

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:	25/04/2025	Time Survey completed:	12:06
Survey address:	Portsmouth PO3		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072597	24/05/2024
Probe	Agos Aria-6000 Antenna	1111	28/11/2022
Cabling	1.7m cable	1313	28/11/2022

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:	11:14
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00987
174-230 MHz	0.01090
470-694 MHz	0.00859
700 MHz	0.00329
800 MHz	0.00323
900 MHz	0.00070
1400 MHz	0.00186
1800 MHz	0.00216
1900 MHz	0.00021
2100 MHz	0.00117
2300 MHz	0.00044
2600 MHz TDD	0.00038
2600 MHz FDD	0.00038
3.4 GHz	0.00199
3.8 GHz	0.00427
Others	0.13987
Total	0.18930

Location 2

Measurement time:	11:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01033
174-230 MHz	0.01184
470-694 MHz	0.00917
700 MHz	0.00767
800 MHz	0.00522
900 MHz	0.00139
1400 MHz	0.00185
1800 MHz	0.00267
1900 MHz	0.00023
2100 MHz	0.00239
2300 MHz	0.00047
2600 MHz TDD	0.00041
2600 MHz FDD	0.00099
3.4 GHz	0.00325
3.8 GHz	0.00474
Others	0.15305
Total	0.21568

Location 3

Measurement time:	11:35
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01136
174-230 MHz	0.01252
470-694 MHz	0.00968
700 MHz	0.00557
800 MHz	0.00399
900 MHz	0.00120
1400 MHz	0.00294
1800 MHz	0.01161
1900 MHz	0.00025
2100 MHz	0.00396
2300 MHz	0.00050
2600 MHz TDD	0.00044
2600 MHz FDD	0.00073
3.4 GHz	0.00317
3.8 GHz	0.00512
Others	0.16263
Total	0.23567

Location 4

Measurement time:	11:49
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01183
174-230 MHz	0.01311
470-694 MHz	0.01004
700 MHz	0.00268
800 MHz	0.01286
900 MHz	0.00090
1400 MHz	0.00319
1800 MHz	0.01126
1900 MHz	0.00026
2100 MHz	0.00341
2300 MHz	0.00054
2600 MHz TDD	0.00046
2600 MHz FDD	0.00143
3.4 GHz	0.00261
3.8 GHz	0.00545
Others	0.17053
Total	0.25054

Location 5

Measurement time:	12:00
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01245
174-230 MHz	0.01359
470-694 MHz	0.01037
700 MHz	0.00459
800 MHz	0.00425
900 MHz	0.00082
1400 MHz	0.00127
1800 MHz	0.00236
1900 MHz	0.00027
2100 MHz	0.00145
2300 MHz	0.00054
2600 MHz TDD	0.00048
2600 MHz FDD	0.00055
3.4 GHz	0.00264
3.8 GHz	0.00566
Others	0.17820
Total	0.23947

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.