Cellular Mast Emissions Survey: Route De La Haule Kiosk (Jersey)

DOCUMENT DETAILS

Document Name:	Cellular Mast Emissions Survey: (Jersey)	Route De La Haule Kiosk
Survey Date:	10/06/2017 at 16:49	
Report issue Date	21/07/2017	
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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 the Route De La Haule site located in Jersey.

The Route De La Haule 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
Route De La Haule	800	0.02488	Airtel J	1563	7.89138E-06	1/ 126721
	900	2.095	JT J	20	0.002974373	1/ 336
	1800	0.00773	Sure J	7547	1.13068E-06	1/ 884424
	2100	1.007	JT J	61	0.007832675	1/ 128
	2600	0.008499	Airtel J	7177	1.58006E-06	1/ 632888
				Total Site EQ	0.01081765	1/ 92

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/92 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	Route De La Haule Kiosk
Site address	Kiosk near public toilets. St Brelade, Jersey
Site Latitude	49.19395
Site Longitude	-2.16421

1.2 Site Description

Operators	JT J
Antenna types	Omni directional (microcell)
Approximate height	2m
Site type	Kiosk
Description	The antenna at Route De La Haule 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.

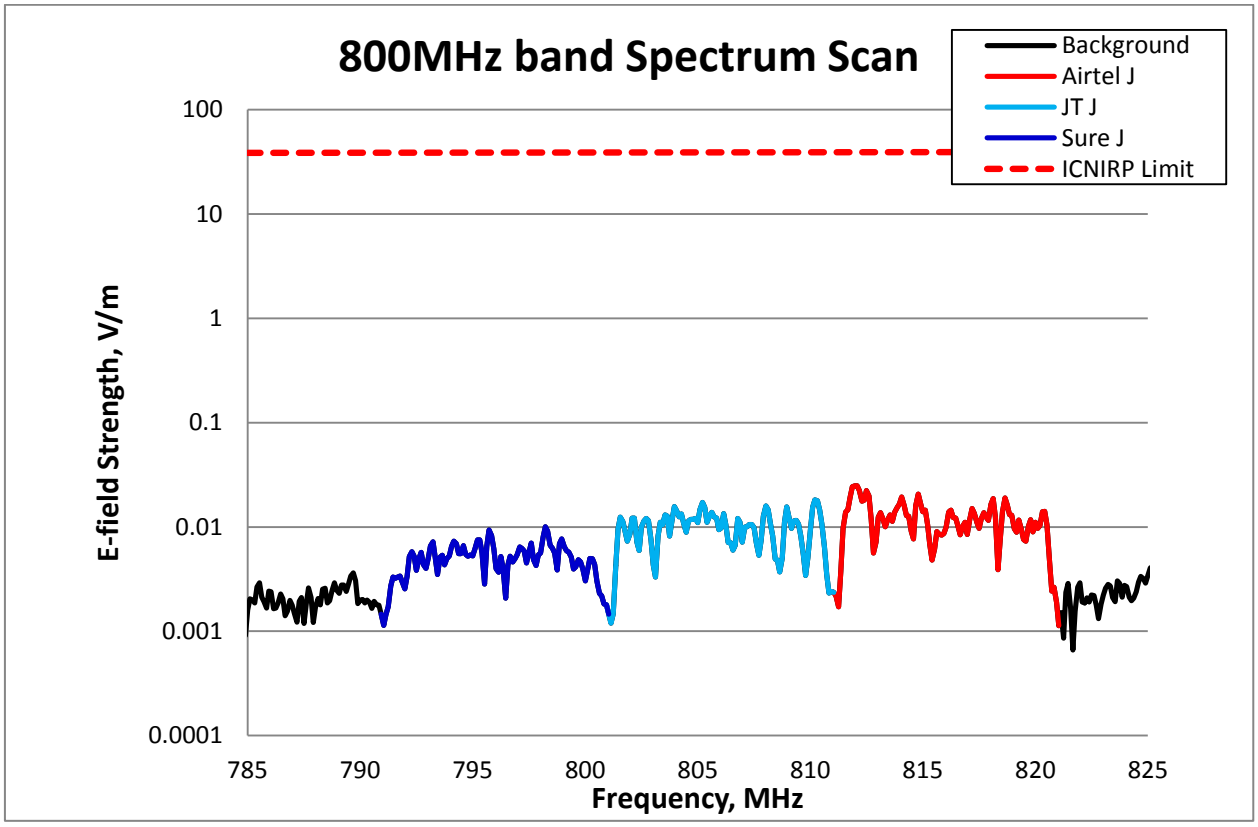


Figure 4 - 800MHz band Spectrum Scan

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 field level recorded across the band was higher than 0.02488 V/m (Airtel J), which is 1563 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
Route De La Haule	Airtel J	800	0.02488	1563	4.31406E-06	1/ 231800
	JT J		0.01822	2135	2.84941E-06	1/ 350949
	Sure J		0.01002	3881	7.27904E-07	1/ 1373808
				total band EQ	7.89138E-06	1/ 126721

Table 2– 800MHz band Exposure Quotient at Route De La Haule Kiosk

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

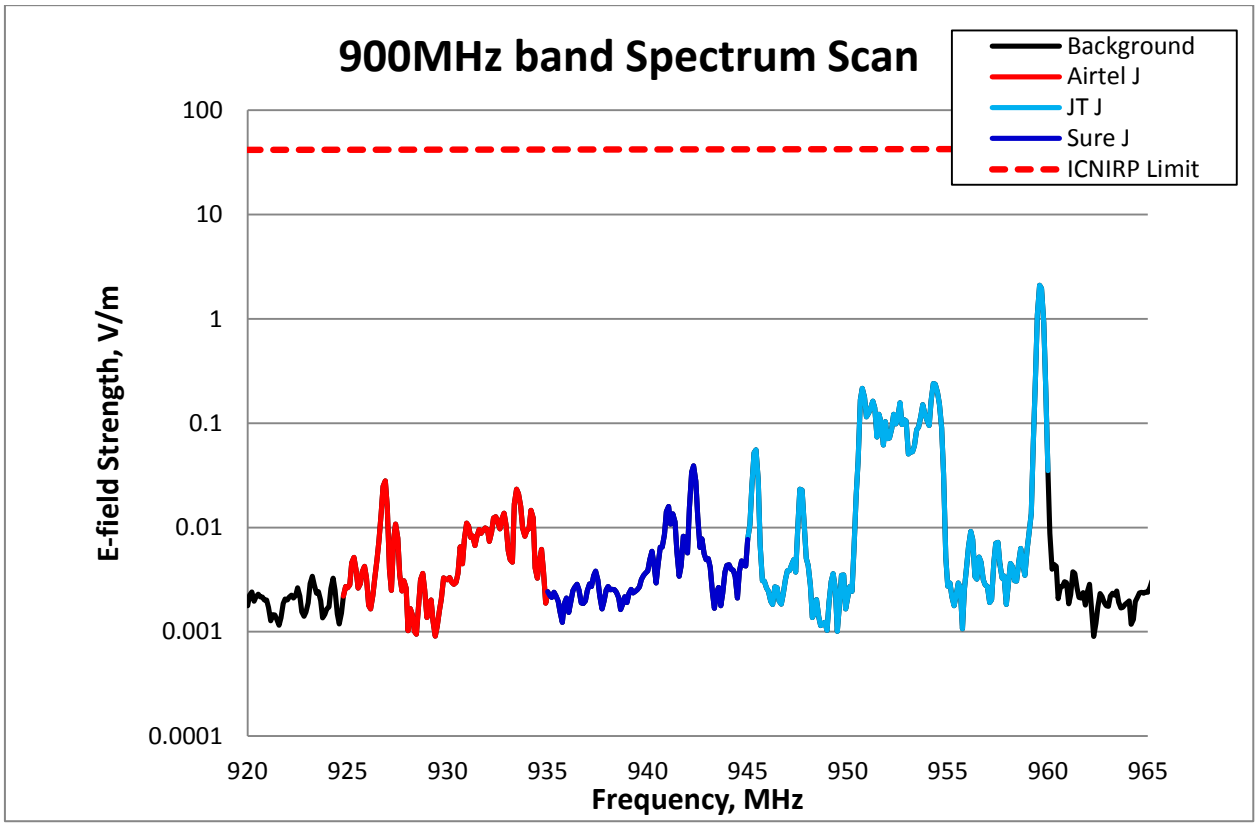


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 2.095 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
Route De La Haule	Airtel J	900	0.02801	1473	1.90924E-06	1/ 523768
	JT J		2.095	20	0.002970857	1/ 337
	Sure J		0.0391	1055	1.60634E-06	1/ 622534
				total band EQ	0.002974373	1/ 336

Table 3– 900MHz band Exposure Quotient at Route De La Haule Kiosk

2.3 1800 MHz Band

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

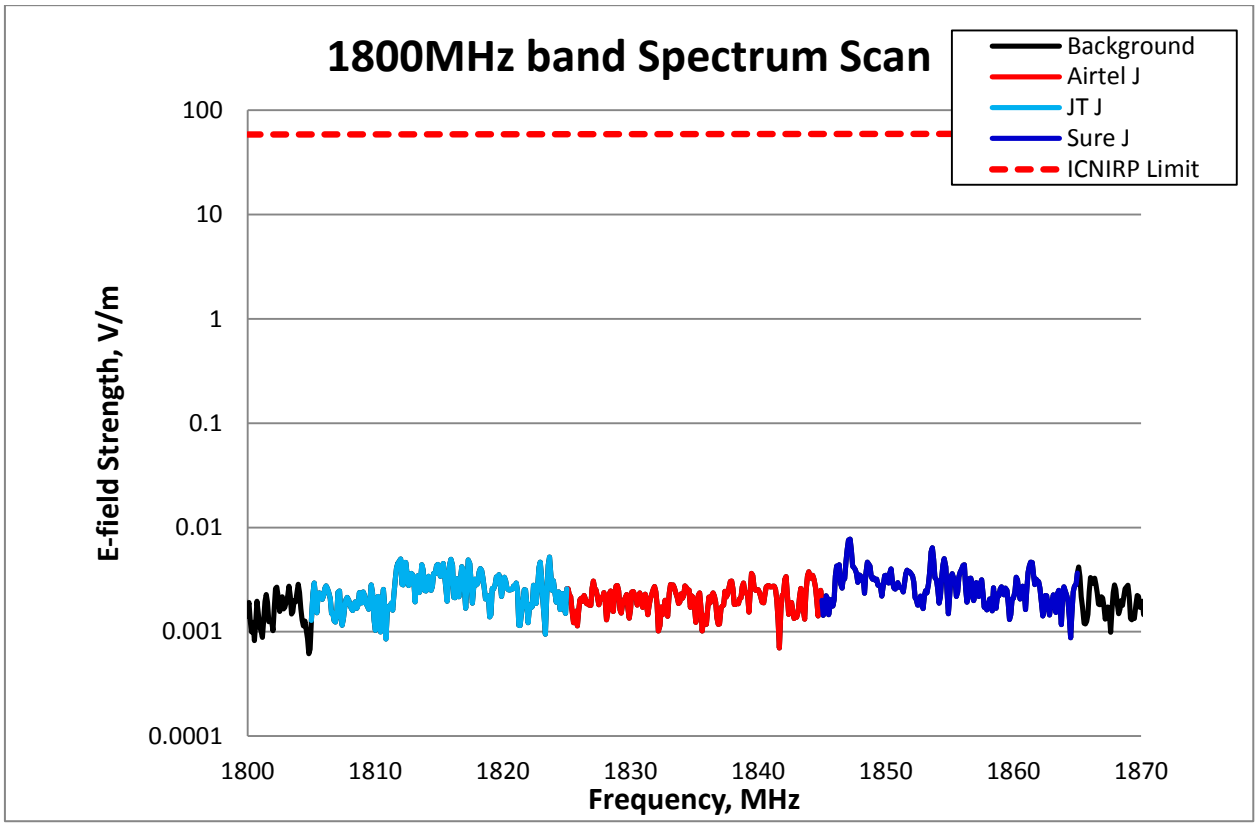


Figure 6 - 1800MHz Spectrum Scan

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

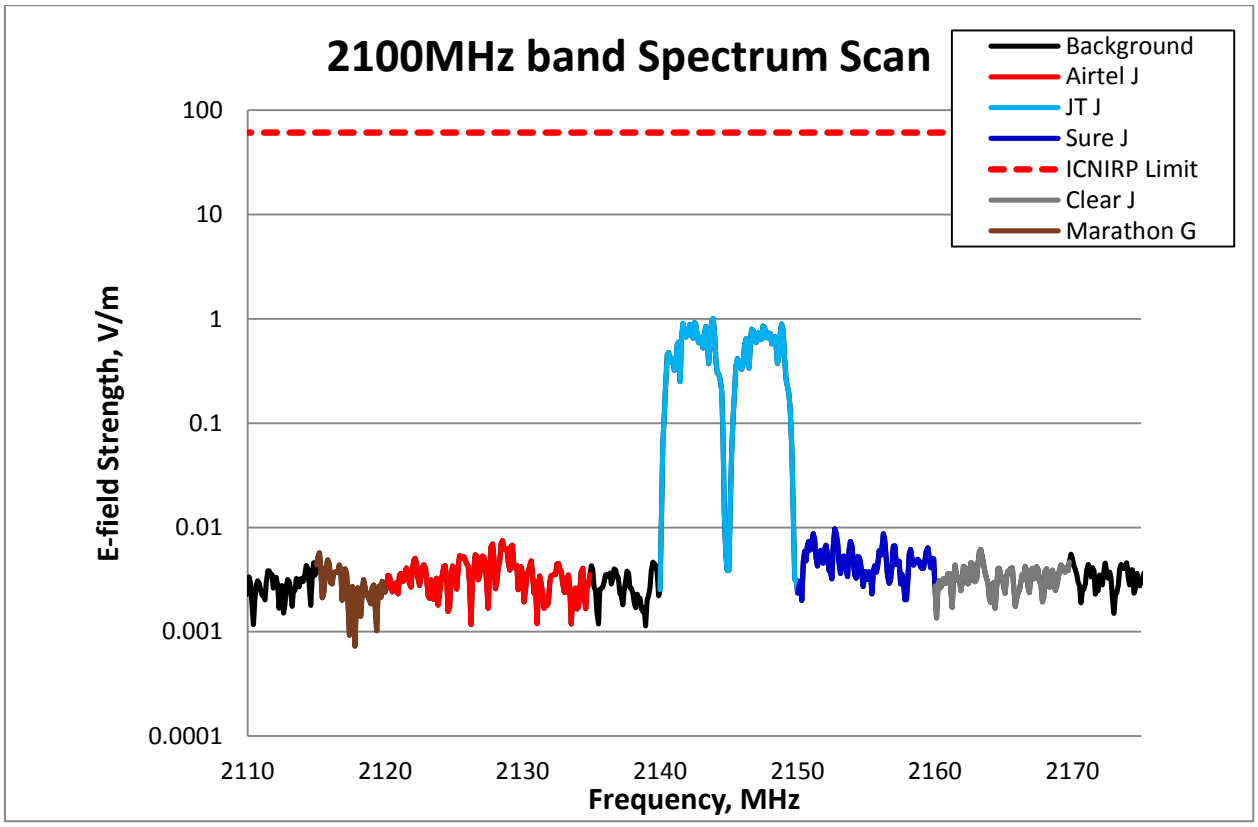
The Exposure Quotient results for the 1800MHz band are shown below:

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
Route De La Haule	Airtel J	1800	0.003757	15527	2.50685E-07	1/ 3989066
	JT J		0.005195	11229	3.94867E-07	1/ 2532499
	Sure J		0.00773	7547	4.85128E-07	1/ 2061313
				total band EQ	1.13068E-06	1/ 884424

Table 4 – 1800MHz band Exposure Quotient at Route De La Haule 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 1.007 V/m (JT J), which is 61 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
Route De La Haule	Airtel J	2100	0.007439	8200	5.43544E-07	1/ 1839776
	Clear J		0.006152	9915	3.01005E-07	1/ 3322203
	JT J		1.007	61	0.007831029	1/ 128
	Marathon J		0.005697	10707	1.2474E-07	1/ 8016659
	Sure J		0.009721	6275	6.76987E-07	1/ 1477134
				total band EQ	0.007832675	1/ 128

Table 5 – 2100MHz band Exposure Quotient at Route De La Haule Kiosk

2.5 2600MHz band

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

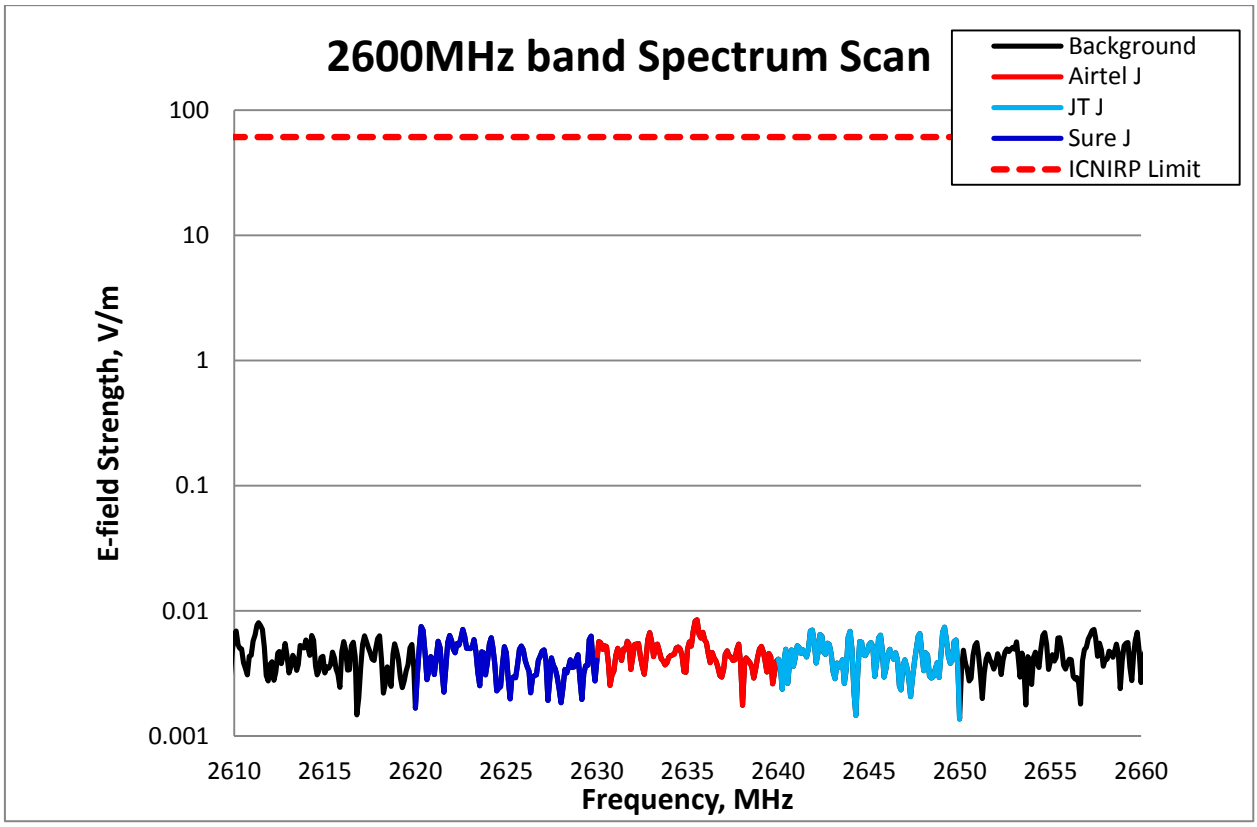


Figure 7 – 2600MHz band Spectrum Scan

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
Route De La Haule	Airtel J	2600	0.008499	7177	5.70303E-07	1/ 1753454
	JT J		0.007429	8211	5.38656E-07	1/ 1856472
	Sure J		0.007509	8124	4.71101E-07	1/ 2122689
				total band EQ	1.58006E-06	1/ 632888

Table 6 – 2600MHz band Exposure Quotient at Route De La Haule Kiosk

End