Cellular Mast Emissions Survey: Langley Park 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 Langley Park site located in Jersey.

The Langley Park 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
Langley Park	800	0.003899	Sure J	9975	3.39461E-07	1/ 2945847
	900	2.111	JT J	20	0.002762376	1/ 362
	1800	0.002994	Sure J	19484	3.51961E-07	1/ 2841222
	2100	0.4746	JT J	129	0.001002223	1/ 998
	2600	0.00567	Sure J	10758	7.6597E-07	1/ 1305534
				Total Site EQ	0.003766056	1/ 266

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/266 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

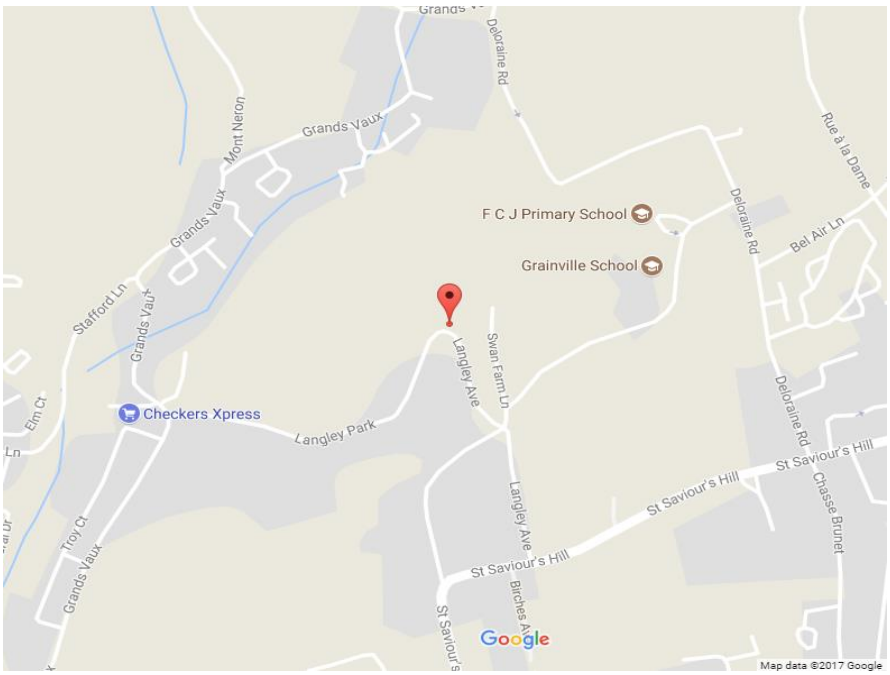


Figure 1 - Map of the Site Area

Site name	Langley Park Kiosk
Site address	Kiosk at Langley Park, St Saviour, Jersey
Site Latitude	49.199
Site Longitude	-2.09102

1.2 Site Description

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

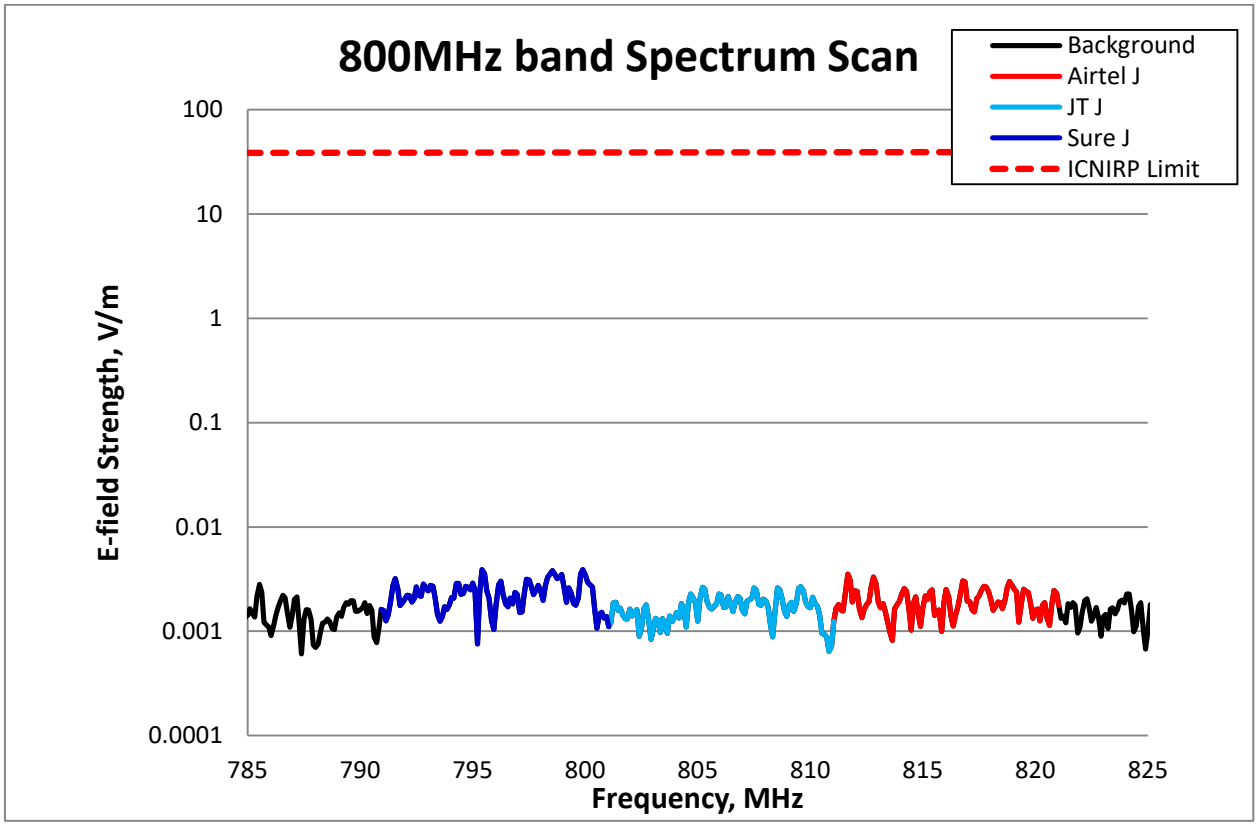


Figure 4 - 800MHz band Spectrum Scan

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.

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
Langley Park	Airtel J	800	0.003537	10995	1.07764E-07	1/ 9279509
	JT J		0.002682	14501	7.84672E-08	1/ 12744173
	Sure J		0.003899	9975	1.53229E-07	1/ 6526163
				total band EQ	3.39461E-07	1/ 2945847

Table 2– 800MHz band Exposure Quotient at Langley Park Kiosk

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

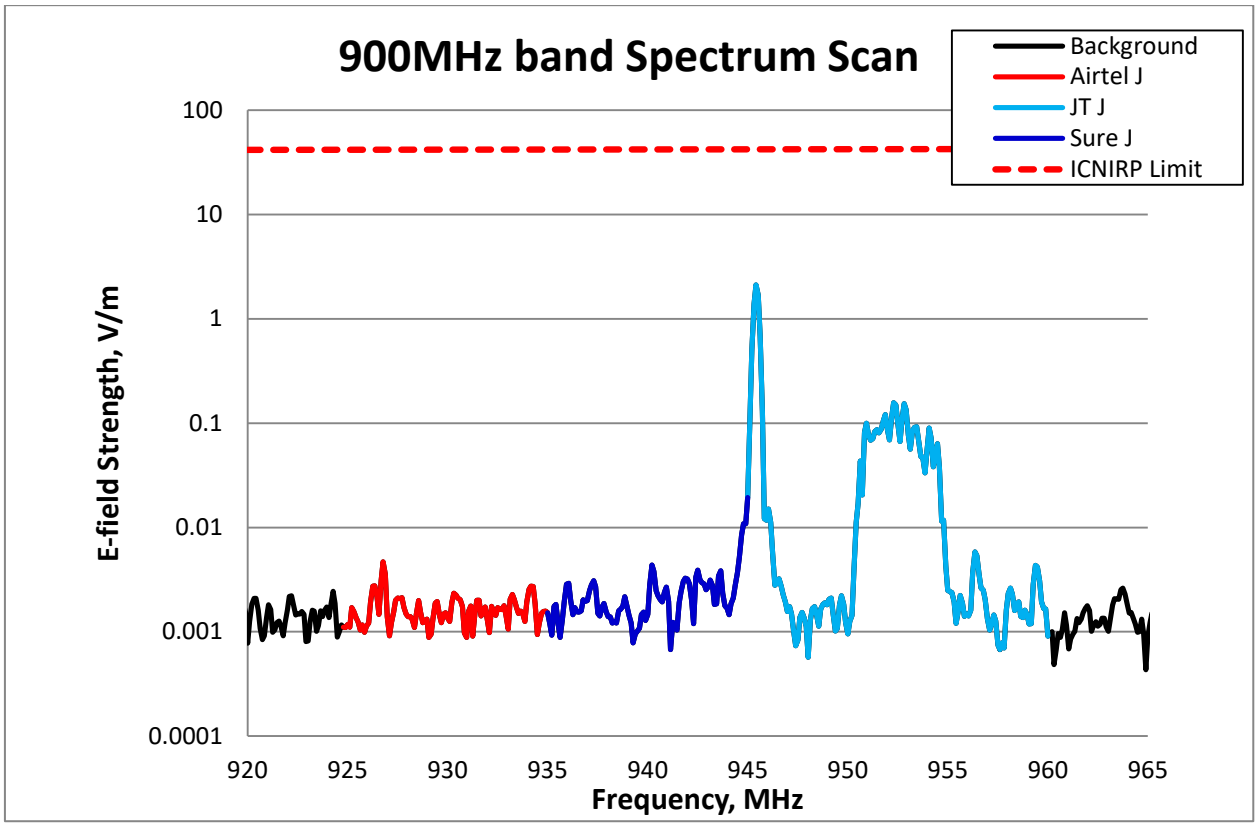


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 2.111 V/m (JT J), which is 20 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
Langley Park	Airtel J	900	0.004694	8788	8.09569E-08	1/ 12352253
	JT J		2.111	20	0.002761985	1/ 362
	Sure J		0.01931	2136	3.09459E-07	1/ 3231442
				total band EQ	0.002762376	1/ 362

Table 3– 900MHz band Exposure Quotient at Langley Park Kiosk

2.3 1800 MHz Band

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

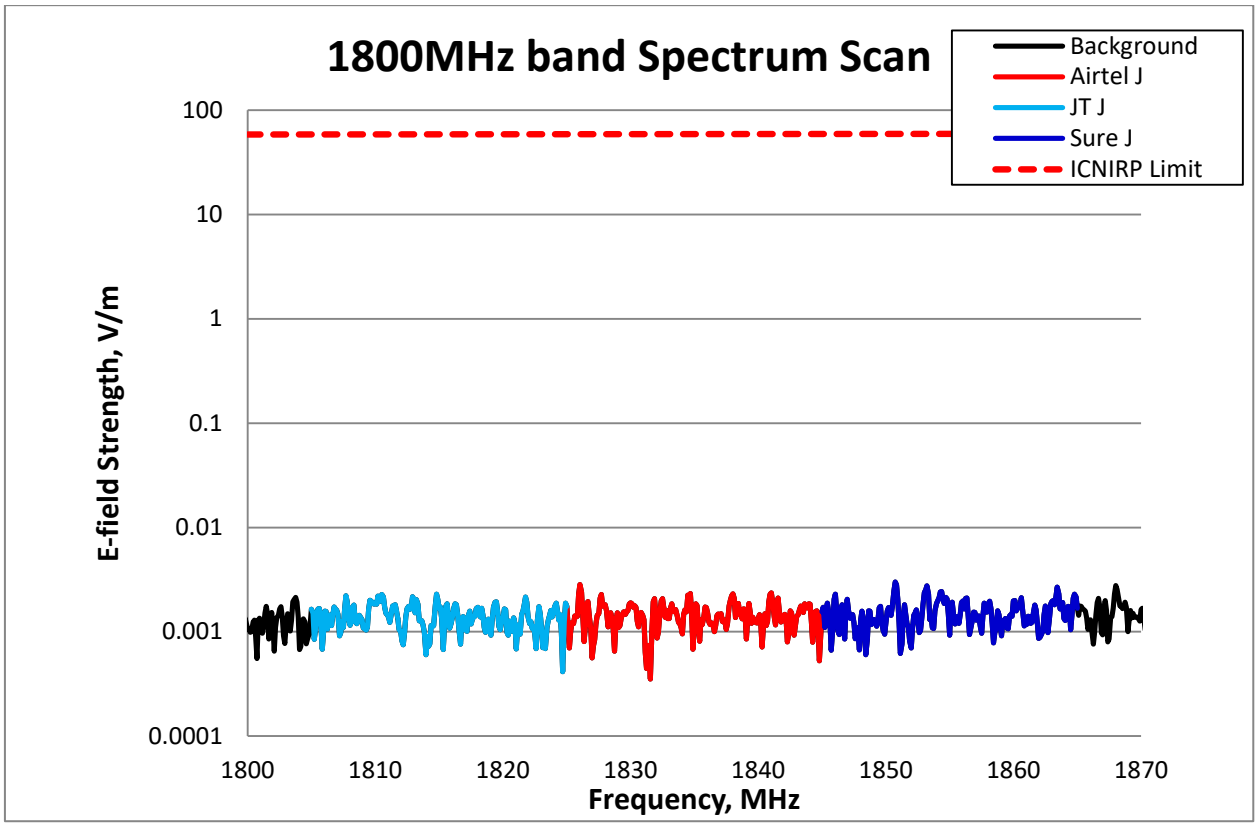


Figure 6 - 1800MHz Spectrum Scan

No activity was recorded in the 1800MHz as no operator appears to transmit in this band at this site.

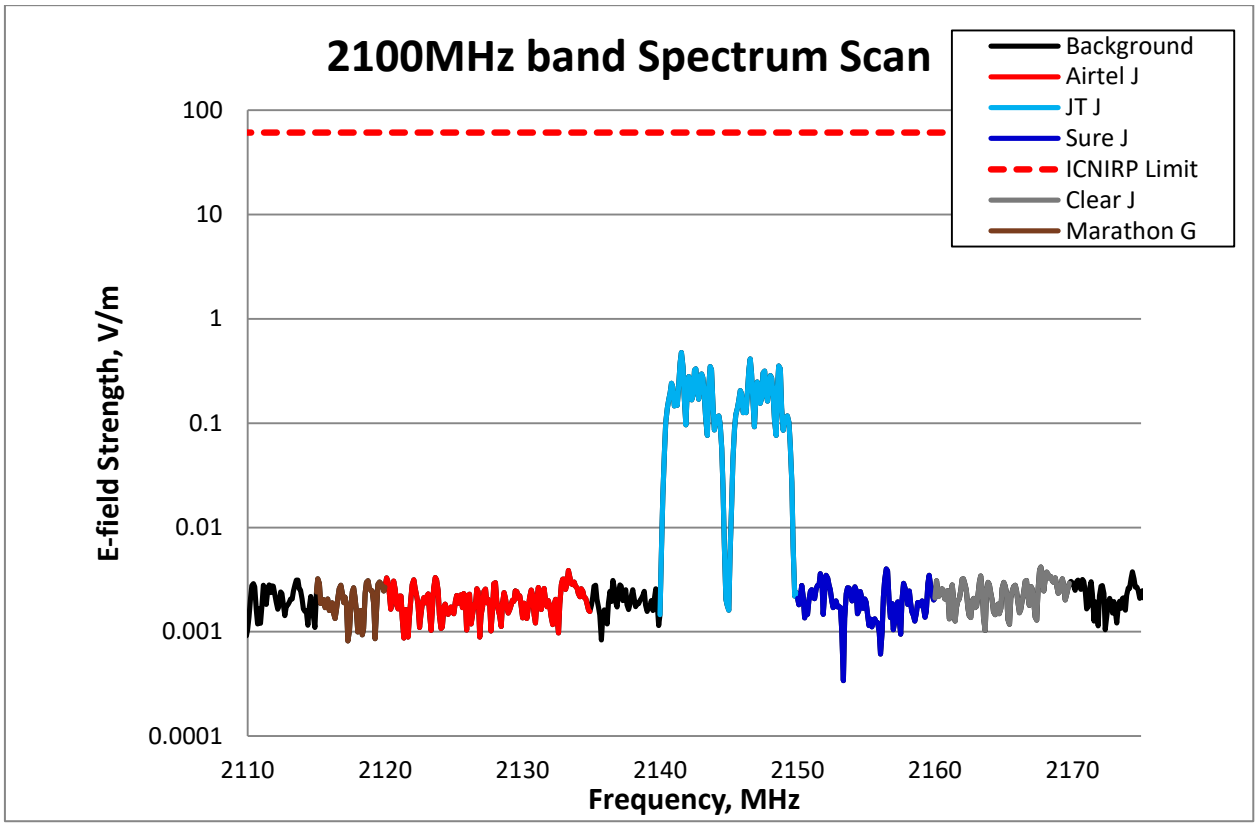
The Exposure Quotient results for the 1800MHz band are shown below:

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
Langley Park	Airtel J	1800	0.00284	20541	1.15849E-07	1/ 8631903
	JT J		0.002292	25452	1.08307E-07	1/ 9233034
	Sure J		0.002994	19484	1.27805E-07	1/ 7824411
				total band EQ	3.51961E-07	1/ 2841222

Table 4 – 1800MHz band Exposure Quotient at Langley Park Kiosk

2.4 2100MHz Band

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



No field level recorded across the band was higher than 0.4746 V/m (JT J), which is 129 times smaller than the ICNIRP Reference level.

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
Langley Park	Airtel J	2100	0.003867	15775	1.72056E-07	1/ 5812058
	Clear J		0.00417	14628	1.54608E-07	1/ 6467991
	JT J		0.4746	129	0.001001718	1/ 998
	Marathon J		0.003228	18897	6.10868E-08	1/ 16370154
	Sure J		0.00401	15212	1.17676E-07	1/ 8497877
				total band EQ	0.001002223	1/ 998

Table 5 – 2100MHz band Exposure Quotient at Langley Park Kiosk

2.5 2600MHz band

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

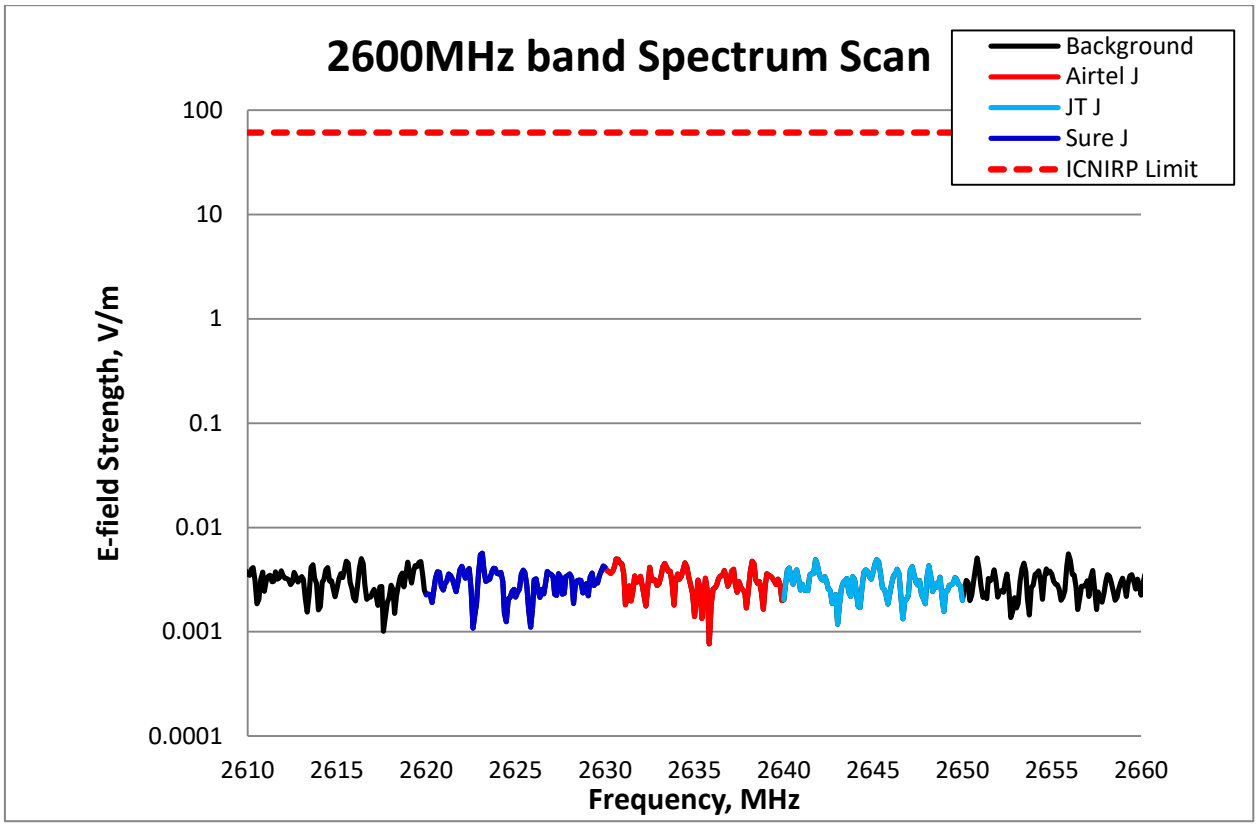


Figure 7 – 2600MHz band Spectrum Scan

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 2600MH 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
Langley Park	Airtel J	2600	0.004983	12242	2.69259E-07	1/ 3713891
	JT J		0.004915	12411	2.43845E-07	1/ 4100973
	Sure J		0.00567	10758	2.52866E-07	1/ 3954664
				total band EQ	7.6597E-07	1/ 1305534

Table 6 – 2600MHz band Exposure Quotient at Langley Park Kiosk

End