



Australian Government

ICTBWN306 Use radio frequency measuring instruments

Release: 1

ICTBWN306 Use radio frequency measuring instruments

Modification History

Release	Comments
Release 1	This version released with ICT Information and Communications Technology Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to set up and use radio frequency (RF) communications instruments to perform installations, upgrades and fault-finding on RF equipment and networks.

It applies to telecommunications lines workers who **only** use RF measuring instruments.

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

Unit Sector

Telecommunications – Broadband and Wireless Networks

Elements and Performance Criteria

Elements	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 to use RF measuring instruments	1.1 Obtain approval for site access with customer or site owner prior to site entry 1.2 Identify purpose of test and type of RF measurement required 1.3 Select industry standard/approved tools and instruments according to required measurement 1.4 Check test instruments to ensure calibration is within acceptable time frames 1.5 Identify safety hazards, assess risks and implement risk control measures in consultation with appropriate personnel
2 Conduct RF measurements	2.1 Set-up test equipment according to manufacturer instructions, industry standards and safe industry practices

Elements	Performance Criteria
	2.2 Use appropriate testing techniques to assess overall system performance 2.3 Record and interpret test results, and compare with standard test specifications
3 Complete RF measurement process	3.1 Make recommendations, based on test result interpretations, to achieve optimum performance 3.2 Notify customer of work completion 3.3 Clean work area and make safe according to enterprise procedures

Foundation Skills

Skill	Description
Reading	- Reads and interprets plans, specifications instructions and other documentation from a variety of sources and consolidates information to determine requirements - Interprets and consolidates test results and data from a range of sources, against defined requirements
Writing	Accurately records and completes enterprise documents and correspondence using clear language and correct spelling, grammar and terminology
Oral Communication	- Participates in verbal exchanges with key personnel using appropriate, clear and detailed language to exchange information, ideas or solutions - Uses listening and questioning skills to confirm understanding of requirements
Numeracy	Performs mathematical calculations to check, interpret and confirm results of system tests
Navigate the world of work	- Complies with explicit policies and procedures - Explores and implements where identified the implicit expectations of policies and procedures
Interact with others	- Uses a range of accepted practices for communicating in a work environment - Complies with work instructions and contributes effectively to work group discussions
Get the work done	- Plans and implements routine tasks and workload, making limited decisions on sequencing, timing and collaboration, and seeks assistance in setting priorities - Makes low-impact decisions within familiar situations, based on a

	range of predefined or routine solutions, and evaluates the effectiveness of the outcome • Uses the main features and functions of digital tools to complete work tasks and access information
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Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. It is restricted to essential operating conditions and any other variables essential to the work environment.

Type of RF measurement must include:	• determining relative RF power level (in dB) • determining relative RF voltage (in dBmV).
Instruments must include:	• RF signal level meter with and without tone generator • RF leakage detector.

Unit Mapping Information

No equivalent unit. New unit.

Links

Companion Volume Implementation Guides are available from VETNet -

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

Assessment Requirements for ICTBWN306 Use radio frequency measuring instruments

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Performance Evidence

The candidate must demonstrate the ability to perform the tasks outlined in the elements, performance criteria, and foundation skills, and to:

- comply with site-specific safety requirements and enterprise work health and safety (WHS) processes and procedures
- comply with all job requirements and WHS regulations, standards and work practices
- check and confirm calibration within appropriate dates of tools and instruments
- operate the following equipment:
 - radio frequency (RF) signal level meter (SLM)
 - RF leakage meter
- perform the following RF measurements:
 - determine relative RF power level (in dB)
 - determine relative RF voltage (in dBmV)
 - determine RF signal quality (MER and BER).

Note: Evidence must be provided at least once when a specific volume or frequency is not stated.

Knowledge Evidence

The candidate must demonstrate the knowledge required to perform the tasks outlined in the elements, performance criteria, and foundation skills, which includes knowledge about:

- instruments used in measuring RF frequencies including:
 - RF signal level meter with and without tone generator
 - RF leakage detector
- types of RF measurements and their respective interpretation for RF frequencies including:
 - determining relative RF power level (in dB)
 - determining relative RF voltage (in dBmV)

- consequences of poorly terminated RF connections
- data recording using the unit decibels (in dBmV)
- variations between RF connector adaptor types
- potential WHS hazards, risks and control measures when working with RF frequency measuring equipment
- RF industry spectrum and limits, and allocations.

Assessment Conditions

Skills must be assessed in a workplace or simulated environment where conditions are typical of those in a telecommunications work environment or workplace.

Access is required to:

- site/s where measuring instruments can be used
- plant, tools and equipment currently used in industry
- relevant regulatory and equipment documentation that impacts on work activities.

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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