MicroLAB Systems

Ultimate DSP Development Solutions

TORNADO-E62/E67

Ultra-high Performance TMS320C6201/C6701 Embedded DSP Controllers

features

- ultra-high performance compatible DSP:
  - TMS320C6201, (32 bits, fixed point, 1600 MIPS)
  - TMS320C6701, (32 bits, floating point, 1000 MFLOPS)
- up to 512Kx32 synchronous static RAM (SBSRAM)
- 4Mx32 synchronous DRAM (SDRAM)
- up to 1Mx8 FLASH/EPROM
- dual-channel 10 Mbps universal receiver/transmitter (USART) with synchronous (HDLC/X.25, SDLC, MONO, BISYNC) and asynchronous protocols and 115kBaud RS232 and 10Mbps RS422 external interfaces
- 12 Mbit/s USB device interface
- 8-bit digital I/O
- host access to the DSP on-chip HPI port
- watch-dog timer and reset monitor
- modular design with daughter-card modules (DCM)
- industry standard 3U form-factor

I/O expansion

- one site for serial I/O expansion (SIOX rev.B or SIOX rev.C) DCM
- one site for parallel I/O expansion (PIOX-16) DCM
- a variety of AD/DA/DIO DCM
- a variety of application specific SIOX and PIOX-16 I/O coprocessor DCM

software development tools

- JTAG port for TI XDS510 and MicroLAB Systems *MIRAGE-510D* emulators with Code Composer IDE
- TI 'C6x C/Assembler Compiler

application software

- Hypersignal tools for DSP algorithm development
- Virtuoso and Nucleus real-time OS tools
- DSP, math, vector and communication functions
- vocoder/fax/modem function libraries

applications

- multichannel vocoders, fax and modems
- multichannel telecommunication and telephony
- multimedia and audio processing
- acoustics and radar
- embedded instrumentation and industrial
- digital radio
- image processing
- biomedical

TI Third Party Network Member DSP

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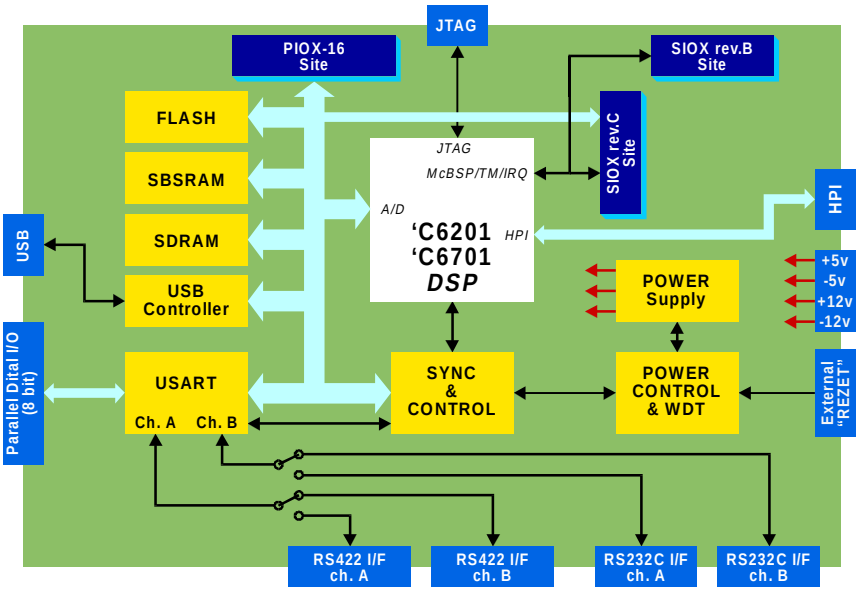

TORNADO-E62/E67 are ultra-high performance embedded DSP controllers with the industry standard 3U form-factor for real-time data acquisition and DSP. Flexible modular construction and a variety of "off-the-shelf" AD/DA/DIO and I/O coprocessor expansion daughter card modules make *TORNADO-E62/E67* an ideal selection for embedded telecommunication, telephony, multimedia, acoustics, instrumentation, digital radio and many more application.

TORNADO-E62/E67 are based around the revolutionary compatible TI 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 comprises of high-speed synchronous burst SRAM (SBSRAM), synchronous DRAM (SDRAM) and FLASH/EPROM memories.

On-board dual-channel 10 Mbit/s USART (universal synchronous/asynchronous receiver/transmitter) with 10 Mbit RS422 and 115 kBaud RS232C interfaces, and 12 Mbit/s USB device interface deliver outstanding flexibility for networking of multiple *TORNADO-E6x/E3x/E54x* controllers and/or interfacing to external networks, peripherals and host computers. Each channel of USART can be independently configured for either synchronous (HDLC/X.25, SDLC, MONO, BISYNC) or asynchronous protocol with either RS422 or RS232C external interface.

TORNADO-E62/E67 controllers offer access from host computer to HPI port of on-board DSP with optional bootloading feature.

An ultimate benefit of *TORNADO-E62/E67* is a modular construction with daughter-card module options, which allows quick "off-the-shelf" system arrangement and to meet requirements of different DSP applications with real-time data acquisition. *TORNADO-E62/E67* feature one serial (SIOX rev.B and SIOX rev.C) and one parallel (PIOX-16) I/O expansion interface sites compatible with a variety of AD/DA, digital I/O, application specific I/O coprocessors and more.. daughter-card modules.

On-board reset monitor and watch-dog timer facilities provide reliable system functionality as stand-alone controller.

On-board 8-bit digital I/O allows control of external power switches, relays, etc and/or input from digital sensors or switches with minimum hardware.

TORNADO-E62/E67 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 using TI Code Composer Studio IDE.

TORNADO-E62/E67 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

DSP

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

on-board memory

- 128K/256K/512Kx32 1/2x CPU clock SBSRAM
- 4Mx32 synchronous DRAM (SDRAM)
- 1Mx8 FLASH/EPROM

external interfaces

- dual-channel 10 Mbit/s USART synchronous/asynchronous protocols and 10 Mbit/s RS422 and 115kBaud RS232C I/F
- 12 Mbit/s USB device I/F
- 16-bit TMS320C6201/C6701 DSP on-chip HPI port with bootloading option

on-board digital I/O

8-bit digital I/O with individual direction control and DSP interrupt mask

serial I/O expansion interface (SIOX)

One SIOX rev.B site and one SIOX rev.C site for daughter card modules.

parallel I/O expansion interface (PIOX)

One PIOX-16 site for daughter card modules.

physical/power

3U (160x100mm) form-factor. Maximum power consumption (with 128Kx32 SBSRAM and 4Mx32 SDRAM)): 5V@2.3A

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