



Australian Government

Assessment Requirements for ICTOPN505 Test the performance of specialised optical devices

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.

Performance Evidence

Evidence of ability to:

- plan and coordinate test activities and equipment
- test specialised optical devices and determine suitability for integration into a network
- analyse test results
- report and make recommendations on suitability for integration
- comply with all work health and safety (WHS) requirements and work practices.

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 what an amplified spontaneous emission (ASE) source test shows
- summarise attenuation characteristics of optical fibres
- outline the principles of operation for dense wavelength division multiplexing (DWDM)
- identify features and operating requirements of test equipment including:
 - a hand-held optical power meter
 - an optical spectrum analyser
 - a transmission test set
- outline dispersion characteristics of various fibres
- describe dispersion compensation devices
- explain standard electrostatic discharge precautions
- outline functions of an optical add-drop multiplexer (OADM) and reconfigurable optical add-drop multiplexer (ROADM)
- explain gain equalisation

- summarise the International Telecommunications Union (ITU) wavelength grid for DWDM
- describe the measurement of dispersion
- explain optical amplifier operation
- name optical fibre connector types and describe their characteristics
- list optical fibre types and describe their characteristics
- explain 'optical return loss' (ORL)
- clarify path protection and protection switching
- explain polarisation dependent loss (PDL)
- identify protocols used on optical DWDM systems
- explain reflectance in optical systems
- summarise ring topologies and linear network topologies
- explain specific work health and safety (WHS) requirements that impact the safe inspection of optical connectors and the safe measurement of optical power from laser transmission systems
- discuss tuneable laser sources and their characteristics.

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 must be typical of those experienced in the Telecommunications – Optical Networks field of work and include access to:

- test equipment currently used in industry
- manufacturer's technical documentation, legislation, codes and standards.

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

Links

Companion Volume implementation guides are found in VETNet -

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