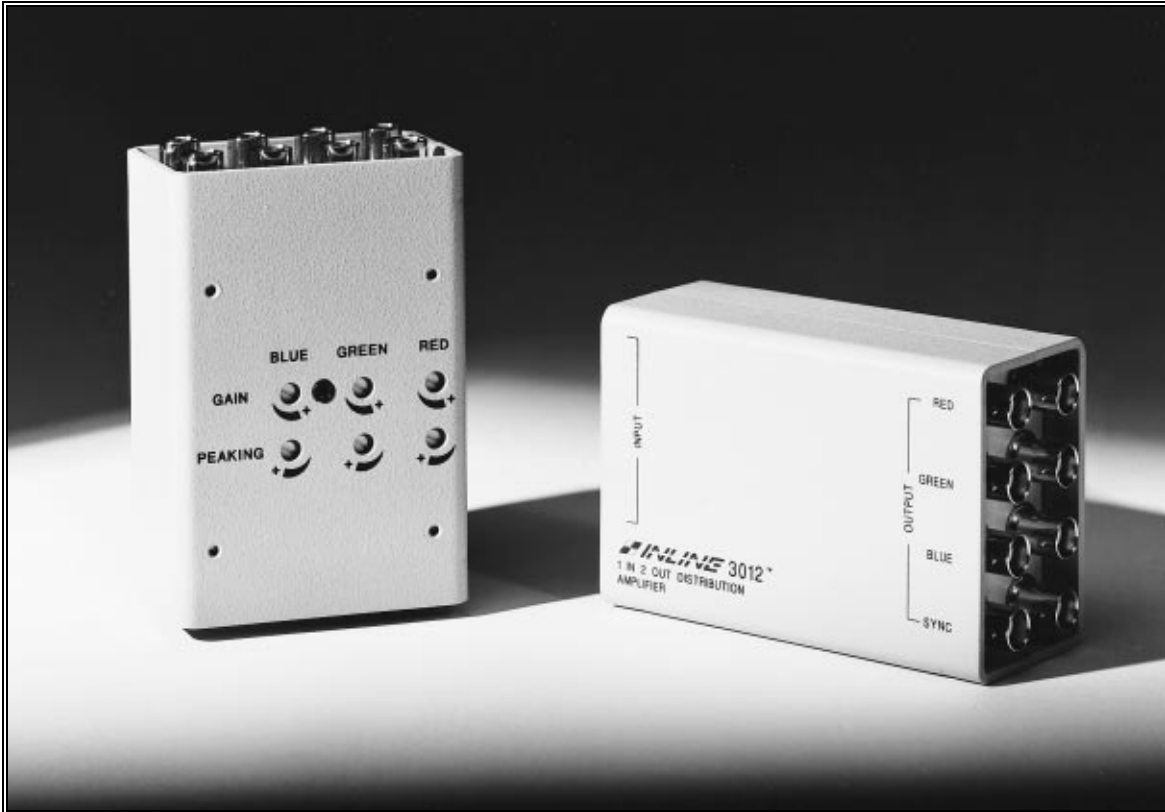


Operation Manual



IN2085 RGBS Line Driver

IN3012 RGBS Distribution Amplifier





Installation and Safety Instructions

For Models without a Power Switch:

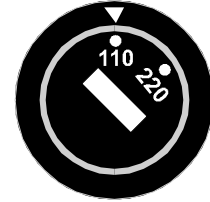
The socket outlet shall be installed near the equipment and shall be accessible.

For Models with 110 / 220V Power Selector:

Caution: Before applying power to this unit, the voltage selector must be set to the appropriate setting to match local A/C line voltage. Improper setting of the voltage selector may cause damage to the unit and create a potential fire hazard.

The voltage selector is a round switch located next to the A/C power input connector which looks like this:

Using a straight slot screwdriver or small coin, rotate the selector to the correct position so that the arrow lines up with 110 or 220 as appropriate for local power line voltage as indicated in the chart below:



Local A/C Voltage	Voltage Selector Setting
110 ~ 120 VAC	110
220 ~ 240 VAC	220

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.

For IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

Caution: Double pole / neutral fusing.

For all Models with Integral Lithium Battery:

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



Instructions d'installation et de sécurité

Pour les modèles sans interrupteur de courant:

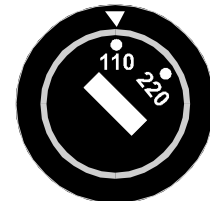
La prise de courant d'alimentation sera installé près de l'équipement et sera accessible.

Pour les modèles avec un sélecteur d'alimentation 110V/220V:

Attention: Avant de connecter l'appareil au circuit d'alimentation, le sélecteur de courant doit être positionné sur la sélection appropriée correspondant au voltage du circuit de courant alternatif local. Une mauvaise sélection peut engendrer des dommages à l'appareil et créer un danger d'incendie.

Le sélecteur d'alimentation est un commutateur rond positionné près du connecteur d'alimentation. Il se représente comme suit:

A l'aide d'un tourne-vis plat ou d'une pièce de monnaie, le sélecteur peut être tourné dans la position adéquate en veillant que la flèche corresponde avec 110 ou 220, en fonction de la valeur du circuit de courant local. (Voir tableau ci-dessous)



Circuit local AC	Position Sélecteur
110 ~ 120 VAC	110
220 ~ 240 VAC	220

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.

Pour IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

Attention: Double pôle / fusible au neutre.

Pour tout les modèles avec une batterie au lithium interne:

Attention: Danger d'explosion si la batterie est incorrectement remplacée. Ne remplacez la batterie qu'avec le même modèle, ou avec un modèle recommandé par le constructeur. Traitez les batteries usagées selon les instructions du fabricant, ou selon les normes écologiques en vigueur.



Installations und Sicherheitshinweise

Für Geräte ohne Netzschalter:

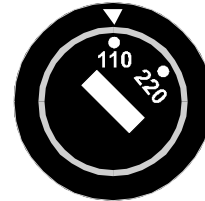
Die Netzsteckdose soll in der Nähe des Gerätes installiert und frei zugänglich sein.

Für Geräte mit 110 / 220V Spannungswähler:

Achtung: Bevor Sie dem Gerät Spannung zuführen, muß der Spannungswähler entsprechend der Spannung des lokalen Wechselspannungsnetzes eingestellt werden. Die falsche Stellung des Spannungswählers kann eine Beschädigung des Gerätes und möglicherweise ein Feuer verursachen.

Der Spannungswähler ist ein runder Schalter in der Nähe der Netzeingangsbuchse mit folgendem Aussehen:

Drehen Sie den Wähler mit einem normalen Schraubenzieher oder einer kleinen Münze so, daß der Pfeil auf die 110 oder 220 zeigt, entsprechend der Spannung Ihres lokalen Netzes wie hier angezeigt:



Lokale Netzwechselspannung	Stellung des Spannungswählers
110 ~ 120 V	110
220 ~ 240 V	220

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 ausgewechselt werden.

Für IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

Achtung: Allpolige Absicherung

Für alle Geräte mit eingebauter Lithium Batterie:

Achtung: Explosionsgefahr bei falschem Batterieeinsatz. Batterie nur ersetzen durch den gleichen oder entsprechenden Typ wie vom Hersteller empfohlen. Entsorgung verbrauchter Batterien nur nach den Anweisungen des Herstellers.



Instalacion E Instrucciones de Seguridad

Modelos Sin Interruptor:

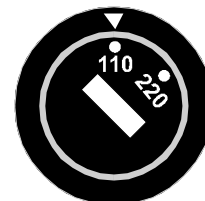
La conexión debe ser instalada cerca del equipo y debe ser accesible.

Modelos con Selector de Voltaje de 110/220V:

Precaución: Antes de operar esta unidad, el selector de voltaje debe instalarse de forma que corresponda a la línea de voltaje local. Instalación inadecuada del selector de voltaje puede causar daño a la unidad y originar un incendio.

El selector de voltaje es un cambio vía redondo localizado cerca de la conexión eléctrica, como se ve en el dibujo:

Use un destornillador común o una moneda pequeña, mueva el selector a la posición correcta, de forma que las flechas indiquen 110 o 220 de acuerdo con el voltaje local, como esta indicado a continuación.



Voltaje Local A/C	Selector de Voltaje
110 ~ 120 VAC	110
220 ~ 240 VAC	220

Para Todos Los Modelos:

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

Modelos con Fusibles Internos o Externos:

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

Modelos IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

Precaución: Double Polo / Fusible Neutral.

Modelos con Batería de Lithium Interna:

Precaución: Peligro de explosión si la batería es reemplazada incorrectamente. Reemplace solamente con la misma clase de batería, o una equivalente recomendada por el fabricante. Deseche las baterías usadas de acuerdo con las instrucciones del fabricante.

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**

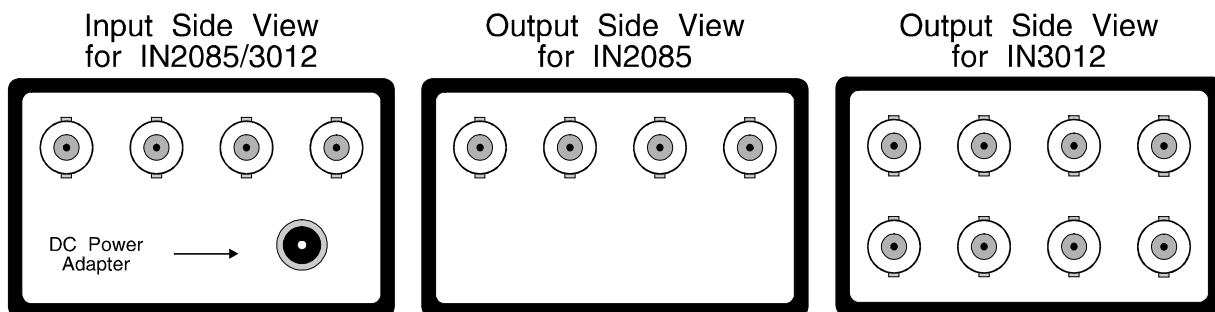
This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide against harmful interference when equipment is operated in a commercial environment. This equipment generates, uses and can radiate 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.

DESCRIPTION

The **IN2085** is a line driver/equalizer designed to extend cable runs of high resolution Red, Green, Blue and Sync video signals by providing individual gain and peaking controls for each output. The **IN3012** is a 1-input 2-output RGBS distribution amplifier. This manual covers both products. The main difference between the two models is the number of outputs and operation of the two models is virtually identical.

INSTALLATION

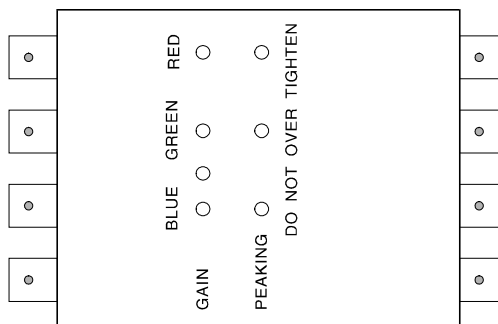
1. Connect the red, green, blue and sync signals from the source to the input of the **IN2085/IN3012** (see Operation section for details on sync on green or sync on all signals.)
2. Connect the **IN2085/3012** red, green, blue and sync output signals to the display device(s) or other equipment. When distributing higher scan rate signals over long cable lengths, cable choice is very critical to overall system performance. The **IN7200 Series** and **IN7300 Series** High Resolution RGBS cables are available in a variety of lengths and are well suited for this purpose.
3. Connect power by plugging in the power supply.
4. Adjust gain and peaking controls as needed (see Operation section for details.)



OPERATION

The **IN2085/IN3012** have individual gain and peaking controls for the red, green, and blue video channels. The sync channel has Automatic Gain Control (AGC), and outputs 4V p-p when unterminated and 2V p-p terminated to 75 ohms.

Bottom View



Gain Control

The gain control is used to increase the contrast of an image by compensating for amplitude loss due to coaxial cables. The gain control has a range of 0.9 to 1.5.

Peaking Control

The peaking control is used to sharpen an image by compensating for high frequency loss due to coaxial cables. High frequencies can be boosted by as much as 3 dB by adjusting the peaking control.

Note: The **IN2085** and **IN3012** will also operate with RGB signals (sync on green) and RsGsBs signals (sync on all). In these situations, only use the red, green, and blue channels (i.e.: leave the sync channel open). The red, green and blue channels can also be used to amplify or split composite NTSC video signals.

JUMPER REFERENCE LIST

INLINE provides 7 internal jumpers which are used to customize the **IN2085/3012** for specific needs. While the jumpers need not be touched for most normal installations, this section describes how to change the jumper settings for unique applications.

Input Impedance

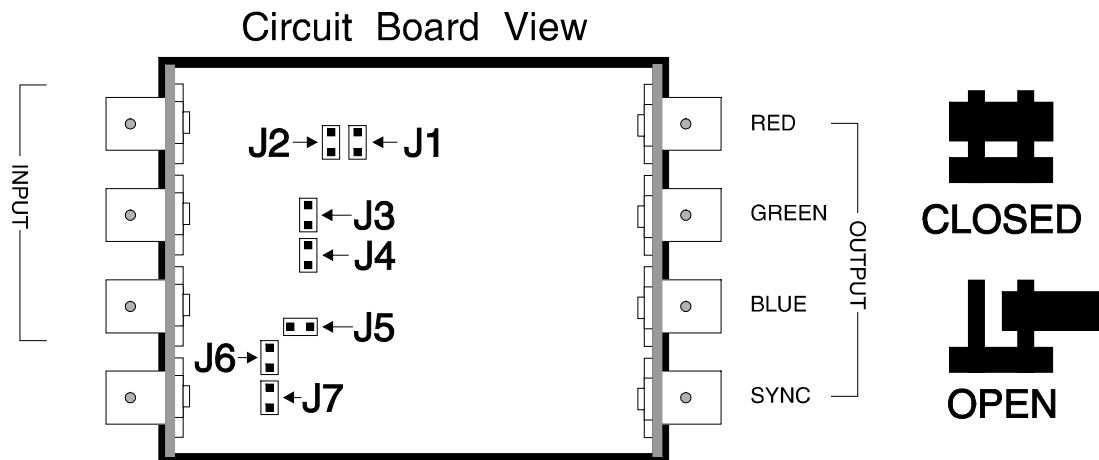
J2, **J4**, and **J6** are used to unterminate or terminate the red green and blue inputs to 75 Ohms. Open is unterminated and closed is terminated to 75 Ohms. Factory setting is closed (75 ohm termination).

J7 is used to unterminate or terminate the sync input to 75 Ohms. Open is unterminated and closed is terminated to 75 Ohms. Factory setting is open (unterminated / high impedance).

AC/DC coupling

J1, **J3**, and **J5** are used to set the red, green and blue channels for AC or DC coupling. Closed is DC coupled and open is AC coupled. Factory setting is open (AC coupled).

See the drawing below for jumper locations.



Use the following steps to modify the jumper settings.

1. Unplug the power from the unit.
2. Remove the screw on the bottom of the unit and slide the top cover off.
3. Gently position jumpers as required for your application.
4. Replace top cover and tighten screw.

SPECIFICATIONS

	IN2085 RGSB Line Driver	IN3012 RGSB 1x2 Dist. Amp..
Input		
Connector type	4 BNC connectors	
RGB Signals	RGB Analog, 1.5V p-p max., 75 ohm impedance	
Sync	0.3 to 5V p-p	
Output		
Connector Type	4 BNC connectors	2 sets of 4 BNC connectors
RGB Signals	Analog Video, 75 ohm impedance	
Sync	Sync output is AGC, 4V p-p unterminated and 2V p-p terminated into 75 ohms	
Bandwidth	330 MHz @ -3 dB	
Rise and Fall Times	1.1 nano seconds	
Controls		
Gain	Adjustable: 0.9 to 1.5	
Peaking	Adjustable: 0 dB to +3dB at 100 MHz	
Dimensions		
Size	2.7" x 4.2" x 2.8"	
Weight	1 lb.	
Power Consumption	9V 500 mA	

ACCESSORIES INCLUDED

Gain and Peaking Adjustment Tool
 9V 500 mA Power Supply
 Operations Manual

OPTIONAL ACCESSORIES

IN7000 Series Cable High Resolution Coaxial Cables
IN7200 Series Cable Ultra High Resolution Coaxial Cables
IN7300 Series Cable Super High Resolution Coaxial Cables

The cables listed above are available with 3, 4, or 5 conductors and come preterminated in lengths from 6' to 250' or as bulk cable.

TROUBLESHOOTING

There is no image displayed on the projector. The output of the IN2085 / 3012 doesn't seem to work.

1. Verify that the signal from the graphics source is compatible with the projection device by connecting them directly (bypass the **IN2085 / 3012**).
2. Check to make sure the sync cables are good. Try sending sync on one of the RGB cables.
3. Check the power supply. If the power supply is receiving power and working properly it should feel slightly warm to the touch after it has been plugged in for half an hour. If the power supply feels cool to the touch you may have either a faulty A/C power source or a bad power supply.

One of the colors is completely missing from the projected image.

Verify that the input and output cables are good. Bypass the missing color signal around the **IN2085/3012**, joining the input and output cable for that one color together with a BNC barrel. If the problem goes away, the **IN2085 / IN3012** may be faulty. If the problem persists, one of the input/output cables or the graphics source is faulty.

The colors are not displayed properly on the projector/monitor.

1. Verify that all RGB connections are correct and that none of the colors is swapped.
2. The **IN2085 / IN3012** gain pots may be misadjusted. Begin by setting the three gain pots to a similar position.
3. Bypass the **IN2085 / IN3012**. If the problem persists, the data projector may have the video drive levels on the CRTs misadjusted. Re-calibrate the Red, Green, and Blue drive levels.

The projected image is far too "hot", appearing excessively white and washed-out.

The **IN2085 / IN3012** RGB gain pots may be set too high. Reset to a lower level.

The IN2085 / IN3012 is being used to drive / split four separate composite video signals. The three signals on the Red, Green, and Blue are working well, but the Sync connector doesn't seem to pass the fourth video signal.

While it is perfectly fine to use the Red, Green, and Blue channels to drive or split composite video signals, the Sync channel has an AGC circuit and is not designed for analog video signals.

When using the IN2085 / IN3012 with low scan rate images, the peaking control doesn't seem to have much effect on the projected image.

The **IN2085 / IN3012** peaking is centered around 100 MHz. This is located outside the range of low scan rate signals and mainly helps restore high frequencies for very high scan rate, high bandwidth signals.

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.**

The information in this manual has been carefully checked and is believed to be accurate. However, Inline, Inc. assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Inline, Inc. be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding IN2085/3012 features and specifications is subject to change without notice.

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