

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:	24/04/2025	Time Survey completed:	11:57
Survey address:	Essex CM3		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY58311497	23/05/2024
Probe	Agos Aria-6000 Antenna	ARIA-6000-1023	22/01/2021
Cabling	1.7m cable	1407	23/11/2023

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 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:	11:21
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00764
174-230 MHz	0.00868
470-694 MHz	0.00681
700 MHz	0.02029
800 MHz	0.02158
900 MHz	0.03817
1400 MHz	0.00254
1800 MHz	0.00698
1900 MHz	0.00016
2100 MHz	0.00605
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00185
3.8 GHz	0.00406
Others	0.11603
Total	0.24167

Location 2

Measurement time:	11:28
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00761
174-230 MHz	0.00861
470-694 MHz	0.00680
700 MHz	0.00447
800 MHz	0.00991
900 MHz	0.01053
1400 MHz	0.00766
1800 MHz	0.00938
1900 MHz	0.00016
2100 MHz	0.01038
2300 MHz	0.00035
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00178
3.8 GHz	0.00404
Others	0.11504
Total	0.19715

Location 3

Measurement time:	11:37
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00759
174-230 MHz	0.00869
470-694 MHz	0.00683
700 MHz	0.00413
800 MHz	0.01153
900 MHz	0.02295
1400 MHz	0.00087
1800 MHz	0.00468
1900 MHz	0.00016
2100 MHz	0.01488
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00189
3.8 GHz	0.00420
Others	0.11641
Total	0.20563

Location 4

Measurement time:	11:44
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00767
174-230 MHz	0.00879
470-694 MHz	0.00692
700 MHz	0.01009
800 MHz	0.01078
900 MHz	0.00606
1400 MHz	0.00141
1800 MHz	0.00468
1900 MHz	0.00016
2100 MHz	0.00405
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00195
3.8 GHz	0.00423
Others	0.11760
Total	0.18522

Location 5

Measurement time:	11:51
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00764
174-230 MHz	0.00878
470-694 MHz	0.00692
700 MHz	0.01156
800 MHz	0.01977
900 MHz	0.04272
1400 MHz	0.00256
1800 MHz	0.01221
1900 MHz	0.00016
2100 MHz	0.00416
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00190
3.8 GHz	0.00423
Others	0.11846
Total	0.24189

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.