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Operation Manual



IN3554 4-Input RGBHV Switcher
IN3556 6-Input RGBHV Switcher

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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

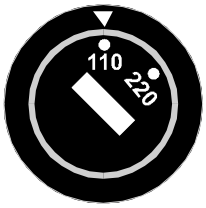
Pour les modèles sans interrupteur de courant:

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 veillaut 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 viguer.

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Installations und Sicherheitshinweise

Für Geräte ohne Netzschalter:
Die Netzsteckdose soll in de Nähe des Gerätes installiert und frei zugänglich sein.

Für Geräte mit 110 / 220V Spannungswähler:

Achtung: Bevor Sie dem Gerät Spann ung 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 Ihr es 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 erstzen 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 linea 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 cambia vía redondo localizado cerca de la conexión electrica, como se ve en el dibujo:

Use un destornillador comun 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 tecnico 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 Bateria de Lithiun Interna:
Precaución: Peligro de explosión si la batería es reemplacada 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.

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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.

CE

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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DESCRIPTION

The **IN3554** and **IN3556** are high performance analog video switchers featuring four or six inputs and one output. The **IN3500** Series switchers are designed to route several high resolution source signals to an attached video projector, monitor, LCD panel or color printer. Users may select the desired input channel using front panel buttons or via remote control using an optional wired remote or control system. The **IN3500** Series Switchers offer easy operation and the following features:

- 500 MHz Bandwidth - switchers route ultra-high resolution video signals with no signal loss
- Passive design ensures compatibility with a wide range of video and audio signals
- Front Panel Channel Selection Controls and LED Indicators
- Contact Closure control port for remote selection of input channel
- Front Panel Power Switch for easy operation in rack mounted installations

COMPATIBILITY

The **IN3554** and **IN3556** switchers are passive devices which will switch a wide variety of signals. These switchers feature a set of five BNCs for each input and output connection and can switch five discrete signal components for each input. While the units were primarily designed for use with high resolution RGBHV analog computer graphics type signals, they may also be used to switch analog video signals in any of the following formats: RGBS, RGsB, RsGsBs, Composite Video, S-Video (Y/C), Component Video. Since the **IN3554/3556** switch five discrete signal components simultaneously, they may also be employed as audio-follow-video switchers. The **IN3554** and **IN3556** function very similarly and contain the same control and switching circuitry. The main difference between the two models is the number of inputs:

The IN3554 is a 4-Input, 1 Output RGBHV Switcher
The IN3556 is a 6-Input, 1 Output RGBHV Switcher

INSTALLATION

This section offers step-by-step instructions for installing **IN3500 Series** switchers. A detailed application drawing showing all equipment connections is included on the next page.

1. Connect all sources to the **IN3554/56** input connectors. Unused inputs do not need to be terminated.
2. An interface may be required for each computer video signal source in order to split off a signal for each local monitor, bring all signals into the RGBS format, and amplify the signal to compensate for long input/output cable runs.
3. Connect the **IN3554/56** output to the display device.
4. Apply AC power to the unit.

It is very important that all input / output connections be made utilizing high resolution coaxial cables. Proper cable selection is critical to overall system performance, especially when working with high frequency signals and/or long cable runs. The **IN7000-5**, **IN7100-5**, or **IN7200-5** Series 5 BNC Male to 5 BNC Male cables are recommended for best results.

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OPERATION

Power Switch

The POWER switch is located on the front panel and is a push, push again type switch which toggles between OFF and ON each time the button is pressed. The red power LED will light to indicate that the POWER switch has been activated and that an AC power source is available. The unit features Auto-Power On, so once the POWER switch has been set to ON, the unit will be in that state if AC power is removed and then reapplied to the unit.

Input Selection

The **IN3500 Series** switchers provide four or six front panel buttons which may be used to select the desired input channel. Any time the unit is powered up, Input 1 is automatically selected. In order to select a different input, press the corresponding input button and the appropriate green LED will light to indicate the current active channel. All non-selected channels are terminated to 75 Ohms. The output signal may be blanked (no input selected) by pressing and holding any two input buttons simultaneously. Input channels may also be selected remotely by using an optional **IN3590** wired remote or a control system (see **Remote Control Operation** on page 4 for more details).

Since these switchers are passive they also bi-directional, meaning that signals may pass backwards through the unit. In such an installation, a single source signal is hooked up to the OUTPUT connector and multiple display devices are attached to the INPUT connectors. When an input is selected, the source signal is routed to one of the attached display devices.

REMOTE CONTROL OPERATION

The **IN3554/56** RGB switchers have a REMOTE CONTROL port which allows these units to be remotely controlled. Channels can be selected through the remote port by providing contact closures between the appropriate pins. The port also includes a +5V power supply and tally outputs. Several contact closure type control devices are available including:

IN3590 - An optional hard wired remote designed to work with **IN3500 Series** switchers.

IN6901 / IN6902 RS232 to Contact Closure Converters - allow **IN3500 Series** switchers and other INLINE devices with contact closure control ports to be controlled by RS232 sources such as control systems and computer serial ports.

Control System - many control systems are capable of providing contact closures.

Control Parameters

In order to select a channel, the channel select pin (pins 1 - 6) must be connected to Common (pin 7 or 8). The contact closures may be momentary or continuous (latching).

Example: To switch to Input Channel #4, apply a contact closure between Pin 4 and Pin 7.

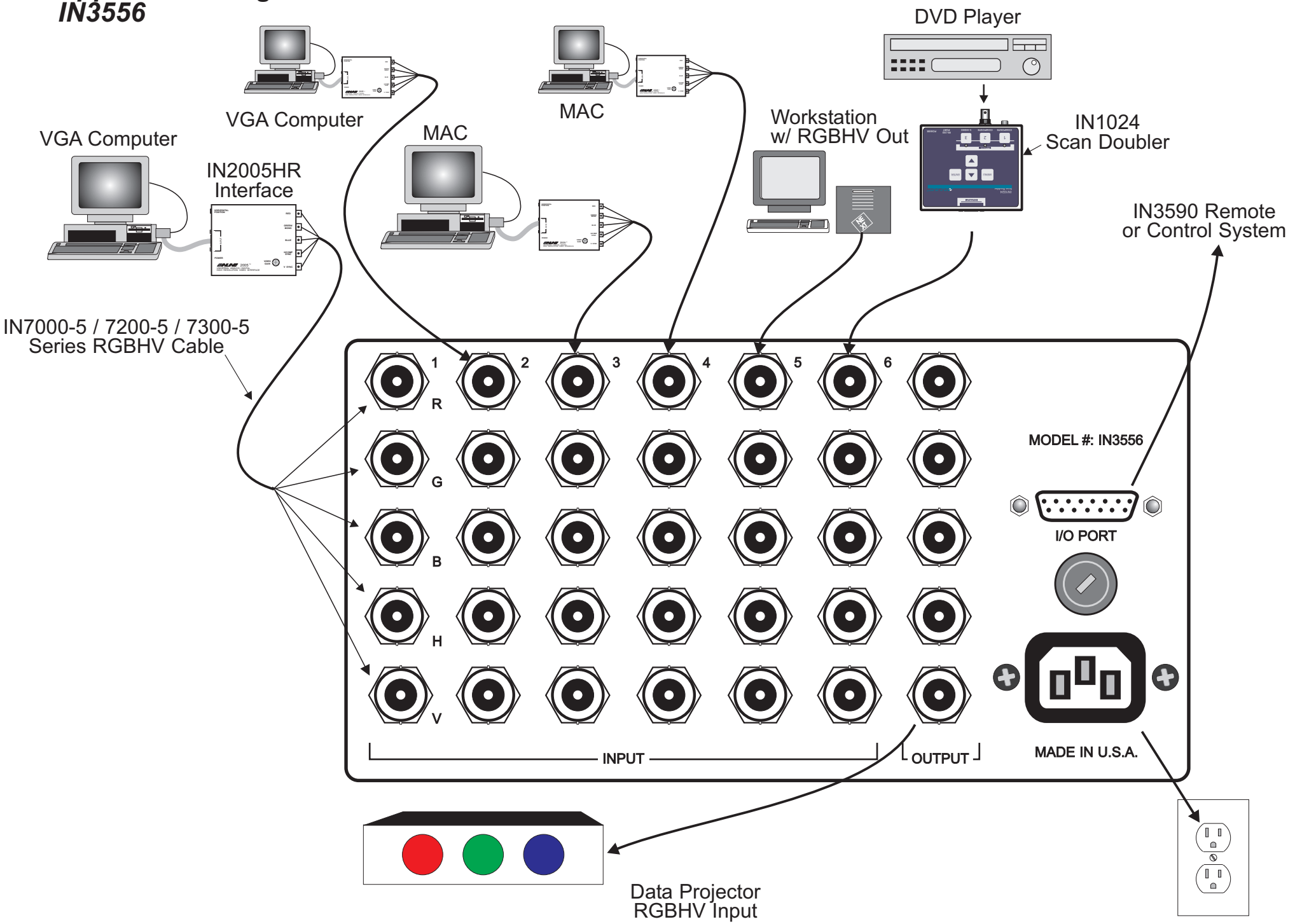
If two channels are selected simultaneously, the output of the switcher is blanked (no output is selected). In order to maintain blanking these two closures must be continuous.

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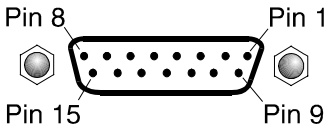
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Application Diagram
IN3556



Tally Output
The REMOTE CONTROL port also provides tally outputs (pins 10 - 15) which may be used to trigger other devices, provide feedback to a control system, or light indicator lights on a custom remote control panel. When a channel is selected, either from the front panel or through the REMOTE CONTROL port, the Tally Output for that channel is switched on. The Tally Output can switch voltages of up to 50 volts and current up to 1.5 amps.

Control Port Pin Outs



The REMOTE CONTROL port is a Female 15 Pin D connector with the following pin outs:

Pin 1	Select Channel 1	Pin 9	+5 volts DC
Pin 2	Select Channel 2	Pin 10	*Tally output for Channel 6
Pin 3	Select Channel 3	Pin 11	*Tally output for Channel 5
Pin 4	Select Channel 4	Pin 12	Tally output for Channel 4
Pin 5	*Select Channel 5	Pin 13	Tally output for Channel 3
Pin 6	*Select Channel 6	Pin 14	Tally output for Channel 2
Pin 7	Common	Pin 15	Tally output for Channel 1
Pin 8	Common		

*Used only on 6-Input units

IN3546R STEREO AUDIO SWITCHER

The **IN3546R** Stereo Audio Switcher may be attached to the **IN3500 Series** via the REMOTE CONTROL port. This provides a +5V power supply for the **IN3546R** Switcher and a control link. When the **IN3546R** is attached to the control port using an **IN9112** control link cable, the **IN3546R** will automatically switch to the appropriate input channel, mirroring the input selected on the attached RGBS switcher and adding audio-follow-video capability to the switcher.

INTERNAL FUSES

The **IN3554/IN3556** switchers contain two internal fuses. If power is applied to the unit and the front panel power LED will not light after the POWER switch has been activated, these fuses may be blown. Open the case as described above and replace the blown fuses with new 200mA fuses.

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SPECIFICATIONS

	IN3554 / IN3556 RGBHV Switcher
Inputs	
Connector type	5 BNC Female
Number of Inputs	IN3554: 4 Inputs IN3556: 6 Inputs
Maximum Signal Components per Input	5
Signal Compatibility	RGBHV, RGBS, RGsB, RsGsBs, Monochrome with Sync, Composite Video, Y/C, Component Video, Audio
Output	
Connector type	5 BNC Female
Bandwidth	500 MHz @ -3dB
Isolation	60 dB @ 50 MHz 55 dB @ 75 MHz 50 dB @ 100 MHz
Switching Time	3.0 mS
Power	
Voltage	110 / 220 - User Selectable
Consumption	10 Watts
Dimensions	
Size	Height: 4.4" / 11.2cm Width: 8.5" / 21.6cm Depth: 5.1" / 13.0cm
Weight	Product Weight: 4 lbs. / 1.8 Kg Shipping Weight: 6 lbs. / 3 Kg
Parts Included	AC Power Cable (US Only) Operation Manual

Optional Accessories	
Input / Output Cables	**IN7000-5 Series** Standard Resolution 5-BNC Cables **IN7200-5 Series:** Ultra High Resolution 5-BNC Cables **IN7300-5 Series:** Super High Resolution, 5-BNC Cables *Available in a variety of lengths from 6' to 250'. .*
Stereo Audio Switcher	**IN3546R Stereo Audio Switcher -** Featuring 6 Inputs and 1 Output, the **IN3546R** adds stereo audio - follow-video capabilities to **IN3500 Series** Switchers. The **IN3546R** attaches to the **IN3500 Series** REMOTE CONTROL port and receives both power and switching commands from the control port.
Control	**IN3590** Wired Remote Control with 25' Long Cable Allows Remote Channel Selection for **IN3500** Series Switchers

TROUBLESHOOTING

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

Solution 1: The display device connected to the output of the switcher 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. Graphics workstations may put out frequencies as high as 82 KHz. Check the operations manual on both the computer graphics card and the display device to ensure that they are compatible.

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Solution 2: The RGBHV input or output cable may have a bad sync line. Try running the sync through another cable.

The unit does not pass any signals.

Solution: Verify that the unit is getting power by checking the power LED on the front. If the LED is not on, the AC power source may be faulty or the unit may have an internal problem. Check the two internal 200mA fuses.

When controlling the IN3500 Series switcher through the REMOTE CONTROL port, the image is blanked and no channel is being selected.

Solution: The control system may be closing two contacts at the same time. Check the wiring on the control cable and the control system programming.

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

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