



# IPC HAND SOLDERING AND REWORK COMPETITION

## 2022 | Regional Qualification PROFESSIONAL

2022 COMPETITION KIT



## Competition Rules & Guidelines

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## Competition Rules

- Contestants Arrival: Competitors should arrive to the IPC HSC booth area at tradeshow at least 10 minutes before his/her scheduled competition time (allocated time slot).
- Entrance to the Competition Area: The judge will call the competitor (as per registration schedule) and Contestant will enter into the arena and sit at the specified workstation. Sitting at the workstation, Contestant will receive a bare PCB board and components box from the judge.
- Competition Equipment: The IPC HSC WC organizer will supply all necessary equipment, tools microscope, ESD work clothes (coat), wrist strap, and finger cots; Competitors are not allowed to bring other or personal tools.
- It is allowed to adjust the chair, solder wires, ESD wristband and cable and the adjustment of the soldering station before the timer is started
- Competitors shall only use the tools provided in IPC toolbox and by sponsors. Only exceptions are: Protection glasses, working cloth (smock or jacket with or without company logo)
- Check tools and materials: Upon reaching the workstation, Contestants should test the function of the systems provided, then check the integrity of equipment and tools, verify that the PCB and the components are present in the box and raise questions to the judges if any discrepancies are found. Contestant may organize the positions of the tools to allow for comfort or for left or right-hand positioning. The judge will make sure that BOM, Layout and Box placement A4 and/or A3 sheet is present on the worktable. After confirming the integrity of equipment and tools, Contestant will notify the judge that he is ready to start.
- Start: The Chief Judge gives the starting order after all competitors are ready. The judge presses the timer and starts timing. It is allowed to open the toolbox, explore the content, place needed material on the table and on hands before the timer is started. The component box can't be opened until the timer starts. **IMPORTANT NOTE: Competitors who start working on the assembly, remove components from the kit, or otherwise begin before the start order is given may be disqualified.**
- 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, operations and safety.
- Communication with Contestant during Competition Time: Except for judges, it is not permitted to communicate with the competitor after the timer is started.
- Time Limit: The competition is strictly limited to 60 minutes of working time. Processes like desktop cleaning are not included in the 60 minutes and should be completed by the Contestant after the completed assembly has been presented to the judge for final inspection. The judge should remind the Contestant when there are ten minutes left. Time is up, whether finish or not, the Contestant shall stop immediately, and the competition board shall be collected by the judge. When maximum time is reached and alarm sounds, all activities have to stop immediately; IPC HSC judge takes note of precise completion time, especially if less than stipulated time (normal 60 minutes).



## Competition criteria & Judges Guidelines Rules

- If a Contestant is affected by non-functional soldering station, not proper working tips, a missing component or other problems, which inhibits the possibility to fulfill the IPC HSC, the competitor is allowed to stop the timer and call a judge.
- Fluxing the whole or large part of the PCB prior to soldering, (except for drag soldering method) is not permitted and will incur penalty points. The number of penalty points is decided by the HSC judge.
- Partial or bad Cleaning will be assessed and may incur penalty points according to judge protocol.
- The PCBA and the judge protocol have to be saved until the Awards Ceremony has been done.
- The score result and protocol for the winner, second and third have to be handed over to the Master of the Prize Ceremony.
- After the Prize Ceremony, the Contestant can have the PCBA and judge protocol.
- Every competitor will receive a nominative "Participation Certificate".
- No Contestant and/or Contestant company' representative have the right to dispute the Judge's decisions or scoring of their own PCBA or other Contestant's PCBA.
- Refereeing error can happen and are a part of the contest.
- Except judges, it is not permitted to communicate with Contestants after the timer is started.

### Results & PCBA Inspection

Judges (IPC MIT) will test and inspect Competition PCBAs according to the following routines & rules:

- Rule 1: The PCBA is disqualified if not fully assembled.
- Rule 2: The PCBA is disqualified if no function and no further inspection will be done. No final score will be presented.
- Rule 3: If the PCBA is fully assembled and has full function, the judge will inspect the PCBA according to IPC-A-610 Class 3. A final score result will be presented.
- Rule 4: If the PCBA is fully assembled and has partial function, the judge will investigate missing components and/or no connection and reduce points according to the judge protocol. The PCBA will be inspected according to IPC-A-610 Class 3. A final score result will be presented.

PCBA Function test: Contestant 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.

PCBA Evaluation: The judges evaluate the PCBAs. Assemblies will be evaluated to the criteria of IPC-A-610, Class 3. Deductions from the total possible points will be made in accordance with the opportunities as noted on the Assembly Evaluation Sheet.



## Results & Judges Decisions

All judges' decisions are final and can't be disputed. No competitor and/or competitor companies' representative have the right to dispute the judge's decisions or scoring of their own PCBA or other competitor PCBA.

Nevertheless, refereeing error may happen and could be a part of the contest.

In case a competitor would be affected by non-functional soldering station, not proper working tips, a missing component or any other problems, which inhibits the possibility to fulfill the IPC HSC board assembly, the competitor is allowed to stop the timer and call a judge.

## Prizes & Awards for Winners

Every Contestant will receive a nominative "Certificate of Participation"

Podium Winners (first place, second place and third place) will receive a nominative "Winners Diploma - Certificate of Completion"

Podium Winners (first place, second place and third place) will receive the 2022' Prizes:

- Winner/1<sup>st</sup> Place will receive a cash prize of 300 EUR (remitted during the Awards ceremony, a nominative duly signed receipt will be requested)
- 2<sup>nd</sup> Place will receive a cash prize of 200 EUR (remitted during the Awards ceremony, a nominative duly signed receipt will be requested)
- 3<sup>rd</sup> Place will receive a cash prize of 100 EUR (remitted during the Awards ceremony, a nominative duly signed receipt will be requested)

Podium Winners (first place, second place and third place) may receive additional Sponsors Prizes.

## Comments & Judges Feedback

The completed assembly (PCBA) and judges' comments can be given to the competitor, if requested, after the prize ceremony is over.



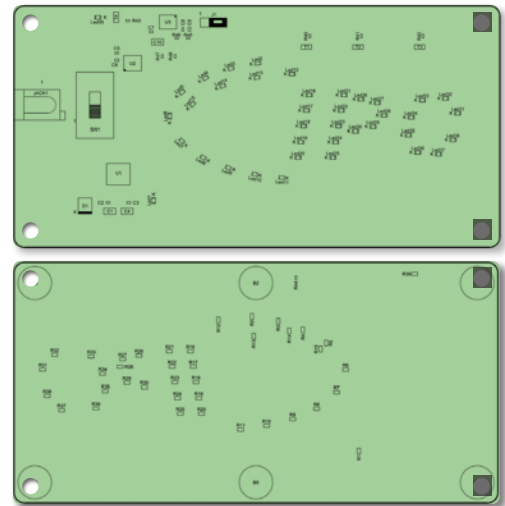
# Competition Board



**2022 COMPETITION KIT**

## IPC HAND SOLDERING COMPETITION 2022 | Regional Competition | PROFESSIONAL

Box	Side	Component	Package	Reference Designator	Technology	Qty
1	Top	Chip Capacitor 10µF - 25V - X7R - 1206	1206	C1, C4, C10	SMT	3
2	Top	Chip Capacitor 100nF - 25V - X7R - 0402	0402	C2, C3, C5, C6	SMT	4
3	Top	Chip Capacitor 1µF - 25V - XSR - 0402	0402	C6, C9	SMT	2
4	Top	Chip Capacitor 10nF - 25V - X7R - 0402	0402	C7	SMT	1
5	Top	Barrier Rectifiers 30V@1A - SMB - DO-214AA	DO-214AA	D1	SMT	1
6	Top	Header 3 Pts - 2.54mm - SMD		J1	SMT	1
7	Top	Chip LED Green	0603	Led 1	SMT	1
8	Top	Chip LED Amber	0603	Led 2-Led 15	SMT	14
9	Top	Chip LED Blue	0603	Led16-Led38	SMT	23
10	Top	Chip LED Red	0603	D39	SMT	1
11	Bottom	Chip Resistor 249R - 1% - 100mW - 0603	0603	R1,39	SMT	39
12	Top	Chip Resistor 10K - 1% - 63mW - 0402	0402	R40-43, R45, R48	SMT	6
13	Bottom	Chip Resistor 0R - 1% - 63mW - 0402	0402	R44	SMT	1
13	Top	Chip Resistor 0R - 1% - 63mW - 0402	0402	R46, R47	SMT	2
14	Top	SIPMOS N-Channel 60V@0.2A - SOT23	SOT23	T1, T2, T3, T4	SMT	4
15	Top	Regulator Linear 5V@500mA - Vin 35V - TO252	DPAK	U1	SMT	1
16	Top	Counter Dividers - TSSOP16	TSSOP16	U2	SMT	1
17	Top	Precision Timer - SOIC-08	SOIC-08	U3	SMT	1
18	Bottom	Bumper Diameter 9.60mm Black		B1, B2, B3, B4, B5, B6	SMT	6
18	Top	Jumper 2 Pts - 2.54mm - SMD		JMP1		1
18	Top	DC Power Jack - 12V@2A - Dia 2.1mm - SMD		JACK1	SMT	1
18	Top	Slide Switch DPDT - 28VDC@4A - THT		SW1	THT	1
N/A		PCB - Competition Board		HSC012021B	2 Layers	1



Component Box Placement

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18



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## Workstation Equipment

### Selection of Soldering Station

All Work-stations are offering the same equipment, information and material, including

- One Tool-box
- Solder wires from both sponsors and specified diameters
- A fresh flux-pen
- One PCB
- One Component box
- One BOM and placement layout
- One Judge Protocol for the responsible judge to fill in the competitor number (same number will apply on the PCBA).

### Workstation Setup and Installation

- Each workstation will offer similar equipment, including one Tool box, lead-free solder wires with specified diameters (0,3, 0,5 and 0,8mm), a fresh flux pen, one Competition PCB, one Component box, one BOM and placement layout,
- Contestants will be allowed to adjust the chair, solder wires, ESD wristband and cable and the adjustment of the soldering station before the timer is started.
- The component box can't be opened until the timer starts (except for exploring and checking its content).
- Contestants shall only use the tools provided by sponsors and available on the Workstation. Only acceptable exceptions are Protection glasses, working cloth like smock or jacket with or without company logo.
- Timer is started when Contestants are ready: took over their work-station and set the different tools.
- All operations will have to be fully compliant with IPC Class 3 Standards recommendations, otherwise, penalty may apply.
- When the alarm sounds for maximum time, all activity has to stop.
- Judges will record the time, if it is less than stipulated time (normal 60 minutes).



## Individual Competitor Non-recruiting/service offering Engagement

### The Rule

It is here clearly stated that IPC Hand Soldering Competition, be it a Regional Qualification Competition or the World Final, is not, and cannot be, a place and time for identifying potential employers, initiate potential recruitment contacts or formalize or plan any discussion on the above-mentioned topics.

It is therefore strictly forbidden to use the Hand Soldering Competition set-up as an opportunity to :

- Offer services or claim a job to a potential new employer met on the Competition
- Initiate contacts with a view to further recruiting opportunities with a potential new employer met on the Competition

By actively taking part in the Competition, Contestants do explicitly agree with the following:

### Individual Competitors Engagement

Voluntarily taking part in an IPC Hand Soldering Competition, be it a Regional Qualification Competition or the World Final, implies clearly that you agree to comply with the "Non-Service Offering" Rule.

This clearly means that, as an individual competitor, being a very skilled employee and expert worker, you will absolutely refrain from using the Hand Soldering Competition location and time to enter into contact or discussion with any individual or company to envisage any employment opportunity of job offering in another company than the one that registered you in the above-mentioned competition.

### Penalties in case of Infringement

Should any clear evidence prove any violation of this clear engagement, several consequences and penalties may be incurred by rule violators:

- Individual/employee convicted of violation of this rule would be prevented to register to any further competition for 5 consecutive years
- Individual/employee convicted of violation of this rule would be disqualified, banned from any further IPC competition for 5 consecutive years and would get any previously granted title waived in case of violation

Hand Soldering Competition Judges will be sole qualified to assess competitors and team behaviour and qualify infringement. In this case, they will report case to IPC and the IPC Committee will take and publish appropriate decision/sanctions.



## Competition Consent

By actively taking part in the Competition, Contestants do explicitly agree with the following:

### Data

Personal data collected for the purpose of the competition organisation will not be published on any support nor supplied to any third party outside of the Competition (IPC and Hand Soldering Competition Official Sponsors).

### Content or Report

Information and reports about this event, including results, ranking, statements, pictures or interviews may be used for drafting articles or marketing material eventually circulated to participants or posted on social media.

By actively taking part in the Competition, Contestants do confirm their acceptance of these terms and conditions and grant IPC a royalty-free, perpetual, worldwide license to copy, reproduce, translate, film, distribute my performance records, pictures, video and written materials (collectively the "work") in any media or format in connection with the Hand Soldering Competition, or the promotion of future Competitions and other uses in furtherance of IPC's mission, as well as authority to use my name, likeness, photograph, and biographical data in connection with its use and promotion of the works. Contestants understand and agree that they will receive no royalty or other monetary compensation from IPC for this license of rights and the use of the work by IPC in connection with the Hand Soldering Competition.

### Photo/video/audio Disclaimer

IPC will record, film or take pictures during the Hand Soldering Competition. By taking part in the Competition, Contestants unambiguously authorize IPC to make free use of documents portraying their image, with a view to their conservation and distribution for any publicity that IPC deems appropriate, without any limitation of space or time.

### Waiver

By actively taking part in the Competition, Contestants unambiguously give their consent to IPC and any of its agents to take or use their picture, portrait, or photograph, including audio and video footage of the performance/Work at the Hand Soldering Competition, for promotional efforts and educational purposes in furtherance of its mission to be used in any format or media, including printed and electronic publications and Internet web pages.