

# DISTRIBUTION AMPLIFIERS

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MANUAL PART NUMBER: 400-0155-002

**DA1921SX**

**CAT-5 COMPUTER VIDEO  
RECEIVER  
USER'S GUIDE**

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**ALTINEX**

SIGNAL  
MANAGEMENT  
SOLUTIONS

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# DISTRIBUTION AMPLIFIERS

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## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1921SX**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1921SX** 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 authorized representatives, must perform all service.

### 1.2 GUIDELINES FOR RACK-MOUNTING

- Maximum operating ambient temperature is 35 (degrees C).
- 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 Earth Grounding of Rack-Mounted Equipment should be maintained.

### 1.3 INSTALLATION

- For best results, place the **DA1921SX** on a flat, level surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose unit to rain or moisture. Do not place the **DA1921SX** in direct sunlight, near heaters or heat radiating appliances, or near liquid. Exposure to direct sunlight, smoke, or steam can harm components.
- Handle the **DA1921SX** carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on the **DA1921SX**. If the **DA1921SX** is mounted to a table or wall, use only ALTINEX-made mounting accessories, such as the mini-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 near to the equipment as possible, and should be easily accessible.
- Do not pull the adapter or any cable that is attached to the **DA1921SX**.
- If the **DA1921SX** is not used for an extended period, disconnect the adapter from the outlet.

### 1.4 CLEANING

- Unplug the **DA1921SX** (adapter or 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 their 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 DA1921SX 2

The **DA1921SX** is a high-resolution 1-in 2-out computer video amplifier/receiver. It converts differential signals from a CAT-5 transmitter to single ended video signals. These single ended signals allow the source to be distributed to large screen projectors or other displays with excellent quality at long distances. The **DA1921SX** is designed to be used together with a compatible CAT-5 computer video transmitter, such as model DA1920SX. The **DA1921SX** is connected to the transmitter using twisted pair CAT-5 UTP (Category 5, 5e, 6) type cable.

The **DA1921SX** is compact and easy to use. It offers a CAT-5 input, two fully buffered outputs and equalization control. It is perfect for audio/visual installations, where a single computer sends signals using inexpensive, thin, light CAT-5 cable.

The **DA1921SX** can receive signal resolutions from VGA thru UXGA. Together with an ALTINEX CAT-5 computer video transmitter and properly adjusted with the built-in equalization controls, the maximum cable distance is approximately 500 feet/152 meters for VGA (640 x 480, 60 Hz refresh rate) and 250 feet/76.2 meters for UXGA (1600 x 1200, 60 Hz refresh rate). Please see the complete specifications for other resolutions.

## TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	DA1921SX
<b>GENERAL</b>	
<b>Inputs</b>	One
Input Connector	RJ-45
<b>Outputs</b>	Two
Local Monitor Connector	15-pin HD Female
Main Output Connectors	15-pin HD Female
<b>Cable Distance Limitations</b>	
Signal Resolution Distance	640 x 480: 500ft/152m 800 x 600: 450ft/137m 1024 x 768: 400ft/122m 1280 x 1024: 350ft/107m 1600 x 1200: 250ft/76m
<b>Compatibility</b>	VGA thru UXGA

Table 1. **DA1921SX** General

MECHANICAL	DA1921SX
Material	0.1" Al
Finish	ALTINEX Grey
Top Panel	Lexan Overlay
Height (inches)	3.00in (76mm)
Width (inches)	4.50in (114mm)
Depth (inches)	1.00in (25mm)
Weight (pounds)	0.40lb (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. **DA1921SX** Mechanical

ELECTRICAL	DA1921SX
<b>Input Video Signal</b>	
Analog Signal Level	Differential ±0.75V max
Impedance	50 Ohms
<b>Input Sync Signal</b>	
Horizontal, Vertical, & C-Sync	Differential ±1V
Impedance	50 Ohms
<b>Output Video Signals</b>	
Analog Signal Level	1.5V p-p
Fall/Rise Time (ns)	2.0
Impedance	75 Ohms
<b>Output Sync Signals</b>	
Horizontal Sync	TTL (+/-)
Vertical Sync	TTL (+/-)
<b>Coupling</b>	AC
<b>Cross-talk</b>	-40 dB @ 10 MHz
<b>Power</b>	
External Power Adapter	9V DC, 500 mA

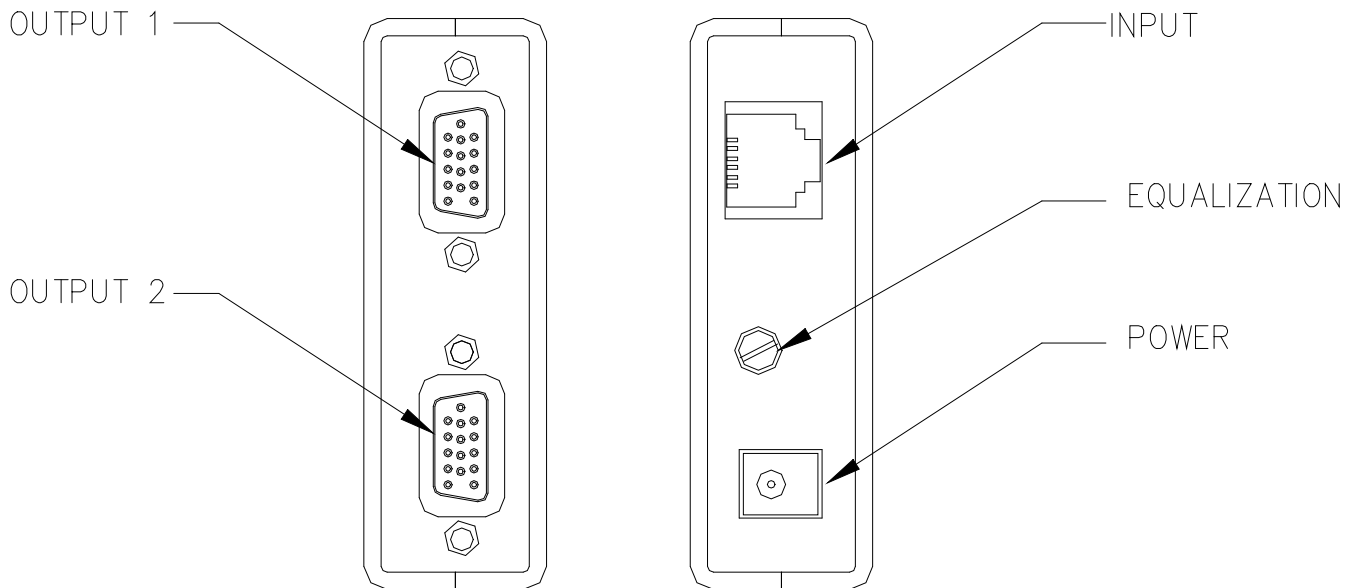
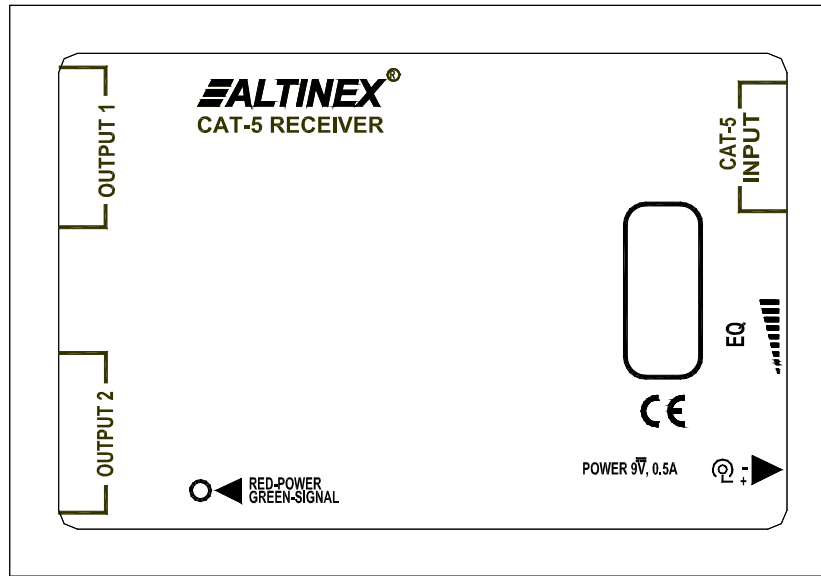
Table 3. **DA1921SX** Electrical

NOTE: All cables for the **DA1921SX** must be ordered separately.

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## PRODUCT DESCRIPTION

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## 4.1 INPUT

The input connector of the **DA1921SX** is an RJ-45 connector, which connects the **DA1921SX** to the **DA1920SX** using a CAT-5 cable.

PIN No.	Input Signals RJ-45 Connector
1	R-
2	R+
3	G-
4	B-
5	B+
6	G+
7	HOR-
8	HOR+

Table 4. **DA1921SX** Input Signals

## 4.2 OUTPUTS

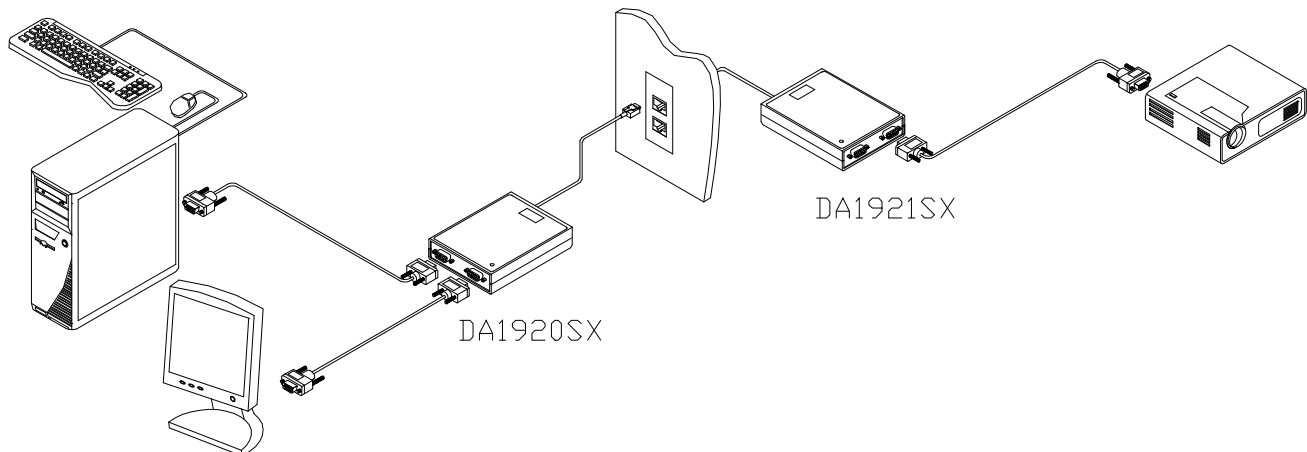
The **DA1921SX** has two outputs with 15-pin HD female connectors. It allows the distribution of video signals to two monitors. With equalization, the **DA1921SX** receives signals through a CAT-5 cable from as far as 500 feet away.

PIN No.	Output Signals 15-pin HD Female
1	Red
2	Green
3	Blue
4	ID Bit 4
5	Ground
6	Ground
7	Ground
8	Ground
9	+5V
10	Ground
11	Ground
12	No Connection
13	Horizontal Sync
14	Vertical Sync
15	No Connection

Table 5. **DA1921SX** Output Signals

## APPLICATION DIAGRAM

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## INSTALLING YOUR DA1921SX 6

- Step 1.** Connect the 9V 500mA AC adapter's output plug to the **DA1921SX**'s power input connector - 2.5 mm DC Jack. Verify that the RED power LED turns ON.
- Step 2.** Remove the protective port covers. Connect the video output from the **DA1920SX** to the input connector on the **DA1921SX** using the CAT-5 cable.
- Step 3.** Verify that the red LED on the face of the unit has now turned green, indicating an active source. If the LED is not green, the **DA1920SX** may not be sending video signals.
- Step 4.** Connect one or two monitors (as needed) to the output connectors using the appropriate VGA cable.
- Step 5.** Verify that the picture quality on Monitors 1 and 2 (connected to Output 1 and Output 2 of the **DA1921SX**) 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.

## OPERATION 7

There is only one adjustment necessary to operate the **DA1921SX**. The adjustment is for equalization on long cable runs. It is adjustable according to the cable length. The unit will operate successfully as long as cables are attached properly and other technical specifications are followed.

## 7.1 LED INDICATOR

The **DA1921SX** offers a special LED on the front panel that provides feedback to the user. When power is connected to the **DA1921SX**, the LED will turn Red. When a valid CAT5 source is connected to the **DA1921SX**, the LED will turn Green, indicating that it is receiving a signal by sensing the presence of the sync portion of the signal.

## 7.2 EQUALIZATION

The **DA1921SX** provides an equalization adjustment for long cable runs. Cable runs less than 50 feet in length will require little to no equalization. After that, the longer the cable, the more equalization is required.

In some cases, it will be necessary to adjust the equalization on both the transmitter and receiver.

## TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **DA1921SX**. However, we would like to offer suggestions for the following:

### 8.1 LED IS NOT RED

The LED should be ON and RED when power is applied and there is no video signal present. If the LED is ON and GREEN, the unit is receiving power and a SYNC signal.

**Cause 1: No AC power.**

*Solution:* Verify the adapter is plugged into a working AC outlet and that the outlet has power.

**Cause 2: Adapter is not plugged into DA1921SX.**

*Solution:* Verify the DC power plug coming from the AC adapter is plugged all the way into the **DA1921SX**.

**Cause 3: The DA1921SX has a problem.**

*Solution:* If there is AC power to the adapter and the LED still does not turn on, the **DA1921SX** or the power adapter may require service. Call ALTINEX at (714) 990-2300.

## 8.2 LED IS NOT GREEN

**Cause 1: There is no power.**

*Solution:* Disconnect the video input from the **DA1921SX** and verify the LED is ON and RED indicating power is present. Reconnect the computer's video output. If the LED is still not GREEN see Cause 2.

**Cause 2: There is no Sync signal.**

*Solution:* Verify the computer output is operating correctly by connecting it directly to the local monitor, bypassing the transmitter and receiver. If the display is good, call ALTINEX at (714) 990-2300.

## 8.3 NO REMOTE IMAGE

**Cause 1: The source has a problem.**

*Solution:* Check the image on the local monitor and verify the quality is good. If the local image is good, see Cause 2.

**Cause 2: Video equalization required.**

*Solution:* Adjust the VIDEO EQUALIZATION on the **DA1921SX**. Long cable runs may require adjustment on both the **DA1921SX** and the **DA1920SX**.

In general, cable runs less than 50 feet require little or no video equalization and should be set to minimum. Longer cable runs will require equalization on both the transmitter and receiver.

## 8.4 REMOTE IMAGE QUALITY IS POOR

**Cause 1: The source has a problem.**

*Solution:* Check the image on the local monitor and verify the quality is good. If the local image is good, see Cause 2.

**Cause 2: Video equalization required.**

*Solution:* Adjust the VIDEO EQUALIZATION on the **DA1921SX**. Long cable runs may require adjustment on both the **DA1921SX** and the **DA1920SX**. If the image is still not correct, call ALTINEX at (714) 990-2300.

## ALTINEX POLICY

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### 9.1 LIMITED WARRANTY/RETURN POLICY

Please see the Altinex website at [www.altinex.com](http://www.altinex.com) for details on warranty and return policy.

### 9.2 CONTACT INFORMATION

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