

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:	07/02/2025	Time Survey completed:	11:46
Survey address:	Southport PR9		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	US55240265	17/04/2024
Probe	Agos Aria-6000 Antenna	6000-1022	22/01/2021
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:	11:01
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00696
174-230 MHz	0.00634
470-694 MHz	0.00508
700 MHz	0.00488
800 MHz	0.00079
900 MHz	0.00039
1400 MHz	0.00150
1800 MHz	0.00080
1900 MHz	0.00011
2100 MHz	0.00081
2300 MHz	0.00028
2600 MHz TDD	0.00032
2600 MHz FDD	0.00030
3.4 GHz	0.00315
3.8 GHz	0.00593
Others	0.12700
Total	0.16466

Location 2

Measurement time:	11:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00714
174-230 MHz	0.00661
470-694 MHz	0.00532
700 MHz	0.05303
800 MHz	0.00715
900 MHz	0.00040
1400 MHz	0.00386
1800 MHz	0.00129
1900 MHz	0.00012
2100 MHz	0.00091
2300 MHz	0.00030
2600 MHz TDD	0.00034
2600 MHz FDD	0.00033
3.4 GHz	0.00318
3.8 GHz	0.00639
Others	0.13493
Total	0.23130

Location 3

Measurement time:	11:17
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00756
174-230 MHz	0.00692
470-694 MHz	0.00555
700 MHz	0.01105
800 MHz	0.00251
900 MHz	0.00043
1400 MHz	0.00094
1800 MHz	0.00061
1900 MHz	0.00012
2100 MHz	0.00060
2300 MHz	0.00032
2600 MHz TDD	0.00036
2600 MHz FDD	0.00035
3.4 GHz	0.00316
3.8 GHz	0.00683
Others	0.14355
Total	0.19084

Location 4

Measurement time:	11:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00775
174-230 MHz	0.00709
470-694 MHz	0.00577
700 MHz	0.00624
800 MHz	0.00241
900 MHz	0.00043
1400 MHz	0.00077
1800 MHz	0.00088
1900 MHz	0.00013
2100 MHz	0.00065
2300 MHz	0.00033
2600 MHz TDD	0.00038
2600 MHz FDD	0.00037
3.4 GHz	0.00322
3.8 GHz	0.00718
Others	0.14939
Total	0.19298

Location 5

Measurement time:	11:32
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00798
174-230 MHz	0.00736
470-694 MHz	0.00592
700 MHz	0.01904
800 MHz	0.00530
900 MHz	0.00044
1400 MHz	0.00407
1800 MHz	0.00068
1900 MHz	0.00013
2100 MHz	0.00170
2300 MHz	0.00034
2600 MHz TDD	0.00039
2600 MHz FDD	0.00038
3.4 GHz	0.00341
3.8 GHz	0.00748
Others	0.15495
Total	0.21957

Location 6

Measurement time:	11:40
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00809
174-230 MHz	0.00748
470-694 MHz	0.00599
700 MHz	0.00390
800 MHz	0.00116
900 MHz	0.00044
1400 MHz	0.00135
1800 MHz	0.00084
1900 MHz	0.00014
2100 MHz	0.00105
2300 MHz	0.00035
2600 MHz TDD	0.00039
2600 MHz FDD	0.00038
3.4 GHz	0.00379
3.8 GHz	0.00754
Others	0.15634
Total	0.19922

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.