Smart Light
Team 1

Lead System Designer
Jon Itokazu

Lead Prototype Director
Zach Lutz

Lead Report Manager
Nate Petrie

Lead Project Coordinator
Peidong Qi

Lead Presentation Manager
Derek Thorn

Lead Project Integrator
Andrew La Fleur
Smart Light
Description

Smart light is a remotely controlled dimmer switch with sensor and user input.

• Sensor checks ambient light and alters lighting to a preset luminosity.

• Light levels can be read and controlled at both the host unit and remotely.

• Manual override allows Smart Light to function as a normal light switch.

Designed for the domestic market within the United States
Smart Light
Key Requirements

Cost
Sales Price: $80, Component Cost: $30, Assembly & Test Costs: $20

Environment
• Indoor, Stationary
• Operating Temp Range: -20 C to 75 C
• Operating Humidity Range: 5% to 85%

Power Input(s)
• AC Power: 114 to 126VAC @ 60 Amps
• Battery Power: Rechargeable battery, 3.6V, 0.22mA
• Solar Panel: Photovoltaic, 0.5 Volts, 400mA

Major Functions
• Sensor Function: Measure, Standby
• Host Function: On, Off, Program

Quantities Measured/ Displayed
• Lux (Lumens per meter squared)
  Range: 0 to 1000 Lux, Accuracy: +/- 5%, Resolution: 1 Lux
• RMS Voltage (displayed as % of nominal AC)
  Range: 0 to 120 Volts, Accuracy: +/- 3.3%, Resolution: 0.1V
Smart Light
Block Diagram

Block A: Power / Rectification (Nate)
Block B: Host MCU I/O (Andrew)
Block C: Host Display U/I (Derek)
Block D: Output Driver (Peidong)
Block E: Sensor / A to D (Jon)
Block F: Sensor Power / Driver (Zack)