

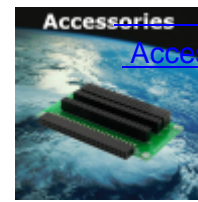


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# Technological Arts Inc.

*Technological Arts*

## Adapt9S12X



### Overview

**Overview:** An enhancement of the popular HCS12 family (and fully backward-compatible CPU), the S12X family utilizes the latest process technology. It boasts higher speed (40 MHz), more functionality, reduced power consumption and cost, and enhanced performance with the new XGATE on-chip memory-management and DMA module. Adapt9S12X products use a modular implementation that brings these advantages within easy reach of engineers and educators. The flexible design of the "Adapt" series of microcontroller products addresses the entire spectrum of training, evaluation, development, prototyping, and OEM use.

### **Module Overview:**

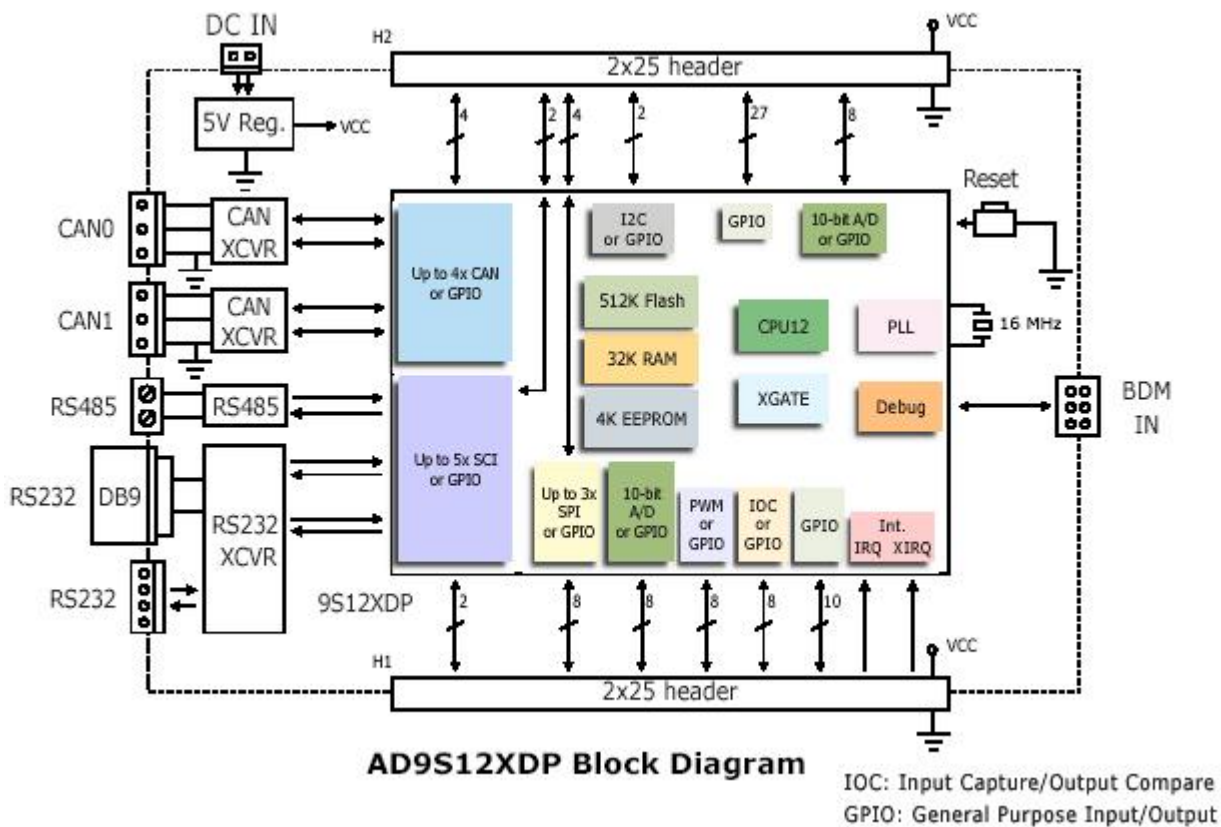
Implemented in an "AdaptS12" form factor board, Adapt9S12X modules are compatible with an entire range of application cards, prototyping cards, and backplanes, and usable with solderless breadboards ("proto boards"). The module design includes all necessary support circuitry for the MCU, as well as a 5-Volt regulator, RS232, RS485, and CAN transceivers on-board (where applicable). Modules are currently offered for 9S12XD, 9S12XE, and 9S12XS microcontrollers.

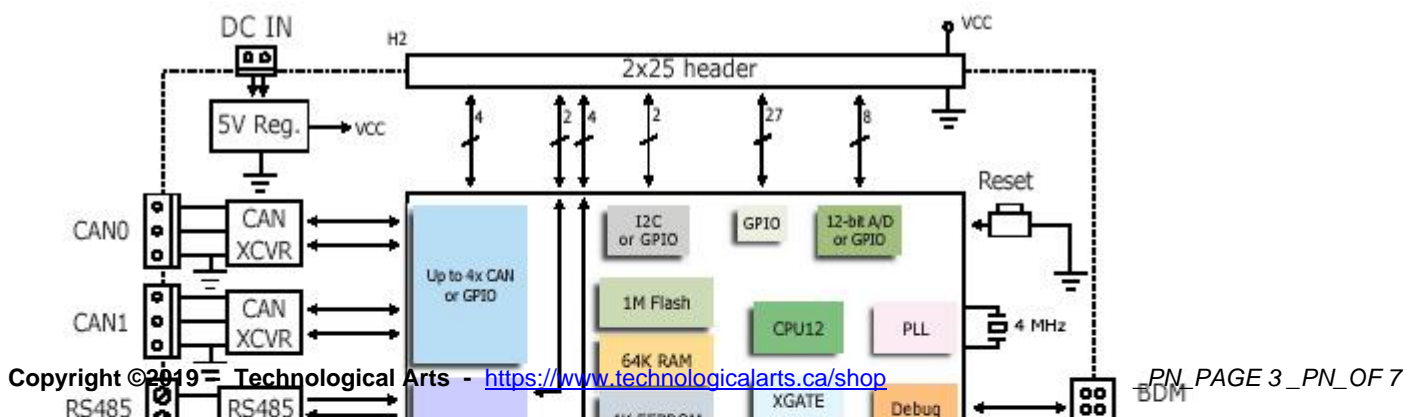
### Details

- 2.30" x 3.25" AdaptS12 form-factor
- two 50-pin connectors bring out all I/O pins of the MCU
- all I/O pins on a 0.1" grid for easy interfacing to standard perfboard

- versatile connector design for use with solderless breadboards, prototyping cards, or embedding into your design
- 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 Serial Monitor for quick loading of user programs
- free uBug12 multi-platform GUI
- ideal development platforms for all 9S12X variants
- 100mA, automotive grade, low-dropout 5V regulator on-board (underneath)
- includes low-voltage inhibit reset circuit + reset button
- accommodates optional precision voltage reference chip for analog-to-digital converters

## Block Diagrams







## Resources

- [HCS12X Family Fact Sheet](#)
  - [HCS12 and S12X Family Compatibility](#)
  - [XGATE Coprocessor Fact Sheet](#)
  - [HCS12X Product Family Brief](#)
  - [XGATE Tutorial](#)
  - [S12X CPU Programming Manual](#)
  - [Freescale webpage](#)
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- [Library of Data, Apps, and Code](#)
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- [FIG-Forth compiler and IDE created by David Armstrong](#)
  - [Linux IDE with assembler](#)
  - [uBug12 multi-platform GUI for working with the on-chip Serial Monitor](#)
  - [SynCode: Free Integrated Editor and GNU C Compiler package for Windows](#) (XGATE not supported)
  - [CodeWarrior Special Edition from Freescale \(32K C code limit; unlimited assembler\)](#)
  - [noICE12: a low-cost full-function debugger for HC12 and HCS\(X\)12 microcontrollers](#). Works with on-chip Serial Monitor or [uBDM12XG5](#) pod.
  - [45-day Demo C compiler](#) from ImageCraft (XGATE assembler supported)
  - [Cosmic C Compiler](#)
  - [Using the GNU Development Tools for 68HC11 and 68HC12](#)
  - [FreeRTOS for Freescale MCUs](#)
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- [Do-it-yourself Electronic Fuel Injection project, based on Adapt9S12XDP512](#)
  - [Online lectures and notes by Professor of Electronics and Computer Engineering, Griffith University \(Australia\)](#)
  - [BlastyRAS: Intelligent Ground Vehicle Competition entry from UT-Austin \(2007\)](#)



**Adapt9S12XDP512M2 XGATE MCU Module**  
**USD \$199.00**

Adapt9S12 form-factor module implementing 9S12XDP512 MCU and essential support circuitry. [\[Product Details...\]](#)



**Adapt9S12XEP100M2 XGATE MCU Module**  
**USD \$199.00**

Adapt9S12 form-factor module implementing 9S12XEP100 MCU and essential support circuitry. [\[Product Details...\]](#)



**Adapt9S12XS128 MCU Module**  
**USD \$99.00**

Adapt9S12 form-factor module implementing 9S12XS128 MCU and essential support circuitry. [\[Product Details...\]](#)



**Adapt9S12XS256 MCU Module**  
**USD \$119.00**

Adapt9S12 form-factor module implementing 9S12XS256 MCU and essential support circuitry. [\[Product Details...\]](#)

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