



Australian Government

MEM18059 Modify electronic systems

Release: 1

MEM18059 Modify electronic systems

Modification History

Release 1. Supersedes and is equivalent to MEM18059B Modify electronic systems

Application

This unit of competency defines the skills and knowledge required to undertake modifications to electronic systems and includes testing and evaluating the modified system.

Where soldering of components is required to advanced or military specifications, where the reliability of electrical connections is critical, or where surface mounted devices are being soldered/de-soldered then unit MEM05002 Perform high reliability soldering and desoldering should also be selected.

Where drafting skills are required unit MEM09003 Prepare basic engineering drawing and unit MEM09004 Perform electrical or electronic detail drafting should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: B

Unit Weight: 4

Pre-requisite Unit

MEM05001	Perform manual soldering/desoldering - electrical/electronic components
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12004	Perform precision electrical/electronic measurement
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18056	Diagnose and repair analog equipment and components

MEM18057	Maintain/service analog/digital electronic equipment
MEM18058	Modify electronic equipment
MEM18065	Diagnose and repair digital equipment and components

Competency Field

Maintenance and diagnostics

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Determine modification	2.1	Determine modification requirements by reference to schematics, circuit diagrams, documentation and/or consultation with appropriate authority
		2.2	Analyse maintenance reports and system output information to confirm the need and nature of modification, where appropriate
		2.3	Determine scope and nature of modifications, confirm with appropriate authority and record according to SOPs
3	Undertake modification/s	3.1	Undertake modification/s using appropriate tools, procedures and techniques
		3.2	Amend circuit diagrams, schematics and equipment manuals to reflect modifications undertaken

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

3.3 Update computer software, if required

4 Test and evaluate modified electronic systems

4.1 Check/test modifications and evaluate for compliance with desired outcome or specification using appropriate tools, test equipment and techniques

4.2 Recommend additional modification changes in accordance with SOPs, if required

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Modifications include the following:

- approved design changes and/or replacement of components or sub-assemblies on electronic analog and digital systems
- updating proprietary software, where appropriate

Systems include one (1) or more of the following:

- computer
- process
- communication
- digital
- security/fire

Test equipment includes one (1) or more of the following:

- continuity testers
- ammeters
- voltmeters
- cathode ray oscilloscopes

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

- frequency counters
- signal generators
- digital probes

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>