



Australian Government

ICTRFN407 Conduct radio frequency measurements

Release: 1

ICTRFN407 Conduct radio frequency measurements

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 plan and undertake testing, including measuring, recording and interpreting results within all legislative and regulatory frameworks.

It applies to technicians who work in the field to install, maintain, upgrade and commission radio frequency (RF) telecommunications systems. These systems may include satellite and microwave, radio or television broadcasting, pay television, free to air television, radio frequency identification (RFID), mobile radio, cellular and worldwide interoperability for microwave access (WiMAX) networks.

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

Unit Sector

Telecommunications – Radio Frequency 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. Plan to conduct RF measurements	1.1 Access site according to enterprise procedures 1.2 Determine type of measurements required based on industry environment 1.3 Assess impact of conducting measurements on network and advise clients and appropriate person 1.4 Assess previous measurement data as required
2. Take RF measurements	2.1 Check that prescribed safety arrangements associated with RF radiation are in place and take corrective action as required

Elements	Performance Criteria
	2.2 Monitor work activity to ensure it meets site specifications and relevant legislation, regulations, codes and standards 2.3 Select industry approved test equipment 2.4 Configure test equipment according to manufacturer specifications 2.5 Conduct measurements according to planned requirements 2.6 Assess RF levels at occupational and non-occupational distances 2.7 Record all measurements and test configurations according to industry standards
3. Analyse measurement outcomes	3.1 Verify measurements against relevant standards and vendor specifications 3.2 Assess problems and variance for corrective action, and notify appropriate person according to enterprise procedures 3.3 Record processes and recommendations according to industry standards
4. Document measurement results	4.1 Complete customer documentation outlining results and recommendations 4.2 Notify customer to obtain sign-off

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance, but not explicit in the performance criteria.

Skill	Description
Reading	Recognises and interprets information from relevant sources to determine technical specifications and regulatory and legislative requirements
Writing	Uses clear, specific and industry related terminology to complete and update workplace documentation and in written communications with clients
Oral Communication	- Uses specific and relevant language and appropriate tone to provide and ask for technical, operational and legal advice - Uses listening techniques to determine understanding
Numeracy	Evaluates and reviews numerical information when undertaking test measurements, interpreting results, calibrating equipment and evaluating performance
Navigate the world of work	- Takes personal responsibility for adherence to legal and regulatory requirements, with specific reference to safety - Understands the nature and purpose of own role and associated

Skill	Description
	responsibilities
Get the work done	• Determines job priorities and works logically and systematically to undertake clearly defined and familiar tasks • Identifies and assembles the instruments, equipment and access required to competently undertake the job • Takes responsibility for routine decision making by selecting from a range of predetermined options in routine situations, identifying and taking situational factors into account • Diagnoses and implements standard solutions to minimise measurement errors

Unit Mapping Information

ICTRFN407 Conduct radio frequency measurements supersedes and is equivalent to ICTRFN401 Conduct radio frequency measurements.

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 ICTRFN407 Conduct radio frequency measurements

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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:

- plan and conduct radio frequency (RF) testing using appropriate equipment and instruments
- measure, record and interpret test results
- monitor work to meet related work health and safety (WHS) requirements and work practices.

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:

- legislation, regulations, codes, standards and enterprise procedures relevant to work activity
- principles and operation of the following:
 - analog and digital modulation methods
 - logarithmic units
 - standard test procedures and test set-ups
 - transmitter and receiver architectures
- principles of radio frequency (RF) operation including:
 - instrument and features and types
 - radiation hazards
 - safety practices.

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 for RF measurements
- a range of test equipment and items to test
- relevant regulatory and equipment documentation that impact on work activities.

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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