INSTALLATION MANUAL
AV MATRIX 4X4
## Model: TIS-AVIP-MTX44

TIS®
CONTROL EVERYTHING

🛈 PRODUCT INFORMATION

This device is a professional 4-input, 4-output HDMI matrix helping with streaming shared media from different devices. It enables switching, controlling and managing options through remote control, computer, or your smart touch-panel. Using this audio splitter, you can take control of multiple digital and analog HDMI AV signals from one location.

PRODUCT SPECIFICATIONS

⤓		Operating Temperature Range	-5 to +40°C(23 to +104 °F)
⤒	**Output**	Storage Temperature Range	-10 to +60°C(-14 to +140 °F)
TISBUS	**TIS Bus**	Operating Humidity Range Bus voltage Current consumption	5 to 90 % RH (no condensation) 12-32 V DC <25 mA / 24 V DC
🛡	**Protection**	Input Video Signal	0.5-1.0 volts p-p
🎛	**Operating and display elements**	Input DDC Signal Bandwidth Video Format Supported	5 volts p-p (TTL) 18Gbit/s 4K@60Hz,YUV4:4:4 4k@30Hz/1080P/1080i/720P/576P/480P/576i/480i
⚙	**Functions**	HDCP Compliant Output Video	HDCP2.2 and HDCP1.4 HDMI2.0 and HDMI 1.4
⊞	**Dimensions**	Audio Format Supported	PCM, Dolby5.1, DTS5.1 digital audio
⬚	**Housing**	Maximum Transmission Distance Power Consumption Dimensions Mass (Main Unit)	1080P 90m, 4K 70m 68 watts (Max.) L438 x W394 x H44 mm 3 KG

FEATURES

- HDMI 2.0 version support 4K@60Hz YUV4:4:4, 18G, HDR10, Dolby Vision (HDMI LOOP)

- 4 HDMI sources for 4 HDMI displays

- Cat5e/6 & HDMI-type outputs

- Transmit up to 90m under 1080p, 70m under 4K@60Hz

- HDCP 2.2/1.4 compliant

- Bi-direction IR routed control (38~56KHz)

- 4x Analog audio & 4x SPDIF audio extraction output

- Support RS232 pass through

- Controllable via panel buttons & LCD, remote control, RS232, web GUI

- Support POC (Receiver powered by Matrix)

PACKAGE CONTENTS

1x Main Unit (HDMI Matrix)

1x DC12V4A with EU Standard cable

1x Remote control

5xIR Transmitter cables, 5x Wide-Band IR Receiver cables

1x CD for control software & user manual & Command list

1U rack design metal case with 2 mounting ear

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PANEL DESCRIPTIONS
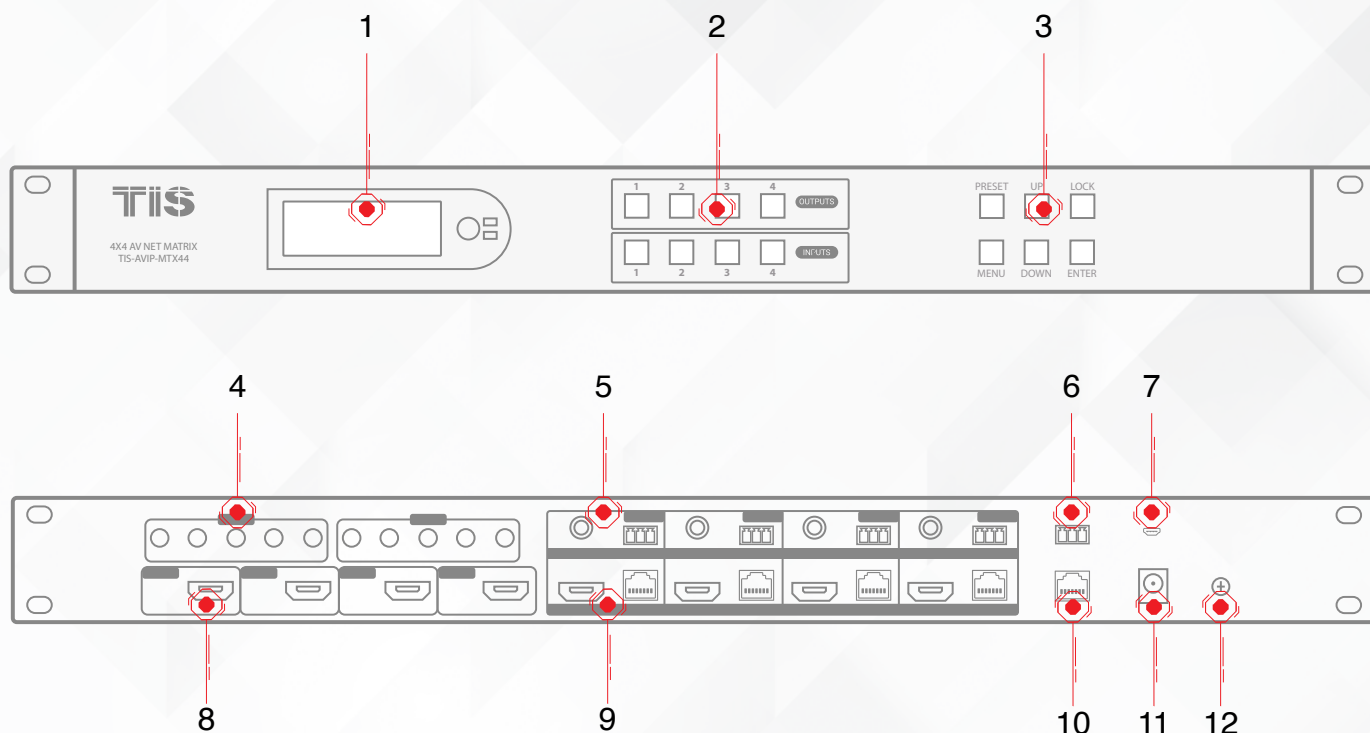
- 1) LCD: Showing Matrix information

- 2) Output button OUT1~8 & Input button IN1~8

- 3) Function button: MUTE; MENU; UP; DOWN; LOCK; ENTER

- 4) IR input port x4 & All in & IR output port x4 & All out

- 5) Audio out (analog x4; SPDIFx4)

- 6) RS232 port

- 7) FW update port

- 8) HDMI Input x4

- 9) Cat5e/6 out x4 & HDMI Loop out x4

- 10) Ethernet port

- 11) Power On/Off

- 12) Grounding

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INPUT / OUTPUT CHANNEL KEY OPERATION

Channel	Button method
Input 1-4	1. Directly press the number key, such as input channel 1, and select "1" to press (only when the output port is selected, the input channel number will be valid) 2. Long press to select all inputs
Output 1-4	Directly press the number key, such as the output channel 5, select the key "5" and press it again to cancel the selection; Long press output 4 to select all channels, and long press again to cancel
MENU	Function Button; Enter the function option or back to previous option
ENTER	Confirm Button: enter function selection mode
UP	Button for UP option
DOWN	Button for NEXT option
MUTE	Shut down the current selected output, press again to wake up
LOCK	Long press lock (button built-in blue light on), Long press again to cancel lock (button built-in blue light off)

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REMOTE CONTROL DESCRIPTION

- 1) Standby Mode

- 2) Lock or Unlock the Panel Button

- 3) Choose output from 1-4

- 4) Choose all the outputs.

- 5) X: Turn on/off output port which you select

- 6) PTP button: Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc)

- 7) Choose input from 1-4

- 8) Menu (back to previous option) button

- 9) UP and DOWN button

- 10) Enter button

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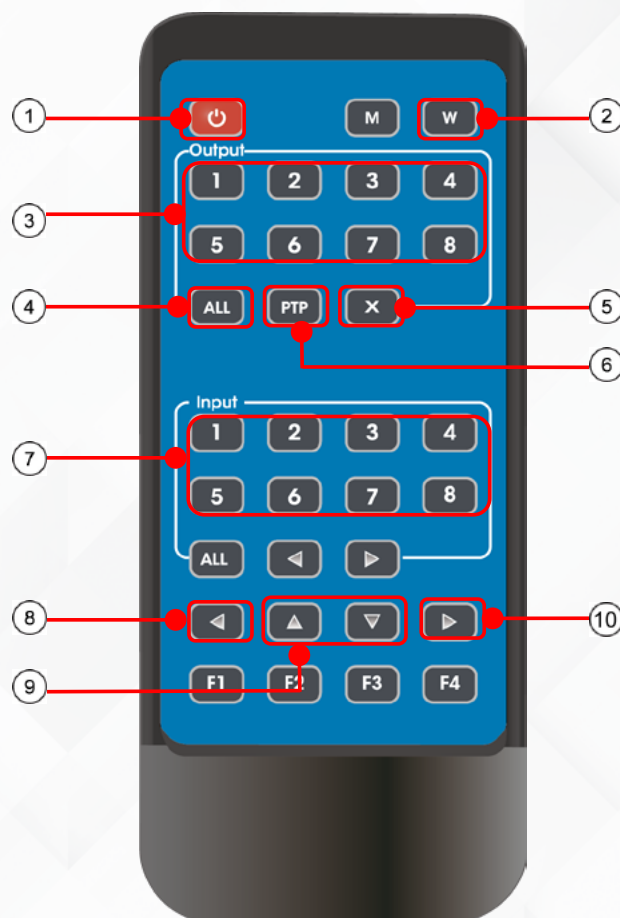
((⊲ IR SYSTEM

The matrix can pass the IR signal through the IR system to the HDMI source or pass the IR signal from the HDMI source to the HDMI sink

Dual way IR using:

Step1: "IR IN" is for HDBaseT output, "IR OUT" is for input channel

Step2: "IR IN ALL" Controlled by all input IR; "IR OUT ALL" Controlled by all output IR.

Step3: HDBaseT receiver support connect with IR receiver to control the Matrix by remote

Step4: Matrix IR channel "IR IN ALL" support connect with IR-RX cable to control the Matrix by remote

6

HDMI Cable
Cable 6/Cat5e

TV REMOTE

PC

Lan or RS232 Control by PC

cat5e/6   RS232

PC

STP

XBOX

BLU-RAY

IR IN   IR OUT   IR IN   IR OUT   IR IN   IR OUT   IR IN   IR OUT

Receiver for matrix   Receiver for matrix   Receiver for matrix   Receiver for matrix

4K TV   4K TV   4K TV   4K TV

4K TV   4K TV   4K TV   4K TV

Matrix or source remote controller   Matrix or source remote controller   Matrix or source remote controller   Matrix or source remote controller

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TIS-BUS CONTROL

▶ 1- Connect the device RS232 to IP-COM-PORT RS232 port as the following:

TIS AVIP-MTX44	IP-COM-PORT
TX	RX
RX	TX
GND	GND

▶ 2- Open the Device Search software, use the search bar to find your TIS-IP-COM-PORT

▶ 3- Set the HDBASE 4x4 matrix device to work with TIS-IP-COM-PORT RS232

▶ 4- Now you can control your device via other TIS BUS devices and TIS application

TIS Command	P1	P2	Description
Universal Switch	10	ON	Video input 1 ,all output
Universal Switch	11	ON	Video input 1 , output 1
Universal Switch	12	ON	Video input 1 , output 2
Universal Switch	13	ON	Video input 1 , output 3
Universal Switch	14	ON	Video input 1 , output 4
Universal Switch	15	ON	Video input 1 , output 5
Universal Switch	16	ON	Video input 1 , output 6
Universal Switch	17	ON	Video input 1 , output 7
Universal Switch	18	ON	Video input 1 , output 8
Universal Switch			
Universal Switch	20	ON	Video input 2 ,all output
Universal Switch	21	ON	Video input 2 , output 1
Universal Switch	22	ON	Video input 2 , output 2
Universal Switch	23	ON	Video input 2 , output 3
Universal Switch	24	ON	Video input 2 , output 4
Universal Switch	25	ON	Video input 2 , output 5
Universal Switch	26	ON	Video input 2 , output 6

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| TIS Command	P1	P2	Description
Universal Switch	27	ON	Video input 2 , output 7
Universal Switch	28	ON	Video input 2 , output 8
Universal Switch			
Universal Switch	30	ON	Video input 3 ,all output
Universal Switch	31	ON	Video input 3 , output 1
Universal Switch	32	ON	Video input 3 , output 2
Universal Switch	33	ON	Video input 3 , output 3
Universal Switch	34	ON	Video input 3 , output 4
Universal Switch	35	ON	Video input 3 , output 5
Universal Switch	36	ON	Video input 3 , output 6
Universal Switch	37	ON	Video input 3 , output 7
Universal Switch	38	ON	Video input 3 , output 8
Universal Switch			
Universal Switch	40	ON	Video input4 ,all output
Universal Switch	41	ON	Video input 4 , output 1
Universal Switch	42	ON	Video input 4 , output 2
Universal Switch	43	ON	Video input 4 , output 3
Universal Switch	44	ON	Video input 4 , output 4
Universal Switch	45	ON	Video input 4 , output 5
Universal Switch	46	ON	Video input 4 , output 6
Universal Switch	47	ON	Video input 4 , output 7
Universal Switch	48	ON	Video input 4 , output 8
Universal Switch			
Universal Switch	....		
Universal Switch	…...		
Universal Switch	80	ON	Video input8 ,all output
Universal Switch	81	ON	Video input 8 , output 1
Universal Switch	82	ON	Video input 8 , output 2
Universal Switch	83	ON	Video input 8 , output 3
Universal Switch	84	ON	Video input 8 , output 4
Universal Switch	85	ON	Video input 8 , output 5
Universal Switch	86	ON	Video input 8 , output 6
Universal Switch	87	ON	Video input 8 , output 7
Universal Switch	88	ON	Video input 8 , output 8

WEB CONTROL

■ 1) Connect the Ethernet port of matrix to the Ethernet port on PC by a crossover cable with RJ45 connectors.

■ 2) Configure your PC as follows:

▶ 1) Click Start > Control Panel > Network and Sharing Center.

▶ 2) Click Change Adapter Settings.

▶ 3) Highlight the network adapter you want to use to connect to the device and click " **Change settings of this connection.** "

■ 3) The local Area commotion properties window for Network selection appears as below:

■ 4) Click the Highlight Internet Protocol Version 4 (TCP/IPv4).

■ 5) Click Properties.

■ 6) Select Use the following IP Address for static IP addressing and fill in the details. For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.168).

■ 7) Click OK.

■ 8) Click Close.

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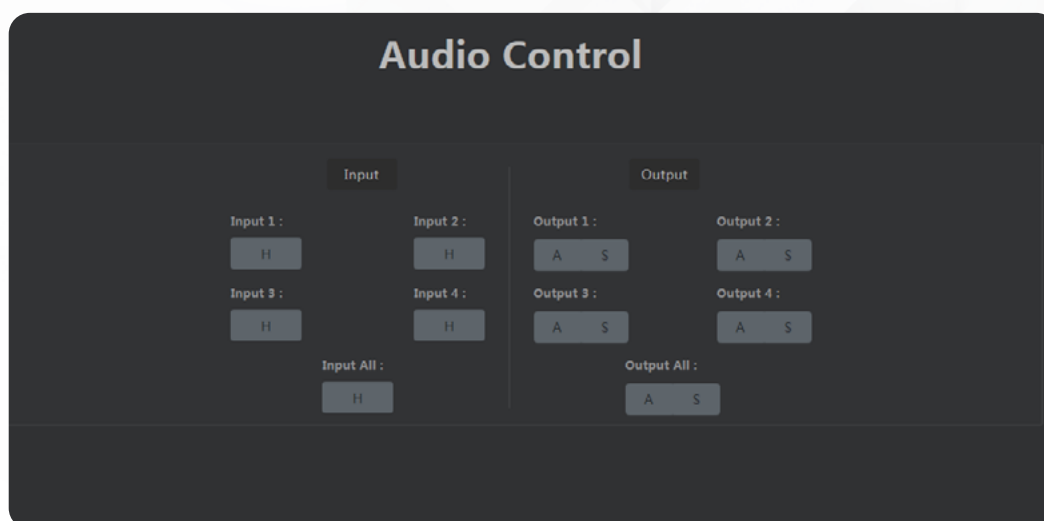
ENTER WEB AND CONTROL

Enter the default IP address of the matrix: 192.168.1.168.

Important note: Use Google, Firefox, IE11, and above browsers. Use of other browsers is not recommended.

Video" interface description:
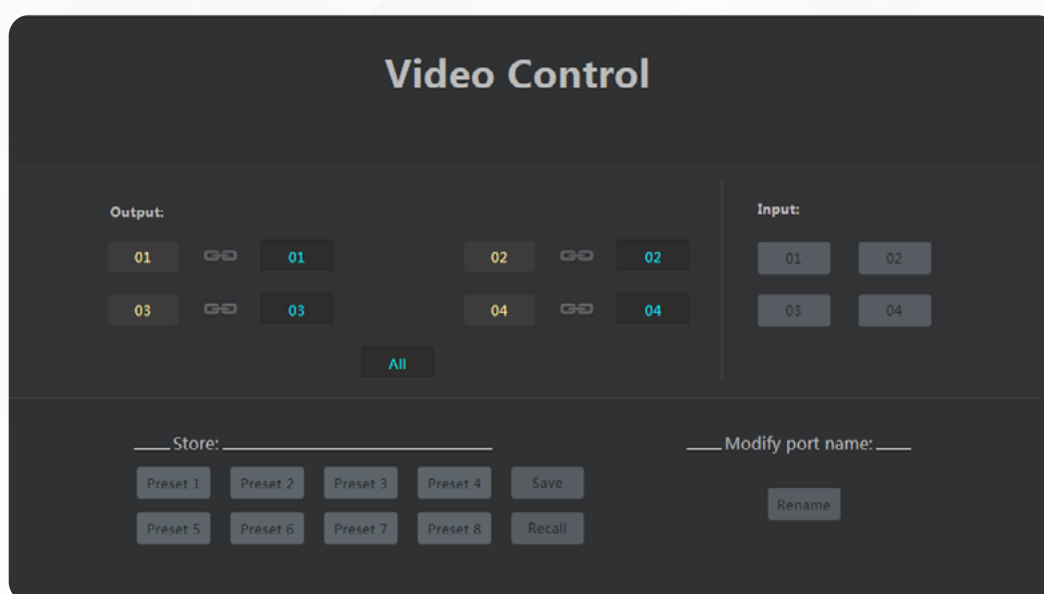
"AUDIO" interface description:

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"EDID" interface description:

Default1	4K/60Hz 444 LPCM2.0(default)	Default5	4K/60Hz 422 HDR 6CH
Default2	4K/60Hz 444 6CH	Default6	4K/60Hz 422 HDR 8CH
Default3	4K/60Hz 444 8CH	Default7	4K/60Hz 420 LPCM2.0
Default4	4K/60Hz 422 HDR LPCM2.0	Default8	1080P/60Hz LPCM2.0

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"Network" interface description:

1. The interface displays Mac address, IP address, Net mask, and Gateway address

2.DHCP can only modify IP address, sub net, mask net and gateway in the OFF state. It does not support any parameter modification in the ON state.

3.DHCP switch: Select the white scroll bar to modify. Then, click Apply.

4.**Default IP Address is 192.168.1.168**

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RS232 PASS THROUGH

By RS232 Command, the matrix can send RS232 data to control the receivers. The receiver can also send RS232 data to control the Matrix.

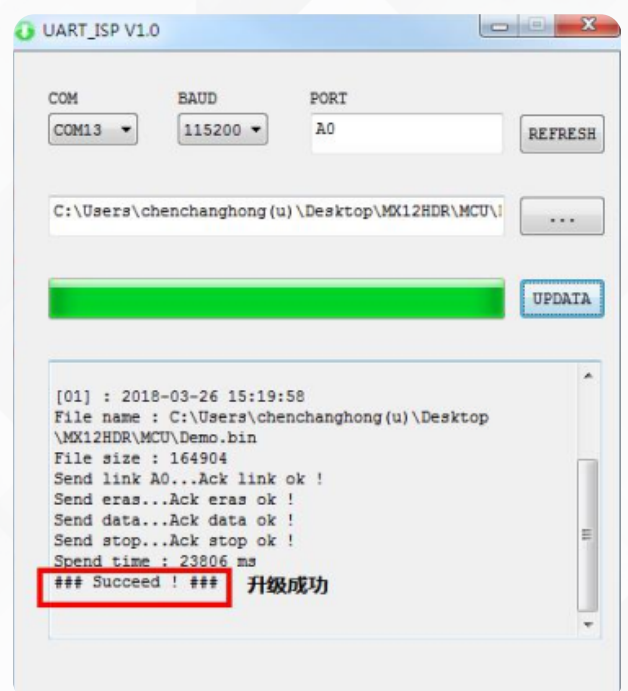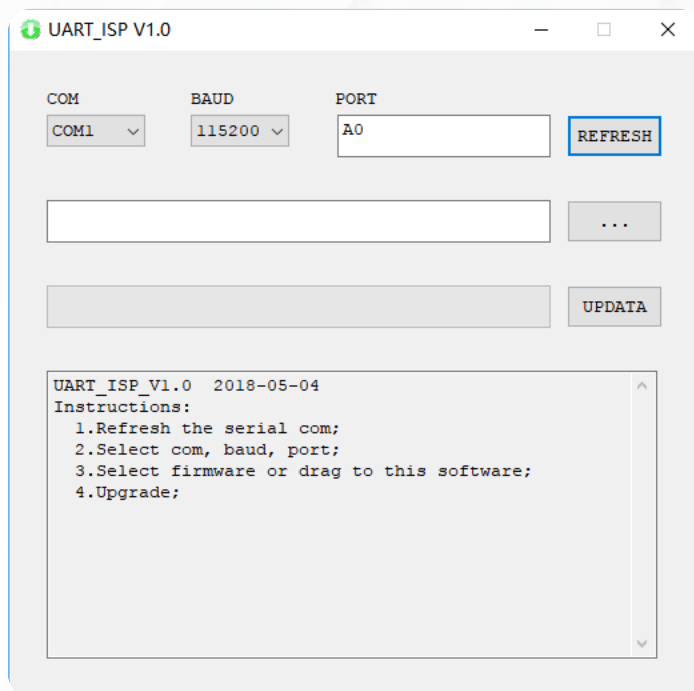Please refer to the command list included in this document.

⬆ RS232 ONLINE UPGRADING FIRMWARE

- 1) Use serial port upgrade, and the host dial code is pre- adjusted to the right to enter the serial port upgrade mode;

- 2) RS232/Micro USB connection computer and product, open special upgrade software, click "Refresh" to make serial number Refresh;

- 3) COM port to choose the port connected with the product;

- 4) The baud rate setting is consistent with the host baud rate (default 115200);

- 5) Upgrade instructions in the upgrade instruction box (some instructions are as follows);

    ▶ A1 means MCU;

    ▶ C0 means CPLD;

    ▶ F0 means HTML.

- 6) Click on the "..."Select the upgrade file for download;

- 7) Click "Update" and the system starts to upgrade;

- 8) The updated information box will prompt "Succeed" information when the upgrade is completed, and the representative program has been upgraded successfully.

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Note:Before burning, it is confirmed that HDMI input and output are suspended. If other devices are connected, the host will automatically stop the upgrade.

If the upgrade progress bar is stopped in the middle of the upgrade, then the host will need to be rebooted, then the serial port will be upgraded.

TEXAS INTELLIGENT SYSTEM LLC
SUITE# 610. 860 NORTH DOROTHY DR
RICHARDSON
TX 75081.USA

TIS CONTROL LIMITED
RM 1502-p9 Easey CommBldg
253-261 Hennessy Rd Wanchai
Hong Kong

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MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner of benzine to clean this unit.

PRODUCT SERVICE

- 1) **Damage requiring service:**

  The unit should be serviced by qualified service personnel if:

  ▶ (a) The DC power supply cord or AC adaptor has been damaged;

  ▶ (b) Objects or liquids have gotten into the unit;

  ▶ (c) The unit has been exposed to rain;

  ▶ (d) The unit does not operate normally or exhibits a marked change in performance;

  The unit has been dropped or the cabinet damaged.

- 2) **Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions.Refer all other servicing to authorized servicing personnel.

- 3) **Replacement parts:** When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.

- 4) **Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as «the warrantor») will, for the length of the period indicated as below, (Parts(2)Year, Labor(90) Days) which starts with the date of original purchase («Limited Warranty period»), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision to repair or replace will be made by the warrantor. During the «Labor» Limited Warranty period there will be no charge for labor. During the «Parts» warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

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MAIL-IN SERVICE

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

LIMITED WARRANTY LIMITS AND EXCLUSIONS

- 1) This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributable to acts of God.

- 2) THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER «LIMITED WARRANTY COVERAGE». THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRNTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)

- 3) PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.

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