Cellular Mast Emissions Survey: Greve De Lecq (Jersey)

DOCUMENT DETAILS

Document Name:	Cellular Mast Emissions Survey:	Greve De Lecq (Jersey)
Survey Date:	09/06/2017 at 08:33	
Report issue Date	14/07/2017	
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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 Greve De Lecq site located in Jersey.

The Greve De Lecq site at the Prince of Wales Hotel was used by two operators at the time of the survey: JT J and Sure 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
Greve De Lecq Prince Of Wales	800	0.002273	Airtel J	17110	3.77747E-08	1/ 26472733
	900	0.7747	JT J	53	0.00042352	1/ 2361
	1800	0.004072	Sure J	14326	1.48232E-07	1/ 6746192
	2100	0.007035	Sure J	8671	2.82795E-07	1/ 3536126
	2600	0.002128	JT J	28665	1.08476E-07	1/ 9218651
				Total Site EQ	0.000424097	1/ 2358

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/2358 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 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

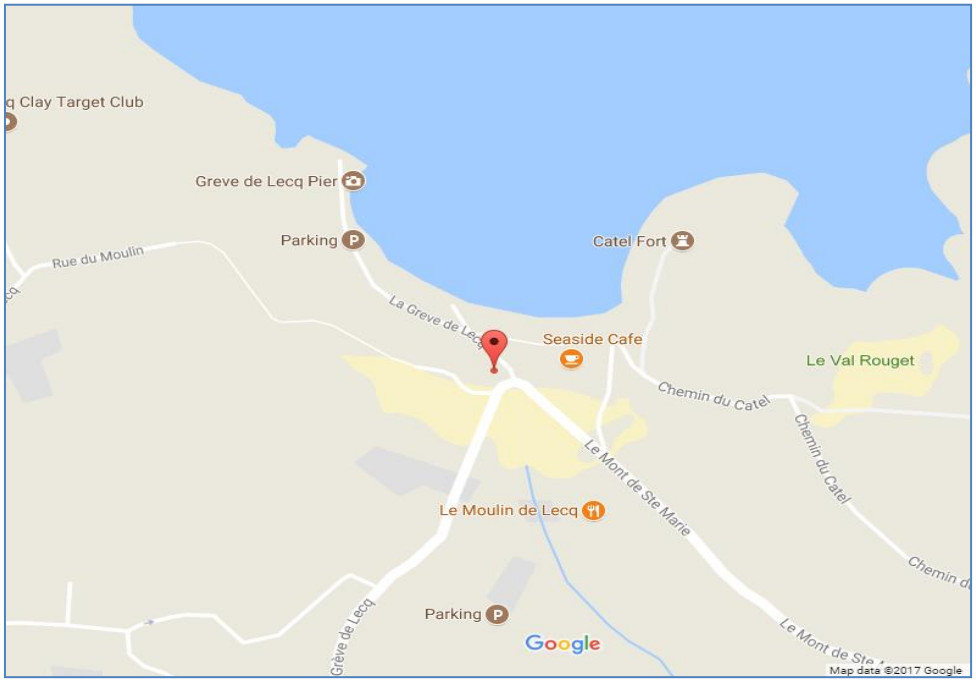

Figure 1 - Map of the Site Area

Site name	Greve De Lecq
Site address	Prince of Wales Hotel, Le Mont De La Greve De Lecq, Jersey
Site Latitude	49.24655
Site Longitude	-2.20125

1.2 Site Description

Operators	JT J and Sure J
Antenna types	Omni Directional
Approximate height	8m
Site type	Rooftop
Description	The antennas at Greve De Lecq are located on the building rooftop, out of reach of the public.

1.3 Site Photo

Figure 2 – Peak Measurement Location

1.4 Test Location

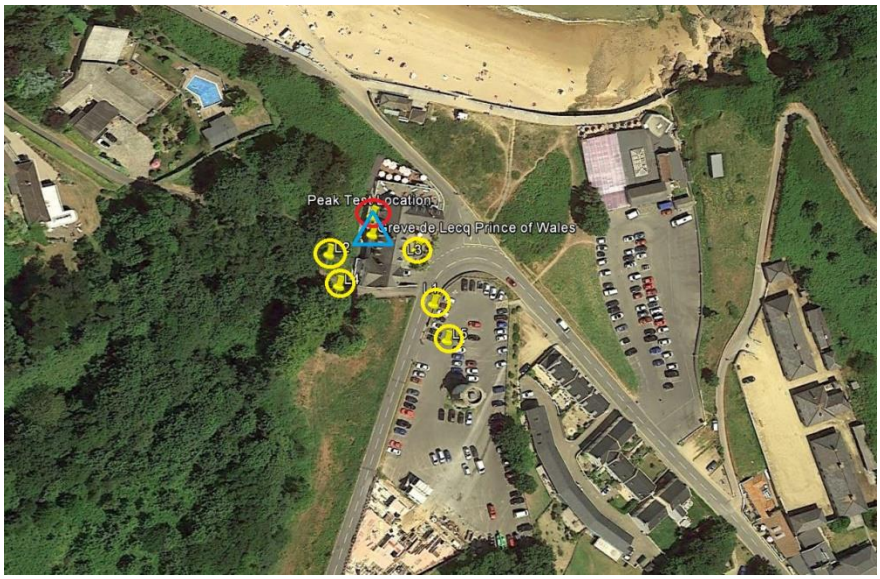

Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out

As part of the peak search procedure, spot measurements were taken at locations around the site, as shown on the above sketch. The reported spectrum scans were taken at the peak location (shown in red above) where the highest readings were 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.

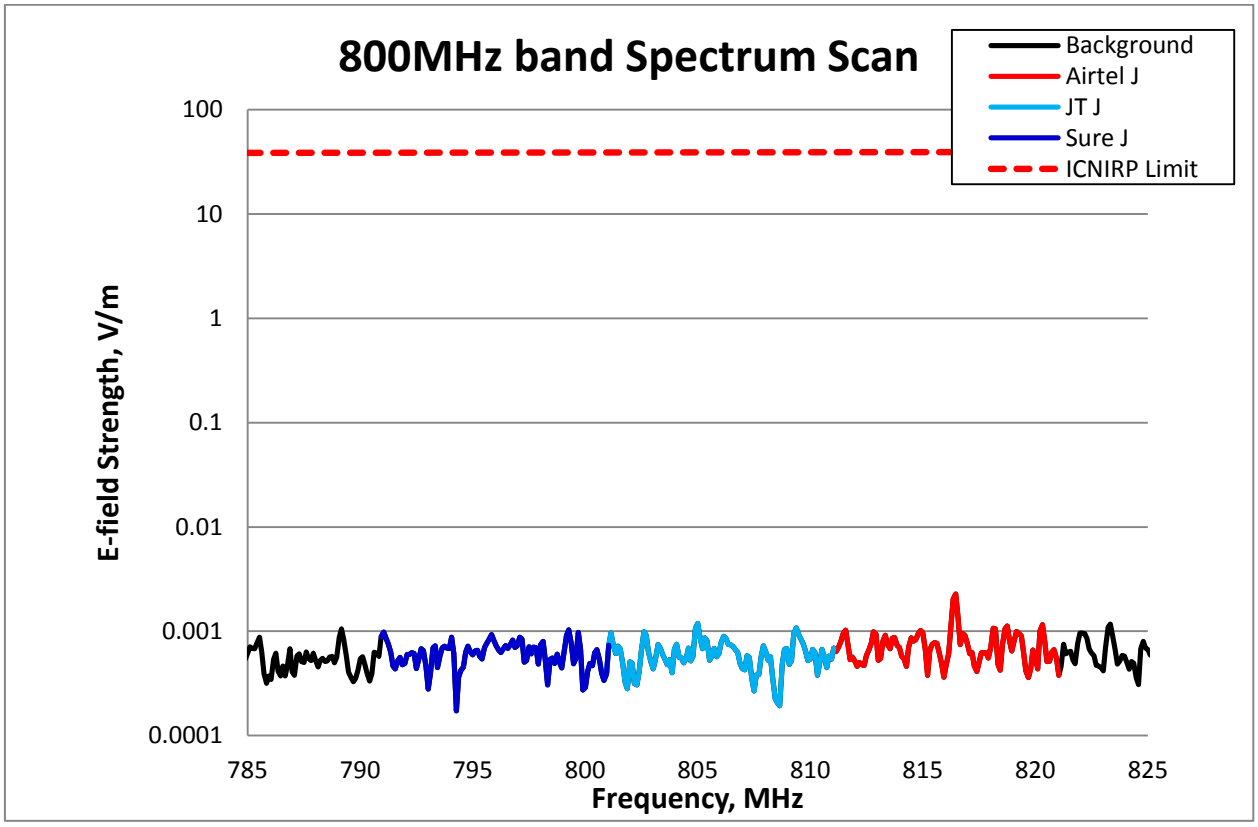

Figure 4 - 800MHz band Spectrum Scan

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.

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
Greve De Lecq Prince Of Wales	Airtel J	800	0.002273	17110	1.646E-08	1/ 60753465
	JT J		0.001187	32764	1.05936E-08	1/ 94396319
	Sure J		0.001031	37722	1.07211E-08	1/ 93273862
				total band EQ	3.77747E-08	1/ 26472733

Table 2– 800MHz band Exposure Quotient at Greve De Lecq

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

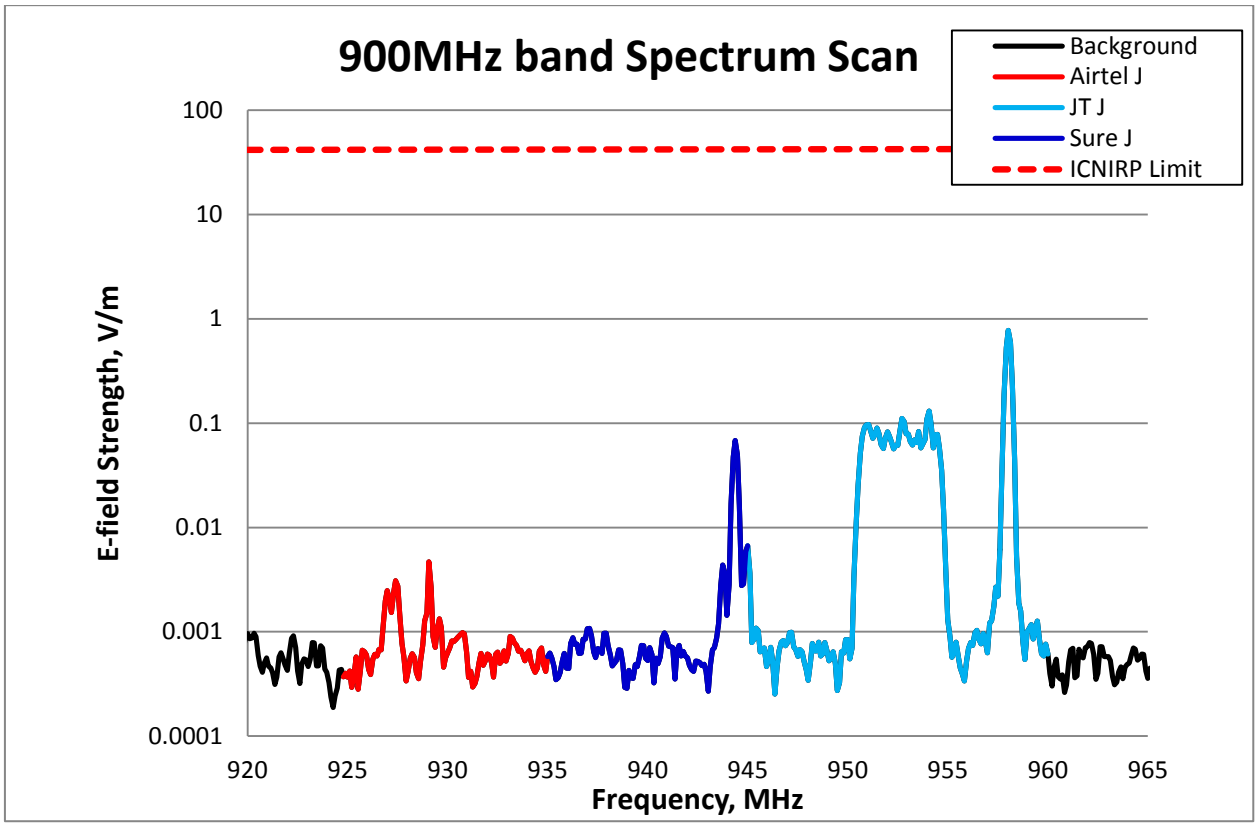

Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.7747 V/m (JT J), which is 53 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
Greve De Lecq Prince Of Wales	Airtel J	900	0.004678	8818	2.9324E-08	1/ 34101784
	JT J		0.7747	53	0.000420783	1/ 2377
	Sure J		0.06832	604	2.70743E-06	1/ 369354
				total band EQ	0.00042352	1/ 2361

Table 3– 900MHz band Exposure Quotient at Greve De Lecq Prince Of Wales

2.3 1800 MHz Band

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

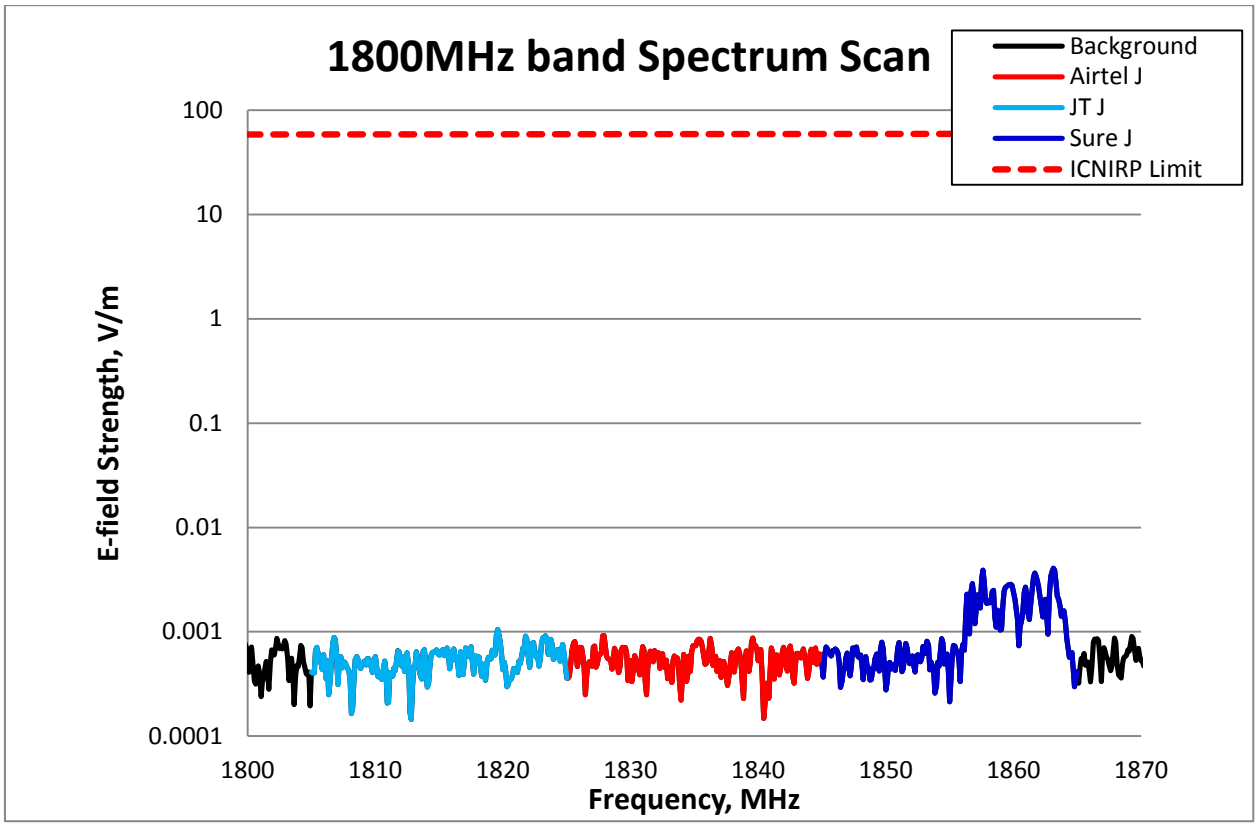

Figure 6 - 1800MHz Spectrum Scan

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
Greve De Lecq Prince Of Wales	Airtel J	1800	0.0009242	63121	1.63699E-08	1/ 61087830
	JT J		0.001051	55506	1.62354E-08	1/ 61593726
	Sure J		0.004072	14326	1.15626E-07	1/ 8648537
				total band EQ	1.48232E-07	1/ 6746192

Table 4 – 1800MHz band Exposure Quotient at Greve De Lecq Prince Of Wales

2.4 2100MHz Band

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

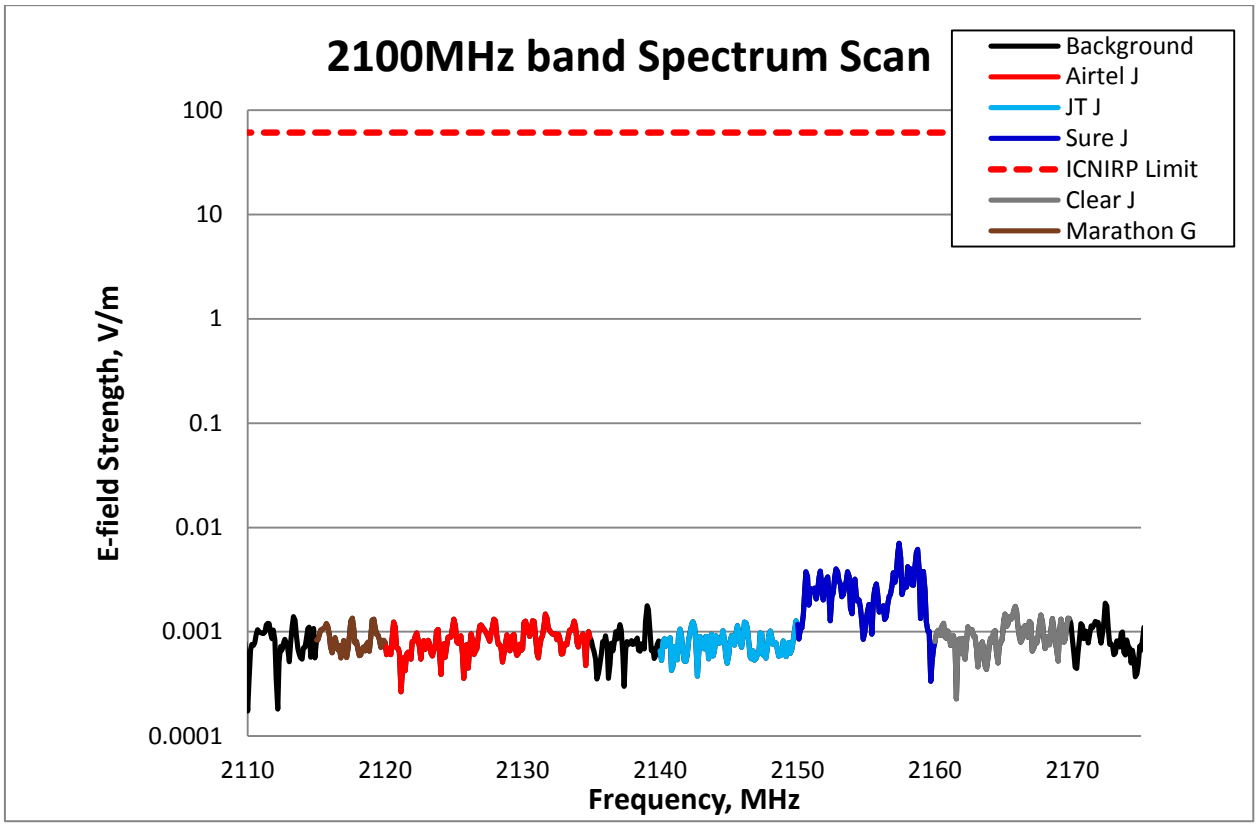

Figure 7 – 2100MHz band Spectrum Scan

No activity was recorded in the 2100MHz as no operator appears to transmit in this band at this site.

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
Greve De Lecq Prince Of Wales	Airtel J	2100	0.001477	41300	2.90507E-08	1/ 34422531
	Clear J		0.001756	34738	2.43964E-08	1/ 40989624
	JT J		0.001278	47731	1.70956E-08	1/ 58494433
	Marathon J		0.001348	45252	1.03089E-08	1/ 97003900
	Sure J		0.007035	8671	2.01944E-07	1/ 4951876
				total band EQ	2.82795E-07	1/ 3536126

Table 5 – 2100MHz band Exposure Quotient at Greve De Lecq Prince Of Wales

2.5 2600MHz band

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

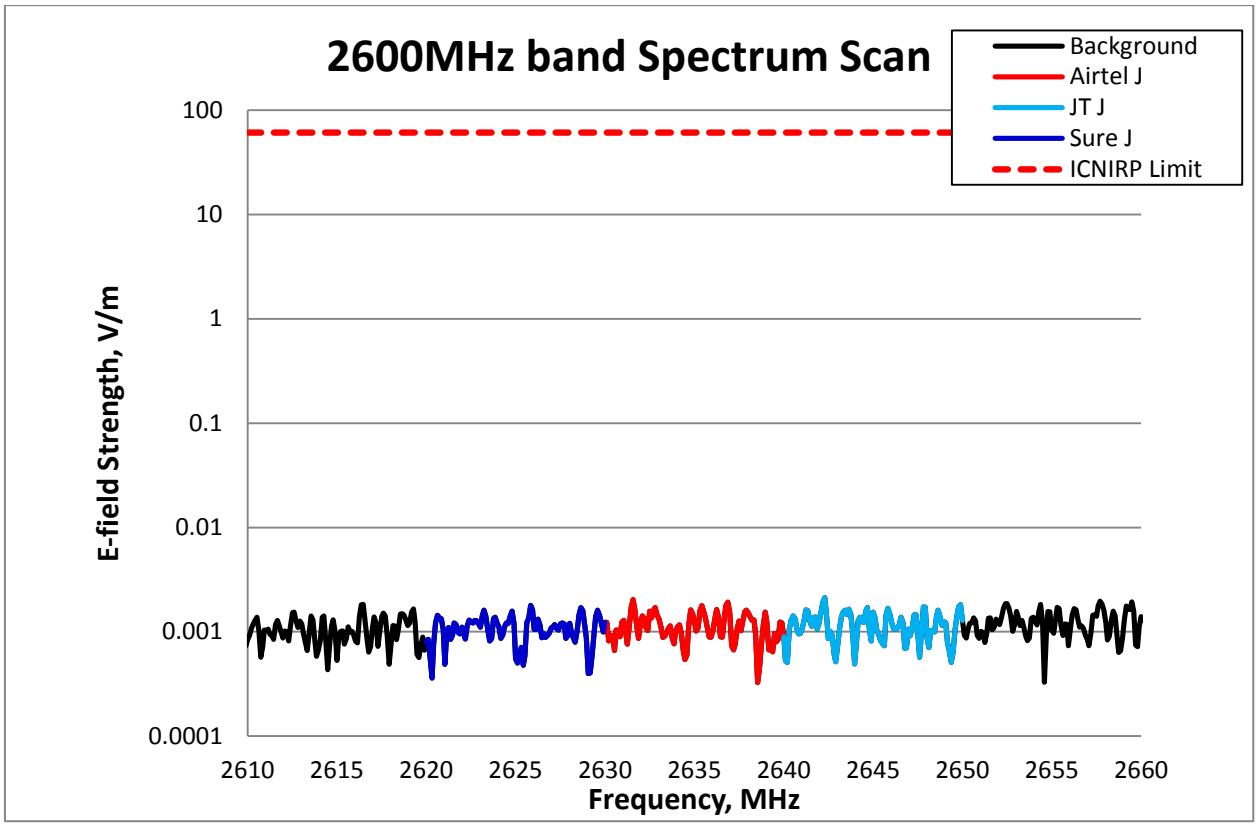

Figure 8 – 2600MHz band Spectrum Scan

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 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
Greve De Lecq Prince Of Wales	Airtel J	2600	0.00204	29902	3.70728E-08	1/ 26973979
	JT J		0.002128	28665	3.89449E-08	1/ 25677316
	Sure J		0.001796	33964	3.24581E-08	1/ 30808955
				total band EQ	1.08476E-07	1/ 9218651

Table 6 – 2600MHz band Exposure Quotient at Greve De Lecq Prince Of Wales

End