

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:	13/08/2024	Time Survey completed:	14:06
Survey address:	London EN5		

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	1188	22/01/2021

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



Location 1

Measurement time:	13:24
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00910
174-230 MHz	0.01012
470-694 MHz	0.00783
700 MHz	0.00205
800 MHz	0.01827
900 MHz	0.02974
1400 MHz	0.00040
1800 MHz	0.00709
1900 MHz	0.00019
2100 MHz	0.00432
2300 MHz	0.00186
2600 MHz TDD	0.00035
2600 MHz FDD	0.00943
3.4 GHz	0.00195
3.8 GHz	0.00564
Others	0.13931
Total	0.24763

Location 2

Measurement time:	13:32
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00878
174-230 MHz	0.01012
470-694 MHz	0.00786
700 MHz	0.00160
800 MHz	0.00690
900 MHz	0.01231
1400 MHz	0.00040
1800 MHz	0.00777
1900 MHz	0.00019
2100 MHz	0.01392
2300 MHz	0.00179
2600 MHz TDD	0.00035
2600 MHz FDD	0.00534
3.4 GHz	0.00195
3.8 GHz	0.00510
Others	0.13666
Total	0.22103

Location 3

Measurement time:	13:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00880
174-230 MHz	0.00998
470-694 MHz	0.00776
700 MHz	0.00227
800 MHz	0.01371
900 MHz	0.01311
1400 MHz	0.00039
1800 MHz	0.00561
1900 MHz	0.00018
2100 MHz	0.01545
2300 MHz	0.00197
2600 MHz TDD	0.00034
2600 MHz FDD	0.00627
3.4 GHz	0.00192
3.8 GHz	0.00526
Others	0.13505
Total	0.22811

Location 4

Measurement time:	13:46
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00908
174-230 MHz	0.01001
470-694 MHz	0.00787
700 MHz	0.00192
800 MHz	0.01962
900 MHz	0.01466
1400 MHz	0.00042
1800 MHz	0.00686
1900 MHz	0.00019
2100 MHz	0.00516
2300 MHz	0.00289
2600 MHz TDD	0.00035
2600 MHz FDD	0.00845
3.4 GHz	0.00196
3.8 GHz	0.00587
Others	0.13676
Total	0.23205

Location 5

Measurement time:	13:53
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00940
174-230 MHz	0.01025
470-694 MHz	0.00790
700 MHz	0.00207
800 MHz	0.01221
900 MHz	0.00790
1400 MHz	0.00039
1800 MHz	0.00849
1900 MHz	0.00019
2100 MHz	0.00418
2300 MHz	0.00146
2600 MHz TDD	0.00035
2600 MHz FDD	0.00572
3.4 GHz	0.00198
3.8 GHz	0.00555
Others	0.13783
Total	0.21588

Location 6

Measurement time:	14:00
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00938
174-230 MHz	0.01042
470-694 MHz	0.00797
700 MHz	0.00188
800 MHz	0.01362
900 MHz	0.01898
1400 MHz	0.00040
1800 MHz	0.00924
1900 MHz	0.00019
2100 MHz	0.00341
2300 MHz	0.00109
2600 MHz TDD	0.00036
2600 MHz FDD	0.00909
3.4 GHz	0.00201
3.8 GHz	0.00557
Others	0.14007
Total	0.23370

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.