

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:	01/08/2024	Time Survey completed:	12:45
Survey address:	London UB5		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY58311497	23/05/2024
Probe	Agos Aria-6000 Antenna	ARIA-600-1023	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:	11:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00642
174-230 MHz	0.00734
470-694 MHz	0.00595
700 MHz	0.01809
800 MHz	0.05639
900 MHz	0.01508
1400 MHz	0.00055
1800 MHz	0.00529
1900 MHz	0.00013
2100 MHz	0.02001
2300 MHz	0.00130
2600 MHz TDD	0.00025
2600 MHz FDD	0.00016
3.4 GHz	0.00137
3.8 GHz	0.01159
Others	0.09901
Total	0.24892

Location 2

Measurement time:	12:07
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00718
174-230 MHz	0.00797
470-694 MHz	0.00637
700 MHz	0.00202
800 MHz	0.03608
900 MHz	0.02647
1400 MHz	0.00084
1800 MHz	0.00329
1900 MHz	0.00014
2100 MHz	0.01007
2300 MHz	0.00227
2600 MHz TDD	0.00027
2600 MHz FDD	0.00017
3.4 GHz	0.00150
3.8 GHz	0.00442
Others	0.10804
Total	0.21713

Location 3

Measurement time:	12:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00750
174-230 MHz	0.00853
470-694 MHz	0.00669
700 MHz	0.00229
800 MHz	0.04117
900 MHz	0.01017
1400 MHz	0.00072
1800 MHz	0.00409
1900 MHz	0.00016
2100 MHz	0.01079
2300 MHz	0.00317
2600 MHz TDD	0.00029
2600 MHz FDD	0.00021
3.4 GHz	0.00163
3.8 GHz	0.00692
Others	0.11603
Total	0.22035

Location 4

Measurement time:	12:23
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00788
174-230 MHz	0.00899
470-694 MHz	0.00716
700 MHz	0.00536
800 MHz	0.08959
900 MHz	0.06027
1400 MHz	0.00080
1800 MHz	0.00178
1900 MHz	0.00016
2100 MHz	0.00486
2300 MHz	0.00197
2600 MHz TDD	0.00030
2600 MHz FDD	0.00019
3.4 GHz	0.00175
3.8 GHz	0.00530
Others	0.12332
Total	0.31969

Location 5

Measurement time:	12:30
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00834
174-230 MHz	0.00955
470-694 MHz	0.00737
700 MHz	0.00646
800 MHz	0.04526
900 MHz	0.02283
1400 MHz	0.00651
1800 MHz	0.00480
1900 MHz	0.00018
2100 MHz	0.00753
2300 MHz	0.00414
2600 MHz TDD	0.00032
2600 MHz FDD	0.00039
3.4 GHz	0.00237
3.8 GHz	0.00547
Others	0.12869
Total	0.26021

Location 6

Measurement time:	12:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00877
174-230 MHz	0.00999
470-694 MHz	0.00778
700 MHz	0.01068
800 MHz	0.08015
900 MHz	0.01458
1400 MHz	0.00081
1800 MHz	0.00853
1900 MHz	0.00018
2100 MHz	0.02046
2300 MHz	0.00137
2600 MHz TDD	0.00034
2600 MHz FDD	0.00023
3.4 GHz	0.00197
3.8 GHz	0.01558
Others	0.13566
Total	0.31708

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.