

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:	19/03/2025	Time Survey completed:	12:00
Survey address:	Broughton PR3		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072593	06/03/2025
Probe	Agos Aria-6000 Antenna	6000-1022	22/01/2021
Cabling	1.7m cable	1462	18/01/2024

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 five 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	0.00887
174-230 MHz	0.01008
470-694 MHz	0.00813
700 MHz	0.02668
800 MHz	0.00268
900 MHz	0.00056
1400 MHz	0.00038
1800 MHz	0.00155
1900 MHz	0.00019
2100 MHz	0.00239
2300 MHz	0.00038
2600 MHz TDD	0.00034
2600 MHz FDD	0.00017
3.4 GHz	0.00208
3.8 GHz	0.00443
Others	0.13437
Total	0.20329

Location 2

Measurement time:	11:29
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00923
174-230 MHz	0.01049
470-694 MHz	0.00833
700 MHz	0.05265
800 MHz	0.01693
900 MHz	0.00060
1400 MHz	0.00040
1800 MHz	0.00158
1900 MHz	0.00020
2100 MHz	0.00130
2300 MHz	0.00039
2600 MHz TDD	0.00036
2600 MHz FDD	0.00018
3.4 GHz	0.00213
3.8 GHz	0.00466
Others	0.14080
Total	0.25022

Location 3

Measurement time:	11:38
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00966
174-230 MHz	0.01084
470-694 MHz	0.00856
700 MHz	0.00383
800 MHz	0.00147
900 MHz	0.00062
1400 MHz	0.00041
1800 MHz	0.00174
1900 MHz	0.00021
2100 MHz	0.00136
2300 MHz	0.00041
2600 MHz TDD	0.00038
2600 MHz FDD	0.00019
3.4 GHz	0.00226
3.8 GHz	0.00493
Others	0.14639
Total	0.19328

Location 4

Measurement time:	11:47
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01002
174-230 MHz	0.01136
470-694 MHz	0.00895
700 MHz	0.04105
800 MHz	0.01176
900 MHz	0.00064
1400 MHz	0.00043
1800 MHz	0.00162
1900 MHz	0.00022
2100 MHz	0.00092
2300 MHz	0.00043
2600 MHz TDD	0.00039
2600 MHz FDD	0.00020
3.4 GHz	0.00232
3.8 GHz	0.00519
Others	0.15314
Total	0.24864

Location 5

Measurement time:	11:54
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01060
174-230 MHz	0.01179
470-694 MHz	0.00926
700 MHz	0.02628
800 MHz	0.00533
900 MHz	0.00064
1400 MHz	0.00045
1800 MHz	0.00149
1900 MHz	0.00023
2100 MHz	0.00225
2300 MHz	0.00045
2600 MHz TDD	0.00041
2600 MHz FDD	0.00021
3.4 GHz	0.00249
3.8 GHz	0.00545
Others	0.15921
Total	0.23653

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.