

Cellular Mast Emissions Survey: Troy Court Kiosk (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 Troy Court Kiosk site located in Jersey.

The Troy Court 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
Troy Court	800	0.00382	Sure J	10181	2.64925E-07	1/ 3774659
	900	1.955	JT J	21	0.002578514	1/ 388
	1800	0.4609	JT J	127	0.000358091	1/ 2793
	2100	0.004513	Sure J	13517	7.03772E-07	1/ 1420914
	2600	0.005958	JT J	10238	7.63824E-07	1/ 1309202
Total Site EQ					0.002938337	1/ 340

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/340 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

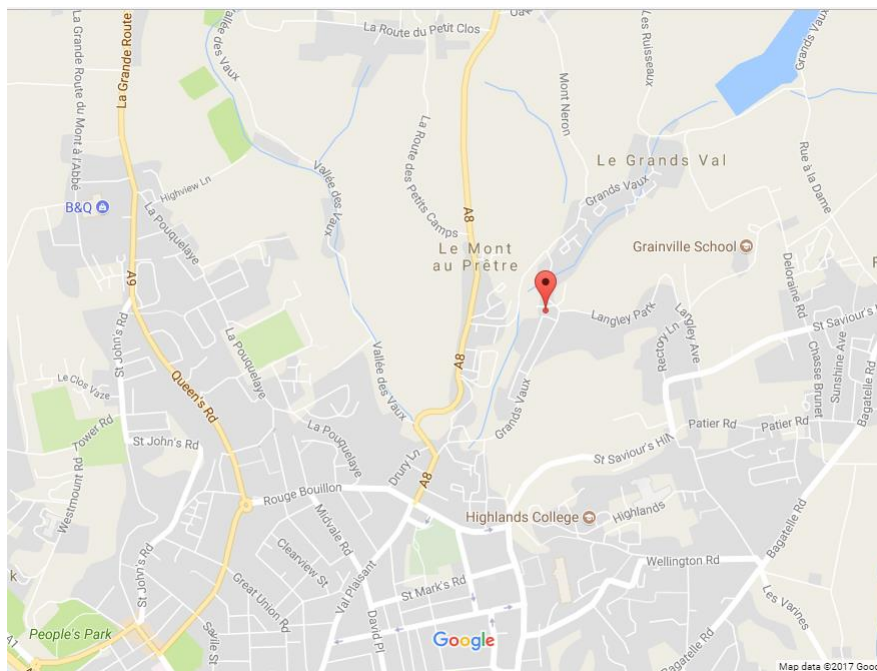


Figure 1 - Map of the Site Area

Site name	Troy Court Kiosk
Site address	Troy Court (Kiosk Near shops), St Saviour, Jersey
Site Latitude	N 49.19792
Site Longitude	W 02.09612

1.2 Site Description

Operators	JT J
Antenna types	Omni directional (microcell)
Approximate height	2m
Site type	Kiosk
Description	The antenna at the Troy Court 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.

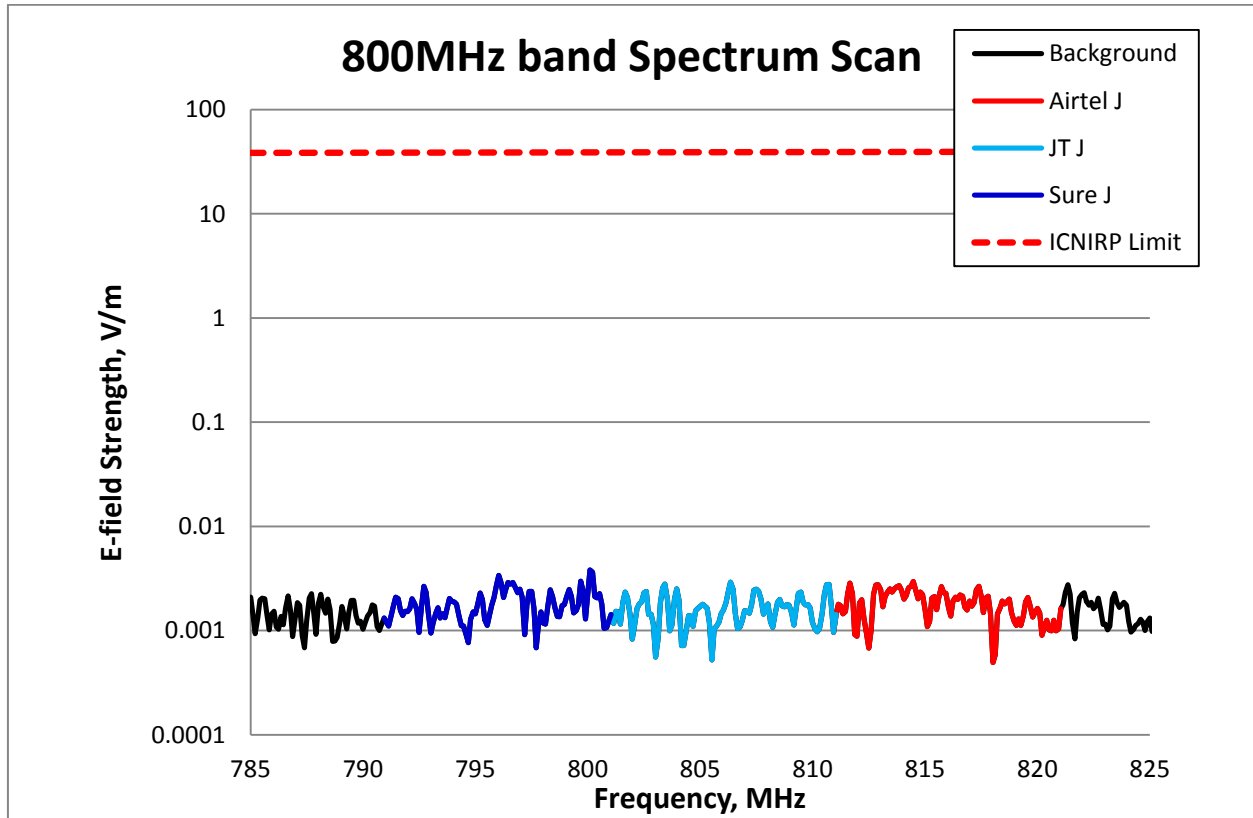


Figure 4 - 800MHz band Spectrum Scan

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 activity was recorded in the 800MHz as no operator appears to transmit in this band at this site.

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
Troy Court	Airtel J	800	0.002951	13179	9.31902E-08	1/ 10730741
	JT J		0.002918	13328	7.60985E-08	1/ 13140856
	Sure J		0.00382	10181	9.56359E-08	1/ 10456328
total band EQ					2.64925E-07	1/ 3774659

Table 2– 800MHz band Exposure Quotient at Troy Court Kiosk

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

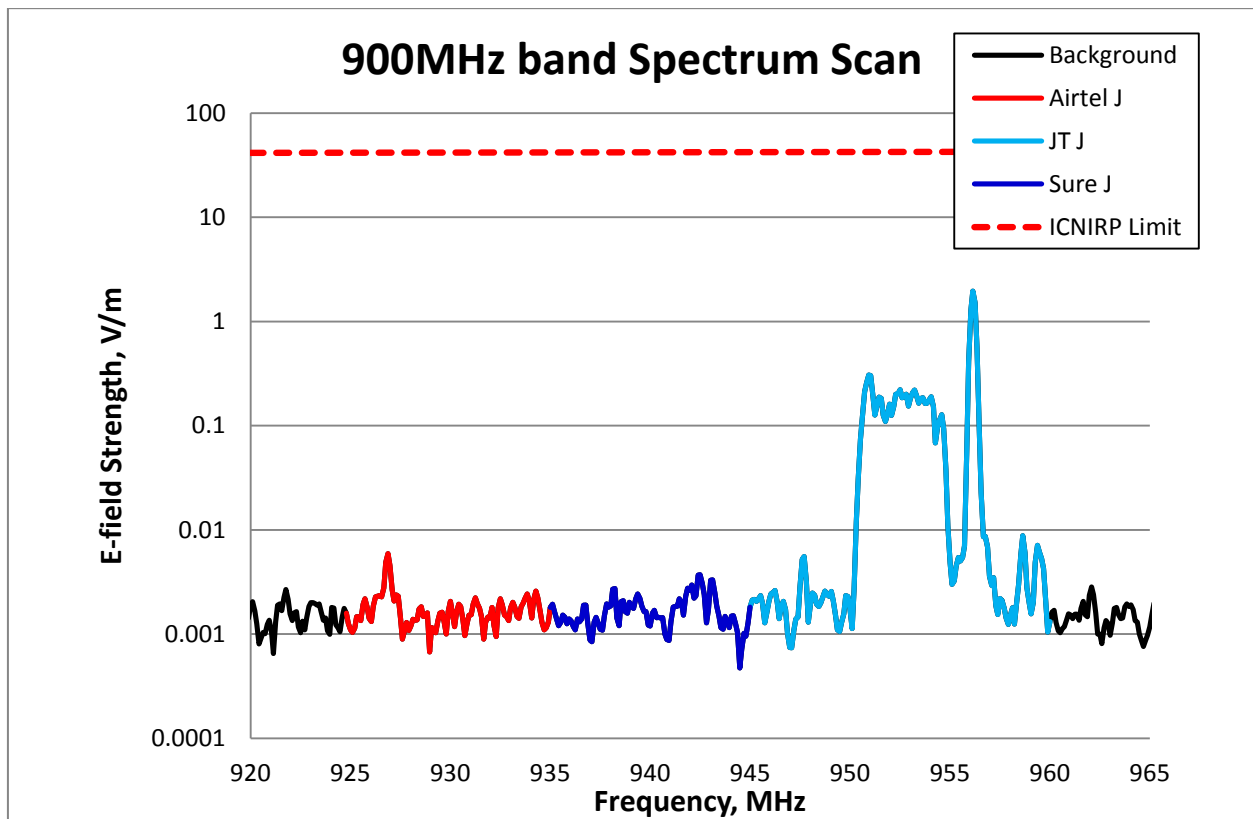


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 1.955 V/m (JT J), which is 21 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
Troy Court	Airtel J	900	0.005935	6950	9.31148E-08	1/ 10739435
	JT J		1.955	21	0.002578336	1/ 388
	Sure J		0.00372	11089	8.47913E-08	1/ 11793668
total band EQ					0.002578514	1/ 388

Table 3– 900MHz band Exposure Quotient at Troy Court Kiosk

2.3 1800 MHz Band

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

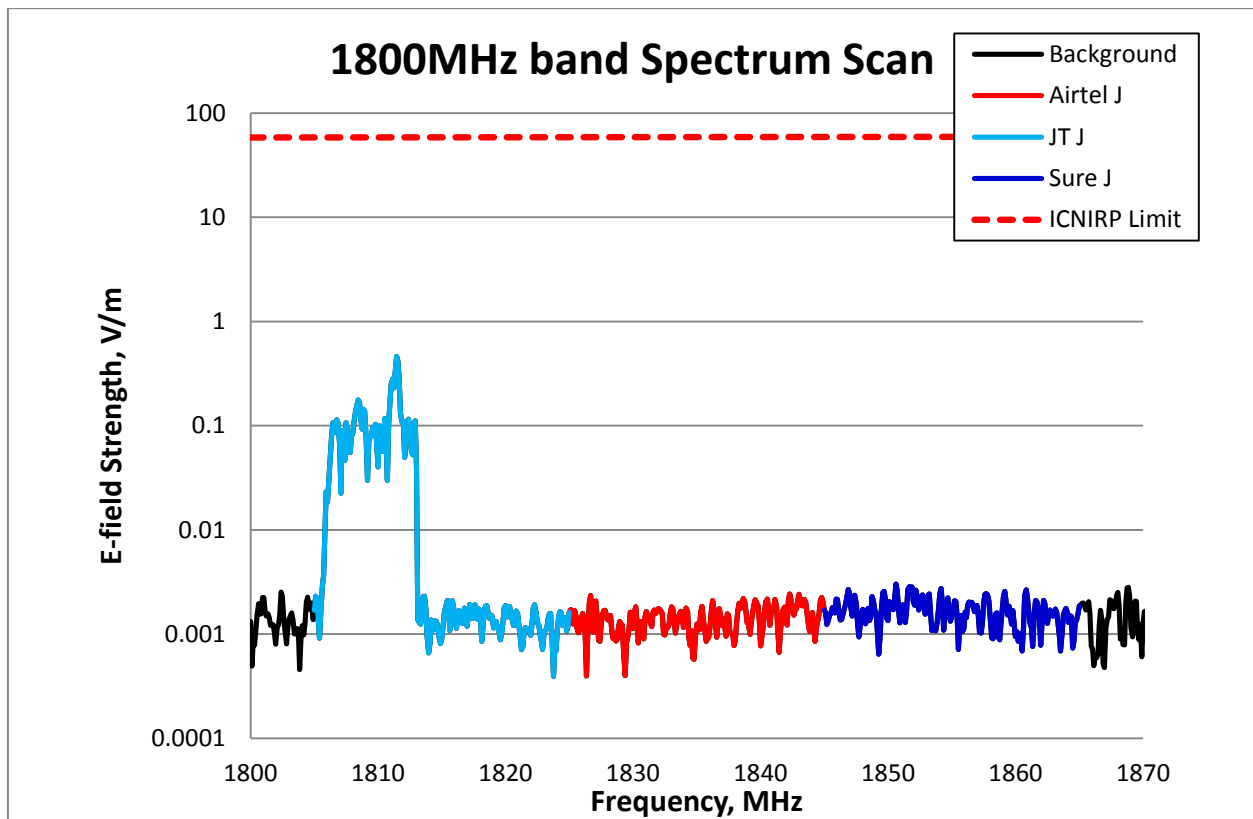


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.4609 V/m (JT J), which is 127 times smaller than the ICNIRP Reference level.

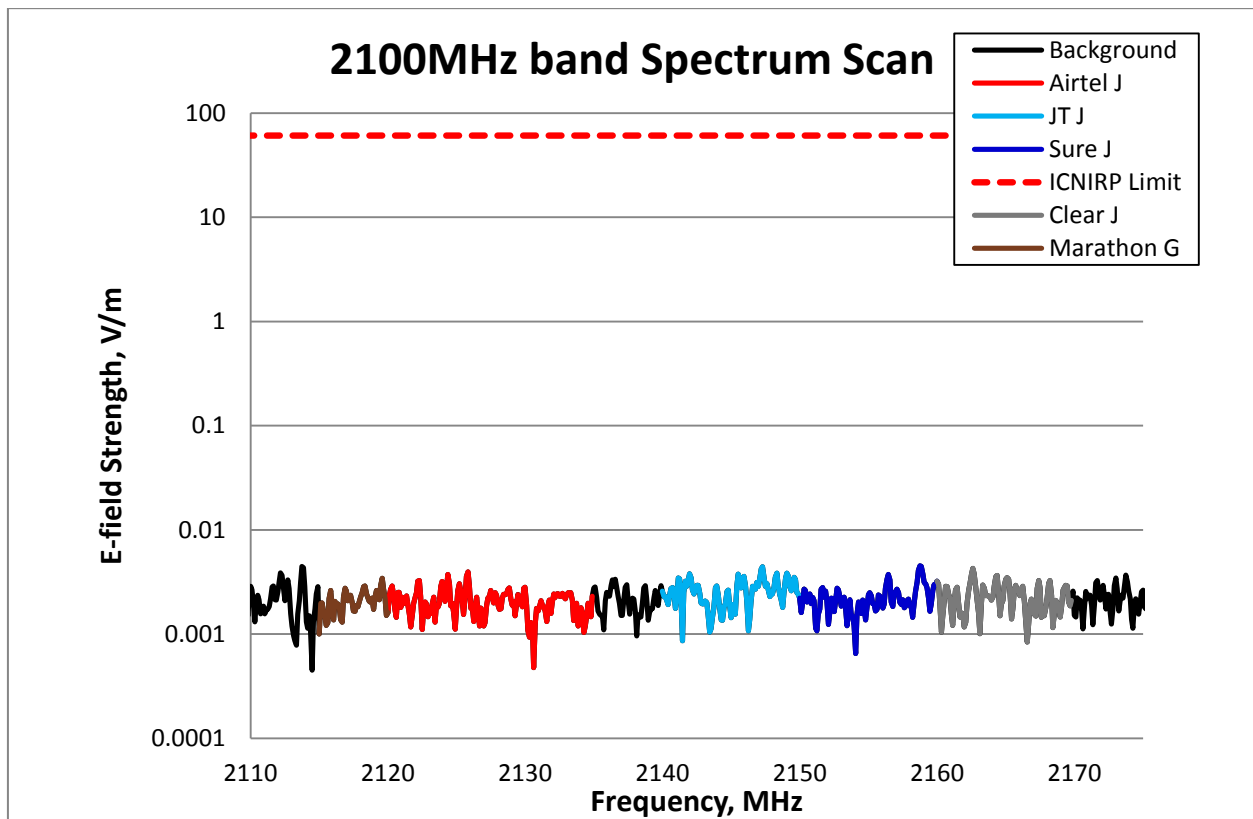
The Exposure Quotient results for the 1800MHz band are shown below:

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
Troy Court	Airtel J	1800	0.002424	24066	1.14106E-07	1/ 8763795
	JT J		0.4609	127	0.000357821	1/ 2795
	Sure J		0.003022	19304	1.56221E-07	1/ 6401169
total band EQ					0.000358091	1/ 2793

Table 4 – 1800MHz band Exposure Quotient at Troy Court Kiosk

2.4 2100MHz Band

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



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	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Troy Court	Airtel J	2100	0.003961	15400	1.73222E-07	1/ 5772926
	Clear J		0.004284	14239	1.46651E-07	1/ 6818912
	JT J		0.00442	13801	1.84463E-07	1/ 5421145
	Marathon J		0.003433	17769	5.94749E-08	1/ 16813828
	Sure J		0.004513	13517	1.39961E-07	1/ 7144846
total band EQ					7.03772E-07	1/ 1420914

Table 5 – 2100MHz band Exposure Quotient at Troy Court Kiosk

2.5 2600MHz band

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

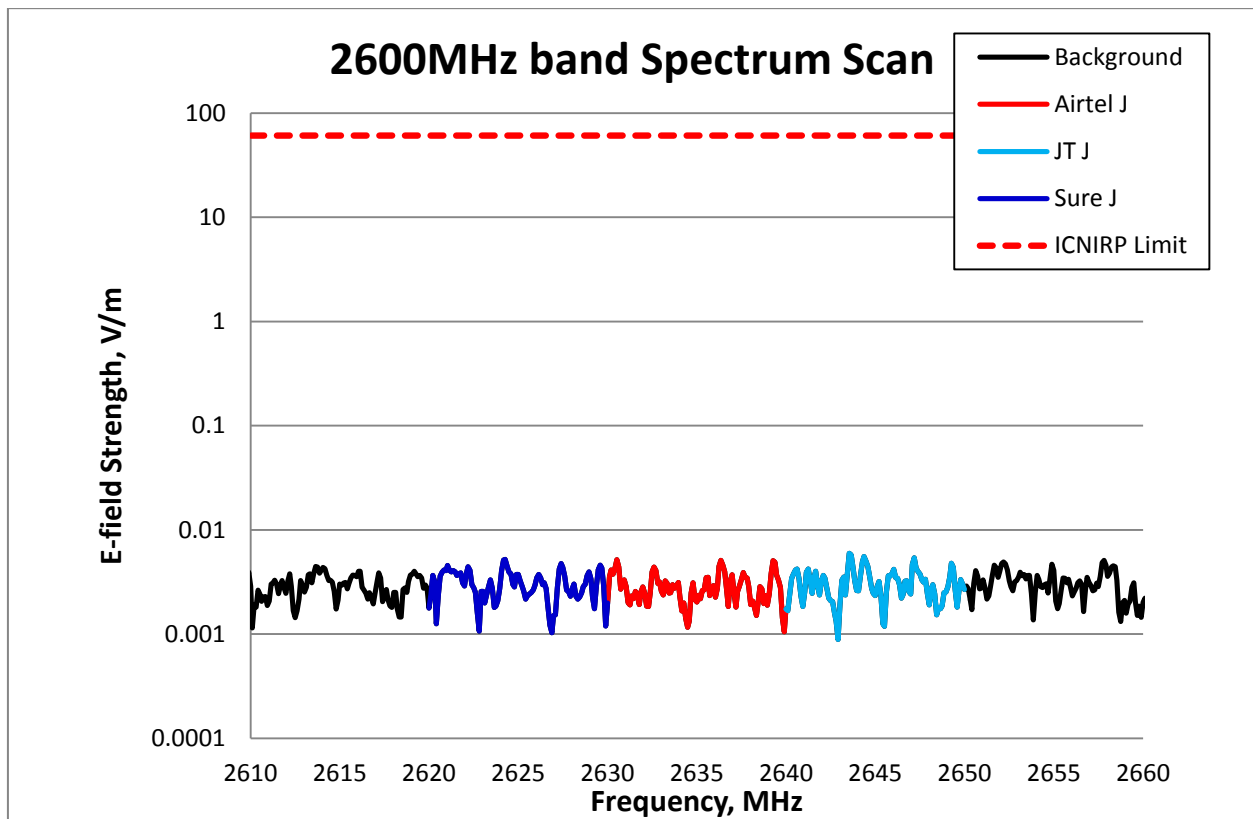


Figure 7 – 2600MHz band Spectrum Scan

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
Troy Court	Airtel J	2600	0.005178	11781	2.26857E-07	1/ 4408054
	JT J		0.005958	10238	2.74364E-07	1/ 3644793
	Sure J		0.005209	11711	2.62603E-07	1/ 3808034
total band EQ					7.63824E-07	1/ 1309202

Table 6 – 2600MHz band Exposure Quotient at Troy Court Kiosk

End