

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:	20/12/2024	Time Survey completed:	09:51
Survey address:	Leeds LS14		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY50672594	06/11/2024
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 five locations and are presented in the following pages of this report.



Location 1

Measurement time:	09:17
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00689
174-230 MHz	0.00783
470-694 MHz	0.00647
700 MHz	0.00142
800 MHz	0.00088
900 MHz	0.00053
1400 MHz	0.00029
1800 MHz	0.00116
1900 MHz	0.00014
2100 MHz	0.00075
2300 MHz	0.00045
2600 MHz TDD	0.00026
2600 MHz FDD	0.00014
3.4 GHz	0.00151
3.8 GHz	0.00338
Others	0.10169
Total	0.13379

Location 2

Measurement time:	09:24
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00723
174-230 MHz	0.00811
470-694 MHz	0.00666
700 MHz	0.00406
800 MHz	0.00159
900 MHz	0.00061
1400 MHz	0.00034
1800 MHz	0.00835
1900 MHz	0.00014
2100 MHz	0.00223
2300 MHz	0.00044
2600 MHz TDD	0.00028
2600 MHz FDD	0.00015
3.4 GHz	0.00183
3.8 GHz	0.00360
Others	0.10613
Total	0.15175

Location 3

Measurement time:	09:31
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00804
174-230 MHz	0.00838
470-694 MHz	0.00703
700 MHz	0.04401
800 MHz	0.00756
900 MHz	0.00056
1400 MHz	0.00050
1800 MHz	0.01713
1900 MHz	0.00015
2100 MHz	0.01341
2300 MHz	0.00046
2600 MHz TDD	0.00028
2600 MHz FDD	0.00020
3.4 GHz	0.00192
3.8 GHz	0.00379
Others	0.10963
Total	0.22306

Location 4

Measurement time:	09:38
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00855
174-230 MHz	0.00852
470-694 MHz	0.00725
700 MHz	0.04284
800 MHz	0.01097
900 MHz	0.00151
1400 MHz	0.00039
1800 MHz	0.01820
1900 MHz	0.00015
2100 MHz	0.00631
2300 MHz	0.00074
2600 MHz TDD	0.00029
2600 MHz FDD	0.00019
3.4 GHz	0.00248
3.8 GHz	0.00396
Others	0.11216
Total	0.22449

Location 5

Measurement time:	09:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01183
174-230 MHz	0.00878
470-694 MHz	0.00935
700 MHz	0.01153
800 MHz	0.00421
900 MHz	0.00129
1400 MHz	0.00235
1800 MHz	0.00633
1900 MHz	0.00015
2100 MHz	0.00499
2300 MHz	0.00201
2600 MHz TDD	0.00029
2600 MHz FDD	0.00020
3.4 GHz	0.00250
3.8 GHz	0.00390
Others	0.11416
Total	0.18388

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.