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MANUAL PART NUMBER: 400-0071-003  
PRODUCT REVISION: 2

# DA1908SX

## 1-IN, 1-OUT VGA LINE DRIVER

## USER'S GUIDE

# DISTRIBUTION AMPLIFIERS

## INTRODUCTION

Altinex appreciates your purchase of the **DA1908SX** 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:

**DA1908SX** - 1-in, 1-out VGA Line Driver

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# DISTRIBUTION AMPLIFIERS

## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1908SX** Distribution Amplifier. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1908SX** 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 DA1908SX

- 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 **DA1908SX** 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 **DA1908SX** 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 **DA1908SX** Distribution Amplifier carefully. Dropping or jarring can damage internal components.

- Do not place heavy objects on top of the **DA1908SX**. If the **DA1908SX** is mounted to a table or wall, use only ALTINEX-made mounting accessories, such as the "L" shaped mini mount-brackets (**MB1001**) and cables for optimum setup.
- To turn off the main power, be sure to remove the adapter from the power outlet. The power outlet socket should be installed as close to the equipment as possible, and should be easily accessible.
- Do not pull the adapter or any cable that is attached to the **DA1908SX** Distribution Amplifier.
- If the **DA1908SX** Distribution Amplifier is not used for an extended period, disconnect the Power AC Adapter from the power outlet.

### 1.4 CLEANING

- Unplug the **DA1908SX** 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

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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.

## ABOUT YOUR DISTRIBUTION AMPLIFIER 2

The **DA1908SX** is a 1-in 1-out Line Driver designed to allow the connection of a single VGA, SVGA, or XGA source to a distant display (monitor or projector) with a minimal loss of quality. It also offers the ability to transmit signals to a local monitor simultaneously by the use of a VGA "Y" type cable (included with the **DA1908SX**). Offering a video bandwidth of 350 MHz, the **DA1908SX** allows very high-resolution video signals to pass without degradation to the image quality. This is an affordable solution for low and medium resolution applications for ultra high-resolution video applications. The use of a "Y" cable is not recommended for these applications. The output of the **DA1908SX** allows video signals to be driven with 200 feet of cable or less depending on the cable quality and the source signal resolution.

Compact and easy to use, the **DA1908SX** is perfect for audio/visual installations where a single computer is connected to a presentation monitor or data projector while still providing a feed to the local monitor. The **DA1908SX** has female 15-pin HD (VGA-type) connectors on the input and output connectors, it can be used with readily available standard VGA-type cables. If desired, the input and/or output of the **DA1908SX** can be easily adapted to 5 BNC connectors through the **DA1908SX**, which is compatible with RGsB, RGBS, or RGBHV signal types. This requires the use of the ALTINEX **MS8100** series adapter cable (15-pin to 5 BNC).

## TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	DA1908SX
<b>GENERAL</b>	
<b>No. of Inputs</b>	1
Input Connector	15-pin HD Female
<b>No. of Outputs</b>	1
Output Connectors	15-pin HD Female
<b>Compatibility</b>	VGA, SVGA, XGA, high resolution RGBHV, RGBS, RGsB and RsGsBs

Table 1. **DA1908SX** General

MECHANICAL	DA1908SX
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)	0.4lbs. (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)	40,000hrs

Table 2. **DA1908SX** Mechanical

ELECTRICAL	DA1908SX
<b>Input Video Signals</b>	
Analog Signal	1.5V p-p max
Impedance	75 Ohms
<b>Input Sync Signals</b>	
Horizontal, Vertical, & C-Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	10 k Ohms
<b>Output Video Signals</b>	
Analog Signal	Gain of 1.05 (+/-5%)
Fall/Rise Time (ns)	1.4
Impedance	75 Ohms
<b>Output Sync Signal</b>	
Composite Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	22 Ohms
<b>Frequency Compatibility</b>	
Typical Video Bandwidth	380 MHz
Minimum Video Bandwidth	350 MHz
Horizontal	15-200 kHz

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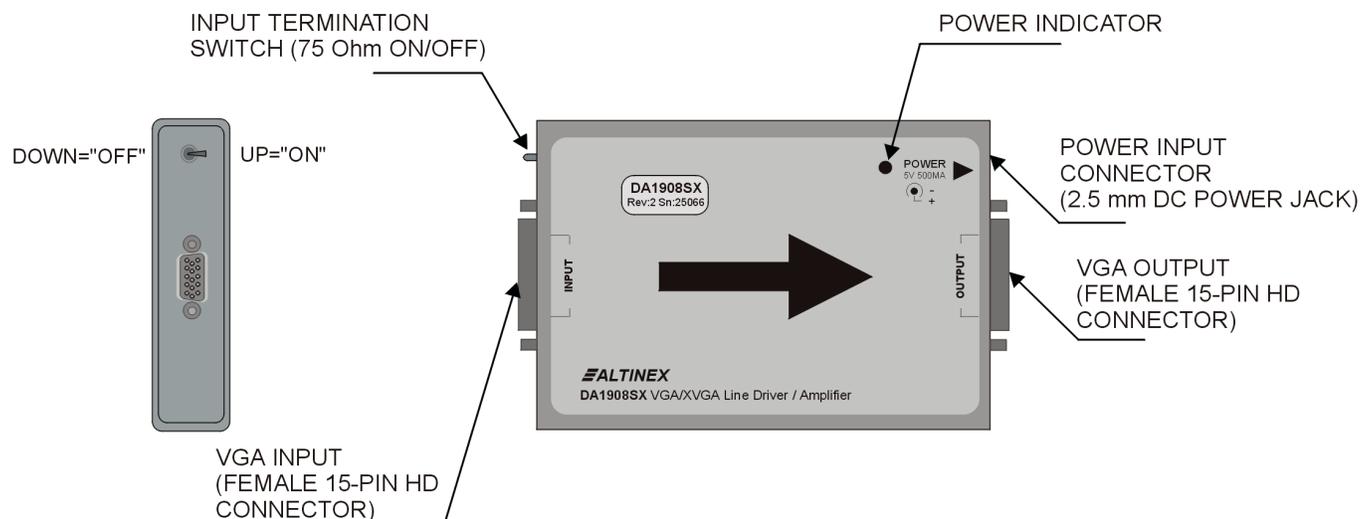
Vertical	47-180 Hz
<b>Coupling</b>	DC
<b>Cross-talk</b>	-40dB @ 10 MHz
<b>Power</b>	
External Power Adapter	9V 500 mA
Power Consumption	4 watts max.

Table 3. **DA1908SX** Electrical

## DESCRIPTION OF DA1908SX 4

SIDE PANEL OF DA1908SX

TOP PANEL OF DA1908SX



### 4.1 INPUT

The **DA1908SX** may be used with two types of input cables — VGA "Y" type cables and straight VGA Male to Male cables. The cable that normally ships with the **DA1908SX** is a VGA "Y" cable (ALTIMEX part # **MS8117CA**). This cable is connected between the computer video output connector and the **DA1908SX** input connector, handling most installations. A local monitor can then be fed from the short pigtail of this cable.

The **DA1908SX** may also be used with a VGA Male to Male cable if a local monitor is not necessary. The **CB3703MR**, **CB3706MR**, and the **CB3712MR** can be used as input cables.

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

Table 4. **DA1908SX** input signals

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## 4.2 OUTPUT

The **DA1908SX** has one 15-pin HD female connector for output. The **DA1908SX** can be used with readily available VGA type cables. If desired, the output can be easily adapted to 5 BNC connectors.

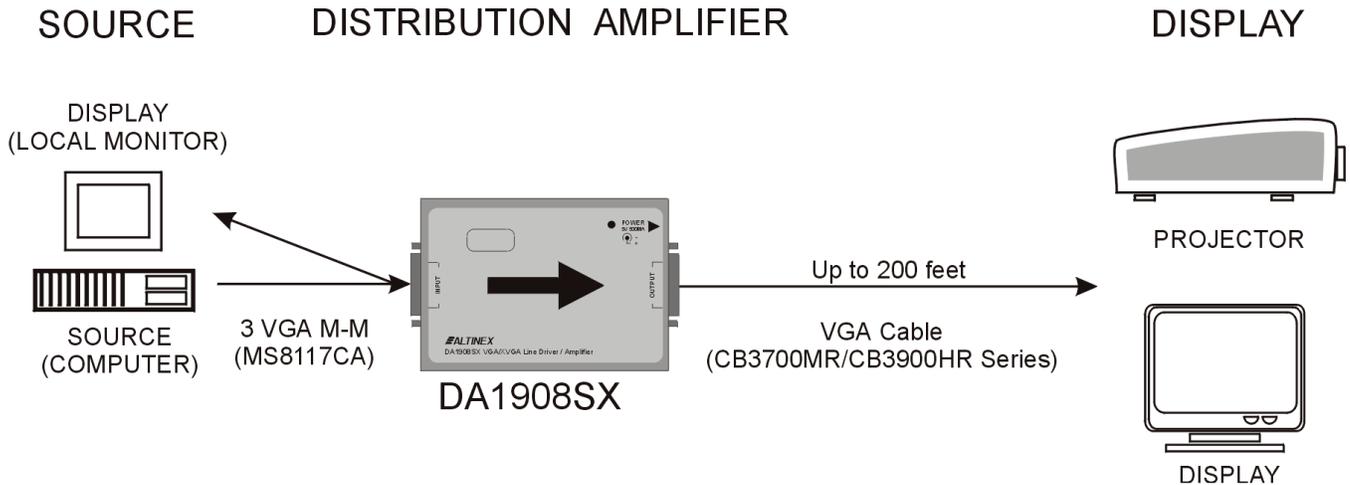
PINS	Output signals on 15-pin HD female connector
1	Red
2	Green
3	Blue
4	ID Bit 4
5	Ground
6	Ground
7	Ground
8	Ground
9	No connection
10	ID Bit 3
11	ID Bit 1
12	ID Bit 2
13	Horizontal Sync
14	Vertical Sync
15	No connection

## 4.3 TERMINATION SWITCH

The **DA1908SX** offers the ability to terminate 75 ohms of the input using the switch located on the side of the unit, next to the 15-pin HD input connector. This switch should normally be in the DOWN (OFF) position when used with the **MS8117CA** VGA "Y" type cable if a local monitor is being used. If a local monitor is not used, the termination switch should be placed in the UP (ON) position.

If a straight VGA Male to Male cable is used with the **DA1908SX**, the termination switch should be placed in the UP (ON) position to insure proper termination.

## APPLICATION DIAGRAM 5



## INSTALLING YOUR DISTRIBUTION AMPLIFIER

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- Step 1.** Make sure that the correct power adapter is connected to the unit. A red LED will light to indicate that the unit is receiving power.
- Step 2.** Connect the supplied **MS8117CA** cable (VGA "Y" cable) between the computer video output and the distribution amplifier input. If desired, connect a local monitor to the short end of the **MS8117CA**. The split in the Y should be on the end of the **DA1908SX**, not on the end of the computer. Make sure that the connectors are well secured. This cable should not be used on the output side of the **DA1908SX**.
- Step 3.** Connect the monitor or projector to the output of the **DA1908SX** using the appropriate VGA-type cables or adapter cables.
- Step 4.** Check the position of the termination switch. If the standard **MS8117CA** (VGA Y-type) cable is being used and a local monitor is used, the termination switch should be DOWN or in the OFF position. If a local monitor is not used, the termination switch should be UP or in the ON position. To ensure the proper setting, closely examine the image quality. An unterminated image will appear too bright and may cause colors to blur and text to appear unreadable. A double-terminated signal will be too dark.
- Step 5.** Verify that the picture quality on the displays is perfect. 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 good, you have completed the installation.

## OPERATION

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The settings of the **DA1908SX** Distribution Amplifier can be adjusted using the termination switch as described in Section 4. There are no other adjustments necessary to operate the unit. The **DA1908SX** will operate successfully as long as cables are attached properly and other specifications are followed.

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## ACCESSORIES 8

Model No.	Description
<b>TERMINATION PLUGS</b>	
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)
<b>RACK MOUNTING BRACKETS</b>	
MB1001	Rack/Wall mount mini-brackets for DA1900 series distribution amplifiers (2 - "L" shaped brackets)
<b>STANDARD 15-PIN VGA MALE TO MALE (Y TYPE CABLE) INPUT CABLES</b>	
MS8117CA	3 ft
<b>STANDARD 15-PIN VGA MALE TO MALE (COAXIAL TYPE CABLE INTERNALLY) INPUT CABLES</b>	
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)
<b>STANDARD 15-PIN VGA MALE TO FEMALE (COAXIAL TYPE CABLE INTERNALLY) OUTPUT CABLES</b>	
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)
<b>VGA TO RGB ADAPTER CABLES</b>	
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 SUPPLIES	
PS5502US	9V 500mA Power Supply for US
PS5512UK	9V 500mA Power Supply for UK
PS5522AU	9V 500mA Power Supply for Australia
PS5532GR	9V 500mA Power Supply for Germany
PS5542JP	9V 500mA Power Supply for Japan

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## FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1.	Why do I need a Line Driver?	A Line Driver is designed to drive a signal up to 100 feet or more using high quality VGA cables.
2.	How many feet of cable can I use with the <b>DA1908SX</b> ?	The output is aligned for optimal performance at 75 feet, with the capability of driving as far as 250 feet depending on cable quality, limitations, and system requirements.
3.	Is the input cable type important when I use the <b>DA1908SX</b> ?	The <b>DA1908SX</b> may be used with two types of input cables – VGA Y-type cables and straight VGA Male to Male cables. When the local monitor is present, the VGA Y cable can be used. If the local monitor is not necessary, the <b>DA1908SX</b> may be used with VGA Male to Male cables. We recommend the ALTINEX straight input VGA cable.
4.	May I use cat 5 cable instead of coaxial cable?	No, you may not use cat 5 cable instead of coaxial cable because the quality of the received signal will be lost. Since there is isolation on each wire, the signals will interfere with each other.
5.	May I drive more than one monitor with one output?	Yes. If you are using the VGA Y cable, then two monitors can be used.
6.	May I use the <b>DA1908SX</b> power supply to power two units at the same time?	It is not recommended since one power supply is supplied with each unit. Please consider the <b>PS5581SM</b> , a rack mount power supply.
7.	Does the <b>DA1908SX</b>	Yes, the <b>DA1908SX</b> does pass DDC signals to a video

	pass DDC signals between the display and the computer?	output connector as long as the pin-outs of the computer are standard.
8.	What are the resolutions of input computer signals that can pass through the <b>DA1908SX</b> ?	1280x1024 – UXGA 1024x768 – XGA 800x600 – SVGA 640x480 – VGA.

# DISTRIBUTION AMPLIFIERS

## TROUBLESHOOTING GUIDE 10

We have carefully tested and have found no problems in the supplied **DA1908SX** unit; however, we would like to offer the following suggestions:

- Please make sure that the amplitude of the input video analog signal is less than 1.5V and is at TTL level for sync signal.
- Please use the ALTINEX supplied external AC adapter supplying 9V DC at 500mA).
- Please make sure that the proper quality of cables is used. We recommend ALTINEX-made cables for best results.
- Please make sure that the outputs are terminated properly and cable runs do not exceed 25 feet for local monitor output port and 100 feet for the main output port.
- If a problem arises 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 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 to ALTINEX that you receive the products that you have ordered and that this product meets your expectations. In the unlikely event, that an ALTINEX product needs to be returned please follow the policy 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