DA1906SX

1-IN, 3-OUT VGA

DISTRIBUTION AMPLIFIER

USER'S GUIDE

ALTINEX

DISTRIBUTION AMPLIFIERS

INTRODUCTION

Thank you for purchasing the **DA1906SX** distribution amplifier. We are sure you will find it to be 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 provide 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:

   DA1906SX - 1-in 3-out VGA/SVGA/XGA
   Distribution Amplifier

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1906SX** Distribution Amplifier. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1906SX** 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 its authorized representative must perform all service.

1.2 SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE DA1906SX

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the airflow through the device's 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 **DA1906SX** 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 **DA1906SX** 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 **DA1906SX** Distribution Amplifier carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **DA1906SX**. If the **DA1906SX** is to be mounted to a table or wall, use only Altinex made mounting accessories like mini mount-bracket (**DA1295FC**) and cables for optimum setup.

- To turn off main power, be sure to remove the Power Adapter 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 cord of Power Adapter or any cable that is attached to the **DA1906SX** Distribution Amplifier.
- If the **DA1906SX** Distribution Amplifier is not used for an extended period of time, disconnect the Power (AC) Adapter from the power outlet.

1.4 CLEANING

- Unplug the **DA1906SX** AC Adapter from wall 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.
- Any changes or modifications to the unit not expressly approved by Altinex, Inc. could void the user's authority to operate the equipment.

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ABOUT YOUR DISTRIBUTION AMPLIFIER   2

The **DA1906SX** is a 1 in 3 out distribution amplifier designed to allow the connection of a single VGA/ SVGA/ XGA/ UXGA source to up to three scan-rate compatible displays. Offering a video bandwidth of 350 MHz, the **DA1906SX** allows even very high-resolution video signals to pass without degradation to the image quality. The outputs of the **DA1906SX** allow signals to be driven through up to 100 feet of cable depending on the cable quality and the source signal resolution.

Compact and easy to use, the **DA1906SX** is perfect for small audio/visual installations where a single computer is connected to two or three computer monitors or data projectors. The **DA1906SX** has female 15-pin HD (VGA-type) connectors on all input and output connectors.

The **DA1906SX** can be used with readily available VGA-type cables. If desired, the input and/or outputs of the **DA1906SX** can be adapted easily to 5 BNC connectors. The **DA1906SX** is compatible with RGsB, RGBS, or RGBHV signals.

The **DA1906SX** is externally compact and can be mounted to furniture or other surfaces using optional hardware.

TECHNICAL SPECIFICATIONS   3

FEATURES/DESCRIPTION	DA1906SX
GENERAL	
No. of Inputs	One
Input Connector	15-pin HD Female
No. of Outputs	Two + One LOOP
Output Connectors	15-pin HD Female
Compatibility	high resolution RGBHV, RGBS, RGsB and RsGsBs

Table 1. **DA1906SX** General

MECHANICAL	DA1906SX
Material	0.1" Al
Finish	Gray
Top Panel	Lexan
Height (inches)	3.00in (76mm)
Width (inches)	4.50in (114mm)
Depth (inches)	1.00in (25mm)

Weight (pounds)	0.40lbs (0.18kg)
Ship Weight (pounds)	2.4lbs (1.09kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **DA1906SX** Mechanical

ELECTRICAL	DA1906SX
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	10k 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 @ -3 dB
Minimum Video Bandwidth	350 MHz @ -3 dB
Horizontal	15-200 kHz
Vertical	47-180 Hz
Coupling	DC
Cross-talk	-40 dB @ 10 MHz
Power	
External Power Adapter	9V DC, 500 mA
Power Consumption	4 watts max
Included	
Distribution Amplifier	**DA1906SX**
Manual	X
Power Adapter	X
Input Cable (3ft 15-pin HD Male to Male)	**CB3703MR**

Table 3. **DA1906SX** Electrical

DESCRIPTION OF DA1906SX 4

4.1 INPUT

The computer input connector of the **DA1906SX** is connected to the video output of the laptop or desktop computer. The **DA1906SX** is provided with a 3 foot Male to Male VGA input cable (ALTINEX part # **CB3703MR**). A longer input cable may be used but lengths over 15 feet are generally not recommended in order to preserve the signal quality. If desired, the HD-15 input can be adapted easily to 5-BNC connector outputs with a proper cable.

Often, laptop computers will require a "toggle command", which will instruct the laptop to output to the internal display, as well, as to the external video port simultaneously. You may need to check the user's manual for your laptop computer to determine this command.

The input is standard VGA compatible. MAC/SUN/SGI outputs can be used with the appropriate input cable.

PIN No.	Input signals on 15-pin HD female connector
1	Red
2	Green
3	Blue
4	ID Bit 0 (connected to Ground, when ID Bit 0 switch is ON)
5	Ground
6	Ground
7	Ground
8	Ground
9	No connection
10	ID Bit 1
11	ID Bit 2
12	ID Bit 3
13	Horizontal Sync
14	Vertical Sync
15	Not used

4.2 OUTPUTS

The **DA1906SX** has 3 buffered outputs with 15-pin HD female connectors. Loop output is amplified output to attach a local monitor. The main output is for the distant presentation display (large screen monitor or LCD projector) up to 250 feet away. The main output is pre-

compensated for optimal performance with 75 ft of Altinex super high-resolution VGA cable. If desired the outputs can be adapted easily to 5-BNC connectors with a proper cable.

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

PIN No.	Loop Output signals on 15-pin HD female connector
1	Red
2	Green
3	Blue
4	ID Bit 0
5	Ground
6	Ground
7	Ground
8	Ground
9	No connection
10	ID Bit 1
11	ID Bit 2
12	ID Bit 3
13	Horizontal Sync
14	Vertical Sync
15	No connection

4.3 TERMINATION SWITCH

The **DA1906SX** offers the ability to terminate the input with 75 ohms using a switch located on the side of the unit, next to the 15-pin HD input connector. This switch should normally be in the UP or "ON" position when used with straight VGA type cables. This will insure that the signal is properly terminated by the **DA1906SX**.

When a VGA "Y" cable (**MS8117CA**) is used with the **DA1906SX**, the Termination Switch
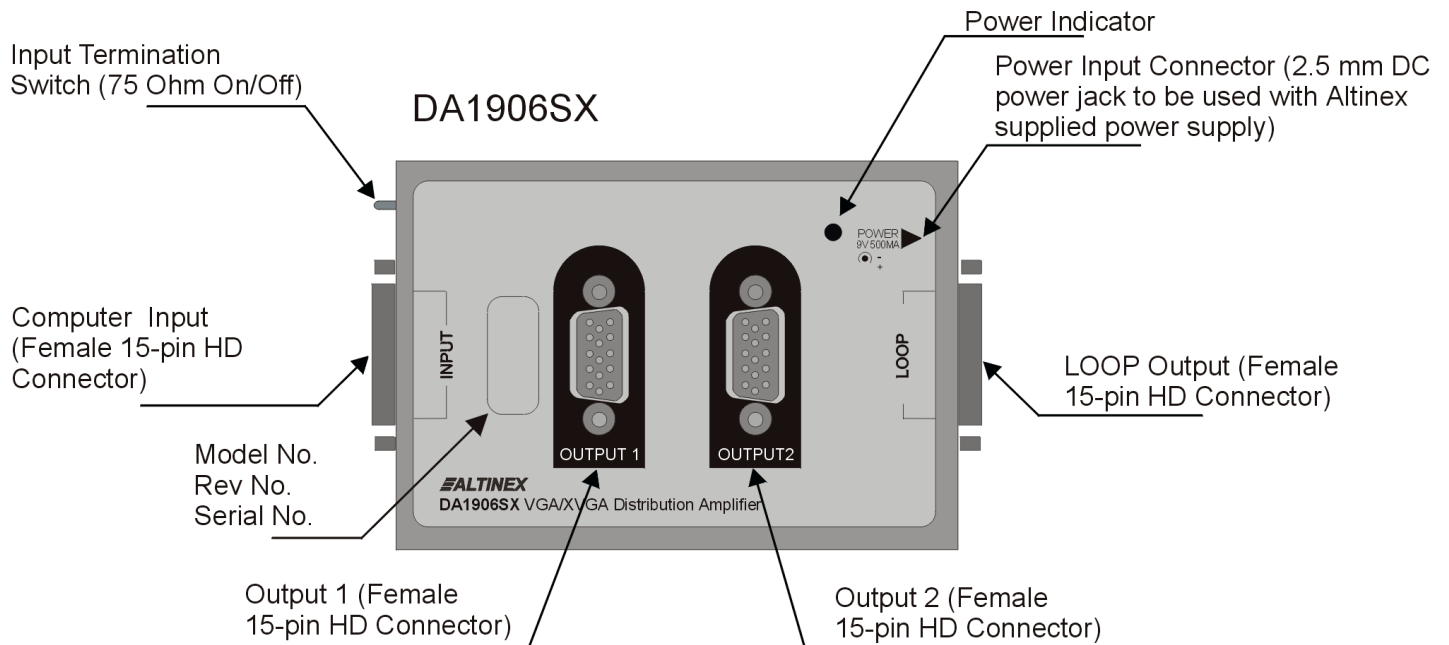
should be in the DOWN or "OFF" position if a monitor is attached, because the termination is made by the monitor. If a VGA "Y" cable is used, but <u>no local monitor is present</u>, the Termination Switch should be in the UP or "ON" position.
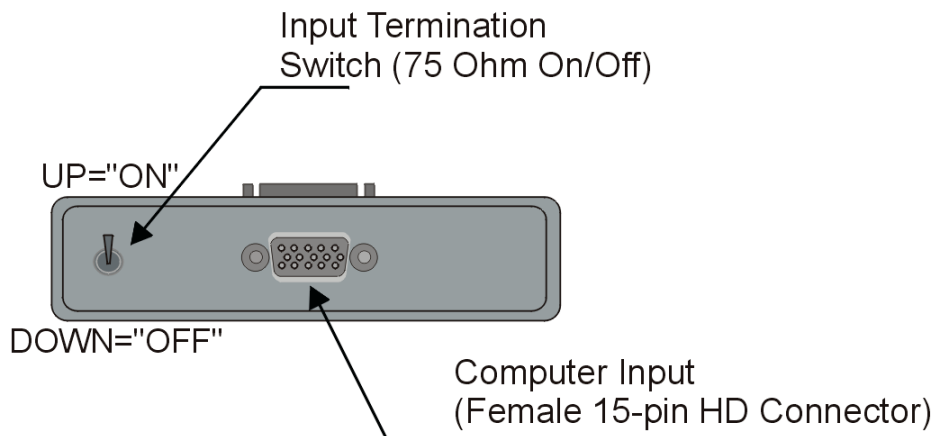
4.4 MOUNTING THE DA1906SX

To mount **DA1906SX**, the Altinex offers optional "L" shaped mini-brackets, **DA1295SX**, which provide wings on either side of the unit. The **DA1906SX** can be installed on a rack plate, furniture, or wall.
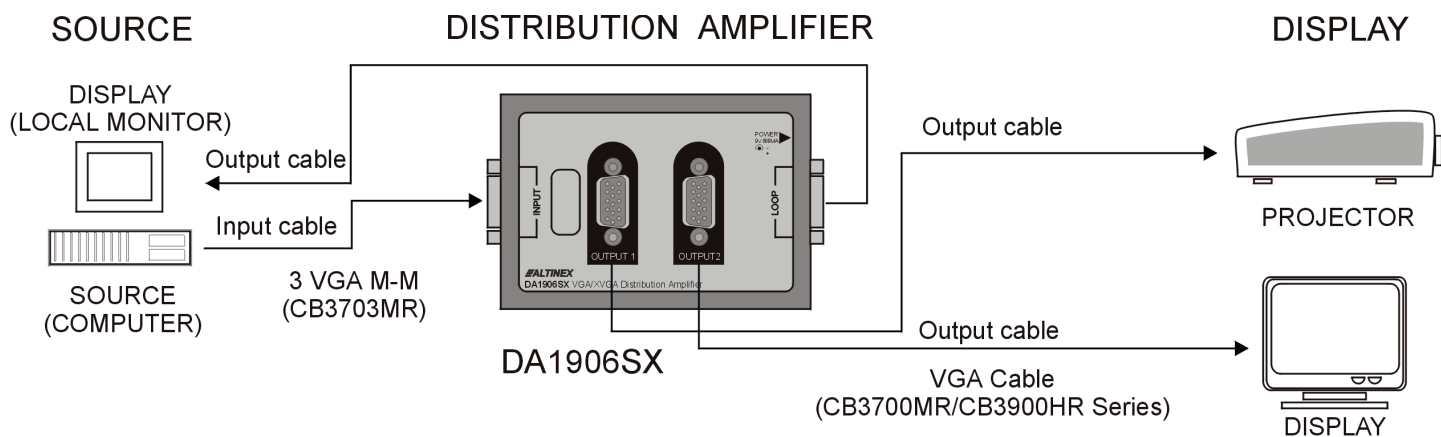
TOP VIEW OF DA1906SX

SIDE VIEW OF DA1906SX

Input Termination
Switch (75 Ohm On/Off)

UP="ON"

DOWN="OFF"

Computer Input
(Female 15-pin HD Connector)

APPLICATION DIAGRAM   5

SOURCE   DISTRIBUTION AMPLIFIER   DISPLAY

DISPLAY
(LOCAL MONITOR)

Output cable

Output cable

Input cable

PROJECTOR

SOURCE
(COMPUTER)

3 VGA M-M
(CB3703MR)

INPUT
LOOP
OUTPUT 1
OUTPUT 2
POWER
9/800mA

ALTINEX
DA1906SX VGA/XVGA Distribution Amplifier

DA1906SX

Output cable

VGA Cable
(CB3700MR/CB3900HR Series)

DISPLAY

INSTALLING YOUR DISTRIBUTION AMPLIFIER   6

Step 1. Connect the 9V 500-mA AC adapter's output plug to the **DA1906X'**s power input connector - 2.5 mm DC Jack. Verify that a red LED is displayed in the top right corner of the unit on the front panel.

Step 2. Remove the protective port covers. Connect the video output from the computer to computer input connector on the **DA1906X** using the provided **CB3703MR-**3 feet input VGA cable. If a longer cable is required, please make sure that the cable has video signal through coaxial component and that it is not excessively long.

Step 3. Connect monitors or projectors to the outputs of the **DA1906SX** using the appropriate VGA type cables or adapter cables.

Step 4. Check position of Termination Switch. Ensure the proper setting by closely examining the image quality as described in section 4.3. An unterminated image will appear too bright and may cause colors to blur and text to appear unreadable.

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Step 5. 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.

Note:

High levels of static discharge under some conditions may shutdown the unit. To reset the unit simply, disconnect the input cable and reconnect it back.

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 **DA1906SX** Distribution Amplifier can be adjusted using the Termination Switch as described in Section no. 4.3. There are no other adjustments necessary to operate the unit. The **DA1906SX** will operate successfully as long as cables are attached properly and other specifications are followed.

ACCESSORIES   8

Model No.	Description
	TERMINATION PLUGS
MS8000TP	15-pin HD VGA
MS8144MG	15-pin HD (M) to 15-pin HD (M)
MS8145MG	15-pin HD (F) to 15-pin HD (F)
	RACK MOUNTING BRACKETS
DA1295SX	Rack/Wall mount mini-brackets for **DA1900** series distribution amplifiers (2 - "L" shaped brackets)
INPUT CABLES	**STANDARD 15 PIN VGA MALE TO MALE (COAXIAL TYPE CABLE INTERNALLY)**
CB3703MR	3 ft
CB3706MR	6 ft
CB3715MR	15 ft
CB3725MR	25 ft
CB3750MR	50 ft (Super High Resolution Coaxes)
CB3775MR	75 ft (Super High Resolution Coaxes)
CB37100MR	100 ft (Super High Resolution Coaxes)
CB37150MR	150 ft (Super High Resolution Coaxes)
OUTPUT CABLES	**STANDARD 15 PIN VGA MALE TO FEMALE (COAXIAL TYPE CABLE INTERNALLY)**
CB3903HR	3 ft
CB3906HR	6 ft
CB3915HR	15 ft
CB3925HR	25 ft
CB3950HR	50 ft (Super High Resolution Coaxes)
CB3975HR	75 ft (Super High Resolution Coaxes)
CB39100HR	100 ft (Super High Resolution Coaxes)
CB39150HR	150 ft (Super High Resolution Coaxes)
	VGA TO RGB ADAPTOR CABLES
MS8102CA	15 pin HD Male to 5 BNC Male, 6ft
MS8104CA	15 pin HD Male to 5 BNC Male, 15ft
MS8105CA	15-pin HD Male to 5 BNC Male, 50 ft
MS8106CA	15 pin HD Male to 5 BNC Female, 6 ft
MS8112CA	15 pin HD Female to 5 BNC Male, 6ft
MS8114CA	15 pin HD Female 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

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DISTRIBUTION AMPLIFIERS

FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1	When using a loop output as output 3? How far can I run the signal?	In some cases there may be a need for longer cables, but lengths over 12 ft are generally not recommended.
2	Are outputs 1 & 2?	Yes, the **DA1906SX** has three Individually buffered outputs.
2	Is input cable type important when I use the **DA1906SX**?	The **DA1906SX** may be used with two types of input cables – VGA Y-type cables and straight VGA Male to Male cables. Altinex recommends straight input VGA cable.
3	May I use cat 5 cable instead of coaxial cable?	You can not use cat 5 cable instead of coaxial cable, because the quality of received signal will be lost. Since there is no isolation on each wire, the signals will interfere with each other.
4	May I use the **DA1906SX** power supply to power 2 units at the same time?	It is not recommended, since one power supply is supplied with each unit. Please consider the **PS5581SM**, a rack mount power supply.
5	Does the **DA1906SX** pass DDC signals between the display and computer?	Yes, the **DA1906SX** does pass DDC signals to a video output connector as long as the pin-outs of the computer are standard per VGA.
6	What are resolutions of input computer signals that can pass	1280x1024 – UXGA 1024x768 – XGA 800x600 – SVGA 640x480 – VGA.

	through the **DA1906SX**?	
3	If I'm not using Loop Output, do I have to do anything?	No, you can leave loop output unterminated.

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- Please make sure that input amplitude of the video analog signal is less than 1.5V and is at TTL level for SYNC signal.
- Please use only an Altinex supplied external AC adapter supplying 9V DC at 500mA to power up **DA1906SX**.
- Please make sure that proper quality of cables is used. We recommend Altinex made cables for best results, where video signals are pass through loop components.
- Please make sure that the outputs are terminated properly and cable runs do not exceed 15 feet for the loop output port & 100 feet for any of the main output ports.
- 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.

DISTRIBUTION AMPLIFIERS

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 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 must 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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