

MANUAL PART NUMBER: 400-0018-003
PRODUCT REVISION: 0

DA1406WM

1-IN, 6-OUT MAC

DISTRIBUTION AMPLIFIER

USER'S GUIDE

DISTRIBUTION AMPLIFIERS

INTRODUCTION

Thank you for purchasing the **DA1406WM** 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:

DA1406WM - 1-in, 6-out MAC Distribution Amplifier

TABLE OF CONTENTS

	Page
PRECAUTIONS / SAFETY WARNINGS	2
GENERAL	2
INSTALLATION.....	2
CLEANING	2
FCC / CE NOTICE	2
ABOUT YOUR DISTRIBUTION AMPLIFIER	3
TECHNICAL SPECIFICATION	3
DESCRIPTION OF DA1406WM	4
INPUT AND OUTPUTS	4
BOOT UP SWITCHES	5
APPLICATION DIAGRAM	5
INSTALLING YOUR DISTRIBUTION AMPLIFIER.....	6
OPERATION	6
ACCESSORIES.....	7
FREQUENTLY ASKED QUESTIONS.....	7
TROUBLESHOOTING GUIDE	8
ALTINEX POLICY	8
LIMITED WARRANTY.....	8
RETURN POLICY	8
CONTACT INFORMATION.....	8

DISTRIBUTION AMPLIFIERS

PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1406WM** Distribution Amplifier. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1406WM** 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 DA1406WM

- 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 **DA1406WM** 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 **DA1406WM** 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 **DA1406WM** Distribution Amplifier carefully. Dropping or jarring can damage internal components.

- Do not place heavy objects on top of the **DA1406WM**. If the **DA1406WM** is to be mounted to a table or wall, use only Altinex made mounting accessories like brackets (**DA1293FC** and **DA1294FC**) and cables for optimum setup.
- To turn off the main power, be sure to remove the cord from the power outlet. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.
- Do not pull the power cord or any cable that is attached to the **DA1406WM** Distribution Amplifier.
- If the **DA1406WM** Distribution Amplifier is not used for an extended period, disconnect the power cord from the power outlet.

1.4 CLEANING

- Unplug the **DA1406WM** 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 **DA1406WM** is a 1-in 6-out MAC distribution amplifier designed to connect a single computer video source to as many as six scan rate compatible displays. The **DA1406WM** will pass an analog video signal up to 1.5 V p-p. Using AGC sync circuitry, the **DA1406WM** converts incoming TTL sync levels to a standard 4V p-p level.

All input and output connectors are 15-pin D female. This provides superior durability, as the pins on male connectors can be easily bent disabling the entire unit. A male to male MAC cable will typically be required for connection between the computer and the input to the **DA1406WM**.

Four ID bit switches allow a user to boot up a computer at a variety of monitor settings. Though primarily designed for use with displays using 15-pin D (MAC-type) connectors, the **DA1406WM** can pass RGBHV, RGBS, and RGSB format signals. Adapter cables may be necessary to accomplish the appropriate connector change.

The **DA1406WM** is great for desktop use, but can also be rack-mounted using optional hardware.

TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	DA1406WM
GENERAL	
Input	1
Input Connector	15-pin D Female
Output	6
Output Connectors	Six 15-pin D Female
Compatibility	MAC, Power MAC, MAC Quadra, high resolution RGBHV, RGBS, RGSB and RsGsBs

Table 1. **DA1406WM** General

MECHANICAL	DA1406WM
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)	40,000 hrs

Table 2. **DA1406WM** Mechanical

ELECTRICAL	DA1406WM
Input Video Signal	
Analog Signal	1.5V p-p max
Impedance	75 Ohms
Input Sync Signal	
Horizontal, Vertical, & C-Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	10 k Ohms
Output Video Signals	
Analog Signal	Gain of 1.05 (+/-5%)
Fall/Rise Time (ns)	1.4
Impedance	75 Ohms
Output Sync Signal	
Composite Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	22 Ohms
Frequency Compatibility	
Typical Video Bandwidth	380 MHz
Minimum Video Bandwidth	350 MHz
Horizontal	15-200 kHz
Vertical	47-180 Hz
Coupling	DC
Cross-talk	-40dB @ 10 MHz
Power	
Internal Power Adapter	90-140/200-240 V
Power Consumption	10 watts max.

Table 3. **DA1406WM** Electrical

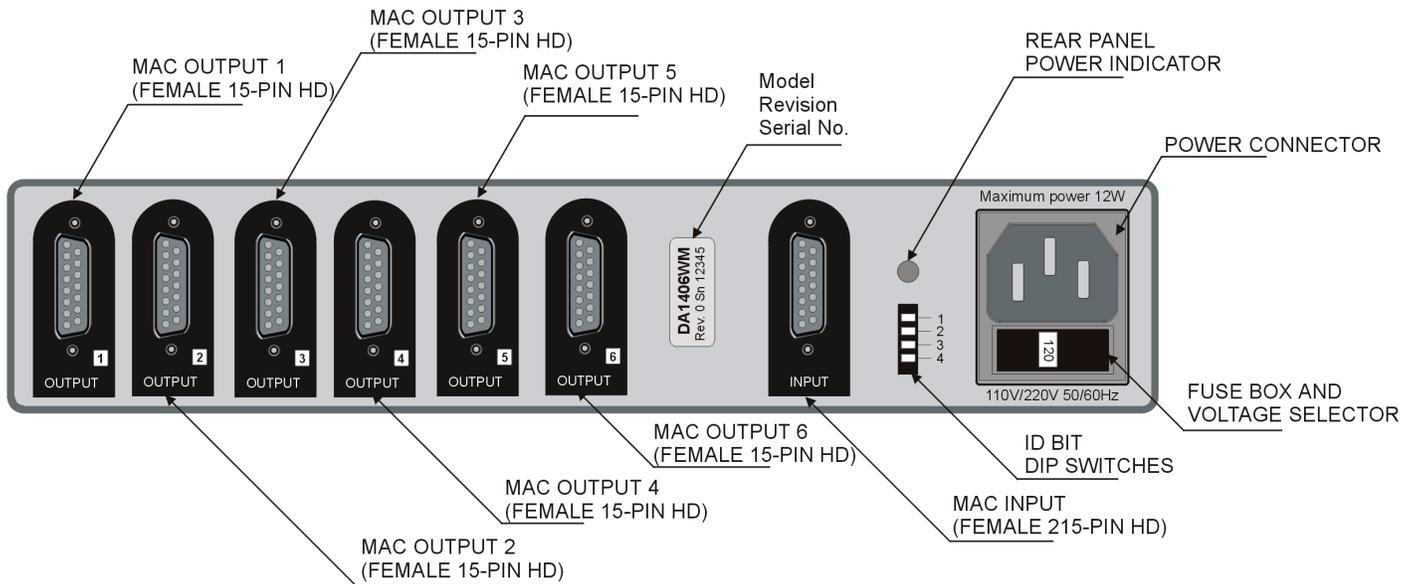
DISTRIBUTION AMPLIFIERS

DESCRIPTION OF DA1406WM 4

FRONT PANEL OF DA1406WM



BACK PANEL OF DA1406WM



4.1 INPUT AND OUTPUTS

Using female 15-pin D (MAC-type) connectors on all input and output connectors, the **DA1406WM** can be used with readily available MAC-type cables. If desired, the input and/or outputs of the **DA1406WM** can be easily adapted to 5-BNC connectors to allow it to be used with RGsB, RGBS, or RGBHV signal types as well. This requires the use of Altinex **MS8100** series adapter cables (15 pin to 5 BNC).

PIN No.	Input signals on 15-pin D female connector
1	Ground
2	Red
3	Composite Sync
4	Switch 1 (Grounded when switch is ON)
5	Green
6	Ground
7	Switch 2 (Grounded when switch is ON)
8	No connection
9	Blue
10	Switch 3 (Grounded when switch is ON)
11	Ground

DISTRIBUTION AMPLIFIERS

PIN No.	Input signals on 15-pin D female connector
12	Vertical Sync
13	Ground
14	Ground
15	Horizontal Sync

Table 4. The DA1406WM Input pin-out

PIN No.	Output signals on 15-pin D female connector
1	Ground
2	Red
3	Composite Sync
4	No connection
5	Green
6	Ground
7	No connection
8	No connection
9	Blue
10	No connection
11	Ground
12	Vertical Sync
13	Ground
14	Ground
15	Horizontal Sync

Table 5. The DA1406WM Outputs pin-out

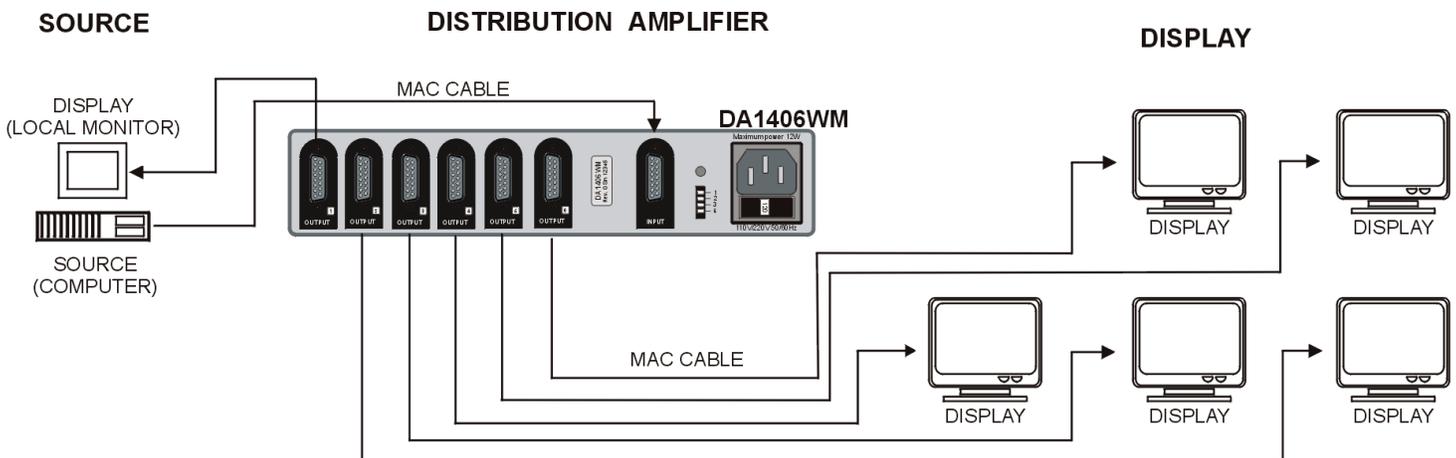
4.2 BOOT UP SWITCHES

Some Video cards require the proper sense ID pins to determine the boot up mode. Sense pins are usually present on MAC video cards. When distribution amplifiers are used, the local monitor (monitor connecting directly to the computer) is no longer available. To insure the proper boot up of the computer, the DA1406WM has dip-switches located on the back panel of the unit.

SWITCH	FUNCTION	ON	OFF
1	Pin 4	GND	OPEN
2	Pin 11	GND	OPEN
3	Pin 12	GND	OPEN
4	Not used		

Table 6. Description dip-switches of the DA1406WM

APPLICATION DIAGRAM 5



INSTALLING YOUR DISTRIBUTION AMPLIFIER

6

- Step 1.** Make sure that the power input is set to the proper AC voltage in your country. An incorrect setting can result in equipment damage not covered by warranty. If the power input voltage needs to be changed, remove the fuse portion of the power entry module and change the location of the fuse. Note that the correct voltage is visible through the voltage designation window.
- Step 2.** Connect the power cord to the unit and plug it into the power outlet. The power indicator LED on the front and back panel will light. This indicates that the unit is operational.
- Step 3.** Connect a cable from the computer to the input channel of the amplifier. Then connect the output channels of the amplifier to the display devices (i.e. monitors or projector)
- Step 4.** If the image is less than perfect check all the connections. The unit is very reliable and seldom will this be the cause of malfunction. Poor quality cables may often degrade the performance of the product. Make sure that the cables used are coaxial cables and that all pins are in good condition.

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 **DA1406WM** Distribution Amplifier can be adjusted using Boot switches as described in Section no. 4. There are no other adjustments necessary to operate the unit. The **DA1406WM** will operate successfully as long as cables are attached properly and other specifications are followed.

DISTRIBUTION AMPLIFIERS

ACCESSORIES 8

Model No.	Description
	TABLE MOUNT BRACKET
TM1271	1 U High, ½ rack units
TM1272	1 U High, ½ rack units w/Computer Input
TM1273	1 U High, ½ rack units w / Computer + A / V Inputs
TM1274	1 U High, ½ rack units w / Computer + A / V + Power Inputs
	RACK MOUNTING ACCESSORIES
DA1293RM	19"-1U Rack Mount Shelf (2- Units)
DA1294RM	19"-1U Rack Mount Ears for single unit.
	MAC MALE TO MALE CABLES (15-PIN D TO 15-PIN D)
CB3403MR	3 ft
CB3406MR	6 ft
CB3415MR	15 ft
CB3425MR	25 ft
CB3450MR	50 ft
CB3475MR	75 ft
CB34100MR	100 ft
CB34150MR	150 ft
	MAC MALE TO FEMALE CABLES (15-PIN D TO 15-PIN D)
CB3603MR	3 ft
CB3606MR	6 ft
CB3615MR	15 ft
CB3625MR	25 ft
CB3650MR	50 ft
CB3675MR	75 ft
CB36100MR	100 ft
CB36150MR	150 ft
	MAC TO RGB ADAPTOR CABLES
MS8103CA	15 pin D Male to 4 BNC Male, 6ft
MS8111CA	15 pin D Male to 5 BNC Male, 15ft
	POWER CABLES
PC5301US	Power cable for US
PS5302UK	Power cable for England
PS5303AU	Power cable for Australia
PS5304GR	Power cable for Germany

FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1	What is a Distribution Amplifier?	A Distribution Amplifier is a device that allows you to connect a single video source to multiple display devices, such as monitors or projectors used in presentation applications.
2	May I have on the outputs of the DA1406WM as high resolution RGBHV or RGBS format signals if the input is on the MAC format signal?	No. The Distribution Amplifier doesn't change a signal resolution format – it only passes it through. It is critical to insure that the display equipment used in a system is compatible with the source equipment in terms of signal resolution.
3	What If I don't use all 6 outputs of the DA1406WM ?	It is not necessary to use all six outputs and it is not necessary to terminate unused outputs, because you have six 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	Which type of format signal may I pass through the DA1406WM ?	The DA1406WM can pass MAC, Power MAC, and MAC Quadra. May also be used to pass high resolution RGBHV, RGBS, RGsB, and RsGsBs format signals.

TROUBLESHOOTING GUIDE 10

We have carefully tested and have found no problems in the supplied **DA1406WM** unit; however, we would like to offer the following suggestions:

- Check to insure the power input is set to proper AC voltage. That the correct voltage is visible through the voltage designation window.
- Please make sure that the input amplitude analog signal is less than 1.5V.
- Please use Altinex supplied external adapter (9V, 500mA).
- Please make sure that proper qualities of cables are used. We recommend Altinex made cables for best results.
- If the problem shows up after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct the problem.

ALTINEX POLICY 11

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 shall be returned to company with transportation charges pre-paid within 2 years or (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