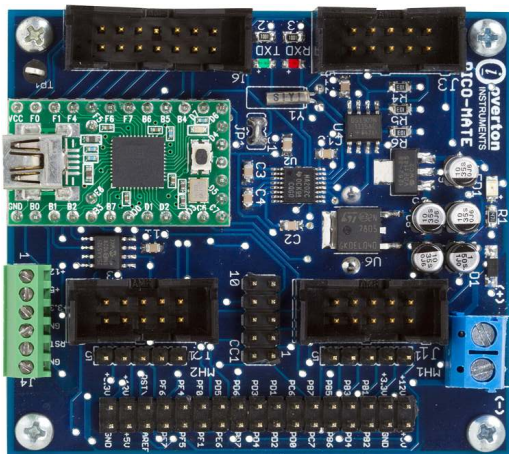


PICO-MATE™

Embedded Test Controller



- ATmega32U4 - 16MHz processor
- 32KB Flash, 2K RAM, 65K EEPROM
- 25 Digital I/O lines
- 12 Analog Inputs, 7 PWM
- UART, I2C, SPI (1ea)
- USB & RS-232C COM Port
- Operator & Expansion Interface
- (Oi) Instrument Ports (2ea)
- Real Time Clock
- Compact Size, 2.50" x 2.75"
- Low cost, \$99 single qty

DESCRIPTION

The Pico-MATE™ is the first in a line of innovative, *EMBEDDED TEST CONTROLLERS* from (Oi). Engineers use it to reduce the high-cost of building custom "automated" test equipment. The Pico-MATE™ is designed for embedded operation which includes direct installation into Mechanical Test Fixtures, custom test instruments or to support larger ATE test systems. The application possibilities are enormous, use the Pico-MATE™ to satisfy a wide range of test solutions (including Semiconductors and PCB's, to full Systems).

The Pico-MATE™ comes loaded with a high-performance Atmel AVR processor, 2K of SRAM and 32K of Flash ROM, 65K EEPROM, 25 Digital I/O lines, a high-speed serial RS232 communications port and a flexible USB interface. Two (Oi) instrument ports are provided to allow access to all (Oi) Test Instrument Modules (i.e., Check-MATE™, DUT-MATE™, Relay-MATE™ and all others). In addition, all Pico-MATE™ I/O lines are consolidated into a single header, which is used for external access and circuit expansion.

Programming the Pico-MATE™ is both simple and fast. Low-cost compilers are available in 'C' and BASIC, and both are supported by TES-MATE™ (Test Executive Suite). TES-MATE™ is a comprehensive library of software routines, support utilities and (Oi) instrument drivers that allow the programmer to take full control over all of the hardware resources the Pico-MATE™ has to offer.

APPLICATIONS

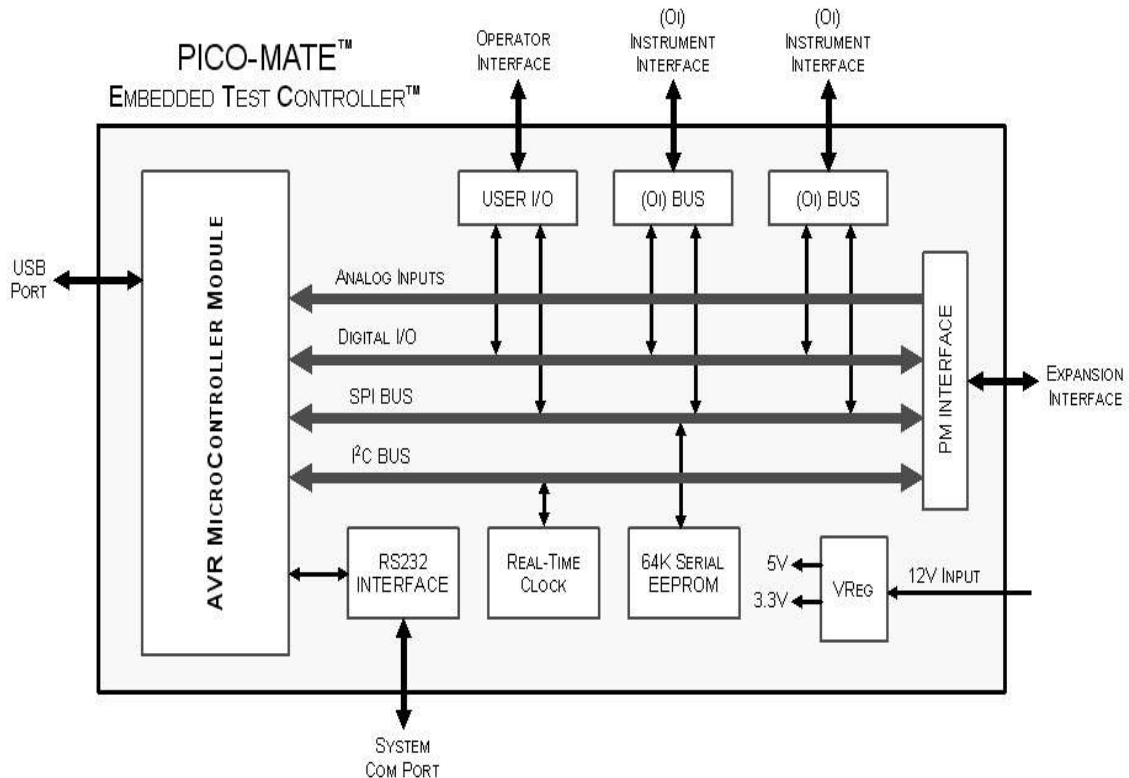
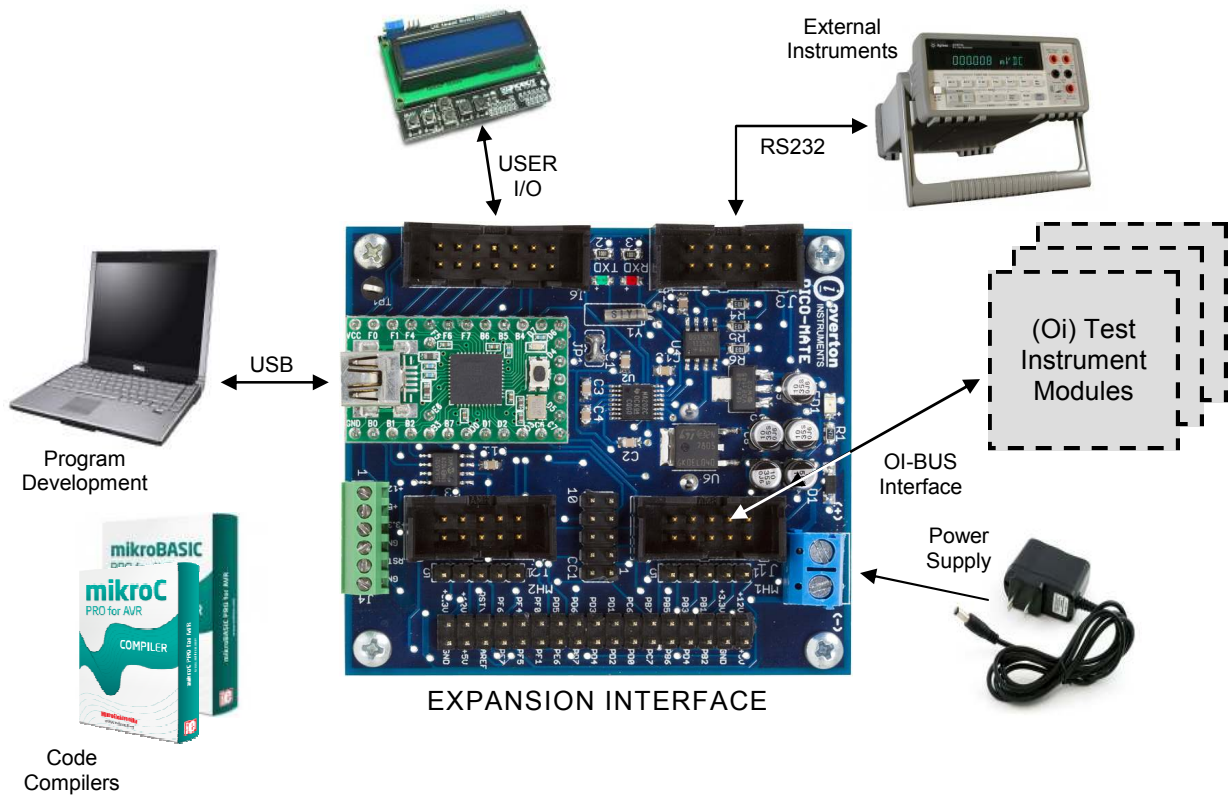
- ✓ Test Digital, Analog, RF, Microwave & High Voltage circuits
- ✓ Include semiconductors, hybrid modules, PCB's, panels or box-level units
- ✓ In-Circuit Test
- ✓ Functional Test
- ✓ ESS & Burn-In
- ✓ Incoming QA/QC inspection
- ✓ Manufacturing
- ✓ Engineering

SPECIFICATIONS

Pico-MATE™	
Processor:	ATmega32U4, 16Mhz
Memory	2K SRAM, 32K Flash, 65K EEPROM
Input/Output	25 Bits DIO, 12 AI, 7 PWM
Serial Ports	RS-232, USB, UART, IC2, SPI
Real Time Clock	1
Instrument Ports	2
Expansion Port	1
Software Compilers	MikroElektronika AVR 'C' & BASIC
Power Supply	+12VDC±10%@100mA
Operating Temp	0-50°C
Dimensions	2.50" x 2.75"

PICO-MATE™

Embedded Test Controller



EMBEDDED TEST SOLUTIONS™



"The Future of Electronics Test"

PICO-MATE™ EMBEDDED TEST CONTROLLER

The **Pico-MATE** is Oi's entry-level test & measurement controller. The diagram below illustrates the ease and flexibility of building custom "automated" test solutions using the **Pico-MATE**. The DUT (device-under-test), is a "thick-film module" that includes both analog and digital circuitry. The overall test process is designed to provide a quick Go/NoGo test sequence.

Before DUT power is applied, the DMM is commanded to perform a series of ICT-like measurements (i.e., resistance, capacitance, continuity and diode checks). This is accomplished by scanning related test points with the **MUX-MATE** (signal multiplexer). The **DUT-MATE** switches power safely to the DUT, as well as measures DUT current & voltage, and provides a over-current circuit breaker. After power is applied, the **Pico-MATE** can use its Digital I/O and serial interfaces to condition and configure the DUT.

Once the configuration is set, the DMM can then be commanded to take a variety of Functional Test measurements (including dc & ac voltages, frequency and period).

You can freely customize the User Interface with a simple combination of input switches and LED indicators. The Operator simply presses the 'START' button, and waits for a green or red LED (to indicate Pass or Fail).

Programming the **Pico-MATE** is both quick and easy. Oi supplies a set of PC-based compilers for BASIC and 'C'. Programming is further accelerated with **TES-MATE**, Test Executive Suite. **TES-MATE** is a comprehensive library of standard software routines, utilities and Oi instrument drivers.

In the example below, the **Pico-MATE**, **MUX-MATE**, **DUT-MATE** and the custom Operator Interface are all integrated inside a low-cost instrument enclosure. The hardware cost for the total solution is less-than \$500 (DMM not included).

Product Features

- 16MHz Atmel Processor
- 32K/2K, Program & Data Memory
- 64K EEPROM, Store P/F Limits & Test Results
- 25 Digital I/O, Analog In, Timing, Interrupt & Control Lines
- Serial Interfaces - SPI, I2C, RS232 & USB
- Real Time Clock
- Expansion Bus, User I/O Bus & Oi-Bus Interfaces
- Compact Size, 2.50" x 2.75"
- Low Cost, just \$99

Typical Applications

- Digital, Analog, RF, Microwave & High Voltage
- In-Circuit Test, Functional Test, ESS & Burn-In
- Semiconductors
- Flex Circuits
- Printed Circuit Boards
- Panelized PCB's

MARCOM20111019-OI

