

# 4x1 HDMI Switch with IR & RS-232 Control

## User's Guide



Models  
PT-SW-HD41

Designed in Germany

Made in Taiwan

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## Section 1: Getting Started

### 1.1 Safety and Notice

**Please read all of these instructions carefully before you use the device. Save this manual for future reference.**

The **PT-SW-HD41 4x1 HDMI Switch with IR** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the PT-SW-HD41 should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

### 1.2 Introduction

The **PT-SW-HD41** provides easy switching among 4 HDMI sources to your high definition display including HDMI equipped or DVI enabled monitors. Full digital and high quality video/audio from any of these 4 sources can perfectly be transmitted to the connected high definition monitor via IR remote control or front panel button. With HDCP support, up to four HDMI/DVI sources such as PS3, DVD players, camcorders, or set-top boxes can seamlessly & simultaneously connected to this **PT-SW-HD41**.

- Support HDMI Deep Color & 3D
- Fully HDCP compliant
- Handy front panel button to switch any four HDMI/DVI sources
- Supports 480p, 720p, 1080i, 1080p, and VESA resolutions
- Front panel LED indicators
- Equalization on input ports and pre-emphasis on output port
- Easy installation

## 1.3 Package Contents

Before you start the installation of the switch, please check the package contents.

- PT-SW-HD41 x1
- Power Adapter (+5VDC, 0.85A) x1
- IR remote control x1
- IR receiver x1
- User's Guide x1

## 1.4 Before Installation

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Don't place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.

## 1.5 Panel Description





1. IR Sensor	2. Serial channel control
3. HDMI OUT	4. channel push button and indicator LED
5. HDMI Input 1~4	6. IR Receiver
7. +5V DC	

## 1.6 Hardware Installation

1. There is no power switch on the device. Power is automatically turned on when the power cord is plugged into a wall outlet.
2. Connect your HDMI/DVI sources to the input ports of PT-SW-HD41.
3. Connect your HDMI/DVI enabled receiver (monitors etc.) into the output port of PT-SW-HD41.
4. Power up PT-SW-HD41.
5. Select the input you want to be displayed on the connected monitor with IR remote control or push button on the front panel.
6. If long cable transmission (>15m/50ft) is considered, HDMI extender is needed.

## 1.7 IR Remote Control



Function Key	Function Description
<b>POWER</b>	Turn on/off HDMI over CAT5e/6/7 transmission on all eight output ports
	Switch to the other channel from either <b>HDMI INPUT 1</b> or <b>HDMI INPUT 2</b> that is in play
	Switch to the other channel from either <b>HDMI INPUT 1</b> or <b>HDMI INPUT 2</b> that is in play
<b>SOURCE SELECT 1</b>	Select <b>HDMI INPUT 1</b> to be the input source
<b>SOURCE SELECT 2</b>	Select <b>HDMI INPUT 2</b> to be the input source
<b>SOURCE SELECT 3</b>	Select <b>HDMI INPUT 3</b> to be the input source
<b>SOURCE SELECT 4</b>	Select <b>HDMI INPUT 4</b> to be the input source

## 1.8 The Command Protocol Format (RS-232 Serial Port)

### Serial Port Setting:

Baud rate : 9600 bps

Data bit : 8 bits

Parity : None

Select channel			
Function Description:			
Command			
Byte	Name	Value	Comment
0	Command Length	0x99	
1	Check Code 1	0x1	Channel:1~4
Example			
Command: 0x99 0x1			

Audio Control			
Function Description:			
Command			
Byte	Name	Value	Comment
0	Command Length	0x99	
1	Check Code 1	0x05	On:0x05 Off:0x06
Example			
Command: 0x99 0x05			

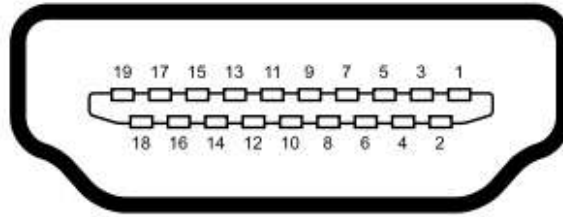
## Section 2: Specifications

Technical	
Role of usage	4x1 switch
HDMI compliance	HDMI Deep Color & 3D Support
HDCP compliance	Yes
Video bandwidth	6.75 Gbps
Video support	480p, 720p, 1080i, 1080p, and VESA resolutions
Transmission	up to 15m/50ft at 1080p
Audio support	Surround sound (up to 7.1ch) or stereo digital audio
Input TMDS signal	1.2 volts (peak-to-peak)
Input DDC signal	5 volts (peak-to-peak)
ESD protection	[1] Human body model—±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]
Input	4x HDMI / 1x RS-232 / 1x IR Receiver
Output	1x HDMI
IR remote control	Electro-optical characteristics: $\pi = 25^\circ$ / Carrier frequency: 38kHz
HDMI connector	Type A [19-pin female]
RS-232 connector	DE-9 [9-pin D-sub female]
Mechanical	
Housing	Metal
Dimensions (L x W x H)	Model: 129 x 52 x 26mm Package: 175 x 128 x 134mm
Fixedness	wall-mounting case
Power supply	5V 0.85A DC
Power consumption	5 Watts [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]



## 2.1 Pin Definitions

### HDMI port



Type A (Receptacle) HDMI

Pin #	Definition	Pin #	Definition	Pin #	Definition
1	TMDS Data2+	8	TMDS Data0 Shield	15	SCL
2	TMDS Data2 Shield	9	TMDS Data0-	16	SDA
3	TMDS Data2-	10	TMDS Clock+	17	DDC/CEC Ground
4	TMDS Data1+	11	TMDS Clock Shield	18	+5 V Power
5	TMDS Data1 Shield	12	TMDS Clock-	19	Hot Plug Detect
6	TMDS Data1-	13	CEC		
7	TMDS Data0+	14	Reserved (N.C. on device)		

## Section 3: Limited Warranty

The SELLER warrants the **PT-SW-HD41 4x1 HDMI Switch with IR** to be free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surges.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables are limited to a 30 day warranty and cable must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the PT-SW-HD41 features and specifications is subject to change without further notice.

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Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

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