



Australian Government

UEEEEC0070 Troubleshoot faults in television receivers

Release: 1

UEEEEC0070 Troubleshoot faults in television receivers

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 fault find and repair of faults in signal processing and scanning and deflection sections of television receivers.

It includes working safely, applying logical fault-finding workplace procedures, conducting repairs, safety and functional testing, and completing the necessary service documentation.

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

Pre-requisite Unit

UEEEEC0058 Repair predictable faults in television receivers

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to identify television receiver 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 a given work area are identified and applied
- 1.2** WHS/OHS risk control measures and workplace procedures are followed in preparation for work activity

- 1.3 Nature of the television receiver fault is obtained from documentation or from work supervisor to determine the scope of work to be undertaken
 - 1.4 Advice is sought from work supervisor to ensure the work is coordinated effectively with relevant person/s
 - 1.5 Materials required for the work are determined in accordance with workplace procedures
 - 1.6 Tools, equipment and testing devices needed to carry out work are obtained in accordance with workplace procedures and checked for correct operation and safety
- 2 **Find television receiver faults**
 - 2.1 WHS/OHS risk control measures and workplace procedures for carrying out work activities are followed
 - 2.2 Need to inspect, test and measure live work is determined in accordance with WHS/OHS requirements and, as required, conducted in accordance with workplace safety procedures
 - 2.3 Apparatus is checked and isolated in accordance with WHS/OHS requirements and workplace procedures
 - 2.4 Fault finding is approached methodically, using measured and calculated values of apparatus parameters, chrominance and luminance signal processing and scanning and deflection sections of television receivers
 - 2.5 Apparatus components are dismantled, as required, and parts stored to protect against loss or damage
 - 2.6 Faulty components are identified, rechecked and fault status confirmed
 - 2.7 Materials/replacement parts required to rectify faults are sourced and obtained in accordance with workplace procedures
 - 2.8 Effectiveness of the repair is tested in accordance with workplace procedures
 - 2.9 Apparatus is reassembled, finally tested and prepared for return to service
 - 2.10 Unplanned situations are dealt with safely and with the approval of an authorised person/s

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| | 2.11 | Fault-finding activities are carried out efficiently without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices |
| 3 Repair television receiver fault | 3.1 | WHS/OHS risk control measures and workplace procedures for carrying out repair work are followed |
| | 3.2 | Apparatus is checked and isolated 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 affected efficiently without damage to other components, apparatus or circuits |
| | 3.5 | Effectiveness of the repair is inspected and tested in accordance with workplace procedures |
| | 3.6 | Apparatus is reassembled, inspected and final functional test completed in preparation for return to customer |
| 4 Complete and report television receiver fault-finding and 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 | Written justification is recorded for television receiver repairs to apparatus |
| | 4.4 | Work completion is documented and appropriate 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.

Troubleshooting faults in television receivers must include at least the following:

- two television receiver faults in signal processing and scanning and deflection sections of television receivers

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH171A Troubleshoot faults in television receivers.

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 UEEEC0070 Troubleshoot faults in television receivers

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 sustainable energy principles and practices
- completing and reporting television receiver fault-finding and repair activities
- dealing with unplanned situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- finding and repairing faults in television receiver
- finding television receiver faults efficiently
- implementing relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, workplace procedures and practices, including the use of risk control measures
- providing written justification for television receiver repairs
- replacing television receiver components without damage
- using methodical television receiver fault-finding techniques.

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:

- automatic gain control (AGC) circuits in typical television receivers, including operation and fault-finding techniques
- components providing radio frequency (RF) interference suppression protection, rectification and filtering in a typical television receiver power supply
- operation of a typical television synchronous demodulator circuit
- operation of series regulated power supplies as used in typical television receiver/monitors and recording device
- operation of the switched-mode power supply (SMPS) control circuits in a television/video cassette recorder (VCR)
- operation of tuners found in typical television receivers
- operation of typical self-oscillating television/VCR/switched-mode power supply (SMPS) circuits

- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- safe working procedures to test power supply circuitry of a typical 'hot chassis' television receiver
- sub-system arrangements and the operating principles of series and shunt type television receiver/VCR/SMPS
- techniques for locating and repairing faults in a defective SMPS in a typical television monitor or VCR
- techniques for locating and repairing faults in typical vision intermediate frequency (IF) circuits
- techniques for locating and repairing faulty components.

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 simulated suitable 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 television receivers
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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