AFRObot Technical Manual

PCB LAYOUT

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dip switch</td>
<td>8.</td>
</tr>
<tr>
<td>2.</td>
<td>Servo</td>
<td>9.</td>
</tr>
<tr>
<td>4.</td>
<td>Encoders</td>
<td>11.</td>
</tr>
<tr>
<td>5.</td>
<td>Reset switch</td>
<td>12.</td>
</tr>
<tr>
<td>6.</td>
<td>3.3V voltage regulator</td>
<td>13.</td>
</tr>
<tr>
<td>7.</td>
<td>IR sensors</td>
<td>14.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.</td>
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<tr>
<td></td>
<td></td>
<td>18.</td>
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<td></td>
<td></td>
<td>19.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22.</td>
</tr>
</tbody>
</table>
DESCRIPTIONS

1. Dip switch
Connected to GPIOs for potential use later on (pins 2 and 3). Pin 1 of the dip switch corresponds to pin 110 of the processor, and is the bootloader pin.

2. Servo
Connector for the servo, used for lifting and lowering the writing utensil when tracing lines.

3. Motor controllers
Two connectors for the two motor controllers.

4. Encoders
Two connectors for the two encoders.

5. Reset Switch
The reset for the processor. Active when the green LED next to the switch is on (active low).

6. 3.3V voltage regulator
Connector for the 3.3V analog voltage regulator.

7. IR sensors
Two connectors for the two IR sensors.

8. 5V voltage regulators
Two connectors for the 5V voltage regulators. The left one is analog.

9. Battery connector
Connector for the battery.  
**NOTE:** Only pin 1 works, which is the power pin. The other 2 pins were mistakenly left unconnected, but there is a ground pin (10) immediately to the right of the connector which can be rigged to the connector.

10. Ground pin
Ground access pin.

11. DB9 RS232
Connector for the DB9.  
**NOTE:** The DB9 connector pins are mistakenly reversed. Essentially pin 1 is pin 5, pin 2 is pin 4, pin 3 is pin 3, pin 4 is pin 2, and pin 5 is pin 1 on the top row of the connector. Imagine the top row flipped backwards.

12. Sonar
Connector for the sonar.

13. SDRAM
SDRAM module.

*NOTE: Lots of routes are under this module, so it may run hot.*

14. **Camera**
Connector for the camera.

15. **Digital compass**
Connector for the digital compass.

16. **Reflectance arrays**
Two connectors for the reflectance arrays.

17. **Processor**
LPC2478 Processor module.

18. **3.3V voltage regulator**
Connector for the 3.3V voltage regulator.

19. **Level shifter**
The level shifter module.

20. **GPIOs**
GPIO pins from the processor for future testing and/or unforeseen complications.

21. **GPIOs**
GPIO pins from the processor for future testing and/or unforeseen complications.

22. **Test LEDs**
Test LEDs which are connected to corresponding GPIOs for future testing and debugging.