

XMC Graphics Adaptor



APPLICATIONS

The XM 403/x33 is a high performance graphics adaptor suitable for any XMC compliant host board (CompactPCI®, VME, VXS, VPX etc). The on-board 3D/2D triple display controller manages the graphics processing. The adaptor independently supports, via the front and rear panels, a digital flat panel (DFP) display with a Transition Minimized Differential Signaling (TMDS) interface, up to 2560 x 1600 pixel resolution, and a CRT with an RGB interface, up to

2048 x 1536 pixel resolution. Two of these interfaces can be driven simultaneously with the same or two different images. Market applications are varied, but include industrial, control, defense and medical sectors. Examples include high resolution color graphics, CAE/CAD/CAM, image processing as well as mapping systems. This board is rear I/O plug compatible with the ruggedized air-cooled and conduction-cooled versions.

HIGHLIGHTS

- High performance 3D/2D triple display controller:
 - 256 Mbytes of gDDR2 DRAM
 - resolutions up to 2560 x 1600
 - color depth up to 32-bit
- Supports DVI, VGA and TV-out:
 - DVI-I and VGA via front panel connectors
 - DVI-I, VGA, TV-out (PAL, NTSC) and HD TV (1080p) output via rear I/O Pn4 connector
- Supports composite video capture via TV-in:
 - PAL, NTSC and SECAM formats
 - video overlay capability
- Two independent display engines:
 - simultaneous display on any two interfaces
- 1 Mbits Flash EPROM for video BIOS
- XMC (Switched Mezzanine Card) format:
 - single size CMC (Common Mezzanine Card)
 - x8 PCI Express® interface
- Extended temperature version:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, includes humidity sealant)
- Ruggedized air-cooled version (RA-Series):
 - -40°C to +75°C, conformally coated
 - see separate XM 403/x33-RA datasheet
- Ruggedized conduction-cooled version (RC-Series):
 - conduction cooled to ANSI/VITA 20-2001 (R2005)
 - -40°C to +85°C, conformally coated
 - see separate XM 403/x33-RC datasheet
- Supported by Windows® XP, Windows® XP Embedded, Windows® 2000 and Linux®

Graphics Processor

- utilizes S3 Graphics 2300E 3D/2D triple display controller, which provides:-
 - 2 independent display engines
 - multi-display capability
 - digital resolutions up to 2560 x 1600
 - analog resolutions up to 2048 x 1536
 - 32-bit true color
 - 256 Mbytes of 64-bit dual channel gDDR2 DRAM
 - dual integrated RAMDAC
 - 128-bit graphics engine
 - PCI Express® interface
 - supports video overlay
- graphics engine clock:-
 - 300MHz for N-Series
 - 350MHz for E, RA, RC and K-Series
- gDDR2 memory clock:-
 - 400MHz for N-Series
 - 375MHz for E, RA, RC and K-Series

Digital Interfaces

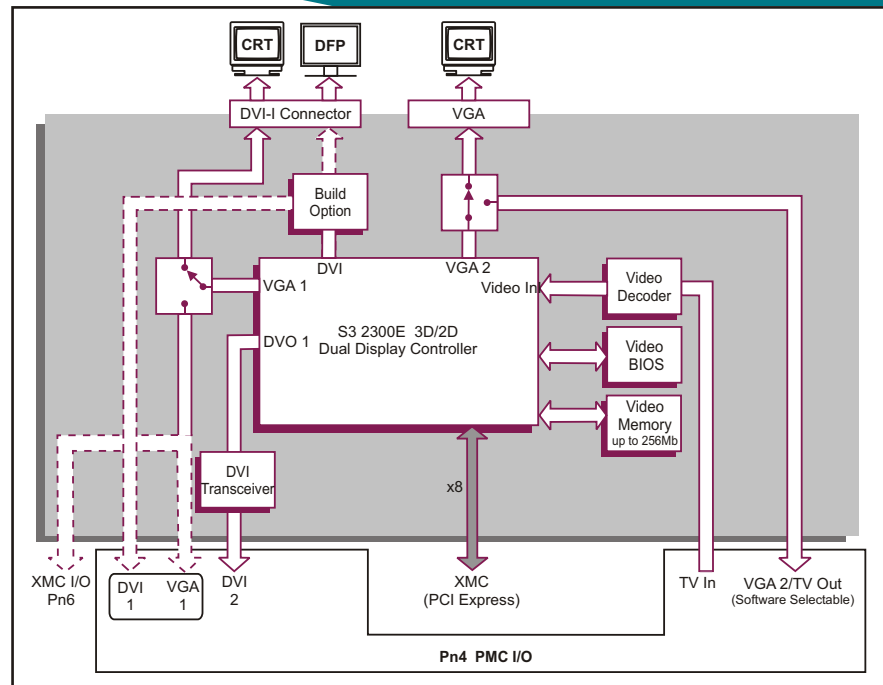
- supports 2 x TMDS compliant displays via:-
 - option for DVI 1 graphics via front panel connector or via rear I/O PMC Pn4 connector
 - DVI 2 graphics accessible only through rear I/O PMC Pn4 connector
- supports active matrix (TFT) and passive (DSTN) panels
 - up to 2560 x 1600 pixels
 - up to 32-bit color
 - 60Hz refresh rate
 - supports twisted-pair cable, up to 5 meters in length

Analog Interfaces

- supports 2 x RGB compliant display:-
 - accessible via front panel DVI-I and VGA connectors
 - VGA 1 interface switchable to rear I/O PMC Pn4 connector or optional rear XMC Pn6 connector
 - VGA 2 interface switchable to rear I/O PMC Pn4 connector
- VGA 2 interface cannot be used simultaneously with TV output interface:-
 - uses same Pn4 pins
 - software selectable
- up to 2048 x 1536 pixels
- up to 32-bit color

TV Output Interface

- composite, S-Video or YPbPr (YUV) outputs via rear I/O PMC Pn4 connector:-
 - HD-TV capable
 - internal CE class encoder for, NTSC, PAL and HD-TV (all 18 DTV ATSC and DVB standards, including 1080p)
- TV output interface cannot be used simultaneously with VGA 2 interface:-
 - uses same Pn4 pins
 - software selectable



TV Input Interface

- supports multiple standards including PAL, NTSC and SECAM
- automatic detection, supports 50Hz and 60Hz field frequency
- suitable for video capture and video stream input
- supports video overlay

Multiple Displays

- 2 independent display engines:-
 - up to 2 displays driven simultaneously with the same or 2 different images
 - the same or 2 different resolutions
 - the same or 2 different refresh rates
- dependent on operating system software
- using multiple displays lowers the maximum available resolution, color depth and refresh rate

XMC Interface

- complies with PCI Express 1.1 protocol and electrical specification:-
 - supports link training for x1 to x8 lane widths

BIOS EPROM

- 1 Mbits Flash EPROM

Software Support

- support for Windows® XP, Windows® XP Embedded, Windows® 2000, and Linux®

Electrical Specification

- requires 3.3V and 5V supplies only:-
 - +5V @ 1.5A; +/-5% (typical)
 - +3.3V @ 500mA; +/-5% (typical)
- 12V supply not utilized
- +12V supply cannot be used

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

- operating temperatures:-
 - 0°C to +55°C (N-Series)
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series)
- storage temperatures:-
 - -40°C to +85°C
- 5% to 95% Relative Humidity, non-condensing (operating):-
 - K-Series includes humidity sealant
- ruggedized conduction-cooled and ruggedized air-cooled versions, see separate datasheets:-
 - rear plug compatible
 - conduction-cooled: XM 403/x33-RC
 - air-cooled: XM 403/x33-RA

Mechanical Specification

- single size CMC (Common Mezzanine Card) 74mm x 149mm
- 10mm height stack module
- shock:-
 - 20g, 11ms, ½ sine (operating);
 - 30g, 11ms, ½ sine (non-operating)
- vibration:-
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
 - 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)

ORDERING INFORMATION

Order Number Product Description (Hardware)- for the order number options (p and y) please contact your local sales office

XM 403/p33-1y XMC Graphics Adaptor, S3 Graphics 2300E 3D/2D triple display controller,

where p = option for VGA 1 via Pn4 PMC or via Pn6 XMC I/O connector
 where y = option for DVI 1 via front panel or via Pn4 PMC I/O connector

For accessories please contact your local sales office.
 For extended temperature E and K-Series, or ruggedized RA and RC-Series, please contact your local sales office.