

Cellular Mast Emissions Survey: Les Creux Millennium Park (Jersey)



DOCUMENT DETAILS

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	Park (Jersey)	
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Survey Engineer:	Louise Sands	
Report Compiled by:	Erin Dawson	
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 Les Creux Millennium Park site located in Jersey.

The Les Creux Millennium Park site was used by two operators at the time of the survey: Airtel J and 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
Les Creux Millenium Park	800	0.03288	Airtel J	1183	7.20134E-06	1/ 138863
	900	1.785	JT J	23	0.002612656	1/ 383
	1800	0.2922	JT J	200	0.000244086	1/ 4097
	2100	0.1584	JT J	385	0.00012383	1/ 8076
	2600	0.002011	Airtel J	30333	1.27979E-07	1/ 7813754
Total Site EQ					0.002987901	1/ 335

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/335 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

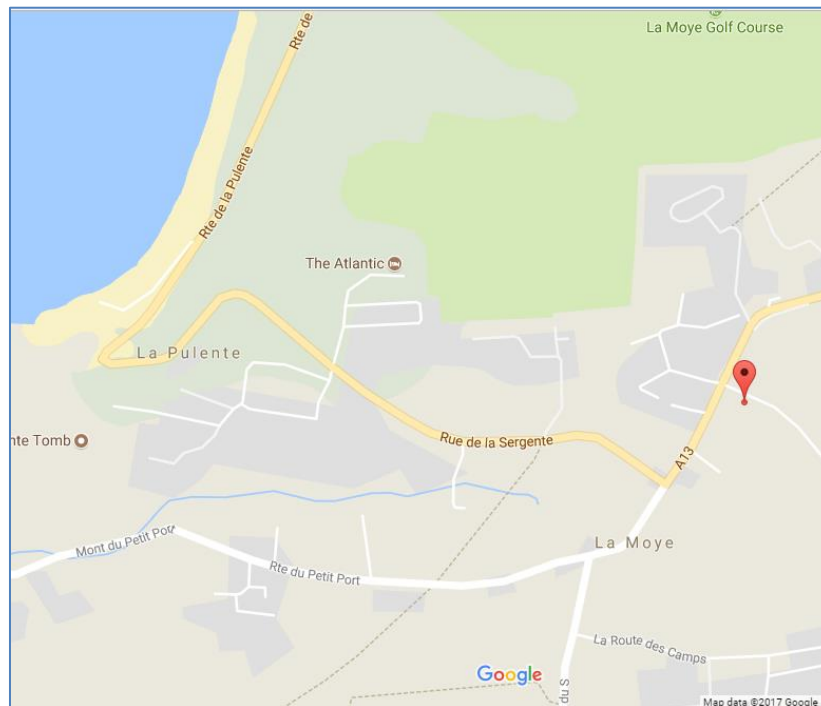


Figure 1 - Map of the Site Area

Site name	Les Creux Millennium Park
Site address	Les Creux Country Park, La Route Orange, St Brelade, Jersey
Site Latitude	N 49.18658
Site Longitude	W 02.21631

1.2 Site Description

Operators	Airtel J, JT J
Antenna types	Omni directional and directional
Approximate height	15m
Site type	Pole Masts
Description	The antennas at Les Creux Millennium Park are located on the edge of a field, the public have access.

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.

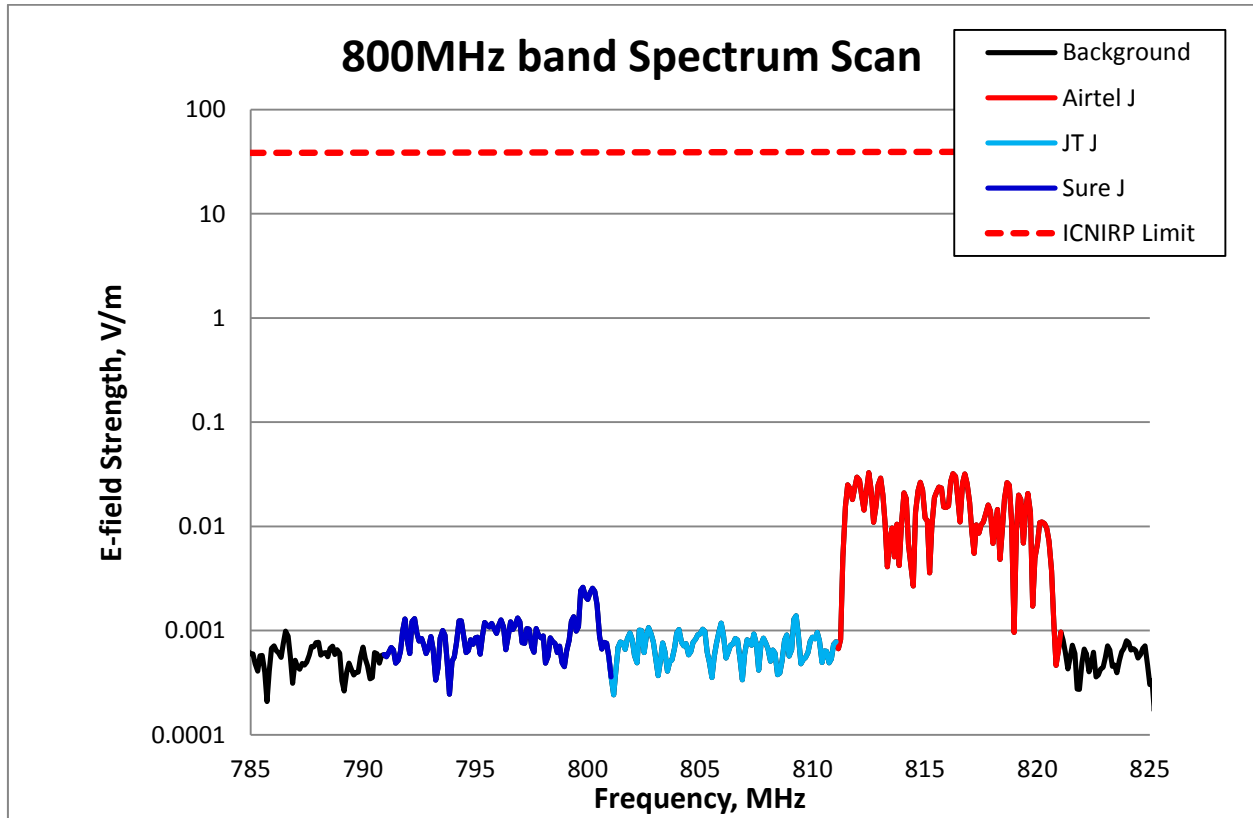


Figure 4 - 800MHz band Spectrum Scan

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 field level recorded across the band was higher than 0.03288 V/m (Airtel J), which is 1183 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
Les Creux Millenium Park	Airtel J	800	0.03288	1183	7.1575E-06	1/ 139714
	JT J		0.001391	27959	1.44248E-08	1/ 69325117
	Sure J		0.002615	14872	2.9415E-08	1/ 33996310
	total band EQ			7.20134E-06	1/ 138863	

Table 2– 800MHz band Exposure Quotient at Les Creux Millennium Park

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

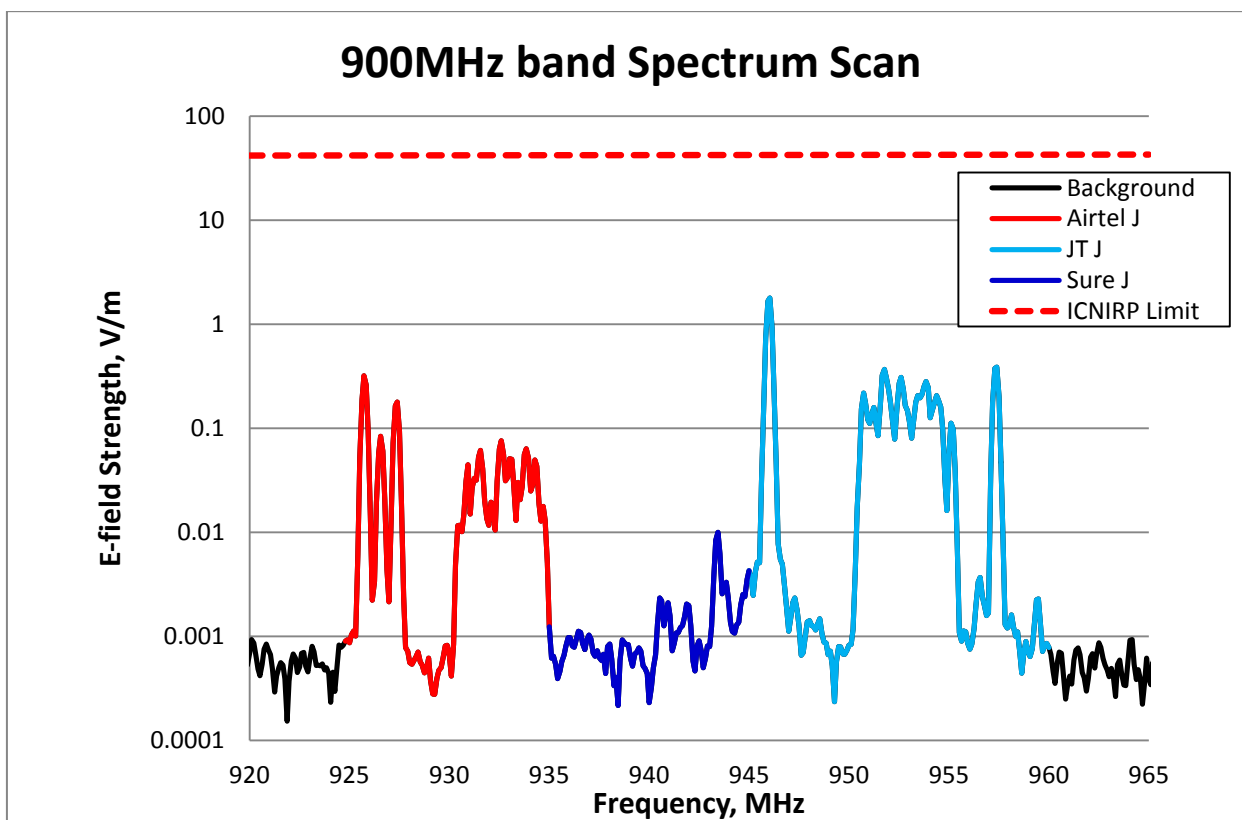


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 1.785 V/m (JT J), which is 23 times smaller than the ICNIRP Reference level.

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

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
Les Creux Millenium Park	Airtel J	900	0.3185	130	9.7484E-05	1/ 10258
	JT J		1.785	23	0.002515069	1/ 398
	Sure J		0.009979	4134	1.03404E-07	1/ 9670787
total band EQ					0.002612656	1/ 383

Table 3– 900MHz band Exposure Quotient at Les Creux Millennium Park

2.3 1800 MHz Band

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

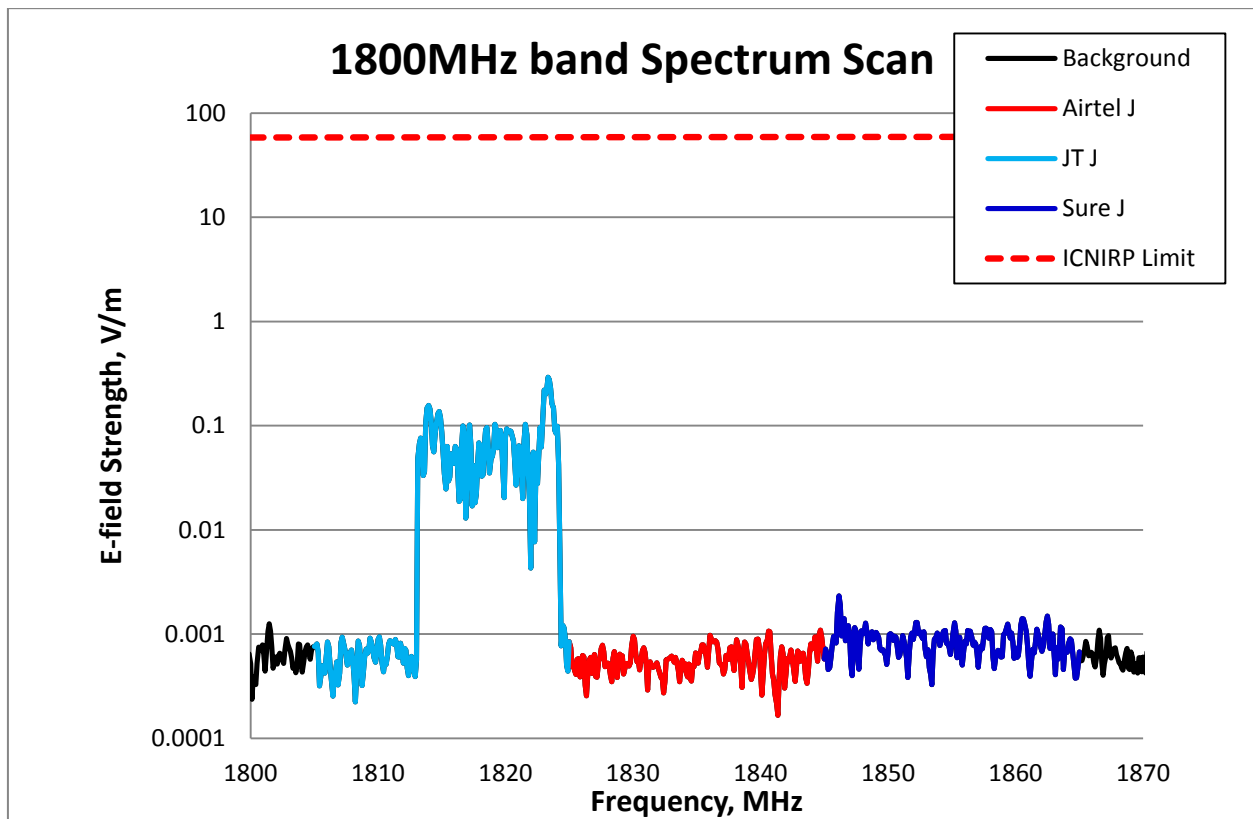


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.2922 V/m (JT J), which is 200 times smaller than the ICNIRP Reference level.

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

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
Les Creux Millenium Park	Airtel J	1800	0.00109	53520	1.88474E-08	1/ 53057750
	JT J		0.2922	200	0.000244025	1/ 4098
	Sure J		0.002322	25123	4.20446E-08	1/ 23784292
total band EQ					0.000244086	1/ 4097

Table 4 – 1800MHz band Exposure Quotient at Les Creux Millennium Park

2.4 2100MHz Band

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

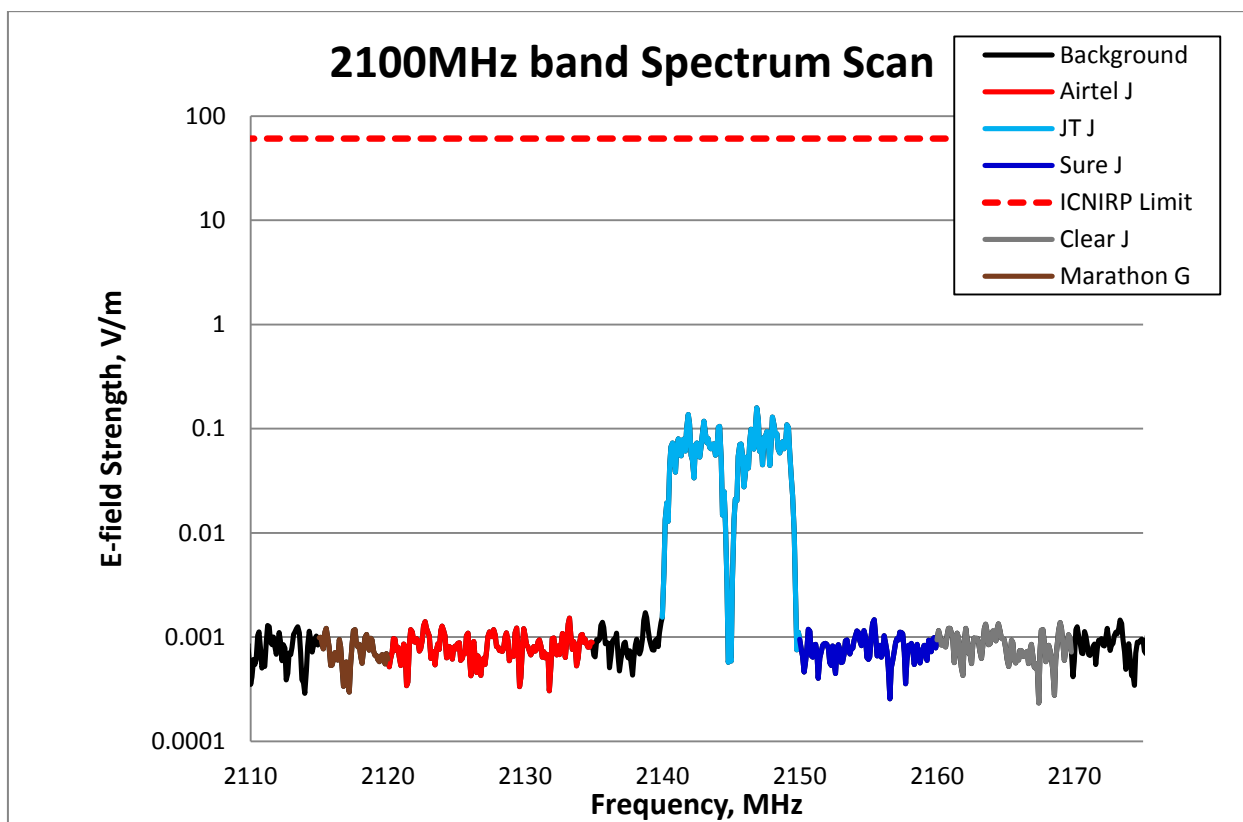


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.1584 V/m (JT J), which is 385 times smaller than the ICNIRP Reference level.

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

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
Les Creux Millenium Park	Airtel J	2100	0.001517	40211	2.77635E-08	1/ 36018559
	Clear J		0.001381	44171	1.95349E-08	1/ 51190370
	JT J		0.1584	385	0.000123757	1/ 8080
	Marathon J		0.001217	50123	7.99303E-09	1/ 125109077
	Sure J		0.001472	41440	1.75075E-08	1/ 57118292
total band EQ					0.00012383	1/ 8076

Table 5 – 2100MHz band Exposure Quotient at Les Creux Millennium Park

2.5 2600MHz band

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

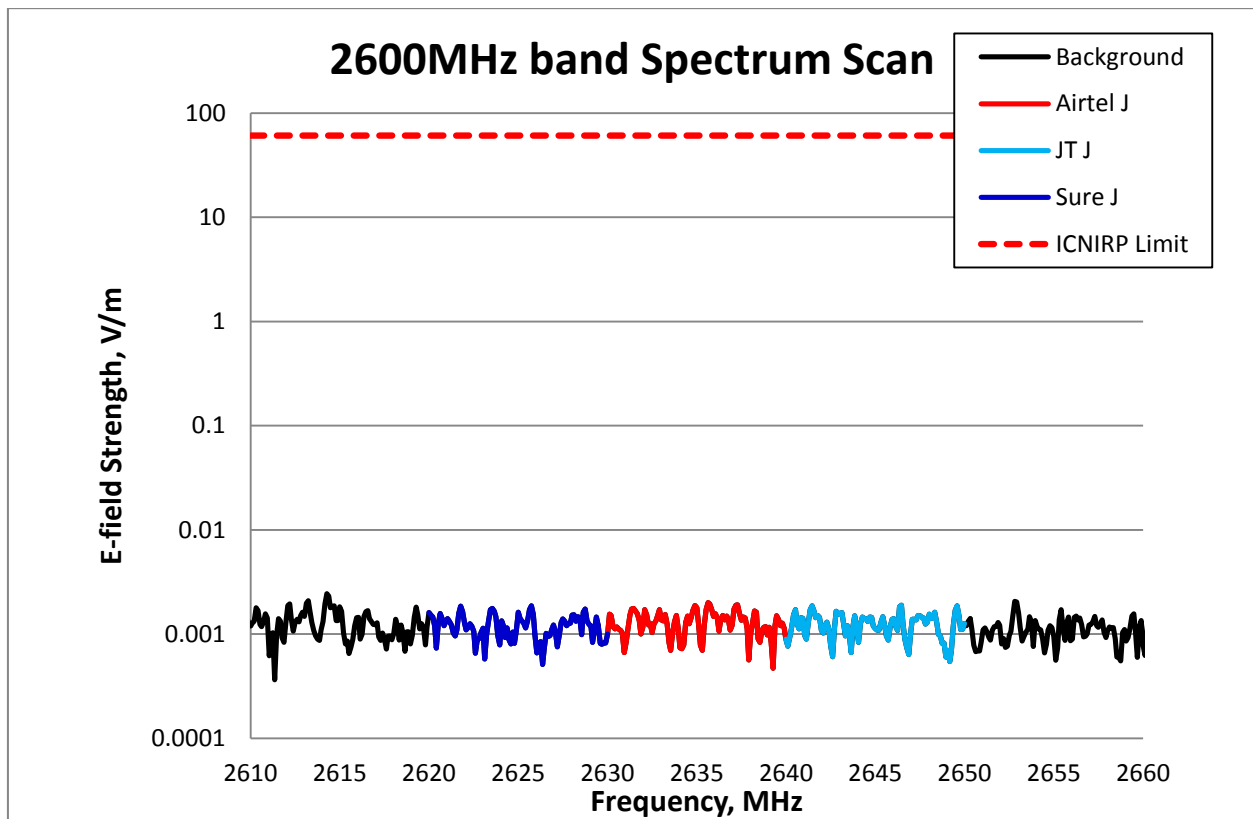


Figure 8 – 2600MHz band Spectrum Scan

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	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
Les Creux Millenium Park	Airtel J	2600	0.002011	30333	4.63334E-08	1/ 21582726
	JT J		0.00189	32275	4.23485E-08	1/ 23613563
	Sure J		0.001871	32603	3.92976E-08	1/ 25446876
total band EQ					1.27979E-07	1/ 7813754

Table 6 – 2600MHz band Exposure Quotient at Les Creux Millennium Park

End