

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:	06/02/2025	Time Survey completed:	16:02
Survey address:	Preston PR1		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	US55240265	17/04/2024
Probe	Agos Aria-6000 Antenna	6000-1024	30/03/2021
Cabling	1.7m cable	1383	12/10/2023

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 420 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:	15:10
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00711
174-230 MHz	0.00659
470-694 MHz	0.00523
700 MHz	0.00075
800 MHz	0.01585
900 MHz	0.00491
1400 MHz	0.00092
1800 MHz	0.00032
1900 MHz	0.00010
2100 MHz	0.00398
2300 MHz	0.00025
2600 MHz TDD	0.00028
2600 MHz FDD	0.00062
3.4 GHz	0.00265
3.8 GHz	0.00462
Others	0.11126
Total	0.16543

Location 2

Measurement time:	15:17
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00756
174-230 MHz	0.00695
470-694 MHz	0.00554
700 MHz	0.00078
800 MHz	0.01006
900 MHz	0.02276
1400 MHz	0.00159
1800 MHz	0.00033
1900 MHz	0.00011
2100 MHz	0.01105
2300 MHz	0.00026
2600 MHz TDD	0.00031
2600 MHz FDD	0.00105
3.4 GHz	0.00293
3.8 GHz	0.00515
Others	0.11847
Total	0.19489

Location 3

Measurement time:	15:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00785
174-230 MHz	0.00723
470-694 MHz	0.00579
700 MHz	0.00083
800 MHz	0.02247
900 MHz	0.03778
1400 MHz	0.00153
1800 MHz	0.00037
1900 MHz	0.00011
2100 MHz	0.00783
2300 MHz	0.00028
2600 MHz TDD	0.00033
2600 MHz FDD	0.00099
3.4 GHz	0.00293
3.8 GHz	0.00548
Others	0.12586
Total	0.22766

Location 4

Measurement time:	15:32
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00808
174-230 MHz	0.00755
470-694 MHz	0.00648
700 MHz	0.00089
800 MHz	0.02120
900 MHz	0.00910
1400 MHz	0.00107
1800 MHz	0.00042
1900 MHz	0.00012
2100 MHz	0.00646
2300 MHz	0.00029
2600 MHz TDD	0.00033
2600 MHz FDD	0.00063
3.4 GHz	0.00334
3.8 GHz	0.00580
Others	0.13093
Total	0.20269

Location 5

Measurement time:	15:41
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00835
174-230 MHz	0.00757
470-694 MHz	0.00609
700 MHz	0.00085
800 MHz	0.00981
900 MHz	0.00703
1400 MHz	0.00076
1800 MHz	0.00036
1900 MHz	0.00012
2100 MHz	0.00131
2300 MHz	0.00030
2600 MHz TDD	0.00034
2600 MHz FDD	0.00046
3.4 GHz	0.00284
3.8 GHz	0.00597
Others	0.13517
Total	0.18735

Location 6

Measurement time:	15:56
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00841
174-230 MHz	0.00783
470-694 MHz	0.00628
700 MHz	0.00088
800 MHz	0.02106
900 MHz	0.00711
1400 MHz	0.00088
1800 MHz	0.00044
1900 MHz	0.00013
2100 MHz	0.00410
2300 MHz	0.00031
2600 MHz TDD	0.00035
2600 MHz FDD	0.00062
3.4 GHz	0.00321
3.8 GHz	0.00637
Others	0.14204
Total	0.21001

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.