

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:	12/11/2024	Time Survey completed:	09:36
Survey address:	Bangor BT19		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Field fox 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 30 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:	08:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00063
800 MHz	0.00035
900 MHz	0.00040
1400 MHz	0.00020
1800 MHz	0.00025
1900 MHz	0.00008
2100 MHz	0.00026
2300 MHz	0.00020
2600 MHz TDD	0.00021
2600 MHz FDD	0.00010
3.4 GHz	0.00077
3.8 GHz	0.00190
Others	0.03165
Total	0.03702

Location 2

Measurement time:	08:51
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00067
800 MHz	0.00040
900 MHz	0.00046
1400 MHz	0.00022
1800 MHz	0.00026
1900 MHz	0.00009
2100 MHz	0.00027
2300 MHz	0.00022
2600 MHz TDD	0.00022
2600 MHz FDD	0.00010
3.4 GHz	0.00084
3.8 GHz	0.00207
Others	0.03420
Total	0.04002

Location 3

Measurement time:	09:00
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00067
800 MHz	0.00036
900 MHz	0.00039
1400 MHz	0.00022
1800 MHz	0.00027
1900 MHz	0.00009
2100 MHz	0.00027
2300 MHz	0.00023
2600 MHz TDD	0.00023
2600 MHz FDD	0.00011
3.4 GHz	0.00088
3.8 GHz	0.00217
Others	0.03572
Total	0.04161

Location 4

Measurement time:	09:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00069
800 MHz	0.00037
900 MHz	0.00044
1400 MHz	0.00023
1800 MHz	0.00029
1900 MHz	0.00010
2100 MHz	0.00030
2300 MHz	0.00023
2600 MHz TDD	0.00023
2600 MHz FDD	0.00011
3.4 GHz	0.00092
3.8 GHz	0.00228
Others	0.03730
Total	0.04350

Location 5

Measurement time:	09:18
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00245
800 MHz	0.00207
900 MHz	0.00317
1400 MHz	0.00026
1800 MHz	0.00187
1900 MHz	0.00010
2100 MHz	0.00180
2300 MHz	0.00024
2600 MHz TDD	0.00026
2600 MHz FDD	0.00015
3.4 GHz	0.00099
3.8 GHz	0.00238
Others	0.03966
Total	0.05539

Location 6

Measurement time:	09:30
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00073
800 MHz	0.00039
900 MHz	0.00045
1400 MHz	0.00024
1800 MHz	0.00030
1900 MHz	0.00010
2100 MHz	0.00031
2300 MHz	0.00025
2600 MHz TDD	0.00025
2600 MHz FDD	0.00012
3.4 GHz	0.00099
3.8 GHz	0.00246
Others	0.03978
Total	0.04638

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.