DProbe430

hitex
DEVELOPMENT TOOLS

The Modular In-Circuit DProbe430 Emulator

Embedding Software Quality

Tools for MSP430

Powerful Development Tools for MSP430 Family

In close cooperation with Texas Instruments, Hitex developed a modular in-circuit emulator system that enables design engineers to write correct and robust code for TI's popular family of ultra-low-power microcontrollers – MSP430.

From the entry-level system DProbe430 to the high-end system with a DBox16 extension, this emulator system has all the advanced features a design engineer expects from a modern debugging tool. Engineers will use Hitex's HiTOP debugger, one of the best software development environments on the market today, to operate their emulator.

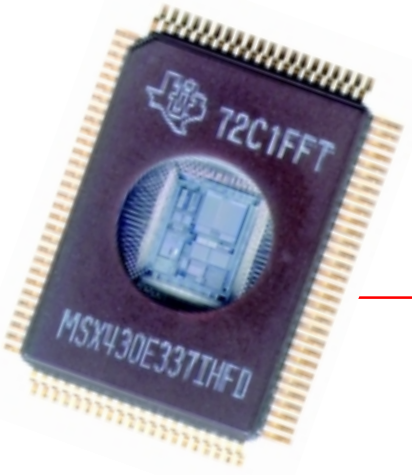
The MSP430 microcontrollers' blend of price/performance and low-power operation appeal to design engineers who have demanding applications for which power consumption is an important issue, such as measurement and metering. To get that next project to market on time, choose a hassle-free, professional development system from Hitex.

Efficient Tools

1 Modularity

The modular DProbe430 emulation system consists of a universal base unit and several derivative-specific units for the various MSP430 family microcontrollers. Switching among the derivatives is very easy and cost-effective by simply replacing the derivative unit with another. This modularity ensures instant support of future derivatives with enhanced features.

For advanced design engineers or more complex design challenges, the emulator system can be extended with the high-end extension DBox16. This is another competitive advantage of the system: cost saving through upgrading. There is no need to buy a completely new high-end in-circuit emulation system!



2 DProbe430

DProbe430 is an excellent choice for developing code for the MSP430 microcontrollers. If a user wishes to debug application software even before hardware is available, the unit operates in stand-alone mode. This is achieved by means of the emulation memory which is able to cover the whole address range, performing in real time with zero wait states.

Execution hardware breakpoints are able to stop the running application before the desired instruction is executed. In addition, data breakpoints are available to detect read or write accesses to variables. The trace unit allows the processor activity to be recorded and displayed in bus cycle mode, HLL mode or even in logic analyzer display mode.

Connection to the host PC is easy, and fast data transmission rates of up to 115,200 Baud speed up the debugging process.

3 DProbe430 with DBox16

If a design engineer needs to acquire the maximum information about the application and the target system, Hitex offers the DBox16 extension, a top-performance instrument that has all the advanced features required for tracking down and eliminating even the most elusive bugs.

Beyond the standard features, the system with the DBox16 is equipped with Code Coverage and Performance Analysis, tools that can be used to validate the quality of the application. With Code Coverage, unused code can be detected or a complete test of all program paths performed. Using Performance Analysis, code bottlenecks can be detected and resolved, thus improving the overall performance of the application.

The improved trace hardware marks all recorded frames with an additional time stamp, allowing for a precise time analysis of the application. Advanced trace control features and filter options enable the pure recording of those parts of the program of interest so that up to 64K high-level language lines can be saved with a single shot.

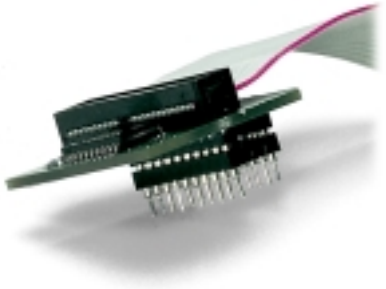
For disclosing hard-to-find bugs, 4 triggers are available which can be combined in a sequence or as a timer trigger to measure timeouts.

Using the DBox16, two fast connections to the host PC are offered as an option: the Hitex parallel interface or the USB interface, which are recommended for a very fast readout of the trace buffer.

Since time-to-market is crucial for the development of new products, as is quality in today's competitive markets, Hitex's DProbe430 with DBox16 has been designed not just to meet these demands but to exceed expectations.

4 Adaptation Solutions

A mechanically safe and reliable adaptation of the target system is essential for an efficient debugging. For all the different packages of the MSP430 derivatives, even the finest pitches, Hitex provides a professional and cost-effective solution. For microcontrollers which are placed in a socket, the normal socket adapter can be used. It is inserted in the socket in place of the microcontroller. Some packages allow the use of replace adapters that have the same footprint as the controller. These adapters are soldered in the target hardware in place of the controller and allow a safe connection of the DProbe430. For detailed information on how to adapt the derivative of your choice, please contact or visit us on the internet at: www.hitex.de and www.hitex.com.



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MSP430 Tools
Technical Data

Supported Derivates	MSP430x11x, MSP430x11x1, MSP430x31x	MSP430x13x, MSP430x14x	MSP430x31x, MSP430x32x, MSP430x33x
Base Unit	DProbe430-Base	DProbe430-Base	DProbe430-Base
Derivative Unit	DProbe430-DP110	DProbe430-DP140	DProbe430-DP300
Extension	DBox16 + DBox16-IF430	DBox16 + DBox16-IF430	DBox16 + DBox16-IF430

Features	DProbe430	DProbe430 with DBox16
Real-time emulation up to max. controller frequency	✓	✓
64k emulation memory, code and data	✓	✓
64k hardware breakpoints (execution, read, write)	✓	✓
Memory protection (access, write)	✓	✓
Support of all power saving modes	✓	✓
Support from 2.5V up to 5.5 V targets	✓	✓
Real-Time Trace (frames, bits)	64 k, 48	64 k or 256 k, 96
Extensive filtering options of trace recording	-	✓
Recording of time stamps in trace	-	✓
Trigger	-	✓
Sequence levels	-	✓
Time Trigger	-	✓
Coverage	-	✓
Performance analysis	-	✓
HiTOP user interface for complete HLL debugging	✓	✓
Powerful macro language HiSCRIPT	✓	✓

The company

Since its founding in 1976, Hitex has created test instruments that have enabled engineers to develop professional error-free products on time. The company now has two divisions:

Development Tools

Working closely with semiconductor manufacturers and strategic customers, Hitex has developed a broad line of in-circuit emulators, which along with high-level language debuggers and other related test systems have made the name Hitex well known in Europe and in the rest of the world for reliable instruments and excellent technical support. Hitex has sales/support offices in all major world markets.

Automation

The Automation division provides custom solutions for clients. This division contracts to take on any or all phases of a customer project. Let our many years of experience in digital microelectronics work to your advantage.

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