



MANUAL PART NUMBER: 400-0411-001

AP445-103

**SEAMLESS SWITCHER, 9-IN 3-OUT
FRONT PANEL, IR AND RS-232 CONTROL
USER'S GUIDE**

ALTINEX



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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **AP445-103**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **AP445-103** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

- Unauthorized personnel shall not open the unit due to high-voltage components inside.
- Qualified ALTINEX service personnel, or authorized representatives must perform all service.

1.2 GUIDELINES FOR RACK-MOUNTING

- Maximum operating temperature is 35°C.
- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.
- Connect the unit to a properly rated supply circuit.
- Reliable Earth Grounding of equipment should be maintained.

1.3 INSTALLATION

- For best results, place the **AP445-103** on a flat, level surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **AP445-103** in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **AP445-103** carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **AP445-103**.

- To turn off the main power, remove the adapter from the power outlet. The power outlet should be installed as near to the equipment as possible and be easily accessible.
- Do not pull the adapter or any cable that is attached to the **AP445-103**.
- If the **AP445-103** is not used for an extended period, disconnect it from the power outlet.

1.4 CLEANING

- Unplug the **AP445-103** adapter before cleaning. Clean surfaces with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

1.5 FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A, digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR AP445-103

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AP445-103 9-IN 3-OUT SEAMLESS SWITCHER WITH AUDIO

The **AP445-103** is a true, high resolution, seamless switcher. Content is switched seamlessly without freeze framing any images. Any of the 9 video inputs may be controlled by the image processor. The image processor converts scales, scan reduces, converts standards and transcodes virtually any video input signal to any video output signal. This is possible since the **AP445-103** is also a scaler, scan reducer, standards converter, video transcoder, aspect ratio converter and more.

Other features include picture in picture, genlock, logo insertion, aspect ratio conversion and picture adjustments specific to individual formats. The **AP445-103** also has 10 balanced audio inputs and two balanced outputs providing a complete, all in one, audio-video solution. In order to control the **AP445-103**, simply connect it via RS-232 to a PC, control system, or daisy-chain it to a Multi-Tasker™. All commands are Multi-Tasker™ compatible.

The compact design and flexibility of the **AP445-103** make it the ideal tool for AV systems of any size or as a stand alone system. The **AP445-103** converts images to match almost any presentation device including LCD projectors, CRT monitors, projection TVs, plasma displays and HDTV systems.

VIDEO

The nine video inputs and three video outputs comprise the following formats: S-Video, Component Video, Composite Video, HDTV and computer RGBHV resolutions ranging from 640x480 to 1920x1440. The **AP445-103** is capable of auto-detecting and processing all common video standards without the need for user intervention.

The picture in picture feature allows the placement of any type of video signal to be placed onto any other video format. Zoom/shrink with pan features are available and can be used during picture in picture mode. The **AP445-103** provides the capacity of seamless switching with fades.

The **AP445-103** Logo Insertion ability allows a logo image to be displayed on any output. A standard Altinex logo is provided, along with some test patterns. Custom logos may be provided to Altinex at the time of purchase. The desired logos will be factory programmed into the **AP445-103**'s memory. One logo may be selected as an input source through front panel control or all available logos may be selected using RS-232 control.

In addition to all the special features, the **AP445-103** also has basic picture controls and adjustments. On each video input, there are adjustments for color, hue, brightness and contrast. Each PC input signal allows adjustments of red, green, and blue contrast Levels as well as RGB video signal level. Each setting is stored in memory on the **AP445-103**. The settings are unique to the output and each output type can store its own individualized settings.

AUDIO

The audio inputs are balanced inputs, but may also be wired to receive unbalanced audio signals. The two audio outputs are both balanced outputs for the best performance.

The gain control of the output audio signal is available for the main output. Preview Audio output will always provide unity gain and the system is designed to have audio follow video automatically.

RS-232 CONTROL

Altinex includes a robust command selection that provides full control of the **AP445-103** over the RS-232 port. The commands are easy to follow and fully documented.

Commands for common control setups and special feature controls may be saved in standard text files. These text files may be used to send a series of commands to the **AP445-103** quickly and easily using standard RS-232 communication software, such as HyperTerminal or other control systems.

HelpInside offers predefined commands that can be sent from any PC and do not require any programming knowledge.

SPECIAL APPLICATION

TECHNICAL SPECIFICATIONS 3

FEATURES/ DESCRIPTION	AP445-103
GENERAL	
Inputs – Audio	
Balanced or Unbalanced	5-pin TB (10)
Inputs – Video	
PC Input	15-pin HD female (3)
Composite Video	BNC female (3)
S-Video	4-pin Mini DIN (3)
RS-232	9-pin HD female (1)
AC IN	IEC C14 (1)
Outputs	
PC Video Preview, Main & Main Loop	15-pin HD female (3)
Video Preview & Main	BNC female (2)
S-Video Main	4-pin Mini DIN (1)
Video Support	
Resolutions - Computer	640x480 to 1920x1440
Resolutions - HDTV	480p, 576p, 720p, 1080i
Interlace	Progressive and interlaced
Television Standards	NTSC, PAL, SECAM

Table 1. AP445-103 General

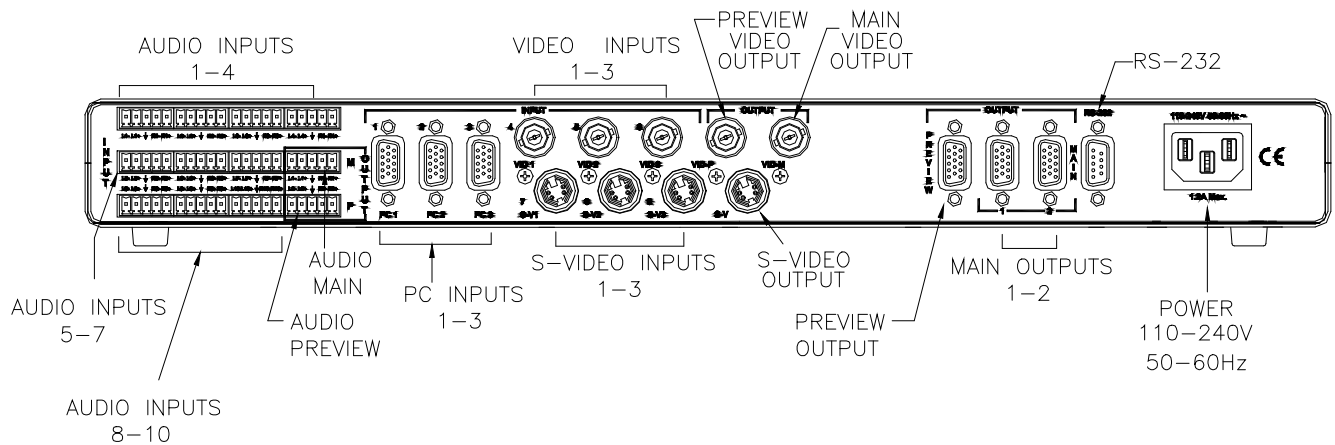
MECHANICAL	AP445-103
Material	0.08" Al
Finish	ALTINEX Black
Height (inches)	1.75in (45mm)
Height with feet (inches)	2.0in (51mm)
Depth (inches)	9.00in (229mm)
Weight (pounds)	5.2lb (2.4kg)
Ship Weight (pounds)	7.2lbs (3.3kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. AP445-103 Mechanical

ELECTRICAL	AP445-103
INPUTS	
Input Audio Signal	
Balanced/Unbal. Vmax	0dBu
Impedance	10K Ohms
Input PC Video Signal	
Analog Signal Level	1.5Vp-p max
Impedance	75 Ohms
Input PC Sync Signal	
Level	5Vp-p max
Impedance	10K Ohms
Input C-Video Signal	
Analog Signal Level	1.5Vp-p max
Impedance	75 Ohms
Input S-Video Signal	
Analog Signal Level	1.5Vp-p max
Impedance	75 Ohms
OUTPUTS	
Output Audio Signal	
Balanced/Unbal	-90dB to 0dB
Impedance	50 Ohms
Output PC Video Signal	
Analog Signal Level	0.7Vp-p adjustable
Impedance	75 Ohms
Output PC Sync Signals	
Horizontal, Vertical Sync	5Vp-p
Impedance	220 Ohms
Output C-Video Signal	
Analog Signal Level	0.770Vp-p
Impedance	75 Ohms
Output S-Video Signal	
Analog Signal Level – Y	1.0Vp-p(Y)
Analog Signal Level – C	0.3Vp-p
Impedance	75 Ohms
Power	
External AC Power	90-264VAC, 47-63Hz, 1.2A
Power Consumption	144 watts

Table 3. AP445-103 Electrical

REAR VIEW



FRONT VIEW

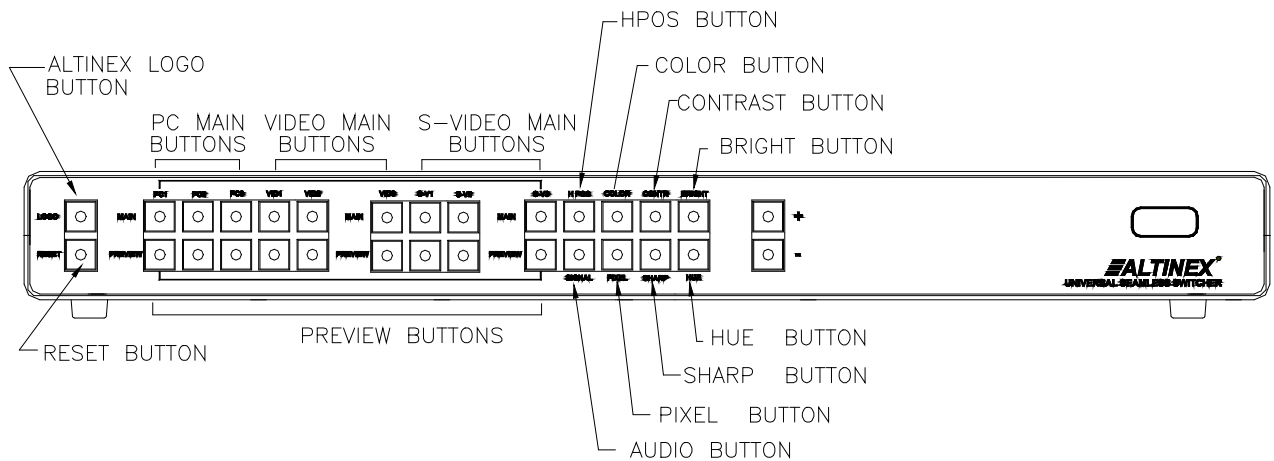
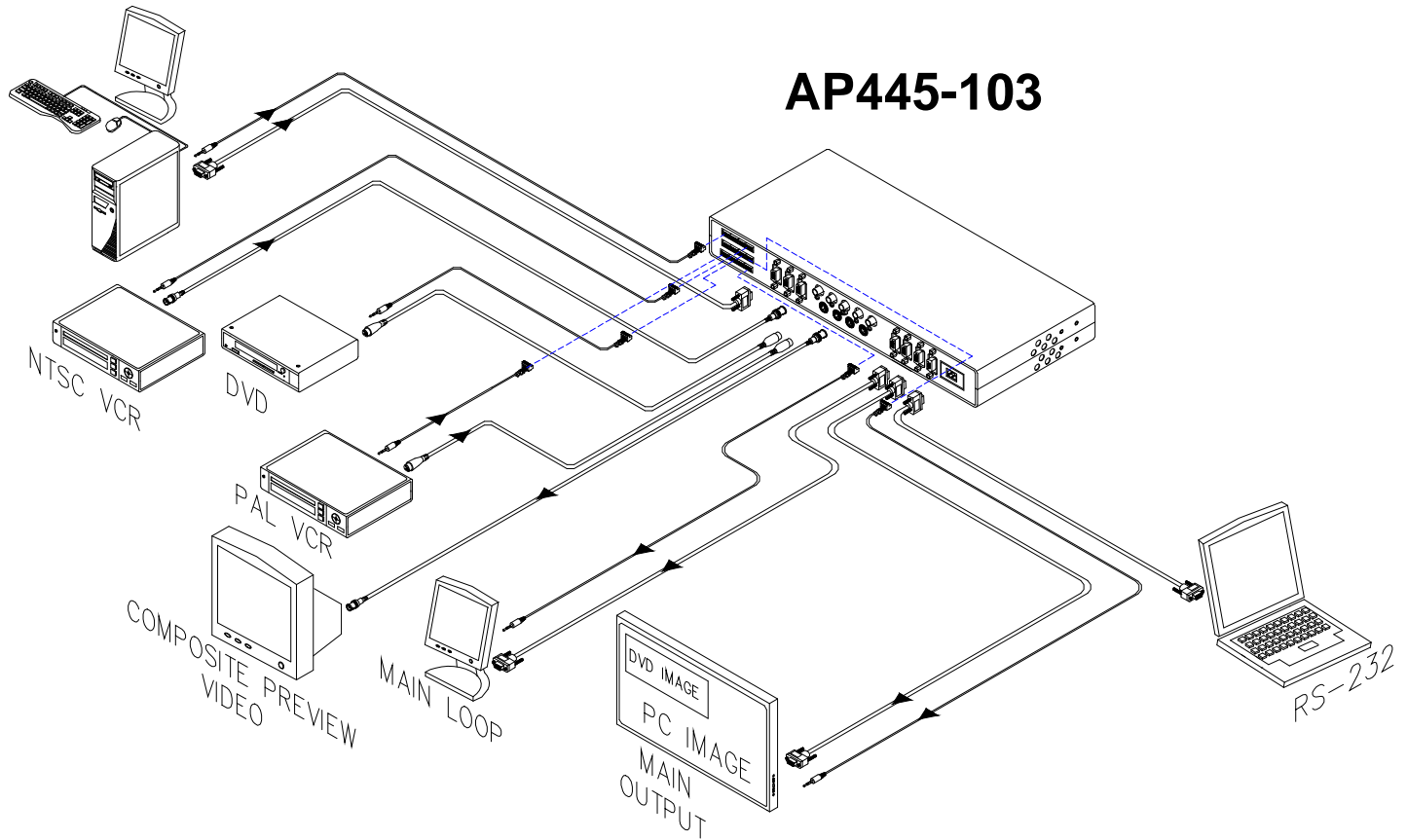


DIAGRAM 1: TYPICAL SETUP 1



SPECIAL APPLICATION

DIAGRAM 2: TYPICAL SETUP 2

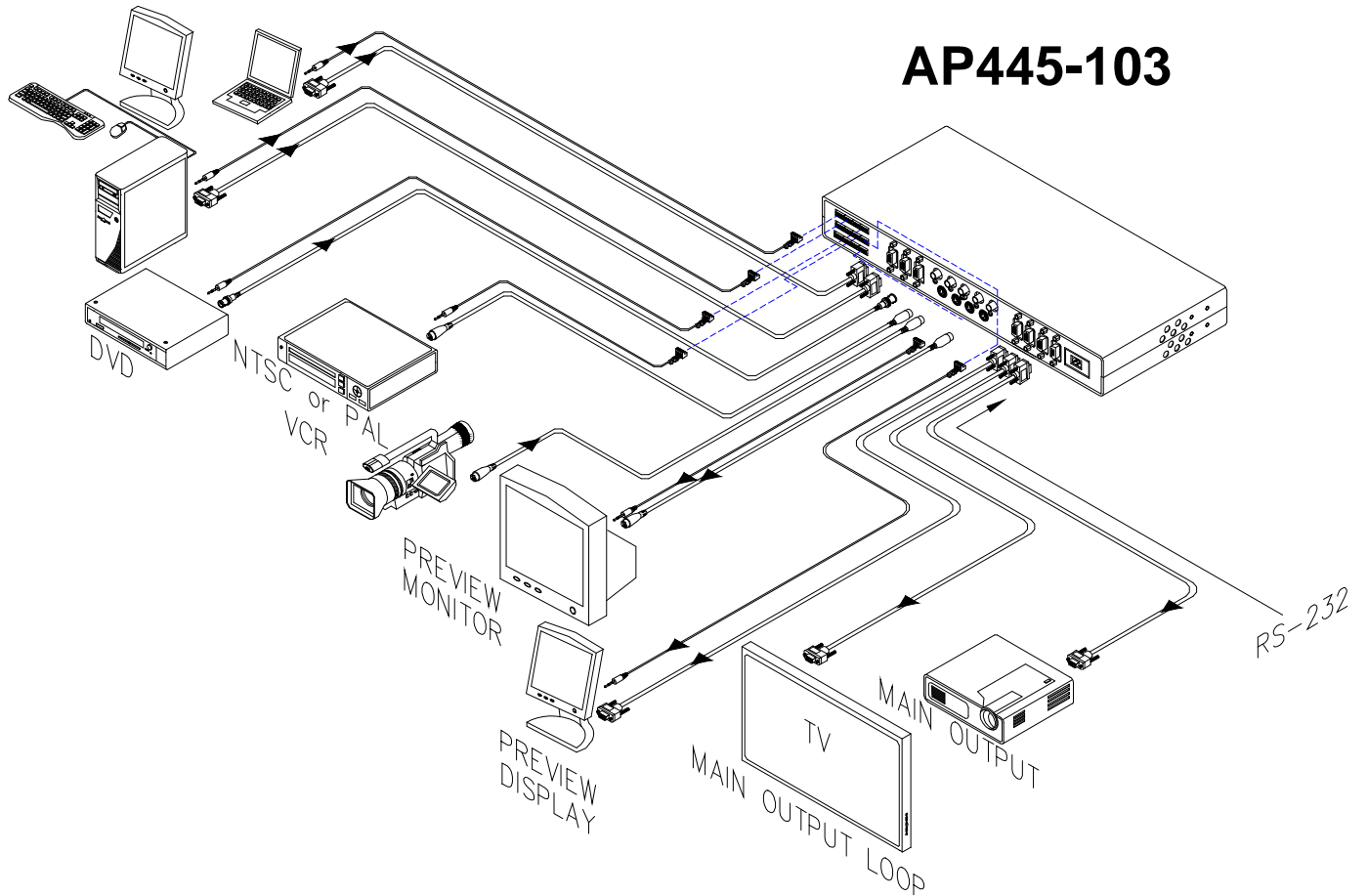
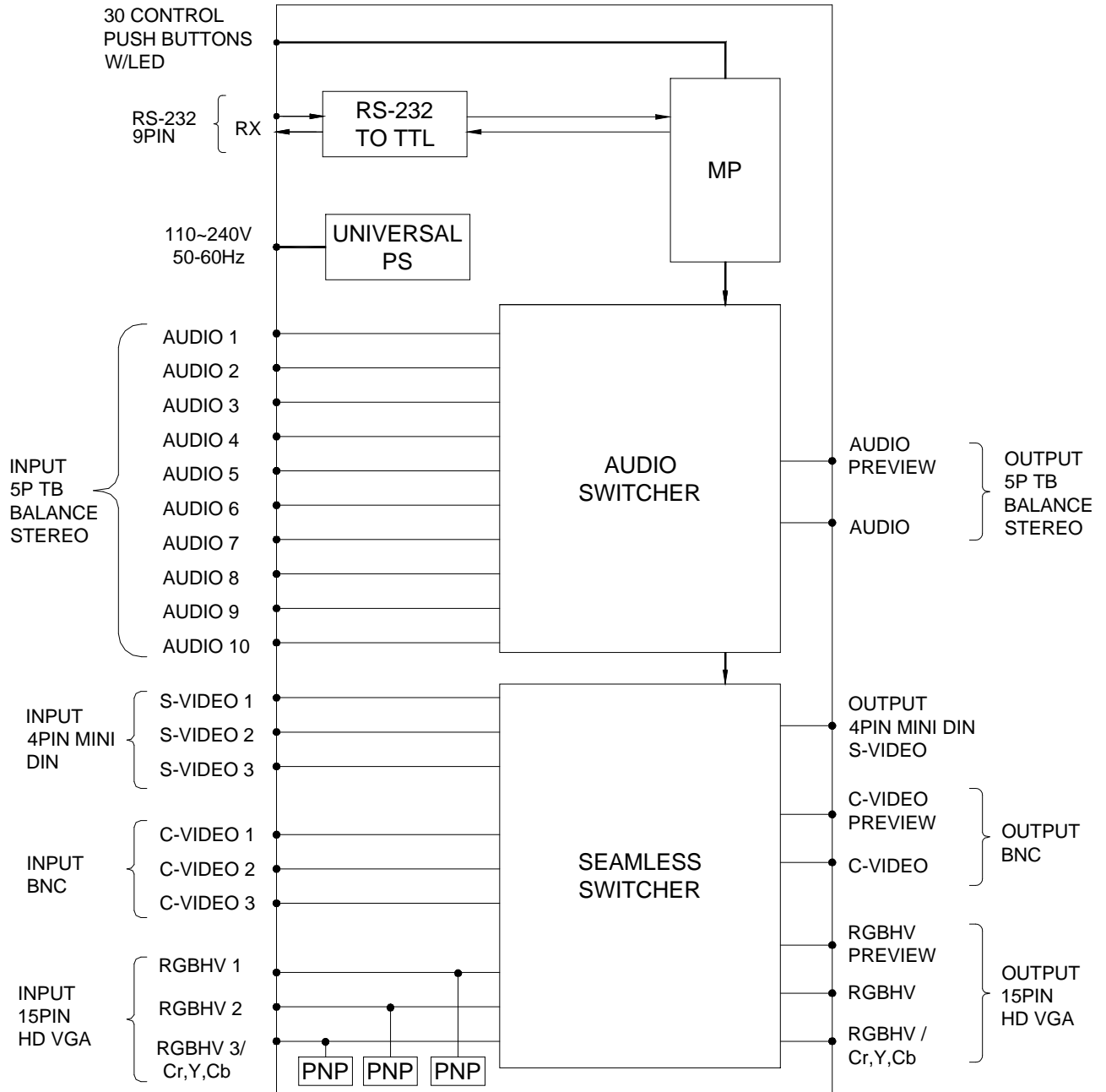


DIAGRAM 3: INTERNAL VIEW



INSTALLING YOUR AP445-103 6

- Step 1.** Determine which input sources and display devices are to be used with the **AP445-103**.
- Step 2.** Connect the input and output cables to the **AP445-103**. Refer to the Description drawing on page 5 for connector placement.
- Step 3.** Connect the power cord between the **AP445-103** and a working AC outlet.
- Step 4.** Verify the front panel LED's illuminate with the current settings for input and output signals.
- Step 5.** The unit is now operational and may be controlled from the front panel or using RS-232 communication. See the OPEATION section of this manual for details. The following are general operating notes that apply to both RS-232 and manual control.

GENERAL OPERATING NOTES

INPUTS

The nine video inputs may be selected as Main or Preview inputs. The inputs are identified and numbered on the front and rear of the unit as follows:

IN#	Video IN	Audio IN
1.	PC1	Input 1
2.	PC2	Input 2
3.	PC3	Input 3
4.	VID 1	Input 4
5.	VID 2	Input 5
6.	VID 3	Input 6
7.	S-V1	Input 7
8.	S-V2	Input 8
9.	S-V3	Input 9

OUTPUTS

There are three main output connectors available. There is one for Video, one for S-Video and one for RGB/RGBS/RGsB/YCbCr. The 15-pin HD output connector also has a loop output connector, Main 2. These are the processed image signals; therefore, only one may be active at any given time.

PREVIEW INPUTS/OUTPUTS

A Preview Input allows the user to see what signal is on an input connector without making it the Main Output. The active Preview Input may be viewed only on its equivalent Preview Output connector. That is, a Video signal may only be previewed on the Preview Video output connector, not the PC Preview output.

C-VIDEO & S-VIDEO

The Video and S-Video outputs are enabled together and will always have the same output image. Since the outputs are the same, the Video Preview output is used for both Video and S-Video previewing.

AUDIO

Each video input has a corresponding audio input. Audio inputs one through nine are enabled when their equivalent video inputs are enable as the Main Output. For example, when VID1 (input 4) is select as the video source for the Main Output, audio Input 4 will be switched to the audio Main Audio Output.

SWITCHING

An image on the main video output may remain on even after switching to an input with no image, leaving the last image output on the display. The [DEGL] and [SWFT] commands may be used to eliminate this effect. In order to do this, set the fade time to a value greater than zero and turn the de-glitch feature on.

OPERATION

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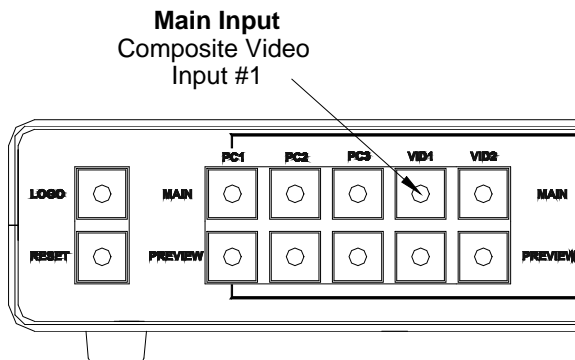
7.1 FRONT PANEL OPERATION

Front panel control is available using push buttons with LED indicators. The controls allow the selection of reset, logo output, Main and Preview inputs, picture adjustments and audio gain control. Refer to the Description drawing on page 5 or the unit itself for the location of the control buttons.

7.1.1 SELECTING THE MAIN INPUT

The control buttons for the Main Inputs are on the top row of the panel. Selecting the Main Input will make that image available on the Main Output. The Main Output must first be set using RS-232 control and the [OUTM] command or the default may be used.

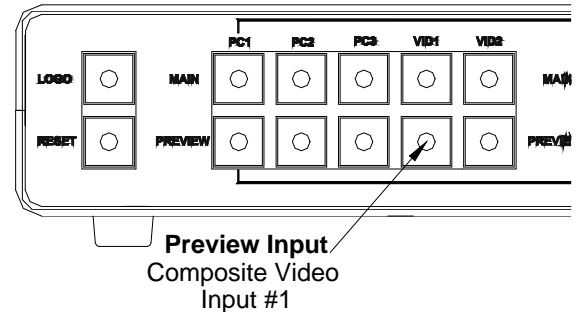
In order to make the input signal on Video Input #1 available on the Main Output, press the MAIN, VID1 button. The input will be selected and its settings recalled from memory. At that time, the LED will turn on.



7.1.2 SELECTING THE PREVIEW INPUT

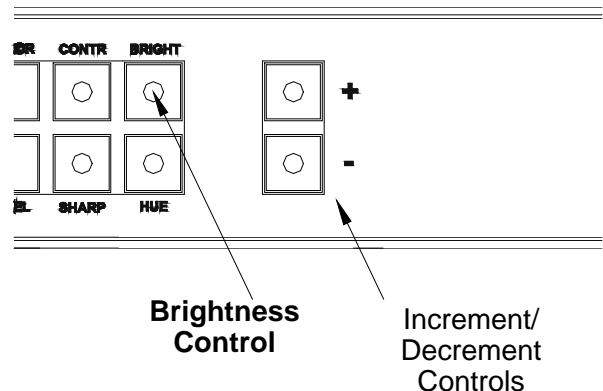
The control buttons for the Preview Inputs are on the bottom row of the control panel. Selecting the Preview Input will make that image available on the Preview Output of the same signal type.

In order to make the input signal on Video Input #1 available on the Preview Output VID-P, press the PREVIEW, VID1 button. The Video Input #1 will now be output on the VID-P connector and the LED will turn on.



7.1.3 MAKING PICTURE ADJUSTMENTS

There are controls available for the following picture properties: color, contrast, brightness, sharpness, hue and horizontal position control. Pressing one of these buttons will make that property the active control. Then, use the + and - buttons to adjust the image.



7.1.4 ADJUSTING THE VOLUME

The audio gain is controlled just like the video picture adjustments. First, press the AUDIO button on the panel. Then, use the plus and minus buttons to adjust the volume.

7.1.5 OUTPUT THE PRELOADED LOGO

The preloaded logo may be displayed on the Main Output only. Since the logo is stored in memory and there is no physical input, there is no preview input available.

Press the LOGO button on the front panel. The logo image will be displayed on the Main Output and the LED on the button will illuminate.

ADJUST PIXEL CLOCK (RGB INPUTS)

In some cases, it may be necessary to adjust the pixel phase clock. This adjustment allows the analog to digital converter to more accurately sync with the pixel timing and make the output image cleaner.

In order to adjust the pixel clock, press the PIXEL button. The LED will illuminate when the control is active. Then, use the plus and minus keys to adjust the image for the best quality.

7.2 RS-232 CONTROL

The **AP445-103** has many advanced remote control capabilities, which are accessible through standard RS-232 communication. Actual control may be accomplished through a computer control system or any other device capable of sending RS-232 commands.

The RS-232 settings in the communication software should be set as follows:

Speed 9600 Baud
Data Bits 8
Stop Bits 1
Flow Control None
Parity None

7.2.1 RS-232 INTERFACE

The RS-232 commands, for the **AP445-103** are in a simple ASCII character format.

1. Square brackets “[]” are part of the command.
2. Use uppercase letters for all commands.

The default unit ID is zero, but may be set to a value from 0 to 99. In single unit operation, commands may be sent without the unit identifier. Unit ID 0 should be used for single unit operation.

If multiple **AP445-103**'s are connected to the same communication port, the units may be controlled two ways. In order to control all the units the same, commands may be sent without the unit identifier. Commands sent without the unit identifier will be executed by all **AP445-103**'s.

Individual control is accomplished by first assigning each unit a unique ID number. Then each unit may be controlled individually by including the unit identifier at the end of each command string.

Example:

[VER]: Executed by all AP445-103's connected.
[VERC0]: For Unit ID 0 Only
[VERC1]: For Unit ID 1 Only
etc...

7.3 DESCRIPTION OF COMMANDS

In this section, each command description includes the command format and a status line description. The command format describes the proper syntax necessary for using the command. The status line description is used to identify the command setting in the unit's status feedback.

In the status feedback, the status line will be followed by the current value of that property.

1. [SIDn]

This command sets the ID number of the unit. The default unit ID is zero.

Command Format: [SIDn]

n = Unit ID (n = # from 0 to 99)

Example:

Send the command [SID1] to the system. The unit ID is now one.

2. [RSI]

This command resets the unit ID to the default value of zero.

Command Format: [RSI]

Example:

Send the command [RSI] to the system and the new ID will be zero.

3. [RSN]

This command reads and then display of the ID number of the unit.

Command Format: [RSN]

Example:

The **AP445-103** was set to an ID value of 3. Send the command [RSN] and the system will return the following feedback:

[3]

4. [VER]

This command displays the firmware version and model number of the **AP445-103**.

Command Format: [VER]

Example:

Send the command [VER] and receive the following feedback:

AP445-103 690-0208-001

AP445-103 = Model Number

690-0208-001 = Firmware Version

5. [STAT]

This command displays the status of the **AP445-103**.

Command Format: [STAT]

Example:

Send the command [STAT] and receive feedback similar to the following for an RGBHV type input signal:

Lock Source: IN0 (PC1)

Lock Method: OFF

Main Output: RGBHV

Main Input: IN1 (PC2)

Preview Input: IN0 (PC1)

Red Level: 112

Green Level: 112

Blue Level: 112

Pixel Clock Adjustment: 15

Input Standard: RGBHV

Audio Gain Level: 16

Input Ratio: 4:3

Output Ratio: 4:3

Output Resolution: 4 640 x 400 85Hz

Top Corner Position: 0

Left Corner Position: 0

Bottom Corner Position: 0

Right Corner Position: 0

De-interlace Method: Auto

Zoom Scale: X1

Shrink scale: X1

Output Freeze: OFF

Horizontal Position: 0

Vertical Position: 0

De-glitch: ON

Flicker Reduction: Low

Smoothing: OFF

Output Image Flip: OFF

Luma Delay: 4

Cross Color Reduction: OFF

Fading Time: 5

Y Key Minimum Value: 0

Y Key Maximum Value: 124

U Key Minimum Value: 0

U Key Maximum Value: 255

V Key Minimum Value: 0

V Key Maximum Value: 255

Lock Pixel Offset: +00

Lock Line Offset: +00

6. [STATS]

This command displays the status of the **AP445-103** and saves the settings in memory.

Command Format: [STATS]

Example:

Send the command [STATS] and receive feedback as in the previous example, but in this case the settings will be saved and recalled when the same input is selected.

7. [Cn]

This command displays the status of the **AP445-103** with a specified unit ID.

Command Format: [Cn]

n = Unit ID (n = # from 0 to 99)

Example:

The **AP445-103** was previously defined as ID 3 using the [SID] command. Now, send the command [C3] to receive the status of the unit.

8. [CnS]

This command displays the status of the **AP445-103** with a specified unit ID and saves the input settings.

Command Format: [CnS]

n = Unit ID (n = # from 0 to 99)

S = Save

Example:

The **AP445-103** was previously defined as ID 3 using the [SID] command. Now, send the command [C3S] to receive the status of the unit and save its settings.

9. [CLR]

This command performs a reset of the unit and retrieves the last saved settings. Allow a few seconds for all the changes to be processed and for settings to be recalled.

Command Format: [CLR]

Example:

Send the command [CLR] to set the **AP445-103** to the last saved settings.

10. [FRESET]

This command performs a factory reset on the unit. This will clear any saved settings and return then to their nominal settings. The Main Input will be set to PC1 and the Main Output will be set to PC.

Command Format: [FRESET]

Example:

Send the command [FRESET] and the unit will respond as follows:

```
PLEASE WAIT  
UNIT IS PERFORMING A FACTORY RESET
```

When the reset is complete, the system will display the following message:

```
FACTORY RESET COMPLETE
```

11. [TEST]

This command performs a test on the internal memory. Upon completion, the system will display the results. If there are no problems, the system will display the following:

MEMORY TEST RESULTS:

U20: OK

Otherwise, failures will be indicated.

Command Format: [TEST]

Example:

Send the command [TEST] to test the unit's memory.

12. [INM]

This command selects the input that will be connected and displayed on the Main output. It is the complement of the [OUTM] command. The [OUTM] command defines the Main output. RGB inputs will also require the type of RGBHV signal to be defined using the [INV] command.

Status Line ID Main Input:

Command Format: [INMn]

n = Input Number (n = # from 0 to 8)

0 = PC1 (RGBHV/YCbCr #1)

1 = PC2 (RGBHV YCbCr #2)

2 = PC3 (RGBHV YCbCr #3)

3 = CV1 (Composite Video #1)

4 = CV2 (Composite Video #2)

5 = CV3 (Composite Video #3)

6 = YC1 (S-Video #1)

7 = YC2 (S-Video #2)

8 = YC3 (S-Video #3)

Example:

Send the command [INM0] to connect PC1 (RGBHV) input to the Main output.

13. [INP]

This command selects the input that will be connected and displayed on the Preview output. There is one Preview output connector for each type of input, except for S-Video. The Preview output is available only on the same output type as the input. In other words, if CV1 is selected as the Preview Input, the Preview Output is only available on the VID-P output connector.

Status Line ID Preview Input:

Command Format: [INPn]

n = Input Number (n = # from 0 to 8)
0 = PC1 (RGBHV/YCbCr #1)
1 = PC2 (RGBHV YCbCr #2)
2 = PC3 (RGBHV YCbCr #3)
3 = CV1 (Composite Video #1)
4 = CV2 (Composite Video #2)
5 = CV3 (Composite Video #3)
6 = YC1 (S-Video #1)
7 = YC2 (S-Video #2)
8 = YC3 (S-Video #3)

Example:

Send the command [INP5] to connect composite video input 3 to the Preview output.

14. [INnVm]

This command is used to define the type of RGBHV signal that is connected to an RGBHV input.

Status Line ID Input Standard:
Command Format: [INnVm]

n = RGB Input Number (n = 0, 1 or 2)
0 = PC1
1 = PC2
2 = PC3

m = RGB Input Type (m = 0, 1, 2 or 3)
0 = RGBHV
1 = RGsB
2 = RGsB
3 = YUV

Example:

The PC2 input signal type is RGsB. Send the command [IN2V2] to set PC2 input type to RGsB.

15. [INnLm]

This command selects the input source and method for the locked output.

Status Line ID Lock Source:
 Lock Method:
Command Format: [INnLm]

n = Input Number (n = 0 to 8)
0 = PC1 (RGBHV/YCbCr #1)
1 = PC2 (RGBHV YCbCr #2)
2 = PC3 (RGBHV YCbCr #3)
3 = CV1 (Composite Video #1)
4 = CV2 (Composite Video #2)
5 = CV3 (Composite Video #3)
6 = YC1 (S-Video #1)
7 = YC2 (S-Video #2)
8 = YC3 (S-Video #3)

m = Lock Method (m = 0, 1, 2, 3 or 4)
0 = OFF (lock source not used)
1 = genlock
2 = PIP
3 = Overlay
4 = Underlay

Example:

Send the command [IN1L1] to set PC2 input as the lock source and the lock method to genlock.

16. [OUTM]

This command selects the Main output to be the active output. This command is the complement to the [INM] command. The [INM] command selects the input for the Main output.

Status Line ID Main Output:
Command Format: [OUTMn]

n = Output Number (n = 0 to 4)
0 = RGBHV
1 = RGsB
2 = RGsB
3 = YUV
4 = CV/YC

Example:

In order to make the active output the RGBHV signal, send the command [OUTM0].

17. [MODER]

This command selects resolution of the Main output. Due to the large number of resolutions available, use the [MODER?] command to determine the resolution number of the desired resolution.

Status Line ID Output Resolution:
Command Format: [MODERn]
n = Resolution (n = 0 to 83)

Example:

In order to set the output resolution to 1024x768 at 60Hz, send the command [MODER27].

18. [MODER?]

This command displays the available resolutions for use with the [MODERn] command.

Command Format: [MODER?]

Example:

Display the available output resolutions by sending the command [MODER?].

Standard resolutions available:

- 0 = NTSC / 60Hz
- 1 = PAL / 50Hz
- 2 = 640 x 350 70Hz
- 3 = 640 x 350 85Hz
- 4 = 640 x 400 85Hz
- 5 = 720 x 400 70Hz
- 6 = 720 x 400 85Hz
- 7 = 720 x 576 50Hz
- 8 = 640 x 480 60Hz
- 9 = 640 x 480 67Hz
- 10 = 640 x 480 72Hz
- 11 = 640 x 480 75Hz
- 12 = 640 x 480 85Hz
- 13 = 640 x 480 85Hz
- 14 = 640 x 480 138Hz
- 15 = 800 x 680 138Hz
- 16 = 800 x 600 60Hz
- 17 = 800 x 600 72Hz
- 18 = 800 x 600 75Hz
- 19 = 800 x 600 85Hz
- 20 = 800 x 600 95Hz
- 21 = 800 x 600 112Hz
- 22 = 832 x 624 75Hz
- 23 = 848 x 480 60Hz
- 24 = 960 x 576 50Hz
- 25 = 1024 x 768i 43Hz
- 26 = 1024 x 768 60Hz
- 27 = 1024 x 768 70Hz
- 28 = 1024 x 768 75Hz
- 29 = 1024 x 768 85Hz
- 30 = 1024 x 768 89Hz
- 31 = 1024 x 912i 30Hz
- 32 = 1170 x 1007i 30Hz

- 33 = 1152 x 864 75Hz
- 34 = 1152 x 864 80Hz
- 35 = 1152 x 864 85Hz
- 36 = 1152 x 864 85Hz
- 37 = 1280 x 720 60Hz
- 38 = 1280 x 768 60Hz Rd.Blnk
- 39 = 1280 x 768 60Hz
- 40 = 1280 x 768 75Hz
- 41 = 1280 x 768 85Hz
- 42 = 1280 x 960 60Hz
- 43 = 1280 x 960 72Hz
- 44 = 1280 x 960 85Hz
- 45 = 1280 x 1024 60H
- 46 = 1280 x 1024 70Hz
- 47 = 1280 x 1024 75Hz
- 48 = 1280 x 1024 85Hz
- 49 = 1360 x 768 60Hz
- 50 = 1365 x 1024 75Hz
- 51 = 1400 x 1050 60Hz Rd.Blnk
- 52 = 1400 x 1050 60Hz
- 53 = 1400 x 1050 75Hz
- 54 = 1400 x 1050 85Hz
- 55 = 1600 x 1200 60Hz
- 56 = 1600 x 1200 65Hz
- 57 = 1600 x 1200 70Hz
- 58 = 1600 x 1200 70Hz
- 59 = 1600 x 1200 85Hz
- 60 = 1600 x 1280 60Hz
- 61 = 1600 x 1280 65Hz
- 62 = 1600 x 1280 70Hz
- 63 = 1600 x 1280 75Hz
- 64 = 1792 x 1344 60Hz
- 65 = 1792 x 1344 75Hz
- 66 = 1856 x 1392 60Hz
- 67 = 1856 x 1392 75Hz
- 68 = 1920 x 1035i 30Hz
- 69 = 1920 x 1080 24Hz
- 70 = 1920 x 1080i 2Hz
- 71 = 1920 x 1080i 30Hz
- 72 = 1920 x 1080 60Hz
- 73 = 1920 x 1080 65Hz
- 74 = 1920 x 1080 70Hz
- 75 = 1920 x 1080 75Hz
- 76 = 1920 x 1200 60Hz Rd.Blnk
- 77 = 1920 x 1200 60Hz Rd.Blnk
- 78 = 1920 x 1200 65Hz
- 79 = 1920 x 1200 70Hz
- 80 = 1920 x 1200 75Hz
- 81 = 1920 x 1200 75Hz
- 82 = 1920 x 1440 60Hz
- 83 = 1920 x 1440 75Hz
- 84 = reserved for future

INPUT IMAGE POSITION COMMANDS:

TPOS, LPOS, BPOS and RPOS

The next four commands are used to set the overall size and shape of input images. Each input maintains its particular settings until power is disconnected from the unit. These command effect only the selected Main Input, see the [INM] command.

19. [TPOS] – All Inputs

This command vertically sets the top corner of the Main Input image. The range of values is -100 to +100. A negative number moves the image up and a positive number moves the image down.

Status Line ID Top Corner Position:
Command Format: [TPOS p n]

p = Direction (0 = negative, 1 = positive)

n = Value (n = # from 0 to 100)

Example:

Move the top corner of the image up 50 steps from its base position. In order to do this, send the command [TPOS050]. The first “0” defines a negative (up) movement and “50” defines a total movement of 50 steps.

20. [LPOS] – All Inputs

This command horizontally sets the bottom corner of the Main Input image. The range of values is -100 to +100. A negative number moves the image left and a positive number moves the image right.

Status Line ID Left Corner Position:
Command Format: [LPOS p n]

p = Direction (0 = negative, 1 = positive)

n = Value (n = # from 0 to 100)

Example:

Move the left corner of the image 25 steps to the left from its base position. In order to do this, send the command [LPOS025]. The first “0” defines a negative (left) movement and “25” defines a total movement of 25 steps.

21. [BPOS] – All Inputs

This command vertically sets the bottom corner of the Main Input image. The range of values is -100 to +100. A negative number moves the image up and a positive number moves the image down.

Status Line ID Bottom Corner Position:
Command Format: [BPOS p n]

p = Direction (0 = negative, 1 = positive)

n = Value (n = # from 0 to 100)

Example:

Move the bottom corner of the image 25 steps down from its base position. In order to do this, send the command [BPOS125]. The first “1” defines a positive (down) movement and “25” defines a total movement of 25 steps.

22. [RPOS] – All Inputs

This command horizontally sets the bottom corner of the Main Input image. The range of values is -100 to +100. A negative number moves the image left and a positive number moves the image right.

Status Line ID Right Corner Position:
Command Format: [RPOS p n]

p = Direction (0 = negative, 1 = positive)

n = Value (n = # from 0 to 100)

Example:

Move the right corner of the image 25 steps right from its base position. In order to do this, send the command [RPOS125]. The first “1” defines a positive (right) movement and “25” defines a total movement of 25 steps.

23. [PIXPH] – RGB Inputs Only

This command adjusts the phase of the Pixel clock in relation to the horizontal sync signal and is used only on the RGB inputs. Use this command to make pixelated images cleaner.

Status Line ID Pixel Clock Adjustment:
Command Format: [PIXPH n]

n = Pixel Phase (n = # from 0 to 31)

Example:

The current phase of the Pixel clock is 31, but is too high. Lower the Pixel clock phase to 10 by sending the command [PIXPH10]. Fine tune the adjustment using the [+] and [-] commands.

24. [DEINT] – All Inputs

This command is used to select the method of de-interlacing interlaced inputs. An interlaced image is made up of two image fields separated in time. Combining these fields into a single image sometimes produces motion artefacts. This command is used to reduce or eliminate these effects.

Status Line ID De-interlace Method:
Command Format: [DEINTn]

n = Method (n = # from 0 to 6)

0 = Normal (two interlaced fields combined, often producing motion artefacts)

1 = Auto (automatically selects Film 3:2 if file mode is detected or medium motion compensation if not)

2 = File 3:2 (NTSC only)

3 = Low Motion Compensation

4 = Medium Motion Compensation

5 = High Motion Compensation

Example:

Select the automatic setting for de-interlacing interlaced images. To do this, send the command [DEINT1].

CY and YC INPUT IMAGE PROPERTIES: Brightness, Contrast, Color, Hue and Sharpness

The next five commands are used to set and/or adjust the properties for the CY and YC input images. Any changes will affect only the active Main Input. Use these properties to compensate for inadequacies in the input signal. Set the property to a specific level by sending the command with a value.

Adjust a property by sending the property command with or without a value and then using the [+] and [-] commands to adjust the value. If adjusting a property starting with the current value, do not send a command with a value. Send only the command name (ex: [BRIGHT]) and then use [+] and [-] as required.

Example 1, Set A Value

Set the brightness level to 100 by sending the command [BRIGHT100]. The unit will return the following feedback:

100

Example 1, Display Current Value:

Display the current brightness level by sending the command [BRIGHT]. The unit will return the following feedback:

100

Example 3, Adjust A Value:

Adjust the brightness level starting with the current level of 100. Send the following commands:

[BRIGHT] The unit will return 100.

[+] [+] [+]

[BRIGHT] The unit will return 103.

25. [BRIGHT] – CV or YC Inputs

This command is used to display, set or adjust the brightness level of the active, Main Input image. See the preceding examples for details.

Status Line ID Brightness:
Command Format: [BRIGHTn] or [BRIGHT]
n = Value (n = # from 0 to 180, default = 90)

26. [CONTR] – CV or YC Inputs

This command is used to display, set or adjust the contrast level of the active, Main Input image. See the preceding examples for details.

Status Line ID Contrast:
Command Format: [CONTRn] or [CONTR]
n = Value (n = # from 0 to 180, default = 90)

27. [COLOR] – CV or YC Inputs

This command is used to display, set or adjust the color level of the active, Main Input image. See the preceding examples for details.

Status Line ID Color:
Command Format: [COLORn] or [COLOR]
n = Value (n = # from 0 to 180, default = 90)

28. [HUE] – CV or YC Inputs

This command is be used to display, set or adjust the hue level of the active, Main Input image. See the preceding examples for details.

Status Line ID Hue:
Command Format: [HUE n] or [HUE]
n = Value (n = # from 0 to 360, default = 180)

29. [SHARP] – CV or YC Inputs

This command is used to display, set or adjust the sharpness level of the active, Main Input image. See the preceding examples for details.

Status Line ID Sharpness:
Command Format: [SHARPn] or [SHARP]
n = Value (n = # from 0 to 15, default = 8)

RGB LEVEL ADJUSTMENTS:

The next four commands are used to set and/or adjust the properties for the RGB output levels. Increasing one of the levels effectively boosts the signal contrast for that color. Any changes will affect only the active RGB input. The RGBSL command adjustment is separate from the red, green and blue level adjustments.

30. [REDLEV] – RGB Input

This command is used to display, set or adjust the red level of the active RGB Main Input image.

Status Line ID Red Level:
Command Format: [REDLEVn] = set
 [REDLEV] = display

n = Value (n = # from 75-150, default = 112)

Example:

Increase the input level of the red signal only. The default value is 112 for all three colors. Send the command [REDLEV130] to effectively increase the input level of the red signal.

31. [GREENLEV] – RGB Input

This command is used to display, set or adjust the green level of the active RGB Main Input image.

Status Line ID Green Level:
Command Format: [GREENLEVn] = set
 [GREENLEV] = display

n = Value (n = # from 75-150, default = 112)

Example:

Increase the input level of the green signal only. The default value is 112 for all three colors. Send the command [GREENLEV130] to effectively increase the input level of the green signal.

32. [BLUELEV] – RGB Input

This command is used to display, set or adjust the blue level of the active RGB Main Input image.

Status Line ID Blue Level:
Command Format: [BLUELEVn] = set
 [BLUELEV] = display

n = Value (n = # from 75-150, default = 112)

Example:

Decrease the input level of the blue signal only. The default value is 112 for all three colors. Send the command [BLUELEV75] to effectively decrease the input level of the blue signal.

33. [RGBSL] – RGB Input

This command is used to display, set or adjust the RGB level of the active RGB Main Output. Increasing the value of this setting increases the output levels for the red, green and blue signals. Use the red, green and blue level commands to increase an individual color output.

Command Format: [RGBSLn] or [RGBSL]

n = Value (n = # from 0-255)

Example 1:

Set the RGB input video signal level to a nominal value of 85 by sending the command [RGBSL85]. When the setting has been updated, the feedback will be "85".

Example 2:

Increase the RGB output levels to their maximum values by sending the command [RGBSL255]. This will increase all three of the RGB output levels.

34. [LUMDEL] – CV or YC Inputs

This command is used to display, set or adjust the luminance to chrominance phase delay between the two signals.

Status Line ID Luma Delay:
Command Format: [LUMDELn] or [LUMDEL]

n = Value (n = # from 0-7)

Example:

Set the Luma Delay (phase delay) to the minimum value of 0 by sending the command [LUMDEL0]. Display the Luma Delay value by sending [LUMDEL] and the unit will respond with the feedback: of "0".

ADJUSTMENT CONTROLS: [+] and [-]

These commands allow a selected property to be adjusted from keyboard commands. The following properties may be adjusted using these commands:

[PIXPH].....Pixel Clock
[BRIGHT].....Brightness
[CONTR].....Contrast
[COLOR].....Color
[HUE].....Hue
[SHARP].....Sharpness
[REDLEV].....Red Level on RGB Inputs
[GREENLEV].....Green Level on RGB Inputs
[BLUELEV].....Blue Level on RGB Inputs
[RGBSL].....RGB Levels on RGB Inputs
[HSHIFT].....Horizontal Position
[VSHIFT].....Vertical Position

35. [+]

This command increments a selected property to be adjusted from the keyboard or front panel.

Command Format: [+], [+k]

[+] = Increment level by one step

[+k] = Increment level by 'k' steps

Example:

Select the brightness command for adjustment. The current brightness level is 50, but it is not the optimal value. After sending the following commands, an optimum level of 55 is obtained:

1. [BRIGHT]

The current brightness level is 50.

2. [+][+][+][+][+] or [+ 5]

The level is now 55 and no further adjustments are required.

36. [-]

This command decrements a selected property to be adjusted from the keyboard or front panel.

Command Format: [-], [-k]

[-] = Decrement level by one step

[-k] = Decrement level by 'k' steps

Example:

Select the brightness command for adjustment. The current brightness level is 100, but it is not the optimal value. After sending the following commands, an optimum level of 90 is obtained:

1. [BRIGHT]

The current brightness level is 100.

2. [-][-][-][-][-][-][-][-][-] or [-10]

The level is now 90 and is no further adjustments are required.

37. [VnSTDM] – CV or YC Inputs

This command is used to specify the incoming video standard. Most applications will auto-detect incoming standards, but some special applications may need to be specified.

Status Line ID Input Standard:

Command Format: [VnSTDM]

n = Input Number (n = # from 3-8)

m = Standard (m = # from 0-5)

0 = PAL BGDHI/NTSC M
(normal PAL & NTSC)

1 = NTSC 4.43 50 / PAL 60

2 = NTSC 4.43 60 / PAL N

3 = NTSC N 3.58 / PAL M

4 = NTSC – Japan 3.58

5 = SECAM

Example:

Set the input standard on the CV1 input for normal PAL and NTSC operation. To do this, send the command [V3STD0], where "3" is the CV1 input and "0" is the normal PAL and NTSC setting.

38. [INnMODEAm] – ALL Inputs

This command is used to specify the aspect ratio of the incoming video signal. The incoming aspect ratio is needed to provide ratio conversion on the output signal. Use this command along with the [MODEA] command which defines the output signal aspect ratio.

Status Line ID Input Ratio:
Command Format: [INnMODEAm]
n = Input Number (n = # from 0-8)
m = Input Aspect Ratio (m = 1 or 2)
 1 = 16:9
 2 = 4:3

Example:

Define the aspect ratio of the incoming video signal on CV3 as 4:3 by sending the command [IN5MODEA2].

39. [MODEA] – Output

This command is used to specify the aspect ratio of the output video signal. The incoming aspect ratio is needed to provide ratio conversion on the output signal. Use this command along with the [MODEA] command which defines the output signal aspect ratio.

Status Line ID Output Ratio:
Command Format: [MODEAm]
m = Output Aspect Ratio (m = 1 or 2)
 1 = 16:9
 2 = 4:3

Example:

Set the aspect ratio of the output signal to 4:3 by sending the command [MODEA2].

40. [ZOOM] – Output

This command is used to set the zoom ratio of the Main Output. The range of the zoom is from one to ten where a ratio of one is the size of the native image.

Status Line ID Zoom Scale:
Command Format: [ZOOMm]

m = Zoom Ratio (m = # from 1 to 10)

Example:

Zoom the output image to five times its normal size by sending the command [ZOOM5].

41. [PANZ] – Output

This command is used to select the position of the zoomed output image. The range is in percent of the output image. The value 0,0 is the top left of the image and 50,50 is the middle of the image.

Command Format: [PANZx,y]

x = Horizontal Percentage (x = 0 to 100)
y = Vertical Percentage (y = 0 to 100)

Example:

Pan the output image to the upper left corner by sending the command [PANZ10,10].

42. [FREEZ] – Output

This command is used to freeze the image.

Status Line ID Output Freeze:
Command Format: [FREEZp]

p = Freeze State (p = 1 or 0)
 0 = OFF
 1 = ON

Example:

Freeze the displayed image by sending the command [FREEZ1].

43. [HSHIFT] – Output

This command is used to adjust the horizontal position of the output image.

Status Line ID Horizontal Position:

Command Format: [HSHIFTpn]

p = Direction (p = 0 or 1)
0 = Negative, Move Left
1 = Positive, Move Right

n = Number of Steps (n = # from 0 to 100)

Example:

Shift the output image 10 steps to the right by sending the command [HSHIFT110]. The unit will return feedback of "+10".

44. [VSHIFT] – Output

This command is used to adjust the vertical position of the output image.

Status Line ID Vertical Position:
Command Format: [VSHIFTpn]

p = Direction (p = 0 or 1)
0 = Negative, Move Up
1 = Positive, Move Down

n = Number of Steps (n = # from 0 to 100)

Example:

Shift the output image 20 steps up by sending the command [VSHIFT020]. The unit will return feedback of "-20".

45. [SHR] – Output

This command is used to shrink the size of the output window. The shrink value is a ratio of the native image size, with a minimum size of 10% of the native image. Typically, this command is used with the PIP function.

Status Line ID Shrink Scale:
Command Format: [SHRm]

m = Ratio of Native Size (m = # from 1 to 10)
Ex: m = 1 for 1:1 or 100% of Native Size
Ex: m = 5 for 1:5 or 50% of Native Size

Example:

Set the output image window size to 10% of the native image size. In order to accomplish this, send the command [SHR10]. The Shrink Scale will now be shown as "X10" in the status feedback.

46. [SHRPOS] – Output

This command is used to shrink the size of the output window. The shrink value is a ratio of the native image size, with a minimum size of 10% of the native image. Typically, this command is used with the PIP function.

Command Format: [SHRPOSx,y]

x = Horizontal Percentage (x = 0 to 100)
y = Vertical Percentage (y = 0 to 100)

Example:

Set the shrunken image window position to the middle of the Main Output image. In order to accomplish this, send the command [SHRPOS50,50].

47. [FLRED] – Output

This command is used to set the level of flicker reduction. The default flicker reduction level is set to low and is the best in most cases.

Status Line ID Flicker Reduction:
Command Format: [FLREDp]

p = Reduction Level (p = 0, 1, 2 or 3)
0 = OFF
1 = Low
2 = Medium
3 = High

Example:

Turn off flicker reduction by sending the command [FLRED0].

48. [SMTH] – Output

This command is used to set the image smoothing function level.

Status Line ID Smoothing:
Command Format: [SMTHp]

p = Smoothing Level (p = 0, 1 or 2)
0 = OFF
1 = Medium
2 = High

Example:

Set the smoothing level to high by sending the command [SMTH2].

49. [IFLIP] – Output

This command is used flip the output image vertically, horizontally or both vertically and horizontally.

Status Line ID Output Image Flip:

Command Format: [IFLIPp]

p = Flip Method (p = 0, 1, 2 or 3)

0 = OFF

1 = Horizontally

2 = Vertically

3 = Horizontally and Vertically

Example:

Flip the output image vertically by sending the command [IFLIP2].

50. [DEGL] – Output

This command is used set the output de-glitch function on and off. The default for de-glitch is on. Typically, the only time to turn off the de-glitch feature is when the source image is very unstable and cannot be displayed as an output image.

Status Line ID De-glitch:

Command Format: [DEGLp]

p = De-Glitch (0 = OFF, 1 = ON)

Example:

Disable the output image de-glitch function by sending the command [DEGL0].

51. [SWFT] – Output

This command sets the switching fade time when setting a new input to output connection. The fade time may be set in 0.1 second intervals up to five seconds.

Status Line ID Fading Time:

Command Format: [SWFTn]

n = Fade Time (n = # from 0 to 50)

Example:

Set the fade time one second. In order to do this, send the command [SWFT10]. The fade time in this case is 10 times 0.1sec for a total of one second.

52. [SCHPH] – CV/YC Output with CV/YC Input

This command adjusts the phase between the subcarrier and the horizontal sync. Use this function to reduce any color shifts when genlocking to an incoming CV or YC signal. This option is not available when outputting an RGB signal.

Status Line ID Subcarrier/HSYNC phase:

Command Format: [SCHPHpn]

p = Sign of Adjustment (p = 0 or 1)

0 = Negative Value, decrease

1 = Positive Value, increase

n = Number of Steps (n = # from 0 or 180)

Example:

Set the phase adjustment between the subcarrier and the horizontal sync to +99 by sending the command [SCHPH199].

53. [CRCLRD] – Outputs CV and YC, Not RGB

This command sets the amount of cross color reduction by reducing the luminance bandwidth. This is necessary when high frequency luma data is decoded as chroma data.

Status Line ID Cross Color Reduction:

Command Format: [CRCLRDp]

p = CCR Amount (p = 0, 1, 2 or 3)

0 = OFF

1 = Low

2 = Medium

3 = High

Example:

Set the phase adjustment between the subcarrier and the horizontal sync to +99 by sending the command [SCHPH199].

54. [DRGBLS] – Output with CV/YC Inputs Only

This command digitally processes the RGB Lock Source to allow key level detection.

Status Line ID n/a

Command Format: [DRGBLSp]

p = Digitize RGB Lock Source (p = 0 or 1)

0 = OFF

1 = ON

Example:

Set the unit to digitize the lock source by sending the command [DRGBLS1].

KEY VALUES for UNDERLAY/OVERLAY:

The next eight commands are used to set the parameters for the Lock and Overlay features of the **AP445-103**. These settings will not have any effect unless the lock method, [INnLm], is set to a value other than off.

55. [HPLS] – Output

This command adjusts the output image's horizontal sync and position in relation to the lock source. Typically, this value is left at zero.

Status Line ID Lock Pixel Offset:
Command Format: [HPLSpn]

p = Sign of Adjustment (p = 0 or 1)
 0 = Negative Value, decrease
 1 = Positive Value, increase
n = Number of Steps (n = # from 0 or 2047)

Example:

Set the pixel offset to +1024 by sending the command [HPLS11024].

56. [VPLS] – Output

This command adjusts the output image's vertical sync and position in relation to the lock source.

Status Line ID Lock Line Offset:
Command Format: [VPLSpn]

p = Sign of Adjustment (p = 0 or 1)
 0 = Negative Value, decrease
 1 = Positive Value, increase
n = Number of Steps (n = # from 0 or 2047)

Example:

Set the lock line offset to -10 by sending the command [VPLS010].

57. [YKEYMIN] – Output

This command is used to set the Y key minimum luminance value. This command is the complement to the [YKEYMAX] command. The two commands set the luminance Y range for keying-out a pixel color.

Status Line ID Y Key Minimum Value:
Command Format: [YKEYMINn]

n = Min Luminance (n = # from 0 to 255)

Example:

Set the minimum luminance to a value of 125 by sending the command [YKEYMIN125].

58. [YKEYMAX] – Output

This command is used to set the Y key maximum luminance value. This command is the complement to the [YKEYMIN] command. The two commands set the luminance Y range for keying-out a pixel color.

Status Line ID Y Key Maximum Value:
Command Format: [YKEYMAXn]

n = Max Luminance (n = # from 0 to 255)

Example:

Set the maximum luminance to a value of 65 by sending the command [YKEYMAX65].

59. [UKEYMIN] – Output

This command is used to set the U key minimum chrominance value. This command is the complement to the [UKEYMAX] command. The two commands set the chrominance U range for keying-out a pixel color.

Status Line ID U Key Minimum Value:
Command Format: [UKEYMINn]

n = Min U chrominance (n = # from 0 to 255)

Example:

Set the minimum U chrominance to a value of 125 by sending the command [UKEYMIN125].

60. [UKEYMAX] – Output

This command is used to set the U key maximum chrominance value. This command is the complement to the [UKEYMIN] command. The two commands set the chrominance U range for keying-out a pixel color.

Status Line ID U Key Maximum Value:
Command Format: [UKEYMAXn]

n = Max U chrominance (n = # from 0 to 255)

Example:

Set the maximum U chrominance to a value of 65 by sending the command [UKEYMAX65].

61. [VKEYMIN] – Output

This command is used to set the V key minimum chrominance value. This command is the complement to the [VKEYMAX] command. The two commands set the chrominance V range for keying-out a pixel color.

Status Line ID V Key Minimum Value:
Command Format: [VKEYMINn]

n = Min V chrominance (n = # from 0 to 255)

Example:

Set the minimum V chrominance to a value of 125 by sending the command [VKEYMIN125].

62. [VKEYMAX] – Output

This command is used to set the V key maximum chrominance value. This command is the complement to the [VKEYMIN] command. The two commands set the chrominance V range for keying-out a pixel color.

Status Line ID V Key Maximum Value:
Command Format: [VKEYMAXn]

n = Max V chrominance (n = # from 0 to 255)

Example:

Set the maximum V key chrominance to a value of 65 by sending the command [VKEYMIN65].

63. [LOGOOUT] – Output

This command is used to display the preloaded logo to the Main Output image. The image is treated as a regular video input and may be zoomed, shrunk or used as the main input for picture in picture.

Status Line ID n/a
Command Format: [LOGOOUTn]

n = Logo Number (n = 1 to 9)

Example:

Set Main Output image to the preloaded logo image by sending the command [LOGOOUT1].

64. [SLO] – Audio Output

This command displays the current audio level and makes the audio output active for use with the [+] and [-] commands. The range is 0 to 32. At 32, the output signal is equal to the input.

Status Line ID Audio Gain Level:
Command Format: [SLO]

Example:

The level is at 15. Send the command [SLO] and the unit will return feedback of “[15]”.

Increase the level to 20 by sending the following commands.

[+] [+] [+] [+] [+]

The level is now too high. Send the following commands to decrease the level.

[-] [-] [-]

The level is now at 17 and no further adjustments are required.

65. [VLOA] – Audio Output

This command sets audio level to an absolute value in the range of 0 to 32. At 32, the output signal is equal to the input signal.

Status Line ID Audio Gain Level:
Command Format: [VLOAx]

x = Audio Level (x = # from 0 to 32)

Example:

Set the audio level to 16 by sending the command [VLOA16].

66. [HELP]

This command displays information available for the AP445-103 RS-232 interface commands.

Command Format: [HELP]

Example:

In order to display the RS-232 commands available for the **AP445-103**, send the command [HELP]. The commands along with a brief description will be displayed in the terminal window.

67. [...S]

This command allows a single command to be saved at one time. Use this command to save a single property where it is undesirable to save all the current settings.

Command Format: [..S]

S = Save

Example:

Set the brightness level to 120 and save this setting at the same time. In order to do this, send the command [BRIGHT120S].

7.4 SUMMARY OF COMMANDS.

- 1) [SIDn] Set ID number of the unit.
- 2) [RSI] Reset ID of the unit to 0.
- 3) [RSN] Return unit ID number.
- 4) [VER] Display firmware version.
- 5) [STAT] Display status of unit.
- 6) [STATS] Display/save current status.
- 7) [Cn] Display status of one ID.
- 8) [CnS] Display/save status.
- 9) [CLR] Retrieve default settings.
- 10) [FRESET] Reset to factory default.
- 11) [TEST] Test memory IC's.
- 12) [INM] Select Input for Main Out.
- 13) [INP] Select Input for Preview Out.
- 14) [INnVm] Select RGB Input type.
- 15) [INnLm] Select Input for Locked Out.
- 16) [OUTM] Select Main Output.
- 17) [MODER] Set Output resolution.
- 18) [MODER?] Show available resolutions.
- 19) [TPOS] Adjust top position of main.
- 20) [LPOS] Adjust left position of main.
- 21) [BPOS] Adjust bottom position of main.
- 22) [RPOS] Adjust right position of main.

- 23) [PIXPH] Adjust phase of Pixel clock.
- 24) [DEINT] De-interlace input.
- 25) [BRIGHT] Adjust brightness level.
- 26) [CONTR] Adjust contrast level.
- 27) [COLOR] Adjust color level.
- 28) [HUE] Adjust hue level.
- 29) [SHARP] Adjust sharpness level.
- 30) [REDLEV] Adjust red contrast level.
- 31) [GREENLEV] Adjust green contrast level.
- 32) [BLUELEV] Adjust blue contrast level.
- 33) [RGBSL] Adjust RGB signal level.
- 34) [LUMDEL] Luma/Chroma phase delay.
- 35) [+] Increment by one or more.
- 36) [-] Decrement by one or more.
- 37) [VnSTDM] Select Video Input Standard.
- 38) [INnMODEAm] Select Ratio for Input signal.
- 39) [MODEA] Select output aspect ratio.
- 40) [ZOOM] Select Main Out zoom ratio.
- 41) [PANZ] Set zoomed image position.
- 42) [FREEZ] Set Freeze function.
- 43) [HSHIFT] Adjust output image H-pos.
- 44) [VSHIFT] Adjust output image V-pos.
- 45) [SHR] Set Shrink ratio of Main Out.
- 46) [SHRPOS] Set Position of shrunken image.
- 47) [FLRED] Set Flicker Reduction.
- 48) [SMTH] Set Smoothing.
- 49) [IFLIP] Set Image flip.
- 50) [DEGL] Set Output De-glitch.
- 51) [SWFT] Set Switching fade time.
- 52) [SCHPH] Adjust subcarrier and HSYNC phase.
- 53) [CRCLRD] Set Cross Color Reduction.
- 54) [DRGBLS] Digitally process RGB Lock.

- 55) [HPLS] Adjust output HSYNC/image position.
- 56) [VPLS] Adjust output VSYNC/image position.
- 57) [YKEYMIN] Adjust min Luma Y value.
- 58) [YKEYMAX] Adjust max Luma Y value.
- 59) [UKEYMIN] Adjust min Chroma U value.
- 60) [UKEYMAX] Adjust max Chroma U value.
- 61) [VKEYMIN] Adjust min Chroma V value.
- 62) [VKEYMAX] Adjust max Chroma V value.
- 63) [LOGOOUT] Select Logo as Main input.
- 64) [SLO] Select main audio output for adjustment.
- 65) [VLOA] Set absolute volume level.
- 66) [HELP] Display RS-232 commands.
- 67) [...S] Save command sent.

TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **AP445-103**. However, we would like to offer suggestions for the following:

8.1 LED'S DO NOT TURN ON

The LED's should be turn on and red when power is applied and the unit is initializing. Once the unit is initialized, the LED's for the Main and Preview settings should be on.

Cause 1: No AC power.

Solution: Verify the power cord is plugged into a working AC outlet and that the outlet has power.

Cause 2: Adapter is not plugged into the **AP445-103**.

Solution: Verify the AC power plug coming from the AC outlet is plugged all the way into the **AP445-103**.

Cause 3: The **AP445-103** has a problem.

Solution: If there is AC power to the adapter and the LED's still does not turn on, the **AP445-103** or the power cord may require service. Call ALTINEX at (714) 990-2300.

8.2 NO OUTPUT IMAGE

Cause 1: The source has a problem.

Solution: Check the image from the source using a local monitor and verify the quality is good. If the local image is good, see Cause 2.

Cause 2: Cable corrections are incorrect.

Solution: Verify the video source is connected to the correct connector on the rear of the unit. Also, verify the display device is connected to the correct port on the rear of the unit. If the cables are connected correctly, see Cause 3.

Cause 3: Control settings are incorrect.

Solution: On the front panel, verify the LED for the Main Input is on and matches the signal type that is connected on the rear of the unit. If the selected input matches the connected output, see Cause 4.

Cause 4: Output connector is not selected.

Solution: Using RS-232 control, verify the correct output is selected. Send the status [STAT] command and verify the feedback line "Main Output:" connection is the same as the display device connection. If the output does not match, use the [OUTM] command to set the correct output. If there is still no image, call ALTINEX at (714) 990-2300

8.3 NO OUTPUT VOLUME

Cause 1: The source has a problem.

Solution: Connect the source directly to the receiving device. If the source is good, see Cause 2.

Cause 2: Incorrect input selected.

Solution: The **AP445-103** is designed to have audio follow video. Verify the audio source signal is connected to the equivalent video input. For example, if the video input is CV1, this is numerical input #4. Verify the audio source is connected to audio input #4. If there is still no sound, call ALTINEX at (714) 990-2300.

ALTINEX POLICY

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9.1 LIMITED WARRANTY/RETURN POLICY

Please see the Altinex website at www.altinex.com for details on warranty and return policy.

9.2 CONTACT INFORMATION

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