

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:	16/01/2025	Time Survey completed:	15:39
Survey address:	Nelson BB9		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	US55240265	17/04/2024
Probe	Agos Aria-6000 Antenna	6000-1024	30/03/2021
Cabling	1.7m cable	1383	12/10/2023

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 six locations and are presented in the following pages of this report.



Location 1

Measurement time:	14:54
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00782
174-230 MHz	0.00706
470-694 MHz	0.00570
700 MHz	0.03458
800 MHz	0.00358
900 MHz	0.00049
1400 MHz	0.06869
1800 MHz	0.01979
1900 MHz	0.00012
2100 MHz	0.00686
2300 MHz	0.00030
2600 MHz TDD	0.00033
2600 MHz FDD	0.00033
3.4 GHz	0.00332
3.8 GHz	0.00594
Others	0.13256
Total	0.29748

Location 2

Measurement time:	15:01
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00947
174-230 MHz	0.00743
470-694 MHz	0.00590
700 MHz	0.00703
800 MHz	0.00254
900 MHz	0.00047
1400 MHz	0.01931
1800 MHz	0.00407
1900 MHz	0.00012
2100 MHz	0.00185
2300 MHz	0.00031
2600 MHz TDD	0.00035
2600 MHz FDD	0.00034
3.4 GHz	0.00397
3.8 GHz	0.00636
Others	0.13985
Total	0.20937

Location 3

Measurement time:	15:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00871
174-230 MHz	0.00771
470-694 MHz	0.00611
700 MHz	0.04864
800 MHz	0.00869
900 MHz	0.00223
1400 MHz	0.00730
1800 MHz	0.00501
1900 MHz	0.00013
2100 MHz	0.00830
2300 MHz	0.00032
2600 MHz TDD	0.00036
2600 MHz FDD	0.00113
3.4 GHz	0.00339
3.8 GHz	0.00673
Others	0.14646
Total	0.26122

Location 4

Measurement time:	15:17
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00905
174-230 MHz	0.00789
470-694 MHz	0.00632
700 MHz	0.03052
800 MHz	0.00655
900 MHz	0.00061
1400 MHz	0.00836
1800 MHz	0.00821
1900 MHz	0.00013
2100 MHz	0.00230
2300 MHz	0.00033
2600 MHz TDD	0.00038
2600 MHz FDD	0.00038
3.4 GHz	0.00375
3.8 GHz	0.00708
Others	0.15289
Total	0.24474

Location 5

Measurement time:	15:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00892
174-230 MHz	0.00840
470-694 MHz	0.00640
700 MHz	0.02329
800 MHz	0.00465
900 MHz	0.00073
1400 MHz	0.02939
1800 MHz	0.02548
1900 MHz	0.00014
2100 MHz	0.00428
2300 MHz	0.00035
2600 MHz TDD	0.00040
2600 MHz FDD	0.00053
3.4 GHz	0.00380
3.8 GHz	0.00734
Others	0.15747
Total	0.28155

Location 6

Measurement time:	15:33
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00889
174-230 MHz	0.00827
470-694 MHz	0.00651
700 MHz	0.02560
800 MHz	0.00314
900 MHz	0.00055
1400 MHz	0.06891
1800 MHz	0.03882
1900 MHz	0.00014
2100 MHz	0.01370
2300 MHz	0.00035
2600 MHz TDD	0.00040
2600 MHz FDD	0.00040
3.4 GHz	0.00428
3.8 GHz	0.00754
Others	0.16074
Total	0.34825

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.