

features

- TMS320C542 DSP, fixed point, 16 bits, 40MIPS
- on-board static RAM (SRAM) 8K..128x16 0ws
- on-board shared bus (SB) architecture with shared SRAM/PIOX resources and SB masters comprising of DSP and host ISA-bus memory I/F
- SRAM/PIOX access from host ISA-bus memory I/F via ISA bus UMB-mapped memory page
- host access to the DSP HPI port
- flexible modular system architecture with I/O expansion keeps hardware cost to a minimum
- build-in device serialisation code
- compact size
- low cost

I/O expansion

- two sites for serial I/O expansion (SIOX) I/F daughter card modules
- one site for high-speed parallel I/O expansion (PIOX-16) I/F daughter card modules
- a variety of AD/DA/DIO PIOX-16/SIOX daughter card modules for instrumentation, telecommunication, telephony, speech and audio processing applications

software development tools

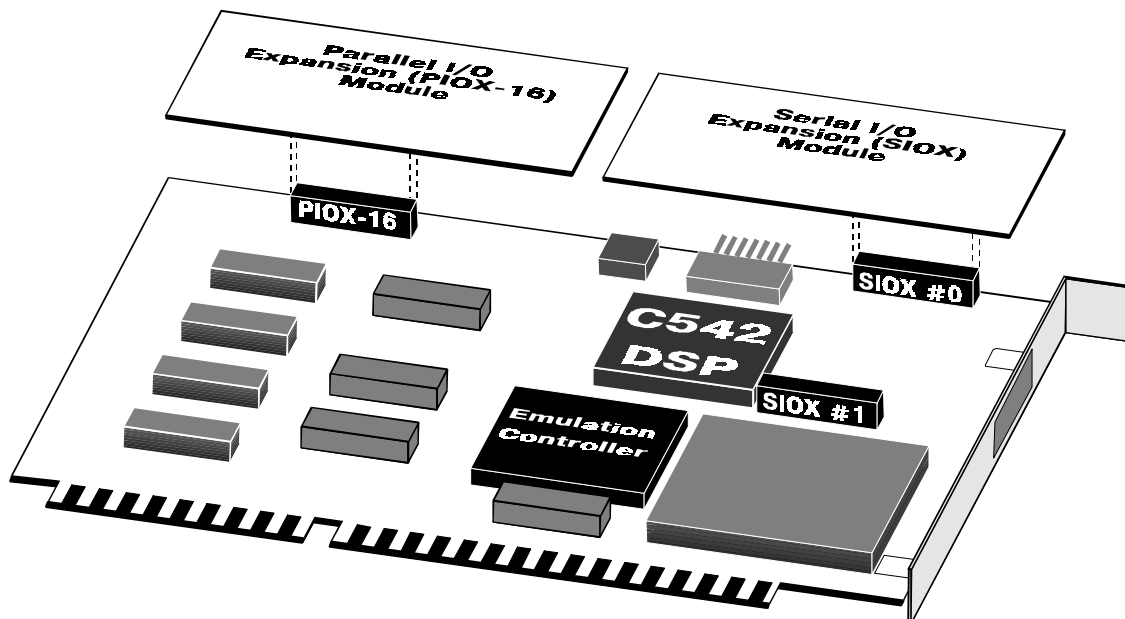
- JTAG port for TI XDS510 and MicroLAB Systems *MIRAGE-510D* emulators
- optional plug-in low cost emulation controller chip (*ECC*):
 - identical to XDS510 and *MIRAGE-510D* emulators
 - emulation of the on-board TMS320C542 DSP
 - Go DSP C54x Code Composer
- TI C54x Fixed Point DSP C/Assembler Compiler

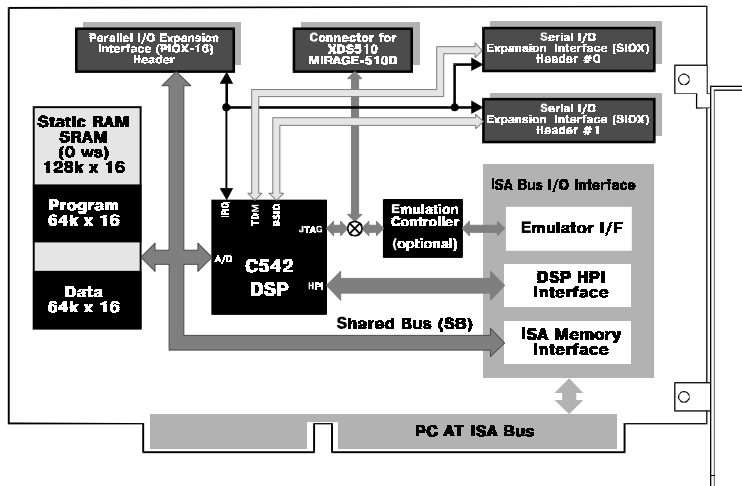
application software

- SPOX, Virtuoso real-time operating systems
- DSP, math, vector and communication functions
- Hypersignal tools for DSP algorithm development
- vocoder/fax/modem function libraries
- host control utilities

applications

- telecommunication and telephony
- audio and speech processing
- instrumentation and industrial
- biomedical
- education





TORNADO-542L is a high performance and multifunctional DSP platform for real-time data acquisition and DSP for IBM PC ISA-bus host computers. Low cost, flexible modular system architecture and a wide selection of AD/DA/DIO expansion daughter card modules make *TORNADO-542L* an ideal platform for telecommunication, telephony, speech, audio, instrumentation and biomedical application as well as for OEM and education.

TORNADO-542L is based around state-of-art TI fixed point TMS320C542 DSP that is a member of enhanced TI TMS320C54x DSP product line and is optimized for telecommunication applications.

An ultimate benefit of *TORNADO-542L* 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 SRAM/PIOX-16 resources and host ISA bus memory interface (I/F) without consuming virtually any DSP time. Host software can easily access any SRAM/PIOX-16 data via ISA-bus UMB mapped memory page.

TORNADO-542L also provides direct access from host ISA-bus I/F to the DSP on-chip HPI port in order to upload/download the DSP on-chip SRAM data or in case simulation of communication between host and TMS320C542 DSP in future customer designed hardware is required.

In order to meet requirements of real-time data acquisition, *TORNADO-542L* provides two serial (SIOX) and one high-speed parallel (PIOX-16) I/O expansion I/F connectors for optional compatible AD/DA/DIO and DSP coprocessor daughter card modules.

TORNADO-542L has the on-board JTAG port, which is compatible with the TI XDS510 and MicroLAB Systems *MIRAGE-510D* scan-path emulators and is used to debug the TMS320C54x software. Also available is an optional low cost plug-in emulator control chip (ECC) facility that is identical to XDS510 and *MIRAGE-510D* emulators and runs under the industry standard Go DSP C54x Code Composer IDE.

Development of the *TORNADO-542L* resident software can be done with the TI C54x fixed point DSP C/Assembly tools, a variety of compatible real-time operating systems, DSP algorithm development tools and DSP/vector/math function libraries that are available from multiple software vendors.

The vocoder/fax/modem function libraries are also available for telecommunication and telephony applications using *TORNADO-542L*.

Flexible modular construction of *TORNADO-542L* delivers ready-on solutions for a wide selection of applications and is open to meet your requirements while keeping a cost of project to a minimum.

Technical Specifications

processor

TMS320C542 fixed point DSP, 16 bits, 40 MIPS

on-board memory

8K..128Kx16 0ws static RAM

host ISA bus memory and I/O interfaces

ISA bus UMB mapped 32KB memory page. Sixteen ports in the ISA bus I/O space. Nine 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)

Two sites for SIOX daughter card modules. Includes the DSP on-chip serial ports and timer control lines, IRQ lines, reset, PC power lines.

Physical/power

1/2 PC/AT card. Occupies one PC/AT ISA slot. Maximum power consumption (with 128Kx16 SRAM and emulator option installed): 5V@1.8A

warranty

Full one year warranty with software update and on-line technical support.