



Australian Government

ICTCBL219 Apply safe technical work practices for cabling registration when configuring an ADSL circuit

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 2.0.

Application

This unit describes the skills and knowledge required to practice safe installation, alteration and configuration of the carrier network termination device/asymmetric digital subscriber line (NTD/ADSL) filter and modem/mode 3 socket/cabling, for an alarm system connected to a monitoring station using a carrier line supporting an ADSL modem service, used for Open and Restricted Cabling Registration.

It applies to cablers, installers and technicians working in the field of installation, maintenance or upgrades of existing systems in voice, data or security systems, and in the context of technology convergence and digital subscriber line (DSL) technologies as applied in the telecommunications industry.

Work functions in the occupational areas where this unit may be used are subject to regulatory requirements. Refer to the ICT Implementation Guide Companion Volume or the relevant regulator for details of licensing, legislative or certification requirements.

Unit Sector

Telecommunications – cabling

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. Build and test direct current (DC) and alternating current (AC) circuits and telephone earthing	1.1 Identify any hazards and work health and safety (WHS) issues for safe worksite and notify appropriate personnel 1.2 Connect series and parallel DC and AC circuit configuration following safe work practices 1.3 Choose appropriate test equipment and measure values of

ELEMENT	PERFORMANCE CRITERIA
	electrical quantities of circuits 1.4 Use calculations to verify measured values of electrical quantities in series and in parallel circuit configuration 1.5 Compare measured values to calculated values and determine reasons for any variations 1.6 Evaluate results and determine probable faults if relevant 1.7 Measure voltages present on telephone line and compare to exchange battery voltage 1.8 Measure resistance to earth, ensuring electrical earth in telecommunications installation
2. Configure a safe ADSL circuit configuration with mode 3 connection	2.1 Determine effects of bandwidth, frequency and attenuation on DSL circuits as used for broadband client access 2.2 Design and configure ADSL circuit from network boundary through to mode 3 socket for alarm system connected to monitoring station 2.3 Configure connection to ensure that ADSL circuit is not disconnected for safety reasons when alarm activation in conjunction with a mode 3 socket disconnects plain old telephone service (POTS) circuit 2.4 Use level 3 tester to verify correct termination and installation of digital transmission line
3. Diagnose and rectify faults	3.1 Determine urgency and impact of faults and required response timeframe for clearance 3.2 Identify type of fault and determine most probable causes of fault from data and historical trends where available 3.3 Select tools and test equipment relevant to system and type of fault 3.4 Diagnose fault in methodical and safe manner using suitable fault-finding technique 3.5 Isolate fault progressively to remove likely variables from diagnostic 3.6 Determine options to rectify fault and present to client for decision on rectification 3.7 Document test methods and results, and file with other system installation records
4. Alter existing services	4.1 Identify existing and proposed cable systems for altering services to existing installation

ELEMENT	PERFORMANCE CRITERIA
	4.2 Plan alterations to cause minimal disruption to ongoing client activity 4.3 Use appropriate tools to safely terminate telecommunications cables and outlets 4.4 Identify and rectify any cable fault 4.5 Carry out alterations in safe manner and according to both mandatory and recommended industry standards 4.6 Identify risks posed by contact with remote power feeding services 4.7 Test alteration and obtain sign off with client

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	3.2, 4.7	Uses explicit strategies to make connections between information and ideas while reading
Writing	3.6, 3.7	Interrelates ideas, information and some support material when writing about familiar topics
Oral Communication	1.1, 3.6	Demonstrates awareness of choices for register, especially in situations that are familiar
Numeracy	1.3-1.5, 1.7, 3.1, 3.2, 4.7	Uses 'in the head' and written methods to calculate, and uses calculation and technological processes and tools to undertake the problem solving process
Navigate the world of work	1.1, 1.2, 2.1, 4.5, 4.6	Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work context, and draws attention to any issues that may affect self or others
Get the work done	1.3, 1.6, 2.1-2.4, 3.1-3.7, 4.1-4.4, 4.7	- Implements actions as per plan, making slight adjustments if necessary, and addressing some unexpected issues - Automatically implements standard procedures for routine decisions in response to familiar problems - Understands when to take responsibility and when to notify others

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTCBL219 Apply safe technical work practices for cabling registration when configuring an ADSL circuit	ICTCBL2139B Apply safe technical work practices for cabling registration when configuring an ADSL circuit	Updated to meet Standards for Training Packages Performance Criteria clarified	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 ICTCBL219 Apply safe technical work practices for cabling registration when configuring an ADSL circuit

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Performance Evidence

Evidence of the ability to:

- demonstrate the use of asymmetric digital subscriber line (ADSL) concepts in application and design
- demonstrate fault-finding techniques to locate cabling faults in telecommunications networks
- solve calculations for direct current (DC) and alternating current (AC) electrical problems
- apply digital transmission principles and testing
- demonstrate the use of ADSL test equipment
- comply with all related work health and safety (WHS) requirements and work practices in the alteration of existing client services.

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:

- discuss WHS issues and practices relating to ADSL circuits and working with electricity
- describe typical electrical faults, fault-finding techniques and the type and use of testing equipment, including:
 - multimeter to measure direct current (DC) voltage, current and resistance
 - continuity tester to check continuity wiring
 - testing of open circuits and short circuits
 - ADSL test set
- identify the appropriate tools used in ADSL cabling
- describe the types of cable terminations used for a range of telecommunications cable applications

- outline the following:
 - ADSL circuitry and configurations
 - digital transmission concepts, including installation practices and testing
 - procedures in altering existing services, including sign off
 - the distinction between analog and digital signals.

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 – cabling field of work and include access to:

- special purpose tools, equipment and materials
- a site where altering of existing services for a client may be conducted
- appropriate AC and DC testing equipment
- manufacturer's documentation and equipment
- correct tools and measuring equipment currently used in industry.

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

Links

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