

TORNADO-PX6414Q TORNADO-PX6415Q TORNADO-PX6416Q

23,040 MIPS Quad TMS320C6414/C6415/C6416 DSP PIOX Coprocessor
with External I/O for TORNADO DSP Boards

features

- PIOX daughter-card module (DCM) for TORNADO DSP boards
- four 32-bit fixed-point TMS320C6414/C6415/C6416 DSP
- up to 23,040 MIPS peak DSP performance
- each TMS320C64xx DSP features 1Mbyte on-chip RAM, 3 McBSP ports, 64 EDMA channels, 3 timers, HPI port, GPIO, and on-chip VCP/TCP hardware coprocessors (TMS320C6416)
- up to 16Mx32 SDRAM per each DSP for local data
- multi-path DSP-to-DSP communication:
 - 64Kx32 quad-port RAM (QPRAM) for DSP-to-DSP communication via shared RAM without arbitration delays
 - DSP-to-DSP interrupt generation
 - software configured DSP-to-DSP serial communication links topology
- scalable design allows infinite multi-board network expansion with board-to-board communication via external serial links
- multi-board network integration with all TORNADO coprocessors providing external serial links (i.e. TORNADO-PX/DDC4G quad-channel digital radio coprocessor, etc)
- modular design with up to four optional external AD/DA/DIO SIOX rev.B DCM (one DCM per DSP) for real-time AD/DA/IO
- communication between host TORNADO PIOX interface and on-board DSP via DSP on-chip HPI ports and mutual interrupts
- DSP startup with either no boot or boot via the HPI port
- ideal selection for multi-channel general purpose DSP and optional real-time data acquisition

real-time I/O expansion

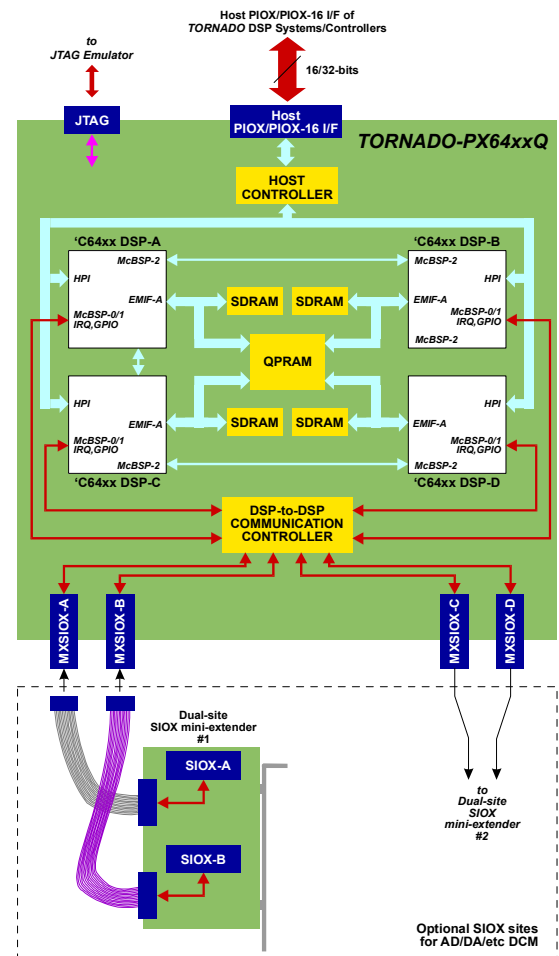
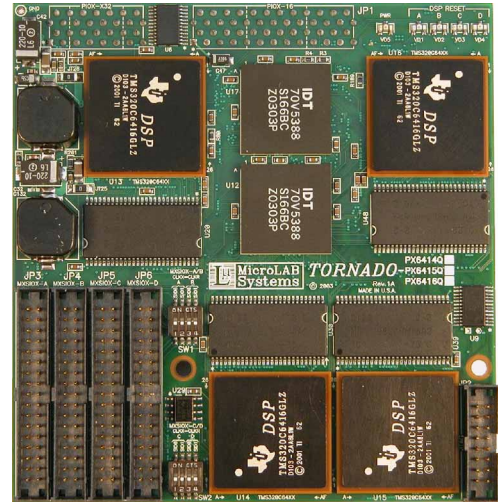
- four optional external sites for SIOX rev.B daughter-card modules
- a variety of "of-the-shelf" AD/DA/DIO SIOX rev.B daughter-card modules
- application specific SIOX rev.B I/O coprocessor daughter-card modules

'C6x DSP software development tools

- JTAG port for TI and MicroLAB Systems JTAG emulators
- TI C6000 Code Composer Studio Compile/Debug tools
- drivers for 3L Diamond multiprocessor/multitasking RTOS
- software utilities and demo samples

applications

- multi-channel vocoders, fax/modem
- multi-channel VoIP
- multi-channel cellular telephony
- multi-channel digital radio
- multi-channel radars and radio-monitoring
- multi-channel radio-modems



Technical Specifications

<i>On-board DSP</i>	4x TMS320C6414/C6415/C6416 32-bit fixed-point DSP from TI
<i>DSP clock</i>	600/720 MHz
<i>Maximum total DSP performance</i>	19,200/23,040 MIPS
<i>External DSP memory</i>	SDRAM: 4M/16Mx32 (per each DSP) QPRAM: 64Kx32 (mapped to each DSP)
<i>DSP-to-DSP link network</i>	
<i>Host I/F</i>	user selected 16-/32-bit <i>TORNADO</i> PIOXt interface with access to DSP on-chip HPI ports, mutual interrupts, access timeout control
<i>Host I/F data access time</i>	30ns typ
<i>AD/DA expansion facility</i>	4x optional external SIOX rev.B sites via MXSIOX SIOX rev.B mini-extender kits
<i>SIOX rev.B options</i>	One or two McBSP ports, timer/IO, two interrupt request inputs, software SIOX reset control, $\pm 12V/\pm 5V$ power supplies
<i>Dimensions</i>	PIOX/PIOX-16 plug-in mainboard: 3.75"x3.50" external dual-site MXSIOX mini-extender: 4.37"x2.37" with 6" extender cables
<i>power consumption</i> (without SIOX daughter-card installed)	+5 V @ 3.2A

TORNADO-3x, TORNADO-54x, TORNADO-6x, TORNADO-P6x, TORNADO-P3x, TORNADO-E, TORNADO-PX, TORNADO-SX, MIRAGE-510DX, , MIRAGE-P510D, UECMX, MX-Link, PIOX, PIOX-16, SIOX are trademarks of MicroLAB Systems Ltd. All other products and company names used are trademarks of their respective holders.