



INLINE IN3564HR High Resolution VGA Switchers Instruction Manual

[Home](#) » [inLine](#) » **INLINE IN3564HR High Resolution VGA Switchers Instruction Manual** 

Contents

- [1 INLINE IN3564HR High Resolution VGA Switchers Instruction Manual](#)
- [2 Installation and Safety Instructions](#)
- [3 FCC COMPLIANCE](#)
- [4 Product Overview](#)
- [5 DESCRIPTION](#)
- [6 PRODUCT FEATURES](#)
- [7 INPUT](#)
- [8 OUTPUT](#)
- [9 OPERATION](#)
- [10 REMOTE CONTROL OPERATION](#)
- [11 IN3546R STEREO AUDIO SWITCHER](#)
- [12 ADAPTER / EXTENSION CABLES FOR INPUT AND LOCAL MONITOR OUTPUT](#)
- [13 Troubleshooting](#)
- [14 The display device connected to the IN3564HR / IN3566HR output has a bad / scrambled image.](#)
- [15 The unit does not pass any signals.](#)
- [16 When controlling the IN3564HR / IN3566HR Switcher through the REMOTE CONTROL port, the image is blanked and no channel is being selected.](#)
- [17 Warranty](#)
- [18 INLINE warrants the equipment it manufactures to be free from defects in materials and workmanship.](#)
- [19 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.](#)
- [20 Read More About This Manual & Download PDF:](#)
- [21 Documents / Resources](#)
 - [21.1 References](#)

INLINE IN3564HR High Resolution VGA Switchers Instruction 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 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.

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), EN60950-9

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.

Product Overview

DESCRIPTION

The **IN3564HR / IN3566HR** is a high-performance video switcher that allow users to select between four or six video sources and route the selected source to an attached video output device such as a presentation monitor, video projector or desktop data monitor. Both models are identical in function and design, with the only difference being the number of inputs:

The **IN3564HR** is a 4-input, 1-output VGA switcher. The **IN3566HR** is a 6-input, 1-output VGA switcher. The **IN3564HR / IN3566HR** switcher features a 350 MHz video bandwidth and is compatible with VGA, SVGA, XGA, XGA2, UXGA and all other VGA signal resolutions and refresh rates.* The switcher features five discrete signal paths per input, making it compatible with analog signals in a variety of formats including RGBHV, RGBS, RGsB, RsGsBs and monochrome high- resolution video. In addition, the **IN3564HR / IN3566HR** is also compatible with NTSC / PAL / SECAM signals in component, Y/C or composite video formats



The **IN3564HR / IN3566HR** is not a scan converter. The dataprojector, monitor or other output device must be compatible with the horizontal scan rates output by the computer video cards.

PRODUCT FEATURES

Two Switching Modes – In **Manual Mode**, users select the desired input by pressing a large front panel input

button or remotely via contact closure control. In **Autoswitch Mode**, the unit automatically selects the active input. If more than one input is active, the highest numbered input has priority. Autoswitching Mode is ideal for automatic operation in installations with multiple interfaces or wall plates. The unit can be set for Manual or Autoswitch Mode using a slider switch on the back panel of the switcher. A front panel LED illuminates to indicate that the unit has been set to the Autoswitch Mode.

Front Panel Control – Users select the desired input by pressing a front panel button. Each time a button is pressed, the switcher selects the appropriate input and an LED lights to indicate the currently active port. All non-selected inputs are terminated to 75 ohms.

Rack Mountable Unit – Two units may be mounted side-by-side in a 1U rack space using the optional **IN9080** Rack Shelf (two or more switchers can work together as a large switching system). A single unit may be rack-mounted using the **IN9080** Rack Shelf and the **IN9088** Half- Rack Blank Plate. The switcher 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.

*Both units can also route video from Macintosh G3 and G4 models with 15-Pin HD connectors.

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15-Pin HD VGA Connectors – The **IN3564HR / IN3566HR** connects directly to VGA computer graphics cards and VGA data displays using high-resolution coaxial VGA extension cables such as the **IN8000** Series. Input / output adapter cables (see table on page 6) are also available in a variety of lengths for MAC (15-Pin D), SUN (13W3) and various workstations (4 or 5 BNC).

Stereo Audio-Follow-Video – capability may be achieved using an optional **IN3546R** Stereo Audio Switcher in conjunction with the **IN3564HR / IN3566HR**. The **IN3546R** attaches to the remote port, receiving both power and switching commands from the attached VGA switcher.

Remote Control – The **Remote Port** allows for remote input selection by any device that is capable of providing momentary or latching contact closures. The remote port also includes a +5V power supply and tally outputs to provide feedback to a control system. The **IN3590** is an optional hardwire remote control that connects directly to the port and provides remote channel selection from up to 25' away.

Blank Button – temporarily disconnects all video signals from the output when it is activated. When the Blank Button is pressed again (deactivated), the switcher returns to the last selected input.

Optional Input Label Plate – Two attachment posts are provided on the front panel above the input selector buttons to securely hold the **IN9348**, an optional plastic plate that can be engraved to indicate the name of each input source.

In addition, both units feature an **Internal Universal Power Supply** and **Durable Metal Case Enclosure**. The **IN3564HR / IN3566HR** offers a flexible alternative for permanent installations, staging systems, rentals and other applications requiring a compact, durable high-performance video switcher.

Compatibility

IN3564HR / IN3566HR switcher features 15-pin HD female input and output connectors and can switch five discreet signal components for each input. The **IN3564HR / IN3566HR** is specifically designed to route several analog video signals including VGA, S-VGA, XGA, MAC, Sun and other high-resolution workstations.

INPUT

The **IN3564HR / IN3566HR** will accept high-resolution video signals from virtually any computer that outputs an analog video signal. The unit will work with signals at virtually any resolution and refresh rate. Compatible signal formats include RGBHV, RGBS, RGsB,* RsGsBs and Monochrome high-resolution video.



The **IN3564HR / **IN3566HR** 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 RGBS or RGBHV).*

OUTPUT

The output signal of the **IN3564HR** / **IN3566HR** is analog RGB video with TTL sync on a 15- pin HD VGA female connector. This output signal is compatible with high-resolution data grade monitors and data / graphics projectors, making it ideal for use with LCD projectors and other data display devices which require that all VGA sync formats and polarities remain unchanged from the original source signal.

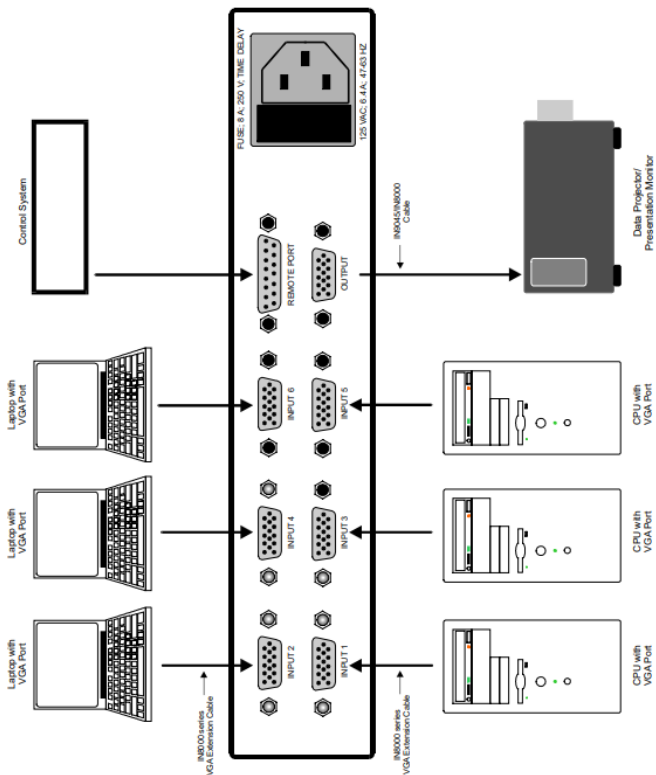
Installation

*This section offers step-by-step instructions for connecting / installing the **IN3564HR** / **IN3566HR** Switcher. A detailed application drawing showing all equipment connections is included on page 4.*

1. Units mounted in a 1U rack should be installed before making any connections. Multiple units must first be installed in an **IN9080** Rack Shelf. Single units can be mounted in the rack shelf with an **IN9088** Half-Rack Blank
2. Connect all VGA sources to the **IN3564HR** / **IN3566HR** input connectors.* Unused inputs do not need to be terminated.
3. Connect the display device to the output of the **IN3564HR** / **IN3566HR**.
4. Apply AC Power to the unit (the unit powers up automatically).
5. Select the appropriate switching mode. The mode switch on the back of the **IN3564HR** / **IN3566HR** is used to select between auto and manual. The LED on the front of the switcher indicates when the unit is in auto switch mode. By applying the optional **IN3590** Remote Control, the user will override the mode switch.

* A 1 x 2 distribution amplifier (such as an **IN3262D** / **IN3262DS**) may be required at one or more of the input devices in order to split off a signal for local monitors and / or amplify the signal to compensate for long cable runs. For applications that require cable runs in excess of 300', users may wish to employ the **IN1110** / **IN1111** Video Transmitter / Receiver System to improve signal quality

IN3564HR / IN3566HR APPLICATION DIAGRAM



OPERATION

The **IN3564HR / IN3566HR** Switcher features **Auto Power On**, so the unit powers up automatically when A/C power is applied. The **IN3564HR** and **IN3566HR** Switchers provide four and six front panel buttons (respectively) which, when in **Manual Mode**, may be used to select the desired input channels. Input one is automatically selected at power up. In order to select a different input, press the corresponding input button and the appropriate LED will light to indicate the current active channel.

When the **Autoswitch Mode** is selected (switch is located on the back of the unit), the unit will automatically select the active input. If the switcher is connected to more than one input, the Autoswitch Mode will automatically select the highest input (Example: Input three will supercede inputs one and two, providing that the rest of the inputs are unterminated).

All non-selected channels are terminated to 75 ohms. The output signal may be blanked (no input selected) by pressing the **Blank Button** on the front of the unit. Input channels may also be selected remotely by using the optional **IN3950** hardwired remote control.

Since these switchers are passive they are also bi-directional, meaning that signals may pass both ways through the unit. In such an installation, a single source signal is run through the output connector and multiple display devices are attached to the input receptacles. The source signal is routed to the attached display device whose input switch is selected.

REMOTE CONTROL OPERATION

The **IN3564HR / IN3566HR** Switcher has a **Remote Port** located on the back of the unit. 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 all **IN3500 Series** switchers.
- **IN6901 / IN6902 RS-232 to Contact Closure Converter** – allows **IN3500 Series** switchers and other **INLINE** devices with contact closure control ports to be controlled by RS-232 sources such as control systems and

computer serial

- **Control Systems** – many control systems are capable of providing contact

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 (*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.

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

IN3546R STEREO AUDIO SWITCHER

The **IN3546R** Stereo Audio Switcher may be attached to the **IN3564HR** / **IN3566HR** via the Remote Control Port. This provides a +5V power supply for the **IN3546** Switcher and a control link. When the audio switcher is attached to the control port using an **IN9112** / **IN9133** Control / Power cable, the **IN3546R** will automatically switch to the appropriate input channel, mirroring the input selection on the attached **IN3564HR** / **IN3566HR** and adding audio-follow-video capability to the switcher.

ADAPTER / EXTENSION CABLES FOR INPUT AND LOCAL MONITOR OUTPUT

The **IN3564 HR** / **IN3566HR** 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'
VGA: 15-Pin HD				
Input Cable		IN8006M	IN8012M	IN8025M
Output Cable		IN8006	IN8012	IN8025
MAC with 15-Pin D:				
Input Cable		IN9140M		IN9144M
Output Cable	IN9141			IN9145
MAC G3, G4 and PowerBook with 15-Pin HD*:				
Input Cable		IN8006M	IN8012M	IN8025M
Output Cable		IN8006	IN8012	IN8025
Sun: 13W3 (may also be used with SGI with RGsB output)				
Input Cable		IN9142M		IN9146M
Output Cable	IN9143			IN9147
Workstation: 5 BNC / RGBHV				
Input Cable		IN9047	IN9045	IN9045-L25
Output Cable		IN9047	IN9045	IN9046-L25
Workstation: 4 BNC / RGBS				
Input Cable		IN9100M		

*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).

Specifications

	IN3564HR	IN3566HR
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Inputs		
Connector Type	15-pin HD VGA female	
Number of Inputs	4	6
Signal Components per Input	5	
RGB Video Signals	Analog Video, 0.7 Vp-p nom. 1.5 Vp-p max.	
Input Impedance	75 ohms	
Sync Signals	TTL compatible, 5Vp-p max.	
Signal Compatibility	RGBHV, RGBS, RGsB & High-Resolution Monochrome	
Output		
Connector Type	15-pin HD VGA female	
Output Sync Formats	RGBHV, RGBS and RGsB	
RGB Signals	Analog Video, 75 ohm impedance	
Bandwidth	350 MHz @ -3 dB	
Isolation	60 dB @ 50 MHz / 55 dB @ 75 MHz / 50 dB @ 100 MHz	
Remote Port	15-Pin D female connector	
Switching Time	2.0 mSec typical	
Power		
Power Supply	Internal switching mode: 90-260 VAC; 47-63 Hz	
Voltage	110 / 220 (set at factory)	
Consumption	8 watts	

Dimensions	
Size	1.65" H x 8.5" W x 6" D / 4.2cm x 21.6cm x 15.2cm
Shipping Weight	3 lbs. / 1.5 kgs.
Regulatory Compliance	
Safety	UL 1950. 3 rd Ed.; CE: EN50081-1 CAN/CSA-22.2 No. 950 3 rd Ed.
EMI	FCC class A; CE: EN50022 (1987), EN50081-1 (1991), EN50082-1 (1992 & 1994), EN60950-92

Parts Included

(1) **IN3564HR** or **IN3566HR** VGA Switcher
 (1) **IN9230** IEC Power Cable, 6' long (USA only)
 (1) Operations Manual

Required Accessories (Ordered Separately)

Input / Output Adapter and Extension Cables

VGA: IN8000 Series 15-pin HD (male to male), available in various lengths from 3' to 100'

For other Computers: See list on page 6

Optional Accessories
Remote Equipment IN3590 – Hand held wired remote control IN6901 / IN6902 – RS-232 to Contact Closure Converter
Powered Accessories IN1110 / IN1111 – Video Transmitter / Receiver System IN3262D / IN3262DS – Distribution Amplifier IN3546R – 6-Input, 1-Output Stereo Audio Switcher IN9112 – Control / Power cable for IN3546R IN9133 – Control / Power cable for IN3546R with loop-through
Installation Hardware IN9080 – Rack Shelf IN9088 – Half-Rack Blank Plate IN9348 – Engraveable Plastic Input Labeling Plate

Troubleshooting

The display device connected to the IN3564HR / IN3566HR output has a bad / scrambled image.

Solution 1: Verify that the correct input cable is being used.

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, but SVGA can be as high as 48 – 58 KHz depending on the vertical refresh rate. Many workstations have new 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.

The unit does not pass any signals.

Solution: The **IN3564HR / IN3566HR** contains two internal fuses. If power is applied to the unit and none of the front panel LEDs activate, these fuses may be blown. Open the case as described below and replace the blown fuses with new 200mA fuses.

1. Disconnect power to the switcher
2. Unscrew the two screws on each side of the unit
3. Gently slide off the top cover
4. Replace the bad fuse(s)
5. Replace the top cover and tighten the screws

When controlling the IN3564HR / IN3566HR 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.

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
- 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

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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References

- [Extron - The AV Technology Leader](#)
- [User Manual](#)

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