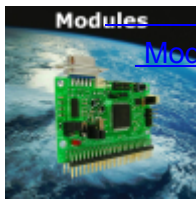




Technological Arts Inc.

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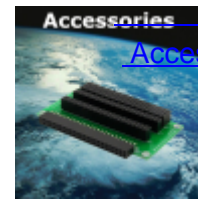
Adapt9S12C



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Overview

Adapt9S12C is a next-generation version of the immensely popular Adapt11 product originally introduced by Technological Arts almost 20 years ago. The flexible design, wide range of connector options, and breadboard pluggability address all aspects of training, evaluation, development, prototyping-- and even volume production.

If you are migrating from the 68HC11, you'll appreciate the backward-compatibility. At the same time, you'll love the powerful HCS12 instruction superset, with its advanced DSP-like instructions, 16-bit arithmetic, memory-to-memory moves, and many powerful addressing modes.

- 19, 33, or 58 I/O lines with multi-property programmability (eg. input/output, pull-up/pull-down, reduced drive, inverted polarity, etc.)
- up to 8 key wake-up interrupt inputs (with digital filtering)
- 1 x SCI
- 1 x SPI
- 8-channel 10-bit ADCs
- multiple PWM channels
- 4-channel timers supporting input capture/output compare, event counting, gated time accumulation, and simple PWM
- internal memory configuration:
 - from 32K to 128K multi-sector Flash
 - from 2K to 4K RAM
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- fast, high-endurance Flash program memory (tens of thousands of erase/write cycles)

- PLL for bus operation up to 25 MHz (over entire voltage and temperature range)
- advanced security features for protecting program memory
- 3.3 V to 5 V operation
- on-chip LVI reset circuit saves external parts
- offered in 48-pin, 52-pin and 80-pin surface mount packages

Features

- standard 6-pin BDM connector for full debugging capabilities (when used with an optional BDM pod)
- up to 44 digital I/O lines on primary I/O connector
- eight can be used as 10-bit analog inputs (Port AD)
- auxilliary I/O connector brings out 8 more I/O pins (Port P)
- up to six PWM channels (Port P)
- up to eight Input Capture/Output Compare pins (Port T)
- serial peripheral interface (SPI)
- serial communications interface (SCI)
- controller area network (CAN 2.0) with on-board transceiver circuit
- up to ten key wake-up interrupt pins
- internal programmable pullup and pulldown resistors on most pins
- user access to MCU reset signal

Details

- supports programming in C, BASIC, Forth, assembler, etc.
- no special Flash programming voltage or switch required
- fast in-circuit programming
- small footprint on-chip bootloader/monitor and free uBug12JE multi-platform GUI for quick loading/debugging of user programs
- Run/Load switch to select Standalone or Monitor operation
- compatible with virtually all 9S12 development tools on the market

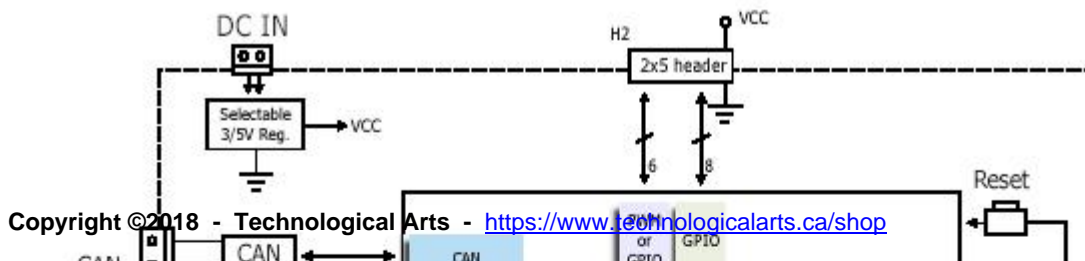
Flash-based code development using on-chip debug/monitor With a 2K Flash-resident debug/monitor program, you'll be able to load your program into the remaining 126K Flash via the serial port using the CodeWarrior or uBug12JE. The entire 126K Flash can be programmed in about 12 seconds! To use the monitor for debugging or code-loading, just set the switch to LOAD. To run your standalone program thereafter, leave the switch in the RUN position. Your code runs from Flash, and interrupts are supported (via Flash-based pseudo vectors, since the monitor resides in the vector space of the MCU). A program you load into Flash this way will run every time you apply power or reset the board in Run Mode.

Flash-based code development using a Background Debug Mode (BDM) pod If you use a more advanced development tool (such as our USBDM1T or UBDM12LX5 pod), the entire 128K Flash can be used, because the Flash-resident bootloader is no longer needed (therefore pseudo-vectors aren't required either).

Resources

- [Adapt9S12C Feature and Pinout Sheet](#)
 - [Adapt9S12C Manual](#)
 - [Adapt9S12C Mechanical Drawing](#)
 - [Adapt9S12C Modular Configuration Examples](#)
 - [Adapt Family Application Card Pinout Table](#)
 - [Adapt9S12 Selector Guide](#)
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- [MC9S12C Fact Sheet](#)
 - [MC9S12C Family Product Brief](#)
 - [MC9S12C Family Data Sheet](#)
 - [MC9S12C Webpage](#)
 - [CAN Transceiver Data Sheet](#)
 - [RS232 Transceiver Data Sheet](#)
 - [LM1086CT-ADJ Voltage Regulator Data Sheet](#)
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- [uBug12 GUI for working with the on-chip Serial Monitor under Windows, Mac, and Linux](#)
 - [Linux command line tool **hc12mem** for working with the Serial Monitor](#)
 - [SynCode: Free Integrated Editor and GNU C Compiler package for Windows](#)
 - [Special Edition of CodeWarrior C compiler](#) from Freescale. It has a 32K C code limit, and unlimited assembler!
 - [45-day Demo C compiler \(ICC V7 for CPU12\)](#) from ImageCraft
 - [Eric Engler's EGNU](#)
 - [Eric Engler's ASMIDE](#)
 - [Using the GNU Development Tools for 68HC11 and 68HC12](#)
 - [FreeRTOS for 9S12C](#)
 - [University of Texas Course Notes & Examples](#)

Block Diagram





Adapt9S12C128 MCU Module
USD \$79.00

Adapt11 form-factor 9S12C128 MCU module with RS232 and CAN interfaces, 128K Flash and 4K RAM
[\[Product Details...\]](#)



Adapt9S12C32 MCU Module
USD \$69.00

Adapt11 form-factor 9S12C32 MCU module with RS232 and CAN interfaces, 32K Flash and 2K RAM
[\[Product Details...\]](#)

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