CSC-6010D

4K UHD Multi-Format Scaler

HDMI® HIGH-DEFINITION MULTIMEDIA INTERFACE 4K x 2K+ HDCP 2.2

Operation Manual

DISCLAIMERS

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE (DD/MM/YY)	SUMMARY OF CHANGE
RDV1	22/04/16	Preliminary Release
RDV2	08/09/16	Update Web screenshot of status and update page
RDV3	13/10/16	Add 4KUHD Bypass on WebGUI , RS-232 command and OSD menu. Add RS232 details.

CONTENTS

1. INTRODUCTION

This multi-format scaler features the three most popular input interfaces utilized on source devices: HDMI, DisplayPort and VGA. This unit is an ideal solution for use in conference rooms and showrooms and for any customer who has a requirement to match disparate input sources to the native resolution of a display. The maximum output resolution supported is 4K@60Hz YUV 4:4:4 for both HDMI and DisplayPort inputs. This unit comes packed with all of the adjustment options you are likely to need when accommodating different sources including a wide array of aspect ratio settings as well as contrast, brightness, saturation, hue, sharpness, etc. all adjustable directly on the unit. Additionally this unit brings the benefit of an analog speaker output for ease of integration when employed in conference centers, classrooms and public venues. The auto source detection feature is designed to switch to the most recently connected source automatically and to switch to another live input if the current one becomes disconnected. This unit is controllable via front panel controls (with OSD), WebGUI, IR remote, telnet and RS-232. These comprehensive control interfaces make operation easy and intuitive.

2. APPLICATIONS

- Entertainment Rooms & Home Theaters
- Showrooms & Demo Rooms
- Classroom & Lecture Hall Presentations
- Conference Rooms
- Public Commercial Displays

3. PACKAGE CONTENTS

- 1 x Scaler Unit
- 1 x Ear Phone to D-Sub Cable
- 1 x 5V / 3A DC Power Adaptor
- 1 x Remote Control Unit (Model: CR-171)
- 1 x Operation Manual

4. SYSTEM REQUIREMENTS

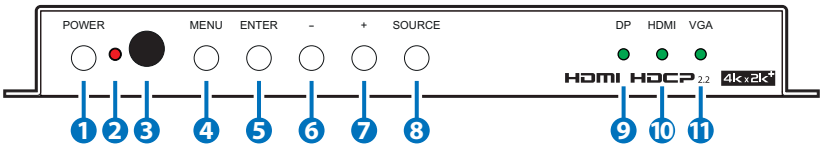
Input source equipment such as media players, PCs/laptops, video game consoles or set-top boxes. HDMI receiving equipment such as HDTVs, monitors or audio amplifiers. Powered analog speakers are recommended for optional audio support.

5. FEATURES

- Multiple input formats including HDMI, DisplayPort and VGA
- HDMI 2.0, HDCP 2.2, HDCP 1.4 and DVI 1.0 compliant
- Supports video timings up to 4K@60Hz YUV 4:4:4 over the HDMI and DisplayPort inputs and over the HDMI output
- Auto source detection: Automatically switches to the most recently connected input
- Wide range of aspect ratio settings including: full screen, 16:9, 16:10 and 4:3
- Direct adjustment of contrast, brightness, hue and saturation
- Audio mute function
- Analog stereo audio output with volume control
- EDID management support
- Comprehensive user interface options including: Front panel with OSD, WebGUI, telnet, RS-232, and IR remote
- Firmware can be easily updated in the field via USB

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel

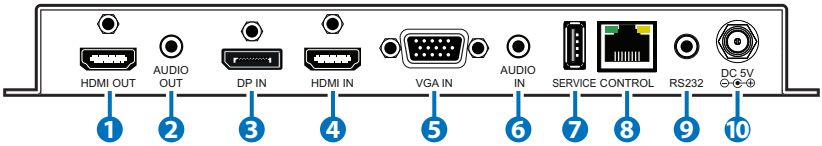


1. **POWER :** Press this button to power on the unit or place it into stand-by mode.
2. **POWER LED:**
   a. Power on: LED will illuminate solid green.
   b. Stand-by mode: LED will illuminate solid red. Telnet, RS-232 and WebGUI remain active in stand-by mode.
3. **IR Window:** Accepts IR signals from the included IR remote for control of this unit only.
4. **MENU:** Press to enter the OSD menu, or to back out from menu items.
5. **ENTER:** Press to confirm a selection or to go deeper into a menu item.
6. **DOWN:** Press to move down within menus or to decrease volume.
7. **UP:** Press to move up within menus or to increase volume.
8. **SOURCE :** Press to sequentially switch through the available inputs (HDMI, VGA and DisplayPort).
9. **DP:** When the selected input source is DisplayPort this LED will illuminate solid green.
10. **HDMI:** When the selected input source is HDMI this LED will illuminate solid green.
11. **VGA:** When the selected input source is VGA this LED will illuminate solid green.

The following ***hotkey functions*** are also available:

1. Auto Adjust (only for VGA IN function): Press the ENTER button when the OSD menu is not active and the input source is VGA to execute the auto adjust function. The image will be automatically adjusted to the optimal aspect ratio.
2. Factory Reset: Press and hold the MENU button when connecting the power supply to force a factory reset of the unit.
3. XGA output: Press the MENU and "+" buttons at the same time to set the output resolution to XGA.
4. 720p output: Press the MENU and "-" buttons at the same time to set the output resolution to 720p60.
5. 720p output (alternate): Press and hold the ENTER button when connecting the power supply to set the output resolution to 720p59.
6. Firmware Update: A firmware update can be performedvia WebGUI, telnet and RS-232 command. It can also be performed by holding the POWER button when connecting the power supply.

6.2 Rear Panel



1. **HDMI OUT :** Connect to HDMI TVs, monitors or amplifiers for digital video and audio output.
2. **AUDIO OUT:** Connect to powered speakers or an amplifier for stereo analog audio output.
3. **DP IN:** Connect to DisplayPort source equipment such as a PC or laptop.
4. **HDMI IN:** Connect to HDMI source equipment such as a media player, game console or set-top box.
5. **VGA IN:** Connect to VGA source equipment such as a PC or laptop.
6. **AUDIO IN:** Connect to the stereo analog output of the device connected to the VGA input port.
7. **SERVICE:** This slot is reserved for firmware update use only. Please plug a USB thumb drive into this slot to update the firmware.
8. **CONTROL:** Connect directly, or through a network switch, to your PC/laptop to control the unit via telnet/WebGUI.
9. **RS-232:** Connect directly to your PC/laptop to send RS-232 commands to control the unit.
10. **DC 5V:** Plug the 5V DC power adapter into the unit and connect it to an AC wall outlet for power.

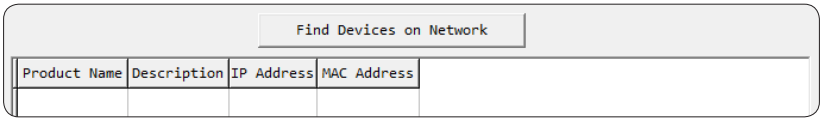
6.3 WebGUI

Install the IP Discovery Tool:

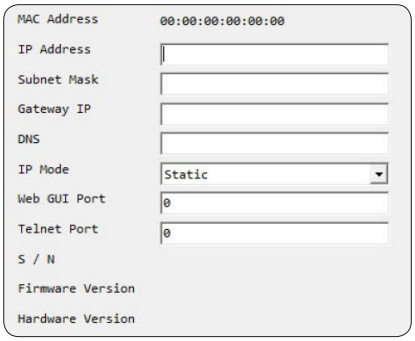
(1) Please obtain the Device Discovery software from your authorized dealer and save it in a directory where you can easily find it.

Note: *The unit's default IP address is 192.168.1.50*

(2) Connect the unit and your PC/Laptop to the same active network and execute the Device Discovery software. Click on "Find Devices on Networkd your PC/Laptop to the same active network and execute the Device Discovery software.



(3) By clicking on one of the listed devices you will be presented with the network details of that particular device. If you choose, you can alter the static IP network settings for the device, or switch the unit into DHCP mode to automatically obtain proper network settings from a local DHCP server. To switch to DHCP mode, please select DHCP from the IP mode drop-down, then click "Save" followed by "Reboot".



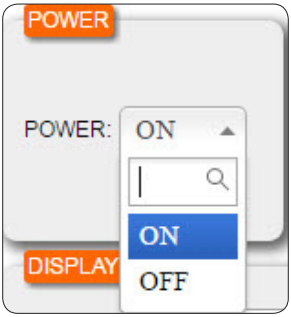
(4) Once you are satisfied with the network settings, you may use them to connect via Telnet or WebGUI. The network information window provides a convenient link to launch the WebGUI directly.

6.3.1 WebGUI Control Page

All functions, including power, 4KUHD Bypass input selection, EDID management, HDCP management, output adjustments, OSD settings, Ethernet settings, volume adjustments, and reset/firmware functions, are presented on a single web page to allow for intuitive operation. The individual functions will be introduced in the following sections.

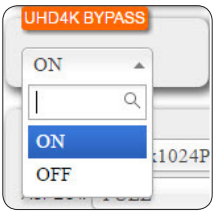
6.3.2 Power On/Off

The unit can be powered on or off (placed into stand-by mode) from this tab.



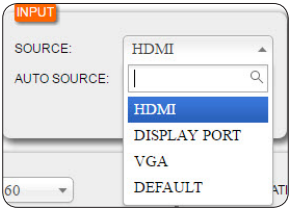
6.3.3 UHD 4K Bypass

The UHD 4K bypass input is able to be selected bypass or down scale. Please select the bypass "On" to remain 4K UHD input or "Off" for down scale.

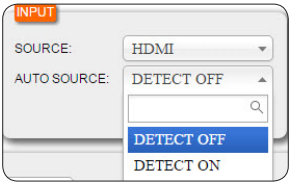


6.3.4 Input Source Selection and Auto Source Detection

(a) Source: The input source can be selected here. Four input source options are available: HDMI, DisplayPort, VGA and Default (HDMI is the normal default input. This can be changed via the WebGUI, RS-232 or telnet).

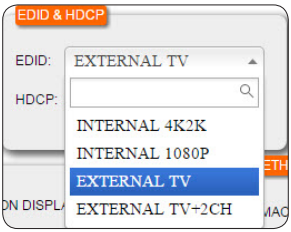


(b) Auto Source: When set to “DETECT ON” the unit will automatically switch to the most recently connected live input source. If the currently live source disconnects then the unit will automatically search for another live input source. To disable this function select “DETECT OFF”.

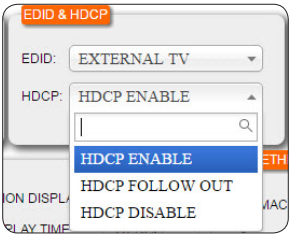


6.3.5 EDID & HDCP Settings

(a) EDID: Four EDID options are available: Internal 4K2K, Internal 1080p, External TV (EDID is copied from the connected display device) and External TV+2ch (EDID is copied from the connected display device but the audio is set to LPCM 2.0).

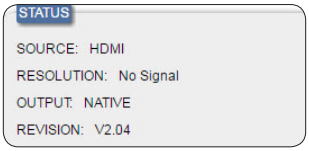


(b) HDCP: HDCP support can be enabled, disabled or set to follow the capability of the connected display device.



6.3.6 Status Information

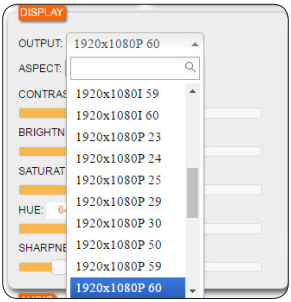
This tab displays the current input/output status and the unit's firmware revision.



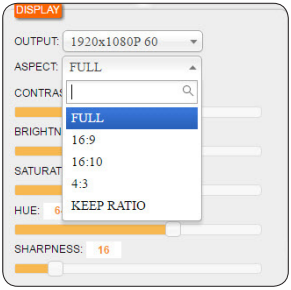
6.3.7 Display Settings

The output timing, aspect ratio, and other video processing functions can be configured in this tab.

(a) Output: The preferred output timing can be selected here. Selecting NATIVE will use the native timing reported by the EDID of the connected display device.



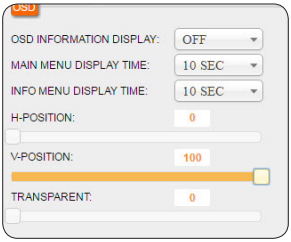
(b) Aspect: The following output aspect ratios are available: FULL (expand the source to fill the output resolution regardless of the original aspect ratio), 16:9, 16:10, 4:3 and KEEP RATIO (maintain the aspect ratio of the source relative to the aspect of the output resolution).



(c) Contrast, Brightness, Saturation, Hue and Sharpness: These settings control the image quality of the output. Each setting can be adjusted from 0 to 100 based on user preference.

6.3.8 OSD Settings

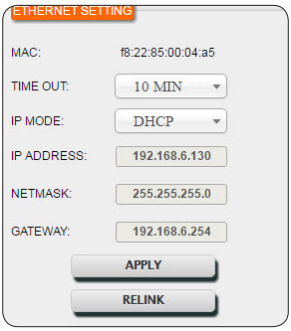
This tab allows for the control and adjustment of all available OSD (On Screen Display) settings. The OSD Information Display can be turned on or off. The display time for the Main Menu and Info Menu can be set with a range between 5 and 45 seconds, or they can be set to "infinite" by setting the time to OFF. The H/V position and transparency settings for the Main Menu can also be adjusted.



6.3.9 Ethernet Settings

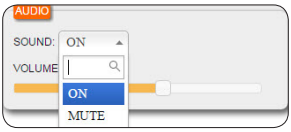
The unit's Ethernet settings are configured in this tab. The IP connection timeout can be set to a time between 10 and 60 minutes, or it can be disabled (OFF). The IP address can be configured by your network automatically (DHCP) or the unit's IP settings can be manually configured (STATIC). After making changes to the IP configuration, or changing IP Modes please click "Apply" to activate your changes.

Note: *If the IP address is changed then the IP address required for WebGUI or telnet access will also change accordingly. Consult the OSD to view the current IP settings if necessary.*

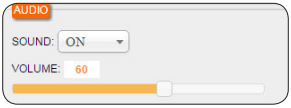


6.3.10 Audio Settings

(a) Sound: This setting allows you to mute audio from the current input.

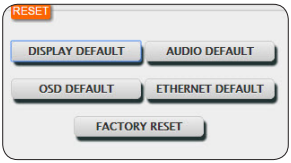


(b) Volume: The audio volume can be adjusted from 0 to 100.



6.3.11 Reset Options

This tab provides options for returning the Display, Audio, OSD and Ethernet settings to their individual factory defaults. It also allows you to perform a system-wide Factory Reset (returns all settings to the factory defaults).



6.3.12 Setup

To update the firmware of the unit, please click on the Firmware Update button and follow the on-screen prompts.

6.4 Telnet Control

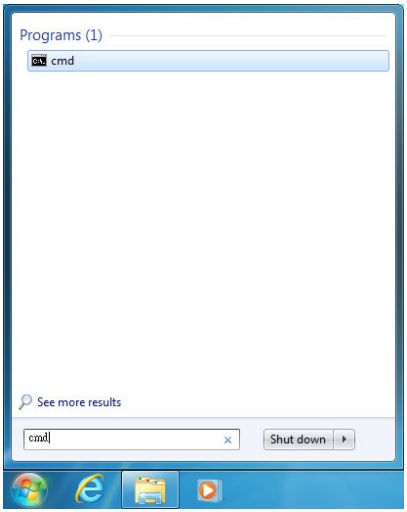
Before attempting to use telnet control, please ensure that both the unit and the PC/Laptop are connected to the same active networks.

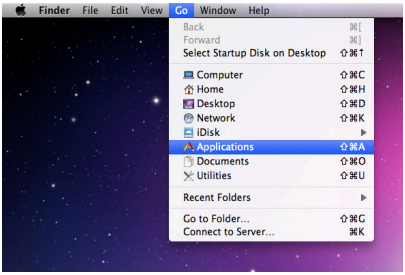
To access Telnet in Windows 7, click on the “Start” menu and type “cmd” in the search field, then press “Enter".

Under Windows XP go to the “Start" menu, click on "Run", type "cmd" then press “Enter”.

Under Mac OS X, go to Go→Applications→Utilities→Terminal

See below for reference.



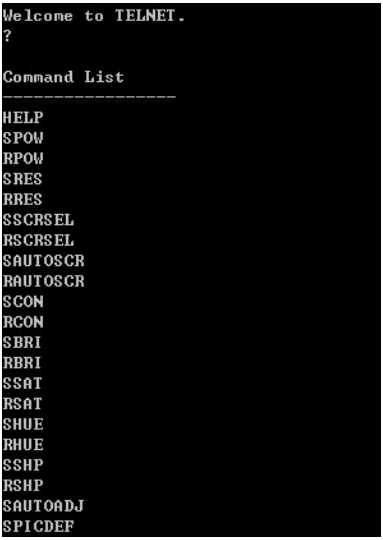


Once in the CLI (Command Line Interface) type "telnet" followed by the IP address of the unit and "23", then hit “Enter”.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Administrator>telnet 192.168.XX.XX 23
```

This will connect us to the unit we wish to control. Type "help" or "?" to list the available commands.



Note: Commands will not be executed unless followed by a carriage return. Commands are case-insensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly.

6.5 RS-232 Command List

On a PC/Laptop that is connected to an active network system, open a web browser and type device's IP address on the web address entry bar. A security page will appear to ask for User and Password, please key in "Admin" for both and click Submit to enter.

Note: The Default IP setting is on Static with address at 192.168.1.50

COMMAND	DESCRIPTION
?	PRINTS ALL AVAILABLE RS-232/TELNET COMMANDS TO THE SCREEN!! HELP PARAM
HELP	PRINTS ALL AVAILABLE RS-232/TELNET COMMANDS TO THE SCREEN!! HELP PARAM
SPOW	SET THE UNIT POWER ON/OFF!! SPOW PARAM PARAM=(0/1) 0=OFF,1=ON
RPOW	SHOW CURRENT POWER STATE!! RPOW NO PARAMETER!!

COMMAND	DESCRIPTION
SRES	SET OUTPUT RESOLUTION!! SRES PARAM=(0~36). (0)=800X600P60,(1)=1024X768P60,(2)=1280X800P60(3)=1280X1024P60 (4)=1366X768P60,(5)=1400X1050P60,(6)=1600X900P60RB (7)=1600X1200P60,(8)=1680X1050P60,(9)=1920X1200PRB (10)=1280X720P50,(11)=1280X720P59,(12)=1280X720P60 (13)=1920X1080I50,(14)=1920X1080I59,(15)=1920X1080I60 (16)=1920X1080P23,(17)=1920X1080P24,(18)=1920X1080P25 (19)=1920X1080P29,(20)=1920X1080P30,(21)=1920X1080P50 (22)=1920X1080P59,(23)=1920X1080P60,(24)=2048X1080P23 (25)=2048X1080P24,(26)=3840X2160P23,(27)=3840X2160P24 (28)=3840X2160P25,(29)=3840X2160P29,(30)=3840X2160P30 (31)=3840X2160P50,(32)=3840X2160P59,(33)=3840X2160P60 (34)=4096X2160P23,(35)=4096X2160P24,(36)=Native
RRES	SHOW CURRENT OUTPUT RESOLUTION!! RRES NO PARAMETER!!

COMMAND	DESCRIPTION
SSCRSEL	SET INPUT SOURCE CHANNEL!! SSCRSEL PARAM=(0~2) (0)=HDMI,(1)=DISPALY PORT,(2)=VGA,(3)=DEFAULT.
RSCRSEL	SHOW CURRENT INPUT SOURCE CHANNEL!! RSCRSEL NO PARAMETER!!"
SAUTOSCR	SET INPUT AUTO DETECT SOURCE!! SAUTOSCR PARAM(0/1) 0=OFF,1=ON!!
RAUTOSCR	SHOW CURRENT INPUT AUTO DETECT SOURCE STATUS!! RAUTOSCR NO PARAMETER!!
SCON	SET CONTRAST VALUE!! SCON PARAM PARAM(0~100) VALUE.
RCON	SHOW CONTRAST CURRENT VALUE!! RCON NO PARAMETER!!
SBRI	SET BRIGHTNESS VALUE!! SBRI PARAM PARAM=(0~100) VALUE.
RBRI	SHOW BRIGHTNESS CURRENT VALUE!! RBRI NO PARAMETER!!
SSAT	SET SATURTATION VALUE!! SSAT PARAM PARAM=(0~100) VALUE.
RSAT	SHOW SATURTATION CURRENT VALUE!! RSAT NO PARAMETER!!
SHUE	SET HUE VALUE!! SHUE PARAM PARAM=(0~100) VALUE.
RHUE	SHOW HUE CURRENT VALUE!! RHUE NO PARAMETER!!
SSHP	SET SHARPNESS VALUE!! SSHP PARAM PARAM=(0~100) VALUE.

COMMAND	DESCRIPTION
RSHP	SHOW SHARPNESS CURRENT VALUE!! RSHP NO PARAMETER!!
SAUTOADJ	SET AUTO ADJUST!! SAUTOADJ NO PARAMETER!!
SPICDEF	RESET CONTRAST,BRIGHTNESS,SATURTATION,HUE,SHARPNESS,VALUE TO DEFAULT!! SPICDEF NO PARAMETER!!
SASPECT	SET DISPLAY ASPECT!! SASPECT PARAM PARAM=(0~4). (0)=ASPECT FULL,(1)=ASPECT 16:9,(2)=ASPECT 16:10, (3)=ASPECT 4:3,(4)=KEEP RATIO.
RASPECT	SHOW DISPLAY CURRENT ASPECT!! RASPECT NO PARAMETER!!
SOSDO	SET OSD ON/OFF TO SCREEN!! SOSDO PARAM, PARAM(0/1) 0=OFF,1=ON!!
SOSDH	SET OSD HORIZONTAL POSITION!! SOSDH PARAM, PARAM=(0~100%).
ROSDH	SHOW OSD HORIZONTAL POSITION CURRENT!! ROSDH NO PARAMETER!!
SOSDV	SET OSD VERTICAL POSITION!! SOSDV PARAM ,PARAM=(0~100)
ROSDV	SHOW OSD VERTICAL POSITION CURRENT!! ROSDV NO PARAMETER!!
SOSDG	SET OSD TRANSPARENT VALUE!! SOSDG PARAM,PARAM=(0~7).
ROSDG	SHOW OSD TRANSPARENT CURRENT VALUE!! ROSDG NO PARAMETER!!

COMMAND	DESCRIPTION
SOSDMT	SET OSD MAIN MENU DISPLAY TIME!! SOSDMT PARAM PARAM=(0~9) . (0)=5 SEC ,(1)=10 SEC ,(2)=15 SEC ,(3)=20 SEC ,(4)=25 SEC ,(5)=30 SEC (6)=35 SEC ,(7)=40 SEC ,(8)=45 SEC ,(9)=OFF.
ROSDMT	SHOW OSD MAIN MENU DISPLAY CURRENT TIME!! ROSDMT NO PARAMETER!!
SOSDIT	SET OSD INFOMATION MENU DISPLAY TIME!! SOSDIT PARAM PARAM=(0~9) (0)=5 SEC ,(1)=10 SEC ,(2)=15 SEC ,(3)=20 SEC ,(4)=25 SEC ,(5)=30 SEC (6)=35 SEC ,(7)=40 SEC ,(8)=45 SEC ,(9)=OFF.
ROSDIT	SHOW OSD INFOMATION MENU DISPLAY CURRENT TIME!! ROSDIT NO PARAMETER!!
SOSDID	SET INFORMATION OSD DISPLAY ENABLE/DISABLE !! SOSDID PARAM ,PARAM=(0/1) 0=OFF,1=ON!!
ROSDID	SHOW INFORMATION OSD DISPLAY CURRENT STATE!! ROSDID NO PARAMETER!!
SOSDDEF	SET OSD DISPLAY DEFAULT VALUE!! SOSDDEF NO PARAMETER!!
SIPM	SET IP MODE TO DHCP OR STATIC!! SIPM PARAM, PARAM=(0/1) (0)STATIC,(1)DHCP
RIPM	SHOW CURRENT IP MODE TO SCREEN!! RIPM NO PARAMETER!!

COMMAND	DESCRIPTION
SIPADD	SET STATIC IP ADDRESS!! SIPADD PARAM PARAM=xxx.xxx.xxx.xxx xxx=(0~255)
RIPADD	SHOW STATIC CURRENT IP ADDRESS TO SCREEN!! RIPADD NO PARAMETER!!
SMAADD	SET STATIC SUBNET ADDRESS!! SMAADD PARAM PARAM=xxx.xxx.xxx.xxx xxx=(0~255)
RMAADD	SHOW STATIC CURRENT SUBNET ADDRESS TO SCREEN!! RMAADD NO PARAMETER!!
SGAADD	SET STATIC GATEWAY ADDRESS!! SGAADD PARAM PARAM=xxx.xxx.xxx.xxx xxx=(0~255)
RGAADD	SHOW STATIC CURRENT GATEWAY ADDRESS TO SCREEN!! RGAADD NO PARAMETER!!
SETHT	SET TELNET TIMEOUT!! SETHT PARAM. PARAM=(0~6) (0)OFF, (1)10 MINUTE, (2)20 MINUTE, (3)30 MINUTE, (4)40 MINUTE, (5)50 MINUTE, (6)60 MINUTE.
RETHT	SHOW TELNET TIMEOUT CURRENT TO SCREEN!! RETHT NO PARAMETER!!
RELINK	RELINK THE UNIT IN 2 SECONDS!! RELINK NO PARAMETER!!
SETHDEF	SET ETHERNET DEFAULT VALUE!! SETHDEF NO PARAMETER!!

COMMAND	DESCRIPTION
RMAC	SHOW CURRENT MAC ADDRESS TO SCREEN!! RMAC NO PARAMETER!!
SMUTE	SET MUTE AUDIO!! SMUTE PARAM,PARAM=(0/1) 0=MUTE,1=UNMUTED.
RMUTE	SHOW CURRENT MUTE TO SCREEN!! RMUTE NO PARAMETER!!
SAVOL	SET AUDIO VOLUME!! SAVOL PARAM,PARAM=(0~100) VALUE.
RAVOL	SHOW CURRENT AUDIO VOLUME!! SAVOL NO PARAMETER!!
SAUODEF	SET AUDIO DEFAULT VALUE!! SAUODEF NO PARAMETER!!
SEDID	SET VIDEO NATIVE EDID!! SEDIDVPARAM,PARAM=(0~3) (0)= Internal_4K2K,(1)= Internal_1080P, (2)= External TV,(3)= External TV & LPCM 2CH,
REDID	SHOW VIDEO CURRENT NATIVE EDID!! REDIDV NO PARAMETER!!
SHDCP	SET HDCP OUTPUT!! SHDCP PARAM,PARAM=(0~2) PARAM(0)=HDCP ENABLE. (1)=HDCP FOLLOW OUT. (2)=HDCP DISABLE.
RHDCP	SHOW OUTPUT HDCP CURRENT!! RHDCP NO PARAMETER!!
SUPFW	SET NWE FIRMWARE TO UNIT!! SUPFW NO PARAMETER!!
DEFAULT	RESET THE UNIT TO FACTORY DEFAULTS!! DEFAULT NO PARAMETER!!

COMMAND	DESCRIPTION
IPCONFIG	SHOW ETHERNET ADDRESS TO SCREEN!! IPCONFIG NO PARAMETER!!
RBIOS	SHOW BIOS VERSION TO SCREEN!! RBIOS NO PARAMETER!!
RINRES	SHOW INPUT RESOLUTION TO SCREEN!! RINRES NO PARAMETER!!
SBYPASS	SET INPUT 4K OUTPUT RESOLUTION BYPASS!! SBYPASS PARAM,PARAM=(0/1) 0=OFF,1=ON.
RBYPASS	SHOW CURRENT 4KBYPASS MODE STATUS!! RBYPASS NO PARAMETER!!

6.6 OSD (On Screen Display) Menu

FIRST LEVEL	SECOND LEVEL	ADJUSTABLE PARAMETERS AND DEFAULT SETTINGS
Output Resolution	800x600P60	1280X720P60
	1024X768P60	
	1280X800P60	
	1280X1024P60	
	1366X768P60	
	1400X1050P60	
	1600X900P60RB	
	1680X1050P60	
	1600X1200P60	
	1280X720P50/59/60	
	1920x1200PRB	
	1920X1080I50/59/60	

FIRST LEVEL	SECOND LEVEL	ADJUSTABLE PARAMETERS AND DEFAULT SETTINGS
	1920X1080P 23/24/25/29/30/50/59/60	
	2048X1080P23/24	
	3840X216 0P23/24/25/29/30/50/59/60	
	4096X2160P23/24	
	NATIVE	
Input UHD4K Bypass	On / Off	Select on or off. The default setting is "Off"
Input Source	HDMI Input	Select On or Off, default is ON
	DP Input	Select On or Off, default is OFF
	VGA Input	Select On or Off, default is OFF
	Auto Source	Select On or Off, default is OFF
	Restore Def	Select Yes or No, default is No
Picture Settings	Contrast	Adjust from 0~100, default is 64
	Brightness	Adjust from 0~100, default is 64
	Saturation	Adjust from 0~100, default is 64
	Hue	Adjust from 0~100, default is 64
	Sharpness	Adjust from 0~100, default is 16

FIRST LEVEL	SECOND LEVEL	ADJUSTABLE PARAMETERS AND DEFAULT SETTINGS
	Auto Adjust	Select No or Yes), default is No
	Picture Reset	Select No or Yes), default is No
Aspect Settings	Aspect Full	Select ON or OFF, default is ON
	Aspect 16:9	Select ON or OFF, default is OFF
	Aspect 16:10	Select ON or OFF, default is OFF
	Aspect 4:3	Select ON or OFF, default is OFF
	Keep Ratio	Select ON or OFF, default is OFF
OSD Settings	H Position	Adjust from 0~100%, default is 5%
	V Position	Adjust from 0~100%, default is 95%
	Transparency	Adjust from 0~7, default is 4
	Menu Timeout	Adjust from 5~45 sec, default is 10sec
	Info Timeout	Adjust from 5~45 sec, default is 10sec
	Info Display	Select ON or OFF, default is OFF
	Restore Def	Select No or Yes, default is No

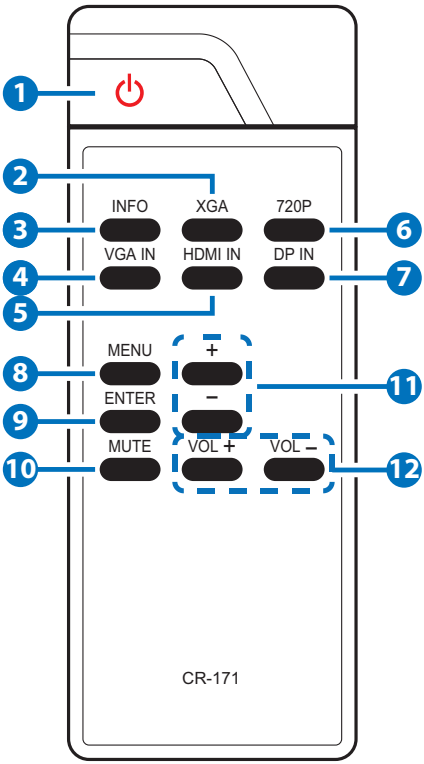
FIRST LEVEL	SECOND LEVEL	ADJUSTABLE PARAMETERS AND DEFAULT SETTINGS
	IP Mode	Static or DHCP, default is Static
	IP Set	IP/ Subnet/ Gateway, default is IP
Ethernet	Byte 1 High	Adjust from 0~255, default is 192
	Byte 2	Adjust from 0~255, default is 168
	Byte 3	Adjust from 0~255, default is 1
	Byte 4 Low	Adjust from 0~255, default is 50
	Net Timeout	Adjust from OFF or up to 60 minutes, default is 10 minutes
	Relink	No or OK, default is No
	Restore Def	No or OK, default is No
	Static/DHCP	Not Linked or Linked), default is Not Linked
	IP	(0~255)192.168.1.50
	Sub	(0~255)255.255.255.0
	Gate	(0~255)192.168.1.254
	MAC	(0~ff)xx-xx-xx-xx-xx-xx
Audio Settings	Audio Mute	(Mute/Un-Mute)Un-Mute
	Volume	(0~100)60
	Restore Def	(No/OK)No

FIRST LEVEL	SECOND LEVEL	ADJUSTABLE PARAMETERS AND DEFAULT SETTINGS
EDID & HDCP	EDID SET:	Int.4K2K/ Int.1080P/ Ext.TV/ Ext.TV 2CH), default is Int.1080P
	EDID SET	
	HDCP SET:	Enable, Disable or Follow Out, default is Enable
	HDCP Out	
Setup	Firmware Update	No or OK, default is No
	Factory Reset	NO or OK, default is No
Information	Source Info:	
	Type	
	Name	
	Model	
	Sink Info:	
	Type	
	Model	
	Native1	
	Native2	
	HDCP Out	

Note: *In the following scenarios deep color will be kept from the input source.*

Input timing: 3840X2160P/23 & output timing: 3840X2160P/23
Input timing: 3840X2160P/24 & output timing: 3840X2160P/24
Input timing: 3840X2160P/25 & output timing: 3840X2160P/25
Input timing: 3840X2160P/29 & output timing:3840X2160P/29
Input timing: 3840X2160P/30 & output timing: 3840X2160P/30
Input timing: 3840X2160P/50 & output timing: 3840X2160P/50
Input timing: 3840X2160P/60 & output timing: 3840X2160P/60
Input timing: 4096X2160P/23 & output timing: 4096X2160P/23
Input timing: 4096X2160P/24 & out timing: 4096X2160P/23

6.7 Remote Control Unit



1. **POWER:** Press to power on the unit or place it into stand-by mode.
2. **XGA:** Press to set the output timing to XGA (1024x768@60Hz).
3. **INFO:** Press to show video information on the OSD.
4. **VGA IN:** Press to switch to the VGA input.
5. **HDMI IN:** Press to switch to the HDMI input.
6. **720p:** Press to set the output timing to 720P (1280x720@60Hz).
7. **DP IN:** Press to switch to the DisplayPort input.
8. **MENU:** Press to bring up the OSD menu.
9. **ENTER:** Press to confirm a selection or to go deeper into a menu item.
10. **MUTE:** Press to mute or un-mute the audio.
11. **+/-:** Press to move up and down or adjust selections within menus.
12. **VOL+/VOL-:** Press to increase or decrease volume.

6.8 D-sub 9 Pin Definition

Pin	Define TX / RX
1	N/C
2	TxD/RxD
3	RxD/TxD
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	NC

Baud Rate: 115200bps

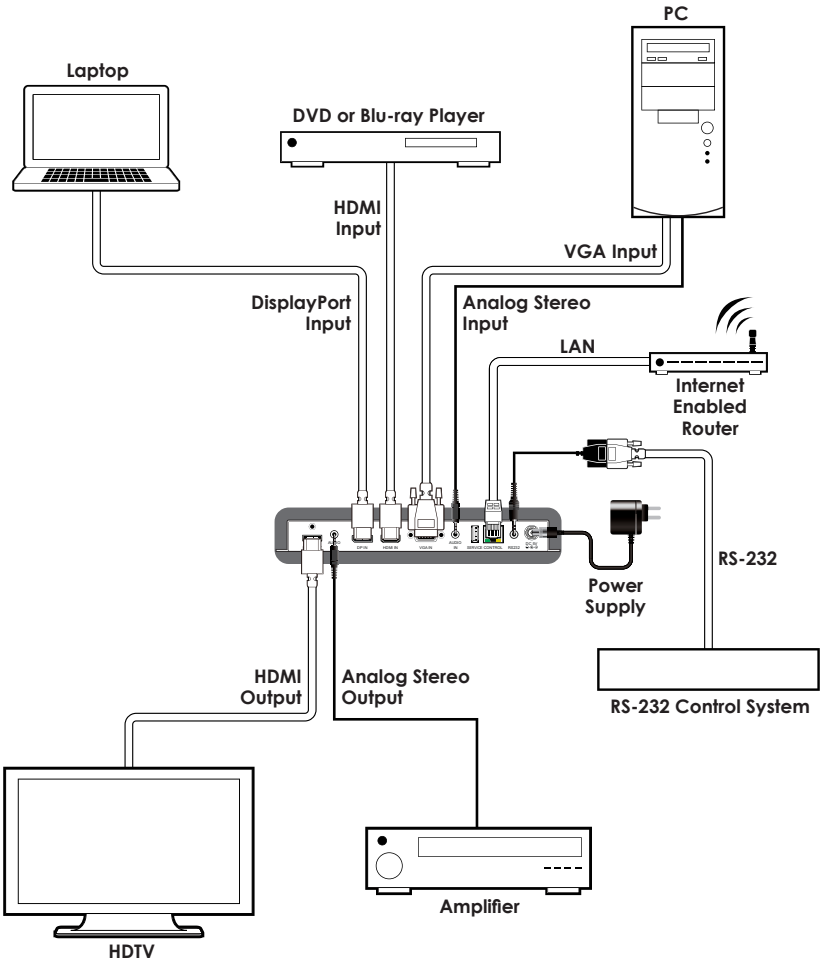
Data bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specification

Input Ports	1x HDMI
	1x VGA
	1x DisplayPort
	1x audio in
Output Ports	1x HDMI out
	1x audio out
Control Interfaces	1x RS-232
	1x Service (USB 2.0)
	1x Control
Supported Resolutions	Up to 4K@60Hz for HDMI & DP input and output
	Up to 1680 x 1050@ 60Hz for VGA input
Baud Rate	115200 bps
Power Supply	5V DC
Chassis Material	Metal
Silkscreen Color	Black
Dimensions	231.5(L) x108 (W) x25(H)mm/Jacks Excluded
	231.5(L) x 117(W) x 25(H)mm /Jacks Included
Power Consumption	11.2W

8.2 Supported Timing Table

INPUT TIMING	VGA	HDMI / DISPLAYPORT
480i/60,576i/50,480p/60,576p/50		✓
480p/60	✓	
576p/50	✓	
720p/50/60	✓	
800x600/56/60/72/75/85	✓(640x480)	✓
1080i/50/60		✓
1080p/24/25/30/50/60	✓	✓
1280x720/60		
1024x768/60/70/75/85	✓	✓
1280x768/60/75	✓	✓
1280x800/60/75	✓	✓
1280x1024/60/75	✓	✓
1366x768/60	✓	✓
1400x1050/60/75	✓	✓
1440x900/60/75	✓	✓
1600x900/60	✓	✓(RB)
1600x1200/60	✓	✓
1680x1050/60	✓	✓
1920x1200/60RB	✓	✓
3840x2160/24/25/30		✓
3840x2160/50/60(4:2:0)		✓
4096x2160/50/60		✓

OUTPUT TIMING	HDMI
800x600/60	✓
1024X768/60	✓
1280X800/60	✓
1280X720P/50/59/60	✓
1280X1024/60	✓
1366X768/60	✓
1400X1050/60	✓
1600X900P60RB	✓
1600X1200/60	✓
1680X1050/60	✓
1920x1200/60RB	✓
1920X1080i/50/59/60	✓
1920X1080P/50/59/60	✓
2048X1080P/23/24	✓
3840X2160P50/59/60	✓
4096X2160P/23/24	✓
Native	✓

8.3 Maximum HDMI cable length

TIMING	INPUT	OUTPUT
8 bit 1080p	15m	15m
3840 x 2160p@24	5m	5m
3840 x 2160p@60 YUV 4:4:4	5m	5m

CYPRESS TECHNOLOGY CO., LTD
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