

Cellular Mast Emissions Survey: Atlantic Hotel (Jersey)



DOCUMENT DETAILS

Document Name:	Cellular Mast Emissions Survey:	Atlantic Hotel (Jersey)
Survey Date:	13/08/2017 at 07:11	
Report issue Date	31/08/2017	
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 Atlantic Hotel site located in Jersey.

The Atlantic Hotel 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
Atlantic Hotel	800	0.02094	JT J	1857	1.56094E-06	1/ 640641
	900	0.2487	JT J	166	5.03227E-05	1/ 19872
	1800	0.002537	Sure J	22994	1.02345E-07	1/ 9770841
	2100	0.002096	JT J	29103	1.24375E-07	1/ 8040217
	2600	0.002466	Airtel J	24736	1.25798E-07	1/ 7949246
Total Site EQ					5.22362E-05	1/ 19144

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/19144 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	Atlantic Hotel
Site address	Le Mont Du La Pulente, St Brelade, Jersey
Site Latitude	N 49.1887
Site Longitude	W 02.22408

1.2 Site Description

Operators	JT J
Antenna types	Omni directional
Approximate height	15m
Site type	Rooftop
Description	The antennas at the Atlantic 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.

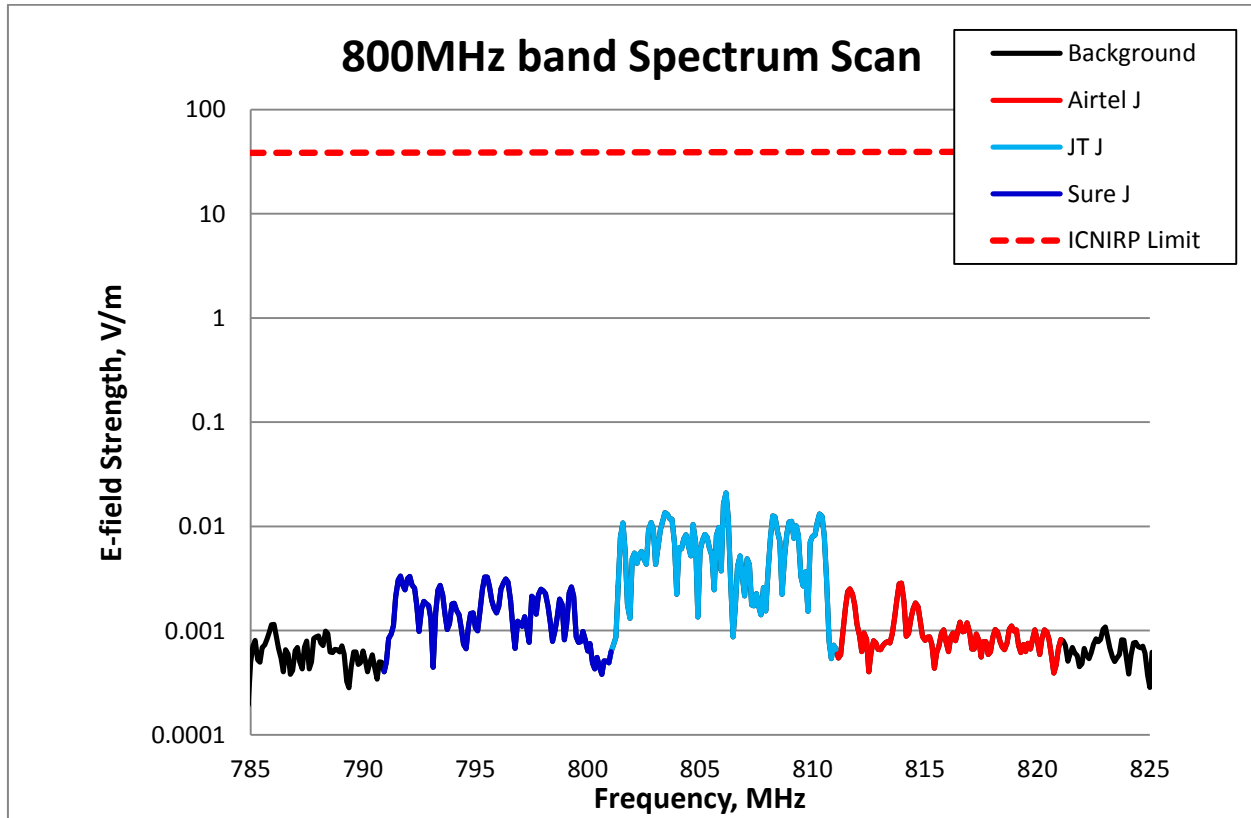


Figure 4 - 800MHz band Spectrum Scan

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 0.02094 V/m (JT J), which is 1857 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
Atlantic Hotel	Airtel J	800	0.002863	13584	3.09847E-08	1/ 32273963
	JT J		0.02094	1857	1.44692E-06	1/ 691124
	Sure J		0.00334	11644	8.30317E-08	1/ 12043598
total band EQ					1.56094E-06	1/ 640641

Table 2– 800MHz band Exposure Quotient at the Atlantic Hotel

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

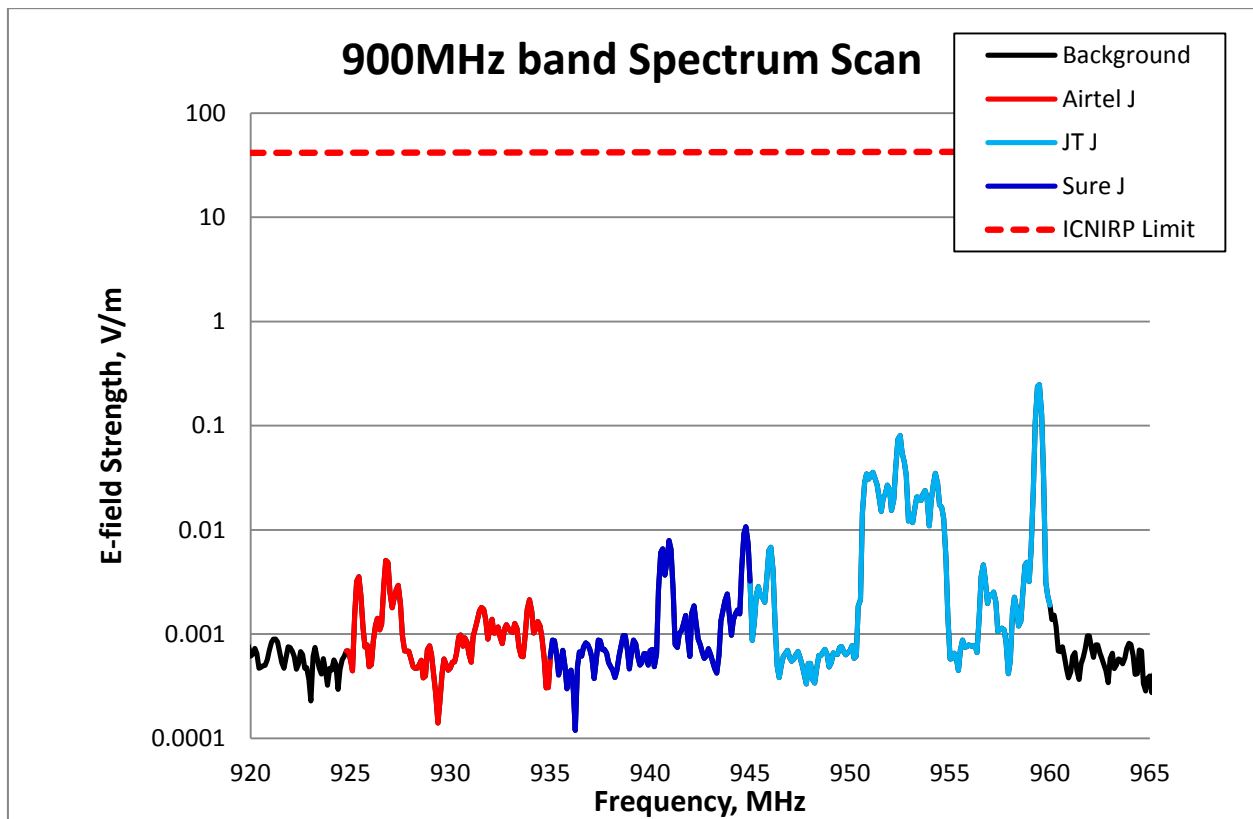


Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.2487 V/m (JT J), which is 166 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
Atlantic Hotel	Airtel J	900	0.005092	8101	5.36474E-08	1/ 18640223
	JT J		0.2487	166	5.01104E-05	1/ 19956
	Sure J		0.01076	3834	1.58664E-07	1/ 6302626
total band EQ					5.03227E-05	1/ 19872

Table 3– 900MHz band Exposure Quotient at the Atlantic Hotel

2.3 1800 MHz Band

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

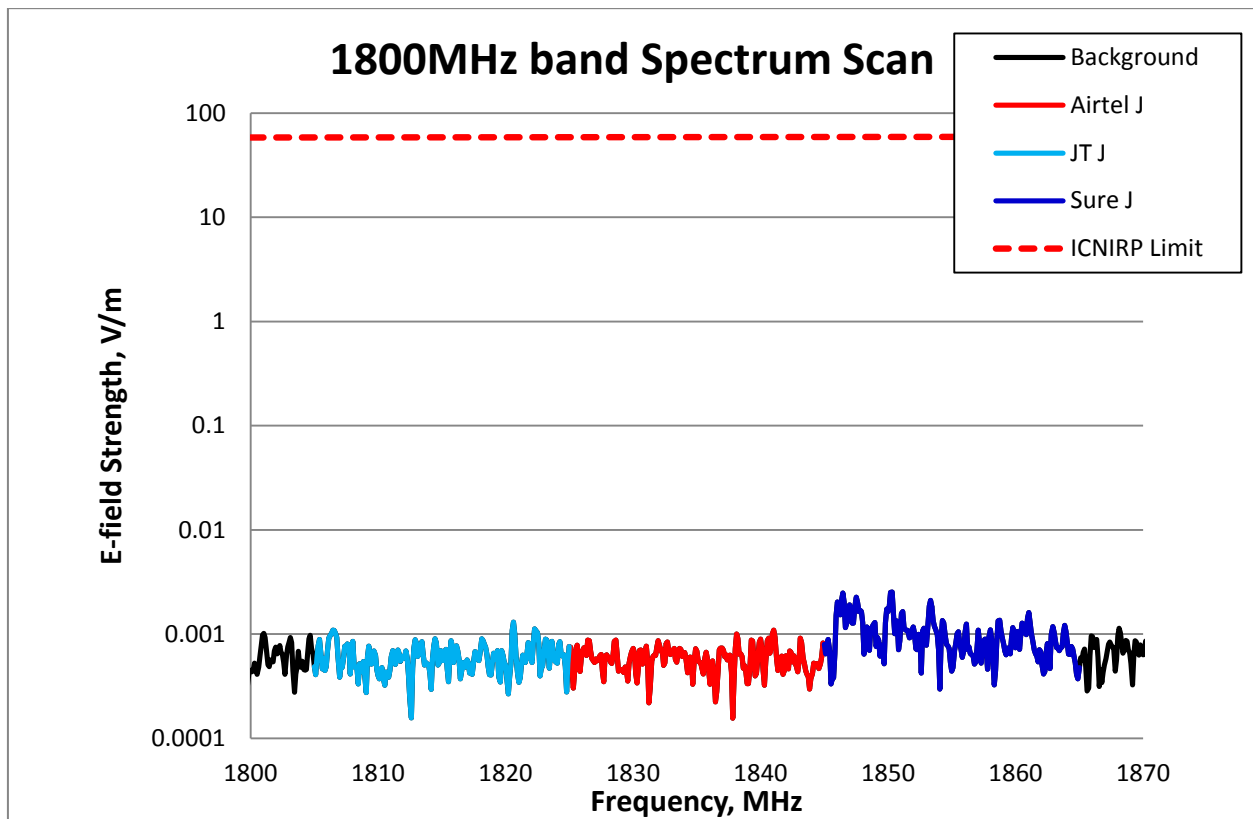


Figure 6 - 1800MHz Spectrum Scan

No 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	Operator	Band [MHz]	Max E-field Strength [V/m]	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Atlantic Hotel	Airtel J	1800	0.001092	53422	1.93158E-08	1/ 51771180
	JT J		0.0013	44874	2.11457E-08	1/ 47290873
	Sure J		0.002537	22994	6.18838E-08	1/ 16159308
total band EQ					1.02345E-07	1/ 9770841

Table 4 – 1800MHz band Exposure Quotient at the Atlantic Hotel

2.4 2100MHz Band

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

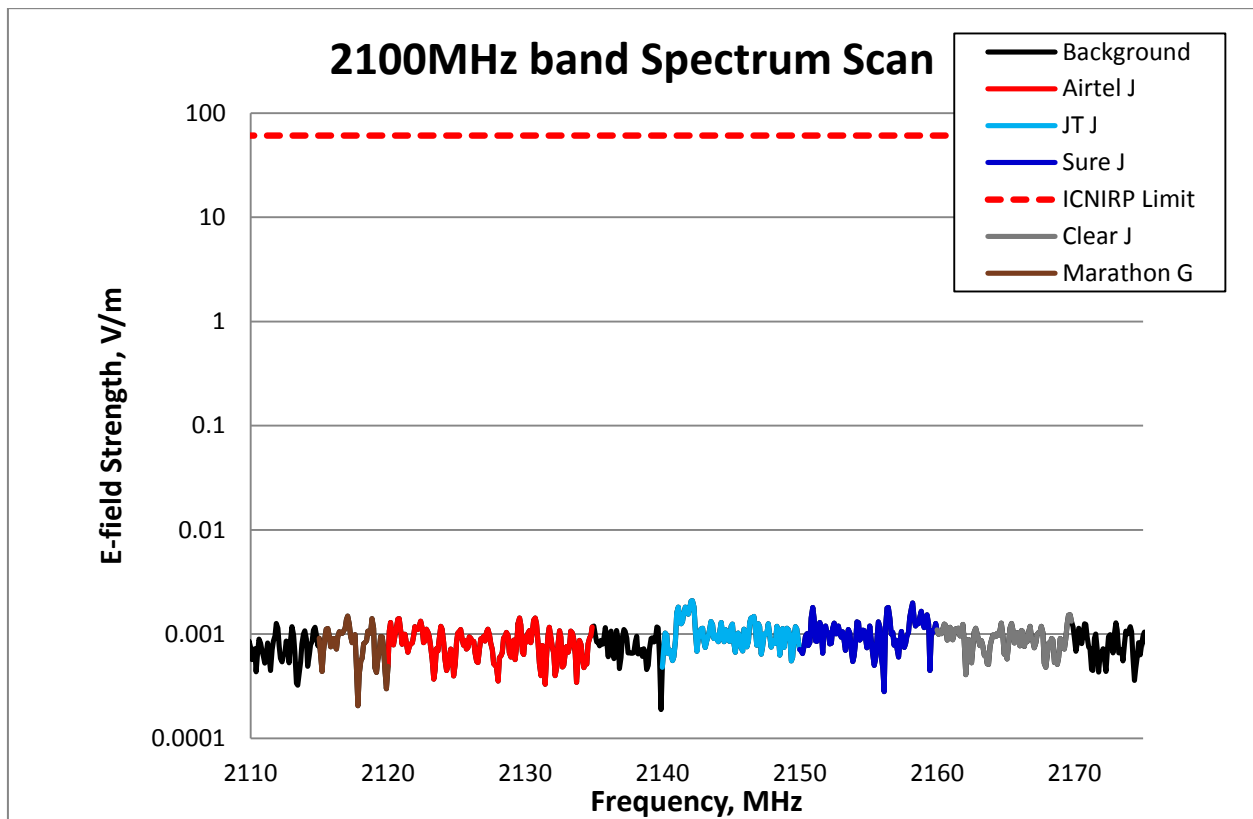


Figure 7 – 2100MHz band Spectrum Scan

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

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
Atlantic Hotel	Airtel J	2100	0.001433	42568	2.92664E-08	1/ 34168864
	Clear J		0.001538	39662	2.27763E-08	1/ 43905253
	JT J		0.002096	29103	3.15026E-08	1/ 31743413
	Marathon J		0.001485	41077	1.04429E-08	1/ 95759076
	Sure J		0.001991	30638	3.03865E-08	1/ 32909300
total band EQ					1.24375E-07	1/ 8040217

Table 5 – 2100MHz band Exposure Quotient at the Atlantic Hotel

2.5 2600MHz band

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

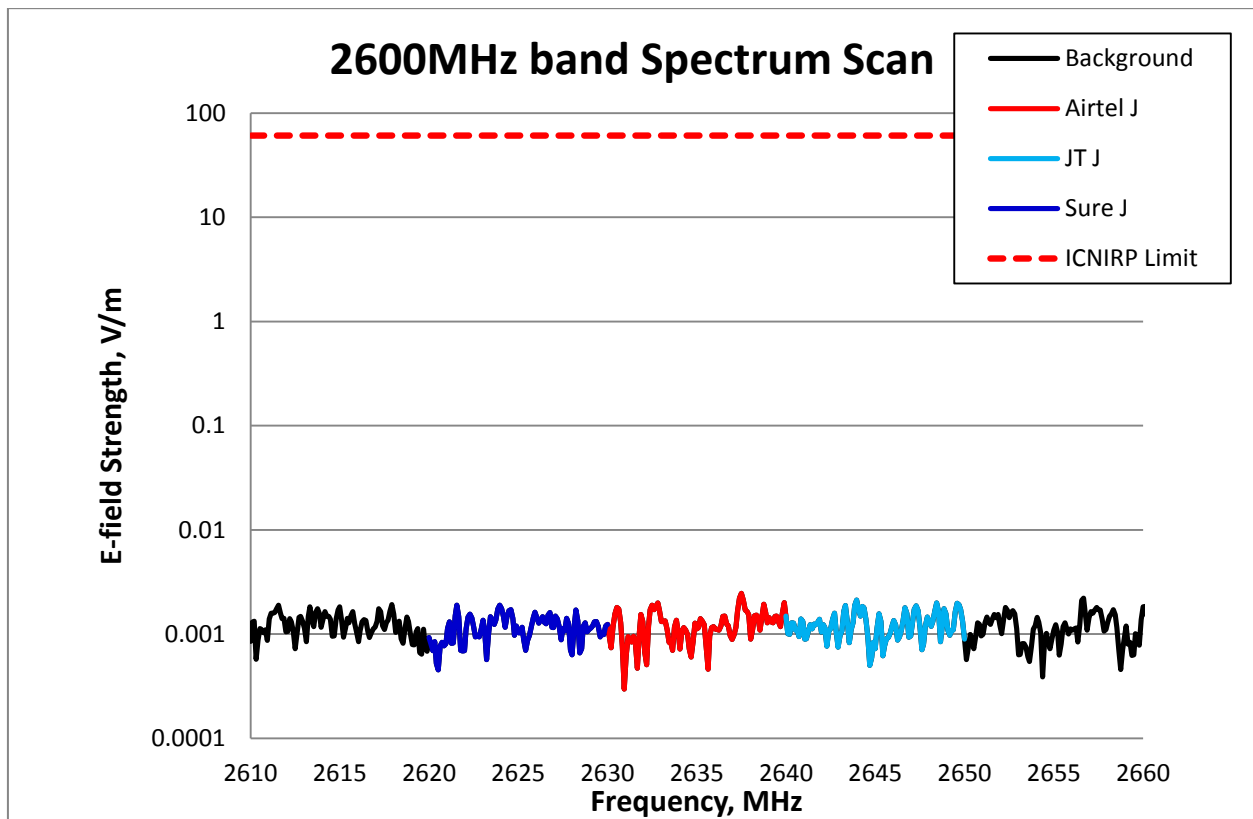


Figure 8 – 2600MHz band Spectrum Scan

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
Atlantic Hotel	Airtel J	2600	0.002466	24736	4.42728E-08	1/ 22587224
	JT J		0.002121	28760	4.38322E-08	1/ 22814297
	Sure J		0.001898	32139	3.76931E-08	1/ 26530044
	total band EQ			1.25798E-07	1/ 7949246	

Table 6 – 2600MHz band Exposure Quotient at the Atlantic Hotel

End