

AlaMode

*An Arduino compatible board for the
Raspberry-Pi®*

brought to you by





Features

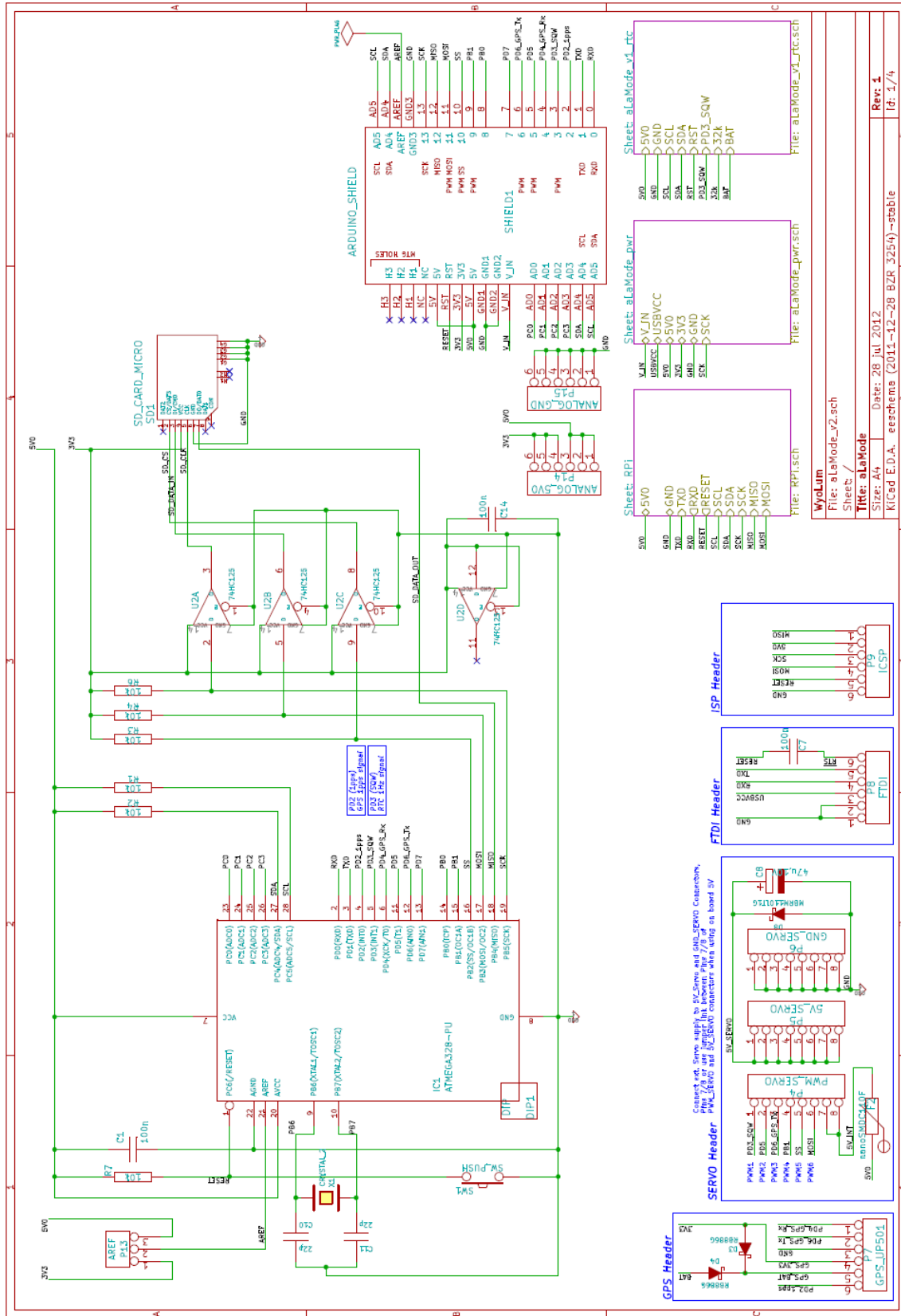
- micro SD card reader
- Temperature controlled, precision Real Time clock, with battery backup
- GPS interface for the Fastrax UP501 module
- Arduino compatible, with standard shield headers
- General purpose blink LED on port D13
- Interfaces with Raspberry-Pi® via the GPIO header
- Communicates with Raspberry-Pi via I2C, SPI or Serial UART
- Analog reference can be set to either 5V0 or 3V3
- Analog header has 5V0, 3V3 and GND headers, to allow interfacing 3 wire sensors directly.
- Servo header with 5V0 and GND connections to allow interfacing 3 wire servos directly
- Servos can be powered via on-board 5V0 or from external 5V
- FTDI and ISP headers for programming and sketch loading
- Power via external 5V to micro-USB socket, or directly from Raspberry-Pi
- 5V0 and 3V3 indicator LEDs

Potential Uses

- Stand-alone data logger
- Simple-to-use, persistent storage
- Program loader for separate Arduino compatible



Schematic, #1



ARDUINO_SHIELD

X13	H3	AD5	SCL
X14	H2	AD4	SDA
X15	H1	AREF	AREF
X16	H4	GND3	GND
X17	NC	GND	GND
X18	H3	SCK	SCK
X19	H2	MISO	MISO
X20	H1	MOSI	MOSI
X21	H4	SS	SS
X22	H3	PWM5	PWM5
X23	H2	PWM6	PWM6
X24	H1	PWM7	PWM7

SHIELD1

7	P07	PIN6_GPS_Tx
6	P06	PIN5_GPS_Tx
5	P05	PIN4_GPS_Tx
4	P04	PIN3_GPS_Tx
3	P03	PIN2_GPS_Tx
2	P02	PIN1_GPS_Tx
1	P01	PIN0_GPS_Tx
0	P00	GND

SHEET: alLaMode.v1_rtc

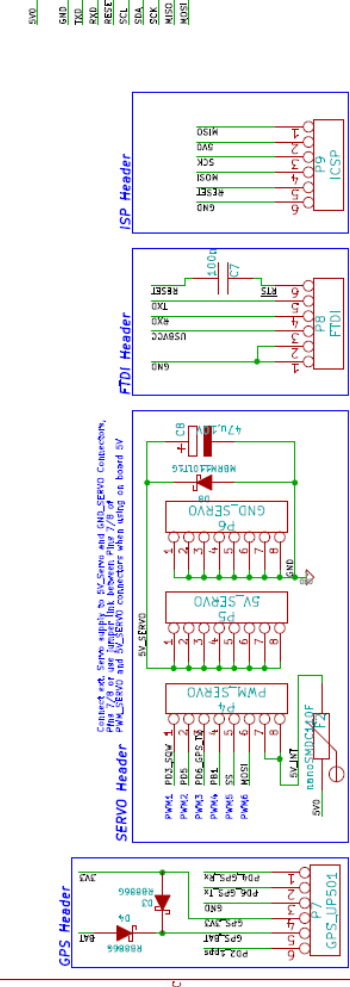
5V0	5V0
GND	GND
SCL	SCL
SDA	SDA
RST	RST
PIN2_SQW	PIN2_SQW
PIN3_SQW	PIN3_SQW
PIN4_SQW	PIN4_SQW
BAT	BAT

SHEET: alLaMode.pwr

V+IN	5V0
USBVCC	5V0
GND	GND
TXD	5V0
RXD	5V0
GND	GND
RESET	GND
SCK	SCK
SDA	SDA
MISO	MISO
MOSI	MOSI

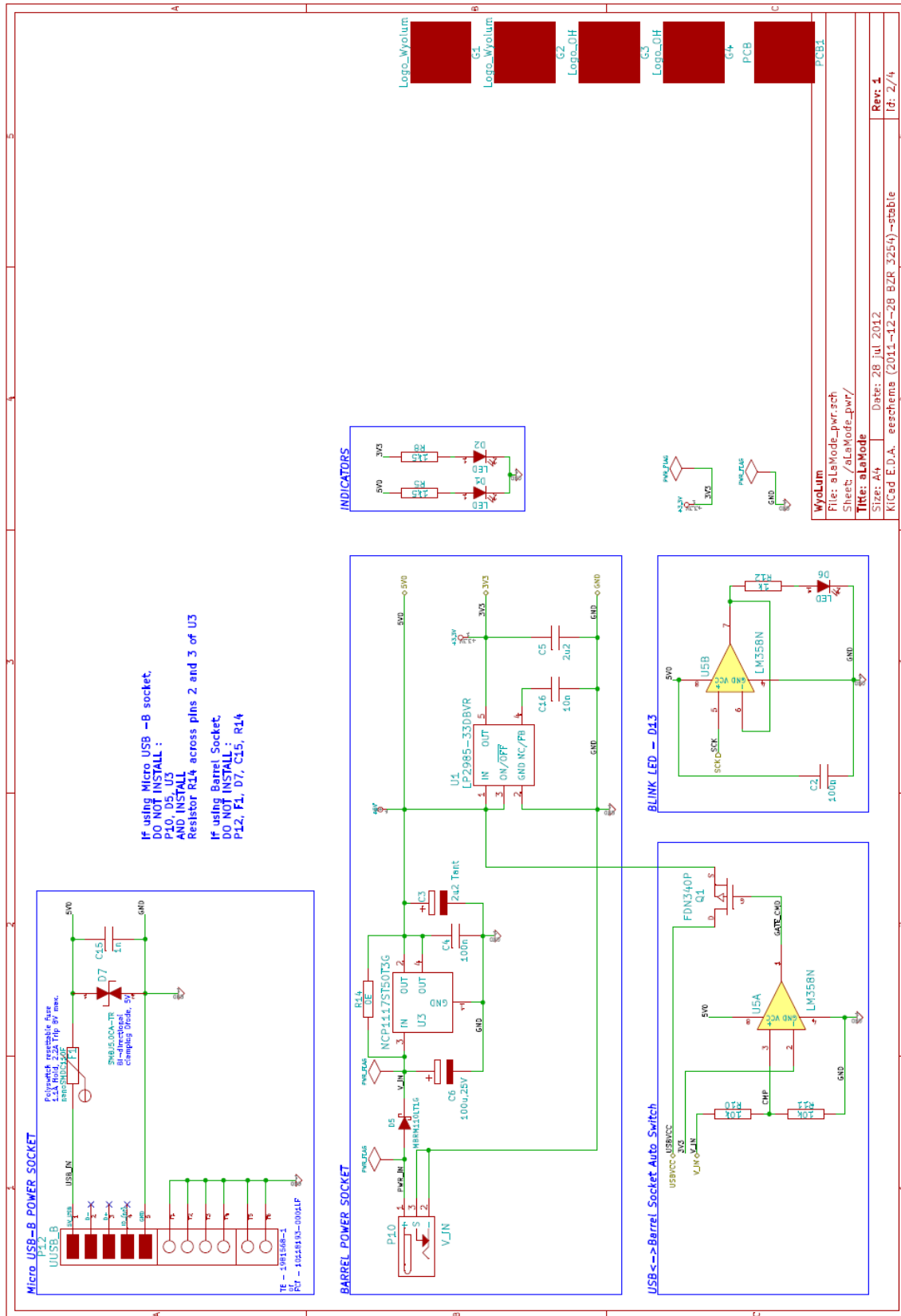
SHEET: alLaMode.pwr

V+IN	5V0
USBVCC	5V0
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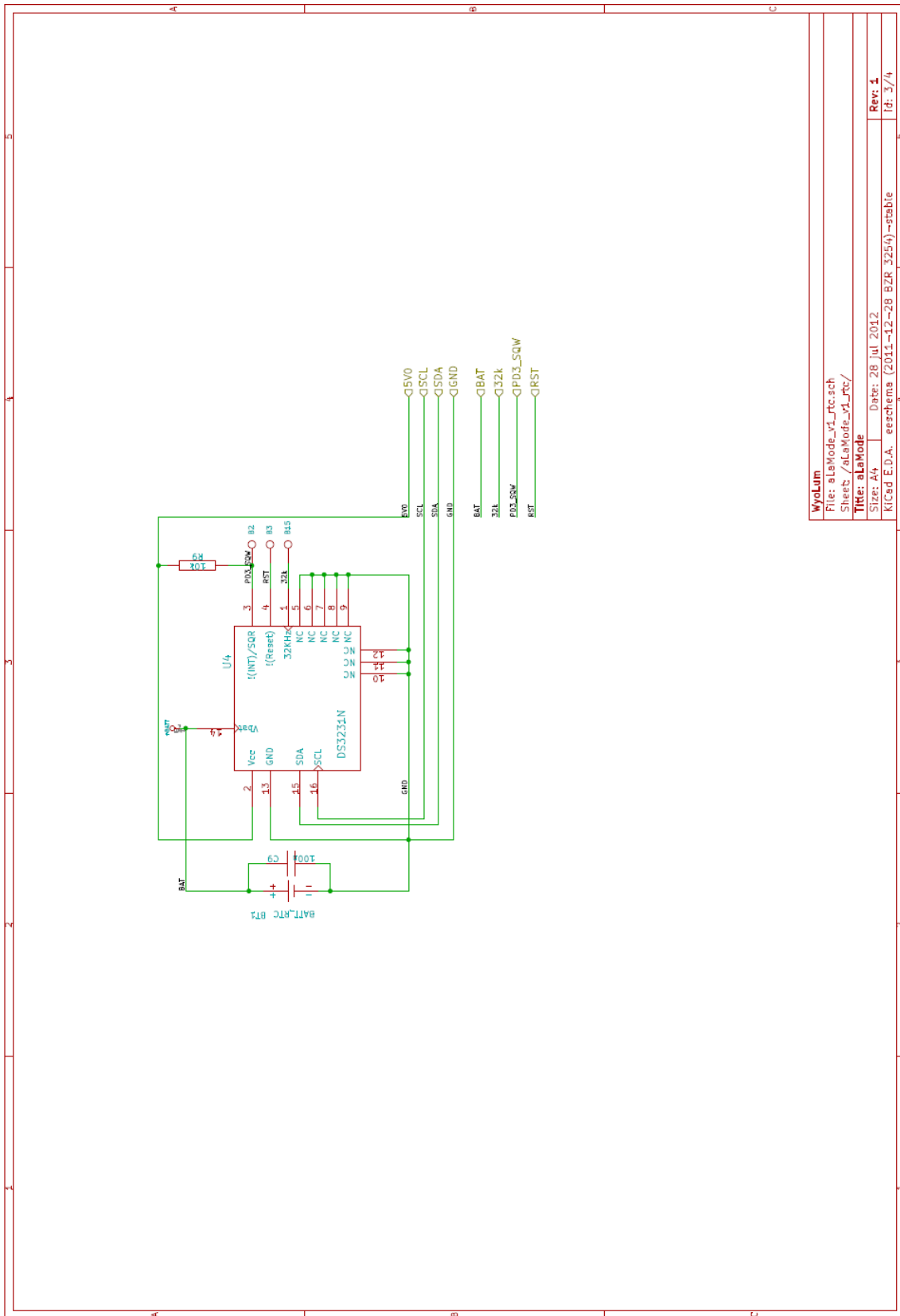


Schematic, #2



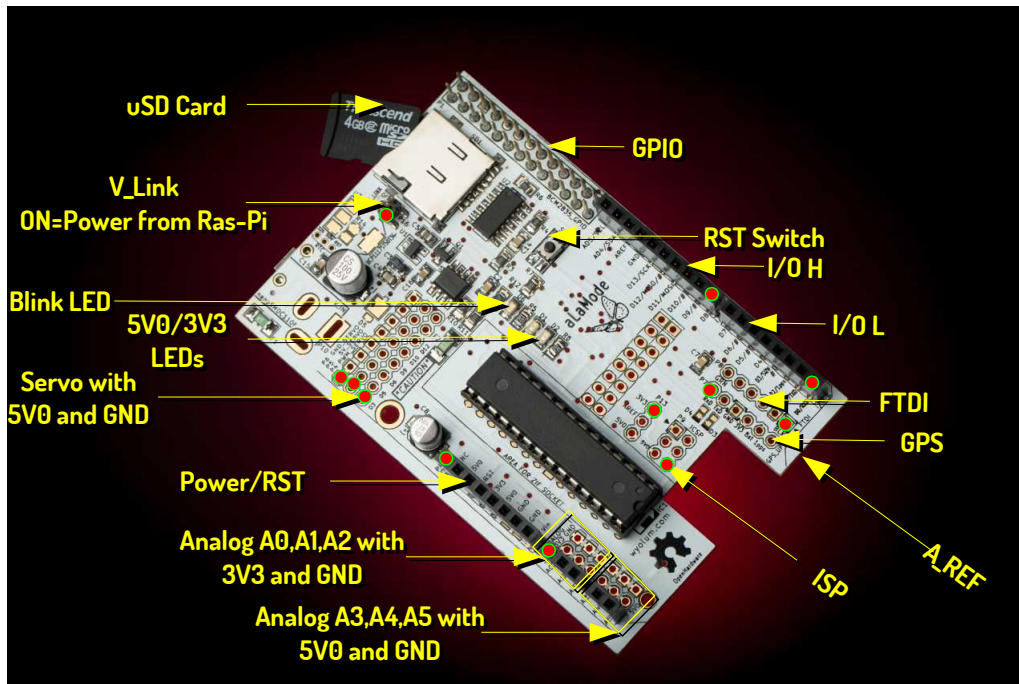


Schematic, #3

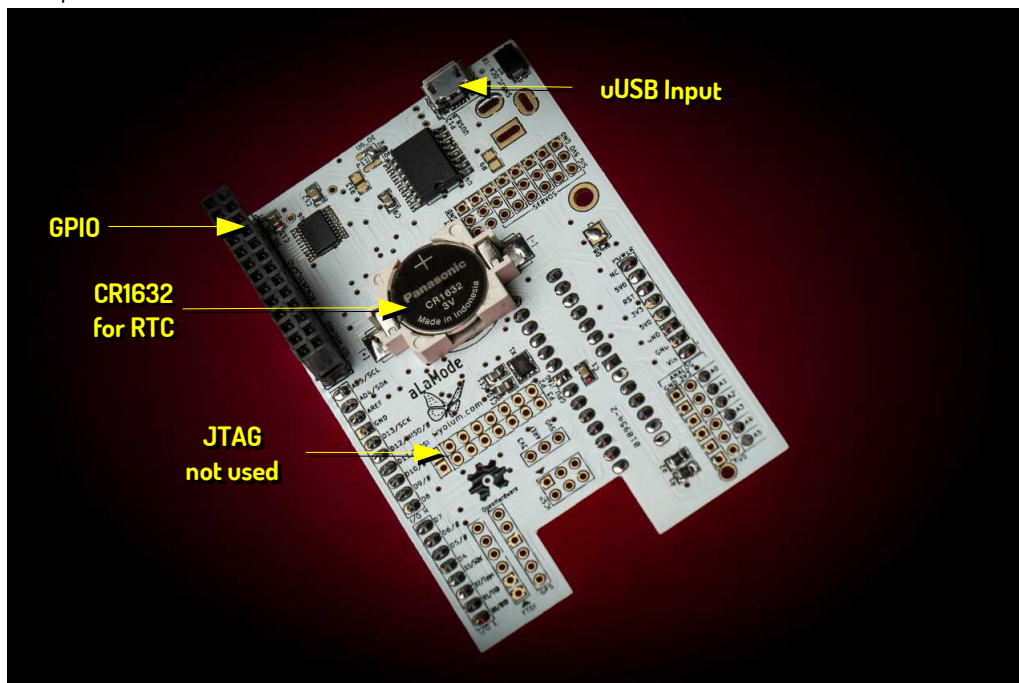




Physical Interfaces



NOTE : Picture shows the prototype Beta boards. Final production boards do not have the cutout, and GPS header is re-positioned.





Physical Interfaces, Description

[RED Markers point to Pin # 1 of each header]

HEADER POWER							
	<ol style="list-style-type: none"> 1. NC 2. 5V0 3. RST 4. 3V3 5. 5V0 6. GND 7. GND 8. Vin (Note : 5V only) 						
HEADER ANALOG							
	<ol style="list-style-type: none"> 1. A0 : 3V3 : GND 2. A1 : 3V3 : GND 3. A2 : 3V3 : GND 4. A3 : 5V0 : GND 5. A4 : 5V0 : GND , SDA 6. A5 : 5V0 : GND , SCL 						
HEADER's ISP and AREF							
	<table border="0"> <tr> <td>1. MISO</td> <td>2. 5V0</td> </tr> <tr> <td>3. SCK</td> <td>4. MOSI</td> </tr> <tr> <td>5. RST</td> <td>6. GND</td> </tr> </table> <ol style="list-style-type: none"> 1. 3V3 2. AREF 3. 5V0 	1. MISO	2. 5V0	3. SCK	4. MOSI	5. RST	6. GND
1. MISO	2. 5V0						
3. SCK	4. MOSI						
5. RST	6. GND						



HEADER's GPS and FTDI	
	<ol style="list-style-type: none"> 1. GPS_Rx , PD4 (Arduino digital pin 4) 2. GPS_Tx , PD6 (Arduino digital pin 6) 3. GND 4. 3V3 5. GPS_BATT (backup for GPS, from RTC 3V batt.) 6. 1pps , PD2 (Arduino digital pin 2) <ol style="list-style-type: none"> 1. GND (BLACK) 2. GND 3. 5V0 4. RXD , PD0 (Arduino digital pin 0) 5. TXD , PD1 (Arduino digital pin 1) 6. RESET (GREEN)
HEADER's I/O L and I/O H	
	<ol style="list-style-type: none"> 1. PD0 , RXD 2. PD1 , TXD 3. PD2 , 1pps (GPS) 4. PD3 , SQW (RTC) , # (PWM1) 5. PD4 , GPS Rx 6. PD5 , # (PWM2) 7. PD6 , GPS Tx , # (PWM3) 8. PD7 , 9. PD8 , 10. PD9 , # (PWM4) 11. PD10 , SS # (PWM5) 12. PD11 , MOSI , # (PWM6) 13. PD12 , MISO 14. PD13 , SCK 15. GND , 16. AREF , 17. AD4 , SDA 18. AD5 , SCL



HEADER GPIO																											
	<table border="0"> <tr> <td>1. Rpi_3V3</td> <td>2. Rpi_5V0</td> </tr> <tr> <td>3. Rpi_SDA , SDA0</td> <td>4. NC</td> </tr> <tr> <td>5. Rpi_SCL , SCL0</td> <td>6. GND</td> </tr> <tr> <td>7. NC , GPIO4</td> <td>8. Rpi_Tx</td> </tr> <tr> <td>9. NC</td> <td>10. Rpi_Rx</td> </tr> <tr> <td>11. NC , GPIO 0</td> <td>12. Rpi_RST , GPIO 1</td> </tr> <tr> <td>13. NC , GPIO 2</td> <td>14. NC</td> </tr> <tr> <td>15. NC , GPIO 3</td> <td>16. NC , GPIO 4</td> </tr> <tr> <td>17. NC</td> <td>18. NC , GPIO 5</td> </tr> <tr> <td>19. Rpi_MOSI</td> <td>20. NC</td> </tr> <tr> <td>21. Rpi_MISO</td> <td>22. NC , GPIO 6</td> </tr> <tr> <td>23. Rpi_SCK</td> <td>24. NC , SPI_CE0</td> </tr> <tr> <td>25. NC</td> <td>26. NC , SPI_CE1</td> </tr> </table>	1. Rpi_3V3	2. Rpi_5V0	3. Rpi_SDA , SDA0	4. NC	5. Rpi_SCL , SCL0	6. GND	7. NC , GPIO4	8. Rpi_Tx	9. NC	10. Rpi_Rx	11. NC , GPIO 0	12. Rpi_RST , GPIO 1	13. NC , GPIO 2	14. NC	15. NC , GPIO 3	16. NC , GPIO 4	17. NC	18. NC , GPIO 5	19. Rpi_MOSI	20. NC	21. Rpi_MISO	22. NC , GPIO 6	23. Rpi_SCK	24. NC , SPI_CE0	25. NC	26. NC , SPI_CE1
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MICRO HEADER 5V-LINK																											
	<table border="0"> <tr> <td>1. 5V0</td> </tr> <tr> <td>2. Rpi_5V0</td> </tr> <tr> <td>3. NC</td> </tr> </table> <p>If ON, AlaMode is powered via Rpi 5V0 If OFF, AlaMode needs to be powered via P12, u-USB socket</p>	1. 5V0	2. Rpi_5V0	3. NC																							
1. 5V0																											
2. Rpi_5V0																											
3. NC																											



HEADER SERVO																									
	<table border="0"> <tr><td>1. PWM1 , PD3</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>2. PWM2 , PD5</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>3. PWM3 , PD6</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>4. PWM4 , PD9</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>5. PWM5 , PD10</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>6. PWM6 , PD11</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>7. 5V_INT</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> <tr><td>8. 5V_INT</td><td>5V_SERVO</td><td>GND_SERVO</td></tr> </table> <p>ERRATA : PWM6 = PD11 , MOSI (NOT PD12)</p>	1. PWM1 , PD3	5V_SERVO	GND_SERVO	2. PWM2 , PD5	5V_SERVO	GND_SERVO	3. PWM3 , PD6	5V_SERVO	GND_SERVO	4. PWM4 , PD9	5V_SERVO	GND_SERVO	5. PWM5 , PD10	5V_SERVO	GND_SERVO	6. PWM6 , PD11	5V_SERVO	GND_SERVO	7. 5V_INT	5V_SERVO	GND_SERVO	8. 5V_INT	5V_SERVO	GND_SERVO
1. PWM1 , PD3	5V_SERVO	GND_SERVO																							
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6. PWM6 , PD11	5V_SERVO	GND_SERVO																							
7. 5V_INT	5V_SERVO	GND_SERVO																							
8. 5V_INT	5V_SERVO	GND_SERVO																							
	<p>To power Servos via AlaMode 5V0 supply (internal mode), fix shorting links/jumpers between</p> <p>Pin 7 (5V_INT) and 5V_SERVO and</p> <p>Pin 8 (5V_INT) and 5V_SERVO</p> <p>as marked here (red rectangles)</p> <p>(Note : Single jumper will work too. Dual jumpers allow higher current capacity)</p>																								
	<p>To power Servos via External 5V supply (external mode), connect</p> <p>5V_SERVO to 5V_Ext</p> <p>5V_SERVO to 5V_Ext</p> <p>and</p> <p>GND to GND_Ext</p> <p>GND to GND_Ext</p> <p>as marked here (red / gray rectangles)</p> <p>(Note : Single connections will work too. Dual connections allow higher current capacity)</p>																								



LINKS

- website : www.wyolum.com
- e-mail : info@wyolum.com
- forum : <http://wyolum.com/forum/forumdisplay.php?fid=14>
- Git Repo : <https://github.com/wyolum/alamode>
- Arduino : <http://www.arduino.cc/>



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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