

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:	06/08/2024	Time Survey completed:	12:02
Survey address:	Droitwich WR9		

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.

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:	10:33
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00991
174-230 MHz	0.00852
470-694 MHz	0.00953
700 MHz	0.00174
800 MHz	0.00344
900 MHz	0.00126
1400 MHz	0.00045
1800 MHz	0.00120
1900 MHz	0.00022
2100 MHz	0.00084
2300 MHz	0.00040
2600 MHz TDD	0.00037
2600 MHz FDD	0.00019
3.4 GHz	0.00214
3.8 GHz	0.00523
Others	0.19856
Total	0.24400

Location 2

Measurement time:	10:49
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01084
174-230 MHz	0.00926
470-694 MHz	0.01033
700 MHz	0.00120
800 MHz	0.00089
900 MHz	0.00072
1400 MHz	0.00049
1800 MHz	0.00080
1900 MHz	0.00025
2100 MHz	0.00072
2300 MHz	0.00045
2600 MHz TDD	0.00041
2600 MHz FDD	0.00021
3.4 GHz	0.00242
3.8 GHz	0.00591
Others	0.22023
Total	0.26512

Location 3

Measurement time:	11:19
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01133
174-230 MHz	0.00975
470-694 MHz	0.01080
700 MHz	0.00185
800 MHz	0.00480
900 MHz	0.00079
1400 MHz	0.00051
1800 MHz	0.00149
1900 MHz	0.00026
2100 MHz	0.00066
2300 MHz	0.00048
2600 MHz TDD	0.00043
2600 MHz FDD	0.00023
3.4 GHz	0.00260
3.8 GHz	0.00631
Others	0.23367
Total	0.28598

Location 4

Measurement time:	11:41
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01135
174-230 MHz	0.00985
470-694 MHz	0.01081
700 MHz	0.00133
800 MHz	0.00277
900 MHz	0.00072
1400 MHz	0.00051
1800 MHz	0.00130
1900 MHz	0.00026
2100 MHz	0.00078
2300 MHz	0.00048
2600 MHz TDD	0.00043
2600 MHz FDD	0.00023
3.4 GHz	0.00259
3.8 GHz	0.00633
Others	0.23243
Total	0.28215

Location 5

Measurement time:	11:56
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01190
174-230 MHz	0.00999
470-694 MHz	0.01111
700 MHz	0.00197
800 MHz	0.00584
900 MHz	0.00101
1400 MHz	0.00053
1800 MHz	0.00241
1900 MHz	0.00027
2100 MHz	0.00101
2300 MHz	0.00048
2600 MHz TDD	0.00044
2600 MHz FDD	0.00023
3.4 GHz	0.00268
3.8 GHz	0.00656
Others	0.24004
Total	0.29649

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.