

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:	24/04/2024	Time Survey completed:	13:40
Survey address:	Leeming DL7		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY50672594	02/11/2023
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 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**		

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.

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:	12:53
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5 - 108 MHz	0.00691
174 - 230 MHz	0.00761
470 - 694 MHz	0.00646
700 MHz	0.00872
800 MHz	0.41447
900 MHz	0.10115
1400 MHz	0.02109
1800 MHz	0.03282
1900 MHz	0.00013
2100 MHz	0.00262
2300 MHz	0.00031
2600 MHz TDD	0.00025
2600 MHz FDD	0.00012
3.4 GHz	0.00218
3.8 GHz	0.00323
others	0.10083
total	0.70890

Location 2

Measurement Time:	13:00
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5 - 108 MHz	0.00767
174 - 230 MHz	0.00805
470 - 694 MHz	0.00666
700 MHz	0.00365
800 MHz	0.09014
900 MHz	0.01758
1400 MHz	0.00539
1800 MHz	0.00306
1900 MHz	0.00014
2100 MHz	0.00217
2300 MHz	0.00033
2600 MHz TDD	0.00027
2600 MHz FDD	0.00013
3.4 GHz	0.00184
3.8 GHz	0.00347
others	0.10501
total	0.25556

Location 3

Measurement Time:	13:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5 - 108 MHz	0.00774
174 - 230 MHz	0.00834
470 - 694 MHz	0.00689
700 MHz	0.00625
800 MHz	0.10138
900 MHz	0.05502
1400 MHz	0.00746
1800 MHz	0.00359
1900 MHz	0.00015
2100 MHz	0.00172
2300 MHz	0.00034
2600 MHz TDD	0.00028
2600 MHz FDD	0.00014
3.4 GHz	0.00182
3.8 GHz	0.00367
others	0.11133
total	0.31613

Location 4

Measurement Time:	13:18
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5 - 108 MHz	0.00915
174 - 230 MHz	0.00884
470 - 694 MHz	0.00768
700 MHz	0.00552
800 MHz	0.05701
900 MHz	0.02088
1400 MHz	0.00467
1800 MHz	0.00798
1900 MHz	0.00016
2100 MHz	0.00139
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00181
3.8 GHz	0.00391
others	0.11685
total	0.24666

Location 5

Measurement Time:	13:26
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5 - 108 MHz	0.00826
174 - 230 MHz	0.00915
470 - 694 MHz	0.00807
700 MHz	0.01018
800 MHz	0.07609
900 MHz	0.02017
1400 MHz	0.00789
1800 MHz	0.00428
1900 MHz	0.00016
2100 MHz	0.00119
2300 MHz	0.00038
2600 MHz TDD	0.00031
2600 MHz FDD	0.00017
3.4 GHz	0.00186
3.8 GHz	0.00407
others	0.12106
total	0.27327

Location 6

Measurement Time:	13:34
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5 - 108 MHz	0.00874
174 - 230 MHz	0.00941
470 - 694 MHz	0.00872
700 MHz	0.00751
800 MHz	0.24592
900 MHz	0.52497
1400 MHz	0.00678
1800 MHz	0.00709
1900 MHz	0.00017
2100 MHz	0.00178
2300 MHz	0.00038
2600 MHz TDD	0.00032
2600 MHz FDD	0.00016
3.4 GHz	0.00194
3.8 GHz	0.00417
others	0.13784
total	0.96589

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.