

Cellular Mast Emissions Survey: Portelet Inn (Jersey)



DOCUMENT DETAILS

Document Name:	Cellular Mast Emissions Survey:	Portelet Inn (Jersey)
Survey Date:	20/07/2017 at 16:45	
Report issue Date	07/11/2017 rev B	
Survey Engineer:	Louise Sands	
Report Compiled by:	Lauren Medhurst	
Checked and Approved by	Bachir Belloul	
Authorised for Distribution	Ravi Mondair	

This document and any information contained therein are intended for the use of employees and customers of iWireless Solutions Limited only. No part of this document may be reproduced or transmitted to a third party in any form or means without the prior written consent of iWireless Solutions Limited

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 Portelet Inn site located in Jersey.

The Portelet Inn 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
Portelet Inn	800	0.1427	JT J	273	8.22315E-05	1/ 12161
	900	0.4357	JT J	95	0.000157237	1/ 6360
	1800	0.006075	Sure J	9603	2.56139E-07	1/ 3904128
	2100	0.005585	Sure J	10922	2.61197E-07	1/ 3828522
	2600	0.002092	Sure J	29159	1.17857E-07	1/ 8484826
Total Site EQ					0.000240104	1/ 4165

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/4165 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	Portelet Inn
Site address	La Route De Noirmont, Jersey
Site Latitude	49.17288
Site Longitude	-2.17383

1.2 Site Description

Operators	JT J
Antenna types	Directional
Approximate height	8m
Site type	Rooftop
Description	The antennas at the Portelet Inn 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.

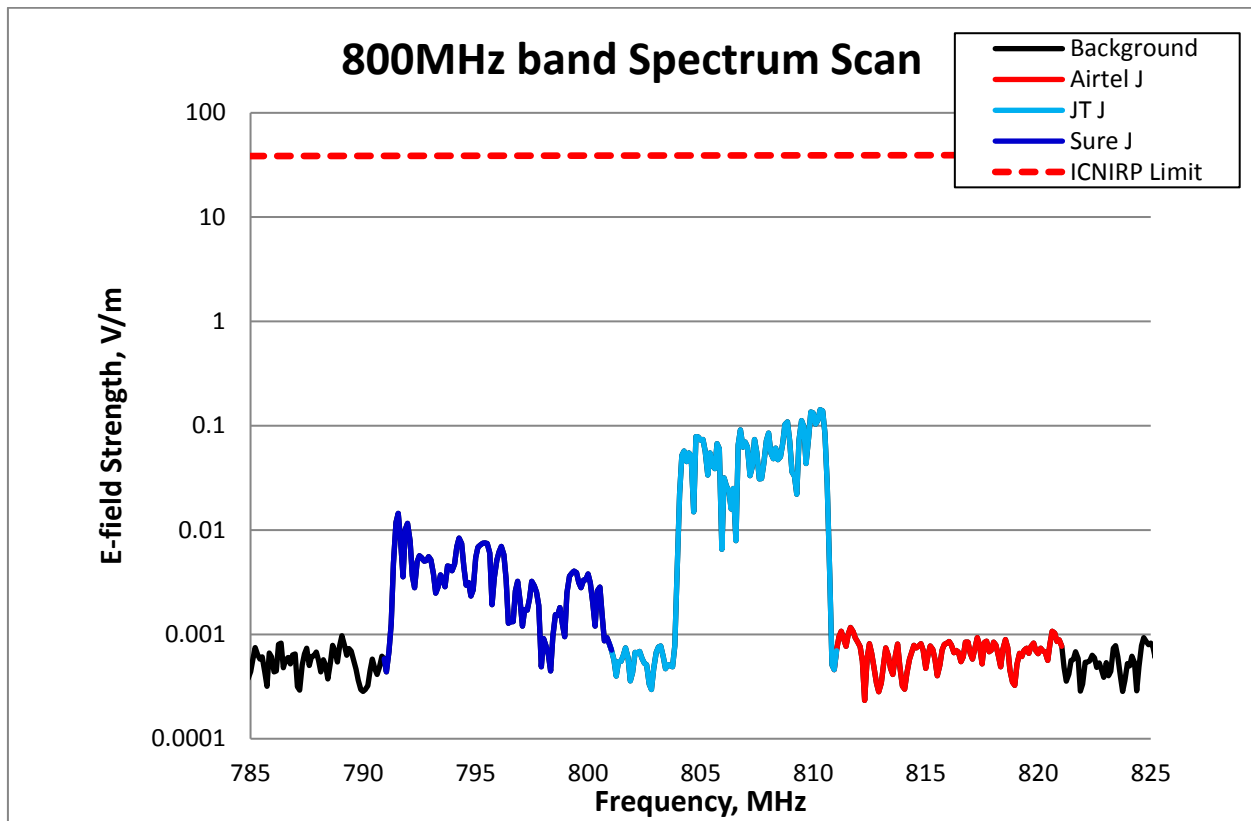


Figure 4 - 800MHz band Spectrum Scan

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 0.1427 V/m (JT J), which is 273 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
Portelet Inn	Airtel J	800	0.001164	33411	1.33204E-08	1/ 75072717
	JT J		0.1427	273	8.16583E-05	1/ 12246
	Sure J		0.01449	2684	5.59813E-07	1/ 1786310
total band EQ					8.22315E-05	1/ 12161

Table 2– 800MHz band Exposure Quotient at the Portelet Inn

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

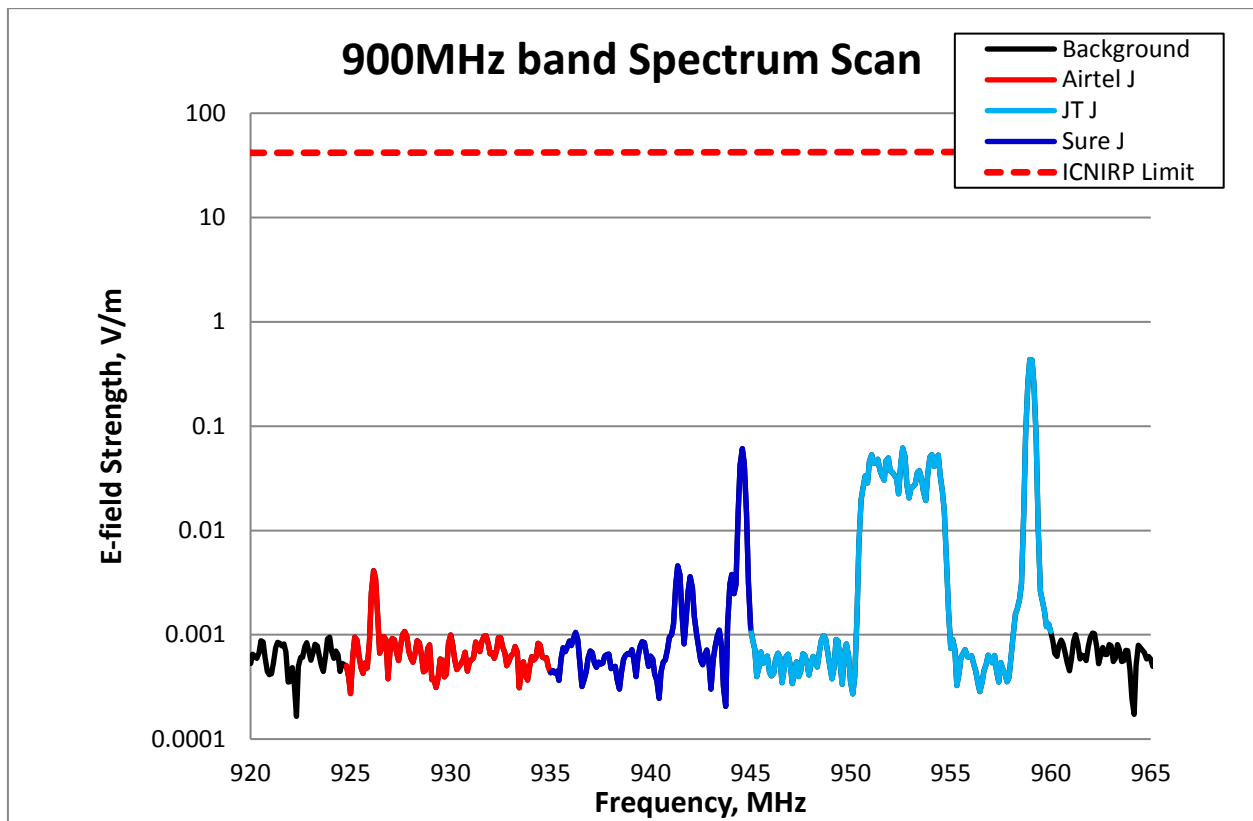


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.4357 V/m (JT J), which is 95 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
Portelet Inn	Airtel J	900	0.00411	10036	2.16381E-08	1/ 46214761
	JT J		0.4357	95	0.000155056	1/ 6449
	Sure J		0.06097	677	2.15983E-06	1/ 463000
total band EQ					0.000157237	1/ 6360

Table 3– 900MHz band Exposure Quotient at the Portelet Inn

2.3 1800 MHz Band

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

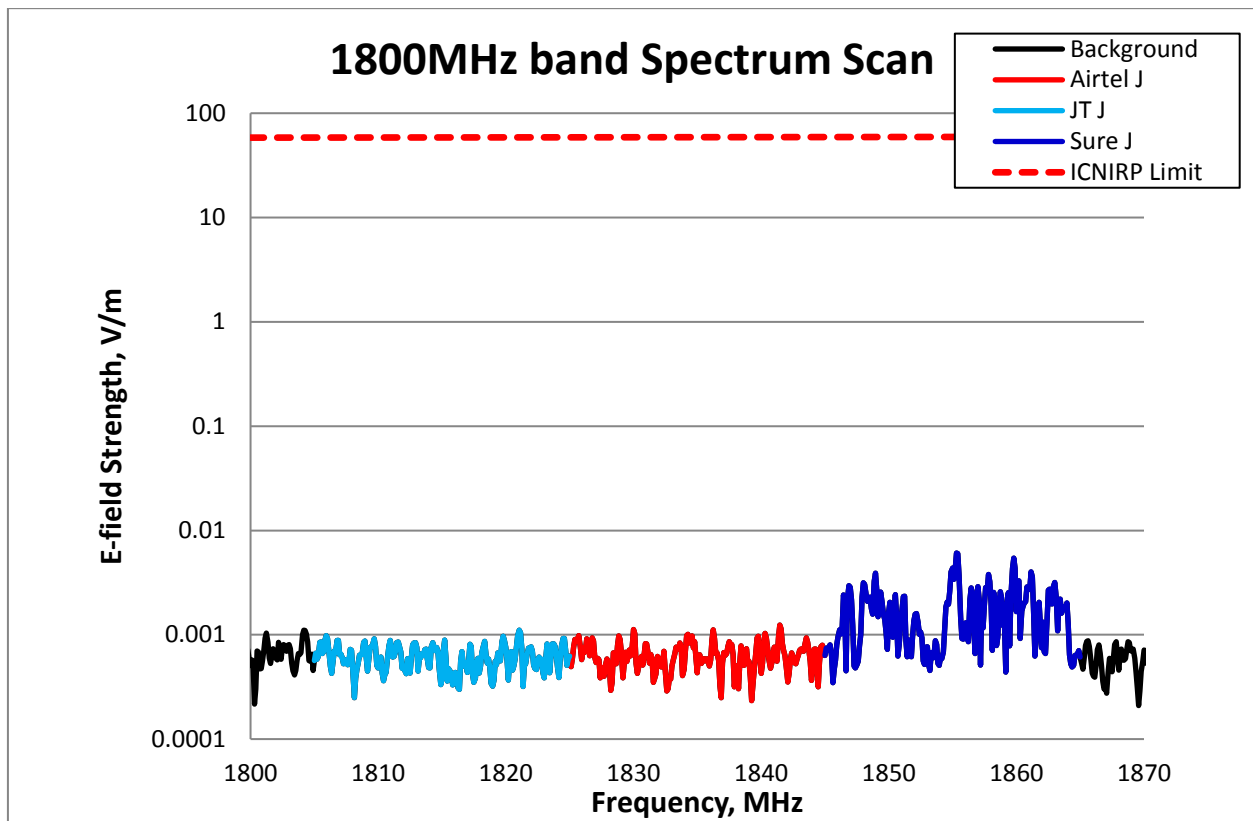


Figure 6 - 1800MHz Spectrum Scan

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
Portelet Inn	Airtel J	1800	0.001238	47121	2.32601E-08	1/ 42992027
	JT J		0.001107	52698	2.12055E-08	1/ 47157672
	Sure J		0.006075	9603	2.11674E-07	1/ 4724256
total band EQ					2.56139E-07	1/ 3904128

Table 4 – 1800MHz band Exposure Quotient at the Portelet Inn

2.4 2100MHz Band

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

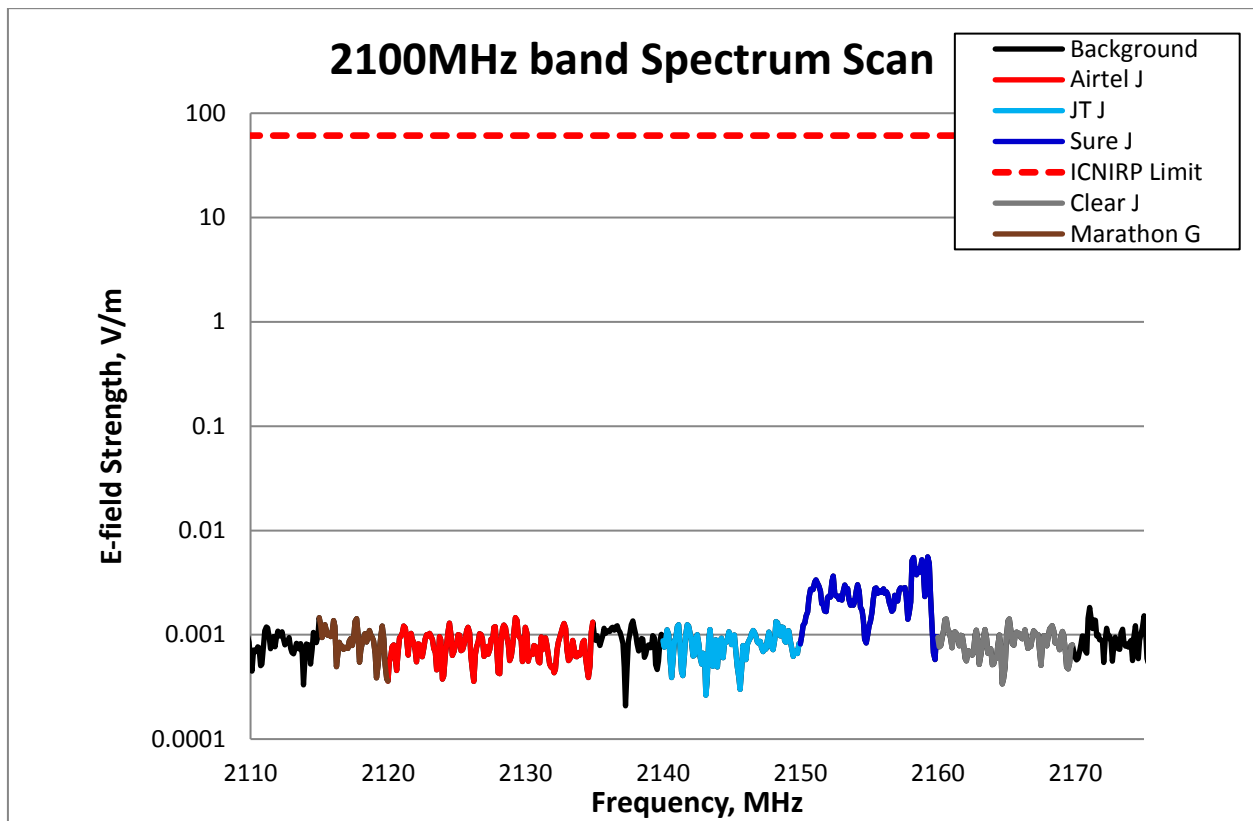


Figure 7 – 2100MHz band Spectrum Scan

Marginal activity was recorded in the 2100MHz as no operator appears to transmit in this band at this site.

The Exposure Quotient results for the 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
Portelet Inn	Airtel J	2100	0.001463	41695	2.71462E-08	1/ 36837558
	Clear J		0.001422	42897	2.05226E-08	1/ 48726769
	JT J		0.001338	45590	1.90463E-08	1/ 52503640
	Marathon J		0.001459	41809	1.14526E-08	1/ 87316405
	Sure J		0.005585	10922	1.8303E-07	1/ 5463595
total band EQ					2.61197E-07	1/ 3828522

Table 5 – 2100MHz band Exposure Quotient at the Portelet Inn

2.5 2600MHz band

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

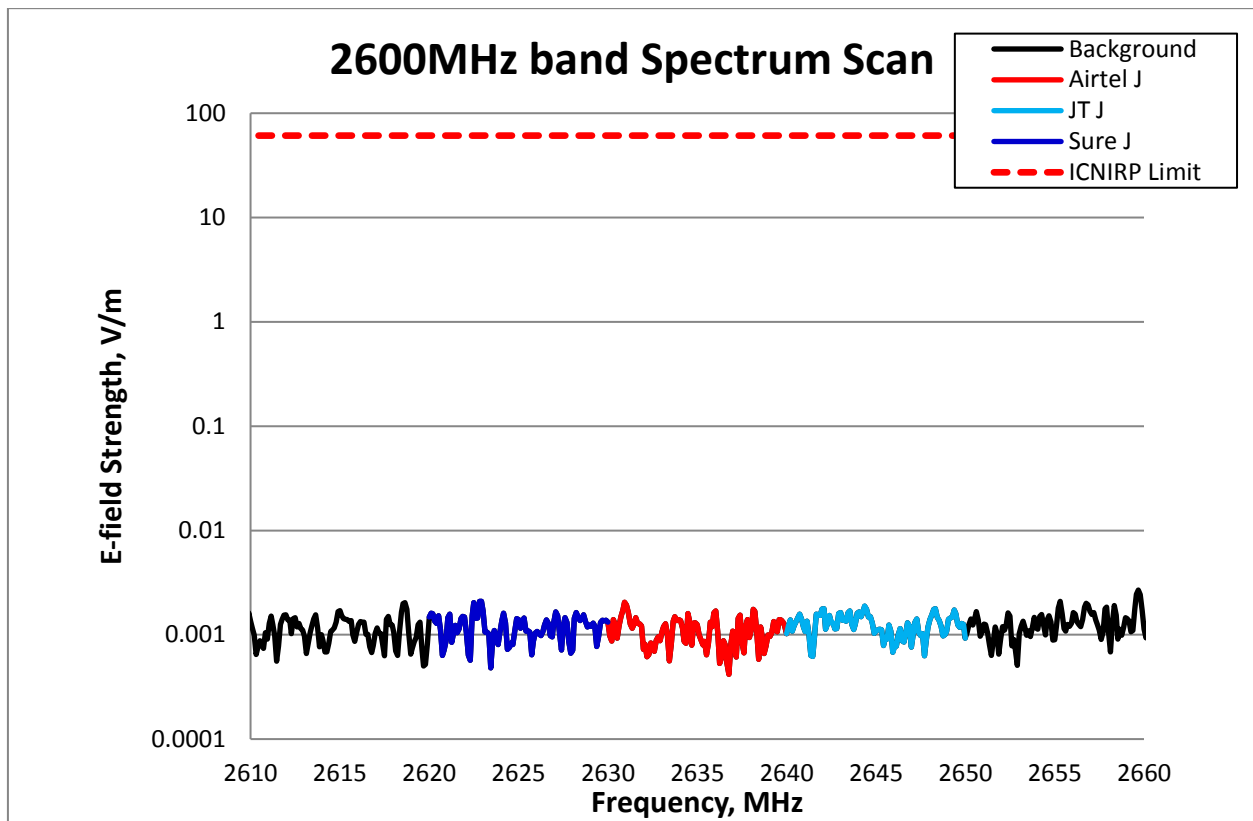


Figure 8 – 2600MHz band Spectrum Scan

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 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
Portelet Inn	Airtel J	2600	0.002053	29713	3.4408E-08	1/ 29063020
	JT J		0.001887	32326	4.32468E-08	1/ 23123098
	Sure J		0.002092	29159	4.02027E-08	1/ 24873974
total band EQ					1.17857E-07	1/ 8484826

Table 6 – 2600MHz band Exposure Quotient at the Portelet Inn

End