SECTION 2. INSTALLATION

2.1 INTRODUCTION

This section provides the information required for installation of the RS Remote Controller into its operating environment.

2.2 UNPACKING AND INSPECTION

Unpack the RS Remote Controller 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 RS Remote Controller product.

2.3 INSTALLATION

The RS Remote Controller is designed to be mounted in a standard 19" rack panel: it is 1.75 inches, or one standard unit, 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 RS Remote Controller power unit to the power connector at the right rear (as viewed from the back of the panel) of the RS Remote Controller 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 RS Remote Controller; it is designed to be ON at all times. (If it is desirable to have the RS Remote Controller powered down regularly, connect the power module to a switchable AC power strip.)

2.4 DATA CONNECTIONS

Connect the female end of a DB9 extender cable to the RS Remote Controller connector labeled **J1**. If additional RS Remote Controllers are in the system, connect the output of the previous Controller to the connector labeled **J2**.

2.5 SETTING UP THE CONTROLLER

The RS Remote Controller is configured by means of holding certain buttons down while the unit is powered up. Once the settings have been made they will be stored in nonvolatile memory until they are changed by a subsequent setting operation.

2.5.1 SETTING THE MODE

There are four distinct modes of operation for the RS Remote Controller:

Mode 1 - single station, in which the controller causes the router to route inputs to a specific output number.

Mode 2 - full matrix, in which the controller can cause any input to be sent to any output.

Mode 3 - string commands, in which preprogrammed strings of instructions can be sent to the routing switcher.

Mode 4 - recall mode, in which patterns are recalled from the routing switchers memories.

To select mode of operation, hold the B key down and the number 1, 2, 3, or 4 key, corresponding to Mode 1, 2, 3, or 4 while the power is turned on. Wait until the light test finishes and the beeper sounds twice. The unit is then ready to operate in the mode selected.

2.5.2 SELECTING THE OUTPUT NUMBER

If Mode 1 has been selected, Single Station, you must select which output the RS Remote Controller is going to control. To select the output number, hold the corresponding number key down while power is cycled. Wait for the light test and for the beeper to sound twice. The unit is then ready to control the output number you selected.

2.5.3 SELECTING THE ROUTER TYPE

The protocols for the various Knox routing switchers vary, so the RS Remote Controller must be told which Routing Switcher it is to control. To select the router, hold the V key down and the 1 key (for RS8x8), or the 2 key (for RS16x16 or ProSwitch) or the 3 key (for RS12x2), or the 4 key (for RS4x4) while the power is cycled. Wait for the light test and for the beeper to sound twice. The unit is then ready to control the routing switcher selected.

2.5.4 SELECTING THE BAUD RATE

The baud rate has been set at the factory for 9600 baud, which matches the default baud rate of the Knox Routing Switchers. If, for any reason a different baud rate is required, hold the A key down, and the 1 key (for 2400 baud), or the 2 key (for 9600 baud), or the 3 key (for 19200 baud). Wait for the light test and for the beeper to sound twice. The controller will then be ready to communicate at the baud rate you selected.

2.5.5 SETTING THE STRINGS

The RS Remote Controller can be programmed to output a series or string of commands at the push of a button. The string can contain up to 32 characters. To use this feature, select Mode 3.

To set up the strings you will need a terminal, such as the Windows terminal program. Connect the terminal device to the RS Remote Controller's input RS232 socket (the DB9S connector). Be sure the terminal program is set to 9600 baud (or another baud rate if you have selected it), 8 bits, 1 stop bit, no parity, and flow control off. Then hold the ENTER key on the front panel of the RS Remote Controller down while you cycle power to the unit. Release the key when the sign-on message appears on the terminal screen.

Each string must be properly formatted. From the terminal, type in the following for the first string:

:01: then the letters or numbers you want in the string (do not push ENTER to insert a Carriage Return*; type it in this form: <OD>), then push the ENTER key on the terminal to terminate the string. The controller will send the prompt STRING OK to the terminal. Repeat the process for the second string using

:02: and so on up to the sixteenth string. Enter as many strings as you want; to return to operation, just recycle the power with no switches held down.

For example, :01:bl5<OD>b22<OD> will send the commands to connect input 5 to output 1 and input 2 to output 2 on an RS8x8 each time button number 1 is pushed in Mode 3.

*Other HEX commands can be embedded in a similar fashion: use the greater than or less than brackets around the HEX value of the character.

SECTION 3. OPERATION

3.1 INTRODUCTION

This section explains in detail the operation of the RS Remote Controller.

3.2 CONNECTIONS AND SETUP

Connect data cables as described in section 2.4.

3.3 ROUTING VIA THE FRONT PANEL SWITCHES

3.3.1 SINGLE STATION MODE -- SINGLE BUTTON OPERATION

If the RS Remote Controller is configured as a single station (Mode 1) or full matrix (Mode 2) controller, the pushbuttons numbered 1 through 16 correspond to the numbered inputs or outputs on the Routing Switcher.

In Mode 1, the single output which is to be controlled should already have been selected (see section 2.5). To route an input to that output, push the numbered key corresponding to the input number at the routing switcher.

The lamp above the pushbutton will light if the routing switcher received the command correctly. Note: input numbers higher than 8 for an 8X8 router will be ignored.

3.3.2 FULL MATRIX MODE -- MULTI-BUTTON OPERATION

In Mode 2, PUSH the B,V, or A button to send Both,Video, or Audio, then the numbered button corresponding to the output you wish to control, then the numbered button corresponding to the input you wish to route from, then the ENTER button.

The two lamps corresponding to the most recent crosspoint made will flash. Note: input or output numbers higher than 8 for an 8x8 router or higher than 12 for a 12x12 will be ignored.

3.3.3 STRINGS MODE

In Mode 3, a string of ASCII characters has been programmed into each button. Usually, this will be a group of routing switcher changes that you wish to be executed all at the same time. In Mode 3, push a single button to execute the programmed commands. The lamp above the pushbutton selected will light when the router receives the string command.

(The Strings mode can also be set up for multi-button operation such that some buttons issue partial commands and other buttons issue finishing commands; this allows for more complex matrix of choices by an operator. Such programming should be left to advanced users.)

3.3.4 RECALL MODE

In Mode 4, push any button 1 through 16 (1 through 8 for the RS8x8, and 1 through 4 for the RS4x4) and the router's stored pattern corresponding to that number will be recalled and all crosspoints changed to match that pattern. The lamp above the pushbutton selected will light when the router receives the recall command.

3.4 ROUTING VIA THE INFRARED TRANSMITTER

Push VCR on the remote control to select Knox Routing Switcher control.

3.4.1 HOW TO ROUTE AUDIO AND VIDEO

The infrared transmitter acts like a computer terminal to control the various Knox Routing Switchers according to their RS232 protocol.

The control protocol for the Knox Routing Switchers is a letter (B, V, or A) followed by the output number (1-8 for the RS8x8, or 01-64 for the RS16x16 and larger routers), followed by the input number (1-8 or 01-64), followed by ENTER.

With the IR transmitter aimed in the general direction of the RS Remote Controller, push the A key for Audio, the V key for video, or the B key for both audio and video, then number keys to indicate the output number followed by the input number, then push the ENTER key. A typical sequence for the RS8x8 is:

B18 [ENTER]

to route audio and video from input 8 to output 1.

A typical sequence for the RS16x16 is:

V 1206 [ENTER]

to route video only from input 6 to output 12.

If you have pushed a button by accident, or are unsure where you are in the sequence, you can always push the ENTER key to abort the process and then start your sequence over.

3.4.2 HOW TO STORE AND RECALL PATTERNS FROM THE ROUTER

FULL MATRIX OR SINGLE STATION -- The RS Remote Controller's infrared transmitter can store or recall router patterns in the Knox RS4x4, RS8x8 and RS16x16 Routing Switchers. The RS4x4 can store 4 patterns, the RS8x8 can store 8 patterns, and the RS16x16 can store 16. The method is the same whether the RS Controller is wired for full matrix or single station operation.

To **Recall** a stored pattern, push the R key, then a one or two-digit number (one digit for the 4x4 or 8x8 and two for the 16x16), then the ENTER key.

To **Store** the current pattern into one of the stored pattern areas (this will overwrite the pattern previously stored there), first push the VCR key on the IR transmitter, then the S key twice (two short pushes), then the pattern number to store the current pattern to, then the ENTER key.