



General Rules (Applicable to All Rounds)

1. All rounds are team-based; team size and any special structure (e.g. Semi-Final's Design/Build split) is given in that round's section.
2. Teams may collaborate freely within their own team, unless a round states otherwise.
3. No communication, collaboration, or assistance with another team, in any round.
4. No mobile phones, laptops, or personal electronic devices, unless permitted for a specific round.
5. No internet access, web search, or AI tools in any round.
6. Use only materials, components, and tools provided or permitted for that round.
7. Damaging or tampering with components, boards, or official paperwork may lead to elimination or disqualification.
8. No extra time beyond a round's allotted duration; rounds start only on the official signal.
9. Teams must report on time and coordinate with the event coordinators.
10. Participants must maintain discipline and follow coordinator/judge instructions.
11. All judge/organizer decisions are final; no arguments or appeals.
12. Ties are decided by that round's coordinators at the time.
13. Teams among the first three to correctly complete a round may be awarded additional credit, at the judges' discretion.



ROUND 1 — SIGNAL INTELLIGENCE

Rules & Regulations

1. Objective

- Investigation-based challenge using technical evidence.
- 10 questions/tasks across multiple evidence blocks.
- Evidence types include waveforms, protocol traces, circuits, Boolean logic, RTL/Verilog, and timing data.
- Evidence blocks may be interconnected — analyse collectively.

2. Duration & Timeline

- Total duration: 20 minutes.
Judge Verification 10 mins

3. Documentation & Submission

- Submit the final response in the specified format.
- Mention team number/name clearly.
- Only submissions within the time limit are considered.
- No modifications after handover, unless permitted.
- Ensure answers are clearly marked and legible.



ROUND 2A — FAULT FORENSICS

Rules & Regulations

1. Objective

- Diagnose and repair a deliberately faulty circuit board using visual inspection.
- Tests troubleshooting skill, not circuit-building.

2. Duration & Timeline

- Each board has 2–4 faults; total time per team is 40 minutes.
- Time covers diagnosis, repair, and demonstration.

3. Materials & Resources

- Use only the tools provided, and own hands for diagnosis.

4. Task Process — Diagnosis & Repair

- Record the evidence, diagnosis, and corrective action for each fault on the sheet.
- Diagnosis and repair are both scored — fixing without correct diagnosis won't earn full marks.
- Faults may be fixed in any order.
- New damage caused while working must be fixed within the same time.
- Circuit must be demonstrated working to a judge to count as repaired.

5. Scoring & Evaluation

- Marks given separately for diagnosis, evidence/method, repair, and time taken.
- Partial credit applies if only diagnosis or only repair is achieved.



ROUND 2B — SYSTEM RECONFIGURATION

Rules & Regulations

1. Objective

- Design, build, and adapt a system when the requirement changes mid-round.
- Tests engineering adaptability.

2. Materials & Challenge Setup

- Each team receives a system requirement and a standardized component inventory.
- Initial requirement specifies inputs, outputs, and functionality.

3. Task Process — Initial Implementation

- Analyse the requirement and build a system that satisfies it.
- Testing allowed during the build period.
- Judges may check the initial system before the requirement change.

4. Task Process — System Requirement Change

- Midway through the round, organizers announce an Engineering Change Order (ECO) with a modified requirement.
- Teams must reconfigure their system to meet the new requirement — adaptation, not a fresh rebuild.
- The updated requirement is the basis for final verification.

5. Scoring & Evaluation

- Judges verify the system against both the initial and updated requirements.
- Evaluated on: understanding of the requirement, initial implementation, successful adaptation, final functionality, and engineering explanation.



ROUND 3 — SEMI-FINAL (BLIND HANDOFF)

1. Objective

- Blind Handoff challenge: one team communicates a design to another through documentation alone.
- Design Pair: designs the system and prepares handoff documentation.
- Build Pair: implements the system from documentation alone, without clarification.

2. Duration & Timeline (Total: 35 Minutes)

Phase	Duration
Design	12 minutes
Document Inspection & Handoff	3 minutes
Breadboard Build	17 minutes
Judge Verification	3 minutes

3. Team Structure

- 2 members in the Design Pair, 2 in the Build Pair, working at separate stations.

4. Prohibited Actions — Zero Communication Rule

- No communication of any kind between Design Pair and Build Pair once handoff begins — verbal, physical, written, or visual.
- Violation results in automatic disqualification.

5. Task Process — Design & Build

- Design Phase: Design Pair determines components, inputs/outputs, logic, connections, and test conditions from the given requirement.
- Build Phase: Build Pair implements the circuit using only the sealed documentation and standard hardware kit — no access to the original requirement.

6. Documentation & Submission

- Handoff documentation must include: system name, inputs/outputs, components, power connections, logic/truth table, circuit diagram, pin connections, expected output, test cases, and special instructions.
- Documentation is sealed after the design phase; no changes permitted after sealing.

7. Scoring & Evaluation

- Evaluated on design correctness (clarity/completeness of documentation) and implementation fidelity (accuracy of the build). (Judges verify the finished circuit)