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zVID2

Local Bus Super VGA/FPD Adapter

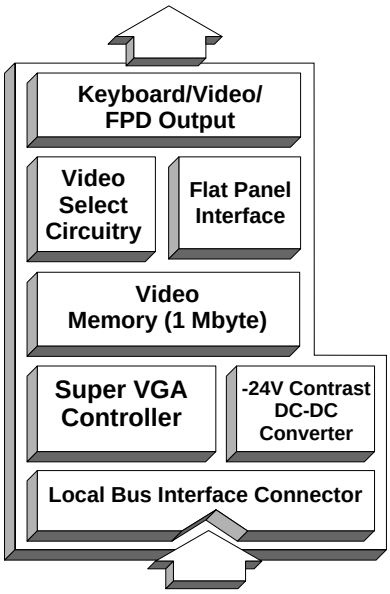
High-speed Super VGA/Flat Panel Display Adapter provides local bus video performance and flat panel support for compatible single board computers.

The zVID2 is a 32-bit, high-performance, local bus Super VGA and flat panel display (FPD) adapter for the ZT□8902 Single Board 486 Computer (SBC) or the ZT□8903, ZT 8904, and ZT 89CT04 Single Board 386 EX Computers. The zVID2 operates at the full speed of the CPU, using a 32-bit data path. This allows it to substantially out-perform interfaces that use the system backplane or a motherboard's ISA chipset for graphics.

The zVID2 supports most monochrome and color FPDs on the market, including 8- and 16-bit single- and dual-scan color Super Twisted Nematic (STN) panels, and 9-, 12-, and 18-bit Thin Film Transistor (TFT) color panels. The zVID2 contains 1 Mbyte of video memory and supports CRT resolutions up to 1024 x 768 x 256 colors, non-interlaced, and 1280 x 1024 x 16 colors, interlaced.

Users can also access the ZT 8902 SBC's keyboard interface, making the zVID2 a space efficient video/keyboard solution. The low-profile zVID2 and ZT 8902 together fit in a single card cage slot.

The zVID2 allows each ZT□8902 SBC in a multiprocessing STD 32 STAR SYSTEM™ to have a separate video display, or to be "daisy-chain" connected in a multiprocessing system, allowing multiple zVID2-equipped processors to share a monitor and keyboard.



- 32-bit high-performance local bus interface
- Supports CPU bus speeds up to 33 MHz
- Up to 10 times the graphics performance of bus-based video solutions
- Eliminates backplane bus traffic for video operations
- Microsoft® Windows™ hardware performance features
- One slot for zVID2 and ZT 8902, ZT 8903, ZT□8904, or ZT□89CT04 SBC
- Supports shared or separate video displays in multiprocessing STAR SYSTEMs
- 1 Mbyte high-speed video memory
- Hardware-compatible with IBM Super VGA standard
- 1024 x 768 x 256 colors non-interlaced
- 1280 x 1024 x 16 colors interlaced
- Supports 8- and 16-bit dual- and single-scan color STN panels
- Supports 9-, 12-, and 18-bit color TFT panels
- Simultaneous display of CRT and LCD panels with resolutions up to 1024 x 768 x 256 colors
- Power sequencing circuitry for FPDs

ZIATECH CORPORATION

Functional Considerations

Local Bus Interface

The zVID2 connects directly to compatible single board computers (SBCs) through a 100-pin board-to-board local bus connector.

The local bus interface intercepts CPU read and write cycles sent to video memory or I/O addresses, preventing the processor's chipset from performing STD□32 Bus transactions. The local interface uses all 32 data bits and operates at the full speed of the processor's external data bus (up to 33 MHz).

VGA Controller

The zVID2 design incorporates the Cirrus GD6440 VGA controller. The GD6440 is fully hardware register-compatible with the IBM Super VGA standard and features several Windows performance enhancements such as color expansion and packed pixel memory addressing.

Flat Panel Support

The zVID2 supports most types of monochrome and color Flat Panel Displays (FPDs), including 8- and 16-bit dual- and single-scan color STN panels and 9-, 12-, and 18-bit color TFT panels. The GD6440 supports 12 different classes of FPDs. The user selects specific panel types through configuration jumpers on the zVID2. The zVID2 also supports SimulSCAN™ operation, which allows concurrent output to both an FPD and a CRT display.

The zVID2 also includes power sequencing circuitry, which correctly sequences FPD logic, contrast, and backlight voltages. The zVID2 can supply logic power at +5V, 500mA, and negative contrast voltage at -24V, 30mA. For panels which require higher currents, the zVID2 provides TTL level control signals for sequencing user-supplied power circuitry.

The zVID2 contains a 50-pin dual-row, 2mm horizontal connector which supports panels with up to 18-bit displays. This connector is pin-compatible with the 50-pin connector found on the ZT□8982 Super VGA/FPD and Keyboard Interface. This connector also provides access to the keyboard, analog CRT, and power-on sequencing signals.

Video Memory

The zVID2 contains a full 1 Mbyte of high-speed fast page mode DRAM, allowing it to support high resolution color graphics modes such as 1024 x 768 x 256 colors non-interlaced and 1280 x 1024 x 16 colors interlaced. The video memory is mapped to the standard A0000h to BFFFFh VGA memory space.

Video ROM BIOS

The video BIOS for the zVID2 has been combined with the system BIOS and occupies 32 Kbytes in the CPU's memory. On power-up, the BIOS is automatically installed during system initialization.

Video Select Circuitry

The zVID2 is capable of sharing monitors and keyboards with other zVID2 modules. This feature is controlled by the zVID2's on-board video/keyboard select circuitry, which consists of a video switch and a software controlled video/keyboard select signal. Up to seven compatible SBC/zVID2 pairs can be daisy-chain connected in a Ziatech STD 32 STAR SYSTEM™ to share a common display and keyboard. Using software control, the user can "hot key" to any of the single board computers with a simple key stroke.

Software

The zVID2 is fully supported by Ziatech's BIOS (Version 4.12 or later). The zVID2 includes a driver/utility disk with high-resolution drivers for various software packages such as Microsoft Windows 3.x, and various utilities for performing functions such as changing video modes.

Specifications

Electrical

Power Req.	*Min.*	*Typ.*	*Max.*
Supply Voltage, V_{CC}	4.75V	5.00V	5.25V
Supply Current, V_{CC} = 5.0V	175mA	196mA	260mA

Mechanical

- Dimensions: 3.75" (9.50cm) x 2.860" (7.26cm)
- Height: no additional slots
- Weight: 1.38 oz. (39.1g)
- Connectors
  - P1: 100-pin local bus interface
  - P2: 50-pin video/keyboard/flat panel

Environmental	
Operating Temperature	0° to 65° Celsius
Storage Temperature	-40° to +85° Celsius
Non-Condensing Relative Humidity	less than 95% at 40° Celsius

Reliability

- MTBF: 49 years
- MTTR: five minutes (based on board replacement)

Ordering Information

zVID2	Local Bus Super VGA/Flat Panel Display Adapter
ZT 97104	ZT 8982/zVID2 software utilities and manual

Accessories

Cable *(See Data Book cable section for details):*

ZT 90166	10" (25.4cm) video/keyboard to panel mount connector
ZT 90167	10" (25.4cm) video/keyboard to desktop-style connector
ZT 90168	10" (25.4cm) multi-video/keyboard, converts seven zVID2s to desktop-style connector

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