



# Instruction Manual

**1T-FC-677  
3G-SDI Extender  
with HDMI Converter**



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## **1.0 INTRODUCTION**

Thanks for purchasing the 1T-FC-677 3G Extender with HDMI Converter product from TV One. The 1T-FC-677 3G SDI Extender with HDMI Converter allows SD-SDI, HD-SDI and 3G-SDI signals to be displayed on either an SDI monitor or an HDMI capable monitor.

The high Bitrate processing of 2.970 Gbit/s ensures fast signal transmission without signal loss and also allows great flexibility in monitor selection since extremely high quality displays can be accomplished on either a high resolution SDI monitor or high resolution HDMI display. And, even greater utility is provided by the 3G loop through which allows both SDI and HDMI displays simultaneously.

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.

TV One reserves the right to revise any of its hardware and software following its policy to modify and/or improve its products where necessary or desirable. This statement does not affect the legal rights of the user in any way.

All third party trademarks and copyrights are recognized. The TV One logo, TV One-task and CORIO are the registered Trademarks of TV One. All other trademarks are the property of their respective holders.

### **1.2 Features**

This 1T-FC-677 3G-SDI Extender with HDMI Conversion has many features that enable it to perform in a superior manner. Among these features you will find:

- SD-SDI, HD-SDI and 3G-SDI to HDMI signal conversion
- Simultaneous display of 3G SDI and HDMI versions of the same signal
- Operation at 2.970Gb/s, 2.970/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s & 270Mb/s
- Supports SMPTE 425M (A & B), 424M, 292M and 259M-C
- Equalized and Re-clocked Loop Output

- Integrated 8-Channel 48Khz Audio De-Embedder
- Automatic Input Video Detection of SD-SDI, HD-SDI & 3G-SDI
- Conversion of SMPTE 425M level B to level A for 1080p 50/59.94/60 4:2:2 10 bit
- May cascade multiple units for maximum extender flexibility
- Allowable SDI transmission distances (using Belden 1694A cable) :
  - 300 Meters for SD-SDI
  - 200 Meters for HD-SDI
  - 100 Meters for 3G SDI
- Locking +5VDC Connectors for enhanced mechanical security

## 2.0 SPECIFICATIONS

<b>Video Input</b>	
SD-SDI, HD-SDI, 3G-SDI	1x via BNC Connector
<b>Video Outputs</b>	
3G-SDI	2x via BNC Connectors (Equalized & Re-clocked)
HDMI	1x via HDMI Connector
<b>De-Embedded Audio Outputs</b>	
Stereo R+L	2x RCA Connectors
<b>Video Signal Processing</b>	
Input Signal	Automatic Detection of Signal Type
Output signal	Equalized and Re-Clocked SDI Output
SDI throughput Rates	2.970Gb/s and 2.970/1.001Gb/s
<b>Audio Processing</b>	
De-Embedding	Up to 8-Channels, 48Khz (LPCM 2.0 or LPCM 7.1 over the HDMI output)
<b>SMPTE Standards</b>	
SMPTE I/O Supported	425M, Level A&B, 424M, 292M, 259M-C
<b>Video Formats Supported</b>	
SD and HD Formats	480i, 576i, 720p, 1080i, 3G-SDI 1080p
<b>SDI Cable Distance</b>	(Using Belden 1694)
Max Distances	SD-SDI=300m, HD-SDI=200m, 3G-SDI=100m
<b>Environmental</b>	
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
<b>Warranty</b>	
Limited Warranty	3 Years Parts and Labor
<b>Regulatory Approvals</b>	
3G Extender Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS
<b>Mechanical (H-W-D)</b>	
1T-FC-677 (HWD)	30x200x103.5mm (1.18x7.87x4.07")
<b>Weight</b>	
1T-FC-677	585g (1.29 lbs)
<b>Power Requirement</b>	

External Power Supply	5 VDC@2A, Locking DC
<b>Accessories Included</b>	
1x Power Adapter	US, UK or Euro
1x User Manual	
<b>Model Numbers</b>	
1T-FC-677	3G-SDI Extender with HDMI Converter

### 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:

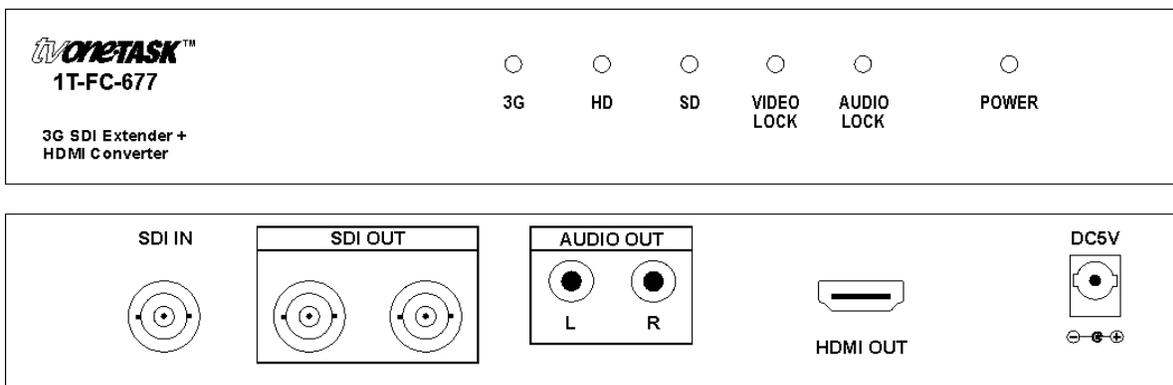
- 1x 3G-SDI Extender/HDMI Converter unit
- 1x Power Adapter
- 1x Operations Manual

**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 connecting the 1T-FC-677, verify that the display device can support the output resolution.*

#### 4.1 1T-FC-677 Unit



Connect the SDI source device's output to the SDI IN connector of the 1T-FC-677, using an appropriate high quality cable.

Connect an SDI cable or an HDMI cable to the appropriate OUTPUT connector. If you wish, you can also loop the 3G-SDI signal through the unit so that you can view both an SDI and an HDMI signal display at the same time.

Lastly, connect the AC adapter to the unit and observe that the Power LED is illuminated.

## 5.0 OPERATING THE UNIT

Once the connections have been made and power applied, there are no operational adjustments required. Equalization and Re-Clocking is performed automatically and the input type is also automatically determined by the 1T-FC-677.

SDI Audio channels are automatically detected (up to 8 channels) and are output over HDMI as either LPCM 2.0 or LPCM 7.1. If there are less than 8 active channels of audio, the 1T-FC-677 will automatically select the first 2 channels and output them over the analog stereo and HDMI outputs as LPCM 2.0. If there are 8 active channels, the first 2 channels will be output over the analog stereo outputs and the HDMI output will contain a full LPCM 7.1 audio signal. The SDI audio channels are assigned to the LPCM 7.1 channels as follows:

Channels 1 / 2 = Front Left / Front Right

Channels 3 / 4 = Center / LFE

Channels 5 / 6 = Surround Left / Surround Right

Channels 7 / 8 = Surround Back Left / Surround Back Right

In addition, LEDs will illuminate showing the status of the unit. The meanings of the LED display are as follows:

LED	Signal Status
Power	AC Adaptor is connected and providing power to unit
3G	Input type is 3G-SDI
HD	Input type is HD-SDI
SD	Input type is SD-SDI
Video Lock	Both input and outputs are present
Audio Lock	SDI signal has embedded audio and HDMI audio is active

## 6.0 TROUBLESHOOTING

Other than faulty cables or attempting to use the product over too great a distance, there are seldom problems with the 1T-FC-677.

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 unit is receiving power. Next make certain

your cables are defect free and securely attached to the cable at each end. 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**

TV One 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. TV One branded products based on TV One'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. TV One-task branded products, other than those based on TV One'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 TV One.

Should a product, in TV One's opinion, prove defective within this warranty period, TV One, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of TV One. 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 TV One and return the product to a location designated by TV One, 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. TV One assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

TV One 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 TV One with respect to any defective products will be limited to the repair or replacement of such products. In no event shall TV One 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-FC-677 3G-SDI Extender/HDMI Converter has 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 TV One at the appropriate location shown below.

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