Eric Mittleman - RGB Sensor Power Budget

A. List of Major Components

| All Major Components | Component Name | Part Number | Supply Voltage Range | Qty | Absolute Maximum Current (mA) | Total Current | Unit |
|---|---|---|---|---|---|---|---|
| | PIC18F Microcontroller | PIC18F27Q84 | +1.8 - 5.5V | 1 | 350 | 350 | mA |
| | RGB Sensor | OPT4060DTSR | -0.5 - 6.0V | 1 | 10 | 10 | mA |
| | | | | | | | |

B. Assign each major component to ONE power rail below.

| +3.3V Power Rail | Component Name | Part Number | Supply Volt Range | Qty | Absolute Maximum Current (mA) | Total Current | Unit |
|---|---|---|---|---|---|---|---|
| | PIC18F Microcontroller | PIC18F27Q84 | +1.8 - 5.5V | 1 | 350 | 350 | mA |
| | RGB Sensor | OPT4060DTSR | -0.5 - 6.0V | 1 | 10 | 10 | mA |
| | | | | | | | |
| | | | | | | | |
| | | | | | **Subtotal** | 360 | mA |
| | | | | | **Safety Margin** | 25% | |
| | | | | | **Total Current Required on +3.3V Rail** | 450 | mA |
| | | | | | | | |
| C. Regulator | +3.3V Regulator | LM2674MX-3.3/NOPB | +6.5 - 45V | 1 | 500 | 500 | mA |
| | | | | | **Total Remaining Current on +3.3V Rail** | 50 | mA |
| | | | | | | | |

C. For each power rail above, select a specific voltage regulator using the same process as for major component selection. Confirm the Total Remaining Current Available on each rail is not negative.

D. Select a specific external power source (wall supply or battery) for your system, and confirm that it can supply all of the regulators for all of the power rails simultaneously. If you need multiple power sources, list eac separately below and indicate which regulators will be connected to each supply. Confirm that the Total Remaining Current Available on each power source below is not negative.

| External Power Source 1 | Component Name | Part Number | Supply Voltage Range | Output Voltage | Absolute Maximum Current (MmA) | Total Current | Unit |
|---|---|---|---|---|---|---|---|
| Power Source 1 Selection | Plug-in Wall Supply | L6R36-120 | 90 - 264 VAC | +12V | 3000 | 3000 | mA |
| | | | | | | | |
| Power Rails Connected to | +3.3V Regulator | LM2674MX-3.3/NOPB | 6.5-45V | +3.3V | 500 | 500 | mA |
| External Power Source 1 | | | | | | | |
| | | | | | | | |
| | | | | | **Total Remaining Current Available on External Power Source 1** | 2500 | mA |