

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:	21/02/2024	Time Survey completed:	14:05
Survey address:	Ballyclare BT39		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	55240264	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**		

Notes

* 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.

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.



Map data: © Google

Location 1

Measurement Time:	13:18
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.11529
800 MHz	0.05490
900 MHz	0.04362
1400 MHz	0.00040
1800 MHz	0.00211
1900 MHz	0.00012
2100 MHz	0.00356
2300 MHz	0.00028
2600 MHz TDD	0.00029
2600 MHz FDD	0.00014
3.4 GHz	0.00106
3.8 GHz	0.00276
others	0.05002
total	0.27456

Location 2

Measurement Time:	13:27
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.02637
800 MHz	0.04107
900 MHz	0.05402
1400 MHz	0.00156
1800 MHz	0.00306
1900 MHz	0.00012
2100 MHz	0.04588
2300 MHz	0.00027
2600 MHz TDD	0.00029
2600 MHz FDD	0.00014
3.4 GHz	0.00104
3.8 GHz	0.00271
others	0.05998
total	0.23651

Location 3

Measurement Time:	13:36
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.02061
800 MHz	0.01143
900 MHz	0.01019
1400 MHz	0.00100
1800 MHz	0.00136
1900 MHz	0.00012
2100 MHz	0.00445
2300 MHz	0.00027
2600 MHz TDD	0.00029
2600 MHz FDD	0.00013
3.4 GHz	0.00103
3.8 GHz	0.00269
others	0.04996
total	0.10354

Location 4

Measurement Time:	13:50
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.02181
800 MHz	0.03370
900 MHz	0.03750
1400 MHz	0.00159
1800 MHz	0.00365
1900 MHz	0.00011
2100 MHz	0.00487
2300 MHz	0.00026
2600 MHz TDD	0.00028
2600 MHz FDD	0.00015
3.4 GHz	0.00101
3.8 GHz	0.00263
others	0.05371
total	0.16128

Location 5

Measurement Time:	13:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.03548
800 MHz	0.05216
900 MHz	0.03483
1400 MHz	0.00125
1800 MHz	0.00492
1900 MHz	0.00012
2100 MHz	0.00426
2300 MHz	0.00027
2600 MHz TDD	0.00029
2600 MHz FDD	0.00014
3.4 GHz	0.00102
3.8 GHz	0.00266
others	0.04827
total	0.18567

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.