



BLACK BOX®

NETWORK SERVICES

December 8, 2005
SW202A

4 to 1 S-Video/Audio Switch

SW202A
Front and Rear



UMA1065 Rev. n/c

**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
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**FEDERAL COMMUNICATIONS COMMISSION
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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.

EUROPEAN UNION DECLARATION OF CONFORMITY

This product complies with the requirements of the European EMC directive 89/336/EEC



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.
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.

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1. Introduction

1.1 General

The Model SW202A is a versatile S-Video (Y/C or S-VHS) Switch with 4 inputs and one output. It also switches stereo audio from each of the inputs. It is compatible with all TV standards.

The selection of the channel to be displayed can be made from individual front panel switches, or via RS-232 control port. 4 LED lights are used to show the channel selection.

The unit features 250 MHz amplifiers for clear and crisp image and also buffers the audio signals with low noise amplifiers for a distortion-free sound.

The output can be placed in scan mode (either from the front panel by pressing two buttons simultaneously, or via a serial command). In this mode the output displays each input channel for a few seconds and cycles through all inputs. The output can also be blanked (with audio muted) via a serial command.



Figure 1 – Front panel of the SW202A

1.2 Features

- Serial Port for Control via external device
- Buffered output; perfect for high quality video
- Scan mode to cycle through each input.
- LED Indicators
- Rugged Shielded Metal Enclosure
- Installs in minutes
- Universal Power Supply allows use world-wide

2. Installation

1. Plug in the desired number of S-Video/Audio sources to the S-Video/Audio inputs on the back of the SW202A.
2. Connect an output device to the S-Video/Audio output on the back of the SW202A.
3. Connect the included RS-232 cable to a PC or other Serial control device if so desired.
4. Connect the included power supply to the jack on the rear of the unit.
5. Apply AC to the power supply
6. Turn on your output video display and all audio/video sources



Figure 2 – Rear of the SW202A



Figure 3 – Serial Control Cable (Included)

3. Operation

3.1 Modes of Operation

Scan Mode - Will cycle through and select each S-Video/Audio signal for a programmed number of seconds (1 to 60), and then switch to the next S-Video/Audio input.

Normal Mode - S-VIDEO/AUDIO inputs are selected based on user input. (default)

The SW202A can only be in one of these modes at a time.

3.2 Front-Panel Switches

The first function of the front panel buttons is to switch from one S-Video/Audio signal to another. Just press the button and the

S-Video/Audio signal you selected will be routed to the output. If there is no S-Video/Audio signal to be displayed then you will see a black screen. The SW202A will enter Normal Mode any time a single front panel button is pressed.

The second use of the front panel buttons is to put the SW202A into Scan Mode. Press buttons 3 and 4 simultaneously and the SW202A will enter Scan Mode. The time interval between switching will be the time interval last specified via Hyper Terminal. If no interval has been specified then the default is 5 seconds.

The third use of the front panel buttons is to reset the SW202A to the factory default settings. Press button 1 and 4 simultaneously for 3 seconds. This will turn off scan mode and set the scanning interval to the default time of 5 seconds. This will also un-blank the outputs.

3.3 RS-232 control via Hyper Terminal

To use the RS-232 control interface, start HyperTerminal™ with the following settings:

Baud rate: 4800

Data Bits: 8 Parity: None Stop Bits: 1 or 2

Flow Control: None

This is what the menu will look like in HyperTerminal™.

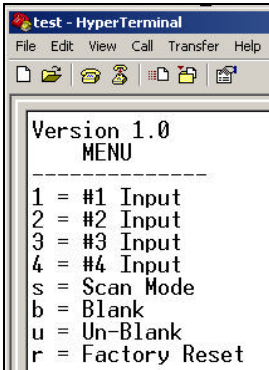


Figure 4 – Main Menu

By pressing the number keys, "1", "2", "3", "4", the SW202A will switch to that S-Video/Audio input. This will also put the SW202A into Normal Mode.

Pressing "s" will put the SW202A into Scan Mode. Before the SW202A enters Scan Mode, you will be asked how many seconds between switching "Seconds between switching? (1-60)". To this question, you must input a number between 1 and 60 then press enter. Any other input will cause this question to be repeated.

Pressing "b" will blank the S-Video output and mute the line level Stereo Audio output from the SW202A until the un-blank command is received.

Pressing "u" will un-blank the S-Video output and un-mute the line level Stereo Audio output from the SW202A if it was previously blanked.

Pressing "r" will reset the SW202A with the factory defaults. The factory defaults are Normal Mode, and the time interval between scanning is 5 seconds.

3.4 Non-Volatile Memory

The SW202A saves the last channel selected and the Mode of operation (scan vs. normal) after power off. Blanking mode is not remembered.

4. Troubleshooting

4.1 Calling Black Box

If you determine that your unit is malfunctioning, do not attempt to repair the unit. Contact Black Box Tech. Support at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- The nature and duration of the problem;
- The components involved in the problem—that is, what type of cable, makes and models of computers and monitors, etc.
- The results of any testing you've already done.

4.2 Shipping and Packaging

If you need to transport or ship your Switch:

- Package it carefully. We recommend that you use the original container.
- Before you ship the unit back to Black Box for repair or return, contact us to get a Return Authorization (RA) number.

5. Specifications

Video Gain/Level	Unity Gain. 1V p-p for Y, 0.3 V p-p for C
Audio Gain/Level	Unity. Gain. 0 to +4dBu (0.78 to 1.23Vrms)
Video Bandwidth	250 MHz.(-3 dB)
Audio Bandwidth	10 Hz to 20 KHz
Input Impedance	Video: 75 Ω on Y and C, Audio: 5 K Ω
Serial Control	4800 Baud, 8-bit, 1 stop bit, no parity
Temperature	Operating: 32 to 122°F (0 to 50°C) Storage: -40 to +158°F (-40 to +70°C)
Enclosure	Steel
MTBF	85,000 hours (calculated estimate)
Power	From utility-power (mains) outlet, through included external power supply. Output Voltage: 6v DC Center-Positive. Average Power Consumption: 1 Watt
Size (hxwd)	1.85"H X 10.88"W X 4.00"D
Weight	1.8 lbs (2.5 lbs shipping)



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