

# 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 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 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>	17/12/2024	<b>Time Survey completed:</b>	10:24
<b>Survey address:</b>	Motherwell ML1		

Measurement equipment		Serial number	Calibration Date
<b>Meter</b>	Keysight Fieldfox N9915A Spectrum Analyser	MY57271744	31/12/2023
<b>Probe</b>	Agos Aria-6000 Antenna	ARIA-6000-1089	31/12/2023
<b>Cabling</b>	1.7m cable	1240	31/12/2023

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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.

## 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:	09:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00128
800 MHz	0.00856
900 MHz	0.00702
1400 MHz	0.00063
1800 MHz	0.00065
1900 MHz	0.00020
2100 MHz	0.00227
2300 MHz	0.00042
2600 MHz TDD	0.00032
2600 MHz FDD	0.00011
3.4 GHz	0.00128
3.8 GHz	0.00271
Others	0.15684
<b>Total</b>	<b>0.18228</b>

### Location 2

Measurement time:	09:38
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00126
800 MHz	0.04402
900 MHz	0.01978
1400 MHz	0.00060
1800 MHz	0.00062
1900 MHz	0.00020
2100 MHz	0.00350
2300 MHz	0.00041
2600 MHz TDD	0.00032
2600 MHz FDD	0.00010
3.4 GHz	0.00122
3.8 GHz	0.00263
Others	0.16159
<b>Total</b>	<b>0.23624</b>

### Location 3

Measurement time:	09:54
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00128
800 MHz	0.32946
900 MHz	0.11880
1400 MHz	0.00052
1800 MHz	0.00062
1900 MHz	0.00020
2100 MHz	0.12723
2300 MHz	0.00043
2600 MHz TDD	0.00033
2600 MHz FDD	0.00011
3.4 GHz	0.00119
3.8 GHz	0.00278
Others	0.16262
<b>Total</b>	<b>0.74557</b>

### Location 4

Measurement time:	10:02
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00132
800 MHz	0.01621
900 MHz	0.01920
1400 MHz	0.00062
1800 MHz	0.00069
1900 MHz	0.00020
2100 MHz	0.00770
2300 MHz	0.00043
2600 MHz TDD	0.00033
2600 MHz FDD	0.00011
3.4 GHz	0.00130
3.8 GHz	0.00281
Others	0.15626
<b>Total</b>	<b>0.20717</b>

### Location 5

Measurement time:	10:09
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00124
800 MHz	0.06142
900 MHz	0.09083
1400 MHz	0.00049
1800 MHz	0.00060
1900 MHz	0.00020
2100 MHz	0.01361
2300 MHz	0.00043
2600 MHz TDD	0.00033
2600 MHz FDD	0.00011
3.4 GHz	0.00116
3.8 GHz	0.00279
Others	0.16456
<b>Total</b>	<b>0.33777</b>

### Location 6

Measurement time:	10:18
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00128
800 MHz	0.03965
900 MHz	0.01547
1400 MHz	0.00055
1800 MHz	0.00065
1900 MHz	0.00021
2100 MHz	0.00217
2300 MHz	0.00043
2600 MHz TDD	0.00033
2600 MHz FDD	0.00011
3.4 GHz	0.00123
3.8 GHz	0.00280
Others	0.15994
<b>Total</b>	<b>0.22483</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.*