



Australian Government

ICTTEN310 Remove and replace electronic circuit boards in carrier equipment

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package version 3.0.

Application

This unit describes the skills and knowledge required to remove and replace electronic circuit boards and associated equipment in switching, transmission, fixed, mobile radio, access and site environmental management networks, including the various transmission path components.

It applies to linesworkers, technicians or technical supervisors working for carriers, or other service providers. It also applies to work, which may be performed under direction of the relevant authority.

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

Unit Sector

Telecommunications – Telecommunications networks engineering

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for hardware replacement	1.1 Obtain repair/replacement brief, relevant legislation, codes, regulations and standards for the job 1.2 Discuss and record details of hardware to be removed or replaced, and proposed work schedule with the relevant authority 1.3 Inspect network and determine the scope of the repair task 1.4 Work safely according to relevant safety legislation and client practices 1.5 Obtain appropriate new or replacement hardware and associated

ELEMENT	PERFORMANCE CRITERIA
	installation documentation 1.6 Obtain tools and check they are in good working order 1.7 Undertake an impact risk assessment of the hardware replacement with the relevant authority and prepare a contingency plan
2. Replace hardware	2.1 Notify relevant authority of any building or equipment cabinet alarms that might be activated by accessing site 2.2 Verify serial/part numbers of replacement card 2.3 Determine card suite, rack, shelf and slot location 2.4 Remove and replace connecting cables and card as required 2.5 Replace electronic equipment, as instructed by the relevant authority, following relevant anti-static precautions 2.6 Complete associated jumpering or cabling as required 2.7 Request relevant authority or integration team to activate the card 2.8 Escalate any hardware replacement problems with the relevant authority and implement contingency plan 2.9 Restore pressurisation systems as required
3. Clean up worksite and complete required documentation	3.1 Remove and dispose of waste and debris from worksite, according to environmental requirements, and restore work area 3.2 Recover faulty equipment and return to appropriate point for disposal or refurbishment 3.3 Complete documentation, update fault records and make recommendations according to the client practices 3.4 Notify relevant authority of job completion and obtain sign-off

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.3	Recognises and interprets technical, regulatory and enterprise documentation

Writing	1.2, 1.3, 1.7, 2.1, 3.3, 3.4	Uses clear, specific and industry-related terminology to complete and update workplace documentation
Oral Communication	1.2, 1.7, 2.1, 2.7, 2.8, 3.4	- Liaises with a range of personnel about technical and operational requirements using specific and relevant language - Uses listening and questioning techniques to confirm understanding
Numeracy	1.2, 1.5, 2.2, 2.6, 3.3	Uses mathematical formulae to calculate power, voltage, current and the resistance, capacitance or inductance of various components
Navigate the world of work	1.1, 1.4, 2.5, 3.1, 3.2, 3.3	Complies with policies, procedures and legislative requirements relevant to own role
Interact with others	1.2, 1.7, 2.1, 2.7, 2.8, 3.4	Uses appropriate practices and protocols to communicate effectively with a range of personnel
Get the work done	1.1, 1.3, 1.5, 1.6, 1.7, 2.1, 2.3, 2.4, 2.6, 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4	- Plans, sequences and carries out tasks to meet required outcomes - Analyses task requirements to make routine decisions, taking some situational factors into account - Anticipates potential problems and prepares contingency plans - Follows required procedures when responding to problems - Understands purpose and some specific functions of common digital tools used in work contexts

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTTEN310 Remove and replace electronic circuit boards in carrier equipment	Not applicable	New unit to meet skills required by the industry.	No equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTTEN310 Remove and replace electronic circuit boards in carrier equipment

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Performance Evidence

Evidence of the ability to:

- interpret, discuss and confirm required work
- obtain documentation, equipment and hardware for required work
- notify relevant personnel of alarms that could be activated in the access and restoration of equipment cabinets and enclosures
- prepare a contingency plan to use if card replacement is unsuccessful, in consultation with relevant personnel
- remove and replace circuit boards as instructed by relevant authority, following work health and safety (WHS) requirements and anti-static precautions
- replace telecommunications hardware according to client practices
- follow required practices or contingency plan if hardware replacement is unsuccessful
- update fault records and complete required documentation
- restore site to required condition
- liaise with personnel from relevant authority for information and reporting purposes.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain application of direct current (DC) and alternating current (AC) electrical principles to the removal and replacement of circuit boards
- describe static electricity and its impact on electronic circuit boards in telecommunications equipment
- outline performance testing and fault finding techniques of telecommunications networks
- describe the purpose and operation of common testing equipment
- describe the behaviour of faulty network elements including symptoms and impact on network

- summarise common telecommunications hardware and network structures
- list types of power sources used in telecommunications networks.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications networks engineering field of work and include access to:

- a suitable site to replace telecommunications network hardware
- a range of hardware currently used in industry
- a range of general and test equipment required for testing telecommunications network hardware.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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