

## SECTION 2. INSTALLATION

***WARNING!***

**Static Sensitive Connectors!** During the installation process and whenever changing cables to the Knox SDI8x8 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 SDI8x8 into its operating environment.

### 2.2 UNPACKING AND INSPECTION

Unpack the SDI8x8 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 SDI8x8 product. The SDI8x8 uses a +5 volt supply with center pin positive.

**DO NOT USE ANY OTHER POWER SUPPLY WITH THE SDI8x8.**

Units are shipped with a memory-backed program microprocessor chip which retains the routing crosspoint information when power is off.

## 2.3 INSTALLATION

The SDI8x8 is designed to be mounted in a standard 19" rack panel; it is 5.25 inches, or three 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 SDI8x8 power unit to the power connector at the right rear (as viewed from the back of the panel) of the SDI8x8 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 SDI8x8; it is designed to be ON at all times. (If it is desirable to have the SDI8x8 powered down regularly, connect the power module to a switchable AC power strip.)

## 2.4 VIDEO CONNECTIONS

Connect up to eight SDI video sources to the input BNC connectors marked VIDEO INPUT. Inputs are automatically terminated in 75 ohms. An Input Carrier Detect LED will light for each valid SDI input.

Connect up to eight SDI destinations to the eight BNC connectors marked OUTPUT. Be sure that all destination devices are terminated at 75 ohms. When a valid input signal has been routed to an output, the CD LED and the Data Rate LED for that output will light.

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

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### 2.5 SETTING THE BAUD RATE

If the SDI8x8 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 SDI8x8. Set the switches as follows:

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 SDI8x8.

### 2.6 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 SDI8x8. Position 3 ON is verbose, while position 3 OFF is non-verbose.

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

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

In either mode, an incorrect or meaningless command will result in the word ERROR being reported.

ALL OTHER SWITCH POSITIONS (5-8) SHOULD BE OFF.

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### SECTION 3. OPERATION

#### 3.1 INTRODUCTION

This section explains in detail the operation of the SDI8x8 using either the front panel pushbutton switches or the RS232 port.

#### 3.2 CONNECTIONS

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

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.

Do not route an output back to the same input.

#### 3.3 ROUTING VIA THE FRONT PANEL SWITCHES

##### 3.3.1 HOW TO ROUTE SDI VIDEO

Select the output you wish to route a signal to and push (and release) the front panel button with that number; the row of LEDs to the right of the button you pushed will flash. Then select the 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.

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### 3.3.2 HOW TO STORE AND RECALL CROSSPOINT PATTERNS

The SDI8x8 has 8 stored routing map configuration memory locations. These stored configurations are non-volatile and are thus maintained during power interruptions.

To RECALL and load one of the stored patterns from front panel, push and hold input button #1; an R will appear on the LED display. Then push an output button, 1 to 8, corresponding to the crosspoint pattern you wish to recall.

To STORE the currently loaded crosspoint pattern to one of the eight pattern storage areas, push and hold input button #8; an S will appear on the LED display. Then push an output button, 1 to 8, corresponding to the storage area you wish to store the crosspoint pattern in.

### 3.4 ROUTING VIA THE RS232 INPUT

#### 3.4.1 ROUTING SDI VIDEO

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, but the SDI8x8 will answerback in one of two modes to each command received (see section 3.5 for details).

The SDI8x8 RS232 port is configured as a DCE. The pin-out of this port allows connection to an IBM-PC or compatible 9 pin serial COM port with a 1:1 cable.

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

Vxy(ENTER),

where x is an output number and y is an input number. The leading letter may be a V or a B.

Each time a routing command is sent, the RS232 output line responds in accordance with the verbose/non-verbose switch setting (see section 2.6).

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### 3.4.2 TURNING AN OUTPUT OFF

Any output may be turned off by using a 0 (zero) as the input number. Thus the command:

B10(ENTER)

turns output 1, and its front-panel crosspoint LED, OFF.

All outputs may be turned off by sending the command:

C(ENTER)

All crosspoint LEDs will go off.

### 3.4.3 STORING AND RECALLING CROSSPOINT PATTERNS

To RECALL and load one of the eight crosspoint patterns in the backed-up memory, send the three-byte command:

Rn(ENTER),

where n is a number from 1 to 8.

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

Sn(ENTER),

where n is a number from 1 to 8. The pattern stored in that memory area will be overwritten by the new pattern.

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## 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 SDI8x8. 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.

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.

## 3.6 READING SYSTEM STATUS

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

D(ENTER)

The status report does not disturb the existing crosspoint pattern.

## 3.7 LAMP TEST

The lamp test which occurs automatically on power-up or at RESET 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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## 3.8 SIGN-ON MESSAGE

The SDI8x8 will report its sign-on message out the RS232 port on receipt of the command:

I(ENTER)

## 3.9 HELPSCREEN

The SDI8x8 will dump a list of its commands out the RS232 port on receipt of the command:

H(ENTER)

Bxy	ROUTE VIDEO OUTPUT X TO INPUT Y
Vxy	ROUTE VIDEO OUTPUT X TO INPUT Y
T	RUN LAMP TEST
D	DUMP EXISTING CONFIGURATION
I	DISPLAY SIGNON MESSAGE
C	CLEAR LED ARRAY
H	DISPLAY THIS HELP MESSAGE

Figure 3.1 Typical Help screen

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### SECTION 4. MAINTENANCE

*Note:* Maintenance of the SDI8x8 should be performed by qualified service people only.

#### 4.1 INTRODUCTION

The SDI8x8 does not require any routine maintenance.

#### 4.2 SWITCH OPTIONS

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

#### 4.3 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 SDI8x8. 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.

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

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

Switch positions 5 through 8 are reserved for programming options not covered here. Switches 5 through 8 should always be OFF. Switches are ON when pushed up.