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# Technological Arts Inc.

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## Adapt9S12E256 Module with 112-pin MCU, Minimal

USD \$149.00



### Product Info

- 2.30" x 3.25" AdaptS12 form-factor
- implements the 112-pin TQFP version of the 9S12E256
- 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
- two RS232C ports
- supplied with 8 MHz crystal, but internal bus can run up to 24MHz (using on-chip PLL)
- selectable Colpitts/Pierce oscillator configuration
- on-chip single-wire Background Debug Module (BDM) fully supported for loading and debugging user code
- universal 6-pin/10-pin BDM connectors support BDM pods from multiple vendors
- code in C, BASIC, Forth, assembler, etc.
- no special Flash programming voltage or switch required
- fast in-circuit programming
- small footprint on-chip bootloader/monitor works with our free uBug12 Windows GUI, for quick loading/debugging of user programs
- Run/Load switch for choice of Standalone or Monitor operation following reset
- low-dropout 5V/3V regulator on-board (mounted underneath)

- user-selectable for 3V or 5V operation
- accommodates optional precision voltage reference chip for analog-to-digital converter
- second I/O connector accommodates memory expansion bus
- many application cards and accessories available:
  - RAM card (#AD9S12MX1)
  - prototyping cards and backplanes (click on Accessories folder, above)
  - low-cost demo card (#AD9S12DEMH1)
  - 100Base-T LAN card (#AD9S12LAN)
  - Servo/Sensor Interface module (#AD9S12SSIM)
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- assembled, tested module, pre-programmed with Freescale Serial Monitor ([see AN2548](#))
- red and black power connector wire (#PCJ1-8)
- printed schematic/pinout sheet
- find data sheets, manuals, and all other resources for this product by clicking on the blue Resources tab above

If you require mating connectors, browse Connectors in the Components category at the left. For power supplies, browse the Accessories category.

**Before you order...**

All of our [standard connector options](#) are available for this board. The product photo above shows "RA1" connector on both H1 and H2. Please make your choice of connectors before adding this item to your shopping cart. Otherwise, the board will be shipped with the default option (i.e. no connectors on H1 and H2).

**Product Details**

**Description:** Adapt9S12E256 is a compact, modular "AdaptS12" form factor board, compatible with an entire range of application cards, prototyping cards, and backplanes, and usable with solderless breadboards ("proto boards"). The Basic configuration includes all necessary support circuitry for the MCU, including a 5-Volt regulator, 8MHz crystal, reset button, BDM connector, and RS232C interface. Accommodation for a user-supplied precision voltage reference is also provided on-board.

**Here are a few ways you can use Adapt9S12E256:** - 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 254K Flash via the serial port using [our uBug12 user interface for Windows](#). The entire 254K Flash can be programmed in about 20 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 at RUN. 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 Flash Mode.

The Serial Monitor is also supported by Freescale's CodeWarrior Integrated Development Environment, for automatic erasing and loading of flash, and C source-level debugging.

- Flash-based code development using a BDM pod

If you want to take advantage of a more advanced development tool (such as uBDM12LX5), the entire 256K Flash can be used, because the Flash-resident bootloader is no longer needed. Use of a BDM pod will also enable you to load and run code from an optional external RAM card, supporting unlimited software breakpoints.

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[Vendor Information](#)