Technological Arts Inc.

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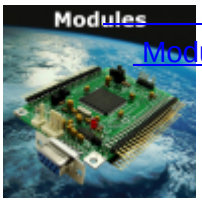
Adapt9S12D



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 accomodates 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
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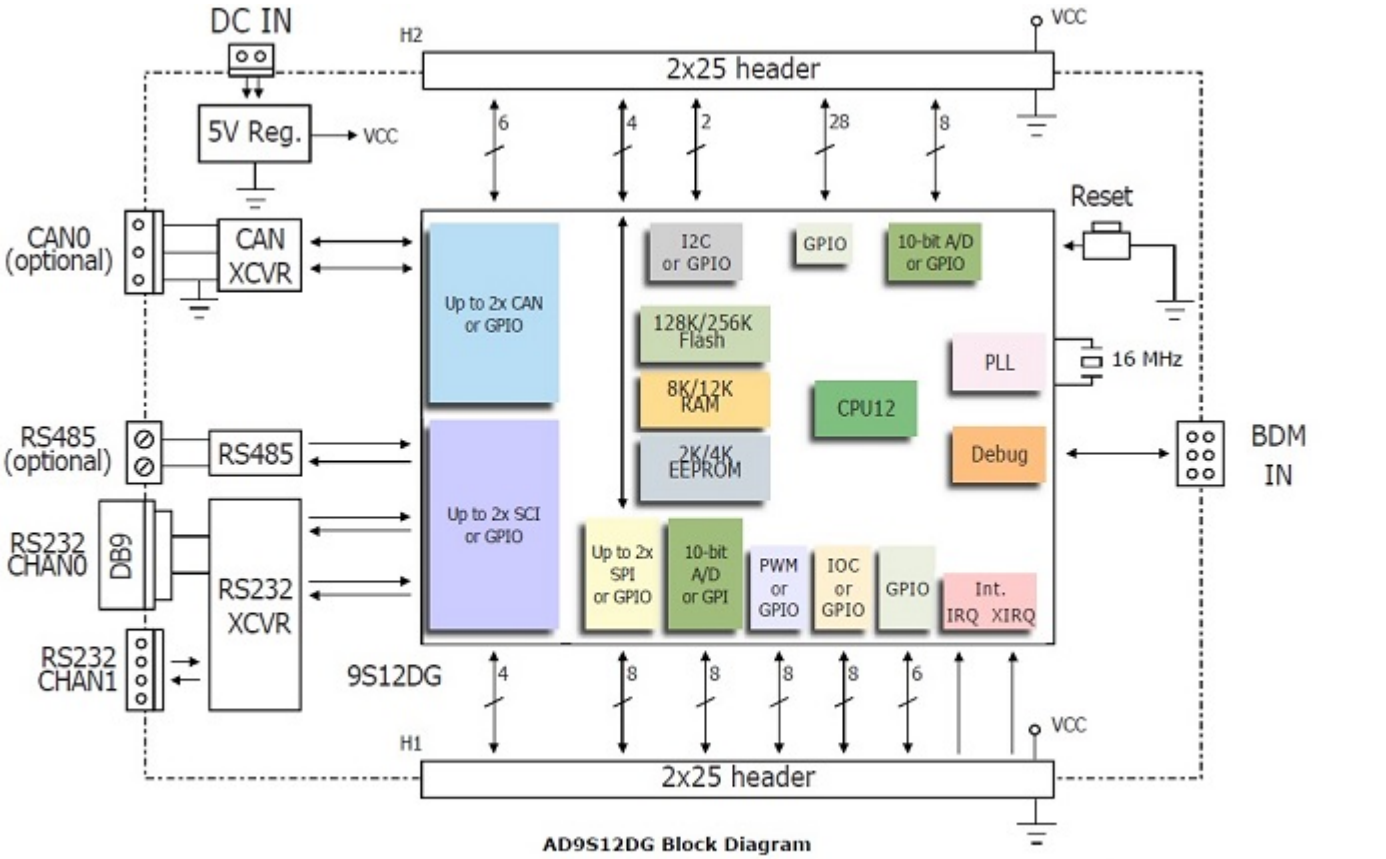
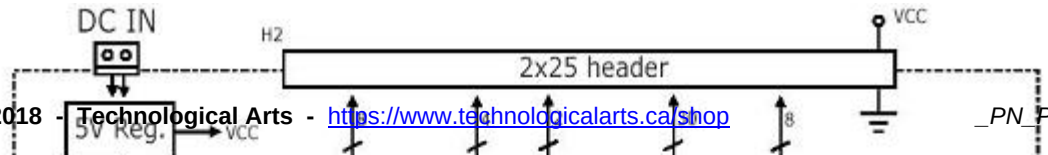
Block Diagrams



AD9S12DG Block Diagram

IOC: Input Capture/Output Compare

GPIO: General Purpose Input/Output


DC IN
H2
2x25 header
VCC
5V Reg.
VCC
8

Resources

- Device Guides
- Freescale/NXP webpage for 9S12D
- soBASIC web site

- Adapt9S12D Data Sheet
- Evaluation Package User Manual-- NOTE: current version of this manual does not cover the Serial Monitor
- Support Library

- 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

- 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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