

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:	08/01/2026	Time Survey completed:	11:13
Survey address:	Whickham NE11		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072594	25/11/2025
Probe	Agos Aria-6000 Antenna	ARIA-6000-1156	08/07/2025
Cabling	1.7m cable	1378	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:	10:22
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00786
174-230 MHz	0.00919
470-694 MHz	0.00752
700 MHz	0.00402
800 MHz	0.01571
900 MHz	0.02412
1400 MHz	0.00035
1800 MHz	0.00106
1900 MHz	0.00016
2100 MHz	0.00501
2300 MHz	0.00167
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00173
3.8 GHz	0.00409
Others	0.12086
Total	0.20381

Location 2

Measurement time:	10:32
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00773
174-230 MHz	0.00901
470-694 MHz	0.00739
700 MHz	0.00178
800 MHz	0.00380
900 MHz	0.00346
1400 MHz	0.00035
1800 MHz	0.00108
1900 MHz	0.00016
2100 MHz	0.00153
2300 MHz	0.00098
2600 MHz TDD	0.00031
2600 MHz FDD	0.00017
3.4 GHz	0.00174
3.8 GHz	0.00416
Others	0.12026
Total	0.16390

Location 3

Measurement time:	10:41
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00790
174-230 MHz	0.00916
470-694 MHz	0.00733
700 MHz	0.00162
800 MHz	0.00706
900 MHz	0.03467
1400 MHz	0.00036
1800 MHz	0.00198
1900 MHz	0.00016
2100 MHz	0.00502
2300 MHz	0.00348
2600 MHz TDD	0.00031
2600 MHz FDD	0.00016
3.4 GHz	0.00174
3.8 GHz	0.00410
Others	0.12136
Total	0.20642

Location 4

Measurement time:	10:50
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00788
174-230 MHz	0.00956
470-694 MHz	0.00743
700 MHz	0.00366
800 MHz	0.00669
900 MHz	0.02378
1400 MHz	0.00040
1800 MHz	0.00344
1900 MHz	0.00016
2100 MHz	0.00563
2300 MHz	0.00426
2600 MHz TDD	0.00032
2600 MHz FDD	0.00016
3.4 GHz	0.00178
3.8 GHz	0.00420
Others	0.12297
Total	0.20233

Location 5

Measurement time:	10:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00797
174-230 MHz	0.00924
470-694 MHz	0.00746
700 MHz	0.00905
800 MHz	0.02223
900 MHz	0.04489
1400 MHz	0.00036
1800 MHz	0.00343
1900 MHz	0.00016
2100 MHz	0.00553
2300 MHz	0.00176
2600 MHz TDD	0.00032
2600 MHz FDD	0.00019
3.4 GHz	0.00177
3.8 GHz	0.00422
Others	0.12233
Total	0.24091

Location 6

Measurement time:	11:07
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00790
174-230 MHz	0.00956
470-694 MHz	0.00760
700 MHz	0.00521
800 MHz	0.01233
900 MHz	0.02156
1400 MHz	0.00035
1800 MHz	0.00116
1900 MHz	0.00017
2100 MHz	0.00917
2300 MHz	0.00216
2600 MHz TDD	0.00032
2600 MHz FDD	0.00016
3.4 GHz	0.00177
3.8 GHz	0.00418
Others	0.12307
Total	0.20667

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.