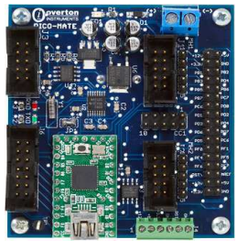
PICO-MATE™, EMBEDDED TEST CONTROLLER



This document highlights the extreme versatility and flexibility the Pico-MATE™ makes available to developer's who design custom test & measurement equipment. In the following application examples, the Pico-MATE™ is combined with other (Oi) test instruments. The result is an excellent development platform which can be used to support all departments (including Engineering, Manufacturing, QA/QC, NPI, Burn-In and Depot Repair).

Fixture Control Solutions

Figure 1, shows a broad range of sensors and circuits used to support custom test fixtures. These devices are used to measure and control a wide variety of electrical parameters (including temperature, light, motion, voltage, power and others). The Pico-MATE™ is combined with the Check-MATE$^{(vl)}$ and Switch-MATE/HC$^{(vl)}$, to offer fully automated Fixture Control Solutions. The Check-MATE$^{(vl)}$ provides a robust collection of Analog & Digital I/O capability, while the Switch-MATE/HC$^{(vl)}$ is used to switch high current loads (10A max). To support external I^{2}C & Spi-bus devices, the Pico-MATE™ provides standard capabilities for both. Finally, through a simple RS232 port, you can control the complete test fixture from an external PC or ATE system.

RF Module Test System

Figure 2, demonstrates a "quick and simple" method for testing RF modules. In this case, the Pico-MATE™ is combined with the DUT-MATE$^{(vl)}$ and COM-MATE$^{(vl)}$. The DUT-MATE$^{(vl)}$ delivers "safe" power, which means it verifies the DUT (device-under-test) is 'OK' before switching power. The COM-MATE$^{(vl)}$ has two RS232 COM ports which allows the Pico-MATE™ to communicate with and control the external RF test instruments. In addition, the Pico-MATE™ can use its I^{2}C & Spi-bus resources to directly configure the DUT and/or download program data. With no changes to the hardware, you can also use the same test system to test other RF devices (including coax cable assemblies, switches, mixers, amplifiers and much more).

Power Supply Test System

Figure 3, presents the basic elements for testing a wide variety of power supply assemblies. The two "work horses" for the test system include the Programmable Power Supply and the Programmable Electronic Load. These instruments determine critical line and load performance. In this configuration, the Pico-MATE™ is combined with the COM-MATE$^{(vl)}$ and DAQ-MATE$^{(vl)}$. The COM-MATE$^{(vl)}$ allows the Pico-MATE™ to communicate with and control the external power supply test instruments. The DAQ-MATE$^{(vl)}$ is a 16-Ch data acquisition module which is used to quickly isolate faults by measuring "key" analog test points (such as voltage dividers, regulators, references, ADC's, OpAmp's and related circuits).

Flex Circuit Test System

Figure 4, illustrates the use of a precision DMM to implement a low-cost solution for testing both passive and active components mounted on a flex circuit. The DMM makes its possible to take ICT-like measurements (i.e., Resistance, Capacitance & Continuity). Once power is applied to the DUT, the DMM can also take Functional Test measurements (such as AC & DC voltages, and Frequency & Pulse-width). In this configuration, the Pico-MATE™ is combined with the DUT-MATE$^{(vl)}$ and MUX-MATE$^{(vl)}$. The DUT-MATE$^{(vl)}$ is used to switch "safe" power to the DUT, while the MUX-MATE$^{(vl)}$ is used route test points (on the DUT), to the measurement input on the DMM. During run-time, the Pico-MATE™ manages the test sequence, determines Pass/Fail, and stores the test results.

FIG-1, Fixture Control Solutions

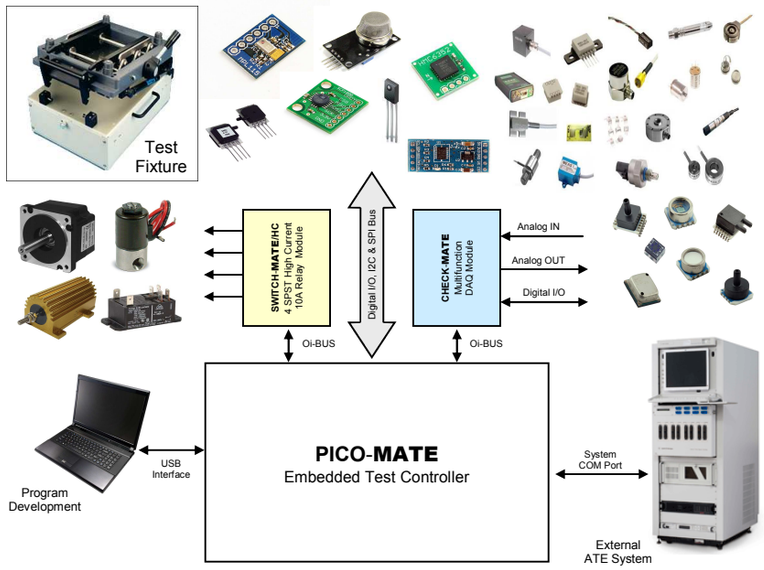


FIG-2, RF Module Test System

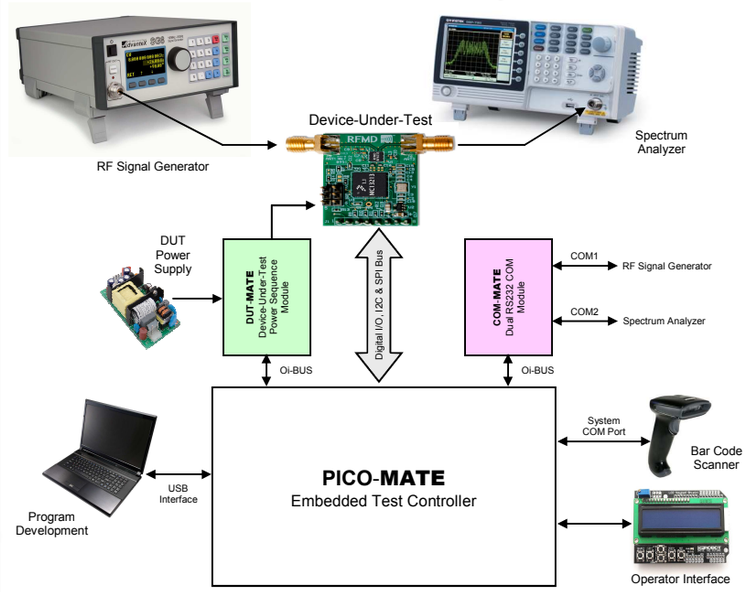


FIG-3, Power Supply Test System

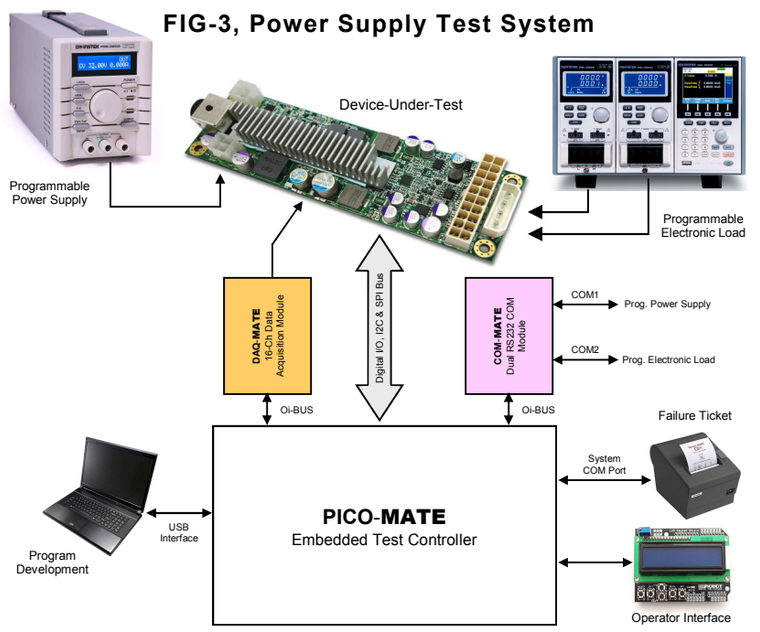


FIG-4, Flex Circuit Test System