4x4 HDMI2.0 Matrix Support 4K@60hz YUV4:4:4, 18Gbps, HDR Operating Instruction



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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Dear Customer

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.

1. Features

- HDMI 2.0 version (Support 4K@60Hz YUV4:4:4)
- Support 3D
- Bandwidth upto 18Gbps
- HDCP2.2 input ,HDCP2.2 output HDCP1.4 input, HDCP1.4 output
- Support HDR10
- 4xHDMI Input, 4xHDMI output with 4xSPDIF Audio
- Any one of the 4 Ultra HD sources to any one of the 4 Ultra HD displays
- Support Panel Button, Local IR, RS232 Control with command, IP Control, Web GUI Control
- Support Dolby True HD and DTS-HD master audio
- Unit size: L216XW105XH34mm

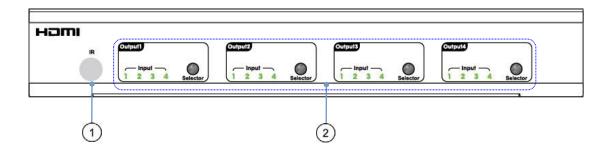
2. Package Contents

- 1). 1x HDMI Matrix
- 2). 1x 5V DC power supply
- 3). 1x Remote control
- 4). 1x IR Ext RX Cable
- 5). 1x Phoenix plugs for RS232 cable termination
- 6). 1x mounting kit
- 7). 1x CD for control software & user manual

3. Specifications

•	
Operating Temperature	-4°F to 140°F (-20°C to 60°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Resolution	480p@60hz,576P@50hz,720P@60hz, 1080P@24hz,1080P@50hz,1080P@60hz,4K@24hz,4K@30hz, 4K@60hz YUV4:2:0, 4K@ 60hz YUV4:4:4
Video Input Connectors	4xHDMI Type A, 19-pin, female
Video Output Connectors	4xHDMI Type A, 19-pin, female
RS-232 serial port	3PIN terminal block connectors
Ethernet port (IP control)	RJ45, female
IR Ext port	1x3.5mm stereo jack
Bandwidth	18 Gbps
Default IP	192.168.1.168
Rack-Mountable	Rack ears included
Dimensions(WxHxD)	L216XW105XH34mm
Net Weight	0.72kg
Power consumption	13W(Max)

4. Panel Descriptions

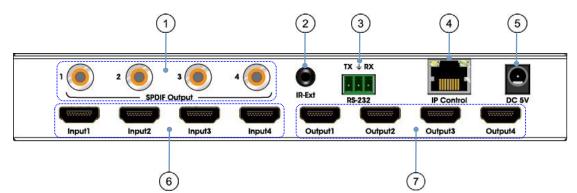


① IR receive window.

② Output button OUT1~4: choose the desired output port from input ports 1~4.

Note: 1) Turn on/off DHCP function: press the selector of output 1 and output 2 for 3 seconds.

2) Restore factory settings: when all outputs select input 1, press the selector of output 3 and output 4 for 3 seconds.



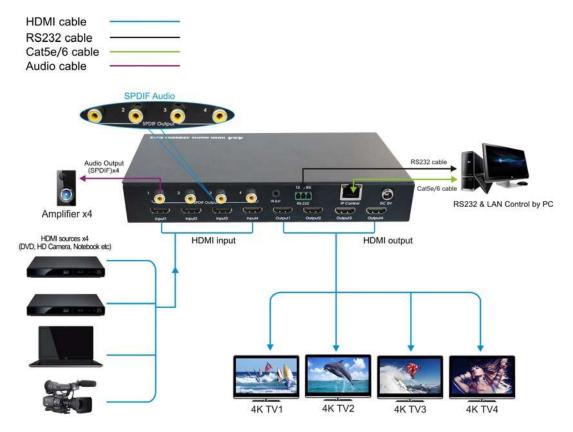
- ① SPDIFAudiooutput.
- ② For IR external receiver cable.
- ③ RS232 for control or upgrading the firmware.
- 4 IP control.
- (5) DC power input.
- 6 HDMI input port.
- (7) HDMI output port.

5. Connecting and Operating

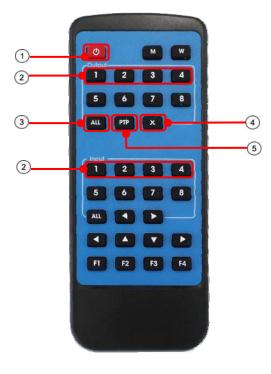
- 1. Connect source devices to input ports of the matrix
- 2. Connect HDMI output ports to TV or other HDMI sink devices.
- 3. Optional: connect RS232 cable from PC RS232 port.
- 4. Optional: connect an Ethernet cable from the TCP/IP port on the matrix to a local areanetwork.
- 5. Connect 5V POWER supply to DC power socket.

6. Power on the matrix, HDMI sources and displays.

6. Application Diagram



7. Remote Control Description



 Standby Mode.
 OUTPUT-X select INPUT-Y: Press OUTPUT-X (X means 1 to 4 of outputs) Press INPUT-Y (Y means 1 to 4 of inputs)
 All outputs select INPUT-Y: Press ALL button in zone OUTPUT
 Press INPUT-Y button (Y means 1 to 4 of inputs), then INPUT-Y switched to ALL OUTPUTS.
 Cancel Button: Cancel the switching operation
 PTP button: Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc):
 Press PTP button in Zone OUTPUT.

8. RS232 Pin Assignment

Matrix	Remote Control Console		
Assignment	PIN	Assignment	
	1	NC	
Tx	2	Rx	
Rx	3	Тх	
	4	NC	
GND	5	GND	
	6	NC	
	7	NC	
	8	NC	
	9	NC	

9. RS232 Control

9.1 Software control



Connect the 4x4 Matrix to PC with a RS232 cable, open the software included in the manual. On the COM Setting session, select the COM port according to your PC and click Connect to get connected.

On this COM setting session, you can also change the Device name, Device name support up to 16 characters. Save or edit your status by clicking the Edit button.

Come to Port Set session to select or switch your input sources for each output, We can read the current status by clicking the "Status" button, or Clear our historical operating record by clicking "Clear" button. The right down blank shows the operating history.

|--|

Picture 1: Porting Setting The EDID session helps us to Read and Configure EDID for each input, such as HDR, 3D, Data rates and Audio channel.

Search		Se	t Input HDMI 1			
Disconnect!	EDID Mode:	4K2K@60Hz (YC444) 1080P	•	Read		Apply
	T HDR 🔽	4K2K@30Hz 4K2K@60Hz (YC420)	it	○ 7.1 CH	○ 5.1 CH	© 2.0 CH
vice Name		4K2K@60Hz (YC444) Copy From TV1	AL 2	,		
4HDMI2.OMatrix	EDID Mode:	Copy From TV2 Copy From TV3 Copy From TV4		Read		Apply
Get		3D 🗆 30Bit 🗖 36Bit	☐ 48Bit	C 7.1 CH	⊂ 5.1 CH	@ 2.0 CH
Edit	EDID Mode:	Se 4K2K@60Hz (YC420)	t Input HDMI 3	}Read	ĺ.	Apply
	□ HDR □			○ 7.1 CH	⊂ 5.1 CH	© 2.0 CH
		Se	t Input HDMI 4	1		
	EDID Mode:	4K2K@60Hz (YC420)	•	Read		Apply
	T HDR 🔽	3D 🗆 30Bit 🗖 36Bit	□ 48Bit	⊂ 7.1 CH	C 5.1 CH	© 2.0 CH

Picture 2: EDID Setting

The IP configure session helps to read and configure the IP address and MAC of the Matrix. Click DHCP if you want the router assign an automatic IP for the Matrix.

OM Setting P ort: COM9 -	ort Set EDID Config IP Con	fig Net Config	System Cor	fig	
Search	□ IP Address Setting				
Disconnect!	Host IP Address:	192 . 168	. 1 .	168	
evice Name	Net Mask:	255 . 255	. 255 .	0	
*4HDMI2.0Matrix	Router IP Address:	192 . 168	. 1 .	0	
Get					
Edit	MAC Address: A4 : BA	x:82:29:71:A)	Г DHCP	

Picture 3: IP Config

The Net Config session allows us to configure the PC and Matrix in the same LAN with the IP Address and connection.

Click "Net config" \rightarrow "Connect" \rightarrow "Search Device" \rightarrow "Sel Device Number" \rightarrow "Connect" then you can see the device name, it meas connect successfully.

HDMI 2.0 4*4 Matrix	A 44 AB 80 79.4 100	
COM Setting Port: COM1 - Search	Image: Config and Config	1
Connect		<u></u>
Get		

Picture4:NetConfig

You can also click "IE", easy and click to enter into web.

COM Setting Port: COM1 🔽 Search Connect	Port Set EDID Config IP Config Net Config System Config Current PC Information IP Address: 192 . 168 . 0 . 140 Ports: 5001 Disconnect
Device Name Get Edit	Host Device Information IP Address: 192 . 168 . 0 . 173 1->IP=192.168.0.173 Name=4*4HDMI2.0Matri Sel Device Number: 1
	(7) Reset IE

Picture 5: Net Config

The last session is System Config, which allows power ON/OFF or reset, default the Matrix.

OM Setting prt: COM9 +	Port Set EDID Config IP	Config Net Config	System Config		
Search Disconnect!	Command:			Apply	
Discollect		Bay	ver Ctrl		
vice Name 4HDMI2.0Matrix	Reset	On	OFF		
Get	Default				
Edit					

Picture 6: System config

9.2 Command Control

- 1). Open CommUart Assistant.
- 2). Comport setting:

Baud Rate:	115200 bps
Parity:	None
Data Bits:	8 bit
Stop Bits:	1 bit

3). Enter Port Command in Send options.

	CommUart Assistant	🖓
COM Settings	Data receive	SAVAGE V4.2.
PortNum COM9	MtP@W0E000203010203020203030203342a3448444d49322e304d617472697	B#
BaudB 115200 -	MtP@W0901#	
	MtP@W0E000203010203020203030203342s3448444d49322s304d617472697(MtP@W0901#	5 ₩
	MtP@W0E000203010203020203030203342s3448444d49322e304d617472697(B#
DataB 8 🗾	MtP@W0901#	
StopB 1	MtP@W0E000203010203020203030203342s3448444d49322s304d6174726978	B#
	MtP@W0901#	
Close		
lecv Options		
TReceive to file		
🦳 Auto linefeed		
🗌 Show timestamp		
🔽 Receive as hex		
🦵 Pause receive		
Save Clear		
end Options		
-		
└ Data from file └ Auto checksum		
Auto checksum Auto clear input		
∫ Auto clear input □ Send as hex	1.DCD • 2.RXD • 3.TXD • 4.DTR • 5.GND • 6.DSR • 7.RTS •	8.CTS + 9.RI+
Period 1000 ms		
	@W 04 03 02 01 00 #	Send
Load Clear		
COM Settings	Send: 67 Recv: 181	6 Reset

4). Command

Picture 7

Command	Function	Note
@W 04 00 01 02 03 #	PTP Function	Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc)
@W 50 #	Reboot	
@W 51 #	Restore Factory Setting	
@W 0F 00 #	Standby	00: Standby Mode 01: Cancel "Standby Mode"

5). Select HDMI input for HDMI output

Command	Description
00	Output1
01	Output2
02	Output3
03	Output4
04	All Output
00	Input1

01	Input2
02	Input3
03	Input4

E.g: @W 00 00 #: Output 1 display Input1

Output 1____ Input1

6). EDID Setting

@W XX AA BB #:

Parameter Description:

XX for configuration of "INPUT EDID"

Command	05	06	07	08
Description	Input1	Input2	Input3	Input4

AA for selecting "Video Mode"

Command	00	01	02	03
Description	1080P	4K2K_30	4K2K_60(YC420)	4K2K_60(YC444)
	a la al avec f			

AB for selecting below function

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
HDR	48Bit	36Bit	30Bit	7.1CH	5.1CH	2CH	3D
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0

"1" : choose the function, "0" : doesn't choose the function.

E.g: 11001001: HDR, 48Bit, 7.1CH, 3D

Chang Binary code "11001001" to hexadecimal format "C9".

E.g: @W 05 03 C9 #

The EDID of input 1 is: 4K2K_60(YC444)、HDR、48Bit、7.1CH、3D.

10. Web Control

10.1 Static IP Address.

The default IP Address of HDMI Matrix is 192.168.1.168.

10.1.1 Change the IP address of your PC.

1). Connect the HDMI Matrix and PC to the LAN.

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). Connect to the device and click change settings of this connection:

	9	
Connect using:		
1ntel(R) 825	79V Gigabit Network Conn	ection
		Configure
This connection us	ses the following items:	- configure
Client for	Microsoft Networks	
and a	Network Monitor 3 Driver	
QoS Pac		
	Printer Sharing for Microsoft	Networks
	Protocol Version 6 (TCP/IPv	
	ratocal Version 4 (TCP/IP)	
🗹 🔺 Link-Laye	er Topology Discovery Map	per I/O Driver
	er Topology Discovery Resp	oonder
🗹 🔺 Link-Laye		-
Install	Uninstall	Properties
	Uninstall	Properties
Install Description	6. The latest version of the	
Install Description TCP/IP version that provides co		internet protocol
Install Description TCP/IP version	6. The latest version of the	internet protocol
Install Description TCP/IP version that provides co	6. The latest version of the	internet protocol

Picture 8

- 4). Highlight Internet Protocol Version 4 (TCP/IPv4) by clicking on the item.
- 5). Click **Properties**.

eneral	Alternate Configuration				
this cap	n get IP settings assigned a bability. Otherwise, you nee appropriate IP settings.				
 O 	otain an IP address automa	tically			
O Us	e the following IF address:				
IP ad	ddress:		-8	<u>.</u>	
Subr	iet mask:	74.1	- 52	27	
Defa	ult gateway;		÷.	•	
() O	btain DNS server address a	utomatically			
O Us	se the following DNS server	addresses:			
Prefi	erred DNS server:		3		
Alter	nate DNS server:		3	ii.	
Πv	alidate settings upon exit			Adva	anced

Picture 9

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 192.168.1.2 to 192.168.1.254 (excluding 192.168.1.168).

eneral								
You can get IP settings a this capability. Otherwise for the appropriate IP se	e, you need :							
🔘 Obtain an IP addre	ss automatica	ally						
() Use the following IF	Paddress:							
IP address:		192 .	168	x	1		2	
Subnet mask:		255 .	255	. 2	55	1	0	
Default gateway:		Γ.					_	
Obtain DNS server		47 II.						
Obtain Divis server Obtain Divis server Obtain Divis server								
Preferred DNS server					_	•0		
Alternate DNS server		-		a a		23 23		
	81.					80		
🔲 Validate settings u	ipon exit				Γ	A	dvar	nced
						10000	120050	10000000000

Picture 10 7).

Click **OK**.

8). Click Close.

10.1.2 Open the web browser and control the matrix.

1). Open the Web browser and enter the IP address of the HDMI Matrix:192.168.1.168, then you can set the function as below pictures:

← → C ① 192.168.1.168				₽ 1☆
Port Set	EDID	Config		IP Config
	Port !	Set page		
Output1: Input 1	Input 2	Input 3	Input 4	4
Output2: Input 1	Input 2	Input 3	Input 4	4
Output3: Input 1	Input 2	Input 3	Input 4	4
Output4: Input 1	Input 2	Input 3	Input 4	4
Output All: Input 1	Input 2	Input 3	Input 4	1

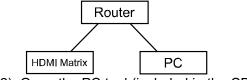
Picture 11: Port Setting Page

11 HDMI2.0 4*4 N	fatrix X		
C 01	Contraction of the local division of the loc		\$ ∂ ☆
Port Set	EDID	Config	IP Config
	EDID 5	Set page	
Input H	DMI1: 4K2K@60Hz[YC444]	•	Apply
四 3	D 🖾 30Bit 🖾 36Bit 🖾 480	Bit @ 7.1Ch @ 5.1Ch	\$ 2.0Ch
Input HI	0MI2: 4K2K@60Hz[YC444]	•	Apply
	3D 0 30Bit 0 36Bit 0 48		Carriel Control La
	10 - 30BIE - 36BIE - 46	Bit 07.1Ch 05.1Ch	= 2.0Ch
Input Ht	0MI3: 4K2K@60Hz[YC444]	•	Apply
(i) 3	D 0 30Bit 0 36Bit 0 48	Bit @ 7.1Ch @ 5.1Ch	# 2.0Ch
Input HI	0MI4: 4K2K@60Hz[YC444]	•	Apply
10 g	D 🛛 30Bit 💭 36Bit 🗐 481	Bit 07.1Ch 05.1Ch	* 2.0Ch
	Picture 12: EDI	D Setting Page	
D upartes da	Picture 12: EDI	D Setting Page	
	Matrix ×	D Setting Page	
← → C ①	Matrix ×	D Setting Page	
< → C (0)	Matrix ×	10 10 1	Q i ☆)
	Matrix ×	Config	
< → C (0)	Matrix x 192.168.1.168 EDID	Config	Q i ☆)
< → C (0)	Matrix × 192.168.1.168 EDID IP Cor	Config Ifig page	Q i ☆)
< → C (0)	Matrix × 192.168.1.168 EDID IP Cor MAC Address:	Config 1fig page 60:51:38:07:63:90	Q i ☆)
< → C (0)	Matrix × 192.168.1.168 EDID IP Cor MAC Address: Host IP Address:	Config Ifig page 60:51:38:07:63:90 192:168:1.168	Q i ☆)
< → C (0)	Matrix × 192.168.1.168 EDID IP Cor MAC Address: Host IP Address: Net Mask Address:	Config Ifig page 6C:51:38:07:63:9C 192:168:1:168 255:255:265:0	Q i ☆)
< → C (0)	Matrix × 192.168.1.168 EDID IP Cor MAC Address: Host IP Address: Net Mask Address: Router IP Address:	Config 1fig page 6C:51:38:07:63:9C 192:168:1.168 255:255:255:0 192:168:1.1	\$ ☆
< → C (0)	Matrix × 192.168.1.168 EDID IP Cor MAC Address: Host IP Address: Net Mask Address:	Config Ifig page 6C:51:38:07:63:9C 192:168:1:168 255:255:265:0	Q 🖈

Picture 13: IP Configuration Page

10.2 DHCP

You can also choose "DHCP" for HDMI Matrix (refer to 9.1 picture3) 1). Connect the HDMI Matrix and PC to the LAN.



2). Open the PC tool (included in the CD).

DC tool

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3). Search the IP address of HDMI Matrix, please refer to 9.1 picture 4 & picture 5. 4). Open the web browser and enter the IP address you searched, then you can set the function as below pictures:

Port Set		EDID	Config		IP Co	nfia
		2010	ooinig			ing.
		Port S	set page			
Output1: In	put 1	Input 2	Input 3	Input 4	4	
Output2: Inj	out 1	Input 2	Input 3	Input 4	4	
Output3: Inc	out 1	Input 2	Input 3	Input 4	4	
Output4: In	put 1	Input 2	Input 3	Input 4	4	
Output All:	nput 1	Input 2	Input 3	Input 4	1	

← → C 0 192.168.0.	20	№ ☆ i
Port Set	EDID Config	IP Config
	EDID Set page	
Input HDMI1: 48	2K@60Hz[YC444] •	Apply
🖾 3D 🖾 30B	i <mark>t </mark> 36Bit 🗐 48Bit 💿 7.1Ch (5.1Ch 🛎 2.0Ch
Input HDMI2: 4K	2K@60Hz[YC444] ▼	Apply
🖾 3D 🖾 308	it 🗐 368it 🗐 488it 🔍 7.1Ch	0 5.1Ch 🛎 2.0Ch
Input HDMI3: 4K	2K@60Hz[YC444] •	Apply
0 3D 0 30B	it 🗍 36Bit 🗐 48Bit 🎯 7.1Ch 🛛	0 5.1Ch 🕷 2.0Ch
Input HDMI4: 4K	2K@60Hz[YC444] •	Apply
0 3D 0 30B	it 🗐 36Bit 🗐 48Bit 🎯 7.1Ch 🕯	5.1Ch # 2.0Ch

Picture 15: EDID Setting Page

G [0	192.168.0.20		₿ ☆
Port Set	EDID	Config	IP Config
	IP Cor	ifig page	
	MAC Address:	6C 51 38 07 63 9C	
	Host IP Address:	192,168.0.20	
	Net Mask Address:	265 255 265 0	
	Router IP Address:	192.168.0.1	
	Device Name:	1234567890123456	

Picture 16: IP Configuration Page

11. Online upgrading firmware.



1). Connect the HDMI Matrix with PC via RS232 port.

2). Open the software to upgrade firmware (Included in the manual).

3). Click "Search" choose the port, then click "connect", then you can see "S3R(C)", click "Load FW File" to upload the firmware, click "update", the firmware can be upgraded in one minute.

PDATE_FW	1	(3)	1200	×
Port Sel:		sconnect		
S3RLC		Reset		
D:\upgrading firmwar	e\MUX_ALL_HDMI20(1).hex		Loa	d FW File
[Update
		2.L	*	

Picture 17:Upgrading firmware

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, 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.

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

 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.