EMBEDDED TEST SOLUTIONS

overton INSTRUMENTS

ANALOG CONVERSION

For many Test Engineers, the **Analog Conversion** collection from Oi, represents a major breakthrough for building what we call "*Smart Test Fixtures*". In such applications, the need to control and acquire analog data is critically important. Today's sophisticated test fixtures are called upon to measure a broad range of electrical parameters (including temperature, pressure, LED light, sound & motion, vibration, distance, speed, orientation and the list goes on).

Whether you need to read an analog signal, or set an output voltage, the Analog Conversion products' offer a unique solution that will do the job easier, quicker, faster and for far less cost. What could be simpler - just select the Oi module you need, install the sensor/s you want, plug-in the USB interface, write a little code and that's it, you are up and running with minimal effort.

SPECIAL BENEFITS

- *Wide array of analog conversion solutions*
- *Easy access to instrument resources*
- *Compact size, module just 2.50" x 2.75"*
- *Embedded or USB Interface*
- *Compatible with LabView, LabWindows, VB, HP-Vee, C/C++, Python & many others*
- *Low cost, Oi modules can be as much as 60% less then traditional PC-based test instruments*
- *Enhance Mechanical Test Fixtures, create custom desktop test equipment or support larger ATE test systems*

Multifunction DAQ Module

The innovative CHECK-MATE and CHECK-MATE+ delivers a triple threat. Each module combines 8 analog inputs, 1 analog output and 8 digital input/output bits. The analog inputs are 12-bit resolution (16-bits for the CHECK-MATE+), and includes 4 programmable ranges (0-5Vdc, ±5Vdc, 0-10Vdc & ±10Vdc). The analog output provides 12-bit resolution and 2 programmable ranges (0-10Vdc, ±10Vdc). The 8 digital bits are fully programmable.

Analog Data Acquisition

The DAQ-MATE module provides 16 *very fast* analog input channels (100Ksps). Each channel has 12-bit resolution and offers 4 programmable ranges (0-5Vdc, ±5Vdc, 0-10Vdc & ±10Vdc).

Voltage Control Solutions

The QDM-MATE module provides 4 independent DAC output channels. Each channel has 12-bit resolution and offers 2 programmable ranges (0-10Vdc, ±10Vdc).

CHECK-MATE
Multifunction DAQ Module

- *8-CH, 12-bit A/D with 100ksps sample rate, programmable inputs (8) single-ended or (4) differential*
- *1-CH, 12-bit D/A (unipolar/ bipolar modes)*
- *8 digital input/output lines, independently programmable*

CHECK-MATE+
Multifunction DAQ Module

- *8-CH, 16-bit A/D with 100ksps sample rate, programmable inputs (8) single-ended or (4) differential*
- *1-CH, 12-bit D/A (unipolar/ bipolar modes)*
- *8 digital input/output lines, independently programmable*

DAQ-MATE
16-CH DAQ Module

- *16 12-bit A/D channels*
- *100Ksps sample rate*
- *Programmable inputs (16 SE, 8 Differential)*
- *4 Programmable Input Ranges (0-5V, 0-10V, ±5V and ±10V)*

QDM-MATE
Quad DAC Module

- *4 independent DAC channels*
- *12-bit resolution*
- *2 modes, unipolar 0-10Vdc & bipolar ±10V*

ORDER INFO

CHECK-MATE, Multifunction DAQ Module **ETS-2010-00**	CHECK-MATE+, Multifunction DAQ Module **ETS-2060-00**	DAQ-MATE, 16-CH Data Acquisition Module **ETS-2020-00**	QDM-MATE, Quad DAC Module **ETS-2040-00**
CHECK-MATE, with optional USB Interface **ETS-2011-00**	DAQ-MATE, with optional USB Interface **ETS-2061-00**	DAQ-MATE, with optional USB Interface **ETS-2021-00**	QDM-MATE, with optional USB Interface **ETS-2041-00**

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CHECK-MATE CONTROL CIRCUITS

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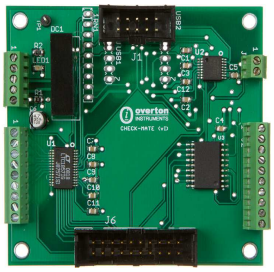


The Check-MATE is a complete Multifunction DAQ Module, that combines 3 test & measurement functions into one low-cost test instrument. The functions include Digital I/O, Analog Input and Analog Output. This document provides a collection of sample circuits that highlight the boundless versatility and flexibility that is created with the Check-MATE. Easy access to the Check-MATE hardware resources is provided through a series of screw terminal connections. In addition, that same capability is also consolidated within a single IDC header connector. This makes it super-simple to connect to external spring-probes (pogo pins) or interface to custom circuits (as shown in the diagrams on right). Use the Check-MATE to build "smart" Mechanical Test Fixtures, develop custom desktop test equipment or to support larger ATE test systems.

DIGITAL I/O

The DIO function provides 8 separate TTL data bits. Each bit can be independently programmed for either input or output, and can sink or source 25mA of current. In addition to directly stimulating the DUT (device-under-test), the DIO bits can be used to perform a myriad of test fixture control and User Interface support tasks. The DIO diagram highlights several interface circuits. The label D_OUT and D_IN indicate bit direction.

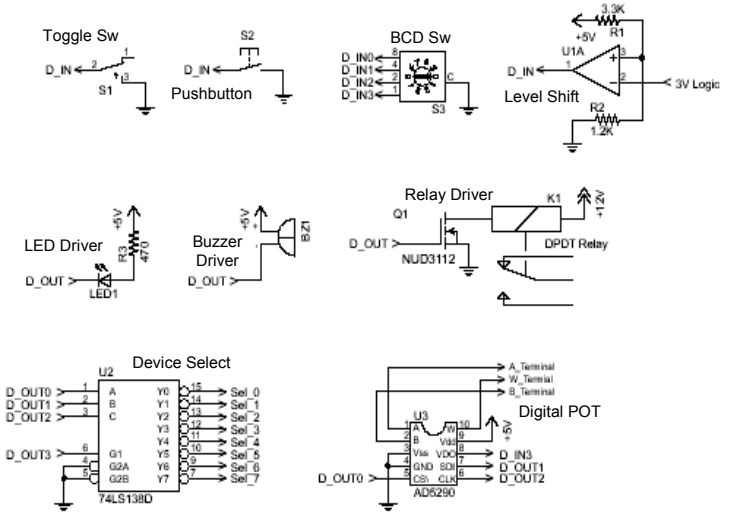
ANALOG INPUT

The AIN function provides a *fast* 12-Bit ADC, that includes 8 'Single-Ended' analog input channels (or 4 'Differential'). Each channel can be independently programmed for 4 ranges (0-5Vdc, ±5Vdc, 0-10Vdc and ±10Vdc). Use the analog inputs to directly measure outputs supplied by the DUT, or monitor sensors that support the operation of the test fixture itself. The AIN diagram lists a variety of useful data acquisition circuits. The label A_IN indicates an analog input connection.

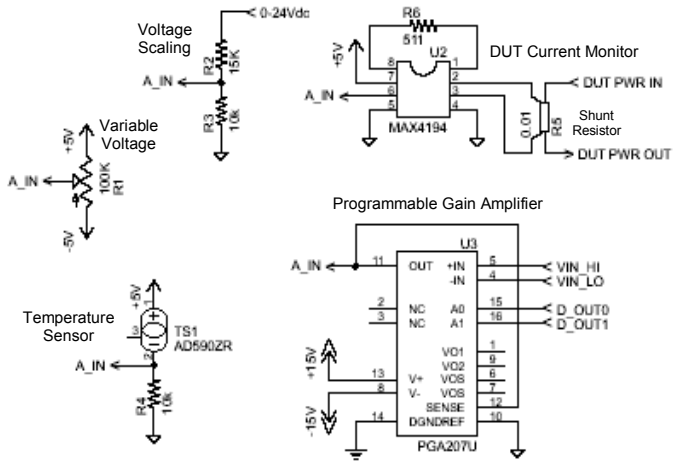
ANALOG OUTPUT

The AOUT function provides a single programmable 12-Bit DAC, voltage output. The DAC can be configured to operate in two range modes (0-10Vdc or ±10Vdc). Use the output voltage to produce a precise control stimulus for numerous test scenarios. Excellent for simulating a DUT voltage input, or for controlling a variable gain amplifier or frequency generator. The AOUT diagram illustrates several relevant circuits. The label A_OUT indicates the analog output connection.

DIGITAL I/O



ANALOG INPUT



ANALOG OUTPUT