

Cellular Mast Emissions Survey: Rue De La Forge (Jersey)



DOCUMENT DETAILS

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	(Jersey)	
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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 Rue De La Forge site located in Jersey.

The Rue De La Forge 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
La Rue de La Forge	800	0.2315	JT J	168	0.000417228	1/ 2397
	900	1.891	JT J	22	0.002880618	1/ 347
	1800	0.18	JT J	324	0.000261966	1/ 3817
	2100	0.1515	JT J	403	0.000166247	1/ 6015
	2600	0.00386	JT J	15803	3.88758E-07	1/ 2572296
Total Site EQ					0.003726449	1/ 268

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/268 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

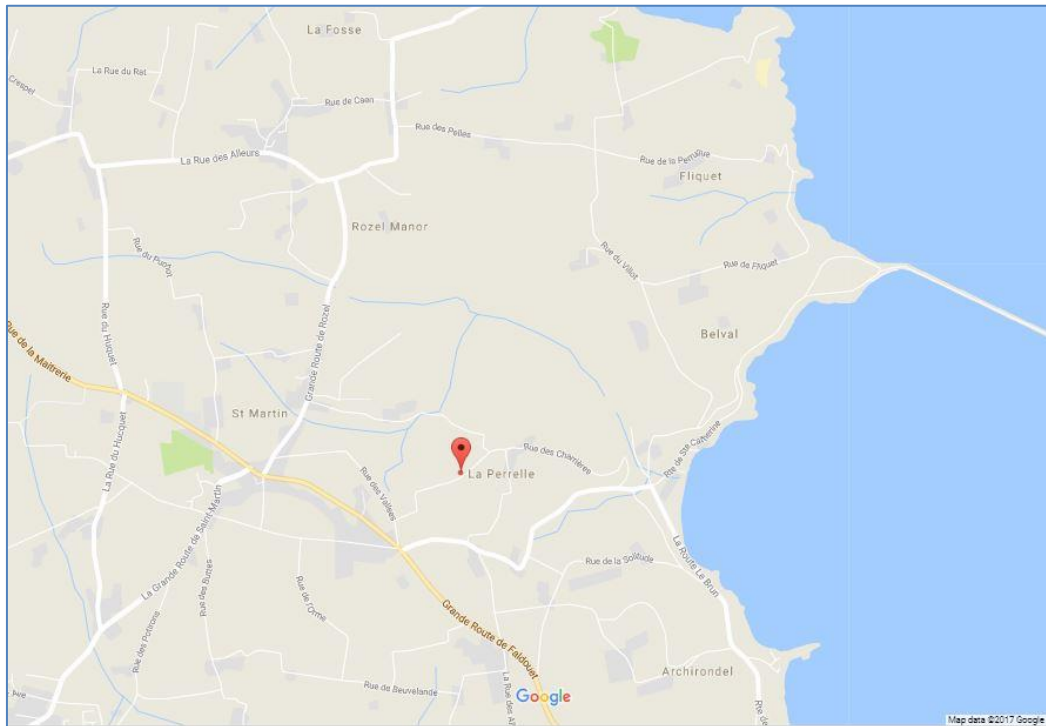


Figure 1 - Map of the Site Area

Site name	Rue De La Forge
Site address	Le Rue de la Forge, La Perrelle, St Martin, Jersey
Site Latitude	49.21795
Site Longitude	-2.04087

1.2 Site Description

Operators	Airtel J, JT J
Antenna types	Directional
Approximate height	18m
Site type	Pole Mast
Description	The antennas at the Rue De La Forge are located at the corner of a field, the public have access.

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location

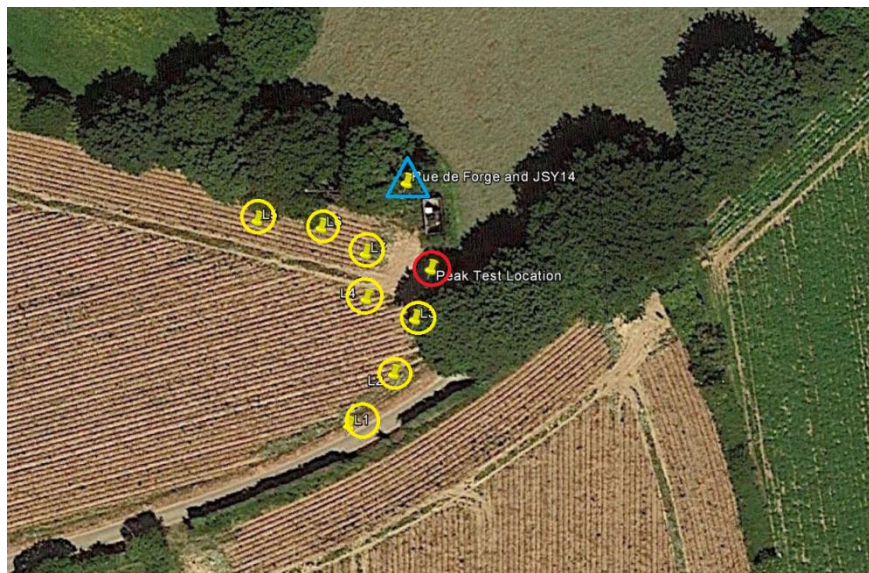


Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out

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.

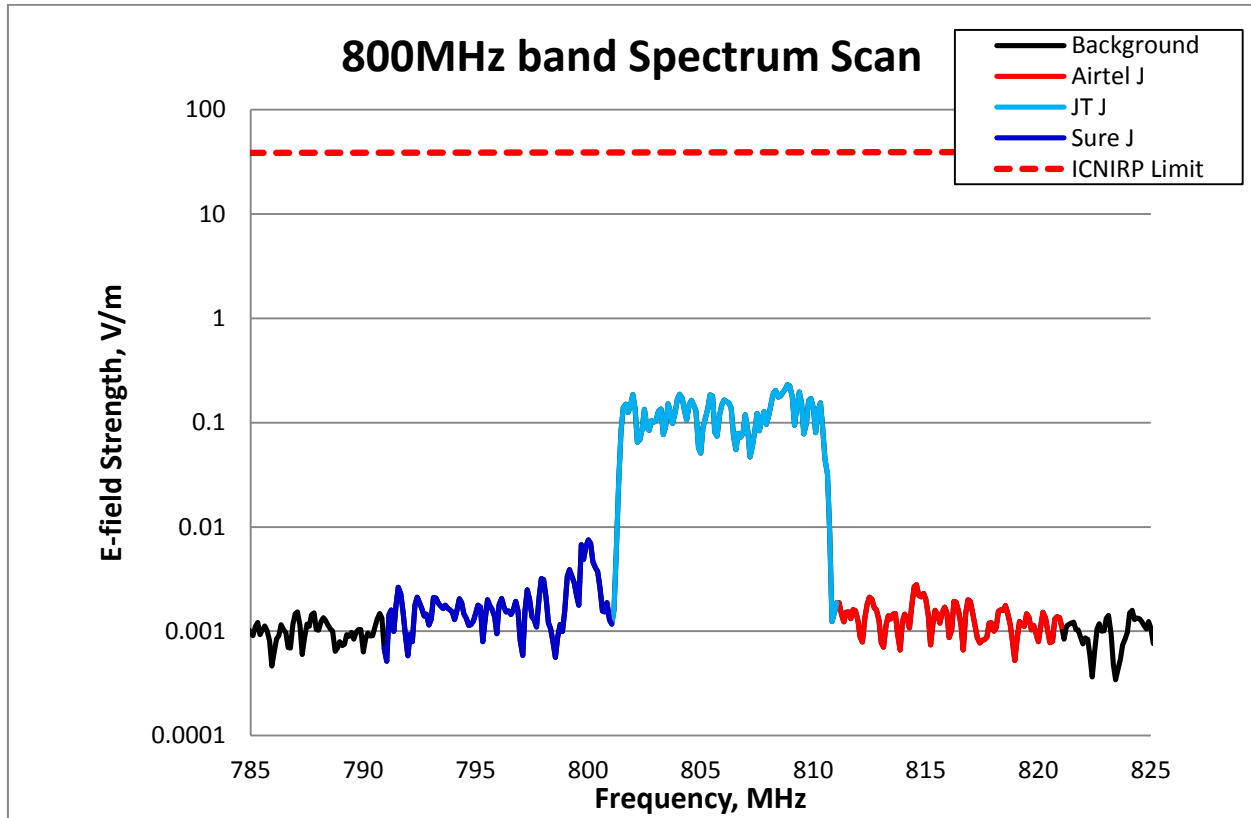


Figure 4 - 800MHz band Spectrum Scan

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 0.2315 V/m (JT J), which is 168 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
La Rue de La Forge	Airtel J	800	0.002788	13949	5.32516E-08	1/ 18778777
	JT J		0.2315	168	0.000417029	1/ 2398
	Sure J		0.007514	5176	1.45862E-07	1/ 6855807
total band EQ					0.000417228	1/ 2397

Table 2– 800MHz band Exposure Quotient at Rue De La Forge

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

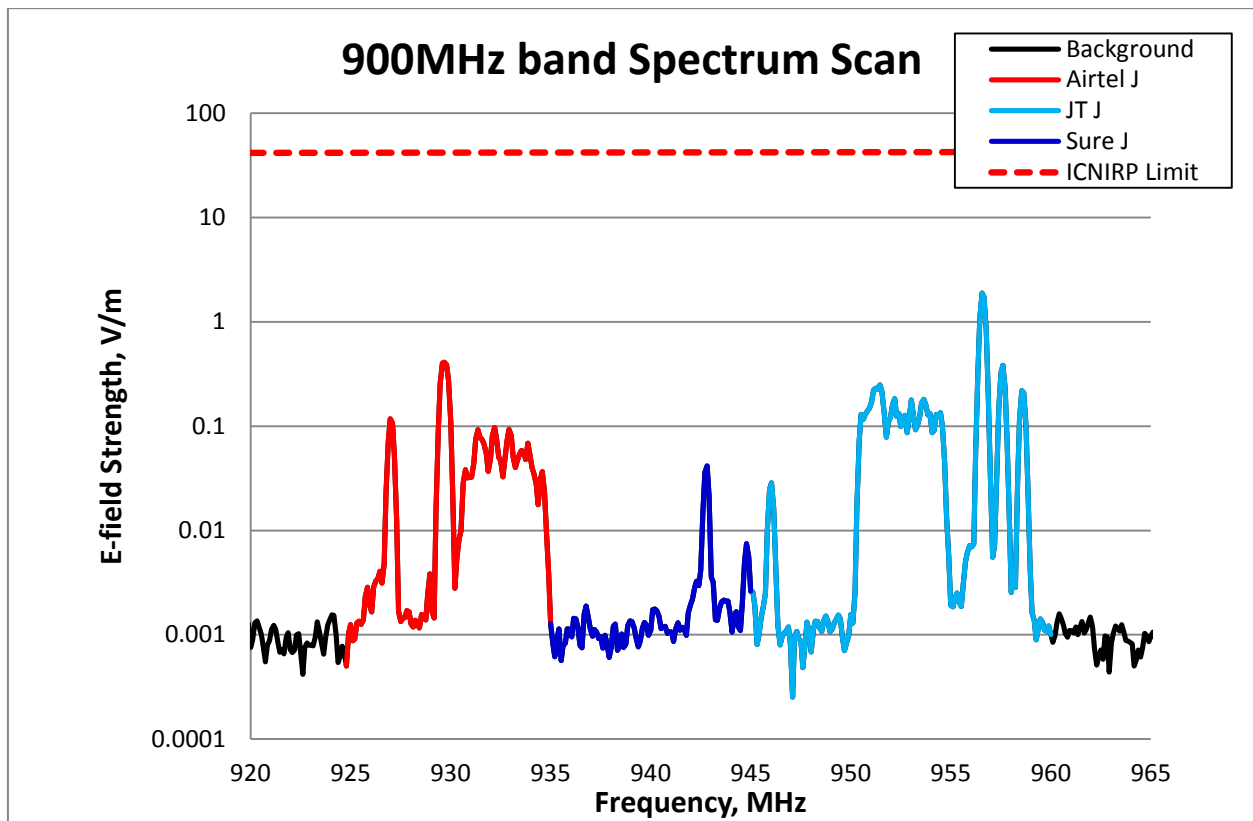


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 1.891 V/m (JT J), which is 22 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
La Rue de La Forge	Airtel J	900	0.4092	101	0.000215844	1/ 4633
	JT J		1.891	22	0.002663685	1/ 375
	Sure J		0.04159	992	1.08981E-06	1/ 917589
total band EQ					0.002880618	1/ 347

Table 3– 900MHz band Exposure Quotient at Rue De La Forge

2.3 1800 MHz Band

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

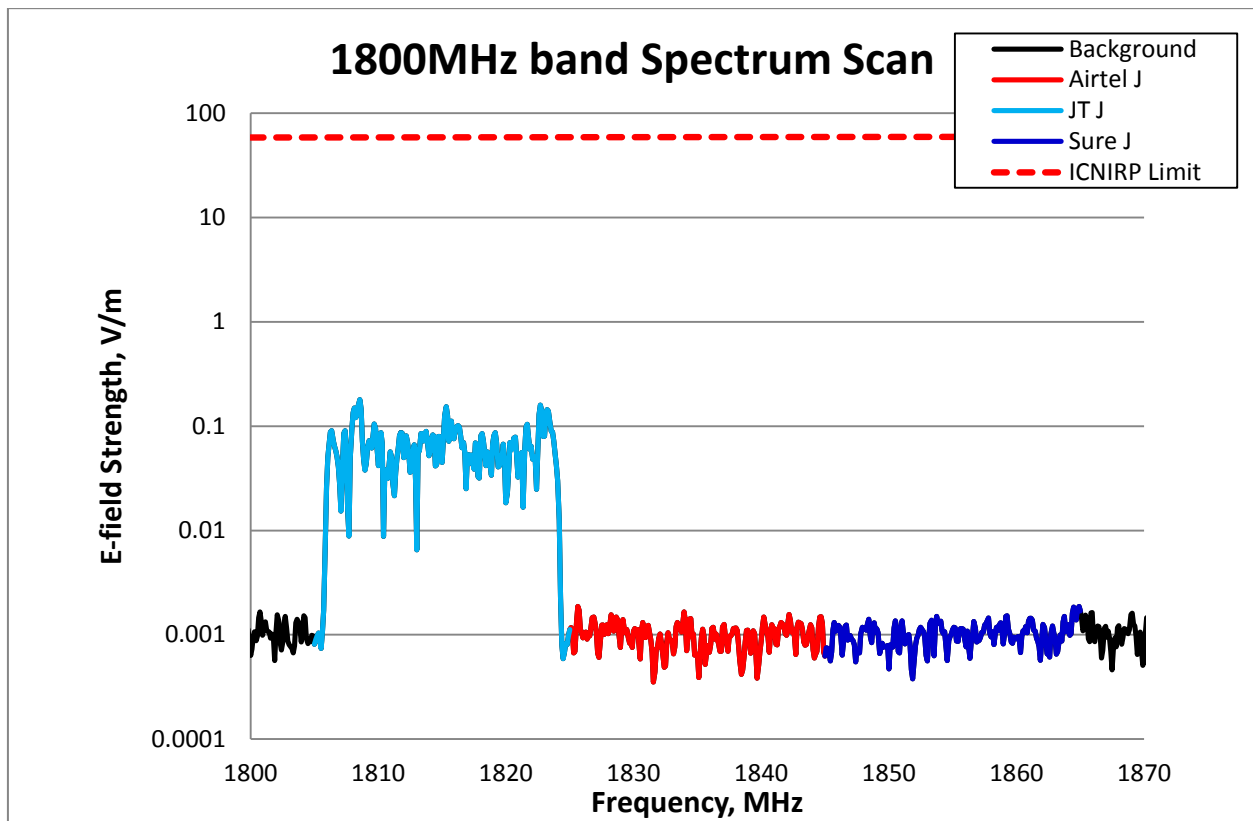


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.18 V/m (JT J), which is 324 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
La Rue de La Forge	Airtel J	1800	0.001871	31179	5.57054E-08	1/ 17951576
	JT J		0.18	324	0.000261853	1/ 3819
	Sure J		0.001864	31296	5.71503E-08	1/ 17497709
total band EQ					0.000261966	1/ 3817

Table 4 – 1800MHz band Exposure Quotient at Rue De La Forge

2.4 2100MHz Band

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

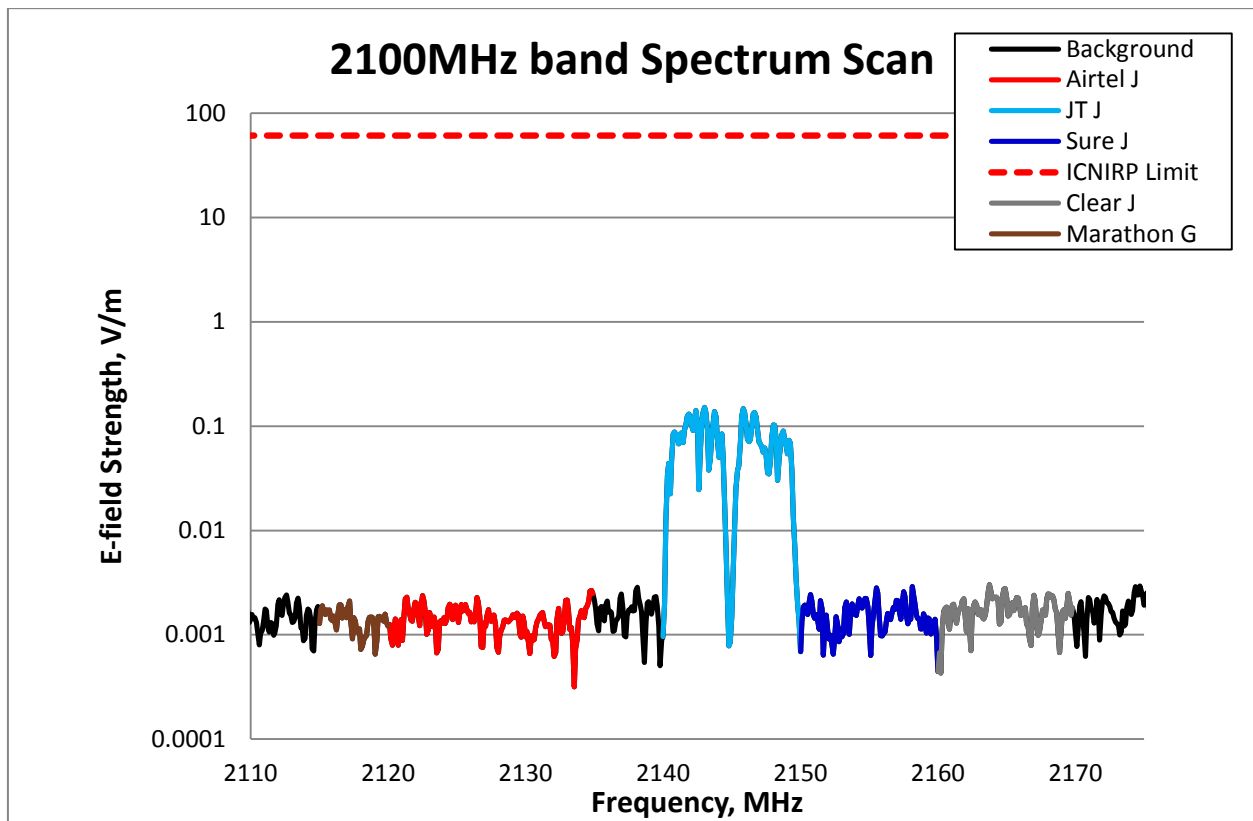


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.1515 V/m (JTJ), which is 403 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
La Rue de La Forge	Airtel J	2100	0.002654	22984	8.37541E-08	1/ 11939719
	Clear J		0.003023	20179	8.29464E-08	1/ 12055982
	JT J		0.1515	403	0.000165986	1/ 6025
	Marathon J		0.00211	28910	2.69952E-08	1/ 37043656
	Sure J		0.002892	21093	6.79292E-08	1/ 14721203
total band EQ					0.000166247	1/ 6015

Table 5 – 2100MHz band Exposure Quotient at Rue De La Forge

2.5 2600MHz band

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

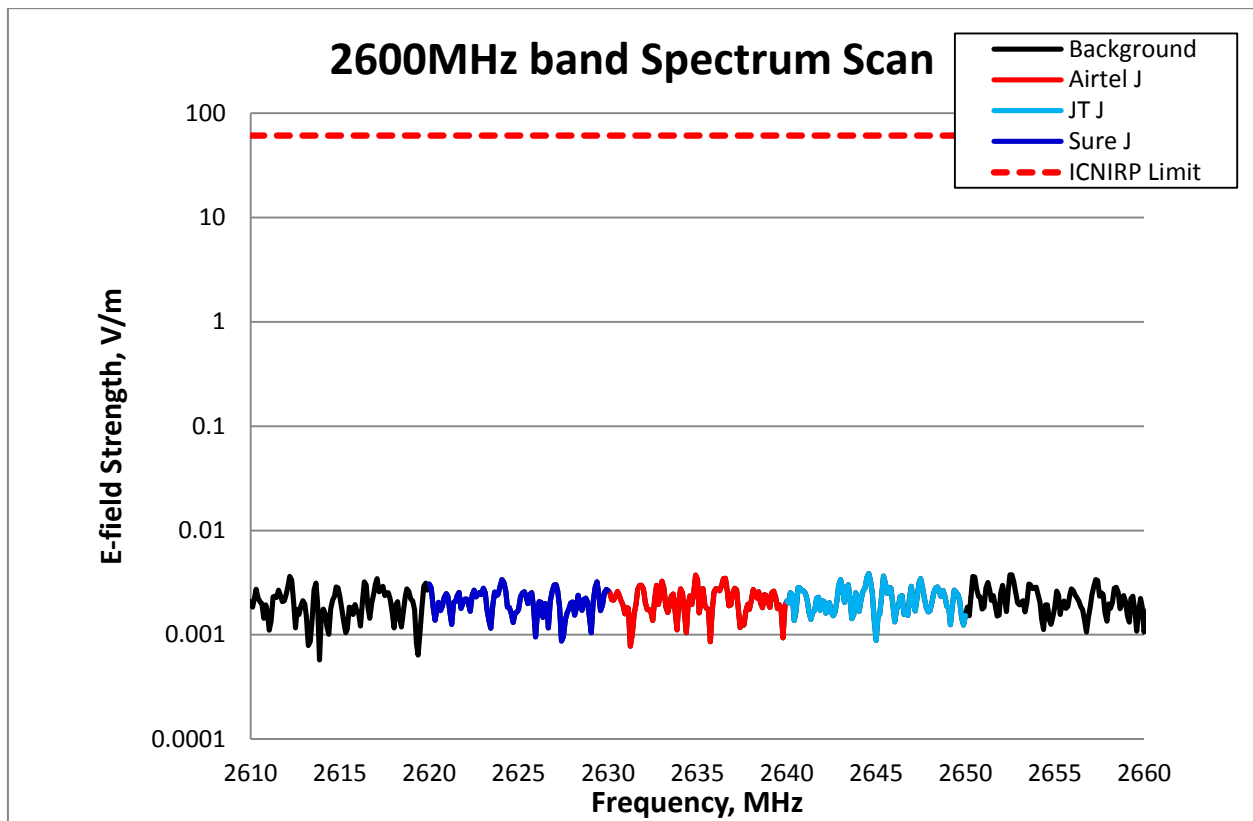


Figure 8 – 2600MHz band Spectrum Scan

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
La Rue de La Forge	Airtel J	2600	0.003736	16328	1.29923E-07	1/ 7696854
	JT J		0.00386	15803	1.37254E-07	1/ 7285766
	Sure J		0.003393	17978	1.21581E-07	1/ 8224995
total band EQ					3.88758E-07	1/ 2572296

Table 6 – 2600MHz band Exposure Quotient at Rue De La Forge

End