



1T-CT-641 Transmitter



1T-CT-642 Receiver

Instruction Manual

1T-CT-641/1T-CT-642
HDMI over single Cat.5e/Cat.6



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1.0 INTRODUCTION

Thank you for purchasing this HDMI over single Cat.5e or Cat.6 product from tvONE. The product group consists of a 1T-CT-641 Transmitter coupled with a 1T-CT-642 Receiver which employs HDMI v1.4 and HDBaseT-Lite technology to allow transmission of uncompressed, 1080p high definition television signals over a single Cat.5e or Cat.6 cable. (This is the type cable typically employed for Ethernet computer networks). HDMI v1.4 signals - including 3D and 4k UHD formats - are supported, and the system will also allow DVI signal transmission with appropriate DVI to HDMI cable adapters. In addition, embedded LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio capability is standard. The 1T-CT-641/1T-CT-642 system can achieve signal distribution distances of up to 60 meters (197 feet) for uncompressed HDMI signals without signal degradation.

1.1 Liability Statement

Every effort has been made to ensure that this product is free of errors. tvONE cannot be held liable for the use of this hardware or any direct or indirect consequential damages arising from its use. It is the responsibility of the user of the hardware to check that it is suitable for his/her requirements and that it is installed correctly. All rights reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

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1.2 Features

The 1T-CT-641/1T-CT-642 HDMI over single Cat.5e/Cat.6 system has many features that provide superior performance:

- HDMI with 3D, 4k(24Hz/30Hz) support
- HDCP and DVI compliant
- Uncompressed HDMI signal distribution to 60 meters (197 feet)
- HDBaseT-Lite Class B performance enhancing technology *
- Supports embedded HDMI lossless digital audio
- Full HD resolution support (1080p@60Hz/36bit), UHD support (4k@30Hz), HD 3D formats & PC resolutions up to WUXGA
- Supports HDCP repeaters and CEC bypass
- Uses a single Cat.5e/Cat.6 Ethernet cable via RJ45 connectors
- Output resolution follows input
- Supports bi-directional infrared remote control extension
- Screw on +5VDC connectors for a more reliable connection

*  Class B technology provides a method for distribution of uncompressed video plus embedded audio at a bit rate of up to 10.2 Gbps over distances of up to 60 meters (197 ft.) via a single Cat 5e or Cat.6 cable. Video, Audio and Control can be placed on a single Cat 5e or Cat.6 cable connecting the transmitter and receiver units. Cascading multiple units is also possible.

NOTE: *Not all HDBaseT-Lite products will support all of the features listed.*

2.0 SPECIFICATIONS

Video I/O	
1T-CT-641 Tx-HDMI Input	1x via HDMI connector
1T-CT-642 Rx-HDMI Output	1x via HDMI connector
Cat.5e/Cat.6 Cable I/O	
1T-CT-641 Tx – Cat.5e/Cat.6 Output	1x via RJ45 connector
1T-CT-642 Rx – Cat.5e/Cat.6 Input	1x via RJ45 connector
Additional I/O	
Connectors	2x 3.5mm mini-jack per unit (infrared)
Supported Signals & Protocols	
Industry Standards	HDMI v1.4 (3D, 4k), HDCP, DVI 1.0, infrared
Video Performance	
Maximum Resolution	HD up to 1080p@60Hz/36bit, UHD to 4k@30Hz, PC to WUXGA
Audio Support	
Formats Supported	LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio

HDBaseT-Lite Class B Support	
Maximum Bandwidth	Uncompressed video/audio to 10.2Gbps/300MHz
Maximum Range	
One 1T-CT-641/642 Tx/Rx System	60m (197 ft.) at 1080p@60Hz 40m (131 ft.) at 4k@30Hz
Environmental	
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-20° to +60° C (-4° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
Warranty	
Limited Warranty	3 Years Parts and Labor
Regulatory Approvals	
Encoder/Decoder Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS
Cable Requirements (T/R)	
Ethernet Cable (UTP or STP)	Highest quality single Cat 5e or Cat 6 cable
Mechanical (H-W-D)	
1T-CT-641Tx, 1T-CT-642 Rx (H-W-D)	22.5x55x76.5mm (0.87 x 2.17 x 3.01")
Weight	
1T-CT-641 Transmitter	56g (0.12 lbs.)
1T-CT-642 Receiver	64g (0.14 lbs.)
Power Requirement	
External Power Supply	1x 5VDC@2.6A, screw lock connector
Accessories Included	
1x Power Adapter	US, UK or Euro
1x User Manual	
1x IR Emitter or Receiver	
Model Numbers	
1T-CT-641	HDMI over single Cat.5e/Cat.6 Transmitter
1T-CT-642	HDMI over single Cat.5e/Cat.6 Receiver

3.0 CHECKING PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make certain the following items are contained in the shipping carton:

- 1x Transmitter (1T-CT-641) or Receiver (1T-CT-642) unit
- 1x Power Adapter
- 1x IR Emitter (with 1T-CT-641)
- 1x IR Receiver (with 1T-CT-642)
- 1x Operations Manual

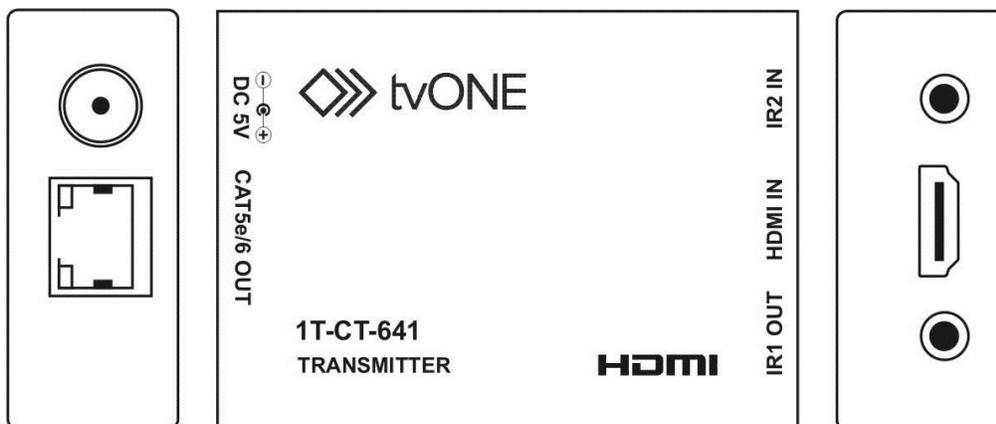
Note: Please retain the original packing material should the need ever arise to return the unit. If you find any items are missing, contact your reseller or tvONE immediately. Have the Model, Serial Number and Invoice available for reference when you call.

4.0 CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the HDMI signal input and output, Cat.5e/Cat.6 cable and power requirements.

Note: The resolution capability of the remotely located display devices must be capable of displaying the output of the source device. Before using the extender system, verify that the display device on the receiving end can support the output resolution and signal format by connecting it directly to the source device.

4.2 1T-CT-641 Transmitter



1. Connect the HDMI source device's output to the HDMI IN connector of the 1T-CT-641 Transmitter, using an appropriate HDMI cable, (10 Meter (~30') in length for 12 bit signals, 15 meters (~45') for 8 bit signals).
2. (OPTIONAL) If there is an IR controllable device on the 1T-CT-641 side that you wish to control remotely from the 1T-CT-642 side, connect the IR emitter to the IR1 OUT connector on the 1T-CT-641. If there is an IR controllable device on the 1T-CT-642 receiver side that you wish to control remotely from the 1T-CT-641 side, connect the IR receiver to the IR2 IN connector on the 1T-CT-641.
3. Connect the Cat.5e or Cat.6 cable to the transmitter via the RJ45 connector. Ensure that the RJ45 connector achieves a positive lock into the transmitter's connector.
4. Connect the AC power adapter's screw lock DC power connector to the transmitter. The green LED on the RJ45 port will illuminate when power is present.

4.3 1T-CT-642 Receiver



1. At the remote location, connect the Cat.5e/Cat.6 cable to the receiver's RJ45 connector. Ensure that the connector achieves a positive lock into the receiver's connector.
2. (OPTIONAL) If there is an IR controllable device on the 1T-CT-642 side that you wish to control remotely from the 1T-CT-641 side, connect the IR emitter to the IR2 OUT connector on the 1T-CT-642. If there is an IR controllable device on the 1T-CT-641 side that you wish to control remotely from the 1T-CT-642 side, connect the IR receiver to the IR1 IN connector on the 1T-CT-642.

3. Connect the HDMI connector of the receiver to the HDMI input of the remote display or other device, using an appropriate cable, (15 Meter (~30') in length for either 12 bit signals or 8 bit signals).
4. Connect the AC power adapter's screw lock DC power connector to the receiver. The green LED on the RJ45 port will illuminate when power is present.
5. Turn on the source device and remote display. Observe the Link LED on the Transmitter and the Receiver. The yellow LED on both RJ45 ports will remain lit when the link is complete and stable.

Note: It's important that you verify that the HDMI source functions properly directly with the HDMI display device before you attempt to use the system components to extend the signal distribution distance. Failure to do this introduces an unwanted variable that would then have to be resolved should the system not function as expected.

5.0 OPERATING THE UNIT

Once the connections have been made and power applied as explained above, there are no operational adjustments required. It is recommended however that the power on sequence be as follows: HDMI over Cat.5e/Cat.6 Transmitter and HDMI over Cat.5e/Cat.6 Receiver, HDMI destination device and HDMI source – in that order.

6.0 TROUBLESHOOTING

In the event of problems, first make certain that the input and output cables are no more than 15 meters long (for signals to 1080p resolution) and are of the highest possible quality. Next, make certain that both extender products are receiving power.

If all is well in these areas, remember that HDMI devices communicate with one another so the source device and destination device must be fully HDMI capable. In addition, HDCP encryption requires additional processing which also is dependent on the equipment you have connected to the source and destination device. If you experience problems using the HDMI over single Cat.5e or Cat.6 products, you should attempt to determine what is wrong by attaching the source device directly to the destination device using the same cable you are using with the extended system. This is a way of determining if the problem is due to bad cables or a problem with other devices. If you are unable to obtain a signal using this simplified path, suspect the cables, the source device or the destination device.

After trying the above suggestions should the problem still persist, contact your dealer for additional suggestions before contacting tvONE. Should the dealer's technical personnel be unable to assist you, contact tvONE via our support website:

<http://tvone.crmdesk.com>. Create a technical support request on the site and our support team will respond within a short period of time.

7.0 LIMITED WARRANTY

tvONE warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a fixed term from the date of purchase. The warranty term for specific product lines is defined below.

1. tvONE branded products based on tvONE's CORIO technology are warranted for a period of five years from the date of purchase. This includes products with the model number prefix of C2, 1T-C2, CX, A2 or S2.
2. tvONE products, other than those based on tvONE's CORIO technology mentioned above, are warranted for a period of three years from the date of purchase. This includes products with the model number prefix of 1T, with the exception of 1T-C2.
3. LCD Monitors are warranted for a period of three years from the date of purchase, with the exception of the LCD panels integrated into the monitors that are supplied by third parties. LCD panels are limited to the term and conditions of the warranty offered by the respective LCD panel manufacturer. Such specific LCD panel warranties are available upon request to tvONE.

Should a product, in tvONE's opinion, prove defective within this warranty period, tvONE, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of tvONE. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

If repairs are necessary under this warranty policy, the original purchaser must obtain a Return Authorization Number from tvONE and return the product to a location designated by tvONE, freight prepaid. After repairs are complete, the product will be returned, freight prepaid.

LIMITATIONS - All products sold are "as is" and the above Limited Warranty is in lieu of all other warranties for this product, expressed or implied, and is strictly limited to two years from the date of purchase. tvONE assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

tvONE makes no other representation of warranty as to fitness for the purpose or merchantability or otherwise in respect of any of the products sold. The liability of tvONE with respect to any defective products will be limited to the repair or replacement of such products. In no event shall tvONE be responsible or liable for any damage arising from the use of such defective products whether such damages be direct, indirect, consequential or otherwise, and whether such damages are incurred by the reseller, end-user or any third party.

8.0 REGULATORY COMPLIANCE

The 1T-CT-641 and 1T-CT-642 HDMI over single Cat.5e/Cat.6 cable products have been tested for compliance with appropriate FCC and CE rules and regulations. The power adaptor/supply has been tested for compliance with appropriate UL, CUL, CE, PSE, GS Rules, regulations and/or guidelines. This product and power adapter is RoHS compliant.

9.0 CONTACT INFORMATION

Should you have questions or require assistance with this product in areas not covered by this manual, please contact tvONE at the appropriate location shown below.

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