

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:	15:08
Survey address:	Leeds LS4		

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:	14:23
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00810
174-230 MHz	0.00862
470-694 MHz	0.00702
700 MHz	0.00302
800 MHz	0.03044
900 MHz	0.01374
1400 MHz	0.00238
1800 MHz	0.00325
1900 MHz	0.00015
2100 MHz	0.00237
2300 MHz	0.00083
2600 MHz TDD	0.00029
2600 MHz FDD	0.00015
3.4 GHz	0.00240
3.8 GHz	0.00382
Others	0.11403
Total	0.20060

Location 2

Measurement time:	14:30
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00786
174-230 MHz	0.00896
470-694 MHz	0.00720
700 MHz	0.00558
800 MHz	0.09373
900 MHz	0.01795
1400 MHz	0.00244
1800 MHz	0.00312
1900 MHz	0.00016
2100 MHz	0.00549
2300 MHz	0.00350
2600 MHz TDD	0.00030
2600 MHz FDD	0.00018
3.4 GHz	0.00205
3.8 GHz	0.00398
Others	0.11940
Total	0.28191

Location 3

Measurement time:	14:37
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00814
174-230 MHz	0.00926
470-694 MHz	0.00736
700 MHz	0.00838
800 MHz	0.08791
900 MHz	0.02824
1400 MHz	0.00108
1800 MHz	0.00188
1900 MHz	0.00016
2100 MHz	0.00913
2300 MHz	0.00218
2600 MHz TDD	0.00031
2600 MHz FDD	0.00020
3.4 GHz	0.00208
3.8 GHz	0.00411
Others	0.12153
Total	0.29198

Location 4

Measurement time:	14:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00865
174-230 MHz	0.00936
470-694 MHz	0.00741
700 MHz	0.02037
800 MHz	0.18454
900 MHz	0.04959
1400 MHz	0.00371
1800 MHz	0.00501
1900 MHz	0.00017
2100 MHz	0.00703
2300 MHz	0.00216
2600 MHz TDD	0.00032
2600 MHz FDD	0.00021
3.4 GHz	0.00319
3.8 GHz	0.00416
Others	0.12481
Total	0.43069

Location 5

Measurement time:	14:53
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00866
174-230 MHz	0.00965
470-694 MHz	0.00759
700 MHz	0.01488
800 MHz	0.00490
900 MHz	0.00185
1400 MHz	0.00125
1800 MHz	0.00248
1900 MHz	0.00017
2100 MHz	0.00114
2300 MHz	0.00048
2600 MHz TDD	0.00032
2600 MHz FDD	0.00024
3.4 GHz	0.00217
3.8 GHz	0.00429
Others	0.12546
Total	0.18554

Location 6

Measurement time:	15:02
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00837
174-230 MHz	0.00977
470-694 MHz	0.00770
700 MHz	0.00334
800 MHz	0.02252
900 MHz	0.00847
1400 MHz	0.00177
1800 MHz	0.00283
1900 MHz	0.00017
2100 MHz	0.00252
2300 MHz	0.00083
2600 MHz TDD	0.00033
2600 MHz FDD	0.00018
3.4 GHz	0.00263
3.8 GHz	0.00438
Others	0.12818
Total	0.20400

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.