

DISTRIBUTION AMPLIFIERS



MANUAL PART NUMBER: 400-0035-004

DA1905GL

1-IN, 1-OUT RGBHV

LINE DRIVER/ISOLATOR WITH EQ

USER'S GUIDE

EALTINEX

SIGNAL
MANAGEMENT
SOLUTIONS

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DISTRIBUTION AMPLIFIERS

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DISTRIBUTION AMPLIFIERS

PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1905GL** Line Driver. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1905GL** 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 DA1905GL

- 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 **DA1905GL** 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 **DA1905GL** 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 **DA1905GL** Distribution Amplifier carefully because dropping or jarring can damage internal components.

- Do not place heavy objects on top of the **DA1905GL**.
- To turn off the main power, be sure to remove the cord from 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 **DA1905GL** Distribution Amplifier.
- If the **DA1905GL** Distribution Amplifier is not used for an extended period, disconnect the power cord from the power outlet.

1.4 CLEANING

- Unplug the **DA1905GL** 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.

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- 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 **DA1905GL** is a multi-purpose RGBHV Line Driver, Ground Loop Isolator, and Sync Processor. As a Line Driver, The **DA1905GL** offers a single output (6-BNC connectors for RGBSHV). It will also accept RGSB, RGSB, Component Video (Y, R-Y, B-Y), S-Video, and Composite Video signals using the appropriate channels. Used to compensate for loss over long runs of coaxial cable, the **DA1905GL** may be installed alone or with an Interface, or with additional **DA1905GL** units, depending on system requirements. Typically, the **DA1905GL** might be used at the end of a cable run with an interface at the head-end of the run.

The **DA1905GL** is engineered for custom signal alignment, enabling it to be modified to handle cable runs of 300 feet or more. The **DA1905GL** is compact and streamlined, making it easy to fit virtually anywhere in a system.

In an audio/visual system, when different pieces of equipment operating from different power sources are connected, a ground loop can potentially occur, usually causing a hum bar to roll from top to bottom over a display image. Severe ground loops can cause damage to equipment. The **DA1905GL** is designed for installation between these pieces of equipment to eliminate a ground loop problem. The common mode range of the **DA1905GL** is +/-2V with a video signal of 1V p-p. The **DA1905GL** may also be used as a ground loop isolator for up to three different composite video signals, using red, green, and blue channels.

Ultimately, the **DA1905GL** acts as a sync processor, allowing you to combine horizontal and vertical sync into composite sync or splits composite sync into separate horizontal and vertical sync. The **DA1905GL** is not designed to strip sync from green.

TECHNICAL SPECIFICATIONS 3

FEATURES/ DESCRIPTION	DA1905GL
GENERAL	
Input	1
Input Connector	5-BNC Female
Output	1
Output Connectors	6-BNC Female
Compatibility	High Resolution RGBHV, RGSB, RGSB & RsGsBs, Component, S-Video & Composite Video

Table 1. **DA1905GL** General

MECHANICAL	DA1905GL
Material	0.1" Al
Finish	Gray
Top Panel	Lexan
Height (inches)	2.25in (57mm)
Width (inches)	3.50in (89mm)
Depth (inches)	1.70in (43mm)
Weight (pounds)	0.4lb. (0.18kg)
Ship Weight (pounds)	1.8lb. (0.82kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **DA1905GL** Mechanical

ELECTRICAL	DA1905GL
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	

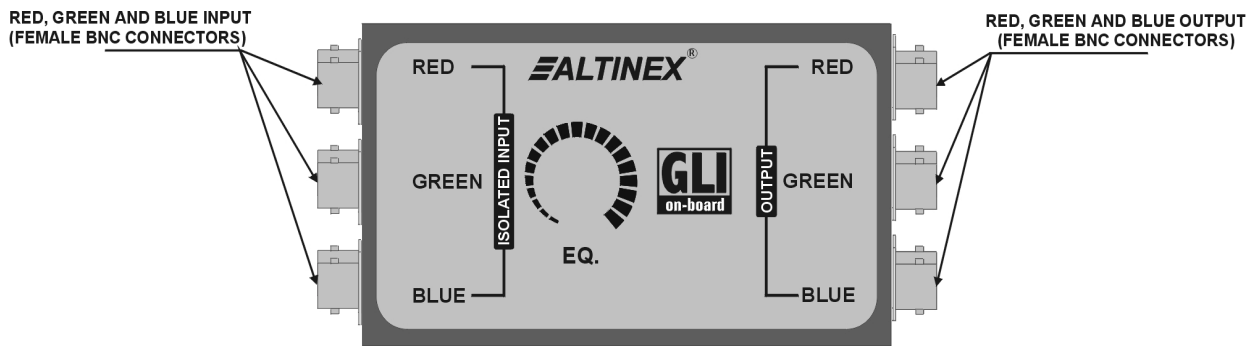
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Horizontal	15-200 kHz
Vertical	47-180 Hz
Minimum Video Bandwidth	350 MHz
Typical Video Bandwidth	360 MHz
Cable Equalization	Factory Adjustable from 0dB to 18 dB, 100MHz to 300MHz

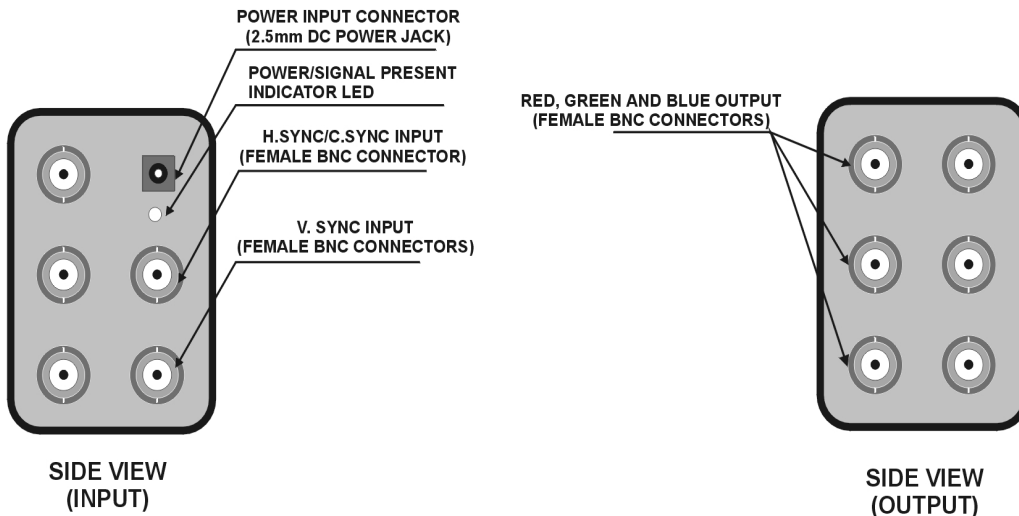
Coupling	DC
Cross-talk	-40dB @ 10 MHz
Power	
External Power Adapter	9V 500mA
Power Consumption	4 watts max

Table 3. DA1905GL Electrical

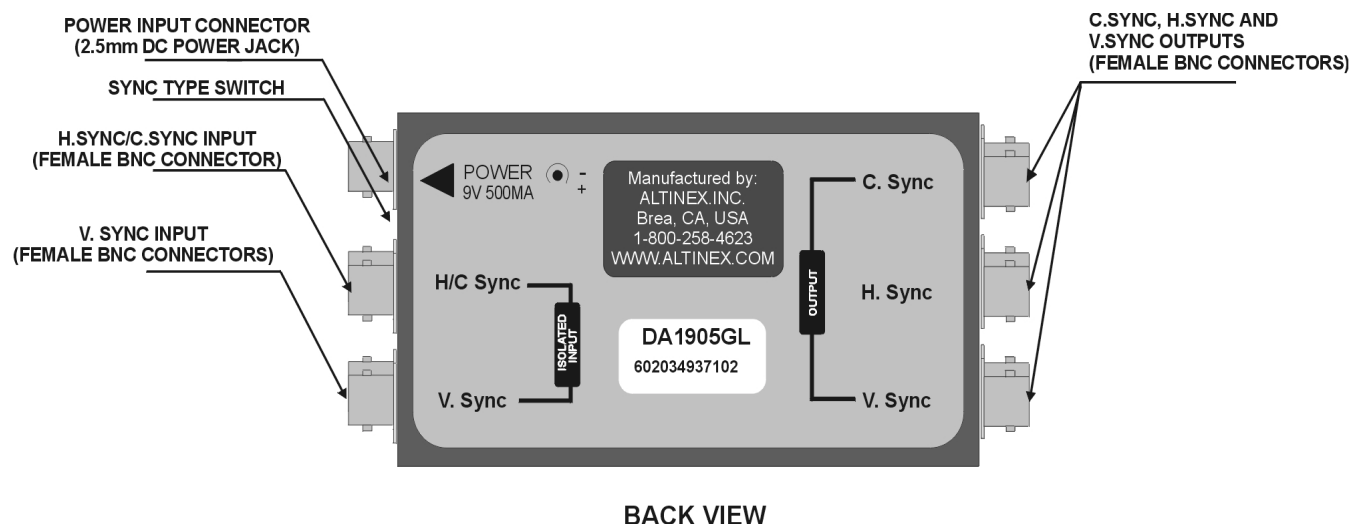
DESCRIPTION OF DA1905GL 4



FRONT VIEW



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BACK VIEW

4.1 INPUTS/OUTPUTS

The input of the **DA1905GL** uses 5-BNC connectors representing red, green, blue, horizontal/composite sync, and vertical sync. The output uses 6-BNC connectors for red, green, blue, composite sync, horizontal sync and vertical sync. All of the output components are available at all times. If an RGBS format signal is fed into the **DA1905GL**, the unit will separate the signal into RGBHV and still provide the original composite sync signal. If the input signal is in RGBHV format, the combined composite sync will be present in addition to the original RGBHV format signal. In this sense, the **DA1905GL** also acts as a sync separator and sync combiner.

4.2 SYNC COMPATIBILITY

The **DA1905GL** is designed to handle a Sync Level between 1V p-p and 5V p-p. The sync must be referenced to 0V, meaning that it should start at 0 V and go up to a maximum of 5V. The **DA1905GL** will not handle sync, which goes below 0V.

4.3 COMMON MODE RANGE

The Common Mode Range of the **DA1905GL** is +/-2 V with a video signal of 1 V p-p. In most cases, a ground loop voltage will not exceed 200-300 mV, so this common mode range is more than enough to handle even the most severe ground loop problems.

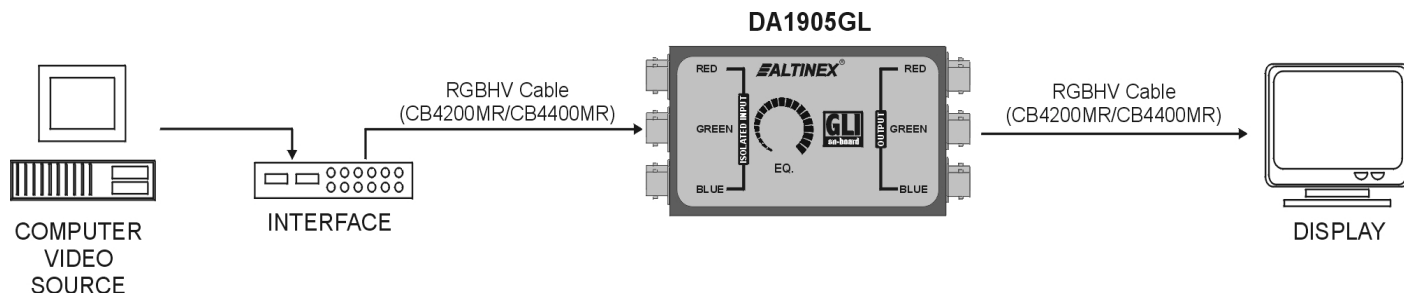
4.4 EQUALIZATION

Equalization is a means of boosting Red, Green, and Blue signals at high frequencies with digital adjustment knobs when using cable runs over 100 feet. This works for up to 300 feet or more of cable depending on the type of cable. The attenuation of red, green, and blue signals due to long cables may be effectively removed.

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APPLICATION DIAGRAM

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INSTALLATION

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Step 1. Make sure that the correct power adapter is connected to the unit. The **DA1905GL** uses a 9V 500 mA power supply.

Step 2. Connect the cables from the video sources (computers) to the appropriate input channels. Connect the output channels to the display devices (monitors or projectors).

Step 3. Check the image on all associated active displays.

If the **DA1905GL** is working to eliminate a specific ground loop problem, make sure that all visible interference has been eliminated. If the problem persists, the ground loop may involve more than just the two pieces of equipment, which are interconnected.

If the **DA1905GL** is used for general preventative measures, your image should remain stable and interference free. Due to potential changes in any power/ground system, the **DA1905GL** acts as a “defense mechanism” to eliminate potential ground loop interference problems.

Step 4. Adjust the red, green, and blue equalization settings for the best image quality.

OPERATION

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The settings of the **DA1905GL** Distribution Amplifier can be adjusted using the Sync Level, Common Mode Range, and Equalization as described in section four. There are no other adjustments necessary to operate the unit. The **DA1905GL** will operate successfully as long as cables are attached properly and other technical specifications are followed.

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ACCESSORIES 8

Model No.	Description
	TABLE MOUNT BRACKET
TM1275	Mounting Bracket for DA1905GL
	HIGH RESOLUTION 5-CHANNEL COAX CABLE
CB4200MR	Bulk cable (500 ft. minimum)
CB4203MR	3 feet, 5-BNC to 5-BNC
CB4206MR	6feet, 5-BNC to 5-BNC
CB4212MR	12 feet, 5-BNC to 5-BNC
CB4225MR	25 feet, 5-BNC to 5-BNC
CB4250MR	50 feet, 5-BNC to 5-BNC
CHB4275MR	75 feet, 5-BNC to 5-BNC
CB42100MR	100 feet, 5-BNC to 5-BNC
CB42150MR	150 feet, 5-BNC to 5-BNC
	SUPER HIGH RESOLUTION 5-CHANNEL COAX CABLE
CB4400MR	Bulk cable (500 ft. minimum)
CB4406MR	6feet, 5-BNC to 5-BNC
CB4412MR	12 feet, 5-BNC to 5-BNC
CB4425MR	25 feet, 5-BNC to 5-BNC
CB4450MR	50 feet, 5-BNC to 5-BNC
CB4475MR	75 feet, 5-BNC to 5-BNC
CB44100MR	100 feet, 5-BNC to 5-BNC
CB44150MR	150 feet, 5-BNC to 5-BNC
	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 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

FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1.	When should I use the DA1905GL ?	Often, in large audio/visual systems, a variety of different pieces of equipment are powered from multiple AC feeds and are powered from the same feeds that are used to operate high current equipment. This can potentially create a ground loop problem, evidenced by a rolling hum bar on a display or by sync instability. The DA1905GL is a high resolution; high bandwidth ground loop isolator designed to resolve these common ground problems in audio/visual systems.
2.	Which signal formats may be passed through the DA1905GL ?	The DA1905GL is a multiple-purpose RGBHV Line Driver, Ground Loop Isolator, and Sync Processor. As a Line Driver, the DA1905GL offers a single input (5-BNC connectors for RGBHV) and a single output (6-BNC connectors for RGBSHV). It will also accept RGBS, RGsB, Component Video (Y, R-Y, & B-Y), S-Video, and Composite Video signals using the appropriate channels.
3.	What is a Ground Loop?	A ground loop is a type of electromagnetic interference often caused by small, but significant differences in ground voltage. These differences in ground voltage occur between two or more different power sources when equipment using the different power sources is

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TROUBLESHOOTING GUIDE 10

We have carefully tested and have found no problems in the supplied **DA1905GL** 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 sync levels are between 1 V p-p and 5 V p-p.
- Please use ALTINEX supplied external adapter (9V, 500mA).
- Please make sure that the proper quality of cables is used. We recommend ALTINEX made cables for best results.
- If a problem arises after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct the problem.

		connected by means of video/audio inputs and outputs. A ground loop may also be caused when high current equipment (such as a lighting or air conditioning system) is fed from the same power sources as the display equipment. Ground loops can vary in intensity. If a ground loop is large enough, it can not only cause problems with the display image; it can actually damage equipment components.
4.	How many different composite video signals may I pass through the DA1905GL , when I use it as a Ground Loop Isolator?	Three DA1905GL Distribution Amplifiers may be used as ground loop isolators for up to three different composite video signals, using the red, green, and blue channels.
5.	May I use the DA1905GL as a Sync Processor?	Yes, the DA1905GL acts as a Sync Processor, allowing you to combine horizontal and vertical sync into composite sync or split composite sync into separate horizontal and vertical sync. The DA1905GL is not designed to strip sync from Green.

ALTINEX POLICY

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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. The warranty is contingent upon the return of products within 2 years (90 days for cables) from date of shipment to the purchaser with transportation charges pre-paid. 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 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

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