



INT-HD52 Owners Manual



A SUBSIDIARY OF WESCO DISTRIBUTION, INC.

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Important Safety Instructions

- » Please completely read and verify you understand all instructions in this manual before operating this equipment.
- » Keep these instructions in a safe, accessible place for future reference.
- » Heed all warnings.
- » Follow all instructions.
- » Do not use this apparatus near water.
- » Clean only with a dry cloth.
- » Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- » Use only accessories specified or recommended by Intelix.
- » Explanation of graphical symbols:

- ◊ Lightning bolt/flash symbol: the lightning bolt/flash and arrowhead within an equilateral triangle symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product enclosure which may be of sufficient magnitude to constitute a risk of shock to a person or persons.
- ◊ Exclamation point symbol: the exclamation point within an equilateral triangle symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



- » **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.**
- » Use the mains plug to disconnect the apparatus from the mains.
- » **THE MAINS PLUG OF THE POWER CORD MUST REMAIN READILY ACCESSIBLE.**
- » Do not defeat the safety purpose polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of your obsolete outlet. **Caution! To reduce the risk of electrical shock, grounding of the center pin of this plug must be maintained.**
- » Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and the point where they exit from the apparatus.
- » Do not block the air ventilation openings. Only mount the equipment per Intelix’s instructions.
- » Use only with the cart, stand, table, or rack specified by Intelix or sold with the equipment. When/if a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.
- » Unplug this apparatus during lightning storms or when unused for long periods of time.
- » **Caution! Shock Hazard.** Do not open the unit.
- » Refer to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



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Product Overview

The Intelix INT-HD52 is a compact auto switcher and scaler that allows the integration of analog and digital devices into a high-definition environment. Mounting options include under table or resting on a shelf.

The INT-HD52 allows the selection of five different sources, and will simultaneously scale the selected video to the specified resolution through the HDMI and HDBaseT outputs. The unit features three HDCP compliant HDMI inputs, one Display Port input and one VGA input. The VGA input can be configured to support YPbPr (component), YC (S-video), and C (composite) video formats with the appropriate VGA breakout cable. There are eight fixed output resolutions to choose from, and several aspect ratio modes which will ensure your content is displayed properly. The HDBaseT output will allow you to extend audio, video, and control signals up to 70m away.

The INT-HD52 offers unique audio options designed to simplify your installation. The audio input can be used for mic or line level applications, 48V phantom power is also supplied as an option for condenser microphones. The balanced stereo audio output can be used for audio reinforcement purposes. The INT-HD52 will allow you to mix the mic/line audio input and the HDMI audio separately. There is a separate 3.5mm line level stereo input for the VGA and Display Port inputs. The system can be configured to either use the embedded Display Port audio or use the external 3.5mm audio input paired with the Display Port.

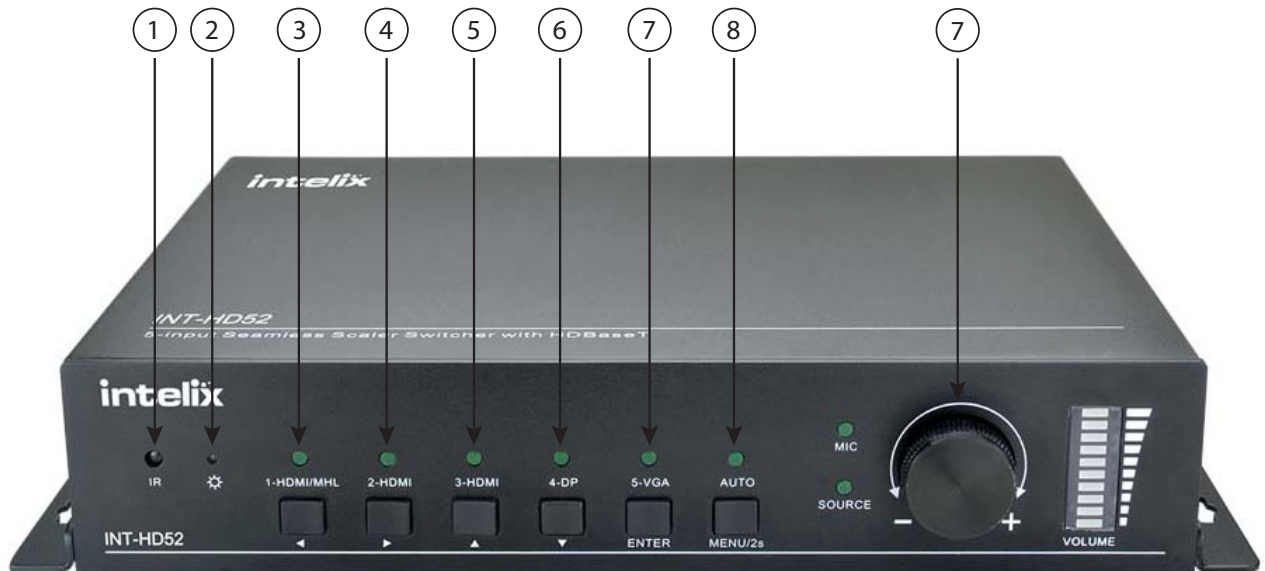
The INT-HD52 can be controlled via front panel buttons, built in web GUI, IR, RS232 and Ethernet. RS232 and bidirectional IR control can also be extended (with a compatible HDBaseT receiver with RS232 throughput). CEC enabled sources and connected display devices can also be controlled from the INT-HD52 via CEC protocol.

Package Contents

- (1) Intelix INT-HD52 Switcher Scaler
- (2) Mounting Ears with 4 Screws
- (1) Power Adapter (24VDC, 2.71A)
- (4) Plastic Cushions+
- (1) IR Remote
- (1) VGA Analog Breakout Cable (VGA to YPbPr)
- (1) RS232 DB9 - 3 Pin Phoenix Breakout Cable
- (2) 3 Pin Phoenix Connectors
- (1) 5 Pin Phoenix Connector
- (1) IR Emitter
- (1) IR Receiver
- (1) Quick Install Guide

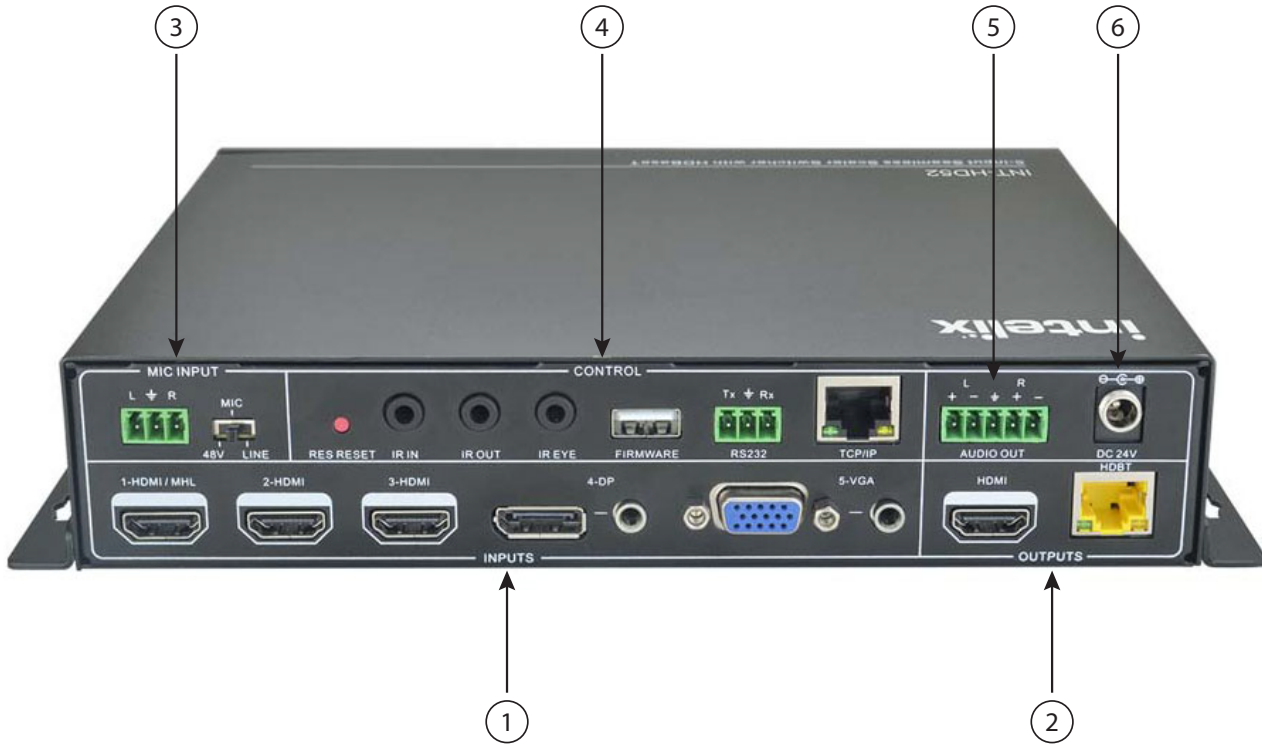
Front and Rear Panels

Front Panel



1. Built in IR Receiver
2. Power Indicator - GREEN when device is in standby mode, RED when device is powered on and no indicator when there is no power to device
3. 1-HDMI/MHL input selector and activity LED / Left Key for On screen display control (OSD)
4. 2-HDMI input selector and activity LED / Right Key for OSD
5. 3-HDMI input selector and activity LED / Up Key for OSD
6. 4-Display Port input selector and activity LED / Down Key for OSD
7. 5-VGA input selector and activity LED / Enter Key for OSD
8. Auto Switching selector and activity LED- Press this to enter / exit auto-switching mode / OSD menu button
 - **NOTE:** When you set the VGA input port to C-Video or YPbPr in Manual-switching mode, the system will not be able to enter auto-switching mode.
 - Hold this button down for 3 seconds to enter On Screen Display menu (OSD)
9. Volume knob for variable audio control- Push knob in to toggle between 'Mic' and 'Source' control

Rear Panel



1. INPUTS

- Video input ports: 1 HDMI/MHL, 2 HDMI inputs, 1 Display Port and 1 VGA
- Audio input ports: 1 Display Port external audio input and 1 VGA auxiliary audio input

2. OUTPUTS

- HDMI output: HDMI video output port
- HDBaseT output: Supports PoH. Connect to a compatible HDBaseT receiver to transmit A/V, IR and RS232 control

3. MIC INPUT

- Mic audio port connects to microphone
- Dial switch- switches between 3 different modes; **48V** for condenser mics, **MIC** mode for dynamic mics and **LINE** mode for line level audio

4. CONTROL

- RES RESET - press this to reset output resolution to 720p or to activate HDMI and HDBT outputs if they have been turned off
- IR IN / IR OUT - connect with IR receiver and emitter to control devices via IR
- FIRMWARE - Type-A USB port for updating firmware
- RS232 - Serial port, connect a control device to control the INT-HD52
- TCP/IP - Ethernet port, connect a control device or computer to control INT-HD52

5. AUDIO OUTPUT

- Stereo balanced L/R audio output

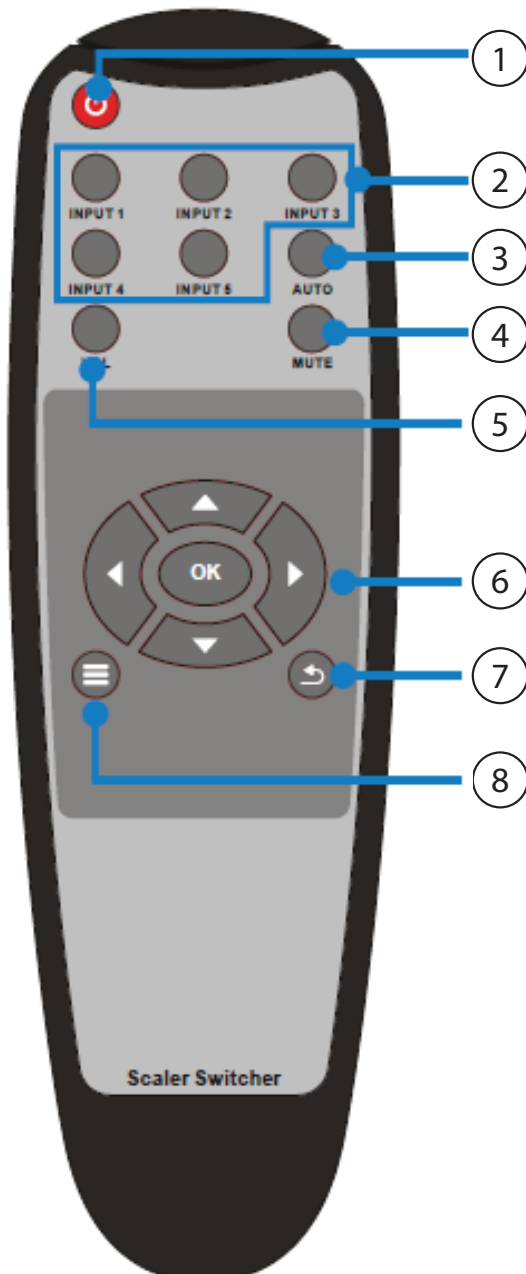
6. DC 24V

- Locking power port, connect DC 24V power adapter

IR Remote

The included IR remote performs all of the functions available on the front panel.

The remote control requires two AAA batteries, which are included.



1. Power on/off
2. Input source select buttons
3. Enter / Exit audio switching mode
4. Audio mute
5. Volume - After pressing this button a volume adjustment screen will shown on display connected to INT-HD52, then press UP/DOWN to adjust volume
6. Navigation. OK = enter or confirm
7. Exit: terminates current operation
8. OSD menu, also returns to previous menu

Installation Instructions

Quick Start

1. Mount the switching scaler
2. Connect sources
3. Connect displays
4. Connect microphone input (optional)
5. Connect audio output (optional)
6. Connect control (optional)
7. Apply power

Mount the Switching Scaler

At least 2 inches of free air space is required on both sides of the INT-HD52 for proper side ventilation. Avoid mounting the INT-HD52 near a power amplifier or any other source of significant heat.

For shelf mounting, attach the supplied shelf feet to the bottom of the INT-HD52.

For table mounting, attach the supplied mounting rails to the sides of the INT-HD52. Once the rails are installed, the scaler is ready to be mounted under a table.

Connecting Video Sources

HDMI / Display Port Input

Connect the source devices to HDMI or Display Port inputs using HDMI / Display Port cables that are less than or equal to 5 meters in length. For source devices that are further away, an extension device will be required to complete the connection.

VGA/Analog Video Inputs

Connect the source devices to VGA inputs using VGA cables that are less than or equal to 5 meters in length. For source devices that are further away, a VGA extension device will be required to complete the connection.

Use the supplied adapter cable (FLX-RBOCA) if the source is an analog video signal such as component or composite video (yellow connector on source to red connector on FLX-RBOCA).

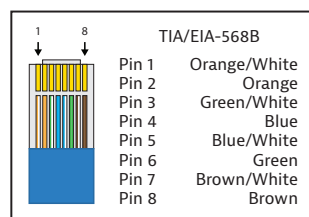
Connecting Displays

HDMI Output

Connect the display devices to HDMI outputs using HDMI cables that are less than or equal to 5 meters in length. For display devices that are further away, it is highly recommended to utilize the HDBaseT output.

HDBaseT Output

Connect one end of a Category cable to the HDBaseT receiver labeled *HDBT IN*, then connect the other end of the Category cable to the INT-HD52 transmitter labeled *HDBT OUT*



Twisted Pair Wiring

Use TIA/EIA-568B wiring for Category 6 connection between send and receive units.

To ensure proper performance of the INT-HD52 system, it is recommended that you use solid core, shielded Category 6 F/UTP cabling at a minimum. Category 5e F/UTP may perform well up to a certain length but may not support power over HDBaseT reliably longer distances.



When using shielded category cabling **ALWAYS...**

-use shielded connectors
-properly ground the category cable

For optimized performance use the following Liberty Wire and Cable branded cabling;

Category 6 plenum; 24-4P-P-L6SH
 Category 6A plenum; 24-4P-P-L6ASH

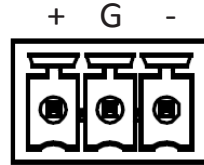
Category 6 NON-plenum; 24-4P-L6SH
 Category 6A NON-plenum; 24-4P-L6ASH

Connecting Audio Input Sources

Line Level Stereo / Mono Input

The INT-HD52 receiver has a 3 pin phoenix stereo audio input that can be used to connect stereo unbalanced line level input source or a balanced microphone audio input. Connect an unbalanced line level audio source to the receiver with the following pin out for stereo audio, be sure to use the LINE audio option with the audio selector option located next to the MIC INPUT.

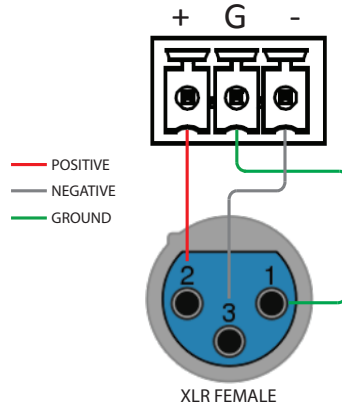
- Connect L to left audio input channel
- Connect R to right audio input channel
- Connect G to ground for left and right audio input channel



NOTE: If there are phasing issues with using line level stereo input, sum both left and right audio channels into the positive pin on the 3 pin phoenix of the INT-HD52

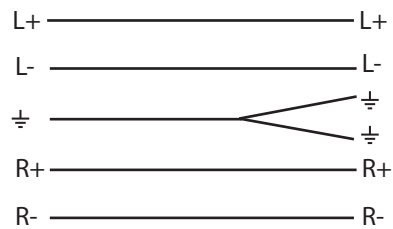
Microphone Level Input

Connect a balanced mic level audio source to the receiver with the following pin out for mic audio, be sure to use the MIC audio option with the audio selector option. When using dynamic microphones and use 48V option when using condenser microphones that require phantom power.



Connect Audio Output

Insert the removable 5-pin phoenix connector block to the audio output. The INT-HD52 supports a stereo balanced left and right output.



NOTE: The outputs can also be used in an unbalanced circuit, in this situation only connect the positive outputs of the left and right output channels of the INT-HD52 to an unbalanced input on a 3rd party audio processor or amplifier.

Connecting RS232 Control

Connect a control system to the INT-HD52 RS232 port on the receiver to control the switcher via 3rd third party control.

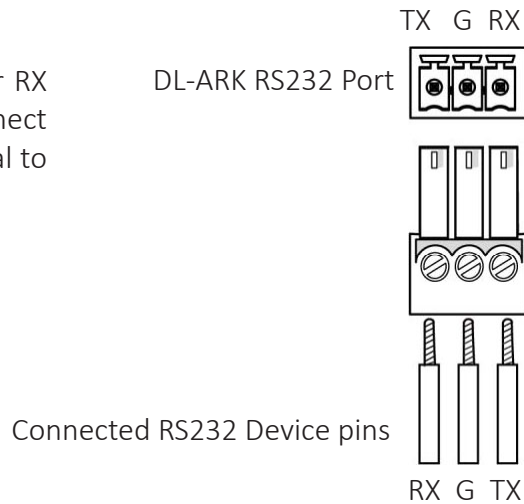
Connect a display or projector to the connected HDBaseT receivers RS232 port to control display with INT-HD52.

RS232 Wiring

Connect the display / system controller RX signal to TX on the INT-HD52, then connect the display / system controllers TX signal to RX.

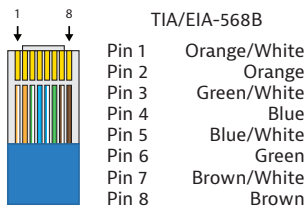
Default RS232 Input Settings:

- 9600 baud
- 8 Data Bits
- 1 Stop Bit
- Parity = none



Connecting Ethernet

The INT-HD52 features an RJ45 for Ethernet control via 3rd party control system or to access the internal web GUI.



The Ethernet port of the INT-HD52 requires a standard straight-through Category 5e or greater cable with the TIA/EIA-568B crimp pattern for optimal operation.

The default IP address of the INT-HD52 is 192.168.0.178 / subnet 255.255.255.0. When using telnet control use port 4001.

Connect IR Control

Local Switcher Control

To control the INT-HD52 with the supplied remote control connect the supplied IR receiver into the **IR EYE** port of the INT-HD52. Point the remote at the IR receiver to control switcher.

HDBaseT IR Pass Through

The INT-HD52 has an advanced bidirectional IR control protocol through the HDBaseT receiver which allows for the IR control of sources or displays located near the INT-HD52 or HDBaseT receiver. Intelix recommends using the INT-HD70-RX or the DIGI-BSR-4K for installations which require IR extension.

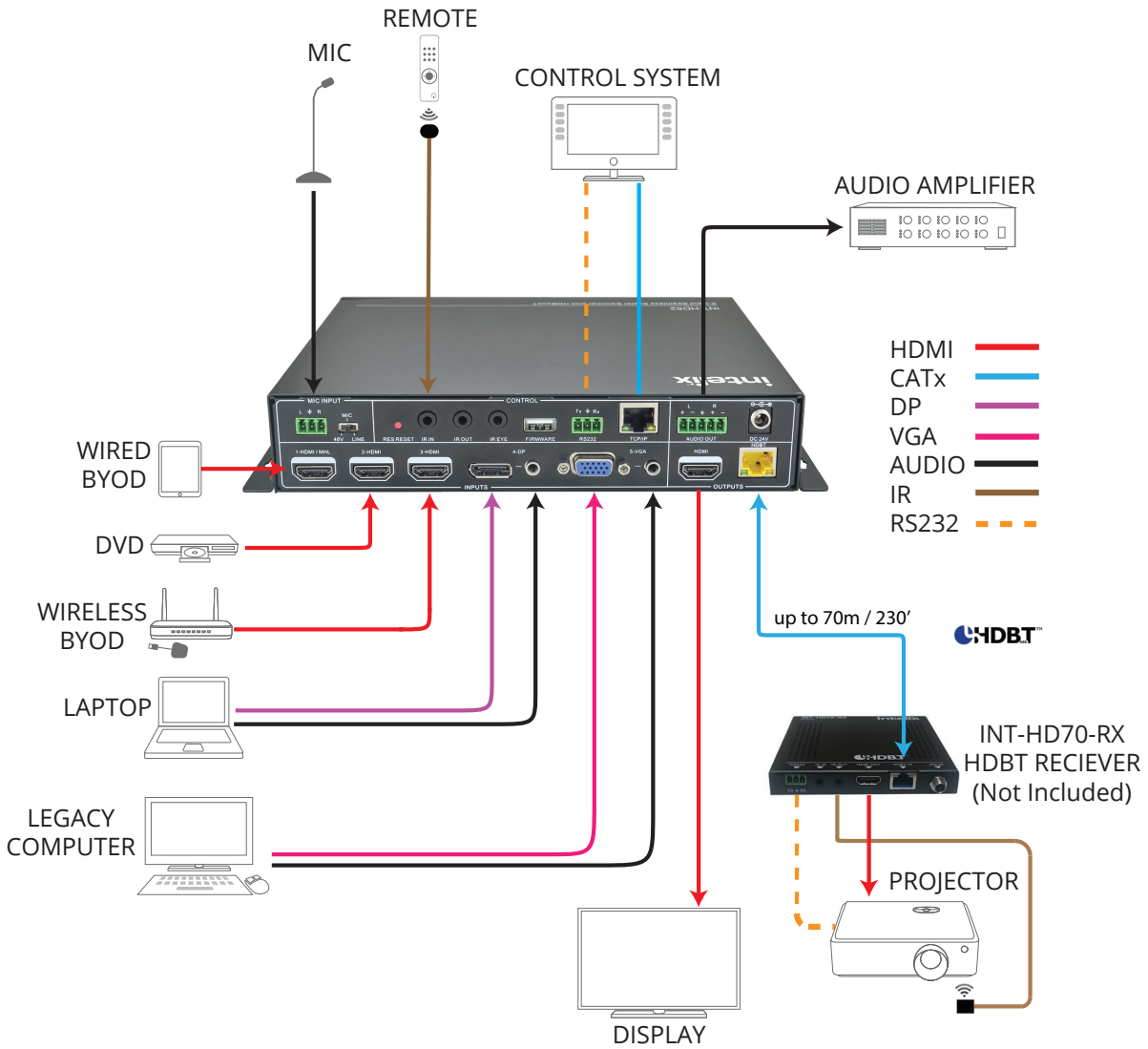
NOTE: Only use the included IR receiver and emitter and transmitter. Third party 12V DC IR components are not compatible with the INT-HD52.

To use bi-directional control connect IR receivers in the **IR IN** port of either the local switcher or connected HDBaseT receiver (sold separately). Then connect IR emitters to the **IR OUT** port of either the local switcher or the connected HDBaseT receiver.

Apply Power

Plug the power supply into the power input port on the rear of the switcher / scaler. Twist the locking ring clockwise to prevent accidental disconnection of power.

Application Diagram

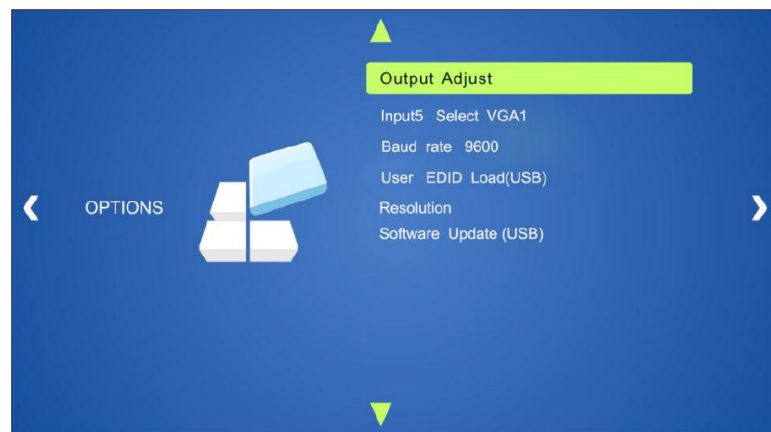


On Screen Display (OSD) Menu Navigation

The menu system of the INT-HD52 provides a wide array of options to customize the installation of the product regardless of customer needs.

Upon entering the menu, navigating left or right will provide three different sub-menus: *Options*, *Picture* and *Setup*. Pressing ENTER on the front panel or OK on the remote will cycle through options or enter another menu if multiple configuration settings are available.

Options Menu



Output Adjust

Selecting *Output Adjust* will open another menu which will change the vertical / horizontal position, width, and height of the output image. The default value is Off. Pressing right or left will cycle to On. Values range from 0 to 100. Pressing MENU will exit the sub-menu.

HDMI and HDBasetT output ports can also be turned ON/OFF under this menu setting.

Input5 Select

Pressing ENTER or OK will cycle the analog video input modes: VGA, YPbPr (component video), and AV (composite video).

Baud Rate

Pressing ENTER or OK will allow you to change the baud rate setting of the RS232 control.

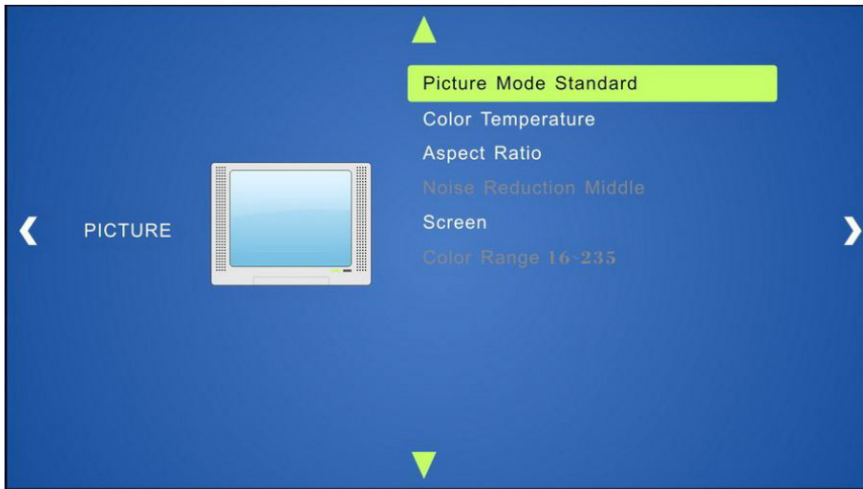
User EDID Upload(USB)

Load user defined EDID table into switcher / scaler through this menu. You will need to have the EDID table saved on to a portable USB drive to use this feature. Portable USB drive will use the firmware USB port on the INT-HD52 to upload the EDID table.

Software Update

A separate document will provide usage instructions once a new software update is available.

Picture Menu



Picture Mode

Selecting Picture Mode will open another menu which will change the contrast, brightness, color, and sharpness of the input image. The default value is Standard. Values range from 0 to 100. Pressing MENU will exit the sub-menu.

Color Temperature

Selecting Color Temperature will open another menu which will change the color temperature of the input image. The default value is Medium. Values range from 0 to 100. Pressing MENU will exit the sub-menu.

Aspect Ratio

Selecting Aspect Ratio will open another menu which will change the aspect ratio of the input image. The default value is Native. While VGA only has three aspect ratio selections available, HDMI has seven. Pressing MENU will exit the sub-menu.

VGA and HDMI: Native, 4:3, 16:9

HDMI only: Zoom 1, Zoom 2, Just Scan, Panorama

Noise Reduction (HDMI Only)

Selecting Noise Reduction will open another menu which will compensate for compression noise of the input image. Available selections are: Off, Low, Middle, High, and Default. Pressing MENU will exit the sub-menu.

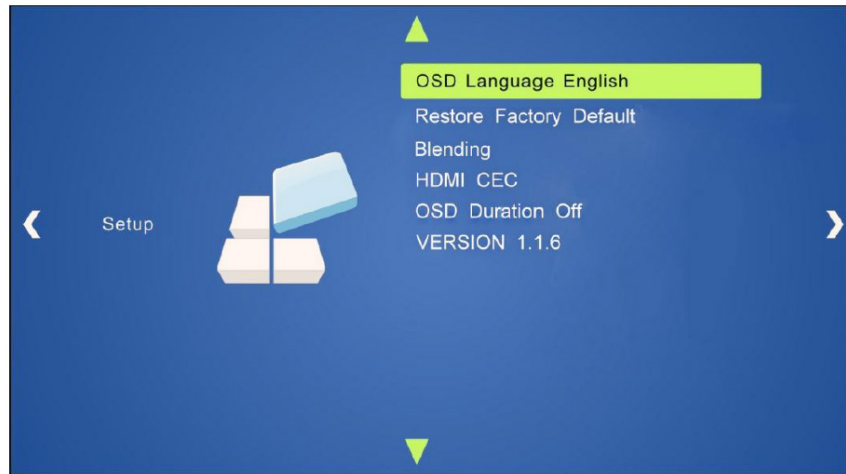
Screen (VGA)

Selecting Screen will open another menu which will adjust the input signal processing to clear up various analog distortion issues. Auto Adjust will automatically correct for any input signal issues. Manual adjustments include Horizontal Position, Vertical Position, Size, and Phase where values range from 0 to 100. Pressing MENU will exit the sub-menu.

Color Range (VGA)

Selecting Color range will cycle between two options: 0-255 (deep color) and 16-235 (standard color).

Setup Menu



The Setup menu features on-screen display (OSD) language selection, OSD blending (transparency), HDMI CEC, and OSD duration.

OSD Language

Selecting OSD Language will open another menu which will change the menu language of the INT-HD52. The available languages are: English, German, Russian, Chinese, French, Spanish, and Swedish. The default language is English. Pressing MENU will exit the sub-menu.

Restore Factory Default

This menu will allow you to reset the INT-HD52 back to factory default

Blending

Selecting Blending will open another menu which will present options the menu transparency. The available options are Off, Low, Middle, and High where the default is Off. Pressing MENU will exit the sub-menu.

HDMI CEC

Selecting HDMI CEC will open another menu which will present options to adjust the operation of CEC. Device List will show which HDMI devices support CEC. Cycling HDMI CEC in the sub-menu will turn on or off CEC support. Cycling Auto Standby will enable or disable this feature. Pressing MENU will exit the sub-menu.

OSD Duration

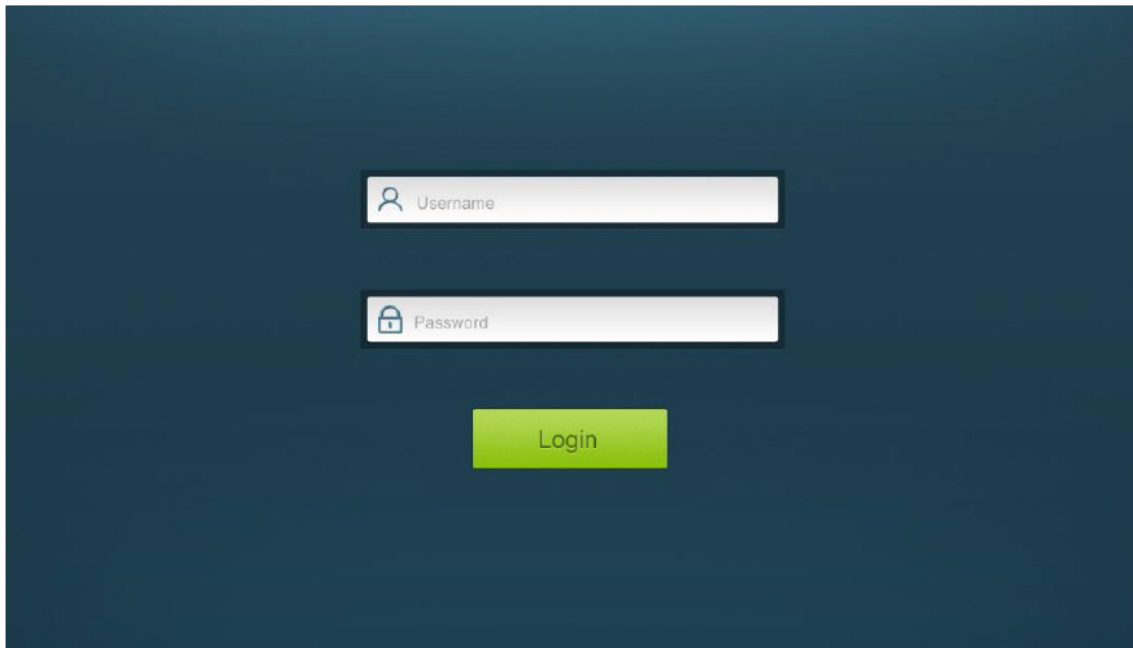
Selecting OSD Duration will open another menu to select the period of time the input name will be visible after switching sources. Available times are Off, 5Sec, 10Sec, and 15Sec. The default is Off. Pressing MENU will exit the sub-menu.

Version

Displays current software version

Web Graphical User Interface (GUI) Control

The INT-HD52 can be controlled by web-based GUI which allows users to interact the INT-HD52 through graphical icons and visual indicators.



Connect a computer and the INT-HD52 to a Ethernet switch using the Ethernet ports on your computer and the INT-HD52. Type **192.168.0.178** in a web browser on the computer to access the web GUI. When prompted enter 'user' as the user name and password and click LOGIN.

Control Menu



Source

Click on desired video input source

VGA

Click *ADJUST* to adjust the position of the VGA output image

DP

Click *AUDIO* to turn on/off the Display Ports external audio input

VOLUME

Click the corresponding positive / negative buttons to increase / decrease the volume of the microphone or source audio input. Click the corresponding MUTE button to mute / unmute microphone or source audio input.


POWER FUNCTIONS

Click *SOURCE* to turn on/off source device

Click *DISPLAY* to turn on/off display device

Click *LOCAL* to put the INT-HD52 into standby mode

Configuration Menu

Click on the  in the control menu to access the configuration menu. The configuration menu offers three sub-menus; Settings, Network and Source Label.

Configuration; Setting



Output Resolution

Select the desired output resolution and click CONFIRM

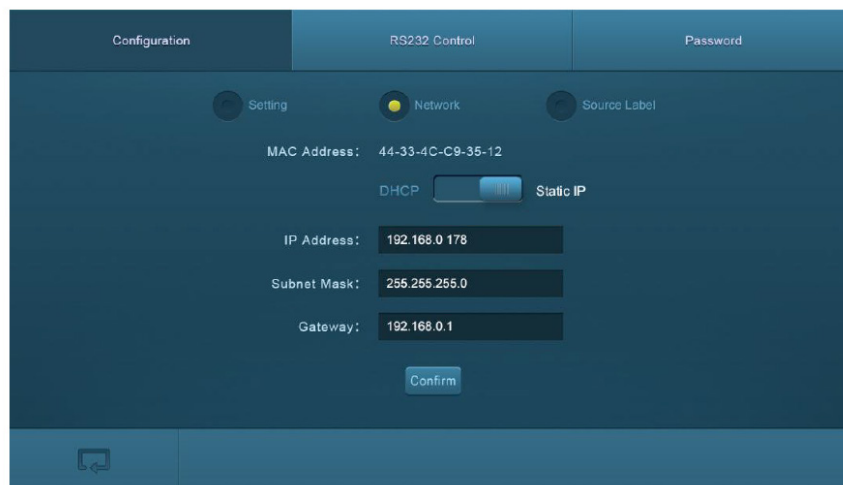
Update

Insert a portable USB drive containing the EDID / firmware file into the FIRMWARE port on the INT-HD52 then click EDID or FIRMWARE to update

Shutdown Timer (No Input)

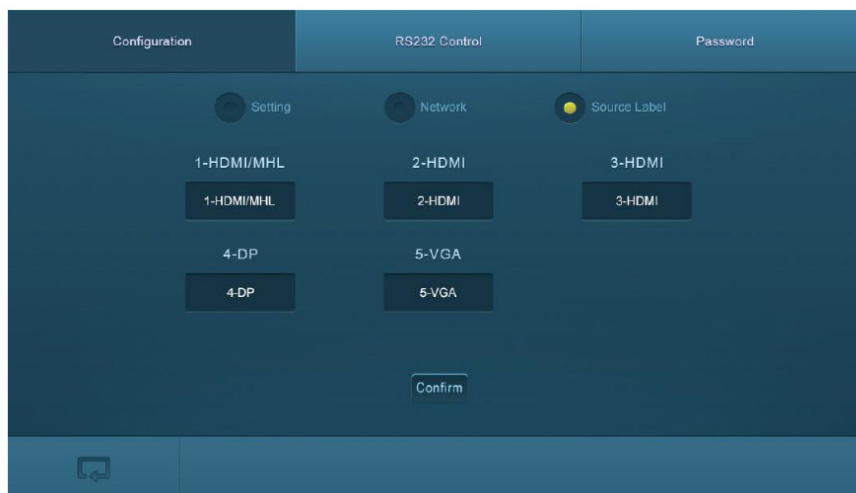
If the INT-HD52 does not detect a present video signal it will automatically shut down after the preset time interval has passed. *AUTO* drop down menu sets the time interval for auto switching mode and *MANU* drop down sets the time interval for manual switching mode

Configuration; Network



In this menu you can change the IP address of the INT-HD52. Select DHCP if you desire the IP to be set automatically based on your DHCP network settings or select STATIC IP mode to manually enter in the IP Address, Subnet Mask and Gateway. When you manually enter in the IP address make sure you the address does not overlap an existing IP address in the same network.

Configuration; Source Label



In this menu you can change the name of the source inputs as desired.

RS232 Control Menu

The screenshot shows the RS232 Control menu with the following fields:

- Port: Local
- Baud Rate: 9600
- Command: [Empty text box]
- Hex:
- Send button

Port

Select the receiving control port by choosing *LOCAL* for the INT-HD52 RS232 port or *HDBT* for a compatible HDBaseT receiver with RS232 through port.

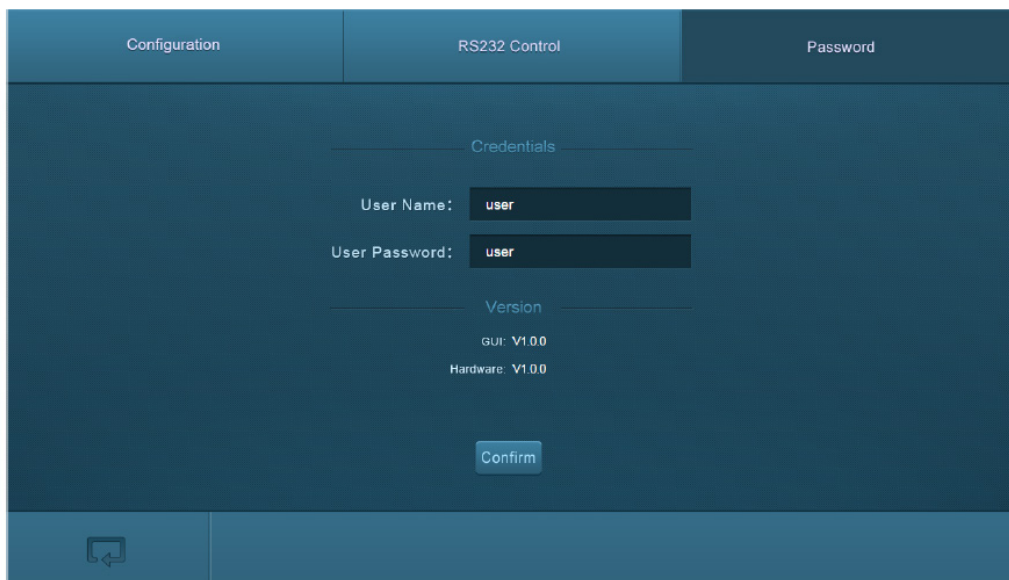
Baud Rate

The baud rate of the *LOCAL* port cannot be changed however the *HDBT* port can be modified. The compatible baud rates for the HDBaseT port are 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

Command

Typing an ASCII format command into this field will control external devices connected to the INT-HD52 RS232 port or HDBaseT device.

Password Menu



The screenshot displays the 'Password Menu' interface. At the top, there are three tabs: 'Configuration', 'RS232 Control', and 'Password'. The 'Password' tab is selected. Below the tabs, the 'Credentials' section contains two input fields: 'User Name:' and 'User Password:', both containing the text 'user'. Below these fields is the 'Version' section, which displays 'GUI: V1.00' and 'Hardware: V1.00'. A 'Confirm' button is located below the version information. At the bottom left of the interface, there is a back arrow icon.

In this menu the user name and password can be changed. Click CONFIRM when user name and password has been changed as desired.

RS232 / IP Control Commands

RS232 Settings: 9600 baud, 8 Data bits, 1 Stop bit, Parity = None

Telnet Control Settings: User defined IP address (default IP address: 192.168.0.178), port 4001

There are no spaces between any of the characters in the command string.

<CR> = Carriage return (Hex 0D)

<LF> = Line Feed (Hex 0A)

Video Input Switching and Configuration

Description	Command	Response
Select HDMI 1 input (input 1)	50701%	Switch to HDMI 1<CR><LF>
Select HDMI 2 input (input 2)	50702%	Switch to HDMI 2<CR><LF>
Select HDMI 3 input (input 3)	50703%	Switch to HDMI 3<CR><LF>
Select Display Port input (input 4)	50704%	Switch to DP<CR><LF>
Select VGA input (input 5)	50705%	Switch to VGA 1/YPbPr/AV <CR><LF>
Auto switch inputs on	50785%	Auto Switching<CR><LF>
Auto switch inputs off	50786%	Manual Switching<CR><LF>
Set VGA (Input 5) for VGA video	50683%	Input 5 Set & Switch to VGA <CR><LF> AND
		Switch to VGA <CR><LF>
Set VGA (Input 5) for YPbPr video	50684%	Input 5 Set & Switch to YPbPr <CR><LF> AND
		Switch to YPbPr <CR><LF>
Set VGA (Input 5) for composite video	50685%	Input 5 Set & Switch to AV <CR><LF> AND
		Switch to AV <CR><LF>

Video Input Customization

Description	Command	Response
Cycle aspect ratio	50608%	Aspect Ratio : 16:9<CR><LF> OR
		Aspect Ratio : 4:3<CR><LF> OR
		Aspect Ratio : auto<CR><LF> OR
		Aspect Ratio : panorama<CR><LF> OR
		Aspect Ratio : justscan<CR><LF> OR
		Aspect Ratio : zoom2<CR><LF> OR
		Aspect Ratio : zoom1<CR><LF>
Set brightness to XX; XX = 00 to 99	502XX%	Brightness: 50<CR><LF>
Set contrast to XX; XX = 00 to 99	503XX%	Contrast: 50<CR><LF>
Set saturation to XX; XX = 00 to 99	504XX%	Saturation: 50<CR><LF>
Set sharpness to XX; XX = 00 to 07	505XX%	Sharpness: 50<CR><LF>
Cycle color temperature	50607%	Color Temperature: medium<CR><LF> OR
		Color Temperature: warm<CR><LF> OR
		Color Temperature: user<CR><LF> OR
		Color Temperature: cool<CR><LF>
Cycle picture mode	50614%	Picture Mode : standard<CR><LF> OR
		Picture Mode : mild<CR><LF> OR
		Picture Mode : user<CR><LF> OR
		Picture Mode : dynamic<CR><LF>

Video Input HDCP Compliance

Description	Command	Response
Turn on HDCP compliance on output	50793%	HDCP ON<CR><LF>
Turn off HDCP compliance output	50794%	HDCP OFF<CR><LF>

Video Output Configuration

Description	Command	Response
1360x768 output	50619%	Resolution: 1360x768<CR><LF>
1920x1200 output	50620%	Resolution: 1920x1200<CR><LF>
1600x1200 output	50621%	Resolution: 1600x1200<CR><LF>
1600x900 output	50624%	Resolution: 1600x900<CR><LF>
1024x768 output	50626%	Resolution: 1024x768<CR><LF>
1280x720 output	50627%	Resolution: 1280x720<CR><LF>
1280x800 output	50628%	Resolution:1280x800<CR><LF>
1920x1080 output	50629%	Resolution: 1920x1080<CR><LF>
Auto adjust output resolution based on display	50782%	modify input hdmi preferred timing<CR><LF> AND
		rotarySwitch==57<CR><LF> AND
		Manage HDMI input with preferred timing<CR><LF> AND
		timing table=[1]<CR><LF> AND
		Resolution: 1920x1080<CR><LF> AND

Video Output Adjustment

Description	Command	Response
Enable OSD for image adjustments	50678%	Enter Output Position Adjust<CR><LF>
Disable OSD for image adjustments	50679%	Exit Output Position Adjust<CR><LF>
Shift image left	50670%	Output Position Adjust X 50 <CR><LF>
Shift image right	50671%	Output Position Adjust X 50 <CR><LF>
Shift image up	50672%	Output Position Adjust Y 50<CR><LF>
Shift image down	50673%	Output Position Adjust Y 50<CR><LF>
Decrease image width	50674%	Output Width Adjust 50<CR><LF>
Increase image width	50675%	Output Width Adjust 50<CR><LF>
Decrease image height	50676%	Output Height Adjust 50<CR><LF>
Increase image height	50677%	Output Height Adjust 50<CR><LF>
Enable HDMI Output	50730%	HDMI Power Off<CR><LF>
Disable HDMI Output	50731%	HDMI Power On<CR><LF>
Disable HDBT Output	50732%	HDBT Power Off<CR><LF>
Enable HDBT Output	50733%	HDBT Power On<CR><LF>
Enable HDMI & HDBT Output	50734%	HDMI HDBT Power On<CR><LF>

Freeze Video Output

Description	Command	Response
Freeze output image	50655%	Freeze: enable<CR><LF>
Un-Freeze output image	50656%	Freeze: disable<CR><LF>

Audio Input Configuration and Adjustment

Description	Command	Response
Use embedded audio for DP Input	50706%	DP Audio from Embedded<CR><LF>
Use external audio for DP input	50707%	DP Audio from LINE<CR><LF>

Audio Output Control

Description	Command	Response
Mute Source Audio	50600%	SOURCE Mute<CR><LF>
Unmute Source Audio	50601%	SOURCE Unmute<CR><LF>
Source Audio volume up	50602%	LINE Volume: XX<CR><LF>
Source Audio volume down	50603%	LINE Volume: XX<CR><LF>
Set Source Audio to XX; XX = 00 to 60	510XX%	SOURCE Volume: XX<CR><LF>
Mute VGA Audio	50726%	VGA Audio Mute<CR><LF>
Unmute VGA Audio	50727%	VGA Audio Unmute<CR><LF>
Mute DP Audio	50728%	DP Audio Mute<CR><LF>
Unmute DP Audio	50729%	DP Audio Unmute<CR><LF>
Mute MIC audio	50722%	MIC Mute<CR><LF>
Unmute MIC audio	50723%	MIC Unmute<CR><LF>
MIC volume up	50724%	MIC Volume: XX<CR><LF>
MIC volume down	50725%	MIC Volume: XX<CR><LF>
Set MIC volume to XX; XX = 00 to 60	508XX%	MIC Volume: XX<CR><LF>

CEC Setup and Control

Description	Command	Response
Enable CEC	50686%	HDMI CEC ON<CR><LF>
Disable CEC	50687%	HDMI CEC OFF<CR><LF>
CEC Play/pause	50901%	CEC cmd: play&pause<CR><LF>
CEC Stop	50902%	CEC cmd: stop<CR><LF>
CEC Menu	50903%	CEC cmd: menu<CR><LF>
CEC Reverse (rewind)	50904%	CEC cmd: rev<CR><LF>
CEC Forward	50905%	CEC cmd: fwd<CR><LF>
CEC Up	50906%	CEC cmd: up<CR><LF>
CEC Down	50907%	CEC cmd: down<CR><LF>
CEC Left	50908%	CEC cmd: left<CR><LF>
CEC Right	50909%	CEC cmd: right<CR><LF>
CEC Select	50910%	CEC cmd: select<CR><LF>
CEC Exit	50911%	CEC cmd: exit<CR><LF>
Display Power On	50920%	Display Power On<CR><LF>
Display Power Off	50921%	Display Power Off<CR><LF>

Menu Navigation

Description	Command	Response
Menu OK	50609%	Key: ok<CR><LF>
Menu LEFT	50610%	Key: left<CR><LF>
Menu RIGHT	50611%	Key: right<CR><LF>
Menu UP	50612%	Key: up<CR><LF>
Menu DOWN	50613%	Key: down<CR><LF>
Enter device menu	50616%	OSD: Enter<CR><LF>
Menu EXIT	50618%	OSD: Exit <CR><LF>

OSD Visibility

Description	Command	Response
Enable OSD for MIC volume bar	50646%	Volume Icon: enable<CR><LF>
Disable OSD for MIC volume bar	50647%	Volume Icon: disable<CR><LF>
Hide mute icon of AV audio in OSD	50761%	LINE Mute Icon: disable<CR><LF>
Display mute icon of AV audio in OSD	50762%	LINE Mute Icon: enable<CR><LF>
Hide mute icon of MIC audio in OSD	50763%	MIC Mute Icon: disable<CR><LF>
Display mute icon of MIC audio in OSD	50764%	MIC Mute Icon: enable<CR><LF>
Hide freeze icon in OSD	50765%	Freeze Icon: enable<CR><LF>
Display freeze icon in OSD	50766%	Freeze Icon: disable<CR><LF>
Enable OSD for input switching	50644%	Input Icon: enable<CR><LF>
Disable OSD for input switching	50645%	Input Icon: disable<CR><LF>

RS232 Routing through HDBaseT

The INT-HD52 has the logic to pass RS232 commands to 3rd party devices connected to the RS232 port on the HDBaseT receiver. The destination command string is embedded in a command which includes the destination HDBaseT port and baud rate. The maximum string length is 48 bytes (characters).

To disable / enable RS232 tunnel control, the following commands must be initiated

Description	Command	Response
RS232 Switcher Control / Tunnel Pass Through	50787%	RS232 Mode 1: RS232 Control Scaler & Remote
RS232 Tunnel Control	50788%	RS232 Mode 2: RS232 Control Scaler

Once RS232 tunnel control command has been initiated to tunnel RS232 commands to a 3rd party device connected to the RS232 port of the HDBaseT receiver, the following command structure should be used for either hexadecimal or ASCII string formats.

Description	Command	Example
Sending HEX command	<pre> /-1{b}:{xx xx xx xx} {b} = baud rate 0=400 1=4800 2=9600 3=19200 4=38400 5=57600 6=115200 {xx xx xx xx} = Hex string </pre>	<pre> /-12:AA BB CC DD Sends command at 9600 baud rate AA BB CC DD = Hex code </pre>
Sending ASCII command	<pre> /+1{b}:xxxxxxxx {b} = baud rate 0=400 1=4800 2=9600 3=19200 4=38400 5=57600 6=115200 {xxxxxxxx} = Ascii string </pre>	<pre> /+12:PWRON Sends command at 9600 baud rate PWRON = ASCII String </pre>

System Query

Description	Command	Response
Check volume level	50630%	LINE Volume: XX<CR><LF> AND
		MIC Volume: XX<CR><LF>
Check input source	50631%	Input: HDMI 1<CR><LF> OR
		Input: HDMI 2<CR><LF> OR
		Input: HDMI 3<CR><LF> OR
		Input: VGA 1<CR><LF> OR
		Input: VGA 2<CR><LF>
Check output resolution	50632%	Resolution: 1360x768<CR><LF> OR
		Resolution: 1920x1200<CR><LF> OR
		Resolution: 1600x1200<CR><LF> OR
		Resolution: 1024x768<CR><LF> OR
		Resolution: 1280x720<CR><LF> OR
		Resolution:1280x800<CR><LF> OR
Check picture mode	50633%	Picture Mode : standard<CR><LF> OR
		Picture Mode : mild<CR><LF> OR
		Picture Mode : user<CR><LF> OR
		Picture Mode : dynamic<CR><LF>
Check aspect ratio	50635%	Aspect Ratio : 16:9<CR><LF> OR
		Aspect Ratio : 4:3<CR><LF> OR
		Aspect Ratio : auto<CR><LF> OR
		Aspect Ratio : panorama<CR><LF> OR
		Aspect Ratio : justscan<CR><LF> OR
		Aspect Ratio : zoom2<CR><LF> OR
		Aspect Ratio : zoom1<CR><LF>
Check brightness	50636%	Brightness: 50<CR><LF>
Check contrast	50637%	Contrast: 50<CR><LF>
Check saturation	50638%	Saturation: 50<CR><LF>
Check sharpness	50639%	Sharpness: 50<CR><LF>
Check color temperature	50640%	Color Temperature: medium<CR><LF>
Check Line audio mute status	50751%	LINE Mute<CR><LF> OR
		LINE Unmute<CR><LF>
Check MIC mute status	50752%	MIC Mute<CR><LF> OR
		MIC Unmute<CR><LF>
Check HDMI audio inputs	50712%	HDMI1 Audio from XXXX port AND
		HDMI2 Audio from XXXX port AND
		HDMI3 Audio from XXXX port
Check Freeze output image status	50753%	Freeze: enable<CR><LF>
		Freeze: disable<CR><LF>

System Query (continued)

Check front panel lock status	50754%	Front Panel Lock<CR><LF> OR
		Front Panel Unlock<CR><LF>
Check volume bar display status	50651%	Volume Icon: enable<CR><LF> OR
		Volume Icon: disable<CR><LF>
Check HDMI embedded audio output status	50652%	Embedded Audio Output: enable<CR><LF> OR
		Embedded Audio Output: disable<CR><LF>
Check system status	50783%	Line Volume:XX AND
		Mic Volume:XX AND
		Source:XXXX AND
		Resolution:XXXX AND
		Digital Sound Output: XXXX AND
		Switch status: XXXX
Check input source in OSD	50650%	Input Icon: enable<CR><LF> OR
		Input Icon: disable<CR><LF>
Display IP Address	50657%	192.168.0.178!<CR><LF>
Display DP Audio Path	50712%	DP Audio from Embedded / External

Auto Power Off Settings

Disable Auto OFF Mode	50714%	Auto Switch Mode: Set no input to power off function: Disable<CR><LF>
Set Auto OFF mode for 1 Minute	50715%	Auto Switch Mode: Set no input to power off function: 1 minutes<CR><LF>
Set Auto OFF mode for 2 Minutes	50716%	Auto Switch Mode: Set no input to power off function: 2 minutes <CR><LF>
Set Auto OFF mode for 5 Minutes	50717%	Auto Switch Mode: Set no input to power off function: 5 minutes <CR><LF>
Set Auto OFF mode for 10 Minutes	50718%	Auto Switch Mode: Set no input to power off function: 10 minutes <CR><LF>

System Power / Factory Default

Enter Standby Mode	50697%	Wake Up!<CR><LF>
Check volume bar display status	50797%	Go To Standby!<CR><LF>
Reset to Factory Default	50617%	Factory Reset<CR><LF>

Troubleshooting

Presentation Switcher does not power on

- » Verify power outlet is active.
- » Verify the power supply connector is secured to the rear of the switcher.

No video from HDBaseT output

- » Verify the green link LED on the HDBaseT output is lit solid.
- » Verify the Category 6 cable is continuous between the scaler and HDBaseT receiver.
- » Verify the HDBaseT receiver has power if it cannot accept power via PoE.

Distorted or no video output

- » Verify the video output resolution is compatible with the display.

Cannot hear HDMI input audio

- » Verify HDMI input audio settings.
- » If using a Display Port device with a Display Port to HDMI adapter, verify source can pass audio via Display Port connection.

Presentation Switcher does not automatically switch

- » Verify switcher is not in manual mode.
- » Verify VGA inputs are not set to composite video (AV) or component video (YPbPr).

Technical Specifications

Input Connections	
HDMI Inputs	Three (3) HDMI type A
Display Port Inputs	One (1) Display Port
VGA Inputs	One (1) HD15-F
Microphone / Line Input	One (1) 3-Pole/3.5mm Euroblock
Control (Front Panel)	Push Button
Control (Rear Panel)	RS232 via 3-Pole/3.5mm Euroblock, RS232 via HDBaseT Output (8P8C-F), IR via 3.5 mm TRS
24V DC Power	One (1) Threaded Barrel (5.5 mm OD; 2.6 mm ID)
Firmware Upgrade	USB Type A Female
IR Input	One (1) 3.5 mm jack (TRS)
Output Connections	
HDMI Output	One (1) HDMI type A
Stereo Balanced Analog Audio	One (1) 5-Pole/3.5mm Euroblock
HDBaseT Output	One (1) 8P8C-F
IR Outputs	Five (1) 3.5 mm jack (TS)
Video Performance	
HDMI Input Bandwidth	4.95Gbps (1.65Gbps per color)
HDMI Input Resolutions	640x480: 60/72/75/85 Hz, 800x600: 56/60/72/75/85 Hz, 1024x768: 60/70/75/85 Hz, 1280x768: 60 Hz, 1280x1024: 60/75Hz, 1360x768: 60 Hz, 720x480i/p (4:3 and 16:9), 720x576i/p (4:3 and 16:9), 1280x720p: 50/60 Hz, 1360x768: 60Hz, 1440x900: 60 Hz, 1600x1200: 60 Hz, 1680x1050: 60 Hz, 1920x1080i: 25/30 Hz, 1920x1080p: 50/60 Hz, 1920x1200: 60 Hz
HDMI Input Compatibility	HDMI 1.4, DVI-D
HDMI Input Compliance	HDCP Compliant 2.2
VGA Input Bandwidth	375MHz
VGA Input Resolutions	640x480: 60/72 Hz, 720x400: 60 Hz, 800x600: 60/72/75 Hz, 1024x768: 60/70/75 Hz, 1280x720: 60 Hz, 1280x768: 60Hz, 1280x960: 60 Hz, 1280x1024: 60/75Hz, 1360x768: 60Hz, 1440x900: 60 Hz, 1600x1200: 60 Hz, 1680x1050: 60 Hz, 1920x1080: 60 Hz, 1920x1200 60 Hz
VGA Input Video Impedance	75ohm
VGA Input Maximum Pixel Clock	145MHz
VGA Input Video Gain	0dB
VGA Input Signal Level	0.5V~2.0Vp-p
Output Resolutions	1920x1200, 1920x1080 (1080p), 1600x1200, 1600x900 1360x768, 1280x720 (720p), 1280x800, 1024x768
Audio Performance	
Analog Input Signal Level	-10dBv Nominal
Analog Input Impedance	>10k ohm
MIC Input Signal Level	-48dB Nominal (Mic input), +4dBu Nominal (Line Input)
MIC Input Impedance	600 ohm (Mic input), >10k ohm (Line input)
MIC Phantom Power	48V DC @ 350mA
ADC Format	24bit, 48kHz, 2ch LPCM
Line Level Output Impedance	50 ohm
Frequency Response	20Hz-20kHz
Stereo Channel Separation	>80dB @ 1kHz
Common Mode Rejection	>90dB @ 20Hz-20kHz

Control Parameters	
RS232 Baud	9600 baud
HDBaseT Signal Characteristics	
Maximum Distance	70 m
Cable Requirements	Solid core shielded Category 5e, Category 6 or greater with TIA/EIA-568B crimp pattern
Bandwidth	10.2 Gbps
Gain	0 dB – 10 dB at 100 MHz
Signal to Noise Ratio (SNR)	> 70 dB at 100 MHz over 100 m
Return Loss	< -30 dB at 5 KHz
Total Harmonic Distortion (THD)	< 0.005% at 1 KHz
Min-Max Signal Level	< 0.3 V – 1.45 Vp-p
Differential Phase Error	±10° at 135 MHz over 100 m
Chassis and Environmental	
Enclosure	Painted Aluminum
Dimensions	44 mm x 220 mm x 148 mm (1.73 in x 8.66 in x 5.83 in) – 1RU
Shipping Weight	0.67 kg (1.48 lbs.)
Operating Temperature	0° to +48° C (+32° to +120° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-20° to +70° C (+14° to +158° F)
Storage Humidity	10% to 85%, Non-condensing
Power and Regulatory	
Power Supply Input	100V-240VAC / 50-60 Hz / 0.8A
Power Supply Output	24VDC / 2.71A
Power Consumption	27 watts (max)
ESD Protection	±15 kV
Product Regulatory	FCC, CE, RoHS
Power Supply Regulatory	UL, CUL, CE, PSE, GS, RoHS
Other	
Warranty	5 years
Included Accessories	IR Remote, IR Receiver, Power Supply, Power Supply Adapters (US, EU, UK, AU), Four (4) Rubber Feet, Serial Cable (DE9-F to Euroblock), Two (2) 3-Pole/3.5mm Euroblock Connectors (installed on product), One (1) 5-Pole/3.5mm Euroblock Connectors (installed on product) One (1) FLX-RBOCA Cables (40 mm (15.75 in.) Male HD15 to Three (3) Female RCA Connectors (Red, Green, Blue), Two (2) Mounting Rails with Chassis Screws, Quick Install Guide
Compatible Receivers (A/V and Control)	INT-HD70-RX, DIGI-BSR-4K
Optional Accessories (sold separately)	IR Transmitter (DIGIB-EMT)

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

Thank you for your purchase.

For Technical Support please call our toll free number at
800-530-8998 or email us at supportlibav@libav.com

www.libav.com

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