

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:	23/04/2025	Time Survey completed:	14:32
Survey address:	Allestree DE22		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072606	04/06/2024
Probe	Agos Aria-6000 Antenna	ARIA-6000-1158	25/09/2023
Cabling	1.7m cable	1458	25/09/2023

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:	13:34
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02296
174-230 MHz	0.01511
470-694 MHz	0.00962
700 MHz	0.00624
800 MHz	0.00328
900 MHz	0.00351
1400 MHz	0.00147
1800 MHz	0.00750
1900 MHz	0.00025
2100 MHz	0.00813
2300 MHz	0.00067
2600 MHz TDD	0.00041
2600 MHz FDD	0.00016
3.4 GHz	0.00311
3.8 GHz	0.00421
Others	0.22300
Total	0.30962

Location 2

Measurement time:	13:47
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02504
174-230 MHz	0.01684
470-694 MHz	0.01047
700 MHz	0.00160
800 MHz	0.00232
900 MHz	0.00085
1400 MHz	0.00055
1800 MHz	0.00244
1900 MHz	0.00028
2100 MHz	0.00109
2300 MHz	0.00049
2600 MHz TDD	0.00044
2600 MHz FDD	0.00018
3.4 GHz	0.00205
3.8 GHz	0.00469
Others	0.24397
Total	0.31330

Location 3

Measurement time:	14:00
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02687
174-230 MHz	0.01787
470-694 MHz	0.01098
700 MHz	0.00219
800 MHz	0.00608
900 MHz	0.00482
1400 MHz	0.00123
1800 MHz	0.00398
1900 MHz	0.00029
2100 MHz	0.00206
2300 MHz	0.00102
2600 MHz TDD	0.00048
2600 MHz FDD	0.00023
3.4 GHz	0.00358
3.8 GHz	0.00507
Others	0.26047
Total	0.34723

Location 4

Measurement time:	14:10
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02719
174-230 MHz	0.01780
470-694 MHz	0.01120
700 MHz	0.00135
800 MHz	0.00072
900 MHz	0.00069
1400 MHz	0.00055
1800 MHz	0.00370
1900 MHz	0.00030
2100 MHz	0.00099
2300 MHz	0.00051
2600 MHz TDD	0.00048
2600 MHz FDD	0.00020
3.4 GHz	0.00222
3.8 GHz	0.00523
Others	0.26698
Total	0.34010

Location 5

Measurement time:	14:26
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.02828
174-230 MHz	0.01846
470-694 MHz	0.01161
700 MHz	0.00155
800 MHz	0.00087
900 MHz	0.00100
1400 MHz	0.00063
1800 MHz	0.00238
1900 MHz	0.00031
2100 MHz	0.00112
2300 MHz	0.00064
2600 MHz TDD	0.00052
2600 MHz FDD	0.00024
3.4 GHz	0.00260
3.8 GHz	0.00549
Others	0.27862
Total	0.35430

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.