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 floor[2] 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:	15/11/2024	**Time Survey completed:**	10:35
Survey address:	Ormesby TS7		

Measurement equipment		**Serial number**	**Calibration Date**
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072606	04/06/2024
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:	09:36
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01195
174-230 MHz	0.01296
470-694 MHz	0.00963
700 MHz	0.00284
800 MHz	0.01375
900 MHz	0.06195
1400 MHz	0.00133
1800 MHz	0.00135
1900 MHz	0.00022
2100 MHz	0.00319
2300 MHz	0.00182
2600 MHz TDD	0.00039
2600 MHz FDD	0.00022
3.4 GHz	0.00192
3.8 GHz	0.00410
Others	0.15411
Total	**0.28173**

Location 2

Measurement time:	09:45
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01175
174-230 MHz	0.01290
470-694 MHz	0.00994
700 MHz	0.00199
800 MHz	0.00287
900 MHz	0.00218
1400 MHz	0.00099
1800 MHz	0.00367
1900 MHz	0.00023
2100 MHz	0.00148
2300 MHz	0.00067
2600 MHz TDD	0.00040
2600 MHz FDD	0.00021
3.4 GHz	0.00254
3.8 GHz	0.00433
Others	0.15898
Total	**0.21512**

Location 3

Measurement time:	09:54
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01198
174-230 MHz	0.01353
470-694 MHz	0.01019
700 MHz	0.00159
800 MHz	0.00143
900 MHz	0.00226
1400 MHz	0.00080
1800 MHz	0.00281
1900 MHz	0.00024
2100 MHz	0.00336
2300 MHz	0.00190
2600 MHz TDD	0.00041
2600 MHz FDD	0.00018
3.4 GHz	0.00223
3.8 GHz	0.00446
Others	0.16377
Total	**0.22112**

Location 4

Measurement time:	10:03
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01238
174-230 MHz	0.01358
470-694 MHz	0.01027
700 MHz	0.00167
800 MHz	0.00129
900 MHz	0.00087
1400 MHz	0.00074
1800 MHz	0.00456
1900 MHz	0.00024
2100 MHz	0.00115
2300 MHz	0.00052
2600 MHz TDD	0.00042
2600 MHz FDD	0.00020
3.4 GHz	0.00218
3.8 GHz	0.00452
Others	0.16554
Total	**0.22012**

Location 5

Measurement time:	10:19
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01313
174-230 MHz	0.01401
470-694 MHz	0.01060
700 MHz	0.00255
800 MHz	0.00607
900 MHz	0.00623
1400 MHz	0.00123
1800 MHz	0.00702
1900 MHz	0.00025
2100 MHz	0.00178
2300 MHz	0.00236
2600 MHz TDD	0.00044
2600 MHz FDD	0.00019
3.4 GHz	0.00226
3.8 GHz	0.00471
Others	0.17119
Total	**0.24401**

Location 6

Measurement time:	10:29
Frequency band	**Percentage of the ICNIRP reference levels for general public exposure**
87.5-108 MHz	0.01370
174-230 MHz	0.01481
470-694 MHz	0.01075
700 MHz	0.00251
800 MHz	0.03285
900 MHz	0.07203
1400 MHz	0.00176
1800 MHz	0.00145
1900 MHz	0.00025
2100 MHz	0.00237
2300 MHz	0.00305
2600 MHz TDD	0.00044
2600 MHz FDD	0.00023
3.4 GHz	0.00240
3.8 GHz	0.00482
Others	0.17725
Total	**0.34066**

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.