

Cellular Mast Emissions Survey: Longbeach 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 Longbeach Kiosk site located in Jersey.

The Longbeach 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
Longbeach Kiosk	800	0.01427	JT J	2725	9.43592E-07	1/ 1059780
	900	1.438	JT J	29	0.001504009	1/ 665
	1800	0.003119	Airtel J	18704	3.5442E-07	1/ 2821511
	2100	1.087	JT J	56	0.005729651	1/ 175
	2600	0.005901	Sure J	10337	7.99548E-07	1/ 1250707
Total Site EQ					0.007235757	1/ 138

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/138 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

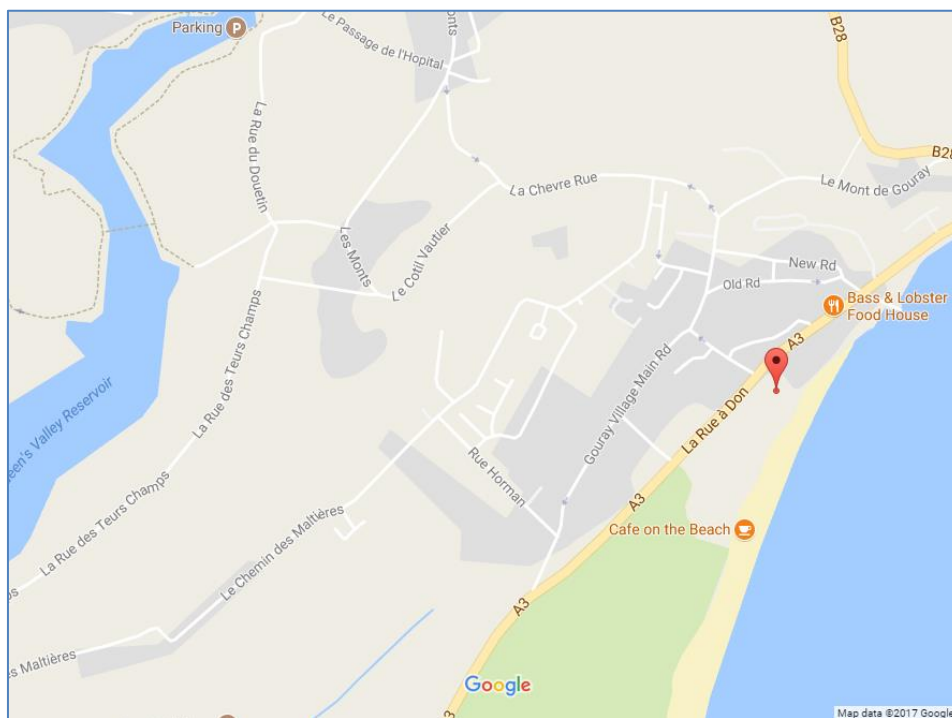


Figure 1 - Map of the Site Area

Site name	Longbeach Kiosk
Site address	LA Rue a Don (Near public toilets opposite New Road), Grouville, Jersey
Site Latitude	N 49.19625
Site Longitude	W 02.0307

1.2 Site Description

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

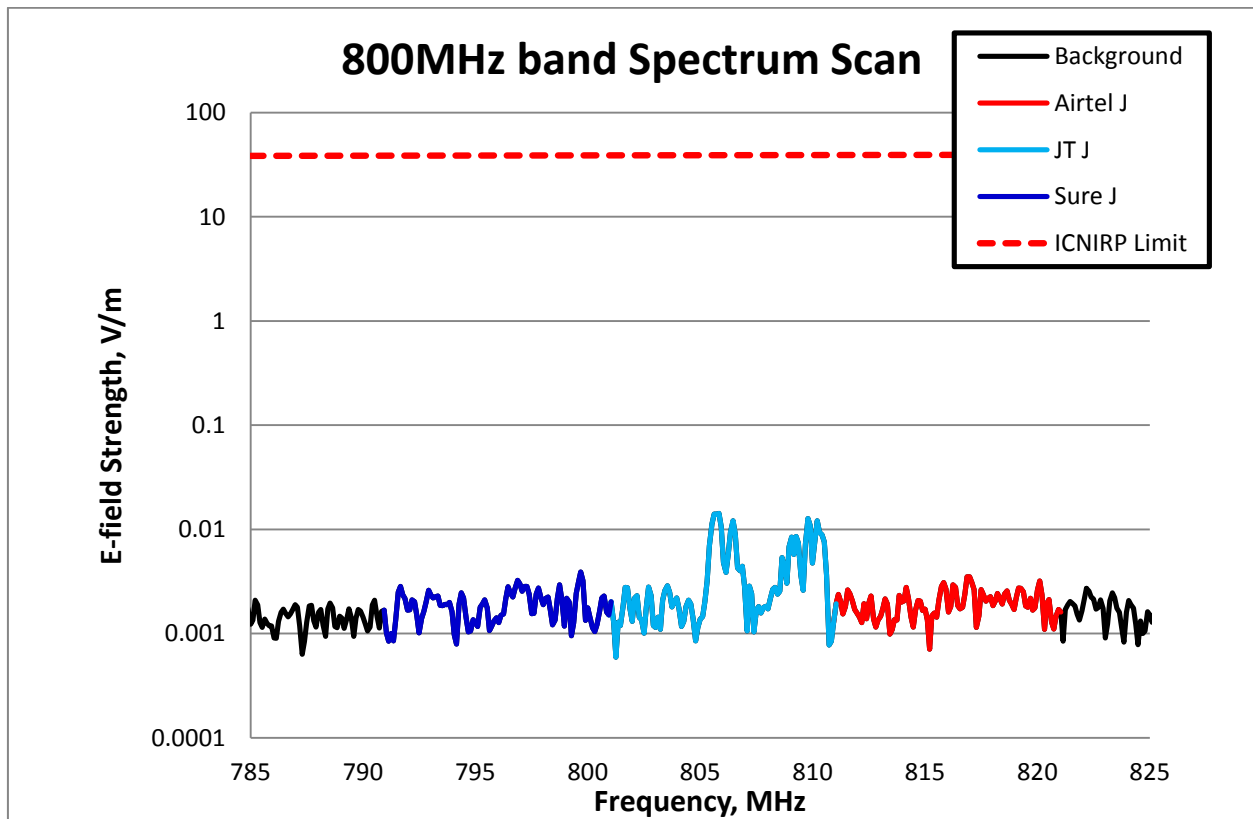


Figure 4 - 800MHz band Spectrum Scan

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 0.01427 V/m (JT J), which is 2725 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
Longbeach Kiosk	Airtel J	800	0.003511	11077	1.10483E-07	1/ 9051195
	JT J		0.01427	2725	7.2978E-07	1/ 1370275
	Sure J		0.003897	9980	1.03329E-07	1/ 9677804
total band EQ					9.43592E-07	1/ 1059780

Table 2– 800MHz band Exposure Quotient at Longbeach kiosk

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

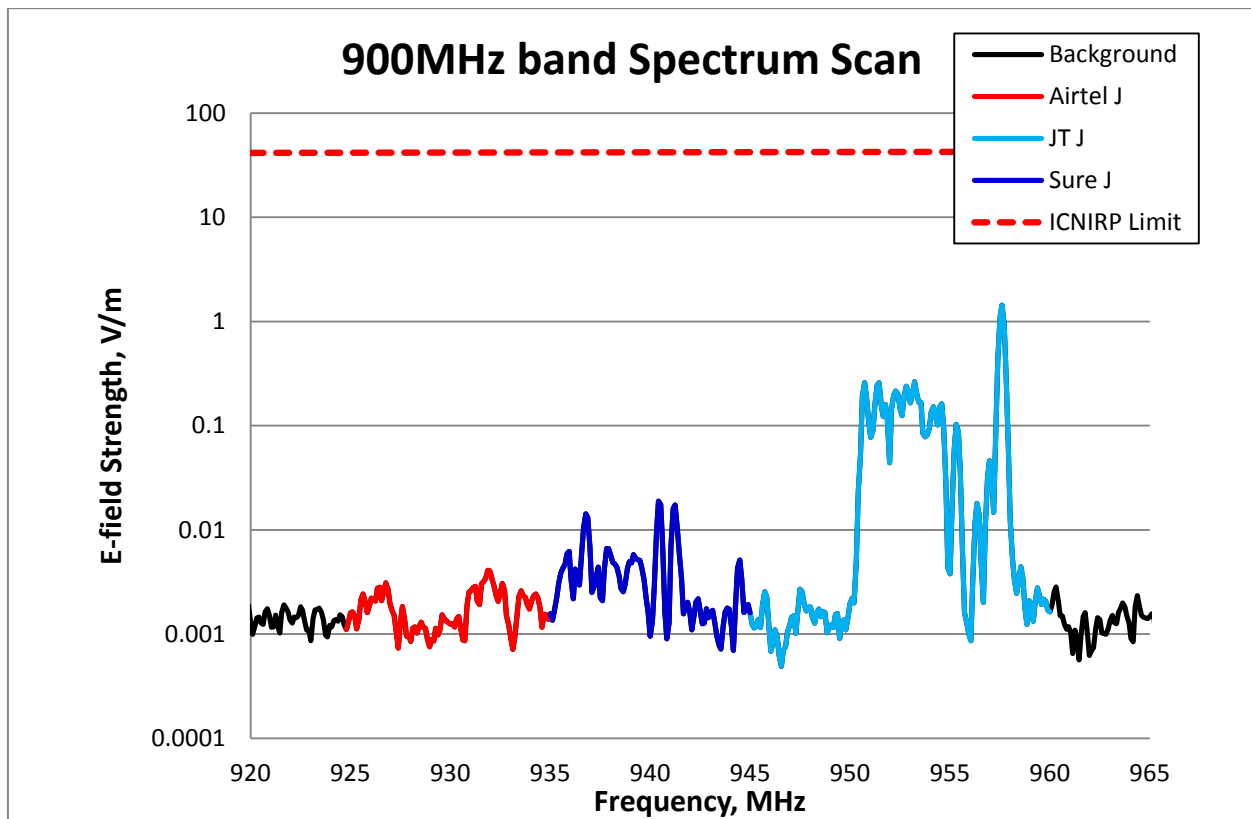


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 1.438 V/m (JT J), which is 29 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
Longbeach Kiosk	Airtel J	900	0.004101	10059	1.00506E-07	1/ 9949667
	JT J		1.438	29	0.001503103	1/ 665
	Sure J		0.01885	2188	8.05094E-07	1/ 1242091
total band EQ					0.001504009	1/ 665

Table 3– 900MHz band Exposure Quotient at Longbeach Kiosk

2.3 1800 MHz Band

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

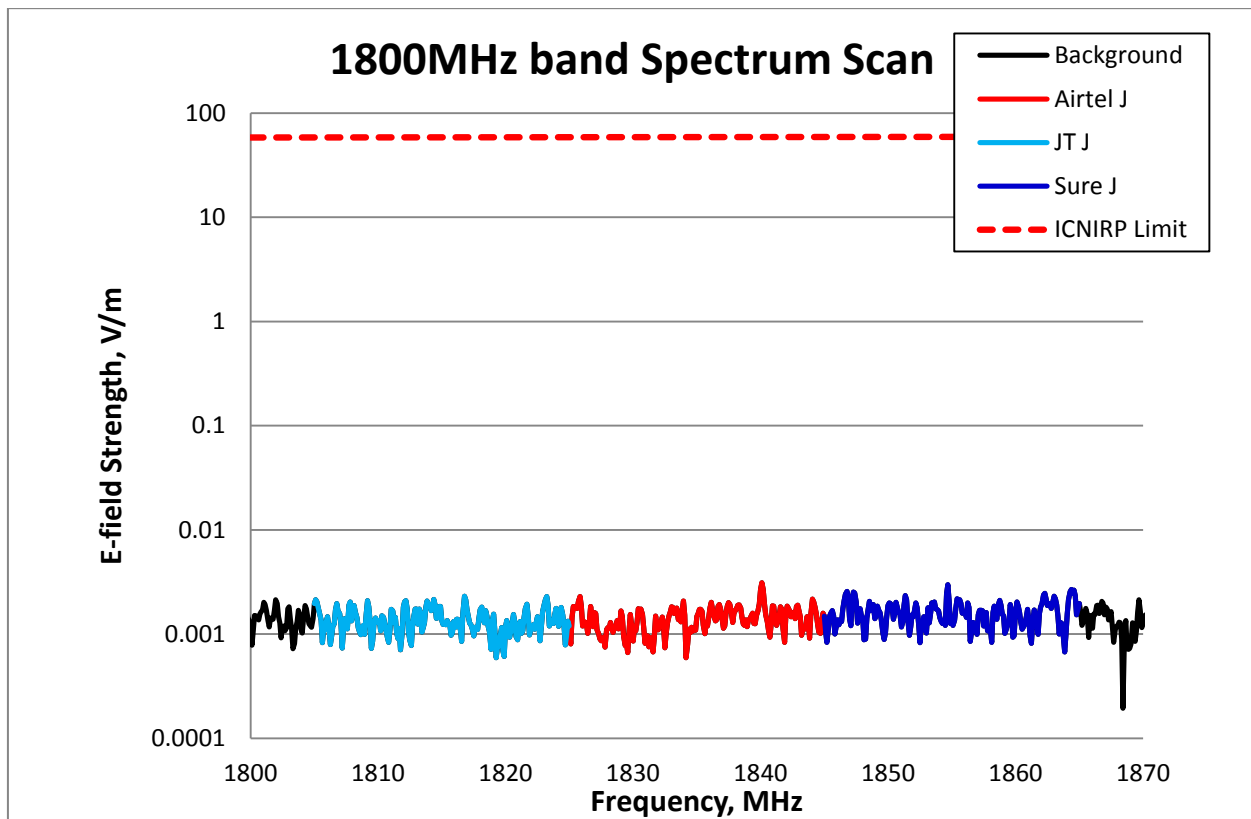


Figure 6 - 1800MHz Spectrum Scan

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

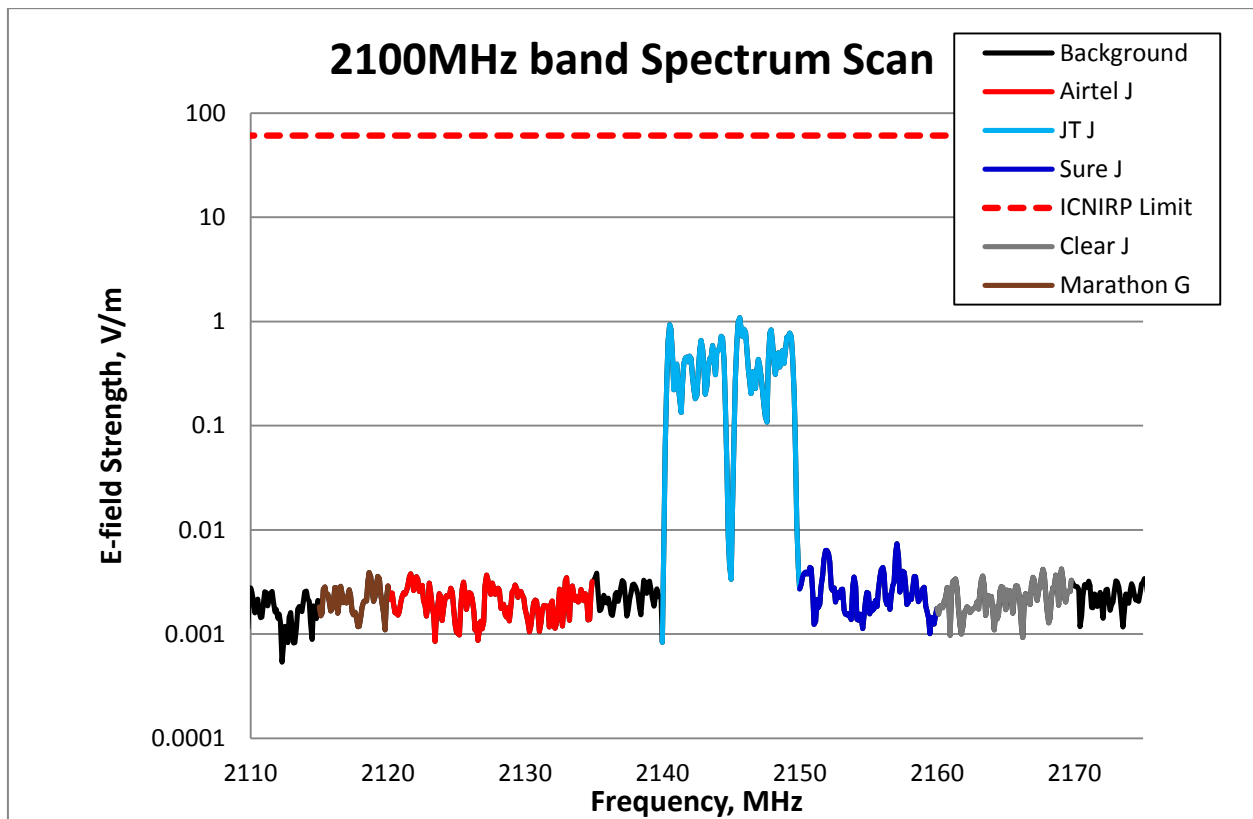
The Exposure Quotient results for the 1800MHz band are shown below:

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
Longbeach Kiosk	Airtel J	1800	0.003119	18704	1.10959E-07	1/ 9012342
	JT J		0.002308	25276	1.0249E-07	1/ 9757096
	Sure J		0.002987	19530	1.40972E-07	1/ 7093631
total band EQ					3.5442E-07	1/ 2821511

Table 4 – 1800MHz band Exposure Quotient at Longbeach 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 1.087 V/m (JT J), which is 56 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
Longbeach Kiosk	Airtel J	2100	0.003788	16103	1.90417E-07	1/ 5251640
	Clear J		0.004216	14469	1.49696E-07	1/ 6680199
	JT J		1.087	56	0.005729003	1/ 175
	Marathon J		0.003898	15649	7.02804E-08	1/ 14228721
	Sure J		0.007376	8270	2.3684E-07	1/ 4222256
total band EQ					0.005729651	1/ 175

Table 5 – 2100MHz band Exposure Quotient at Longbeach Kiosk

2.5 2600MHz band

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

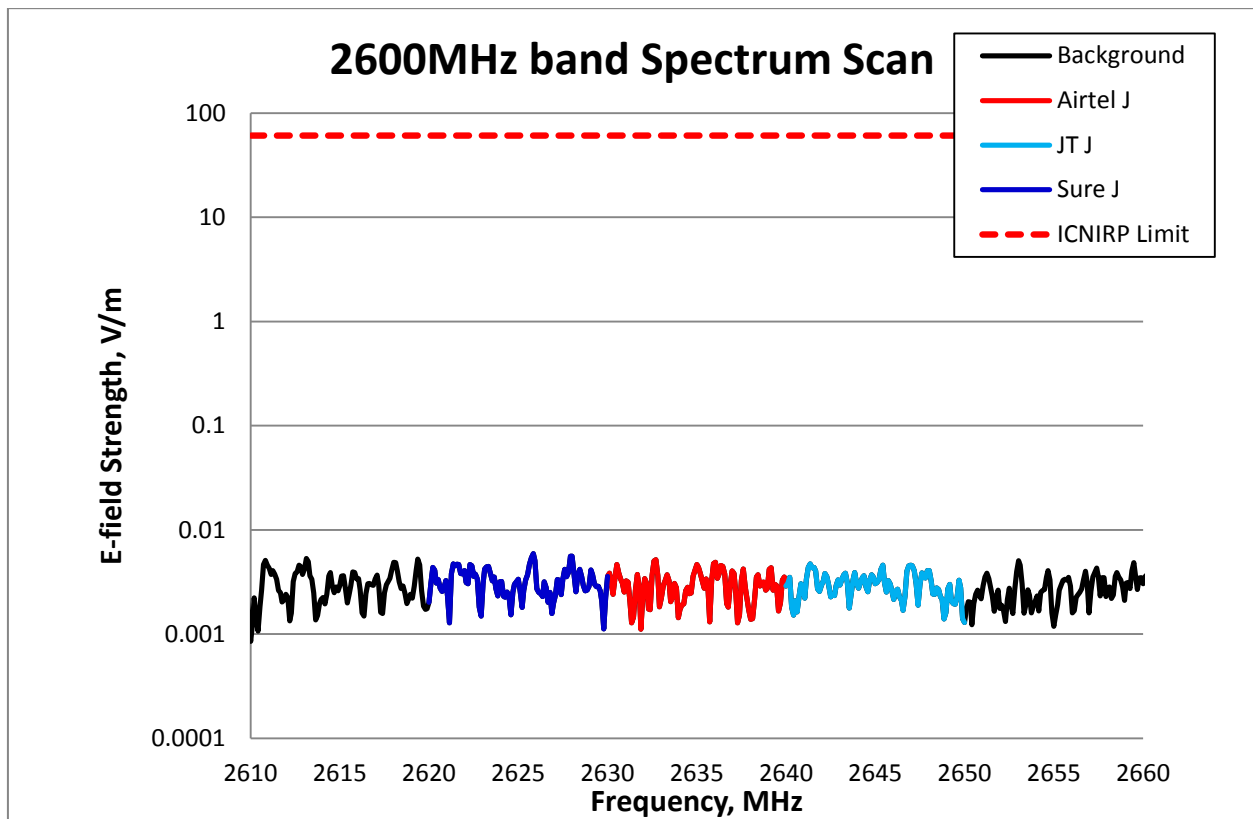


Figure 7 – 2600MHz band Spectrum Scan

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 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
Longbeach Kiosk	Airtel J	2600	0.005175	11787	2.53545E-07	1/ 3944077
	JT J		0.004736	12880	2.48185E-07	1/ 4029257
	Sure J		0.005901	10337	2.97819E-07	1/ 3357749
total band EQ					7.99548E-07	1/ 1250707

Table 6 – 2600MHz band Exposure Quotient at Longbeach Kiosk

End