

External IR Sensor and UI LEDs Power Budget

| | |
|--------------------|---|
| Team Number: | 202 |
| Project Name: | Autocan |
| Team Member Names: | Lia Ryan, Damian Novgorodov, Mohammed Ali D Alqarni, Vedaa Uk |
| Version: | 3 |

A. List ALL major components (active devices, integrated circuits, etc.) except for power source

| All Major Components | Component Name | Part Number | yVoltageRan | # |
|----------------------|------------------|-------------|-------------|---|
| | Photo Transistor | BPW96B | 5V | 1 |
| | IR LED | TSAL6100 | 5V | 1 |
| | Opamp | MCP6004-I/P | 1.8 - 6V | 1 |
| | RGB LED | QBL8RGB60D | 2 - 5V | 1 |

B. Assign each major component above to ONE power rail below. Try to minimize the number of power rails

| +5V Power Rail | Component Name | Part Number | yVoltageRan | # |
|----------------|------------------|-------------|-------------|---|
| | Photo Transistor | BPW96B | 5V | 1 |
| | IR LED | TSAL6100 | 5V | 1 |
| | Opamp | MCP6004-I/P | 1.8 - 6V | 1 |
| | RGB LED | QBL8RGB60D | 2 - 5V | 1 |

Total Current Required

| | | | | |
|--|---------------|--------|---------|---|
| c2. Regulator or Source Ch | +5V Regulator | LM7805 | (range) | 1 |
| Total Remaining Current Available | | | | |

C. For each power rail above, select a specific voltage regulator using the same process

D. Select a specific external power source (wall supply or battery) for your system, and

| External Power Source 1 | Component Name | Part Number | yVoltageRan | Output |
|---|---------------------|-------------|-------------|--------|
| Power Source 1 Selection | Plug-in Wall Supply | B09ZTKTLGW | 110VAC | 9V |
| Power Rails Connected to External Power Source 1 | +5V Regulator | LM7805 | 7V to 35V | 5V |
| Total Remaining Current Available on External Power Source 1 | | | | |

get - Lia Ryan

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| er sources, voltage regulators, | | |
|-------------------------------------|-------------|--------|
| aximumCurre | Total | Unit |
| 100 | 100 | mA |
| 200 | 200 | mA |
| 170 | 170 | microA |
| 100 | 100 | mA |
| number of different power rails in | | |
| aximumCurreal | Current(mA) | Unit |
| 100 | 100 | mA |
| 200 | 200 | mA |
| 170 | 170 | microA |
| 100 | 100 | mA |
| | 0 | mA |
| Subtotal | 570 | mA |
| Safety Margin | 25% | |
| l on +5V Rail | 712.5 | mA |
| | | |
| 1000 | 1000 | mA |
| e on +5V Rail | 287.5 | mA |
| ss as for major component | | |
| d confirm that it can supply all of | | |
| aximumCurreal | Current(mA) | Unit |
| 15000 | 15000 | mA |
| | | |
| 1500 | 1500 | mA |
| ver Source 1 | 13500 | mA |