



A WORLD OF A/V SOLUTIONS



INTERFACES

**IN2111R / IN2111R2**  
HIGH RESOLUTION RACK MOUNTABLE INTERFACE  
HIGH RESOLUTION RACK MOUNTABLE DOUBLE INTERFACE



IN2111R



IN2111R2

**IN2111R/R2**  
**OPERATION MANUAL**



## Installation and Safety Instructions

**For Models without a Power Switch:**

The socket outlet shall be installed near the equipment and shall be accessible.

**For all Models:**

No serviceable parts inside the unit. Refer service to a qualified technician.

**For Models with Internal or External Fuses:**

For continued protection against fire hazard, replace only with same type and rating of fuse.



## Instructions d'installation et de sécurité

**Pour les modèles sans interrupteur de courant:**

La prise de courant d'alimentation sera installé près de l'équipement et sera accessible.

**Pour tout les modèles:**

Pas de composants à entretenir à l'intérieur. Confiez toute réparation à un technicien qualifié.

**Pour les modèles équipés de fusibles internes ou externes:**

Afin d'éviter tout danger d'incendie, ne remplacer qu'avec le même type et la même valeur de fusible.



## Installations- und Sicherheitshinweise

**Für Geräte ohne Netzschalter:**

Die Netzsteckdose soll in der Nähe des Gerätes installiert und frei zugänglich sein.

**Für alle Geräte:**

Keine Wartung innerhalb des Gerätes notwendig. Reparaturen nur durch einen Fachmann!

**Für Geräte mit interner oder externer Sicherung:**

Für dauernden Schutz gegen Feuergefahr darf die Sicherung nur gegen eine andere gleichen Typs und gleicher Nennleistung ausgetauscht werden.



## Instalacion E Instrucciones de Seguridad

**Modelos Sin Interruptor:**

La conexión debe ser instalada cerca del equipo y debe ser accesible.

**Para Todos Los Modelos:**

Dentro de la unidad, no hay partes para reparar. Llame un tecnico calificado.

**Modelos con Fusibles Internos o Externos:**

Para prevenir un incendio, reemplace solo con el mismo tipo de fusible.

### CE COMPLIANCE

All products exported to Europe by Inline, Inc. after January 1, 1997 have been tested and found to comply with EU Council Directive 89/336/EEC. These devices conform to the following standards:

EN50081-1 (1991), EN55022 (1987)  
EN50082-1 (1992 and 1994), EN60950-92

**Shielded interconnect cables must be employed with this equipment to ensure compliance with the pertinent Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) standards governing this device.**



### FCC COMPLIANCE

This device 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 against harmful interference when 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 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 own expense.

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## Product Overview

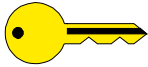
### DESCRIPTION

The **IN2111R / IN2111R2** is a high performance computer video interface for analog video signals including VGA, SVGA, XGA, MAC, SUN and other high-resolution workstations. The **IN2111R / IN2111R2** combines high-resolution computer interfacing, modular A/V connector plates and front panel A/C power outputs into a 2U rack mountable unit. The unit can also be configured with an optional audio buffer module that converts unbalanced stereo audio signals to balanced stereo audio. This highly integrated approach gives audiovisual professionals the ability to quickly design and install functional, customized computer interfacing and A/V connectivity solutions for a broad spectrum of applications.

Like other **INLINE** interfaces, the **IN2111R / IN2111R2** performs the following functions:

- **Signal Splitting** - allows the simultaneous connection and viewing of both the computer's local monitor and a second output device such as an LCD data projector or a presentation monitor.
- **Physical Interfacing** - Because computers employ many different types of video output connectors, it is sometimes difficult to directly connect them to data projection devices. The **IN2111R / IN2111R2** simplifies interfacing, routing and switching tasks by acting as a universal adapter. Through the use of removable input cables, the **IN2111R / IN2111R2** can be attached to different computers and will provide a video output signal on five BNC connectors. The output signal may be set to RGBHV (default), RGSB or RGSB formats.

#### KEY CONCEPT



*The **IN2111R / IN2111R2** is not a scan converter. The data projector, monitor or other output device must be compatible with the horizontal scan rate output by the computer video card.*

### PRODUCT FEATURES

**Rack Mountable Unit** - Featuring integral rack mounting ears, the **IN2111R / IN2111R2** is specifically designed to mount in a standard 19" equipment rack in a 2U space; no additional rack shelves or rack ears are required. The interface has a sleek black finish that blends well with other rack mounted equipment, complementing the decor of boardrooms, training facilities, control rooms and other high-tech / high profile installations featuring exposed equipment racks.

**Two Interfaces in One Product** - The **IN2111R2** contains two separate interfaces in a single rack mountable unit, offering enhanced functionality for systems with multiple large screen data displays and other applications requiring the flexibility provided by dual interfaces.

**Modular Faceplate** - The **IN2111R** and the **IN2111R2** (capable of holding up to twelve and eight A/V connector plates, respectively) have modular faceplates that can accommodate the exact connectors required for each installation. Dozens of engraved connector plates are available for audio, video, computer, data and phone connections. INLINE can provide custom engraving services to label the connector plates as required for various applications (additional charge for custom engraving). Available A/V modules are listed on pages 11-12.

**Front Panel A/C Power Outlets** - The **IN2111R / IN2111R2** has front panel power outlets (600 watts total) that provide a convenient place to plug in a laptop computer, CD player or other portable A/V device that will be located in front of the equipment rack. Three models are available for each interface to support various A/C socket types worldwide:

<b>IN2111R</b>	<b>IN2111R2</b>	(2) Edison outlets
<b>IN2111R - IEC</b>	<b>IN2111R2 - IEC</b>	(2) IEC female outlets
<b>IN2111R - EU</b>	<b>IN2111R2 - EU</b>	(1) Schuko outlet

**15-Pin HD VGA Standard Connectors** - The **IN2111R / IN2111R2** connects directly to VGA graphics cards and VGA local monitors using high-resolution coaxial VGA extension cables such as the **IN8000** series. Input / output adapter cable sets (see table on page 4) are also available in a variety of lengths for MAC (15-Pin D), SUN (13W3) and workstations (4 or 5 BNC).

**Ultra High-Resolution Amplification** - The **IN2111R / IN2111R2** provides superb performance and maximum image clarity at any resolution. Several design elements combine to provide this level of performance: video bandwidth in excess of 400 MHz, buffered local monitor output, and input / local monitor output cables constructed of high-resolution coaxial materials.

**Stereo Audio Signal Balancing** - The **IN2111R / IN2111R2** can be ordered with up to three **IN9370FT** Balanced Audio Buffered Modules. An optional factory installed module, the **IN9370FT** takes an unbalanced stereo audio signal (applied to a 3.5mm stereo mini or other front panel audio connector) and converts it to balanced audio. Balanced audio signals are output in a 5-pin captive screw terminal connector.

**CRT / LCD / DMD / ILA / HDLV / Plasma Friendly Output Signal** - Dipswitches are available to set the output sync format, polarity and horizontal position control characteristics as needed to match the requirements of virtually any compatible data display (the **IN2111R2** has a separate bank of dipswitches for each interface).

**Selectable Output Sync Format** - The unit can be set for RGBHV, RGSB or RGSB output sync as required by the data display device and signal distribution system. The **IN2111R / IN2111R2** does not strip green off the sync signal (i.e. RGSB input signals appear at the output as RGSB). The output sync formats for each of the **IN2111R2** interfaces can be selected individually.

**Convenient Controls and Features** - A hand-adjustable **horizontal position control** on the **IN2111R / IN2111R2** faceplate allows for precise centering of the image within the data display area (the **IN2111R2** features a separate control for each interface). The **Auto Power** feature automatically powers up the interface when an input cable is connected to the 15-pin HD input, and powers down the unit when the input cable is removed. The **dipswitch access plate** (located on the faceplate) provides quick access to the dip-

switches for setting output sync format, sync polarity mirroring, serration pulse enable / disable, horizontal control enable / disable, and VGA / MAC monitor emulation enable / disable.

In addition the **IN2111R / IN2111R2** features:

- **Analog Interface** - the unit will operate with Analog Video with TTL level sync signals. The signal can be separate H & V or composite sync.
- **Monitor Emulation Switch** - eliminates the need for a termination plug if a local monitor is not used. Emulates a color VGA monitor or a 13/14" 640 x 480 MAC monitor.
- **Sync Polarity Preservation Switch** - enables the sync polarity to be preserved, or to be set for negative polarity (for RGBHV signals in and out).
- **Serration Pulse Removal Switch** - (for RGSB or RGSB output) enables the user to remove serration pulses from the sync output.

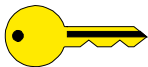
## Compatibility

### INPUT

The **IN2111R / IN2111R2** will accept high-resolution video signals from virtually any computer that outputs an analog video signal (VGA, SVGA, XGA, MAC, SUN, SGI and other high-resolution computers) at virtually any refresh rate. Input signal compatibility parameters are:

Video Signal:	Analog RGB Video
Signal Format:	RGBHV, RGSB, RGSB*
Horizontal Frequency Range:	30 KHz to 130 KHz
Vertical Refresh Rates:	30 Hz to 120 Hz

#### KEY CONCEPT



*\* The **IN2111R / IN2111R2** will operate with RGSB input signals. However, the unit will not strip sync off of the green. RGSB input signals are always output as RGSB (they cannot be output as RGSB or RGBHV). Also the horizontal position control will not operate when used with RGSB input signals.*

### OUTPUT

The output signal of the **IN2111R / IN2111R2** is analog RGB video with TTL sync on 3, 4 or 5 female BNC connectors. The output format can be set to RGBHV, RGSB or RGSB using dipswitches. This output signal is compatible with high-resolution data grade monitors and data / graphics projectors.

**KEY CONCEPT**



VGA, MAC, SUN, SGI and other high-resolution workstations operate in several video modes encompassing a wide range of resolutions and scan rates. Many of the video signals from the newest models can run as high as 70 KHz or more, with the newest VGA cards offering an output resolution of 1600 x 1200 (some can even go as high as 1920 x 1080). The data projector or monitor connected to the interface output must be compatible with the horizontal scan rate and vertical refresh rate of the computer's video signal. Please check the documentation for both the computer graphics card and the data display device to ensure compatibility.

**ADAPTER / EXTENSION CABLES FOR INPUT AND LOCAL MONITOR OUTPUT**

The IN2111R / IN2111R2 has 15-pin HD VGA-type connectors for input and local monitor output. The following input and local monitor output cables are available:

Computer	3'	6'	12'	25'
<b>VGA: 15-Pin HD</b>				
Input Cable		IN8006	IN8012	IN8025
Output Cable (Optional)		IN8006	IN8012	IN8025
<b>MAC with 15-Pin D:</b>				
Input Cable		IN9140		IN9144
Output Cable	IN9141			IN9145
<b>MAC G3, G4 and PowerBook with 15-Pin HD*:</b>				
Input Cable		IN8006	IN8012	IN8025
Output Cable		IN8006	IN8012	IN8025
<b>SUN: 13W3 (may also be used with SGI with RGsB output)</b>				
Input Cable		IN9142		IN9146
Output Cable	IN9143			IN9147
<b>Workstation: 5 BNC</b>				
Input Cable		IN9048	IN9046	IN9046-L25
Output Cable		IN9047	IN9045	IN9046-L25
<b>Workstation: 4 BNC</b>				
Input Cable		IN9100		

\*Newer Mac G3 models (with translucent cases) have 15-Pin HD connectors (pins arranged in 3 rows). Older G3 models (with solid white enclosures) incorporate 15-Pin D connectors (pins arranged in 2 rows).

**Note: The input / output cables listed above can be used with any of the following interfaces, distribution amplifiers and switchers:**

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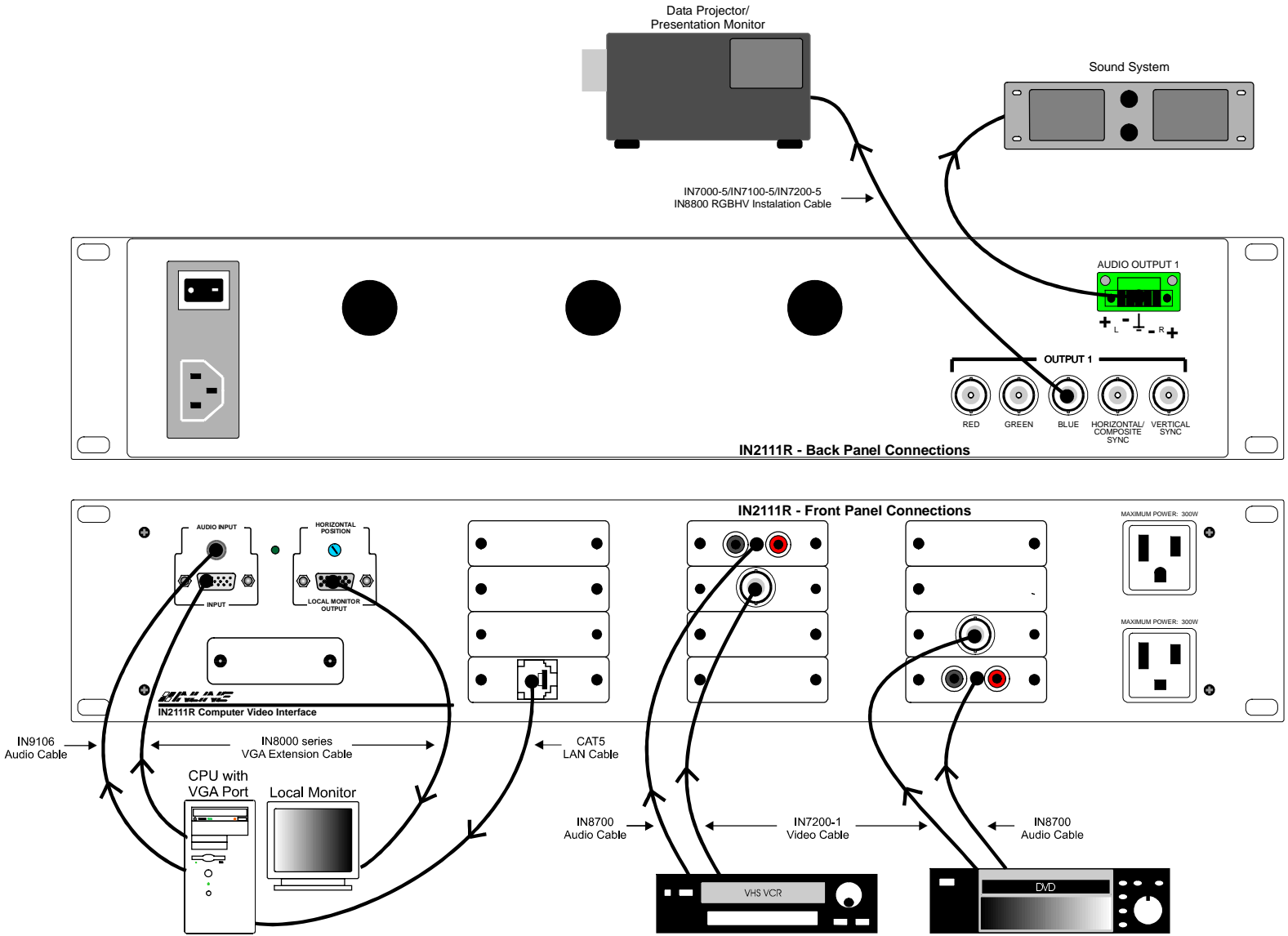
- IN2100   IN2110   IN2111 Series   IN2112 Series   IN2114 Series   IN2116  
 IN2200   IN3260   IN3262 Series   IN3264   IN3268   IN3600 Series

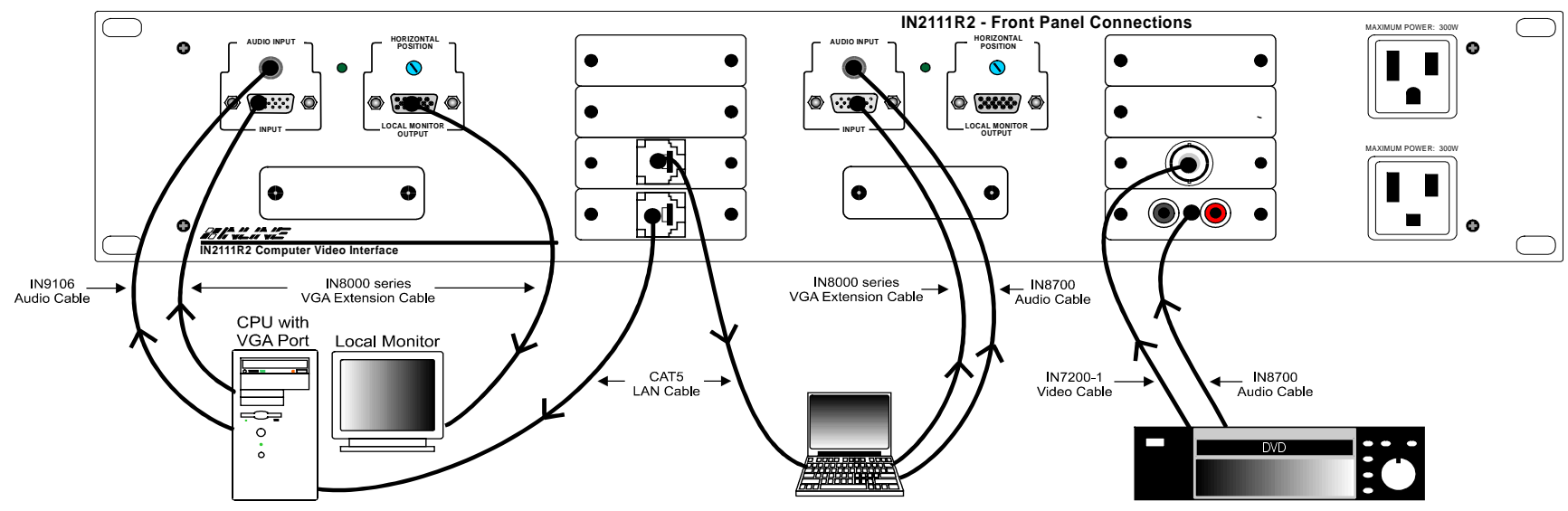
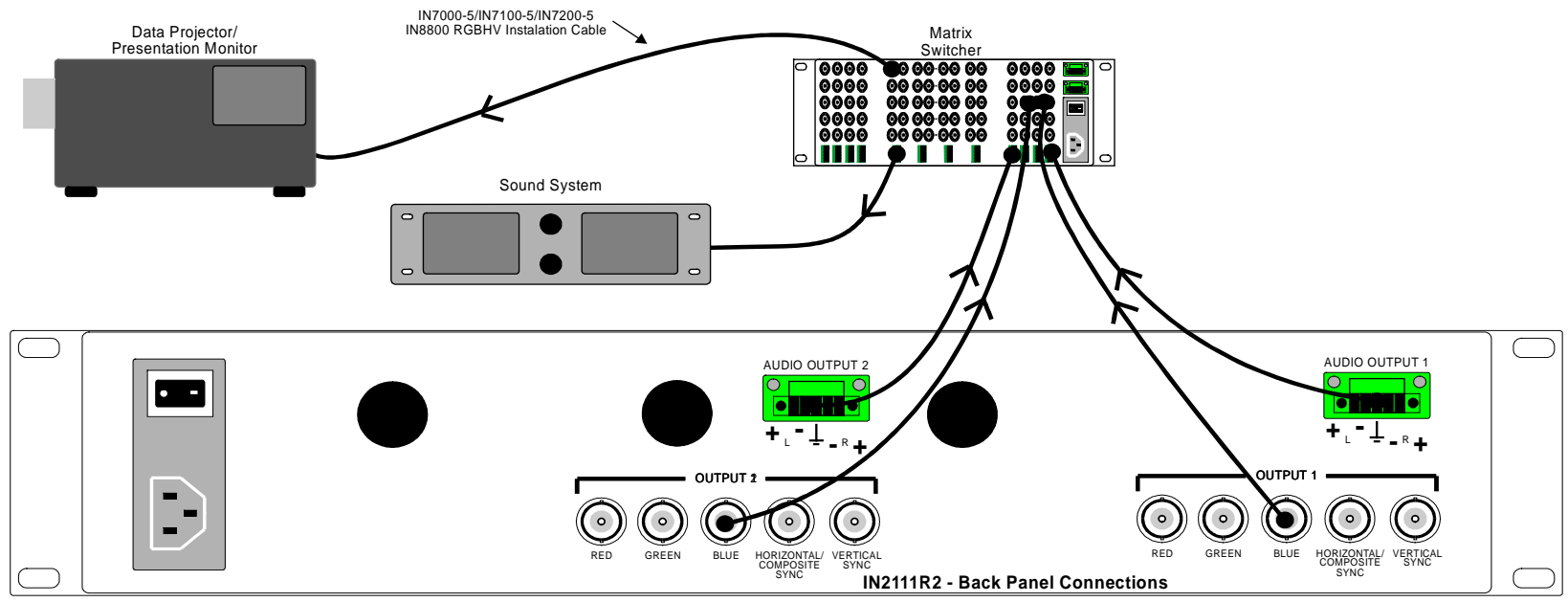
## Installation

This section offers step-by-step instructions for installing the **IN2111R / IN2111R2** (see Application Diagram on pages 6 & 7).

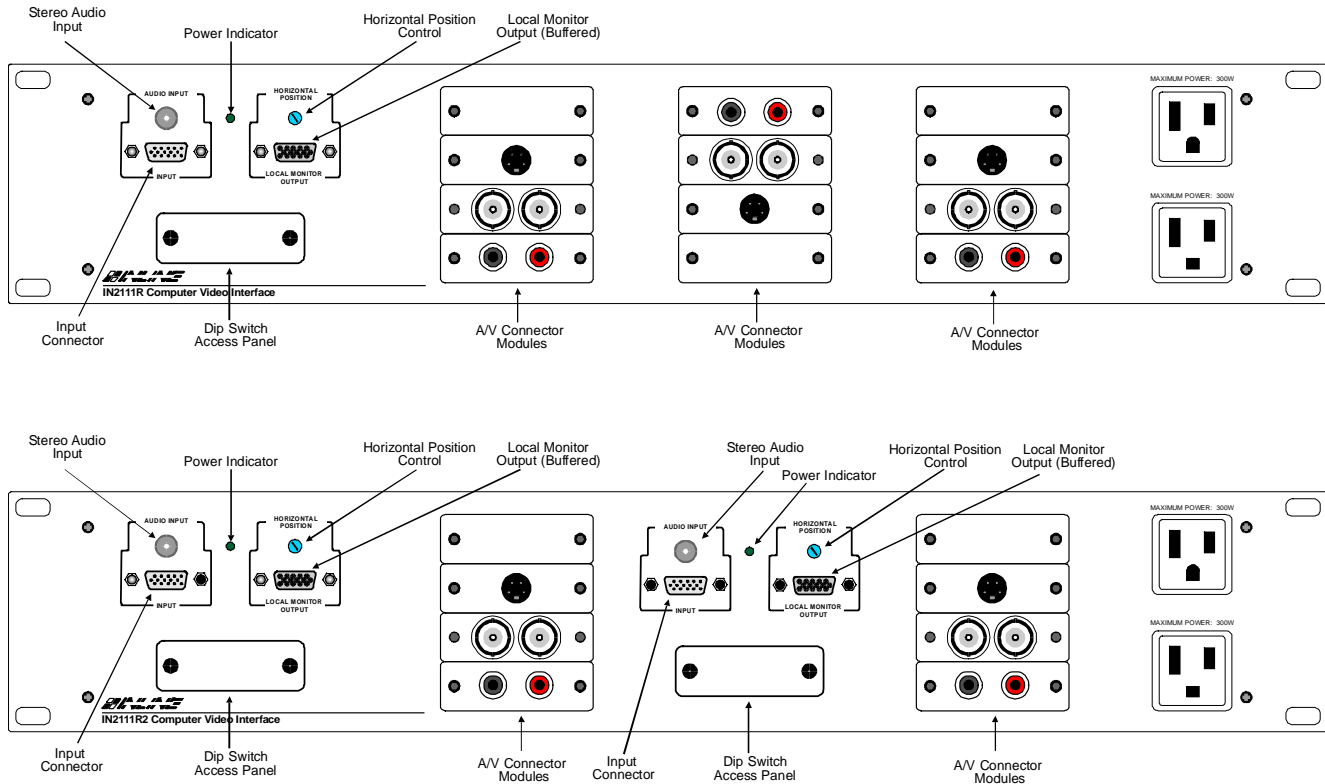
1. Utilizing the integral rack mounting ears, mount the unit in a standard 19" equipment rack (or larger) in a 2U space. Run the necessary video coax, power and accessory cables to it.
2. Set the dipswitches for the requirements of your installation (see Dipswitch Settings on page 9). The **IN2111R / IN2111R2** factory default output format is RGBHV. If your display device, routing system or cabling requires a different format, use the dipswitches to change the output signal to RGSB or RGSB as desired.
3. Connect the **IN2111R / IN2111R2** output (5 BNC connectors) to the data display device's RGB input, using three, four or five high-resolution BNC cables or a multi-conductor RGBHV, RGSB or RGB "snake". The **IN7000 / IN7100 / IN7200 / IN7300 Series** high-resolution cables and the **IN8800 Series** installation cables are well suited for this purpose. While making connections, take care to insure that the red output is connected to the red input, green output to the green input, etc.
4. Connect the accessory cables as required by your installation.
5. Connect the power. The power connector has a sticker showing the correct polarity. **Be extra careful to connect the positive to the (+) connector and the negative to the (-) connector. Connecting the power with the reverse polarity may permanently damage the unit! If in doubt, measure the power cable with a voltmeter to verify the positive and negative terminals.** You may also use the optional **IN9210** rack mounted power supply which will power up to 10 interfaces. The cable used to connect the power supply to the interface should be 18 gauge to 22 gauge, depending on its length. The **INLINE IN8500P-2** power cable (an 18 gauge, 2-conductor, plenum rated cable) is well suited for this application.
6. Turn the computer and computer monitor off. Disconnect the computer monitor (if present) from the video output port on the computer.
7. Connect the local computer monitor (if present) to the local monitor output of the **IN2111R / IN2111R2**. VGA monitors will attach directly to the local monitor output. For other types of monitors, use the appropriate local monitor output adapter cable (see list on page 4). If no local monitor is used, set the monitor emulation dipswitch to emulate a color VGA monitor or a 13/14" MAC RGB monitor.
8. Connect the output of the computer to the Input of the **IN2111R / IN2111R2** with the appropriate input cable.
9. Complete the installation by turning the computer and computer monitor on. If required, adjust the horizontal position control.

**IN2111R / IN2111R2 APPLICATION DIAGRAMS**





## IN2111R / IN2111R2 FRONT PANEL CONNECTORS AND CONTROLS



### HORIZONTAL POSITION CONTROL

The location of the horizontal position control is shown above. The horizontal position control adjusts the position of the image on the data display device from left to right (it has no effect on the local computer monitor).

Many data projectors and monitors have their own horizontal position control, and the interaction of the display device's and the interface's horizontal controls may result in a dark image on the data display. The following procedure is suggested to ensure best results:

1. Adjust the **IN2111R / IN2111R2** horizontal position control so a good quality image is displayed. This control should not be set to an extreme position.
2. Adjust the display device's horizontal position control until the image is centered as desired.
3. If the image appears dark or the colors are not properly displayed, fine tune the controls on both the display device and the interface until the picture is centered and a good quality image is attained.

## DIPSWITCH SETTINGS

Most installations will not require any changes to the dipswitch settings, and the **IN2111R / IN2111R2** will generally be operated with the factory default settings. The factory default and specialized dipswitch settings are indicated below.

### Factory Default Settings



**Dipswitches ON:** 2 & 4  
**Signal Format:** Red / Green / Blue / Horizontal and Vertical Sync  
**Horizontal Position Control:** Enabled  
**H & V Sync Polarity:** Negative, Negative  
**Monitor Emulation:** Disabled

The following table lists the functions of the 6 dipswitches:

DIPSWITCH	FUNCTION	SETTING
1	Horizontal Position	1 = Disabled 0 = Enabled
2	RGsB Output (sync on green)	1 = RGSB or RGBHV 0 = RGsB
3	RGSB or RGBHV Output (dipswitch 2 must be set to 1)	1 = RGSB 0 = RGBHV
4	RGBHV Output Sync Polarity	1 = Negative, Negative 0 = Mirror Input Polarities
5	Serration Pulse Removal (for RGSB or RGsB output)	1 = Remove Serration Pulses 0 = Pass Serration Pulses
6	Monitor Emulation (VGA color/MAC* 640 x 480)	1 = Emulation Disabled 0 = Emulation Enabled

\*If monitor emulation is desired when using a MAC G3 (with 15-pin HD connector) or G4, dipswitch #6 must be set to 1.

## OPTIMAL SETTINGS FOR LCD / DMD / ILA / D-ILA / PLASMA DISPLAYS

The following output sync settings provide maximum signal preservation and are recommended for the best image quality with LCD, DMD, ILA, D-ILA and Plasma Display devices. Depending on the design of the display device's sync processing circuitry, you may be able to set the horizontal position control (dipswitch #1) to the enabled position. However, experimentation with your display device is the best way to determine whether you can achieve a stable image with the horizontal position enabled. Many LCD displays include a fine phase control, which can be adjusted to optimize picture quality.

**Dipswitches ON:** 1 & 2  
**Signal Format:** Red / Green / Blue / Horizontal and Vertical Sync  
**Horizontal Position Control:** Disabled  
**H & V Sync Polarity:** Mirror Input Polarities

## IN9370FT AUDIO BUFFER MODULE

The **IN2111R / IN2111R2** can be ordered with an **IN9370FT** audio buffer module. This factory installed optional module takes an unbalanced stereo audio input, buffers the signal and outputs it as balanced stereo audio. This is desirable for systems where the **IN2111R / IN2111R2** audio signal will be connected to equipment with balanced audio inputs, and is helpful in preserving signal integrity and minimizing outside signal interference (which often occurs while sending the audio signal over lengthy cable runs). The output can also be set for unbalanced stereo audio if desired.

### IN9370FT Input Signal Factory Pre-Wiring

In the factory default installation, the **IN9370FT** is pre-wired to accept unbalanced stereo audio input from a 3.5mm Stereo mini audio input connector (located on the left side of the interface immediately above the 15-pin HD computer video input connector). The **IN9370FT** can be pre-wired at the factory to accept the input signal from audio connectors on one of the A/V connector modules (this special alternative wiring must be requested at time of order).

### IN9370FT Jumper Settings

J2 and J3 set the output for either balanced or unbalanced audio signals. J4 balances or unbalances the left side audio signal, and J5 balances or unbalances the right. All four jumpers (J2, J3, J4 and J5) need to be set in the same position.

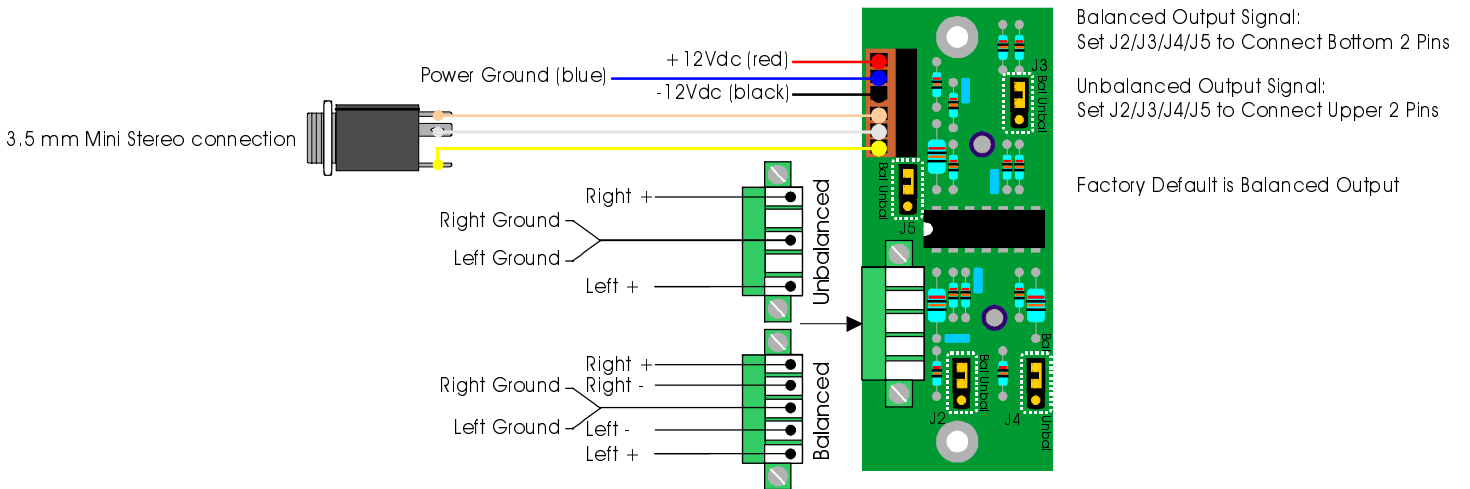
**Balanced Output Signal:** Set J2 / J3 / J4 / J5 to Connect Bottom 2 Pins

**Unbalanced Output Signal:** Set J2 / J3 / J4 / J5 to Connect Upper 2 Pins

*Note: Connections to J1 and J7 are pre-wired at the factory and may only be modified by trained technicians. J7 is used for power input, and J1 is the audio input.*

### IN9370FT Output Connector

A balanced or unbalanced stereo audio output signal is provided on a 5-pin captive screw connector. It is important that connections are made appropriately for balanced or unbalanced output as indicated in the diagram below:



## AUDIO / VIDEO / PHONE / DATA / SWITCH / COMPUTER CONNECTOR MODULES

**Modular A/V Connector Plates & Accessories for:**  
*IN2111 Series / IN2112 Series / IN2114 Series / IN2116 / IN3260 / IN9166 / IN9167 / IN9168*

Connector Module Black/White	Description	Front Connector / Termination	Back Connector / Termination	Module Size
IN9350B / IN9350W	Blank Plate - Single Size	None	None	Single
IN9351B / IN9351W	(2) BNC Barrel	(2) BNC Female	(2) BNC Female	Single
IN9352B / IN9352W	(1) S-Video	4-pin Mini DIN Female	4 Bare Wires	Single
IN9353B / IN9353W	(2) RCA	(1) RCA Female - Red (1) RCA Female - Black	(2) Solder Lug Terminal (2) Solder Lug Terminals	Single
IN9354B / IN9354W	(2) ¼" Stereo Phono	(2) ¼" Stereo Phono Female	(3) Solder Lug Terminals	Single
IN9355B / IN9355W	(2) 3.5mm Mini Stereo	(2) 3.5mm Mini Stereo Female	(3) Solder Lug Terminals	Single
IN9356B / IN9356W	(1) 5-PIN Captive Screw Terminal	Phoenix Brand 5-pin Captive Screw Terminal	(5) Solder Lug Terminals	Single
IN9357B / IN9357W	(2) F-Connector Barrel	(2) F-Connector Female	(2) F-Connector Female	Single
IN9358B / IN9358W	(1) RJ11	RJ11 Female - Leviton Brand	6-pin Punch Block	Single
IN9359B / IN9395W	(1) RJ45	RJ45 Female - Leviton Brand	8-pin Punch Block for Cat 5 Cable	Single
IN9360B / IN9360W	(1) Contact Closure Switch With LED & (1) 3.5mm Mini Stereo	Square White Single Pole Switch with Integrated LED	(4) Solder Lug Terminals	Single
		3.5mm Mini Stereo Female	(3) Solder Lug Terminals	
IN9361B / IN9361W	(1) 15-pin HD	15-pin HD Female	15-pin HD Female	Single
IN9362B / IN9362W	(1) 15-pin HD	15-pin HD Male	15-pin HD Male	Single
IN9363B / IN9363W	(1) S-Video Barrel & (1) BNC Barrel	4-pin Mini DIN Female	4-pin Mini DIN Female	Single
		BNC Female	BNC Female	
IN9364DB / IN9364DW	(1) 4-pin XLR	Neutrik Brand 4-pin XLR Female	(4) Solder Cups	Double
IN9365DB / IN9365DW	(1) 3-pin XLR	Neutrik Brand 3-pin XLR Female	(3) Solder Cups	Double
IN9366DB / IN9366DW	(1) 6-pin XLR	Neutrik Brand 6-pin XLR Female	(6) Solder Cups	Double
IN9367DB / IN9367DW	Blank Plate - Double	None	None	Double
IN9368TB / IN9368TW	Blank Plate - Triple	None	None	Triple
IN9369QB / IN9369QW	Blank Plate - Quad	None	None	Quad
IN9372DB / IN9372DW	A/V Super Module: (2) RCA - Audio & (1) RCA - Video & (1) S-Video	RCA Female - Red	(2) Solder Lug Terminals	Double
		RCA Female - Black	(2) Solder Lug Terminals	
		RCA Female - Yellow	(2) Solder Lug Terminals	
		4-pin Mini DIN Female	4 Bare Wires	
IN9373B / IN9373W	(2) RCA Barrel	(2) RCA Female	(2) RCA Female	Single
IN9374B / IN9374W	(1) 9-Pin D Gender Changer – Female	(1) 9-pin D Female	(1) 9-pin D Female	Single

Connector Module Black/White	Description	Front Connector / Terminal	Back Connector / Terminal	Module Size
IN9375B / IN9375W	(2) Keyboard / Mouse Connectors	(2) 6-pin Mini DIN Female	(2) 6-pin Mini DIN Female	Single
IN9376B / IN9376W	A/V Super Module with Barrel Connectors: (2) RCA - Audio & (1) RCA - Video & (1) S-Video	RCA Female - Red	RCA Female	Double
		RCA Female - Black	RCA Female	
		RCA Female - Yellow	RCA Female	
		4-pin Mini DIN Female	4-pin Mini DIN Female	
IN9377DB / IN9377DW	(2) RCA - Audio & (1) RCA - Video	RCA Female - Red	(2) Solder Lug Terminals	Double
		RCA Female - Black	(2) Solder Lug Terminals	
		RCA Female - Yellow	(2) Solder Lug Terminals	
IN9378B / IN9378W	(1) 9-pin D Gender Changer - Male	(1) 9-pin D Male	(1) 9-pin D Male	Single
IN9381B / IN9381W	(1) BNC Barrel	(1) BNC Female	(1) BNC Female	Single
IN9382B / IN9382W	(1) F-Connector Barrel	(1) F-Connector Female	(1) F-Connector Female	Single
IN9383B / IN9383W	(1) RCA Barrel	(1) RCA Female	(1) RCA Female	Single
IN9384B / IN9384W	(1) ¼" Stereo Phono	(1) ¼" Stereo Phono Female	(3) Solder Lug Terminals	Single
IN9385B / IN9385W	(1) 3.5mm Mini Stereo	(1) 3.5mm Mini Stereo Female	(3) Solder Lug Terminals	Single
IN9386B / IN9386W	(1) BNC Barrel & (1) 3.5mm Mini Stereo	BNC Female	BNC Female	Single
		3.5mm Mini Stereo	(3) Solder Lug Terminals	
IN9387B / IN9387W	(1) S-Video & (1) 3.5mm Mini Stereo	4-pin Mini DIN Female	4 Bare Wires	Single
		3.5mm Mini Stereo	(3) Solder Lug Terminals	
IN9388B / IN9388W	(1) RCA for Video & (1) 3.5mm Mini Stereo	Yellow RCA Female	(2) Solder Lug Terminals	Single
IN9389B / IN9389W	(1) 6-PIN Mini DIN Barrel (PS/2 Keyboard / Mouse)	(1) 6-pin Mini DIN Female	(1) 6-pin Mini DIN Female	Single
IN9394DB / IN9394DW	(1) 4-pin XLR	Switchcraft 4-pin XLR Female	(4) Solder Cups	Double
IN9395DB / IN9395DW	(1) 3-pin XLR	Switchcraft 3-pin XLR Female	(3) Solder Cups	Double
IN9396DB / IN9396DW	(1) 6-pin XLR	Switchcraft 6-pin XLR Female	(6) Solder Cups	Double

**Note:** When ordering the IN2111R / IN2111R2, please specify the necessary A/V connector modules.

## Specifications

<b>Input</b>	
Connector Type	15-pin HD male - standard VGA pin-outs
RGB Video Signals	Analog, 1.5 Vp-p max.
Input Impedance	75 ohm
Sync Signals	TTL compatible
Horizontal Scan Rate	30 KHz - 130 KHz
Vertical Scan Rate	30 Hz - 120 Hz
Stereo Audio Connector	3.5mm stereo mini female
<b>Output</b>	
Buffered Local Monitor	15-pin HD female - standard VGA pin-outs
Stereo Audio Output (Passive)	3-pin mini Phoenix captive screw terminal
Stereo Audio Output with <b>IN9370FT</b> Installed (Buffered)	5-pin Phoenix captive screw terminal
Main Output	5 BNC female connectors
Output Signal Formats	RGBHV - Negative sync polarities (default) RGBHV - Mirror input sync polarities, RGSB or RGsB
RGB Signals	Analog Video, 75 ohm impedance
Bandwidth	400 MHz @ -3 dB with .7 volt input signal
Rise and Fall Times	0.875 nano seconds
Gain	1.0 +/- 5% (unity)
Sync Signal	H, V and S: 4V Unterminated; 2V when 75 ohm terminated Gs: 0.3V when 75 ohm terminated
Horizontal Pulse Width	Horizontal Position Enabled: Approximately 1.5 usec Horizontal Position Deleted: Approximately the same as the input signal
Vertical Pulse Width	Approximately the same as the input signal
<b>Controls</b>	
External	Dipswitches located on back of unit
Internal	75 ohm / High Z termination for red, green and blue (3 jumpers) Auto power enabled / disabled (jumper)
<b>Dimensions</b>	
Size (including faceplate)	3.5" H x 19" W x 5.5" D / 8.9cm x 48.3cm x 14.0cm
Shipping Weight	6 lbs. / 3 kg.
<b>Power</b>	
Power Supply	Internal Universal: 90 - 240VAC; 47 - 63Hz 600 Watts Total
Front Panel A/C Outlets	<b>IN2111R / IN2111R2:</b> (2) Edison female <b>IN2111R-IEC / IN2111R2-IEC:</b> (2) IEC female <b>IN2111R-EU / IN2111R2-EU:</b> (1) Schuko
<b>Regulatory Compliance</b>	
Safety	UL 1950. 3 <sup>rd</sup> Ed.; CE: EN50081-1 CAN/CSA-22.2 No. 950 3 <sup>rd</sup> Ed.
EMI	FCC class A; CE: EN50022 (1987), EN50081-1 (1991), EN50082-1 (1992 & 1994), EN60950-92

<b>Parts Included</b>
(1) <b>IN2111R</b> or <b>IN2111R2</b> Rack Mountable Interface
(1) <b>IN9334</b> 3/32 Allen Wrench for <b>IN2111R</b> / <b>IN2111R2</b> Connector Module Set Screws
(1) IEC Power Cable
(1) Operation Manuel

<b>Required Accessories (Ordered Separately)</b>
<b>Input and Local Monitor Adapter and Extension Cables:</b>
<b>VGA:</b> <b>IN8000 Series</b> 15-pin HD male to 15-pin HD female, various lengths from 3' to 100'
<b>For Other Computers:</b> See list on page 4

<b>Optional Accessories</b>
<b>Balanced Audio Module</b>
<b>IN9370FT:</b> Audio Buffer Module - converts unbalanced stereo audio signals to balanced audio. The <b>IN9370FT</b> input is normally connected to the 3.5mm audio input connector. The module may also be wired to accept stereo audio input from RCA, 3.5mm mini or ¼" connector modules
<b>Power Equipment</b>
<b>IN9210:</b> Rack mountable power supply, powers up to 10 units
<b>Audio Input Cables:</b>
<b>IN9106:</b> 3.5mm stereo mini male to 3.5mm stereo mini male, 6' long
<b>IN9107:</b> (1) 3.5mm stereo mini male to (2) RCA male, 6' long
<b>Installation Cables</b>
<b>IN7000P-5 Series RGBHV Cable:</b> Standard Resolution, Plenum Cable available in bulk lengths
<b>IN7000P-5K Series RGBHV Cable:</b> Standard Resolution, Plenum Cable available in 1000' bulk length
<b>IN8800:</b> 18 Conductor Super High-Resolution Cable: (3) Super High-Res. Coax., (3) Mini Coax., (5) 26 Gauge Twisted Pairs, (1) Gauge Pair
<b>Connectors and Tools:</b>
<b>IN9301</b> BNC Connectors
<b>IN9320</b> Crimp Tool Frame
<b>IN9321</b> Die ( <b>IN9320</b> and <b>IN9321</b> are used to terminate bulk cables)

**RGB OUTPUT CABLES**

<u>Cables</u>	<u>3-Conductor</u>	<u>4-Conductor</u>	<u>5-Conductor</u>	<u>6 Conductor</u>
<b>Standard Resolution</b>		IN7000-4	IN7000-5	
<b>Standard Resolution, Plenum</b>		IN7000P-4	IN7000P-5	
<b>High Resolution</b>	IN7100-3	IN7100-4	IN7100-5	
<b>Ultra High Resolution</b>	IN7200-3	IN7200-4	IN7200-5	IN7200-6
<b>Super High Resolution</b>			IN7300-5	IN7300-6
<b>Super High Resolution, Plenum</b>				IN7300P-6

All cable grades are available in lengths from 3' to 250' pre-terminated with high quality BNC connectors or as bulk cable.

## Troubleshooting

### The display device connected to the IN2111R / IN2111R2 output has a bad / scrambled image.

**Solution 1:** Verify that the correct input cable is being used (see list on page 4).

**Solution 2:** The display device connected to the output of the interface may not be compatible with the computer output. Standard 640 x 480 VGA runs at 31.5 KHz, and SVGA can be as high as 48 - 58 KHz, depending on the vertical refresh rate. PC, MAC, SUN and other high-resolution workstations have new and ultra high-resolution modes such as 1600 x 1200 and 1800 x 1440, and can output a video signal with a horizontal scan rate of over 100 KHz! Many data monitors and data projectors are not compatible with these resolutions and frequencies.

**Solution 3:** Check the dipswitch settings to make sure the unit is putting out a sync format that the display device can use. For most applications, the default dipswitch settings (see page 9) will work best. For LCD / DMD displays, you may have to disable the horizontal position control.

**Solution 4:** The RGBS or RGBHV cable may have a bad sync line. Try running the sync through another cable.

**Solution 5:** The IN2111R / IN2111R2 output sync range may not be compatible with the display device. Check the resolution and refresh rate for both the computer graphics card and the data display device to ensure compatibility.

### The output image is very dark.

**Solution:** The horizontal position control may be set off to an extreme setting or may be interacting poorly with the horizontal position control on the display device. Follow the horizontal position adjustment procedure on page 8.

### The local monitor looks fine but the image on the LCD projector is wavy or has vertical bars in the picture.

**Solution 1:** LCD / DMD displays work best when the sync signal has minimum sync processing. Set the interface dipswitches as indicated in the section **OPTIMAL SETTINGS FOR LCD / DMD DISPLAYS** on page 9. Setting the interface to RGBHV output and disabling the horizontal position control may alleviate this problem.

**Solution 2:** LCD / DMD displays often have an adjustment called Phase Adjust or Fine Phase Control. This control should be adjusted to provide the best image.

### The output image is missing a color.

**Solution:** Possibly the RGBS or RGBHV cable is bad. Try switching connections on the output to verify that the bad color's cable is OK (*Example:* If there is no red, try running the green output through the red cable and see if the green is displayed or not).

### The output image is too green.

**Solution:** The dipswitch settings may be set for sync on green output and the display device doesn't like that format. Try changing the dipswitches to output an RGBS or RGBHV signal (see dipswitch settings on page 9).

### The horizontal position control is not working.

**Solution 1:** Check the dipswitch settings (page 9) to see if the horizontal position control has been disabled.

**Solution 2:** The input setting may be RGB (sync on green). The horizontal position control does not work with RGB input signals.

**The output image is doubled, with two images displayed side-by-side.**

**Solution:** The display device may not be compatible with the horizontal scan rate of the computer. This problem often occurs when a 31.5 KHz VGA signal is sent into an RGB monitor that is only compatible with signals at 15.75 KHz.

If problems persist, call INLINE Technical Services at (800) 882-7117 for further assistance.

## Warranty

- ◆ INLINE warrants the equipment it manufactures to be free from defects in materials and workmanship.
- ◆ If equipment fails because of such defects and INLINE is notified within two (2) years from the date of shipment, INLINE will, at its option, repair or replace the equipment at its plant, provided that the equipment has not been subjected to mechanical, electrical or other abuse or modifications.
- ◆ Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of re-shipment to the Buyer.
- ◆ **This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.**

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