

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:	07/05/2025	Time Survey completed:	12:08
Survey address:	Chester CH1		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072602	14/04/2025
Probe	Agos Aria-6000 Antenna	335	25/09/2023
Cabling	1.7m cable	1459	25/09/2023

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:	11:20
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01462
174-230 MHz	0.01636
470-694 MHz	0.01265
700 MHz	0.00520
800 MHz	0.09132
900 MHz	0.00251
1400 MHz	0.00062
1800 MHz	0.02578
1900 MHz	0.00029
2100 MHz	0.00404
2300 MHz	0.00062
2600 MHz TDD	0.00051
2600 MHz FDD	0.00020
3.4 GHz	0.00258
3.8 GHz	0.00521
Others	0.19722
Total	0.37974

Location 2

Measurement time:	11:29
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01462
174-230 MHz	0.01620
470-694 MHz	0.01264
700 MHz	0.00500
800 MHz	0.01526
900 MHz	0.00606
1400 MHz	0.00062
1800 MHz	0.02479
1900 MHz	0.00029
2100 MHz	0.00552
2300 MHz	0.00064
2600 MHz TDD	0.00051
2600 MHz FDD	0.00024
3.4 GHz	0.00315
3.8 GHz	0.00571
Others	0.19755
Total	0.30879

Location 3

Measurement time:	11:37
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01445
174-230 MHz	0.01611
470-694 MHz	0.01253
700 MHz	0.00472
800 MHz	0.06100
900 MHz	0.00211
1400 MHz	0.00062
1800 MHz	0.03299
1900 MHz	0.00028
2100 MHz	0.00412
2300 MHz	0.00060
2600 MHz TDD	0.00050
2600 MHz FDD	0.00021
3.4 GHz	0.00248
3.8 GHz	0.00530
Others	0.19494
Total	0.35297

Location 4

Measurement time:	11:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01471
174-230 MHz	0.01639
470-694 MHz	0.01261
700 MHz	0.00484
800 MHz	0.03673
900 MHz	0.00154
1400 MHz	0.00062
1800 MHz	0.01986
1900 MHz	0.00029
2100 MHz	0.00222
2300 MHz	0.00088
2600 MHz TDD	0.00051
2600 MHz FDD	0.00021
3.4 GHz	0.00298
3.8 GHz	0.00544
Others	0.19804
Total	0.31788

Location 5

Measurement time:	11:55
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01507
174-230 MHz	0.01692
470-694 MHz	0.01293
700 MHz	0.00272
800 MHz	0.01804
900 MHz	0.00095
1400 MHz	0.00063
1800 MHz	0.02030
1900 MHz	0.00029
2100 MHz	0.00779
2300 MHz	0.00062
2600 MHz TDD	0.00052
2600 MHz FDD	0.00022
3.4 GHz	0.00232
3.8 GHz	0.00519
Others	0.20244
Total	0.30695

Location 6

Measurement time:	12:02
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01522
174-230 MHz	0.01707
470-694 MHz	0.01328
700 MHz	0.00413
800 MHz	0.04414
900 MHz	0.00230
1400 MHz	0.00065
1800 MHz	0.02616
1900 MHz	0.00030
2100 MHz	0.00305
2300 MHz	0.00070
2600 MHz TDD	0.00054
2600 MHz FDD	0.00035
3.4 GHz	0.00261
3.8 GHz	0.00552
Others	0.20896
Total	0.34497

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.