

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 420 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:	16/01/2024	Time Survey completed:	13:48
Survey address:	Aberystwyth SY23		

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.

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**		

Notes

* 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.

Survey locations

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



Map data: © Google

Location 1

Measurement Time:	12:51
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00113
800 MHz	0.00157
900 MHz	0.00048
1400 MHz	0.00209
1800 MHz	0.00508
1900 MHz	0.00016
2100 MHz	0.00336
2300 MHz	0.00031
2600 MHz TDD	0.00026
2600 MHz FDD	0.00014
3.4 GHz	0.00174
3.8 GHz	0.00372
others	0.05918
total	0.07922

Location 2

Measurement Time:	13:04
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00146
800 MHz	0.00380
900 MHz	0.00052
1400 MHz	0.00716
1800 MHz	0.01270
1900 MHz	0.00017
2100 MHz	0.00134
2300 MHz	0.00033
2600 MHz TDD	0.00028
2600 MHz FDD	0.00015
3.4 GHz	0.00229
3.8 GHz	0.00397
others	0.06362
total	0.09779

Location 3

Measurement Time:	13:14
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00157
800 MHz	0.00778
900 MHz	0.00388
1400 MHz	0.00695
1800 MHz	0.00680
1900 MHz	0.00017
2100 MHz	0.00101
2300 MHz	0.00033
2600 MHz TDD	0.00028
2600 MHz FDD	0.00016
3.4 GHz	0.00265
3.8 GHz	0.00410
others	0.06748
total	0.10316

Location 4

Measurement Time:	13:33
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00104
800 MHz	0.00078
900 MHz	0.00054
1400 MHz	0.00117
1800 MHz	0.00373
1900 MHz	0.00018
2100 MHz	0.00138
2300 MHz	0.00035
2600 MHz TDD	0.00029
2600 MHz FDD	0.00016
3.4 GHz	0.00197
3.8 GHz	0.00430
others	0.06830
total	0.08420

Location 5

Measurement Time:	13:42
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00107
800 MHz	0.00083
900 MHz	0.00053
1400 MHz	0.00271
1800 MHz	0.00384
1900 MHz	0.00018
2100 MHz	0.00290
2300 MHz	0.00035
2600 MHz TDD	0.00030
2600 MHz FDD	0.00017
3.4 GHz	0.00205
3.8 GHz	0.00435
others	0.06801
total	0.08729

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.