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 floor[2] 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:	03/09/2025	**Time Survey completed:**	13:38
Survey address:	Preston PR1		

Measurement equipment		**Serial number**	**Calibration Date**
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072593	06/08/2025
Probe	Agos Aria-6000 Antenna	AGOS-6000-1022	08/07/2025
Cabling	1.7m cable	1462	08/07/2025

[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

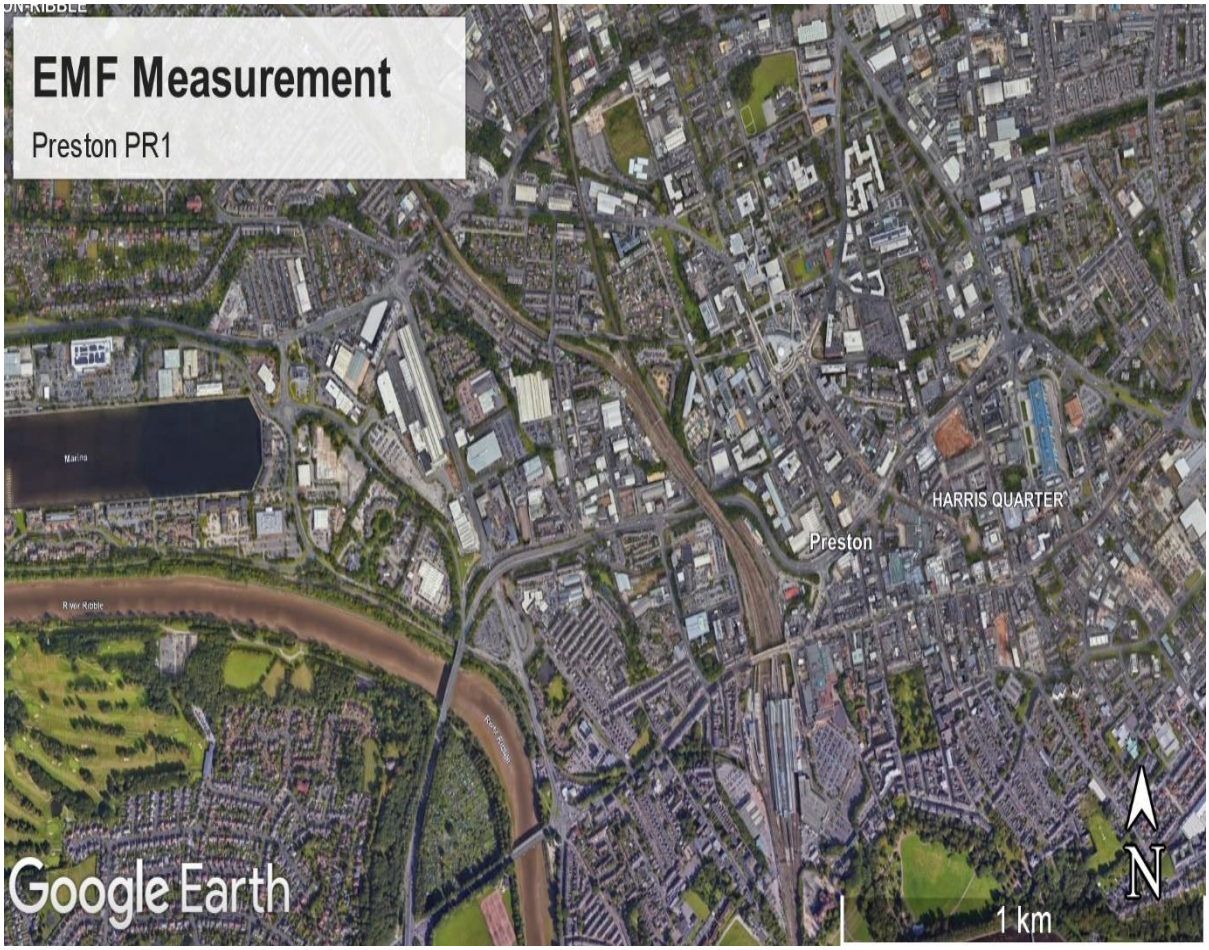
Mobile bands covered by this report

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:	12:51
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00870
174-230 MHz	0.00998
470-694 MHz	0.00785
700 MHz	0.06027
800 MHz	0.01267
900 MHz	0.00061
1400 MHz	0.00043
1800 MHz	0.00636
1900 MHz	0.00019
2100 MHz	0.00199
2300 MHz	0.00040
2600 MHz TDD	0.00038
2600 MHz FDD	0.00018
3.4 GHz	0.00224
3.8 GHz	0.00412
Others	0.12795
Total	**0.24432**

Location 2

Measurement time:	12:59
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00932
174-230 MHz	0.01069
470-694 MHz	0.00841
700 MHz	0.00450
800 MHz	0.00164
900 MHz	0.00084
1400 MHz	0.00058
1800 MHz	0.00673
1900 MHz	0.00020
2100 MHz	0.00495
2300 MHz	0.00043
2600 MHz TDD	0.00041
2600 MHz FDD	0.00054
3.4 GHz	0.00381
3.8 GHz	0.00454
Others	0.13817
Total	**0.19577**

Location 3

Measurement time:	13:07
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00998
174-230 MHz	0.01140
470-694 MHz	0.00885
700 MHz	0.00699
800 MHz	0.00170
900 MHz	0.00107
1400 MHz	0.00049
1800 MHz	0.00327
1900 MHz	0.00022
2100 MHz	0.00275
2300 MHz	0.00046
2600 MHz TDD	0.00044
2600 MHz FDD	0.00020
3.4 GHz	0.00300
3.8 GHz	0.00491
Others	0.14783
Total	**0.20356**

Location 4

Measurement time:	13:16
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01046
174-230 MHz	0.01199
470-694 MHz	0.00924
700 MHz	0.02696
800 MHz	0.00832
900 MHz	0.00085
1400 MHz	0.00053
1800 MHz	0.00393
1900 MHz	0.00023
2100 MHz	0.00281
2300 MHz	0.00049
2600 MHz TDD	0.00047
2600 MHz FDD	0.00027
3.4 GHz	0.00281
3.8 GHz	0.00525
Others	0.15767
Total	**0.24227**

Location 5

Measurement time:	13:24
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01091
174-230 MHz	0.01263
470-694 MHz	0.00964
700 MHz	0.06760
800 MHz	0.01467
900 MHz	0.00090
1400 MHz	0.00057
1800 MHz	0.00494
1900 MHz	0.00024
2100 MHz	0.00220
2300 MHz	0.00051
2600 MHz TDD	0.00048
2600 MHz FDD	0.00024
3.4 GHz	0.00316
3.8 GHz	0.00552
Others	0.16464
Total	**0.29884**

Location 6

Measurement time:	13:32
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01135
174-230 MHz	0.01299
470-694 MHz	0.00994
700 MHz	0.02055
800 MHz	0.00764
900 MHz	0.00073
1400 MHz	0.00055
1800 MHz	0.00363
1900 MHz	0.00025
2100 MHz	0.00117
2300 MHz	0.00052
2600 MHz TDD	0.00050
2600 MHz FDD	0.00023
3.4 GHz	0.00303
3.8 GHz	0.00572
Others	0.17015
Total	**0.24897**

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.