

features

- 32-bit TMS320C31 DSP (50 MFLOPS for industrial -40°C..+85°C temperature range; 60 MFLOPS for commercial 0°C..+70°C temperature range)
- up to 64K...1024Kx32 0ws static RAM (SRAM)
- 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
- mutual interrupts between DSP and host CPU
- build-in device serialisation code
- compact MicroPC® form factor
- plugs into 8-bit ISA-bus slot
- flexible modular system architecture keeps hardware cost to a minimum
- low cost

I/O expansion

- serial I/O expansion (SIOX) I/F connector
- a variety of AD/DA and digital I/O daughter modules
- SIOX-coprocessors *TORNADO-SX*

software development tools

- MPSPD port for TI XDS510 and MicroLAB Systems *MIRAGE-510D* emulators

- optional on-board emulation controller for the on-board TMS320C31 DSP
 - identical to XDS510 and *MIRAGE-510D* emulators
 - TI C Source Debugger and Go DSP Code Composer IDE
- TI Floating Point DSP C/Assembler Compiler

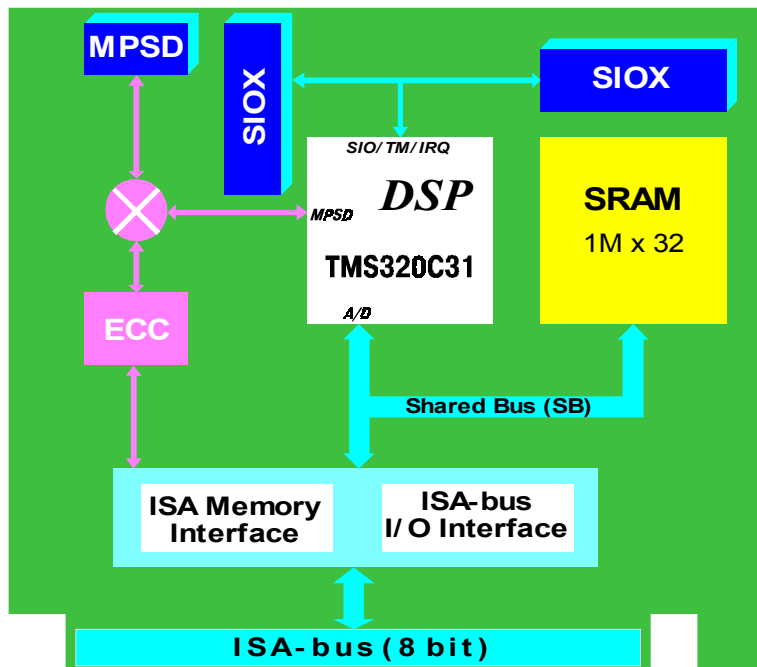
application software

- Virtuoso, SPOX and Nucleus RTX/PLUS real-time operating systems
- Hypersignal tools DSP algorithm development
- DSP, math, vector and communication functions
- host control functions and utilities

applications

- industrial DSP applications
- real-time DSP, data acquisition and signal analysis
- instrumentation
- communication
- acoustics and speech processing
- audio
- image processing
- floating point accelerators
- medical devices





TORNADO-31M is a high performance, flexible and low cost DSP platform for industrial -40°C...+85°C temperature range applications. *TORNADO-31M* meets compact industrial MicroPC® form factor and can be installed into any industrial ISA-bus host computer.

An ultimate benefit of *TORNADO-31M* 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 resource 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.

In order to meet different requirements for real-time signal acquisition, *TORNADO-31M* provides *TORNADO-3x* compatible serial I/O expansion (SIOX) I/F connector for optional daughter card modules. A broad selection of compatible *TORNADO SIOX* AD/DA, digital I/O and DSP coprocessor daughter card modules is available.

Debugging of software for the on-board TMS320C31 DSP is performed by means of external TI XDS510 or MicroLAB Systems *MIRAGE-510D* scan-path emulators. Also, an optional available plug-in on-board emulation controller chip (ECC) delivers a low cost replacement of XDS510 and *MIRAGE-510D* emulators and runs under the industry standard TI C Source Debugger and Go DSP Code Composer IDE.

The *TORNADO-31M* software can be developed with the TI floating point DSP C/Assembly tools. A variety of compatible real-time operating systems, DSP algorithm development tools and DSP/math/vector function libraries are available from multiple software vendors.

Flexible expandable modular construction of *TORNADO-31M* delivers ready-on solutions for a wide selection of industrial applications and is open to meet your requirements while keeping a cost of project to a minimum.

Technical Specifications

processor

TMS320C31 floating point DSP, 32 bits (50 MHz for -40°C...+85°C industrial temperature range; 60 MHz for 0°C...+70°C commercial temperature range).

on-board memory

64K..1024Kx32 0ws static RAM.

host ISA-bus interface

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

serial I/O expansion interface (SIOX)

One site for SIOX daughter module. Includes the TMS320C31 on-chip serial port and timers control lines, IRQ lines, reset, PC power lines.

physical/power

dimensions: 125x115mm. Occupies one 8-bit ISA slot. Maximum power consumption (with 128Kx32 SRAM installed): 5V@1.8A

warranty

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