



MATLAB extension quick user guide

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This quick start guide intends for Engduino 3 and Windows OS, it is untested for Linux or MAC

Preliminary:

- Engduino is turned on and plugged in
- Engduino has Protocol.ino uploaded
- Add path to include EngduinoMatlab/lib

legend:

command lines: Courier new font
parameters: *Italic font*

Create Engduino Object

`e=Engduino`

Lights

Small green LED (D16):

- Turn on**
`e.setLed(1)`
- Turn off**
`e.setLed(0)`

All LED (D0-D15):

- `e.setLedsAll(LED_color)`

All LEDs with Brightness (D0-D15):

- `e.setLedsAllB(LED_color, brightness)`

One LED (D0-D15), keep others unchanged:

- `e.setLedsOne(led#, LED_color)`

One LED ONLY (D0-D15), turn others off:

- `e.setLedsExact(led#, LED_color)`

LED color vector and brightness vector (16 elements):

- `e.setLedsB([LED_color, LED_color,..., LED_color], [brightness, brightness,..., brightness])`

LED with 16x3 RGB brightness vectors:

- `e.setLedsRgb(rgb_brightness)`

Pause the program:

- `pause(#seconds)`

Other useful reference

- `var=zeros(x size, y size)`
- `help command`

Parameters

LED color:

- `e.COLOR_RED`
- `e.COLOR_BLUE`
- `e.COLOR_GREEN`
- `e.COLOR_YELLOW`
- `e.COLOR_CYA`
- `e.COLOR_MAGENTA`
- `e.COLOR_WHITE`
- `e.COLOR_OFF`

Parameter range:

- `led#`: 0-15
- `brightness`: 0-15
- `rgb_brightness`: 0-15 of vector matrix size 16x3

Sensors

Temperature (°C)

- `e.getTemperature`

Accelerometer ([x,y,z])

- `e.getAccelerometer`

Magnetometer ([x,y,z])

- `e.getMagnetometer`

Light (0-1024)

- `e.getMagnetometer`

MATLAB Programming

- `for i=0:15`
...
`end`
- `while(condition)`
...
`End`
- `switch(expr)`
`case {smth}`
...
`Otherwise`
`end`