

 SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING	<h2>Standard Operating Procedure (SOP)</h2>
<b>SOP Title:</b> Radio Frequency Sources	
<b>SOP Number:</b> SEEE_04	
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Version	Date	Author
2.0	25.04.2018	Max Ammann

### 1.0 PURPOSE

Care is required when working with radio frequency (RF) power sources.

### 2.0 SCOPE

RF signal generators/network analysers and transceivers are located in the laboratories in Rooms 418 and 429. While most signal generators/vector and scalar network analysers have output powers not greater than 10 dBm, if further amplification is made in student project work, careful consideration must be given.

Students using transceivers with transmitter output powers greater than 30 dBm must take special precautions when connecting antennas or antenna feeder cables.

Students or building RF transmitters must take special care as painful RF burns can result for output powers greater than 40 dBm. An evaluation of compliance with the ICNIRP guidelines must also be made when dealing with radiated powers greater than 30 dBm.

### 3.0 DEFINITIONS

Radio Frequency (RF) is a rate of oscillation in the range of about 3 kHz to 300 GHz, which corresponds to the frequency of radio waves, and the time varying currents which carry radio signals.

ICNIRP International Commission for Non Ionising Radiation Protection

<https://www.icnirp.org/>

### 4.0 RESPONSIBILITIES

Students and other laboratory users are required to familiarise themselves with the specification of RF instruments employed in laboratory or project work. Safety concerns are to be reported to supervisory and laboratory staff.

**5.0 HEALTH & SAFETY PRECAUTIONS**

- Students working on RF sources do so under the supervision of lecturers and technical staff who are competent in the handling of such sources.
- Equipment is inspected frequently for safe operation.
- The School enforces rules governing student conduct and activity within laboratories. Students are issued with a written copy of these rules.
- Do not use this equipment if you have any safety concerns

**6.0 MATERIALS**

N/A

**7.0 PROCEDURE**

N/A

**8.0 REPORTING**

Report any issues of concern to any member of the staff

**9.0 DOCUMENTATION**

Equipment specification manuals are located in the appropriate laboratory

**10.0 REFERENCES**

ICNIRP guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz) *Health Physics*, 74 (4) pp 494-522, 1998.  
<https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>

**11.0 REVIEW**

This SOP will be reviewed biennially by appropriate staff or as required.