

mCAN2

True 40 MHz
with NO Stretch Cycles

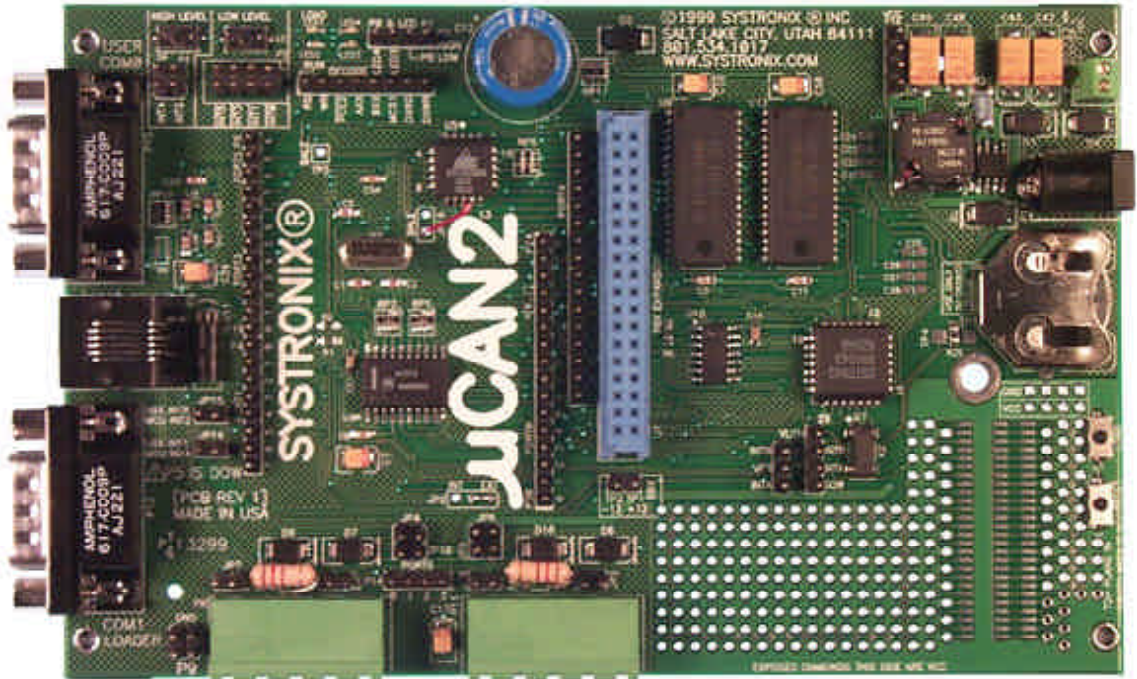
SYSTRONIX®

Dallas 80C390 High Speed Dual CAN Rapid Development & Prototyping System

The new mCAN2 is a ready-to-use DS80C390 development system.

Built around a powerful Dallas High Speed Microcontroller core with dual CAN 2.0B controllers, clock & calendar, and more.

Dual CAN connectors are at the bottom, the blue SBX expansion connector is in the middle, with RS232 and MicroLan along the left edge.



Develop with the new 80C390 CMOS Dual CAN High Speed Microcontroller.

10 MIPS. 2 MBytes SRAM. RS232, MicroLan, SBX. Prototype area.

Only \$350.

Rev up your development with a warp-speed 8051 core, and for the first time ever - **dual CAN 2.0B controllers!**

μCAN2 features 1 MByte each of code and data memory, dual UARTs, clock and calendar and expansion capability via SBX.

True zero wait-state performance. Easy program loading from a PC serial port. Dallas MicroLan/iButton port for low-cost remote sensing & control.

Includes the new Systronix RAD51 8051 assembler and development environment! Device drivers and example programs with source code are included.

- Dual CAN 2.0B controllers!
- 2 MBytes NVRAM, zero wait states.
- Dual UARTs, dual RS232 ports
- Pushbuttons (high & low levels) and two free LEDs.
- Powerful serial loader & utility EPROM.
- 6-24 VDC power input, with low-noise, high-efficiency switching regulator.
- All processor ports brought out to clearly-labelled headers.
- Prototyping area for SMT SOIC (wide and narrow), and through-hole DIP, SIP & ZIP, or more via SBX.
- Optional keypads and LCDs
- Real technical support included!
- Latest info and secure online ordering at: www.systronix.com.

True 40 MHz Zero Wait-State Performance

Dallas High Speed Microcontrollers (HSMs) are high performance, low power, CMOS 8051 code-compatibles with a radical new processor core. HSMs complete an instruction cycle in only 4 clock periods instead of 12. Combine that with clock speeds up to 40 MHz and you've got a 10 MIP CMOS controller. μ CAN2 is rigorously designed to meet all manufacturer's timing requirements over worst case temperature and power variations, *with no "wait states"*.

The DS80C390 includes 10 internal interrupts, 6 external interrupts, watchdog, power-fail interrupt, dual UARTs, dual data pointers, high speed math accelerator, and more. Download data sheets at www.systronix.com, www.dalsemi.com, or call Dallas Semiconductor at 972-371-4000.

Two Full CAN 2.0B Controllers!

Each controller has 15 message centers, two data byte masks and associated IDs, 11- or 29-bit ID modes, SIESTA low power mode, and can auto-baud.

1 MByte each of Code and Data plus 4 KByte I/O space

The 80C390 has 24-bit program/data addressing capability with a 4 MByte address range. μ CAN2 provides 2 MBytes of high speed SRAM with MaxCap backup, and a 4 KByte memory mapped I/O space. The 80C390 also has 4 KBytes of internal program/data SRAM. μ CAN2 uses a paged memory architecture which is compatible with many existing 8051 programming tools. We also include RAD51. At 40 MHz, only high speed SRAM is fast enough - Flash and even most UV EPROMs are too slow. μ CAN2 uses a MaxCap to provide enough memory backup to last through typical brief power outages.

I/O Options

The industry standard 8-bit SBX "mezzanine bus" interface is an easy way to plug on additional memory mapped I/O from dozens of vendors, or create your own with our SBX prototyping board. The Systronix SBX1 board supports parallel interface LCDs and matrix keypads, and 24 bits of rugged bidirectional digital I/O.

Smart Loader/Demonstrator EPROM

The powerful Systronix auto-bauding loader does much more than program HEX files. You can read and write all controller registers, internal data and external memory, test interrupts, and more. You can peek and poke all memory-mapped I/O space - very handy for testing peripherals. All of this can be done manually or via script files from an RS232 port of ANY computer - Wintel, Mac, Linux, etc.

Includes new Systronix RAD51 IDE and 8051 Assembler

μ CAN2 includes the new Systronix RAD51 Integrated Development Environment (IDE) and 8051-family assembler. Requires Windows 95/98/NT.

How do I order?

You can order μ CAN2 in our secure on-line store at www.systronix.com. Our web site will always have the newest information on released products. Or call us!

SBX1 LCD and Keypad Option:

Plug on SBX1 for a basic user interface and 24 bits of digital I/O. SBX1 provides a 16-pin latching header for an LCD, a 4x5 keypad decoder, 24 bits of bidirectional I/O capable of sinking 150 mA, and a piezo buzzer. The digital I/O header is a standard Opto-22 type 25x2 for easy industrial I/O buffering.

Price (preliminary- subject to change):

μ CAN2 \$350 (single), \$335 (3-9), \$320 (10+), call for higher quantities. SBX-1 LCD, keypad and I/O: \$TBD SBX-Proto board with decoder/strobe PLD \$TBD.

TECHNICAL DETAILS

Microcontroller Socketed PLCC68 Dallas DS80C390 40MHz - can be run at 10, 20, or 40 MHz with the crystal provided. All ports are presented on labelled headers.

Memory 1 MByte of code and 1 MByte of data in NVRAM with MaxCap backup. Memory contents are maintained for 30 sec min, 120 sec typical without system power. Page size is 64 KBytes. 4 KByte I/O space.

Power Unregulated 6-24 VDC input from a 5.5x2.5 mm jack or the CAN net. Efficient switching regulator is reverse-polarity, short-circuit and over-temperature protected. 5V @ 500 mA available for user. With the Systronix 12VDC 1A power cube at 10 MHz, μ CAN2 consumes 115 mA with 15.1VDC input (1.7 watts). At 40 MHz, 150 mA @14.8V (2.2 watts).

Serial I/O Two RS232 serial I/O, one for each UART.

CAN Network Two CAN 2.0B channels with DeviceNet screw terminals and twisted pair cable drivers.

Digital I/O SBX card provides additional I/O options.

LEDs and Switches Two pushbuttons (low and high levels) and two LEDs are provided for experimentation. The pushbuttons can drive one or more of the C390's interrupts.

Clock & Calendar DS1284 with lithium battery. Calendar or interval interrupts can be jumpered to the controller.

Expansion 8-bit SBX connector with up to 16 decoded addresses and two interrupts. Dallas MicroLan/iButton port for low-cost remote sensing & control. Memory mapped I/O space is decoded at FAXXH and FBXX, as are read and write strobes at FDXXH.

Easy Program Loading Serial program loading of HEX files initiated by on-card pushbutton. The auto-bauding serial loader is only active in LOAD mode. In RUN mode it is inactive, giving your program complete control of all controller resources.

Size Standard 100x160 mm single Eurocard size, hundreds of enclosures available (some stocked by Systronix) including RF shielded, NEMA rated, etc.

Environmental Commercial temperature 0 to 70 deg C.

Support & Warranty Friendly technical support. One year warranty against defects, and fast turn-around on repairs.

All systems include:

- Printed user manual & technical reference
- Wall cube power supply
- CDROM with Systronix RAD51 assembler & IDE for Windows 95/98/NT, and all data sheets in PDF format.
- Sample programs in assembly code, BCI51 BASIC, and C.

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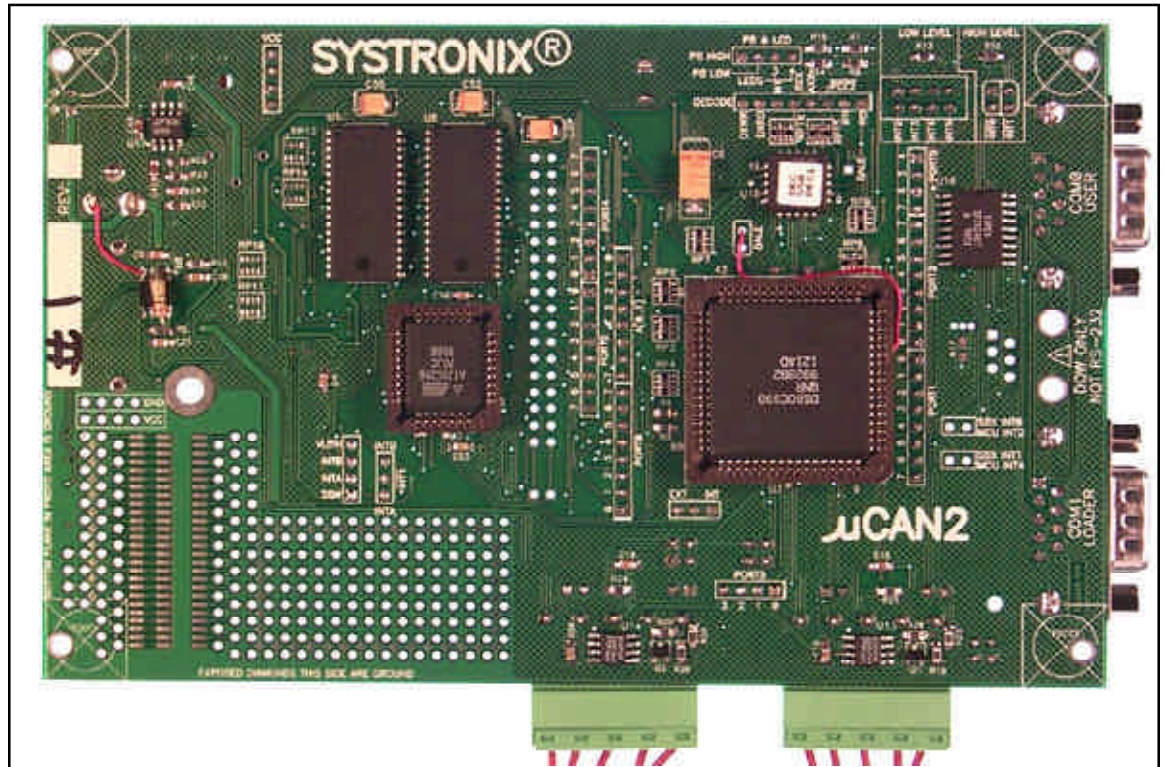
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mCAN2 bottom view showing the DS80C390 controller.

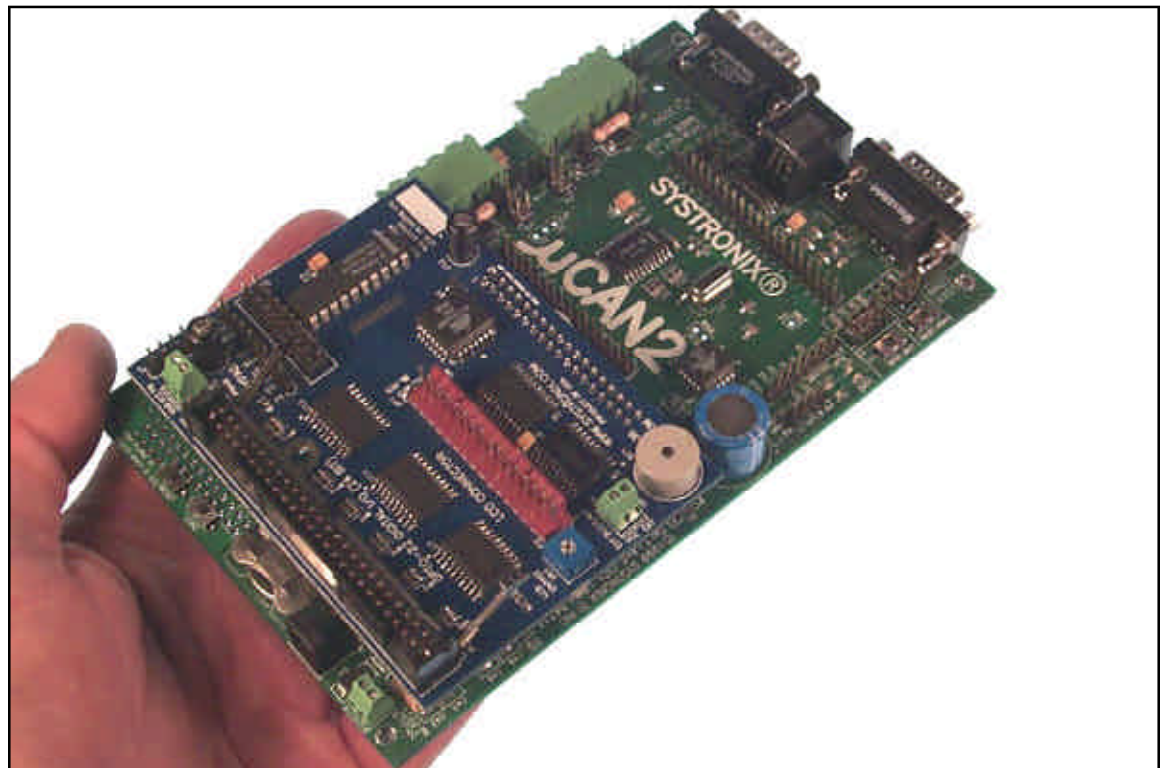
Putting the controller on the bottom enables plugging in an In-Circuit Emulator while maintaining access to all top-side test points and the prototype area. You can even use an ICE with anSBX board installed.

Headers and test points are labelled on both top and bottom surfaces.



mCAN2 top view shown with a prototype Systronix SBX1 I/O expansion board.

Total height of the two-board combination is about 1.5 inches, (not including 25x2 and keypad cables).

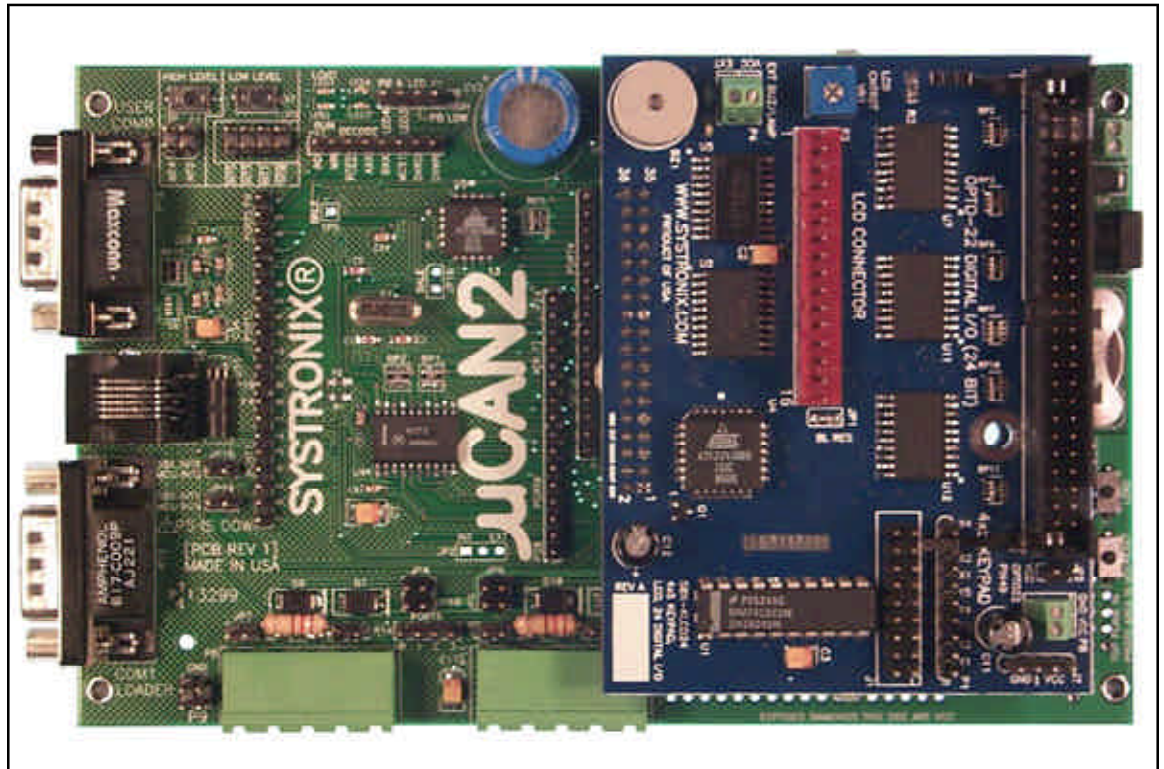


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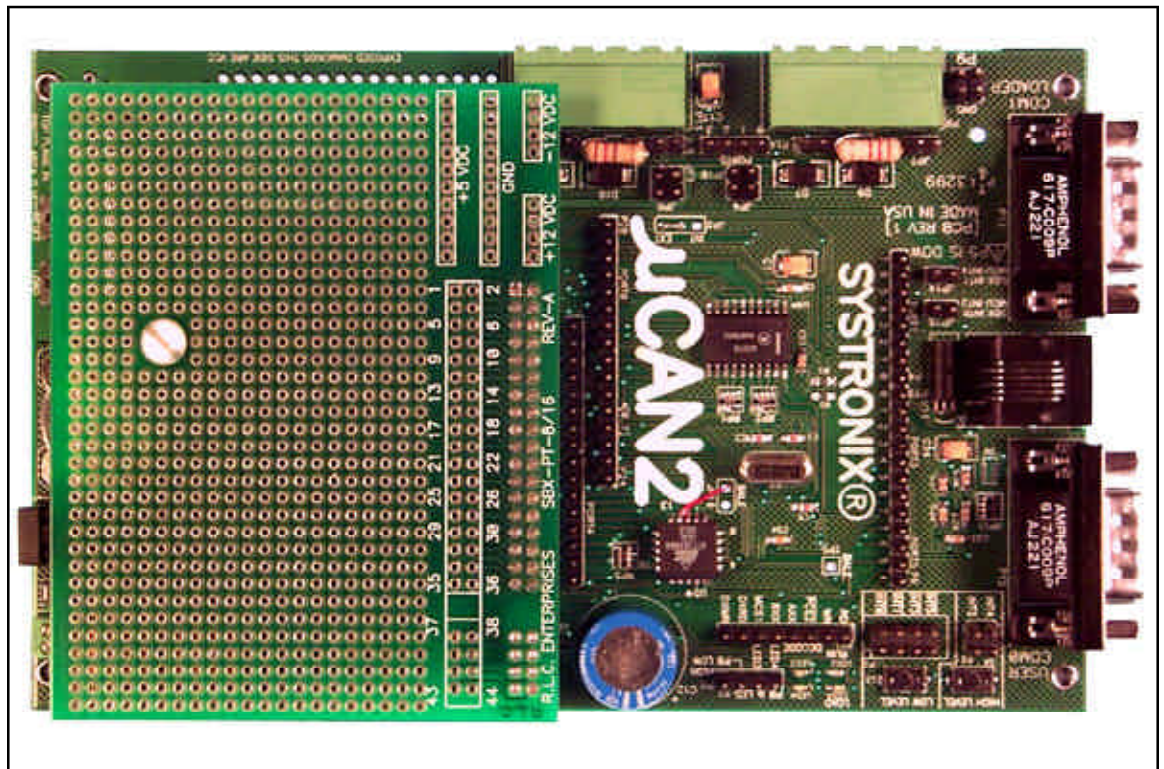
mCAN2 shown with Systronix SBX1 I/O expansion board.

SBX1 adds a parallel LCD interface on the red 16x1 header (with contrast adjustment and backlight power), a 4x4 or 4x5 keypad decoder, a buzzer, and 24 bits of open-drain bidirectional I/O via the Opto-22 compatible 25x2 latching header.



mCAN2 shown here with RLC Enterprises SBX bare prototyping board. This adds 7 square inches of prototype area.

Coming soon: a Systronix SBX bare prototyping board and an SBX development board with decoder and strobe PLD



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