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:	02/10/2025	**Time Survey completed:**	11:24
Survey address:	Sandwell, Dudley B64		

Measurement equipment			**Serial number**	**Calibration Date**
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072612	04/11/2024	
Probe	Agos Aria-6000 Antenna	ARIA-6000-1117	08/07/2025	
Cabling	1.7m cable	1319	08/07/2025	

[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

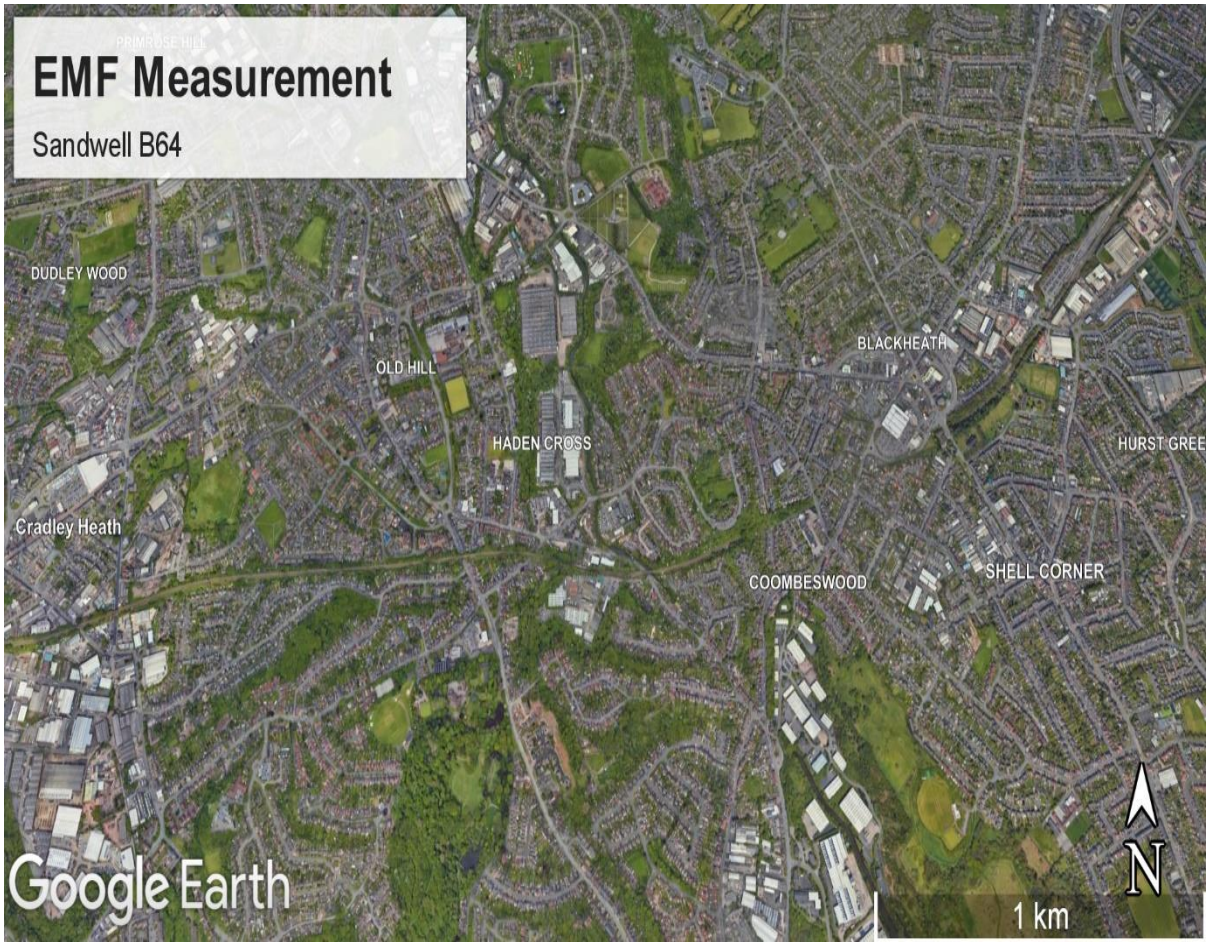
Mobile bands covered by this report

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 30 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:	10:30
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00833
174-230 MHz	0.00971
470-694 MHz	0.00760
700 MHz	0.00434
800 MHz	0.00280
900 MHz	0.00054
1400 MHz	0.00113
1800 MHz	0.00741
1900 MHz	0.00018
2100 MHz	0.00106
2300 MHz	0.00035
2600 MHz TDD	0.00029
2600 MHz FDD	0.00017
3.4 GHz	0.00333
3.8 GHz	0.00431
Others	0.12714
Total	**0.17870**

Location 2

Measurement time:	10:38
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00868
174-230 MHz	0.01013
470-694 MHz	0.00790
700 MHz	0.00430
800 MHz	0.00429
900 MHz	0.00057
1400 MHz	0.00266
1800 MHz	0.00401
1900 MHz	0.00019
2100 MHz	0.00121
2300 MHz	0.00036
2600 MHz TDD	0.00031
2600 MHz FDD	0.00019
3.4 GHz	0.00343
3.8 GHz	0.00463
Others	0.13386
Total	**0.18673**

Location 3

Measurement time:	10:46
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00881
174-230 MHz	0.01031
470-694 MHz	0.00814
700 MHz	0.00374
800 MHz	0.00284
900 MHz	0.00060
1400 MHz	0.00103
1800 MHz	0.00417
1900 MHz	0.00019
2100 MHz	0.00195
2300 MHz	0.00038
2600 MHz TDD	0.00032
2600 MHz FDD	0.00019
3.4 GHz	0.00272
3.8 GHz	0.00481
Others	0.13812
Total	**0.18832**

Location 4

Measurement time:	10:54
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00909
174-230 MHz	0.01067
470-694 MHz	0.00833
700 MHz	0.00207
800 MHz	0.00143
900 MHz	0.00063
1400 MHz	0.00093
1800 MHz	0.00242
1900 MHz	0.00020
2100 MHz	0.00116
2300 MHz	0.00041
2600 MHz TDD	0.00033
2600 MHz FDD	0.00021
3.4 GHz	0.00277
3.8 GHz	0.00501
Others	0.14172
Total	**0.18737**

Location 5

Measurement time:	11:07
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00955
174-230 MHz	0.01127
470-694 MHz	0.00865
700 MHz	0.00494
800 MHz	0.00939
900 MHz	0.00060
1400 MHz	0.00813
1800 MHz	0.00870
1900 MHz	0.00020
2100 MHz	0.00376
2300 MHz	0.00040
2600 MHz TDD	0.00034
2600 MHz FDD	0.00021
3.4 GHz	0.00362
3.8 GHz	0.00517
Others	0.14823
Total	**0.22317**

Location 6

Measurement time:	11:18
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.00961
174-230 MHz	0.01149
470-694 MHz	0.00875
700 MHz	0.00527
800 MHz	0.00400
900 MHz	0.00062
1400 MHz	0.00108
1800 MHz	0.00908
1900 MHz	0.00021
2100 MHz	0.00170
2300 MHz	0.00041
2600 MHz TDD	0.00036
2600 MHz FDD	0.00021
3.4 GHz	0.00308
3.8 GHz	0.00538
Others	0.15177
Total	**0.21303**

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.