

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:	30/08/2024	Time Survey completed:	10:11
Survey address:	Ripon HG4		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072594	04/11/2024
Probe	Agos Aria-6000 Antenna	6000-1024	30/03/2021
Cabling	1.7m cable	1383	12/11/2023

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 420 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:	09:20
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00705
174-230 MHz	0.00841
470-694 MHz	0.00710
700 MHz	0.02170
800 MHz	0.06649
900 MHz	0.00055
1400 MHz	0.00031
1800 MHz	0.00498
1900 MHz	0.00015
2100 MHz	0.00344
2300 MHz	0.00034
2600 MHz TDD	0.00028
2600 MHz FDD	0.00014
3.4 GHz	0.00156
3.8 GHz	0.00366
Others	0.11123
Total	0.23739

Location 2

Measurement time:	09:28
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00772
174-230 MHz	0.00898
470-694 MHz	0.00758
700 MHz	0.12393
800 MHz	0.37686
900 MHz	0.00054
1400 MHz	0.00033
1800 MHz	0.00187
1900 MHz	0.00016
2100 MHz	0.00110
2300 MHz	0.00037
2600 MHz TDD	0.00030
2600 MHz FDD	0.00015
3.4 GHz	0.00169
3.8 GHz	0.00399
Others	0.12725
Total	0.66282

Location 3

Measurement time:	09:35
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00800
174-230 MHz	0.00958
470-694 MHz	0.00817
700 MHz	0.03539
800 MHz	0.10301
900 MHz	0.00053
1400 MHz	0.00036
1800 MHz	0.00499
1900 MHz	0.00017
2100 MHz	0.00321
2300 MHz	0.00039
2600 MHz TDD	0.00032
2600 MHz FDD	0.00016
3.4 GHz	0.00181
3.8 GHz	0.00426
Others	0.12767
Total	0.30802

Location 4

Measurement time:	09:44
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00842
174-230 MHz	0.01016
470-694 MHz	0.00846
700 MHz	0.00811
800 MHz	0.02645
900 MHz	0.00055
1400 MHz	0.00038
1800 MHz	0.01283
1900 MHz	0.00018
2100 MHz	0.00229
2300 MHz	0.00041
2600 MHz TDD	0.00035
2600 MHz FDD	0.00018
3.4 GHz	0.00196
3.8 GHz	0.00459
Others	0.13396
Total	0.21928

Location 5

Measurement time:	09:51
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00895
174-230 MHz	0.01040
470-694 MHz	0.00858
700 MHz	0.02073
800 MHz	0.05776
900 MHz	0.00057
1400 MHz	0.00039
1800 MHz	0.00235
1900 MHz	0.00018
2100 MHz	0.00199
2300 MHz	0.00043
2600 MHz TDD	0.00036
2600 MHz FDD	0.00018
3.4 GHz	0.00202
3.8 GHz	0.00477
Others	0.13973
Total	0.25938

Location 6

Measurement time:	10:05
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00924
174-230 MHz	0.01094
470-694 MHz	0.00866
700 MHz	0.00292
800 MHz	0.00665
900 MHz	0.00111
1400 MHz	0.00041
1800 MHz	0.00462
1900 MHz	0.00019
2100 MHz	0.00125
2300 MHz	0.00045
2600 MHz TDD	0.00038
2600 MHz FDD	0.00019
3.4 GHz	0.00214
3.8 GHz	0.00502
Others	0.14432
Total	0.19848

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.