

# 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>	02/05/2025	<b>Time Survey completed:</b>	15:47
<b>Survey address:</b>	Nelson BB9		

Measurement equipment		Serial number	Calibration Date
<b>Meter</b>	Keysight Fieldfox N9915A Spectrum Analyser	MY56072610	05/03/2025
<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 five locations and are presented in the following pages of this report.



**Location 1**

<b>Measurement time:</b>	15:00
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.01309
174-230 MHz	0.01491
470-694 MHz	0.01037
700 MHz	0.00627
800 MHz	0.10873
900 MHz	0.12404
1400 MHz	0.00200
1800 MHz	0.00068
1900 MHz	0.00023
2100 MHz	0.02057
2300 MHz	0.00048
2600 MHz TDD	0.00045
2600 MHz FDD	0.00225
3.4 GHz	0.00318
3.8 GHz	0.00552
Others	0.17684
<b>Total</b>	<b>0.48961</b>

## Location 2

<b>Measurement time:</b>	<b>15:08</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.01625
174-230 MHz	0.01504
470-694 MHz	0.01093
700 MHz	0.00460
800 MHz	0.00826
900 MHz	0.04189
1400 MHz	0.00149
1800 MHz	0.00072
1900 MHz	0.00025
2100 MHz	0.00343
2300 MHz	0.00051
2600 MHz TDD	0.00045
2600 MHz FDD	0.00101
3.4 GHz	0.00290
3.8 GHz	0.00594
Others	0.18887
<b>Total</b>	<b>0.30254</b>

### Location 3

<b>Measurement time:</b>	<b>15:24</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.02472
174-230 MHz	0.01909
470-694 MHz	0.01228
700 MHz	0.00298
800 MHz	0.09061
900 MHz	0.04907
1400 MHz	0.00152
1800 MHz	0.00082
1900 MHz	0.00029
2100 MHz	0.06047
2300 MHz	0.00058
2600 MHz TDD	0.00055
2600 MHz FDD	0.00257
3.4 GHz	0.00339
3.8 GHz	0.00689
Others	0.21373
<b>Total</b>	<b>0.48953</b>

#### Location 4

<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	0.02916
174-230 MHz	0.02009
470-694 MHz	0.01280
700 MHz	0.00561
800 MHz	0.03399
900 MHz	0.04706
1400 MHz	0.00248
1800 MHz	0.00087
1900 MHz	0.00030
2100 MHz	0.01069
2300 MHz	0.00061
2600 MHz TDD	0.00053
2600 MHz FDD	0.00077
3.4 GHz	0.00371
3.8 GHz	0.00732
Others	0.22615
<b>Total</b>	<b>0.40214</b>

## Location 5

<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	0.01655
174-230 MHz	0.01887
470-694 MHz	0.01325
700 MHz	0.00723
800 MHz	0.12584
900 MHz	0.13688
1400 MHz	0.00259
1800 MHz	0.00090
1900 MHz	0.00031
2100 MHz	0.01441
2300 MHz	0.00064
2600 MHz TDD	0.00057
2600 MHz FDD	0.00156
3.4 GHz	0.00508
3.8 GHz	0.00767
Others	0.23768
<b>Total</b>	<b>0.59002</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.*