

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:	03/04/2025	Time Survey completed:	14:34
Survey address:	Chester-le-Street DH3		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY50672594	04/11/2024
Probe	Agos Aria-6000 Antenna	6000-1024	30/03/2021
Cabling	1.7m cable	1383	12/11/2023

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 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:	13:42
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01094
174-230 MHz	0.00970
470-694 MHz	0.00997
700 MHz	0.00310
800 MHz	0.00544
900 MHz	0.00051
1400 MHz	0.00430
1800 MHz	0.00742
1900 MHz	0.00016
2100 MHz	0.00551
2300 MHz	0.00038
2600 MHz TDD	0.00031
2600 MHz FDD	0.00239
3.4 GHz	0.00376
3.8 GHz	0.00438
Others	0.12228
Total	0.19057

Location 2

Measurement time:	13:55
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01273
174-230 MHz	0.01076
470-694 MHz	0.00899
700 MHz	0.02284
800 MHz	0.04711
900 MHz	0.00058
1400 MHz	0.01598
1800 MHz	0.01930
1900 MHz	0.00019
2100 MHz	0.01177
2300 MHz	0.00045
2600 MHz TDD	0.00037
2600 MHz FDD	0.00084
3.4 GHz	0.00390
3.8 GHz	0.00521
Others	0.14421
Total	0.30523

Location 3

Measurement time:	14:02
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01111
174-230 MHz	0.01139
470-694 MHz	0.00958
700 MHz	0.00742
800 MHz	0.01540
900 MHz	0.00060
1400 MHz	0.00821
1800 MHz	0.02382
1900 MHz	0.00020
2100 MHz	0.00636
2300 MHz	0.00048
2600 MHz TDD	0.00039
2600 MHz FDD	0.00536
3.4 GHz	0.00339
3.8 GHz	0.00555
Others	0.15264
Total	0.26190

Location 4

Measurement time:	14:13
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01059
174-230 MHz	0.01183
470-694 MHz	0.00934
700 MHz	0.00209
800 MHz	0.00257
900 MHz	0.00063
1400 MHz	0.00321
1800 MHz	0.00883
1900 MHz	0.00021
2100 MHz	0.00217
2300 MHz	0.00049
2600 MHz TDD	0.00041
2600 MHz FDD	0.00193
3.4 GHz	0.00337
3.8 GHz	0.00569
Others	0.15746
Total	0.22081

Location 5

Measurement time:	14:20
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01465
174-230 MHz	0.01189
470-694 MHz	0.00983
700 MHz	0.00218
800 MHz	0.00284
900 MHz	0.00062
1400 MHz	0.00145
1800 MHz	0.00354
1900 MHz	0.00021
2100 MHz	0.00251
2300 MHz	0.00049
2600 MHz TDD	0.00041
2600 MHz FDD	0.00112
3.4 GHz	0.00406
3.8 GHz	0.00572
Others	0.15825
Total	0.21977

Location 6

Measurement time:	14:28
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01274
174-230 MHz	0.01238
470-694 MHz	0.01102
700 MHz	0.00281
800 MHz	0.00447
900 MHz	0.00063
1400 MHz	0.00720
1800 MHz	0.00809
1900 MHz	0.00021
2100 MHz	0.00468
2300 MHz	0.00049
2600 MHz TDD	0.00041
2600 MHz FDD	0.00090
3.4 GHz	0.00413
3.8 GHz	0.00575
Others	0.15875
Total	0.23468

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.