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# Technological Arts Inc.

*Technological Arts*

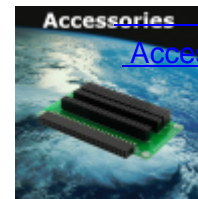
## Adapt9S12D



[Modules](#)



[App Cards](#)



[Accessories](#)

### [Product Info](#)

Adapt9S12D is a compact, modular implementation of the Freescale 9S12DP256C microcontroller chip. The HCS12 family is backward-compatible with 68HC12 (and 68HC11), and utilizes the latest process technology. By shrinking feature size, more functionality can be put on a chip, reducing power consumption and cost, while increasing operating speed. Adapt9S12DP256 is an ideal low-cost platform that brings these advantages within easy reach of engineers, students, and hobbyists. The flexible design of the entire **Adapt** series microcontroller products accommodates all facets of training, evaluation, development, prototyping, and even volume production.

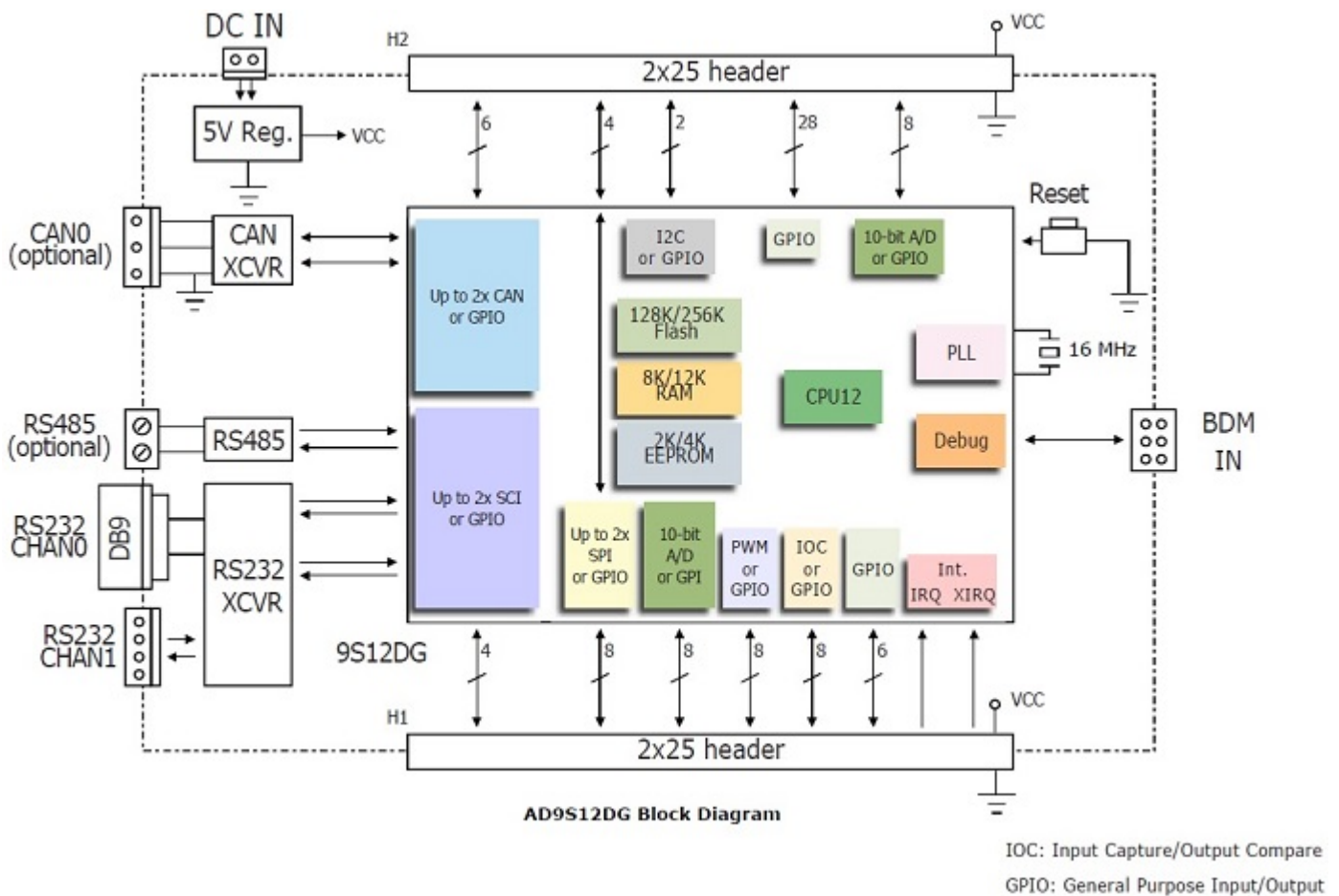
Implemented in an **AdaptS12** form factor board, Adapt9S12D is compatible with an entire range of application cards, prototyping cards, and backplanes, and usable with solderless breadboards (*proto boards*). The Minimal configuration includes all necessary support circuitry for the MCU, as well as a 5-Volt regulator and RS232 transceiver on-board.

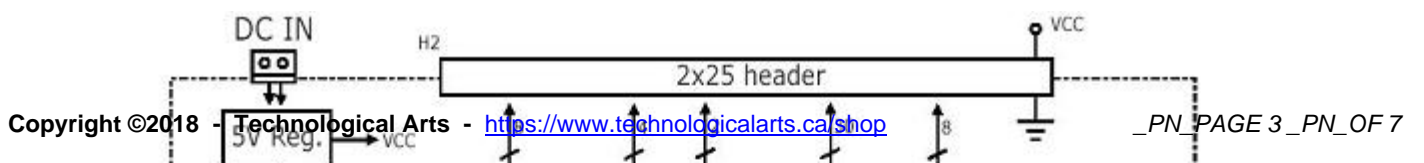
### [Product Details](#)

- 2.30-inch x 3.25-inch AdaptS12 form-factor
- two 50-pin connectors bring out all I/O pins of the MCU
- all I/O pins on a 0.1-inch grid for easy interfacing to standard perfboard
- versatile connector design for use with solderless breadboards, prototyping cards, or embedding into your design
- RS232 transceivers provided for both SCI channels
- 16 MHz crystal, but internal bus can run up to 24MHz (using on-chip PLL)

- accommodates optional user-supplied oscillator
- Background Debug Mode (BDM) fully supported for loading and debugging user code
- universal 6-pin/10-pin BDM connectors support BDM pods from multiple vendors
- program in C, BASIC, Forth, assembler, etc.
- no special Flash programming voltage or switch required
- fast in-circuit programming
- on-chip bootloader/monitor (DBUG12) for quick loading of user programs
- ideal development platform for all **D-** and **A-** series 9S12 variants (eg. 9S12DG, 9S12DA, etc.)
- automotive grade, low-dropout 5V regulator on-board (mounted underneath)
- includes low-voltage inhibit reset circuit + reset button
- accommodates optional precision voltage reference chip for analog-to-digital converters
- accommodates optional LOAD/RUN switch for alternative bootloaders
- second I/O connector accommodates memory expansion bus
- many accessories available:
  - prototyping cards and backplanes
  - low-cost demo card
  - Servo/Sensor Interface module
  - 100-BaseT LAN card

## Block Diagrams





## Resources

- [Device Guides](#)
  - [Freescale/NXP webpage for 9S12D](#)
  - [soBASIC web site](#)
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- [Adapt9S12D Data Sheet](#)
  - [Evaluation Package User Manual](#)-- NOTE: current version of this manual does not cover the Serial Monitor
  - [Support Library](#)
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- [uBug12](#), a free multi-platform utility that works with the on-chip Serial Monitor
  - [Linux command line tool hcs12mem](#) for working with the Serial Monitor
  - [SynCode: Free Integrated Editor and GNU C Compiler package for Windows](#)
  - [CodeWarrior Special Edition IDE for S12/X from Freescale \(32K C code limit; unlimited assembler; integrated debugger\)](#)
  - [45-day Demo C compiler](#) from ImageCraft
  - [AsmIDE is a free Windows IDE for GNU C](#), created by Eric Engler
  - [Using the GNU Development Tools for 68HC11 and 68HC12](#)
  - [FreeRTOS for 9S12D](#)
  - [University of Texas library of C code for 68HC12 and HCS12 microcontrollers](#)
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- [New Mexico Institute of Technology Microcontroller Course](#)
  - [Assembly-and-c-language-programming-using-codewarrior](#)
  - [Examining-the-hcs12-dp256-using-codewarrior-memory-screen](#)
  - [Lab-3-hand-assembly-and-code-warrior-debugger](#)
  - [Lab-5-logic-and-shifting-operations-wuth-codewarrior](#)



**Adapt9S12DG128SM0 with Serial Monitor, min. config.  
USD \$115.00**

This is the best value for educational and OEM applications! Serial Monitor factory installed. Populated with RS232 interface only (no RS485 or CAN transceivers). [\[Product Details...\]](#)



**Adapt9S12DP256M0 Module, Minimal Configuration**  
**USD \$128.00**

This board is for legacy users only. Now uses 9S12DT256 (the 9S12DP256 chip is no longer made). [\[Product Details...\]](#)



**Adapt9S12DP256M1 Module, CAN Configuration**  
**USD \$137.00**

This board is for legacy users only. Now uses 9S12DT256 (the 9S12DP256 chip is no longer made). [\[Product Details...\]](#)



**Adapt9S12DP256M2 Module, Full Configuration**  
**USD \$142.00**

This board is for legacy users only. Now uses 9S12DT256 (the 9S12DP256 chip is no longer made). [\[Product Details...\]](#)



**Adapt9S12DP512M0 Module, Minimal Configuration**  
**USD \$129.00**

This is one of our most popular boards! D-Bug12 factory installed. RS232 interface only (no CAN, RS485). [\[Product Details...\]](#)



**Adapt9S12DP512M1 Module, CAN Configuration**  
**USD \$139.00**

This is one of our most popular boards! D-Bug12 factory installed. RS232 interface + dual CAN transceivers (no RS485). [\[Product Details...\]](#)



**Adapt9S12DP512M2 Module, Full Configuration**  
**USD \$149.00**

This is one of our most popular boards! D-Bug12 factory installed. Populated with RS232, RS485, and dual CAN transceivers. [\[Product Details...\]](#)



**Adapt9S12DP512SM0 with Serial Monitor, min. config.**  
**USD \$129.00**

This is one of our most popular boards! Serial Monitor factory installed. Populated with RS232 interface only (no RS485 or CAN transceivers). [\[Product Details...\]](#)



**Adapt9S12DP512SM1 Module with Serial Monitor, CAN config.**  
**USD \$139.00**

This is one of our most popular boards! Serial Monitor factory installed. Populated with RS232 interface and dual CAN transceivers (no RS485). [\[Product Details...\]](#)



**Adapt9S12DP512SM2 Module with Serial Monitor, Full config.**  
**USD \$149.00**

This is one of our most popular boards! Serial Monitor factory installed. Populated with RS232, RS485, and dual CAN transceivers. [\[Product Details...\]](#)

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