Intel Edison {#edison}

Intel(R) Edison is a dual-core Silvermont Atom(TM) clocked at 500MHz. The Edison also features 4GB of storage, 1GB ram and on-board WiFi and Bluetooth.

Currently supported boards:

- Intel Arduino board
- Intel breakout board

UART

On both the Arduino board and the breakout board, The available UART interface is on /dev/ttyMFD1

Intel Arduino board

The Edison used with the Arduino board has the following limitations in libmraa:

- Do not use the 'reset' button on the arduino shields, there is a hardware bug and the platform will likely not come back up correctly
- I2C is exposed on i2c-6, therefore you must use bus 6 and not bus 0
- PWM available on default swizzler positions. (3,5,6,9)
- SPI exposed is also used for the ADC. Try not to use your own CS.
- Max SPI speed is 25Mhz/4 ~6.25Mhz
- SPI PM can sometimes do weird things you can disable it with: `echo on > /sys/devices/pci0000\:00/0000\:00\:07.1/power/control`
- ADC kernel module will return 16bit number but the ADC itself only has an accuracy of maximum 12bits and in MRAA it's limited to 10bits by default. Use `mraa_aio_set_bit(12)` to switch to the maximum resolution mode. This ADC is only included on the Arduino board.
- AIO pins are treated as 0-5 in `mraa_aio_init()` but as 14-19 for everything else. Therefore use `mraa_gpio_init(14)` to use A0 as a GPIO
- Arduino pin 7 can sometimes negatively impact the WiFi capability, if using WiFi avoid using this pin
- Edison's i2c-1 can be used using for example the sparkfun i2c breakout ontop of the Arduino breakout board, this is not supported officially so asking for mraa_i2c_init(1) will result in getting i2c bus 6 (the default one). However using raw mode (mraa_i2c_init_raw(1)) this bus is fully usable
- If you want to use /dev/ttyMFD2 you have to use the raw uart mode passing a std::string or char* argument of

"/dev/ttyMFD2" to mraa:Uart() or mraa_uart_init_raw. By default there is a getty running on that interface so you will need to disable that first

Because of the way IO is setup with the tristate on the Arduino breakout board IO will be flipped as it is setup. It's recommended to setup IO pins & direction before using them in a `setup()` method or similar. It's impossible on this platform to avoid some GPIOs flipping on setup.

Intel(R) breakout board

- Both I2C buses are available 1 & 6
- IO on the miniboard is 1.8V
- Requesting GPIO 4 will break your FTDI UART console, so bear in mind when trying to use it

Please see the following table on how the physical pins map to mraa pin numbers

MRAA Number	Physical Pin	Edison Pin	Notes	Pinmode0	Pinmode1	Pinmode2
0	J17-1	GP182		GPIO-182	PWM2	
1	J17-2	NC	Nothing from mraa			
2	J17-3	NC	Nothing from mraa			
3	J17-4	VIN	Nothing from mraa			
4	J17-5	GP135		GPIO-135	UART	
5	J17-6	RCVR_MODE	Nothing from mraa			
6	J17-7	GP27		GPIO-27	I2C-6-SCL	
7	J17-8	GP20		GPIO-20	I2C-1-SDA	
8	J17-9	GP28		GPIO-28	I2C-6-SDA	
9	J17-10	GP111		GPIO-111	SPI-5-CS1	
10	J17-11	GP109		GPIO-109	SPI-5-SCK	
11	J17-12	GP115		GPIO-115	SPI-5-MOSI	
12	J17-13	OSC_CLK_OUT_0	Nothing from mraa/check			
13	J17-14	GP128		GPIO-128	UART-1-CTS	
14	J18-1	GP13		GPIO-13	PWM1	
15	J18-2	GP165		GPIO-165		
16	J18-3	GPI_PWRBTN_N	Nothing from mraa			
17	J18-4	MSIC_SLP_CLK2	Nothing from mraa			
18	J18-5	V_VBAT_BKUP	Nothing from mraa			
19	J18-6	GP19		GPIO-19	I2C-1-SCL	
20	J18-7	GP12	PWM0	GPIO-12	PWM0	
21	J18-8	GP183	PWM3	GPIO-183	PWM3	
22	J18-9	NC	Nothing from mraa			

23	J18-10	GP110		GPIO-110	SPI-5-CS0	
24	J18-11	GP114		GPIO-114	SPI-5-MISO	
25	J18-12	GP129		GPIO-129	UART-1-RTS	
26	J18-13	GP130		GPIO-130	UART-1-RX	
27	J18-14	FW_RCVR	Nothing from mraa			
28	J19-1	NC	Nothing from mraa			
29	J19-2	V_V1P80	Nothing from mraa			
30	J19-3	GND	Nothing from mraa			
31	J19-4	GP44		GPIO-44		
32	J19-5	GP46		GPIO-46		
33	J19-6	GP48		GPIO-48		
34	J19-7	RESET_OUT	Nothing from mraa			
35	J19-8	GP131		GPIO-131	UART-1-TX	
36	J19-9	GP14		GPIO-14		
37	J19-10	GP40		GPIO-40	SSP2_CLK	
38	J19-11	GP43		GPIO-43	SSP2_TXD	
39	J19-12	GP77		GPIO-77	SD	
40	J19-13	GP82		GPIO-82	SD	
41	J19-14	GP83		GPIO-83	SD	
42	J20-1	V_VSYS	Nothing from mraa			
43	J20-2	V_V3P30	Nothing from mraa			
44	J20-3	GP134				
45	J20-4	GP45		GPIO-45		
46	J20-5	GP47		GPIO-47		
47	J20-6	GP49		GPIO-49		
48	J20-7	GP15		GPIO-15		
49	J20-8	GP84		GPIO-84	SD	
50	J20-9	GP42		GPIO-42	SSP2_RXD	
51	J20-10	GP41		GPIO-41	SSP2_FS	
52	J20-11	GP78		GPIO-78	SD	
53	J20-12	GP79		GPIO-79	SD	
54	J20-13	GP80		GPIO-80	SD	
55	J20-14	GP81		GPIO-81	SD	