ADP-120
VGA to LVDS Adapter Board
For 40 pin VESA Standard LCDs

User Manual

The Systemation ADP-120 Adapter Board converts VGA video into LVDS data to directly drive a 40 pin VESA Standard LCDs. The board contains a scaling engine to accept video in different resolutions and scale the video to fit the 40 pin VESA Standard LCDs.

User controls are provided through the use of an On-Screen Menu. Three small pushbuttons on the board operate the OSD. Three remote pushbuttons can also be used by connecting to J16.

Analog VGA type video can be input through an industry standard HD-15 connector. The video input must be Red, Green and Blue video with Hsync and Vsync signals. The DDC channel on the VGA input is not supported.

The output connectors are compatible with the 40 pin VESA Standard LCDs 40-pin I-Pex and 30-pin Molex type. Cables are available from Systemation to connect the ADP-120 board to any of the 40 pin VESA Standard LCDs.

Power is input on connector J8. The power is 5VDC +/- 0.5V at 2A maximum. This includes the power required to power any 40 pin VESA Standard LCDs as well.

There is no setup required for the board. No jumpers or switches to set. The board “reads” the 40 pin VESA Standard LCDs to determine the output resolution and all video inputs are scaled to that resolution.

S P E C I F I C A T I O N S

1 – Video Input:	VGA analog Video with Horizontal/Vertical Sync
2 – Power Input:	5VDC from External Power Supply @ 2.0A
3 – LCDs Supported:	40 pin VESA Standard LCDs
4 – User Controls:	3 pushbuttons control an On-Screen Menu for: Backlight Up/Down Horizontal/Vertical or Auto Image Position Brightness/Color Level Status
5 – Remote Controls:	A Systemation PB-01 button board is available to remote the 3-button controls.
6 – Video Modes:	VGA Mode - 640x480, @ 60, 72, 75 Hz Text Mode - 720x400 @ 70 Hz EGA Mode – 640x350 @ 70 Hz SVGA Mode – 800x600 @ 56, 60, 72, 75 Hz XGA Mode – 1024x768 @ 60, 70, 75 Hz WSVGA Mode - 1024x600 @ 60 Hz SXGA Mode – 1280x1024 @ 60, 72, 75 Hz
7 – Image Processing:	Any of the above video resolutions will be scaled to fit the resolution of the LCD connected. In addition, video modes that are not supported will be displayed showing the upper left corner of the “unknown” video mode.
8 - LCD Drive:	A 40- pin I-Pex connector and a 30-pin FFC connector support the 40 pin VESA Standard LCDs
9 – Cables:	40-pin and 30-pin Cables are available from Systemation
10 – Temperature:	Operating: -20C to +70C

The following items are available on the MAIN MENU:

1 – LCD Backlight Brightness:	This item controls the PWM to the LCD from 0% to 100% brightness. The default is 100%
2 – Horizontal Position:	This adjustment allows the video input to be moved left and right on the screen. See note 1 below.
3 – Vertical Position:	This adjustment allows the video input to be moved up and down on the screen. See note 1 below
4 – Image Brightness:	This is the brightness control of the video image and is adjustable from 0% to 100%. The default is 60%
5 – Image Contrast:	This item is the contrast adjustment of the video image and is adjustable from 0% to 100%. The default is 100%.
6 – Image Color:	This item adjusts the color level of the video input from 0% to 100%. The default is 40%.
7 – Options Menu:	This item selects the Options Menu.
8 – Video Status:	This item selects the Status of the board and the input video.
9 – Exit:	Clears the Menu Menu

The following items are available on the OPTIONS MENU:

1 – Horizontal Size:	This item adjusts the input video horizontal size. It has the effect of stretching or shrinking the input image horizontally.
2 – Clock Phase (Focus):	This item adjusts the phase of the video sample clock with respect to the video image data. It has the effect of changing the focus from dull to sharp.
3 – Auto Position:	Selecting this item causes the board to re-measure the video input and re-scale and re-position the image on the screen.
4 – Load Defaults:	This item when selected erases all image position information and re-sets the image parameters to factory defaults.
5 – Exit:	Returns to Main Menu

The following information is shown on the Video Status Screen. No adjustments are available on this screen:

1 – Video Mode:	This is the measured incoming video mode. The name and measurements of the video mode are shown. For example: VGA 640x480
2 – Horizontal Timing:	The measured horizontal rate and sync polarity are shown.
3 – Vertical Timing:	The measured vertical rate and sync polarity are shown.
4 – Total Lines:	This is the measured total number of video lines in one frame of video.
5 – Run Time:	This is the total number of hours that the board has been on and running.
6 – Version Number:	This is the version of firmware currently running in the board.

Notes:

1 – The horizontal and vertical position of all “known” video modes is saved in flash memory on the board. When the board “sees” a video mode for the first time, it will perform an Auto Position on the video mode and save the position parameters in memory.

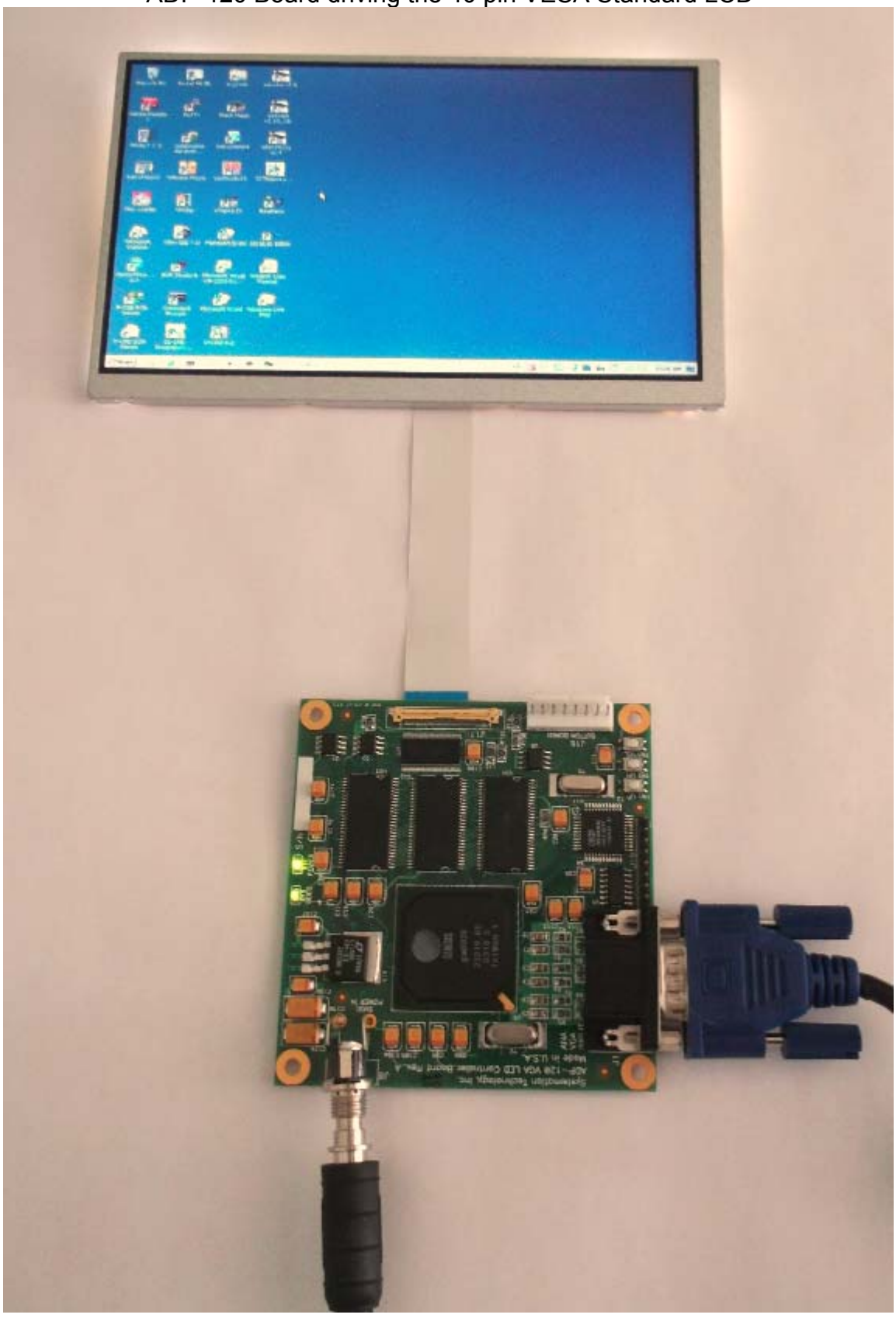
2 - If the user selects Auto Position on the Options Menu the video will be re-measured and saved again.

3 - If the User selected Load Defaults on the Options Menu, all position information for all “known” video modes is erased causing the board to automatically Auto Position again when the video mode is “seen” again by the board.

4 – The Run Time value is only updated every ten minutes and only when the board is receiving video.

5 – When the board sees no video, the screen background will be set to blue and a box in the middle of the screen will display NO VIDEO. If the no video condition persists for 30 seconds, the backlight will be turned off. If the user desires, pressing the MENU button will cause the backlight to again be turned on. Of course, when video returns, the backlight will be turned on and the image presented.

ADP-120 Board driving the 40 pin VESA Standard LCD



ORDERING INFORMATION:

3 – ADP-120 Board

4 – Cable for 40 pin Ipex

5 – Cable for 30 pin Molex

6 – AC Power Supply

Systemation Technology Inc.
1321 3rd Street
League City, Texas 77573
281-332-7186
281-332-7188 (fax)
www.systemation-inc.com