

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:	30/01/2025	Time Survey completed:	13:56
Survey address:	Stevenage SG1		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072607	29/10/2024
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 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:	13:06
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00858
174-230 MHz	0.00993
470-694 MHz	0.00762
700 MHz	0.00921
800 MHz	0.00427
900 MHz	0.00057
1400 MHz	0.00971
1800 MHz	0.00234
1900 MHz	0.00018
2100 MHz	0.00153
2300 MHz	0.00036
2600 MHz TDD	0.00033
2600 MHz FDD	0.00016
3.4 GHz	0.00218
3.8 GHz	0.00380
Others	0.12025
Total	0.18102

Location 2

Measurement time:	13:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00868
174-230 MHz	0.01022
470-694 MHz	0.00796
700 MHz	0.00229
800 MHz	0.00134
900 MHz	0.00058
1400 MHz	0.01243
1800 MHz	0.00236
1900 MHz	0.00018
2100 MHz	0.00130
2300 MHz	0.00039
2600 MHz TDD	0.00034
2600 MHz FDD	0.00019
3.4 GHz	0.00223
3.8 GHz	0.00406
Others	0.12648
Total	0.18102

Location 3

Measurement time:	13:25
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00900
174-230 MHz	0.01052
470-694 MHz	0.00815
700 MHz	0.00521
800 MHz	0.00234
900 MHz	0.00064
1400 MHz	0.01470
1800 MHz	0.00479
1900 MHz	0.00019
2100 MHz	0.00378
2300 MHz	0.00040
2600 MHz TDD	0.00035
2600 MHz FDD	0.00019
3.4 GHz	0.00265
3.8 GHz	0.00420
Others	0.13074
Total	0.19784

Location 4

Measurement time:	13:35
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00908
174-230 MHz	0.01046
470-694 MHz	0.00829
700 MHz	0.00447
800 MHz	0.00135
900 MHz	0.00062
1400 MHz	0.01514
1800 MHz	0.00291
1900 MHz	0.00019
2100 MHz	0.00189
2300 MHz	0.00040
2600 MHz TDD	0.00035
2600 MHz FDD	0.00019
3.4 GHz	0.00242
3.8 GHz	0.00429
Others	0.13290
Total	0.19496

Location 5

Measurement time:	13:43
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00932
174-230 MHz	0.01052
470-694 MHz	0.00842
700 MHz	0.00219
800 MHz	0.00106
900 MHz	0.00065
1400 MHz	0.00482
1800 MHz	0.00302
1900 MHz	0.00020
2100 MHz	0.00148
2300 MHz	0.00042
2600 MHz TDD	0.00036
2600 MHz FDD	0.00022
3.4 GHz	0.00233
3.8 GHz	0.00437
Others	0.13513
Total	0.18451

Location 6

Measurement time:	13:50
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00949
174-230 MHz	0.01079
470-694 MHz	0.00851
700 MHz	0.00355
800 MHz	0.00155
900 MHz	0.00063
1400 MHz	0.01434
1800 MHz	0.00298
1900 MHz	0.00020
2100 MHz	0.00118
2300 MHz	0.00042
2600 MHz TDD	0.00037
2600 MHz FDD	0.00019
3.4 GHz	0.00242
3.8 GHz	0.00448
Others	0.13822
Total	0.19929

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.