



# Instruction Manual

1T-FC-766 HDMI to 3G SDI Converter

## Table of Contents

1.0	Introduction	2
2.0	Checking Package Contents	3
3.0	Specifications	4
4.0	Connecting the Hardware	5
5.0	Operating The Unit	5
6.0	Troubleshooting	7
7.0	Limited Warranty	8
8.0	Regulatory Compliance	9
9.0	Contact Information	9

## **1.0 INTRODUCTION**

The 1T-FC-766 HDMI to 3G SDI Converter allows HDMI signals to be displayed on an SDI 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 a high resolution SDI monitor. And, even greater utility is provided since the 1T-FC-766 HDMI to 3G SDI Converter allows outputs to two SDI displays simultaneously.

Our professional video conversion products have been serving the industry for over twenty years. tvONE 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. 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.

tvONE 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 recognised. The tvONE logo, Magenta logo, CORIO word and the CORIO logo are registered trademarks of tvONE. All other trademarks are the property of their respective holders.

## 1.2 Features

The 1T-FC-766 HDMI to 3G SDI Converter has many features that enable it to perform in a superior manner. Among these features you will find:

- Supports HDMI timing: 480i, 576i, 720p50/60, 1080p 24/25/30, 1080i 50/60, 1080p 50/60
- Operation at 2.970Gbit/s, 2.970/1.001Gbit/s, 1.485Gbit/s, 1.485/1.001Gbit/s and 270Mbits/s
- Simultaneous display of HDMI source on two SDI displays
- When a DVI signal goes through HDMI, the R/L audio can be sent with it to the 3G SDI output
- Integrated audio embedded up to 8 channel PCM 48kHz for HDMI or 2 channels for DVI audio
- Auto video mode detection (3G/SD/HD)
- Connect with other units (SDI to HDMI) to extend your signal over long distances
- Compliant with HDCP copy protection guidelines
- Supports signal transmission distances of up to 300M for SD signals, 200M for HD signals and 100M for 3G signals (with Belden 1694A cable)
- Locking +5VDC Connectors for enhanced mechanical security

## 2.0 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 HDMI to 3G SDI 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 tvONE immediately. Have the Model Number, Serial Number and Invoice available for reference when you call.*

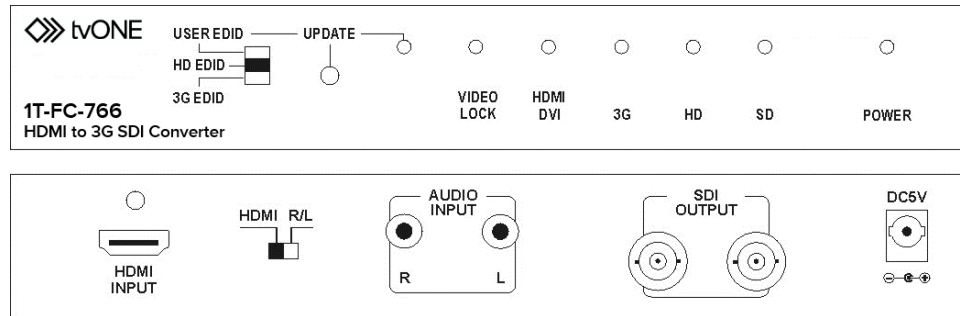
### 3.0 SPECIFICATIONS:

<b>Video Input</b>	
HDMI	1x via HDMI Connector
<b>Video Outputs</b>	
3G-SDI	2x via BNC Connectors (SD, HD & 3G SDI)
<b>Video Signal Processing</b>	
Input Signal Output signal SDI throughput Rates Frequency Bandwidth	Automatic Detection of Signal Type Equalized SDI Output 2.970Gb/s and 2.970/1.001Gb/s 225 MHz/Link (HDMI 1.3)
<b>Audio Processing</b>	
Integrated Audio Embeddable Audio	Up to 8-Channels, 48KHz 2 Channels, Stereo, R&L
<b>Video Formats Supported</b>	
SD, HD and 3G Formats	480i, 576i, 720p, 1080i, 3G-SDI 1080p
<b>SDI Cable Distance</b> (Using Belden 1694A)	
Max Distances	SD-SDI=300m, HD-SDI=200m, 3G-SDI=100m
<b>Warranty</b>	
Limited Warranty	3 Years Parts and Labor
<b>Mechanical</b>	
1T-FC-766 (H-W-D) 1T-FC-766 Weight	30 x 200 x 103.5mm (1.18 x 7.87 x 4.07") 585g (1.29 lbs.)
<b>Environmental</b>	
Operating Temperature Operating Humidity	0° to +40°C (+32° to +104°F) 20% to 90%, Non-condensing
Storage Temperature Storage Humidity	-20° to +60°C (-4° to +140°F) 20% to 90%, Non-condensing
<b>Power Requirement</b>	
External Power Supply	5VDC@2.6A, twist lock connector
<b>Regulatory Approvals</b>	
HDMI to 3G-SDI Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS
<b>Accessories Included</b>	
1x AC Power Adapter	US, UK and Euro
1x Instruction Manual	

## 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 1T-FC-766. Before connecting the 1T-FC-766, verify that the display device can support the output resolution.*



Connect the HDMI source device's output to the HDMI IN connector of the 1T-FC-766, using an appropriate high quality HDMI cable.

Connect an SDI cable to either of the SDI OUTPUT connectors. If you wish, you may connect another cable to the second SDI Output connector for two SDI signal displays at the same time.

If you plan on converting a DVI signal (via an optional DVI to HDMI adapter cable) and you are going to embed stereo audio into the SDI data stream, connect audio cables to the RCA type audio connectors and set the HDMI/RL switch to RL. Otherwise, leave the HDMI/RL switch in the HDMI position.

Lastly, connect the AC adapter to the unit and then to the AC source. Make sure that the Power LED illuminates.

## 5.0 OPERATING THE UNIT

The 1T-FC-766 HDMI to 3G SDI Converter will function without operator intervention once it is set up. The best way to become familiar with the unit and achieve proper set up is to follow along as we discuss the function of the control functions and the meaning of the various LED indicators.

*NOTE: Before you begin to familiarize yourself with the 1T-FC-766 HDMI to 3G SDI Converter, make certain that your HDMI source is supported by the unit. The 1T-FC-766 supports these standard formats: 480i, 576i, 720p50/60, 1080p 24/25/30, 1080i 50/60 and 1080p 50/60.*

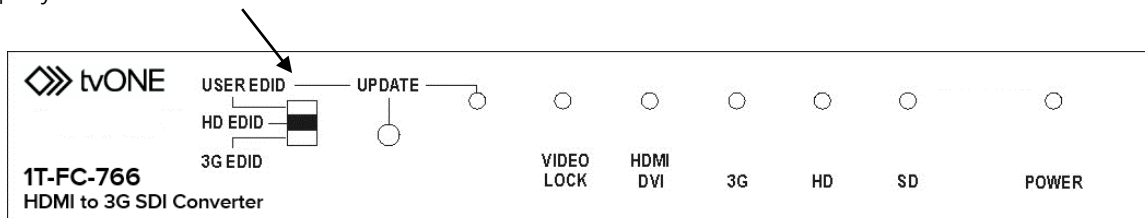
### 5.1 EDID Function

Most modern monitors have a function (called EDID) that allows them to communicate with the device providing a signal. This relieves the user from having to know the display capability of a specific monitor and eliminates many of the frustrations present when trying to match source signal characteristics with display device capabilities.

The initial step in setting up the 1T-FC-766 is to make certain the unit's characteristics and the normally used HDMI monitor's characteristics are matched.

First, make certain your HDMI source is set to one of the acceptable HDMI timing and resolution setting listed in the section 5.0 note above. Change the source signal characteristics as necessary to conform to the allowable input signal types. (In the vast amount of cases, the default setting on the source equipment will be fine but you should verify the source's setting, and if necessary, change the settings to an acceptable variant.)

Next, with the HDMI source providing an acceptable signal set the three position switch to each of the positions in turn, observing if the SDI monitor displays a signal on any of the three possible positions. If it does, leave the switch in the position that results in a signal display.



If the SDI monitor does not display a signal properly, you will need to “clone” the EDID characteristics of an HDMI monitor, one that matches the resolution characteristics of the SDI monitor you intend to use, into the 1T-FC-766.

To clone the HDMI monitor's EDID information into the 1T-FC-766, perform the following steps:

- 1) Set the three position switch to “User EDID”
- 2) Connect the HDMI monitor you wish to clone to the HDMI Input.
- 3) Press and hold the “Update” button until the “Video Lock” light turns on. (The “update” light will be on during the update)
- 4) Reconnect the HDMI source to the HDMI Input.

Generally speaking, a user will only need to create a new User EDID default in special cases where there is a need to force the source to provide specific refresh rates and/or resolutions (720p60 only, 1080i59.94 only, etc.).

Very few users should ever need to touch the User EDID option.

## 5.2 Default HDMI Input Switch Conditions and LED Indications

The default signal condition for the three position HDMI EDID switch is as follows:

- USER EDID - Native Mode 720p@60
- HD EDID - Native Mode 1080i@60
- 3G EDID - Native Mode 1080p@60

The meaning of the various LEDs is as follows:

LED	Signal Status
EDID Update	Illuminates when the EDID information is being updated.
Video Lock	Illuminates when the input HDMI has received a signal and locked to it.
HDMI/DVI	Illuminates when the input source is an HDMI signal and will not illuminate when the input is a DVI signal.
3G	Illuminates when the input HDMI signal is 1080p@50/60.
HD	Illuminates when the input HDMI signal is 1080p@24/25/30, 1080i@50/60 or 720p@50/60.
SD	Illuminates when the input HDMI signal is 480i/576i.
Power	Illuminates any time power is applied to the unit.

**NOTES:**

1) A DVD's HDMI default timing is often set on 480p but SDI does not support that timing so it's possible that the image will not display on the SDI monitor. To avoid such an event, it's suggested that you set the source output timing to the "AUTO mode" so that the source equipment will read the 1T-FC-766 default input setting and send the proper EDID native timing.

2. Only when the EDID button is held down will the EDID update procedure progress. When the update is complete, the Video Lock LED will illuminate. If the button is not pressed the Video Lock LED will illuminate according to the System Signal Status.

3. When the EDID circuit reads DVI mode, the system will check if the EDID's native mode supports SDI timing. If yes, the display will show the signal as SD-SDI, HD-SDI or 3G-SDI Mode as appropriate. If it the EDID native mode does not support SDI timing, the system will automatically default to DVI EDID Native 3G mode.

4. If there is an EDID format error during cloning (Header error, Checksum error or EDID error), the default User EDID will not be changed.

## 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-766.

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.

*Note: It is strongly recommended that you use premium cables in order to achieve maximum distance cable runs and the best performance possible.*

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 the stated number of 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-FC-766 HDMI/3G-SDI Converter product 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 tvONE at the appropriate location shown below.

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