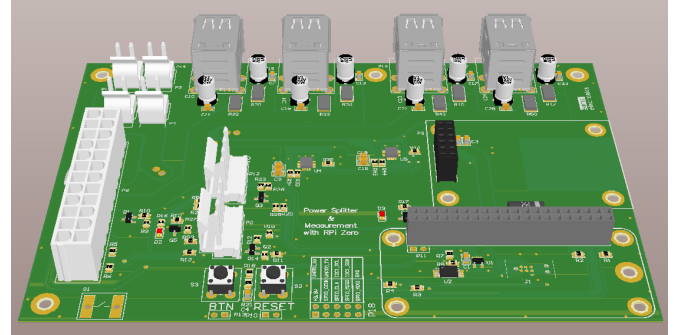# ATX Power Supply splitter for Raspberry Pi Clusters

1   Overview

- 8x USB-A port for 5V output

- Voltage, Current and power measurement for each channel

- 2x 5V output for general purposes

- 2x 12V output for general purposes

- 2x FAN connector

2   Description

- The ATX power splitter connector utilizes ATX power to split the power to 8 USB port for Raspberry Pi cluster applications.

- 40-pin header connector for Raspberry Pi Zero. Voltage, current and power measurement for each channel are on I²C bus available. Pi Zero is powered by 5V Standby current from ATX power supply.

- 2x 4-pin FAN connector, controlled by Raspberry Pi with PWM. FAN RPMs are also available for Reaspberry Pi to read.

- One user button and one user LED are available for user programming. Button can be programmed as on/off switch for ATX power supply.

- 2x PAC1934 voltage and current sensors from microchip on I²C bus. Linux kernel driver and device tree blob are available. Device I²C addresses: 0x10, 0x1F

- 12-pin connector for Ethernet over SPI modules to bring the ethernet functionality to Raspberry Pi, if needed.

- Onboard EEPROM for board specific data as well as for HAT (Hardware Attached on Top) specifications.

- 10-pin header for UART, I²C, SPI connections.

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3 Technical specification

View from Top side (Scale 1:1)

Power Splitter
&
Measurement
with RPi Zero

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Serial ports connector

+3.3V	1	2	UART0_RX
SPI0_CE1N	3	4	UART0_TX
SPI0_CLK	5	6	I2C1_SCL
SPI0_MISO	7	8	I2C1_SDA
SPI0_MOSI	9	10	GND

Connectors and buttons

P1	+5V
P2	+5V
P3	+12V
P4	+12V
P5	RPi Zero connector
P6	ATX connector
P9	FAN2 connector
P12	FAN1 connector
P13	User button connector
P10	RPi reset header
P11	RPi reset connector
P8	ETH-SPI module connector
P18	Connector for SPI, I2C, UART
S2	User button
S3	RPi reset button

P5

RPi header connections

Function	GPIO	Header Pin	GPIO	Function
		12	18	(out) FAN1 PWM
(in) User button	27	13		
		16	23	(in) FAN1 Tacho
(in) PS_ON from ATX	6	31		
(in) FAN2 Tacho	13	33		
(out) FAN2 PWM	19	35	36	(in) PWR_OK from ATX
		40	21	(out) LED1 (D3)

Notes:

1. All dimensions in mm.