

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:	02/05/2025	Time Survey completed:	12:29
Survey address:	Samlesbury BB2		

Measurement equipment			Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072610	05/03/2025	
Probe	Agos Aria-6000 Antenna	6000-1022	22/01/2021	
Cabling	1.7m cable	1462	18/01/2024	

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:	11:34
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01046
174-230 MHz	0.01163
470-694 MHz	0.00909
700 MHz	0.00145
800 MHz	0.00974
900 MHz	0.00737
1400 MHz	0.00053
1800 MHz	0.00727
1900 MHz	0.00020
2100 MHz	0.00085
2300 MHz	0.00042
2600 MHz TDD	0.00036
2600 MHz FDD	0.00205
3.4 GHz	0.00229
3.8 GHz	0.00464
Others	0.15149
Total	0.21985

Location 2

Measurement time:	11:43
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01153
174-230 MHz	0.01264
470-694 MHz	0.00977
700 MHz	0.00915
800 MHz	0.03404
900 MHz	0.03390
1400 MHz	0.00091
1800 MHz	0.00659
1900 MHz	0.00022
2100 MHz	0.00228
2300 MHz	0.00045
2600 MHz TDD	0.00039
2600 MHz FDD	0.00142
3.4 GHz	0.00246
3.8 GHz	0.00512
Others	0.16609
Total	0.29696

Location 3

Measurement time:	11:52
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01229
174-230 MHz	0.01362
470-694 MHz	0.01043
700 MHz	0.00316
800 MHz	0.02822
900 MHz	0.02491
1400 MHz	0.00095
1800 MHz	0.01074
1900 MHz	0.00024
2100 MHz	0.00436
2300 MHz	0.00049
2600 MHz TDD	0.00042
2600 MHz FDD	0.00044
3.4 GHz	0.00254
3.8 GHz	0.00559
Others	0.17930
Total	0.29771

Location 4

Measurement time:	12:04
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01333
174-230 MHz	0.01452
470-694 MHz	0.01117
700 MHz	0.00173
800 MHz	0.00383
900 MHz	0.00273
1400 MHz	0.00088
1800 MHz	0.00081
1900 MHz	0.00025
2100 MHz	0.00260
2300 MHz	0.00053
2600 MHz TDD	0.00045
2600 MHz FDD	0.00045
3.4 GHz	0.00281
3.8 GHz	0.00609
Others	0.19232
Total	0.25451

Location 5

Measurement time:	12:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01384
174-230 MHz	0.01529
470-694 MHz	0.01163
700 MHz	0.00190
800 MHz	0.00581
900 MHz	0.00893
1400 MHz	0.00093
1800 MHz	0.00239
1900 MHz	0.00027
2100 MHz	0.00184
2300 MHz	0.00056
2600 MHz TDD	0.00047
2600 MHz FDD	0.00042
3.4 GHz	0.00312
3.8 GHz	0.00647
Others	0.20275
Total	0.27661

Location 6

Measurement time:	12:23
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01402
174-230 MHz	0.01589
470-694 MHz	0.01192
700 MHz	0.00192
800 MHz	0.00901
900 MHz	0.00459
1400 MHz	0.00068
1800 MHz	0.01291
1900 MHz	0.00028
2100 MHz	0.00102
2300 MHz	0.00056
2600 MHz TDD	0.00048
2600 MHz FDD	0.00039
3.4 GHz	0.00316
3.8 GHz	0.00664
Others	0.20753
Total	0.29101

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.