

EmStat Pico MUX16 for OEM

[ESPICO-MUX16.R1]

EmStat *pico*™
Built with  ANALOG
DEVICES

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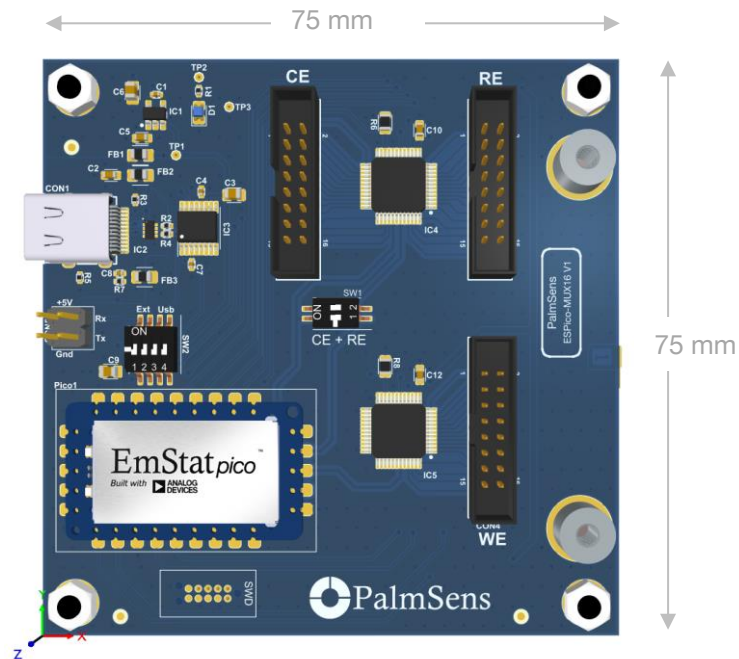
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Description

The “EmStat Pico MUX for OEM” is a 16-channel multiplexer with integrated EmStat Pico potentiostat module.

There are two ways of addressing the multiplexer:

- MUX16 mode where the WE, RE and CE are all switched at the same time. This allows for 16 individual cells to be connected to the board, each with their own WE, RE and CE.
- MUX256 mode where WE and RE+CE combined are switched separately, allowing 256 channels to be addressed as a matrix.



The EmStat Pico MUX16 board (actual size)

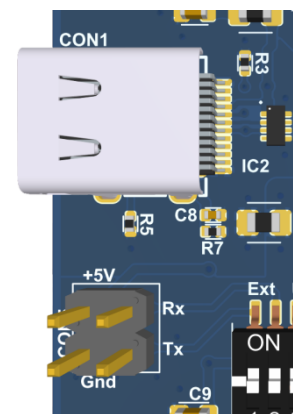
Communications

The board has a USB-C port for connecting and powering the board from a PC.

Next to the USB port is a 4-pin male (2.54 mm pitch) header which can be used for alternative 5V power supply and Rx and Tx pins for TTL serial connection. This allows you to connect the board directly to another microcontroller like an Arduino.

The MUX is controlled using 8 digital IO lines. This effectively creates an 8-bit address for the mux. The 4 LSB bits of the mux address switch the WE, the 4 MSB switch the RE and CE.

The EmStat Pico MUX16 board can be used directly with PStTrace software.



Please note that the digital lines of the EmStat Pico module need to be toggled manually in the PStTrace software before starting a measurement on a specific channel.

Controlling the MUX with your own code

The EmStat Pico module works with the MethodSCRIPT™ language.

[Click here for more information on MethodSCRIPT](#)

The following script can be used to set channel 2 in MethodSCRIPT (\n represents a newline):

```
e\n
#configure all 10 GPIO pins as outputs, add "i" to indicate it is an integer \n
set_gpio_cfg 0x3FFi 1\n
#Select WE2 and RE2/CE2\n
set_gpio 0x11i\n
\n
```

Note that # is used for comments.

This script can be sent through the PStTrace MethodSCRIPT Sandbox window or any terminal emulator. Many examples for using MethodSCRIPT on different platforms are available.

Connections

The cells can be connected to the box connectors on the box by means of flatcables or a break-out board.

The connectors have 16 position with a pitch of 0.079" (2.00mm). See the [datasheet](#) of the connector (AWHW2-16G-0202-T-R) for more details.

System Specifications

General	
▪ multiplexer	16 channels in 3-electrodes multiplexer mode 256 channels in 2-electrodes matrix mode
▪ on resistance	4 Ohm typical
▪ charge injection	1 pC typical
▪ leakage current	10 pA (per channel) typical at 25 °C

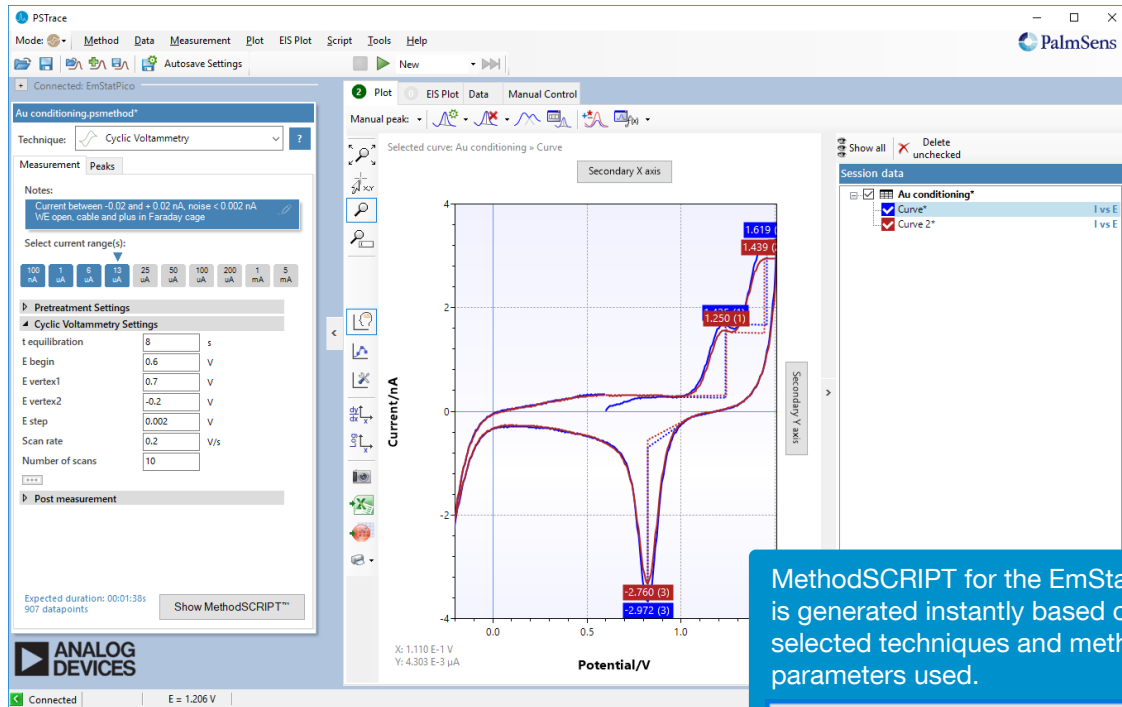
Standard package

The EmStat Pico MUX16 comes standard with the following items:

- EmStat Pico MUX16 board
- USB-C cable
- USB stick with PStTrace
- 6x IDC (crimp) connectors for the 16 position board connectors
- Flat cable

PSTrace: research software for Windows

The EmStat Pico MUX16 board can be used directly with the PSTrace software for Windows. PSTrace automatically sets the EmStat Pico in the optimal mode based on the user specified method parameters.

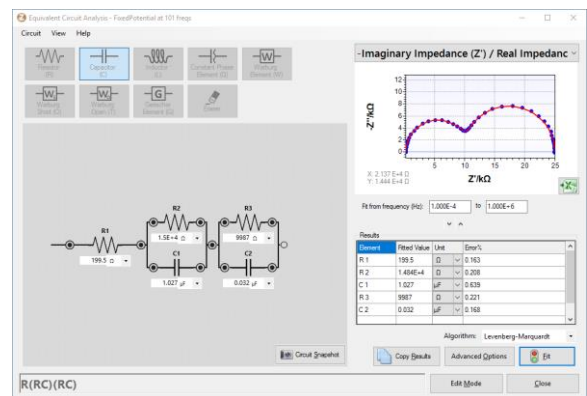


MethodSCRIPT for the EmStat Pico is generated instantly based on the selected techniques and method parameters used.

Show MethodSCRIPT™

Other functions in PSTrace 5

- Method validation
- Automatic peak search
- Equivalent Circuit Fitting
- Open your data in Origin and Excel with one click of a button
- Save all available curves, measurement data and methods to a single file
- Dynamic feedback on method parameters



Integration with third party software:

- Excel
- Origin
- Matlab
- ZView



System requirements

- Minimum PC requirements are:
- Windows 7, 8, or 10 (32-bit or 64-bit)
 - 1 GHz or faster 32-bit (x86) or 64-bit (x64) processor
 - 1 GB RAM (32-bit) or 2 GB RAM (64-bit)

For more information about software visit www.palmsens.com/software

Please don't hesitate to contact PalmSens for more details:
info@palmsens.com

PalmSens BV
The Netherlands
www.palmsens.com

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