

Cellular Mast Emissions Survey: Gorey Common Kiosk (Jersey)



DOCUMENT DETAILS

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Survey Engineer:	Louise Sands
Report Compiled by:	Lauren Medhurst
Checked and Approved by	Bachir Belloul
Authorised for Distribution	Ravi Mondair

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Executive Summary

CICRA regularly monitors radiowave emissions from the cellular masts in the Bailiwicks of Guernsey and Jersey to ensure the mobile network operators who operate their services from those masts comply with their license obligations in terms of power levels and that the emissions from the sites comply with internationally recognised standards and guidelines regarding Health & Safety limits for the public.

In 2017, CICRA commissioned iWireless Solutions to conduct the emission surveys at all sites within the two Bailiwicks. This report is for the Gorey Common Kiosk site located in Jersey.

The Gorey Common Kiosk site was used by a single operator at the time of the survey: JT J. Surveys were however conducted at all cellular frequency bands (800, 900, 1800, 2100 and 2600MHz) for all mobile cellular technologies (GSM, 3G and 4G) and for all three cellular operators as a routine procedure.

The survey established that the emissions around this site were very low and well below the safety limits for the public advised by internationally recognised standards.

The values shown hereafter are the maximum levels that were recorded around the site following a peak search. In most other locations, the levels were lower. The recorded values are only true at the time of testing and can go up or down depending on the level of user activity on the cell.

The Total Exposure Quotient for the site recorded across all detected cellular frequency bands is given at the bottom of the summary table below. A total Site EQ close to 1 (one) would mean that emissions at the site approach the limit advised by ICNIRP in their guidelines.

Site Name	Band [MHz]	Max E-field in band [V/m]	Operator at Max E-field	ICNIRP Limit Relative Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Gorey Common Kiosk	800	0.01053	JT J	3693	7.79196E-07	1/ 1283373
	900	2.353	JT J	18	0.003698105	1/ 270
	1800	0.00839	JT J	6953	1.22555E-06	1/ 815958
	2100	1.235	JT J	49	0.01165112	1/ 86
	2600	0.006546	Sure J	9319	1.10437E-06	1/ 905497
Total Site EQ					0.015352335	1/ 65

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/65 and therefore remains well below the ICNIRP guidelines.

The graphs which follow show the activity on all the frequency bands surveyed. The plots are colour-coded for easy identification of the three main operators: Airtel J in red, Sure J in dark blue, and Jersey Telecom (JT) J in light blue.

The graphs are also supported by the equivalent statistical figures derived from the measured levels at the site for added clarity.

1. Site Details

1.1 Site Location

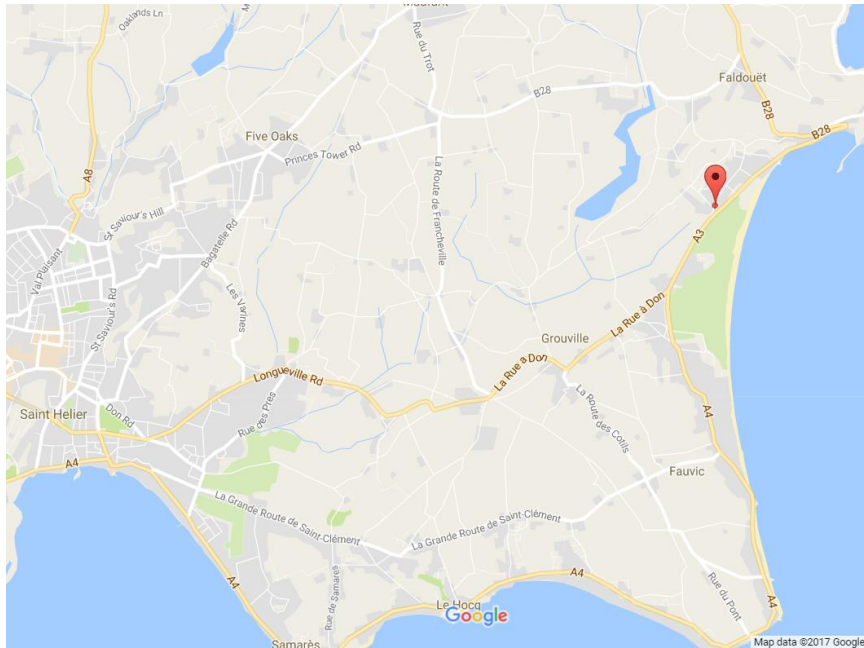


Figure 1 - Map of the Site Area

Site name	Gorey Common Kiosk
Site address	Kiosk on Gorey Common, Grouville, Jersey
Site Latitude	N 49.19459
Site Longitude	W 2.03497

1.2 Site Description

Operators	JT J
Antenna types	Omni directional
Approximate height	2m
Site type	Kiosk
Description	The antenna at the Gorey Common Kiosk is hidden inside the roof-space of the kiosk. It is not visible to the public but its outer protective case can be reached by the public

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location



Figure 3- The probe was positioned inside the kiosk where the strongest signal was recorded

The spectrum readings reported further down this report were recorded over a period of 6 minutes as advised by ICNIRP.

2. Survey Results

2.1 800 MHz Band

The graph for the 800 MHz activity is shown below with the E-field strength levels measured at the site plotted on a logarithmic scale.

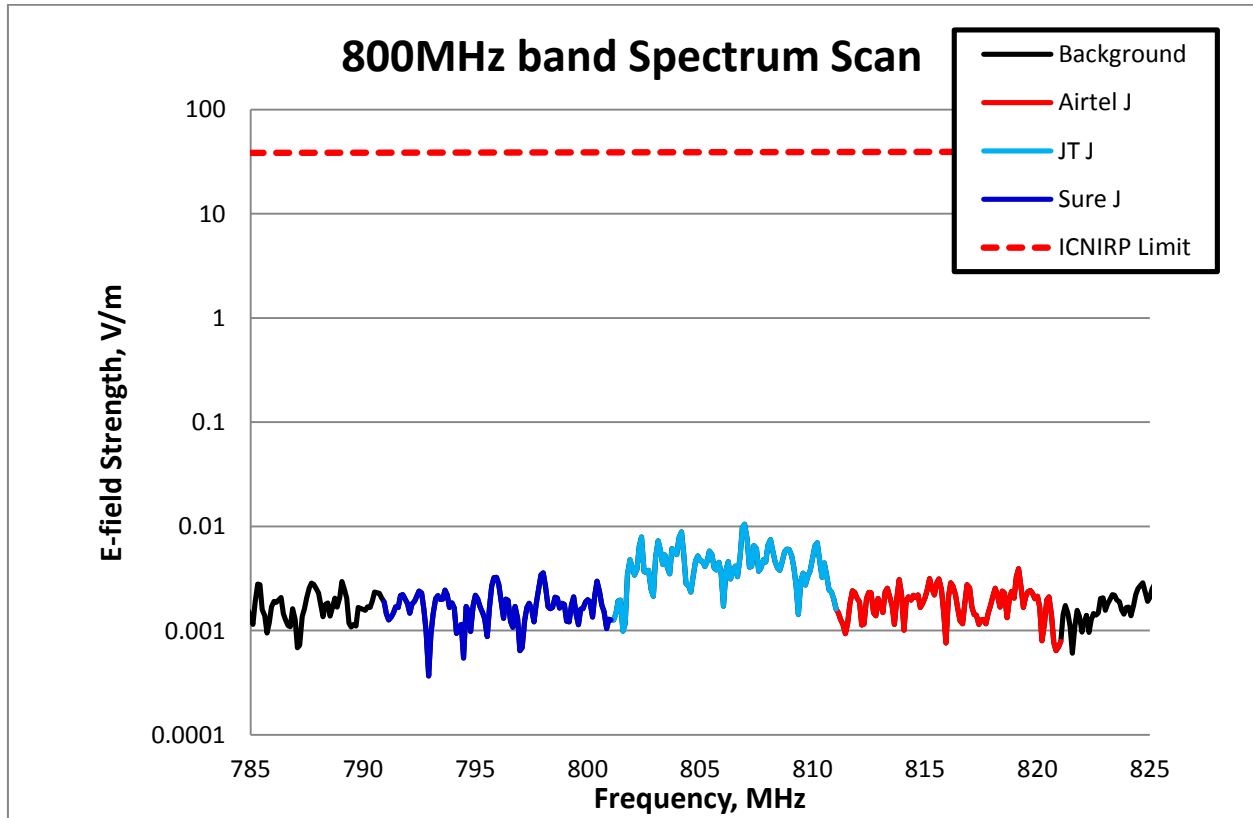


Figure 4 - 800MHz band Spectrum Scan

The red line on the scan represents the Airtel activity, the light blue is JT and the dark blue is Sure. ICNIRP's Reference Level for the General Public is also shown as the straight dashed line at the top of the graph. For clarity, each step on the vertical axis represents a 10-fold increase. The same scaling and colour scheme will be used throughout this report.

No activity was recorded in the 800MHz as no operator appears to transmit in this band at this site.

Site Name	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Gorey Common Kiosk	Airtel J	800	0.003932	9891	1.05664E-07	1/ 9463940
	JT J		0.01053	3693	5.84688E-07	1/ 1710313
	Sure J		0.003583	10854	8.8844E-08	1/ 11255685
total band EQ					7.79196E-07	1/ 1283373

Table 2– 800MHz band Exposure Quotient at Gorey Common Kiosk

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

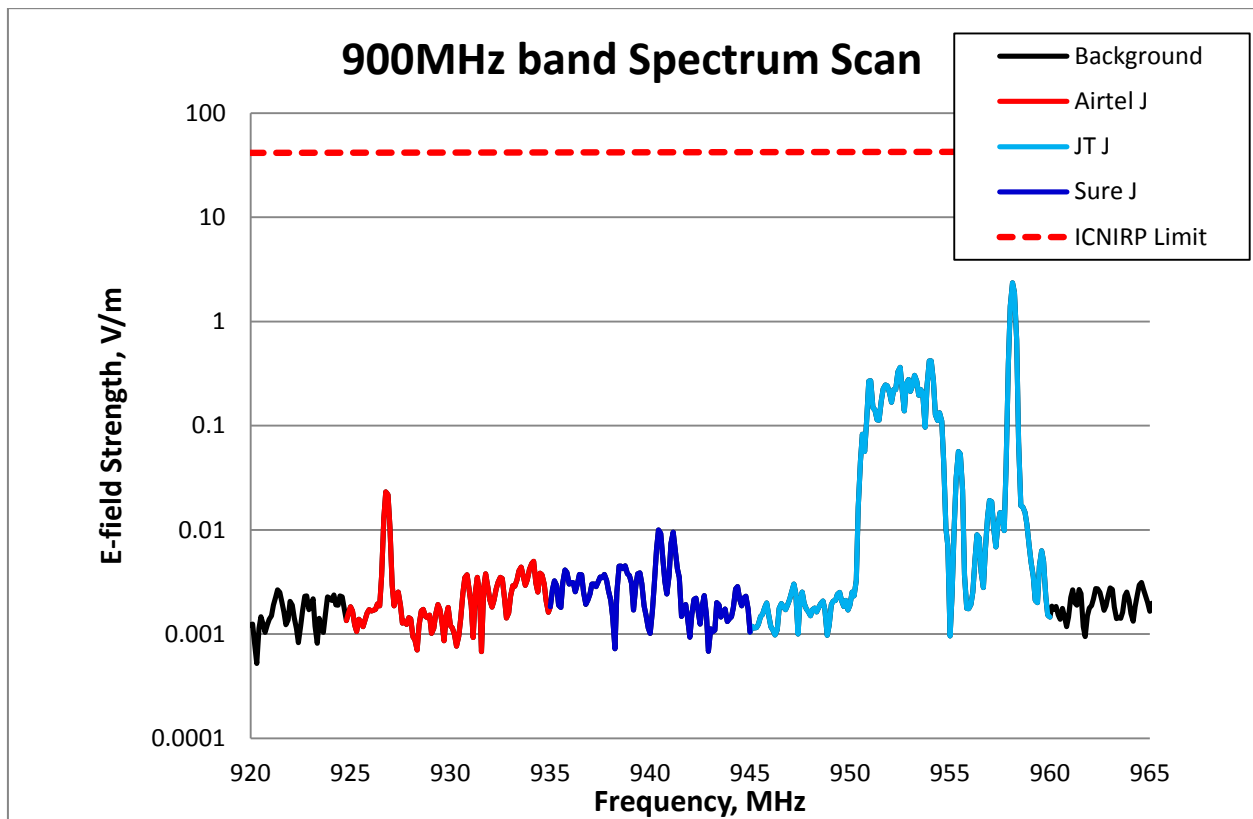


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 2.353 V/m (JT J), which is 18 times smaller than the ICNIRP Reference level.

The Exposure Quotient results for the 900MHz band are shown below:

Site Name	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Gorey Common Kiosk	Airtel J	900	0.02327	1773	4.88228E-07	1/ 2048222
	JT J		2.353	18	0.003697328	1/ 270
	Sure J		0.01001	4121	2.89431E-07	1/ 3455054
total band EQ					0.003698105	1/ 270

Table 3– 900MHz band Exposure Quotient at Gorey Common Kiosk

2.3 1800 MHz Band

The graph for the 1800 MHz activity around the site is shown below:

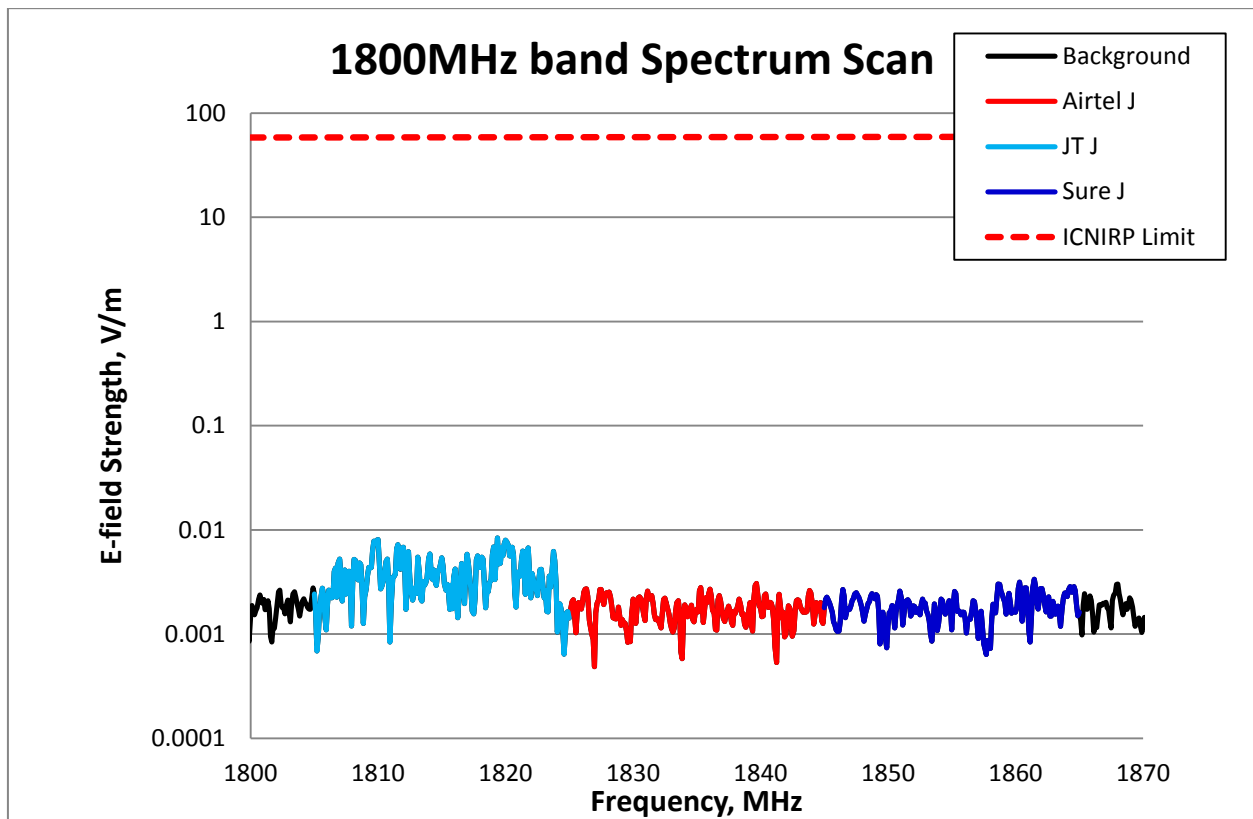


Figure 6 - 1800MHz Spectrum Scan

No activity was recorded in the 1800MHz as no operator appears to transmit in this band at this site.

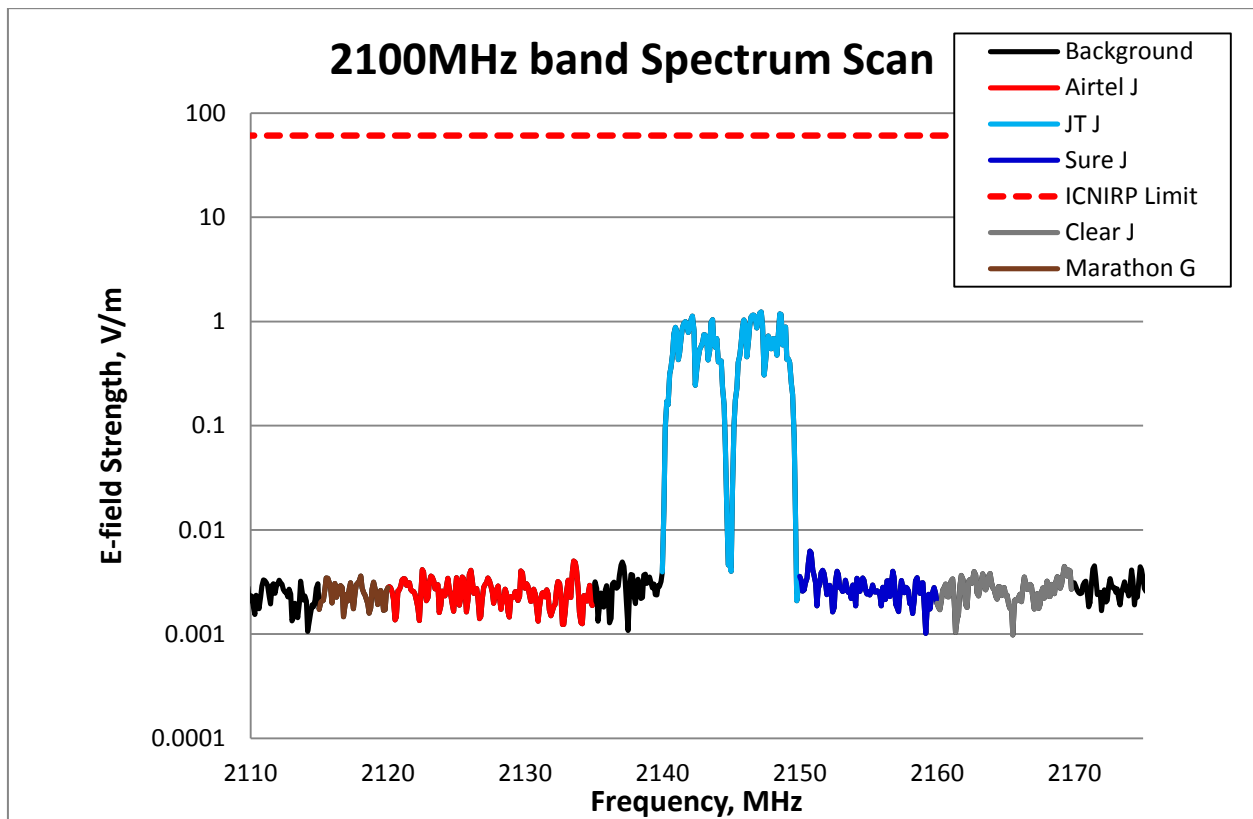
The Exposure Quotient results for the 1800MHz band are shown below:

Site Name	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Gorey Common Kiosk	Airtel J	1800	0.003069	19008	1.67913E-07	1/ 5955469
	JT J		0.00839	6953	8.69826E-07	1/ 1149655
	Sure J		0.003352	17403	1.87814E-07	1/ 5324405
total band EQ					1.22555E-06	1/ 815958

Table 4 – 1800MHz band Exposure Quotient at Gorey Common Kiosk

2.4 2100MHz Band

The graph for the UMTS activity around the site is shown below:



No field level recorded across the band was higher than 1.235 V/m (JT J), which is 49 times smaller than the ICNIRP Reference level.

The Exposure Quotient results for the 2100MHz band are shown below:

Site Name	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Gorey Common Kiosk	Airtel J	2100	0.005043	12096	2.71959E-07	1/ 3677024
	Clear J		0.004477	13625	1.98626E-07	1/ 5034589
	JT J		1.235	49	0.011650342	1/ 86
	Marathon J		0.003602	16935	8.43134E-08	1/ 11860518
	Sure J		0.00625	9760	2.23225E-07	1/ 4479776
total band EQ					0.01165112	1/ 86

Table 5 – 2100MHz band Exposure Quotient at Gorey Common Kiosk

2.5 2600MHz band

The graph for the 2600MHz band activity around the site is shown below:

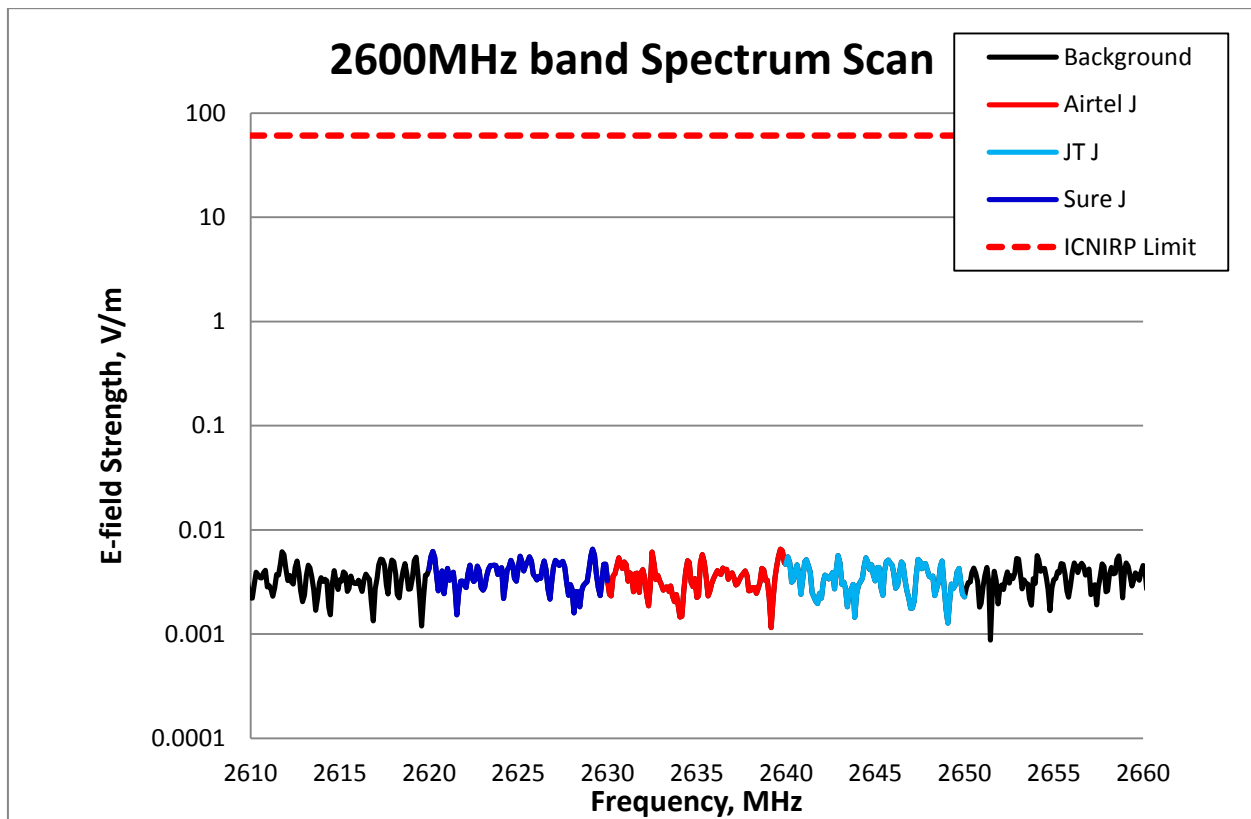


Figure 7 – 2600MHz band Spectrum Scan

No activity was recorded in the 2600MHz as no operator appears to transmit in this band at this site.

The Exposure Quotient results for the 2600MH band are shown below:

Site Name	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Gorey Common Kiosk	Airtel J	2600	0.006543	9323	3.48073E-07	1/ 2872958
	JT J		0.00569	10721	3.51428E-07	1/ 2845531
	Sure J		0.006546	9319	4.04864E-07	1/ 2469965
total band EQ					1.10437E-06	1/ 905497

Table 6 – 2600MHz band Exposure Quotient at Gorey Common Kiosk

End