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MANUAL PART NUMBER: 400-0066-003  
PRODUCT REVISION: 2

## **DA1322AT**

### **1-IN, 2-OUT RGBHV DISTRIBUTION AMPLIFIER (W/EQ & GAIN)**

### **USER'S GUIDE**

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# DISTRBUTION AMPLIFIERS

## INTRODUCTION

Thank you for purchasing the **DA1322AT** Distribution Amplifier. We are sure you will find it a reliable and useful product.

Superior performance for the right price backed by solid technical and customer support is what we have to offer.

The product you are holding in your hands is designed using state-of-the-art technology and is superior to anything available on the market. You will find this and our other products reliable, long lasting, and simple to operate.

We are committed to providing our customers with solutions to the most demanding audio-visual installations at very competitive pricing.

We appreciate your selection of our products and are confident that you will join the ranks of our many satisfied customers throughout the world.

### **This manual covers:**

**DA1322AT** - 1-in, 2-out RGBHV high resolution video Distribution Amplifier

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# DISTRIBUTION AMPLIFIERS

## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1322AT** Distribution Amplifier. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1322AT** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

### 1.1 GENERAL

- Unauthorized personnel shall not open the unit since there are high-voltage components inside.
- Qualified Altinex service personnel, or their authorized representatives must perform all service.

### 1.2 SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE DA1322AT

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the air flow through the devices' fan or vents.
- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.
- Connect the unit to a properly rated supply circuit.
- Reliable Earthing (Grounding) of Rack-Mounted Equipment should be maintained.

### 1.3 INSTALLATION

- For best results, place the **DA1322AT** Distribution Amplifier on a flat, level surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **DA1322AT** Distribution Amplifier in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **DA1322AT** Distribution Amplifier carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **DA1322AT**. If the **DA1322AT** is to be mounted,

to a table or wall, use only Altinex made mounting accessories (Rack Mount Shelf **DA1293FC**, Rack Mount Ears **DA1294FC**) and cables for optimum setup.

- To turn off the main power, be sure to remove the cord from power outlet. The power outlet socket should be installed as close to the equipment as possible, and should be easily accessible.
- Do not pull power cord or any cable that is attached to the **DA1322AT** Distribution Amplifier.
- If the **DA1322AT** Distribution Amplifier is not used for an extended period, disconnect the power cord from the power outlet.

### 1.4 CLEANING

- Unplug the **DA1322AT** power cord before cleaning. Clean surfaces with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

### 1.5 FCC / CE NOTICE

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# DISTRIBUTION AMPLIFIERS

- Any changes or modifications to the unit not expressly approved by Altinex, Inc. could void the user's authority to operate the equipment.

## ABOUT YOUR DISTRIBUTION AMPLIFIER 2

The **DA1322AT** is a 1-in 2-out RGBHV high-resolution video distribution amplifier designed to allow the connection of a single computer video or interface source to one or two monitors or projectors capable of handling the source resolution.

The **DA1322AT** offers additional features for the advanced user. Each video channel offers dip-switches for gain and equalization adjustment that can be used when driving signals over long cable runs. The video channels can also be set to either AC coupling or DC coupling. Each video channels can also be terminated or unterminated.

The sync channels on the **DA1322AT** can be set to pass either analog video/sync or they can be set to regenerate digital (TTL) sync. In addition, the **DA1322AT** is capable of outputting horizontal sync, vertical sync, composite sync, or sync on green. Finally, the sync channels on the **DA1322AT** can be terminated or unterminated.

Though primarily designed to pass an RGBHV signal format, the **DA1322AT** can also pass RGBS, RGsB, Component Video (Y, R-Y, B-Y), S-Video (Y/C), and Composite Video by using the appropriate channels.

The **DA1322AT** uses a universal linear power supply with continuous operation between 95-240V AC.

## TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	DA1322AT
<b>GENERAL</b>	
<b>Input</b>	1
Input Connector	5-BNC Female
<b>Output</b>	2
Output Connectors	Two 5-BNC Female
<b>Compatibility</b>	High resolution RGBHV, RGBS, RGsB and RsGsBs,

	Component, S-Video and Composite Video
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Table 1. **DA1322AT** General

MECHANICAL	DA1322AT
Material	0.1" Al
Finish	Gray
Top Panel	Lexan
Height (inches)	1.75in (44mm)
Width (inches)	8.50in (216mm)
Depth (inches)	4.50in (114mm)
Weight (pounds)	2.0lbs (0.91kg)
Ship Weight (pounds)	3.2lbs (1.45kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000hrs

Table 2. **DA1322AT** Mechanical

ELECTRICAL	DA1322AT
<b>Input Video Signal</b>	
Analog signal	1.5V p-p max
Impedance	10k Ohms/75 Ohms selectable
<b>Input Sync Signal</b>	
Horizontal, Vertical, & C-Sync	0.5 V - 5 V
Sync on Green	-0.3V (on video channels)
Impedance	10k Ohms/75 Ohms selectable
<b>Output Video Signals</b>	
Analog Signal	Gain of 1.05 (+/-5%) or 1.35 (+/-5%)
Fall/Rise Time (ns)	1.0
Impedance	75 Ohms
<b>Output Sync Signal</b>	
Composite Sync	Analog/TTL (+/-) selectable
Sync on Green	-0.3V (on video channels)
Impedance	22 Ohms
<b>Frequency Compatibility</b>	
Horizontal	15-200 kHz
Vertical	47-180 Hz
Typical Video Bandwidth	500 MHz
Minimum Video Bandwidth	350 MHz
<b>Cable Equalization</b>	(Selectable) 0 dB @ 100MHz (off) or 4.5dB

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	@ 100MHz (on)
<b>Coupling</b>	DC
<b>Cross-talk</b>	-40dB @10MHz
<b>Power</b>	
Internal Power Adapter	95-240 V Continuous
<b>Power Consumption</b>	10 watts max.

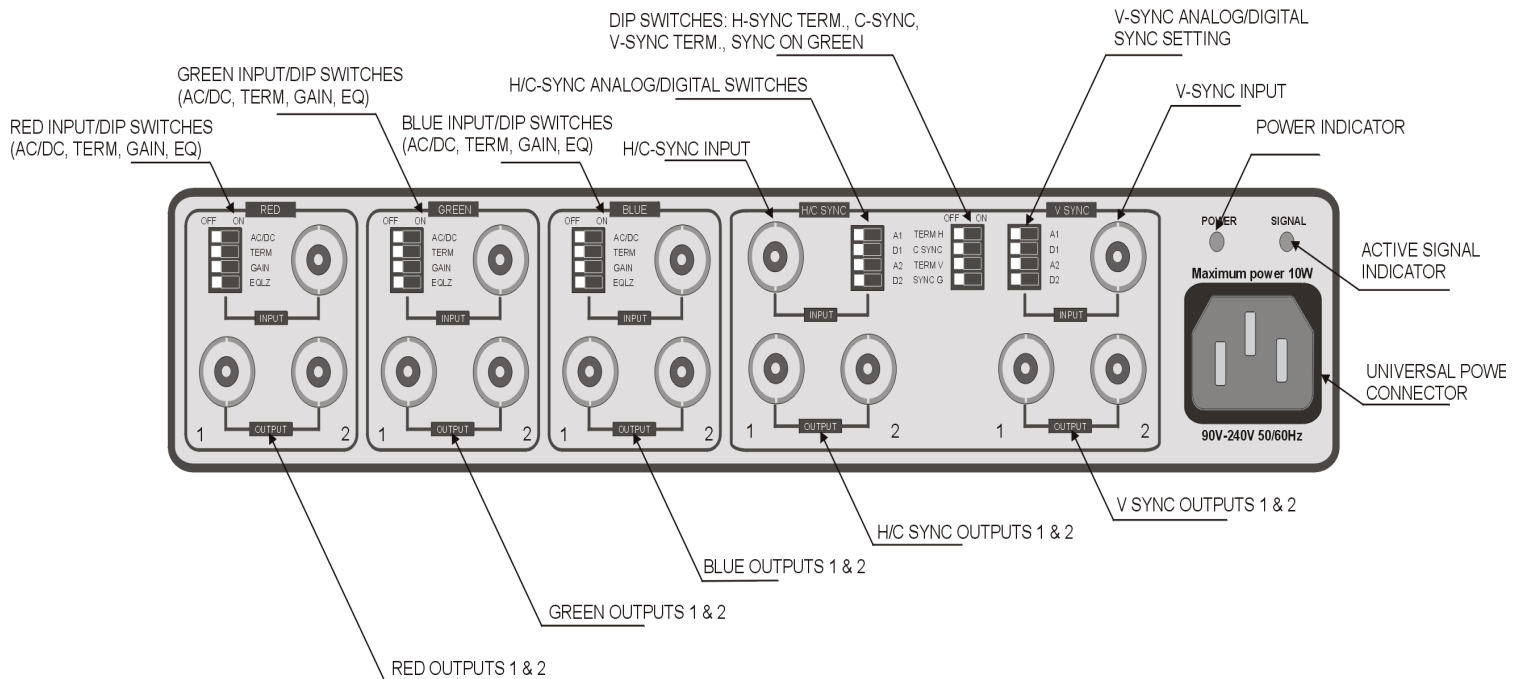
Table 3. DA1322AT Electrical

## DESCRIPTION OF DA1322AT 4

FRONT PANEL OF DA1322AT



BACK PANEL OF DA1322AT



# DISTRIBUTION AMPLIFIERS

## 4.1 INPUT/OUTPUTS

The outputs of the **DA1322AT** allow signals to be driven through 100 feet or more of cable depending on cable quality and the source signal resolution. The **DA1322AT** uses 5-BNC connectors for each input and output representing red, green, blue, and separate horizontal and vertical sync. When passing an RGBS format signal, simply use the horizontal channel to pass composite sync.

## 4.2 CHANNEL DIP SWITCHES

Each channel (RED, GREEN, and BLUE) of the **DA1322AT** has four dip switches: AC/DC, TERM, GAIN, and EQLZ.

The **AC/DC** switch is used to select AC or DC coupling of video signal through a distribution amplifier.

The **TERM** switch is used to terminate or unterminate RED, GREEN, & BLUE inputs with 75 Ohms.

The **GAIN** switch is used to set gain to 1 or 1.3.

The **EQLZ** switch is used to compensate for longer cable runs.

## 4.3 SYNC CONTROL SWITCHES

The **DA1322AT** has separate Sync control switches: TERM H, C SYNC, TERM V, and SYNC G.

The **TERM H** switch is used to terminate or unterminate horizontal sync input with 75 Ohms.

The **TERM V** switch is used to terminate or unterminate vertical sync input with 75 Ohms.

The **C Sync** switch is used with composite sync.

The **Sync G** switch is used with sync on green.

## 4.4 BANDWIDTH

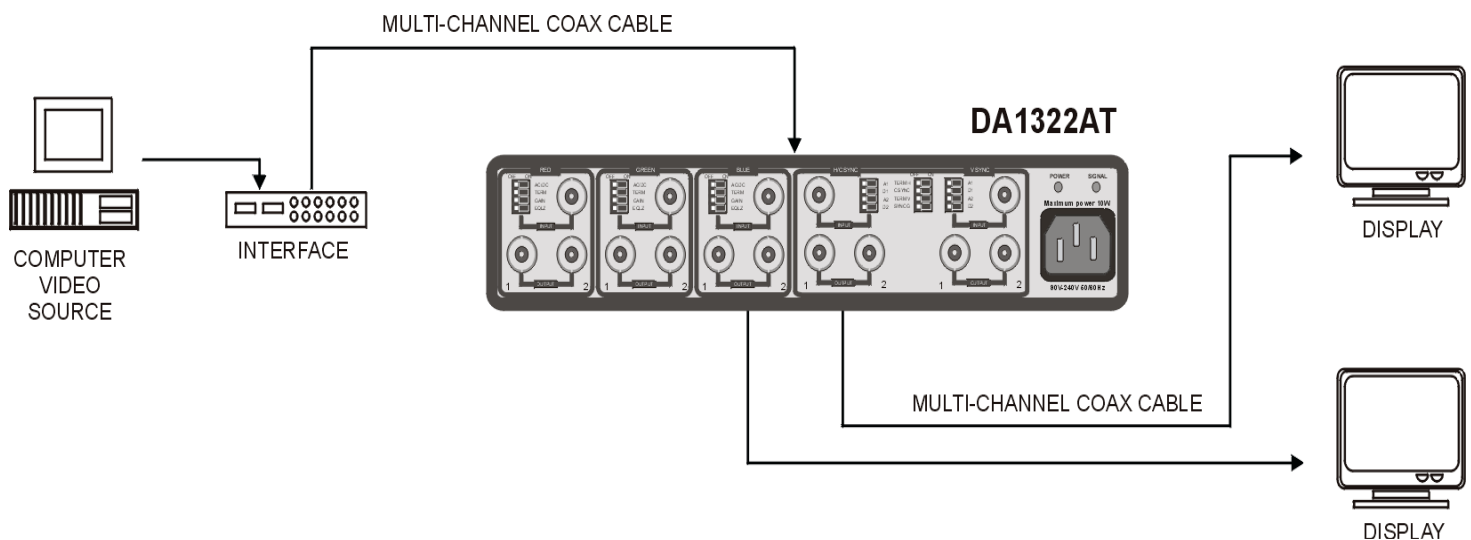
Offering a minimum video bandwidth of 350 MHz and typical bandwidth close of 500 MHz, the **DA1322AT** allows even very high resolution video signals to pass without degrading the image quality.

## 4.5 POWER

Designed with a universal power input connector, the **DA1322AT** offers a built-in linear power supply with continuous operation at 95V to 240V.

## APPLICATION DIAGRAM

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## INSTALLATION 6

- Step 1.** Connect the power cord to the unit and plug it into the power outlet. The power indicator LED on the back panel will light. This indicates that the unit is operational.
- Step 2.** Connect the video output of the source (computer or other high-resolution source) to the input of the **DA1322AT** using a high quality coaxial-type cable. If the source offers a VGA-type 15-pin HD connector, for instance, Altinex part # **MS8102CA** (6' – 15-pin HD male to 5 BNC male) may be used. The active signal indicator on the back panel will light. This indicates that you have an input signal on the input of the distribution amplifier.

**Note:** You may have to use an interface with your computer to provide for the appropriate signal format type and to provide for the use of a local monitor if called for.

- Step 3.** Next, connect the output channels of the amplifier to the display devices (i.e. monitors and /or projectors).
- Step 4.** Verify that the picture quality on all displays is good. If you are not receiving a signal, make sure that the display is compatible with the resolution of the computer graphics card. If the picture quality is less than perfect, check to make sure that all of your connections are solid and that you are using high quality cable.

**CONGRATULATIONS! YOU ARE DONE.**

If you experience any problems, please call  
1-800-258-4623 or 1-714-990-2300 for  
international calls.

## OPERATION 7

The settings of the **DA1322AT** Distribution Amplifier can be adjusted using the Channel dip switches and Sync control switches as described in Section no. 4. There are no other adjustments necessary to operate the unit. The **DA1322AT** will operate successfully as long as cables are attached properly and other specifications are followed.

## ACCESSORIES 8

Model No.	Description
	<b>TABLE MOUNT BRACKETS</b>
<b>TM1271</b>	1 U High, ½ Rack-Wide
<b>TM1272</b>	1 U High, ½ Rack-Wide with 15-pin HD connector plate
<b>TM1273</b>	1 U High, ½ Rack-Wide with SNAP-IN connectors
<b>TM1274</b>	1 U High, ½ Rack-Wide with SNAP-IN and power connectors
	<b>RACK/TABLE MOUNT HARDWARE</b>
<b>DA1293FC</b>	19"-1U Rack Mount Shelf fits two ½ rack wide units
<b>DA1294FC</b>	19"-1U Rack Mount Ears. Holds one 1/2 rack wide unit
	<b>HIGH RESOLUTION 5-CHANNEL COAX CABLE</b>
<b>CB4203MR</b>	3 feet, 5-BNC to 5-BNC
<b>CB4206MR</b>	6feet, 5-BNC to 5-BNC
<b>CB4212MR</b>	12 feet, 5-BNC to 5-BNC
<b>CB4225MR</b>	25 feet, 5-BNC to 5-BNC
<b>CB4250MR</b>	50 feet, 5-BNC to 5-BNC
<b>CHB4275MR</b>	75 feet, 5-BNC to 5-BNC
<b>CB42100MR</b>	100 feet, 5-BNC to 5-BNC
<b>CB42150MR</b>	150 feet, 5-BNC to 5-BNC
	<b>SUPER HIGH RESOLUTION 5-CHANNEL COAX CABLE</b>
<b>CB4406MR</b>	6feet, 5-BNC to 5-BNC
<b>CB4412MR</b>	12 feet, 5-BNC to 5-BNC
<b>CB4425MR</b>	25 feet, 5-BNC to 5-BNC
<b>CB4450MR</b>	50 feet, 5-BNC to 5-BNC
<b>CB4475MR</b>	75 feet, 5-BNC to 5-BNC
<b>CB44100MR</b>	100 feet, 5-BNC to 5-BNC
<b>CB44150MR</b>	150 feet, 5-BNC to 5-BNC

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VGA TO RGB ADAPTER CABLES	
<b>MS8102CA</b>	15-pin HD Male to 5 BNC Male, 6ft
<b>MS8104CA</b>	15-pin HD Male to 5 BNC Male, 15ft
<b>MS8105CA</b>	15-pin HD Male to 5 BNC Male, 50 ft
<b>MS8112CA</b>	15-pin HD Female to 5 BNC Male, 6ft
<b>MS8114CA</b>	15-pin HD Female to 5 BNC Male, 15ft
POWER CABLES	
<b>PS5301US</b>	Power Cable for US
<b>PS5302UK</b>	Power Cable for UK
<b>PS5303AU</b>	Power Cable for Australia
<b>PS5304GR</b>	Germany

	cat 5 cable instead of coaxial cable?	instead coaxial cable, because you will loose the quality of the receiving signal. Due to this, we do not have isolation of each wire; the signals will interfere with each other.
6	What is the maximum resolution I can pass through the <b>DA1322AT</b> ?	Resolution format describes the number of pixels and lines in a given video image, as well as the rate at which each frame is re-drawn or refreshed. Offering a minimum video bandwidth of 350 MHz and typical bandwidth close 500 MHz, the <b>DA1322AT</b> allows even very high resolution video signals to pass without degrading the image quality.

## FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1	How many feet of cable may I use with the <b>DA1322AT</b> ?	The <b>DA1322AT</b> offers individual channel adjustment for gain and peaking, allowing specific control over the outputs for different lengths of cable.
2	Are the outputs of the <b>DA1322AT</b> buffered?	Yes, the <b>DA1322AT</b> offers two individually buffered outputs.
3	What is meant by buffered output?	Buffered output means that the output signal is isolated from the input signal. The loaded output does not affect the input, or any other output on the device. A buffered output may vary in terms of the gain or peaking adjustments made to the video signal
4	If the input of the <b>DA1322AT</b> provides an RGBHV format signal what is available on the output?	The <b>DA1322AT</b> offers sync combining and separating functions. If the input provides RGBHV, on the output you may have RGBS, You may also have RGBS on the input and RGBHV on the output.
5	May I use	You can not use cat 5 cable

## TROUBLESHOOTING GUIDE 10

We have carefully tested and have found no problems in supplied the **DA1322AT** unit; however, we would like to offer the following suggestions:

- Please make sure that input amplitude of the analog signal is less than 1.5V.
- Please make sure that the proper quality of cables is used. We recommend Altinex made cables for best results.
- If a problem shows up after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct the problem. NOTE: The sync pulse voltage must be at least 1.4 volts for proper operation of the distribution amplifier. If lower voltage is used, contact Altinex for additional information.



## 11.1 LIMITED WARRANTY

Altinex warrants that its products and cables are free from defects in materials under normal use and service. This warranty is limited to repairing at company's factory any part or parts of the product, which upon company's examination shall disclose to be, thus defective. Products considered defective should be returned to company with transportation charges pre-paid within 2 years (90 days for cables) from date of shipment to the purchaser. The warranty is expressly instead of all other warranties expressed or implied. Altinex neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of the products. This warranty shall not apply to any product that shall have been repaired or altered outside of company's factory in any way so as, in its judgment, to affect its stability or reliability, or that has been subject to misuse, negligence or accident.

## 11.2 RETURN POLICY

It is very important that you receive products that you have ordered and that this product fulfills your need. In the unlikely event that an Altinex product needs to be returned please follow the policies below:

Altinex will accept product returns for a period of 30 days from authorized Altinex dealers. Products should be returned in an unopened package.

If a product has been opened, the restocking fees will apply. For the restocking fee amount, please contact an Altinex Sales Representative.

If the product is in your possession for more than 30 days, the restocking fees will apply.

Altinex will not accept any returns on cables or custom products.

If your product is in warranty and needs service, contact the Altinex Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the Altinex Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service. The service charges will be quoted to you before the actual repairs are done.

## 11.3 CONTACT INFORMATION

### Sales Department

Phone: 714-990-2300

Fax: 714-990-3303

### Accounting Department

Phone: 714-990-6088

Fax: 714-990-5778

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