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## 2019 IPC Hand Soldering and Rework World Championship Procedure & Criteria

**Reference Criteria: Refer to Class 3 of IPC-7711/7721, IPC-A-610, and J-STD-001**

### Procedures and Rules

- 1. Check in:** The competitors should check in at the check-in desk a minimum of half an hour (30 minutes) in advance to be assigned a competitor number, numbered PCB board, and components. After check-in the competitor should remain near the area of the competition until called to enter the competitor's area. It shall be construed a forfeit if the competitor does not check in at least 10 minutes before his/her scheduled competition time. Besides ESD work clothes, wrist strap, and finger cots, the competitors are not allowed to bring other or personal tools.
  - 2. Entrance to the competitor's area:** After the host calls the roll, the competitors enter into the arena and sit at the specified workstation.
  - 3. Check tools and materials:** Upon reaching the workstation the competitors should test the function of the systems provided, then check the integrity of equipment and tools, verify the components are present in the kits and raise questions to the judges if any discrepancies are found. The competitor may organize the positions of the tools to allow for comfort or for left or right-hand positioning. After confirming the integrity of equipment and tools the competitor will notify the judge that the competitor is ready to begin.
  - 4. Start:** The host gives the starting order after all competitors are ready. The judge presses the timer and starts timing.
- Note:** Competitors who begin work on the assembly, remove components from the kits, or otherwise begin before the start order is given may be disqualified.
- 5. Operation evaluation:** During the competition, the judges will monitor the actions of the competitors and note any discrepancies according to the operation evaluation judges form. Evaluation will include procedures and techniques used, operation, and safety.
  - 6. Intermediate rework stage inspection:** Upon completing the removal of the designated components the competitor will prepare the lands for component installation and clean the board. The competitor will notify the judge that the assembly is ready for intermediate inspection. The judge or host will pause the time clock for the competitor while the judge evaluates the removal and cleanliness of the removed component areas. While waiting, the competitor will not work on any process toward the completion of the assembly. The competitor should wait quietly while the judge evaluates the work.  
  
When the judge has completed the evaluation, the assembly will be returned to the competitor. The time will resume, and the competitor will complete the assembly.
  - 7. Time limit:** The competition is strictly limited to 75 minutes of working time. Processes like desktop cleaning are not included in the 75 minutes and should be completed by the competitor after the completed assembly has been presented to the judge for final inspection. The host should remind the competitors when there are ten minutes left. Time is up, whether finish or not, the competitors shall stop immediately, and the competition board shall be collected.
  - 8. Finish:** The competitors shall raise hand up to show the finish of operation. The judge presses the timer and records the time.
  - 9. 6S operation:** After the competitors finishes the operation and the judges record the time, the competitors do the 6S of the workstation. This item will be scored without time limit.
  - 10. Function test:** the competitors may observe the function test for his or her assembly while the judge or host conducts the test. The judges record the test result. The final test result is subject to the final judgment by the judges.

**11. PCBA number:** The board number will be established randomly at the check-in for the competitor. The assembly number will be noted **PCB board** and noted on the sign-in sheet next to the competitor's name. The assignment of numbers to a competitor will not be known to the evaluator when inspecting the board.

**12. Evaluation:** the judges evaluate the PCBAs. Assemblies will be evaluated to the criteria of IPC-A-610F, Class 3. Deductions from the total possible points will be made in accordance with the opportunities as noted on the Assembly Evaluation Sheet. *All judges' decisions are final.*

Judges may make comments about the assembly, operations observed, and techniques used by

**13. Awards:** Determination of Third Place, Runner up, and Champion will be made based on the highest number of points remaining. In the event of a tie, the determination of placement will be made based on the shortest time to completion.

During the award ceremony and IPC representative will announce the results of the competition and award the winners with certificates and any prizes appropriate. The completed assembly and judges' comments may be given to the competitor who completed the assembly after the announcement of the results.