EE-595
Home Weather Station
Section 801; Team 1

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Home Weather Station

Description

• Purpose of Product – Provide users with convenient access to the weather where they live.

• Feature 1 – Wireless Bluetooth Remote Sensor Module

• Feature 2 – Sensor Module has Long Life Battery

• Feature 3 – Sensor Module Charged by Solar Panel

• Market – United States of America
**EE-595**

**Key Requirements**

- **Cost**
  - Sales Price: $300, Component Cost: $80, Assembly & Test Costs: $50

- **Environment**
  - Indoor/Outdoor, Stationary
  - Operating Temp Range: -45 to 50 °C
  - Operating Humidity Range: 0-95% Relative Humidity

- **Power Input(s)**
  - Residential AC Power: 102-132VAC @ 1A
  - Battery Power: Lead Acid, 9V @ 1A

- **Major Functions, Quantities Measured, Displayed**
  - Functions: On, Off, Standby, Update Values
  - Quantities: Temperature (+/- 1-2 °F), Wind Speed (+/- 2-4 MPH), Wind Direction (+/- 3-5*), Humidity (0-95 %), Pressure (0.5-1.5 Bar)
EE-595
Block Diagram

Signal Legend
Power
Analog
Digital

Home Unit
A. Guangyang
Power Supply
120VAC 60Hz
3.3VDC
3.3VDC

B. Joseph – Display

C1. Mark Communication
Receiver
1 Serial Signal
3.3VDC

Remote Unit
C2. Transmitter
μController ADC
1 Serial Signal
5 Parallel Signals

D. Tim
Sensors:
- Temperature
- Humidity
- Barometric Pressure
- Wind Speed
- Wind Direction

E. Da
Solar Panel and Energy Storage
Battery Charger
Unregulated DC
3.3VDC
12VDC

Unregulated DC
3.3VDC
12VDC