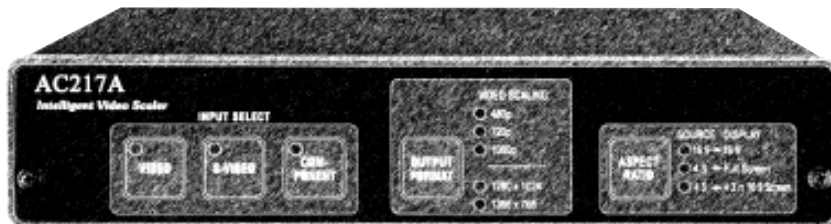


AC217A - Intelligent Video Scaler



P/N122643

**CUSTOMER
SUPPORT
INFORMATION**

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mail order: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

TRADEMARKS USED IN THIS MANUAL

UL is a registered trademark of Underwriters Laboratories Incorporated.

Any other trademarks used in this manual are acknowledged to be the property of the trademark owners.

FCC STATEMENT

FEDERAL COMMUNICATIONS COMMISSION AND CANADIAN DEPARTMENT OF COMMUNICATIONS RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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

This digital apparatus does not exceed the Class A 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 la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

NOM STATEMENT

Normas Oficiales Mexicanas (NOM) Electrical Safety Statement

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.

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NOM STATEMENT

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

CE INFORMATION

Standards to which conformity is declared: EN 55103-1:1996 EN 55103-2:1997

AC217A - Intelligent Video Scaler

INTRODUCTION

Thank you for purchasing AC217A, the Intelligent Video Scaler designed especially for use with HDTV and DTV displays. With AC217A, you now have the ability to enjoy high-resolution, film-like images from any standard video source, including broadcast or cable TV, video tape, DVD and laser disc. AC217A offers a unique automatic motion compensation feature that will adapt to the specific type of input source image.

When processing NTSC sources, AC217A's motion compensation feature automatically selects one of three different motion compensation techniques: adaptive frame (inverse 3:2 pulldown) for original film material, vertical temporal and static mesh. (When processing PAL sources, inverse 3:2 pulldown is not applicable.) Because each technique is set specifically for the type of input image, the result is the clearest, crispest picture quality possible, making AC217A ideal for Home Theater and Professional A/V applications. Packed with other great features such as three different aspect ratio conversions, AC217A is one incredibly versatile scaler. Additional features include Composite, S-Video and Y-C_B-C_R component inputs and RGB or Y-C_B-C_R component outputs, plus an RS-232 remote. An internal power supply and simple, intuitive user-interface round out this sleek, compact unit.

INSTALLATION

INSTALLATION STEPS:

1. Connect the provided AC power cord into the connector marked Power on the rear of AC217A and plug the other end into an AC outlet. This is an auto-sensing universal input power supply and is compatible with worldwide standards.
2. Connect a video source to either the COMPOSITE, S-VIDEO or COMPONENT input on the rear panel using one of the input cables supplied.
3. Connect a computer monitor, projector or display to the VGA compatible connector on the rear panel.

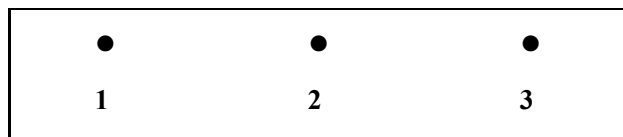
AVAILABLE OUTPUTS:

There are three outputs configurations available on the output VGA connector: RGBHV, RGBS and Y-C_B-C_R. The rear panel switch next to the output connector selects one of the three output types. The individual signals on the HD-15 connector are defined on page 7. Rear connector pin-outs for the output configuration are selected by this switch.

REMOTE CONTROL:

AC217A provides for a hard-wired RS-232 remote control connection using a 3-pin Phoenix-type connector on the rear panel. The baud rate is 9600 baud, no parity, 1 start bit, 1 stop bit. The pin out is as follows:

1 - Ground 2 - Receive Data 3 - Transmit Data



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OPERATION

AC217A is designed to operate properly with any projector or display while requiring minimal set-up and adjustments.

SELECTING AN INPUT:

There are three buttons on the front panel for directly selecting one of the three inputs. The LED that is lit indicates the active selection. The three input options are:

Video (composite)
S-Video (Y/C)
Y-C_B-C_R (component)

SELECTING AN OUTPUT FORMAT:

AC217A provides the five output formats listed below. Pressing the output format button on the front panel will cycle through the choices. The LED that is on indicates the current output format.

480p
720p
1080p
1280 x 1024
1366 x 768

SELECTING AN ASPECT RATIO:

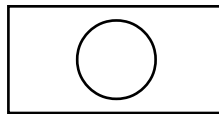
AC217A's unique preset aspect ratio conversion offers the user three choices for changing the input aspect ratio to the desired output image aspect ratio. It is important to select the appropriate conversion setting in order for the output image to appear geometrically correct.

16:9 to 16:9

This conversion scales a 16:9 crop of the input video raster and maps it to the output as a full screen image. It is intended for displaying original letterbox images as a full screen image on 16:9 displays.



Input:
Letterbox in
4:3 frame

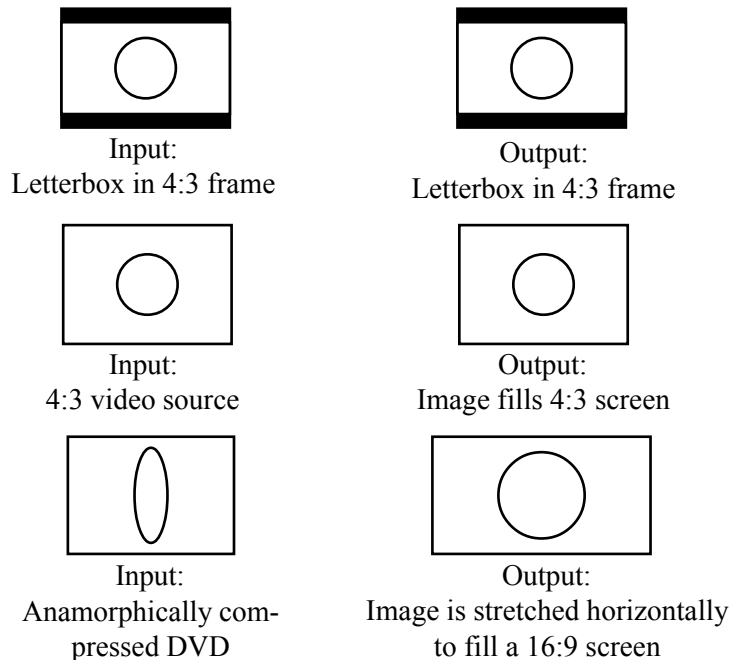


Output:
Full 16:9
frame

4:3 to Full Screen

This conversion takes the entire input video raster and maps it to the entire output raster. If the output display aspect ratio is 4:3, the image will appear with the same geometry as shown on the input. If the output display aspect ratio is 16:9, the image will appear to be "stretched" in the horizontal direction. This is useful if the input video source was an anamorphically compressed DVD, as it will now appear to be geometrically correct on the 16:9 display. Refer to diagrams on top of page 5.

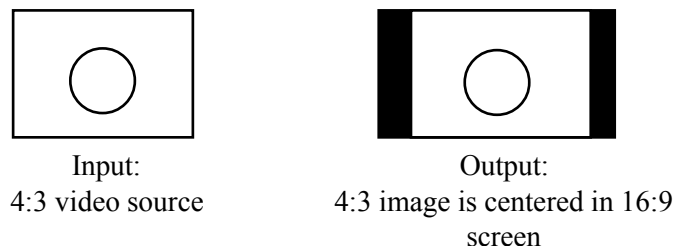
Note: This mode is not available with PAL input to 480p output.



4:3 to 4:3 in 16:9 Screen

This conversion is intended to display a standard, full screen 4:3 input on a 16:9 display with the correct geometry. AC217A will place the 4:3 image centered in the 16:9 display with black on either side of the active image.

Note: This mode is not available with PAL input to 480p output.



MOTION COMPENSATION:

The automatic motion compensation feature will analyze the input source and choose the appropriate compensation. AC217A will automatically select between inverse 3:2 pulldown (adaptive frame), vertical temporal and static mesh modes. With a PAL input, inverse 3:2 pulldown is not used.

SPECIAL KEY FUNCTIONS:

There are several functions that can be activated by pressing a combination of keys simultaneously:

Key Panel Lockout: Press the VIDEO and S-VIDEO buttons at the same time to lock out the key panel.

Key Panel Unlock: Press the S-VIDEO and COMPONENT buttons at the same time to unlock the key panel and allow normal operation.

System Reset: Press the COMPONENT and the OUTPUT FORMAT buttons at the same time to reset the unit and return all settings to their factory defaults.

OUTPUT SPECIFICATIONS

OUTPUT FORMAT	INPUT TYPE	H (kHz)	V (Hz)
480p	NTSC	31.5	59.94
	PAL	32.5	50
720p	NTSC	44.9	59.94
	PAL	37.5	50
1080p	NTSC	67.5	59.94
	PAL	56.3	50
1280x1024	NTSC	63.9	59.94
	PAL	53.3	50
1366x768	NTSC	47.8	59.94
	PAL	39.9	50

TROUBLESHOOTING

IF THIS IS YOUR PROBLEM:

THEN CHECK TO SEE:

Nothing works/no video output:

Are any of the LEDs lit? Is the AC217A plugged into the AC wall outlet?

Is video source connected to the unit and is it putting out a video signal as viewed on a video monitor?

Is the VCR or video source in the proper mode to output video as required?

Have you selected the proper input on the unit (COMPOSITE, S-VIDEO or COMPONENT) for the source selected as the active input?

Is the source of the video ON?

There is video on the output display but it appears out of sync:

If you are using 5 BNC or RCA connectors to the output display, try reversing the H and V sync connectors.

Make sure the display is capable of supporting the resolution you selected on the front of the unit. Try a lower resolution.

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REAR CONNECTOR PIN-OUTS

VGA COMPATIBLE OUTPUT: (HD-15 CONNECTOR)

	RGBHV	RGBS	Y-C _B -C _R
1	Red	Red	C _R
2	Green	Green	Y
3	Blue	Blue	C _B
4	n/c	n/c	n/c
5	Ground	Ground	Ground
6	Ground	Ground	Ground
7	Ground	Ground	Ground
8	Ground	Ground	Ground
9	n/c	n/c	n/c
10	Ground	Ground	Ground
11	n/c	n/c	n/c
12	n/c	n/c	n/c
13	H-Sync out	Composite sync	n/c
14	V-Sync out	n/c	n/c
15	n/c	n/c	n/c

COMPONENT INPUT: (3 FEMALE RCA CONNECTORS)

Y center	Y in
Y outer	Ground
C _B center	C _B in
C _B outer	Ground
C _R center	C _R in
C _R outer	Ground

VIDEO INPUT: (FEMALE RCA CONNECTOR)

center	Composite Video IN
outer	ground

RS-232 REMOTE:

1 (left)	ground
2 (middle)	receive data
3 (right)	transmit data




S-VIDEO INPUT:

1	Ground
2	Ground
3	Luminance
4	Chrominance

AC217A - Intelligent Video Scaler

WARNING

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRONIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

<p>CAUTION RISK OF ELECTRIC SHOCK. DO NOT OPEN.</p>		<p>CAUTION: TO REDUCE THE RISK OF ELECTRONIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	
	<p>This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electronic shocks.</p>		<p>This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.</p>



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