

Domain**BROADCASTING****Title:****Perform measurements on broadcasting equipment****Level: 5****Credits:10****Purpose**

This unit standard is intended for those who perform measurements on broadcasting equipment. People credited with this unit standard are able to demonstrate an understanding of planning process for transmission testing equipment, determine the field exposure level in the vicinity of transmitter and perform measurement on a transmitter, comply with workplace health and safety requirements when performing measurement on broadcasting equipment, identify and solve transmission measurement problems, perform measurements in electronic circuits using analogue and digital multimeters, perform measurements on waveforms in electronic circuits using a Cathode Ray Oscilloscope (CRO), perform test on electronic circuits using function generators and frequency counters.

This unit standard is intended for those who work in the broadcasting working environment.

Special Notes

1. Entry information:

Prerequisites:

- None
2. This unit standard will be essential to technically skilled people who work in the broadcasting environment and need to use sophisticated methods and equipment to measure broadcast transmissions.
 3. This unit standard is to be delivered and assessed in the context of information and communication technology.
 4. Assessment evidence may be collected from a real or a simulated workplace in which broadcasting operations are carried out.
 5. Tools and equipment may include but are not limited to computer, external devices, storage devices and other and basic computer applications.
 6. Performance of all elements in this unit standard must comply with industry standards.
 7. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act 2007(Act No 11, 2007)

- Regulations relating to the health and safety of employees at work under schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this sub-field may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na

Elements and Performance Criteria

Element 1: Demonstrate an understanding of planning process for transmission testing equipment

Range

Test equipment may include but not limited to a spectrum analyser and any other specific test equipment for the transmission application (example; Waveform monitor, modulation analyser, audio measurement set, demodulator, bit stream analyser, etc.).

Performance Criteria

- 1.1 Process instructions are interpreted and tasks are identified.
- 1.2 Transmission testing equipment and tools are identified.
- 1.3 Testing specifications and standards are described.
- 1.4 Test equipment and procedures are described.

Element 2: Determine the field exposure level in the vicinity of transmitter and perform measurement on a transmitter

Range

Measuring equipment may include but not limited to multimeters, spectrum analyser and waveform monitor

Performance Criteria

- 2.1 Tests for selected application are identified.
- 2.2 Calibration on broadcasting transmission equipment is performed in line with equipment manufacturing specification.
- 2.3 Test results are compared and evaluated.

2.4 Field exposure level in the vicinity of transmitter is identified and explained.

Element 3: Comply with workplace health and safety requirements when performing measurement on broadcasting equipment

Performance Criteria

- 3.1 Health and safety practices are known and adhered to at all time.
- 3.2 Health hazards when performing measurement on broadcasting equipment are identified.
- 3.3 Safety precautions are taken when performing measurement on broadcasting equipment.

Element 4: Identify and solve transmission measurement problems

Performance Criteria

- 4.1 Potential transmission measurement problems are identified and evaluated for impact
- 4.2 Responses are formulated to resolve potential transmission measurement problems.
- 4.3 Identified transmission measurement problems are diagnosed and solutions are formulated.
- 4.4 Unresolved problems are recorded and escalated to relevant persons.

Element 5: Perform measurements in electronic circuits using analogue and digital multimeters

Performance Criteria

- 5.1 Specifications for an analogue and digital multimeters are explained.
- 5.2 Continuity tests on connections are performed and evaluated.
- 5.3 Measurements of voltages and currents in DC and AC resistive networks are taken and results are analysed.

Element 6: Perform measurements on waveforms in electronic circuits using a Cathode Ray Oscilloscope (CRO)
Range

Displayed waveform may include but not Limited Square, sine, triangular, ramp and pulse

Waveform measurements may include but not limited to amplitude, period, shape and dc offset.

CRO measurement limitations may include but not limited to low and high frequency limits; low and high amplitude.

Performance Criteria

- 6.1 Adjustments and calibrations are performed on oscilloscopes.
- 6.2 Measurement results and displayed waveforms are explained.
- 6.3 Resistor Capacitor (RC) integrator and RC differentiator circuits are applied to input waveform.
- 6.4 CRO measurement limitations are explained.

Element 7: Perform test on electronic circuits using function generators and frequency counters

Performance Criteria

- 7.1 Adjustments and calibrations are performed on function generator controls.
- 7.2 Specified waveforms are verified using a frequency counter.
- 7.3 Digital signal value measurements are performed on logic circuit using logic probe and clip.

Registration Data

Subfield:	Information and Communication Technology
Date first registered:	30 July 2020
Date this version registered:	30 July 2020
Anticipated review:	
Body responsible for review:	Namibia Training Authority