

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:	13:32
Survey address:	Essex SS11		

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:	12:49
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00730
174-230 MHz	0.00836
470-694 MHz	0.00663
700 MHz	0.00530
800 MHz	0.01027
900 MHz	0.00049
1400 MHz	0.00401
1800 MHz	0.01645
1900 MHz	0.00015
2100 MHz	0.00290
2300 MHz	0.00035
2600 MHz TDD	0.00029
2600 MHz FDD	0.00101
3.4 GHz	0.00260
3.8 GHz	0.00395
Others	0.11193
Total	0.18197

Location 2

Measurement time:	12:56
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00783
174-230 MHz	0.00884
470-694 MHz	0.00696
700 MHz	0.00287
800 MHz	0.00615
900 MHz	0.00059
1400 MHz	0.00678
1800 MHz	0.01917
1900 MHz	0.00016
2100 MHz	0.00334
2300 MHz	0.00038
2600 MHz TDD	0.00030
2600 MHz FDD	0.00149
3.4 GHz	0.00386
3.8 GHz	0.00432
Others	0.11873
Total	0.19177

Location 3

Measurement time:	13:03
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00828
174-230 MHz	0.00920
470-694 MHz	0.00720
700 MHz	0.00386
800 MHz	0.01073
900 MHz	0.00121
1400 MHz	0.00299
1800 MHz	0.00338
1900 MHz	0.00017
2100 MHz	0.00175
2300 MHz	0.00046
2600 MHz TDD	0.00031
2600 MHz FDD	0.00055
3.4 GHz	0.00531
3.8 GHz	0.00466
Others	0.12407
Total	0.18413

Location 4

Measurement time:	13:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00845
174-230 MHz	0.00969
470-694 MHz	0.00750
700 MHz	0.00732
800 MHz	0.00414
900 MHz	0.00061
1400 MHz	0.01028
1800 MHz	0.00900
1900 MHz	0.00018
2100 MHz	0.00154
2300 MHz	0.00043
2600 MHz TDD	0.00033
2600 MHz FDD	0.00107
3.4 GHz	0.00218
3.8 GHz	0.00464
Others	0.12971
Total	0.19708

Location 5

Measurement time:	13:26
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00888
174-230 MHz	0.00988
470-694 MHz	0.00766
700 MHz	0.01185
800 MHz	0.02729
900 MHz	0.00056
1400 MHz	0.00255
1800 MHz	0.00727
1900 MHz	0.00018
2100 MHz	0.00165
2300 MHz	0.00042
2600 MHz TDD	0.00034
2600 MHz FDD	0.00085
3.4 GHz	0.00545
3.8 GHz	0.00487
Others	0.13340
Total	0.22311

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.