

Cellular Mast Emissions Survey: Simon Place Kiosk (Jersey)



DOCUMENT DETAILS

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Survey Engineer:	Louise Sands	
Report Compiled by:	Lauren Medhurst	
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 the Simon Place Kiosk site located in Jersey.

The Simon Place Kiosk site was used by a single 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
Simon Place Kiosk	800	0.01826	JT J	2130	4.33784E-06	1/ 230530
	900	0.8782	JT J	47	0.000671081	1/ 1490
	1800	0.02254	JT J	2588	6.05639E-06	1/ 165115
	2100	1.806	JT J	34	0.027708411	1/ 36
	2600	0.009332	Airtel J	6537	1.81593E-06	1/ 550682
Total Site EQ					0.028391703	1/ 35

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/35 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 (JT) 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

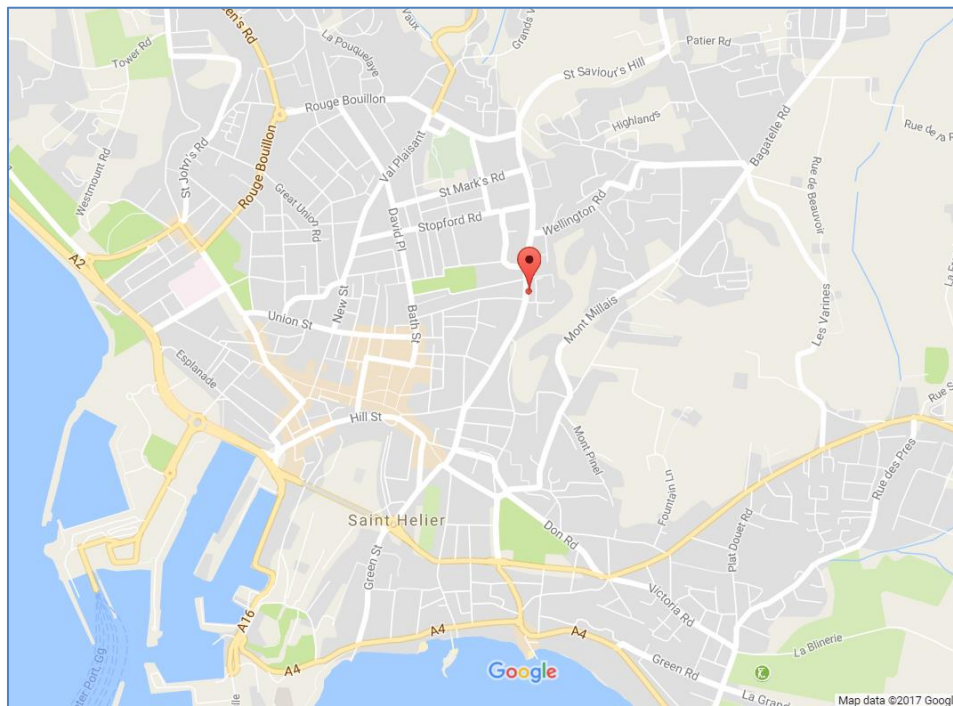


Figure 1 - Map of the Site Area

Site name	Simon Place Kiosk
Site address	St Saviour's Road (Kiosk opposite Simon Place Garage), St Helier, Jersey
Site Latitude	N 49.18736
Site Longitude	W 2.09716

1.2 Site Description

Operators	JT J
Antenna types	Omni directional
Approximate height	2m
Site type	Kiosk
Description	The antenna at the Simon place Kiosk is hidden inside the roof-space of the kiosk. It is not visible to the public but its outer protective case can be reached by the public

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location



Figure 3- The probe was positioned inside the kiosk where the strongest signal was 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.

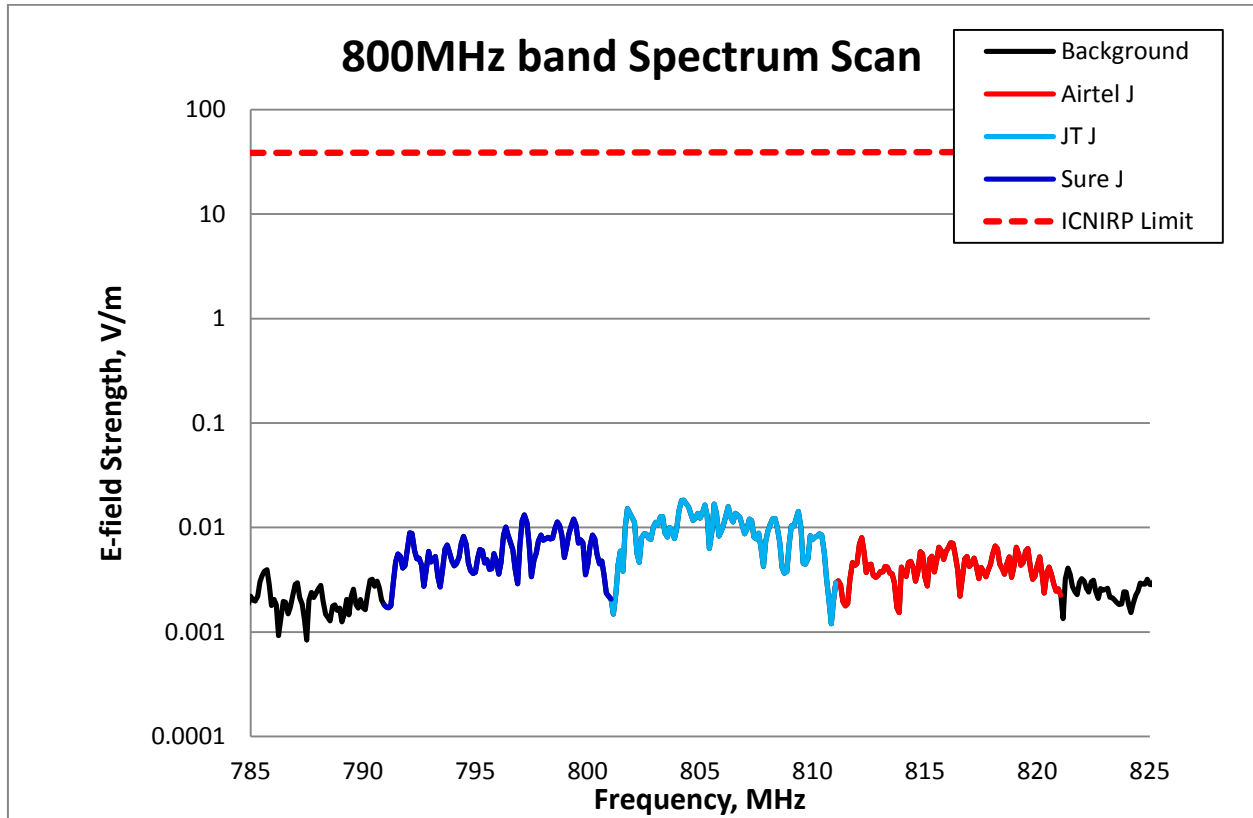


Figure 4 - 800MHz band Spectrum Scan

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 0.01826 V/m (JT J), which is 2130 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
Simon Place Kiosk	Airtel J	800	0.007992	4866	5.14282E-07	1/ 1944458
	JT J		0.01826	2130	2.73059E-06	1/ 366222
	Sure J		0.01323	2940	1.09297E-06	1/ 914940
total band EQ					4.33784E-06	1/ 230530

Table 2– 800MHz band Exposure Quotient at Simon Place Kiosk

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

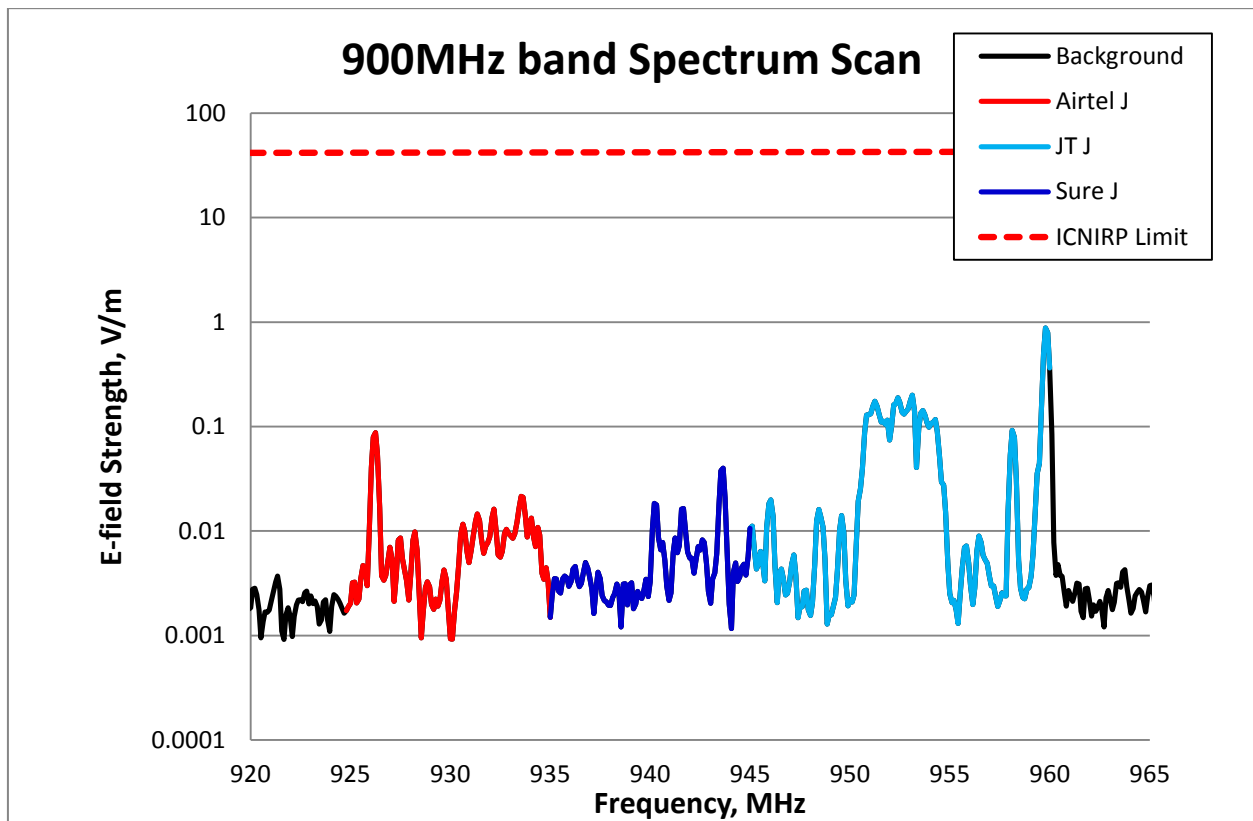


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.8782 V/m (JT J), which is 47 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
Simon Place Kiosk	Airtel J	900	0.08754	471	6.58294E-06	1/ 151908
	JT J		0.8782	47	0.00066267	1/ 1509
	Sure J		0.03994	1033	1.82892E-06	1/ 546772
total band EQ					0.000671081	1/ 1490

Table 3– 900MHz band Exposure Quotient at Simon Place Kiosk

2.3 1800 MHz Band

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

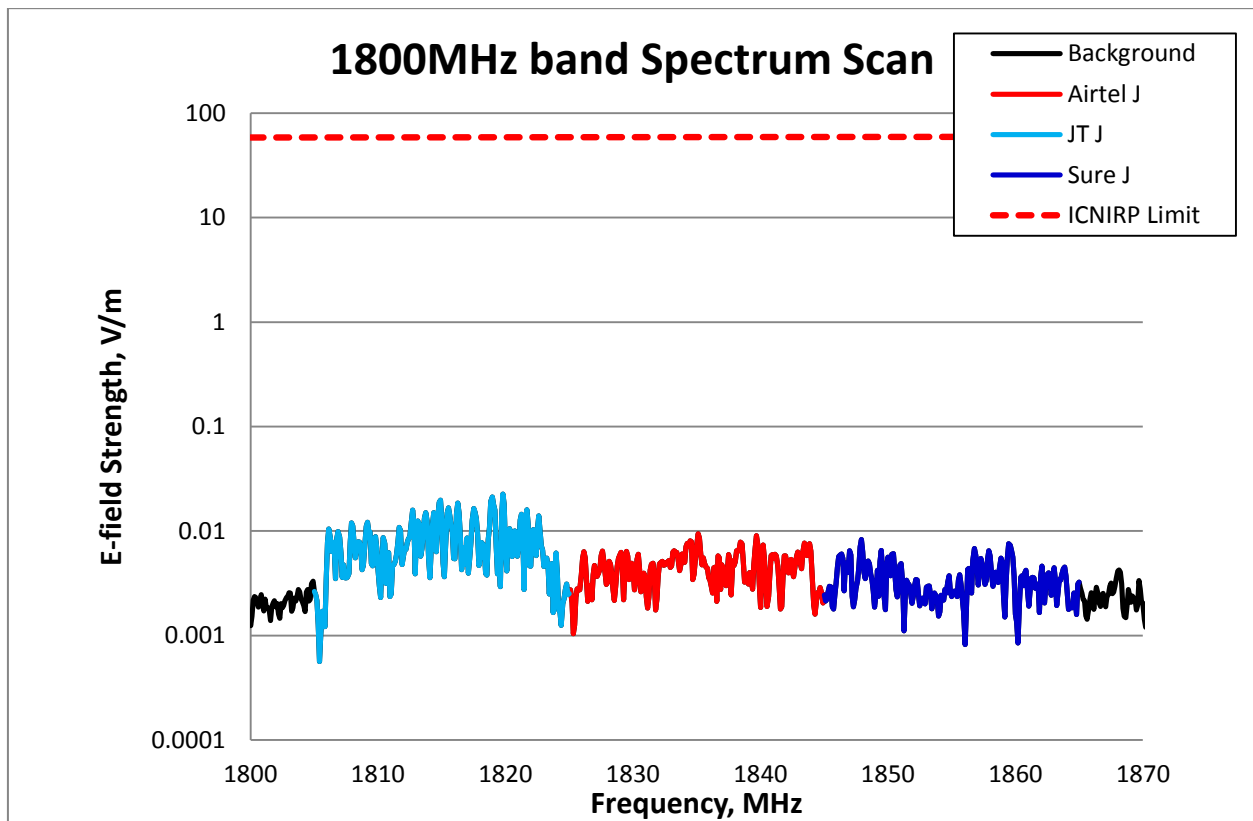


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.02254 V/m (JT J), which is 2588 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
Simon Place Kiosk	Airtel J	1800	0.009424	6190	1.18466E-06	1/ 844123
	JT J		0.02254	2588	4.15032E-06	1/ 240945
	Sure J		0.008277	7048	7.21409E-07	1/ 1386175
total band EQ					6.05639E-06	1/ 165115

Table 4 – 1800MHz band Exposure Quotient at Simon Place Kiosk

2.4 2100MHz Band

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

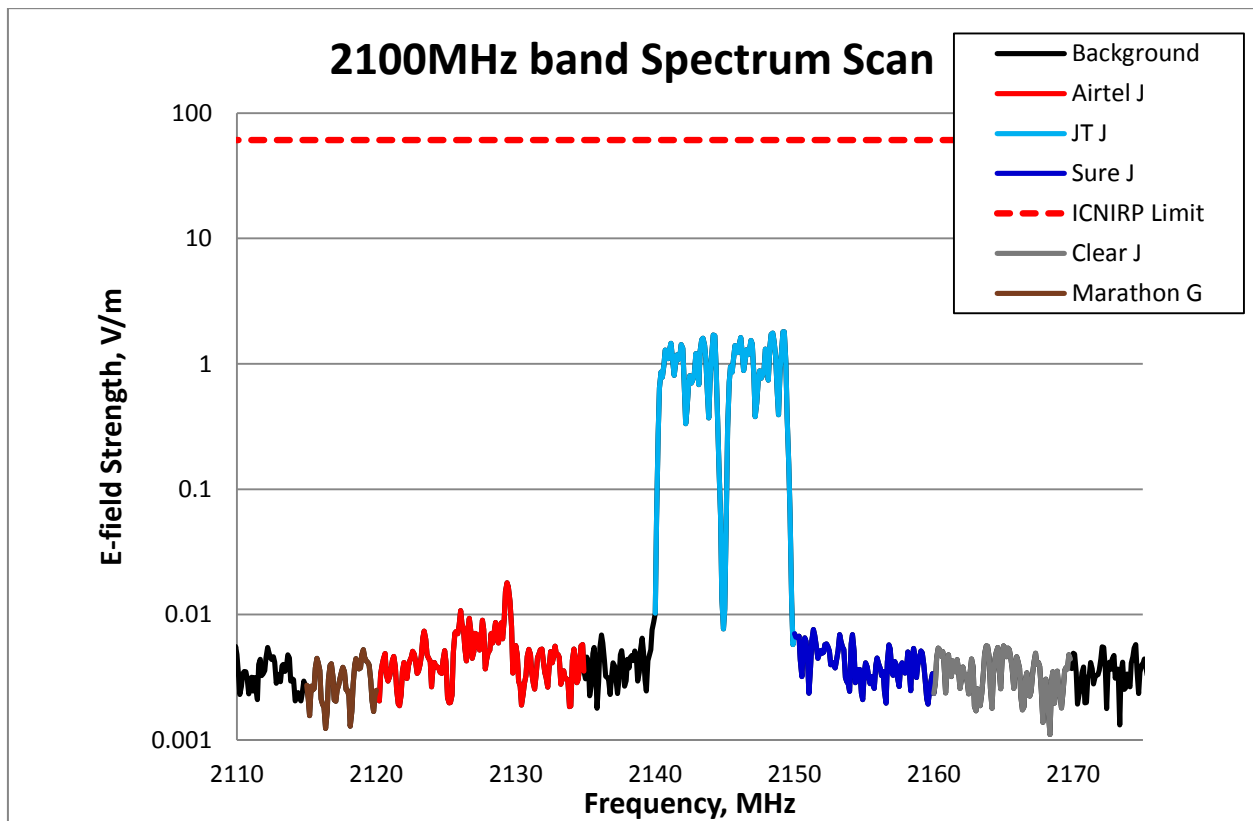


Figure 7 - 2100MHz Spectrum Scan

No field level recorded across the band was higher than 1.806 V/m (JT J), which is 34 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
Simon Place Kiosk	Airtel J	2100	0.01788	3412	1.19623E-06	1/ 835961
	Clear J		0.005641	10814	3.40142E-07	1/ 2939950
	JT J		1.806	34	0.027706231	1/ 36
	Marathon J		0.005251	11617	1.32633E-07	1/ 7539580
	Sure J		0.007596	8031	5.11263E-07	1/ 1955940
total band EQ					0.027708411	1/ 36

Table 5 – 2100MHz band Exposure Quotient at Simon Place Kiosk

2.5 2600MHz band

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

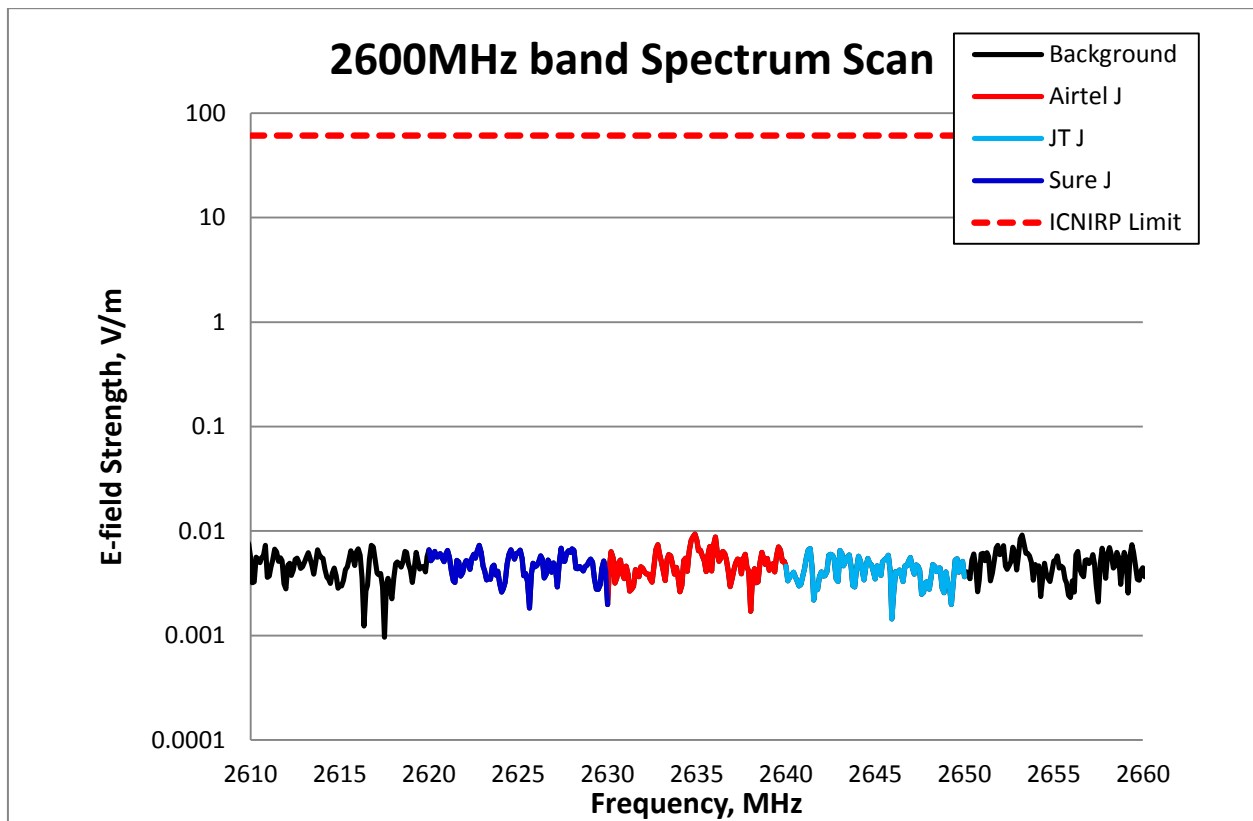


Figure 8 – 2600MHz band Spectrum Scan

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
Simon Place Kiosk	Airtel J	2600	0.009332	6537	6.87156E-07	1/ 1455273
	JT J		0.006802	8968	4.9276E-07	1/ 2029384
	Sure J		0.007309	8346	6.36013E-07	1/ 1572295
total band EQ					1.81593E-06	1/ 550682

Table 6 – 2600MHz band Exposure Quotient at Simon Place Kiosk

End