

Cellular Mast Emissions Survey:

St Johns Parish Hall (Jersey)



DOCUMENT DETAILS

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	(Jersey)	
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Survey Engineer:	Louise Sands	
Report Compiled by:	Hadas Goraly - Shay	
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 St Johns Parish Hall site located in Jersey.

St Johns Parish Hall site was used by one operator at the time of the survey: 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
St Johns Parish Hall	800	0.01262	JT J	3082	8.53335E-07	1/ 1171872
	900	0.3148	JT J	131	6.25742E-05	1/ 15981
	1800	0.001381	Sure J	42242	6.19405E-08	1/ 16144525
	2100	0.002317	JT J	26327	1.44799E-07	1/ 6906133
	2600	0.002309	JT J	26418	1.24519E-07	1/ 8030902
Total Site EQ					6.37588E-05	1/ 15684

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/15684 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

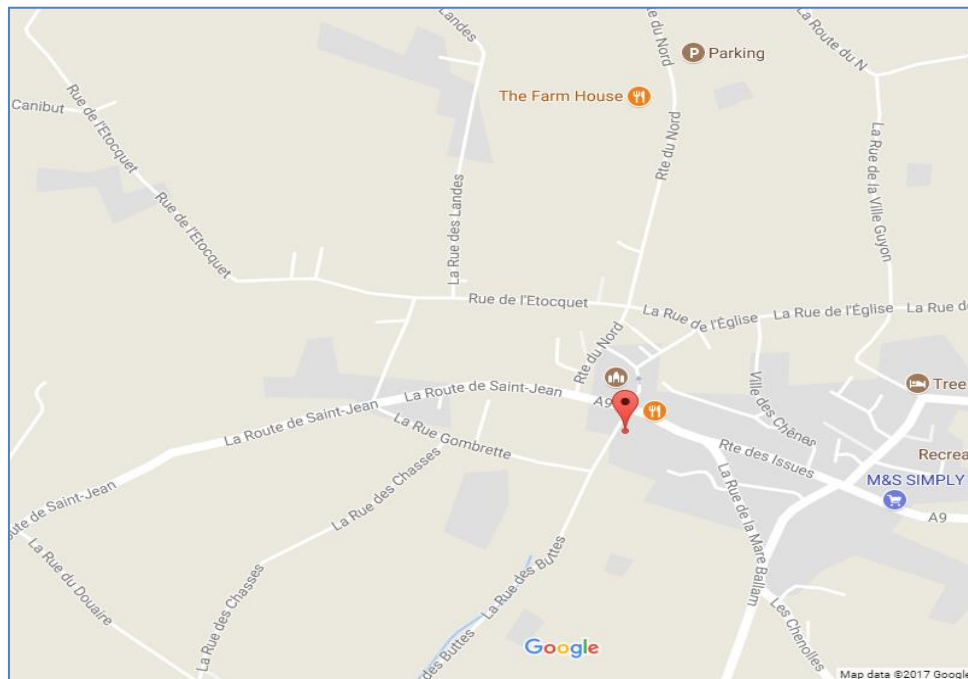


Figure 1 - Map of the Site Area

Site name	St Johns Parish Hall
Site address	La Route de St Jean, St John, Jersey
Site Latitude	49.24529
Site Longitude	-2.13882

1.2 Site Description

Operators	JT J
Antenna types	Omni directional
Approximate height	12m
Site type	Building – Rooftop
Description	The antenna at the St Johns Parish are located on the roof of the main building, out of reach of the public

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location

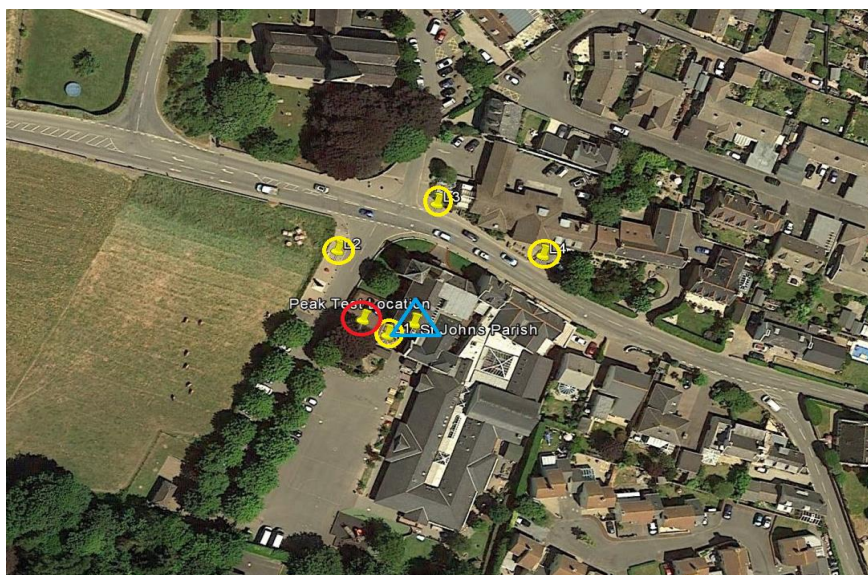


Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out

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.

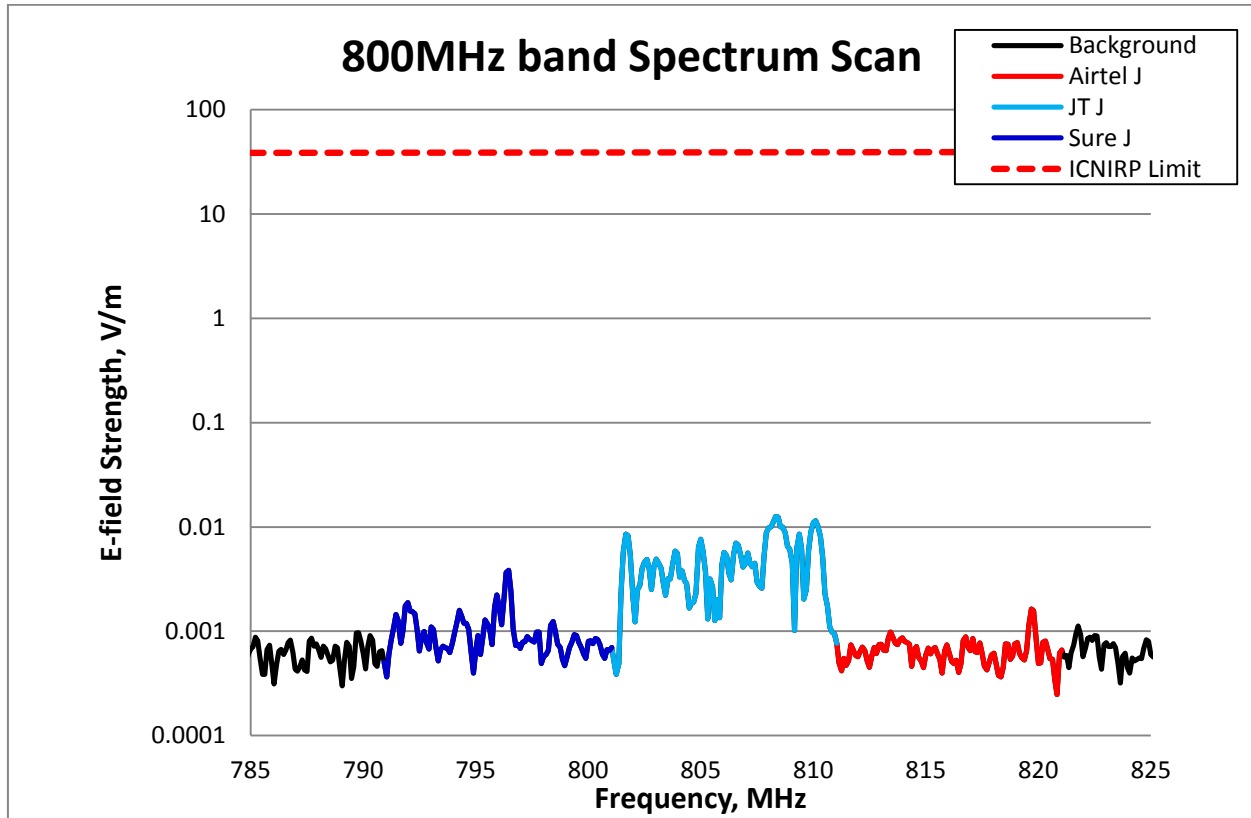


Figure 4 - 800MHz band Spectrum Scan

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 0.01262 V/m (JT J), which is 3082 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
St Johns Parish Hall	Airtel J	800	0.00163	23859	1.23384E-08	1/ 81048038
	JT J		0.01262	3082	8.06982E-07	1/ 1239185
	Sure J		0.003828	10160	3.40147E-08	1/ 29399057
total band EQ					8.53335E-07	1/ 1171872

Table 2– 800MHz band Exposure Quotient at St Johns Parish Hall

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

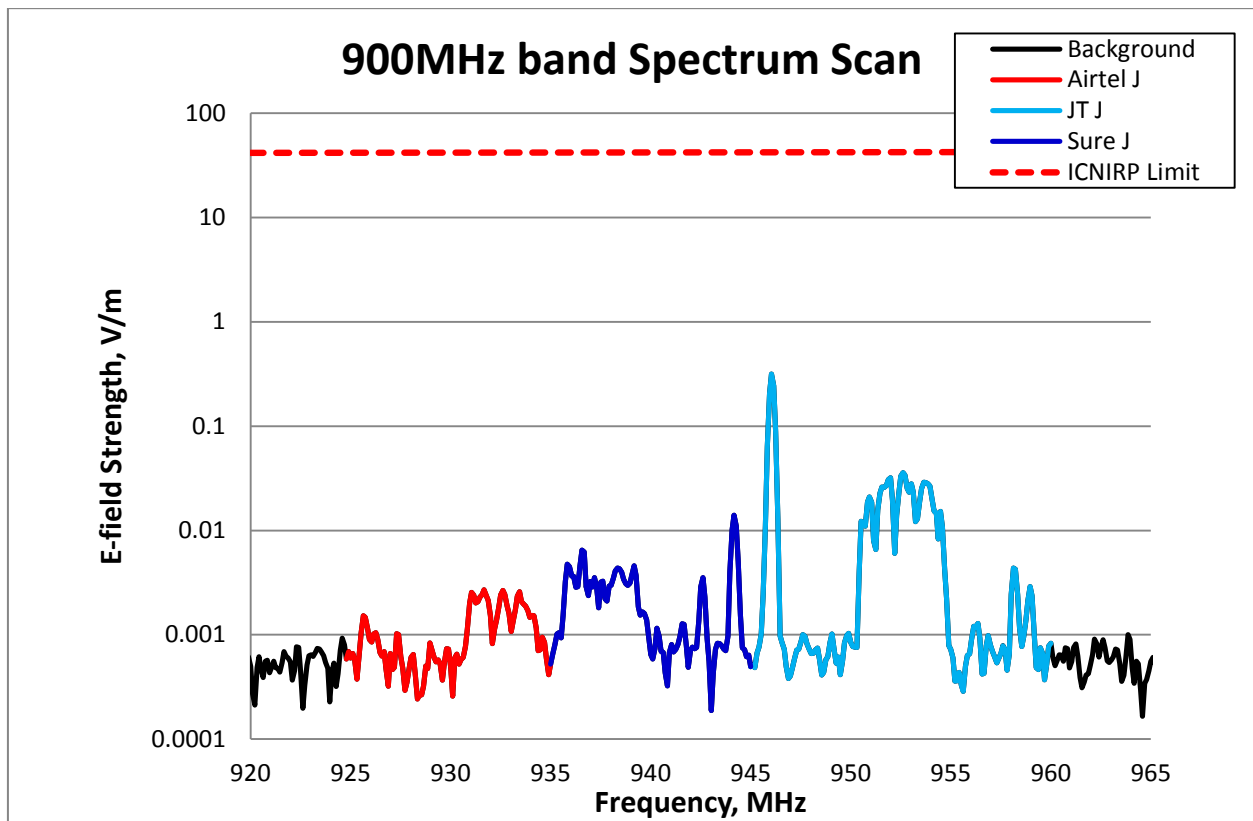


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.3148 V/m (JT J), which is 131 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
St Johns Parish Hall	Airtel J	900	0.002701	15272	4.31334E-08	1/ 23183899
	JT J		0.3148	131	6.22604E-05	1/ 16062
	Sure J		0.014	2946	2.70674E-07	1/ 3694485
total band EQ					6.25742E-05	1/ 15981

Table 3– 900MHz band Exposure Quotient at St Johns Parish Hall

2.3 1800 MHz Band

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

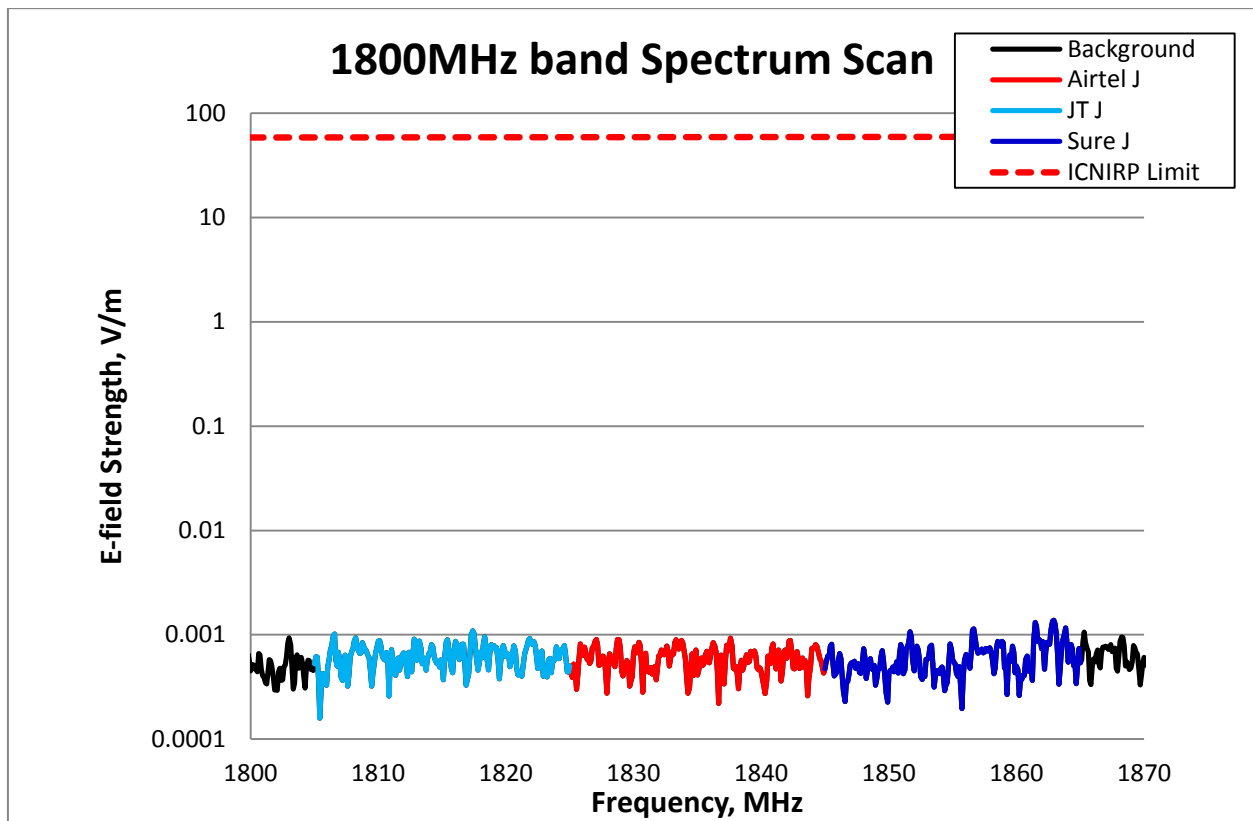


Figure 6 - 1800MHz Spectrum Scan

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
St Johns Parish Hall	Airtel J	1800	0.0009281	62856	1.89608E-08	1/ 52740335
	JT J		0.001092	53422	2.16077E-08	1/ 46279773
	Sure J		0.001381	42242	2.1372E-08	1/ 46790254
total band EQ					6.19405E-08	1/ 16144525

Table 4 – 1800MHz band Exposure Quotient at St Johns Parish Hall

2.4 2100MHz Band

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

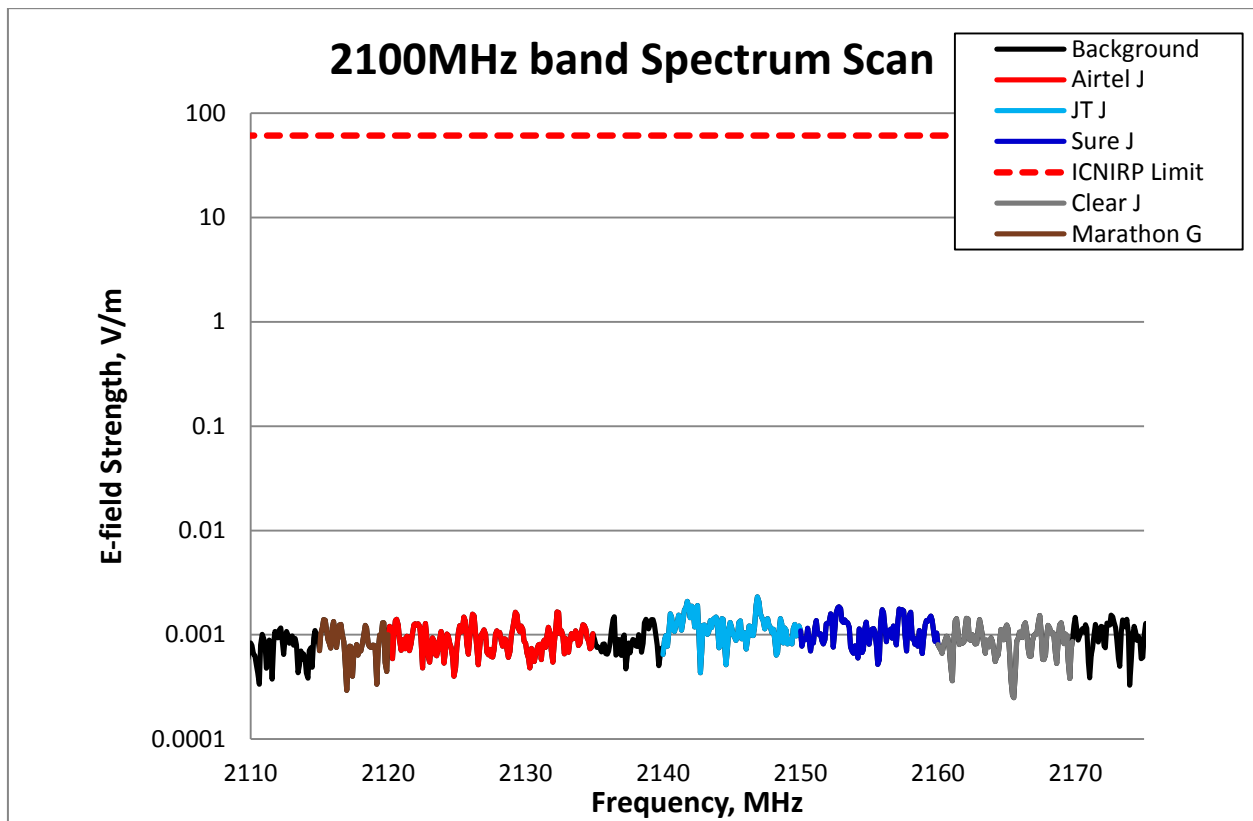


Figure 7 – 2100MHz band Spectrum Scan

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
St Johns Parish Hall	Airtel J	2100	0.001652	36925	3.61063E-08	1/ 27696000
	Clear J		0.001534	39765	2.24566E-08	1/ 44530298
	JT J		0.002317	26327	4.05998E-08	1/ 24630639
	Marathon J		0.001397	43665	1.09968E-08	1/ 90935331
	Sure J		0.001855	32884	3.46392E-08	1/ 28868993
total band EQ					1.44799E-07	1/ 6906133

Table 5 – 2100MHz band Exposure Quotient at St Johns Parish Hall

2.5 2600MHz band

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

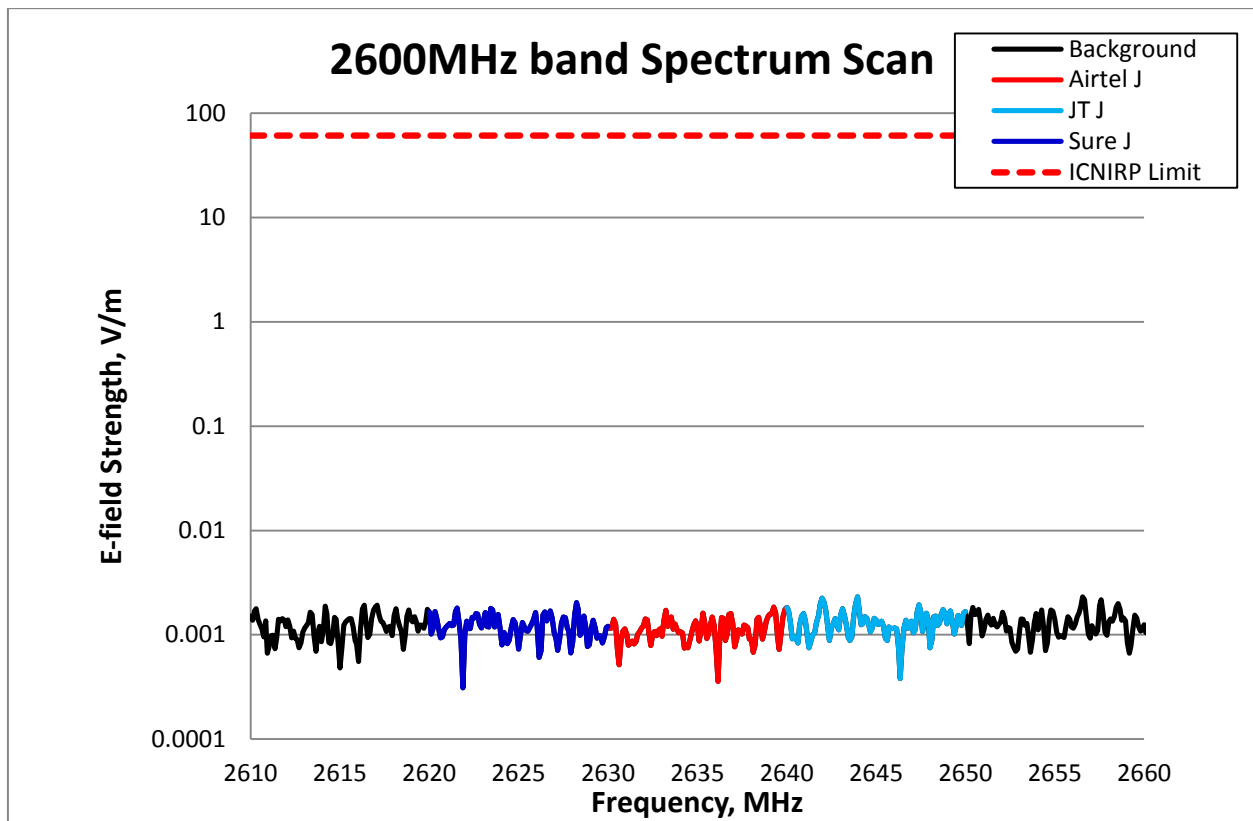


Figure 8 – 2600MHz band Spectrum Scan

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
St Johns Parish Hall	Airtel J	2600	0.001841	33134	3.57733E-08	1/ 27953790
	JT J		0.002309	26418	4.79331E-08	1/ 20862420
	Sure J		0.002032	30020	4.08126E-08	1/ 24502228
total band EQ					1.24519E-07	1/ 8030902

Table 6 – 2600MHz band Exposure Quotient at St Johns Parish Hall

End