

Operation Manual



IN2060 - VGA / SVGA / XGA Distribution Amplifier
IN2061 Targa Distribution Amplifier
IN2075 CGA / EGA Distribution Amplifier
IN2076 - MAC II Distribution Amplifier



DESCRIPTION

The **IN2060 / IN2061 / IN2075 / IN2076** are dedicated video distribution amplifiers designed to work with specific computer graphic signals. They allow for the simultaneous viewing of a local monitor and one additional monitor, LCD projector, or other compatible display device. These units do not alter the video or sync signals, but merely amplify the signals to a level needed to extend the external display as far as 100 feet away. The **IN2060/61/75/76** distribution amplifiers are fully automatic, offering easy operation and the following features:

- ◆ Loop through output for the local computer monitor
- ◆ Output connector and sync format identical to input
- ◆ Gain of 1.1 provides signal boost to compensate for 75 to 100 feet of cable
- ◆ 100 MHz bandwidth

INPUT COMPATIBILITY

The **IN2060/61/75/76** distribution amplifiers operate with specific video signals as detailed below:

IN2060 - operates with analog video input from a wide variety of IBM and compatible computer video signal formats including VGA, SVGA, XGA, and 8514A. Input signals to the **IN2060** must be in the RGBHV format and provided on a 15 pin HD connector.

IN2061 - operates with analog video signals from Truevision Targa, ATVista, NuVista or compatible graphic cards using a 9 pin D connector. These cards output analog red, green and blue signals and TTL composite, horizontal, and vertical sync signals. The **IN2061** local monitor loop-through output passes all of these signals, while the amplified output only passes red, green, blue, horizontal sync, and vertical sync.

IN2075 - operates with digital video input from CGA, EGA, MDA, and Hercules or compatible graphics cards. Input to the **IN2075** must be digital RGB signals in the separate Horizontal and Vertical sync format and provided on a 9 pin D connector. Pins 2 through 9 on the amplified output are fully buffered TTL drivers, so the unit may be used with any card that has a TTL output.

IN2076 - operates with analog video input from most Apple computers including:

- MAC II, MAC IIci, MAC IIcx, MAC IIfx, MAC IIsi, MAC IIx, MAC LC, MAC IIvx, Quadra, Centris, Performa, and other models with similar video signals.
- Third party video cards from manufacturers such as Raster Ops and Super Mac which use a compatible RGSB or RGBS signal on a 15 pin D output connector.
- Other Apple computers such as the Apple IIGS and Powerbooks which feature a 15 pin D video output connector. Please note that certain models of the Apple Powerbook do not normally provide a video output signal and require a third party video output adapter to drive an external video display device.

OUTPUT COMPATIBILITY

The **IN2060/2061/2075/2076** offer buffered video output signals in the same format and using the same connector as the original input signal. This is ideal for use with devices such as LCD panels, which often must see a certain type of connector and sync format in order to recognize and lock up to various frequencies. VGA, MACII, CGA, and EGA type video cards operate in several different modes

encompassing a wide range of resolutions and horizontal scan rates. *The IN2060/61/75/76 are not scan converters and the LCD panel/projector or data monitor must be compatible with the horizontal scan rate put out by the computer video card.* Please check the documentation for both the computer video card and the data projection device in order to ensure compatibility.

INSTALLATION

This section offers step-by-step instructions for installing the **IN2060/61/75/76**. 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 **IN2060/61/75/76** 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:

IN2060 Use an **IN9031** 15-pin HD VGA terminator plug (included with **IN2060**). This emulates a color VGA monitor.

IN2061 Recommend local monitor for termination. Call **INLINE** for further information.

IN2075 No termination necessary. If termination is desired, use an **IN9035** 9-pin D CGA/EGA termination plug (not included).

IN2076 Use an **IN9056** 15-pin D MAC II terminator plug (included with **IN2076**). This emulates a 13"/14" Apple monitor.

4. Connect the **IN2060/61/75/76** amplified output to the data display's RGB analog input using the appropriate high resolution coaxial or twisted pair cable as listed below:

IN2060 **IN8000 Series** High Resolution Mini-Coax Cables with 15 Pin HD connectors.

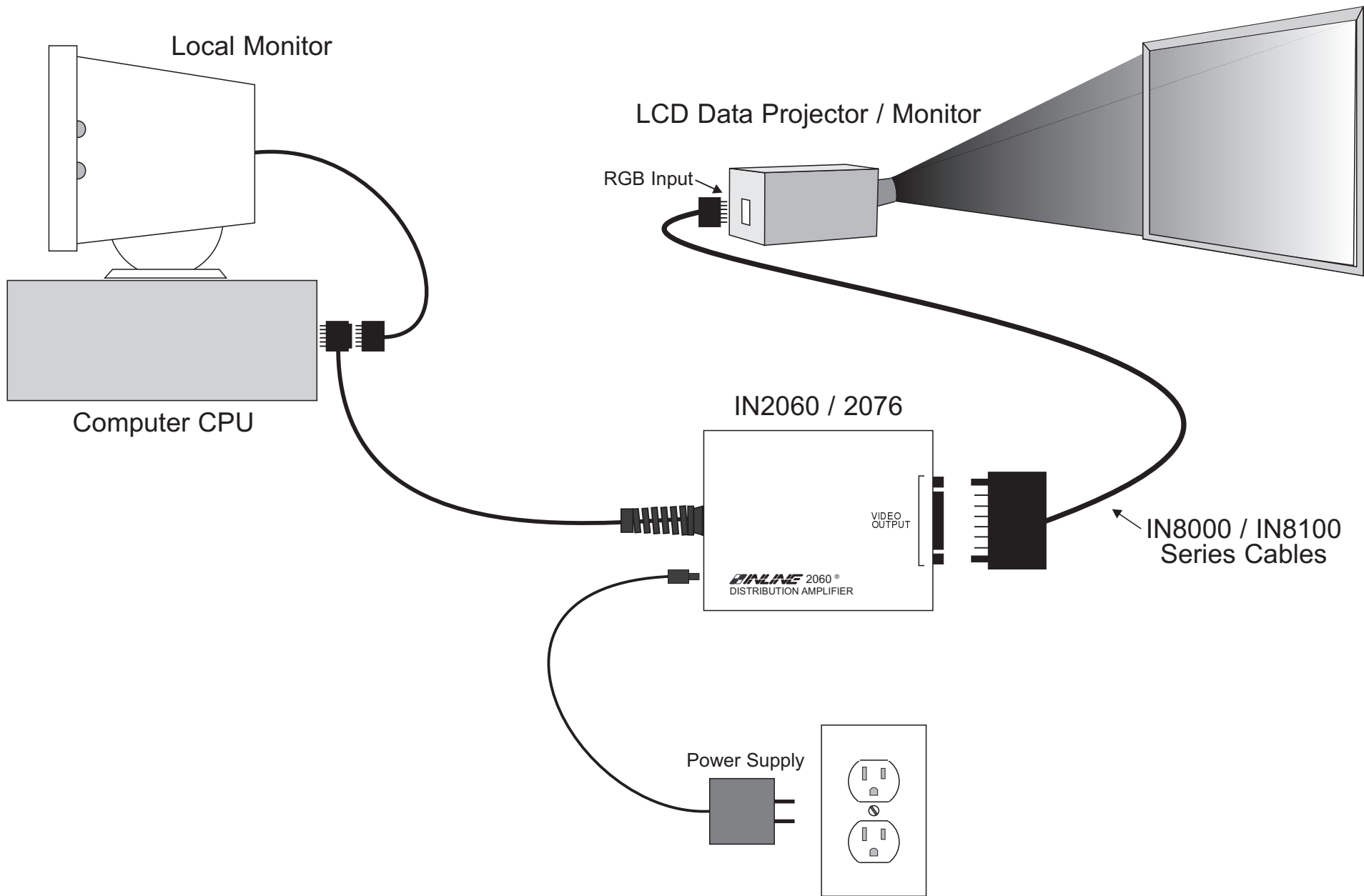
IN2061 May require custom cabling. Call **INLINE** for help with your application.

IN2075 **IN8600 Series** Twisted Pair Cables with 9 Pin D connectors.

IN2076 **IN8100 Series** High Resolution Mini-Coax Cables with 15 Pin D connectors.

5. Connect the round connector on the 9V power supply to the **POWER** input jack (located on the end panel of the distribution amp, on the same end as the 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.

Application Diagram IN2060 / IN2076



SPECIFICATIONS

	IN2060 VGA	IN2061 Targa	IN2075 CGA/EGA	IN2076 MAC II
Input				
Connector type	15 pin HD Male	9 Pin D Male	9 Pin D Male	15 pin D Male
RGB Signals	Analog Video 1.5V p-p max. 75 ohm impedance	Analog Video 1.5V p-p max. 75 ohm impedance	TTL Video High Impedance	Analog Video 1.5V p-p max. 75 ohm impedance
Sync Signals	TTL H & V Sync	TTL Composite Sync / H & V Sync	TTL H & V Sync	TTL Composite Sync / Sync on Green
Output				
Connector type	15 pin HD Female	9 Pin D Female	9 Pin D Female	15 pin D Female
RGB Signals	Analog Video DC restored to 0V	Analog Video DC restored to 0V	TTL Video	Analog Video DC restored to 0V
Gain	1.1	1.1	1.0	1.1
Bandwidth	100 MHz @ -3dB			
Sync Signals	TTL Sync, all units pass sync in the same format as the input signal with sync polarities preserved (IN2061 does not pass composite sync)			
Dimensions				
Power	9V 500 mA DC	9V 500 mA DC	9V 200 mA DC	9V 500 mA DC
Size	Height: 0.875" Width: 3.5" Depth: 2.75"			
Shipping Weight	1 lb.			

Parts & Accessories Included				
	IN2060 VGA DA IN9031 Terminator 9V 500 mA Power Supply Operations Manual	IN2061 Targa DA 9V 500 mA Power Supply Operations Manual	IN2075 CGA/EGA DA 9V 200 mA Power Supply Operations Manual	IN2076 VGA DA IN9056 Terminator 9V 500 mA Power Supply Operations Manual

Optional Accessories				
Output Cables	IN8000 Series High Res Mini-Coax w/ 15 Pin HD Connectors, Available in a variety of lengths from 6' to 100'		IN8600 Series TTL Twisted Pair with 9 Pin D Connectors, Available in a variety of lengths from 12' to 75'	IN8100 Series High Res Mini-Coax w/ 15 Pin D Connectors, Available in a variety of lengths from 6' to 100'

TROUBLESHOOTING

The display device connected to the IN2060/61/75/76 output has a bad/scrambled image.

Solution 1: The display device connected to the output of the distribution amplifier may not be compatible with the computer output. *Many LCD panels and data monitors will not display signals at resolutions higher than 640 x 480 and horizontal scan rates higher than 36 KHz.* Make sure you know what resolution mode the computer video card is set to 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 with newer modes such as 1600 x 1200 running at 79 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 output cable may have a bad sync line. Try another cable.

The output image is missing a color.

Solution: The output cable may be bad. Check both ends of the cable to see if any of the pins are bent or missing. Also inspect the cable to see if the coax may have been pinched or severed internally. Try another cable.

Output image is ghosting.

Solution: The IN2060/61/75/76 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 of the IN2060/2076 is too bright/blooming.

Solution: There needs to be a termination on the loop-through output. Use a local monitor or the appropriate termination plug (included with the units) as listed on page 2.

When using the IN2060, the computer output is black and white when it should be color.

Solution: There needs to be a termination on the loop-through output. Use a local monitor or the IN9031 termination plug (included with the IN2060).

The output image of the IN2060/61/75/76 is visible but has poor quality / low definition.

Solution: The output cable may be too long or of poor quality. INLINE offers several high resolution mini-coax cables for analog signals and a series of shielded twisted pair cables designed specifically for digital video signal transmission. See page 2 for specific recommendations.

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.**

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 IN2060 / IN2061 / IN2075 / IN2076 features and specifications is subject to change without notice.

IBM is a registered trademark of International Business Machines. Apple, MAC, Quadra, Centris, Performa, and Powerbook are registered trademarks of Apple Computers, Inc. Targa, ATVista, NuVista, and Truevision are registered trademarks of Truevision, Inc. All other trademarks and registered trademarks are the property of their respective companies.

All Rights Reserved © Copyright 1996

INLINE, INC. ♦ 22860 SAVI RANCH PARKWAY ♦ YORBA LINDA, CA 92887
800-882-7117 ♦ 714-921-4100 ♦ Fax 714-921-4160 ♦ www.inlineinc.com