Instruction Manual

1T-VS-624
HD/PC to HDMI Scaler with Audio

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1.0   INTRODUCTION

Thanks for purchasing this 1T-VS-624 HD/PC to HDMI Scaler with Audio from TV One. This Scaler converts a wide variety of standard PC (RGB) signals between VGA and WUXGA and also converts YUV HDTV signals to a standard HDMI output at PC, SD or HD resolutions. In addition, externally available audio can be embedded into the output HDMI signal via separate Toslink and Analog Stereo inputs. Output audio, embedded in the HDMI signal, is separately available as Toslink and Analog Stereo outputs providing maximum flexibility for systems integration.

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.5/6 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.

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1.2   Features

The 1T-VS-624 has many features that enable it to perform in a superior manner.
Among those features you will find:

- HDMI v1.2, HDCP 1.1, DVI 1.0 compliant
- Auto detects RGB and YUV Input resolutions
- RGB Input: VGA through WUXGA
- YUV Input: 480i, 480p, 720p, 1080i, 1080p
- Output: HD to 1080p, PC to WUXGA
- Video level adjustments

- Automatically detects HDMI display Resolution
- Supports embedded and external audio in and out
- Up to 150ms audio delay
- Locking DC power adapter
- 3-D Motion adaptive, 3-D de-interlacing and 3:2/2:2 pull-down
- OSD (On Screen Display)

2.0   SPECIFICATIONS

Video Input	
PC RGB Video Input	1x via HD-15 Connector

Video Output	
HDMI 1.2 (HDCP 1.1 compliant)	1x via HDMI Connector

Scaling Engine	
De-Interlace Pull-Down Image Component Processing Frame Rate Conversion Scan Conversion	3D Motion Adaptive 3:2 + 2:2 Recovery Full Time/Full Range 50/60Hz Converts all Standard Scan Formats

Audio Inputs	
Analog Stereo Digital	1x via 3.5mm Stereo Connector 1x SPDIF via Toslink Connector

Audio Outputs	
Analog Stereo Digital	1x via 3.5mm Stereo Connector 1x SPDIF via Toslink Connector

Audio Adjustments	
Variable Audio Output Delay	Off / 40ms / 110ms / 150ms

Audio Performance	
Analog Stereo Input Level Analog Stereo Output Level Toslink Sampling Rate Analog Stereo Bandwidth	2Vrms max @ 47KΩ 1Vrms @ 47KΩ 48KHz, 2CH, LPCM 20Hz to 20KHz

Limited Warranty	
Main Unit	3 Years Parts and Labor

Mechanical	
Size (H-W-D) Weight (Net)	25 x 102 x 145mm (1 x 4 x 5.7") 340g (12oz)

Environmental	
Operating Temperature Operating Humidity	0° to +50°C (+32° to +122°F) 10% to 90%, Non-condensing
Storage Temperature Storage Humidity	-10° to +60°C (+14° to +140°F) 10% to 90%, Non-condensing

Power Requirement	
External Power Supply	5VDC@2.6A, twist lock connector

Regulatory Approvals	
Main Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included	
1x AC Power Adapter	US, UK or Euro Type
1x Operations Manual	

2.1 Supported Input Formats and Resolutions

The 1T-VS-624 accepts analog PC signals via the HD-15 connector directly and analog component signals via the use of an adapter cable. The resolutions and formats processed for these inputs are as follows:

Resolution		V. Rate/Hz	Scan	Format
480i	720x480	60 (NTSC)	Interlaced	YUV
576i	720x576	50 (PAL)	Interlaced	YUV
480p	720x480	60	Progressive	YPbPr / RGBHV
576p	720x576	50	Progressive	YPbPr / RGBHV
720p	1280x720	50, 60	Progressive	YPbPr / RGBHV
1080i	1920x1080	50, 60	Interlaced	YPbPr / RGBHV
1080p	1920x1080	50, 60	Progressive	YPbPr / RGBHV
VGA	640x480	60, 72, 75, 85	Progressive	RGBHV
SVGA	800x600	56, 60, 72, 75, 85	Progressive	RGBHV
XGA	1024x768	60, 70, 75, 85	Progressive	RGBHV
SXGA	1280x1024	60, 75, 85	Progressive	RGBHV
UXGA	1600x1200	60	Progressive	RGBHV
WXGA	1280x800	60	Progressive	RGBHV
WXGA+	1440x900	60	Progressive	RGBHV
	1600x900	60	Progressive	RGBHV
	1400x1050	60	Progressive	RGBHV
WSXGA	1680x1050	60	Progressive	RGBHV
WUXGA	1920x1200	60	Progressive	RGBHV

2.2 Supported Output Formats and Resolutions

The 1T-VS-624 can provide a large number of output resolutions in the RGBHV format as shown in the following table:

Resolution		V. Rate/Hz	Scan	Format
480p	720x480	60	Progressive	RGBHV
576p	720x576	50	Progressive	RGBHV
720p	1280x720	50, 60	Progressive	RGBHV
1080i	1920x1080	50, 60	Interlaced	RGBHV
1080p	1920x1080	50, 60	Progressive	RGBHV
VGA	640x480	60	Progressive	RGBHV
SVGA	800x600	60	Progressive	RGBHV
XGA	1024x768	60	Progressive	RGBHV
SXGA	1280x1024	60	Progressive	RGBHV
UXGA	1600x1200	60	Progressive	RGBHV
WXGA	1280x800	60	Progressive	RGBHV
WXGA+	1440x900	60	Progressive	RGBHV
	1600x900	60	Progressive	RGBHV
	1400x1050	60	Progressive	RGBHV
WSXGA	1680x1050	60	Progressive	RGBHV
WUXGA	1920x1200	60	Progressive	RGBHV

NOTE: The 1T-VS-624 automatically detects the resolution of the HDMI source and also has the ability to determine the resolution of the HDMI display device when in the "NATIVE" resolution mode, which is the default setting. Although you can manually select an output resolution setting via the OSD (On Screen Display) menu, it is not necessary to set an output resolution for most uses.
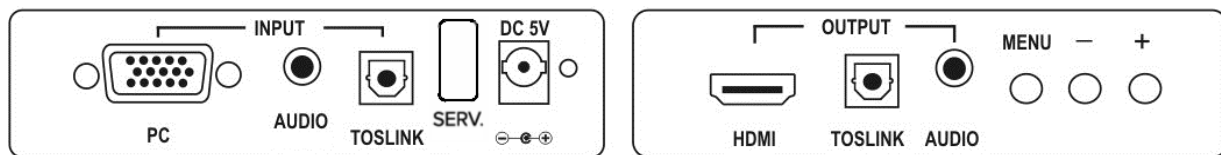
3.0   PACKAGE CONTENTS

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

- 1x 1T-VS-624 HD/PC to HDMI Scaler with Audio
- 1x AC 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.

4.0   CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the signal inputs, outputs, operational controls and the location of the power connector. Next, turn off the PC/RGB source and the HDMI Display and connect the appropriate PC, HDMI and audio cables, first between the source and the 1T-VS-624 and then between the 1T-VS-624 and the display. Plug in the provided AC adapter, first to the 1T-VS-624 and then to an active AC power source. Lastly, turn on the PC source and HDMI display device. (The 1T-VS-624 has no power switch and will begin to function as soon as it has the AC adapter connected to it.)

1T-VS-624 Front Panel   **1T-VS-624 Rear Panel**

NOTE 1: tvONE utilizes a special "Twist-to-lock" connector to prevent the power cable coming loose. Insert the connector into the socket just as you would with other manufacturer's power adaptors but once securely inserted, gently twist the connector 90 degrees to the right or left which will lock it in place.

NOTE 2: To realize maximum quality and performance, use only the highest quality cables with the 1T-VS-624.   Low quality cables will cause degradation of the signal quality and limit the distance between both the source and destination devices and the 1T-VS-624.

5.0   OPERATING THE UNIT

The 1T-VS-624 is controlled via an On Screen Display (OSD) menu structure. Much of the operation of the scaler is done automatically however there may be an occasion where an adjustment is needed, particularly if the input signals are not presented at standard levels. Numerous parameters can be controlled from the menu including adjustment of video parameters, selection of output resolutions and type of audio output.

The menu structure is shown on the next page and is a two tier arrangement. When you press the Menu button for the first time, you will be on the top tier. You can then use the + and – buttons to move up and down the first tier selections until you arrive at the one

associated with the parameters you wish to adjust. *NOTE: Some of the first tier parameters have only one associated adjustment -- e.g. BRIGHTNESS -- whereas others have several: e.g. FINETUNE.*

When you have reached the parameter you wish to adjust, press the Menu button again to select that item. If there is only one item in the second tier associated with the parameter, you can use the + and − buttons to make an adjustment. If there are more than one item associated with the parameter, use the + and − buttons to move to the item you wish to adjust, press the Menu button again to select that item and then use the + and − buttons to make the adjustment.

Once the adjustment has been made, use the Menu button and + and − buttons to navigate to where you can exit the OSD.

5.1 Menu Structure

The main structure is as follows. The 1T-VS-624 OSD (On Screen Display) Menu structure is a two tier display. You first select the high level portion of the menu (Video, Color, Output, OSD Characteristics, Audio, Information or Exit) and then, with the exception of the Exit function; a secondary menu will appear where specific adjustments or operational selections can be made.

High Level	Second Level	Adjustment
Picture Setting	Contrast	0-100 Contrast Adjustment
	Brightness	0-100 Brightness Adjustment
	Exit	Return to High Level Menu
Finetune	Phase	0-100 Phase Adjustment
	Clock	0-100 Clock Adjustment
	H-Position	0-100 H-Position Adjustment
	V-Position	0-100 V-Position Adjustment
	Exit	Return to High Level Menu
Color Setting	Red	0-100 Relative Red Color Level
	Green	0-100 Relative Green Color Level
	Blue	0-100 Relative Blue Color Level
	Exit	Return to High Level Menu
Output Setting	Size	Aspect / Full / Overscan / Underscan / Letterbox / Panscan
	Resolution[1]	NATIVE / VGA / SVGA / XGA / SXGA / SXGA+ WXGA+ / WSXGA / UXGA / WUXGA 480i/480p/720p@60Hz/1080i@60Hz/1080p@60Hz 576i/576p/720p@50Hz/1080i@50Hz/1080p@50Hz
	Exit	Return to High Level Menu
Audio	Delay	OFF / 40ms / 110ms / 150ms
	Input	Optical / Analog
	Sound	On / Mute
	Exit	Return to High Level Menu
OSD Setting[2]	H Position	0-100 Relative L-R Position
	V Position	0-100 Relative U-D Position

	Timer	0-100 Relative OSD Show Time (Sec)
	Background	0-100 Relative OSD Text Transparency
	Display Select	INFO / OFF / ON
	Exit	Return to High Level Menu
Factory Reset	-	Restores original factory settings
Information[3]	-	Source (Input Interface) Input (Input Resolution) Output (Output Resolution) Version (Firmware Version)
Exit	-	Close the OSD Menu

OSD Menu Notes:

Note 1: The Resolution sub-menu allows you to specify the resolution you want the 1T-VS-624 to produce. Keep in mind that setting the resolution can cause an apparent malfunction if you select a resolution that your display device cannot reproduce. ***Make certain your display device can reproduce the resolution you select BEFORE you select it.***

Note 2: The OSD sub-menu allows you to customize the way the On Screen Display appears when it has been accessed. This is a personal preference matter. You can change the default if you wish or simply leave it at the factory setting.

Note 3: The Info sub-menu contains technical information. If you have problems with the 1T-VS-624 and require assistance, the technician may ask you to read information from this menu to him as part of the troubleshooting process.

6.0   TROUBLESHOOTING

Faulty cables are the most common problem associated with the 1T-VS-624. Make certain you are using the highest quality cables available. In the event of trouble with the unit, inspect the cables for damage and make sure they are completely seated in their connectors. Also make certain that the AC adapter is plugged in to a working AC socket and that the LED, located next to the DC connector, is lighted.

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-VS-624 Scaler has been tested for compliance with the 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 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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