

Cellular Mast Emissions Survey: Rozel Pepiniere (Jersey)



DOCUMENT DETAILS

Document Name:	Cellular Mast Emissions Survey:	Rozel Pepiniere (Jersey)
Survey Date:	08/06/2017 at 10:28	
Report issue Date	14/07/2017	
Survey Engineer:	Louise Sands	
Report Compiled by:	Hadas Goraly - Shay	
Checked and Approved by	Bachir Belloul	
Authorised for Distribution	Ravi Mondair	

This document and any information contained therein are intended for the use of employees and customers of iWireless Solutions Limited only. No part of this document may be reproduced or transmitted to a third party in any form or means without the prior written consent of iWireless Solutions Limited

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 Rozel Pepiniere site located in Jersey.

The Rozel Pepiniere site was used by all three operators at the time of the survey: Airtel J, JT J and Sure J. Surveys were 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
Rozel Pepiniere	800	0.1127	Sure J	345	0.000118202	1/ 8460
	900	2.108	JT J	20	0.006484662	1/ 154
	1800	0.1123	Sure J	519	0.000164536	1/ 6078
	2100	0.1312	JT J	465	0.00018225	1/ 5487
	2600	0.004259	Sure J	14323	4.31045E-07	1/ 2319941
Total Site EQ					0.006950081	1/ 144

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/144 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

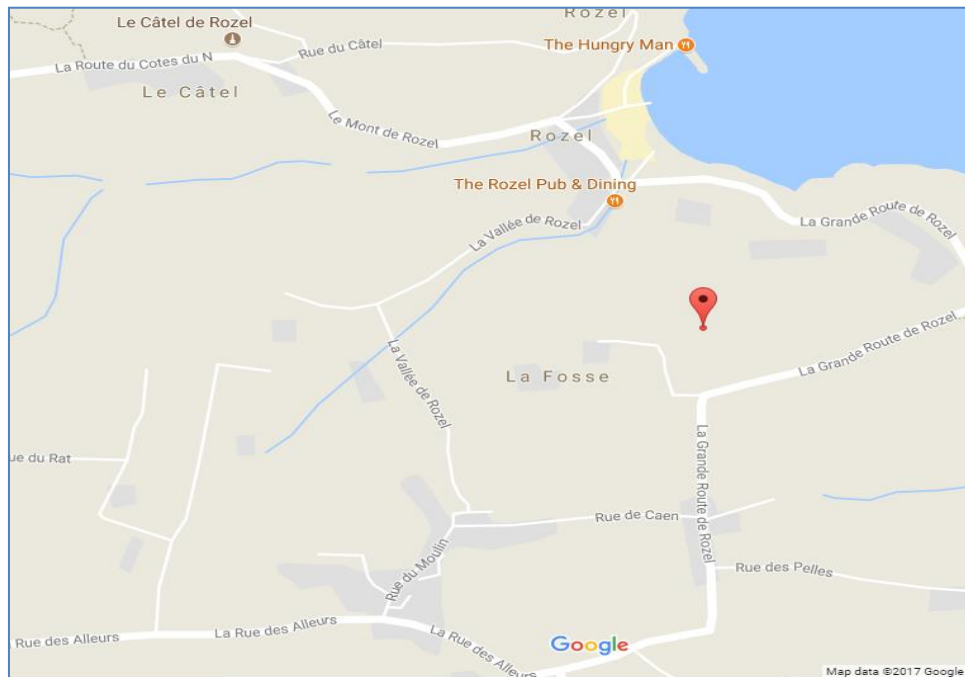


Figure 1 - Map of the Site Area

Site name	Rozel Pepiniere
Site address	La Grande Route de Rozel, St Martin, Jersey
Site Latitude	49.23321
Site Longitude	-2.04427

1.2 Site Description

Operators	Airtel J, JT J, Sure J
Antenna types	Directional
Approximate height	12-15m
Site type	Pole Masts (three on site)
Description	The antennas at the Rozel Pepiniere are located at the corner of the field, the public have access.

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location

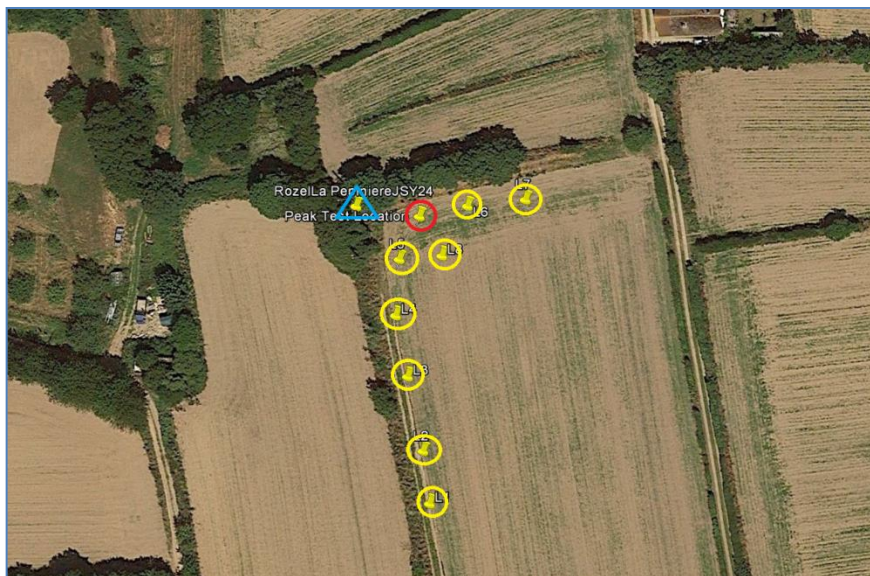


Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out

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.

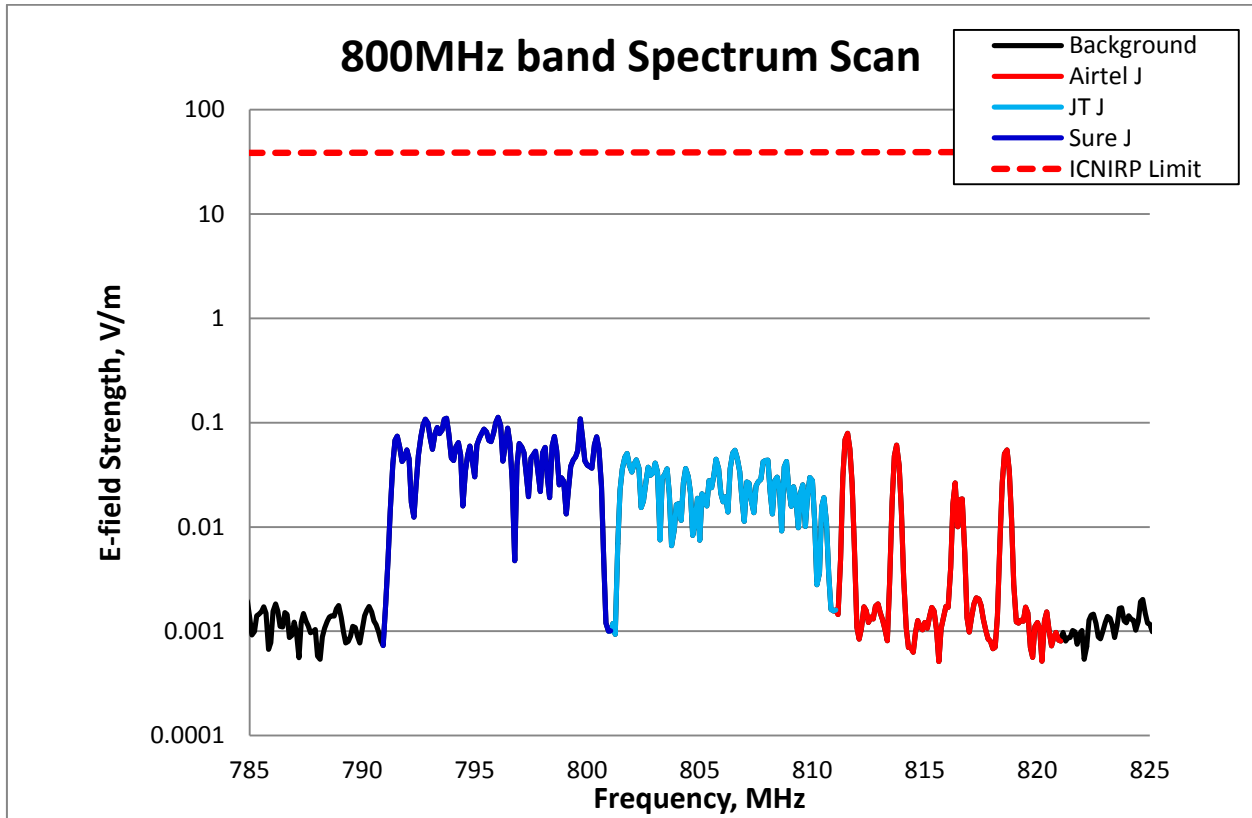


Figure 4 - 800MHz band Spectrum Scan

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 0.1127 V/m (Sure J), which is 345 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
Rozel Pepiniere	Airtel J	800	0.07928	491	8.97089E-06	1/ 111472
	JT J		0.05426	717	1.89549E-05	1/ 52757
	Sure J		0.1127	345	9.02761E-05	1/ 11077
total band EQ					0.000118202	1/ 8460

Table 2– 800MHz band Exposure Quotient at Rozel Pepiniere

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

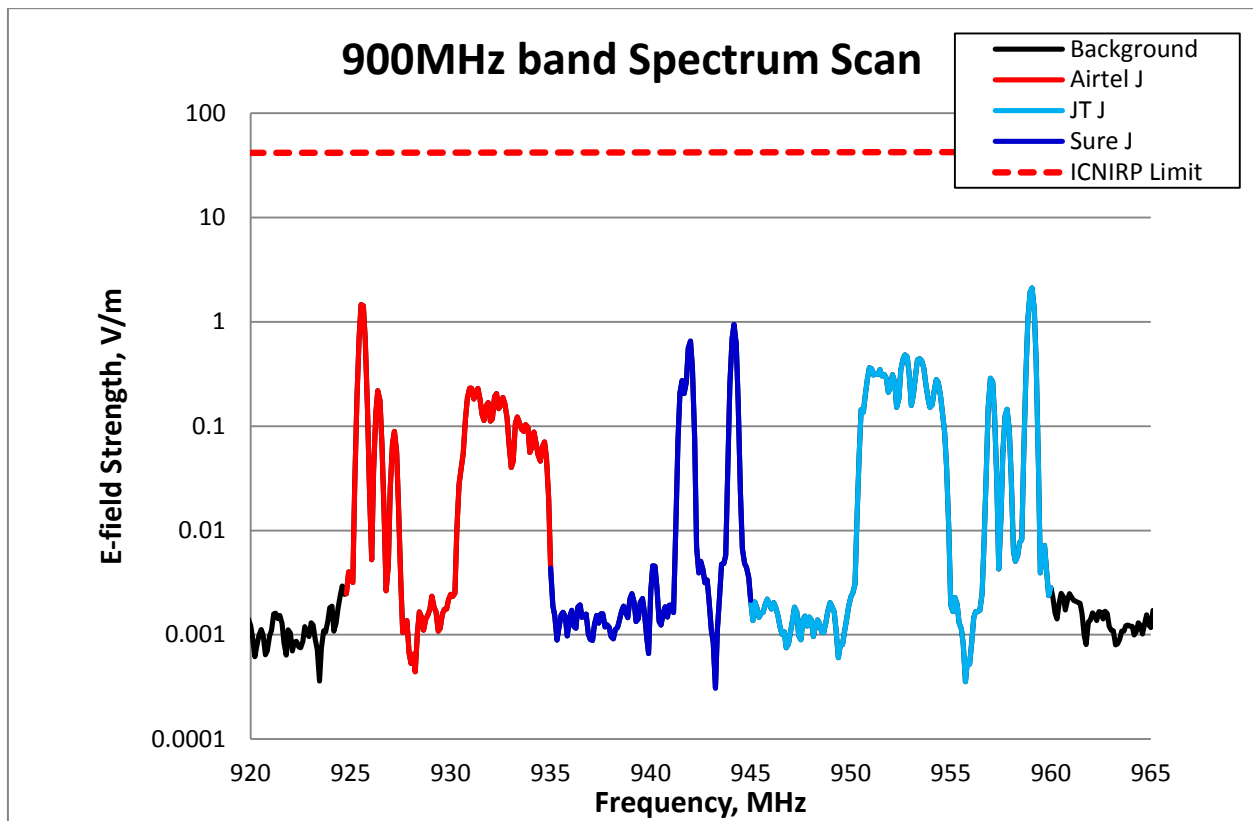


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 2.108 V/m (JT J), which is 20 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
Rozel Pepiniere	Airtel J	900	1.459	28	0.001634995	1/ 612
	JT J		2.108	20	0.004054443	1/ 247
	Sure J		0.9434	44	0.000795223	1/ 1258
total band EQ					0.006484662	1/ 154

Table 3– 900MHz band Exposure Quotient at Rozel Pepiniere

2.3 1800 MHz Band

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

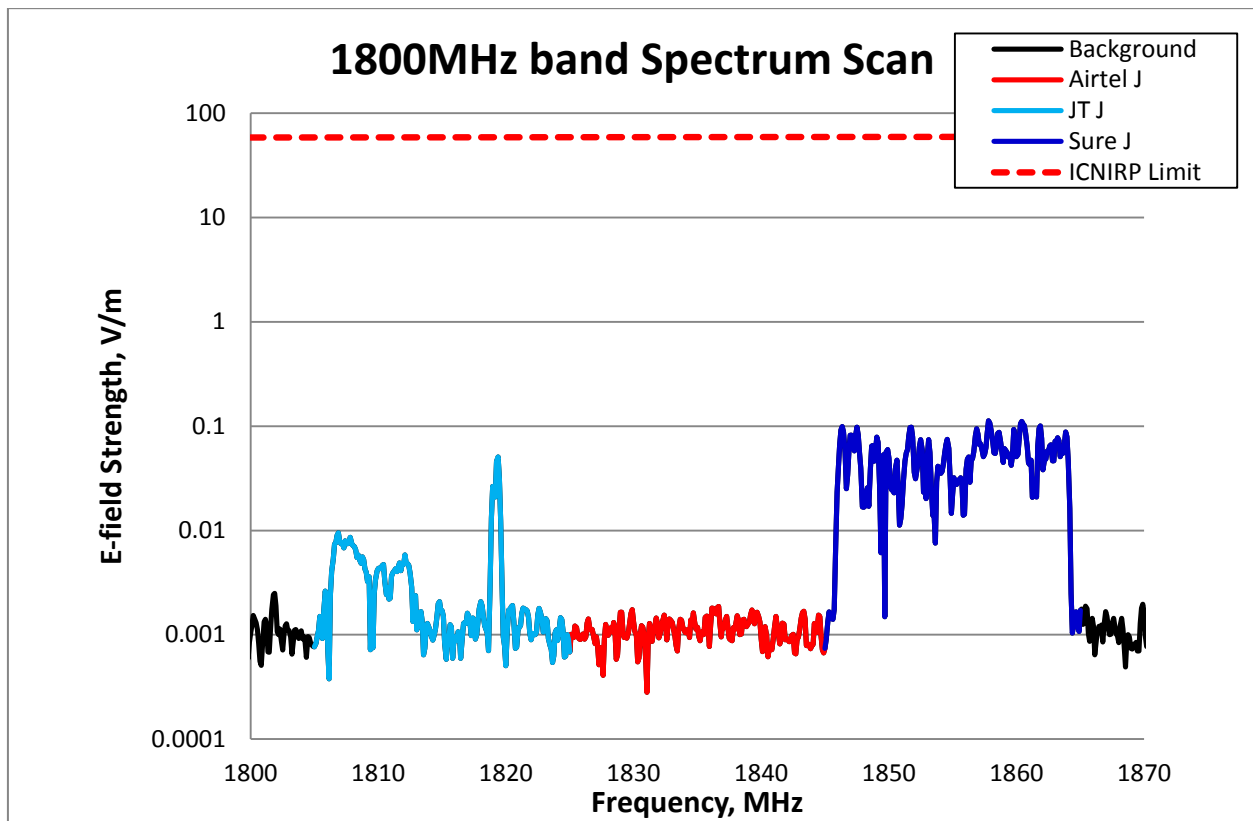


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.1123 V/m (Sure J), which is 519 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
Rozel Pepiniere	Airtel J	1800	0.001863	31313	6.89577E-08	1/ 14501635
	JT J		0.05052	1155	2.61544E-06	1/ 382345
	Sure J		0.1123	519	0.000161851	1/ 6179
total band EQ					0.000164536	1/ 6078

Table 4 – 1800MHz band Exposure Quotient at Rozel Pepiniere

2.4 2100MHz Band

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

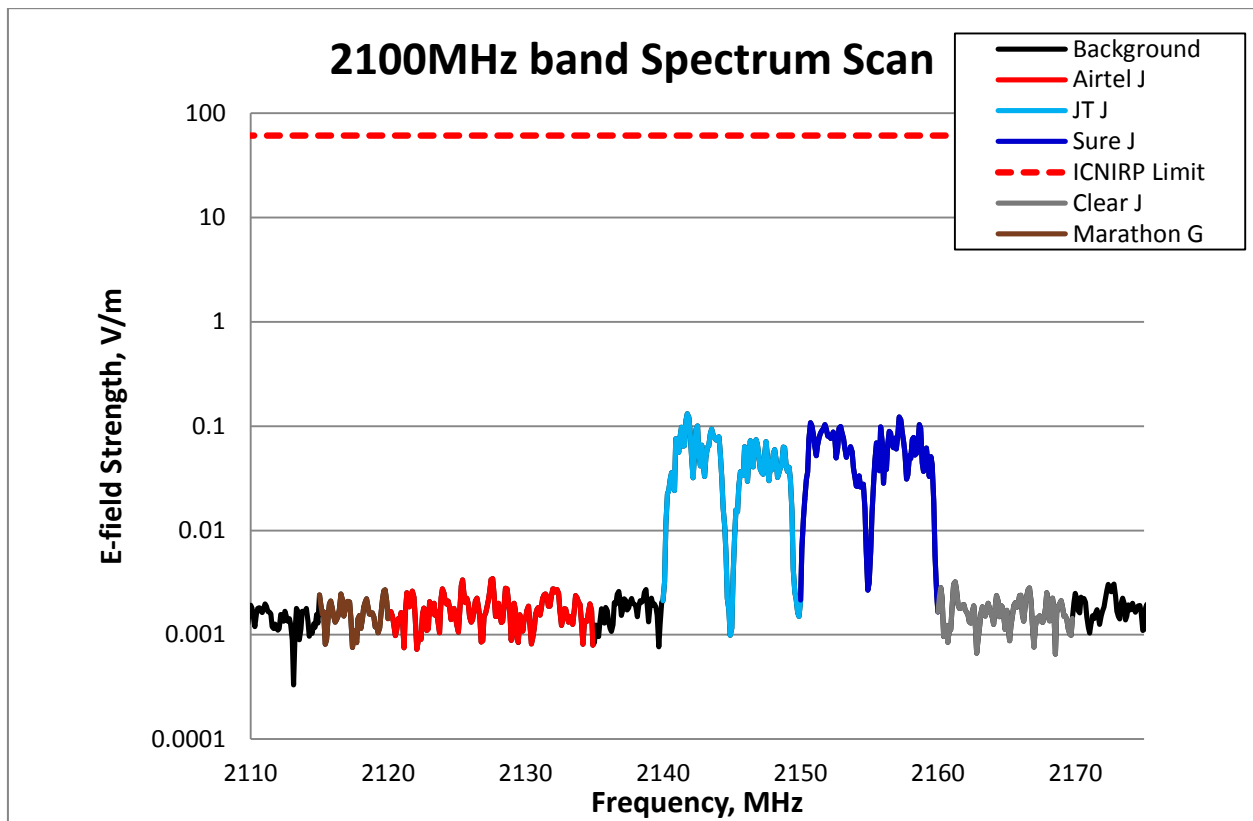


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.1312 V/m (JT J), which is 465 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
Rozel Pepiniere	Airtel J	2100	0.003461	17625	1.28813E-07	1/ 7763202
	Clear J		0.003219	18950	7.9249E-08	1/ 12618458
	JT J		0.1312	465	7.65505E-05	1/ 13063
	Marathon J		0.002691	22668	3.83165E-08	1/ 26098408
	Sure J		0.1221	500	0.000105453	1/ 9483
		total band EQ			7.67969E-05	1/ 13021

Table 5 – 2100MHz band Exposure Quotient at Rozel Pepiniere

2.5 2600MHz band

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

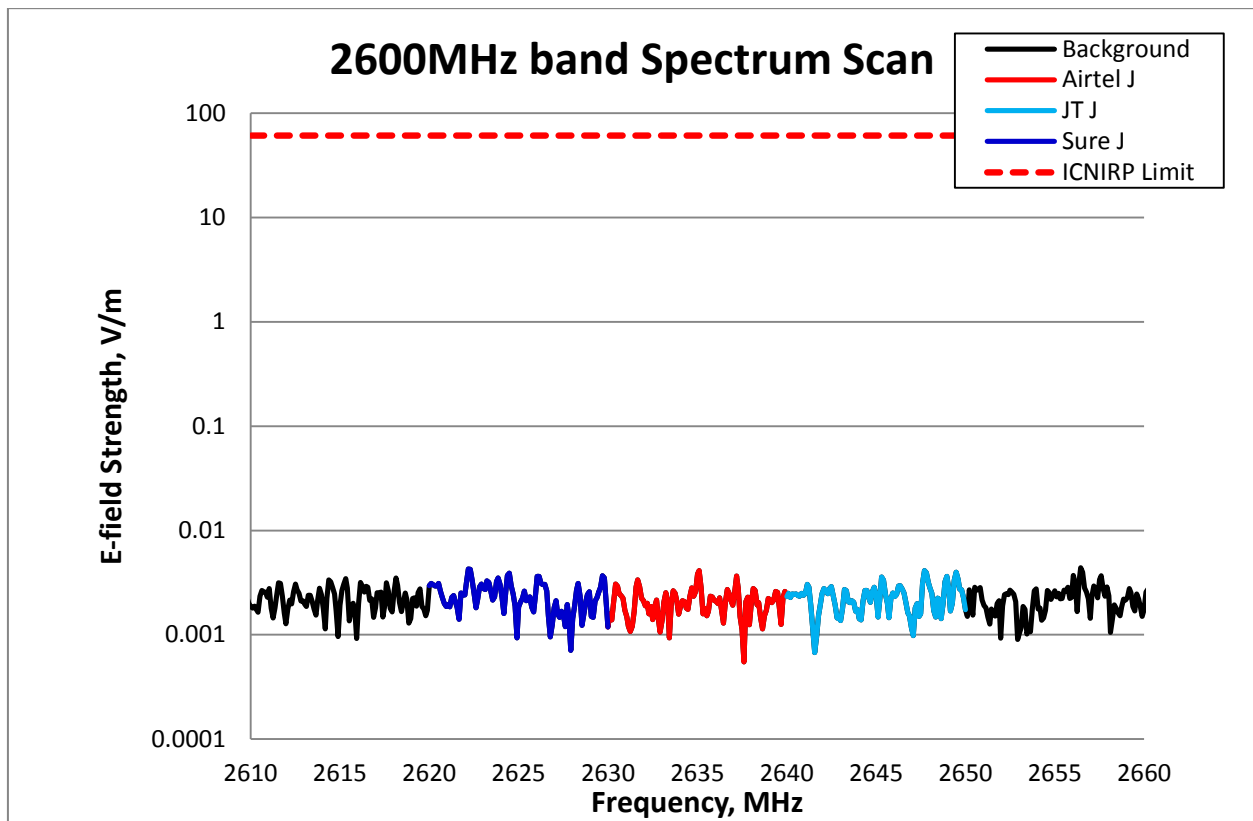


Figure 8 – 2600MHz band Spectrum Scan

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
Rozel Pepiniere	Airtel J	2600	0.004119	14809	1.20694E-07	1/ 8285405
	JT J		0.004131	14766	1.48178E-07	1/ 6748653
	Sure J		0.004259	14323	1.62174E-07	1/ 6166234
total band EQ					4.31045E-07	1/ 2319941

Table 6 – 2600MHz band Exposure Quotient at Rozel Pepiniere

End