

AME40463 Senior Design Project: Fall 2006

PPR – Prototype Performance Requirements - Evaluation Criteria Date:

Engineer/Group: Precision SATLab C1

Rating: _____

Possible Total Rating: 115 pts

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|----|---|---------------|
| 1. | System Initialization | 10 pts |
| | a. System powers up when activated | 5 pts |
| | b. Ready message displayed on LCD panel | 5 pts |
| 2. | Soldering iron reaches proper temperature | 10 pts |
| | a. Temperature sensor relays temperature information to LCD | 5 pts |
| | b. SAT process started once temperature is reached | 5 pts |
| 3. | Remove 'FUZE' from cartridge | 15 pts |
| | a. Motions controlled by micro processor | 2 pts |
| | b. Must grip, remove, and place FUZE with gripper mechanism | 5 pts |
| | c. Placement of FUZE must align with circuit board | 5 pts |
| | d. Scissor lift lowers FUZE from cartridge | 3 pts |
| 4. | Transport FUZE to circuit board | 20 pts |
| | a. Transport platform translates horizontally on lead screw | 5 pts |
| | b. Scissor lift raises FUZE to circuit board | 5 pts |
| | c. Scissor lift stops at correct position | 5 pts |
| | d. Transport platform engages with circuit platform | 5 pts |
| 5. | FUZE is placed in Printed Circuit Board (PCB) | 10 pts |
| | a. FUZE leads align with correct PCB holes | 5 pts |
| | b. FUZE inserted to proper depth within PCB | 5 pts |

6. **Circuit assembled through soldering** **10 pts**
 - a. Scissor lift raises circuit board to soldering station 3 pts
 - b. Solder fed to correct locations on circuit board 2 pts
 - c. Solder melts and forms joint 3 pts
 - d. Circuit lowered from soldering station using scissor lift 2 pts

7. **Circuit Test** **15 pts**
 - a. Circuit allowed to cool before testing 5 pts
 - b. Micro controller outputs test signal to light up green LED 5 pts
 - c. LED signal displayed for at least 15 seconds 5 pts

8. **SAT feedback** **10 pts**
 - a. Ready message displayed before SAT process start 4 pts
 - b. Temperature measurement displayed on LCD panel 3 pts
 - c. Phases of SAT identified on LCD display 3 pts

9. **User Interface** **15 pts**
 - a. System activated when button is pushed 10 pts
 - b. System stopped with stop button 5 pts