

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:	26/02/2025	Time Survey completed:	11:49
Survey address:	Leeds LS15		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY50672594	04/11/2024
Probe	Agos Aria-6000 Antenna	6000-1024	30/03/2021
Cabling	1.7m cable	1383	12/11/2023

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



Location 1

Measurement time:	11:04
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00766
174-230 MHz	0.00882
470-694 MHz	0.00719
700 MHz	0.00225
800 MHz	0.00323
900 MHz	0.00053
1400 MHz	0.01141
1800 MHz	0.00906
1900 MHz	0.00016
2100 MHz	0.00238
2300 MHz	0.00037
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00264
3.8 GHz	0.00392
Others	0.11650
Total	0.17655

Location 2

Measurement time:	11:11
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00853
174-230 MHz	0.00908
470-694 MHz	0.00733
700 MHz	0.00405
800 MHz	0.00674
900 MHz	0.00070
1400 MHz	0.00938
1800 MHz	0.00837
1900 MHz	0.00016
2100 MHz	0.00688
2300 MHz	0.00039
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00362
3.8 GHz	0.00402
Others	0.11939
Total	0.18911

Location 3

Measurement time:	11:19
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00820
174-230 MHz	0.00924
470-694 MHz	0.00749
700 MHz	0.00227
800 MHz	0.00380
900 MHz	0.00124
1400 MHz	0.00615
1800 MHz	0.00783
1900 MHz	0.00016
2100 MHz	0.00296
2300 MHz	0.00042
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00389
3.8 GHz	0.00411
Others	0.12111
Total	0.17935

Location 4

Measurement time:	11:27
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00843
174-230 MHz	0.00951
470-694 MHz	0.00776
700 MHz	0.00175
800 MHz	0.01061
900 MHz	0.01318
1400 MHz	0.00335
1800 MHz	0.02143
1900 MHz	0.00017
2100 MHz	0.00264
2300 MHz	0.00094
2600 MHz TDD	0.00032
2600 MHz FDD	0.00016
3.4 GHz	0.00423
3.8 GHz	0.00425
Others	0.12494
Total	0.21367

Location 5

Measurement time:	11:34
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00810
174-230 MHz	0.00957
470-694 MHz	0.00767
700 MHz	0.00257
800 MHz	0.01269
900 MHz	0.06016
1400 MHz	0.00550
1800 MHz	0.00764
1900 MHz	0.00017
2100 MHz	0.01223
2300 MHz	0.00323
2600 MHz TDD	0.00032
2600 MHz FDD	0.00017
3.4 GHz	0.00485
3.8 GHz	0.00431
Others	0.12711
Total	0.26630

Location 6

Measurement time:	11:43
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00816
174-230 MHz	0.00968
470-694 MHz	0.00769
700 MHz	0.00193
800 MHz	0.00264
900 MHz	0.00056
1400 MHz	0.01149
1800 MHz	0.00704
1900 MHz	0.00017
2100 MHz	0.00182
2300 MHz	0.00041
2600 MHz TDD	0.00033
2600 MHz FDD	0.00017
3.4 GHz	0.00267
3.8 GHz	0.00434
Others	0.12745
Total	0.18655

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.