

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:	06/03/2025	Time Survey completed:	14:18
Survey address:	Burton-on-Trent DE14		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072606	04/06/2024
Probe	Agos Aria-6000 Antenna	ARIA-6000-1158	25/09/2023
Cabling	1.7m cable	1458	25/09/2023

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:	12:35
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01432
174-230 MHz	0.01588
470-694 MHz	0.01192
700 MHz	0.01800
800 MHz	0.00866
900 MHz	0.00423
1400 MHz	0.01299
1800 MHz	0.00198
1900 MHz	0.00028
2100 MHz	0.00230
2300 MHz	0.00080
2600 MHz TDD	0.00051
2600 MHz FDD	0.00071
3.4 GHz	0.00510
3.8 GHz	0.00578
Others	0.20108
Total	0.30455

Location 2

Measurement time:	12:49
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01458
174-230 MHz	0.01609
470-694 MHz	0.01211
700 MHz	0.01842
800 MHz	0.07562
900 MHz	0.02744
1400 MHz	0.00165
1800 MHz	0.00340
1900 MHz	0.00029
2100 MHz	0.01236
2300 MHz	0.00910
2600 MHz TDD	0.00052
2600 MHz FDD	0.00071
3.4 GHz	0.00876
3.8 GHz	0.00589
Others	0.21681
Total	0.42374

Location 3

Measurement time:	13:06
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01454
174-230 MHz	0.01610
470-694 MHz	0.01213
700 MHz	0.01181
800 MHz	0.00787
900 MHz	0.00294
1400 MHz	0.00157
1800 MHz	0.00336
1900 MHz	0.00029
2100 MHz	0.00210
2300 MHz	0.00071
2600 MHz TDD	0.00052
2600 MHz FDD	0.00060
3.4 GHz	0.00487
3.8 GHz	0.00599
Others	0.20451
Total	0.28992

Location 4

Measurement time:	13:44
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01417
174-230 MHz	0.01566
470-694 MHz	0.01186
700 MHz	0.00249
800 MHz	0.00156
900 MHz	0.00107
1400 MHz	0.00119
1800 MHz	0.00166
1900 MHz	0.00028
2100 MHz	0.00127
2300 MHz	0.00057
2600 MHz TDD	0.00050
2600 MHz FDD	0.00022
3.4 GHz	0.00268
3.8 GHz	0.00556
Others	0.19544
Total	0.25616

Location 5

Measurement time:	13:58
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01398
174-230 MHz	0.01558
470-694 MHz	0.01186
700 MHz	0.00828
800 MHz	0.01113
900 MHz	0.01530
1400 MHz	0.00335
1800 MHz	0.00497
1900 MHz	0.00028
2100 MHz	0.00414
2300 MHz	0.00444
2600 MHz TDD	0.00050
2600 MHz FDD	0.00361
3.4 GHz	0.00495
3.8 GHz	0.00568
Others	0.19808
Total	0.30610

Location 6

Measurement time:	14:12
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01433
174-230 MHz	0.01565
470-694 MHz	0.01173
700 MHz	0.02031
800 MHz	0.01243
900 MHz	0.00438
1400 MHz	0.01635
1800 MHz	0.00251
1900 MHz	0.00028
2100 MHz	0.00451
2300 MHz	0.00077
2600 MHz TDD	0.00049
2600 MHz FDD	0.00122
3.4 GHz	0.00550
3.8 GHz	0.00568
Others	0.19711
Total	0.31326

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.