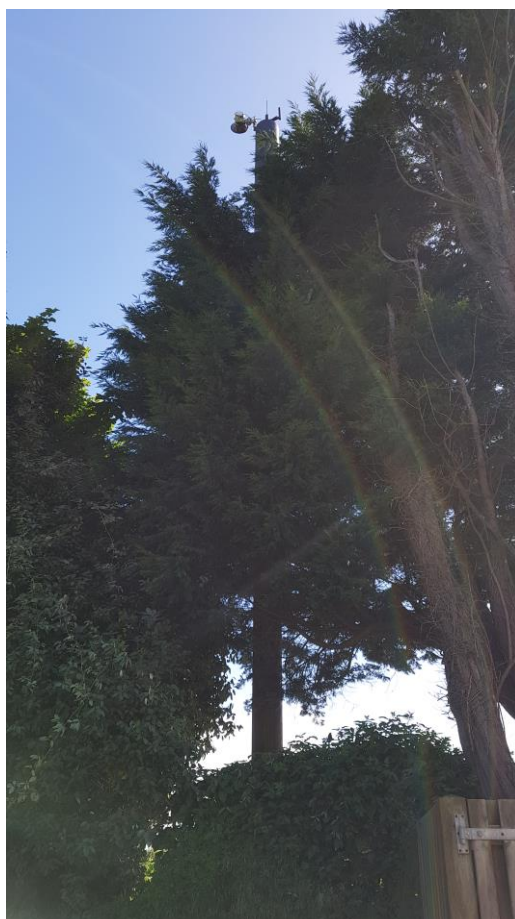


Cellular Mast Emissions Survey: La Prairie Farm (Jersey)



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 La Prairie Farm site located in Jersey.

The La Prairie Farm site was used by a single operator at the time of the survey: Airtel 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 Prairie Farm	800	0.08621	Airtel J	451	2.36666E-05	1/ 42254
	900	0.3653	Airtel J	113	0.000135783	1/ 7365
	1800	0.00214	Sure J	27260	9.00919E-08	1/ 11099771
	2100	0.00394	JT J	15482	1.70856E-07	1/ 5852866
	2600	0.002163	Airtel J	28202	1.12005E-07	1/ 8928173
Total Site EQ					0.000159822	1/ 6257

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/6257 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

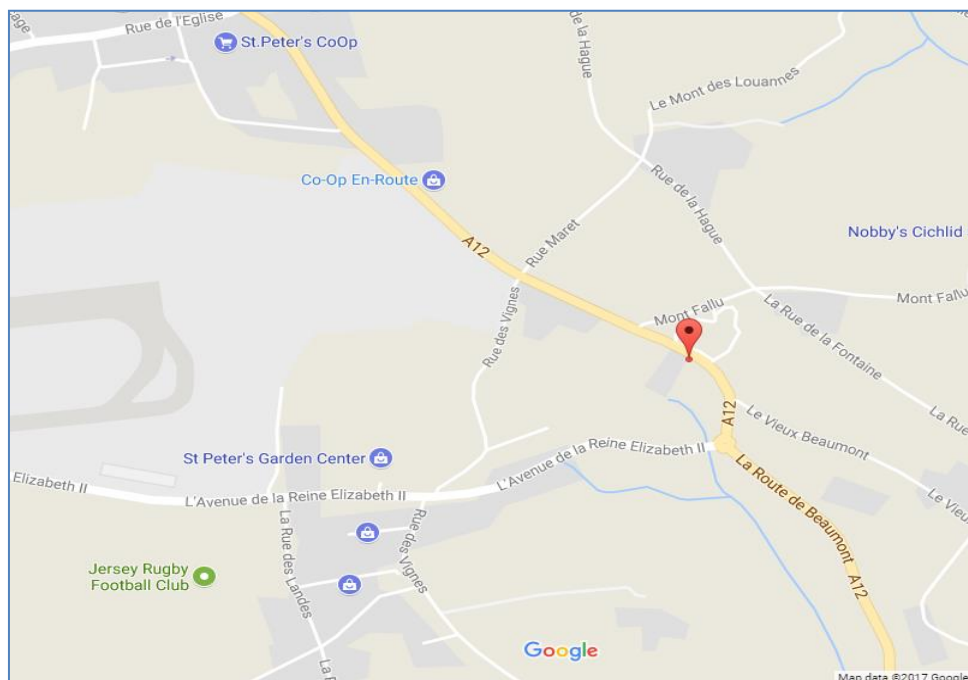


Figure 1 - Map of the Site Area

Site name	La Prairie Farm
Site address	La Route de Beaumont, St Peter, Jersey
Site Latitude	49.20794
Site Longitude	-2.17430

1.2 Site Description

Operators	Airtel J
Antenna types	Directional
Approximate height	18m
Site type	Pole Mast
Description	The antennas at La Prairie Farm is located on the edge of a fenced field, out of reach of the public.

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location

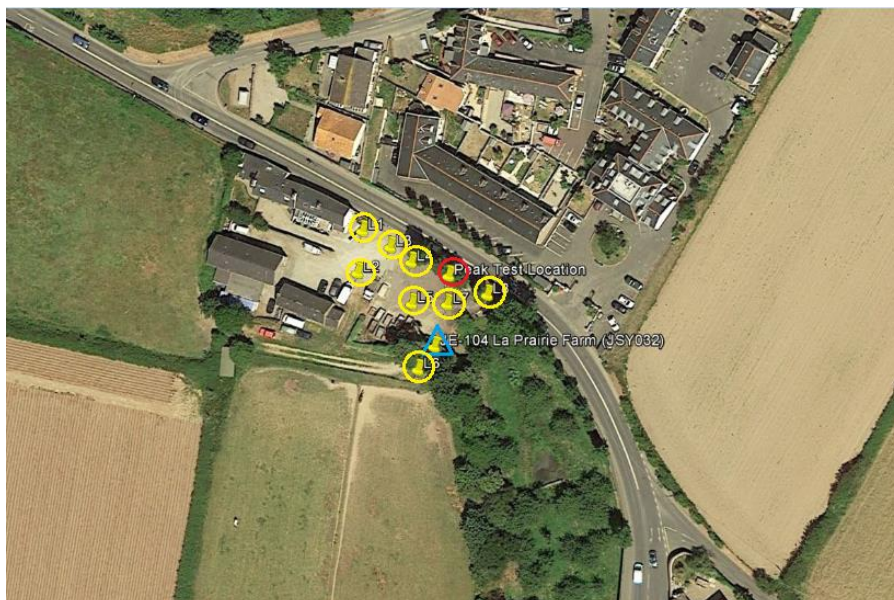


Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out.

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.

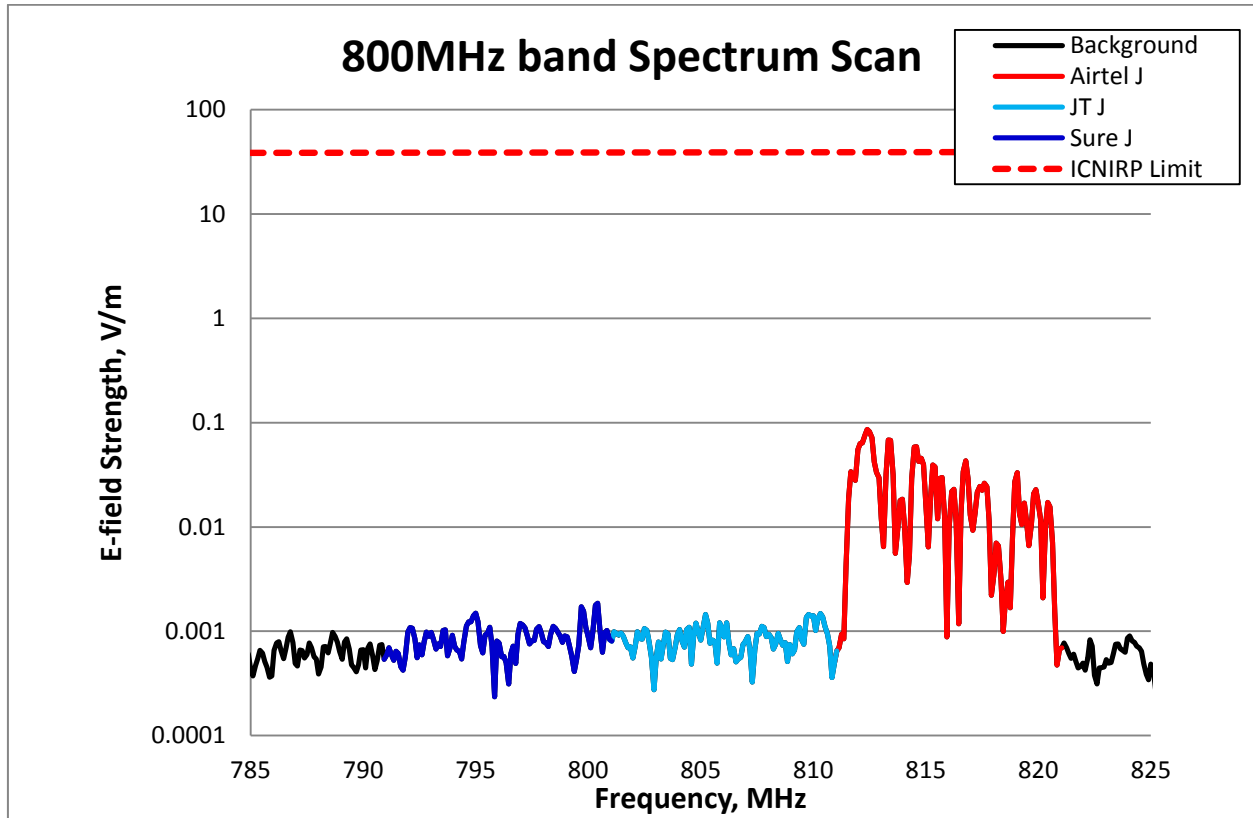


Figure 4 - 800MHz band Spectrum Scan

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 field level recorded across the band was higher than 0.08621 V/m (Airtel J), which is 451 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 Prairie Farm	Airtel J	800	0.08621	451	2.36241E-05	1/ 42330
	JT J		0.001481	26260	2.10833E-08	1/ 47430949
	Sure J		0.001857	20943	2.1424E-08	1/ 46676537
total band EQ					2.36666E-05	1/ 42254

Table 2– 800MHz band Exposure Quotient at La Prairie Farm

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

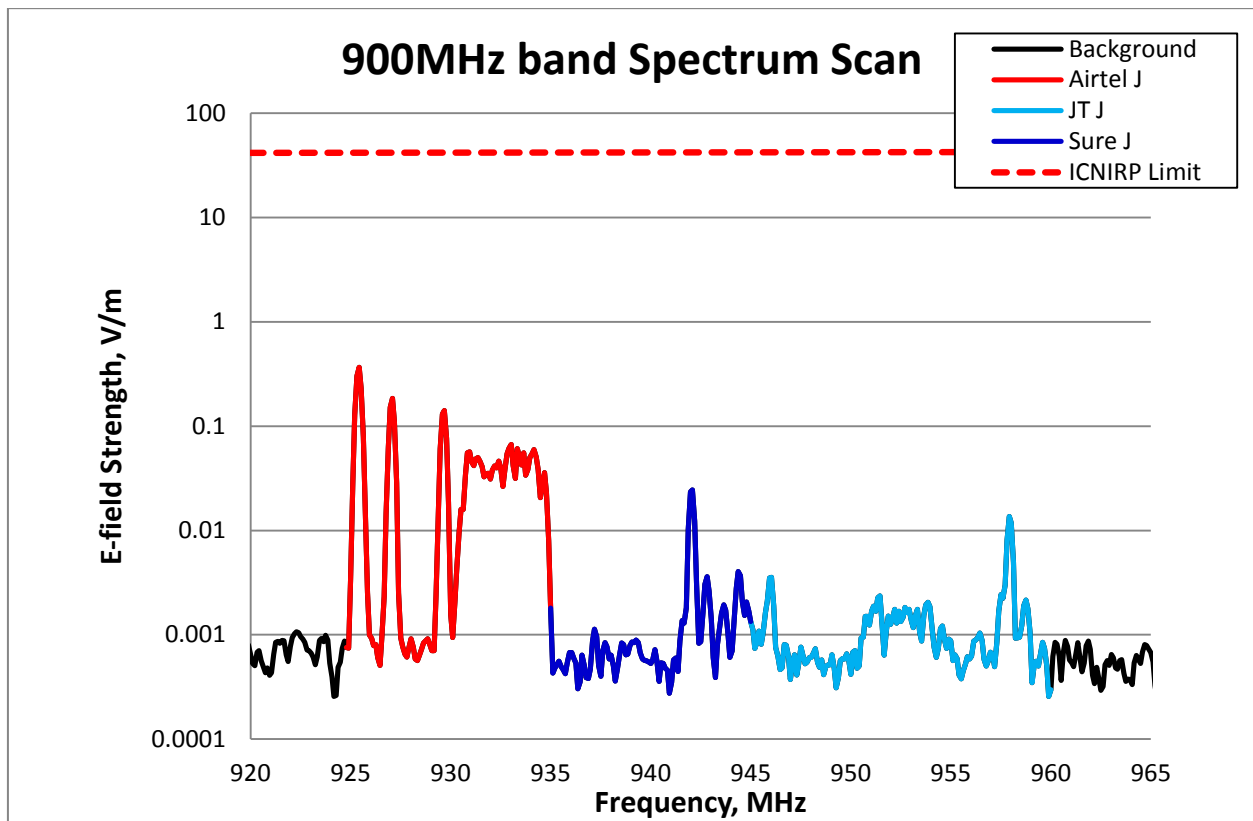


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.3653 V/m (Airtel J), which is 113 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
La Prairie Farm	Airtel J	900	0.3653	113	0.000135203	1/ 7396
	JT J		0.01359	3035	1.65094E-07	1/ 6057164
	Sure J		0.0244	1691	4.15289E-07	1/ 2407959
total band EQ					0.000135783	1/ 7365

Table 3– 900MHz band Exposure Quotient at La Prairie Farm

2.3 1800 MHz Band

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

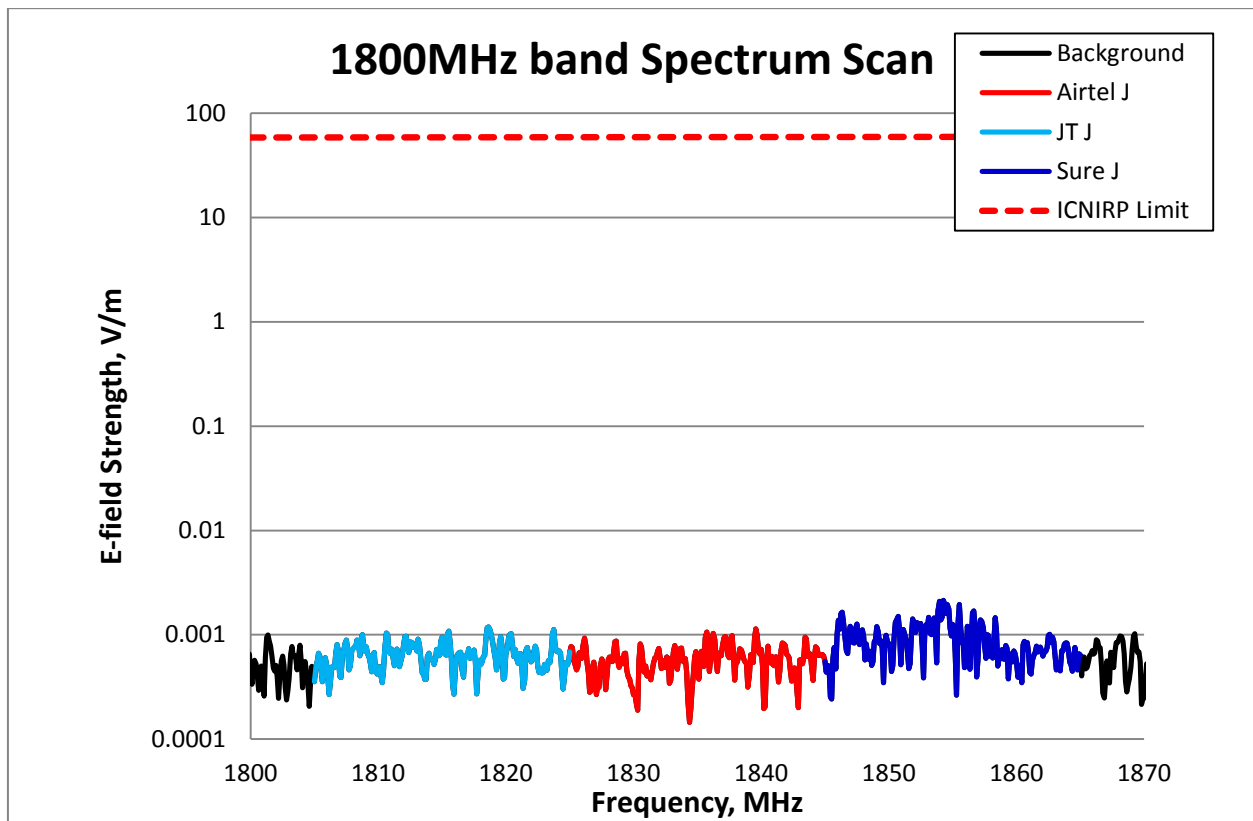


Figure 6 - 1800MHz Spectrum Scan

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	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 Prairie Farm	Airtel J	1800	0.00114	51172	1.89592E-08	1/ 52744781
	JT J		0.001185	49229	2.34249E-08	1/ 42689556
	Sure J		0.00214	27260	4.77078E-08	1/ 20960936
total band EQ					9.00919E-08	1/ 11099771

Table 4 – 1800MHz band Exposure Quotient at La Prairie Farm

2.4 2100MHz Band

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

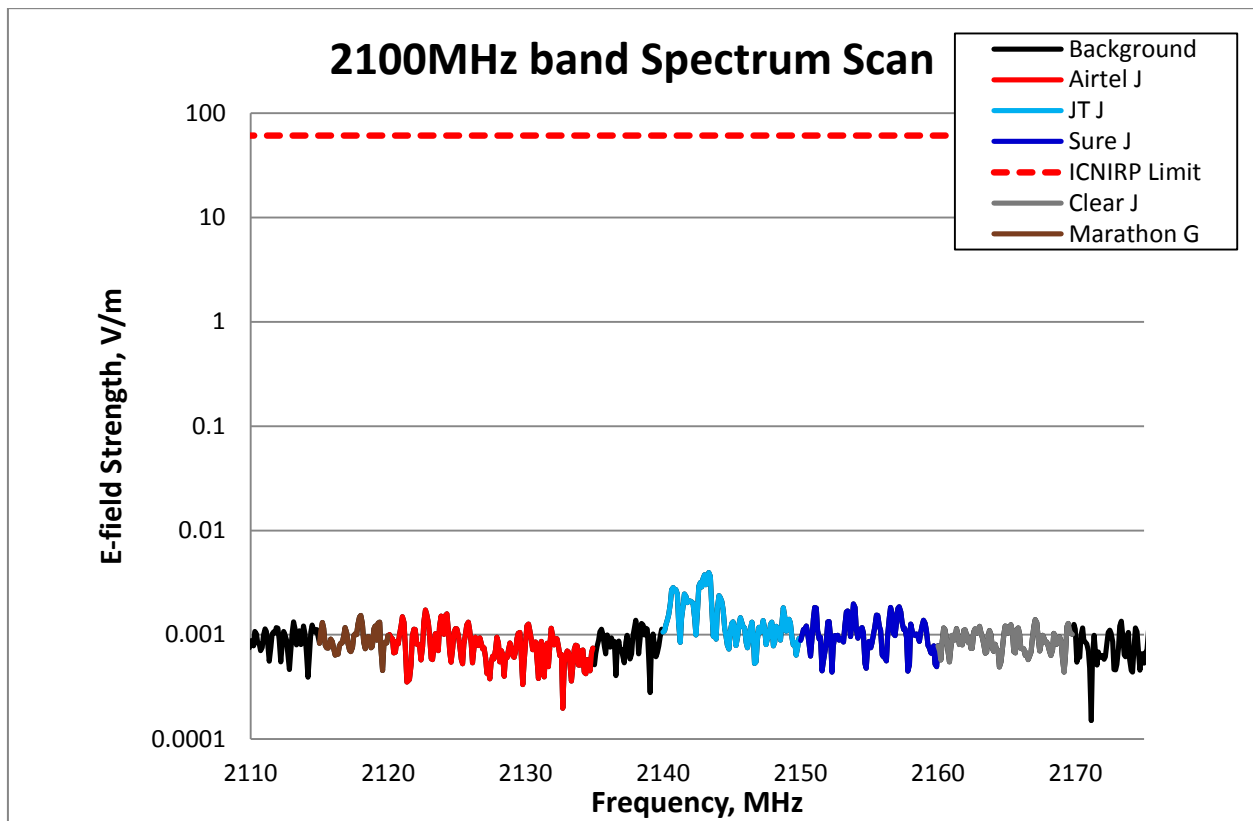


Figure 7 – 2100MHz band Spectrum Scan

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	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 Prairie Farm	Airtel J	2100	0.00173	35260	2.81452E-08	1/ 35529988
	Clear J		0.001396	43696	2.13041E-08	1/ 46939401
	JT J		0.00394	15482	7.71781E-08	1/ 12957042
	Marathon J		0.001535	39739	1.20707E-08	1/ 82845510
	Sure J		0.001979	30824	3.21584E-08	1/ 31096072
total band EQ					1.70856E-07	1/ 5852866

Table 5 – 2100MHz band Exposure Quotient at La Prairie Farm

2.5 2600MHz band

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

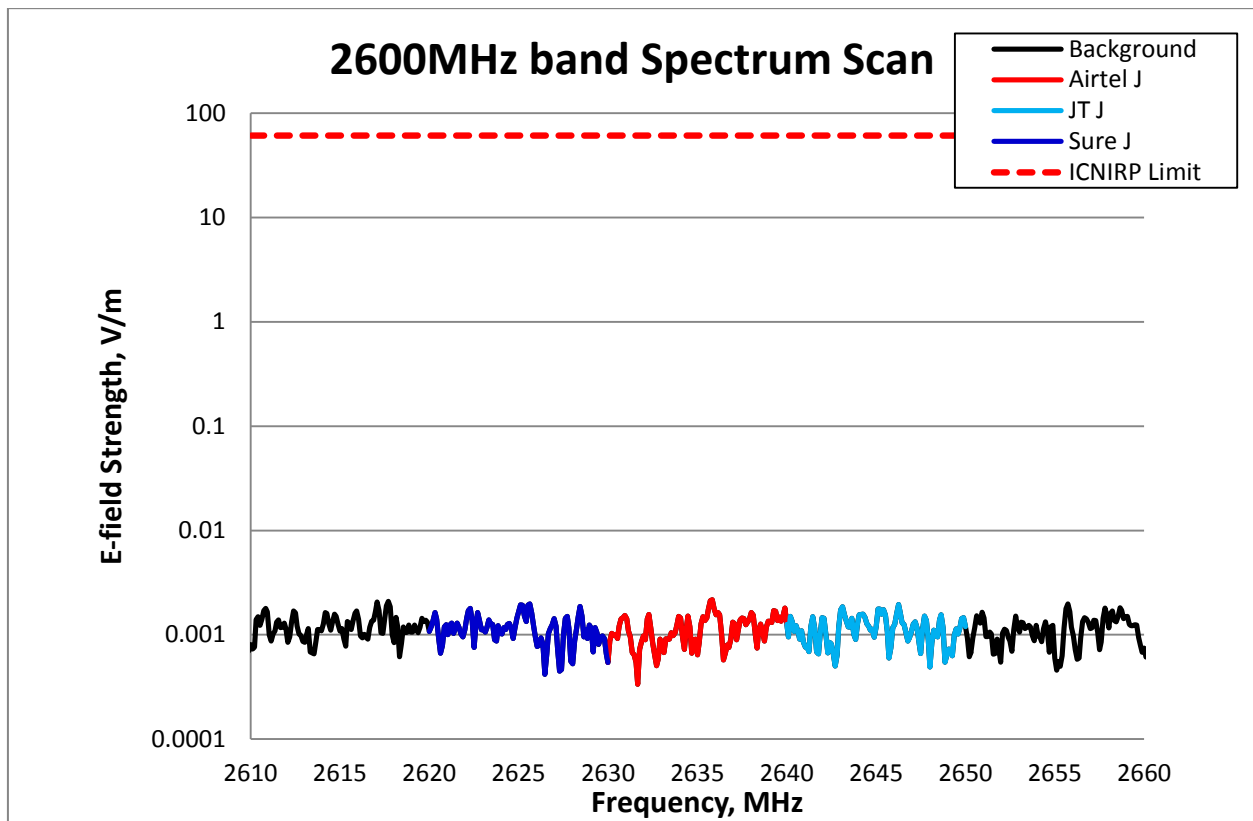


Figure 8 – 2600MHz band Spectrum Scan

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
La Prairie Farm	Airtel J	2600	0.002163	28202	3.76701E-08	1/ 26546253
	JT J		0.001956	31186	3.68677E-08	1/ 27124028
	Sure J		0.001981	30793	3.74672E-08	1/ 26690002
total band EQ					1.12005E-07	1/ 8928173

Table 6 – 2600MHz band Exposure Quotient at La Prairie Farm

End