

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:	27/11/2024	Time Survey completed:	12:31
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:	11:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00816
174-230 MHz	0.00609
470-694 MHz	0.00509
700 MHz	0.01630
800 MHz	0.00286
900 MHz	0.00041
1400 MHz	0.00375
1800 MHz	0.00161
1900 MHz	0.00011
2100 MHz	0.00205
2300 MHz	0.00025
2600 MHz TDD	0.00021
2600 MHz FDD	0.00015
3.4 GHz	0.00198
3.8 GHz	0.00266
Others	0.08115
Total	0.13283

Location 2

Measurement time:	11:52
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00857
174-230 MHz	0.00646
470-694 MHz	0.00531
700 MHz	0.00428
800 MHz	0.00334
900 MHz	0.00056
1400 MHz	0.00287
1800 MHz	0.00175
1900 MHz	0.00012
2100 MHz	0.00256
2300 MHz	0.00026
2600 MHz TDD	0.00022
2600 MHz FDD	0.00020
3.4 GHz	0.00179
3.8 GHz	0.00281
Others	0.08438
Total	0.12547

Location 3

Measurement time:	11:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00642
174-230 MHz	0.00659
470-694 MHz	0.00542
700 MHz	0.00723
800 MHz	0.00155
900 MHz	0.00041
1400 MHz	0.00188
1800 MHz	0.00141
1900 MHz	0.00012
2100 MHz	0.00230
2300 MHz	0.00028
2600 MHz TDD	0.00022
2600 MHz FDD	0.00018
3.4 GHz	0.00163
3.8 GHz	0.00290
Others	0.08728
Total	0.12582

Location 4

Measurement time:	12:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00760
174-230 MHz	0.00695
470-694 MHz	0.00563
700 MHz	0.00697
800 MHz	0.00266
900 MHz	0.00049
1400 MHz	0.00424
1800 MHz	0.00349
1900 MHz	0.00013
2100 MHz	0.00237
2300 MHz	0.00030
2600 MHz TDD	0.00024
2600 MHz FDD	0.00020
3.4 GHz	0.00206
3.8 GHz	0.00311
Others	0.09230
Total	0.13873

Location 5

Measurement time:	12:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01010
174-230 MHz	0.00702
470-694 MHz	0.00571
700 MHz	0.03843
800 MHz	0.00279
900 MHz	0.00046
1400 MHz	0.00362
1800 MHz	0.00169
1900 MHz	0.00013
2100 MHz	0.00288
2300 MHz	0.00031
2600 MHz TDD	0.00024
2600 MHz FDD	0.00017
3.4 GHz	0.00195
3.8 GHz	0.00316
Others	0.09335
Total	0.17199

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.