

Cellular Mast Emissions Survey: St Clement Golf Club (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 St Clement Golf Club site located in Jersey.

The St Clement Golf Club site was used by a single operator at the time of the survey: Airtel J; but strong signal levels were also recorded from JT J who operate a site from a nearby location. Surveys were nonetheless 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 Clement Golf Club	800	0.2026	Airtel J	192	0.000400206	1/ 2499
	900	2.793	JT J	15	0.005021814	1/ 199
	1800	0.2759	JT J	211	0.000175336	1/ 5703
	2100	0.3162	JT J	193	0.000466318	1/ 2144
	2600	0.003943	JT J	15470	3.21363E-07	1/ 3111744
Total Site EQ					0.006063996	1/ 165

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/165 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

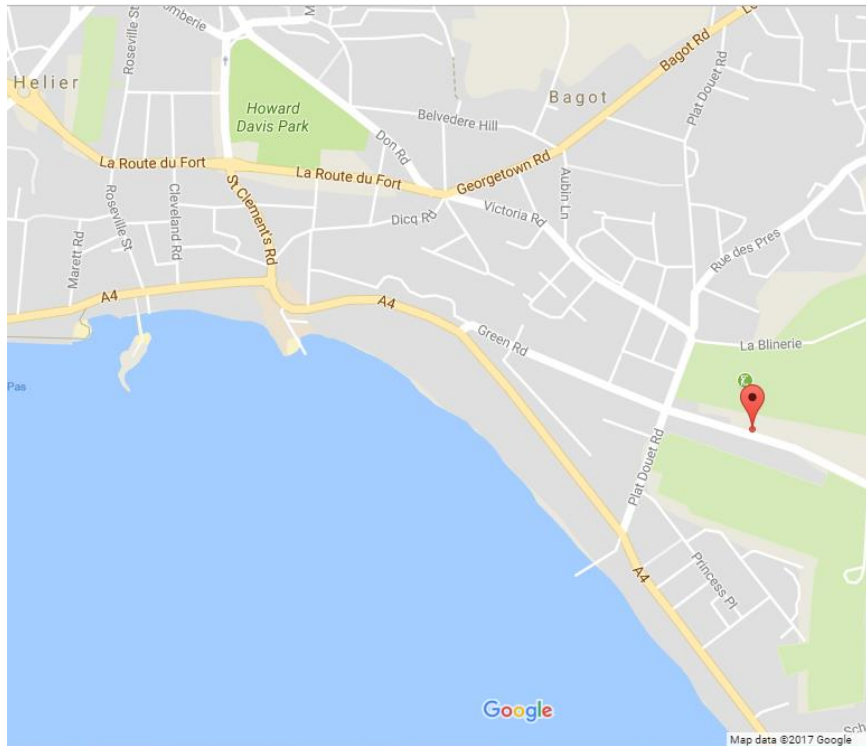


Figure 1 - Map of the Site Area

Site name	St Clement Golf Club
Site address	La Grande Route de St Clement, Jersey
Site Latitude	N 49.17550
Site Longitude	W 02.08640

1.2 Site Description

Operators	Airtel J
Antenna types	Directional
Approximate height	15m
Site type	Pole Mast
Description	The Pole Mast at the St Clement Golf Club is located within a fenced enclosure, access to the public is restricted

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.

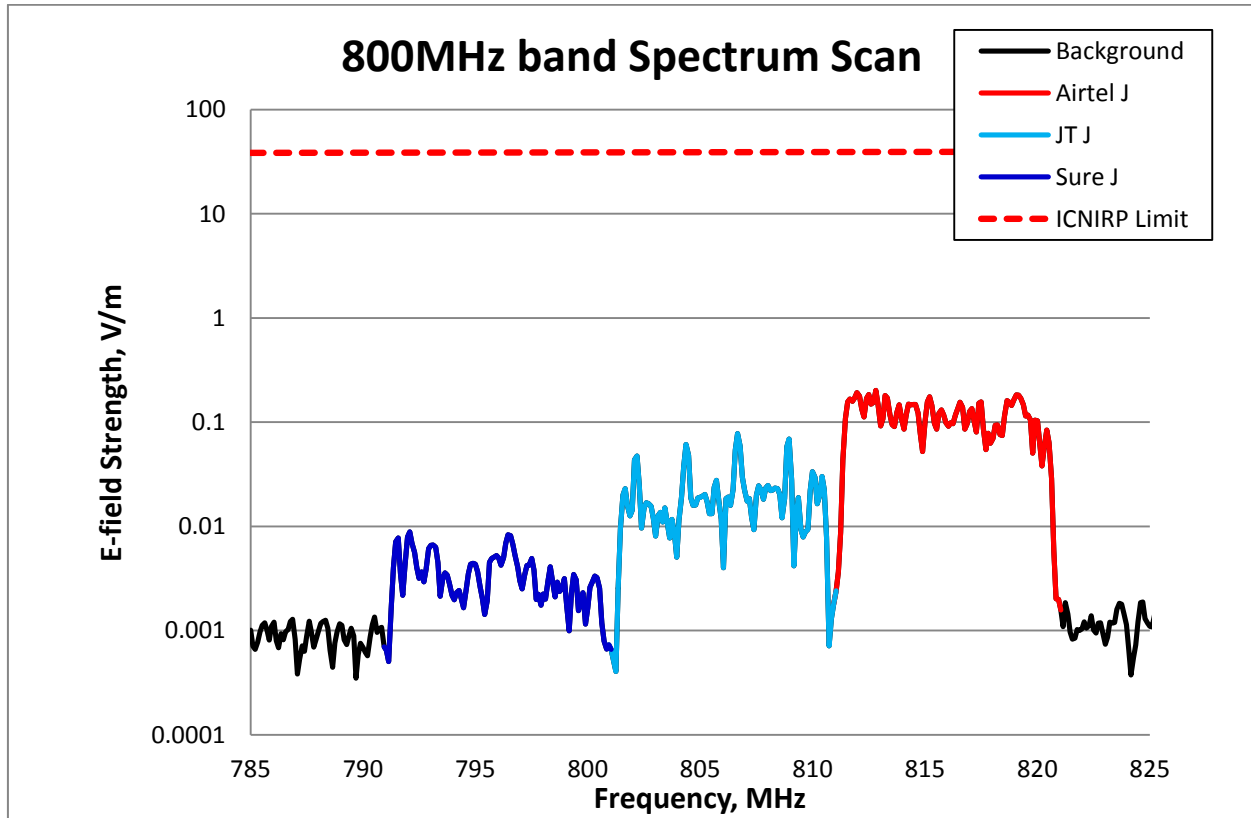


Figure 4 - 800MHz band Spectrum Scan

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 0.2026 V/m (Airtel J), which is 192 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 Clement Golf Club	Airtel J	800	0.2026	192	0.000384161	1/ 2603
	JT J		0.07794	499	1.56318E-05	1/ 63972
	Sure J		0.008849	4395	4.13013E-07	1/ 2421231
total band EQ					0.000400206	1/ 2499

Table 2– 800MHz band Exposure Quotient at the Golf & Squash Club

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

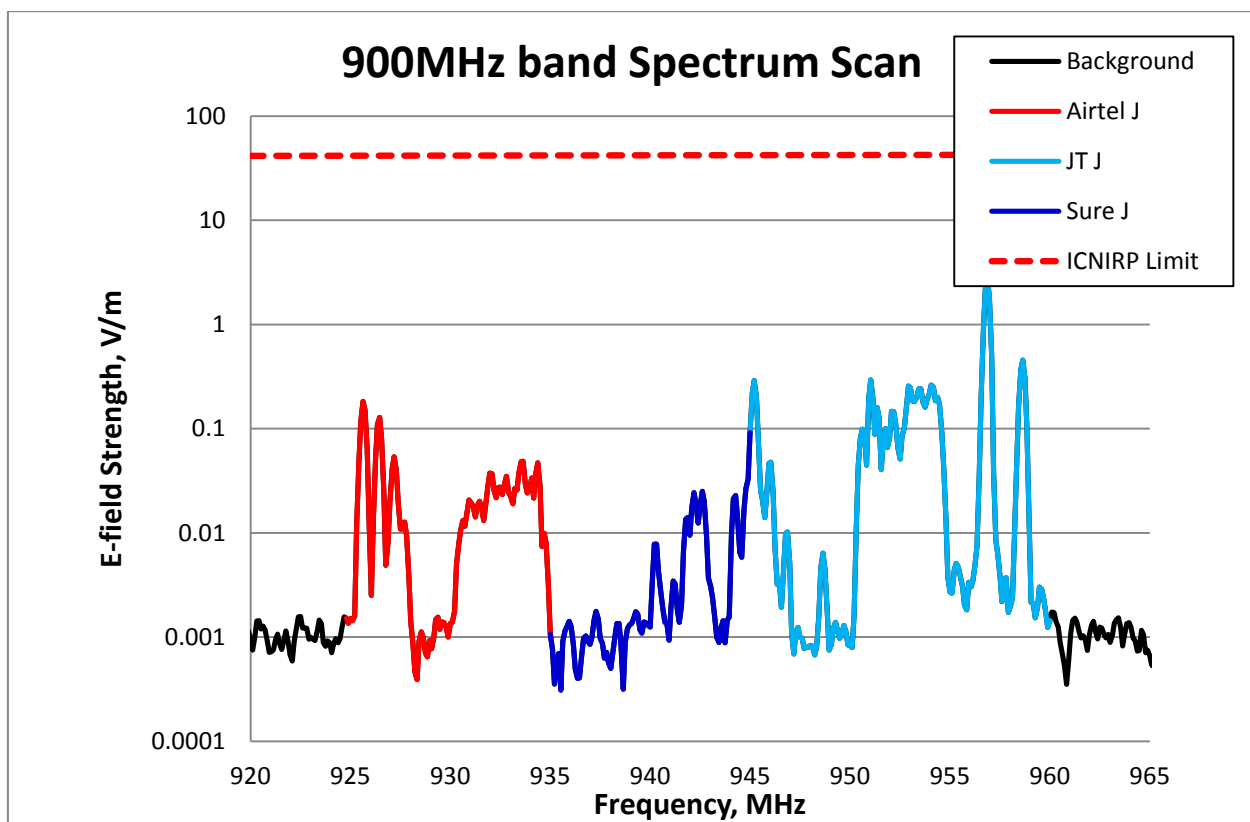


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 2.793 V/m (JT J), which is 15 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
St Clement Golf Club	Airtel J	900	0.1831	225	4.10903E-05	1/ 24337
	JT J		2.793	15	0.004976545	1/ 201
	Sure J		0.09214	448	4.17886E-06	1/ 239300
total band EQ					0.005021814	1/ 199

Table 3– 900MHz band Exposure Quotient at the Golf & Squash Club

2.3 1800 MHz Band

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

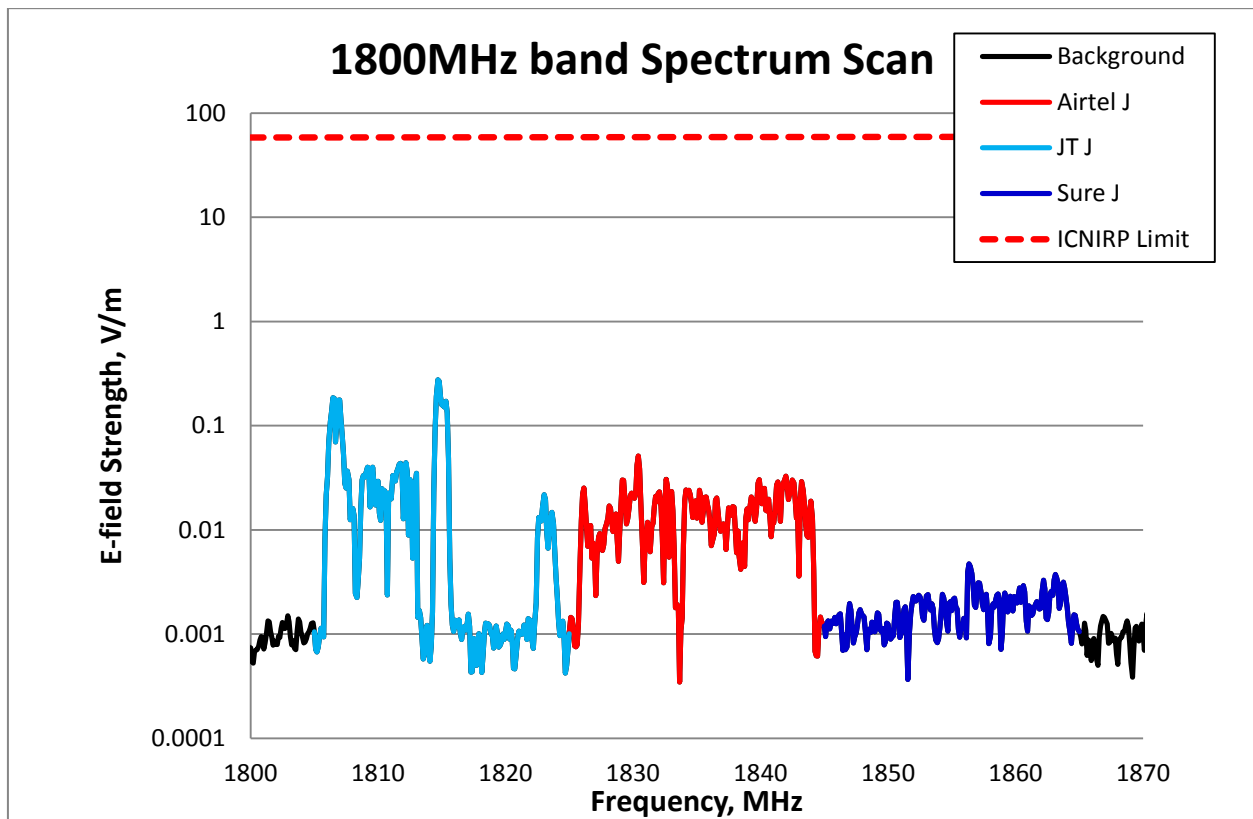


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.2759 V/m (JT J), which is 211 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
St Clement Golf Club	Airtel J	1800	0.05137	1136	1.43441E-05	1/ 69715
	JT J		0.2759	211	0.00016081	1/ 6219
	Sure J		0.004713	12378	1.82421E-07	1/ 5481822
total band EQ					0.000175336	1/ 5703

Table 4 – 1800MHz band Exposure Quotient at the Golf & Squash Club

2.4 2100MHz Band

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

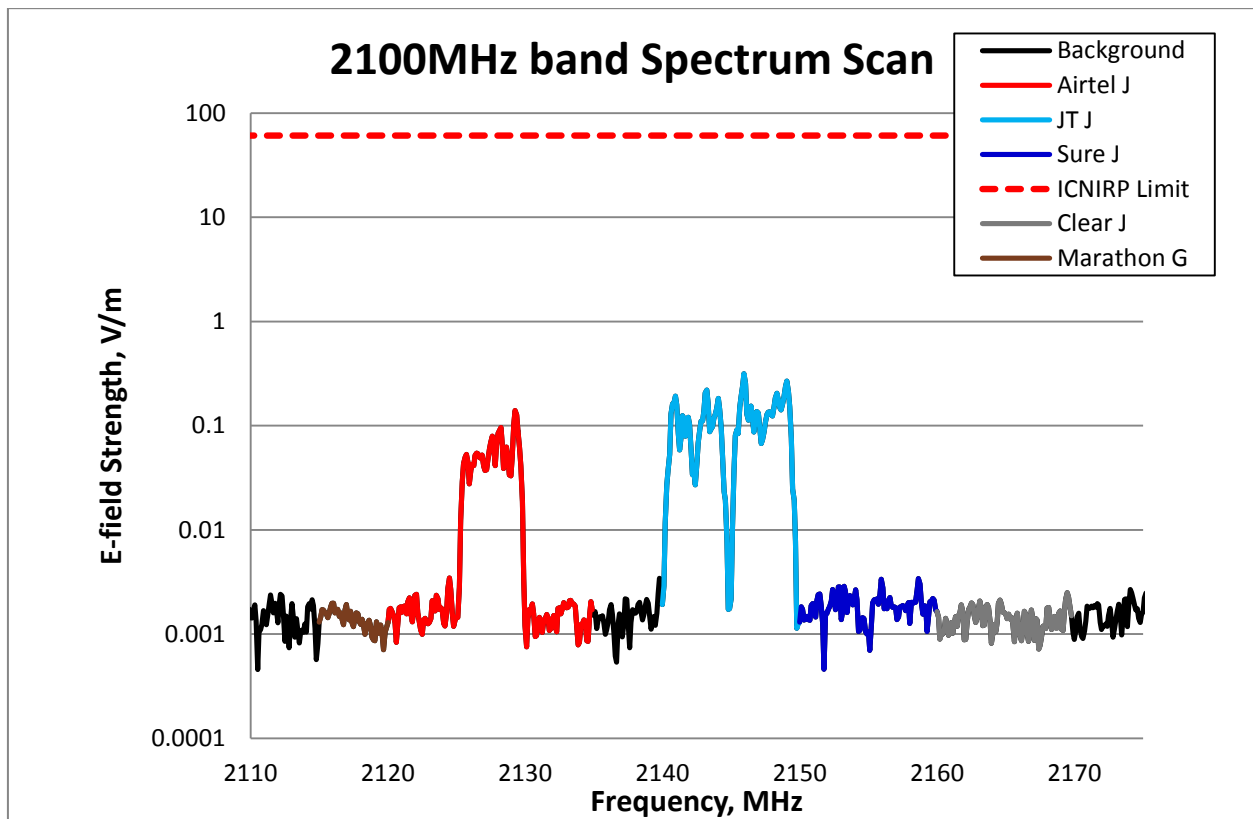


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.3162 V/m (JT J), which is 193 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
St Clement Golf Club	Airtel J	2100	0.1401	435	4.52898E-05	1/ 22080
	Clear J		0.002496	24439	5.36605E-08	1/ 18635694
	JT J		0.3162	193	0.00042085	1/ 2376
	Marathon J		0.001972	30933	2.64312E-08	1/ 37834026
	Sure J		0.0034	17941	9.79435E-08	1/ 10209972
total band EQ					0.000466318	1/ 2144

Table 5 – 2100MHz band Exposure Quotient at the Golf & Squash Club

2.5 2600MHz band

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

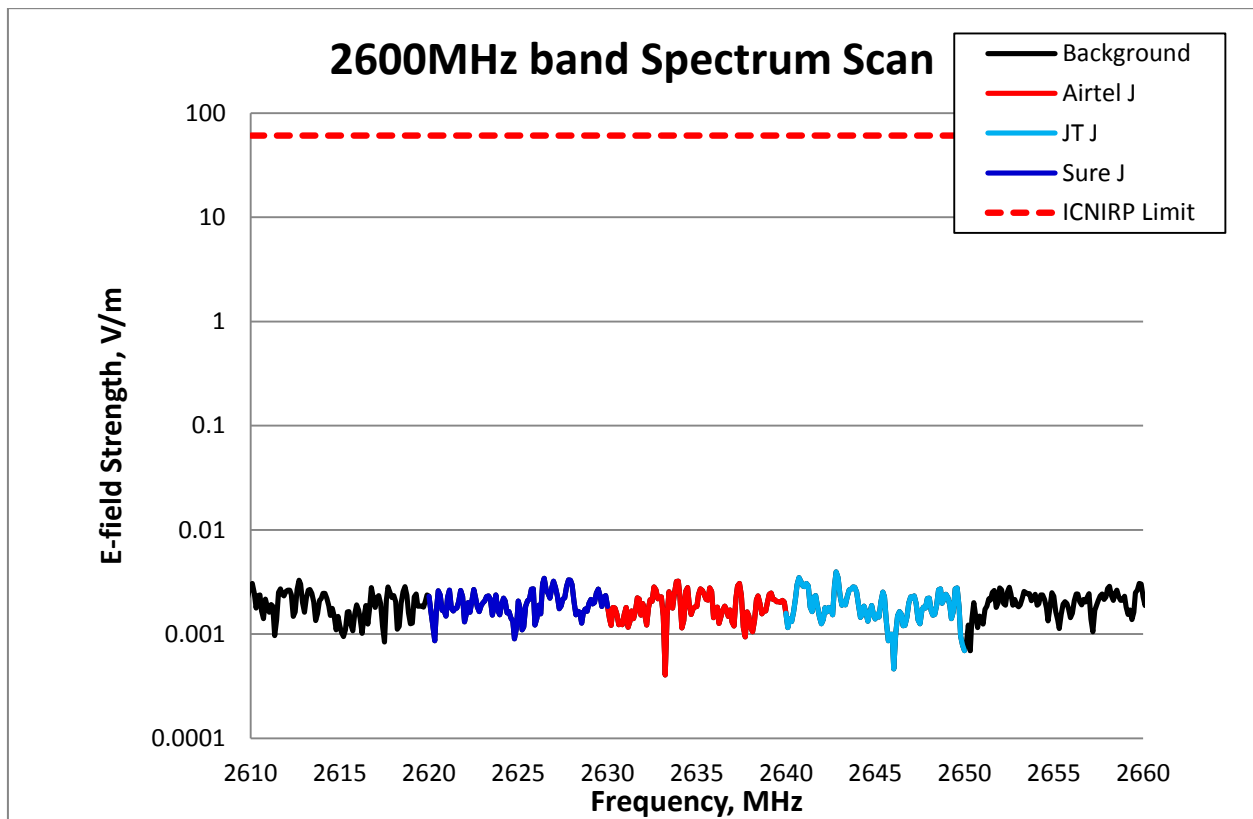


Figure 8 – 2600MHz band Spectrum Scan

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
St Clement Golf Club	Airtel J	2600	0.00322	18944	9.99858E-08	1/ 10001419
	JT J		0.003943	15470	1.07737E-07	1/ 9281880
	Sure J		0.003422	17826	1.13641E-07	1/ 8799675
total band EQ					3.21363E-07	1/ 3111744

Table 6 – 2600MHz band Exposure Quotient at the Golf & Squash Club

End