

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:	23/09/2025	Time Survey completed:	12:53
Survey address:	Carlisle CA6		

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	1462	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:	11:53
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00962
174-230 MHz	0.00913
470-694 MHz	0.00738
700 MHz	0.00262
800 MHz	0.11866
900 MHz	0.12295
1400 MHz	0.00036
1800 MHz	0.00175
1900 MHz	0.00017
2100 MHz	0.00223
2300 MHz	0.00037
2600 MHz TDD	0.00037
2600 MHz FDD	0.00103
3.4 GHz	0.00179
3.8 GHz	0.00378
Others	0.12039
Total	0.40260

Location 2

Measurement time:	12:03
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00933
174-230 MHz	0.01009
470-694 MHz	0.00971
700 MHz	0.00202
800 MHz	0.01102
900 MHz	0.01449
1400 MHz	0.00041
1800 MHz	0.00077
1900 MHz	0.00019
2100 MHz	0.00103
2300 MHz	0.00040
2600 MHz TDD	0.00039
2600 MHz FDD	0.00033
3.4 GHz	0.00189
3.8 GHz	0.00422
Others	0.13026
Total	0.19655

Location 3

Measurement time:	12:12
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00980
174-230 MHz	0.01060
470-694 MHz	0.00925
700 MHz	0.00692
800 MHz	0.07312
900 MHz	0.06912
1400 MHz	0.00043
1800 MHz	0.00201
1900 MHz	0.00020
2100 MHz	0.00188
2300 MHz	0.00043
2600 MHz TDD	0.00043
2600 MHz FDD	0.00073
3.4 GHz	0.00208
3.8 GHz	0.00460
Others	0.14007
Total	0.33169

Location 4

Measurement time:	12:21
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01286
174-230 MHz	0.01144
470-694 MHz	0.00922
700 MHz	0.00188
800 MHz	0.00542
900 MHz	0.00137
1400 MHz	0.00046
1800 MHz	0.00715
1900 MHz	0.00022
2100 MHz	0.00152
2300 MHz	0.00046
2600 MHz TDD	0.00044
2600 MHz FDD	0.00032
3.4 GHz	0.00219
3.8 GHz	0.00495
Others	0.14842
Total	0.20832

Location 5

Measurement time:	12:37
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01181
174-230 MHz	0.01225
470-694 MHz	0.00953
700 MHz	0.00340
800 MHz	0.01208
900 MHz	0.00832
1400 MHz	0.00049
1800 MHz	0.00219
1900 MHz	0.00024
2100 MHz	0.00210
2300 MHz	0.00050
2600 MHz TDD	0.00049
2600 MHz FDD	0.00065
3.4 GHz	0.00244
3.8 GHz	0.00543
Others	0.16144
Total	0.23337

Location 6

Measurement time:	12:47
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01350
174-230 MHz	0.01288
470-694 MHz	0.00995
700 MHz	0.00550
800 MHz	0.07388
900 MHz	0.11090
1400 MHz	0.00052
1800 MHz	0.00199
1900 MHz	0.00025
2100 MHz	0.00261
2300 MHz	0.00053
2600 MHz TDD	0.00052
2600 MHz FDD	0.00160
3.4 GHz	0.00272
3.8 GHz	0.00590
Others	0.17298
Total	0.41624

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.