SD1000A - Analog-Interface XGA TFT LCD Display Controller

The SmartASIC **SD1000A** is a highly integrated TFT LCD controller chip utilizing SmartASICs' advanced image-processing technology. The SD1000A has advanced scaling engine with proprietary sharpness adjustment and text mode enhancement. The SD1000A supports analog interfaced input with an external ADC chip. The SD1000A has robust handling of a wide variety of TFT LCD panels and strong support of standard or non-standard input timings. The SD1000A is the lowest cost solution for high-end main stream XGA TFT LCD display systems.

FEATURES

- Highly integrated analog interface XGA TFT LCD display controller
- Handles both 24-bi and 48-bit samples RGB input up to XGA
- Supports various PC Graphics Cards
- Drives 24-bit or 48-bit digital RGB output up to XGA
- Support various TFT LCD Panels
- Truly "Plug and Display" no special driver required on PC

Implement proprietary TFT LCD Technology

_ Input mode detection and auto calibration
_ Output image scaling and interpolation
_ 16.7 million true color support for 6-bit panel
_ robust detection and handling of invalid input modes

Advanced Input mode detection and auto calibration

_ Input refresh rate detection
_ Input format detection
_ Input frequency detection
_ Optimal sampling clock phase calibration

Advanced image scaling and interpolation

_ Automatic image centering
_ Automatic image expansion in both horizontal and vertical directions
_ Programmable horizontal and vertical expansion ratio
_ Programmable horizontal and vertical interpolation algorithm

True color support for 6 bit panel

_ Proprietary spatial based dithering
_ Optional frame modulation

Support multiple TFT LCD panels

_ Programmable output timing parameters to match specifications of various TFT LCD panels
_ Single or dual pixel output (24/48 bit RGB)
_ Support power On/Off sequence

Robust handling of invalid input conditions

_ Detect no input signal
_ Detect input signal beyond specified acceptable range
_ Output status indicators
_ Generate output signal even when no input signal

Low-cost system solution

_ No external frame buffer required
_ 2-wire serial interface for EEPROM and CPU
_ programmable OSD mixer
_ 160 pin PQFP Package
_ 3.3V power

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