



# Instruction Manual

**1T-MX-3344**  
**4x4 Matrix Switcher**  
**Component Video with Stereo Audio**



## **Table of Contents**

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

## **1.0 INTRODUCTION**

Thanks for purchasing this 4x4 Matrix Switcher for Component Video with Stereo Audio from TV One. The 1T-MX-3344 is designed to allow distribution of four Component Video and Stereo Audio sources to four devices independently. 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 recognised. 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**

The 1T-MX-3344 has many features that enable it to perform in a superior manner. Among those features you will find:

- 4x4 Matrix for YPbPr or YUV (Y,R-Y,B-Y) Video Signals
- 4x4 Matrix for Stereo (L&R) Audio Signals
- Buffered Video and Audio Signal Handling
- Support 480i, 576i SDTV and 480p, 576p, 720p, 1080i, 1080p HDTV
- RC-44 IR Remote Control
- RS-232 Control
- Rack Mount Kit included

## 2.0 SPECIFICATIONS

<b>Video Inputs</b>	
YPbPr or YUV Component	4x via 3x RCA
<b>Video Outputs</b>	
YPbPr or YUV Component	4x via 3x RCA
<b>Audio Inputs</b>	
Analog Stereo (R/L)	4x via 2x RCA
<b>Audio Outputs</b>	
Analog Stereo (R/L)	4x via 2x RCA
<b>Performance</b>	
Television Standards	NTSC, PAL
Video Level	Y=1V p-p, Pb/Pr=0.7Vp-p
Video Bandwidth	300MHz +
Video Impedance	75 $\Omega$
Differential Gain	0.05%
Differential Phase	0.05 degrees
Audio Level (Analog)	(L/R) 2Vrms max @ 47K $\Omega$
Audio Level (Digital)	0.5~1Vp-p@75 $\Omega$
Audio Bandwidth	20Hz to 20 KHz
Audio Impedance	47K $\Omega$
<b>Supported Video Signals</b>	
NTSC & PAL, I/O	YPbPr & YUV (Y,R-Y,B-Y)
<b>Mechanical</b>	
Size (H-W-D)	44x436120mm (1.75"x17"x6.3")
Weight (Net)	1.6 kg (3.5 lbs)
<b>Warranty</b>	
Limited Warranty	3 Years Parts and Labor
<b>Environmental</b>	
Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing
<b>Power Requirement</b>	
External Power Supply	12VDC@1A - Locking DC
<b>Regulatory Approvals</b>	
Switcher Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS
<b>Accessories Included</b>	
1x AC Power Adapter	US, UK or Euro
1x RC-44 IR Remote Control	RC-44
1x Rack Mount Kit	
1x Operations Manual	

### 3.0 CHECKING PACKAGE CONTENTS

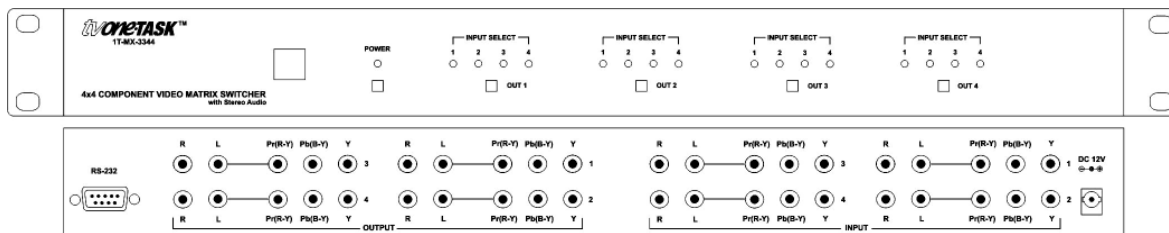
Before attempting to use this unit, please check the packaging and make certain the following items are contained in the shipping carton:

- 1x 1T-MX-3344 Matrix Switcher
- 1x AC Power Adapter
- 1x RC-44 IR Remote Control
- 1x Rack Mount Kit
- 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 Number, 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.



The 1T-MX-3344 is a 4x4 Matrix Switcher capable of switching Component Video Signals, YPbPr or YUV (Y,R-Y,B-Y), plus line level Stereo (L&R) Audio Signals input via connectors on the rear of the unit.

To realize the full bandwidth capability of the switcher, you must use the highest quality cables available. Using poor quality cables or cables that are damaged will degrade the performance of the switcher and may result in an absence of signals entirely.

To begin to configure the system, mount the unit with the supplied rack mounting hardware if desired or place the unit on a flat surface that offers security and accessibility. Insure that there is adequate ventilation and make sure that there is access to the rear and front panels.

Turn off any equipment that will be part of the installed system and then connect the video and audio inputs and outputs as required. Next connect the supplied AC adapter to a working AC outlet and then to the 1T-MX-3344.

If you are using the RS-232 control function, connect the RS-232 cable at this time.

Turn the input and destination equipment on and then turn on the 1T-MX-3344 Matrix Switcher.

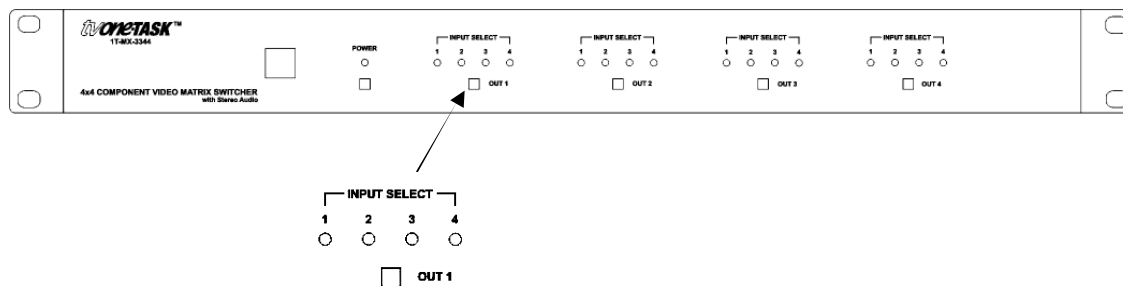
## 5.0 OPERATING THE UNIT

The 1T-MX-3344 is a special type of Video/Audio switcher called a Matrix Routing Switcher. A Matrix Switcher allows any input to be routed to any (or all) outputs whereas a regular routing switcher only allows the operator to select an input that will be sent to one, dedicated output.

The 1T-MX-3344 can be controlled via any of three (3) methods: From the front panel, by use of the included Infrared Remote Controller, or via the RS-232 functionality.

If you have not done so already, press the Power Switch and observe that the Power “On” LED illuminates. If it does not, make certain that the AC adapter is plugged in to both the unit and the AC socket and that appropriate AC voltage is available at the socket.

### 5.1 Control via the Front Panel Switches



Decide on an output (1 through 4) and repeatedly press the small button associated with that output as shown in the example above to select the input. LEDs will illuminate as you step through the possible inputs, showing the input number you have selected and, when you arrive at the input you wish to associate with the selected output, merely stop pressing the button.

Using this method, you can make any of the inputs appear on any of the outputs or you can make the same input appear on all or some of the outputs. Decide the input you wish to associate with an output and press the appropriate output button until the input signal you want appears on that output.

## 5.2 Control via the Infrared Controller

The included RC-44 Infrared Remote Controller has a Power Switch at the top right that can be used to turn the 1T-MX-3344 on and off. Beneath that switch you'll find four rows of selector buttons. The top row controls selections for output number one, the second row controls input selections for output two and the third and fourth rows control input selections for outputs number three and four respectively.

Operation is similar to front panel operation but instead of stepping through the available inputs, you simply press the appropriate input button for the output you wish to control.

As an example, pressing the second button from the left on the second row of buttons will cause input number two to appear on output number two. Pressing the third button from the left on the second row of buttons will cause input three to appear on output two and so on.

## 5.3 Control via the RS-232 Option

Using appropriate control codes, it is possible to switch any input to any output under control of a computer or other hardware control device.

To use this functionality, first prepare a control cable by reference to the table below. Make certain that you have continuity between the pins as shown.

The RS-232 control connections are as follows:

1T-MX-3344			Controller	
Pin Number	Definition		Pin Number	Definition
1	NC		1	NC
2	Tx	—————▶	2	Rx
3	Rx	◀—————	3	Tx
4	NC		4	NC
5	GND		5	GND
6	NC		6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC



**RS-232 transmission format:**

Baud Rate: 9600 bps

Data bit: 8 Bits

Parity: None

Stop Bit: 1 bit

The RS-232 control codes used by the 1T-MX-3344 are as follows:

Code	Meaning
P0	Power Off (Standby)
P1	Power On
ST	Status
VR	Firmware Version
A1	Output 1, Select Input 1
A2	Output 1, Select Input 2
A3	Output 1, Select Input 3
A4	Output 1, Select Input 4
B1	Output 2, Select Input 1
B2	Output 2, Select Input 2
B3	Output 2, Select Input 3
B4	Output 2, Select Input 4
C1	Output 3, Select Input 1
C2	Output 3, Select Input 2
C3	Output 3, Select Input 3
C4	Output 3, Select Input 4
D1	Output 4, Select Input 1
D2	Output 4, Select Input 2
D3	Output 4, Select Input 3
D4	Output 4, Select Input 4

A Carriage Return is not required.

## 6.0 TROUBLESHOOTING

Aside from faulty AC or DC power, most problems with the 1T-MX-3344 relate to damaged/poor quality cables or incorrect signal levels.

If some inputs function correctly and others do not, interchange cables between sources and see if the problem moves with the cables. If it moves, a bad cable or cable connector is the probable reason for the trouble. If the problem remains with one particular input, connect that source to a different input using the same cable and see if the problem moves. If it does, the problem is with the source.

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-MX-3344 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 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 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 Mercosur**

Av. Diaz Velez 3965 #PB  
(1200) Capital Federal  
Buenos Aires, Argentina  
Tel +54 11 5917-2525  
Fax +54 11 4032-0281  
sales.mercosur@tvone.com  
www.tvonela.com

### **TV One Asia**

16F-4, NO.75, Sec. 1  
Hsin Tai Wu Road, Hsichih  
Taipei Hsien 22101  
Taiwan R.O.C.  
Tel +886 2 2698-2296  
Fax +886 2 2698-2297  
sales.asia@tvone.com  
www.tvoneasia.com

### **TV One China**

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

End of Manual