

RS4x4HB

Operation and Technical Manual



**KNOX VIDEO
TECHNOLOGIES**
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Limited Warranty

Unless otherwise stated in the product specific documentation received with this product, Knox Video Technologies provides a five-year limited warranty for this product. The above warranty period shall begin on the date of shipment by Knox to purchaser or, if purchaser is an authorized reseller of such Knox products, from the date of shipment by the reseller to the reseller's original customer.

The warranty set forth above shall not apply to failure or deficiency which has been caused by misuse, abnormal or unusually heavy use, neglect, alteration, improper installation, unauthorized repair or modification, improper testing, accidental or causes external to the product such as but not limited to excessive heat or humidity, power failure, or improper installation.

IF SERVICE IS REQUIRED:

If the product does not perform as warranted, call Knox Video Technologies at 301-840-5805 for available service options.

If it is necessary to return an item to Knox, the defective product should be securely packaged in original boxes and insured for shipment. Owner agrees to insure and accept all liability for loss of or damage to this product.

YOU MUST CALL TECHNICAL SUPPORT AT 301-840-5805 FOR A RETURN AUTHORIZATION NUMBER (RA) AND "SHIP-TO" ADDRESS BEFORE SHIPPING ANY PRODUCT TO KNOX.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.



Knox Video Technologies
8547 Grovemont Circle
Gaithersburg, MD 20877
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Warnings, Cautions and Others

Mises en garde, précautions et indications diverses

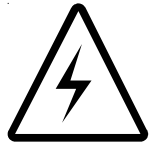


CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

ATTENTION

Afin d’éviter tout risque d’électrocution, d’incendie, etc.:

1. Ne pas enlever es vis ni es panneaux et ne pas ouvrir le coff ret de l’appareil.
2. Ne pas exposer l’appareil a la pluie ni a l’humidité.

Caution — STANDBY/ON switch!

Disconnect the mains plug to shut the power off completely. The STANDBY/ON switch in any position does not disconnect the mains line. The power cannot be remote controlled.

Attention — Commutateur STANDBY/ON!

Déconnecter la fiche de secteur pour couper complètement le courant. Le commutateur STANDBY/ON ne coupe jamais complètement la ligne de secteur, quelle que soit sa position. Le courant ne peut être télécommandé.

For U.S.A.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more 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 the dealer or an experienced radio/TV technician for help.

For Canada/pour le Canada

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

For Canada/pour le Canada

THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE INTERFERENCE-CAUSING EQUIPMENT STANDARD ENTITLED “DIGITAL APPARATUS,” ICES-003 OF THE DEPARTMENT OF COMMUNICATIONS.

CETAPPAREIL NUMERIQUE RESPECTE LES LIMITES DE BRUITS RADIOELECTRIQUES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASSE B PRESCRITES DANS LA NORME SUR LE MATERIEL BROUILLEUR: “APPAREILS NUMERIQUES,” NMB-003 EDICTEE PAR LE MINISTRE DES COMMUNICATIONS.

CAUTION:

- Do not block the ventilation openings or holes.
(If the ventilation openings or holes are blocked by a newspaper or cloth, etc., the heat may not be able to get out.)
- Do not place any naked flame sources, such as lighted candles, on the apparatus.
- When discarding batteries, environmental problems must be considered and local rules or laws governing the disposal of these batteries must be followed strictly.
- Do not use this apparatus in a bathroom or places with water. Also do not place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups, etc.) on top of this apparatus.

ATTENTION:

- Ne bloquez pas es orifices ou es trous de ventilation.
(Si es orifices ou es trous de ventilation sont bloqués par un journal un tissu, etc., la chaleur peut ne pas être évacuée correctement de l’appareil)
- Ne placez aucune source de flamme nue, telle qu’une bougie, sur l’appareil.
- Lors de la mise au rebut des piles, veuillez prendre en considération es problèmes de l’environnement et suivre strictement les règles et les lois locales sur la mise au rebut des piles.
- N’utilisez pas cet appareil dans une salle de bain ou un autre endroit avec de l’eau.
- Ne placez aucune récipient contenant de l’ear (tel que des cosmétiques ou des médicaments, un vase de fleurs, un pot de fleurs, une tasse, uec.) sur cet appareil.

KNOX VIDEO RS4x4HB ROUTING SWITCHER

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SECTION 1. GENERAL INFORMATION

1.1 INTRODUCTION

The RS4x4HB routing switcher is a device which accepts up to four video inputs and up to four stereo audio inputs (that is, four channels of left and right audio), and connects any one of the input channels (buffered electrically) to one or more of the four outputs.

1.2 TECHNICAL DESCRIPTION

The RS4x4HB uses a single chip microprocessor with backup battery to drive two monolithic latching crosspoint decoders, one for video and one for each channel of audio. The video channel features a driver stage with a gain of two to drive a 75 ohm coaxial line. The audio is set up for high impedance unbalanced inputs and outputs with a gain of one, or optional 600 ~ balanced inputs and outputs at up to +16dB.

Crosspoint information is collected by the microprocessor from either the front panel push-button switches or from the RS232 port on the rear panel, and distributed to the crosspoint decoders. Audio and video may be routed together or separately. The microprocessor program activates an automatic lamp test at powerup or when requested on the RS232 port. Each time a routing command is received, the current routing map can be reported on the RS232 port.

1.3 DETAIL SPECIFICATIONS

Video Channels:

Levels: 1 v. composite picture video or black burst: with a variety of line resolutions including 525,625,825,875, and 1025, with a variety of television systems including NTSC, PAL, SECAM, and others.

Frequency Response: DC to 200MHz
@ 300mv, <-3dB @ 150MHz
@ 1.0v, <-3dB @ 115MHz

Input Impedance: 75 ohm

Output Impedance: 75 ohm

Crosstalk: all hostile:
Typ <-70dB @ 5MHz
Typ <-55dB @ 20MHz
Typ <-25dB @ 100MHz
one hostile:
<-40dB @ 200 MHz

Audio Channels, Unbalanced

Levels: 2 v. unbalanced audio, including voice, music, PCM, control track, SM PTE time code, and others

Frequency Response: 20Hz to 30KHz

Input Impedance: 100Kohm

Output Impedance: 1Kohm

Crosstalk: less than -85db @ 1KHz

Audio Channels, Balanced

Hum and noise: <-90dB

Frequency Response: 20Hz to 50K ±1/4 dB

Level: 0, 4, or 16dB, clipping at 18dB

Impedance: Bridging, or 600 ohms termination

Crosstalk: <-90dB @ 20KHz

General

Connectors-Video: (8) BNC or RCA (if specified)

Connectors-Audio: Unbalanced: (16) RCA
Balanced: Phoenix screwtype, removable

Power Consumption: nominal 15 vdc, .75A (from plug-in module supplied)

Power Connector: 5mm/2mm coaxial

Dimensions: 2U rack
19" wide x 3.5" high x 2" deep

Shipping Weight: 5 pounds

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SECTION 2. INSTALLATION

WARNING!



Static Sensitive Connectors! During the installation process and whenever changing cables to the Knox RS4x4HB inputs and outputs, use extreme caution to avoid conducting static electricity to any inputs or outputs including video, audio, and RS232.

DC Offset Warning! Connect standard video and audio inputs and outputs only. Do not connect input or output signals with a positive or negative dc offset.

Chassis Ground is Earth Ground. Do not connect video or audio cables with induced or direct-connection potential on the shield.

2.1 INTRODUCTION

This section provides the information required for installation of the RS4x4HB into its operating environment.

2.2 UNPACKING AND INSPECTION

Unpack the RS4x4HB carefully and verify that the serial number matches the number quoted on the packing list. Before installing it into a system, check the outside of the unit carefully for signs of damage and check that none of the fasteners have come loose.

Check that the power module is also present and marked for use with the RS4x4HB product.

Units are shipped with a memory backup battery which retains the routing crosspoint information when power is off. The battery is mounted on the main printed circuit board visible through the rear cover. In the event that crosspoint information is not retained during power off, the battery must be replaced. It is recommended that the battery be replaced after five years.

2.3 INSTALLATION

The RS4x4HB is designed to be mounted in a standard 19" rack panel; it is 3.50 inches, or two standard units, high.

Choose a space in the rack which is convenient for all the cables and mount the unit using standard rack bolts. Connect the output of the RS4x4HB power unit to the power connector at the right rear (as viewed from the back of the panel) of the RS4x4HB and plug the power unit into a grounded AC power outlet of the voltage and frequency specified on the power unit. There is no power switch on the RS4x4HB; it is designed to be ON at all times. (If it is desirable to have the RS4x4HB powered down regularly, connect the power module to a switchable AC power strip.)

2.4 VIDEO CONNECTIONS

Connect up to four video sources (cameras, videocassette players, RF demodulators, still-stores, character/graphics generators, etc.) to the input BNC connectors marked VIDEO INPUT (or RCA connectors, if they were specified).

Inputs are automatically terminated in 75 ohms. Terminate unused outputs in 75 ohms.

Connect up to four destination devices (monitors, VCRs, LCD projectors, displays, RF modulators, etc.) to the eight BNC (or RCA) connectors marked VIDEO OUTPUT. Be sure that all destination devices are terminated at 75 ohms.

Do not connect a SOURCE of video to any of the video OUTPUT connectors.

2.5 AUDIO CONNECTIONS

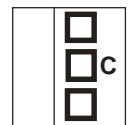
Connect up to four audio sources (line level mikes, videocassette players, RF demodulators, tape/CD players, etc.) to the left and right channel connectors marked AUDIO INPUT.

Connect up to four audio destination devices (amplifiers, VCRs, tape/CD recorders, RF modulators, etc.) to the eight left and right channel connectors marked AUDIO OUTPUT.

Do not connect a SOURCE of audio to any of the audio OUTPUT connectors.

For balanced audio units, the Phoenix connectors may be removed while making the screw connections.

When installing balanced audio connections, use the center pin for the common or ground wire. The top or bottom pin may be used for either + or -, however, the connections must be consistent throughout.



Phoenix connector
for Balanced
Audio

2.6 SETTING THE BAUD RATE

If the RS4x4HB is to be controlled through its RS232 port, it is important to set the correct baud rate. One of four baud rates may be selected using positions 1 and 2 of the programming switch located on the rear panel of the RS4x4HB. Set the switches as follows:

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BAUDRATE	SWITCH 1	SWITCH 2
19200	ON	ON
1200	OFF	ON
2400	ON	OFF
9600	OFF	OFF

Switches are ON when pushed up. All Baud Rates are 8 Bit, No Parity, One or Two Stop Bits. The switches are read by the microprocessor only at power-up; for switch configuration changes to take effect, cycle the power input to the RS4x4HB.

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2.7 ANSWERBACK MODES

The user may choose between two modes of answerback: verbose and non-verbose. Select the mode using position 3 of the programming switch located on the rear panel of the RS4X4HB.

Position 3 ON is verbose, while position 3 OFF is non-verbose.

The switches are read by the microprocessor only at power-up; for switch configuration changes to take effect, cycle the power input to the RS4x4HB.

In the verbose mode, each time a routing command is sent, the current routing map will be reported on the RS232 line.

OUTPUT 1	Video 3	Audio 1
OUTPUT 2	Video 2	Audio 2
OUTPUT 3	Video 1	Audio 3
OUTPUT 4	Video 2	Audio 4

Figure 2.1 Typical Routing Map Status Report

In the non-verbose mode, only the word DONE will be reported. In either mode, an incorrect or meaningless command will cause the word ERROR to be reported.

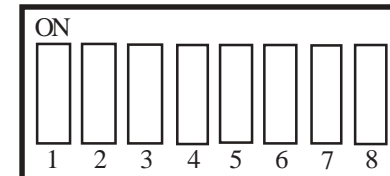


Figure 2.2 Baud Rate Setting
Switches 6-8 should always be off.

2.8 DISABLING THE TIMED SEQUENCE MODE

To avoid accidentally enabling the timed sequence mode, turn switch 4 ON. This will disable the timed mode.

2.9 DISABLING BREAKAWAY AUDIO

To disable the breakaway audio feature, turn switch 5 ON.

2.10 VERTICAL INTERVAL SWITCHING

All units are now fitted with the vertical switching option. Switching will occur during the vertical interval, referencing the sync signal on input number one. If input number one has no input, switching will be random with respect to sync. *Note: vertical interval switching has no meaning unless the inputs are synchronous to one another.*

SECTION 3. OPERATION

3.1 INTRODUCTION

This section explains in detail the operation of the RS4x4HB using either the front panel push-button switches or the RS232 port.

3.2 CONNECTIONS

Connect audio and video sources as described in sections 2.4 and 2.5. There is no requirement that all inputs be used.

If outputs are left over they may be used like a distribution amplifier to buffer and distribute an input signal. To use extra outputs in this way simply route the input you wish to distribute to as many available outputs as desired.

Outputs may be looped back to unused inputs via short cables for the purpose of adding delays, but be aware that if an output is then routed to that same input, an illegal condition will exist and the output will oscillate at frequencies which could spill over onto other crosspoints.

3.3 ROUTING VIA THE FRONT PANEL SWITCHES

3.3.1 HOW TO ROUTE AUDIO AND VIDEO TOGETHER

Select the destination (output) you wish to route a signal to and push (and release) the front panel button with the number; the row of LEDs to the right of the button you pushed will flash. Then select the source (input) audio and video you wish to have routed to that output and push the front panel button with that input number. The row of LEDs will stop flashing and the lamp corresponding to that crosspoint will then glow steadily.

If you do not push an input button within ten seconds, the LEDs will stop flashing and the crosspoint will remain where it was.

3.3.2 HOW TO ROUTE AUDIO SEPARATELY

Select the destination (output) you wish to route an audio signal only to and push the front panel button with that number twice (two quick pushes). The row of LEDs to the right of the button you pushed will flash, as when you route both signals together. Then select the source (input) audio you wish to have routed to that output and push the front panel button with that input number. The row of LEDs will stop flashing and the lamp corresponding to the audio crosspoint will flash slowly, while the LED corresponding to the video crosspoint will glow steadily.

If you do not push an input button within ten seconds, the LEDs will stop flashing and the crosspoint will remain where it was.

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3.3.3 HOW TO STORE AND RECALL CROSSPOINT PATTERNS

The RS4x4HB has 4 stored routing map configuration memory locations. These stored configurations are non-volatile and are thus maintained during power interruptions.

To STORE the currently loaded crosspoint pattern to one of the four pattern storage areas, push and hold input button #4; an S will appear on the LED display. Then release button #4 and push an output button, 1 to 4, corresponding to the storage area you wish to store the crosspoint pattern in.

To RECALL and load one of the four stored crosspoint patterns from the front panel, push and hold input button #1; an R will appear on the LED display. Then release button #1 and push an output button, 1 to 4, corresponding to the crosspoint pattern you wish to recall.

3.3.4 HOW TO START THE TIMED SEQUENCER

The RS4x4HB can be set to cycle continuously through its four stored patterns on a timed basis. To start the cycling, push and hold input button #3. Push and hold input button #3 again to stop the cycling. Putting dipswitch 4 in the ON position can disable the Timed Sequencer.

3.4 ROUTING VIA THE RS232 INPUT

A simple protocol allows all crosspoints to be set through the RS232 port. The RS232 port will accept inputs from a terminal, computer, or other software-driven control device. No handshaking is required. The RS4x4HB RS232 port is configured as a DCE. The pinout of this port allows connection to a PC-compatible 9-pin serial COM port with a 1:1 data cable. (Data is sent from the router on pin 2, received on pin 3. Pin 5 is common.)

Note: in the following commands the letters may be upper or lower case; (ENTER) is the same as Carriage Return (in hex, a 0D). Do not add a Line Feed (in hex, 0A).

3.4.1 ROUTING AUDIO AND VIDEO

To route video and audio send a four-byte command in the form:

Bxy(ENTER)

where x is an output number (1-4) and y is an input number (1-4).

To route video alone send a four-byte command in the form:

Vxy(ENTER)

where x is an output number and y is an input number.

To route audio alone send a four-byte command in the form:

Axy(ENTER)

where x is an output number and y is an input number.

To route both video and audio from different inputs, send a six-byte command in the form:

Bxyz(ENTER)

where x is an output number and y is a video input number and z is an audio input number.

For example, B123 sends video from input 2 to output 1 and audio from input 3 to output 1.

A crosspoint can be turned OFF by routing it to input zero; e.g. B10 turns off the video and audio to output 1.

3.4.2 SENDING A SALVO COMMAND DESCRIPTION

It is possible to send the same input to a number of sequential outputs by a single eight-byte command of the form:

Xmno(ENTER)

where m is the first output number, n is the last output number, and o is the input number.

Using X as the first byte sends both video and audio to the range of outputs, using Y sends video only, and using Z sends audio only. For example, Y144 sends the audio from input 8 to outputs 1 through 4.

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3.4.3 SENDING A STRING OF COMMANDS TO BE EXECUTED AT THE SAME TIME

It is possible to send a set of commands to the routing switcher that will be held until the final command is received, then all the commands are executed at the same time. For all but the final command in the set use the form:

Exy(ENTER),

where x is the output number and y is the input number.

Using E as the first byte sends both video and audio from input y to output x, using F sends video only, and using G sends audio only. The final command in the set must start with the letter B, V, or A instead of E, F, or G. This final command causes all the previous commands to TAKE. You may also cause a TAKE by sending the three-byte command EE(ENTER).

For example, the following commands sent over a period of time:

E11(ENTER),E22(ENTER),E33(ENTER),B44(ENTER)

will result in connecting input 1 to output 1, 2 to 2, 3 to 3, and 4 to 4 when the last (ENTER) is received.

3.4.4 USING CONFERENCE MODE

It is possible to have the video and audio sources from two destinations cross-connected, as might be used in teleconferencing, by issuing a single command to the RS4x4. To cross-connect both audio and video from a pair of inputs and outputs, send a command in the form:

Jxy(ENTER),

where x and y are the two inputs and outputs. Video and audio from x will be routed to y, and video and audio from y will be connected to x.

To cross-connect video only, send a command in the form:

Kxy(ENTER),

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where x and y are the two inputs and outputs. Video from x will be routed to y, and video from y will be connected to x.

To cross-connect audio only send a command in the form:

Lxy(ENTER),

where x and y are the two inputs and outputs. Audio from x will be routed to y, and audio from y will be connected to x.

3.4.5 STORING AND RECALLING CROSSPOINT PATTERNS

To STORE the currently loaded crosspoint pattern to one of the four pattern storage areas, send the three-byte command:

Sn(ENTER),

where n is a number from 1 to 4. The pattern stored in that memory area will be overwritten with the current pattern.

To RECALL and load one of the four crosspoint patterns in the battery backup memory, send the three-byte command:

Rn(ENTER),

where n is a number from 1 to 4.

3.4.6 TIMED SEQUENCER

The RS4x4HB can be set to cycle continuously through its four stored patterns on a time basis. To set the time interval and start the cycling send the four-byte command:

Tnnn(ENTER),

where nnn is a one- to three-digit number from 1 to 999.

To stop the cycling, send the two-byte command:

N(ENTER).

3.4.7 LAMP TEST

The lamp test which occurs automatically on power-up can be initiated through the RS232 port by sending the two byte command:

T(ENTER)

The lamp test does not disturb the existing crosspoint pattern.

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OUTPUT 1	Video 3	Audio 1
OUTPUT 2	Video 2	Audio 2
OUTPUT 3	Video 1	Audio 3
OUTPUT 4	Video 2	Audio 4

Figure 3.1 Typical Routing Map Status Report

In the non-verbose mode only the word DONE will be reported.

In either mode, an incorrect or meaningless command will cause the word ERROR to be reported.

3.5 ANSWERBACK MODES

The user may choose between two modes of answerback: verbose and non-verbose. Select the mode using position 3 of the programming switch located on the rear panel of the RS4x4HB. Position 3 ON is verbose, while position 3 OFF is non-verbose.

In the verbose mode, each time a routing command is sent, the current routing map will be reported on the RS232 line followed by the word DONE.

The switches are read by the microprocessor only at power-up; for switch configuration changes to take effect, cycle the power input to the RS4x4HB.

3.6 READING SYSTEM STATUS

The crosspoint status can be read from the RS232 port at any time by sending the two-byte command:

D(ENTER)

A condensed version of the status can be read by sending:

D0(ENTER)

The status report does not disturb the existing crosspoint pattern.

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SECTION 4. MAINTENANCE



NOTE: Maintenance of the RS4x4HB, except for changing the battery, should be performed by qualified service people only.

4.1 INTRODUCTION

The only routine maintenance the RS4x4HB requires is to change the battery located at the rear of the RS4x4HB unit.

4.2 HOW TO CHANGE THE MEMORY BACKUP BATTERY

The RS4x4HB is shipped with a memory backup battery which retains the routing crosspoint information when power is off. The battery, approximately 1/2 inch in diameter, is mounted in a holder on the main printed circuit board. In the event that crosspoint information is not retained during power off, the battery must be replaced.

To change the battery, pry up the retaining bar gently and slip the old battery out. Replace at least every five years with Knox part number 140896, or commercial type DL1 220.

4.3 SETTING THE BAUD RATE

An 8-position switch, accessible through the rear panel, is provided for setting the baud rate and certain programming functions. Switch positions 1 and 2 are used to set the baud rate for the RS232 control port. One of four baud rates may be selected as follows:

BAUDRATE	SWITCH 1	SWITCH 2
19200	ON	ON
1200	OFF	ON
2400	ON	OFF
9600	OFF	OFF

Switch position 3 chooses between the verbose and non-verbose mode of operation (see section 2.7). Position 3 ON is verbose, while position 3 OFF is non-verbose.

Switch position 4 is used to disable the timed sequencer (see section 3.3.4). Position 4 ON disables the timed sequencer.

Switch position 5 is used to disable the breakaway audio feature (see section 2.9). Position 5 ON disables the breakaway audio feature.

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Switch positions 6 through 8 are reserved for programming options not covered here. Switches 6 through 8 should always be OFF. Switches are OFF when pushed down.

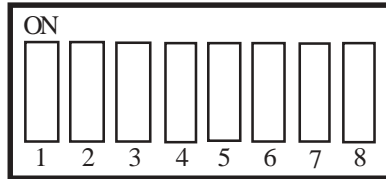


Figure 4.1 Baud Rate Setting

4.4 SETTING THE ANSWERBACK MODE

The user may choose between two modes of answerback: verbose and non-verbose. Select the mode using position 3 of the programming switch located on the rear panel of the RS4x4HB. Position 3 ON is verbose, while position 3 OFF is non-verbose.

In the verbose mode, each time a routing command is sent, the current routing map will be reported on the RS232 line followed by the word DONE.

The switches are read by the microprocessor only at power-up; for switch configuration changes to take effect, cycle the power input to the RS4x4HB.

OUTPUT 1	Video 3	Audio 1
OUTPUT 2	Video 2	Audio 2
OUTPUT 3	Video 1	Audio 3
OUTPUT 4	Video 2	Audio 4

Figure 4.2 Typical Routing Map Status Report

In the non-verbose mode only the word DONE will be reported.

In either mode, an incorrect or meaningless command will cause the word ERROR to be reported.

Switches are ON when pushed up.

4.5 DISABLING THE TIMED SEQUENCER

The Timed Sequencer can be activated accidentally from the front panel pushbuttons. To avoid this condition, disable the Timed Sequencer by putting switch 4 in the ON position.

4.6 DISABLING BREAKAWAY AUDIO

To disable the breakaway audio feature turn switch 5 ON.

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