

# 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)<sup>1</sup>, 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 floor<sup>2</sup> 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%.

<b>Date of Survey:</b>	16/12/2025	<b>Time Survey completed:</b>	14:02
<b>Survey address:</b>	Wigan WN5		

Measurement equipment		Serial number	Calibration Date
<b>Meter</b>	Keysight Fieldfox N9915A Spectrum Analyser	US55240265	31/10/2025
<b>Probe</b>	Agos Aria-6000 Antenna	Aria-6000-1022	08/07/2025
<b>Cabling</b>	1.7m cable	1405	08/07/2025

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<sup>1</sup> <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>

<sup>2</sup> 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 30 MHz and 6 GHz.

## Survey locations

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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**

<b>Measurement time:</b>	<b>13:13</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.01041
174-230 MHz	0.00972
470-694 MHz	0.00755
700 MHz	0.01265
800 MHz	0.00584
900 MHz	0.00056
1400 MHz	0.00502
1800 MHz	0.03037
1900 MHz	0.00014
2100 MHz	0.00657
2300 MHz	0.00032
2600 MHz TDD	0.00033
2600 MHz FDD	0.00017
3.4 GHz	0.00190
3.8 GHz	0.00315
Others	0.12651
<b>Total</b>	<b>0.22120</b>

## Location 2

Measurement time:	13:24
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01022
174-230 MHz	0.00935
470-694 MHz	0.00726
700 MHz	0.03694
800 MHz	0.00427
900 MHz	0.00055
1400 MHz	0.00210
1800 MHz	0.00081
1900 MHz	0.00013
2100 MHz	0.00170
2300 MHz	0.00031
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00203
3.8 GHz	0.00300
Others	0.12069
<b>Total</b>	<b>0.19983</b>

### Location 3

Measurement time:	13:32
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00977
174-230 MHz	0.00904
470-694 MHz	0.00706
700 MHz	0.01899
800 MHz	0.00321
900 MHz	0.00054
1400 MHz	0.00809
1800 MHz	0.00291
1900 MHz	0.00013
2100 MHz	0.00148
2300 MHz	0.00030
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00147
3.8 GHz	0.00286
Others	0.11678
<b>Total</b>	<b>0.18309</b>

#### Location 4

Measurement time:	13:40
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00961
174-230 MHz	0.00902
470-694 MHz	0.00694
700 MHz	0.01205
800 MHz	0.00297
900 MHz	0.00051
1400 MHz	0.00604
1800 MHz	0.01459
1900 MHz	0.00012
2100 MHz	0.00243
2300 MHz	0.00029
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00147
3.8 GHz	0.00278
Others	0.11399
<b>Total</b>	<b>0.18328</b>

## Location 5

Measurement time:	13:48
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00998
174-230 MHz	0.00897
470-694 MHz	0.00708
700 MHz	0.00724
800 MHz	0.00148
900 MHz	0.00051
1400 MHz	0.00145
1800 MHz	0.00113
1900 MHz	0.00012
2100 MHz	0.00104
2300 MHz	0.00029
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00164
3.8 GHz	0.00278
Others	0.11424
<b>Total</b>	<b>0.15842</b>

## Location 6

Measurement time:	13:56
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00958
174-230 MHz	0.00882
470-694 MHz	0.00689
700 MHz	0.01364
800 MHz	0.00499
900 MHz	0.00052
1400 MHz	0.00768
1800 MHz	0.07186
1900 MHz	0.00012
2100 MHz	0.00775
2300 MHz	0.00029
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00162
3.8 GHz	0.00277
Others	0.11431
<b>Total</b>	<b>0.25128</b>

*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.*