



Australian Government

UEENEEA104A Modify electronic sub assemblies

Release 2

UEENEEA104A Modify electronic sub assemblies

Modification History

Release	Action	Core/Elective	Details	Points
2	Edit	N/A	Show full pre-req chain in the unit.	

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers correcting and or modifying electronic sub assemblies. It encompasses working safely, high reliability de-soldering/soldering, checking components against job specifications, testing and following quality procedures.

Application of the Unit

Application of the Unit 2)

This unit is intended for competency development entry-level employment-based programs incorporated in approved contracts of training.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) 4)

Competencies 4.1)

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Unit Code Unit Title

Common Unit Group

UEENEEA101A	Assemble electronic components
UEENEEA102A	Select electronic components for assembly
UEENEEE101A	Apply Occupational Health Safety regulations, codes and practices in the workplace
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components

Electrotechnology Unit Pathway

UEENEEE103A	Solve problems in ELV single path circuits
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Electronics and Communications Unit Pathway

UEENEEE104A	Solve problems in d.c. circuits
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Literacy and numeracy skills

4.2)

Participants are best equipped to achieve competency in this unit if they have reading, writing and Numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3	Writin 3	Numeracy 3
	g	

Employability Skills Information

Employability Skills 5)

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit. Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to modify	1.1 OHS procedures for a given work area are identified, obtained and understood
	1.2 OHS risk control measures for work preparation are followed
	1.3 The nature of the rework is determined from documentation or from work supervisor to establish the scope of work to be undertaken
	1.4 Rework of subassemblies is coordinated with others involved in the work to ensure work schedules are met and safety measures are followed
	1.5 Sources of materials that may be required for the work are established in accordance with established procedures
	1.6 Tools and equipment required for rework are selected for their effectiveness and checked for correct operation and safety

ELEMENT	PERFORMANCE CRITERIA
2 Modify sub assemblies.	2.1 OHS risk control work measures and procedures are followed
	2.2 The need to test or measure live is determined in strict accordance with OHS requirements and when necessary conducted within established safety procedures
	2.3 Circuits are checked as being isolated where necessary in strict accordance OHS requirements and procedures
	2.4 Components are de-connected and re-connected in accordance with principles and technology of connection methods used
	2.5 Work is carried out in compliance with quality procedures and enterprise/industry standards
	2.6 Rework of subassemblies is completed in acceptable timeframe and given environment and workplace conditions
3 Check quality of modified sub assemblies.	3.1 OHS risk control measures for work completion are followed
	3.2 Quality of rework is checked against enterprise/industry standards
	3.3 Functional tests on reworked subassemblies are carried out in accordance with established routines
	3.4 Actions are taken to rectify defects within the scope of established routines
	3.5 Report forms/data sheets on rework of subassemblies are completed accurately

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and modifying/reworking electronic sub assemblies.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EA104A Electronic sub assembly modification techniques

Evidence shall show an understanding of electronic sub assemblies modification techniques, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

T1. Enterprise quality management system encompassing:

- purpose of a quality system
- procedures pertaining to the relevant work function
- work instructions pertaining to the relevant work function

T2. Printed wiring board substrate repair encompassing:

- warpage and cracking damage
 - blistering and delaminating

T3. Conductor patterns repair, including encompassing:

- pad repair and replacement
- track repair, alteration, replacement.

T4. Conformal coatings encompassing:

- types
- removal
- replacement

T5. Quality checks encompassing:

- enterprise/ industry standards
- functional tests
- report forms/data sheets

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit. It must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment 9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit 9.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit must be considered holistically. Each Element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
 - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
 - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
 - Demonstrate an appropriate level of skills enabling employment
 - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
 - Rework electronic sub assemblies as described in 8) and including:
 - A Following job specifications
 - B Using high reliability de-soldering/soldering techniques
 - C Removing and placing components without damage

- D Adhering to quality procedures
- E Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment 9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment it must ensure that the conditions for assessment are authentic and as far as possible reproduce and replicate the workplace and is consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to reworking electronic sub assemblies.

Method of assessment 9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

**Concurrent
assessment and
relationship with
other units** 9.5)

For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with unit:

UEENEEA10 Assemble electronic components
1A

UEENEEA10 Select electronic components for assembly
2A

Range Statement**RANGE STATEMENT**

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit must be demonstrated by modifying/reworking any electronic sub assembly in an environment designed specifically for the purpose.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field 11)
Assembly