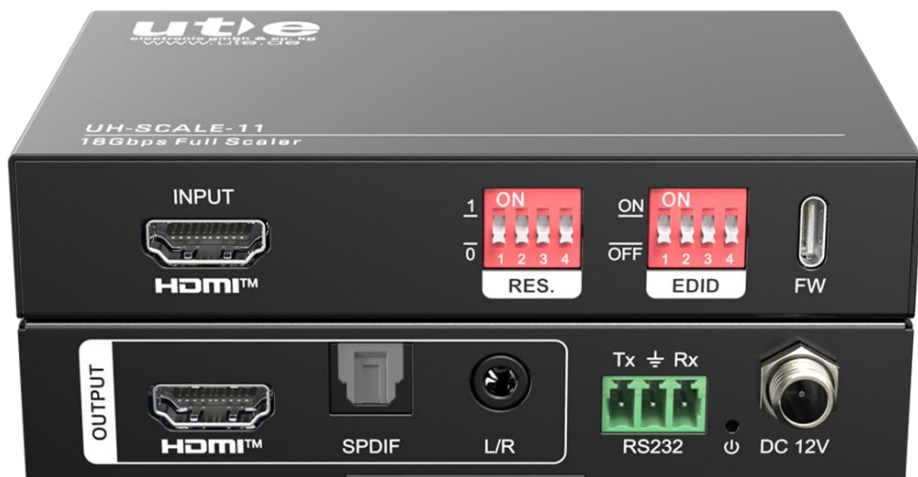


User Manual

UH-SCALE-11

18Gbps HDMI Full Scaler w/ Audio Breakout



All Rights Reserved

Version: UH-SCALE-11_2026V1.0


Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till December 29th, 2025. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

All product function is valid till 2025-12.

Trademarks

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The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

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 B 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 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. It may result in electrical shock or burn.
- Using supplies or parts not meeting the specifications of product 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 extension cable in case of extrusion.
- 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 fine ventilation to avoid damage caused by overheat.
- 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, and please treat them as normal electrical wastes.

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1. Product Introduction

1.1 Introduction to 18G HDMI Full Scaler w/ Audio Breakout

UH-SCALE-11 is a compact yet powerful HDMI full scaler with audio breakout features. It delivers full 18Gbps HDMI 2.0 with HDCP 2.2 compliance. It also features scaling up to 4K@60Hz RGB 8-bit, and downscaling to 640×480@60Hz.

DIP switchers for scaling and EDID make is easy to switch video resolution. RS232 is also provided for advanced control.

1.2 Features

- 18Gb, HDMI 2.0, HDCP 1.4/2.2 compliant.
- UP scaling video up to 4K@60Hz 4:4:4.
- Downscaling video up to 640×480@60Hz.
- Audio de-embedded to digital or analog.
- Switchable output resolution.
- CEC Passthrough.
- Advance EDID management.
- Control by DIP Switch, RS232

1.3 Package List

- 1x UH-SCALE-11: 18Gbps HDMI Full Scaler w/ Audio Breakout
- 1x 3-pin to DB9 serial cable
- 2 Mounting ears and 2 screws
- 4x Rubbery feet
- 1x Power Adapter (12V DC 1A)
- 1x User Manual

Notes:

- Please confirm if the product and the accessories are all included, if not, please contact with the dealers.
- Please contact your dealer immediately if any damage or defect in the components is found.

2. Panel Description

2.1 Front Panel

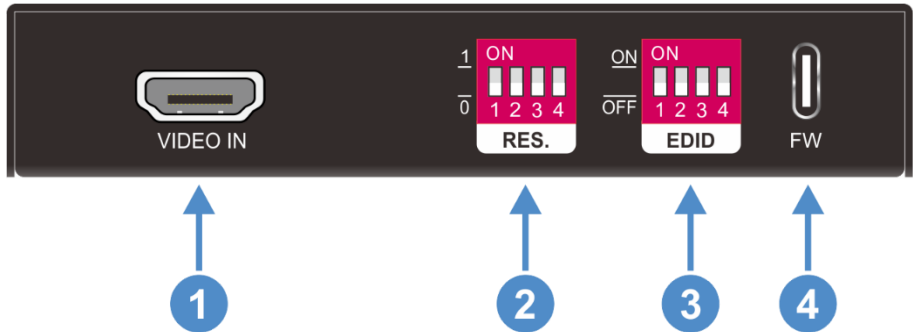



Figure 2- 1 UH-SCALE-11 Front Panel

- ① **VIDEO IN:** Connects to a video source.
- ② **RES:** 4-position DIP switch to set the output resolution.
- ③ **EDID:** 4-position DIP switch to set the EDID.
- ④ **FW:** A USB-C port to upgrade the chipset.

 **Note:** Pictures shown in this manual are only for reference.

2.2 Rear Panel

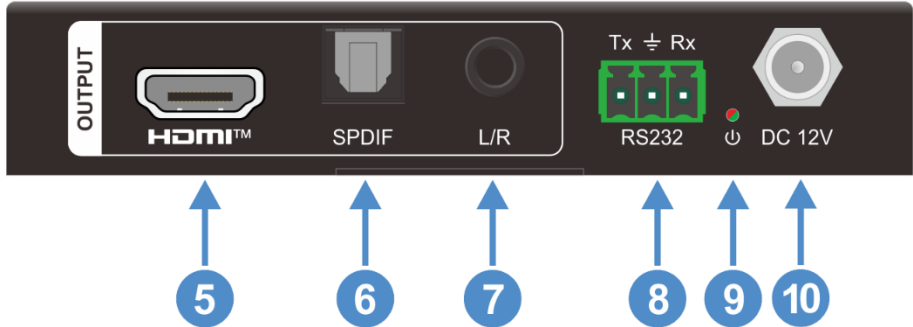



Figure 2- 2 UH-SCALE-11 Rear Panel

- ⑤ **VIDEO:** An HDMI output port, to connects to a display.
- ⑥ **SPDIF:** Toslink port for digital audio output.
- ⑦ **L/R:** 3.5mm audio jack to output analog audio.
- ⑧ **RS232:** 3-pin terminal block to connect the RS-232 control device.
- ⑨ **POWER LED:** A power LED, illuminates green in normal operation, and illuminates red in standby mode.
- ⑩ **DC 12V:** Connect to the DC 12V/1A power adapter.

 **Note:** Pictures shown in this manual are only for reference.

3. System Connection

3.1 Usage Precaution

- Verify all components and accessories included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All the power switches, plugs, sockets and power cords should be insulated and safe.
- All devices should be connected before power on.

3.2 System Diagram UH-SCALE-11

The following diagrams illustrate typical input and output connection/ application that can be utilized with UH-SCALE-11:

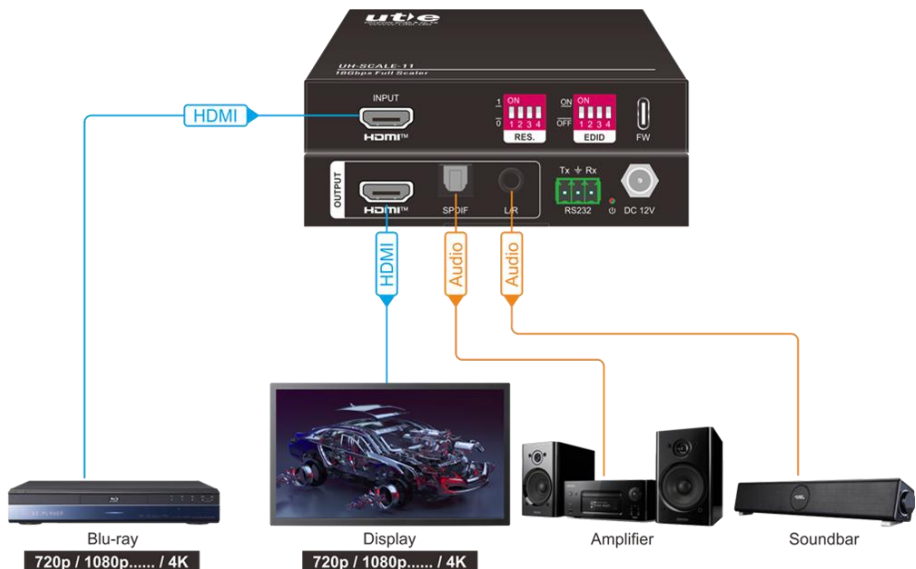
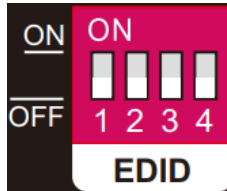


Figure 3- 1 Connection and System Diagram

4. Function Introduction

4.1 EDID Setting



PIN 1-3	EDID
000	Obtain the Display EDID (default)
001	1080p@60Hz 4:4:4, 8bit, Audio 2CH PCM
010	3840x2160p@30Hz 4:4:4, 8-bit, Audio 2CH PCM
011	3840x2160p@60Hz 4:2:0, 8-bit, Audio 2CH PCM
100	3840x2160p@60Hz 4:4:4, 8-bit, Audio 2CH PCM
101	3840x2160p@60Hz 4:4:4, 10-bit, HDR (Inc DV), Audio 2CH PCM
110	User Defined
111	EDID Management

Notes:

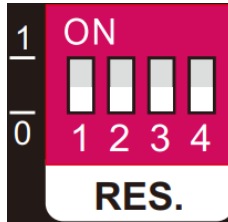
- Pin 4 is reserved.
- Pictures shown in this manual are only for reference.

UH-SCALE-11: 18Gbps HDMI Full Scaler w/ Audio Breakout

When the EDID DIP is switched to 111, below EDID are available to set via RS232 command.

No.	EDID
00	1080p@60Hz 4:4:4, 8-bit, Audio 2CH PCM (Default)
01	1920x1200@60Hz, 8-bit, Audio 2CH PCM
02	3840x2160p@30Hz 4:4:4, 8-bit, Audio 2CH PCM
03	3840x2160p@30Hz 4:4:4, 10-bit HDR, Audio 2CH PCM
04	3840x2160p@60Hz 4:2:0, 8-bit, Audio 2CH PCM
05	3840x2160p@60Hz 4:4:4, 8-bit, Audio 2CH PCM
06	3840x2160p@60Hz 4:4:4, 10-bit, HDR (Inc DV), Audio 2CH PCM
07	User Defined 1
08	User Defined 2
09	EDID Pass-through (Copy from sink)

4.2 Output Resolution Setting



RES.	Output Resolution	RES.	Output Resolution
0000	3840×2160@60	1000	1920×1080@30
0001	1024×768@60	1001	1920×1080@60
0010	1280×1024@60	1010	1920×1200@60
0011	1280×720@60	1011	2560×1440@60
0100	1280×800@60	1100	2560×1600@60
0101	1360×768@60	1101	3840×2160@30
0110	1440×900@60	1110	3840×2160@50
0111	1680×1050@60	1111	Res. Management

UH-SCALE-11: 18Gbps HDMI Full Scaler w/ Audio Breakout

When the RES. DIP is switched to 1111, below resolutions are available to set via RS232 command.

No.	Output Resolution	No.	Output Resolution
01	640×480@60	02	800×600@60
03	720×480@60	04	720×576@50
05	960×540@60	06	960×720@60
07	1024×768@60	08	1280×768@60
09	1280×720@60	10	1280×720@50
11	1280×800@60	12	1280×1024@60
13	1360×768@60	14	1440×900@60
15	1400×1050@60	16	1600×1200@60
17	1680×1050@60	18	1920×1080@60
19	1920×1080@50	20	1920×1080@24
21	1920×1080@25	22	1920×1080@30
23	1920×1200@60	24	2560×1600@60
25	2048×1080@50	26	2048×1080@60
27	2560×1080@50	28	2560×1080@60
29	2560×1440@60	30	3840×2160@24
31	3840×2160@25	32	3840×2160@30
33	3840×2160@50	34	3840×2160@60 (default)
35	4096×2160@24	36	4096×2160@25
37	4096×2160@30	38	4096×2160@50
39	4096×2160@60		

4.3 No Signal Screen

The VIDEO OUTPUT port will output a pure color to the full screen.

These colors are available: red, green, blue, white, yellow, cyan, purple, black. Green is the default, and it can be changed via RS232 command.

4.4 Freeze Frame

The screen will freeze on a specific frame, with no audio output at this time. When the frame is frozen, the video source continues to play both video and audio with interruption.

This function will work by sending RS232 command to it.

4.5 Mute Setting

The output audio of the SPDIF and 3.5mm audio jack can be muted separately by send the RS232 command to it.

4.6 Rotate Screen

The output image can be rotated either by 0° or 180°, this function will only work by sending RS232 command to it.



0°



180°

4.7 Flip Screen

The output image can be flipped horizontally or vertically; this function will only work by sending RS232 command to it.



Original



Flip Horizontally



Flip Vertically

5. RS232 Control

Connect the control device (PC) to the RS-232 port of US-SCALE-11.

The UH-SCALE-11 can be controlled by sending RS232 commands via RS-232 control software installed in PC.

These baud rates are supported: 2400, 4800, 9600, 19200, 38400, 57600(default), or 115200.

5.1 RS232 Control Software

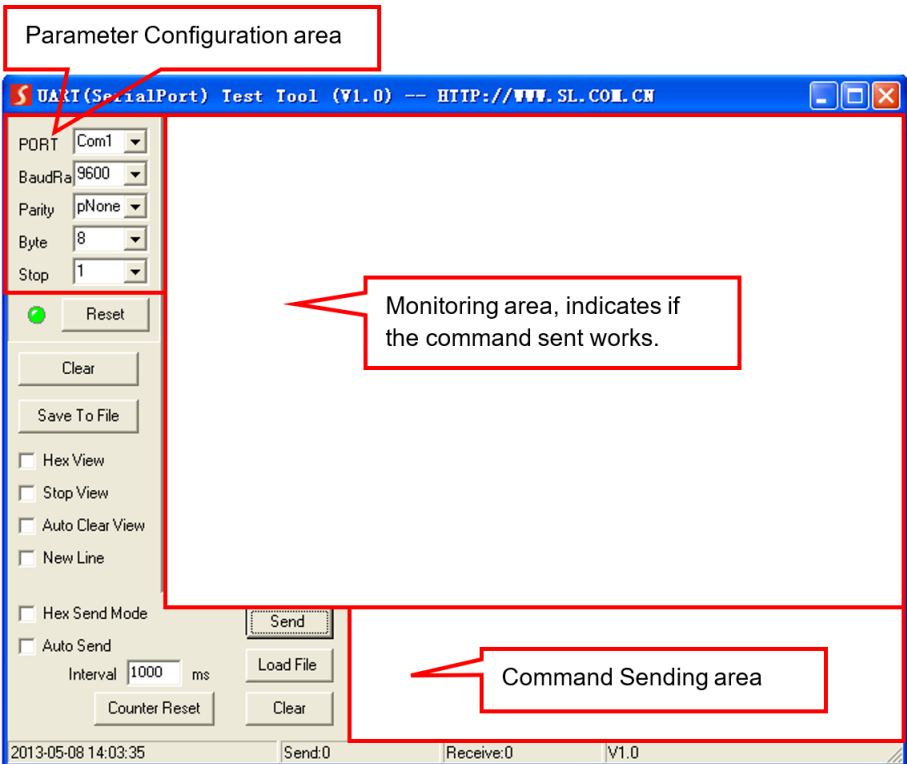
- Installation: Copy the control software file to the computer connected with UH-SCALE-11.
- Uninstallation: Delete all the software files in corresponding file path.
- Basic Settings:
First to connect UH-SCALE-11 with all input devices and output devices needed, then to connect it with a computer which is installed with RS-232 control software. Finally, double-click the software icon to run this software.

Here we take the software CommWatch.exe as example. The icon is showed as below:



CommWatch.exe

The interface of the control software is showed as below:



Please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, and then the command is ready to be sent in Command Sending Area.

5.2 RS232 Command

Communication protocol: RS232

Baud rate: 57600

Data bit: 8

Stop bit: 1

Parity bit: none

Commands	Descriptions	Example
>SetPower [param]	Enter/exit standby status [param] = On, Off On: Power on Off: Power off	>SetPower On >SetPower Off
>GetPower	Get the standby status	>GetPower
>SetAutoStandbyTime [param]	Set an idle time before automatically entering the standby mode. [param] = 1 - 180, unit is minute.	>SetAutoStandby Time 5
>SetAutoStandby [param]	Turn on/off the auto standby mode. [param] = On, Off On: turn on auto standby mode. Off: turn off auto standby mode.	>SetAutoStandby On
>GetAutoStandby	Check the status of auto standby mode.	>GetAutoStandby
>GetAutoStandbyTime	Check the idle time before automatically entering the standby mode.	>GetAutoStandby Time
>GetFirewareVersion	Check the firmware version.	>GetFirewareVersion
>GetType	Check the device name.	>Gettype
>GetDeviceModel	Check the device model number.	>GetDeviceModel
>SetOutputRES [param]	Set the output resolution. [param]=01 - 39 Check the [Output Resolution Setting] for more details.	>SetOutputRES 34
>GetOutputRES	Check the current output resolution.	>GetOutputRES
>GetRS232Baud	Get the RS232 baud rate.	>GetRS232Baud
>SetRS232Baud [param]	Set a baud rate for this device. [param] = 01 - 07 01: 2400, 02: 4800,	>SetRS232Baud 06

Commands	Descriptions	Example
	03: 9600, 04: 19200, 05: 38400, 06: 57600 (default), 07: 115200	
>Reboot	Reboot the system.	>Reboot
>SetMirror [param]	Set the mirror mode for the output. [param] = 01 - 04 01: Rotate the screen to 0°. 02: Rotate the screen to 180°. 03: Horizontal Flip. 04: Vertical Flip. Note: 01 is default.	>SetMirror 01
>GetMirror	Check the mirror mode.	>GetMirror
>SetAnalogAudioMute [param]	Mute the analog output audio. [param] = On, Off On: Mute the analog output audio. Off: Unmute the analog output audio.	>SetAnalogAudio Mute On
>GetAnalogAudioMute	Check if the analog output audio is muted.	>GetAnalogAudio Mute
>SetDigitalAudioMute	Mute the digital output audio. [param] = On, Off On: Mute the digital output audio. Off: Unmute the digital output audio.	>SetDigitalAudio Mute On
>GetDigitalAudioMute	Check if the digital output audio is muted.	>GetDigitalAudio Mute
>SetCSC [param]	Set a mode for color space conversion. Param: 01 - 02 01: Force RGB Mode (Default) 02: Force 420 Mode (it will only work when the source solution is 4K@30 or above)	>SetCSC 01
>GetCSC	Check the mode of the color space conversion.	>GetCSC
>SetUpdateEDID [param]	Upload the user defined EDID. EDID file will be sent to the	>SetUpdateEDID 01

Commands	Descriptions	Example
	device via RS232 software. [param] = 01 – 02 01: User defined 1 02: User defined 2	
>SetEDID	Set the EDID mode. Param: 00 – 09 Check the [EDID Setting] for more details.	>SetEDID 01
>GetEDID	Check the current EDID.	>GetEDID
>GetStatus	Report the current status of the device.	>GetStatus
>Help	List all the commands with description.	>Help
>SetPattern [param]	Set a color to output to the full screen when detects no source. [param] = 01 – 08. 01: Red, 02: Green (default) 03: Blue, 04: White 05: Yellow, 06: Cyan 07: Purple, 08: black	>SetPattern 01
>GetPattern	Check the output color when detects no source.	>GetPattern
>SetFreeze [param]	Freeze a frame of the video. [param] = On, Off On: Freeze a frame. Off: Un-freeze.	>SetFreeze On
>GetFreeze	Check if the screen is freeze.	>GetFreeze
>FactoryReset	Factory reset the device.	>FactoryReset

6. Specification

Video	
Video Input	1x HDMI 2.0 Type-A female port
Input Resolution	Up to 4K@60Hz 4:4:4, HDR
Video Output	1x HDMI 2.0 Type-A female port
Output Resolution	Up to 4K@60Hz RGB 8-bit
HDMI Version	HDMI 2.0
HDCP Version	Up to 2.2
HDMI Audio Signal	LPCM 2.0
Digital Audio Output	
Output	1x S/PDIF
Audio Format	LPCM 2.0
Audio Sample Rate	48KHz
Analog Audio Output	
Output	1x Analog L/R Audio
Output Connector	1x 3.5mm audio jack
Audio Format	LPCM 2.0
Frequency Response	20 Hz to 20 kHz, ± 1 dB
Max Output Level	2.0Vrms \pm 1dB
THD+N	< 0.05%, 20 Hz – 20 kHz
SNR	> 80dB
Crosstalk Isolation	< -80 dB
Control	
RS-232	1x 3-pin serial port
General	
Bandwidth	18Gbps
Environment Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Relative Humidity	10% ~ 90%
External Power Supply	Input: AC 100V~240V, 50/60Hz; Output: DC 12V/1A
Power Consumption	\leq 4.5W
Dimension (W x H x D)	110 x 21 x 80mm
Net Weight	215g



Note: Make sure the HDMI cable is compliant with HDMI2.0 to ensure reliable transmission.

7. After Sales/ Customer Service

Any transport costs are borne by the users during the warranty.

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. These terms and conditions may be changed without prior notice.

1) Product Limited Warranty: We warrants that its products will be free from defects in materials and workmanship for two years, which starts from the first day you buy this product (The purchase invoice shall prevail).

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

2) Scope

These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized dealer only.

3) What the warranty does not cover (Warranty Exclusion)

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
 - Normal wear and tear.
 - Use of supplies or parts not meeting our specifications.
 - No certificate or invoice as the proof of warranty.
 - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
 - Damage caused by force majeure.
 - Servicing not authorized by distributor.
 - Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

4) Documentation: Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defeat has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of dealer.

5) Technical Support: Email to our after-sales department or make a call, please inform us the following information about your cases.

- Product version and name.
- Detailed failure situations.
- The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local dealer or our customer support (info@ute.de).



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