

MIRAGE-510DX UECMX

Dual-Channel TMS320 DSP Emulator for ISA-bus Computers
Universal TMS320 DSP Emulator Daughter-Card Module

features

- UECMX universal emulator daughter-card module:
 - ❑ emulation control for target TI TMS320 DSP via MPSD or JTAG scan-paths
 - ❑ installs onto *TORNADO* DSP system mainboard:
 - ◆ emulates *TORNADO* on-board TMS320 DSP(s) without external pod requirement
 - ◆ emulates any external TMS320 DSP via optional MPSD or JTAG pod
 - ◆ plug-in upward compatible replacement for UECM module
 - ❑ installs onto *MIRAGE-510DX* emulator mainboard:
 - ◆ emulates external TMS320 DSP via MPSD or JTAG pod
 - ◆ upward compatible with *MIRAGE-30D/510D*
 - ❑ optional compatibility with TI XDS510 emulator
 - ❑ complete 16-bit host ISA-bus interface
 - ❑ compact design
- *MIRAGE-510DX* dual-channel TMS320 DSP emulator:
 - ❑ includes ISA-bus interface mainboard and up to two MPSD and/or JTAG pods
 - ❑ ISA-bus interface mainboard provides two sites for UECMX modules, i.e. offers two independent emulation channels for external TMS320 DSP
 - ❑ ideal for debugging of single- and multiprocessor TMS320 DSP environments
 - ❑ replaces two TI XDS510 emulators
 - ❑ two *MIRAGE-510DX* interface boards can be installed into one PC for emulation of any combination of four MPSD and/or JTAG scan-paths

- MPSD and JTAG pods for connection of UECMX and *MIRAGE-510DX* to scan-path interface of TMS320 DSP:
 - ❑ MPSD pod:
 - ◆ connects to MPSD scan-path interface of target TMS320C3x DSP
 - ◆ LED indicators for pod activity, target DSP power, clock and reset signals
 - ◆ provides optional target DSP reset control for reliable emulation
 - ❑ JTAG pod:
 - ◆ connects to JTAG scan-path interface of target TMS320C2xx/C4x/C5x/C6x/C8x DSP
 - ◆ clock edge selector for TMS and TDI signals
 - ◆ LED indicators for pod activity, target DSP power, TCK and TRST signals
 - ❑ compatible with *MIRAGE-30D/510D/510DX* emulators and UECM/UECMX emulation modules

software development tools

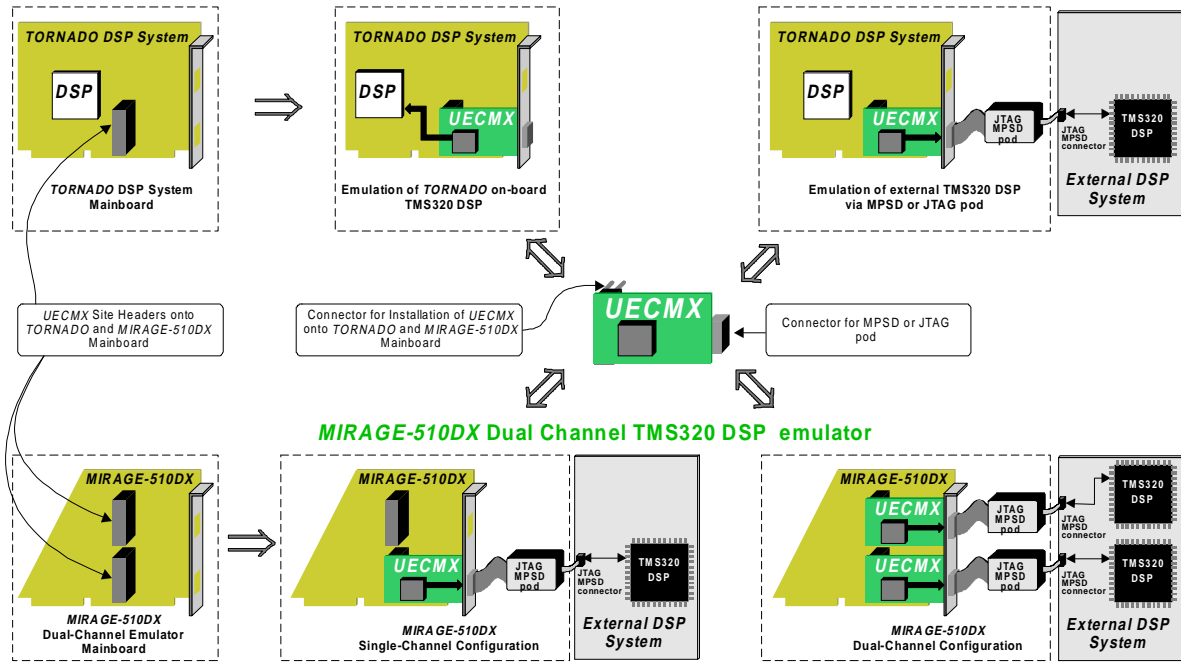
- TI C/Assembler Compilers
- TI HLL Debuggers for DOS, Windows, OS/2
- Go DSP Code Composer IDE for Windows

applications

- low-cost emulator for *TORNADO* DSP systems
- hardware debugging and software development for single- and multiprocessor TMS320 DSP systems
- run-time control and diagnostics of TMS320 DSP systems



Installation of *UECMX* onto *TORNADO* DSP System Mainboard



Overview

UECMX is new unified universal emulator daughter-card module for *MIRAGE-510DX* dual-channel TMS320 DSP emulator and *TORNADO* DSP systems. *UECMX* allows quick and money saving migration between *MIRAGE-510DX* dedicated emulator and emulation facilities of *TORNADO* DSP systems.

Construction

UECMX module includes the on-board emulation controller for MPSPD (TMS320C3x) and JTAG (TMS320C2xx/C4x/C5x/C54x/C6x) scan-path interfaces of target TMS320 DSP.

UECMX module features compact design, installs onto *MIRAGE-510DX* and *TORNADO* mainboards, and is plug-in upward compatible replacement for *UECM* daughter-card module for *TORNADO* DSP systems. New features of *UECMX* module also include optional compatibility with TI XDS510 emulator.

UECMX module and *TORNADO* DSP systems

Once *UECMX* module is installed onto *TORNADO* DSP systems mainboard, then it can emulate *TORNADO* on-board TMS320 DSP and even convert *TORNADO* into universal emulator for any external TMS320 DSP. The latter feature is available only by means of external MPSPD or JTAG pod option

MIRAGE-510DX dual-channel TMS320 emulator

MIRAGE-510DX dual-channel emulator comprises of ISA-bus plug-in interface mainboard with two sites for *UECMX* modules and up to two MPSPD and/or JTAG pods attached to *UECMX* modules. Up to

two *MIRAGE-510DX* mainboards can be installed into one host PC for support of any combination of up to four MPSPD and/or JTAG scan-paths for emulation of target TMS320 DSP. *MIRAGE-510DX* is upward compatible with *MIRAGE-510D* emulator.

MPSPD and JTAG pods

MPSPD and JTAG pods connect *UECMX* to MPSPD and JTAG scan-path interfaces of target TMS320 DSP. MPSPD pod should be used with TMS320C3x DSP, whereas JTAG pod should be used with TMS320C2xx/C4x/C5x/C54x/C6x/C8x DSP. Connection of MPSPD and JTAG pods to scan-path interface of target TMS320 DSP is performed by means of TI XDS510 compatible headers.

Both MPSPD and JTAG pods are compatible with all MicroLAB[®] emulation tools: *UECM/UECMX* universal emulation daughter-card modules and *MIRAGE-30D/510D/510DX* dual-channel emulators.

MPSPD pod provides optional target DSP reset output for reliable emulation control and has LED indicators for pod activity, target DSP power, clock and reset control.

JTAG pod provides optional clock edge selector for JTAG TDI and TMS signals in order to increase JTAG clocking frequency, and has LED indicators for pod activity, target DSP power and JTAG clock (*TCK_RET*) and reset (*TRST*) signals.

Software Development Tools

UECMX and *MIRAGE-510DX* are supported by the industry standard TI HLL Debuggers under DOS, Windows and OS/2, and Go DSP Code Composer IDE under Windows. Compatible software development tools include TI C/Assembler compiler tools.

Technical Specifications

UECMX

Dimensions: 60x40 mm (2.36"x1.57").

MIRAGE-510DX ISA-bus Interface board

Dimensions: 150x100 mm (6"x4"). Occupies one 16-bit ISA-bus slot.

Pods

Dimensions: 89x57x25 mm (3.5"x2.25"x1"). Primary 1m (40 inches) long flat cable for connection to *UECMX/MIRAGE-510DX*, and secondary 100mm (4 inches) long flat cable with 12-pin (MPSPD) or 14-pin (JTAG) female header for connection to target TMS320 DSP.

Power

5v@0.8A with one MPSPD or JTAG pod attached.

TORNADO-3x, *TORNADO-4x*, *TORNADO-54x*, *TORNADO-6x*, *TORNADO-PX*, *TORNADO-SX*, *MIRAGE-510D*, *MIRAGE-510DX*, *UECM*, *UECMX*, *MX-Link* are trademarks of MicroLAB Systems Ltd. All other products and company names used are trademarks of their respective holders. DOC: MLS-SPDS-015F 1/2000