

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 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:	30/09/2024	Time Survey completed:	11:28
Survey address:	Leuchars KY16		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY57271744	31/12/2023
Probe	Agos Aria-6000 Antenna	ARIA-6000-1089	31/12/2023
Cabling	1.7m cable	1240	31/12/2023

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.

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:	10:36
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00175
800 MHz	0.00778
900 MHz	0.01287
1400 MHz	0.00095
1800 MHz	0.00972
1900 MHz	0.00020
2100 MHz	0.00660
2300 MHz	0.00134
2600 MHz TDD	0.00032
2600 MHz FDD	0.00010
3.4 GHz	0.00137
3.8 GHz	0.00283
Others	0.14841
Total	0.19425

Location 2

Measurement time:	10:45
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00327
800 MHz	0.05810
900 MHz	0.02847
1400 MHz	0.00288
1800 MHz	0.02729
1900 MHz	0.00021
2100 MHz	0.01193
2300 MHz	0.00405
2600 MHz TDD	0.00034
2600 MHz FDD	0.00011
3.4 GHz	0.00139
3.8 GHz	0.00322
Others	0.15870
Total	0.29997

Location 3

Measurement time:	10:55
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00202
800 MHz	0.00666
900 MHz	0.00333
1400 MHz	0.00081
1800 MHz	0.00258
1900 MHz	0.00022
2100 MHz	0.00329
2300 MHz	0.00089
2600 MHz TDD	0.00036
2600 MHz FDD	0.00012
3.4 GHz	0.00139
3.8 GHz	0.00326
Others	0.16582
Total	0.19077

Location 4

Measurement time:	11:06
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00184
800 MHz	0.00808
900 MHz	0.01548
1400 MHz	0.00142
1800 MHz	0.01015
1900 MHz	0.00024
2100 MHz	0.00360
2300 MHz	0.00125
2600 MHz TDD	0.00038
2600 MHz FDD	0.00013
3.4 GHz	0.00166
3.8 GHz	0.00373
Others	0.17443
Total	0.22237

Location 5

Measurement time:	11:13
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00237
800 MHz	0.00770
900 MHz	0.00907
1400 MHz	0.00108
1800 MHz	0.00773
1900 MHz	0.00024
2100 MHz	0.00428
2300 MHz	0.00172
2600 MHz TDD	0.00039
2600 MHz FDD	0.00013
3.4 GHz	0.00162
3.8 GHz	0.00363
Others	0.17734
Total	0.21728

Location 6

Measurement time:	11:22
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
700 MHz	0.00275
800 MHz	0.01018
900 MHz	0.01764
1400 MHz	0.00130
1800 MHz	0.01279
1900 MHz	0.00024
2100 MHz	0.01171
2300 MHz	0.00219
2600 MHz TDD	0.00039
2600 MHz FDD	0.00013
3.4 GHz	0.00179
3.8 GHz	0.00369
Others	0.18046
Total	0.24527

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.