Instruction Manual

1T-DA-552, 1T-DA-554, 1T-DA-564
DVI Distribution Amplifiers

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1.0   INTRODUCTION

The 1T-DA-552, 1T-DA-554 and 1T-DA-564 DVI Distribution Amplifiers provide multiple outputs from a single DVI input for distribution to devices capable of receiving and/or displaying such signals. The 1T-DA-552 provides 2 DVI outputs, the 1T-DA-564 provides 4 DVI outputs and the 1T-DA-564 provides 4 DVI outputs plus 8 standalone audio signals—1x4 analog stereo and 1x4 S/PDIF coaxial audio. Each product in this series is compatible with HDMI v1.3 specifications and provides a cutting-age technology that supports Deep Color (10-bit and12-bit) video plus new, lossless Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio digital audio. In addition, all devices exhibit high bandwidth (up to 225MHz - 2.25Gbps) and they provide signal amplification and equalization for high performance processing of audio and video allowing the signals to travel great distances without quality loss. As a bonus feature, all DVI outputs can also be cascaded.

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, AV Toolbox 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

- DVI-D 1.0, HDMI 1.3 and HDCP 1.1 Compliant
- Allows distribution of 2 or 4 Outputs. (1T-DA-552 and 1T-DA-554)
- Provides 1x4 Analog Stereo & 1x4 S/PDIF Audio Distribution (1T-DA-564)
- Supports Dolby Digital +, Dolby® Digital TrueHD and DTS-HD Audio
- Supports 10/12 bit Color Depth Display
- Supports PC resolutions to 1920x1200
- Supports HDTV resolutions to 1080p
- Supports SDTV resolutions of 480i and 576i
- Supports HDMI v1.3 when using Optional DVI to HDMI Adaptors
- Signal Equalization feature enables longer cable runs
- Supports Automatic Discovery of Monitor EDID

1.3 Getting the Best Results

There are many factors affecting the quality of results when distributing DVI type signals. Some basic precautions will ensure the best possible performance from your new DVI DA.

- **Output display device** – The quality of the output signal will depend largely upon the type and quality of the DVI display device used.   For instance, some video projectors just look better than others.
- **Distance between the DA sources and the display –** This plays a major role in the final result. Long distances are possible, but special measures should be taken in order to avoid cable losses. These include using high quality cables. Line amplifiers may also be necessary for the longest runs.
- **Input/Output connection cables** – Low quality cables are susceptible to interference. They degrade signal quality due to poor matching and can cause elevated noise levels. Cables should be of the best quality.
- **Interference from nearby electrical devices** – These can have an adverse effect on signal quality. For example, an older computer monitor often emits very high electromagnetic fields that can interfere with the performance of video equipment in its proximity.

2.0 SPECIFICATIONS

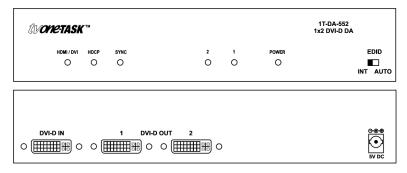|	
Video Inputs	
DVI (All Models)	1x via DVI Connector (Note 1)
Video Output	
DVI	2x via DVI Connector (1T-DA-552)
	4x via DVI Connector (1T-DA-554 & 1T-DA-564)
Audio Output	
Audio I/O	HD-Audio, including Dolby® TrueHD & DTS-HD
Analog Stereo	4x via Stereo 3.5mm 1T-DA-564)
S/PDIF	4x Via S/PDIF RCA Coaxial (1T-DA-564)
Audio Bandwidth	20Hz to 20 KHz (1T-DA-564)
Audio Impedance	20KΩ Stereo, 75Ω Coaxial S/PDIF (1T-DA-564)
Audio Levels	Unity, Nominal, S/PDIF .5-1V p-p (1T-DA-564)
General	
Frequency Bandwidth	2.25Gbps (When using HDMI Single Link)
Color Depth	10/12 bit Color Depth Display
Supported PC/DVI resolutions	Up to 1920x1200
Supported HDTV Formats	480i, 480p, 576i, 576p, 720p, 1080i and 1080p
Compliance	DVI 1.0, HDMI V1.3, HDCP V1.1
Signal Enhancement	Internal
Maximum Distances	
Source to DA	20m (60') for 1080p/8-bit, 15m (45') for 1080p/12-bit
DA to Display	15m (45') for 1080p/8-bit, 10m (30') for 1080p/12-bit
Warranty	
Limited Warranty	3 Years Parts and Labor
Mechanical	
Size (H-W-D)	41.5x218x147mm (1.6"x8.6"x5.8")
Weight (Net)	0.85kg (1.88lbs)
Environmental	
Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	0° to +50°C (+32° to +122°F)
Storage Humidity	10% to 90%, Non-condensing
Power Requirement	
External Power Supply	5VDC@2A
Regulatory Approvals	
DVI DAs	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS
Accessories Included	
1x AC Power Adapter	US, UK or Euro
1x Instruction Manual	
1x Accessory Pack	
Optional Accessories	
RM-220	Single/Dual Rackmount Kit
Product Item Numbers	
1T-DA-552	1x2 DVI DA
1T-DA-554	1x4 DVI DA
1T-DA-564	1x4 DVI DA with Audio
Notes:	
(1) HDMI I/O is possible using optional DVI to HDMI adapters	

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-DA-552, 1T-DA-554 or 1T-DA-564 DVI DA
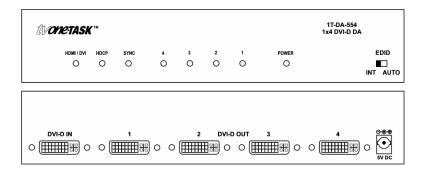- 1x 100~240VAC to 5VDC Power Adapter
- 1x Instruction Manual

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.
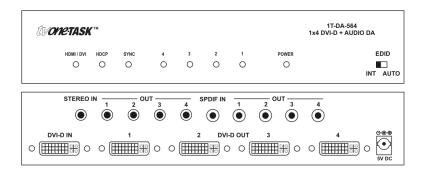
4.0   CONNECTING THE HARDWARE

Connect the DVI Video Source to the input of the 1T-DA-552, 1T-DA-554 or 1T-DA-564 Distribution Amplifier, connect its outputs to a DVI Compliant devices or monitors and lastly connect the AC to DC Power Adapter. The drawings below show the locations of the input, outputs and power connector.

1T-DA-552 1x2 DVI DA

1T-DA-554 1x4 DVI DA

1T-DA-564 1x4 DVI DA with Audio

4.1   Connecting the Inputs to the Distribution Amplifiers

You can connect any DVI compliant device's output to the DVI input. Make certain that the DVI cable is securely plugged into the source device as well as the DVI Distribution Amplifier. Always use a high quality cable, as short a length as possible, for best results.

4.2   Connecting the Outputs to the Destination Devices

Using a high quality DVI cable, connect each output of the DVI DA to a DVI compliant device. Use the shortest cable run possible.

4.3   Connecting the Audio I/O (1T-DA-564 Only)

Connect S/PDIF audio from the source device to the 1T-DA-564's S/PDIF input and then connect the S/PDIF outputs from the 1T-DA-564's RCA connector(s) to the destination devices. If the destination devices can accept only analog stereo audio, connect stereo audio to the 1T-DA-564's input and then to the device's inputs using the 3.5mm connectors.

4.4   Connecting Power

All units are shipped with a Power Adapter to convert 100~240VAC@50-60Hz to 5VDC. Connect the DC Output Cable from the Power Adapter to the back of the unit and then plug the Power Adapter into an AC Receptacle. There is no power switch. The unit begins to function as soon as it is plugged into AC.

4.5   Optional Rack Mount Kit

The Distribution Amplifiers can be mounted in a standard 19" equipment rack. To mount either of the 1x4 DAs in a rack, the optional RM-220 Rack Mount kit must be purchased. Using this kit, either type DA (Video only or Video + Audio) can be mounted in the rack. It's also possible to mount one of each DA in the rack using the dual rack mount capability. It is not necessary to mount two of the same type of DAs.

5.0 OPERATING THE DVI DISTRIBUTION AMPLIFIERS

Once the input, output and power cables are connected, plug the AC adaptor into the AC receptacle and the Distribution Amplifier will begin to function. A Power LED on the front of the unit will confirm power is present. Other than connecting cables and applying power, there are no other operator interventions required with the possible exception of the EDID jumper.

EDID Operation:

On the rear of the unit you'll find an EDID* Jumper. This jumper controls whether the DA determines the connected device's EDID Number automatically or uses an internal information table.

The default factory setting for the EDID Control Jumper is **AUTO** and you should leave it as it is if the display is operating properly. Switch to **INT** (Internal) to use build-in EDID information table should the display have problems. When the EDID control jumper in AUTO position, the unit will detect the first HDMI output source's EDID and record the value in the DA. If the first detected output source is DVI, it will pass to the next source in sequence until the first HDMI compliant device has been detected.

If the DA cannot reliably determine the destination device's EDID number through the handshake routine, switching to the internal table (INT) allows the DA to run through a range of pre-defined resolutions and refresh rates so that a reliable connection can be made.

The Extended display identification data (EDID) is a data structure provided by a computer display to describe its capabilities. It's what enables the TV One OneTask DVI DA to know what kind of monitor is connected to the unit. EDID is defined by a standard published by the Video Electronics Standards Association (VESA). The EDID includes manufacturer name, product type, phosphor or filter type, timings supported by the display, display size, luminance data and (for digital displays only) pixel mapping data.

Operational LEDs

Besides the Power LED, there are status LEDs as well as other LEDS showing the unit's condition with respect to successfully executed output connections.

At the lower left, there are three LEDs which show signal format status. The first (or left-most) LED shows whether an HDMI or DVI signal is being received. Next to that LED, another LED shows if the signal is encoded with HDCP (High Definition Content Protection) signals and a third LED shows if the signal has synchronized. There are also LEDs for each output which show whether or not the output has successfully made a connection with the destination device.

6.0   TROUBLESHOOTING

In the event of problems, first make certain that the input and output cables are no more than 30 meters long (for signals to 1080p resolution) and are of the highest possible quality. Next, make certain that the Distribution Amplifier is receiving power.

When operating the DA, remember that DVI and HDMI devices communicate with one another so the source devices and destination device must be fully DVI or HDMI capable. In addition, HDCP encryption requires additional processing which also is dependent on the equipment you have connected to the sources and destination device. If you experience problems using the 1T-DA-552, 1T-DA-554 or 1T-DA-564 Distribution Amplifier, you should attempt to determine what is wrong by attaching each of the source devices – one at a time – directly to the destination device using the same cables you are using with the expanded system. This is a way of determining if the problem is due to bad cables or a problem with the other devices. If you are unable to obtain a signal using this simplified path, suspect the cables, the source device or the destination device.

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-DA-552, 1T-DA-554 and 1T-DA-564 DVI Distribution Amplifiers have 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.

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