



## VGA to Video Ultimate Pro

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1000 Park Drive • Lawrence, PA 15055-1018 • 724-746-5500 • Fax 724-746-0746

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## FCC AND DOC/MDC STATEMENTS

### FEDERAL COMMUNICATIONS COMMISSION and CANADIAN DEPARTMENT OF COMMUNICATIONS RADIO FREQUENCY INTERFERENCE STATEMENT

*Class B Digital Device.* This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

#### **Caution:**

**Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

*This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.*

*Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectriques publié par le ministère des Communications du Canada..*

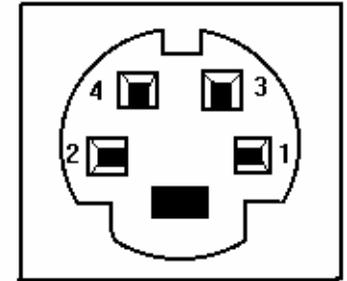
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## S-VIDEO OUT

S-VIDEO connector is a 4-pin mini-DIN connector.

Pin No.	Signal Description
1	GND
2	GND
3	Y ( Luminance ), 0.7 Vpp $\pm$ 0.2 Vpp, 75 $\Omega$ , negative sync
4	C ( Chrominance ), 0.3 Vpp $\pm$ 0.1 Vpp



## VIDEO OUT

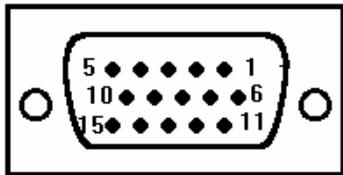
Composite video out, 1.0Vpp  $\pm$  0.2Vpp 75 ohms, negative sync.

**Appendix: Port Pinouts**

**VGA IN/OUT connector**

This port is a DB15HD female connector and it supports *only* the included Y-cable.

Pin No.	Signal Description
1	Red out, 0.7Vpp ± 0.1Vpp, 75 ohms, to monitor
2	Green out, 0.7Vpp ± 0.1Vpp, 75 ohms, to monitor
3	Blue out, 0.7Vpp ± 0.1Vpp, 75 ohms, to monitor
4	DDC2B bus, SDA signal
5	Green in, 0.7Vpp ± 0.1Vpp, 75 ohms, from PC
6	Composite SYNC input, negative sync
7	Monitor Sense, TTL level, active low
8	Ground
9	Red in, 0.7Vpp ± 0.1Vpp, 75 ohms, from PC
10	Blue in, 0.7Vpp ± 0.1Vpp, 75 ohms, from PC
11	HSYNC in, TTL level, from PC
12	VSYNC in, TTL level, from PC
13	HSYNC out, buffered HSYNC in, to monitor
14	VSYNC out, buffered VSYNC in, to monitor
15	DDC2B bus, SCL signal



**1. Specifications**

**System Hardware Required -**

- Computer of one of these types:
- IBM PC Compatible, 286 or faster with VGA display card; or Mac G3/G4 or iMac with CRT port
  - TV set with one of these inputs: composite video, S-video, component video, or (with modulator) RF

**Compliance -**

FCC Class B, DOC Class/MDC Classe B

**Interfaces -**

Input: VGA  
Output: Composite video, S-video, Y.Cb.Cr component video, RGB, and VGA

**Color -**

Full color support, including 24-bit (true color) input

**VGA display modes -**

Resolution	720 x 400	640 x 480	800 x 600	1024 x 768	1152 x 864	1280 x 960	1280 x 1024	1600 x 1200
Vertical Frequency (Hz)	70	60, 70, 72, 75, 85, 100, 120	56, 60, 70, 72, 75, 85, 100	60, 70, 72, 75	60, 70, 72, 75	60	60	60

**MAC display modes(for MAC G4,G4 Cubic, G3) -**

Resolution	640 x 480	832 x 624	800 X 600	1024 X 768	1152 X 864
Vertical Frequency(Hz)	60,66,72,75, 85,100,120	75	56,60,72, 75,85,100	60,70,75	60,70

**APPLE iMac and iMAC DV computer display modes -**

Resolution	640x480	800x600	1024x768
Vertical frequency (Hz)	117	95	75

**Maximum Distance -**

50 ft. (15.2 m) to any input or output device

**User Controls -**

Remote controls for: Power, Video Standard, Area Zoom, Menu, Reset, Freeze, Up, Down, Left, Right

10 button remote control

**Connectors -**

- (6) Side-mounted:
  - (1) DB15HD female for computer video (IN/OUT);
  - (1) RCA video output
  - (1) S-video output
  - (1) RGB to SCART output
  - (1) Y.Cb.Cr output
  - (1) DC In

**Power -**

Unit: 5V DC  
Remote: 2 AAA batteries

**Q: Why is the TV not displaying portions of the display when converted?**

**A:** Your display might be running in "Overscan" mode (placing portions of the picture beyond the boundaries of the screen's visible area). This typically occurs because VGA graphics have more display lines than the TV can handle. Toggle through the H-SIZE and V-IZE settings in the MENU until you find the optimum setting for your application.

**NOTE**

The SIZE control allows the entire image to be displayed by reducing it and putting a crisp, black border around it. Use this control in situations where edges of the image would otherwise be lost due to overscanning.

**Q: There are noise lines on the TV picture. How do I get rid of them?**

**A:** There are four settings in most televisions that affect the clarity of the display. The same adjustments can be used to improve the clarity of the display whether you use a converter or not. The settings are:

1. BRIGHTNESS: Typically, the brightness setting is by default too high. A high brightness setting often causes the display to flicker.
2. SHARPNESS: If the sharpness is set too high, often the result is what is termed "dot-crawl", where the edges of the image appear to move. Lower the sharpness to soften the edges.
3. COLOR: If the color is set too high, often the result is colors that bleed or appear to sparkle. The high (purple) and low (red) frequency colors are most affected. Adjust the color setting down to soften the colors.
4. CONTRAST: If the contrast is set too high, often the result is exaggerated colors. Adjust the contrast down to complement the Sharpness setting.

**Q: I'm not getting a picture on my TV or all I see is a test pattern.**

**A: Take these steps:**

1. The Y-cable connected between the VGA port on the computer and the VGA IN/OUT on the Internal Card is backwards. The end of the cable with the Y-connection should be connected to the *Ultimate Pro*.
2. Make sure the POWER and CHANNEL settings of your TV are correct. If the TV has a remote control, make sure it is not being triggered accidentally.
3. Make sure that the correct type of input (VIDEO or S-VIDEO) is selected on your TV. If possible, connect a VCR, camcorder or other output device to the TV's video input and make sure that the TV is accepting input through the selected connector.

**Q: When I connect my TV to the *Ultimate Pro* through a VCR, I get no picture on the TV.**

**A: Take these steps:**

1. Make sure your VCR is outputting on the channel that your TV can receive auxiliary input on. Consult your VCR's manual if necessary.
2. Make sure that the VCR is set to receive input from the VIDEO IN or AUX.

**Q: I have DTV, EDTV or HDTV. Can I use the Y.Cb.Cr output to get a digital display optimized for my digital TV?**

**A: No.** The Y.Cb.Cr output is converting the analog progressive VGA signal into an analog interlaced signal for display on the TV. The Y.Cb.Cr output offers the best clarity for scan conversion, but it is not an analog to digital conversion.

**Temperature Tolerance -**

Operating: +10°C to +40°C  
Storage: -17.8° to 43.3° C

**Humidity Tolerance -**

8% to 80% noncondensing

**Size -**

5" x 3"x 1.25" (12.5cm x 8cm x 3cm)

**Weight -**

.5 lb. (.23 kg)

## 2. Introduction

### 2.1 General Overview

The VGA to Video Ultimate Pro is an external high-resolution computer-to-TV video converter. It transfers images from your computer for display on a TV or video projector of any size or for recording on a VCR of any type (VHS, VHS-C, 8mm or Beta.). The converter is completely hardware based – you don't have to run any computer software to use the converter. Its easy installation and use, features and high-resolution display make it perfect for presentations, training, kiosks, education, and a host of other applications.

### 2.2 Features

- Latest generation filter technology brings you clear, 100% flicker-free video.
- Pure hardware design.
- Supports NTSC, NTSC-EIAJ, PAL-M, PAL-N, PAL, and PAL Combination-N video for the TV output.
- Zoom function allows areas of the screen to be enlarged for special emphasis.
- Adjustable vertical and horizontal position of image.
- Horizontal and vertical screen size control
- Three video output ports (Composite, S-video, and Component Video)

## 5. Trouble-shooting

This chapter tries to answer questions and concerns that can arise when you install and use the VGA to Video *Ultimate Pro*. It also describes what to do when you have problems with the unit that you can't solve yourself.

### 5.1 Common Questions and Concerns

#### **Q. My TV doesn't have an RCA jack (composite-video connector). How can I connect the *Ultimate Pro* to the TV?**

**A1:** Check the TV – if it has a 4-pin mini-DIN connector for S-video input, use this type of video instead (the quality of the picture will be better anyway).

**A2:** If your TV is hooked to a VCR, connect through the VCR as follows:

1. Install and interconnect the Ultimate Pro normally, but connect the composite-video cable to the VCR's VIDEO IN jack instead of to the TV.
2. Turn on the VCR and the TV. Switch the TV to the channel that takes VCR inputs. Play a tape for a moment on the VCR to make sure that you can see the program on the TV screen, then remove the tape from the VCR.
3. Consult your VCR's manual to find out how to set the "input source" mode for the VCR. (VCRs generally have two or three input sources: one called TV, CABLE, or TUNER; one called VIDEO IN or AUX; and occasionally one called TAPE.) Set the input source to VIDEO IN or AUX. Your TV should now display the images from the *Ultimate Pro*.

**A3:** Another option is to use an RF-modulator: You can use an RF modulator (not included) to convert the *Ultimate Pro's* composite-video signal to an RF signal and send that signal into the TV's antenna (VHF/UHF) input. (The quality of the picture will not be as clear as using only the composite-video or S-video connections directly into the TV.)

## 4.1 Remote Operation

**POWER** : Toggle between power on and off.

**VIDEO STANDARD**: Press this button to select your video system. It supports NTSC, NTSC-EIAJ, PAL-M, PAL-N, PAL, PAL-COMBINATION-N.

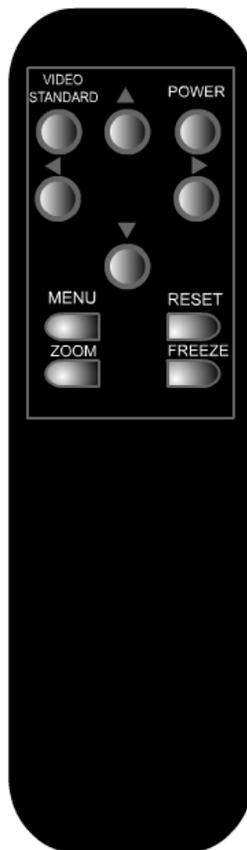
**MENU** : Press this button to cyclically activate the functions. These functions are Fine Tune, H-SIZE, V-SIZE, Brightness, Contrast, Hue, Saturation, Flicker, OSD color & Save.

**ZOOM** : Toggle between Zoom and Normal display.

**RESET**: Press this button will reset the picture to factory settings.

**FREEZE**: Toggle between Freeze and Normal display.

**POSITION buttons**: Press up, down, left & right button to adjust the position of the TV display. These buttons also are used to make adjustments to the setting in the MENU.



## 3. Installation

### 3.1 System Requirements

- IBM PC Compatible, 286 or faster with VGA display card; or Mac G3/G4 or iMac with CRT port
- VGA monitor (optional for simultaneous display)
- TV, VCR, or large-screen display with composite video, S-video, or component video input

#### NOTE:

**The VGA to Video Ultimate Pro should support any VGA computer that has a vertical display frequency between 56 and 120 Hz. However, because video circuitry connectors and computer display cards differ widely among manufacturers and devices, we cannot guarantee that the *Ultimate Pro* will function correctly in any nonstandard application.**

### 3.2 Package Contents

- VGA to Video Ultimate Pro
- Remote control
- (1) 9.8 ft (3m) S-video cable
- (1) 9.8 ft (3m) composite video cable
- (1) 3.5 ft (1 m) VGA Y-cable
- (2) AAA Batteries
- (2) Power cables (USB and PS/2)
- This user's manual

### 3.3 Installation Procedures

Take these steps to install your *Ultimate Pro*:

1. Turn off your computer.
2. Plug the supplied VGA Y-cable (the end with the Y-connection) into your computer's VGA output and the other end into the VGA IN/OUT of the *Ultimate Pro*. The ends of the cable are labeled to specify how to connect them.
3. If using a local monitor plug the monitor's VGA cable into the short end of the Y-cable.
- 4A. If using the *composite video output*, plug one end of the included composite video cable into the *Ultimate Pro's* VIDEO OUT and the other end into the VIDEO IN on your TV, VCR, etc. Make sure the output switch is set to CVBS.
- 4B. If using the higher quality *S-video video output*, plug one end of the included S-Video video cable into the *Ultimate Pro's* S-VIDEO OUT and the other end into the S-VIDEO IN on your TV, VCR, etc. Make sure the output switch is set to CVBS.
- 4C. If using the *RGBS video output*, plug the DB9 end of an RGBS cable (not included) into the *Ultimate Pro's* RGB VIDEO OUT. If the other end of this cable is a SCART connector, plug it into the SCART connector of your TV, VCR, etc. If, however, the other end of this cable has four BNC connectors, plug them into the RED, GREEN, BLUE, and SYNC connectors of the RGBS VIDEO IN port of your TV, VCR, etc. If you need an RGBS cable, contact your supplier for technical assistance. Make sure the output switch is set to RGB.
- 4D. If using the *component (Y.Cb.Cr) video output*, connect the included component video cable in the *Ultimate Pro's* Y.Cb.Cr output and the other ends into the component video input of the video display. The cable and the plugs are color-coded for proper connection. Make sure the output switch is set to Y.Cb.Cr.

### Installation (continued)

5. Plug the output cord of the *Ultimate Pro's* power cable into the DC IN jack on the *Ultimate Pro*. Plug the USB or PS/2 keyboard connector into the corresponding port on the PC. Macintosh users must use the USB power cable.
6. Insert (2) AAA batteries into the remote control.
7. Turn on the computer.
8. Turn on your TV, VCR, etc. If necessary, select VIDEO IN (or S-VIDEO IN, COMPONENT IN or RGBS VIDEO IN) as the receiving device's video input source. If you're unsure how this is done, consult the Owner's Manual for the receiving device.

#### NOTE

**Some portable computers require that the VGA output be activated for the external VGA port to function. If the *Ultimate Pro* is connected correctly and you have a picture on the receiving TV or projector, this may be the cause. Consult the User's Guide that came with your computer if you're unsure how this is accomplished. The portable computer's LCD display may need to be de-activated with this procedure.**

### 4. Operation

- **HORIZONTAL / VERTICAL position adjustments**  
Indicated by arrows on the side of the *Ultimate Pro*
- **MENU Button**  
Accesses the on screen display for adjusting Horizontal and Vertical size, Brightness, Contrast, Hue, Saturation, Flicker, OSD color and Reset.
- **PAL/NTSC**  
Toggle between each of the output video standards
- **FINE TUNE**  
Flicker adjustment
- **SAVE**  
Saves current settings for use between power-ups, etc.
- **ZOOM button**  
Toggle between Zoom and Normal display