

Cellular Mast Emissions Survey: Gorey Slip Kiosk (Jersey)



DOCUMENT DETAILS

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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 Slip Kiosk site located in Jersey.

The Gorey Slip 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 Slip Kiosk	800	0.06312	Sure J	616	1.07257E-05	1/ 93234
	900	1.964	JT J	21	0.003004534	1/ 333
	1800	0.1232	Sure J	474	8.56482E-05	1/ 11676
	2100	1.149	JT J	53	0.009056678	1/ 110
	2600	0.005572	Airtel J	10948	6.84897E-07	1/ 1460074
Total Site EQ					0.012158271	1/ 82

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/82 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

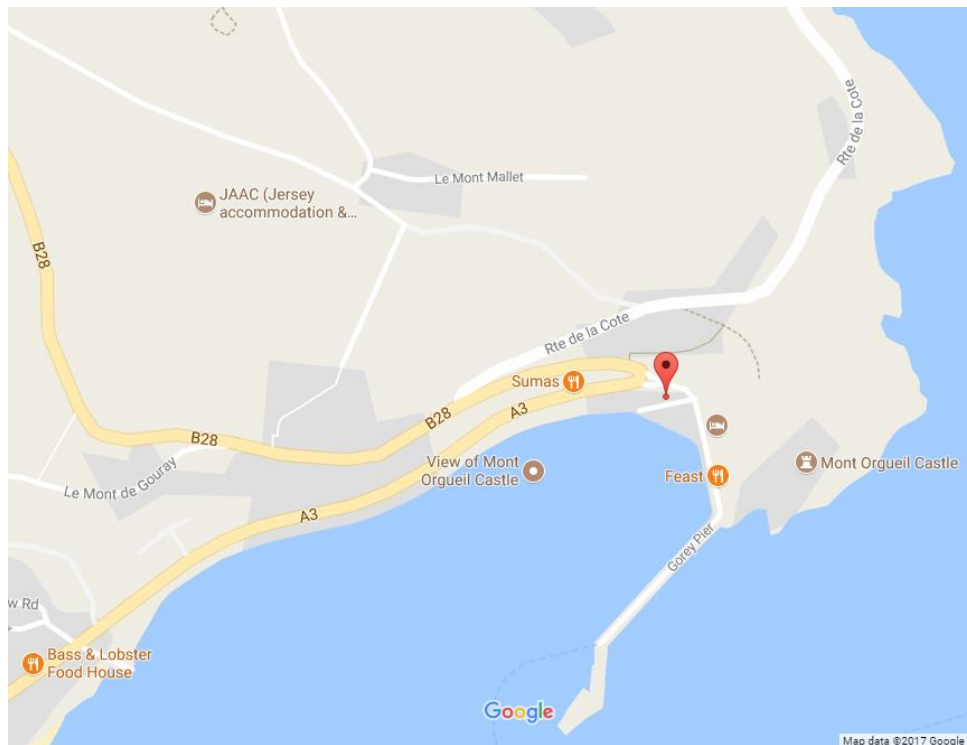


Figure 1 - Map of the Site Area

Site name	Gorey Slip Kiosk
Site address	Gorey Pier, Grouville, Jersey
Site Latitude	N 49.19973
Site Longitude	W 02.02099

1.2 Site Description

Operators	JT J
Antenna types	Omni directional (microcell)
Approximate height	2m
Site type	Kiosk
Description	The antenna at the Gorey Slip 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.

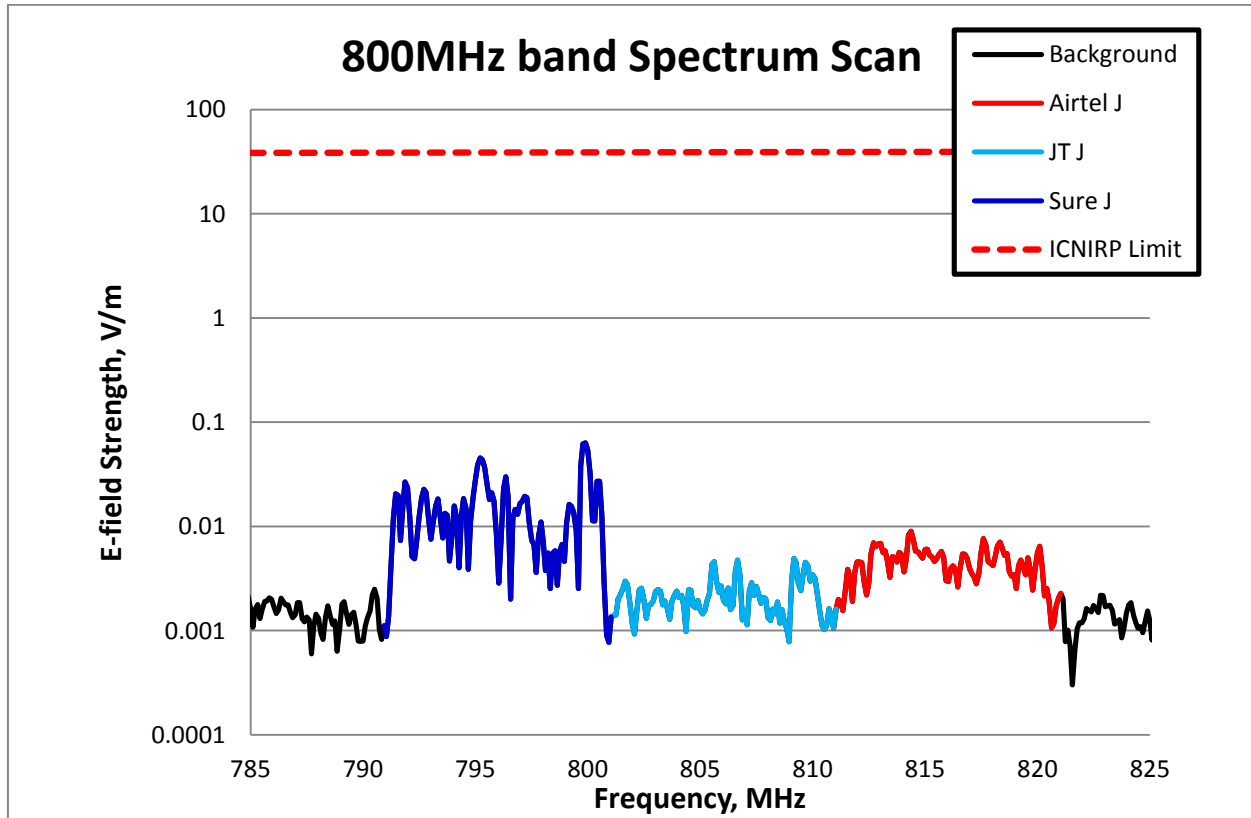


Figure 4 - 800MHz band Spectrum Scan

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 field level recorded across the band was higher than 0.06312 V/m (Sure J), which is 616 times smaller than the ICNIRP Reference level. The Exposure Quotient results for the 800MHz 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 Slip Kiosk	Airtel J	800	0.008971	4335	5.7538E-07	1/ 1737981
	JT J		0.004919	7906	1.42342E-07	1/ 7025310
	Sure J		0.06312	616	1.0008E-05	1/ 99920
total band EQ					1.07257E-05	1/ 93234

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

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

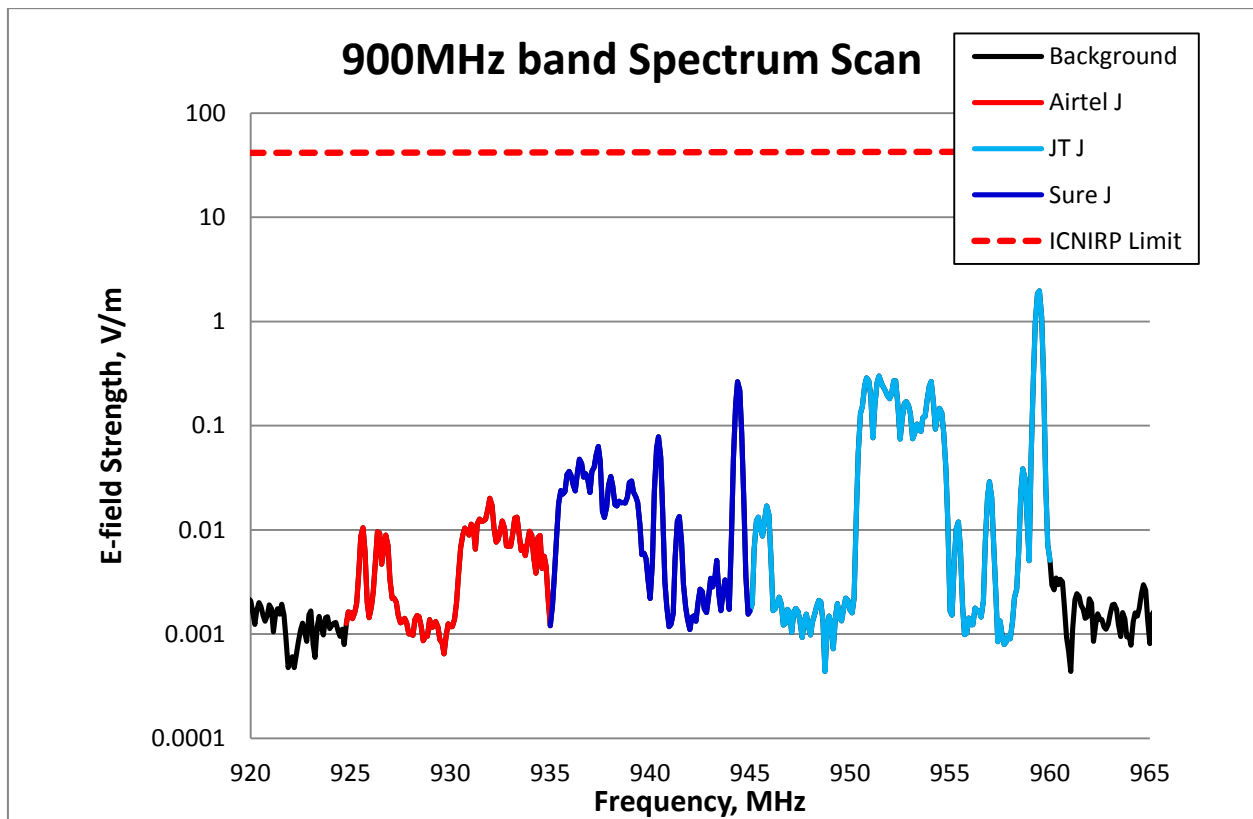


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 1.964 V/m (JT J), which is 21 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 Slip Kiosk	Airtel J	900	0.02015	2047	1.35189E-06	1/ 739703
	JT J		1.964	21	0.002948728	1/ 339
	Sure J		0.2648	156	5.44545E-05	1/ 18364
total band EQ					0.003004534	1/ 333

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

2.3 1800 MHz Band

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

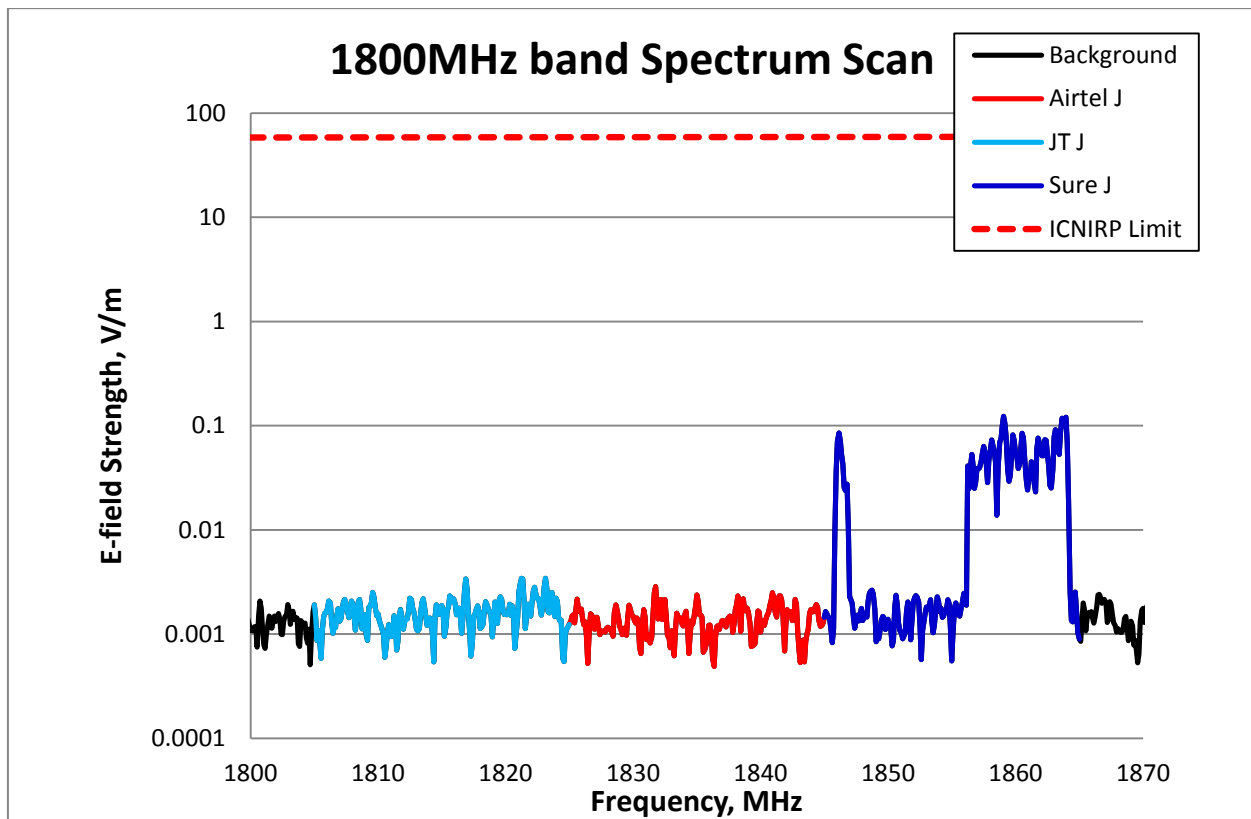


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.1232 V/m (Sure J), which is 474 times smaller than the ICNIRP Reference level.

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 Slip Kiosk	Airtel J	1800	0.00285	20469	1.07879E-07	1/ 9269604
	JT J		0.003443	16943	1.51988E-07	1/ 6579473
	Sure J		0.1232	474	8.53884E-05	1/ 11711
total band EQ					8.56482E-05	1/ 11676

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

2.4 2100MHz Band

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

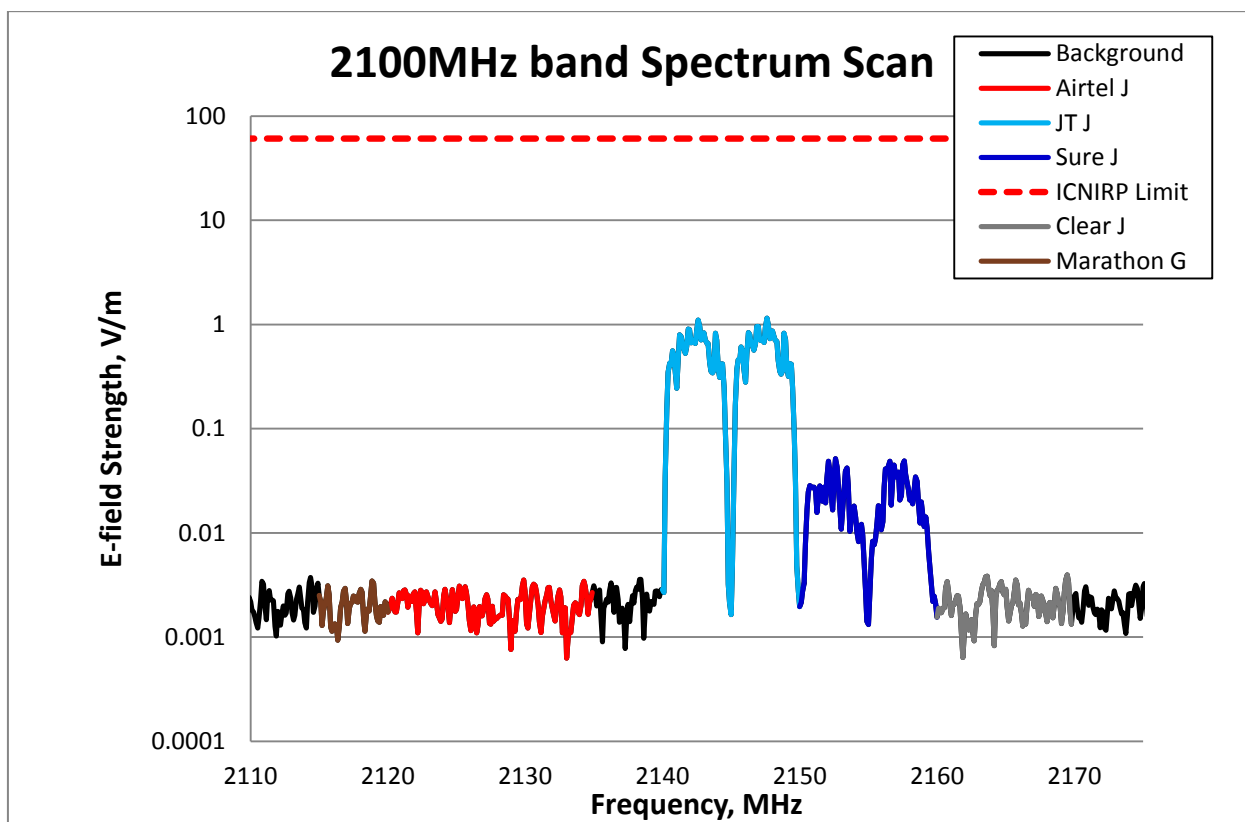


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 1.149 V/m (JT J), which is 53 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 Slip Kiosk	Airtel J	2100	0.00354	17232	1.8096E-07	1/ 5526080
	Clear J		0.003946	15459	1.34994E-07	1/ 7407749
	JT J		1.149	53	0.009040504	1/ 111
	Marathon J		0.003448	17691	5.80839E-08	1/ 17216483
	Sure J		0.0515	1184	1.58005E-05	1/ 63289
total band EQ					0.009056678	1/ 110

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

2.5 2600MHz band

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

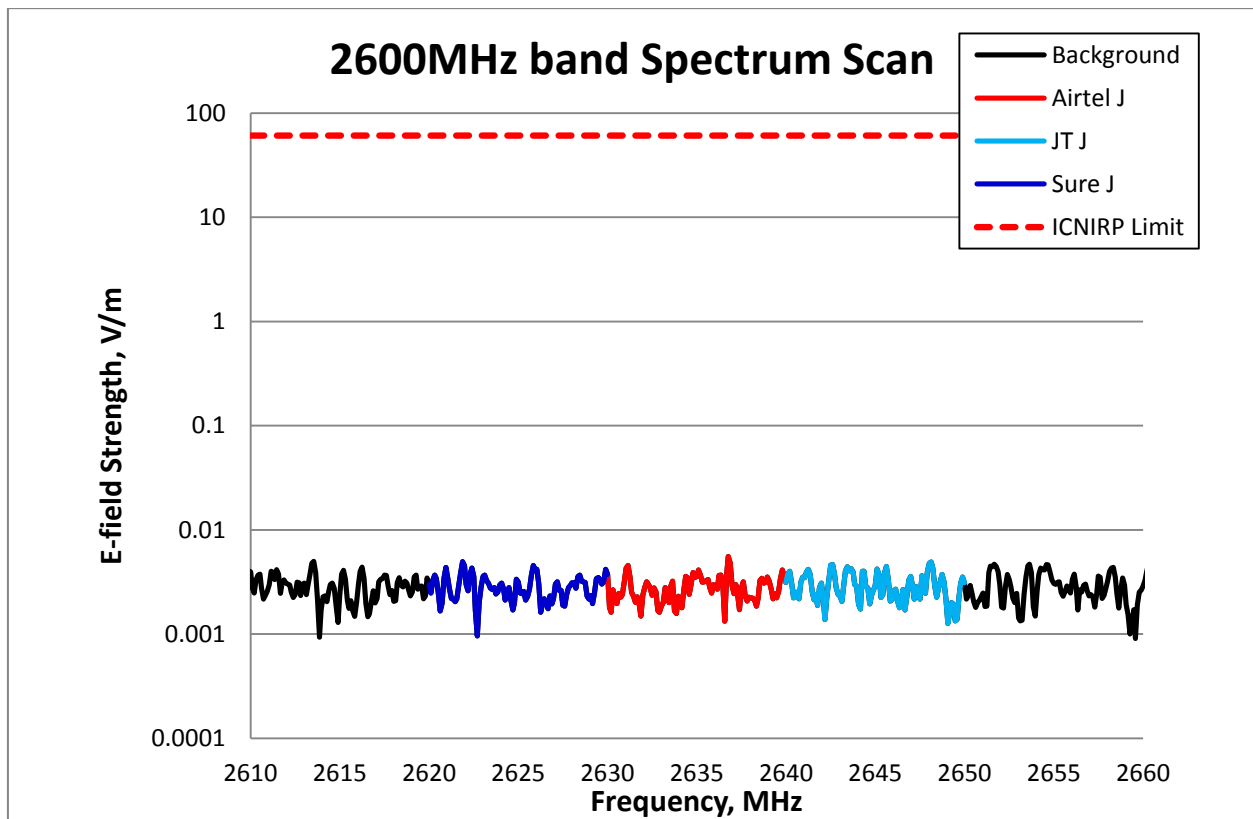


Figure 8 – 2600MHz band Spectrum Scan

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 2600MHz 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 Slip Kiosk	Airtel J	2600	0.005572	10948	2.16575E-07	1/ 4617340
	JT J		0.004916	12408	2.42347E-07	1/ 4126308
	Sure J		0.004966	12284	2.25974E-07	1/ 4425282
total band EQ					6.84897E-07	1/ 1460074

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

End