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 floor[2] 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:	13/01/2026	**Time Survey completed:**	11:39
Survey address:	Cardiff CF14		

Measurement equipment		**Serial number**	**Calibration Date**
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072619	09/12/2025
Probe	Agos Aria-6000 Antenna	ARIA-6000-1117	28/11/2025
Cabling	1.7m cable	1460	20/11/2025

[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 30 MHz and 6 GHz.*

Survey locations

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

Location 1

Measurement time:	10:45
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.04701
174-230 MHz	0.01290
470-694 MHz	0.01035
700 MHz	0.00264
800 MHz	0.09716
900 MHz	0.01044
1400 MHz	0.00049
1800 MHz	0.03503
1900 MHz	0.00023
2100 MHz	0.00342
2300 MHz	0.00045
2600 MHz TDD	0.00038
2600 MHz FDD	0.00546
3.4 GHz	0.00208
3.8 GHz	0.00448
Others	0.15518
Total	**0.38771**

Location 2

Measurement time:	10:54
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.08456
174-230 MHz	0.01328
470-694 MHz	0.01013
700 MHz	0.00164
800 MHz	0.01817
900 MHz	0.01400
1400 MHz	0.00050
1800 MHz	0.01481
1900 MHz	0.00023
2100 MHz	0.00553
2300 MHz	0.00046
2600 MHz TDD	0.00040
2600 MHz FDD	0.00175
3.4 GHz	0.00222
3.8 GHz	0.00477
Others	0.16273
Total	**0.33519**

Location 3

Measurement time:	11:03
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.02301
174-230 MHz	0.01354
470-694 MHz	0.01034
700 MHz	0.00140
800 MHz	0.00487
900 MHz	0.00214
1400 MHz	0.00052
1800 MHz	0.00654
1900 MHz	0.00024
2100 MHz	0.00157
2300 MHz	0.00049
2600 MHz TDD	0.00041
2600 MHz FDD	0.00080
3.4 GHz	0.00215
3.8 GHz	0.00478
Others	0.16727
Total	**0.24006**

Location 4

Measurement time:	11:13
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.07826
174-230 MHz	0.01384
470-694 MHz	0.01051
700 MHz	0.00183
800 MHz	0.07407
900 MHz	0.02515
1400 MHz	0.00051
1800 MHz	0.01417
1900 MHz	0.00024
2100 MHz	0.00714
2300 MHz	0.00049
2600 MHz TDD	0.00042
2600 MHz FDD	0.00249
3.4 GHz	0.00228
3.8 GHz	0.00499
Others	0.17155
Total	**0.40795**

Location 5

Measurement time:	11:21
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.03520
174-230 MHz	0.01405
470-694 MHz	0.01070
700 MHz	0.00242
800 MHz	0.04678
900 MHz	0.00992
1400 MHz	0.00052
1800 MHz	0.01282
1900 MHz	0.00025
2100 MHz	0.00340
2300 MHz	0.00050
2600 MHz TDD	0.00044
2600 MHz FDD	0.00252
3.4 GHz	0.00228
3.8 GHz	0.00502
Others	0.17460
Total	**0.32141**

Location 6

Measurement time:	11:33
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.03142
174-230 MHz	0.01446
470-694 MHz	0.01148
700 MHz	0.00445
800 MHz	0.11878
900 MHz	0.00967
1400 MHz	0.00054
1800 MHz	0.05135
1900 MHz	0.00026
2100 MHz	0.00442
2300 MHz	0.00052
2600 MHz TDD	0.00044
2600 MHz FDD	0.00597
3.4 GHz	0.00247
3.8 GHz	0.00527
Others	0.17787
Total	**0.43937**

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.