

Operation Manual



Dedicated Video Interface Series

IN2080 VGA / SVGA / XGA Interface

IN2081 MAC II Interface

IN2090 CGA / EGA Interface





Installation and Safety Instructions

For Models without a Power Switch:

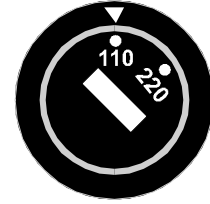
The socket outlet shall be installed near the equipment and shall be accessible.

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:

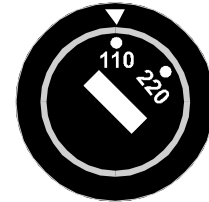
La prise de courant d'alimentation sera installé près de l'équipement et sera accessible.

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:

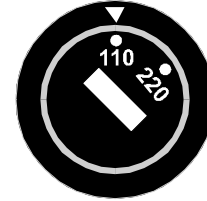
Die Netzsteckdose soll in der Nähe des Gerätes installiert und frei zugänglich sein.

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:

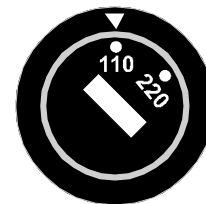
La conexión debe ser instalada cerca del equipo y debe ser accesible.

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 está 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.

INSTALLATION

This section offers step-by-step instructions for installing and adjusting the **IN2080/81/90**. A detailed application drawing showing all equipment connections is included on the next page.

1. Turn the computer and computer monitor off. Disconnect the computer monitor (if present) from the video output port on the computer.
2. Connect the **male side** of the **IN2080/81/90** input connector to the computer's video output port.
3. Connect the local computer monitor (if present) to the **female side** of the pass-through connector. If no local monitor is used, a termination plug may be required as detailed below:

IN2080 Use an **IN9031** 15-pin HD VGA terminator plug (included with **IN2080**). This emulates a color VGA monitor.

IN2081 Use an **IN9056** 15-pin D MAC II terminator plug (included with **IN2081**). This emulates a 13"/14" Apple monitor.

IN2090 No termination necessary. If termination is desired, use an **IN9035** 9-pin D CGA/EGA termination plug (not included).

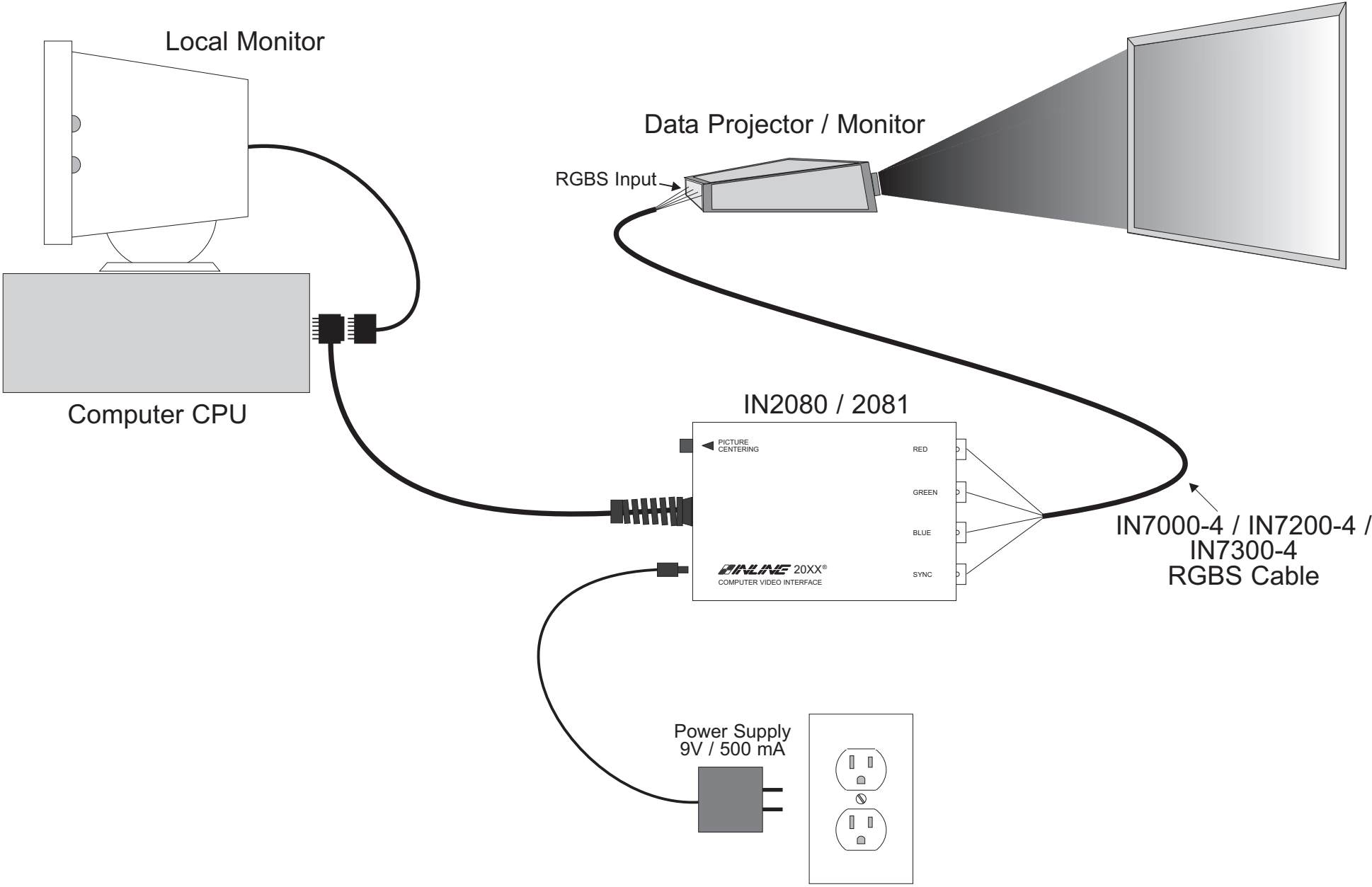
4. Connect the **IN2080/81/90** RGBS output (4 BNC connectors) to the data display device's RGBS input, using four high resolution BNC cables or a multi-conductor RGBS "snake". The **IN7000**, **IN7200**, and **IN7300** series high resolution cables are well suited for this purpose. Take care while making connections to insure that the red output is connected to the red input, green output to the green input, etc.
5. Connect the round connector on the 9V 500 mA power supply to the POWER input jack (located on the end panel of the interface, on the same side as the horizontal position control and monitor loop cable.) Connect the power adapter box side of the power supply to the A/C power source.
6. Complete the installation by turning the computer and computer monitor on. If required, adjust the horizontal position control as detailed in the following section.

HORIZONTAL POSITION CONTROL

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 horizontal control and the interface's horizontal control may result in a dark image on the data display. The following procedure is suggested to ensure best results:

1. Adjust the **IN2080/81/90** 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 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.

Application Diagram IN2080 / IN2081



INTERNAL CONTROLS

The **IN2081** and **IN2090** have been designed with internal controls which may be used by qualified technicians to adjust certain signal parameters. These controls are infrequently used and do not require adjustment for normal daily operation. (The **IN2080** contains no internal controls).

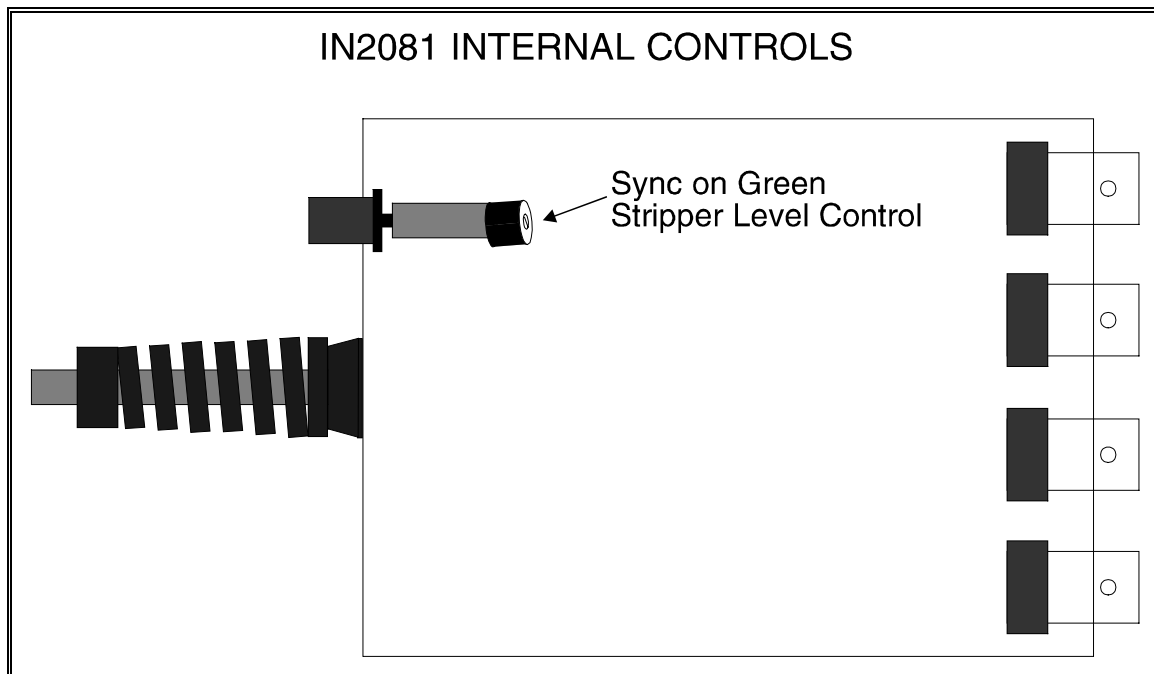
CAUTION: *Any adjustment of internal controls must only be carried out by qualified technicians. The interface case must be opened to adjust these controls and extreme care must be taken to avoid electric shock to the technician and/or damage to the unit.*

The following procedure may be used to access the **IN2081** and **IN2090** internal controls.

1. Remove the screw on the bottom of the unit and slide the top cover off.
2. Locate the desired control pot and gently adjust it using a small plastic "tweezer" tool.
3. Replace the top cover and tighten the case screw.

IN2081 Internal Controls

Sync on Green Stripper Level Control - This control has been calibrated at the factory and should not be adjusted unless absolutely necessary. The typical sign that this control is misadjusted is a very green image on the display device attached to the **IN2081** RGBS output. This control is a tiny blue and white pot located on the **IN2081** circuit board immediately adjacent to the horizontal position control (see diagram below). Adjust the pot as needed to achieve a good quality image with proper color balance.



IN2090 Internal Controls

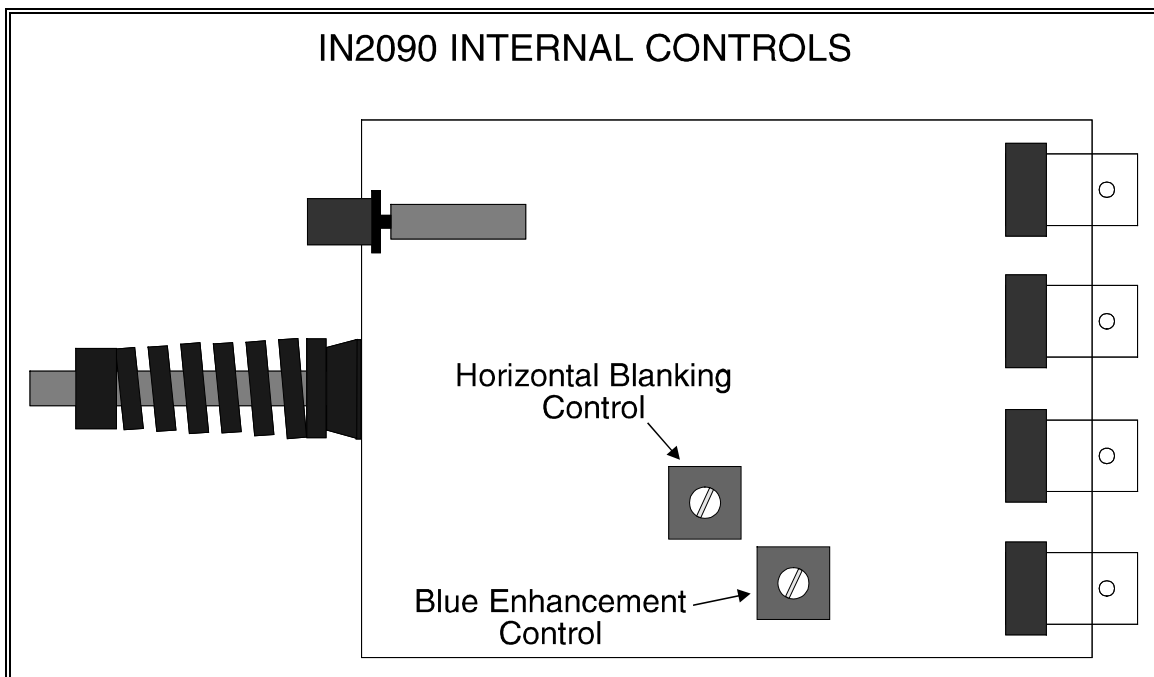
Blue Enhancement Control - Studies have shown that blue, while a soothing color, is difficult for the eye to discern. If a display is filled with blue text, it may be difficult to read under normal conditions. The Blue Enhancement Control helps solve this problem by adding some green into the blue, resulting in an aqua colored display which is easier to read.

The **IN2090** Blue Enhancement Control (see diagram below for location) is factory set to the minimum level, resulting in the most accurate blue color output. If necessary, adjust the control as required to enhance readability.

Horizontal Blanking Control

The Horizontal Blanking Control will not need to be adjusted on a regular basis. The following image symptoms may indicate that the control is misadjusted: missing background colors, horizontal dark bars across the screen, or missing foreground colors. Before adjusting the Horizontal Blanking Control, first check to make sure that the external Horizontal Position Control is not causing any image problems.

The Horizontal Blanking Control is adjacent to the Blue Enhancement Control (see diagram below). Adjust as needed to attain the best image quality.



SPECIFICATIONS

INPUTS

IN2080	Connector	15 Pin HD Male
	RGB Signals	Analog Video, 0 - 1.2V p-p
	Sync Signals	TTL or Analog Sync, 2V - 5V p-p Separate Horizontal and Vertical Sync
IN2081	Connector	15 Pin D Male
	RGB Signals	Analog Video, 0 - 1.2V p-p
	Sync Signals	TTL or Analog Sync, 2V - 5V p-p Composite Sync and Sync on Green
IN2090	Connector	9 Pin D Male
	RGB Signals	TTL Video
	Sync Signals	TTL or Analog Sync, 2V - 5V p-p Separate Horizontal and Vertical Sync

OUTPUTS

Connectors:	4 - BNC Connectors for Red, Green, Blue, Sync
RGB Signals:	Analog Video
RGB Gain:	Fixed at 1.1
Bandwidth:	100 MHz @ -3dB
Sync Signals:	AGC 4V p-p into high impedance loads 2V p-p into low impedance loads

DIMENSIONS

Size:	3.8" x 2.8" x 1.12"
Weight:	1 lb
Power Supply:	9V 500 mA

ACCESSORIES INCLUDED

IN2080	IN9031 VGA Termination Plug, 9V 500 mA Power Supply (US domestic units only), Manual
IN2081	IN9056 MAC Termination Plug, 9V 500 mA Power Supply (US domestic units only), Manual
IN2090	9V 500 mA Power Supply (US domestic units only), Operations Manual

OPTIONAL ACCESSORIES

IN9035 Terminator	9-Pin D Male Termination Plug for EGA / CGA, (use with IN2090)
IN7000 Series RGBS Cables	Standard Resolution Coaxial Cables
IN7200 Series RGBS Cables	Ultra High Resolution Coaxial Cables
IN7300 Series RGBS Cables	Super High Resolution Coaxial Cables

All Cable Grades are available in a variety of lengths from 6' to 250'

TROUBLESHOOTING

The display device connected to the RGBS output has a bad/scrambled image.

Solution 1: The display device connected to the output of the interface may not be compatible with the computer output. CGA and EGA signals vary from 15.75 to 24 KHz. VGA runs at 31.5 KHz, but SVGA can be as high as 48 - 58 KHz! MACII/Quadra computers sense what monitor is connected and configure themselves accordingly, with horizontal scan rates ranging from 24.48 to 68.9 KHz.

Solution 2: The RGBS cable may have a bad sync line. Try running the sync through another cable.

The output image is very dark.

Solution: The horizontal position control may be set off to an extreme position or may be interacting poorly with the horizontal position control on the display device. Follow the horizontal position adjustment procedure listed on page 2.

The output image is missing a color.

Solution: Possibly the RGBS 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 green is displayed or not.)

Output image is ghosting.

Solution: The **IN2080/81/90** are designed to plug directly into the computer's graphic card and a short (6 to 12 ft) monitor cable attached to the loop through output. An extension cable for the input or a very long monitor cable may cause this problem.

The output image from an IN2080 is violet with a very low green signal.

Solution: The local monitor may be monochrome. If it is a monochrome monitor, the **IN9030** mono adapter must be used - the output of the **IN2080** will be black and white.

The output image from the IN2081 is too green.

Solution: Some MACII and Quadra computers output an RGSBS signal. The Sync on Green Stripper Level Control may need adjustment. Follow the adjustment procedure listed on page 4.

The output image from the IN2090 has horizontal black bars throughout the image.

Solution: The Horizontal Blanking Control may need adjustment. First check the Horizontal Position Control to ensure it is not causing the problem. If the problem persists, adjust the Horizontal Blanking Control according to the procedure on page 5.

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 of merchantability or fitness for any particular purpose, all of which are expressly disclaimed.**

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