

2.0 Operation

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2.1 Tethered Remote Control

The Tethered Remote Control has a 20 X 4 character display at the top of the unit (see *Figure 2-1*). Power on/off for the tethered remote is toggled by pressing both power buttons simultaneously. For other key variations, refer to Table 2-1. The Tethered Remote comes with a 25' cable. Optional 50' or 75' cables are also available (disable backlight when using 75' cable).

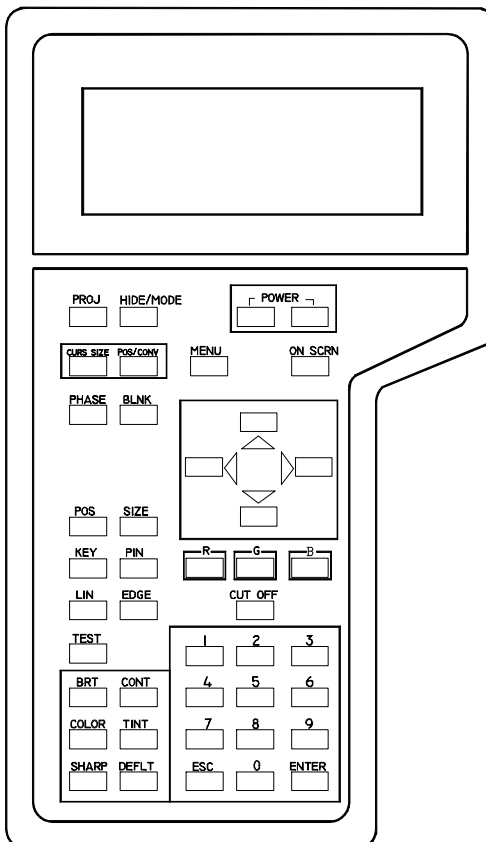


Figure 2-1 Tethered Remote Control

Table 2-1 Tethered Remote Control Key Functions

Key	Function	Usage
ON, OFF	Press <i>both</i> POWER buttons to turn projector power ON. Press <i>both</i> POWER buttons again to turn projector power OFF to turn power off.	
MODE	Toggles through convergence modes (X/Y Convergence, Threshold and Sensitivity).	
HIDE	Mutes video.	
CURS SIZE	Select Convergence cursor size. NOTE: Convergence data from smaller cursor is lost when larger cursor size is selected.	Press CURS SIZE + direction arrows to toggle through available cursor sizes.
CONV	Convergence data key. Change cursor position or display convergence data.	Press key to enter <i>Position</i> mode. Press key again to enter <i>Data</i> display mode.
PHASE	Horizontal and vertical Phase adjustment of the input image on the CRT raster.	Press PHASE + Left/Right arrow keys to set phase.
BLANK	Blanking. Adjusts blanking levels at image edges.	Press BLNK + arrow keys to alter blanking position. Each press of BLNK key changes the active edge (top, bottom, left, right).
POS	Position. Adjusts image raster horizontally and vertically on the screen.	Press POS + Left/Right or Up/Down arrow keys to adjust raster horizontal and vertical position on screen.
SIZE	Adjusts projected image height and width on screen.	Press SIZE + direction arrows to adjust picture height and width.

Key	Function	Usage
KEY	Keystone. Horizontal and vertical keystone correction for grid line distortion at the sides or top and bottom of an image with respect to the center line.	Press KEY + Left/Right or Up/Down arrow keys to correct for horizontal and vertical keystone.
PIN	Pincushion. Vertical and horizontal pincushion correction for distortion at the sides or top and bottom of an image.	Press PIN + direction arrows to correct both vertical and horizontal pincushion distortion.
LIN	Linearity. Horizontal linearity correction for improper horizontal grid spacing on an image.	Press LIN + Left/Right direction arrows to correct for horizontal linearity distortion.
EDGE	Edge Linearity. Horizontal edge linearity correction for improper grid spacing at the sides of an image.	Press EDGE + Left/Right direction arrows to correct for edge linearity distortion.
PATTERN	Displays test pattern selection menu.	Press TEST + Number of test pattern to select.
BRT	Brightness. Adjust the brightness level until the black portions of a projected image are black, but detail in color balanced areas is not lost.	Press BRT + Up/Down direction arrows to set brightness level.
CONT	Contrast. Change the amount of image intensity. If image defocusing or loss of detail occurs, decrease either contrast or brightness, or both.	Press CONT + Up/Down direction arrows to set contrast level.
COLOR	Controls the color intensity of the video image. If the image appears <i>too pale</i> or <i>weak</i> , increase color level. If <i>flushed</i> or <i>too bright</i> , decrease color level.	Press COLOR + Up/Down direction arrows to set color level. Active only when the input is Composite or S-Video.

Key	Function	Usage
TINT	Controls the hue of the video image. If facial tones or objects appear <i>too green</i> , increase tint. If <i>too purple</i> , decrease tint.	Press TINT + Up/Down direction arrows to set tint level. Active only when the input is Composite or S-Video.
SHARP	Sharpness. Controls the sharpness of the video picture. If the image appears <i>soft</i> , increase sharpness. If <i>grainy</i> , decrease sharpness.	Press SHARP + Up/Down direction arrows to set sharpness level. Active only when the input in Composite or S- Video.
DEFLT	Default. Returns all picture control to technician-set default values.	
ESC	Cancels last command and retreats one menu level.	
NUMBER KEYS	Selects channel. makes Menu selections.	
CUTOFF	Cuts off color channel, one color at a time. To cut off all three colors, use HIDE/MODE	Press CUTOFF + R, B, or G.
RED/GREEN/BLUE	Color channel selection.	If color is cut off, press CUTOFF and color key.
ARROWS	Used for increasing and decreasing control levels, cursor movement, and convergence adjustments.	
MENU	Toggles on/off Main Menu display.	Press once to display Main Menu, second time to hide Main Menu.
ONSCRN	Toggles on/off the "on screen" information display.	
ENTER	Implements commands.	
BOW	Not available	

Key	Function	Usage
SKEW	Not available	

2.2 Keyboard Command Equivalents

The ILA-12K can be controlled by a VT-100 terminal or PC using Windows® 3.1. Table 2-2 shows keyboard equivalents. Access Windows® Program Manager and select Terminal, then Settings. Select Terminal Emulation, DEC VT-100(ANSI). Use a Null Modem cable to connect the projector to the terminal. *See Appendix A for more details.*

Table 2-2 Keyboard Command Equivalents

Action	Keyboard Input	Tethered Remote	Hex Code
Power on/off	CTRL-P	Both POWER keys	10
Electronics power only	CTRL + E		05
Arc lamp power only	CTRL + L		0C
Power ON	CTRL + U		15
Power OFF	CTRL + F		06
Video mute	V	HIDE/MODE	56
Convergence mode	D	POS/CONV	44
Change channel	Channel # + ENTER*	Channel # + ENTER	30-39 +OD
Cursor size	M	CURSSIZE	4D
Phase	H	PHASE	48
Blanking	Z	BLNK	5A
Position	P	POS	50
Size	S	SIZE	53
Keystone	K	KEY	4B
Pincushion	N	PIN	4E
Linearity	L	LIN	4C
Edge linearity	E	EDGE	45
Test pattern	T	TEST	54

Action	Keyboard Input	Tethered Remote	Hex Code
Brightness	I	BRT	49
Contrast	C	CONT	43
Color	A	COLOR	41
Tint	U	TINT	55
Sharpness	X	SHARP	58
Picture setting defaults	CTRL+D	DEFLT	04
Back out of menu	ESC	ESC	1B
Hide R, G or B	F	CUT OFF	46
Red, green, blue selection	R, G, B	R,G,B	R=52 G=47 B=42
Up arrow	UP Arrow	UP Arrow	1B,5B, 41**
Down arrow	DOWN Arrow	DOWN Arrow	1B,5B, 42**
Right arrow	RIGHT Arrow	RIGHT Arrow	1B,5B, 43**
Left arrow	LEFT Arrow	LEFT Arrow	1B,5B, 44**
Access main menu	SPACEBAR	MENU	20
Screen display on/off	O	ON SCRN	

*For channels with two numbers, pressing ENTER is not necessary.

**The arrow keys are a sequence of Escape, Left Bracket, and A,B,C, or D depending on the arrow key pressed. The first number represents the Escape key, the second number the left bracket, and the third number represents the letter corresponding to the Arrow key pressed.

2.3 Menu Structure

The Menu Structure is multi-level and allows access to commands for checking out and operating the ILA-12K.

To display the Main Menu, press MENU on the Tethered Remote Control or press the SPACEBAR on a computer terminal. If the Main Menu does not display on the projector screen, press ONSCRN to enable the On-screen command (the menus will always display on the computer terminal screen).

NOTE: If another menu is already displayed on the screen, press ESC until the Main Menu appears.) The Main Menu is displayed on the terminal monitor and on the projected screen image. If using a computer terminal to run the ILA-12K, use a terminal emulation program such as ProComm Plus® or Windows® terminal

Menu screens will remain active for 30 seconds. The menu then "times out" and is cleared from the screen. To issue a command, access the Menu (press MENU) and type the selection number or use the arrow keys to highlight the desired number, and press ENTER.

Figure 2-2 shows the Main Menu Structure and the sub-menus. Section 2.4 provides a description of each menu item.

Main Menu (Software version 5.3.0)

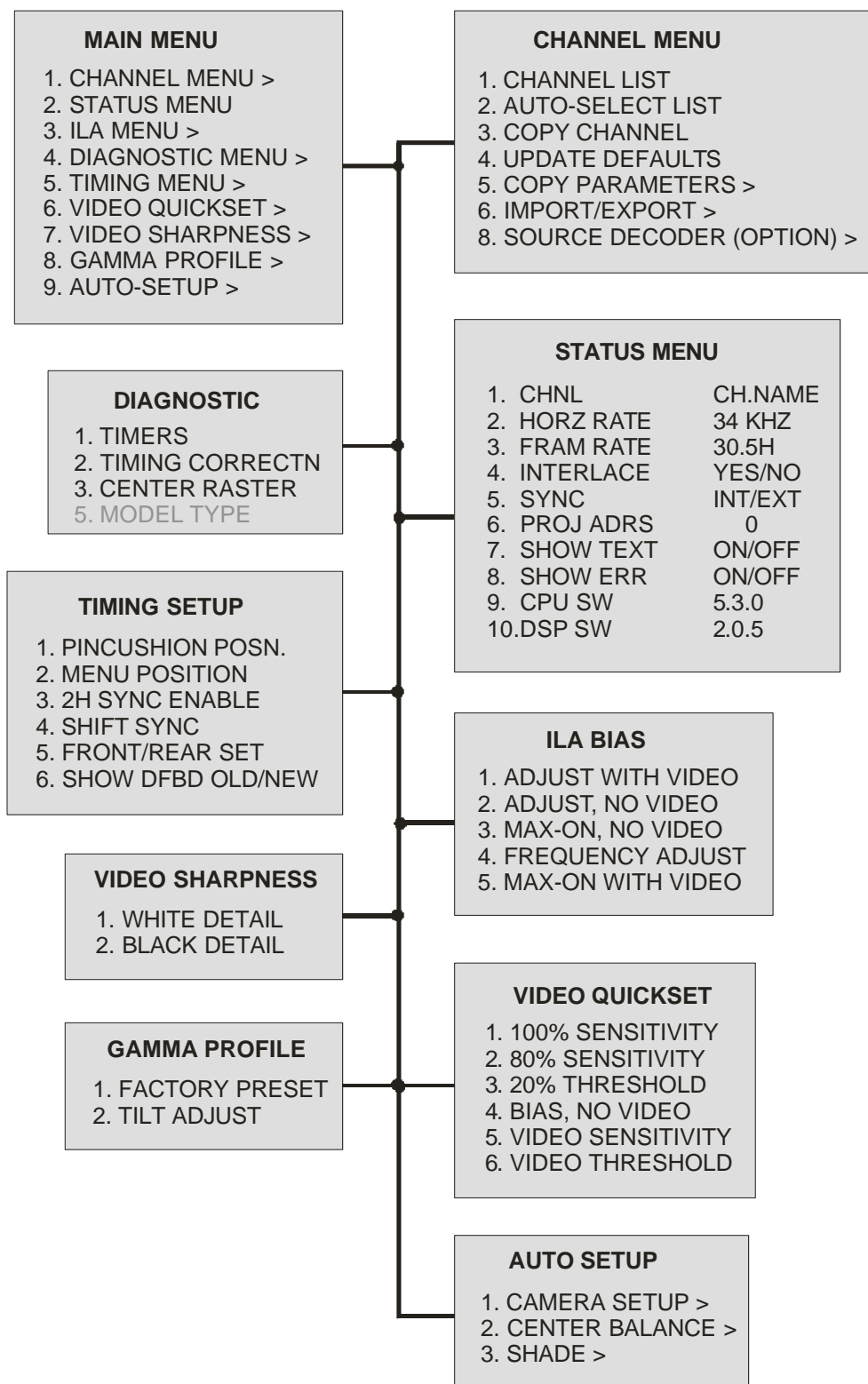


Figure 2-2 Main Menu Structure for the ILA-12K

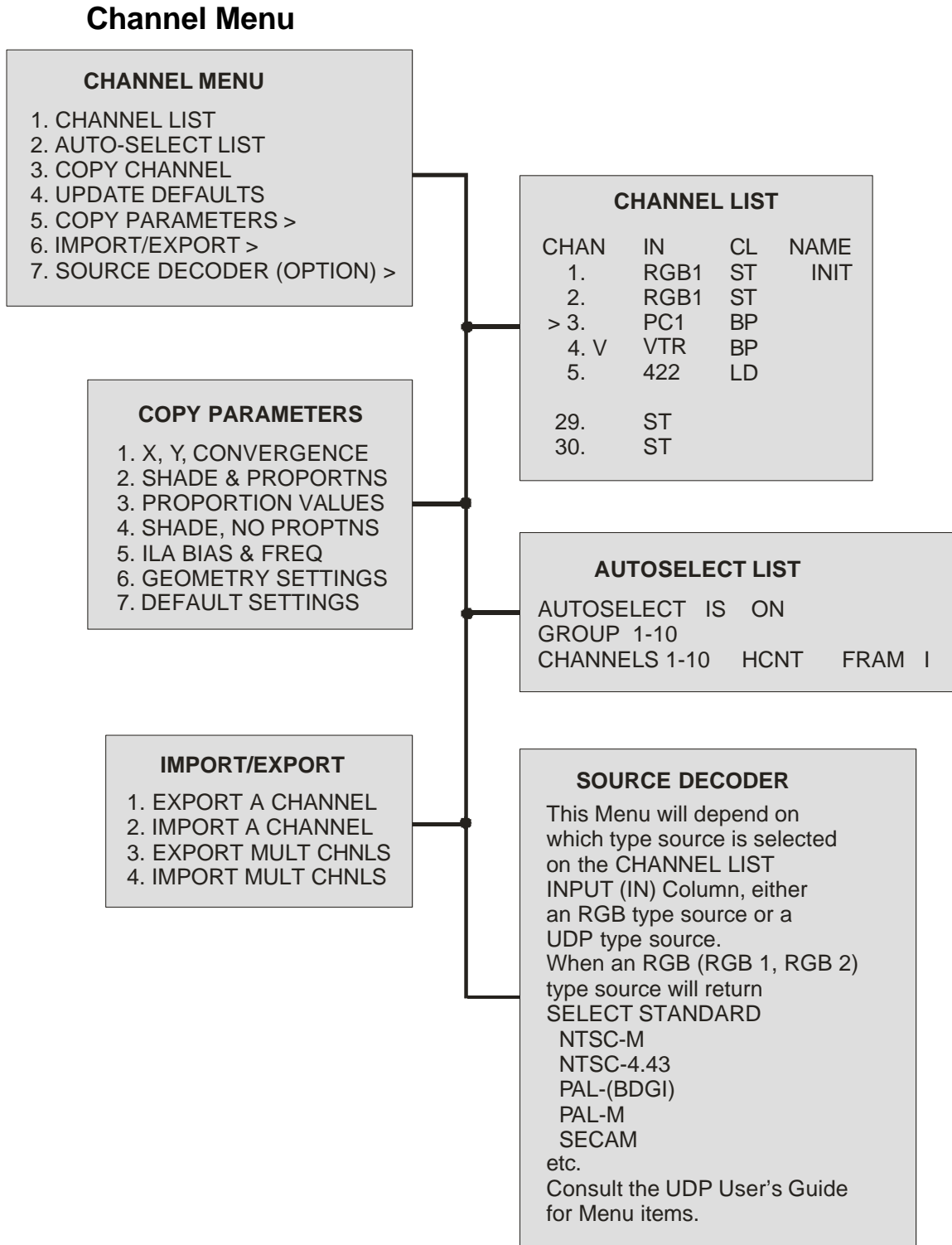


Figure 2-3 Channel Menu and submenus

2.4 Menu Item Definitions

This section defines the menu items available through the Main Menu and submenus.

Main Menu

CHANNEL MENU - This displays the Channel Menu.

STATUS MENU---Displays various parameters of the projector, including the horizontal scan frequency (HORZ RATE), the vertical frequency (FRAM RATE), if the video signal is interlaced or non-interlaced. It also displays the current version of System Software (CPU SW), and Digital Signal Processor Software (DSP SW).

ILA[®] MENU---This displays ILA[®] device Bias Menu.

DIAGNOSTIC MENU---This displays the Diagnostic Menu, which provides access to timing controls. These controls should be used only by trained and certified technicians. The Diagnostic Menu contains a hidden item - #5 Model Type (no item #4). Model Type accesses a menu that allows the user to select the type of projector.

TIMING MENU---This displays the Timing Setup Menu. The functions in the TIMING MENU control the timing for the horizontal scan frequency.

VIDEO QUICKSET---This menu provides the technician with quick access to functions used to set up Color Temperature and Gamma Curve during initial setup. It may be used to make minor touch ups to the Gamma Curve or Color Temperature as necessary. Each of these functions may be accessed from their separate commands in other menus.

VIDEO SHARPNESS---This function provides enhancement for black or white video details when needed for high definition video.

GAMMA PROFILE---This function provides adjustment of the dark levels of each color on the Gamma Curve.

AUTO-SETUP---This item accesses a menu that uses the functions of the Auto-Setup Tool (AST). The use of the functions on this menu require the AST be installed on the projector. The use of this tool requires special training for users.

Channel Menu

CHANNEL LIST---This Menu item displays the status of all active channels. The information includes the Channel number, type of input signal, type of DC Restore, and Channel name set by the user.

CH = channel number (an arrow in front of the channel number indicates the channel is active)
 IN = input (RGB1, RGB2, Video, S-Video)
 SL = (BP:backporch, ST:sync-tip, TL:Tri-level)
 NAME = user-set channel name.

AUTOSELECT LIST---This function displays the current status of the AUTOSELECT function and allows operator to set up an AUTOSELECT group (see section on Autoselect).

COPY CHANNEL---This function copies setup and Convergence data from current channel to another channel. This provides a baseling setup for setting up additional channels for multiple sources. It is important to realize that timing requirements for different horizontal and vertical scan frequencies will require additional adjustment for Convergence, XY Registration, Shading.

UPDATE DEFAULTS---This function saves Picture settings to the Technician remote values. On recent versions of System Software, this function is performed automatically when changing channels of powering OFF the projector.

IMPORT/EXPORT---This function imports setup data from a computer to the projector or exports setup from the projector to a computer. This may be done for a single channel or multiple channels. This function is very important when servicing the projector. It is recommended to export setup data to a computer after setting up the projector. (see Appendix A).

COPY PARAMETERS---This function allows user to copy any of seven setup parameters selectable from the submenu.

SOURCE DECODER---This function displays the optional Decoder Setup Menu for either RGB or UDP type video inputs depending on the INPUT type selected in the CHANNEL LIST.

- SELECT RGB STANDARD
 - NTSC-M,
 - PAL-BDGI,
 - PAL-N, SECAM,
 - PAL-M, PAL-4.43,
 - NTSC-M,
 - NTSC-4.43,
 - BLK/WHT.

Refer to the UDP User's Guide for UDP type STANDARDS. The remainder of the items in this menu should be used by trained and certified technicians.

Status Menu

CH. ##--This function displays the current channel number and channel name.

HORZ RATE.--This function displays the horizontal scan frequency of input signal. +/-5% accuracy.

FRAM RATE--This function displays the vertical scan frequency of an input signal if non-interlaced, or 1/2 the vertical scan frequency if interlaced.

INTERLACE--- This indicates whether the input video is interlaced or non-interlaced. If not, projected image is progressive scan.

SYNC---This function indicates whether the internal or external sync is active.

PROJ. ADRS.--- This function is not applicable to the ILA-12K projector.

SHOW ADD.---This toggles adjustment data display on/off screen.

SHOW ERR.---This toggles on/off the display of error codes on-screen.

CPU SW---This displays the CPU (System) Software version. It uses two Eprom IC chips.

DSP SW---This displays the Digital Signal Processing Software version. It uses three Eproms.

ILA[®] device Bias Menu

ADJUST WITH VIDEO---This function allows the user to set the ILA[®] device bias with video on the screen.

ADJUST NO VIDEO--- This function allows the user to set ILA[®] device bias with video cut off.

MAX-ON NO VIDEO--- This function sets the RGB ILA[®] device biases to maximum (255) without video for easier projector positioning and lateral lens adjustment. It resets to original setting after pressing any key.

FREQUENCY ADJUST--- This function allows the user to set the ILA[®] bias frequency with video on screen. A frequency of 1.8 kHz is acceptable for general video viewing. A lower frequency provides a brighter image with lower image burn-in. A higher bias frequency results in higher resolution. For HDTV a frequency of 2.0-2.5 kHz provides higher resolution with less image lag.

MAX-ON WITH VIDEO---This function displays the maximum (255) ILA[®] bias setting with video on screen. It resets to original setting after pressing any key.

Video Quickset

100% SENSITIVITY---This function allows the user to measure maximum light output with video for calculations to determine Color Temperature and Gamma Curve. It selects the STATIC FLAT FIELD Test Pattern.

80% SENSITIVITY--- This function automatically selects the ADJUST FLAT FIELD test pattern and sets the video output level at 80%. It accesses the Sensitivity Offset where the user may adjust for setting Color Temperature and Gamma Curve.

20% THRESHOLD--- This function automatically selects the ADJUST FLAT FIELD test pattern and sets the video output level at 20%. It accesses the Threshold Offset where the user may adjust for setting Color Temperature and Gamma Curve.

VIDEO SENSITIVITY---This function is used to adjust Sensitivity Offset or Proportional Offset with video or any test pattern on the screen. The user selects External video or any Test Pattern, then selects Video Sensitivity. Then the color is selected and adjusted and using arrow keys to increase or decrease Offset or Proportional. The user can select this function with the External video on-screen, after all shading adjustments have been made, to perform minor shading touch-up if some incorrect coloration still exists in the video. The up/down arrow keys are used to increase or decrease any color.

VIDEO THRESHOLD---Same as #4 for Sensitivity.

Timing Setup Menu

PINCUSHION POSN---This function centers pincushion correction to image.

MENU POSITION---This function centers position of menus on the screen. It also centers Convergence and Shading correction position.

2H SYNC ENABLE---This function is used to eliminate “flagwaving” (a video anomaly) seen at the top of the screen.

SHIFT SYNC---This function is used to eliminate unstable images due to unusual input sync from the source.

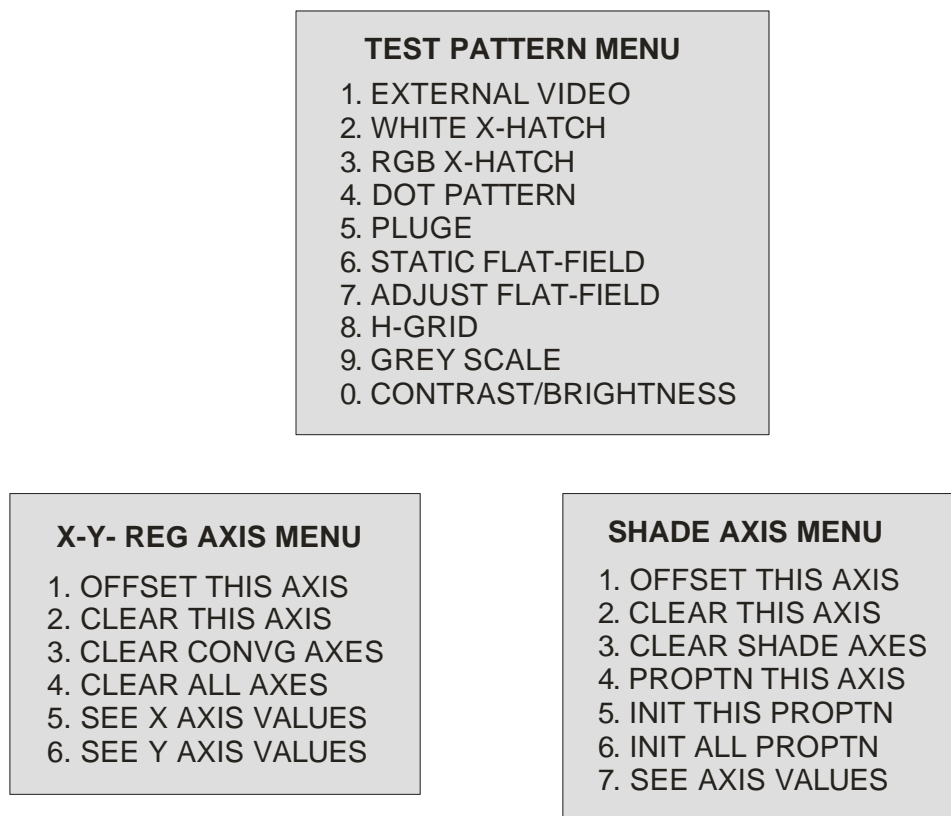


Figure 2-4 Test Pattern, X- Y- Registration Axes, and Shade Axis Menus.

Test Pattern Menu

To select a test pattern with the remote, press TEST (on the Tethered Remote Control), followed by the Test Pattern number. On a keyboard, press T and the Test Pattern number.

EXTERNAL VIDEO---This displays the incoming source video and may be used while adjusting PHASE, SIZE, POSITION and BLANKING.

WHITE-X-HATCH--- This displays white intersecting (cross-hatch) lines with no background. It may be used while adjusting Convergence, Keystone, Pincushion, Pincushion Position, and Linearity.

RGB-X-HATCH--- This displays red, green, blue or a combination of colored intersecting (cross-hatch) lines, depending on which colors are cutoff, with no background. It is used for Convergence final adjustments.

DOT PATTERN---Used to verify G₂ setting for RGB.

PLUGE---Used to set Black/White scale.

STATIC FLAT FIELD---This displays a flat-field at 100% video level. It is used to evaluate Sensitivity and Arc Lamp rolloff.

Sensitivity Shading adjustments.

H-GRID---This displays a screen filled with red, green, or blue uppercase H's. It is

may also be used to focus the Projection Lens.

GREY SCALE---This displays a series of eight stripes of incremented levels of

may be used for checking Color Balance, G₂
Position adjustments.

CONTRAST/BRIGHT---Used as a reference for Brightness and Contrast for the

X,Y Registration Menu

The X,Y Registration Menu is accessed (on the Tethered Remote Control) by

Registration, Sensitivity, or Threshold. Then press the MENU button to access the menu. In the X,Y Registration Mode, the MENU button displays the X,Y

displays the Shade Menu. On a computer terminal, press D for Data, and then press V to cycle through the X,Y Registration, Sensitivity, or Threshold Mode.

OFFSET THIS AXIS---This function adjusts all points on screen equally by setting an offset for XY Registration. It may also be used as a fine adjustment

CLEAR THIS AXIS--- This function resets X- Y-axis to the default values for the active color.

values for the active channel.

CLEAR ALL AXES--- This function resets ALL data to the default value for the

SEE X AXIS VALUES--- This function enables the user to see the X-axis values in each cell when the projector is connected to a VT-100 terminal using a
® with 40 or more lines of display.

Shade Axes Menu

OFFSET THIS AXIS--- This function adjusts all points on the screen equally by

CLEAR THIS AXIS--- This function resets axis for the active color.

CLEAR SHADE AXES--- This function resets all shading data (Sensitivity and

PROPTN THIS AXIS--- This function enables the user to offset (adjust up or down) all cells in one axis (color) in proportion to their individual values.

INIT THIS AXIS--- This function resets current mode for current color to 230 default.

INIT ALL AXES--- This function Resets Sens/Thres for all colors to 230 default level. Must be done when starting up with new System Cont Board or updating software.

SEE AXIS VALUES--- This function Enables operator to see Sensitivity or Threshold axis values in each cell when projector is connected to a VT-100 terminal using a program such as Procomm Plus[®] with 40 or more lines of display.

2.5 Autoselect

The Autoselect feature automatically selects a channel to match an incoming source when the incoming source changes. Channels are assigned by the operator to numbered Autoselect groups. When a source changes, the channels within the same Autoselect group are searched without operator knowledge or intervention. When a channel that matches the new source's parameters is found, that channel is switched to automatically.

Need for Autoselect:

When the projector is operating in one channel and the incoming source changes, the current channel may not be set up to properly process the new source. The operator then must choose which channel is best suited to handle the new source, and change to that channel with the remote. The operator may not know which channel best matches the new source and a delay occurs in switching channels.

A similar situation exists when a switcher without RS-232 capability to control projector switching is connected to one of the projector inputs. This switcher can't send out a command to change projector channels when the switcher channel is changed. The projector channel must be changed manually by the operator to the correct channel for the new switcher channel. Again, the operator must know which channel to switch to.

The Autoselect feature eliminates operator delays and confusion by automatically switching to the correct channel within an Autoselect group.

Autoselect setup example

A computer, capable of selecting between different scan rates, is being used as a source. Normally when the scan rate changes the operator manually changes channels to one that is set up properly for the new source. Because the computer provides sources at three different scan rates, the operator must change channels each time the source changes.

For example, a computer provides the following three sources set up as indicated:

-
-
-

NOTE:

and B).

To place three sources in an Autoselect group:

From the CHANNEL MENU, select AUTOSELECT LIST.

Display		Description
GROUP 1-10		Global on/off state
CHANNELS 1-10	↕	groups
N/A		to 10 channels per group

- 2.
3. to highlight the current state and press ENTER to select.
4. Use the UP/DOWN arrow keys to change the choice to OFF.
5. Press ENTER to save that state.
6. Use the UP/DOWN keys to highlight the group field.
7. Press ENTER to select.
8. Use the UP/DOWN keys to choose a group number.
9. Press ENTER to save that group number.
10. Press the right arrow key to highlight the group name field.
11. Press ENTER to highlight the first character, then scroll with the UP/DOWN keys and press ENTER to select the first letter for the group

name. NOTE: The group name is for convenience only and may be omitted if desired.

Move the highlight to the first channel field in the list and press ENTER.

Use the arrow keys and select Channel 1. Press ENTER to add Channel 1

NOTE 1: A channel can be in one Autoselect group only. To move a
to N/A.

NOTE 2: The order of channel assignment is not important. The Autoselect feature starts at the current channel when looking for a match and scans down the list and back to the beginning of the list. The first channel to match the incoming source is automatically selected.

14. Repeat Step 13 to add Channel 7 and 11 to Group 1.
15. Channels 1, 7, and 11, from the example, are now in AutoSelect Group #1. More channels can be added to this group, if needed. Other channels can be assigned to other groups as needed. One group can be for SUN workstations with different scan rates, and one for MACs, etc. Do not assign sources with very similar parameters to the same group (see Autoselect limitations below).
16. When finished adding channels to Autoselect groups, turn the Autoselect feature to ON as follows:
 - ❑ Select CHANNEL LIST from the MAIN MENU.
 - ❑ Select AUTOSELECT LIST from the CHANNEL LIST.
 - ❑ Use the arrow keys and highlight AUTOSEL STATE ON/OFF. Press ENTER to select it.
 - ❑ Select AUTOSEL STATE ON. Press ENTER to lock the Autoselect to ON.

Now, when the projector operates in one of the channels in Group # 1, and the incoming source changes to one of the other two, the projector automatically switches to the correct channel without any operator knowledge or intervention, just as though the operator selected the channel manually.

Also, when the operator selects a channel within a group and the incoming video doesn't match the selected channel's parameters, that group's channels are searched for a match to the incoming source. The channel that most closely matches is automatically switched to without any operator knowledge or intervention.

Autoselect Features And Limitations

Similar Sources

Autoselect cannot switch between two channels with very similar horizontal frequencies, vertical frequencies, and interlace modes. This occurs with Line-Doubled NTSC Video and VGA 480 Computer Graphics, and with PAL and SECAM video. If two sources with very similar video formats (within the deadband—see below) are located in the same group number, Autoselect switches to the source listed first on the Autoselect channel list. Sources with very similar video formats should be placed in different Autoselect groups.

Deadband (Sensitivity)

The deadband for distinguishing between different video formats is 20 horizontal lines and 3 Hz vertical frames.

Adding/Deleting Channels

To add a channel to any Autoselect group, the video source must be connected and active. The Autoselect feature must be OFF to add or delete a channel.

Autoselect OFF

If Autoselect is OFF the projector will not automatically switch to another channel.

Unmatched Incoming Sources

If the operator switches to an incoming source that does not match any channel in the Autoselect group, no autoselect switching occurs. The projector remains on the current channel.

Maximum Channels and Groups

Up to 10 channels can be assigned to each group and there can be up to 10 groups, but there can only be a total of 30 group/channel combinations. Other channels can exist that are not assigned to any Autoselect group but the total number of channels cannot exceed 30.

Identical Autoselect Groups

It may be useful to have two groups with identical basic parameters. This is feasible in situations where viewing will be in two different environments such as daytime and nighttime or light and dark rooms. One Autoselect group can have higher Brightness or Contrast than another group but otherwise be the same. The operator can switch between the two groups and retain the same Autoselecting between channels but for two different environmental situations. This saves the operator from having to adjust Brightness or Contrast every time the environment changes.

Channels not in Autoselect Groups

These channels are not included when Autoselect searches for matching channels.

2.6 Importing and Exporting Data

Importing and Exporting setup data is a frontline defence against losing the channel setup data such as X,Y Registration, Convergence, Geometry, and Shading. It takes about 10 to 15 minutes to download (Export) this data. Compare

channels, which may take hours.

Importing and Exporting functions can not be performed using the Tethered

software. Microsoft[®] Windows[®] operating system, a Hyper Terminal[®] (3.1) and Hyper Terminal[®] (95/98). The Terminal program under Windows[®] 3.1 works very well however Hyper Terminal under Windows[®] 95/98 is a little tricky to use. ProComm Plus[®] is recommended as an alternative.



CAUTION! It is very strongly recommended that setup

power supplies and backup batteries. Exporting baseline source setup setting up new source file(s) in the case of an unexpected problem

VT-100 Terminal Control

the projector. The VT-100 is connected to TERMINAL-IN (RS-232 #1).

While the ILA-12K projector was designed using the VT-100 terminal, any with a PC to control the projector. This document includes the procedures to set

Hardware/Software Requirements

-
COM2
-
Windows HyperTerminal.
-
Female DB9 connector (to projector) to
wired as RS-232 Null Modem

Software

Windows 3.1 Setup (Vt-100 Emulation)

Software is accomplished as follows:

2. From the menu bar, select SETTINGS. From the SETTINGS menu, select
already selected).

Terminal Preferences

4. Select **SETTINGS** again from the menu bar.
5. Select Terminal Preferences.
6. Set the following Modes:

Line Wrap:	Yes	CR → CR/LF	
Local Echo:	No	Inbound:	No
Sound:	Yes	Outbound:	No
Columns		Cursor	
80:	Yes	Block:	Yes
132:	No	Underline:	No
		Blink:	Yes
Terminal Font	Courier 12	Translations	NONE
		<u>IBM to ANSI</u>	No
Show Scroll Bars	Yes	<u>Buffer Lines:</u>	100
Use Function Arrow, and Ctrl Keys for Windows [®]	No		

Communications Protocol

1. Select **Settings** using the menu bar, then select **Communications**.
2. Set the following communications parameters and modes:

Baud Rate	9600	Stop Bits	1
Data Bits	8	Flow Control	Xon/Xoff
Parity	None	Carrier Detect	No
Parity Check	No		
Connector:	Com1 (This is PC configuration dependent)		
3. Select File from the menu bar and select New. Under File Name enter VT-
4. 100.TRM. This will allow the user to select the file VT-100.TRM with the above parameters saved for ease in future use.

Windows[®] 95/98 and ProComm Plus[®] Setup (VT100 Emulation)

Windows[®] 95/98 Hyper Terminal

Hyper Terminal has a few things that may cause confusion while uploading data and for this reason ProComm Plus[®] communication software is recommended for

Terminal Emulation, however, if the ProComm Plus® software is not available Windows® Hyper Terminal will work.

To use Windows® Hyper Terminal:

1. With Windows® Operating System software running, Click on the START button on the Taskbar. Go to the ACCESSORIES submenu and select COMMUNICATIONS.
2. In the COMMUNICATIONS subdirectory, select Hyper Terminal.
3. Hyper Terminal will automatically bring up a New Connection dialog box that prompts for a name and icon to represent the new connection. Enter a name, select an icon and click on OK.
4. Access the File Menu and Select PROPERTIES. This will bring up the Properties dialog box shown in Figure 2-5. Select the “Connect To” Tab.

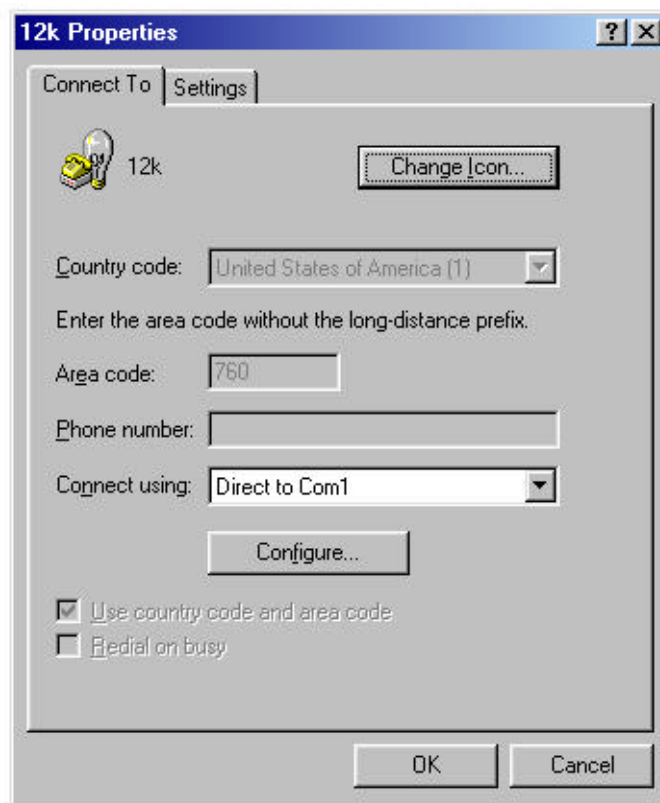


Figure 2-5 Properties dialog box.

5. In the “Connect using” box select an appropriate port. The correct selection will depend on the configuration of the particular computer being used.
6. Click the Configure... box. This will bring up the Port Setting dialog box. Enter the settings shown in Figure 2-6.

7. Hyper Terminal is now configured correctly to communicate with the projector. Access the File Menu and select the Save as.. and give the file a name.

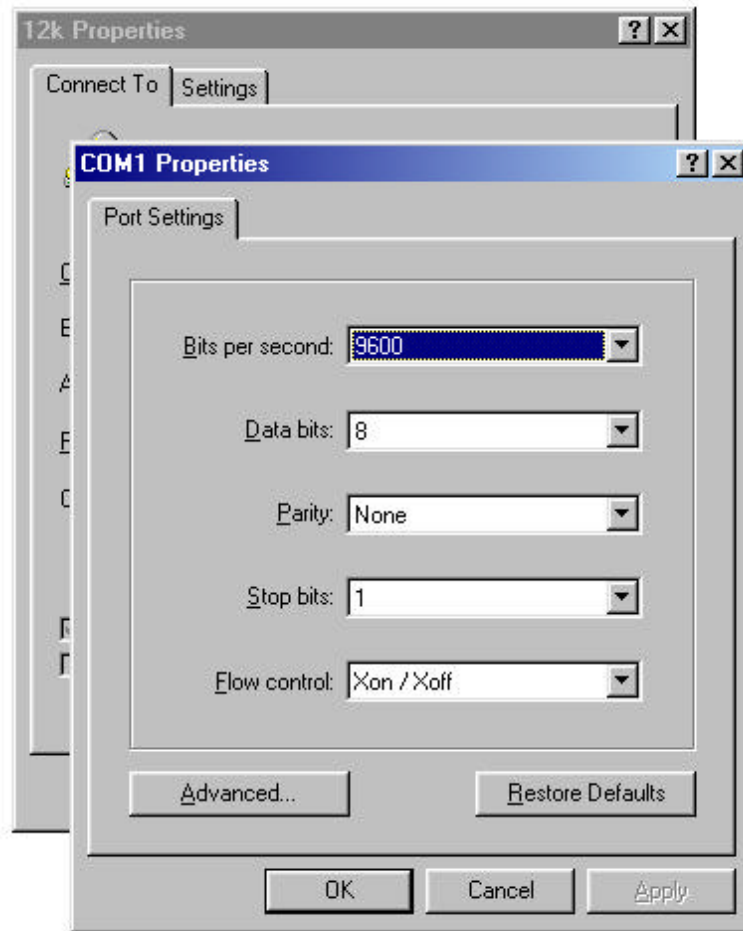


Figure 2-6 Port Settings for Hyper Terminal in Windows[®] 95/98

ProComm Plus[®]

The parameters format shown in this procedure duplicate the format in the ProComm Plus[®] software displayed on the monitor. VT-100 emulation with the PC using ProComm Plus[®] software is accomplished as follows:

1. In ProComm Plus[®] press ALT+Z to display **COMMAND MENU**.
2. Strike ALT+S to display **SETUP UTILITY**.
3. Select Terminal Options and set the following modes:

A- Terminal emulation	VT100
B- Duplex	FULL
C- Soft flow ctrl (XON/XOFF)	ON
D- Hard flow ctrl (RTS/CTS)	OFF
E- Line Wrap	ON
F- Screen scroll	ON

G- CR Translation	CR
H- RS Translation	DESTRUCTIVE
I - Break length (msecs)	350
J - Enquire (ENQ)	OFF
K- EGA/VGA true underline	OFF
L- Terminal width	80
M- ANSI 7 or 8 bit commands	8 BIT

4. Strike ALT+D to display the DIALING DIRECTORY.
5. Setup next available entry in the directory; strike A (Add Entry):

Name: VT-100 Terminal
Number:
Baud: 9600
Parity: None
Data Bits: 8
Stop Bits: 1
Duplex: Full
PORT: COM1 (**NOTE:** PC Configuration dependent)

Script:
Protocol: ASCII
Terminal: VT100
Mode: direct
Password:
Meta file:
Kbd file:
Note file:

Export Channel Data to a PC using Windows[®] 3.1.

The following describes the procedural sequence for exporting ILA-12K channel data to a PC (and disc).

1. Connect VT-100 Terminal or PC (set up to emulate the VT-100) to RS-232 #1 port (TERMINAL-IN) using the RS-232 Null Modem Cable.
2. Start VT-100 terminal emulation from the PC. Select File from the menu bar and select Open. Use filename VT-100 TRM.

NOTE 1 The PC will now act as a controller to the projector and all commands are now keyboard characters. A menu list outside the rectangular box will appear on the monitor screen.

NOTE 2 The Software will timeout in 10 seconds if actions are not complete.

3. Select an active Projector channel from the channel list to be exported.

4. To export channel data to the PC, select CHANNEL MENU from the MAIN MENU and select EXPORT CHAN, DATA. Enter channel number to be exported when the Projector displays the message: ENTER CHANNEL #.
5. The projector will display the message: PREPARE HOST TO RECEIVE DATA. ENTER TO START ESC TO ABORT.
6. At the PC, select Transfers from the main menu bar and select Receive Text File. Enter the name of the channel to save, i.e., CH2.TXT. Strike the Enter key twice to begin Transfer. Transfer is in progress when ASCII data scrolls across the PC's screen.
7. The Projector displays the message: TRANSFERRING ESC TO ABORT.
8. Terminate transfer when the Projector displays the following message: TRANSFER COMPLETE WHEN TERMINAL READY FOR NORMAL OPERATION. PRESS ANY KEY. At the PC select Transfers from the menu bar and select stop.

Import Channel Data from a PC Using Windows® 3.1

The following describes the procedural sequence for importing channel data from a PC (or disc) to the ILA-12K projector.

1. Select an active Projector channel from the channel list.
2. To import channel data to the Projector, select CHANNEL MENU from the MAIN MENU and select IMPORT CHAN. DATA (projector automatically switches to internal sync. Enter channel number to be imported when the Projector displays the message ENTER CHANNEL #.

NOTE: Import Data cannot be performed to the current active channel.

3. The projector will display the following message: READY TO RECEIVE BEGIN UPLOAD NOW ESC TO ABORT.
4. At the PC, select Transfers from the menu bar and select Send Text File. Select the drive letter where the floppy disc is located. Select the file name of the channel to send. Press Enter to begin Transfer.
5. The PC will display send rate at bottom of screen and the message: SENDING CHAN#. TXT.
6. Terminate transfer when the Projector displays the following message: TRANSFER COMPLETE CHANNEL BANK XFER SUCCESSFUL PRESS ESC. Strike the ESC key to terminate transfer.

Export Channel Data to a PC using Windows® 95/98 Hyper Terminal or ProComm Plus® Communications Software.

The following is the procedure for exporting ILA-12K channel data to a computer (and disc). Two software programs can be used to emulate the VT-100 Terminal:

ProComm Plus[®] communication software and Windows[®] Hyper Terminal. Both programs work adequately however, ProComm Plus[®] is the preferred software for to ease of use.

ProComm Plus[®]

1. With Windows[®] 95/98 Operating System software running, start the ProComm Plus[®] software.
2. In ProComm Plus[®] access the File Menu and select OPEN. Locate the file that is configured for a VT-100 Terminal. Press ENTER.

NOTE 1: The PC will now act as a controller to the Projector and all commands are now keyboard characters. A menu list outside of the rectangle box will appear on the PC's screen.

NOTE 2: The Software will time-out in 10 seconds if actions are not completed

3. Select an active Projector channel from the channel list to be exported. From the MAIN MENU select the STATUS MENU and set projector to internal sync by toggling 5.
4. To Export channel data to the computer, select CHANNEL MENU from the MAIN MENU and select IMPORT/EXPORT. Enter channel number to be exported when the Projector displays the message: ENTER CHANNEL#.
5. The Projector will display the message:
PREPARE HOST TO RECEIVE . .
<ENTER> TO START
<ESC>TO ABORT .
6. In ProComm Plus[®], access the Data Menu and select Receive Text File. Give the file a name (the name of the channel to save, i.e.; CH2.TXT). Press the Enter key twice to begin transfer.
7. Transfer is in progress when ASCII data scrolls across the computer screen. The Projector displays the message:
TRANSFERRING
ESC TO ABORT .
8. Terminate transfer when the Projector displays the following message:
TRANSFER COMPLETE WHEN TERMINAL READY FOR
NORMAL OPERATION.
PRESS ANY KEY.
9. At the computer strike the ESC key twice.

Windows® Hyper Terminal

1. Connect the RS-232 null modem cable from the PC serial comm. port connector to the projector RS-232 port #1 (**TERMINAL-IN**) connector.
2. With Windows® 95/98 Operating System software running, Click on the START button on the Taskbar. Go to the ACCESSORIES submenu and select COMMUNICATIONS.
3. In the COMMUNICATIONS subdirectory, select Hyper Terminal.
4. In the Windows® Hyper Terminal, select the File Menu and select OPEN. Find the VT-100 Terminal file (named in step 7 of the Windows® 95/98 VT-100 Emulation setup for Hyper Terminal).
5. Press Ctrl + P to power ON the projector. To perform the EXPORT function, the projector (or at least the Electronics (Ctrl+E toggles the Electronics ON and OFF)) must be powered ON.
6. Press the SPACEBAR to bring up the MAIN MENU.
7. From the MAIN MENU, select item #1 CHANNEL MENU.
8. From CHANNEL MENU, select either EXPORT A CHANNEL or EXPORT MULT CHNLS.
9. The screen will display:
CHANNEL NUMBER?
Enter a channel or multiple channels and press ENTER.
10. The screen will display:
PREPARE HOST TO RECEIVE DATA.
<ENTER> TO START
<ESC> TO ABORT
11. Access the Hyper Terminal TRANSFER MENU and select CAPTURE TEXT. The channel setup data will be exported as a text file.
12. Select a path and give the file a name such as the projector serial number i.e, 34114.txt. Make sure to add the txt extension on the file name to create a text file.
13. Press ENTER to confirm the file name. Press ENTER again to begin the download (Exported). Hyper Terminal will begin downloading data.
14. After the channel(s) have been downloaded, the program will display:
STOP YOUR DOWNLOAD NOW, THEN PRESS A
KEY FOR MENU!!!
15. In Hyper Terminal, access the TRANSFER MENU, and select CAPTURE TEXT, and from the submenu, select STOP and press any key to return to the projector menu.

16. The Export process is complete.

Import Channel Data From A PC Using Windows® 95/98 Hyper Terminal or Procomm Plus® Communications Software

The following is the procedure for importing channel data from a PC (and disc) to the ILA-12K projector.

ProComm Plus®

1. Select an empty projector channel from the CHANNEL LIST. From the MAIN MENU select the STATUS MENU and set projector to internal sync by toggling 5.
2. To import channel data to the Projector, select CHANNEL MENU from the MAIN MENU and select item #6 IMPORT/EXPORT.
3. Select either IMPORT A SINGLE CHANNEL or IMPORT MULT CHNLS. Enter channel number(s) to be imported when the projector displays the message: ENTER CHANNEL #.

NOTE: Import Data cannot be performed to the current active channel.

4. The projector will display the following message:

```
READY TO RECEIVE . .  
BEGIN UPLOAD NOW . .  
<ESC> TO ABORT.
```

5. In ProComm Plus® access the Data Menu and select the SEND DATA
6. The PC will display send rate at bottom of screen and the message: UPLOAD IN PROGRESS....
7. Terminate transfer when the Projector displays the following message: TRANSFER COMPLETE CHANNEL/BLANK XFER SUCCESSFUL PRESS ESC. Strike the ESC key to terminate transfer.

Windows® Hyper Terminal

1. Connect the RS-232 null modem cable from the PC serial comm. port connector to the projector RS-232 port #1 (**TERMINAL-IN**) connector.
2. With Windows® 95/98 Operating System software running, Click on the START button on the Taskbar. Go to the ACCESSORIES submenu and select COMMUNICATIONS.
3. In the COMMUNICATIONS subdirectory, select Hyper Terminal.
4. In the Windows® Hyper Terminal, press Ctrl + P to power ON the projector. To perform the EXPORT function, the projector (or at least the Electronics (Ctrl+E toggles the Electronics ON and OFF)) must be powered ON.

5. Press the SPACEBAR to bring up the MAIN MENU.
6. From the MAIN MENU, select item #1 CHANNEL MENU.
7. From CHANNEL MENU, select either IMPORT A CHANNEL or IMPORT MULT CHNLS.
8. The screen will display:

TARGET CHANNEL?

Enter the number of any empty channel or multiple channels (check the CHANNELS LIST) and press ENTER.
9. The screen will display:

READY TO RECEIVE . .
BEGIN UPLOAD . .
<ESC> TO ABORT
10. Access the Hyper Terminal TRANSFER MENU and select SEND TEXT FILE. The channel setup data will be exported as a text file.
11. Locate and select the file or files to be uploaded (Imported)
12. Press ENTER to confirm the file name. Press ENTER again to begin the download (Imported).
13. At this point the setup data begins to upload to the projector. PLEASE READ THE FOLLOWING NOTE BEFORE DOING ANYTHING ELSE!!

NOTE: The problem with the Hyper Terminal program is that the user would expect it to give some indication that the uploading process is happening, but it does not. The screen still displays the READY TO RECEIVE DATA. The important thing to know is that the program IS UPLOADING DATA AT THIS TIME. If any keys are pressed during the uploading process the Hyper Terminal program will most likely lock up. DO NOT TRY TO RESTART THE UPLOAD PROCESS OR PRESS ANY KEYS. Hyper Terminal takes about 24-30 seconds to upload a channel. Allow sufficient time for each channel to upload.
14. After the channel(s) have uploaded into the projector, the screen displays:

TRANSFER COMPLETE
PRESS ESCAPE
15. Press the ESC key to return to the IMPORT/EXPORT MENU.
16. The Import process is complete.