

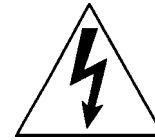
HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

Operation and Technical Manual



**KNOX VIDEO
TECHNOLOGIES**
8547 Grovemont Circle
Gaithersburg, MD 20877
TEL 301•840•5805
FAX 301•840•2946
www.knoxvideo.com

IMPORTANT SAFETY INSTRUCTIONS



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.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

SECTION 2. INSTALLATION

WARNING!

Static Sensitive Connectors! During the installation process and whenever changing cables to the Knox HD-8 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 HD-8 into its operating environment.

2.2 UNPACKING AND INSPECTION

Unpack the HD-8 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.

The Infrared Remote Control accessory is shipped without batteries. It requires 2 standard AA batteries.

2.3 INSTALLATION

The HD-8 will be connecting a number of SOURCE devices to a number of destination ZONE devices. Choose a space which is convenient for all the cables to converge, usually in or near the local zone, ZONE 8. Mount the HD-8 on a horizontal flat surface or on a shelf in a standard 19" rack panel; it requires three standard rack units (3U) for clearance. Connect the HD-8 power plug to a properly grounded AC power outlet of the correct voltage and frequency.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

2.4 VIDEO CONNECTIONS

Connect up to eight baseband video SOURCES (cameras, VCRs, DVD players, satellite receivers, RF demodulators, etc.) to the NTSC (yellow RCAs) or Y/C video input connectors. Inputs are automatically terminated in 75 ohms. It is not necessary to terminate unused inputs. The input connectors are on the left rear of the HD-8.

Connect up to eight destination ZONE devices (TV monitors, VCRs, LCD projectors, RF modulators, etc.) to the NTSC or Y/C video output connectors on the HD-8. Be sure that all destination devices are terminated in 75 ohms. It is not necessary to terminate unused outputs. The output connectors are on the right rear of the HD-8.

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

On-Screen Programming: A ninth composite video output jack can be found in the center of the rear panel. This jack has the same video content as Zone 1, but it has a character generator display overlaid on the picture (in the absence of a video signal for Zone 1, the On-Screen display will have a blue background).

Note: in PAL operation the On-Screen Display will be in PAL if there is a valid 625-line PAL output on Zone 1, but in the absence of a valid Zone 1 output, the blue screen will be 525-line NTSC.

2.5 AUDIO CONNECTIONS

Connect up to eight unbalanced audio SOURCES (CD players, tape players, VCRs, mikes, RF demodulators, etc.) to the left and right channel RCA connectors (white and red RCAs, respectively). Inputs are high impedance (100K).

Connect up to eight audio destination ZONE devices (amplifiers, VCRs, tape/CD recorders, RF modulators, etc.) to the left and right channel RCA connectors. Devices may be terminated with a 1Kohm load.

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

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

2.6 IR CONNECTIONS

Connect up to eight infrared drive SOURCES collected from the various ZONES to the stereo miniature phone jack connectors labeled IR Inputs. Inputs are high impedance (100K). Connect the IR signal to the TIP, or outermost conductor of the phone plug. A source of +5 volt current is also available through a 470 ohm resistor at the IR input connectors; connect a low-current device to the RING, or center conductor, of the phone plug. The SLEEVE of the phone plug is common (ground).

Connect one or more IR emitter-driver devices to the miniature phone jack connectors labeled IR Outputs. Devices may be terminated with a 1Kohm load. NOTE: these are unmodulated outputs designed to drive TTL inputs. The driving signal is on the TIP of the connector; the SLEEVE is common (ground).

An additional IR output jack to the right of Output 8 is a modulated, cumulative output of all eight IR input signals. It is designed to drive an infrared LED directly. This output can be used to drive one or more SOURCE machines from ALL ZONES at once. The driving signal is on the TIP of the connector; the SLEEVE is common (ground).

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

Rear panel LEDs will light to show any activity on IR Inputs or IR Outputs.

2.7 RS232 CONNECTIONS

The HD-8 can be controlled by external RS232 drivers. Connect a computer, terminal, or other RS232 control device to the female DB9 connector on the right side of the rear panel. The HD-8 is wired as a data terminal; that is, data out of the HD-8 is on pin 2, data in is on pin 3, and pin 5 is common (ground).

A direct connection from a PC compatible COM port normally works well; select 9600 baud, 8 bits, no parity, and one or two stop bits. Set the Flow Control to NONE.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

2.8 SETUP AND CONTROL USING THE KNOX HD-8 PROGRAM

This program is intended for use by the installer only. Install the program from the CD provided into a PC-compatible computer running Windows 98 or better.

Start the KNOX.EXE program by double-clicking on the Knox HD-8 desktop icon or on the name in Windows Explorer. You must select the correct COM port before attempting to communicate with the HD-8. Click on the SET COMM PORT button in the lower center, or pull down the Serial Port menu item; select an available COM port. The baud rate and configuration will be assigned automatically.

FIRST TIME SETUP:

Use this setup procedure when the HD-8 is first installed, or after changing its internal memory backup battery.

Setting Time and Date: Locate the Time and Date box in the lower right and check them for accuracy. You can modify the time or date if necessary by using your computer's Control Panel. To send the correct time and date to the HD-8, select EDIT mode in the box on the far left and push the SEND TIME/DATE button in the Time and Date box.

Assigning Names to Sources and Destinations: Sources and destinations are given default names by the program. To give them more meaningful names, first select EDIT mode in the box on the far left. Then highlight each of the Destination Zones on the left and give it a short name (five letters and numbers maximum). Then highlight and name as many of the video, audio, and IR sources as you wish. When you have named all the sources and destinations you wish to at this time, push the WRITE button on the far right side. The new names will be sent to the HD-8. Note: the default names remain available as an alternate set of names each time the program is brought up.

Setting the LCD Banner Lines: Both lines on the LCD can be personalized by the installer; for example, you might want the first line to identify the homeowners, and the second line to give them a number to call for service.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

Select EDIT mode in the box on the far left and type a message in the space next to LINE 1 in the Banner Text box; push the LINE 1 button to send it to the HD-8. Line 2 can have one message in the Full Control mode, and a different message in the Zone Lock mode. Type a message in the LINE 2 box for display under Full Control mode and push LINE 2 to send it to the HD-8. Type a message in the LOCK box for display in Zone Lock mode; push LOCK to send it to the HD-8. The maximum number of characters in each of the banner lines is 40.

Setting the On-Screen Banner Line: The top line of the On-Screen display can have a message personalized by the installer. Select EDIT mode in the box on the far left and type a message in the space next to ON SCN; push the button ON SCN to send it to the HD-8.

NOTE: The LCD and On-Screen Displays can include the time, the date, the software version number, or the zone lock number by placing a variable name within square brackets:

[-VERS-]	causes the current software version to be displayed
[-TIME-]	causes the current time to be displayed
[-DATE-]	causes the current date to be displayed, and
[N]	causes the zone lock number, from 1-8 to be displayed

Choosing the Style of the On-Screen Display: The installer can choose to have the On-Screen display show the customized names assigned to the Sources and Destinations, or to have the default set of names show. Choose Names in the On-Screen Display box in the lower left-center to have the custom names appear; choose Numbers to have the default numbers appear.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

SECTION 3. OPERATION

3.1 INTRODUCTION

This section explains in detail the operation of the HD-8 using either the front panel pushbutton switches, the IR remote control, or the RS232 port.

3.2 CONNECTIONS

Connect audio, video, and IR sources as described in sections 2.4, 2.5, and 2.6. There is no requirement that all inputs or outputs be used or terminated, but be sure that all outputs which are used are properly terminated.

An output may be looped back to an unused input via short cables for the purpose of adding a delay, 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 CONTROL VIA THE FRONT PANEL SWITCHES

NOTE: ZONE LOCK: Zone Lock allows for one-button operation of the HD-8. If Zone Lock is ON the LED in the lower center of the front panel will be lighted and the selected ZONE will appear in the display window. If Zone Lock is OFF the light will be dark. To turn Zone Lock on, press the FUNCTION button in (lower right corner) and push the 1 button; then select the zone to lock to (usually the local zone, ZONE 8) by pushing one of the buttons 1-8. To unlock a zone, just press the FUNCTION button and push the 1 button.

POWER: The front panel power button has three-levels of operation: ON, DISPLAY OFF, and OFF. However, the crosspoint connections are held as long as power is being received by the HD-8. If power is lost, the previous crosspoint conditions will return after power is restored. Generally it is best to have the displays ON while controlling the HD-8.

KNOX VIDEO

HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

ROUTING VIDEO, AUDIO, and IR: Note the ZONE LOCK light-if it is on, it means a zone has been pre-selected (usually the local zone).

ZONE LOCK ON: The light behind the present video source selected will be lighted (if audio is from a different source, its light will blink). You may route audio and video to that zone simultaneously by pushing one of the eight pushbuttons over the word SOURCE. If you wish to change only the video, only the audio, or only the IR for that zone, push the V, A, or IR button first, then push the source button. To select No Source, hold the FUNCTION key down and push the 8 button.

ZONE LOCK OFF: In this mode you must first push the button corresponding to the ZONE you want to control, then push one of the eight buttons to select the SOURCE. If you wish to change only the video, only the audio, or only the IR for that zone, after you push the ZONE button first, then push the V, A, or IR button, then push the source button. To select No Source, hold the FUNCTION key down and push the 8 button.

VOLUME and MUTE

ZONE LOCK ON: If Zone Lock is ON, pushing the VOLUME DOWN and UP buttons will adjust the volume in the selected zone. MUTE will mute that zone.

ZONE LOCK OFF: In this mode you must first push the button corresponding to the ZONE you want to control, then pushing the VOLUME DOWN and UP buttons will adjust the volume in the selected zone. MUTE will mute that zone.

CLEAR to terminate a partially completed instruction.

ADDITIONAL FUNCTION BUTTONS COMMANDS

The Function button may be used with other buttons to change certain settings. Hold the Function button down and push:

MUTE to set Time and Date.

POWER to toggle the On-Screen Display ON or OFF.

CLEAR to bring up the two HELP screens on the On-Screen Display.

KNOX VIDEO

HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

3.4 CONTROL VIA THE INFRARED REMOTE

The infrared remote controller is designed to be used with the On-Screen Display, though most functions may also be completed with the help of the front panel display. In PAL operation the On-Screen Display will be in PAL if there is a valid 625-line PAL output on Zone 1, but in the absence of a valid Zone 1 output, the blue screen will be 525-line NTSC.

NOTE: Depending on the particular remote control being used, some optional functions may or may not be programmed into the remote. When a certain function is optional it is so indicated in the description below.

3.4.1 BUTTON ASSIGNMENTS

Generally, the IR buttons follow a logical order:

<u>Button</u>	<u>Function</u>
PWR	Power ON/OFF
1-8	Zone or Source numbers
Vol+	Volume up
Vol-	Volume down
Mute	Mute/unMute
Channel up	Video Only
Channel down	Audio Only
Last	IR Only
0	Function button
9	Help Screens (used with Function button)

3.4.2 POWER

The power button has three levels of operation: ON, DISPLAY OFF, and OFF. However, the crosspoint connections are held even in the OFF condition as long as power is being received by the HD-8. If power is lost, the previous crosspoint conditions will return after power is restored. Generally it is best to have the displays ON while controlling the HD-8.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

3.4.3 ROUTING VIDEO and AUDIO

ZONE LOCK OFF: In this mode the remote can be used to make routing changes in any and all zones. First push a number from one to eight indicating the Zone you wish to control, then push a number from one to eight indicating the Source you wish to select. To turn the audio and video in a zone OFF, push the Function button, then 8, then the zone you wish to turn OFF. To turn video only off push Function, then 7, then the zone, or to turn audio only off push Function, then 6, then the zone. To select No Source, use the Function button (or the zero) and then push 8.

To select audio or video separately, first select the zone you wish to control, then push the V key (or CHANNEL UP), or A button (or CHANNEL DOWN), then the source number.

ZONE LOCK ON: In this mode the remote is used to make routing changes to the locked zone only. Push a single button from 1 to 8 to select the source for the locked zone. To turn the audio and video in the locked zone OFF, push Function, then 8. To turn video only off, push Function, then 7, or to turn audio only off, push Function, then 6.

To select audio or video separately, first push the V key (or CHANNEL UP), or A button (or CHANNEL DOWN), then the source number.

ALL ZONES: To select an audio and video source to route to all zones, push the Function button, then the 2, then a source number from 1 to 8. To select only a video source to route to all zones, push the Function button, then the 3, then a source number from 1 to 8. To select only an audio source to route to all zones, push the Function button, then the 4, then a source number from 1 to 8.

3.4.4 ROUTING IR

ZONE LOCK OFF: In this mode the remote can be used to make IR changes in any and all zones. First push a number from one to eight indicating the IR output you wish to control, then push the IR key (or LAST), then push a number from one to eight indicating the IR input you wish to select.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

ZONE LOCK ON: In this mode the remote can be used to make IR routing changes to the IR output corresponding to the locked zone number only. Push the IR button (or LAST), then a number from 1 to 8 to select the IR input for the IR output corresponding to the locked zone number.

ALL ZONES: To select an IR input to route to all IR outputs, push the Function button, then the 2, then a source to route to all zones.

3.4.5 VOLUME and MUTE

ZONE LOCK OFF: In this mode the audio volume at any zone may be controlled. First push a number from one to eight indicating the Zone you wish to control the audio in, then push the Volume Up or Volume Down button. Push the zone number again and the MUTE button to Mute the zone; push the MUTE button again to unMute the zone. If you adjust the volume up in a muted zone the zone will automatically be unMuted, but adjusting volume down in a muted zone will keep it muted.

ZONE LOCK ON: In this mode the audio volume in the locked zone may be controlled. Push the Volume Up or Volume Down button to adjust the volume. Push the MUTE button to Mute the locked zone; push the MUTE button again to unMute it. If you adjust the volume up in a muted zone the zone will automatically be unMuted, but adjusting volume down in a muted zone will keep it muted.

3.4.6 THE FUNCTION BUTTON

The Function button has several features:

FUNCTION 1: Locks or unlocks the zone. Push Function, then 1, then a zone number to lock front panel and IR remote control to that zone. Push Function, then 1 to unlock the zone and control all zones from the front panel and IR remote.

FUNCTION 2: Selects ALL ZONE control for both video and audio, and IR. Push Function, then 2, then a number from 1 to 8 to select a source of audio, video, and IR to go to all zones.

KNOX VIDEO

HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

FUNCTION 3: Selects ALL ZONE control for video only. Push Function, then 2, then a number from 1 to 8 to select a source or video to go to all zones.

FUNCTION 4: Selects ALL ZONE control for audio only. Push Function, then 2, then a number from 1 to 8 to select a source of audio to go to all zones.

FUNCTION 5: Reserved.

FUNCTION 6: Turns audio in a zone OFF. Push Function, then 6, then a zone number to turn audio in that zone OFF. In Zone Lock Mode, the zone number is not required.

FUNCTION 7: Turns video in a zone OFF. Push Function, then 7, then a zone number to turn video in that zone OFF. In Zone Lock Mode, the zone number is not required.

FUNCTION 8: Turns audio and video in a zone OFF. Push Function, then 8, then a zone number to turn audio and video in that zone OFF. In Zone Lock Mode, the zone number is not required.

FUNCTION 9: This is the On-Screen Help display. Push Function, then 9, to see the first Help page on the On-Screen Display. Push Function, then 9 again within ten seconds to see the second Help page.

KNOX VIDEO

HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

3.5 CONTROL VIA THE RS232 PORT

The RS232 data port allows complete SETUP and CONTROL of the HD-8 through a simple alphanumeric protocol or using the Knox HD-8 Windows Setup and Control Program. The RS232 port will accept inputs from a terminal, computer, or other software-driven control device.

See Section 2.7, for RS232 connection details.

3.5.1 USING THE WINDOWS SETUP AND CONTROL PROGRAM

This program is intended for use by the installer only. Start the KNOX.EXE program by double-clicking on the name in Windows Explorer. You must select the correct COM port before attempting to communicate with the HD-8. Click on SET COMM PORT button in the lower center, or pull down the Serial Port menu item; select an available COM port.

The program starts up with the default names and banner lines; to read the installed custom names and banner lines into the program push the READ button on the far right; check the AUTO READ box to have the program read the names and banner lines every time the program is started. To have the previously programmed names of zones and sources appear on the windows page, click on the small Auto Read Data box above the READ button.

See Section 2.8, Setup, to set the time, date, and custom names of sources and destinations and other parameters using the Windows Setup and Control Program.

ROUTING VIDEO, AUDIO, AND IR

Reading in the Current Routing Pattern: The Knox HD-8 Windows Setup and Control Program can be used to change the selected Video, Audio, and IR sources to any Zone. When the program is first started, however, it does not know what the actual routing pattern in the HD-8 is, so it is important to push the READ button in the lower right corner after starting the program. After READ is pressed, the correct Source of Video, Audio, and IR (by either Custom Name or Default Name) will appear in the windows opposite each Zone. Once the program has been updated with the current pattern of sources to destinations, the button will change to read WRITE.

Changing the Current Routing Pattern: To change the Source of Video, Audio, or IR to any zone, click on the arrow next to that zone's Video, Audio, or IR, and select a new choice. The new choice will be sent to the HD-8 immediately. To lock video and audio to the same source, click on the Track button between the video and audio selections.

KNOX VIDEO

HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

ADJUSTING THE VOLUME AND MUTING

The Audio volume for each zone can be adjusted from the Program by clicking on the Up or Down arrows next to VOL opposite the desired zone. To Mute the zone, click on the Mute box to the right. When Mute is ON, pushing the Volume Down arrow does not unMute the audio. Pushing the Volume Up arrow does unMute the audio.

SETTING THE INPUT PADS

The input level for each source of audio can be trimmed +/-3db by clicking on the Up or Down arrows below INPUT PAD on the far right of the program screen. CAUTION: this should only be used at Initial Setup to balance the various audio sources-changing these values after the fact will cause an imbalance among audio sources.

3.5.2 USING AN RS232 TERMINAL DEVICE

A simple protocol allows all crosspoint and setup commands to be sent through the RS232 port. The RS232 port will accept inputs from a terminal, computer, or other software-driven control device. Set the RS232 driver for 9600 baud, 8 bits, no parity, and one or two stop bits, flow control OFF. The COM port of a PC-compatible may be connected to the 9-pin female RS232 connector with a standard serial cable.

There are two types of commands: letter commands which start with B,V,A,I or M and sync commands which start with the curly left bracket symbol, {. The HD-8 will echo all ASCII commands and acknowledge valid commands with the word DONE and all valid { commands with a }~. Invalid commands will result in the message ERROR.

ROUTING AUDIO AND VIDEO

To route both audio and video from the same source, send a four-byte command in the form:

Bxy(ENTER),

where x specifies the zone to be routed to, 1-8, and where y specifies the source of video and audio, 0-8 (use 0 for video and audio OFF).

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

Bxyz(ENTER),

where x specifies the zone to be routed to, 1-8, where y specifies the source of video, 0-8, and where z specifies the source of audio, 0-8 (use 0 for video or audio OFF).

KNOX VIDEO

HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

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

Vxy(ENTER),

where x specifies the zone to be routed to, 1-8, and where y specifies the source of video, 0-8 (use 0 for video OFF).

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

Axy(ENTER),

where x specifies the zone to be routed to, 1-8, and where y specifies the source of audio, 0-8 (use 0 for audio OFF).

ROUTING IR

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

Ixy(ENTER),

where x specifies the zone to be routed to, 1-8, and where y specifies the source of IR, 0-8 (use 0 for IR OFF).

SETTING VOLUME AND MUTE

To mute or unmute a zone, send the four-byte command:

Mx1 to mute the zone, or
Mx0 to unmute the zone

where x is the zone number.

To increment or decrement the input pad, send a four-byte command in the form:

{PxP(ENTER) to increment by one count, or
{PxM(ENTER) to decrement by one count

where x is the zone number.

To increment or decrement the volume, send a four-byte command in the form:

{VxP(ENTER) to increment by one count, or
{VxM(ENTER) to decrement by one count

where x is the zone.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

To set the volume to a specific level, send a five-byte command in the form:

{VxVy(ENTER)}

where x is the zone and y is a character from the following table:

CHAR LEVEL	CHAR LEVEL	CHAR LEVEL	CHAR LEVEL
0 100%	? 75	N 50] 25
1 98	@ 73	O 48	^ 23
2 96	A 71	P 46	~ 21
3 95	B 70	Q 45	` 20
4 93	C 68	R 43	a 18
5 91	D 66	S 41	b 16
6 90	E 65	T 40	c 15
7 88	F 63	U 38	d 13
8 86	G 61	V 36	e 11
9 85	H 60	W 35	f 10
: 83	I 58	X 33	g 8
; 81	J 56	Y 31	h 6
< 80	K 55	Z 30	i 5
= 78	L 53	[28	j 3
> 76	M 51	\ 26	k 1
			l 0

To save all the current parameters as the power-up parameters, send

{Z(ENTER)}

To choose Custom Names, send {N1}, to choose Default Names send {N0}.

To get the status of any zone enter the command:

{Sxnn,

where x is the zone number, and nn is:

V for video	TV for video custom names
A for audio	TA for audio custom names
I for IR	TI for IR custom names
P for input pad	U for volume
TO for zone custom names	M for mut

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

3.6 SUMMARY OF FRONT PANEL OPERATIONS

The following is a summary of the button strokes needed to perform the listed operations.

Zone = Button 1 - Button 8

Source = Button 1 - Button 8

<u>Operation</u>	<u>Button Sequence</u>
Abort Command:	Clear
Power:	Power 1.) First Button Press, Display OFF. 2.) Second Button Press, Display and Lights OFF. 3.) Third Button Press, Back to Normal ON state.
Function:	Function 1.) First Button Press, Function. 2.) Second Button Press, Back to Normal ON state.
Set Time/Date:	Function - Mute 1.) VOL+, Move Forward in Time/Date. 2.) VOL-, Move Backward in Time/Date. 3.) MUTE, Increase number in Time/Date. 4.) MUTE, When on QUIT or EXIT. QUIT - Do NOT update Time/Date. EXIT - Update to new Time/Date. 5.) CLR, Quit Time/Date do NOT update Time/Date.
Display Brightness Increase:	Function - Volume Plus
Display Brightness Decrease:	Function - Volume Minus

(summary continues on next page)

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

<u>Operation</u>	<u>Button Sequence</u>
HELP Screens:	Function - Clear 1.) First F-CLR Press, First Help Screen. 2.) Second F-CLR Press, Second Help Screen. 3.) Third F-CLR Press, Back to Normal ON state.
On-Screen ON/OFF:	Function - Video Toggle between On-Screen Display ON and OFF.
On-Screen Names/ Numbers:	Function - Audio Toggle between On-Screen Display Names and Numbers.
Display ON/OFF:	Function - Power Toggle between Display ON and OFF.

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

ZONE NOT LOCKED

<u>Operation</u>	<u>Button Sequence</u>	<u>Alternate Button Sequence</u>
Routing:	Zone - Source	
Video Routing:	Zone - Video - Source	Video - Zone - Source
Audio Routing:	Zone - Audio - Source	Audio - Zone - Source
IR Routing:	Zone - IR - Source	IR - Zone - Source
Mute Audio:	Zone - Mute	Mute - Zone
Volume Increase:	Zone - Volume Plus	Volume Plus - Zone
Volume Decrease:	Zone - Volume Minus	Volume Minus - Zone
Lock Zone:	Function - 1 - Zone	Zone - Function - 1
All Zone Control:	Function - 2 - Source Set Video, Audio and IR for all Zones	Source - Function - 2
Video Zone Control:	Function - 3 - Source Set Video for all Zones	Source - Function - 3
Audio Zone Control:	Function - 4 - Source Set Audio for all Zones	Source - Function - 4
Zero Audio:	Function - 6 - Zone Set Zone Audio to ZERO Source	Zone - Function - 6
Zero Video:	Function - 7 - Zone Set Zone Video to ZERO Source	Zone - Function - 7
Zero Source:	Function 8 - Zone Set Zone to ZERO Source	Zone - Function - 8

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

ZONELOCKED

<u>Operation</u>	<u>Button Sequence</u>
Routing:	Source
Vicoe Routing:	Vicoe - Source
Audio Routing:	Audio - Source
IR Routing:	IR - Source
Mute Audio:	Mute
Volume Increase:	Volume Plus
Volume Decrease:	Volume Minus
Unlock Zone:	Function - 1
All Zone Control:	Function - 2 - Source Set Video, Audio and IR for all Zones
Video Zone Control:	Function - 3 - Source Set Video for all Zones
Audio Zone Control:	Function - 4 - Source Set Audio for all Zones
Zero Audio:	Function - 6 Set Zone Audio to ZERO Source
Zero Video:	Function - 7 Set Zone Video to ZERO Source
Zero Source:	Function - 8 Set Zone to ZERO Source

KNOX VIDEO HD-8 AUDIO/VIDEO DISTRIBUTION SYSTEM

SECTION 4. MAINTENANCE

<p>Note: Maintenance of the HD-8 should be performed by qualified service people only.</p>

4.1 INTRODUCTION

There is no routine maintenance for the HD-8.

4.2 JUMPER OPTIONS

Three two-pin wire jumpers, WJ1, WJ2, and WJ3 are located on the center printed circuit board, accessible by removing the top cover of the unit.

WJ1 is used to invoke the Watchdog Timer. WJ1 should be OFF.

WJ2 and WJ3 are not assigned at this time.

A three-pin wire jumper, WJ4, is located on the rear printed circuit board, accessible by removing the top cover of the unit.

WJ4 is used to select the driving voltage on the RING of the IR input jacks for remote IR sensors. It is usually connecting pins 1 and 2 for regulated +5v drive; it may be moved to pins 2 and 3 for unregulated nominal +7 volt drive.