

# 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>	27/03/2025	<b>Time Survey completed:</b>	16:18
<b>Survey address:</b>	Kirkham PR4		

Measurement equipment		Serial number	Calibration Date
<b>Meter</b>	Keysight Fieldfox N9915A Spectrum Analyser	MY50672593	20/03/2025
<b>Probe</b>	Agos Aria-6000 Antenna	6000-1022	22/01/2021
<b>Cabling</b>	1.7m cable	1462	18/01/2024

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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>	15:24
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00848
174-230 MHz	0.00980
470-694 MHz	0.00783
700 MHz	0.00161
800 MHz	0.00762
900 MHz	0.06082
1400 MHz	0.00038
1800 MHz	0.00053
1900 MHz	0.00018
2100 MHz	0.00462
2300 MHz	0.00038
2600 MHz TDD	0.00037
2600 MHz FDD	0.00052
3.4 GHz	0.00243
3.8 GHz	0.00418
Others	0.12806
<b>Total</b>	<b>0.23780</b>

## Location 2

<b>Measurement time:</b>	<b>15:32</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00927
174-230 MHz	0.01037
470-694 MHz	0.00822
700 MHz	0.00406
800 MHz	0.01532
900 MHz	0.02023
1400 MHz	0.00041
1800 MHz	0.00056
1900 MHz	0.00019
2100 MHz	0.00716
2300 MHz	0.00040
2600 MHz TDD	0.00039
2600 MHz FDD	0.00092
3.4 GHz	0.00227
3.8 GHz	0.00453
Others	0.13679
<b>Total</b>	<b>0.22110</b>

### Location 3

<b>Measurement time:</b>	<b>15:41</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00962
174-230 MHz	0.01106
470-694 MHz	0.00857
700 MHz	0.00596
800 MHz	0.02196
900 MHz	0.08901
1400 MHz	0.00043
1800 MHz	0.00059
1900 MHz	0.00020
2100 MHz	0.02935
2300 MHz	0.00042
2600 MHz TDD	0.00044
2600 MHz FDD	0.00179
3.4 GHz	0.00243
3.8 GHz	0.00482
Others	0.14343
<b>Total</b>	<b>0.33009</b>

#### Location 4

<b>Measurement time:</b>	<b>15:55</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00979
174-230 MHz	0.01127
470-694 MHz	0.00883
700 MHz	0.00246
800 MHz	0.01106
900 MHz	0.02373
1400 MHz	0.00044
1800 MHz	0.00061
1900 MHz	0.00021
2100 MHz	0.00229
2300 MHz	0.00044
2600 MHz TDD	0.00042
2600 MHz FDD	0.00064
3.4 GHz	0.00243
3.8 GHz	0.00503
Others	0.14849
<b>Total</b>	<b>0.22814</b>

## Location 5

<b>Measurement time:</b>	<b>16:04</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.01013
174-230 MHz	0.01153
470-694 MHz	0.00895
700 MHz	0.00191
800 MHz	0.00518
900 MHz	0.04685
1400 MHz	0.00045
1800 MHz	0.00062
1900 MHz	0.00021
2100 MHz	0.01020
2300 MHz	0.00054
2600 MHz TDD	0.00044
2600 MHz FDD	0.00096
3.4 GHz	0.00269
3.8 GHz	0.00509
Others	0.15121
<b>Total</b>	<b>0.25695</b>



## Location 6

<b>Measurement time:</b>	<b>16:12</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.01031
174-230 MHz	0.01171
470-694 MHz	0.00909
700 MHz	0.00155
800 MHz	0.00601
900 MHz	0.05452
1400 MHz	0.00046
1800 MHz	0.00063
1900 MHz	0.00022
2100 MHz	0.00533
2300 MHz	0.00046
2600 MHz TDD	0.00045
2600 MHz FDD	0.00116
3.4 GHz	0.00359
3.8 GHz	0.00525
Others	0.15467
<b>Total</b>	<b>0.26539</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.*