

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:	22/11/2024	Time Survey completed:	11:29
Survey address:	Saltburn TS12		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072606	04/06/2025
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:	10:42
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00926
174-230 MHz	0.01039
470-694 MHz	0.00817
700 MHz	0.03988
800 MHz	0.01698
900 MHz	0.00068
1400 MHz	0.00603
1800 MHz	0.00334
1900 MHz	0.00018
2100 MHz	0.00243
2300 MHz	0.00036
2600 MHz TDD	0.00032
2600 MHz FDD	0.00012
3.4 GHz	0.00174
3.8 GHz	0.00323
Others	0.12609
Total	0.22920

Location 2

Measurement time:	10:51
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00965
174-230 MHz	0.01102
470-694 MHz	0.00857
700 MHz	0.00855
800 MHz	0.00338
900 MHz	0.00065
1400 MHz	0.02409
1800 MHz	0.01845
1900 MHz	0.00019
2100 MHz	0.01322
2300 MHz	0.00038
2600 MHz TDD	0.00034
2600 MHz FDD	0.00014
3.4 GHz	0.00185
3.8 GHz	0.00346
Others	0.13218
Total	0.23612

Location 3

Measurement time:	10:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01016
174-230 MHz	0.01125
470-694 MHz	0.00885
700 MHz	0.03586
800 MHz	0.01277
900 MHz	0.00065
1400 MHz	0.01785
1800 MHz	0.00750
1900 MHz	0.00020
2100 MHz	0.00274
2300 MHz	0.00040
2600 MHz TDD	0.00035
2600 MHz FDD	0.00014
3.4 GHz	0.00188
3.8 GHz	0.00362
Others	0.13800
Total	0.25222

Location 4

Measurement time:	11:07
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01044
174-230 MHz	0.01172
470-694 MHz	0.00907
700 MHz	0.01100
800 MHz	0.00523
900 MHz	0.00063
1400 MHz	0.00770
1800 MHz	0.00457
1900 MHz	0.00020
2100 MHz	0.00255
2300 MHz	0.00041
2600 MHz TDD	0.00036
2600 MHz FDD	0.00015
3.4 GHz	0.00204
3.8 GHz	0.00379
Others	0.14233
Total	0.21219

Location 5

Measurement time:	11:15
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01087
174-230 MHz	0.01218
470-694 MHz	0.00929
700 MHz	0.00777
800 MHz	0.00223
900 MHz	0.00067
1400 MHz	0.00678
1800 MHz	0.00415
1900 MHz	0.00022
2100 MHz	0.00140
2300 MHz	0.00043
2600 MHz TDD	0.00037
2600 MHz FDD	0.00015
3.4 GHz	0.00192
3.8 GHz	0.00393
Others	0.14782
Total	0.21018

Location 6

Measurement time:	11:23
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.01097
174-230 MHz	0.01221
470-694 MHz	0.00954
700 MHz	0.03329
800 MHz	0.01052
900 MHz	0.00072
1400 MHz	0.00899
1800 MHz	0.00313
1900 MHz	0.00022
2100 MHz	0.00378
2300 MHz	0.00044
2600 MHz TDD	0.00039
2600 MHz FDD	0.00016
3.4 GHz	0.00217
3.8 GHz	0.00406
Others	0.15218
Total	0.25277

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.