

ICNIRP Measurement Report

This report presents the results of measurements of electromagnetic field emission levels in the vicinity of mobile base stations. Results are presented as percentages of the power density reference levels for general public exposure in the 1998 edition of the Guidelines published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)¹, with figures provided for individual frequency bands used for base station (downlink) transmissions as well as an overall figure for all other frequency bands between 30 MHz to 6 GHz. The total percentage equals the sum of all individual percentages.

The power density reference levels in the ICNIRP Guidelines are the root mean square (rms) values averaged over six minutes. In this report, we have measured the average E-field strength over a six-minute period in each measurement location.

We have applied a measurement threshold of 3dB above the system noise floor² of the measurement equipment, below which any E-field strength levels measured are deemed not sufficiently above the system noise floor to be valid. In the results tables below, measurement results are shown to a precision of four decimal places. Results which are not sufficiently above the system noise floor to record as a valid measurement are shown as a dash (-). Results which are too small to register to four decimal places are shown as 0.0000%.

Date of Survey:	07/11/2024	Time Survey completed:	11:34
Survey address:	Llandyfaelog SA32		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072612	28/09/2023
Probe	Agos Aria-6000 Antenna	ARIA-6000-1117	28/11/2022
Cabling	1.7m cable	1319	28/11/2022

¹ <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>

² The noise floor of the measurement equipment is the level of background noise that is present before detecting any external signals. In other words, it indicates the absolute minimum level of detectable signals.

Broadcast bands covered by this report

Frequency Band	Frequency Range	Technology*
	87.5-108 MHz	FM Radio
	174-230 MHz	DAB
	470-694 MHz	Digital TV

Mobile bands covered by this report

Frequency Band	Frequency Range	Technology*
700 MHz	738-788 MHz	4G, 5G
800 MHz	791-821 MHz	4G
900 MHz	925-960 MHz	2G, 3G, 4G
1400 MHz	1452-1492 MHz	4G (Supplementary downlink)
1800 MHz	1805-1880 MHz	2G, 4G
1900 MHz	1900-1920 MHz	4G
2100 MHz	2110-2170 MHz	3G, 4G
2300 MHz	2350-2390 MHz	4G
2600 MHz TDD	2570-2620 MHz	4G
2600 MHz FDD	2620-2690 MHz	4G
3.4 GHz	3410-3680 MHz	5G, 4G
3.8 GHz	3680-4200 MHz	Various
Others**		

* This is an indication of the type of technologies typically deployed in these bands; not all frequency bands and technologies may be in use at all locations. ** All other frequencies between 420 MHz and 6 GHz.

Survey locations

The survey was conducted within the area shown in the map below. Measurements were taken at four locations and are presented in the following pages of this report.



Location 1

Measurement time:	11:04
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01251
174-230 MHz	0.01379
470-694 MHz	0.01082
700 MHz	0.00814
800 MHz	0.01659
900 MHz	0.00074
1400 MHz	0.00078
1800 MHz	0.00810
1900 MHz	0.00025
2100 MHz	0.00067
2300 MHz	0.00048
2600 MHz TDD	0.00042
2600 MHz FDD	0.00019
3.4 GHz	0.00209
3.8 GHz	0.00472
Others	0.16998
Total	0.25026

Location 2

Measurement time:	11:11
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01268
174-230 MHz	0.01419
470-694 MHz	0.01161
700 MHz	0.00413
800 MHz	0.01056
900 MHz	0.00074
1400 MHz	0.00151
1800 MHz	0.00943
1900 MHz	0.00025
2100 MHz	0.00108
2300 MHz	0.00049
2600 MHz TDD	0.00043
2600 MHz FDD	0.00020
3.4 GHz	0.00217
3.8 GHz	0.00489
Others	0.18987
Total	0.26422

Location 3

Measurement time:	11:19
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01283
174-230 MHz	0.01428
470-694 MHz	0.01139
700 MHz	0.00800
800 MHz	0.01765
900 MHz	0.00075
1400 MHz	0.00068
1800 MHz	0.00476
1900 MHz	0.00026
2100 MHz	0.00073
2300 MHz	0.00052
2600 MHz TDD	0.00044
2600 MHz FDD	0.00020
3.4 GHz	0.00222
3.8 GHz	0.00500
Others	0.18901
Total	0.26870

Location 4

Measurement time:	11:28
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01302
174-230 MHz	0.01439
470-694 MHz	0.01124
700 MHz	0.00763
800 MHz	0.01481
900 MHz	0.00079
1400 MHz	0.00081
1800 MHz	0.01031
1900 MHz	0.00026
2100 MHz	0.00074
2300 MHz	0.00051
2600 MHz TDD	0.00044
2600 MHz FDD	0.00020
3.4 GHz	0.00221
3.8 GHz	0.00501
Others	0.17931
Total	0.26168

Disclaimer: The results detailed in this report apply only to the tests made at the reported time, using the test equipment detailed. They do not indicate that on another date an identical set of results would be achieved, due to changes in local environmental conditions or other factors which may or may not have an effect on the measurement results obtained at that future time.