

NQ Practical Electronics Verification Summary 2025–26

Verification information

Subject	Practical Electronics
Verification activity	Visit
Round	2
Date published	August 2026

National Course components verified

Course code	Course level	Component title
C860 75	National 5	Practical Electronics: Practical Activity

Comments on assessment

Assessment approaches

The practical activity performed as intended and allowed candidates to demonstrate practical skills in circuit design, simulation, construction, testing, and evaluation. The range of approved tasks provided opportunities for candidates to demonstrate their practical skills while allowing centres flexibility in task selection.

As more centres delivered this course than in previous sessions, there was more sharing of good practice between centres through regional meetings and social media groups. This has resulted in a year-on-year improvement in delivery techniques identified in centres by external verifiers.

These improvement points were listed in verification reports:

You should ensure that component lists fully meet the requirements of the assignment brief, including component values, supplier details and costing information where appropriate.

- Use of test pins — must explicitly link to the candidate test plans and results where appropriate.
- Use of test pins — use dedicated components, when possible.
- Wiring looms — use dedicated materials, when possible.

Assessment judgements

Internal verification procedures were managed effectively across centres and there was clear evidence of discussions supporting assessment decisions. All centres were receptive to feedback provided during verification visits.

Centres that incorporated regular internal verification activities demonstrated greater consistency in their assessment decisions.

There are 3 marks allocated for working safely in the circuit board construction section and 3 marks for working safely in the wiring and assembly section. Candidates may achieve the same marks in each section, but the tools may differ and result in different marks for these two sections. For example, heat guns and shrink-wrapping tools may be used for wiring and assembly but not for individual board construction. You should encourage candidates to prepare a plan for the wiring and assembly part of the project to supplement the planning of the circuit boards. The marks for working safely may vary between both sections of the marking scheme.

If candidates achieve one or more of the subsystems (input/process/output) to a standard of full functional completion, you should assign full marks even if other elements of the full electronic system are non-functional.

General comments

Recurring areas for improvement included:

- increasing the quality and detail of component lists
- developing candidate testing procedures and testing documentation
- encouraging greater use of test points and test pins during circuit construction
- ensuring system block diagrams fully reflect all inputs, processes and outputs
- applying construction marks consistently, particularly in relation to soldering quality and circuit assembly

Make sure neatness, in the wiring and assembly section, applies to colour coding, wire numbering, use of crimp connectors or terminal blocks.

Circuit construction

There should be different colours for different signals: if all the wires on the subsystem have the same colour, then this suggests that each point on the subsystem has the same signal or potential. If red and black are not available, document using two other colours. In this case, the two chosen colours cannot be used for any signal wiring.

Labelling

Make sure the label for a switch includes its function, for example 'SPDT 1 – master switch'. If there are two transistors, label them TR1 and TR2.

Test points

Test points should be used to test for input, process and output stages. For example, test points at pins one (ground), two (trigger), three (output), four (high potential) of a 555 timer. Test points should also be used at each end of the subsystem for continuity testing. If screw terminal blocks are soldered on each subsystem, make sure each screw is labelled with the correct test point on the layout diagram. If centres cannot purchase test points, short wires soldered with labelled test points (for example TP1, TP2 and so on) are recommended.

Test plans

You should encourage candidates to present three different test plans: pre-testing each subsystem; power testing each subsystem; and power testing the three subsystems connected together. Power testing should also include results for each test point; using logic probes and recording a logic level for relevant pins of an IC (under certain light conditions and switching positions), and electrical continuity between subsystems.

The test plan of the whole solution should include a comparison of results from the simulated solution and the candidate's results from their own constructed solution. This includes the flash rate of each LED.

You should ensure that all candidates keep a detailed and up-to-date record of progress. This is essential for candidates to record evidence at all stages of the project including test findings, issues and fixes. This helps them gain marks at later stages of the project such as test planning and the evaluation report.

It is good practice to include comprehensive candidate records of progress, wiring schedules, photographic evidence of construction stages, and detailed assessor commentary.