TPHD2-WP1

HDMI/VGA Wall Plate Switcher & HDBaseT Lite Transmitter

2-gang, Decora-style

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www.tekvox.com

TPHD2-WP1

79066 User Manual

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different product model specifications may vary.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated October, 2018. In order to continue improving the product, we reserve the right to make function or parameter changes without notice or obligation. Please refer to the dealers for the latest details.

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 ensure the best performance from the product, 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 (electrical shock or burn hazard)
- 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 put any heavy items on the product's power cable
- 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 sufficient ventilation to avoid damage caused by overheating
- Keep the module 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 module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- 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
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes

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1. Product Introduction

The TPHD2 WP1 is a Decora style HDBaseT Lite transmitter that installs in a double gang wall box to provide a convenient interface for both HDMI and VGA sources. A VGA HD scaler is utilized to improve the performance of older laptops when used with higher resolution displays. HDMI 1.4 with 4k & 3D signals including HDCP are supported. Switching between HDMI and VGA is provided using both automatic and manual switching. The HDBaseT output supports 200’ video transmission and can be powered from a matching receiver. Bi-directional RS232 communication is also provided by HDBaseT transmission.

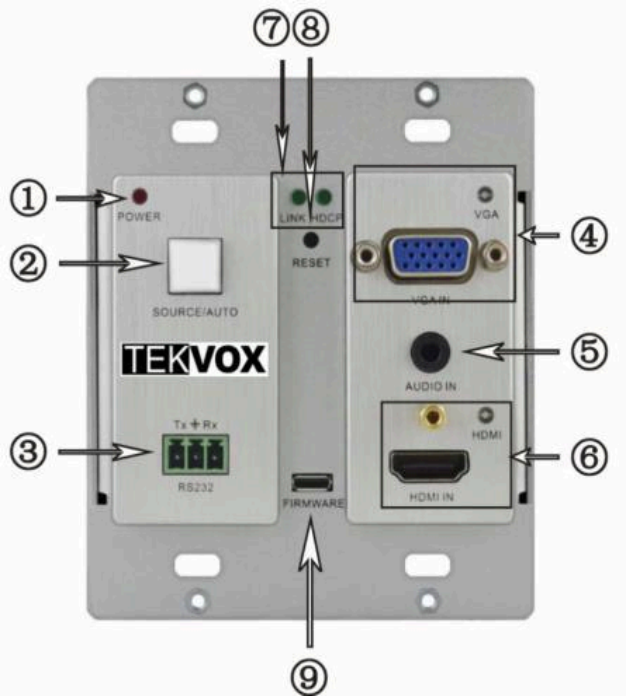
1.1 Features

A long with the ability to provide HDMI and VGA source connections, the TPHD2 WP1 is designed to support the TEKVOX TekTouchPad with power and RS232 on its back side for easy integration. Special RS232 commands are utilized to improve communication between the TekTouchPad and TekMonitor.

- 4K HDMI 1.4, with VGA output resolutions up to 1920x1200
- VGA auto-scaler to support older laptops
- Automatic and manual input switching modes
- Decora-style for easy installation into wall or floor boxes
- Supports transmission distances of up to 200 ft (60m) over single CAT cable
- Remotely powered by receiver via PoH (Power over HDBaseT)
- Includes rear RS232 and power connections for interfacing with a TekTouchPad
- Supports firmware upgrades via USB connection
- Fully HDCP-compliant

1.2 Panel Descriptions

1.2.1 Front Panel Description



No.	Name	Description
1	Power Indicator	Lights up red when power is on
2	Source/Auto Button	**When light is OFF:** Press to toggle between HDMI & VGA sources. The indicator of the selected source will light up green. Press and hold for 3+ seconds to enter Auto-Switching Mode **When light is ON:** Device is in Auto-Switching Mode Press and hold for 3+ seconds to enter Manual-Switching Mode
3	RS232 Port	Serial port 3-pin pluggable terminal block. Used to setup and control the TPHD2-WP1 or send bi-directional RS232 data to remote device.
4	VGA In	Connect a VGA source device. The indicator lights up yellow when there is a VGA signal present, and lights up green when the input is selected. Light turns off when there is no VGA input signal present.
5	Audio In	Used to embed audio with the VGA source
6	HDMI In	Connect an HDMI source device. The indicator lights up yellow when there is an HDMI signal present, and lights up green when the input is selected. Light turns off when there is no HDMI input signal present.

No.	Name	Description
7	LINK & HDCP Indicators	LINK: Lights up green when HDBaseT is properly connected HDCP: Lights up green when the source signal contains HDCP information, blinks when HDCP is not present, and turns off when there is no source signal
8	Reset	Press to reboot the TPHD2-WP1
9	Firmware	USB port used for updating firmware. To update firmware, plug in flash drive with “MERGE.bin” update file, then send command 40698%

1.2.2 Side Panel Description

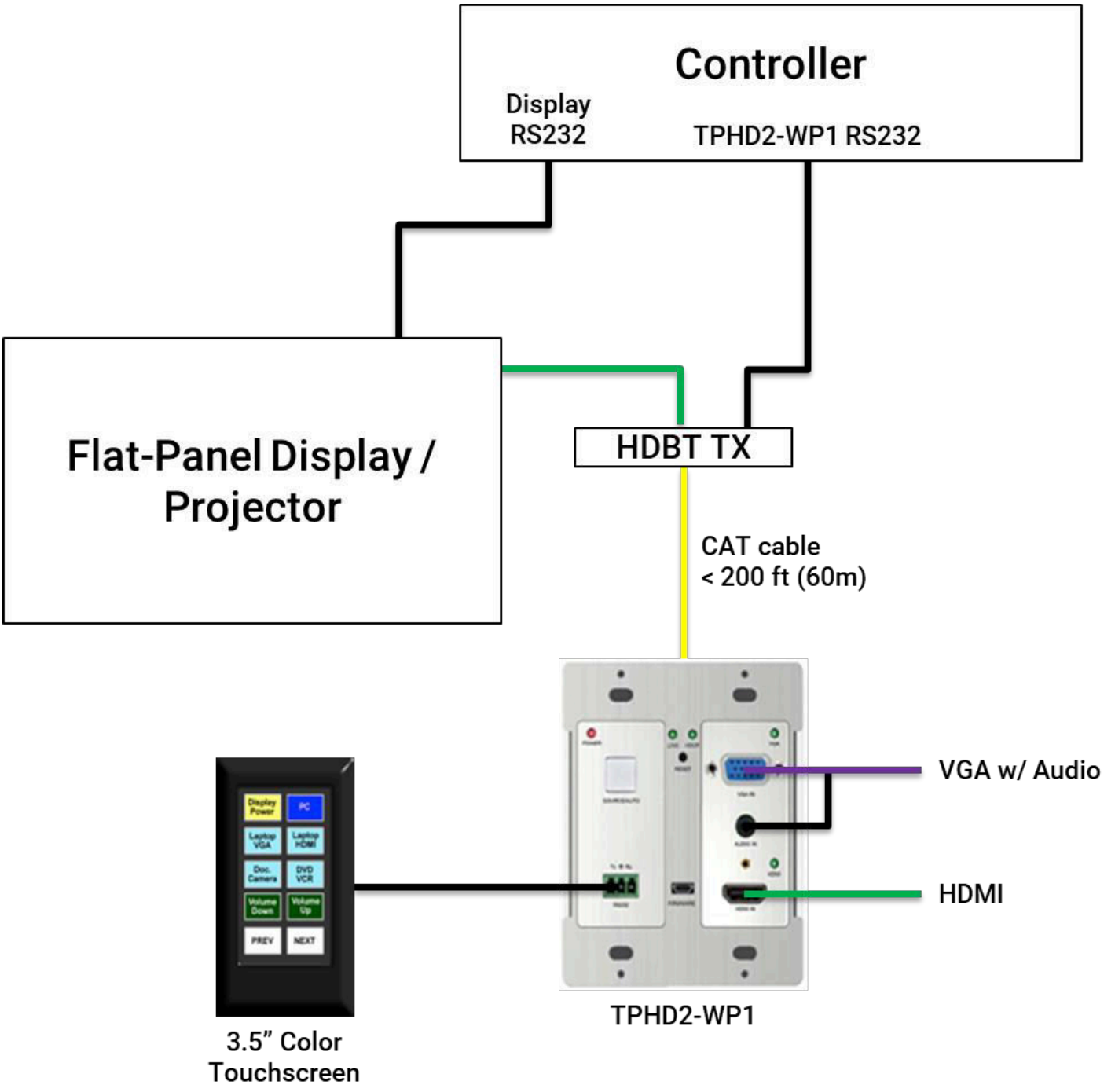
No.	Name	Description
1	HDBaseT Output	Connect to HDBaseT receiver via CAT cable to deliver audio/visual signals with support for PoH (Power over HDBaseT) from receiver. **Note:** The TPHD2-WP1 supports unidirectional PoH, and cannot be used to power far-end receiver.

1.2.3 Rear Panel Description

No.	Name	Description
1	Power In	Connect to DC 12V power adapter if not being powered by receiver
2	Power Out	Supplies DC 12V power for TekTouchPad (if used)
3	RS232	Bi-directional RS232 port for connection to TekTouchPad. This port can be used to control the TPHD2-WP1, or to control a remote device connected to the receiver.

2. Application

By using the TPHD2-WP1 wall plate with a TekTouchPad and networked controller, a simple controlled audiovisual system can be implemented. The RS232 and power connections on the rear of the wall plate make it easy to connect to a TekTouchPad. When using a controller such as a TEK 3, the TekTouchPad is programmed only to communicate with the TEK 3 and not the display. The TEK 3 will have the drivers to communicate with the display. This makes it easy to install several systems or change out the display in the future.



3. Operation

3.1 Front Panel Buttons

From the front panel, the TPHD2-WP1 is controlled by pressing the Source/Auto button or through the RS232 port. Both automatic and manual switching between HDMI & VGA are supported. By default, the TPHD2-WP1 is set to auto-switching, and the button is illuminated. To set the unit to manual switching, press and hold the Source/Auto button for 3 seconds or more or send the RS232 command “40771%”. Once the button light is off, the unit can be toggled between HDMI and VGA by pressing the button. To set the unit back to auto mode press and hold the button for 3 seconds or more or send the RS232 command “40770%”.

- **Automatic Switching Mode**

  In this mode the Source/Auto button is lit up green, and the TPHD2-WP1 switches to the last connected source automatically. If two sources are connected and one is disconnected, the unit will switch to the original source. Otherwise the unit will not switch.
- **Manual Switching Mode**

  In this mode the Source/Auto light is off, and the user must press the button or send an RS232 command to switch between sources. Pressing Source/Auto toggles between HDMI and VGA, and the indicator of the currently selected source will light up green. To switch between HDMI and VGA using RS232 commands send “40701%” for HDMI and “40704%” for VGA.

3.2 RS232 Control

3.2.1 Wall Plate Control

TPHD2-WP1 can operate in one of two control modes for RS232 control. These two modes allow the RS232 connection at the wall plate to control a far-end device, or for the far end device at the receiver to control the TPHD2-WP1.

- **Passthrough Control Mode**

  In Passthrough Control Mode, RS232 data can be sent to control a far end device. Use this mode to allow a TekTouchPad to control a controller or display.

  Bi-directional RS232 data can be sent between the wall plate and a compatible HDBaseT receiver to support control of a controller, or to send commands directly to a display. Supported baud rates are: 2400, 4800, 9600, 19200, 38400, 57600 or 115200.
- **Far-End Control Mode**

  In far-end control mode, a control system can control the TPHD2-WP1.

3.2.2 Wall Plate Operation

An RS232 utility program or dedicated controller is necessary to send commands to the wall plate. The commands cannot be sent using a terminal program as one character at a time, and must be sent as a group of characters.

3.2.3 RS232 Commands

Communication Protocol: RS232 Communication Protocol
Baud rate: 9600
Data bit: 8
Stop bit: 1
Parity bit: None

Note:

- Commands with a gray background are for VGA sources ONLY
- EDID commands are for HDMI sources ONLY

3.2.3.1 Switch Commands

Command	Function	Feedback Example
40701%	Switch to HDMI Input	Switch to HDMI
40704%	Switch to VGA input	Switch to VGA
40705%	Invert the horizontal polarity	Hpolarity:0/1
40706%	Invert the vertical polarity	Vpolarity:0/1
40707%	Check the present resolution & polarity	1920x1080 Hpolarity:1 Vpolarity:0
40600%	VGA Audio Mute	LINE Mute
40601%	VGA Audio Unmute	LINE Unmute
40602%	VGA Audio Up	LINE Volume:xx
40603%	VGA Audio Down	LINE Volume:xx
40901%	Enable OSD	OSD On
40902%	Disable OSD	OSD Off
40770%	Enable auto-switching	Auto Switching
40771%	Disable auto-switching	Manual Switching

3.2.3.2 Resolution Commands

Command	Function	Feedback Example
40619%	Change the resolution to 1360x768 (HD)	Resolution: 1360x768
40626%	Change the resolution to 1024x768 (XGA)	Resolution: 1024x768
40627%	Change the resolution to 1280x720 (720P)	Resolution: 1280x720

Command	Function	Feedback Example
40628%	Change the resolution to 1280x800 (WXGA)	Resolution: 1280x800
40629%	Change the resolution to 1920x1080 (1080P)	Resolution: 1920x1080
40620%	Change the resolution to 1920x1200 (WUXGA)	Resolution: 1920x1200
46021%	Change the resolution to 1600x1200 (UXGA)	Resolution: 1600x1200

3.2.3.3 Setup Commands

Command	Function	Feedback Example
402**xx**%	Set the brightness to **xx**. **xx** ranges from 00 ~ 99	Brightness: **xx**
403**xx**%	Set the contrast to **xx**. **xx** ranges from 00 ~ 99	Contrast: **xx**
404**xx**%	Set the saturation to **xx**. **xx** ranges from 00 ~ 99	Saturation: **xx**
405**xx**%	Set the sharpness to **xx**. **xx** ranges from 00 ~ 99	Sharpness: **xx**
40606%	Auto-adjust the VGA input	VGA Input Auto
40607%	Adjust the color temperature	Color Temperature: **xx** (**xx** can be medium, warm, user, or cool)
40608%	Set the aspect ratio	Aspect Ratio **xx** (**xx** can be 16:9, 4:3, or auto)
40614%	Set the picture mode	Picture Mode: **xx** (**xx** can be dynamic, standard, mild, or user)
40699%	Check the system version	Version V**x.x.x**
40779%	Passthrough Control Mode 1	RS232 Mode 1: RS232 Control Scaler & Remote
40780%	Far-end Control Mode 2	RS232 Mode 2: RS232 & Remote Control Scaler
40790%	Set the HDCP status of HDMI output to Active	HDCP Active
40791%	Set the HDCP status of HDMI output to On	HDCP On
40792%	Set the HDCP status of HDMI Output to Off	HDCP Off
40698%	Software update	
40617%	Reset to factory default	

3.2.3.4 Inquiry Commands

Command	Function	Feedback Example
40632%	Check the output resolution	Resolution: **xx**

Command	Function	Feedback Example
40633%	Check the picture mode	Picture Mode: **xx**
40793%	Check HDCP Status	HDCP Off/On/Active
40635%	Check the image aspect ratio	Aspect Ratio: **xx**
40636%	Check the brightness	Brightness: **xx**
40637%	Check the contrast	Contrast: **xx**
40638%	Check the saturation	Saturation: **xx**
40639%	Check sharpness	Sharpness: **xx**
40640%	Check the color temperature	Color Temperature: **xx**

3.2.3.5 Adjustment Commands

Command	Function	Feedback Example
40678%	Enable screen output adjusting	Enter Output Position Adjust
40679%	Disable screen output adjusting	Exit Output Position Adjust
40670%	Move image to the left	Output Position Adjust X **xx**
40671%	Move image to the right	Output Position Adjust X **xx**
40672%	Move the image up	Output Position Adjust Y **xx**
40673%	Move the image down	Output Position Adjust Y **xx**
40674%	Increase image width	Output Width Adjust **xx**
40675%	Decrease image width	Output Width Adjust **xx**
40676%	Decrease image height	Output Height Adjust **xx**
40677%	Increase image height	Output Height Adjust **xx**

3.2.3.6 EDID Commands

Command	Function	Feedback Example
40772%	EDID pass-through	EDID: bypass mode
40773%	Set EDID data to 1080P PCM 2.0ch	EDID:1080P&PCM 2ch
40774%	Set EDID data to 1080P Dolby 5.1	EDID:1080P&5.1ch
40775%	Set EDID data to 1080P3D Dolby 5.1	EDID:1080P3d&5.1ch
40776%	Set EDID data to 1080i PCM 2.0ch	EDID:1080i&PCM 2ch

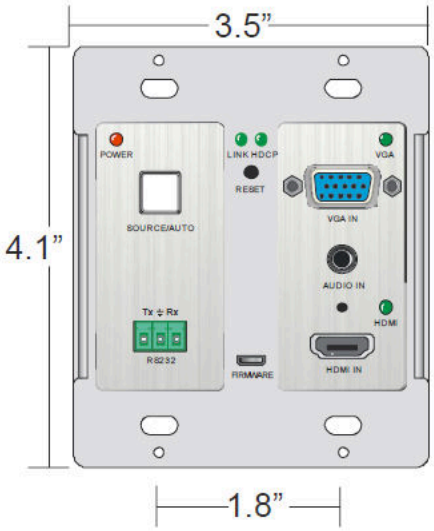
Command	Function	Feedback Example
40777%	Set EDID data to 4K*2K PCM 2.0ch	EDID:4K&PCM 2ch
40778%	Check EDID data	EDID:1080P&PCM 2ch EDID:1080P&5.1ch EDID:1080P3d&5.1ch EDID:4K&PCM 2ch
40799%	Program EDID file, send EDID data within 10s	Waiting for EDID within 10 secs!
40903%	Enable Feedback	Feedback On
40904%	Disable Feedback	Feedback Off

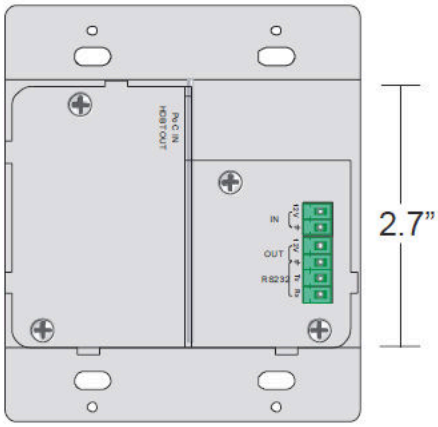
4. Device Specifications

Model	TPHD2-WP1 (79066)
Input	1 HDMI (19-pin HDMI, female) 1 VGA (15-pin VGA, female) 1 AUDIO (3.5mm mini jack) 1 RS232, Front (3-pin Phoenix) 1 RS232 and Power In/Out, Rear (6-pin Phoenix)
Output	HDBaseT Lite (RJ45)
Transmission Mode	HDBaseTLite with PoC
Transmission Distance	1080P ≤ 196 feet (60m) 4Kx2K ≤ 130 feet (40m)
VGA Resolution	800x600, 1024x768, 1280x800, 1280x1024, 1440x900,1600x1200, 1920x1080, 1920x1200
HDMI Resolution	4Kx2K, 1080p 3D, 1080P(HD)/1080i/720P/576P/576i/480P/480i
HDMI Standard	HDMI1.4 and HDCP
Bandwidth	10.2Gbps
Baud Rate	9600 bps
Power Supply	DC 12V, 2A
Power Consumption	9.6W (max)
Temperature	14 ~ 104°F (-10 ~ 40°C)
Humidity	10% ~ 90%
Style	Decora type for 2-Gang wall or floor boxes
Product Dimensions	4.1” (104mm) x 3.5” (89mm) x 1.7” (43mm)
Product Weight	0.64 lbs. (290g)

Specifications are subject to change without notice.

5. Product Dimensions





6. Troubleshooting & Maintenance

Problems	Causes	Solutions
Loss of video or noise on the screen	CAT cable or RJ45 connector issues.	Check connections and cable. Best to use CAT 6 shielded. Distance may be too long.
Power indicator doesn't work or respond to any operation	Loose or failed power cord connection	Ensure the power cord connection is good.
Cannot control the device via RS232 port	Wrong RS232 communication parameters	Make sure the RS232 communication parameters are set correct.
Cannot control the display via RS232	Improper setting of RS232 mode	Check that the unit is set to Passthrough Control Mode.
Cannot control unit via front panel or RS232 while unit is powered on	Unit may not be working.	Check with dealer.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.