Conservation and Land Management Department
Science and Information Division - Research Techniques

# ELECTROMAGNETIC RADIATION FROM COMPUTER SCREENS AND OTHER ELECTRICAL EQUIPMENT

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I have measured the electromagnetic field strength from computers and other electrical equipment in CALM Science and Information Division (Como, Herbarium, Woodvale, Dwellingup).

I used the ARLUNYA GAUSS MAUS meter, made in Australia by THE DINDIMA GROUP PTY LTD. It was rented from TECH-RENTALS PTY LTD, 32 Teddington Road, Victoria Park WA 6100, David Noble (Sales Engineer), ph. (09) 470 3644. The rental cost is $155 per month, the unit cost is around $700.

Electromagnetic Radiation (EMR) can be defined as electric and magnetic fields which radiate from any electrical appliance which uses AC current. The intensity of Electromagnetic Radiation is measured in milliGauss, the frequencies are in the Extremely Low Frequency (ELF) and Very Low Frequency (VLF) ranges. GAUSS MAUSS frequency response in wideband mode (used during tests) is 12 Hz - 1.3 kHz and can measure EMR up to 99 milliGauss.

Australia does not have approved standards relating to EMR exposure. The European Community and North America adopted MPR II (Swedish) standards of 2.5 milliGauss (or less) EMR emissions at 50 centimetres from the equipment (I understand this is for continuous exposure).

## SUMMARY AND RECOMMENDATIONS

Some monitors (Compaq, older Dalcon, Xebec) do not comply with the MPR II standards. Their levels of EMR are between 3 and 5.5 milliGauss at 50 cm.
Other "dangerous" sources include the power switch board at the Herbarium first floor, power cables under the computer room at Woodvale, the old power conditioners at Woodvale Library and Dwellingup. Ordinary kitchen microwaves project 60 to 99 milliGauss at 20 cm! (around 20 milliGauss at 50 cm).

The possibility that electromagnetic fields from computer screens and other electrical equipment cause health problems cannot be excluded. The following are suggestions for the future:

- work at arm's distance from the terminal (at 65 cm EMR is around 2.5 milliGauss on bad monitors)
- remove hazardous power conditioners
- re-arrange risky workplace
- conduct EMR tests periodically
- purchase low level radiation monitors

In the meantime, do not forget basic computer safety:

- take regular breaks, stretch and exercise
- do not sit too close to any monitor
- arrange ergonomically your furniture, screen, keyboard, mouse, documents
- make sure that lighting, temperature, airflow are satisfactory and the noise level is low