MyPi Industrial IoT Integrator Board

Main Card Features

- Raspberry Pi Compute Module 1 & 3 compatible
- Integrated 10/100 Ethernet Adapter
- Mini PCIe interface + SIM connector for use with cellular modems
- Ruggedized USB microSD Card interface, providing on-board mass-storage separate from the OS file system.
- Integrated USB RS232 UART (RX/TX/RTS/CTS) using RJ45 connector for maximum range.
- Modular IO Cards for Application Specific IO solutions
- Dual High-Resolution Raspberry Pi Camera Interfaces
- Raspberry Pi 2 HAT Compatible I/O Connector & Mounting Points
- Integrated battery backed Real-Time-Clock (RTC)
- 1.6s hardware watchdog for added system resilience
- HDMI Out
- 2 x USB 2.0 Master Interfaces
- 2 x Bi-Colour (Red/Green) front panel status LEDs
- 8-Way 2-part 3.5mm screw terminal industrial connector for use with modular IO card outputs or HAT board
- Wide 9-24V (poly-fused and filtered) DC power input range

I/O Socket Features

- I2C Interface
- SPI Interface (2 x Chip Selects)
- TTL 16550 UART (RX/TX/RTS/CTS)
- TTL Serial Console
- 28 x GPIO Lines
- 2 x PWM Outputs
- 2 x GPCLK Outputs

Power Consumption

- 9-24V DC Input
- 1.56-2.8W Average -Dependant on CPU module & power saving modes activated

Dimensions

- Core PCB Size : 125 x 142mm
- + Break Off Enclosure Tabs : 125 x 160/163.4mm
- 4 x M3.5 mounting holes

Raspberry Pi Compatibility

- Fully compatible with Raspberry Pi Compute Module 1 & 3 CPU modules, enabling swift migration of any existing development work done using a standard Raspberry Pi.

FCC/CE Approvals

- Obtained a FCC/CE Class A (Industrial) when tested within a Hammond enclosure.

Enclosures

- Form-factor adjustable to fit two “off the shelf” Hammond brand aluminium enclosures in different size/colours:
  - Single Height - Hammond 1455P1602I/BK
  - Double Height - Hammond 1455Q1602I/BK
- Pre-cut end plates and silk-screening service available
- Also compatible with weather proof IP55/66 Rated StationBox enclosure from RF Elements
### Board Features & Dimensions

![Board Diagram]

### Pre-Designed IO Boards

A series of IO cards have been developed to accelerate product design:

<table>
<thead>
<tr>
<th>ISO-CAN</th>
<th>1 x Isolated CAN-BUS adapter card based on MCP2515 Can Controller</th>
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<tbody>
<tr>
<td>ISO-485</td>
<td>1 x Isolated Half Duplex RS485 adapter with automatic hardware-based flow control</td>
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<tr>
<td>ISO-MBUS</td>
<td>1 x Isolated M-BUS adapter (1 - 3 Slaves) with integrated 34V PSU</td>
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<tr>
<td>ISO-1WIRE</td>
<td>2 x Isolated 1-Wire interfaces</td>
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<tr>
<td>ISO-ADC</td>
<td>Isolated 18-Bit 4-Channel ADC with 4 x Double ended 4-20mA or 0-2.048V inputs</td>
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<tr>
<td>ISO-RF/DIGIN</td>
<td>4 x Opto-Isolated double ended inputs (AC/DC) + XBEE RF Card interface</td>
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<tr>
<td>ISO-DIGOUT</td>
<td>4 x Open-collector outputs (5-40V DC) + 1 x Opto-Isolated Input</td>
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<tr>
<td>ISO-COMBO</td>
<td>Combo IO Card with: - 18-Bit 4-Channel ADC with 4 x Double ended 4-20mA or 0-2.048V inputs - 4 x Opto-Isolated double ended inputs (AC/DC) - 4 x Opto-Isolated Relay Outputs (1A @125VAC/24DC) - Isolated 5V &amp; 0V DC Supply (for input opto-coupler drive)</td>
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<tr>
<td>ISO-LoRa</td>
<td>LoRa Card Based around Microchip RN2483/RN2903 modules</td>
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<tr>
<td>ISO-BLE</td>
<td>Bluetooth 4.0 BLE Card based around Silicon Labs/Bluegiga BLE112E module</td>
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<tr>
<td>Power-Timer</td>
<td>Solar Power-Timer Card, use this card to schedule full power off/on times.</td>
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