



Australian Government

UEEEEC0038 Find and repair microwave amplifier section faults in electronic apparatus

Release: 1

UEEEEC0038 Find and repair microwave amplifier section faults in electronic apparatus

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to find and repair microwave amplifier section faults in electronic apparatus.

It includes preparing to find and repair faults, finding faults, repairing faults, and completing and reporting on repair activities.

Permits may be required for some work environments, such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

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

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEEEEC0060 Repairs basic electronic apparatus faults by replacement of components

UEEEEC0066 Troubleshoot amplifiers in an electronic apparatus

UEEEEC0067 Troubleshoot basic amplifier circuits

UEEEEC0063 Solve fundamental electronic communications system problems

and

UEECD0043 Solve problems in direct current circuits

or

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to find and repair faults

PERFORMANCE CRITERIA

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

1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for relevant work area are identified, obtained and applied

1.2 WHS/OHS risk control measures are applied in accordance with workplace procedures prior to commencing work

1.3 Nature of the fault is identified from documentation or from relevant person/s to determine the scope of work

1.4 Instructions for coordinating work with others is obtained from relevant person/s and applied

1.5 Materials required for the work are determined in accordance with workplace procedures

1.6 Tools, equipment and testing devices required for work are obtained in accordance with workplace procedures and checked for correct operation and safety

2 Find faults

2.1 WHS/OHS risk control measures and procedures are applied

2.2 Need to test and measure live work is determined in accordance with WHS/OHS requirements and workplace procedures

2.3 Apparatus is checked and isolated, as required, in accordance with WHS/OHS requirements and workplace procedures

2.4 Fault finding is undertaken methodically applying principles of microwave amplifier sections and circuits using measured and calculated values of apparatus parameters

- 2.5 Apparatus components are dismantled, where necessary, and parts stored to protect against loss or damage
- 2.6 Faulty components are rechecked and their fault status confirmed
- 2.7 Unplanned situations are dealt with safely and with the approval of relevant person/s
- 2.8 Fault finding is conducted efficiently without waste of materials, damage to apparatus, the surrounding environment or services applying sustainable energy practices
- 3 Repair fault**
 - 3.1 WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
 - 3.2 Apparatus is checked and isolated, as required, in accordance with WHS/OHS requirements and workplace procedures
 - 3.3 Materials required for repair work are sourced and obtained in accordance with workplace procedures
 - 3.4 Repairs are conducted efficiently without damage to other components, apparatus or circuits
 - 3.5 Effectiveness of repair is tested in accordance with workplace procedures
 - 3.6 Apparatus is reassembled, tested and prepared for return to customer
- 4 Complete and report repair activities**
 - 4.1 WHS/OHS work completion risk control measures and workplace procedures are followed
 - 4.2 Work area is cleaned and made safe in accordance with workplace procedures
 - 4.3 Justification is provided for repairs to apparatus in the required format
 - 4.4 Work completion reporting is completed and relevant person/s notified in accordance with workplace procedures

Foundation Skills

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

competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Finding and repairing faults in microwave amplifier sections must include the following:

- at least two types of electronic apparatus

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH116A Find and repair microwave amplifier section faults in electronic apparatus.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEEC0038 Find and repair microwave amplifier section faults in electronic apparatus

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying methodical fault-finding techniques
- applying relevant risk identification, assessment, reporting and control requirements
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- applying sustainable energy principles and practices
- coordinating work with relevant person/s
- dealing effectively with unplanned events
- determining live testing/measurement requirements
- determining scope of repair work
- efficiently finding faults
- identifying and accessing materials, tools, apparatus and testing devices
- isolating circuits/machines/systems
- providing justification for the repairs
- replacing components without damage.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- electronic microwave communications systems, including:
 - advanced electronic (communication systems) testing and measuring devices and techniques
 - electronic (communication systems) fault finding
 - electronic communications, microwave antennae and waveguide fundamentals
 - microwave amplifiers, including:
 - amplifier components and circuit configuration
 - amplifier faults, symptoms and causes

- applications and operational constraints
- operating principles and parameters
- relevant industry standards, codes and regulations
- software programming fundamentals
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to finding and repairing faults in the microwave amplifier sections in electronic apparatus
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>