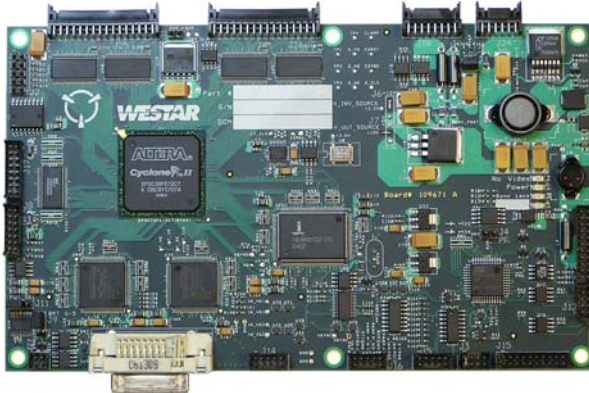


## SP-1 Special Processor Board [for Quad LVDS panels]



**SP-1 Special Processor Board**

## SP-1

- Drives NEC NL204153BC21 panel and other Quad-LVDS panels
- Analog RGB or Dual DVI input
- Adjustments via utility software
- Supports re-configuration in-the-field
- Supports QXGA and other high resolutions
- Supports common inverter interfaces
- 12VDC input power
- PWB size is 4.175" x 7.05"

The Westar SP-1 is a special processor board designed specifically to interface readily available PC video formats to the NEC NL204153BC21 panel and other Quad-LVDS LCD panels. In particular, the SP-1 will accept either analog RGB video or dual DVI video (TMDS format), and convert it to a (4) link LVDS interface. Upon detection of valid video, the board switches video and power to the panel and the backlight inverter per a pre-programmed sequence.

The SP-1 features include:

- DVI-I connector supports Dual DVI (TMDS) channels and Analog RGBHV channel.
- (2) EDID proms support the DVI-I connector: (1) is pre-loaded with preferred Dual DVI timing, (1) is pre-loaded with preferred analog RGBHV timing.
- Active EDID prom (Dual DVI or RGB) is jumper-selectable
- Separate connector for Analog RGBHV only input (no EDID)
- The SP-1 is a single format converter.
  - It accepts Dual DVI or analog video at a fixed format.
  - DVI input uses the data enable (DE) to identify active video area
  - Analog input requires programming "total" and "active" areas, as well as blanking details
- Analog channels support separate sync, sync-on-green or composite sync; with fine phase pixel clock adjustment.
- Drives many types of CCFL backlight inverters.
- Supports contrast control via multiplication on digital video. Contrast control inputs are: discrete inputs configured for momentary switch or optical encoder, analog input (potentiometer control), and RS-232 control.
- Provides brightness control to backlight inverter. Outputs to inverter include programmable resistance or voltage. Brightness is input to SP-1 via discrete input or RS-232.
- +12VDC Input Voltage.
- Smallest possible board size.
- RS-232 interface for configuration and control.

### Common SP-1 Applications include:

- Video adapter board for high resolution custom displays
- Conversion of readily-available PC video to four (4) link LVDS interfaces (Quad-LVDS).

### Configured for your requirements:

We sell our SP products directly to you, the customer. The SP-1 is pre-programmed and ready to work out of the box!

Our recommended system implementation uses the DVI-I input. The DVI-I input is serviced by (2) pre-programmed EDIDs. A jumper selects whether the TMDS EDID or the analog EDID is connected to your graphics card. Many graphics cards can read the EDID and provide the video timing as defined in the EDID. Upon detection of valid video (either analog or Dual DVI), the SP-1 will power the panel and drive the Quad LVDS channels.

If your graphics generator does not support EDID, you will need to make sure the analog video meets the analog timing requirements as pre-programmed into the SP-1. In this case, you can connect to the analog input connector (not served by an EDID). Upon detection of valid analog video, the SP-1 will power the panel and drive the Quad LVDS channels.

## How to get started

Please contact us at (636) 300-5164. The following documents are available to customers:

- SP-1 Installation Manual
- SP-1 Software Configuration Manual

## Ordering information

All SP-1 customers receive SP-1 configuration software free of charge.

Support cabling for the SP-1 is available from Westar, including cables that connect:

- SP-1 output signals to the NEC NL204153BC21
- DC Power into the SP-1
- RS-232 control lines to the SP-1
- Input video to the SP-1

Please contact the factory for available cabling.

<b>Physical Dimensions</b>	4.175" x 7.05" x 0.8" (approx)
<b>Temperature Range</b>	Operating: 0° C to +50° C; Storage: -20° C to +70° C
<b>Video Inputs</b>	Dual DVI, up to 160 Mpixels/sec per link (Effectively 320 Mpixels/sec) Analog RGB, up to 270 Mpixels/sec - Syncs (Digital Separate, Digital Composite, Analog Composite) - Pre-programmed for QXGA per detailed timing in Installation Manual
<b>Video Outputs</b>	Quad LVDS: Formats supported include: - Left/Right pixel pairs as required by NEC NL204153BC21 - Other pixel formats available upon request
<b>Input Power</b>	+12 VDC, 4.1 Amp typical when driving NEC NL204153BC21 panel and inverter
<b>Control Interface</b>	RS-232
<b>Ordering Information</b>	SP-1 (Standard Configuration)