

Cellular Mast Emissions Survey: St Brelade Waitrose (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 St Brelade Waitrose site located in Jersey.

The St Brelade Waitrose site was used by a single operator at the time of the survey: Sure 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
St Brelade Waitrose	800	0.0228	JT J	1706	2.71373E-06	1/ 368496
	900	0.8141	Sure J	51	0.000424174	1/ 2358
	1800	0.1807	Sure J	323	0.000321409	1/ 3111
	2100	0.1556	Sure J	392	0.000132575	1/ 7543
	2600	0.002001	Sure J	30485	1.15426E-07	1/ 8663546
Total Site EQ					0.000880988	1/ 1135

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/1135 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

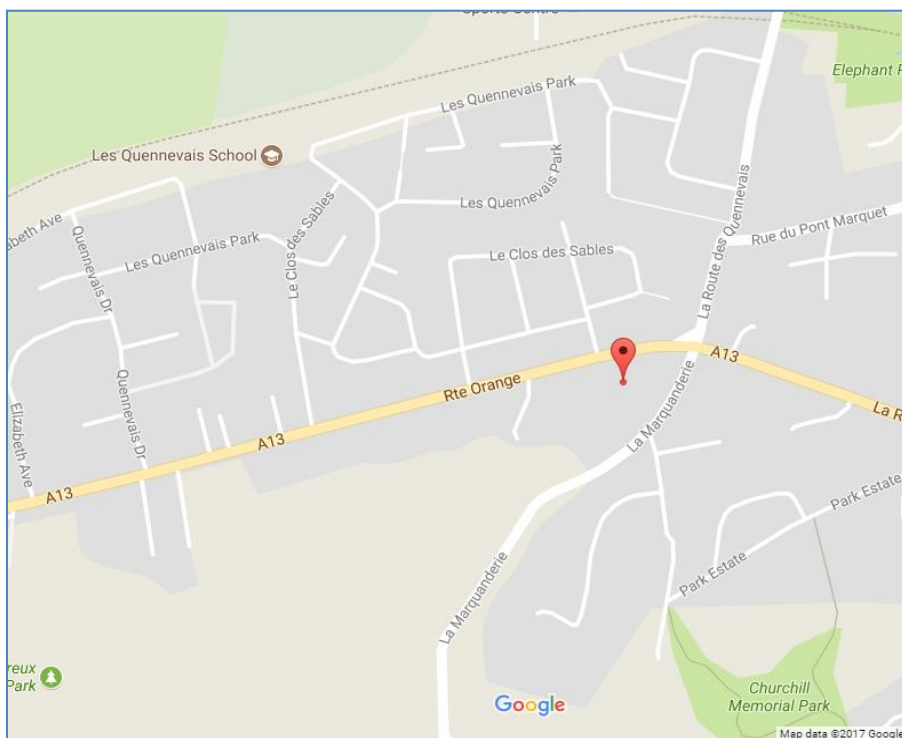


Figure 1 - Map of the Site Area

Site name	St Brelade Waitrose
Site address	Red Houses, St Brelade, Jersey
Site Latitude	49.19014
Site Longitude	-2.20149

1.2 Site Description

Operators	Sure J
Antenna types	Directional
Approximate height	12m
Site type	Building Wall Mount
Description	The antennas at St Brelade Waitrose are located at the side of the building; access is open to the public.

1.3 Site Photo

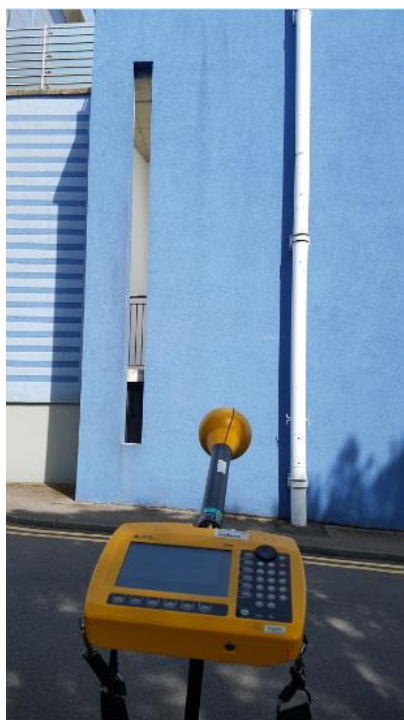


Figure 2 – Peak Measurement Location

1.4 Test Location

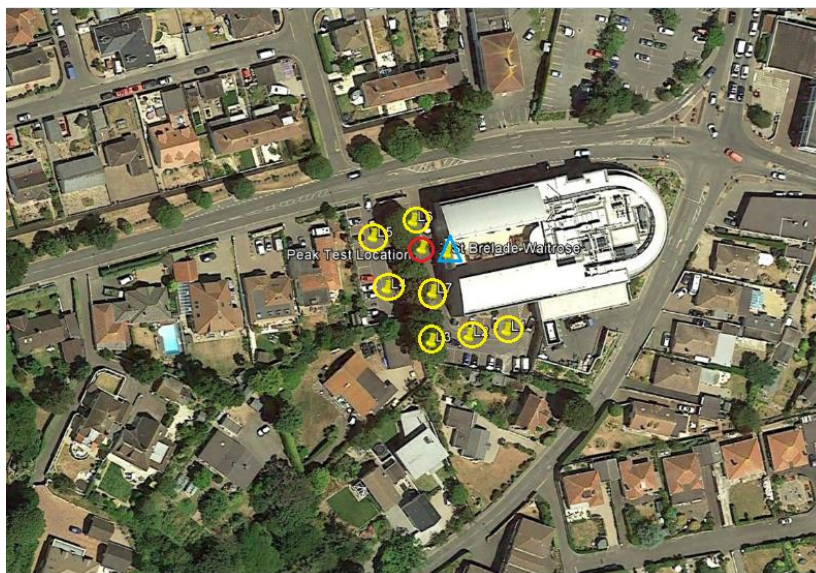


Figure 3- Survey Area with Spot Measurement Markers: The blue triangle is the site location, the yellow circles are intermediate locations measured at during the peak search and the red circle is the spot where the highest spot search reading was obtained and where the detailed survey was carried out

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.

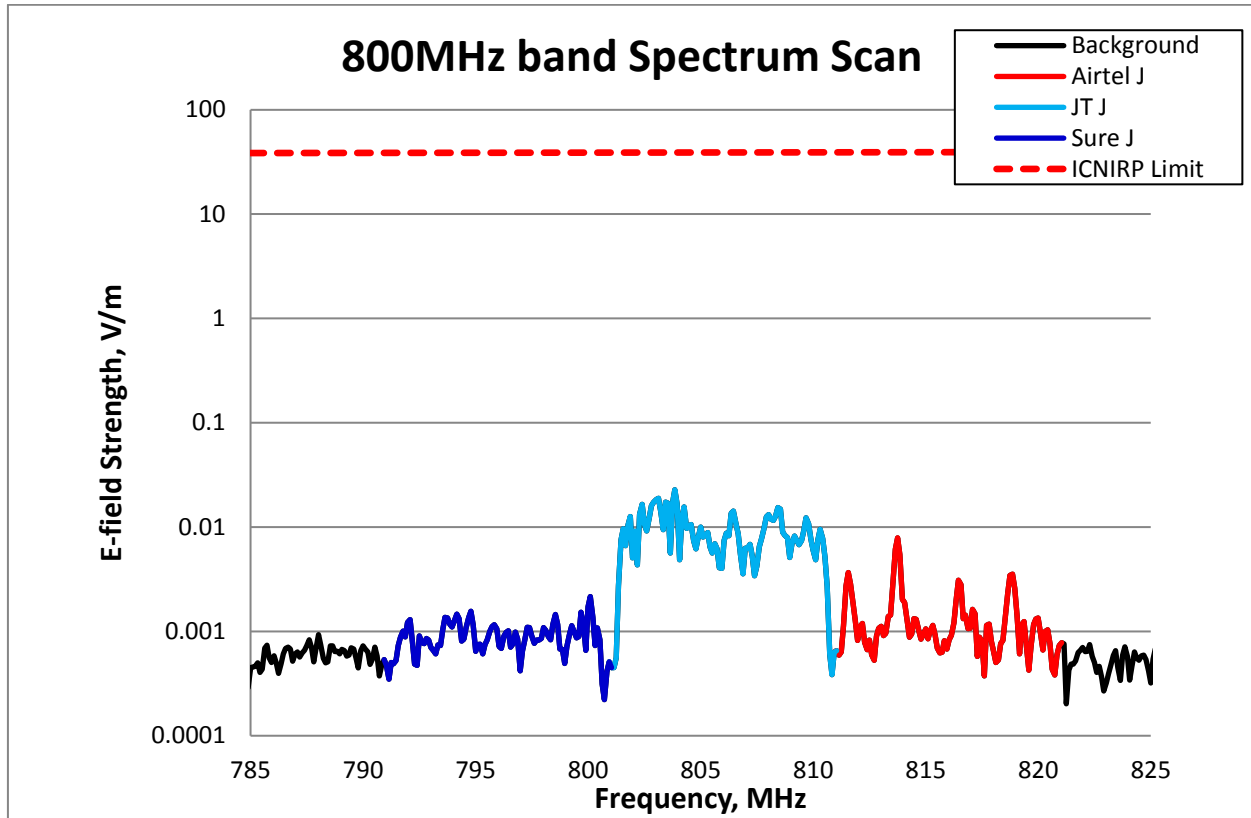


Figure 4 - 800MHz band Spectrum Scan

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 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
St Brelade Waitrose	Airtel J	800	0.007892	4928	8.38913E-08	1/ 11920190
	JT J		0.0228	1706	2.60595E-06	1/ 383738
	Sure J		0.002155	18047	2.38914E-08	1/ 41856092
total band EQ					2.71373E-06	1/ 368496

Table 2– 800MHz band Exposure Quotient at the St Brelade Waitrose

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

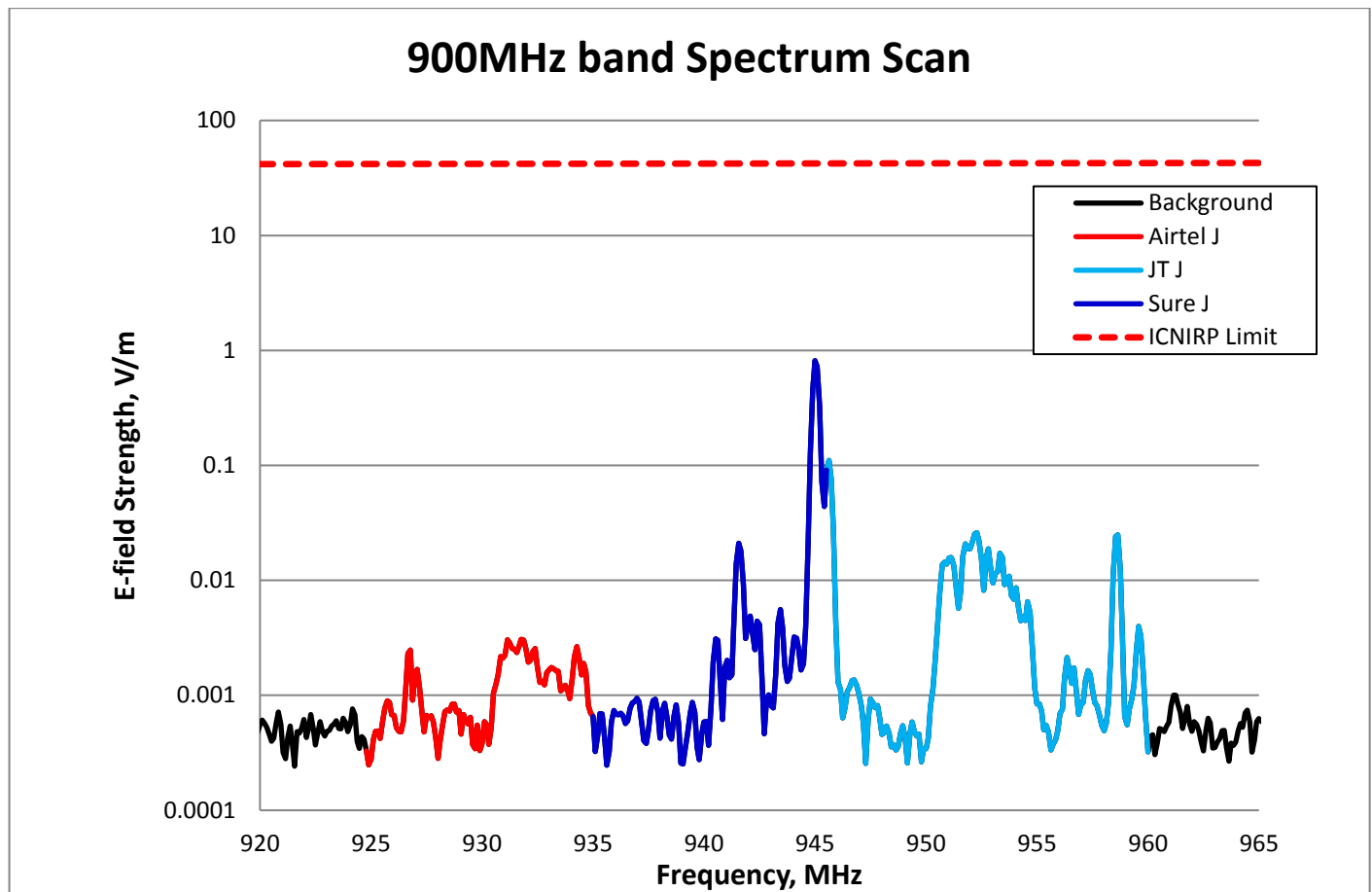


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.8141 V/m (Sure J), which is 51 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
St Brelade Waitrose	Airtel J	900	0.003068	13445	5.43676E-08	1/ 18393298
	JT J		0.1104	374	9.82288E-06	1/ 101803
	Sure J		0.8141	51	0.000414297	1/ 2414
total band EQ					0.000424174	1/ 2358

Table 3– 900MHz band Exposure Quotient at the St Brelade Waitrose

2.3 1800 MHz Band

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

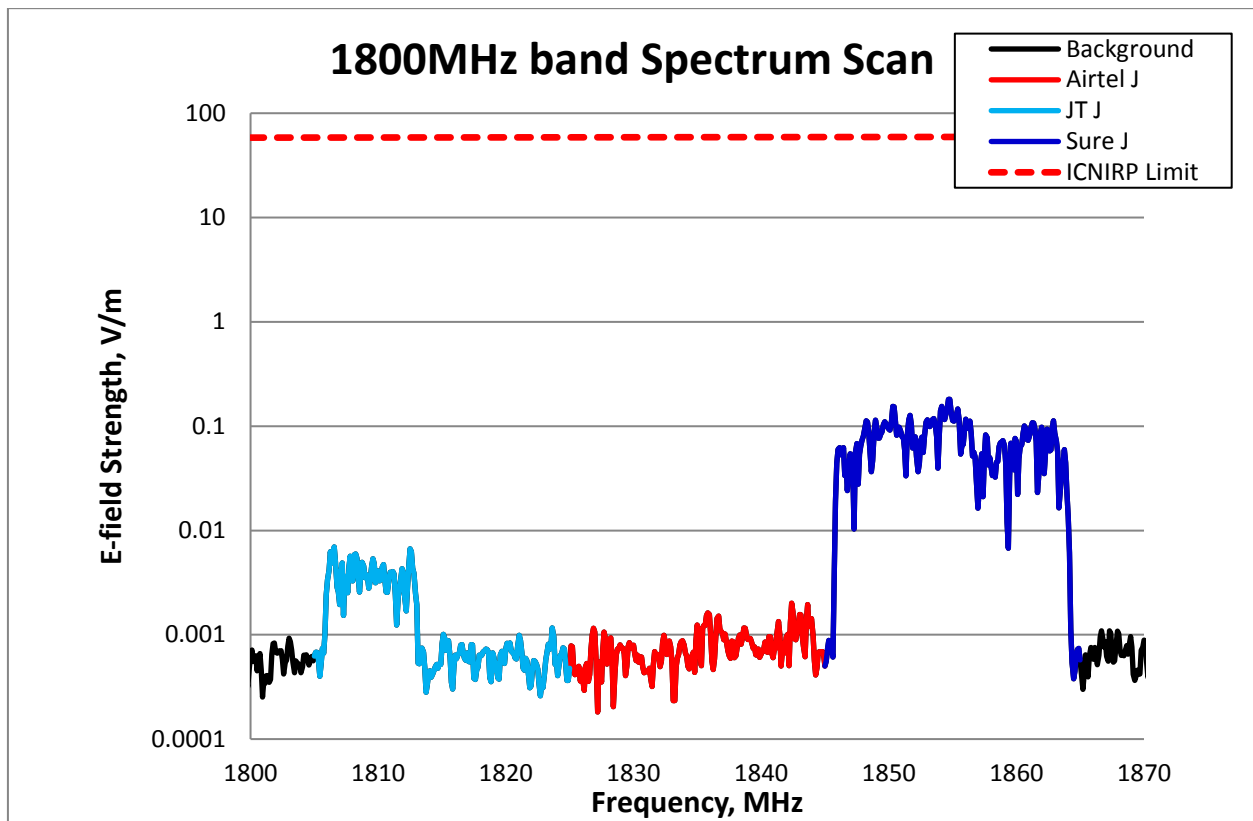


Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.1807 V/m (Sure J), which is 323 times smaller than the ICNIRP Reference level.

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
St Brelade Waitrose	Airtel J	1800	0.002011	29009	3.62604E-08	1/ 27578317
	JT J		0.006954	8389	3.11707E-07	1/ 3208142
	Sure J		0.1807	323	0.000321061	1/ 3115
total band EQ					0.000321409	1/ 3111

Table 4 – 1800MHz band Exposure Quotient at the St Brelade Waitrose

2.4 2100MHz Band

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

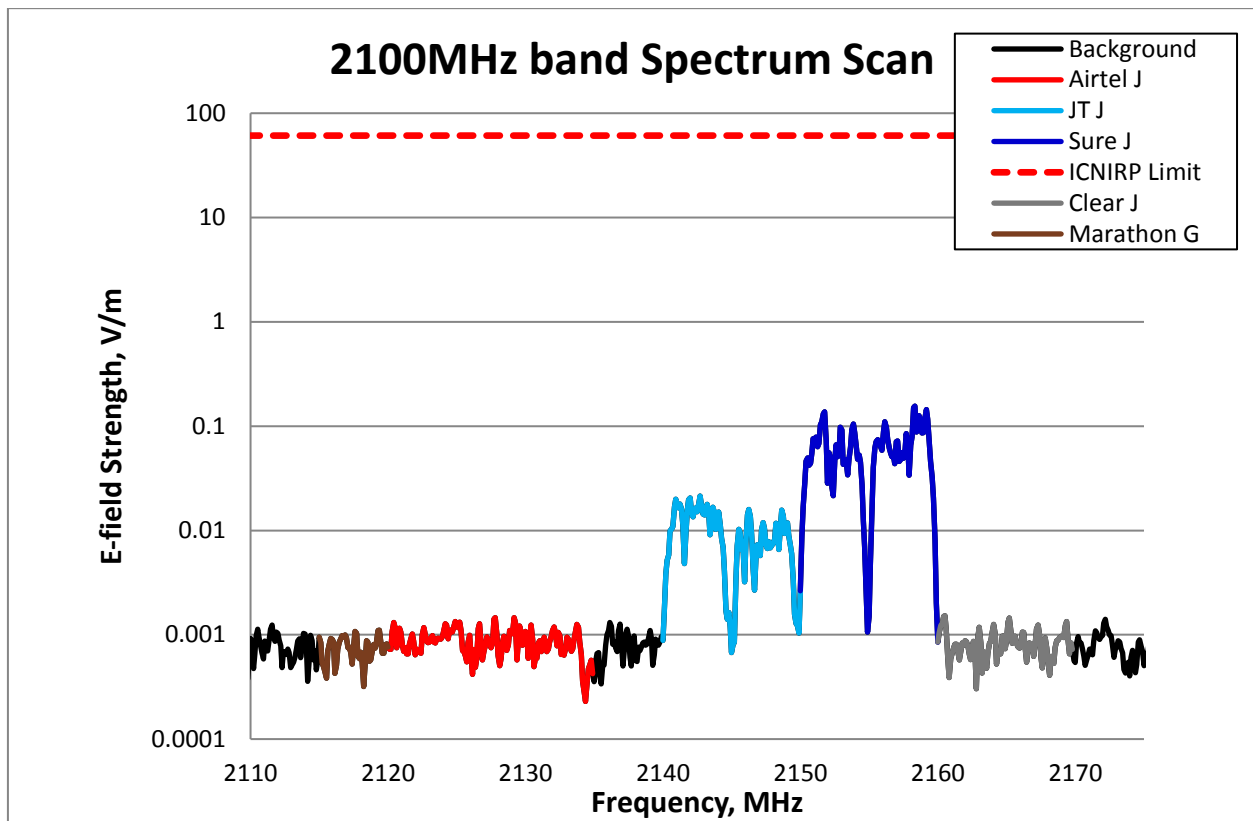


Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.1556 V/m (Sure J), which is 392 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
St Brelade Waitrose	Airtel J	2100	0.001459	41809	3.14423E-08	1/ 31804301
	Clear J		0.001522	40079	1.93795E-08	1/ 51600954
	JT J		0.02135	2857	3.16232E-06	1/ 316224
	Marathon J		0.001105	55204	7.88666E-09	1/ 126796348
	Sure J		0.1556	392	0.000129354	1/ 7731
total band EQ					0.000132575	1/ 7543

Table 5 – 2100MHz band Exposure Quotient at the St Brelade Waitrose

2.5 2600MHz band

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

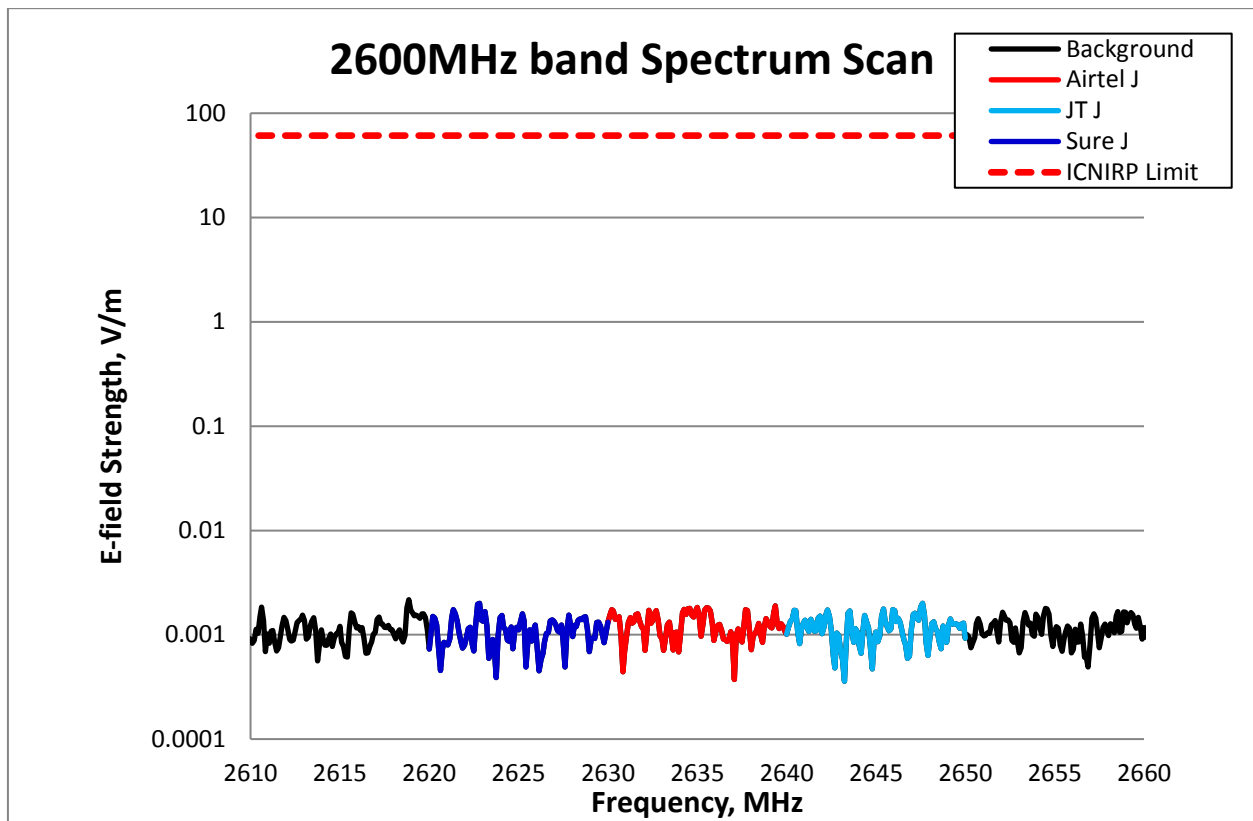


Figure 8 – 2600MHz band Spectrum Scan

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	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
St Brelade Waitrose	Airtel J	2600	0.001889	32292	4.31288E-08	1/ 23186338
	JT J		0.002	30500	3.85355E-08	1/ 25950119
	Sure J		0.002001	30485	3.37619E-08	1/ 29619224
total band EQ					1.15426E-07	1/ 8663546

Table 6 – 2600MHz band Exposure Quotient at the St Brelade Waitrose

End