



Instruction Manual

**1T-CT-680 Series
HDMI over Multiple Coax Extender**

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1.0 INTRODUCTION

Thanks for purchasing the 1T-CT-680 Series HDMI Over Multiple Coax Extender product from TV One. The individual components of this HDMI Over 5-Coax Extender system consist of the 1T-CT-681 Transmitter and the 1T-CT-682 Receiver which constitutes a system used to transmit deep color (12 bits), V1.3 HDMI or DVI-D signals (with appropriate DVI to HDMI Cable Adapter) at resolutions up to 1920x1200 and 1080p, plus transmission of embedded, lossless audio, over RG-6 type coaxial cables or RGBHV cable with 5BNC. The 1T-CT-680 series extender can achieve signal distribution distances of up to 100 meters (325 feet) for 1080p/8 bit signals and 75 meters (245 feet) for 1080p/12 bit signals. Four or five RG-6 type coaxial cables are required. One cable is required for each of the video components (R-G-B) and one for a clock signal. Under some conditions involving relatively short cable runs, the DC voltage from the transmitter can be sent to the receiver unit on a fifth coaxial cable negating the need for a separate power supply for the receiver. Both the Transmitter and Receiver units feature the unique TV One-task locking power connectors to enhance overall system mechanical security.

Our professional video conversion products have been serving the industry for over twenty years. TV One offers a full line of high quality Seamless Switchers, Video Scalers, Up/Down/Cross Converters, Analog-Digital Converters (SD/HD-SDI, HDMI, DVI), Format Converters, Standards Converters, TBC/Frame Synchronizers, Matrix Routing Switchers, Signal Distribution Amplifiers and Cat.5 Transmission Systems.

1.1 Liability Statement

Every effort has been made to ensure that this product is free of errors. TV One 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-680 series of HDMI Over 5-Cable Extender systems have many features that enable them to perform in a superior manner. Among these features you will find:

- Resolutions to 1920x1200, 1080p @ 60Hz
- 1080p/8 Bit signal distribution up to 100 meters (325 feet)
- 1080p/12 Bit (Deep Color) signal distribution up to 75 meters (245 feet)
- Supports Embedded HDMI v1.3 Lossless Digital Audio
- Compliant with HDMI v1.3, HDCP 1.1 and DVI 1.1 specifications
- Uses readily obtainable RG-6 cables
- Supports high definition input up to 1080P, output resolution follows input
- Supports VGA to WUXGA Resolution RGB Video with appropriate cable adapter
- Locking +12VDC Connectors for enhanced mechanical security

2.0 SPECIFICATIONS

Video I/O	
1T-CT-681 Tx-HDMI Input	1x via HDMI Connector
1T-CT-682 Rx-HDMI Output	1x via HDMI Connector
Interconnect Cables	
RG-6 or other coax	4x for Video & Audio
Connectors	
R-G-B, Clock	4x BNC
DC Power Transmission	1x BNC. Maximum distance of 60m (180')
Supported Signals & Protocols	
Industry Standards	HDMI v1.3, HDCP 1.1, DVI 1.1
Video Performance	
Maximum Resolution	Up to 1920x1200, 1080p/60Hz, VGA to WUXGA
Color Space	RGB 24~36, Y444 24~36, Y422 16~24
Deep Color	1080P/12bit
Audio Supported	
	PCM2, PCM 5.1, PCM 7.1, Dolby 5.1, DD+, D-TruHD, DTS-HD
Maximum Range	
1T-CT-681/682 Tx/Rx System	1080p/8-bit Color: 100 meters (325 ft) 1080p /12bit Deep Color: 75 meters (245 ft)
Environmental	
Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +70° C (12° to +158° F)
Storage Humidity	10% 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)	
RG-6, or RGBHV with 5BNC	Highest Quality, 75Ω (e.g. Channel Master®) 23AWB or above
Mechanical (H-W-D)	
1T-CT-681, 1T-CT-682 (H-W-D)	30x125x110mm (1.2x4.9x4.33")
Weight	
1T-CT-681, 1T-CT-682	270g (0.59 lbs)
Power Requirement	
External Power Supply	2x 12VDC@1A, Locking DC
Accessories Included	
2x Power Adapter	US, UK or Euro
1x User Manual	
Model Numbers	
1T-CT-680	HDMI Coax Extender System, Consisting of: 1T-CT-681 Transmitter 1T-CT-682 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 and 1x Receiver unit
- 2x Power Adapter
- 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 TV One immediately. Have the Model and Serial Number and Invoice available for reference when you call.

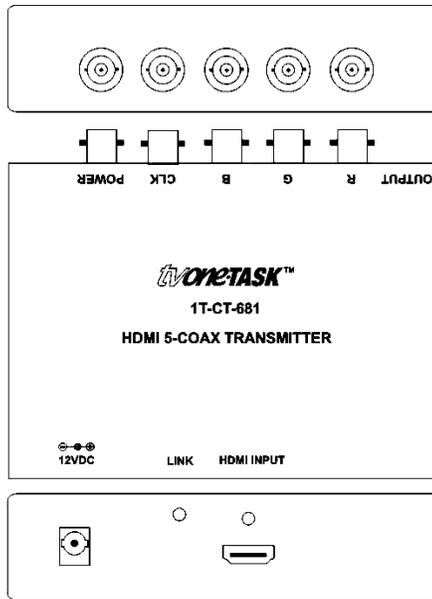
4.0 CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the signal input, outputs, power requirements/inputs plus any controls present. *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.*

4.1 CABLE TRANSMISSION DISTANCES

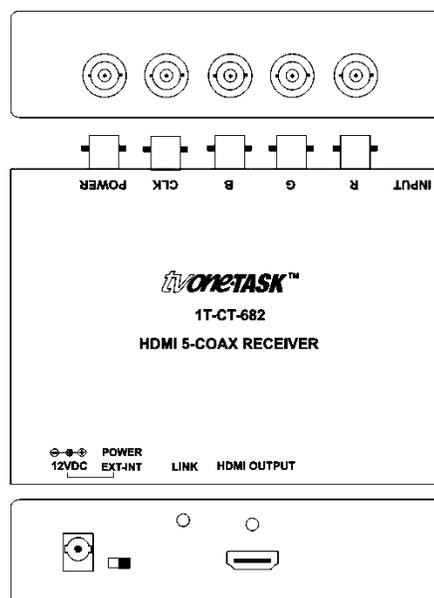
CABLE TYPE	RESOLUTION	DISTANCE
5BNC (23AWG)	1080P-8bit	85±5 m
	1080P-12bit	60±5 m
5BNC (25AWG)	1080P-8bit	65±5 m
	1080P-12bit	40±5 m
5BNC (28AWG)	1080P-8bit	45±5 m
	1080P-12bit	15±5 m
75ohm Coaxial x 5	1080p-8bit	100 m
	1080p-12bit	75 m
HDMI Cable In	1080p-8bit	6 m
	1080p-12bit	3 m
HDMI Cable Out	1080p-8bit	3 m
	1080p-12bit	3 m

4.2 1T-CT-681 Transmitter



1. Connect the HDMI source device's output to the HDMI IN connector of the 1T-CT-681 Transmitter, using an appropriate HDMI cable, (3 Meter (~9') in length for 12 bit signals, 6 meters (~18' for 8 bit signals).
2. Mark all five cables on both ends so you do not inadvertently swap them during installation.
3. Connect five (5) RG-6 cables. Three (3) go to the BNC Video connectors labeled R-G-B, the fourth cable goes to the connector labeled CLK and, if the total cable run is 180 feet or less, connect the fifth cable to the BNC connector labeled "Power" on the Transmitter. Defer connecting the AC adapter until the RG-6 cables are connected to both the Transmitter and the Receiver.

4.3 1T-CT-682 Receiver



1. At the remote location, connect the RG-6 cables to the appropriate inputs. Do not interchange the cables. The Video cables must be connected to the same video inputs and outputs on both the Receiver and Transmitter and the Clock (CLK) cable must be connected to the Clock connector on both units. If the cable run is less than 180 feet, connect a fifth cable to the connector labeled "Power" but if the cable run is greater than 180 feet, DO NOT connect the fifth cable.
2. Connect the HDMI connector of the Receiver to the HDMI input of the remote display or other device, using an appropriate cable, (3 Meter (~9') in length for 12 bit signals, 3 meters (~9' for 8 bit signals).
3. Connect the supplied AC adapters to both the Transmitter and Receiver and then to the AC supply if the cable run is greater than 180 feet after setting the Power switch on the receiver to EXT. If the cable run is less than 180 feet and you are using the Transmitter's AC adapter to power the Receiver via the fifth cable, DO NOT connect the Receiver's AC Adapter and set the Power Switch on the Receiver to INT.
4. Turn on the source device and remote display. Observe the two LEDs on the Transmitter and the Receiver. Both should be lighted. The one above the HDMI connectors verifies that the HDMI signal is present and the one to the left of the HDMI connector labeled "Link" indicates that the Transmitter and Receiver are synchronized. .

Note: With the exception of the Internal/External Power Switch on the 1T-CT-682 Receiver, there are no user controls provided on the 1T-CT-680 system. It's important that you verify that the HDMI source functions properly directly with the HDMI display device before you attempt to use any of the extender system components. 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 UNITS

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 5-Coax Transmitter and HDMI Over 5-Coax Receiver, HDMI source and HDMI destination device – in that order.

6.0 TROUBLESHOOTING

Other than faulty or swapped RG-6 cables, an improperly set up power supply source for the receiver or attempting to use the product over too great a distance, there are seldom problems with these Video Extender products.

If there is no image present at the remote location, connect the display device directly to the source to make certain that the problem is not in the display. If an image is present under those circumstances, make certain the transmitter and receiver(s) are receiving power. Next make certain your RG-6 cables are defect free and securely attached at both ends and the HDMI connectors are also securely attached at both ends. After trying the above suggestions should the problem still persist, contact your dealer for additional suggestions before contacting TV One. Should the dealer's technical personnel be unable to assist you, contact TV One 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

8.0 REGULATORY COMPLIANCE

The 1T-CT-680 Series HDMI Over Multiple Coax Extender has been tested for compliance with appropriate FCC and CE rules and regulations. The Power Adaptor/Supplies have been tested for compliance with appropriate UL, CUL, CE, PSE, GS Rules, Regulations and/or Guidelines. These Products and Power Adapters are 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 TV One at the appropriate location.

TV One USA

2791 Circleport Drive
Erlanger, KY 41018
USA
Tel 859-282-7303
Fax 859-282-8225
sales@tvone.com
www.tvone.com

TV One Latin America

6991 NW 82 Avenue #8
Miami, FL 33166
USA
Tel 305-396-6275
Fax 305-418-9306
sales.latinoamerica@tvone.com
www.tvonela.com

TV One Asia

11F, NO.28, Sec. 2
San-Min Rd, Panchiao City
Taipei Hsien 220
Taiwan R.O.C.
Tel +886 2 8951-0674
Fax +886 2 8951-0675
sales.asia@tvone.com
www.tvoneasia.com

TV One Europe

Continental Approach
Westwood Industrial Estate
Margate, Kent CT9 4JG, UK
Tel +44 (0)1843 873311
Fax +44 (0)1843 873312
sales.europe@tvone.com
www.tvone.eu

TV One Mercosur

Honduras 5849, 2nd Floor, Office C
(C1414BNI) Capital Federal
Buenos Aires, Argentina
Tel +54 11 4771-5570
Fax +54 11 4771-5570
sales.latinoamerica@tvone.com
www.tvonela.com

TV One China

Room 1007, Golden Peach Building
No. 1900 Shangcheng Road
Pudong, Shanghai
China 200120
Tel +86 21 5830-2960
Fax +86 21 5851-7949
sales.china@tvone.com
www.tvonechina.com

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