MicroLAB Systems

Ultimate DSP Development Solutions

TORNADO-62MX/67MX

Ultra-high Performance TMS320C6x DSP Systems for Industrial MicroPC® and ISA-Bus Host PC

features

- ultra-high performance compatible DSP:
  - ❑ TMS320C6201, (32 bits, fixed point, 1600 MIPS)
  - ❑ TMS320C6701, (32 bits, floating point, 1000 MFLOPS)
- synchronous static RAM (SBSRAM) up to 256kx32
- on-board shared bus (SB) architecture with shared SRAM resource and SB masters comprising of DSP and host ISA-bus memory I/F
- SB access from host via ISA-bus memory page
- host access to HPI port of TMS320C6x DSP
- mutual interrupts between DSP and host CPU
- build-in device ID code
- compact MicroPC® form factor
- plugs into 8-bit ISA-bus slot
- low cost

I/O expansion

- serial I/O expansion (SIOX) I/F connector
- parallel I/O expansion (PIOX-16) I/F connector
- a variety of AD/DA and digital I/O daughter modules

software development tools

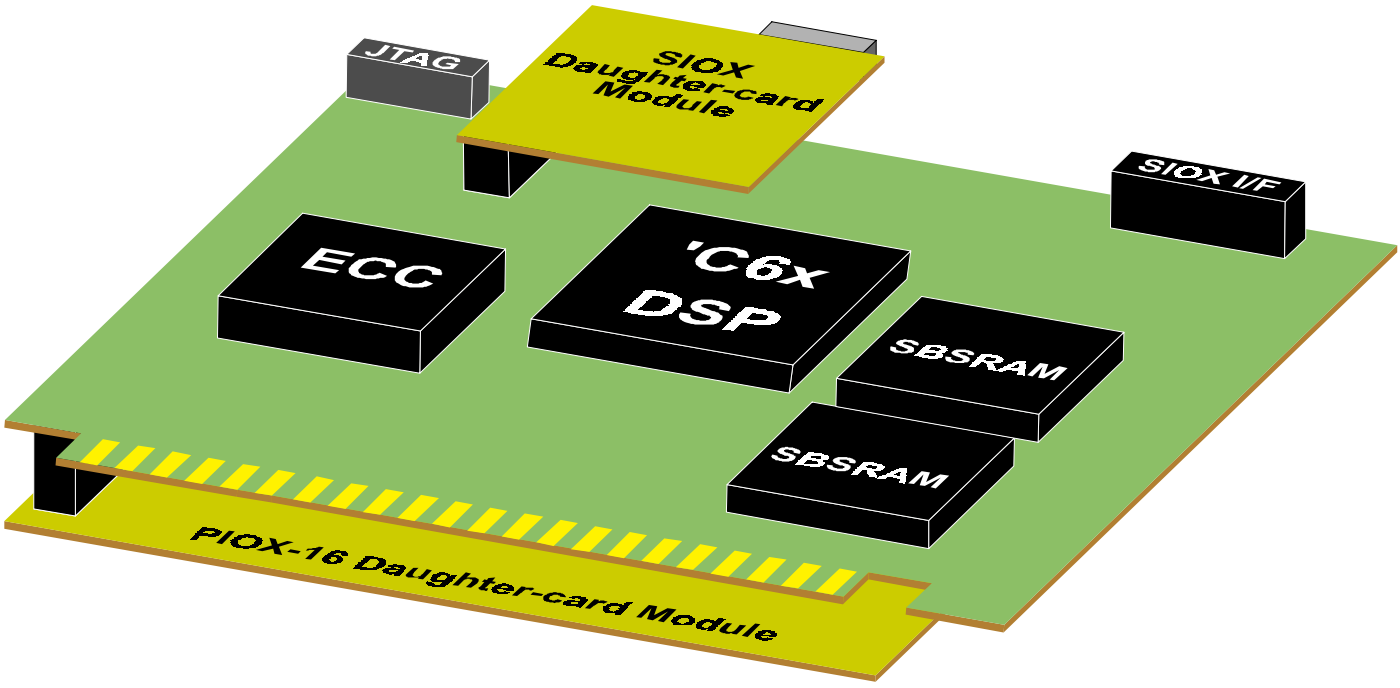
- JTAG port for TI XDS510 and MicroLAB Systems *MIRAGE-510D* emulators
- optional on-board emulation controller (*ECC*) for emulation of the on-board TMS320C6x DSP
  - ❑ identical to XDS510 and MIRAGE-510D emulators
  - ❑ runs under Go DSP Code Composer IDE
- TI TMS320C6x DSP C/Assembler Compiler

application software

- Hypersignal tools DSP algorithm development
- Virtuoso and SPOX real-time operating systems
- vocoder/fax/modem function libraries
- host control utilities

applications

- real-time DSP, data acquisition and signal analysis
- industrial DSP applications
- instrumentation
- multichannel telecommunication and telephony
- multimedia, speech and audio processing
- acoustics and radar
- digital radio
- image processing
- fixed-/floating-point DSP accelerators
- medical devices



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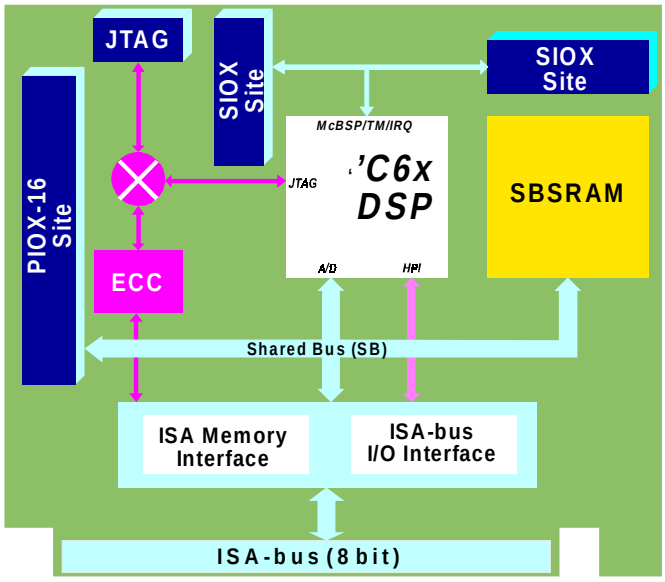

TORNADO-62MX/67MX is an ultra-high performance and low cost DSP platform with compact industial MicroPC® form factor, which installs into any industrial ISA-bus host computer into 8-bit ISA slot. Flexible modular system architecture and a variety of AD/DA/DIO/Coprocessor expansion daughter card modules make *TORNADO-62MX/67MX* an ideal selection for telecommunication, telephony, multimedia, acoustics, instrumentation and digital radio applications in industry.

TORNADO-62MX/67MX are based around the revolutionary TI compatible fixed-point TMS320C6201 DSP (1600 MIPS) and floating-point TMS320C6701 DSP (1000 MFLOPS), which feature compatible on-chip architecture and are optimized for parallel computing. On-board memory is a high-speed synchronous burst SRAM (SBSRAM).

An ultimate benefit of *TORNADO-62MX/67MX* is the on-board shared bus (SB) architecture that has been optimized for high performance on-board data processing and in-parallel high speed data transfers between the on-board SBSRAM/PIOX-16 resources and host ISA-bus memory interface (I/F) without consuming virtually any DSP time. Host software can easily access any SB data via ISA-bus UMB mapped memory page. *TORNADO-62MX/67MX* also provides direct access from host ISA-bus interface to the TMS320C6x DSP on-chip HPI port.

In order to meet requirements of real-time data acquisition, *TORNADO-62MX/67MX* provide serial (SIOX) and high-speed parallel (PIOX-16) I/O expansion interface sites for optional compatible AD/DA/DIO daughter-card modules.

TORNADO-62MX/67MX on-board JTAG emulation port is compatible with TI XDS510 and MicroLAB Systems *MIRAGE-510D* scan-path emulators and is used to debug the on-board TMS320C6x DSP software. Also, optional plug-in on-board emulation controller chip (*ECC*) is available as a low cost replacement for XDS510 and *MIRAGE-510D* emulators and runs under the industry standard Go DSP Code Composer IDE.

TORNADO-62MX/67MX resident software can be developed with the TI 'C6x DSP C/Assembly tools, a variety of compatible real-time operating systems, DSP algorithm development tools, vocoder/fax/modem and DSP/vector/math function libraries, which are available from multiple software vendors.

Technical Specifications

processor

- TMS320C6201 fixed-point DSP, 32 bits, 1600 MIPS
- TMS320C6701 floating-point DSP, 32 bits, 1000 MFLOPS

on-board memory

up to 256Kx32 1/2x CPU clock SBSRAM

host ISA bus memory and I/O interfaces

8-bit ISA bus I/O and memory interface. UMB mapped 32KB memory page. Sixteen ports in ISA bus I/O space. Five lines for PC IRQ.

parallel I/O expansion interface (PIOX-16)

One site for PIOX-16 daughter card module. Includes SB address and data, SB control, DSP on-chip timer control, IRQ lines, reset, PC power lines.

Serial I/O expansion interface (SIOX)

One site for SIOX daughter card module. Includes the DSP on-chip serial ports and timer control lines, IRQ lines, reset, PC power lines.

Physical/power

115x125mm MicroPC form-factor. Occupies one 8-bit ISA slot. Maximum power consumption (with 128Kx32 SRAM installed): 5V@3.5A

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