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 420 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 floor[2] 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:	24/01/2024	**Time Survey completed:**	13:30
Survey address:	Shrewsbury SY3		

Measurement equipment		**Serial number**	**Calibration Date**
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072612	28/09/2023
Probe	Agos Aria-6000 Antenna	ARIA-6000-1117	28/11/2022
Cabling	1.7m cable	1319	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.

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**		

Notes

***** 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.

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.

Map data: © Google

Location 1

Measurement Time:	12:14
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
700 MHz	0.00131
800 MHz	0.00641
900 MHz	0.00451
1400 MHz	0.00153
1800 MHz	0.00931
1900 MHz	0.00022
2100 MHz	0.01268
2300 MHz	0.00042
2600 MHz TDD	0.00036
2600 MHz FDD	0.00021
3.4 GHz	0.00275
3.8 GHz	0.00548
others	0.08377
total	0.12897

Location 2

Measurement Time:	12:26
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
700 MHz	0.00168
800 MHz	0.01828
900 MHz	0.00437
1400 MHz	0.00301
1800 MHz	0.00577
1900 MHz	0.00021
2100 MHz	0.00329
2300 MHz	0.00041
2600 MHz TDD	0.00035
2600 MHz FDD	0.00020
3.4 GHz	0.00305
3.8 GHz	0.00525
others	0.08050
total	0.12636

Location 3

Measurement Time:	12:44
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
700 MHz	0.00134
800 MHz	0.00676
900 MHz	0.00703
1400 MHz	0.00662
1800 MHz	0.00535
1900 MHz	0.00020
2100 MHz	0.00724
2300 MHz	0.00039
2600 MHz TDD	0.00033
2600 MHz FDD	0.00019
3.4 GHz	0.00266
3.8 GHz	0.00489
others	0.07560
total	0.11857

Location 4

Measurement Time:	13:01
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
700 MHz	0.00131
800 MHz	0.01081
900 MHz	0.01544
1400 MHz	0.00203
1800 MHz	0.00186
1900 MHz	0.00020
2100 MHz	0.00285
2300 MHz	0.00039
2600 MHz TDD	0.00032
2600 MHz FDD	0.00018
3.4 GHz	0.00216
3.8 GHz	0.00481
others	0.07494
total	0.11730

Location 5

Measurement Time:	13:24
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
700 MHz	0.00120
800 MHz	0.00876
900 MHz	0.00502
1400 MHz	0.00170
1800 MHz	0.01281
1900 MHz	0.00019
2100 MHz	0.01225
2300 MHz	0.00037
2600 MHz TDD	0.00031
2600 MHz FDD	0.00018
3.4 GHz	0.00240
3.8 GHz	0.00465
others	0.07218
total	0.12202

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.