

Cellular Mast Emissions Survey: La Chasse (Jersey)



DOCUMENT DETAILS

Document Name:	Cellular Mast Emissions Survey: La Chasse (Jersey)
Survey Date:	05/06/2017 at 13:29
Report issue Date	30/06/2017
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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 La Chasse site located in Jersey.

The La Chasse site was used by multiple operators at the time of the survey: Airtel J Sure J and JT J. Surveys were 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
La Chasse	800	0.147	Sure J	265	9.24569E-05	1/ 10816
	900	0.6366	Airtel J	65	0.000759025	1/ 1317
	1800	0.05341	Sure J	1092	2.05292E-05	1/ 48711
	2100	0.07831	JT J	779	5.77836E-05	1/ 17306
	2600	0.002168	Airtel J	28137	1.22529E-07	1/ 8161324
Total Site EQ					0.000929917	1/ 1075

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/1075 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

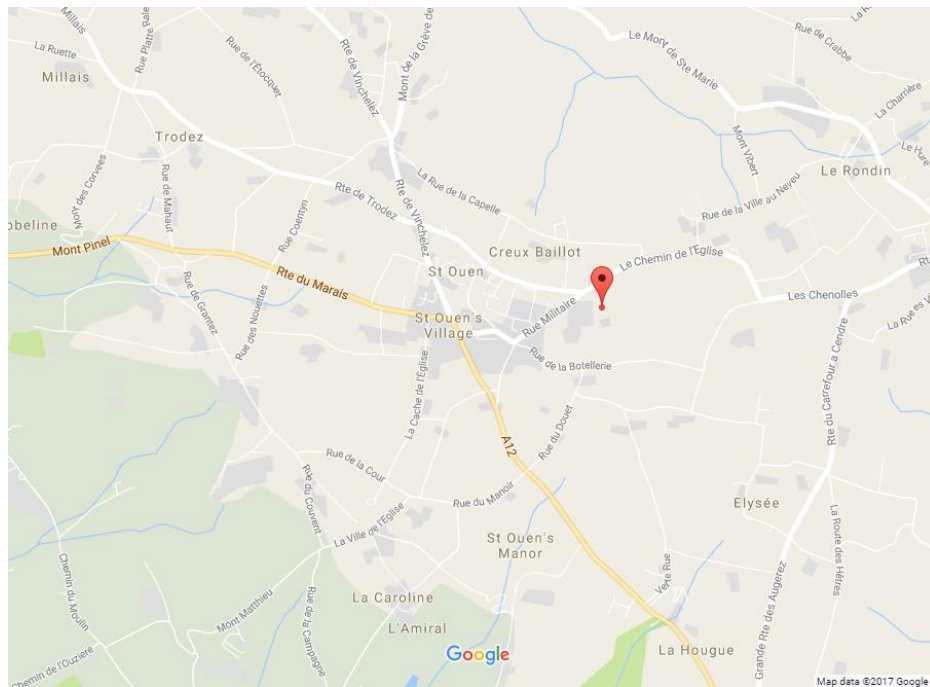


Figure 1 - Map of the Site Area

Site name	La Chasse
Site address	La Chasse Transmitter / Radio Station, St Ouen, Jersey
Site Latitude	N 49.23316
Site Longitude	W 02.19405

1.2 Site Description

Operators	Airtel J / Sure J / JT J
Antenna types	Directional
Approximate height	37m
Site type	Lattice Masts
Description	The lattice mast at La Chasse is located at the rear of the building within a fenced enclosure; access to the public is restricted.

1.3 Site Photo



Figure 2 – Peak Measurement Location

1.4 Test Location

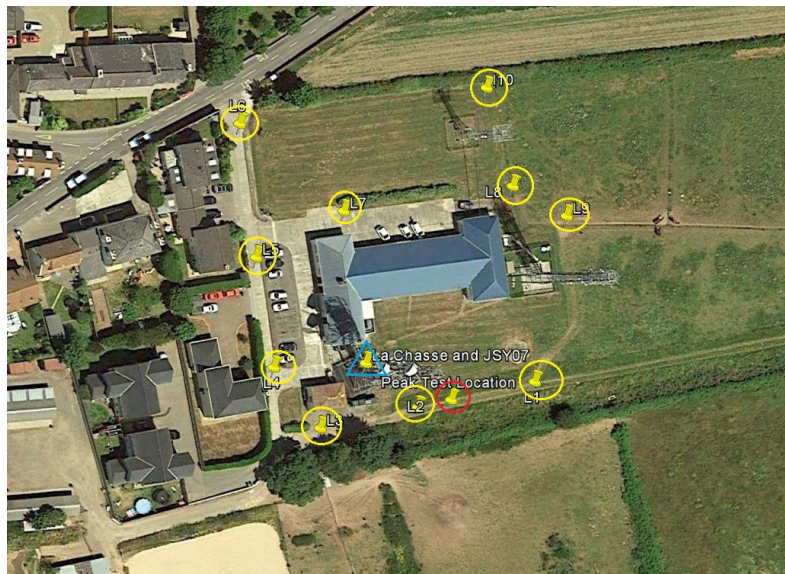


Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out

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.

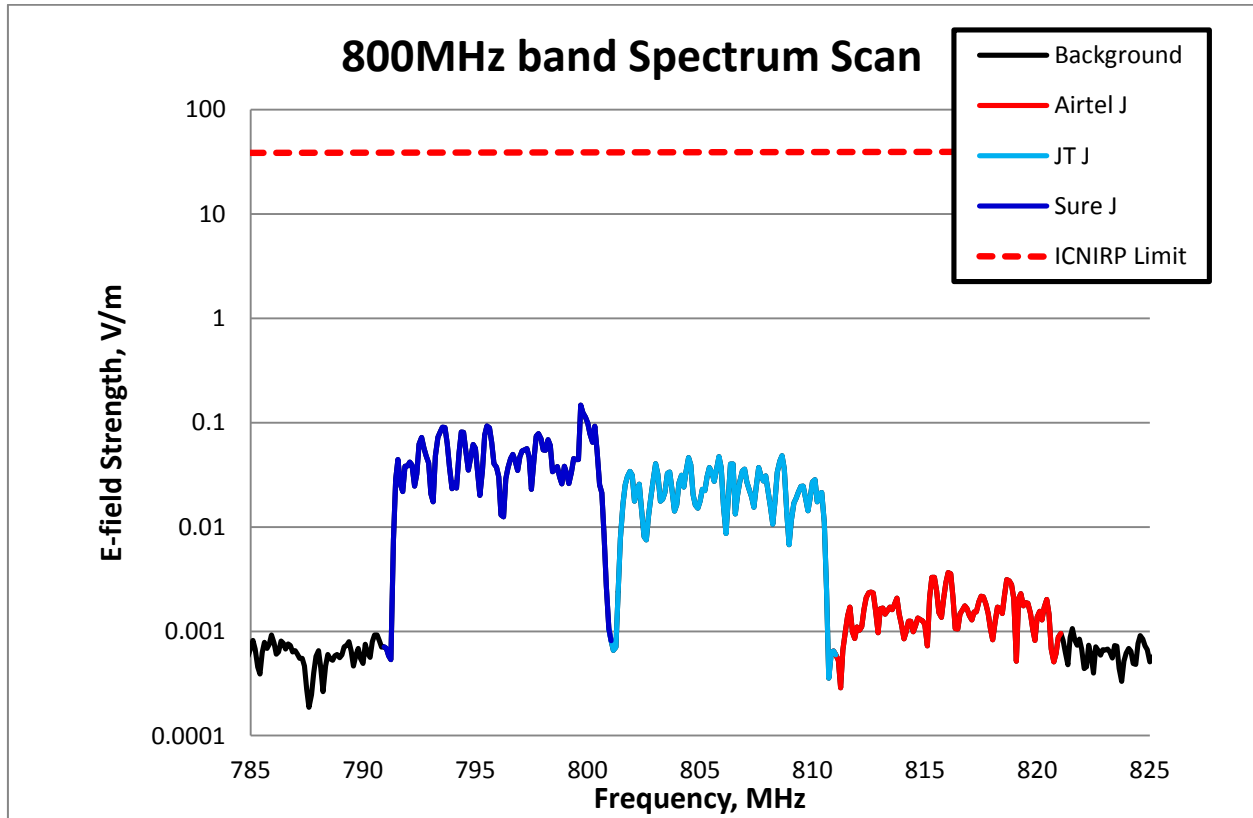


Figure 4 - 800MHz band Spectrum Scan

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 0.147 V/m (Sure J), which is 265 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
La Chasse	Airtel J	800	0.00366	10626	7.73928E-08	1/ 12921101
	JT J		0.04809	809	1.63216E-05	1/ 61268
	Sure J		0.147	265	7.60578E-05	1/ 13148
total band EQ					9.24569E-05	1/ 10816

Table 2– 800MHz band Exposure Quotient at La Chasse

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

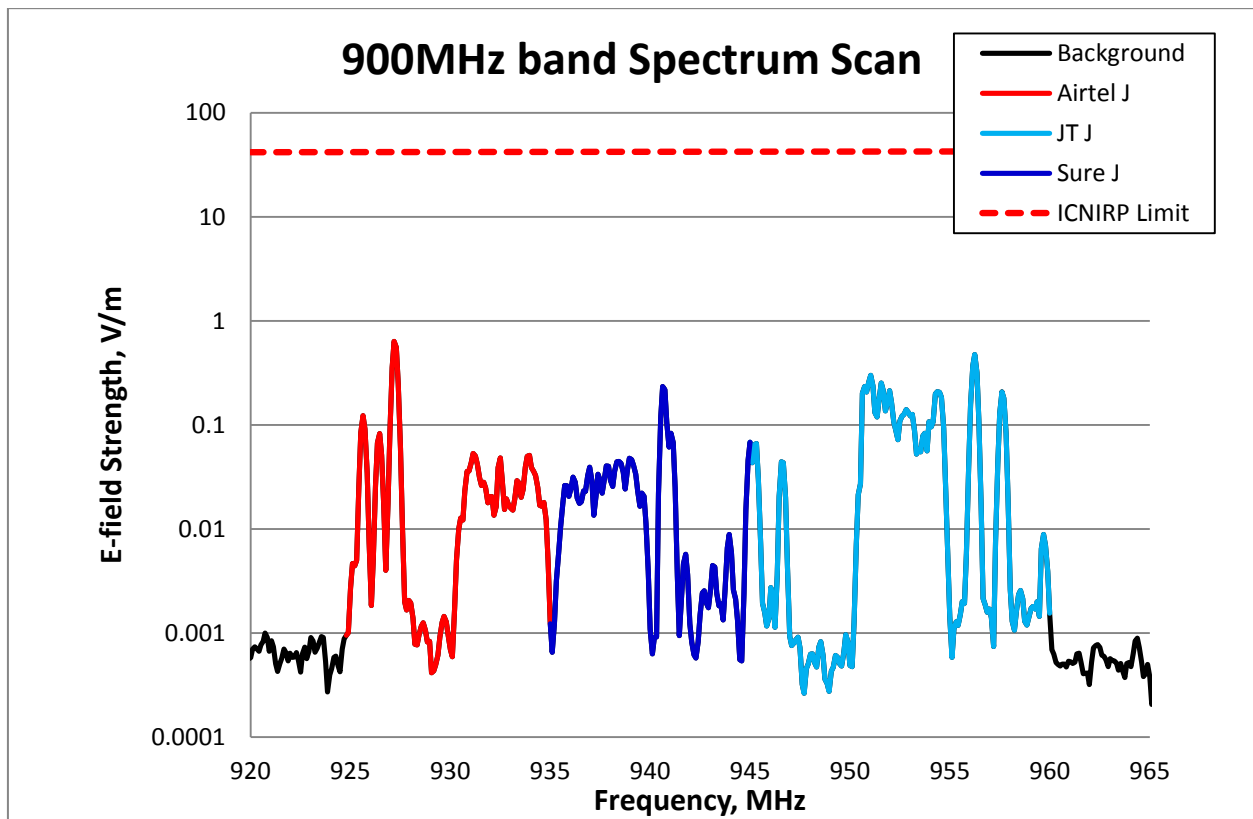


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.6366 V/m (Airtel J), which is 65 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
La Chasse	Airtel J	900	0.6366	65	0.00026848	1/ 3725
	JT J		0.4749	87	0.0004396	1/ 2275
	Sure J		0.2345	176	5.09458E-05	1/ 19629
total band EQ					0.000759025	1/ 1317

Table 3– 900MHz band Exposure Quotient at La Chasse

2.3 1800 MHz Band

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

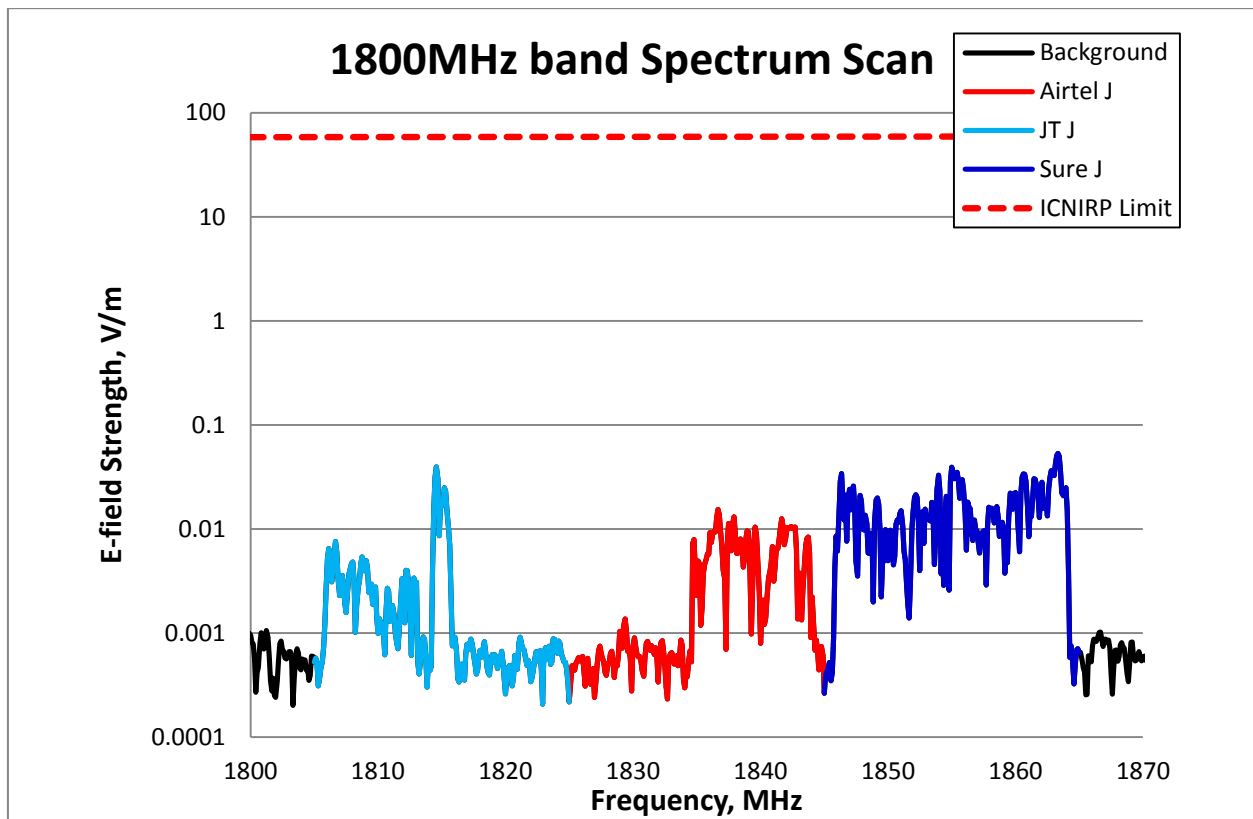


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.05341 V/m (Sure J), which is 1092 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
La Chasse	Airtel J	1800	0.0154	3788	1.30223E-06	1/ 767916
	JT J		0.03959	1474	1.86868E-06	1/ 535136
	Sure J		0.05341	1092	1.73583E-05	1/ 57609
total band EQ					2.05292E-05	1/ 48711

Table 4 – 1800MHz band Exposure Quotient at La Chasse

2.4 2100MHz Band

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

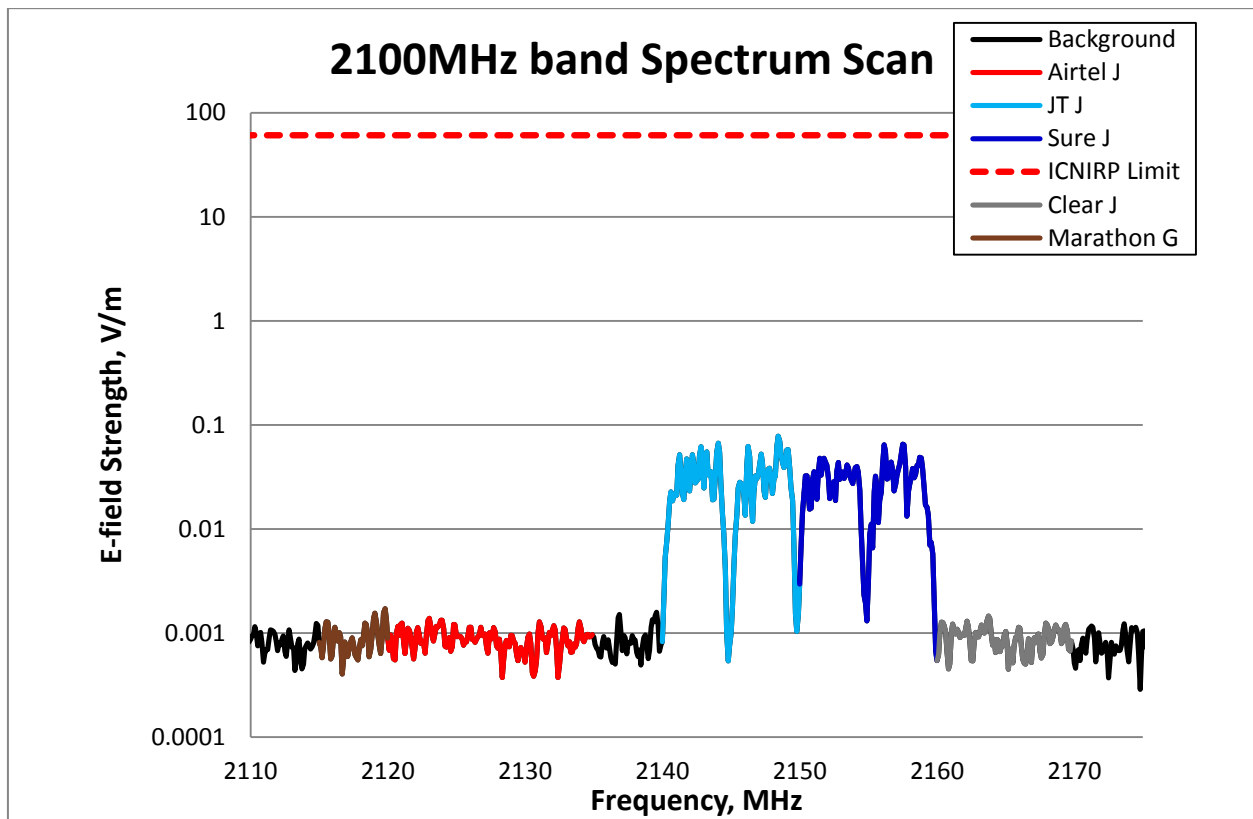


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.07831 V/m (JT J), which is 779 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
La Chasse	Airtel J	2100	0.001387	43980	3.17025E-08	1/ 31543238
	Clear J		0.001454	41953	2.20464E-08	1/ 45358839
	JT J		0.07831	779	3.13612E-05	1/ 31887
	Marathon J		0.001708	35714	1.19255E-08	1/ 83853907
	Sure J		0.06532	934	2.63567E-05	1/ 37941
total band EQ					5.77836E-05	1/ 17306

Table 5 – 2100MHz band Exposure Quotient at La Chasse

2.5 2600MHz band

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

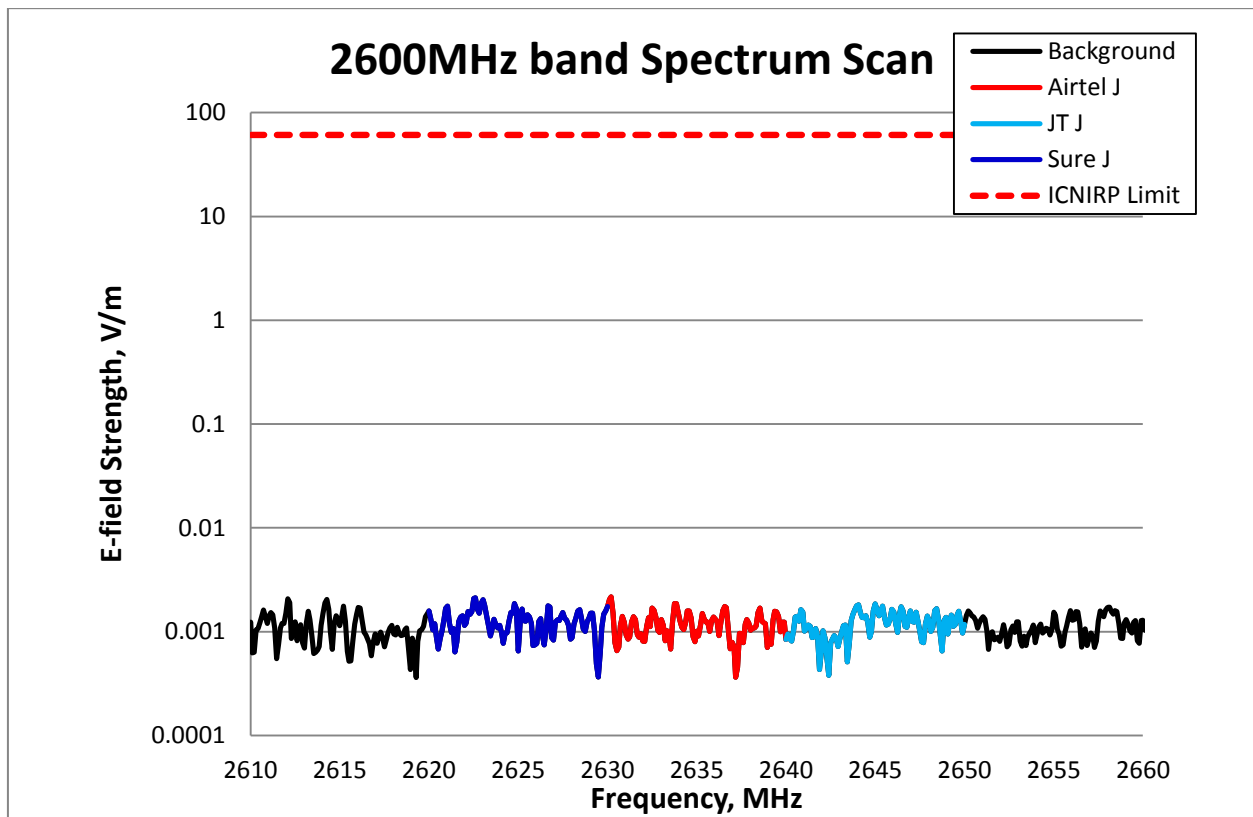


Figure 8 – 2600MHz band Spectrum Scan

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 2600MH 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
La Chasse	Airtel J	2600	0.002168	28137	3.89796E-08	1/ 25654458
	JT J		0.001852	32937	3.95512E-08	1/ 25283667
	Sure J		0.002116	28828	4.39983E-08	1/ 22728132
total band EQ					1.22529E-07	1/ 8161324

Table 6 – 2600MHz band Exposure Quotient at La Chasse

End