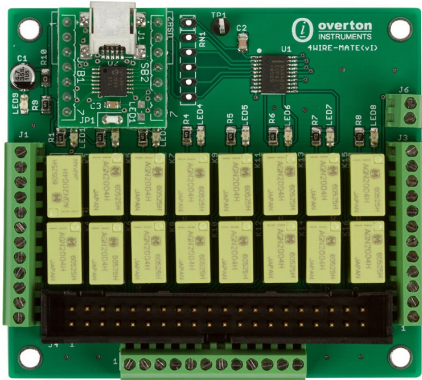



# GSM-MATE4/8(v1)

## GANG SWITCH MODULE

"The Future of Electronics Test"



- Automatic Gang Switch Module
- Switch 4 data lines to one of 8 channels
- Support Ethernet, USB, RS232, JTAG, I<sup>2</sup>C, SPI & CAN bus signal switching
- LED indicate each active port
- Rapid switching, 3msec actuation time
- Convenient screw terminals and mass header for user connections
- USB Interface or Embedded Control
- Compact size, just 2.50" x 2.75" 

MARCOM20200315-01

Specifications are subject to change without notice

## DESCRIPTION

The GSM-MATE4/8<sup>(v1)</sup> is a unique Gang Switch Module that automatically switches 8 channels (4 signal lines each). The module is perfect for supporting PCB panel test applications, where a single set of test equipment or control signals can be commonly shared across a panel of up to 8 DUT's (device-under-test). Many test solutions can be quickly built by connecting the GSM-MATE4/8<sup>(v1)</sup> to a PC laptop or desktop, and run our GUI software. No external power source is required, since power is supplied through the USB interface. Easy access to the hardware is made available through a convenient collection of screw terminal and consolidate headers connectors.

There are two options for controlling the GSM-MATE4/8<sup>(v1)</sup> (with a Host PC or embedded microcontroller). In the case of the PC, the GSM-MATE4/8<sup>(v1)</sup> is connected by a USB interface and responds to a simple set of ASCII commands. Programming is easy using Visual BASIC, LINUX, C/C++, LabView, LabWindows or any language that allows access to through a serial port. For embedded operation, the 4WIRE-MATE<sup>(v1)</sup> uses a standard OI interface to allow external control by most popular microcontrollers (i.e., ARM, PIC, Atmel or STAMP).

Try combining the GSM-MATE4/8<sup>(v1)</sup> with other OI test instruments (such as the SFM-MATE<sup>(v1)</sup> 'short-finder module', DUT-MATE<sup>(v1)</sup> 'power sequence module', Check-MATE<sup>(v1)</sup> 'data acquisition module' and others). Use our ETS Series products to build unlimited test solutions quickly, confidently and affordably.

## SPECIFICATIONS

Channels	
Number	8 channels, 4 wires each
Configuration	Ch0 input, Ch1-Ch8 outputs
Max DC Volts	125Vac, 110Vdc
Max Current	1A, each signal line
Max Load	0.50A/125Vac, 1A/30Vdc
Min Load	10uA, 10mVdc
Max Switching	62.50VA, 33W
Contact Resistance	100mΩ
Relay life	100M operations
Set / Release Time	Max 4msec (approx 2msec)
Input Control	
Embedded	Oi-Bus interface
USB Interface	Optional USB module
General	
Power Supply	+5VDC±10%@100mA
Operating Temp	0-50°C
Dimensions	2.50" x 2.75"

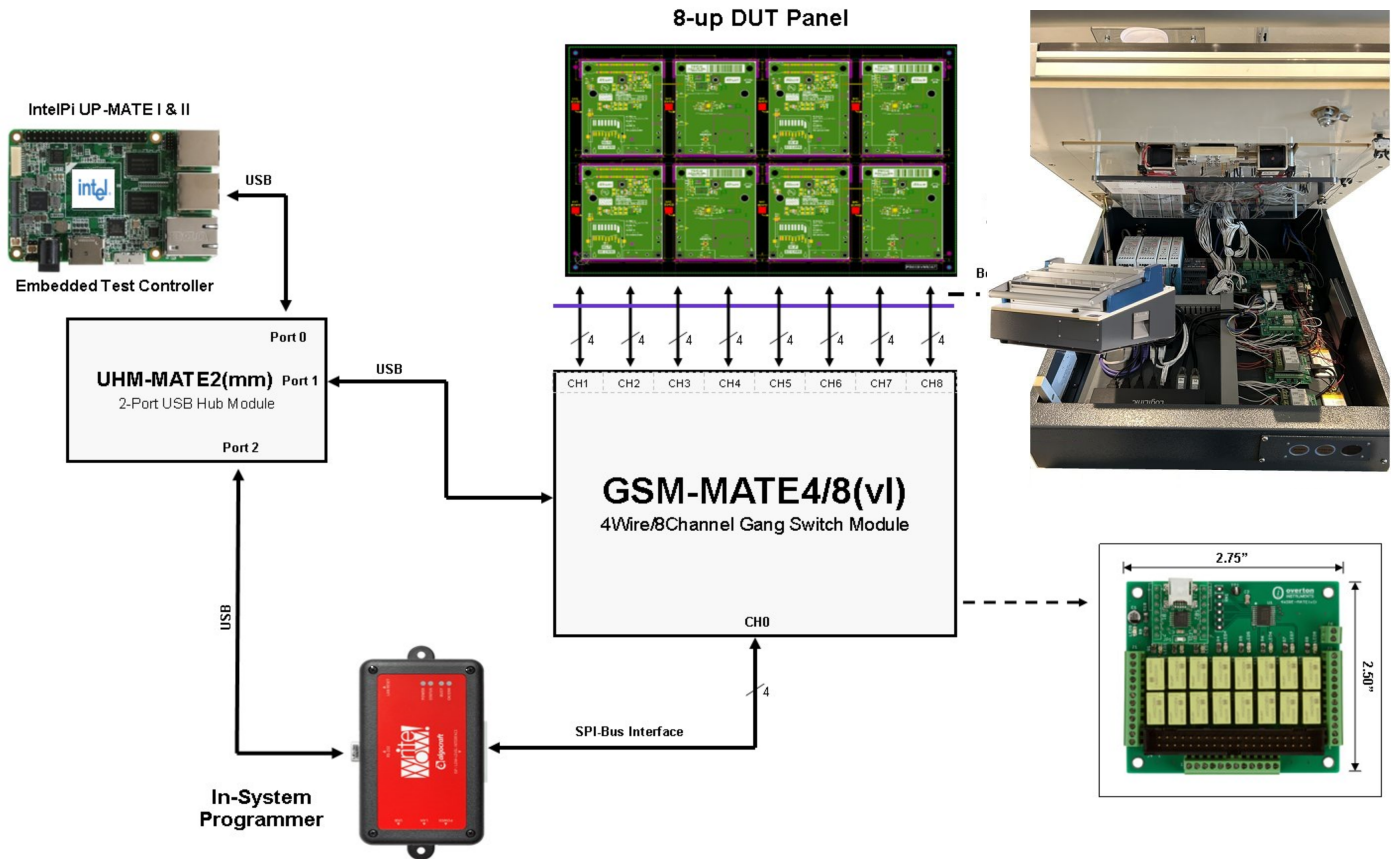
## ORDER INFORMATION

Part No.	Description
ETS-4410-00	GSM-MATE4/8 <sup>(v1)</sup> , Gang Switch Module
ETS-4411-00	GSM-MATE4/8 <sup>(v1)</sup> with USB-MATE, USB Interface Module

# SMART SWITCHING SOLUTIONS

## Expand in-system programming with a low cost gang switch module...

Prepared by Overton Claborne Sr, November 14, 2023, rev01



It would not be an overstatement to say, the vast majority of PCB assemblies built today includes some type of onboard memory device (i.e., embedded controller with flash or separate EEPROM). And, at some point in the manufacturing process these devices often require some form of in-system programming operation. Fortunately, to program a single PCB there exists a multitude of cheap in-system programmers on the market. However, if you are tasked with programming a panelized PCB, then you will likely need a gang switched system (and the price tag for that unit could cost you many thousands of dollars).

This application brief features the **GSM-MATE4/8** instrument module from OVERTON INSTRUMENTS (OI). In the diagram above the GSM-MATE4/8 is combined with a single low-cost SPI-Bus device programmer. The solution creates a very economical method to program a panel of 8 PCB's. In the illustration, the output interface from the SPI-Bus programmer is connected to

the CH0 input on the GSM-MATE4/8. From the Host PC, the GSM-MATE4/8 can be quickly commanded to switch CH0 (4 I/O lines), to any one of the 8 output channels (CH1 - CH8). Each output channel is connected to a corresponding DUT (device-under-test) on the PCB panel, thru a set of spring probes.

Like all (OI) instrument modules, they are designed for embedded operation, which means the GSM-MATE4/8 can be easily mounted inside a Mechanical Test Fixture. Access to the relay switches is provided by two options. First, there is a set of screw terminal blocks which allows individual wire connections. Or, there is a mass 34-pin header which contains all of the switch connections, and provides an excellent method to directly connect to the test fixture spring-probes.

The diagram also includes the UHM-MATE (USB Hub Module), which is a 4-Port USB 2.0 Hub. With the introduction of the UHM-MATE, you can have

a completely automated and totally self-contained In-System Programming Station (for significantly less cost than a commercial gang switch/programming system).

But, if you also need to individually power the PCB's on the panel, you can simply add two other (OI) instruments - the DPM-MATE and the SWITCH-MATE. The DPM-MATE (DUT Power Module), offers a collection of standard supply voltages that range from +3.3Vdc to +24Vdc (and ±12Vdc & ±15Vdc). The beauty of the DPM-MATE modules is that the output can be automatically switched (thru a relay), and the rail voltage & current can both be read-back thru the USB port. The SWITCH-MATE is a 8Ch SPST relay module, that is connected the DPM-MATE, and can automatically switch power to one of the 8 DUT's.

To get more information about how you can build your own low cost in-system programmer using the GSM-MATE4/8, just give us a call.