# MODEL : AB-3879

**HDMI Video Scaler**

INSTRUCTION MANUAL



**HDMI Video Scaler**
**7x2 (mirrored) Multi Format HDMI Video Scaler Selector Switch**
**7 In's Converted to VGA & HDMI Output**

*HDTV Distribution Amplifier Series*

*Thank you for purchasing the AB-3879 HDMI Video Scaler. You will find this unit easy to install and highly reliable but it is essential that you read this manual thoroughly before attempting to use this HDMI Video Scaler.*

# SAFETY INFORMATION

1. To ensure the best results from this product, please read this manual and all other documentation before operating your equipment. Retain all documentation for future reference.

2. Follow all instructions printed on unit chassis for proper operation.

3. To reduce the risk of fire, do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.

4. Make sure power outlets conform to the power requirements listed on the back of the unit. Keep unit protected from rain, water and excessive moisture.

5. Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Dust with a clean dry cloth.

6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

7. Do not force switched or external connections in any way. They should all connect easily, without needing to be forced.

8. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.

9. AC voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.

10. Turn power off and disconnect unit from AC current before making connections.

11. Never hold a power switch in the "ON" position.

12. This unit should be installed in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold. Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.

13. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically "blown free" of foreign dust and matter.

14. To reduce the risk of electric shock, do not remove the cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel. There are no user serviceable parts inside.

15. When moving the unit, disconnect input ports first, then remove the power cable; finally, disconnect the interconnecting cables to other devices.

16. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.

17. The equipment power cord should be unplugged from the outlet when left unused for a long period of time.

18. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.

19. Service Information Equipment should be serviced by qualifier service personnel when:
    A. The power supply cord or the plug has been damaged.
    B. Objects have fallen, or liquid has been spilled into the equipment.
    C. The equipment has been exposed to rain
    D. The equipment does not appear to operate normally, or exhibits a marked change in performance
    E. The equipment has been dropped, or the enclosure damaged.

THIS SAFETY INFORMATION IS OF A GENERAL NATURE AND MAY BE SUPERSEDED BY INSTRUCTIONS CONTAINED WITHIN THIS MANUAL

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## CONTENTS

## INTRODUCTION

Congratulations on your purchase of a professional high-performance scaler and thank you for your support of KVM Switch products. The AB-3879 is a video graphics scaler that accepts seven types of signals: analog video, S-Video, component video, VGA, DVI, HDMI, and display port signals.

It scales the input signals into either VGA or HDMI signals, supporting higher full HD resolutions of 480i/p, 720p, 1080i/p. Designed to solve problems of compatibility between source devices and monitors, it is also useful for delivering one single image on a TV wall. In addition to the front panel buttons and the IR remote control, users may gain control over the AB-3879 using a PC through the RS-232 serial port or Ethernet port.

## PACKAGE CONTENTS

Check that you have the following components;
- AB-3879 Video Scaler
- IR Remote Control
- Rack Mounts
- IR extender receiver
- RS-232 driver CD (All Windows Operating Systems)
- RS-232 cable
- Users Guide
- AC/DC Adapter: 12 VDC, 2A universal type switch 50/60Hz, 100~230 VAC

## 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.

## DISCLAIMERS

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# FEATURES

## FEATURES

- Supports HDMI 1.4a 30 formals and suits HDMI V1.4 transmitter & receiver
- Compliant with HDMI 1.4, DVI 2.0, and HDCP 2.0
- Input support:
    - Analog: analog video, S-Video, composite video, VGA
    - Digital: DVI, HDMI and display port (2560x1600)
- Output support: VGA and HDMI 1080p with deep color 36-bit
- Output audio support: S/PDIF, stereo audio
- Advanced 30 de-interlace, smooth edge algorithm and 3:2/2:2 film mode processing
- 3D format functions: frame packing, side-by-side, top/bottom adjustment
- Bypasses XGA & 720p 120Hz 3D signal for DLP link 3D ready projector for active 3D display
- Supports full HD @24Hz, full HD 3D signal, with special algorithm for RH/LH synchronization
- Supports wide range of HD resolutions ranging from XGA to WUXGA 1920x1200 to
- HDTV/DTV resolutions 480i/480p, 576i/576p, 720p, 1080i & 1080p
- Compatible with all HDMI source devices, PC monitors, plasma HD display, HDTV and audio receivers/amplifiers
- Supports intelligent color adjustment (discrete RGB color adjustment, hue, saturation, sharpness, contrast, brightness, and preset color modes)
- Rack mountable: 19-inch ear rack mount
- Various user interface control:
- Windows-based GUI control via RS-232 port
    - Front panel push buttons, IR wireless remote control, Third party RS-232 controller (via simple ASCII), Ethernet
- Supports IR extender with maximum extend distance reaching 1000 feet / 300 meters
- Supports TV wall function, allowing the image to be divided on multiple displays/monitors
- Power supply DC 12V, universal type switch, 100-240 VAC, 50/50Hz

## SPECIFICATIONS

**Scaler Type:** 7 in 2 out HDMI Video Scaler

**Video Input Signal:** 1x Composite / 1x S-Video /1x Component / 1x VGA / 1x DVI / 1x HDMI / 1x DP

**Audio Input Signal:** Digital Audio (PCM), Stereo Audio

**Video Output Signal:** 1x RGB, 1x HDMI

**Audio Output Signal:** 1x S/PDIF Digital Audio, 1x Analog, Audio RH/LH, 1x HDMI Audio

**3D Support:** 3D Video Format in HDMI 1.4a (225MHz)

**Input Resolution:** Up to 1080p-60, 1920x1200, and DP 2560x1600

**Output Resolution:** Up to 1080p-60 and 1920x1200

**Source Status:** Automatic scanning of input/output status

**HDCP Support:** DVI/ HDMI/ Display Port, compliant with HDCP 2.0

**HDMI Compliance:** HDMI 1.4a receiver and transmitter

**HDMI Cable Distance:** Max. ~ 50 feet (15 meters), depending on cable quality

**Infrared Frequency:** 38KHz

**Chassis Material:** Metal

**IR Extend Distance:** ~1000 feet (300 meters) line cable via IR extender

**Control:** IR remote control, RS-232, front panel push buttons

**Dimensions:** 11.96 x 5.90 x 1.73 in (304x150x11mm)

**Rack Mount:** 19-inch panel type (1U-44L)

**Power Supply:** Input 100 ~ 240 VAC, 50/60 Hz / Output DC 12V, 3A

**Safety Approvals:** CE, FCC, RoHS (2002/95/EC)

**Temperature:** 32 ° F ~ 100 ° F (0 ° ~32 ° C)

**Shipping Weight**: 2.05 Kgs / 3.42 lbs

**Video Wall:**

- Magnify, scroll, pan through all inputs
- Video wall function: Image split, cropping, and assign display location
- Pixel based overlap adjustment in all edges, up to 15x15 matrix displays
- Up to 2560x1600 input resolution via display port

**System Control:**

- Box ID for easy independent control through IR, RS-232, and 5 selectable profile settings for difference display
- Ethernet control module with RJ45 connector
- Code update through RS-232
- ASCII control protocol over RS-232 and Ethernet
- One DC 12V/1A trigger output

**Advanced Video Processing:**

- Advanced 3D de-interlace, smooth edge algorithm and 3:2/2:2 film mode
- High quality video and graphics scaling up and down
- Frame rate conversion

**Intelligent Color Adjustment:**

- Discrete RGB, color adjustment, hue, saturation, sharpness, contrast, brightness, 4 preset color modes

**3D Function:**

- Auto detect standard 3D signal (with 3D index inside) from Blu-ray DVD or STB
- Supports full HD @ 24 Hz full HD 3D signal with special algorithm for RH/LH synchronization
- Bypass XGA & 720p 120 Hz 3D signal for DLP link
- 3D ready projector for active 3D display

As product improvements are continuous, specifications are subject to change without notice.

## FRONT PANEL
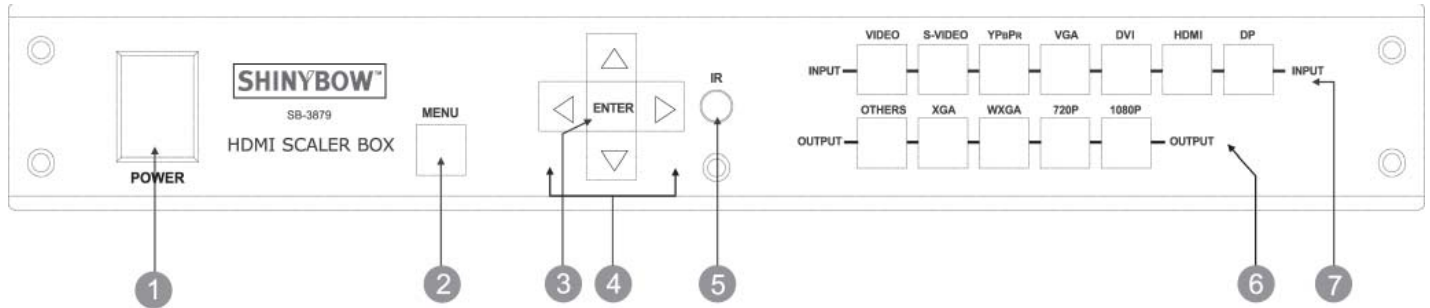


### 1. POWER ON SWITCH

The power switch turns the unit on and off. The LED will illuminate blue 10 indicate the switcher is ON and receiving power. The scaler will remember the last setting during a power cycle. When turned on again, it will automatically apply the setting last used.

### 2. MENU

Press menu to open the On-Screen Display interface. Press again to exit menu

### 3. ENTER

Press enter to confirm your entries.

### 4. ARROW KEYS

Use the arrow keys to move between the On-Screen Display options. Press the up key to enter the upper layer and the down key to enter the next layer. Press the left and right keys to select options in the same layer or change the value of a parameter.

### 5. IR SENSOR

The IR sensor receives IR commands from the supplied remote controller or a third party IR remitter.

### 6. OUTPUT SELECT BUTTONS

Select the desired resolution supported by your display devices. Press OTHERS for resolutions other than XGA, WXGA, 720p, 1080p. The button will illuminate blue to indicate it is selected. Advanced resolution adjustment can be found in the OSD options.

### 7. INPUT SELECT BUTTONS

Select from one of the 7 buttons the video signal you intend to be scaled. The button will illuminate blue to indicate it is selected.

# REAR PANEL

## REAR PANEL
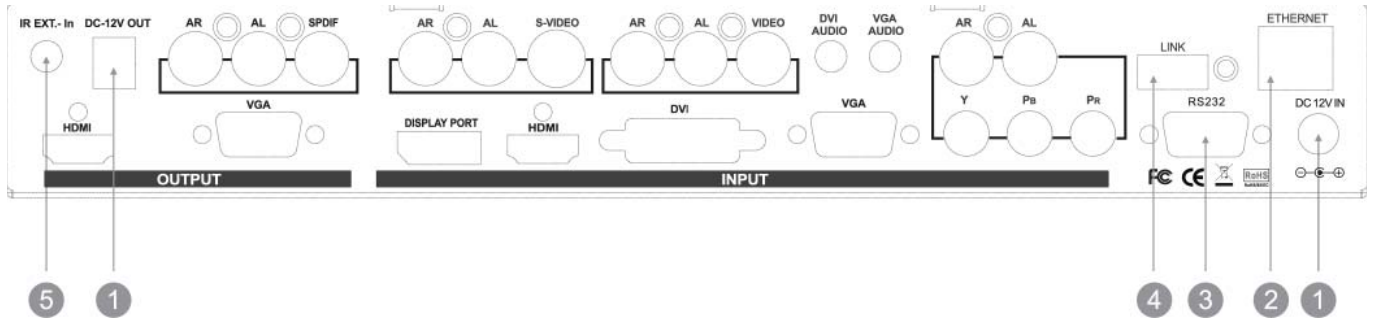
### 1. DC POWER INLET

The scaler suits a DC power plug-pack input connector. Please ensure the plug-pack used is of an approved type and of correct current, voltage output, and connector polarity. DV 12 Volt, power supply 2A.
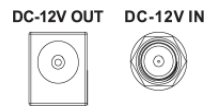
Power Jack:
DC Jack - Inner OD O 2.1mm (+ )
            Outside OD O 5.5mm (GND)
Power input - 12VDC, 2A

### 2. ETHERNET CONNECTION

Connect a CATS cable to the Ethernet port for control of the scaler from a computer.
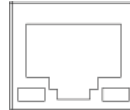
SPSC / RJ 45 connector

### 3. RS-232 CONNECTION

Connect a serial cable to the RS-232 port for control at the scaler from a computer.
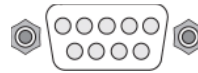
D-SUB 9-pin female connector

### 4. LINK

Connect the link port for firmware updates. Used for testing purpose.
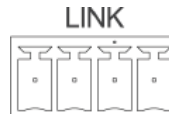
Terminal block connector

### 5. IR EXTENDER CONTROL

Supports remote control via IR extender. Maximum extend distance reaches 1000 feet (300 meters).

IR Extender Jack:
Female Jack - inner OD 0 3.5 mm

# REAR PANEL

## REAR PANEL
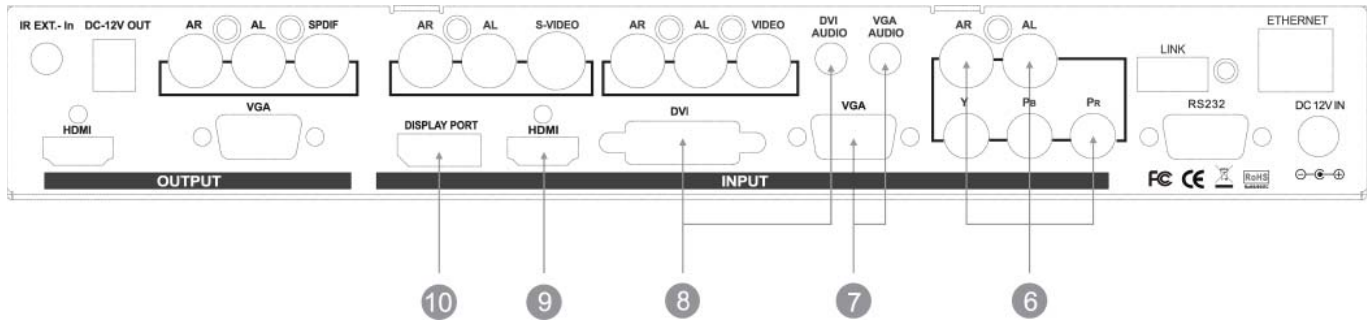


### 6. YPBPR + AR / AL AUDIO INPUT

Connect a signal of component video directly to the female RCA connector, which supports component video (YPBPR) to HDTV display devices. Connect the output port of your source audio device to the AR/AL inputs.
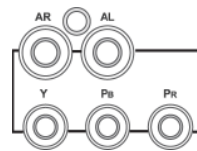
Component video via 3x RCAs
Female RCA connectors
Stereo audio via 2x RCAs
Female RCA connectors

### 7. VGA + VGA AUDIO INPUT

Connect a signal of VGA (RGBHV) to the HD-15F female connector. Connect the output port of your source audio device to the audio input.
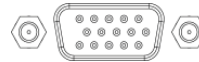
VGA video jack
Female HD-15F connector

### 8. DVI + DVI AUDIO INPUT

Connect a signal of DVI to the digital video connector. Connect the output port of your source audio device to the audio input.

Female DVI connector

### 9. HDMI INPUT

Connect 8 signal link of HDMI direct digital video/audio to the HDMI connector, which supports HDMI digital video/audio and DVI digital video sources.
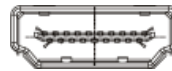
HDMI female jack

### 10. DISPLAY PORT INPUT

Connect a signal of display port to the DP port, which supports digital video and audio.

Display port digital video and audio connector

# REAR PANEL

## REAR PANEL
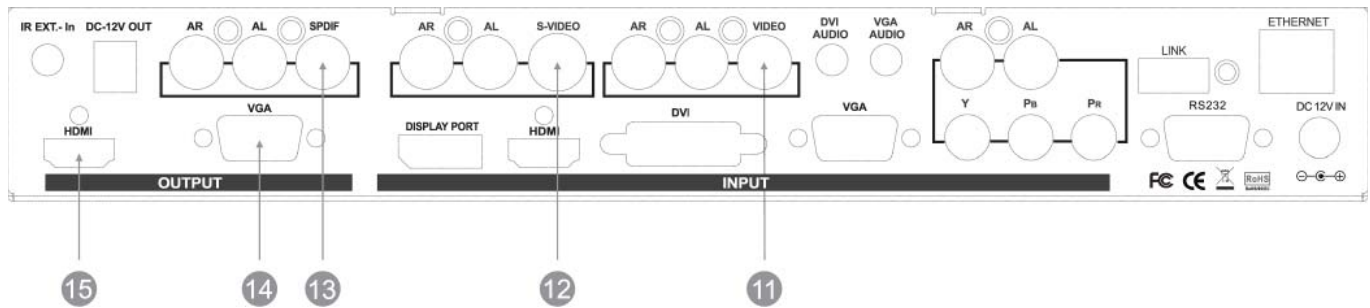


### 11. VIDEO + AR I AL AUDIO INPUT

Connect a signal of composite video to the RCA connector.
Connect the output port of your source audio device to the
AR/AL inputs.

Female RCA connector Stereo Audio
(AR/AL) Via 1x 03.5mm ear phone jack
connector

Note: With 1x female phone jack each
channel

### 12. S-VIDEO + AR / AL AUDIO INPUT

Connect a signal input of S-Video to the connector. Connect the
output port of your source audio device to the AR/AL inputs.

Mini-DIN connector Stereo Audio (AR/
AL) Via 1x 03.5mm ear phone jack
connector

Note: With 1x female phone jack each
channel

### 13. SPDIF

Connect for digital audio output.

Female RCA connector

### 14. VGA OUTPUT

Connect a signal source of VGA(RGBHV) to the VGA connector.

Component Video (YPBPR) Via 3x
RCAs

Note: With 3x RCA female connectors.

### 15. HDMI OUTPUT

Connect a signal link of HDMI direct digital video/audio to this
Female HDMI connector, which supports HDMI digital video/audio
and DVI digital video sources.
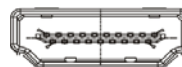
HDMI digital video/audio connector
HDMI female connector

Note: With proper adapters, the scaler
can be used with DVI digital video
signals, and HDCP compliant.

# REMOTE CONTROL

**Before making any connections to the AB-3879. Observe the following:**

Ensure the mains voltage supply matches the label on the supplied plug- Pack (+/- 10%)

Ensure that the power switch is OFF

Ensure that all system grounds (earth) are connected to a common point.

Avoid powering equipment within a system from multiple power sources that may be separated by large distances

Connect all audio video sources and destination equipment

Power up all source and destination audio-visual sources

For each destination output select the appropriate input source by using The front panel input select buttons. The supplied IR remote control. Or through the RS-232 serial communications port.

Upon power up the switcher will return to its last used setting before Powered down.

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## REMOTE CONTROL

**For guidance on the OSD options, please refer to the OSD instruction manual.**

**IR REMOTE CONTROL KEY :**

**1/2. POWER ON AND OFF:** Turns on or off the scaler

**3. MUTE:** Stops playing sounds

**4. SOURCE (HDMI, VGA, DVI, DP, YPBPR, VIDEO, S-VIDEO):** Selects your input signal type

**5. ENTER:** Confirms your selection/enter the next layer of OSD options

**6. ARROW KEYS:** move up, down, left or right between the OSD options. Use left and right keys to adjust the value of a parameter. Use down key to enter the next layer of options and up key to move back.

**7. RETURN:** Return to the upper layer of OSD options

**8. MENU:** Opens up the OSD menu

**9. INFO:** Checks the connection status of input/output/ RS-232/Ethernet ports

**10. EXIT:** Leaves the OSD menu

**11. OUTPUT (XGA, WXGA, 720P, 1080P, OTHERS):** Selects the desired output resolution supported by your display device.

**12. OSD TIME OUT:** Adjusts the OSD menu display time

**13. VIDEO WALL:** Opens the video wall options
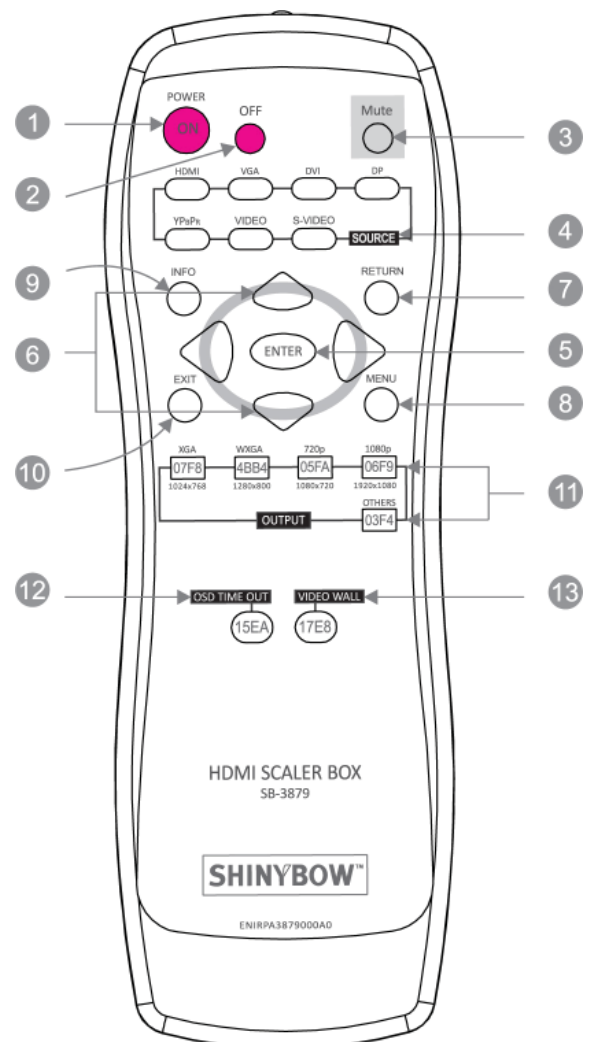
## IR REMOTE CUSTOM AND DATA CODES (NEC STANDARD)

**HOW TO SETUP IR CODES:**

**CUSTOM CODE: 20DF**

| | |
|---|---|
| **POWER ON:** | **20DF 5DA2** |
| **POWER OFF:** | **20DF 5EA1** |
| **Mute:** | **20DF 02FD** |
| | |
| **HDMI:** | **20DF 1FEO** |
| **VGA:** | **20DF OAF5** |
| **DVI:** | **20DF 50AF** |
| **DP:** | **20DF 59A6** |
| **YPBPR:** | **20DF 58A7** |
| **VIDEO:** | **20DF 5AA5** |
| **S-VIDEO:** | **20DF 5BA4** |
| | |
| **RETURN:** | **20DF 11EE** |
| **MENU:** | **20DF 19EA** |
| **INFO:** | **20DF 1BE4** |
| **EXIT:** | **20DF 5CA3** |
| | |
| **ENTER:** | **20DF 51AE** |
| **UP:** | **20DF 44BB** |
| **RIGHT:** | **20DF 48B7** |
| **LEFT:** | **20DF 1CE3** |
| **DOWN:** | **20DF 1DE2** |
| | |
| **XGA:** | **20DF 07F8** |
| **WXGA:** | **20DF 4BB4** |
| **720p:** | **20DF 05FA** |
| **1080p:** | **20DF 06F9** |
| **OTHERS:** | **20DF 03FC** |
| | |
| **OSD TIME OUT:** | **20DF 15EA** |
| **VIDEO WALL:** | **20DF 15EB** |

**Example 1: Select input VGA and output HDMI**
**The IR Data Code: 20DF   OAF5   20DF   07F8**

**Example 2: Open OSD-> move right -> move down to next layer -> enter to confirm selection**
**The IR Data Code: 20DF   15EA   20DF   48B7   20DF   1DE2   20DF   51AE**

# IR EXTENDER

## IR RECEIVER:

**1. SB-100    IR 300M Receiver**
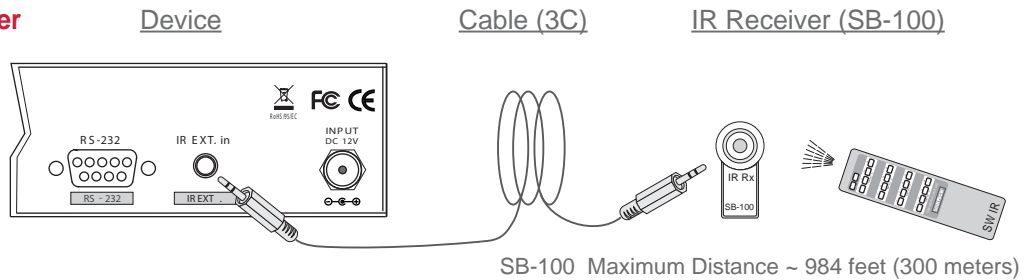


**SB-100** IR Receiver Set

Device · Cable (3C) · IR Receiver (SB-100)

SB-100  Maximum Distance ~ 984 feet (300 meters)

**2. SB-100C    IR 2M Receiver**

IR Receiver cable 6ft (2M)

**SB-100C** IR Receiver Cable

Device · Cable (3C) · IR Receiver (SB-100C)

SB-100C Maximum Distance ~ 6 feet (2 meters)
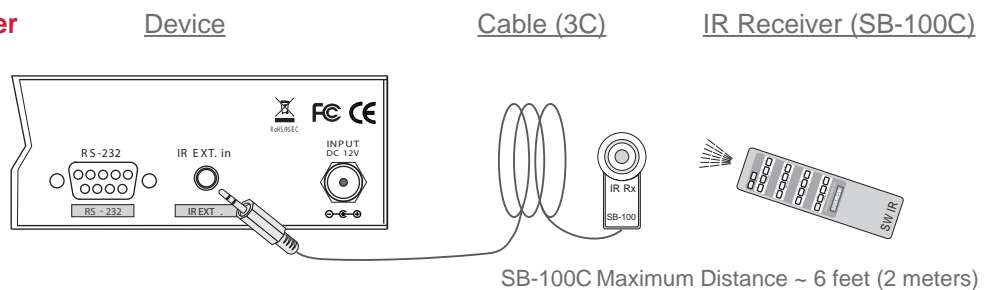
*\*\*\* When you plug the External IR extender into the switcher, the front panel IR receiver remains active. \*\*\**

## PIN CONFIGURATION:

SB-100 and SB-100C Receiver Pin configuration
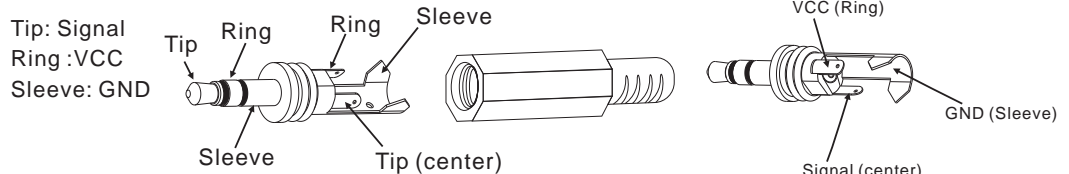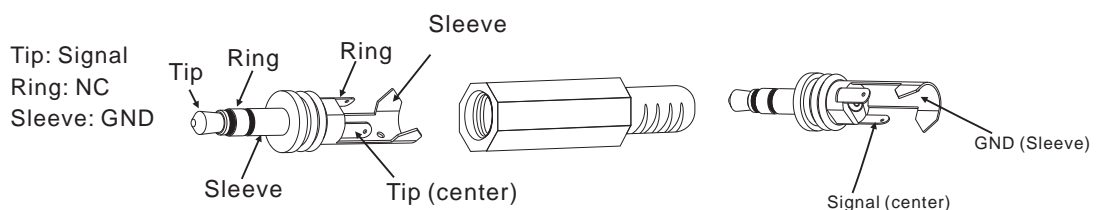


**SB-100** IR Receiver Set

Tip: Signal
Ring :VCC
Sleeve: GND

Tip · Ring · Ring · Sleeve
Sleeve · Tip (center)

VCC (Ring)
GND (Sleeve)
Signal (center)

SB-100 Maximum Distance ~ 984 feet (300 meters)

IR Receiver cable 6ft (2M)

**SB-100C** IR Receiver Cable

Tip: Signal
Ring: NC
Sleeve: GND

Tip · Ring · Ring · Sleeve
Sleeve · Tip (center)

GND (Sleeve)
Signal (center)

SB-100C Maximum Distance ~ 6 feet (2 meters)

**Note:** *The External IR jack has voltage on the "Ring" portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

# IR EXTENDER

## IR EMITTER:

**1. SB-101    IR 300M Transmitter**



**SB-101** IR Transmitter Set

Device

Cable (3C)

IR Transmitter (SB-101)

DC 12V   IR out   IR in   CAT6/6a/7

From Receiver   To Driver   OUTPUT
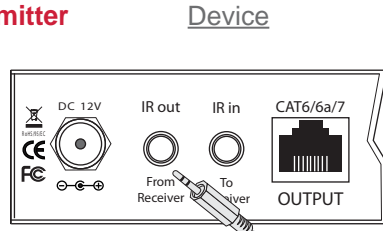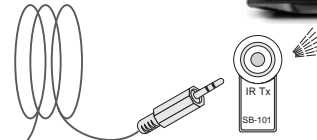
IR Tx
SB-101

SB-101  Maximum Distance ~ 984 feet (300 meters)

----------------------------------------------------------------------------------------------------

**2. SB-101C    IR 2M Transmitter**

IR Transmitter cable 6ft (2M)



**SB-101C** Transmitter Cable

Device

Cable (3C)

IR Transmitter (SB-101C)

DC 12V   IR out   IR in   CAT6/6a/7

From Receiver   To Driver   OUTPUT
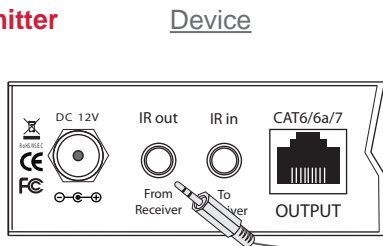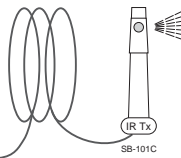
IR Tx
SB-101C

SB-101C Maximum Distance ~ 6 feet (2 meters)

*\*\*\* When you plug the External IR extender into the switcher, the front panel IR transmitter remains active. \*\*\**

## PIN CONFIGURATION:

SB-101 and SB-101C Transmitter Pin configuration
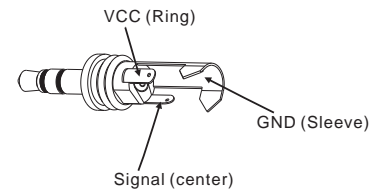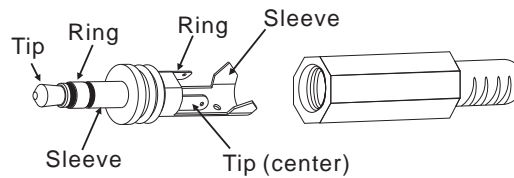


**SB-101** IR Transmitter Set

Tip: Signal
Ring :VCC
Sleeve: GND

Tip   Ring   Ring   Sleeve

Sleeve   Tip (center)

VCC (Ring)

GND (Sleeve)

Signal (center)

SB-101 Maximum Distance ~ 984 feet (300 meters)

IR Transmitter cable 6ft (2M)



**SB-101C** Transmitter Cable

Tip: Signal
Ring: NC
Sleeve: GND

Tip   Ring   Ring   Sleeve

Sleeve   Tip (center)

GND (Sleeve)

Signal (center)
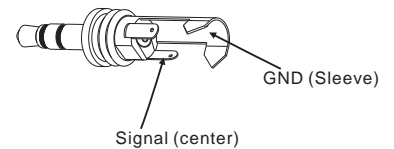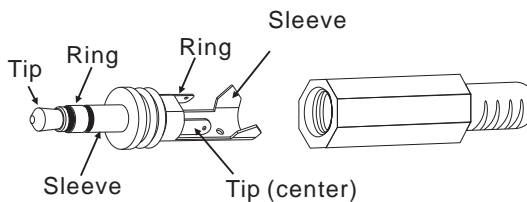
SB-101C Maximum Distance ~ 6 feet (2 meters)

***Note:*** *The External IR jack has voltage on the "Ring" portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

# TYPICAL APPLICATION

## 7 IN 2 OUT HDMI VIDEO SCALER
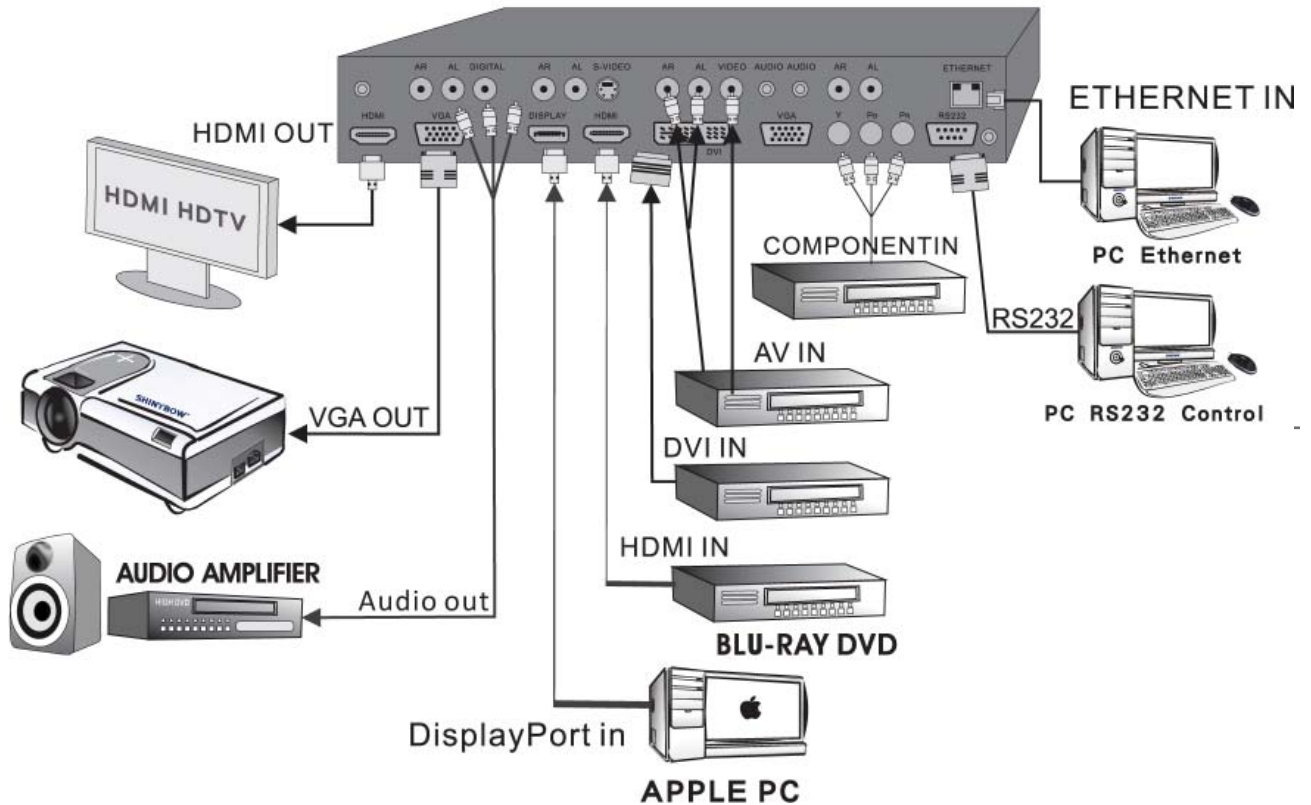


## INSTALLING

**CONTROL PORTS :**

1. Front Panel - Function Key Press Buttons
2. IR Remote - IR Remote Controller
3. RS-232 Interface - RS-232 Interface System
4. Ethernet - Ethernet Interface System

**INPUTS 1 ~ 7 PORT SOURCE SIGNALS :** COMPONENT VIDEO, AV, DVI, HDMI, Display Port (5 input ports connected)

**OUTPUTS 1 ~ 2 PORT DISPLAY SIGNALS :** VGA, HDMI

AB-3879 SUPPORTS 7x INPUTS AND 2x OUTPUTS, CONTROL IR & RS-232 INTERFACE SYSTEM PORTS.

# INPUT RESOLUTION SUPPORT

| Resolution | | INPUT | | | | |
|---|---|:---:|:---:|:---:|:---:|:---:|
| | | COMPONENT | VGA | DVI | HDMI | Display Port |
| 640x350 @ 85 Hz | 480p / 480i | ✓ | | ✓ | ✓ | ✓ |
| 640x400 @ 85 Hz | 576p / 576i | | | ✓ | ✓ | ✓ |
| 640x480 @ 60 Hz | 720p | ✓ | ✓ | ✓ | ✓ | ✓ |
| 640x480 @ 72 Hz | VGA | | | ✓ | ✓ | ✓ |
| 640x480 @ 75 Hz | VGA | | ✓ | ✓ | ✓ | ✓ |
| 720x400 @ 70 Hz | DOS | | ✓ | ✓ | ✓ | ✓ |
| 720x400 @ 85 Hz | 1080p / 1080i | ✓ | ✓ | ✓ | ✓ | ✓ |
| 800x600 @ 56 Hz | SVGA | | | ✓ | ✓ | ✓ |
| 800x600 @ 60 Hz | SVGA | | ✓ | ✓ | ✓ | ✓ |
| 800x600 @ 72 Hz | SVGA | | ✓ | ✓ | ✓ | ✓ |
| 800x600 @ 75 Hz | SVGA | | ✓ | ✓ | ✓ | ✓ |
| 832x624 @ 75 Hz | SVGA | | ✓ | ✓ | ✓ | ✓ |
| 848x480 @ 59 Hz | WVGA | | ✓ | ✓ | ✓ | ✓ |
| 848x480 @ 60 Hz | WVGA | | ✓ | ✓ | ✓ | ✓ |
| 852x480 @ 60 Hz | 480p | | ✓ | | | |
| 1024x768 @ 60 Hz | XGA | | ✓ | ✓ | ✓ | ✓ |
| 1024x768 @ 70 Hz | XGA | | | ✓ | ✓ | ✓ |
| 1024x768 @ 75 Hz | XGA | | | ✓ | ✓ | ✓ |
| 1152x864 @ 75 Hz | XGA+ | | ✓ | ✓ | ✓ | ✓ |
| 1280x720 @ 48 Hz | HD 720 | | ✓ | | | |
| 1280x720 @ 50 Hz | HD 720 | | ✓ | ✓ | ✓ | ✓ |
| 1280x720 @ 60 Hz | HD 720 | | ✓ | ✓ | ✓ | ✓ |
| 1280x768 @ 60 Hz | WXGA | | ✓ | ✓ | ✓ | ✓ |
| 1280x768 @ 75 Hz | WXGA | | ✓ | ✓ | ✓ | ✓ |
| 1280x768 @ 60 RB | WXGA | | ✓ | | ✓ | ✓ |
| 1280x800 @ 60 Hz | WXGA | | ✓ | | ✓ | ✓ |
| 1280x800 @ 75 Hz | WXGA | | ✓ | | ✓ | ✓ |

# INPUT RESOLUTION SUPPORT

| Resolution | | INPUT | | | | |
|---|---|---|---|---|---|---|
| | | COMPONENT | VGA | DVI | HDMI | Display Port |
| 1280x960 @ 60 Hz | SXGA | | ✓ | | ✓ | ✓ |
| 1280x1024 @ 60 Hz | SXGA | | ✓ | ✓ | ✓ | ✓ |
| 1280x1024 @ 75 Hz | SXGA | | ✓ | ✓ | ✓ | ✓ |
| 1360x768 @ 60 Hz | SXGA | | ✓ | ✓ | ✓ | ✓ |
| 1360x768 @ 75 Hz | SXGA | | ✓ | | | |
| 1366x768 @ 60 Hz | WXGA | | ✓ | | | |
| 1400x788 @ 60 Hz | WXGA+ | | ✓ | | | |
| 1400x1050 @ 60 Hz | SXGA+ | | ✓ | ✓ | ✓ | ✓ |
| 1400x1050 @ 75 Hz | SXGA+ | | ✓ | ✓ | ✓ | ✓ |
| 1400x1050 @ 60 RB | SXGA+ | | ✓ | | ✓ | ✓ |
| 1440x900 @ 60 Hz | WXGA+ | | ✓ | | ✓ | ✓ |
| 1440x900 @ 75 Hz | WXGA+ | | | | ✓ | ✓ |
| 1440x1050 @ 60 Hz | SXGA+ | | ✓ | ✓ | ✓ | ✓ |
| 1600x1200 @ 60 Hz | UXGA | | ✓ | ✓ | ✓ | ✓ |
| 1600x1200 @ 65 Hz | UXGA | | ✓ | | | |
| 1600x1200 @ 70 Hz | UXGA | | ✓ | | | ✓ |
| 1600x1200 @ 75 Hz | UXGA | | | | | ✓ |
| 1680x1050 @ 60 Hz | WSXGA+ | | ✓ | ✓ | ✓ | ✓ |
| 1792x1344 @ 60 Hz | | | ✓ | | | |
| 1856x1392 @ 60 Hz | | | ✓ | | | |
| 1920x1200 @ 60 RB | WUXGA | | ✓ | | | |
| 1920x1200 @ 60 Hz | WUXGA | | | ✓ | ✓ | ✓ |
| 1920x1440 @ 60 Hz | WUXGA | | | ✓ | ✓ | ✓ |
| 1920x1440 @ 75 Hz | WUXGA | | | ✓ | ✓ | ✓ |
| 720x480p @ 59 Hz | DVD "NTSC" | | | ✓ | ✓ | ✓ |
| 720x480p @ 59 PW | DVD "NTSC" | | | ✓ | ✓ | ✓ |
| 720x576p @ 50 Hz | DVD "PAL" | | | ✓ | ✓ | ✓ |

# INPUT RESOLUTION SUPPORT

| Resolution | | INPUT | | | | |
|---|---|---|---|---|---|---|
| | | COMPONENT | VGA | DVI | HDMI | Display Port |
| 720x576p @ 50 PW | DVD "PAL" | | | ✓ | ✓ | ✓ |
| 1280x720p @ 50 Hz | HDTV 720p | | | ✓ | ✓ | ✓ |
| 1280x720p @ 60 Hz | HDTV 720p | | ✓ | ✓ | ✓ | ✓ |
| 1280x720p @ 100 Hz | HDTV 720p | | | ✓ | ✓ | ✓ |
| 1280x720p @ 120 Hz | HDTV 720p | | | ✓ | ✓ | ✓ |
| 1920x1080p @ 24 Hz | 1080p HD | | | | ✓ | ✓ |
| 1920x1080p @ 30 Hz | 1080i HD | | | | ✓ | ✓ |
| 1920x1080p @ 50 Hz | 1080p HD | | | | ✓ | ✓ |
| 1920x1080p @ 60 Hz | 1080p HD | | ✓ | ✓ | ✓ | ✓ |
| 1920x1080p @ 24 Hz | Full HD 1080p | | | | | ✓ |
| 2048x1280 @ 60 Hz | | | ✓ | | | |
| 2560x1600 | WQXGA | | | | | ✓ |

# OUTPUT RESOLUTION SUPPORT

| Front Panel Buttons | Resolution | OUTPUT | |
| --- | --- | --- | --- |
| | | VGA | HDMI |
| OTHERS | 720x480 | ✓ | ✓ |
| | 800x600 | ✓ | ✓ |
| | 1280x800 | ✓ | ✓ |
| | 1280x1024 | ✓ | ✓ |
| | 1360x768 | ✓ | ✓ |
| | 1400x1050 | ✓ | ✓ |
| XGA | 1600x1200 | ✓ | ✓ |
| WXGA | 1920x1200 | ✓ | ✓ |
| 720p | 1024x768 | ✓ | ✓ |
| 1080p | 1280x720 | ✓ | ✓ |
| 1080p | 1920x1080 | ✓ | ✓ |

**Note:** When the front panel button OTHERS is pressed, the scaler will automatically apply the resolution 1360x768. Users may continue pressing OTHERS to cycle through the following four resolutions:     1360x768   ->   1280x1024   ->   1600x1200   ->   1920x1200

To select 720x480, 800x600, 1280x800, open the OSD menu and go to the IMAGE PROPERTIES to adjust the settings in the output mode.

# VIDEO TIMING LIST (HDMI)

| Resolution | | H Freq. (Khz) | V Freq. (Hz) | Pixel Clock (MHz) | H Total Pixel | H Display Pixel | H Front Porch | H Sync Width | H Sync Pol | V Total Lines | V Display Lines | V Front Porch | V Sync Width | V Sync Pol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 640x480 | @ 60 Hz | 31.484 | 59.97 | 25.1875 | 800 | 640 | 16 | 96 | N | 525 | 480 | 10 | 2 | N |
| 640x480 | @ 72 Hz | 37.861 | 72.809 | 31.5 | 832 | 640 | 24 | 40 | N | 520 | 480 | 9 | 3 | N |
| 640x480 | @ 75 Hz | 37.5 | 75 | 31.5 | 840 | 640 | 16 | 64 | N | 500 | 480 | 1 | 3 | N |
| 720x400 | @ 70 Hz | 31.458 | 70.063 | 28.3125 | 900 | 720 | 16 | 108 | N | 449 | 400 | 13 | 2 | P |
| 800x600 | @ 56 Hz | 35.156 | 56.25 | 36 | 1024 | 800 | 24 | 72 | P | 625 | 600 | 1 | 2 | P |
| 800x600 | @ 60 Hz | 37.879 | 60.317 | 40 | 1056 | 800 | 40 | 128 | P | 628 | 600 | 1 | 4 | P |
| 800x600 | @ 72 Hz | 48.077 | 72.188 | 50 | 1040 | 800 | 56 | 120 | P | 666 | 600 | 37 | 6 | P |
| 800x600 | @ 75 Hz | 46.875 | 75 | 49.5 | 1056 | 800 | 16 | 80 | P | 625 | 600 | 1 | 3 | P |
| 848x480 | @ 59 Hz | 29.83 | 59.659 | 31.5 | 1056 | 848 | 24 | 80 | N | 500 | 480 | 3 | 5 | P |
| 848x480 | @ 60 Hz | 31.02 | 60 | 33.75 | 1088 | 848 | 16 | 112 | P | 517 | 480 | 6 | 8 | P |
| 1024x768 | @ 60 Hz | 48.363 | 60.004 | 65 | 1344 | 1024 | 24 | 136 | N | 806 | 768 | 3 | 6 | N |
| 1024x768 | @ 70 Hz | 56.476 | 70.069 | 75 | 1328 | 1024 | 24 | 136 | N | 806 | 768 | 3 | 6 | N |
| 1024x768 | @ 75 Hz | 60.023 | 75.029 | 78.75 | 1312 | 1024 | 16 | 96 | P | 800 | 768 | 1 | 3 | P |
| 1152x864 | @ 75 Hz | 67.5 | 75 | 108 | 1600 | 1152 | 64 | 128 | P | 900 | 864 | 1 | 3 | P |
| 1280x720 | @ 48 Hz | 35.539 | 47.961 | 58 | 1632 | 1280 | 48 | 128 | N | 741 | 720 | 1 | 3 | P |
| 1280x720 | @ 50 Hz | 36.918 | 49.822 | 60.25 | 1632 | 1280 | 48 | 128 | N | 741 | 720 | 1 | 3 | P |
| 1280x720 | @ 60 Hz | 44.621 | 59.814 | 74.25 | 1664 | 1280 | 56 | 136 | N | 746 | 720 | 1 | 3 | P |
| 1280x768 | @ 60 Hz | 47.396 | 59.995 | 68.25 | 1440 | 1280 | 48 | 32 | P | 790 | 768 | 3 | 7 | N |
| 1280x768 | @ 60 Hz | 47.776 | 59.87 | 79.5 | 1664 | 1280 | 64 | 128 | N | 798 | 768 | 3 | 7 | P |
| 1280x768 | @ 75 Hz | 60.289 | 74.893 | 102.25 | 1696 | 1280 | 80 | 128 | N | 805 | 768 | 3 | 7 | P |
| 1280x800 | @ 60 Hz | 49.702 | 59.81 | 83.5 | 1680 | 1280 | 72 | 128 | N | 831 | 800 | 3 | 6 | P |
| 1280x800 | @ 75 Hz | 62.795 | 74.934 | 106.5 | 1696 | 1280 | 80 | 128 | N | 838 | 800 | 3 | 6 | P |
| 1280x960 | @ 60 Hz | 60 | 60 | 108 | 1800 | 1280 | 96 | 112 | P | 1000 | 960 | 1 | 3 | P |
| 1280x1024 | @ 60 Hz | 63.981 | 60.02 | 108 | 1688 | 1280 | 48 | 112 | P | 1066 | 1024 | 1 | 3 | P |
| 1280x1024 | @ 75 Hz | 79.976 | 75.025 | 135 | 1688 | 1280 | 16 | 144 | P | 1066 | 1024 | 1 | 3 | P |
| 1360x768 | @ 60 Hz | 47.712 | 60.015 | 85.5 | 1792 | 1360 | 64 | 112 | P | 795 | 768 | 3 | 6 | P |
| 1366x768 | @ 60 Hz | 48 | 60 | 72 | 1500 | 1366 | 14 | 56 | P | 800 | 768 | 1 | 3 | P |
| 1400x1050 | @ 60 Hz | 64.744 | 59.948 | 101 | 1560 | 1400 | 48 | 32 | P | 1080 | 1050 | 3 | 4 | N |
| 1400x1050 | @ 60 RB | 65.317 | 59.978 | 121.75 | 1864 | 1400 | 88 | 144 | N | 1089 | 1050 | 3 | 4 | P |
| 1400x1050 | @ 75 Hz | 82.278 | 74.867 | 156 | 1896 | 1400 | 104 | 144 | N | 1099 | 1050 | 3 | 4 | P |
| 1440x900 | @ 60 Hz | 55.935 | 59.887 | 106.5 | 1904 | 1440 | 80 | 152 | N | 934 | 900 | 3 | 6 | P |
| 1440x900 | @ 75 Hz | 70.506 | 74.847 | 136.5 | 1936 | 1440 | 96 | 152 | N | 942 | 900 | 3 | 6 | P |
| 1440x1050 | @ 60 Hz | 65.234 | 59.903 | 125.25 | 1920 | 1440 | 88 | 152 | N | 1089 | 1050 | 3 | 10 | N |
| 1600x1200 | @ 60 Hz | 75 | 60 | 162 | 2160 | 1600 | 64 | 192 | P | 1250 | 1200 | 1 | 3 | P |
| 1680x1050 | @ 60 Hz | 65.402 | 60.057 | 146.5 | 2240 | 1680 | 104 | 176 | N | 1089 | 1020 | 3 | 6 | P |
| 1920x1200 | @ 60 RB | 74.038 | 59.95 | 154 | 2080 | 1920 | 48 | 32 | P | 1235 | 1200 | 3 | 6 | N |
| 720x480p | @ 59 Hz | 31.469 | 59.94 | 27 | 858 | 720 | 16 | 62 | N | 525 | 480 | 9 | 6 | N |
| 720x480p | @ 59 PW | 31.469 | 59.94 | 27 | 858 | 720 | 16 | 62 | N | 525 | 480 | 9 | 6 | N |
| 720x576p | @ 50 Hz | 31.25 | 50 | 27 | 864 | 720 | 12 | 64 | N | 625 | 576 | 5 | 5 | N |
| 720x576p | @ 50 PW | 31.25 | 50 | 27 | 864 | 720 | 12 | 64 | N | 625 | 576 | 5 | 5 | N |
| 1280x720p | @ 50 Hz | 37.5 | 50 | 74.25 | 1980 | 1280 | 440 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1280x720p | @ 60 Hz | 45 | 60 | 74.25 | 1650 | 1280 | 110 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1280x720p | @ 100 Hz | 75 | 100 | 148.5 | 1980 | 1280 | 440 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1280x720p | @ 120 Hz | 90 | 120 | 148.5 | 1650 | 1280 | 110 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1920x108p | @ 24 Hz | 27 | 24 | 74.25 | 2750 | 1920 | 638 | 44 | P | 1125 | 1080 | 4 | 5 | P |
| 1920x108p | @ 30 Hz | 33.75 | 30 | 74.25 | 2200 | 1920 | 88 | 44 | P | 1125 | 1080 | 4 | 5 | P |
| 1920x108p | @ 50 Hz | 56.25 | 50 | 148.5 | 2640 | 1920 | 528 | 44 | P | 1125 | 1080 | 4 | 5 | P |
| 1920x108p | @ 60 Hz | 67.5 | 60 | 148.5 | 2200 | 1920 | 88 | 44 | P | 1125 | 1080 | 4 | 5 | P |

# VIDEO TIMING LIST (VGA)

| Resolution | | H Freq. (Khz) | V Freq. (Hz) | Pixel Clock (MHz) | H Total Pixel | H Display Pixel | H Front Porch | H Sync Width | H Sync Pol | V Total Lines | V Display Lines | V Front Porch | V Sync Width | V Sync Pol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 640x480 | @ 60 Hz | 31.563 | 60.119 | 25.1875 | 800 | 640 | 16 | 96 | N | 525 | 480 | 10 | 2 | N |
| 640x480 | @ 72 Hz | 37.861 | 72.809 | 31.5 | 832 | 640 | 24 | 40 | N | 520 | 480 | 9 | 3 | N |
| 640x480 | @ 75 Hz | 37.5 | 75 | 31.5 | 840 | 640 | 16 | 64 | N | 500 | 480 | 1 | 3 | N |
| 720x400 | @ 70 Hz | 31.528 | 70.218 | 28.3125 | 900 | 720 | 16 | 108 | N | 449 | 400 | 13 | 2 | P |
| 800x600 | @ 56 Hz | 35.156 | 56.25 | 36 | 1024 | 800 | 24 | 72 | N | 625 | 600 | 1 | 2 | P |
| 800x600 | @ 60 Hz | 37.879 | 60.317 | 40 | 1056 | 800 | 40 | 128 | N | 628 | 600 | 1 | 4 | P |
| 800x600 | @ 72 Hz | 48.077 | 72.188 | 50 | 1040 | 800 | 56 | 120 | N | 666 | 600 | 37 | 6 | P |
| 800x600 | @ 75 Hz | 46.875 | 75 | 49.5 | 1056 | 800 | 16 | 80 | P | 625 | 600 | 1 | 3 | P |
| 848x480 | @ 59 Hz | 29.83 | 59.659 | 31.5 | 1056 | 848 | 24 | 80 | N | 500 | 480 | 3 | 5 | P |
| 848x480 | @ 60 Hz | 31.02 | 60 | 33.75 | 1088 | 848 | 16 | 112 | P | 517 | 480 | 6 | 8 | P |
| 1024x768 | @ 60 Hz | 48.363 | 60.004 | 65 | 1344 | 1024 | 24 | 136 | N | 806 | 768 | 3 | 6 | N |
| 1024x768 | @ 70 Hz | 56.476 | 70.069 | 75 | 1328 | 1024 | 24 | 136 | N | 806 | 768 | 3 | 6 | N |
| 1024x768 | @ 75 Hz | 60.023 | 75.029 | 78.75 | 1312 | 1024 | 16 | 96 | N | 800 | 768 | 1 | 3 | P |
| 1152x864 | @ 75 Hz | 67.5 | 75 | 108 | 1600 | 1152 | 64 | 128 | P | 900 | 864 | 1 | 3 | P |
| 1280x720 | @ 48 Hz | 35.539 | 47.961 | 58 | 1632 | 1280 | 48 | 128 | N | 741 | 720 | 1 | 3 | P |
| 1280x768 | @ 60 RB | 47.396 | 59.995 | 68.25 | 1440 | 1280 | 48 | 32 | P | 790 | 768 | 3 | 7 | N |
| 1280x768 | @ 60 Hz | 47.776 | 59.87 | 79.5 | 1664 | 1280 | 64 | 128 | N | 798 | 768 | 3 | 7 | P |
| 1280x768 | @ 75 Hz | 60.289 | 74.893 | 102.25 | 1696 | 1280 | 80 | 128 | N | 805 | 768 | 3 | 7 | P |
| 1280x800 | @ 60 Hz | 49.702 | 59.81 | 83.5 | 1680 | 1280 | 72 | 128 | N | 831 | 800 | 3 | 6 | P |
| 1280x800 | @ 75 Hz | 62.795 | 74.934 | 106.5 | 1696 | 1280 | 80 | 128 | N | 838 | 800 | 3 | 6 | P |
| 1280x960 | @ 60 Hz | 60 | 60 | 108 | 1800 | 1280 | 96 | 112 | P | 1000 | 960 | 1 | 3 | P |
| 1280x1024 | @ 60 Hz | 63.981 | 60.02 | 108 | 1688 | 1280 | 48 | 112 | P | 1066 | 1024 | 1 | 3 | P |
| 1280x1024 | @ 75 Hz | 79.976 | 75.025 | 135 | 1688 | 1280 | 16 | 144 | P | 1066 | 1024 | 1 | 3 | P |
| 1360x768 | @ 60 Hz | 47.712 | 60.015 | 85.5 | 1792 | 1360 | 64 | 112 | P | 795 | 768 | 3 | 6 | P |
| 1400x1050 | @ 60 RB | 64.744 | 59.948 | 101 | 1560 | 1400 | 48 | 32 | P | 1080 | 1050 | 3 | 4 | N |
| 1400x1050 | @ 60 Hz | 65.317 | 59.978 | 121.75 | 1864 | 1400 | 88 | 144 | N | 1089 | 1050 | 3 | 4 | P |
| 1400x1050 | @ 75 Hz | 82.278 | 74.867 | 156 | 1896 | 1400 | 104 | 144 | N | 1099 | 1050 | 3 | 4 | P |
| 1440x900 | @ 60 Hz | 55.935 | 59.887 | 106.5 | 1904 | 1440 | 80 | 152 | N | 934 | 900 | 3 | 6 | P |
| 1440x1050 | @ 60 Hz | 65.234 | 59.903 | 125.25 | 1920 | 1440 | 88 | 152 | N | 1089 | 1050 | 3 | 10 | N |
| 1600x1200 | @ 60 Hz | 75 | 60 | 162 | 2160 | 1600 | 64 | 192 | P | 1250 | 1200 | 1 | 3 | P |
| 1680x1050 | @ 60 Hz | 65.179 | 59.852 | 146 | 2240 | 1680 | 104 | 176 | N | 1089 | 1050 | 3 | 6 | P |
| 1920x1200 | @ 60 RB | 74.038 | 59.95 | 154 | 2080 | 1920 | 48 | 32 | P | 1235 | 1200 | 3 | 6 | N |

# VIDEO TIMING LIST (DISPLAY PORT)

| Resolution | | H Freq. (Khz) | V Freq. (Hz) | Pixel Clock (MHz) | H Total Pixel | H Display Pixel | H Front Porch | H Sync Width | H Sync Pol | V Total Lines | V Display Lines | V Front Porch | V Sync Width | V Sync Pol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 640x480 | @ 60 Hz | 31.56 | 60.12 | 25.1875 | 800 | 640 | 16 | 96 | N | 525 | 480 | 10 | 2 | N |
| 640x480 | @ 72 Hz | 37.86 | 72.81 | 31.5 | 832 | 640 | 24 | 40 | N | 520 | 480 | 9 | 3 | N |
| 640x480 | @ 75 Hz | 37.5 | 75 | 31.5 | 840 | 640 | 16 | 64 | N | 500 | 480 | 1 | 3 | N |
| 720x400 | @ 70 Hz | 31.46 | 70.06 | 28.3125 | 900 | 720 | 16 | 108 | N | 449 | 400 | 13 | 2 | P |
| 800x600 | @ 56 Hz | 35.16 | 56.25 | 36 | 1024 | 800 | 24 | 72 | P | 625 | 600 | 1 | 2 | P |
| 800x600 | @ 60 Hz | 37.88 | 60.32 | 40 | 1056 | 800 | 40 | 128 | P | 628 | 600 | 1 | 4 | P |
| 800x600 | @ 72 Hz | 48.08 | 72.19 | 50 | 1040 | 800 | 56 | 120 | P | 666 | 600 | 37 | 6 | P |
| 800x600 | @ 75 Hz | 46.88 | 75 | 49.5 | 1056 | 800 | 16 | 80 | P | 625 | 600 | 1 | 3 | P |
| 848x480 | @ 59 Hz | 29.83 | 59.66 | 31.5 | 1056 | 848 | 24 | 80 | P | 500 | 480 | 3 | 5 | P |
| 848x480 | @ 60 Hz | 31.02 | 60 | 33.75 | 1088 | 848 | 16 | 112 | P | 517 | 480 | 6 | 8 | P |
| 1024x768 | @ 60 Hz | 48.36 | 60 | 65 | 1344 | 1024 | 24 | 136 | N | 806 | 768 | 3 | 6 | N |
| 1024x768 | @ 70 Hz | 56.48 | 70.07 | 75 | 1328 | 1024 | 24 | 136 | N | 806 | 768 | 3 | 6 | N |
| 1024x768 | @ 75 Hz | 60.02 | 75.03 | 78.75 | 1312 | 1024 | 16 | 96 | P | 800 | 768 | 1 | 3 | P |
| 1152x864 | @ 75 Hz | 67.5 | 75 | 108 | 1600 | 1152 | 64 | 128 | P | 900 | 864 | 1 | 3 | P |
| 1280x720 | @ 48 Hz | 35.54 | 47.96 | 58 | 1632 | 1280 | 48 | 128 | N | 741 | 720 | 1 | 3 | P |
| 1280x720 | @ 50 Hz | 36.92 | 49.82 | 60.25 | 1632 | 1280 | 48 | 128 | N | 741 | 720 | 1 | 3 | P |
| 1280x720 | @ 60 Hz | 44.62 | 59.81 | 74.25 | 1664 | 1280 | 56 | 136 | N | 746 | 720 | 1 | 3 | P |
| 1280x768 | @ 60 Hz | 47.4 | 59.99 | 68.25 | 1440 | 1280 | 48 | 32 | P | 790 | 768 | 3 | 7 | N |
| 1280x768 | @ 60 Hz | 47.78 | 59.87 | 79.5 | 1664 | 1280 | 64 | 128 | N | 798 | 768 | 3 | 7 | P |
| 1280x768 | @ 75 Hz | 60.29 | 74.89 | 102.25 | 1696 | 1280 | 80 | 128 | N | 805 | 768 | 3 | 7 | P |
| 1280x800 | @ 60 Hz | 49.7 | 59.81 | 83.5 | 1680 | 1280 | 72 | 128 | N | 831 | 800 | 3 | 6 | P |
| 1280x960 | @ 60 Hz | 60 | 60 | 108 | 1800 | 1280 | 96 | 112 | P | 1000 | 960 | 1 | 3 | P |
| 1280x1024 | @ 60 Hz | 63.98 | 60.02 | 108 | 1688 | 1280 | 48 | 112 | P | 1066 | 1024 | 1 | 3 | P |
| 1280x1024 | @ 75 Hz | 79.98 | 75.02 | 135 | 1688 | 1280 | 16 | 144 | P | 1066 | 1024 | 1 | 3 | P |
| 1360x768 | @ 60 Hz | 47.71 | 60.02 | 85.5 | 1792 | 1360 | 64 | 112 | P | 795 | 768 | 3 | 6 | P |
| 1366x768 | @ 60 Hz | 48 | 60 | 72 | 1500 | 1366 | 14 | 56 | P | 800 | 768 | 1 | 3 | P |
| 1400x1050 | @ 60 Hz | 64.74 | 59.95 | 101 | 1560 | 1400 | 48 | 32 | P | 1080 | 1050 | 3 | 4 | N |
| 1400x1050 | @ 60 Hz | 65.32 | 59.98 | 121.75 | 1864 | 1400 | 88 | 144 | N | 1089 | 1050 | 3 | 4 | P |
| 1400x1050 | @ 75 Hz | 82.28 | 74.87 | 156 | 1896 | 1400 | 104 | 144 | N | 1099 | 1050 | 3 | 4 | P |
| 1440x900 | @ 60 Hz | 55.93 | 59.89 | 106.5 | 1904 | 1440 | 80 | 152 | N | 934 | 900 | 3 | 6 | P |
| 1440x900 | @ 75 Hz | 70.51 | 74.85 | 136.5 | 1936 | 1440 | 96 | 152 | N | 942 | 900 | 3 | 6 | P |
| 1440x1050 | @ 60 Hz | 65.23 | 59.9 | 125.25 | 1920 | 1440 | 88 | 152 | N | 1089 | 1050 | 3 | 10 | N |
| 1600x1200 | @ 60 Hz | 75 | 60 | 162 | 2160 | 1600 | 64 | 192 | P | 1250 | 1200 | 1 | 3 | P |
| 1600x1200 | @ 65 Hz | 81.25 | 65 | 175.5 | 2160 | 1600 | 64 | 192 | P | 1250 | 1200 | 1 | 3 | P |
| 1600x1200 | @ 70 Hz | 87.5 | 70 | 189 | 2160 | 1600 | 64 | 192 | P | 1250 | 1200 | 1 | 3 | P |
| 1600x1200 | @ 75 Hz | 93.52 | 74.81 | 202 | 2160 | 1600 | 64 | 192 | P | 1250 | 1200 | 1 | 3 | P |
| 1680x1050 | @ 60 Hz | 65.18 | 59.85 | 146 | 2240 | 1680 | 104 | 176 | N | 1089 | 1050 | 3 | 6 | P |
| 1920x1200 | @ 60 RB | 74.04 | 59.95 | 154 | 2080 | 1920 | 48 | 32 | P | 1235 | 1200 | 3 | 6 | N |
| 1920x1200 | @ 60 Hz | 74.46 | 59.81 | 193 | 2592 | 1920 | 136 | 200 | N | 1245 | 1200 | 3 | 6 | P |
| 2560x1600 | @ 60 Hz | 98.53 | 59.86 | 268 | 2720 | 2560 | 48 | 32 | P | 1646 | 1600 | 3 | 6 | N |
| 720x480p | @ 59 Hz | 31.47 | 59.94 | 27 | 858 | 720 | 16 | 62 | N | 525 | 480 | 9 | 6 | N |
| 720x480p | @ 59 PW | 31.47 | 59.94 | 27 | 858 | 720 | 16 | 62 | N | 525 | 480 | 9 | 6 | N |
| 720x576p | @ 50 Hz | 31.25 | 50 | 27 | 864 | 720 | 12 | 64 | N | 625 | 576 | 5 | 5 | N |
| 720x576p | @ 50 PW | 31.25 | 50 | 27 | 864 | 720 | 12 | 64 | N | 625 | 576 | 5 | 5 | N |
| 1280x720p | @ 50 Hz | 37.5 | 50 | 74.25 | 1980 | 1280 | 440 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1280x720p | @ 60 Hz | 45 | 60 | 74.25 | 1650 | 1280 | 110 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1280x720p | @ 100 Hz | 75 | 100 | 148.5 | 1980 | 1280 | 440 | 40 | P | 750 | 720 | 5 | 5 | P |
| 1280x720p | @ 120 Hz | 90 | 120 | 148.5 | 1650 | 1280 | 110 | 40 | P | 750 | 720 | 5 | 5 | P |

# VIDEO TIMING LIST (DISPLAY PORT)

| 1920x1080i | @ 50 Hz | 28.13 | 25 | 74.25 | 2640 | 1920 | 528 | 44 | P | 1125 | 1080 | 2 | 5 | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1920x108p | @ 24 Hz | 27 | 24 | 74.25 | 2750 | 1920 | 638 | 44 | P | 1125 | 1080 | 4 | 5 | P |
| 1920x108p | @ 30 Hz | 33.75 | 30 | 74.25 | 2200 | 1920 | 88 | 44 | P | 1125 | 1080 | 4 | 5 | P |
| 1920x108p | @ 50 Hz | 56.25 | 50 | 148.5 | 2640 | 1920 | 528 | 44 | P | 1125 | 1080 | 4 | 5 | P |
| 1920x108p | @ 60 Hz | 67.5 | 60 | 148.5 | 2200 | 1920 | 88 | 44 | P | 1125 | 1080 | 4 | 5 | N |

# OSD OPTIONS OVERVIEW

| Layer 1 | Layer2 | Layer3 |
|---|---|---|
| Picture | Brightness | |
| | Contrast | |
| | Hue | |
| | Saturation | |
| | Sharpness | |
| | Automatic | |
| Image Setup | Manual | Clock / Phase / Clock |
| | Horizontal Position | |
| | Vertical Position | |
| | Color | Preset Mode / Custom |
| | Input Signal | DVI / HDMI / VGA / Display Port / Component / Composite / S-Video |
| | Scaling | Original AR/ Full Screen |
| | Output Mode | 720x480, 800x600, 1280x800, 1280x1024, 1360x768, 1400x1050, 1600x1200, 1024x768, 1280x768, 1280x720, 1920x1080 |
| Video Wall | Zoom | Horizontal Zoom / Vertical Zoom |
| | Pan | Horizontal Pan / Vertical Pan |
| | Overlap | Left / Right / Top / Bottom (Edges) / Reset |
| 3D Properties | Input Format | Automatic / Side-By-Side / Top-Bottom |
| | Output Format | Left Eye Frame / Right Eye Frame |
| | 1080p 24Hz Output | Enable / Disable |
| Options | Information | |
| | Language | English |
| | Reset | Reset All / Reset Video Wall |
| | Accessibility | Button Repeat Rate (off, default, slow) / Menu Time Out / Logo Time Out |
| | Setting | Mute |
| | | BOXID |
| | | Profile |
| | | Network (serial port, Ethernet) |

# PICTURE

**PICTURE** allows you to digitally adjust the brightness, contrast, hue, saturation, and sharpness of the images. An unilluminated icon suggests the function is not available. To enable it, the unit color must be set in custom mode. Go to the 3rd icon in the first layer to change the setting in color: **Image properties -> color -> custom -> save**. Be sure to save your setting. Otherwise, the value will not be set.
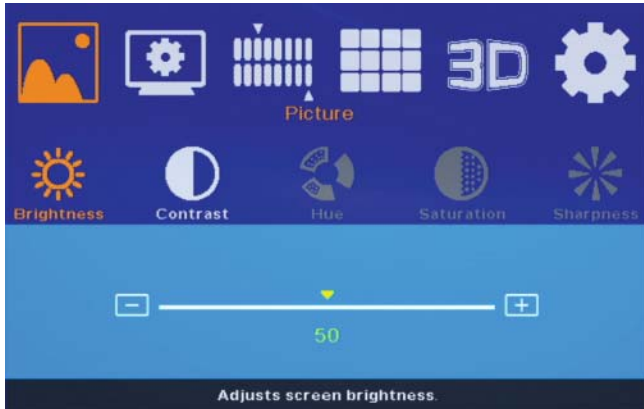


- Layer one, the 1st icon from left
- Choose the icon and use the down arrow key to open the next layer, which has five options: brightness, contrast, hue, saturation, and sharpness
- Hue, saturation, and sharpness, the three icons are illuminated only when signals of AV, S-Video, or component video are present on the scaler

| | |
|---|---|
|  | **Brightness**<br>Use arrow key right and left to adjust the value |
|  | **Contrast**<br>Use arrow key right and left to adjust the value |
|  | **Hue**<br>Use arrow key right and left to adjust the value<br>Adjustable only when the unit receives valid AV, S-Video, or component video signals. |
|  | **Saturation**<br>Use arrow key right and left to adjust the value<br>Adjustable only when the unit receives valid AV, S-Video, or component video signals. |
|  | **Sharpness**<br>Use arrow key right and left to adjust the value<br>Adjustable only when the unit receives valid AV, S-Video, or component video signals. |

# IMAGE SETUP

To enable the **IMAGE SETUP**, a valid VGA signal must be present on the scaler. An illuminated icon indicates the presence of a VGA signal.
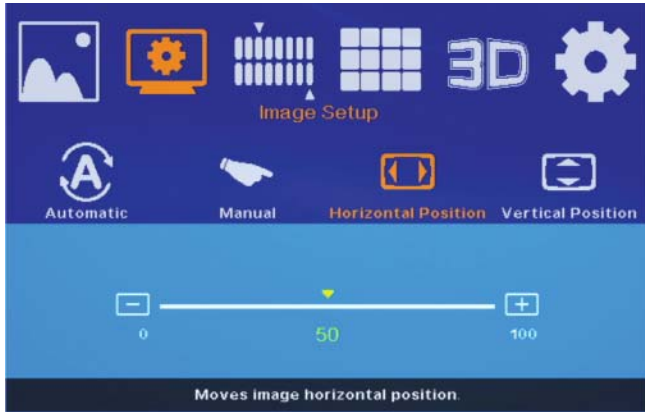


- First layer, the 2nd icon from left
- Choose the icon and use the down arrow key to open the second layer, which has four options: automatic, manual, horizontal position, vertical position

| | |
|---|---|
| **Automatic** | AB-3879 reads the Input signal and automatically sets the optimal value for the Output. |

| | |
|---|---|
| **Manual** | Clock / Phase / Save |

| | |
|---|---|
| **Horizontal Position** | Move the image to right or left. |

| | |
|---|---|
| **Vertical Position** | Move the image up or down. |

# IMAGE PROPERTIES

**IMAGE PROPERTIES** allow you to change Color, select Input Signal, adjust scaling, and change Output Resolution. Resolutions not listed on the front panel button can be selected here, under the output mode.



- Layer one, the 3rd icon from left
- Choose the icon and use the down arrow key to open up the second layer, which has four options: color, input signal, scaling, output mode
- Setting the color in custom mode can enable the PICTURE function (layer one, the 1st icon from left).

| | |
|---|---|
|  | **Color**<br>Preset Mode: Standard, RGB, warm, cold<br>Custom: Red, Green, Blue, Save |
|  | **Input Signal**<br>DVI, HDMI, VGA, Display Port, Component, Composite Video, S-Video |
|  | **Scaling**<br>Original AR, Full Screen |

| | |
|---|---|
|  | **Output Mode**<br>Select one desired output resolution from the following 11 choices. |

| OTHERS | 720x480, 800x600, 1280x800, 1280x1024, 1360x768, 1400x1050, 1600x1200, 1920x1200 |
|---|---|
| XGA | 1024x768 |
| WXGA | 1280x768 |
| 720p | 1280x720 |
| 1080p | 1920x1080 |

When the front panel button OTHERS is pressed, the scaler will automatically apply the resolution 1360x768. Users may continue pressing OTHERS to cycle through the following four resolutions:
**1360x768 -> 1280x1024 -> 1600x1200 -> 1920x1200**

# TV WALL

AB-3879 scaler is able to send divided images on multiple display devices and build a video wall, be it a wall of size 1x2, 2x2, or 10x10. Maximally, the scaler can make possible a video wall of 15 by 15 screens. Note that an AB-3879 is required for each output. Users may arrange the position and adjust the size of each image block under the TV WALL function.



- Layer one, the 3rd icon from the left
- Choose the TV wall icon, use the down arrow key to open the next layer, which has three options: zoom, pan, overlap

**ZOOM:** Use right / left key to adjust the value of the parameter:
    **Horizontal zoom:** enlarge the image on the left and right ends.
    **Vertical zoom:** enlarge the image upwardly and downwardly.

**PAN:** Arrange the relative position of the image in the TV wall. First calculate the size of the TV wall: the number of displays horizontally and vertically connected. Then, assign numbers to indicate relative position. Take the following two TV walls for example.

**3x2 TV wall (Horizontal: 3 ; Vertical: 2)**
**Display No.4 should be assigned:**
Horizontal Zoom = 1
Vertical Zoom = 2
**Display No.5 should be assigned:**
Horizontal Zoom = 2
Vertical Zoom = 2

**3x3 TV wall (Horizontal: 3 ; Vertical: 3)**
**Display No.9 should be assigned:**
Horizontal Zoom = 3
Vertical Zoom = 3





**OVERLAP:** Align the overlapping images for visual continuum. Move the image up, down or to left, right by adjusting the parameters of the top edge, bottom edge, left edge, and right edge. To return to the original setting, press RESET.

**OPTIONS** allows you to check the connection status, change menu language, return to factory default, save setting, and make adjustments to the setting of the OSD menu .
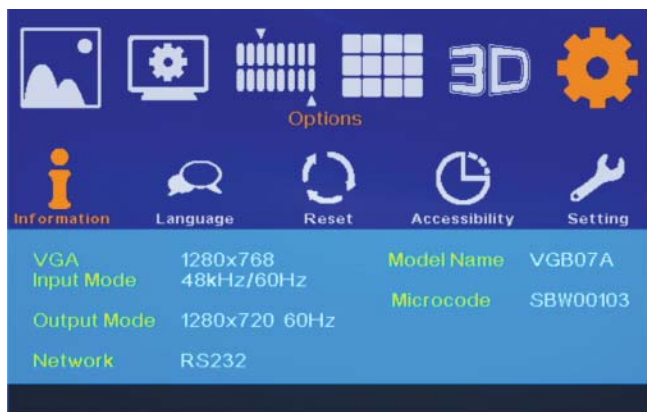
- Layer one, the 6th icon from left
- Press the down arrow key to open up the second layer, which has five options: info, language, reset, accessibility, setting

**INFO:** Check the connection status of Input/Output ports, the model name, the connection status of RS-232/Ethernet ports, and firmware version.

**LANGUAGE:** Arrange the relative position of the image in the TV wall. First calculate the size of the TV wall: the number of displays horizontally and vertically connected. Then, assign numbers to indicate relative position. Take the following two TV walls for example.

**RESET:** Return to factory default setting.
**Reset all:** reset all options.
**Reset video wall:** reset all the options relating to video wall function only.

**Accessibility:**
<u>Button repeat rate:</u> Adjust the unit response time when MENU button is pressed.
    **Off:** Press MENU button, and the MENU shows up/disappears once.
    **Default:** Return to the factory default setting.
    **Slow:** Press MENU button and hold on for longer seconds, the unit will take more time than default to respond.
<u>Menu time out:</u> Adjust the length of time OSD menu stays on screen.
    **On:** The OSD menu will disappear after a period of time. You can lengthen or shorten the menu display time.
    **Off:** Stop the OSD menu from disappearing automatically. When the function is turned off, the OSD menu will not disappear until
        MENU button is pressed again.
<u>Logo time out:</u> Adjust the length of time the logo stays on screen when the unit is turned on.

**SETTING:**
**Mute:** Stop playing sounds.
**BOX 10:** Check the 10 of the unit.
**Profile:** Save and reload the settings. The unit can memorize a total of 5 different settings.
**Network:** Serial Port, Ethernet

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