

# 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)<sup>1</sup>, 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<sup>2</sup> 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%.

<b>Date of Survey:</b>	11/12/2024	<b>Time Survey completed:</b>	15:14
<b>Survey address:</b>	Sutton SM3		

Measurement equipment		Serial number	Calibration Date
<b>Meter</b>	Keysight Fieldfox N9915A Spectrum Analyser	US55240262	24/01/2024
<b>Probe</b>	Agos Aria-6000 Antenna	1111	28/11/2022
<b>Cabling</b>	1.7m cable	1313	28/11/2022

---

<sup>1</sup> <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>

<sup>2</sup> 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 five locations and are presented in the following pages of this report.



## Location 1

<b>Measurement time:</b>	<b>14:27</b>
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00617
174-230 MHz	0.00539
470-694 MHz	0.00438
700 MHz	0.00121
800 MHz	0.00547
900 MHz	0.00309
1400 MHz	0.00074
1800 MHz	0.00173
1900 MHz	0.00007
2100 MHz	0.00208
2300 MHz	0.00022
2600 MHz TDD	0.00017
2600 MHz FDD	0.00029
3.4 GHz	0.00191
3.8 GHz	0.00129
Others	0.06436
<b>Total</b>	<b>0.09856</b>

## Location 2

<b>Measurement time:</b>	14:39
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00647
174-230 MHz	0.00558
470-694 MHz	0.00464
700 MHz	0.00309
800 MHz	0.01437
900 MHz	0.00060
1400 MHz	0.00088
1800 MHz	0.00507
1900 MHz	0.00008
2100 MHz	0.00156
2300 MHz	0.00024
2600 MHz TDD	0.00017
2600 MHz FDD	0.00020
3.4 GHz	0.00184
3.8 GHz	0.00136
Others	0.06716
<b>Total</b>	<b>0.11329</b>

### Location 3

<b>Measurement time:</b>	14:49
<b>Frequency band</b>	<b>Percentage of the ICNIRP reference levels for general public exposure</b>
87.5-108 MHz	0.00623
174-230 MHz	0.00565
470-694 MHz	0.00474
700 MHz	0.00217
800 MHz	0.00696
900 MHz	0.00042
1400 MHz	0.00193
1800 MHz	0.00958
1900 MHz	0.00008
2100 MHz	0.00280
2300 MHz	0.00020
2600 MHz TDD	0.00018
2600 MHz FDD	0.00010
3.4 GHz	0.00688
3.8 GHz	0.00145
Others	0.06835
<b>Total</b>	<b>0.11771</b>

#### Location 4

Measurement time:	14:59
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00632
174-230 MHz	0.00568
470-694 MHz	0.00469
700 MHz	0.00202
800 MHz	0.00580
900 MHz	0.00040
1400 MHz	0.00116
1800 MHz	0.00254
1900 MHz	0.00008
2100 MHz	0.00139
2300 MHz	0.00020
2600 MHz TDD	0.00018
2600 MHz FDD	0.00034
3.4 GHz	0.00529
3.8 GHz	0.00146
Others	0.06892
<b>Total</b>	<b>0.10647</b>

## Location 5

Measurement time:	15:08
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00657
174-230 MHz	0.00578
470-694 MHz	0.00470
700 MHz	0.00100
800 MHz	0.00446
900 MHz	0.00268
1400 MHz	0.00093
1800 MHz	0.00202
1900 MHz	0.00008
2100 MHz	0.00251
2300 MHz	0.00026
2600 MHz TDD	0.00018
2600 MHz FDD	0.00008
3.4 GHz	0.00242
3.8 GHz	0.00146
Others	0.06962
<b>Total</b>	<b>0.10475</b>

*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.*