**Total Power Consumption**

In the development of battery powered projects, development of the robot part in our case, power analysis is one of the crucial step. Since the batteries are the only power source robot has, to ensure proper operation of robot for a predetermined time the power analysis must be done carefully.

In the total power consumption calculation of the system, we considered the worst-case scenario of each design element separately. Despite, this analysis method overestimates the power consumption, it creates a safety margin for us. In the case all the systems are active and at their full power, our system is going to be still fully functional. The power analysis of robot and telecontroller can be observed respectively in TABLE 1 and TABLE 2.

Table 1: Power analysis of Robot

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Device | Quantity | Maximum Values per Device | | | Total Device Power |
| Current | Voltage | Power |
| DC Motor | 2 | 300 mA | 12 V | 3.6 W | 7.2 W |
| Drone Transmitter | 1 | 100 mA | 12 V | 1.2 W | 1.2 W |
| Shooting DC Motor | 1 | 200 mA | 12 V | 2.4 W | 2.4 W |
| IR Proximity Sensors | 1 | 45 mA | 5 V | 225 mW | 0.225 W |
| Raspberry Pi 3 Model B | 1 | 300 mA | 5 V | 1.5 W | 1.5 W |
| Arduino Mega | 1 | 100 mA | 5 V | 500 mW | 0.5 W |
| Total Power |  | | | | **13 Watt** |

Table 2: Power analysis of Telecontroller

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Device | Quantity | Maximum Values per Device | | | Total Device Power |
| Current | Voltage | Power |
| Drone Receiver | 1 |  | 12 V |  |  |
| Screen | 1 |  | 12 V |  |  |
| Antenna Driver | 1 | 50 mA | 12 V | 600 mW | 0.6 W |
| Raspberry Pi zero | 1 | 200 mA | 5 V | 1 W | 1 W |
| Total Power |  | | | | **13 Watt** |