

Cellular Mast Emissions Survey: Beau Rivage Hotel (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 Beau Rivage Hotel site located in Jersey.

The Beau Rivage Hotel site was used by a single operator at the time of the survey: Airtel J; but strong signal levels were also measured from other operators who operate from nearby sites. 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
Beau Rivage Hotel	800	0.04836	Sure J	804	2.59828E-05	1/ 38487
	900	1.047	Airtel J	39	0.00108323	1/ 923
	1800	0.0266	JT J	2193	5.29009E-06	1/ 189033
	2100	0.0267	JT J	2285	9.3814E-06	1/ 106594
	2600	0.002478	Airtel J	24617	1.21478E-07	1/ 8231954
Total Site EQ					0.001124006	1/ 890

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/890 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

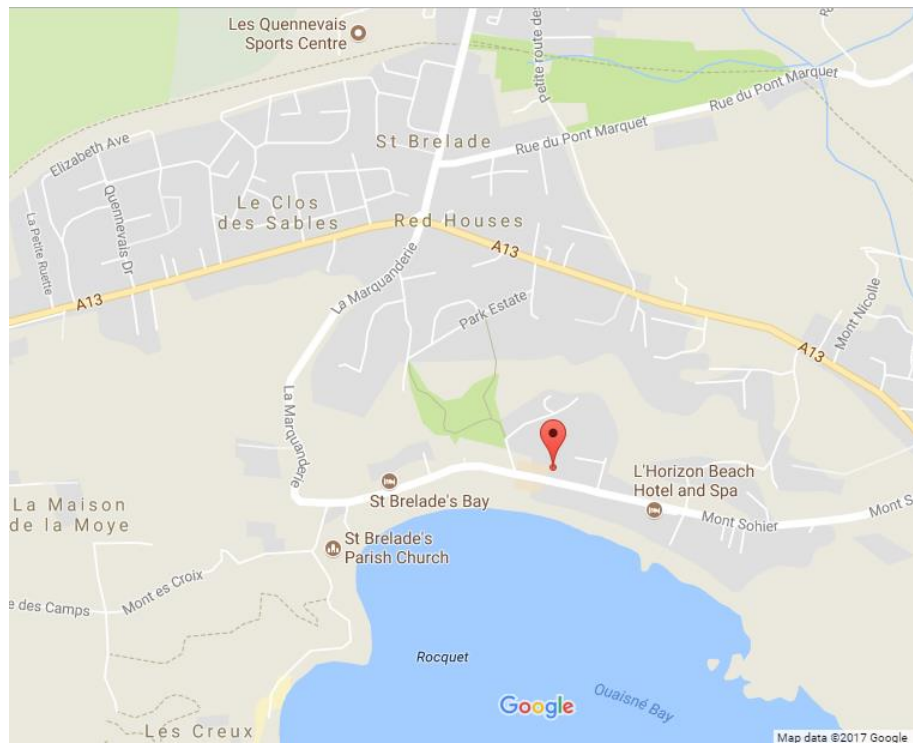


Figure 1 - Map of the Site Area

Site name	Beau Rivage Hotel
Site address	Mont Sohier, St Brelade, Jersey
Site Latitude	N 49.18568
Site Longitude	W 02.1964

1.2 Site Description

Operators	Airtel J
Antenna types	Directional
Approximate height	15m
Site type	Rooftop
Description	The antennas at Beau Rivage Hotel are located on the roof of the main building, out of reach of the public.

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.

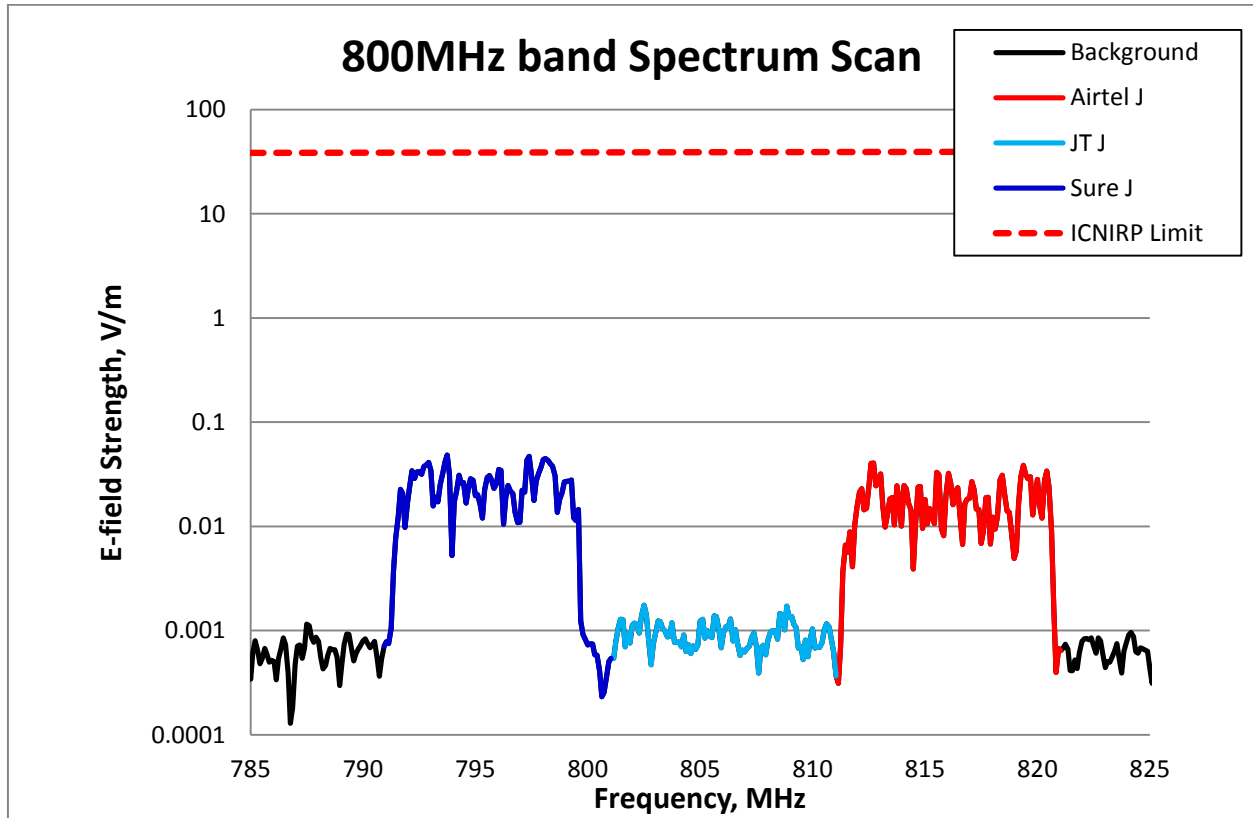


Figure 4 - 800MHz band Spectrum Scan

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 0.04836 V/m (Sure J), which is 804 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
Beau Rivage Hotel	Airtel J	800	0.04053	960	9.7918E-06	1/ 102126
	JT J		0.001754	22173	2.41395E-08	1/ 41425921
	Sure J		0.04836	804	1.61668E-05	1/ 61855
total band EQ					2.59828E-05	1/ 38487

Table 2– 800MHz band Exposure Quotient at the Beau Rivage Hotel

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

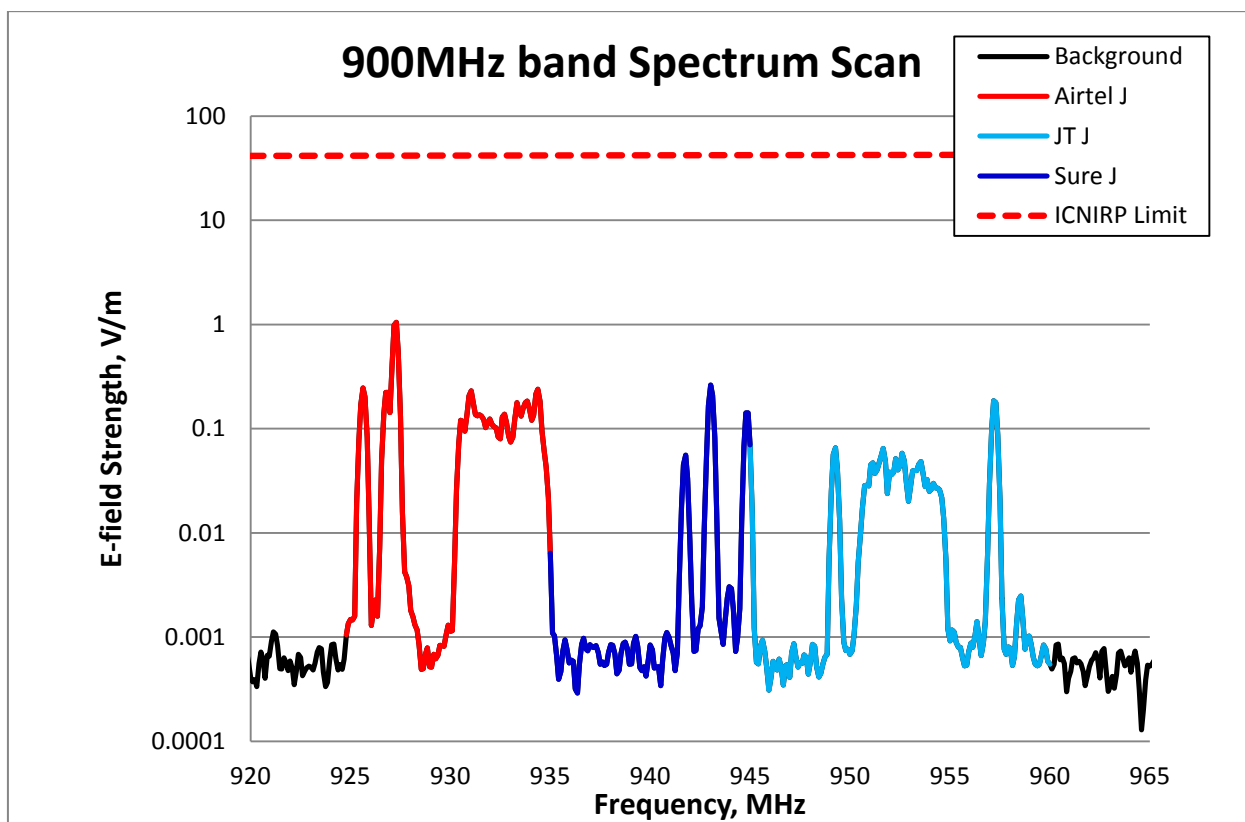


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 1.047 V/m (Airtel J), which is 39 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
Beau Rivage Hotel	Airtel J	900	1.047	39	0.000984768	1/ 1015
	JT J		0.1859	222	4.25918E-05	1/ 23479
	Sure J		0.2631	157	5.58701E-05	1/ 17899
total band EQ					0.00108323	1/ 923

Table 3– 900MHz band Exposure Quotient at the Beau Rivage Hotel

2.3 1800 MHz Band

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

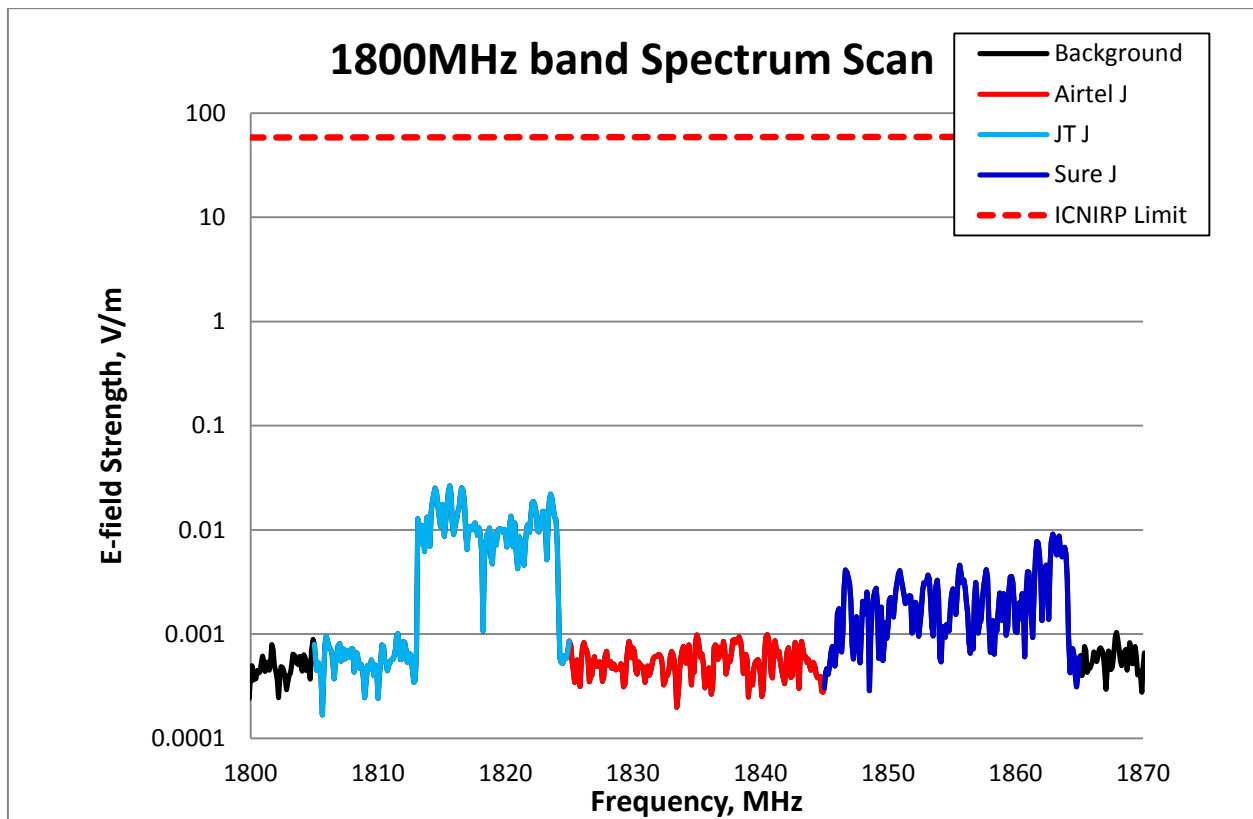


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.0266 V/m (JT J), which is 2193 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
Beau Rivage Hotel	Airtel J	1800	0.0009905	58896	1.72927E-08	1/ 57827755
	JT J		0.0266	2193	4.83235E-06	1/ 206939
	Sure J		0.009145	6379	4.40441E-07	1/ 2270451
total band EQ					5.29009E-06	1/ 189033

Table 4 – 1800MHz band Exposure Quotient at Beau Rivage Hotel

2.4 2100MHz Band

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

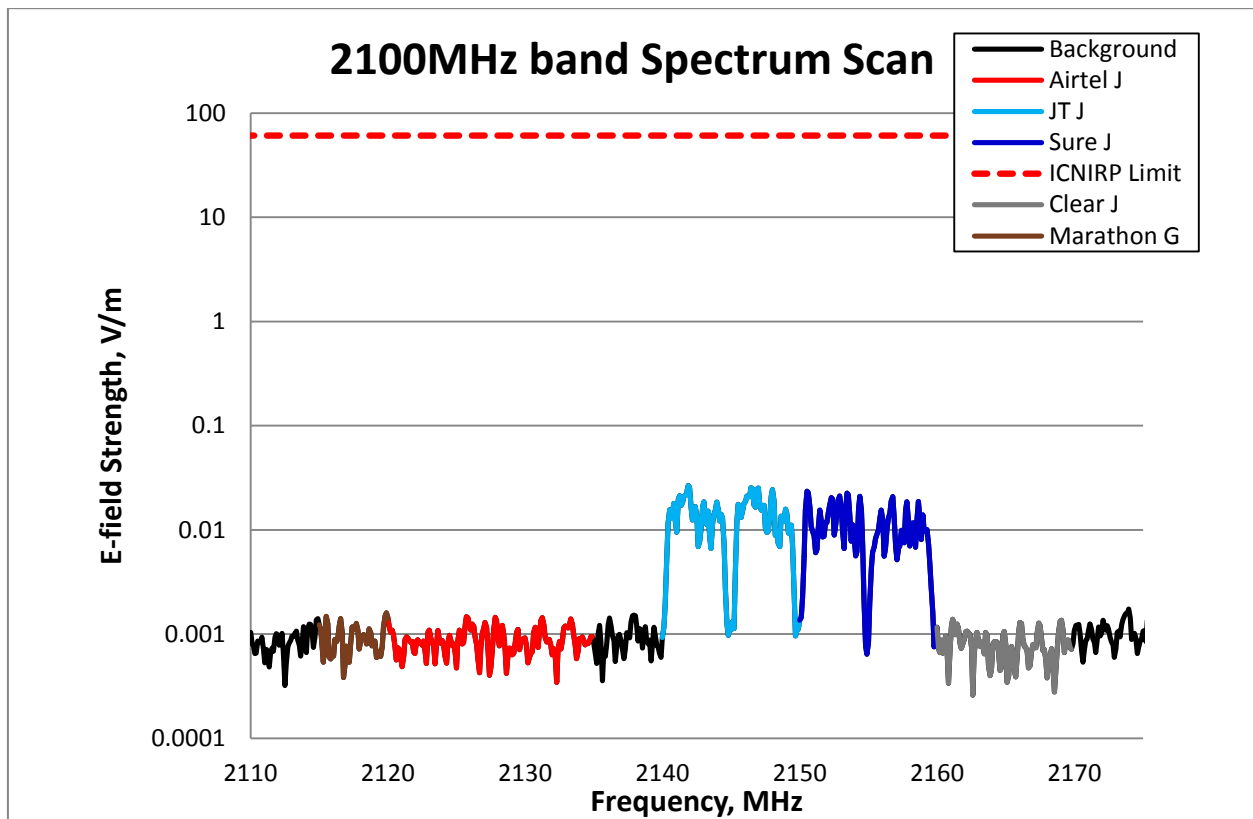


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.0267 V/m (JT J), which is 2285 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
Beau Rivage Hotel	Airtel J	2100	0.001468	41553	3.21059E-08	1/ 31146881
	Clear J		0.001384	44075	1.79838E-08	1/ 55605495
	JT J		0.0267	2285	5.56412E-06	1/ 179723
	Marathon J		0.001598	38173	1.23061E-08	1/ 81260266
	Sure J		0.0236	2585	3.75488E-06	1/ 266320
total band EQ					9.3814E-06	1/ 106594

Table 5 – 2100MHz band Exposure Quotient at the Beau Rivage Hotel

2.5 2600MHz band

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

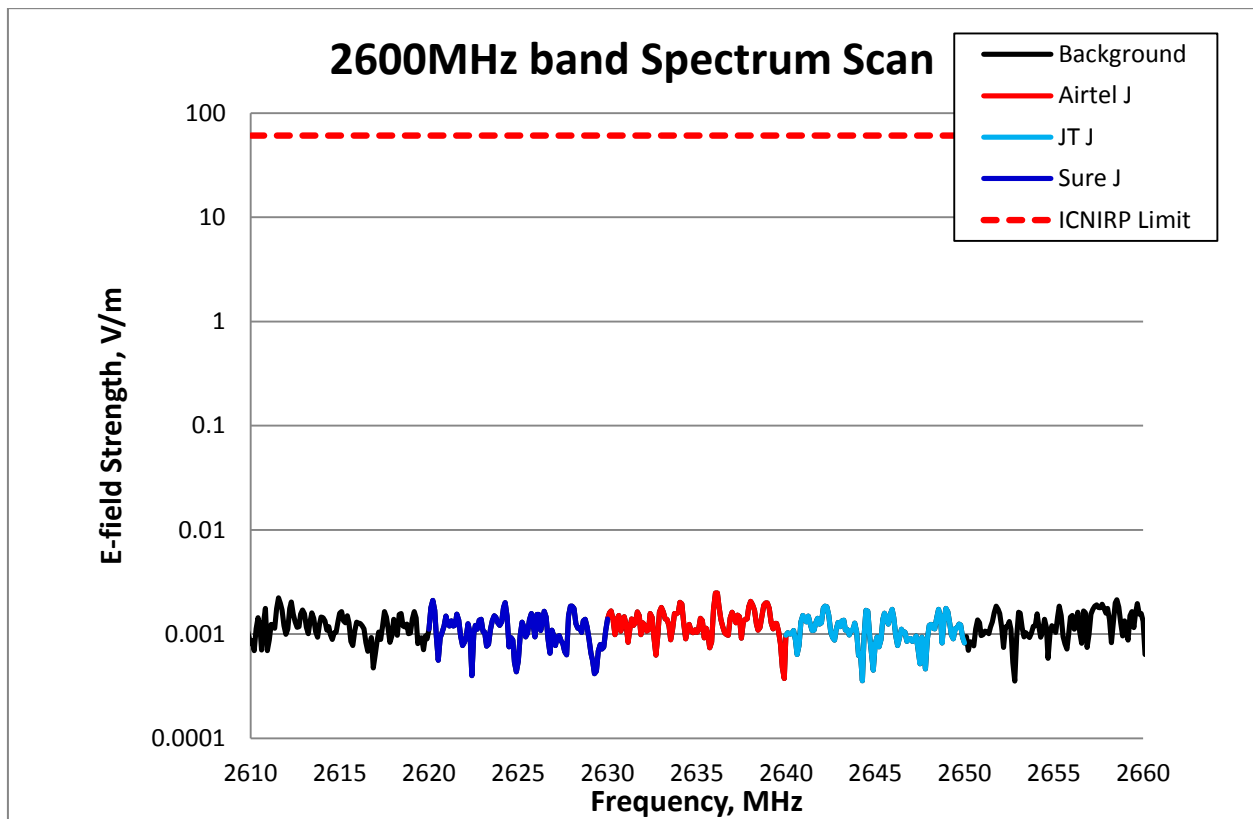


Figure 8 – 2600MHz band Spectrum Scan

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
Beau Rivage Hotel	Airtel J	2600	0.002478	24617	4.97278E-08	1/ 20109463
	JT J		0.001851	32955	3.53509E-08	1/ 28287841
	Sure J		0.002103	29006	3.63991E-08	1/ 27473183
total band EQ					1.21478E-07	1/ 8231954

Table 6 – 2600MHz band Exposure Quotient at the Beau Rivage Hotel

End