User Manual

TL-SM3X1-HDV

3x1 Video Switching System

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Preface

Read this user manual carefully before using this product. Pictures shown in this manual are for reference only; the actual product may vary.

This manual is only for operation instruction only and not for any maintenance or repair.

Trademarks

Product model and logo are trademarked. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without prior written consent.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To insure proper operation, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment

- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.

- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.

- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.

- Refer all servicing to qualified service personnel.

- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.

- Do not remove the housing of the device, as opening or removing housing may expose you to dangerous voltage or other hazards.

- Install the device in a place with adequate ventilation to avoid damage caused by overheating.

- Keep the device away from liquids.

- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the device immediately.

- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

- Unplug the power cord when left unused for a long period of time.

- If disposing of the unit, do not burn or mix with general household waste. The device must be disposed of per local regulations for electronic recycling.

Contents

1. Introduction

1.1 Introduction to TL-SM3X1-HDV

The TL-SM3X1-HDV is a 3x1 video switcher with two HDMI inputs, one VGA input and one HDMI output. The unit supports HDMI video resolutions up to 4K@30, as well as multichannel audio. The unit supports VGA video resolutions up to 1920x1200@60Hz.

The TL-SM3X1-HDV supports two operating modes: auto-switch mode and manual switch mode. When in auto-switch mode, the unit will automatically switch to a signal input as soon as a new source is connected. When the active source is removed, the unit will select the first source on the lowest numbered input.

In manual switch mode, the TL-SM3X1-HDV will switch between connected inputs when a control command is sent to the unit via IR or through a command sent by compatible table inserts, or by using buttons on the front panel of the unit.

In addition to controlling the switching of the source inputs, the TL-SM3X1-HDV also controls a display connected via an HDMI cable via CEC commands. This allows for automatic power on/off commands to be transmitted from the unit (as well as connected table inserts) to the display, thereby providing a complete room connectivity and control solution.
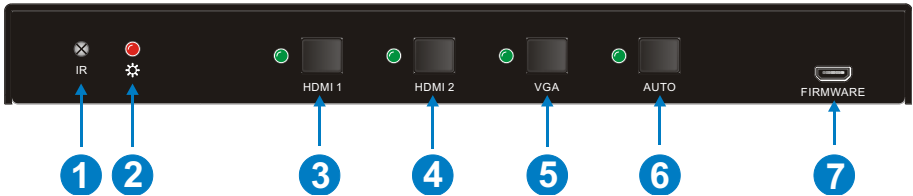
1.2 Features

- Two HDMI inputs, one VGA input & one HDMI output

- HDMI video resolution up to 4K@30Hz 4:4:4

- VGA video resolution up to 1920x1200@60Hz

- HDMI 1.4 & HDCP 1.4 compliant

- MHL support on HDMI input channel 1

- IR remote control & front panel control

- Integration with TechLogix table inserts for signal pass-through & remote control

- Micro USB firmware port

- EDID pass-through

- CEC pass-through with display control

- Hot-plug support

1.3 Package List

- 1 x TL-SM3X1-HDV switcher

- 1 x IR Remote

- 1 x 3.5mm audio cable (3m) (optional)

- 1 x Power Adapter (DC 12V 1A)

- 2 x Mounting rails (with 8 screws)
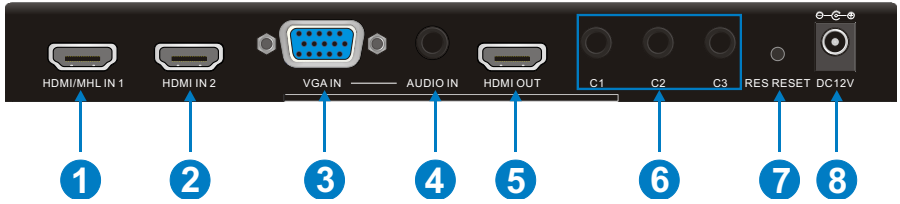
- 4 x Rubber feet

- 1 x User Manual

2. Panel Description

2.1 Front Panel

No.	Name	Description
①	Built-in IR Receiver	Receives IR control signals sent from a remote control
②	Power LED	Illuminates red when properly powered on
③	HDMI 1 input Selector & Activity LED	*Button*: Provides manual switching to HDMI channel 1 *LED*: illuminates green when HDMI channel 1 is selected
④	HDMI 2 input Selector & Activity LED	*Button*: Provides manual switching to HDMI channel 2 *LED*: illuminates green when HDMI channel 2 is selected
⑤	VGA 1 input Selector & Activity LED	*Button*: Provides manual switching to VGA channel *LED*: illuminates green when VGA channel is selected
⑥	Auto-Switching Mode Selector & Activity LED	*Button*: Turns on/off auto-switching *LED*: illuminates green when auto-switching mode is selected **Note:** During auto-switching mode, front panel switching is disabled
⑦	Firmware	Micro USB port used for firmware update

Note: Pictures shown in this manual are for reference only; actual product may vary.
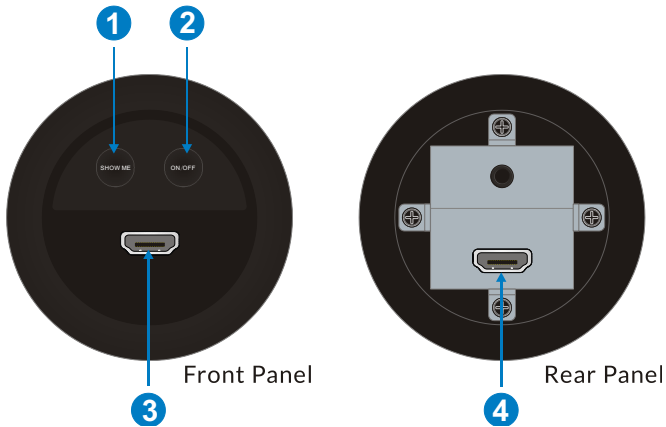
2.2 Rear Panel

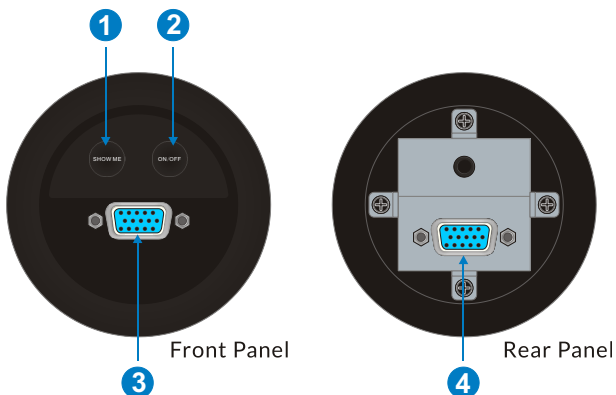| No.	Name	Description
①	HDMI/MHL IN 1	HDMI input port 1 **Note:** Supports both HDMI and MHL connections
②	HDMI IN 2	HDMI input port 2
③	VGA IN	VGA input port 3
④	AUDIO IN	External audio port; embeds onto the VGA stream when converting to HDMI
⑤	HDMI OUT	HDMI output port
⑥	C1~C3	Dry contact closure control ports (for use with compatible TechLogix table inserts)
⑦	RES RESET	Resets the units' resolution to 1280x720p
⑧	DC 12V	12V power port

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2.3 Example Table Inserts

Front Panel

Rear Panel

No.	Name	Description
①	SHOW ME	*Button*: Selects the corresponding input on the TL-SM3X1-HDV
②	ON/OFF	*Button*: Select to power on/off a connected display
③	HDMI input port	Local table connection for sources
④	HDMI output port	Connection to switcher

Note: HDMI signals are passed from the source device (connected via the *HDMI input port*), through the table insert, and to the switcher (connected via the *HDMI output port*).

Front Panel

Rear Panel

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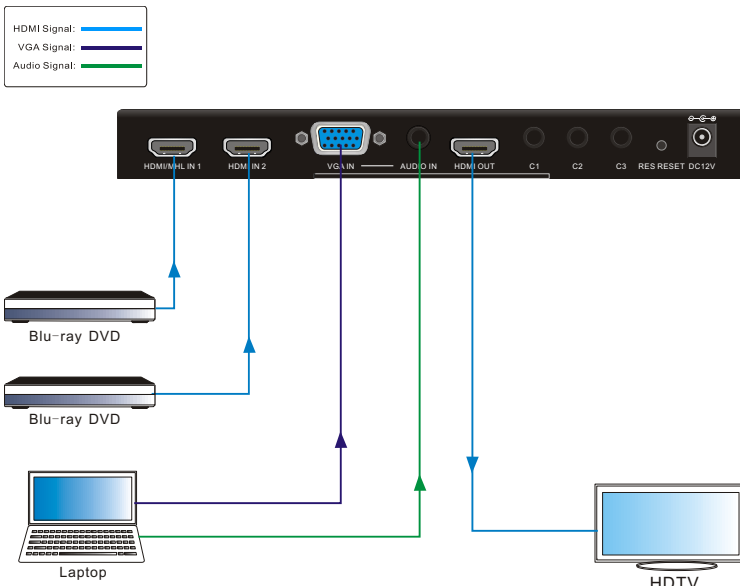| No.	Name	Description
⑤	SHOW ME	*Button*: Selects the corresponding input on the TL-SM3X1-HDV
⑥	ON/OFF	*Button*: Select to power on/off a connected display
⑦	VGA input port	Local table connection for sources
⑧	VGA output port	Connection to switcher

Note: VGA signals are passed from the source device (connected via the *VGA input port*), through the table insert, and to the switcher (connected via the *VGA output port*).
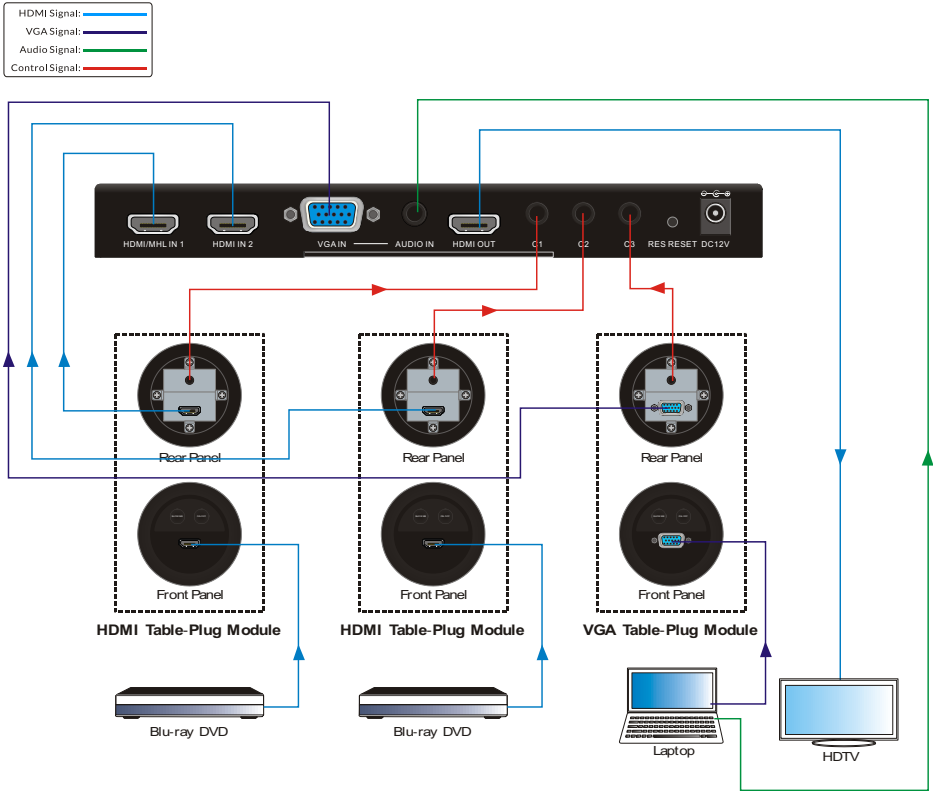
3. System Connection

3.1 Usage Precautions

1) System should be installed in a clean environment that has a proper temperature and humidity.
2) All of the power switches, plugs, sockets and power cords should be installed properly.
3) All devices should be connected before powering on the devices.
4) If mounting the unit, the included mounting hardware must be used.

3.2 System Diagram

3-1 Example System Diagram (without table inserts)

3-2 System Diagram (with table inserts)

3.3 Connection Procedure

1. Verify all components included with the TL-SM3X1-HDV are present before installation.

2. If the TL-SM3X1-HDV will be permanently mounted to a surface, attach the included Mounting rails with the supplied screws.

3. If the TL-SM3X1-HDV will be sitting on a shelf, attach the included rubber feet to the bottom of the unit.

4. Turn off power and disconnect the audio/video equipment by following the manufacturer's instructions.

5. Connect HDMI signal cables between the HDMI sources and the HDMI IN 1 and HDMI IN 2 ports.

6. Connect a VGA signal cable between the VGA sources and the VGA IN ports.

7. Connect an HDMI cable between the display and the HDMI OUT port.

8. If the 3x1 video switcher will be controlled via TechLogix table inserts:

   1) Separately connect HDMI signal cables between the HDMI sources and HDMI ports of the table inserts.

   2) Separately connect a VGA signal cable between the VGA source and the VGA port of the table insert.

   3) Separately connect HDMI signal cables between the HDMI ports of table inserts and the HDMI IN 1 and HDMI IN 2 ports of the TL-SM3X1-HDV.

   4) Seperately connect a VGA signal cable between the VGA port of the table insert and the VGA IN port of the TL-SM3X1-HDV.

   5) Separately connect three table inserts to the C1, C2, and C3 ports of the TL-SM3X1-HDV.

9. Connect the included 12VDC power adaptor to the TL-SM3X1-HDV.

10. Power on attached audio/video devices.

Important notice:

- Do not attempt to disassemble or alter the TL-SM3X1-HDV housing. There are no user-serviceable parts inside the unit. Doing so will void your warranty.

- To minimize the possibility of equipment damage from electrostatic discharge (ESD), all source and destination equipment must be powered off during installation.

- Allow proper ventilation to reduce the risk of thermal failure.

4. System Operations

4.1 Front Panel Buttons

The front panel buttons may be used for source selection. Video signals support auto-switching and manual switching (factory default).

4.1.1 Manual-switching

Press **HDMI 1**, **HDMI 2** or **VGA** on front panel to select the corresponding input source.

4.1.2 Auto-switching

Press **AUTO** to enter into auto-switching mode.

The auto-switching mode abides by the following principles:

➢ **New input**
When a new signal (or connection) is detected, the TL-SM3X1-HDV switches to this new signal automatically.
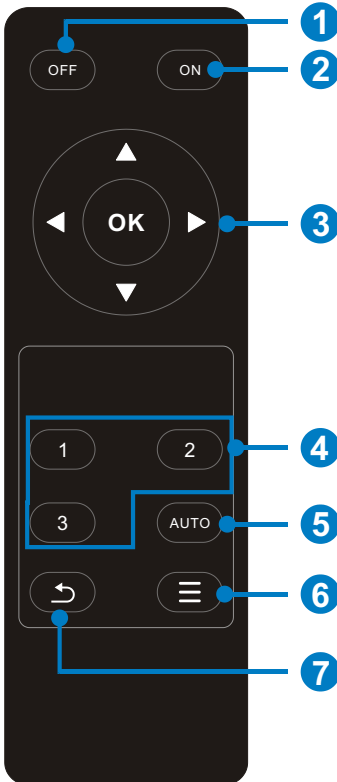
➢ **Rebooting device**
The TL-SM3X1-HDV will save the last configuration before losing power. If the last switching mode is auto-switching, once rebooted, the TL-SM3X1-HDV will automatically enter auto-switching mode, then detect all inputs and memorize their connection status for future use. If the last displayed signal is still available, the unit will output the signal. If not, the unit will detect all the input signals with priority from HDMI 1 to HDMI 2 to VGA.

➢ **Removing signals**
Should an active signal be removed, the TL-SM3X1-HDV will detect all input signals with priority from HDMI 1 to HDMI 2 to VGA. It will transfer the first signal detected to the display.

4.2 IR Remote

The built-in IR receiver on the front panel will receive IR control signals sent by a remote control (included).

① **OFF**

Powers off the connected display using CEC commands

② **ON**

Powers on the connected display using CEC commands

③ **OK:** confirm button

Navigation buttons: UP/DOWN/LEFT/ RIGHT allow for resolution selection

④ **Input source selection buttons**

1=HDMI 1, 2=HDMI 2, 3=VGA

Select video source via pressing corresponding button

⑤ **Auto button**

Enter/Exit auto-switching mode

⑥ **Menu button**

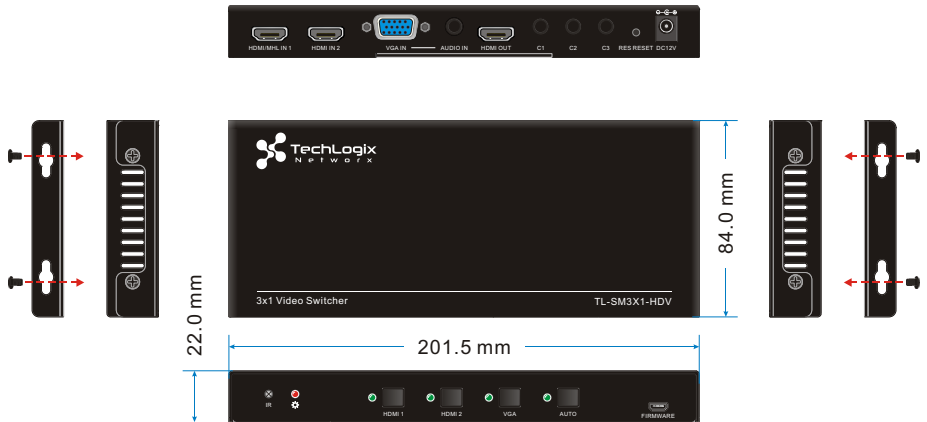Enters the OSD menu. Allows for navigation through supported output resolutions.

⑦ **Return button**

5. Specification

Input/output	
Video Input	1 HDMI/MHL 1 HDMI 1 VGA
Video Input Connector	2 female HDMI 1 female VGA (15-pin)
Input Video Signal	HDMI, YPbPr, C-video, VGA
Video Output	1 HDMI
Video Output Connector	1 female HDMI
Output Video Signal	HDMI
Output Resolution	HDMI output video support HDMI 1.4 & HDCP 1.4; maximum resolution of 4K@30 4:4:4 VGA output video support HDMI 1.4 & HDCP 1.4; maximum resolution of 1920x1200. Other supported resolutions include: 1920x1080, 1600x1200, 1600x900, 1360x768, 1280x800, 1280x720, or 1024x768.
Audio	
Audio Input	1 stereo audio input for VGA video
Audio Input Connector	1 3.5mm stereo jack
Audio Input Impedance	>10kΩ
Frequency Response	20Hz~20K Hz
Stereo Channel Separation	>80dB @1KHz
Control Part	
Control Port	3 Dry Contact (C1~C3) 1 FIRMWARE
Control Connector	3 3.5mm mini jack 1 Micro-USB
Control Buttons	Front Panel: HDMI 1, HDMI 2, VGA, AUTO Rear Panel: RES RESET
General	
Temperature	0 ~ +50℃
Humidity	10% ~ 90%
Power Supply	DC12V 1A
Max Power Consumption	2W

Dimension (W*H*D)	201.5mm x 22.0mm x 84.0mm
Weight	246g

6. Panel Drawing

7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Output image with snowflakes or static	Poor cable quality	Replace the cable
	Failing or loose connection	Check the cable connection
No output image when switching	No signal at the input / output end	Check with oscilloscope or multi-meter
	Failing or loose connection	Check the cable connection
	Failure of the unit	Contact TechLogix technical support
POWER indicator doesn't illuminate or lack of unit response	Power supply/cable failure	Check the power supply connection
Static becomes stronger when connecting the video connectors	Bad grounding	Check unit and power supply ground connection

If your problem persists after following the above troubleshooting steps, please contact your authorized reseller or TechLogix technical support.

8. After-sales Service

1) **Product Limited Warranty:** We warrant that our products will be free from defects in materials and workmanship for **three years.**
2) **Warranty coverage may be voided when:**
   ● The warranty period has expired
   ● The factory applied serial number has been altered or removed from the product
   ● There is damage, deterioration or malfunction caused by:
      ● Atypical wear and tear
      ● Use of supplies or parts not meeting the specifications
      ● No certificate or invoice as the proof of warranty
      ● Damage caused by force majeure
      ● Non-authorized service
3) **Technical Support:** When contacting TechLogix support, please have the following information available:
   ● Product part number
   ● Installation and sale date
   ● Detailed failure information