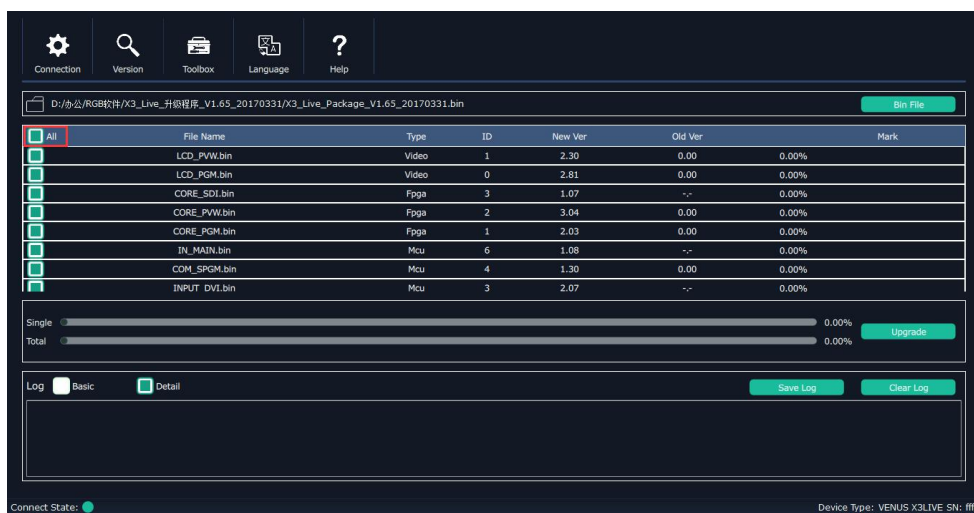(1) Click "Connection", and window pops up as follows:

Serial Comm, Net Comm and USB Comm can be selected. Click "OK" to confirm. When connected, the status indicator light turns green, see the picture below:

(2) Click bin file on the top right corner.

(3) Upload the target upgrade package, and tick "ALL". Items that need upgrade will turn green.

(4) Click "Upgrade".

Note:

The device will prompt "Restart the device" after upgrading. When restart for the first time, it will check and program the procedure to the MCU. This process will takes about 10 seconds. During program, the OLED display and buttons are uncontrolled.

6.2.2 Upgrade the software by USB disk

Upgrade the software by the USB interface in the front panel of VENUS X1PRO-E, the upgrade steps are as follows:

1.Copy the "*.pkg" file to the USB disk, and modify the file name to "_update.pkg".

2.Plug into the power cord and make sure the VENUS X1PRO-E is in normal operation.

3.Plug the USB disk into the USB interface in the front panel of VENUS X1PRO-E, the device will upgrade automatically. The buzzer sounds beeps during upgrade, the beeps will stop and the USB disk will delete the upgrade file automatically after complete upgrade.

6.3 Terms & Definitions

The following terms and definitions are used throughout this guide.

- **"ASCII":** American Standard for Information Interchange. The standard code consisting of 7-bit coded characters (8 bits including parity check) used to exchange information between data processing systems, data communication systems, and associated equipment. The ASCII set contains control characters and graphic characters.
- **"Aspect ratio":** The relationship of the horizontal dimension to the vertical dimension of an image. In viewing screens, standard TV is 4:3, or 1.33:1; HDTV is 16:9, or 1.78:1. Sometimes the ":1" is implicit, making TV = 1.33 and HDTV = 1.78.
- **"AV":** Audio visual, or audio video.
- A **"Background"** is an unscaled source, typically originating from a computer. A background source appears at the system's lowest priority — visually in back of all other sources.
- **"Baudrate":** Named of J.M.E. Baudot, the inventor of the Baudot telegraph code. The number of the electrical oscillations per second, called baud rate. Related to, but not the same as, transfer rate in bits per second (bps).
- **"Blackburst":** The video waveform without the video elements. It includes the vertical sync, horizontal sync, and the chroma burst information. Blackburst is used to synchronize video equipment to align the video output. One signal is normally used to set up an entire video system or facility. Sometimes it is called House sync.
- **"BNC":** Bayonet Neill-Concelman. A cable connector used extensively in television and named for its inventors. A cylindrical bayonet connector that operates with a twist-locking motion. To make the connection, align the two curved grooves in the collar of the male connector with the two projections on the outside of the female collar, push, and twist. This allows the connector to lock into place without tools.
- **"Brightness":** Usually refers to the amount or intensity of video light produced on a screen without regard to color. Sometimes called "black level.
- "**CAT 5**": Category 5. Describes the network cabling standard that consists of four unshielded twisted pairs of copper wire terminated by RJ-45 connectors. CAT 5 cabling supports data rates up to 100 Mbps. CAT 5 is based on the EIA/TIA 568 Commercial Building Telecommunications Wiring Standard.
- **"Color bars":** A standard test pattern of several basic colors (white, yellow, cyan, green, magenta, red, blue, and black) as a reference for system alignment and testing. In NTSC video, the most commonly used color bars are the SMPTE standard color bars. In PAL video, the most commonly used color bars are eight full field bars. In the computer, the most commonly used color bars are two rows of reversed color bars.
- **"Color burst":** In color TV systems, a burst of subcarrier frequency located on the back porch of the composite video signal. This serves as a color synchronizing signal to establish a frequency and phase reference for the chroma signal. Color burst is 3.58 MHz for NTSC and 4.43 MHz for PAL.
- **"Color temperature":** The color quality, expressed in degrees Kelvin(K), of a light source.

The higher the color temperature, the bluer the light. The lower the temperature, the redder the light. Benchmark color temperature for the A/V industry include 5000°K, 6500°K, and 9000°K.

● **"Contrast ratio":** The radio of the high light output level divided by the low light output level. In theory, the contrast radio of the television system should be at least 100:1, if not 300:1. In reality, there are several limitations. In the CRT, light from adjacent elements contaminate the area of each element. Room ambient light will contaminate the light emitted from the CRT. Well-controlled viewing conditions should yield a practical contrast ratio of 30:1 to 50:1.

● **"DVI":** Digital Visual Interface. The digital video connectivity standard that was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handles digital video signals only, and one with 29 pins that handles both digital and analog video.

● **"EDID":** Extended Display Identification Data – EDID is a data structure used to communicate video display information, including native resolution and vertical interval refresh rate requirements, to a source device. The source device will then output the optimal video format for the display based on the provided EDID data, ensuring proper video image quality. This communication takes place over the DDC – Display Data Channel.

● **"Ethernet":** A Local Area Network (LAN) standard officially known as IEEE 802.3. Ethernet and other LAN technologies are used for interconnecting computers, printers, workstations, terminals, servers, etc. within the same building or campus. Ethernet operates over twisted pair and over coaxial cable at speeds starting at 10Mbps. For LAN interconnectivity, Ethernet is physical link and data link protocol reflecting the two lowest layers of the OSI Reference Model.

● **"Frame":** In interlaced video, a frame is one complete picture. A video frame is made up of two fields, or two sets of interlaced lines. In a film, a frame is one still picture of a series that makes up a motion picture.

● **"Gamma":** The light output of a CRT is not linear with respect to the voltage input. The difference between what you should have and what is actually output is known as gamma.

● **"HDMI" - High – Definition Multimedia Interface:** An interface used primarily in consumer electronics for the transmission of uncompressed high definition video, up to 8 channels of audio, and control signals, over a single cable. HDMI is the de facto standard for HDTV displays, Blu-ray Disc players, and other HDTV electronics. Introduced in 2003, the HDMI specification has gone through several revisions.

● **"HDSDI":** The high-definition version of SDI specified in SMPTE-292M. This signal standard transmits audio and video with 10 bit depth and 4:2:2 color quantization over a single coaxial cable with a data rate of 1.485 Gbit/second. Multiple video resolutions exists including progressive 1280x720 and interlaced 1920x1080 resolution. Up to 32 audio signals are carried in the ancillary data.

● **"JPEG" (Joint photographic Expects Group):** Commonly used method of lossy compression for photographic images using a discreet cosine transfer function. The degree of compression can be adjusted, allowing a selectable tradeoff between storage size and image quality. JPEG typically achieves 10:1 compression with little perceptible loss in image quality. Produces blocking artifacts.

- **"MPEG":** Motion Picture Expect Group. A standard committee under the auspices of the International Standards Organization working on algorithm standards that allow digital compression, storage and transmission of moving image information such as motion video, CD-quality audio, and control data at CD-ROM bandwidth. The MPEG algorithm provides inter-frame compression of video images and can have an effective compression rate of 100:1 to 200:1.
- **"NTSC":** The color video standard used in North America and some other parts of the world created by the National Television Standards Committee in the 1950s. A color signal must be compatible with black-and-white TV sets. NTSC utilizes an interlaced video signals, 525 lines of resolution with a refresh rate of 60 fields per second (60 Hz). Each frame is comprised of two fields of 262.5 lines each, running at an effective rate of 30 frames per second.
- **"Operator":** Refers to the person who uses the system.
- **"PAL":** Phase Alternate Line. A television standard in which the phase of the color carrier is alternated from line to line. It takes four full pictures (8 fields) for the color-to-horizontal phase relationship to return to the reference point. This alternation helps cancel out phase errors. For this reason, the hue control is not needed on a PAL TV set. PAL, in many transmission forms, is widely used in Western Europe, Australia, Africa, the Middle East, and Micronesia. PAL uses 625-line, 50-filed (25 fps) composite color transmission system.
- **"PIP":** Picture-in-Picture. A small picture within a larger picture created by scaling down one of the images to make it smaller. Each picture requires a separate video source such as a camera, VCR, or computer. Other forms of PIP displays include Picture-by-Picture (PBP) and Picture-with-Picture (PWP), which are commonly used with 16:9 aspect display devices. PBP and PWP image formats require a separate scaler for each video window.
- **"Polarity":** The positive and negative orientation of a signal. Polarity usually refers to the direction or a level with respect to a reference (e.g. positive sync polarity means that sync occurs when the signal is going in the positive direction).
- **"RJ-45":** Registered Jack-45. A connector similar to a telephone connector that holds up to eight wires, used for connecting Ethernet devices.
- **"RS-232":** An Electronic Industries Association (EIA) serial digital interface standard specifying the characteristics of the communication path between two devices using either DB-9 or DB-25 connectors. This standard is used for relatively short-range communication and does not specify balanced control lines. RS-232 is a serial control standard with a set number of conductors, data rate, word length, and type of connector to be used. The standard specifies component connection standards with regard to the computer interface. It is also called RS-232-C, which is the third version of the RS-232 standard, and is functionally identical to the CCITT V.24 standard.
- **"Saturation":** Chroma, chroma gain. The intensity of the color, or the extent to which a given color in any image is free from white. The less white in a color, the truer the color or the greater its saturation. On a display device, the color control adjusts the saturation. Not to be confused with the brightness, saturation is the amount of pigment in a color, and not the intensity. Low saturation is like adding white to the color. For example, a low-saturated red looks pink.
- **"Scaling":** A conversion of a video or computer graphic signal from a starting resolution to a

new resolution. Scaling from one resolution to another is typically done to optimize the signal for input to an image processor, transmission path or to improve its quality when presented on a particular display.

● **"SDI":** Serial Digital Interface. The standard based on a 270 Mbps transfer rate. This is a 10-bit, scrambled, polarity independent interface with common scrambling for both component ITU-R 601 and composite digital video and four channels of (embedded) digital audio.

● **"Seamless Switching":** A feature found on many video switchers. This feature causes the switcher to wait until the vertical interval to switch. This avoid a glitch (temporary scrambling) which normally is seen when switching between sources.

● **"SMPTE":** Society of Motion Picture and Television Engineers. A global organization, based in the United States, that sets standards for baseband visual communications. This includes film as well as video and television standards.

● **"S-Video":** A composite video signal separated into the luma ("Y" is for luma, or black and white information; brightness) and the chroma ("C" is an abbreviation for chroma, or color information).

● **"Sync":** Synchronization. In video, sync is a means of controlling the timing of an event with respect to other events. This is accomplished with timing pulses to insure that each step in a process occurs at the correct time. For example, horizontal sync determines exactly when to begin each horizontal scan line. Vertical sync determines when the image is to be refreshed to start a new field or frame. There are many other types of sync in video system.(Also known as "sync signal" or "sync pulse.")

● **"TCP/IP":** Transmission Control Protocol/Internet Protocol. The communication protocol of the Internet. Computers and devices with direct access to the Internet are provided with a copy of the TCP/IP program to allow them to send and receive information in an understandable form.

● **"USB":** Universal Serial Bus. USB was developed by seven PC and telecom industry leaders (Compaq, DEC, IBM, Intel, Microsoft, NEC, and Northern Telecom). The goal was easy plug-and-play expansion outside the box, requiring no additional circuit cards. Up to 127 external computer devices may be added through a USB hub, which may be conveniently located in a keyboard or monitor. USB devices can be attached or detached without removing computer power. The number of devices being designed for USB continues to grow, from keyboards, mice, and printers to scanners, digital cameras, and ZIP drives.

● **"VESA":** Video Electronics Standards Association. A nonprofit number organization dedicated to facilitating and promoting personal computer graphics through improved standards for the benefit of the end-user. www.vesa.org

● **"VGA":** Video Graphics Array. Introduced by IBM in 1987, VGA is an analog signal with TTL level separate horizontal and vertical sync. The video outputs to a 15-pin HD connector and has a horizontal scan frequency of 31.5 kHz and vertical frequency of 70 Hz (Mode 1, 2) and 60 Hz (Mode 3). The signal is non-interlaced in modes 1, 2, and 3 and interlaced when using the 8514/A card (35.5 kHz, 86 Hz) in mode 4. It has a pixel by line resolution of 640×480 with a color palette of 16 bits and 256,000 colors.

● **"YCrCb":** Used to describe the color space for interlaced component video.

● **"YPbPr":** Used to describe the color space for progressive-scan (non-interlaced) component

video.

6.4 Revision History

The table below lists the changes to the Video Processor User Manual.

Format	Time	ECO#	Description	Principal
V1.0	2018-04-23	0000#	Release	Lydia
V1.1	2018-06-05	0001#	Update the specification	Lydia