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 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:	09/01/2025	**Time Survey completed:**	12:53
Survey address:	Middlesbrough TS4		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072594	04/11/2024
Probe	Agos Aria-6000 Antenna	6000-1024	30/03/2021
Cabling	1.7m cable	1383	12/11/2023

[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:	12:10
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00685
174-230 MHz	0.00801
470-694 MHz	0.00667
700 MHz	0.00332
800 MHz	0.00125
900 MHz	0.00047
1400 MHz	0.00227
1800 MHz	0.00183
1900 MHz	0.00014
2100 MHz	0.00110
2300 MHz	0.00032
2600 MHz TDD	0.00027
2600 MHz FDD	0.00013
3.4 GHz	0.00195
3.8 GHz	0.00346
Others	0.10422
Total	**0.14226**

Location 2

Measurement time:	12:17
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00715
174-230 MHz	0.00841
470-694 MHz	0.00692
700 MHz	0.00615
800 MHz	0.00218
900 MHz	0.00048
1400 MHz	0.00226
1800 MHz	0.00441
1900 MHz	0.00015
2100 MHz	0.00109
2300 MHz	0.00034
2600 MHz TDD	0.00028
2600 MHz FDD	0.00014
3.4 GHz	0.00186
3.8 GHz	0.00368
Others	0.10983
Total	**0.15533**

Location 3

Measurement time:	12:24
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00731
174-230 MHz	0.00870
470-694 MHz	0.00704
700 MHz	0.00596
800 MHz	0.00204
900 MHz	0.00056
1400 MHz	0.00328
1800 MHz	0.00703
1900 MHz	0.00015
2100 MHz	0.00134
2300 MHz	0.00036
2600 MHz TDD	0.00029
2600 MHz FDD	0.00015
3.4 GHz	0.00197
3.8 GHz	0.00383
Others	0.11325
Total	**0.16326**

Location 4

Measurement time:	12:32
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00754
174-230 MHz	0.00879
470-694 MHz	0.00716
700 MHz	0.00303
800 MHz	0.00152
900 MHz	0.00122
1400 MHz	0.00215
1800 MHz	0.00208
1900 MHz	0.00015
2100 MHz	0.00103
2300 MHz	0.00041
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00203
3.8 GHz	0.00389
Others	0.11551
Total	**0.15697**

Location 5

Measurement time:	12:38
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00764
174-230 MHz	0.00902
470-694 MHz	0.00744
700 MHz	0.00882
800 MHz	0.00507
900 MHz	0.00062
1400 MHz	0.01061
1800 MHz	0.00380
1900 MHz	0.00016
2100 MHz	0.00126
2300 MHz	0.00038
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00271
3.8 GHz	0.00402
Others	0.11796
Total	**0.17998**

Location 6

Measurement time:	12:47
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00777
174-230 MHz	0.00913
470-694 MHz	0.00750
700 MHz	0.00403
800 MHz	0.00208
900 MHz	0.00051
1400 MHz	0.00278
1800 MHz	0.00295
1900 MHz	0.00016
2100 MHz	0.00153
2300 MHz	0.00038
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00221
3.8 GHz	0.00410
Others	0.12063
Total	**0.16622**

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.