

Surface Mount Technology

ECSS Specification ECSS-Q-ST-70-38

Fact Sheet E05

European Space Agency Training Centre (UK)

This ESA-approved course develops an understanding of the practical advantages to be gained in designing and building using surface mount technology. The course has a practical bias including hand soldering as well as the methods of applying solder paste and available reflow heat sources. The course follows the requirements of ECSS-Q-ST-70-38, "High Reliability Soldering for Surface Mount and Mixed Technology Printed-Circuit Boards".

The course has practical hands-on experience at every opportunity. All necessary tools and equipment are supplied, although delegates are welcome to bring their own hand tools if they wish.

Course aims

- To review and understand the requirements of ESA Surface Mount Specification ECSS-Q-ST-70-38
- To develop the skills required for successful placement and hand soldering of leaded and leadless surface-mount components
- To identify and understand methods of applying and dispensing solder paste
- To become familiar with a range of reflow heat sources and their effect on the solderability of surface mount devices
- To demonstrate the advantages of surface mount assembly

Course content

A study of the requirements of ESA SMT Specification ECSS-Q-ST-70-38 * Passive and active SMCs * Substrates * Design of circuit layouts * Component placement and reflow methods * Inspection * Cleaning * Gold removal and pretinning * Practical work.

The course includes continuous assessment of the delegates' workmanship and concludes with a multi-choice question paper based on the ESA specification.

Award

In accordance with ESA-STR-258, an ESA approved, Category 3 Certificate, valid for 2 years, will be awarded on successful completion of the course.

Recertification

To renew certification, a 1-day recertification course (E95) is available.

Experience and pre-requisites

Some experience of electronic assembly techniques, quality assurance or design would be advantageous. Intended for Production Operators, Quality Assurance Engineers and Design and Manufacturing Engineers. Anyone not holding an ESA Hand Soldering Certificate to ECSS-Q-ST-70-08 (or comparable qualification) should take the E05+ course. This involves starting the course one day earlier.

In accordance with ESA-STR-258, confirmation of Visual Acuity will be required.

Duration, schedule and fees

E05: 4 days; E05+: 5 days – see the current calendar for dates and fees.

Course content, duration, dates and venue are negotiable to meet the special requirements of small groups of delegates from individual clients. This course can be combined with other short courses to create an integrated, cost effective training package.

Enquiries are welcome – please use the website [contact form](#) for security.

