

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:	02/12/2024	Time Survey completed:	11:14
Survey address:	Dartford DA11		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY58311497	23/05/2024
Probe	Agos Aria-6000 Antenna	ARIA-6000-1023	22/01/2021
Cabling	1.7m cable	1407	23/11/2023

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 five locations and are presented in the following pages of this report.



Location 1

Measurement time:	10:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01660
174-230 MHz	0.00782
470-694 MHz	0.00603
700 MHz	0.01608
800 MHz	0.00260
900 MHz	0.00047
1400 MHz	0.01704
1800 MHz	0.01413
1900 MHz	0.00014
2100 MHz	0.00526
2300 MHz	0.00033
2600 MHz TDD	0.00026
2600 MHz FDD	0.00015
3.4 GHz	0.00179
3.8 GHz	0.00339
Others	0.09962
Total	0.19170

Location 2

Measurement time:	10:46
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.03251
174-230 MHz	0.00886
470-694 MHz	0.00614
700 MHz	0.04099
800 MHz	0.00873
900 MHz	0.00050
1400 MHz	0.02235
1800 MHz	0.00898
1900 MHz	0.00014
2100 MHz	0.00835
2300 MHz	0.00035
2600 MHz TDD	0.00026
2600 MHz FDD	0.00014
3.4 GHz	0.00207
3.8 GHz	0.00343
Others	0.10116
Total	0.24494

Location 3

Measurement time:	10:53
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01201
174-230 MHz	0.00767
470-694 MHz	0.00613
700 MHz	0.01761
800 MHz	0.01794
900 MHz	0.00046
1400 MHz	0.02391
1800 MHz	0.01276
1900 MHz	0.00014
2100 MHz	0.00962
2300 MHz	0.00033
2600 MHz TDD	0.00026
2600 MHz FDD	0.00014
3.4 GHz	0.00218
3.8 GHz	0.00348
Others	0.10156
Total	0.21621

Location 4

Measurement time:	11:01
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00735
174-230 MHz	0.00768
470-694 MHz	0.00611
700 MHz	0.00386
800 MHz	0.00251
900 MHz	0.00048
1400 MHz	0.00512
1800 MHz	0.00199
1900 MHz	0.00014
2100 MHz	0.00170
2300 MHz	0.00033
2600 MHz TDD	0.00026
2600 MHz FDD	0.00015
3.4 GHz	0.00170
3.8 GHz	0.00347
Others	0.10130
Total	0.14416

Location 5

Measurement time:	11:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02490
174-230 MHz	0.00790
470-694 MHz	0.00612
700 MHz	0.01366
800 MHz	0.00347
900 MHz	0.00047
1400 MHz	0.00898
1800 MHz	0.00588
1900 MHz	0.00014
2100 MHz	0.00442
2300 MHz	0.00032
2600 MHz TDD	0.00026
2600 MHz FDD	0.00015
3.4 GHz	0.00185
3.8 GHz	0.00347
Others	0.10216
Total	0.18416

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.