

HDMI 2.0 HDBaseT Switch with HDMI and USB-C inputs

Support 4K@60hz YUV4:4:4, 18Gbps

OPERATION MANUAL



Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

SURGE PROTECTION DEVICE RECOMMENDED

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment

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1. Features

- Incorporate HDBaseT technology
- HDMI 2.0 version support 18Gbps, Deep color up to 8 bit
- 3x HDMI inputs support 4K@60HZ 4:4:4 and downscaler from 4K to 1080P
- 1x USB-C input support 4K@30HZ and 65W power charging
- 1x mirrored HDBaseT output can transmit AV signal up to 70M 1080P, 40M 4K@60Hz
- HDCP 1.4/2.2 compliant with advanced EDID management
- Support analog 3.5mm audio in and phoenix MIC in
- Support analog 3.5mm audio out and SPDIF outputs
- Support HDMI audio formats including Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
- Support Auto-switch input sources
- Control via Push buttons, IR remote, RS232 and IP control
- Support POC (receiver powered by HDBaseT switch)

2. Package Contents

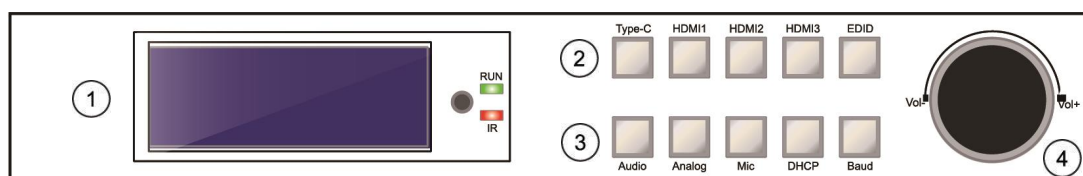
- 1). 1x Main Unit (HDBaseT Switch)
- 2). 1x Power supply DC24V/1A
- 3). 1x Remote control
- 4). 2xIR Transmitter cables, 3x Wide-Band IR Receiver cables
- 5). 1x CD for control software & user manual
- 6). 1x Receiver

3. Specifications

Operating Temperature Range	-5 to +40°C(23 to +104 °F)
Storage Temperature Range	- 10 to +60°C(14 to +140 °F)
Operating Humidity Range	5 to 90 % RH (no condensation)
Input Video Signal	0.5- 1.0 volts p-p
Bandwidth	18Gbps
Video Format Supported	4K@60Hz,YUV4:4:4 4k@30Hz/1080P/1080i/720P/576P/480P
HDCP Compliant	HDCP2.2 and HDCP1.4
Output Video	HDMI 2.0(over HDBaseT and HDMI)
Audio Format Supported	PCM2.0, Dolby5. 1, DTS5. 1 digital audio
Maximum Transmission Distance	1080P 70m, 4K@60hz 4:4:4 40m
Dimensions	219 L x 140W x 35H mm
Mass (Main Unit)	1. 175KG

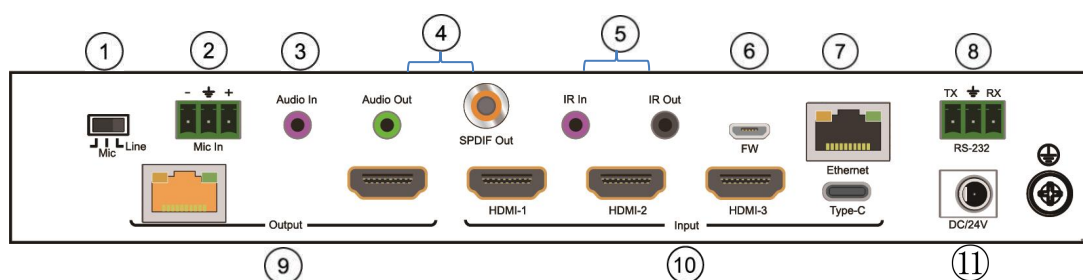
4. Panel Descriptions

Front Panel



- ①LCD: Showing HDBaseT switch information
- ②Switch button: Input Source and EDID
- ③Function button: Audio, Analog, Mic, DHCP,Baud
- ④Volume button

Rear Panel



- ①Slide Switch
- ②Mic input
- ③Audio input
- ④Audio output(analog&S/PDIF)
- ⑤IR(in & out)
- ⑥Micro USB port for firmware update
- ⑦Ethernet: IP/Web control
- ⑧RS232
- ⑨Output(HDBaseT&HDMI)
- ⑩Input(3xHDMI, 1xUSB-C)
- ⑪DC/24V

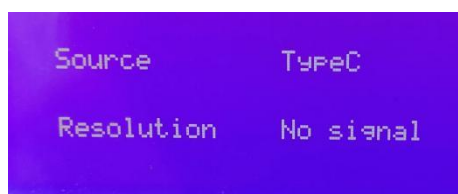
5. Application Diagram



6. Panel Introduction

1) LCD main interface used to display the input status corresponding to the output, when there is a display resolution on the right side, it shows a signal source access, if there is no resolution signal source input, it will display No signal.

Enter the menu interface, It will automatically return to the main interface and reduce the brightness after 20 seconds without other operations; the LCD enters the backlight mode (LCD screen off) if the interval between keys exceeds 30 seconds.



Operation:

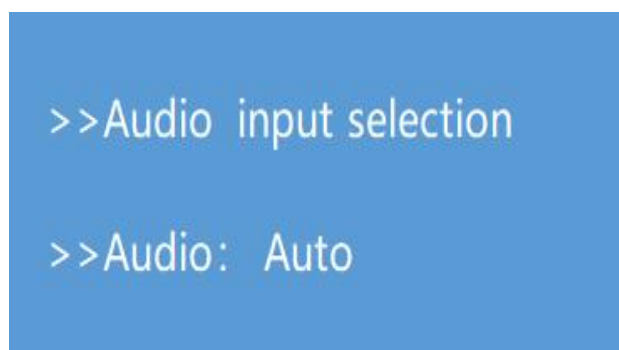
Press shortly the HDMI1, HDMI2, HDMI3, USB-C buttons to switch directly the source directly

Each time the signal source is switched, the LCD screen will be bright, the brightness will reduce after 20 seconds, and fully backlight after 30 seconds.

2) Audio Set:

User can choose four audio modes include Auto、 Analog embed、 Microphone、 Mute, The analog embed mode sound is output to the TV and overwrites the original signal source sound. The Auto mode is original signal source sound. The Microphone mode is sound output from a microphone to a TV. The mute mode is input mute.

Operation: Press “audio” button, cyclic switch the input audio



3) EDID Set:

EDID can be set four modes, 4K60(built-in)、1080P(built-in)、copy HDMI、copy HDBT,

Operation: Press “EDID” button, cyclic switch the EDID.

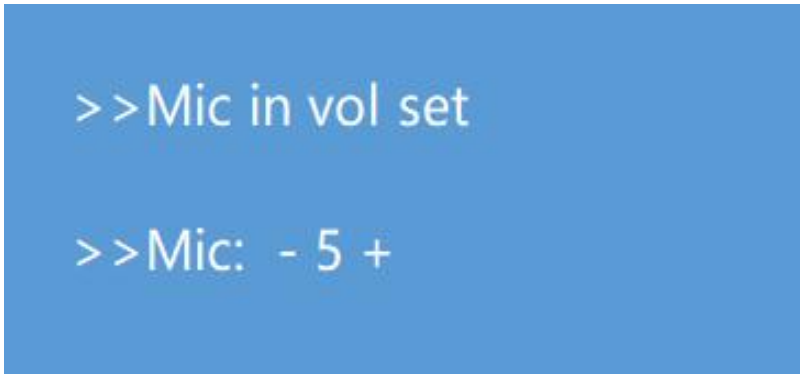


>>EDID set

>>EDID:1080P 2D 2CH

4) MIC in vol set: Mic sound range:0-80, max 80,

Operation: Press“MIC”button, when the font background is white, rotate vol button to control the sound, decreasing to the left and increasing to the right.



>>Mic in vol set

>>Mic: - 5 +

5) Analog out vol set: Analog sound range:0-80, max 80,

Operation: Press“Analog”button, when the font background is white, rotate vol button to control the sound, decreasing to the left and increasing to the right.

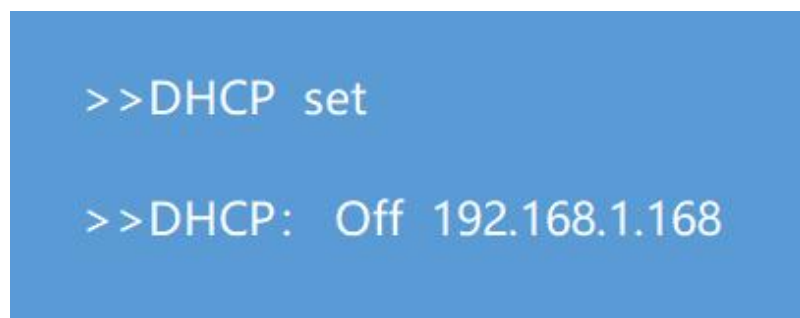


>>Analog out vol set

>>Analog: - 5 +

6) DHCP Set: By default Static IP address: 192.168.1.168, After opening DHCP, HDBaseT Switch will automatically distribute IP addresses based on the router. If there is no router, IP address will be default.

Operation: Press shortly“DHCP”button, LCD shows On. Press again, LCD shows Off.



7) Baud Set: Device Baud support 9600、 19200、 38400、 57600、 115200. By default baud is 115200.

Operation: Press “Baud”button, cyclic switch the baud.



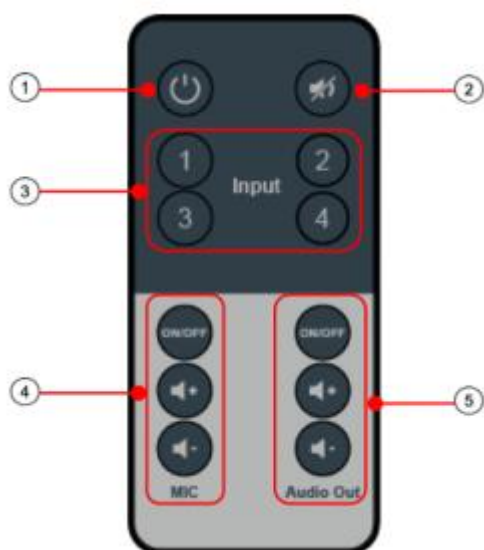
6.Audio Introduction

1) Mic audio input have three modes, include Line、 48Vmic、 No power supply mic mode by slide switch settings. In 48V mic model, users need to connect 48V microphone; In Line mode, MIC input a PCM 2.0 signal.

In No power supply mode, connect mic devices(mic input support HDMI、 USB-C). Before opening MIC functions, users need to set slide switch, then set audio to microphone on the Panel、 IR、 Web.

2) Audio embedding(HDMI、 USB-C), User need to set audio to Analog on the Panel、 IR、 Web, then connect the PCM 2.0 audio to device, after that audio can be embedding into TV.

7. Remote Control Description



- ①: Stand by
- ②: Mute: control audio switch
- ③: Input sources select
 - 1. USB-C
 - 2. HDMI 1
 - 3. HDMI 2
 - 4. HDMI 3
- ④: Mic control
 - +: Volume increase
 - : Volume decrease
- ⑤: Audio out
 - +: Volume increase
 - : Volume decrease

8. Command Control

Control software operation:

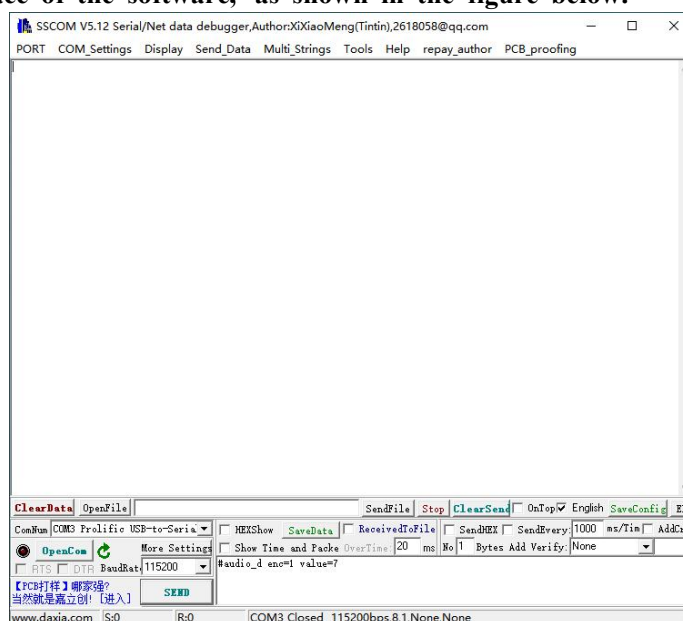
The serial control software is illustrated with SSCOM5.12.1 as an example.



Basic Settings:

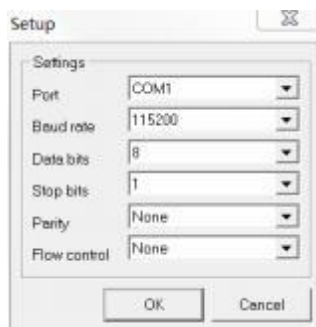
Double-click the software in the installation package to run specifically and install the RS232 software on the computer.

Enter the main interface of the software, as shown in the figure below.



Please use USB to RS232 cable connect PC and device, open RS232 software.

In the parameter configuration area, select the serial number that the serial port connect with PC, and set the baud rate of the communication protocol: 115200 (default), data bits: 8. Stop bits: 1, Parity: None, user can input the instruction in the command input area and control the machine or remote receiver.



Instructions:

- 1). All commands start from “#”, “%d” parameters No.
- 2). The “_” in the commands cannot omit.

Command	type	%d means number	%d means number
Check command	#cmd		
Select video input	#video_d in%d	1:TYPEC 2:HDMI 1 3:HDMI 2 4:HDMI 3	N/A
Audio embedding input	#audio_d enc=%d value=%d	0:autoI 1:IIS 2:mic 4:mute	MIC sound range(0~80)
Audio IIS output settings	#audio_d iis=%d	sound range(0~80)	N/A
EDID mode	#edid_d mode=%d	0:(4K60),1:(1080p) 2:(HDMI),3:(HDBT)	N/A
Reset	#factory	N/A	N/A
Baud	#uart baud=%d	0:9600 1:19200 2:38400 3:57600 4:115200	N/A
IP information check	#ip help?	N/A	N/A
DHCP settings	#ip dhcp=%d	0:off,1:on	N/A
Auto switch	#auto switch=%d	0:off,1:on	N/A
Standby	#Standby=%d	0:Standby,1:wake up	N/A

Operation:

1. Select video input: #video_d in1 ; it means switch to USB-C input
2. Audio embedding input: #audio_d enc=1 value=7 ; it means MIC sound set to 7
3. Audio IIS output settings: #audio_d iis=7 ; it means analog audio sound set to 7
4. EDID mode: #edid_d mode=2 ; it means copy HDMI EDID
5. Baud: #uart baud=0 ; it means baud set to 9600
6. DHCP: #ip dhcp=1 ; it means DHCP on

9. Web Control

9.1 Enter Web and Control

1. Change the IP address of your PC.

1). Connect the Ethernet port of HDBaseT switch to the Ethernet port on PC by a straight pin to pin 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 connection 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**.

(Default IP Address: 192.168.1.168; MASK: 255.255.255.0; Gateway: 192.168.1.1)



Control interface:

①. Video input: video input switch

Click any of Type C, HDMI 1, HDMI 2, or HDMI 3 to complete the switch,  means switch done.

②. EDID Mode: EDID settings

Click any of 4K60, 1080P, HDMI or HDBT to complete the switch,  means switch done.

③. Audio Input: Audio input settings

Click any of auto, Analog, Mute or mic to complete the switch,  means switch done.

Auto means audio of signal source, Analog means audio embedding, Mute means sound off, mic means microphone input

④. Mic: mic volume adjustment

Click and hold "" to move the button to the preset volume value and release.

⑤. Audio Output, audio volume adjustment

Click and hold "" to move the button to the preset analog volume value and release.

⑥. Setting: reset to factory settings

Click "Factory", a dialog box will pop up. Click "OK" again, set done.



The screenshot displays a control interface with two tabs: "Control" (selected) and "Network".

Video Input: Four radio buttons are shown: TYPEC, HDMI 1, HDMI 2, and HDMI 3. None are selected.

EDID Mode: Four radio buttons are shown: 4K60, 1080P, HDMI, and HDBT. None are selected.

Audio Input Mode: Four radio buttons are shown: Auto, Analog, Mute, and Mic. None are selected.

MIC: A volume slider labeled "VOL:" with a value of 5. The slider knob is positioned at the 5 mark.

Analog Output: A volume slider labeled "VOL:" with a value of 5. The slider knob is positioned at the 5 mark.

Setting: A button labeled "Factory" is visible.

9.2 Network interface

- ①Device Mac Address: (unchangeable)
- ②Device IP Address:(changeable)
- ③Device Net Mask Address: (changeable)
- ④Device Gate Way Address: (changeable)
- ⑤DHCP ON/OFF: DHCP status(changeable)
- ⑥Apply: confirmation button

Operation:

- 1.Click“IP Address”white box to change IP Address.
- 2.Click ”Net Mask Address”white box to change Net Mask Address.
- 3.Click”Gate Way Address”white box to change Gate Way Address.
- 4.DHCP ON/OFF: Click to switch DHCP ON/OFF

After the DHCP function is enabled, the boxes corresponding to IP address、 Net Mask Address and Gate Way Address become gray and cannot be changed.

After the DHCP function is disable, the boxes corresponding to IP address、 Net Mask Address and Gate Way Address become white and can be changed.

After setting DHCP each time, the following tips will be displayed in the web page and reload web page.

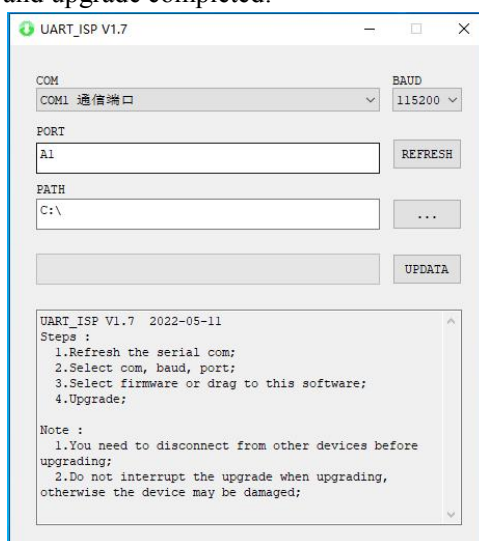
“DHCP is turned off,please wait for a while, the module will boot in 7 seconds.”

The screenshot displays a web-based network configuration interface. At the top, there are two tabs: 'Control' and 'Network', with 'Network' being the active tab. The interface contains several input fields and a toggle switch. The 'Mac Address' field is a grayed-out text box. Below it are three white text boxes for 'IP Address', 'Net Mask Address', and 'Gate Way Address'. At the bottom of these fields is a DHCP toggle switch, which is currently in the 'Off' position. A blue 'Apply' button is located at the bottom center of the configuration area.

10. Firmware Upgrade

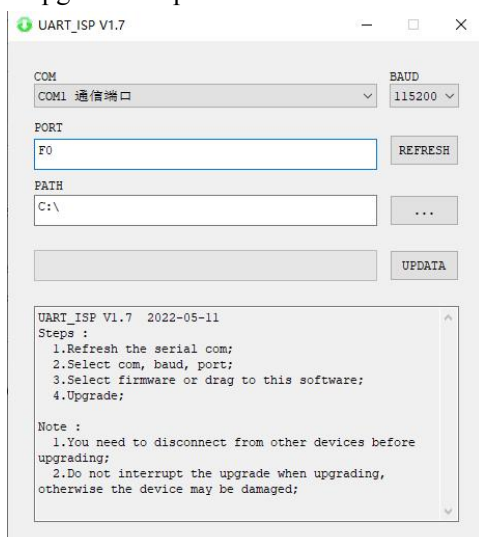
10.1 MCU Upgrade

- 1). The user should use the CD in color-box, read and install software “UART_ISP_V1.7.exe” on PC;
- 2). Connect unit to PC with USB cable from micro USB port, click “UART_ISP_V1.7.exe” software, REFRESH and choose correct COM port that connect to product, and baud rate 115200(default). The baud rate setting is consistent with the host baud rate.
- 3). Type in “A1” in PORT and choose update program file in PATH, then click UPDATA wait for update until it prompt “Succeed” information and upgrade completed:



10.2 Web Upgrade

- 1).Connect unit to PC with USB cable from micro USB port, click “UART_ISP_V1.7.exe” software, REFRESH and choose correct COM port that connect to product, and baud rate 115200(default). The baud rate setting is consistent with the host baud rate.
- 2).Type in “F0” in PORT and choose update program in PATH, then click UPDATA wait for update until it prompt “Succeed” information and upgrade completed:



MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene 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 or 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.

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 WARRANTY. (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