

# User Manual



## VLHDMIEXT150

**18Gbps HDBaseT Extender kit (150m)**



**All Rights Reserved**

**Version: VLHDMIEXT150\_2025V1.0**

## 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. 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.

## 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 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. It may result in electrical shock or burn.
- 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 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, please treat them as normal electrical wastes.

## **Elektro- und Elektronikgeräte**

### **Informationen für private Haushalte**

Das Elektro- und Elektronikgerätegesetz (ElektroG) enthält eine Vielzahl von Anforderungen an den Umgang mit Elektro- und Elektronikgeräten. Die wichtigsten sind hier zusammengestellt.

#### **1. Getrennte Erfassung von Altgeräten**

Elektro- und Elektronikgeräte, die zu Abfall geworden sind, werden als Altgeräte bezeichnet. Besitzer von Altgeräten haben diese einer vom unsortierten Siedlungsabfall getrennten Erfassung zuzuführen. Altgeräte gehören insbesondere nicht in den Hausmüll, sondern in spezielle Sammel- und Rückgabesysteme.

#### **2. Batterien und Akkus sowie Lampen**

Besitzer von Altgeräten haben Altbatterien und Altakkumulatoren, die nicht vom Altgerät umschlossen sind, sowie Lampen, die zerstörungsfrei aus dem Altgerät entnommen werden können, im Regelfall vor der Abgabe an einer Erfassungsstelle vom Altgerät zu trennen. Dies gilt nicht, soweit Altgeräte einer Vorbereitung zur Wiederverwendung unter Beteiligung eines öffentlich-rechtlichen Entsorgungsträgers zugeführt werden.

#### **3. Möglichkeiten der Rückgabe von Altgeräten**

Besitzer von Altgeräten aus privaten Haushalten können diese bei den Sammelstellen der öffentlich-rechtlichen Entsorgungsträger oder bei den von Herstellern oder Vertreibern im Sinne des ElektroG eingerichteten Rücknahmestellen unentgeltlich abgeben. Rücknahmepflichtig sind Geschäfte mit einer Verkaufsfläche von mindestens 400 m<sup>2</sup> für Elektro- und Elektronikgeräte sowie diejenigen Lebensmittelgeschäfte mit einer Gesamtverkaufsfläche von mindestens 800 m<sup>2</sup>, die mehrmals pro Jahr oder dauerhaft Elektro- und Elektronikgeräte anbieten und auf dem Markt bereitstellen. Dies gilt auch bei Vertrieb unter Verwendung von Fernkommunikationsmitteln, wenn die Lager- und Versandflächen für Elektro- und Elektronikgeräte mindestens 400 m<sup>2</sup> betragen oder die gesamten Lager- und Versandflächen mindestens 800 m<sup>2</sup> betragen. Vertreter haben die Rücknahme grundsätzlich durch geeignete Rückgabemöglichkeiten in zumutbarer Entfernung zum jeweiligen Endnutzer zu gewährleisten. Die Möglichkeit der unentgeltlichen Rückgabe eines Altgerätes besteht



bei rücknahmepflichtigen Vertreibern unter anderem dann, wenn ein neues gleichartiges Gerät, das im Wesentlichen die gleichen Funktionen erfüllt, an einen Endnutzer abgegeben wird. Wenn ein neues Gerät an einen privaten Haushalt ausgeliefert wird, kann das gleichartige Altgerät auch dort zur unentgeltlichen Abholung übergeben werden; dies gilt bei einem Vertrieb unter Verwendung von Fernkommunikationsmitteln für Geräte der Kategorien 1, 2 oder 4 gemäß § 2 Abs. 1 ElektroG, nämlich „Wärmeüberträger“, „Bildschirmgeräte“ oder „Großgeräte“ (letztere mit mindestens einer äußeren Abmessung über 50 Zentimeter). Zu einer entsprechenden Rückgabe-Absicht werden Endnutzer beim Abschluss eines Kaufvertrages befragt. Außerdem besteht die Möglichkeit der unentgeltlichen Rückgabe bei Sammelstellen der Vertreter unabhängig vom Kauf eines neuen Gerätes für solche Altgeräte, die in keiner äußeren Abmessung größer als 25 Zentimeter sind, und zwar beschränkt auf drei Altgeräte pro Geräteart.

#### **4. Datenschutz-Hinweis**

Altgeräte enthalten häufig sensible personenbezogene Daten. Dies gilt insbesondere für Geräte der Informations- und Telekommunikationstechnik wie Computer und Smartphones. Bitte beachten Sie in Ihrem eigenen Interesse, dass für die Löschung der Daten auf den zu entsorgenden Altgeräten jeder Endnutzer selbst verantwortlich ist.

#### **5. Bedeutung des Symbols „durchgestrichene Mülltonne“**

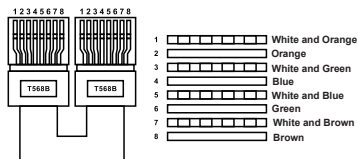
Das auf Elektro- und Elektronikgeräten regelmäßig abgebildete Symbol einer durchgestrichenen Mülltonne weist darauf hin, dass das jeweilige Gerät am Ende seiner Lebensdauer getrennt vom unsortierten Siedlungsabfall zu erfassen ist.

## Surge protection device recommended

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

## Caution

The network cable connection method required for this product is direct connection. Please do not cross connect.



**Direct Interconnection Method**

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## 1. Introduction

This 18Gbps HDMI Extender can extend high definition video/audio signal, RS-232 and bi-directional IR signal to a distance up to 492ft/150m between the transmitter and receiver via a single CAT cable. It supports resolution up to 4K2K@60Hz 4:4:4, 18Gbps and HDCP 2.2. One HDMI loop port is available for output. The extender also supports de-embedded audio for L/R audio output. In addition, the extender is equipped with two-way IR pass-through which allows for source and display control.

This HDMI extender includes two units: transmitter unit and receiver unit. The transmitter unit is responsible for capturing HDMI input signal and carrying the signal via one cost effective CAT5e/6 cable, and transmitting/emitting IR control signals. The receiver unit is responsible for receiving the HDMI signal and transmitting/emitting IR control signal.

The extender offers the most convenient solution for HDMI extension via a single CAT5e/6 with long distance capability, and is the perfect solution for any application.

## 2. Features

- ☆ HDCP 2.2 / HDCP 1.4 and DVI 1.0 compliant
- ☆ Support 18Gbps video bandwidth
- ☆ The maximum transmission distance via a single CAT5e/6 cable:  
394ft/120m for 4K2K signal;  
492ft/150m for 1080P signal
- ☆ Support one HDMI loop output on the transmitter
- ☆ De-embedded audio to analog stereo output on receiver
- ☆ With bi-directional IR, RS-232 and CEC pass-through
- ☆ HDR, HDR10+, Dolby Vision and HLG function supported
- ☆ Support PoC (Power over Cable) function
- ☆ Compact design for easy and flexible installation

### 3. Package Contents

- ① 1× 18Gbps HDMI over HDBaseT Extender (Transmitter)
- ② 1× 18Gbps HDMI over HDBaseT Extender (Receiver)
- ③ 1× 24V/1A Locking Power Supply
- ④ 1× IR Blaster Cable (1.5m)
- ⑤ 1× 20~60KHz IR Receiver Cable (1.5m)
- ⑥ 2× 3pin Phoenix Connector
- ⑦ 4× Mounting Ear
- ⑧ 1× User Manual

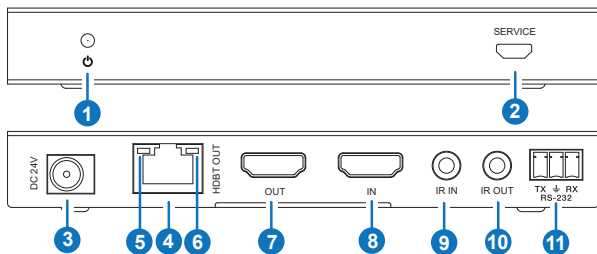
### 4. Specifications

| Technical          |                                                                                                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HDMI Compliance    | HDMI 2.0b                                                                                                                                                                                     |
| HDCP Compliance    | HDCP 2.2 / HDCP 1.4                                                                                                                                                                           |
| Video Bandwidth    | 18Gbps                                                                                                                                                                                        |
| Video Resolution   | 4K2K 50/60Hz 4:4:4<br>4K2K 50/60Hz 4:2:2<br>4K2K 50/60Hz 4:2:0<br>4K2K 30Hz 4:4:4<br>1080p, 1080i, 720p, 720i, 480p, 480i<br>All HDMI 3D TV formats<br>All PC resolutions including 1920x1200 |
| Color Space        | RGB / YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0                                                                                                                                                   |
| Color Depth        | 8/10/12-bit (1080P60Hz, 4K30Hz, 4K60Hz YCbCr 4:2:2/4:2:0)<br>8-bit (4K60Hz 4:4:4)                                                                                                             |
| HDMI Audio Formats | LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X                                                                      |
| L/R Audio Formats  | LPCM 2.0                                                                                                                                                                                      |
| ESD Protection     | IEC 61000-4-2: ±8kV (Air-gap discharge), ±4kV (Contact discharge)                                                                                                                             |

| Connection                                                        |                                                                                                                                                                                                                                                                                            |          |          |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| Transmitter                                                       | Input: 1x IN [HDMI Type A, 19-pin female]<br>Output: 1x OUT [HDMI Type A, 19-pin female]<br>1x HDBT OUT [RJ45, 8-pin female]<br>Control: 1x IR IN [3.5mm stereo mini-jack]<br>1x IR OUT [3.5mm stereo mini-jack]<br>1x RS-232 [3-pin phoenix jack]<br>1x SERVICE [Mini-USB, update port]   |          |          |
| Receiver                                                          | Input: 1x HDBT IN [RJ45, 8-pin female]<br>Output: 1x OUT [HDMI Type A, 19-pin female]<br>1x AUDIO OUT [3.5mm stereo mini-jack]<br>Control: 1x IR IN [3.5mm stereo mini-jack]<br>1x IR OUT [3.5mm stereo mini-jack]<br>1x RS-232 [3-pin phoenix jack]<br>1x SERVICE [Mini-USB, update port] |          |          |
| Mechanical                                                        |                                                                                                                                                                                                                                                                                            |          |          |
| Housing                                                           | Metal Enclosure                                                                                                                                                                                                                                                                            |          |          |
| Color                                                             | Black                                                                                                                                                                                                                                                                                      |          |          |
| Dimensions                                                        | Transmitter / Receiver: 140mm [W] x 65mm [D] x 18mm [H]                                                                                                                                                                                                                                    |          |          |
| Weight                                                            | Transmitter: 160g, Receiver: 155g                                                                                                                                                                                                                                                          |          |          |
| Power Supply                                                      | Input: AC 100 - 240V 50/60Hz<br>Output: DC 24V/1A (Locking connector)                                                                                                                                                                                                                      |          |          |
| Power Consumption                                                 | 9.36W                                                                                                                                                                                                                                                                                      |          |          |
| Operating Temperature                                             | 32 - 104°F / 0 - 40°C                                                                                                                                                                                                                                                                      |          |          |
| Storage Temperature                                               | -4 - 140°F / -20 - 60°C                                                                                                                                                                                                                                                                    |          |          |
| Operating Humidity                                                | 20%~80% (relative humidity, non-condensing)                                                                                                                                                                                                                                                |          |          |
| Storage Humidity                                                  | 10%~90% (relative humidity, non-condensing)                                                                                                                                                                                                                                                |          |          |
| Resolution / Distance                                             |                                                                                                                                                                                                                                                                                            |          |          |
| 4K2K                                                              | 394ft/120m                                                                                                                                                                                                                                                                                 |          |          |
| 1080P                                                             | 492ft/150m                                                                                                                                                                                                                                                                                 |          |          |
| Resolution / Cable Length                                         | 4K60                                                                                                                                                                                                                                                                                       | 4K30     | 1080P60  |
| HDMI IN / OUT                                                     | 16ft/5m                                                                                                                                                                                                                                                                                    | 32ft/10m | 50ft/15m |
| The use of “Premium High Speed HDMI” cable is highly recommended. |                                                                                                                                                                                                                                                                                            |          |          |

## 5. Operation Controls and Functions

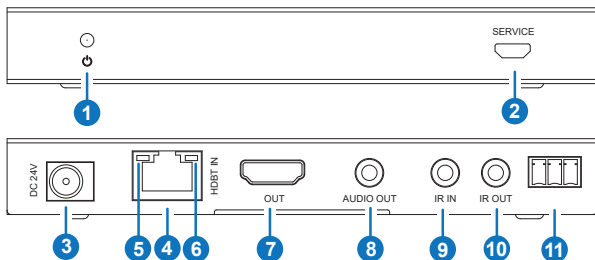
### 5.1 Transmitter Panel



| No. | Name                        | Function Description                                                                                                                                                                                                                                                 |
|-----|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Power LED                   | Red LED indicates that the transmitter is powered on.                                                                                                                                                                                                                |
| 2   | SERVICE port                | Firmware update port.                                                                                                                                                                                                                                                |
| 3   | DC 24V port                 | DC 24V/1A power supply input port.<br><i>Note that the extender supports PoC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, the other one doesn't need power supply.</i>                                              |
| 4   | HDBT OUT port               | RJ45 connector for connecting the HDBT IN port of receiver with a CAT5e/6 cable.                                                                                                                                                                                     |
| 5   | Connection Signal Indicator | <ul style="list-style-type: none"> <li>Light on: Transmitter and receiver are in good connection status.</li> <li>Light flashing: Transmitter and receiver are in poor connection status.</li> <li>Light off: Transmitter and receiver are not connected.</li> </ul> |
| 6   | Data Signal Indicator       | <ul style="list-style-type: none"> <li>Light on: There is HDMI signal with HDCP.</li> <li>Light flashing: There is HDMI signal without HDCP.</li> <li>Light off: There is no HDMI signal.</li> </ul>                                                                 |
| 7   | OUT port                    | HDMI loop output for display.                                                                                                                                                                                                                                        |
| 8   | IN port                     | HDMI signal input port.                                                                                                                                                                                                                                              |
| 9   | IR IN port                  | IR signal input port for receiving the signal of IR remote.                                                                                                                                                                                                          |
| 10  | IR OUT port                 | IR signal output port for control of source device. This IR output signal is from the IR IN port of receiver.                                                                                                                                                        |

| No. | Name        | Function Description                                                                                                                                        |
|-----|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11  | RS-232 port | 3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or from receiver to transmitter. |

## 5.2 Receiver Panel

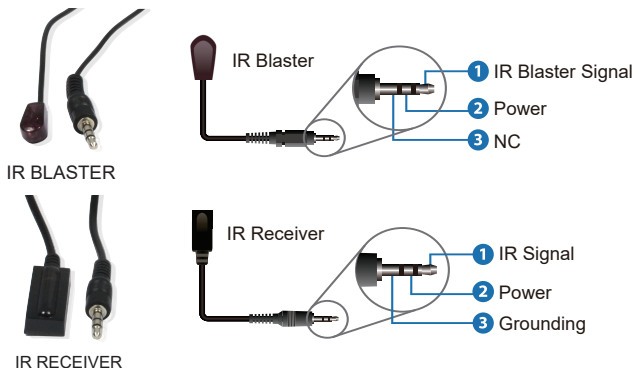


| No. | Name                        | Function Description                                                                                                                                                                                                                                                 |
|-----|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Power LED                   | Red LED indicates that the receiver is powered on.                                                                                                                                                                                                                   |
| 2   | SERVICE port                | Firmware update port.                                                                                                                                                                                                                                                |
| 3   | DC 24V port                 | DC 24V/1A power supply input port.<br><i>Note that the extender supports PoC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, the other one doesn't need power supply.</i>                                              |
| 4   | HDBT IN port                | RJ45 connector for connecting the HDBT OUT port of transmitter with a CAT5e/6 cable.                                                                                                                                                                                 |
| 5   | Connection Signal Indicator | <ul style="list-style-type: none"> <li>Light on: Transmitter and receiver are in good connection status.</li> <li>Light flashing: Transmitter and receiver are in poor connection status.</li> <li>Light off: Transmitter and receiver are not connected.</li> </ul> |
| 6   | Data Signal Indicator       | <ul style="list-style-type: none"> <li>Light on: There is HDMI signal with HDCP.</li> <li>Light flashing: There is HDMI signal without HDCP.</li> <li>Light off: There is no HDMI signal.</li> </ul>                                                                 |

| No. | Name        | Function Description                                                                                                                                        |
|-----|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7   | OUT port    | HDMI loop output for display.                                                                                                                               |
| 8   | AUDIO OUT   | 3.5mm stereo connector for analog audio output.                                                                                                             |
| 9   | IR IN port  | IR signal input port for receiving the signal of IR remote.                                                                                                 |
| 10  | IR OUT port | IR signal output port for control of source device. This IR output signal is from the IR IN port of receiver.                                               |
| 11  | RS-232 port | 3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or from receiver to transmitter. |

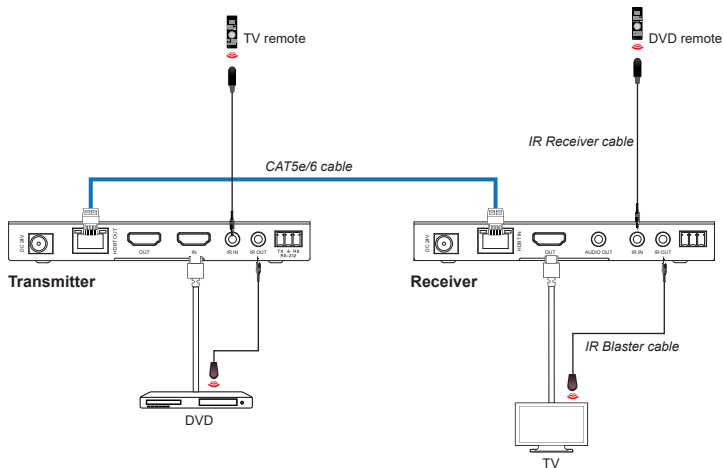
### 5.3 IR Pin Definition

IR Receiver and Blaster pin's definition is as below:



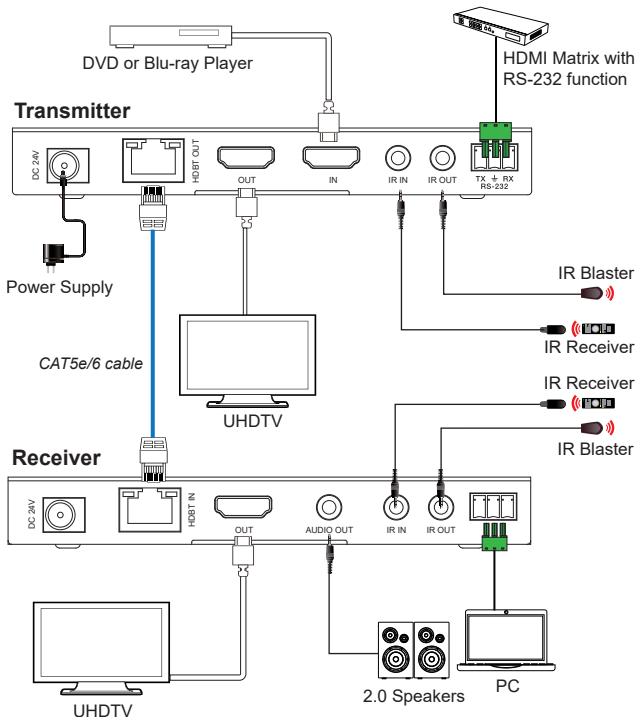


The following is IR system diagram about IR cable use method.



**Note:** When the angle between the IR receiver and the remote control is  $\pm 45^\circ$ , the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is  $\pm 90^\circ$ , the transmission distance is 0-8 meters.

## 6. Application Example



**HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

The terms HDMI and HDMI High-Definition Multimedia interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

## 7. Customer Service

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

### 1) Warranty

The limited warranty period of the product is fixed three years.

### 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 distributor only.

### 3) 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 distributor.

**Remarks:** Please contact your local distributor for further assistance or solutions.