

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:	14/11/2025	Time Survey completed:	15:08
Survey address:	Blackburn BB1		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072593	06/08/2025
Probe	Agos Aria-6000 Antenna	AGOS-6000-1022	08/07/2025
Cabling	1.7m cable	1405	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:	14:20
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01255
174-230 MHz	0.01414
470-694 MHz	0.01083
700 MHz	0.00496
800 MHz	0.00740
900 MHz	0.01276
1400 MHz	0.01137
1800 MHz	0.00498
1900 MHz	0.00027
2100 MHz	0.00791
2300 MHz	0.00059
2600 MHz TDD	0.00063
2600 MHz FDD	0.00190
3.4 GHz	0.00501
3.8 GHz	0.00654
Others	0.18924
Total	0.29108

Location 2

Measurement time:	14:28
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01168
174-230 MHz	0.01338
470-694 MHz	0.01025
700 MHz	0.00652
800 MHz	0.03130
900 MHz	0.05646
1400 MHz	0.02916
1800 MHz	0.00502
1900 MHz	0.00026
2100 MHz	0.02188
2300 MHz	0.00055
2600 MHz TDD	0.00070
2600 MHz FDD	0.00473
3.4 GHz	0.00620
3.8 GHz	0.00602
Others	0.17623
Total	0.38032

Location 3

Measurement time:	14:38
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01105
174-230 MHz	0.01239
470-694 MHz	0.00962
700 MHz	0.01503
800 MHz	0.00526
900 MHz	0.00180
1400 MHz	0.01231
1800 MHz	0.00550
1900 MHz	0.00024
2100 MHz	0.01206
2300 MHz	0.00054
2600 MHz TDD	0.00048
2600 MHz FDD	0.00052
3.4 GHz	0.00610
3.8 GHz	0.00554
Others	0.16391
Total	0.26235

Location 4

Measurement time:	14:46
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01057
174-230 MHz	0.01202
470-694 MHz	0.00928
700 MHz	0.01187
800 MHz	0.00855
900 MHz	0.00648
1400 MHz	0.01206
1800 MHz	0.00255
1900 MHz	0.00023
2100 MHz	0.00494
2300 MHz	0.00049
2600 MHz TDD	0.00048
2600 MHz FDD	0.00095
3.4 GHz	0.00523
3.8 GHz	0.00530
Others	0.15729
Total	0.24829

Location 5

Measurement time:	14:55
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01015
174-230 MHz	0.01156
470-694 MHz	0.00900
700 MHz	0.00737
800 MHz	0.00603
900 MHz	0.00518
1400 MHz	0.00428
1800 MHz	0.00138
1900 MHz	0.00022
2100 MHz	0.00207
2300 MHz	0.00047
2600 MHz TDD	0.00045
2600 MHz FDD	0.00050
3.4 GHz	0.00333
3.8 GHz	0.00506
Others	0.15117
Total	0.21823

Location 6

Measurement time:	15:02
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01009
174-230 MHz	0.01141
470-694 MHz	0.00879
700 MHz	0.01582
800 MHz	0.01807
900 MHz	0.01308
1400 MHz	0.01039
1800 MHz	0.00290
1900 MHz	0.00022
2100 MHz	0.00865
2300 MHz	0.00046
2600 MHz TDD	0.00050
2600 MHz FDD	0.00207
3.4 GHz	0.00393
3.8 GHz	0.00492
Others	0.14820
Total	0.25950

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.