

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 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 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:	18/10/2024	Time Survey completed:	14:11
Survey address:	Newtownards BT23		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	US55240264	21/12/2023
Probe	Agos Aria-6000 Antenna	1112	28/11/2022
Cabling	1.7m cable	1314	28/11/2022

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.

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:	13:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01129
800 MHz	0.09901
900 MHz	0.08049
1400 MHz	0.00024
1800 MHz	0.01147
1900 MHz	0.00010
2100 MHz	0.01272
2300 MHz	0.00024
2600 MHz TDD	0.00261
2600 MHz FDD	0.00012
3.4 GHz	0.00095
3.8 GHz	0.00234
Others	0.04068
Total	0.26227

Location 2

Measurement time:	13:32
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.02034
800 MHz	0.03727
900 MHz	0.04987
1400 MHz	0.00024
1800 MHz	0.00500
1900 MHz	0.00010
2100 MHz	0.00481
2300 MHz	0.00025
2600 MHz TDD	0.00259
2600 MHz FDD	0.00012
3.4 GHz	0.00098
3.8 GHz	0.00239
Others	0.04028
Total	0.16424

Location 3

Measurement time:	13:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01291
800 MHz	0.03168
900 MHz	0.02789
1400 MHz	0.00024
1800 MHz	0.00252
1900 MHz	0.00010
2100 MHz	0.00414
2300 MHz	0.00025
2600 MHz TDD	0.00199
2600 MHz FDD	0.00012
3.4 GHz	0.00099
3.8 GHz	0.00243
Others	0.04044
Total	0.12572

Location 4

Measurement time:	13:48
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00141
800 MHz	0.00162
900 MHz	0.00297
1400 MHz	0.00025
1800 MHz	0.00055
1900 MHz	0.00010
2100 MHz	0.00060
2300 MHz	0.00025
2600 MHz TDD	0.00037
2600 MHz FDD	0.00012
3.4 GHz	0.00100
3.8 GHz	0.00247
Others	0.04011
Total	0.05182

Location 5

Measurement time:	13:56
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00629
800 MHz	0.01175
900 MHz	0.02589
1400 MHz	0.00025
1800 MHz	0.00395
1900 MHz	0.00011
2100 MHz	0.00395
2300 MHz	0.00026
2600 MHz TDD	0.00154
2600 MHz FDD	0.00013
3.4 GHz	0.00102
3.8 GHz	0.00249
Others	0.04114
Total	0.09876

Location 6

Measurement time:	14:05
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.01086
800 MHz	0.09830
900 MHz	0.05808
1400 MHz	0.00025
1800 MHz	0.01130
1900 MHz	0.00011
2100 MHz	0.01684
2300 MHz	0.00026
2600 MHz TDD	0.00249
2600 MHz FDD	0.00013
3.4 GHz	0.00103
3.8 GHz	0.00253
Others	0.04247
Total	0.24463

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.