

# 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)<sup>1</sup>, 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<sup>2</sup> 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%.

<b>Date of Survey:</b>	13/01/2026	<b>Time Survey completed:</b>	14:40
<b>Survey address:</b>	Cardiff CF14		

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

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

<sup>2</sup> 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

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



**Location 1**

<b>Measurement time:</b>	<b>13:32</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.09826
174-230 MHz	0.01563
470-694 MHz	0.01177
700 MHz	0.00206
800 MHz	0.02121
900 MHz	0.02065
1400 MHz	0.00057
1800 MHz	0.00085
1900 MHz	0.00028
2100 MHz	0.00170
2300 MHz	0.00162
2600 MHz TDD	0.00049
2600 MHz FDD	0.00039
3.4 GHz	0.00309
3.8 GHz	0.00592
Others	0.19745
<b>Total</b>	<b>0.38194</b>

## Location 2

Measurement time:	13:41
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02440
174-230 MHz	0.01564
470-694 MHz	0.01176
700 MHz	0.00196
800 MHz	0.02355
900 MHz	0.09431
1400 MHz	0.00058
1800 MHz	0.00091
1900 MHz	0.00028
2100 MHz	0.00392
2300 MHz	0.00702
2600 MHz TDD	0.00049
2600 MHz FDD	0.00073
3.4 GHz	0.00330
3.8 GHz	0.00625
Others	0.19645
<b>Total</b>	<b>0.39153</b>

### Location 3

Measurement time:	13:50
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02156
174-230 MHz	0.01534
470-694 MHz	0.01166
700 MHz	0.00515
800 MHz	0.02438
900 MHz	0.06262
1400 MHz	0.00056
1800 MHz	0.00169
1900 MHz	0.00028
2100 MHz	0.00614
2300 MHz	0.00677
2600 MHz TDD	0.00049
2600 MHz FDD	0.00086
3.4 GHz	0.00439
3.8 GHz	0.00684
Others	0.19523
<b>Total</b>	<b>0.36394</b>

#### Location 4

Measurement time:	13:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02186
174-230 MHz	0.01537
470-694 MHz	0.01151
700 MHz	0.00308
800 MHz	0.02206
900 MHz	0.03133
1400 MHz	0.00056
1800 MHz	0.00761
1900 MHz	0.00028
2100 MHz	0.00553
2300 MHz	0.00175
2600 MHz TDD	0.00048
2600 MHz FDD	0.00135
3.4 GHz	0.00296
3.8 GHz	0.00580
Others	0.19082
<b>Total</b>	<b>0.32234</b>

## Location 5

Measurement time:	14:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.03809
174-230 MHz	0.01550
470-694 MHz	0.01153
700 MHz	0.00733
800 MHz	0.07503
900 MHz	0.03431
1400 MHz	0.00056
1800 MHz	0.00233
1900 MHz	0.00027
2100 MHz	0.00826
2300 MHz	0.00194
2600 MHz TDD	0.00047
2600 MHz FDD	0.00126
3.4 GHz	0.00271
3.8 GHz	0.00617
Others	0.19103
<b>Total</b>	<b>0.39680</b>

## Location 6

Measurement time:	14:16
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.04425
174-230 MHz	0.01519
470-694 MHz	0.01149
700 MHz	0.00523
800 MHz	0.02282
900 MHz	0.01555
1400 MHz	0.00056
1800 MHz	0.00433
1900 MHz	0.00027
2100 MHz	0.01211
2300 MHz	0.00386
2600 MHz TDD	0.00048
2600 MHz FDD	0.00132
3.4 GHz	0.00376
3.8 GHz	0.00756
Others	0.19327
<b>Total</b>	<b>0.34204</b>

Location 7

Measurement time:	14:24
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02331
174-230 MHz	0.01516
470-694 MHz	0.01139
700 MHz	0.00574
800 MHz	0.11797
900 MHz	0.07750
1400 MHz	0.00055
1800 MHz	0.00540
1900 MHz	0.00027
2100 MHz	0.00525
2300 MHz	0.00215
2600 MHz TDD	0.00048
2600 MHz FDD	0.00112
3.4 GHz	0.00287
3.8 GHz	0.00599
Others	0.18949
<b>Total</b>	<b>0.46464</b>

Location 8

Measurement time:	14:34
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.07395
174-230 MHz	0.01531
470-694 MHz	0.01152
700 MHz	0.00184
800 MHz	0.01389
900 MHz	0.01585
1400 MHz	0.00055
1800 MHz	0.00082
1900 MHz	0.00027
2100 MHz	0.00163
2300 MHz	0.00132
2600 MHz TDD	0.00047
2600 MHz FDD	0.00033
3.4 GHz	0.00279
3.8 GHz	0.00757
Others	0.18858
<b>Total</b>	<b>0.33669</b>

*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.*