

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:	02/02/2023	Time Survey completed:	13:02
Survey address:	Dundee DD4		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY57271744	24/01/2023
Probe	Agos Aria-6000 Antenna	60001089	28/11/2022
Cabling	1.7m Cable	1274	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	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**		

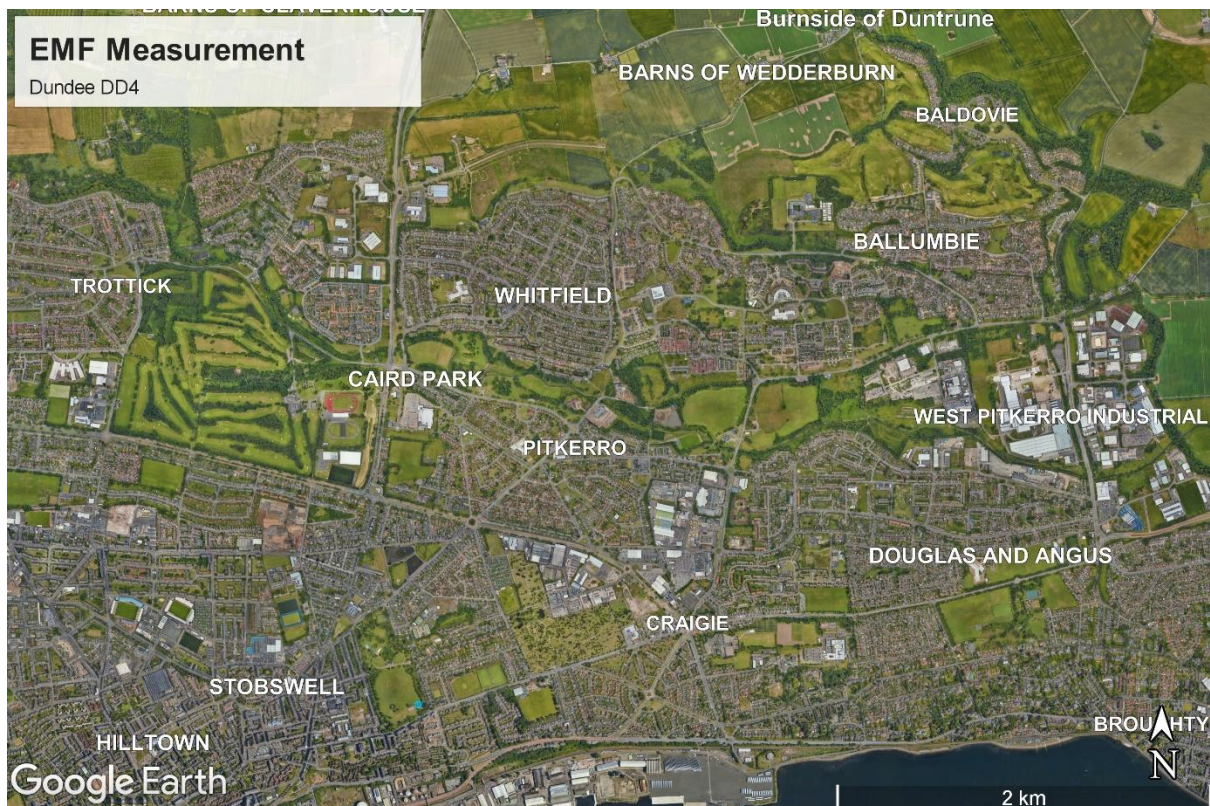
Notes

* 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 between 420 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.



Map data: © Google

Location 1

Measurement time:	12:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01868
800 MHz	0.02931
900 MHz	0.01562
1400 MHz	0.00498
1800 MHz	0.02086
1900 MHz	0.00019
2100 MHz	0.00843
2300 MHz	0.00043
2600 MHz TDD	0.00032
2600 MHz FDD	0.00009
3.4 GHz	0.00110
3.8 GHz	0.00253
Others	0.05343
Total	0.15597

Location 2

Measurement time:	12:23
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00671
800 MHz	0.03652
900 MHz	0.02184
1400 MHz	0.00796
1800 MHz	0.02433
1900 MHz	0.00020
2100 MHz	0.02015
2300 MHz	0.00060
2600 MHz TDD	0.00034
2600 MHz FDD	0.00011
3.4 GHz	0.00116
3.8 GHz	0.00266
Others	0.05582
Total	0.17840

Location 3

Measurement time:	12:31
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01957
800 MHz	0.13176
900 MHz	0.05591
1400 MHz	0.00294
1800 MHz	0.01497
1900 MHz	0.00021
2100 MHz	0.01823
2300 MHz	0.00053
2600 MHz TDD	0.00035
2600 MHz FDD	0.00011
3.4 GHz	0.00124
3.8 GHz	0.00280
Others	0.05945
Total	0.30807

Location 4

Measurement time:	12:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.02563
800 MHz	0.25222
900 MHz	0.11984
1400 MHz	0.00811
1800 MHz	0.00582
1900 MHz	0.00022
2100 MHz	0.00764
2300 MHz	0.00052
2600 MHz TDD	0.00036
2600 MHz FDD	0.00012
3.4 GHz	0.00134
3.8 GHz	0.00289
Others	0.06341
Total	0.48812

Location 5

Measurement time:	12:47
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.09105
800 MHz	0.18219
900 MHz	0.07807
1400 MHz	0.00258
1800 MHz	0.02073
1900 MHz	0.00022
2100 MHz	0.03622
2300 MHz	0.00051
2600 MHz TDD	0.00036
2600 MHz FDD	0.00012
3.4 GHz	0.00132
3.8 GHz	0.00294
Others	0.06345
Total	0.47976

Location 6

Measurement time:	12:56
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00827
800 MHz	0.02262
900 MHz	0.01691
1400 MHz	0.00393
1800 MHz	0.01540
1900 MHz	0.00022
2100 MHz	0.01725
2300 MHz	0.00048
2600 MHz TDD	0.00036
2600 MHz FDD	0.00011
3.4 GHz	0.00134
3.8 GHz	0.00299
Others	0.06071
Total	0.15059

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.