

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:	13:58
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:	13:23
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00978
174-230 MHz	0.00901
470-694 MHz	0.00704
700 MHz	0.00095
800 MHz	0.02157
900 MHz	0.00842
1400 MHz	0.00040
1800 MHz	0.00058
1900 MHz	0.00017
2100 MHz	0.00979
2300 MHz	0.00210
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00174
3.8 GHz	0.00425
Others	0.12065
Total	0.19691

Location 2

Measurement time:	13:30
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01314
174-230 MHz	0.00888
470-694 MHz	0.00688
700 MHz	0.00095
800 MHz	0.10825
900 MHz	0.01882
1400 MHz	0.00040
1800 MHz	0.00062
1900 MHz	0.00016
2100 MHz	0.00180
2300 MHz	0.00075
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00168
3.8 GHz	0.00410
Others	0.11736
Total	0.28423

Location 3

Measurement time:	13:38
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02575
174-230 MHz	0.00854
470-694 MHz	0.00656
700 MHz	0.00097
800 MHz	0.05530
900 MHz	0.01060
1400 MHz	0.00036
1800 MHz	0.00058
1900 MHz	0.00015
2100 MHz	0.00158
2300 MHz	0.00078
2600 MHz TDD	0.00028
2600 MHz FDD	0.00014
3.4 GHz	0.00156
3.8 GHz	0.00381
Others	0.10998
Total	0.22695

Location 4

Measurement time:	13:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01002
174-230 MHz	0.00790
470-694 MHz	0.00636
700 MHz	0.00086
800 MHz	0.05362
900 MHz	0.01032
1400 MHz	0.00041
1800 MHz	0.00050
1900 MHz	0.00015
2100 MHz	0.00151
2300 MHz	0.00061
2600 MHz TDD	0.00027
2600 MHz FDD	0.00014
3.4 GHz	0.00149
3.8 GHz	0.00363
Others	0.10562
Total	0.20343

Location 5

Measurement time:	13:52
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01899
174-230 MHz	0.00782
470-694 MHz	0.00623
700 MHz	0.00088
800 MHz	0.02336
900 MHz	0.00916
1400 MHz	0.00036
1800 MHz	0.00051
1900 MHz	0.00014
2100 MHz	0.00552
2300 MHz	0.00150
2600 MHz TDD	0.00027
2600 MHz FDD	0.00014
3.4 GHz	0.00146
3.8 GHz	0.00356
Others	0.10392
Total	0.18381

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.