

Manufacturing plan: WOCCS family - P11208 group

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1. Facility

- Surface Mount Technology (SMT) Laboratory in Center for Integrated Manufacturing Studies (CIMS) at Rochester Institute of Technology (RIT)
- Senior Design Lab on the 4th floor of College of Engineering (COE)

2. Production schedule

01/07/2011 - Training and production of 2 boards (out of 10)

3. Staffing and training

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Training:

- Use of the microscope
- Use of the solder paste gun
- Use of the reflow thermal station
- Procedure to populate the PCB

4. Inventory, assembly and fabrication processes

- Inventory:
 - i. Gather and Organize Components based on the bill of materials (BOM)

- ii. Purchase printed circuit board (PCB)
- iii. Printed documentation(PCB layouts, Electrical schematics,...)
- iv. CIMS lab soldering tools

- Assembly:

Procedure	Description	Condition	Cost	Status
1	Cut mounting boards to size that fit the casing requirement	Width: 7+/- 0.127 cm Length: 9 +/- 0.127 cm	N/A	
2	Pour solder paste on the designated pads	the solder paste should match the pads as accurately as possible	N/A	
3	Place Surface Mount Components on PCB based on the schematic/PCB layouts	Components should match the pads to avoid short circuits and other malfunctions	N/A	
4	Use the reflow station all over the surface mounted pads to solder components	Make sure the components are placed correctly and are stable then apply the heat until you see the paste melt (becomes shiny) then switch to an other area.	N/A	
5	Let the board and the parts cool down before removing the board from the station	Wait at least 2min	N/A	
6	Place to through-holes components and solder them with a soldering iron.	Make sure not to shorten the circuit while soldering	N/A	
7	Repeat step 2 to 6 for all 10 boards		N/A	

5. Material and estimated resource requirements

- Solder and Soldering Iron
- Solder Paste
- Solder Wick/Gun

- Microscope
- Reflow Thermal Station for surface mount components
- Lab manager
- Lab tools (Twizer,...)

6. Key assumption

- Full immediat access the CIMS lab
- Presence of a lab manager
- Power supply