

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 420 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:	25/01/2023	Time Survey completed:	11:20
Survey address:	Morley, Leeds, West Yorkshire LS27		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072594	13/04/2022
Probe	Agos Aria-6000 Antenna	60001024	07/01/2022
Cabling	1.7m Cable	1189	22/01/2023

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.

Mobile bands covered by this report

Frequency Band	Frequency	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**		

Notes

* 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.



Map data: © Google

Location 1

Measurement time:	10:31
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00655
800 MHz	0.00318
900 MHz	0.00051
1400 MHz	0.00419
1800 MHz	0.00286
1900 MHz	0.00013
2100 MHz	0.00264
2300 MHz	0.00038
2600 MHz TDD	0.00025
2600 MHz FDD	0.00016
3.4 GHz	0.00149
3.8 GHz	0.00317
Others	0.05042
Total	0.07593

Location 2

Measurement time:	10:41
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00641
800 MHz	0.00209
900 MHz	0.00046
1400 MHz	0.00200
1800 MHz	0.00128
1900 MHz	0.00014
2100 MHz	0.00108
2300 MHz	0.00032
2600 MHz TDD	0.00027
2600 MHz FDD	0.00015
3.4 GHz	0.00152
3.8 GHz	0.00343
Others	0.05408
Total	0.07323

Location 3

Measurement time:	10:49
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01721
800 MHz	0.00629
900 MHz	0.00047
1400 MHz	0.02239
1800 MHz	0.00289
1900 MHz	0.00015
2100 MHz	0.00116
2300 MHz	0.00035
2600 MHz TDD	0.00028
2600 MHz FDD	0.00015
3.4 GHz	0.00165
3.8 GHz	0.00364
Others	0.05701
Total	0.11364

Location 4

Measurement time:	10:57
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00264
800 MHz	0.00151
900 MHz	0.00052
1400 MHz	0.00208
1800 MHz	0.00366
1900 MHz	0.00015
2100 MHz	0.00352
2300 MHz	0.00036
2600 MHz TDD	0.00029
2600 MHz FDD	0.00015
3.4 GHz	0.00168
3.8 GHz	0.00375
Others	0.05828
Total	0.07859

Location 5

Measurement time:	11:06
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01020
800 MHz	0.00628
900 MHz	0.00050
1400 MHz	0.00585
1800 MHz	0.00527
1900 MHz	0.00015
2100 MHz	0.00250
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00027
3.4 GHz	0.00175
3.8 GHz	0.00389
Others	0.06063
Total	0.09795

Location 6

Measurement time:	11:14
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00829
800 MHz	0.00475
900 MHz	0.00058
1400 MHz	0.00393
1800 MHz	0.00233
1900 MHz	0.00016
2100 MHz	0.00223
2300 MHz	0.00047
2600 MHz TDD	0.00030
2600 MHz FDD	0.00026
3.4 GHz	0.00179
3.8 GHz	0.00399
Others	0.06197
Total	0.09105

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.