

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:	03/12/2024	Time Survey completed:	15:54
Survey address:	Ewell KT19		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	US55240262	24/01/2024
Probe	Agos Aria-6000 Antenna	1111	28/11/2022
Cabling	1.7m cable	1313	28/11/2022

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 five locations and are presented in the following pages of this report.



Location 1

Measurement time:	15:07
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00006
174-230 MHz	0.00040
470-694 MHz	0.00009
700 MHz	0.00088
800 MHz	0.00057
900 MHz	0.00003
1400 MHz	0.00061
1800 MHz	0.00070
1900 MHz	0.00000
2100 MHz	0.00049
2300 MHz	0.00000
2600 MHz TDD	0.00000
2600 MHz FDD	0.00015
3.4 GHz	0.00012
3.8 GHz	0.00000
Others	0.00102
Total	0.00513

Location 2

Measurement time:	15:16
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00030
174-230 MHz	0.00040
470-694 MHz	0.00009
700 MHz	0.00555
800 MHz	0.00087
900 MHz	0.00003
1400 MHz	0.00131
1800 MHz	0.00044
1900 MHz	0.00000
2100 MHz	0.00081
2300 MHz	0.00000
2600 MHz TDD	0.00000
2600 MHz FDD	0.00023
3.4 GHz	0.00005
3.8 GHz	0.00000
Others	0.00120
Total	0.01128

Location 3

Measurement time:	15:26
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00007
174-230 MHz	0.00041
470-694 MHz	0.00009
700 MHz	0.00058
800 MHz	0.00287
900 MHz	0.00020
1400 MHz	0.00088
1800 MHz	0.00102
1900 MHz	0.00000
2100 MHz	0.00058
2300 MHz	0.00005
2600 MHz TDD	0.00000
2600 MHz FDD	0.00031
3.4 GHz	0.00015
3.8 GHz	0.00000
Others	0.00115
Total	0.00838

Location 4

Measurement time:	15:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00010
174-230 MHz	0.00041
470-694 MHz	0.00009
700 MHz	0.00192
800 MHz	0.00122
900 MHz	0.00019
1400 MHz	0.00032
1800 MHz	0.00033
1900 MHz	0.00000
2100 MHz	0.00096
2300 MHz	0.00003
2600 MHz TDD	0.00000
2600 MHz FDD	0.00038
3.4 GHz	0.00000
3.8 GHz	0.00000
Others	0.00115
Total	0.00709

Location 5

Measurement time:	15:48
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00008
174-230 MHz	0.00041
470-694 MHz	0.00011
700 MHz	0.00108
800 MHz	0.00046
900 MHz	0.00003
1400 MHz	0.00079
1800 MHz	0.00059
1900 MHz	0.00000
2100 MHz	0.00032
2300 MHz	0.00000
2600 MHz TDD	0.00000
2600 MHz FDD	0.00018
3.4 GHz	0.00022
3.8 GHz	0.00000
Others	0.00118
Total	0.00545

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.