Cellular Mast Emissions Survey:
La Moye (Jersey)

DOCUMENT DETAILS

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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 La Moye site located in Jersey.

The La Moye site was used by two operators at the time of the survey: Sure J and 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
La Moye	800	0.2107	Sure J	185	0.000115171	1/ 8683
	900	0.5573	Sure J	74	0.000500801	1/ 1997
	1800	0.2372	JT J	246	0.000190438	1/ 5251
	2100	0.8155	JT J	75	0.003210929	1/ 311
	2600	0.002115	Airtel J	28842	1.20365E-07	1/ 8308031
				Total Site EQ	0.004017459	1/ 249

Table 1 - Cumulative Exposure Quotient

The results show that the cumulative EQ was measured at 1/249 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	La Moye
Site address	La Rue Baal, St Brelade, Jersey
Site Latitude	N 49.17694
Site Longitude	W 02.22247

1.2 Site Description

Operators	Sure J, JT J
Antenna types	Omni directional and directional
Approximate height	12m
Site type	Building Wall Mount
Description	The antennas at La Moye are located on the side of the main building, out of reach of the public

1.3 Site Photo

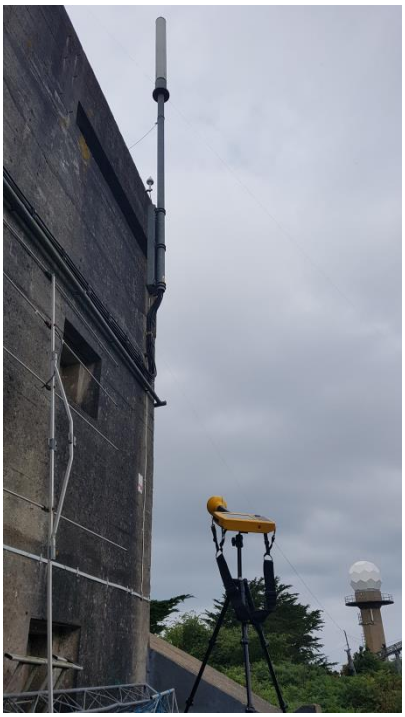

Figure 2 – Peak Measurement Location

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.

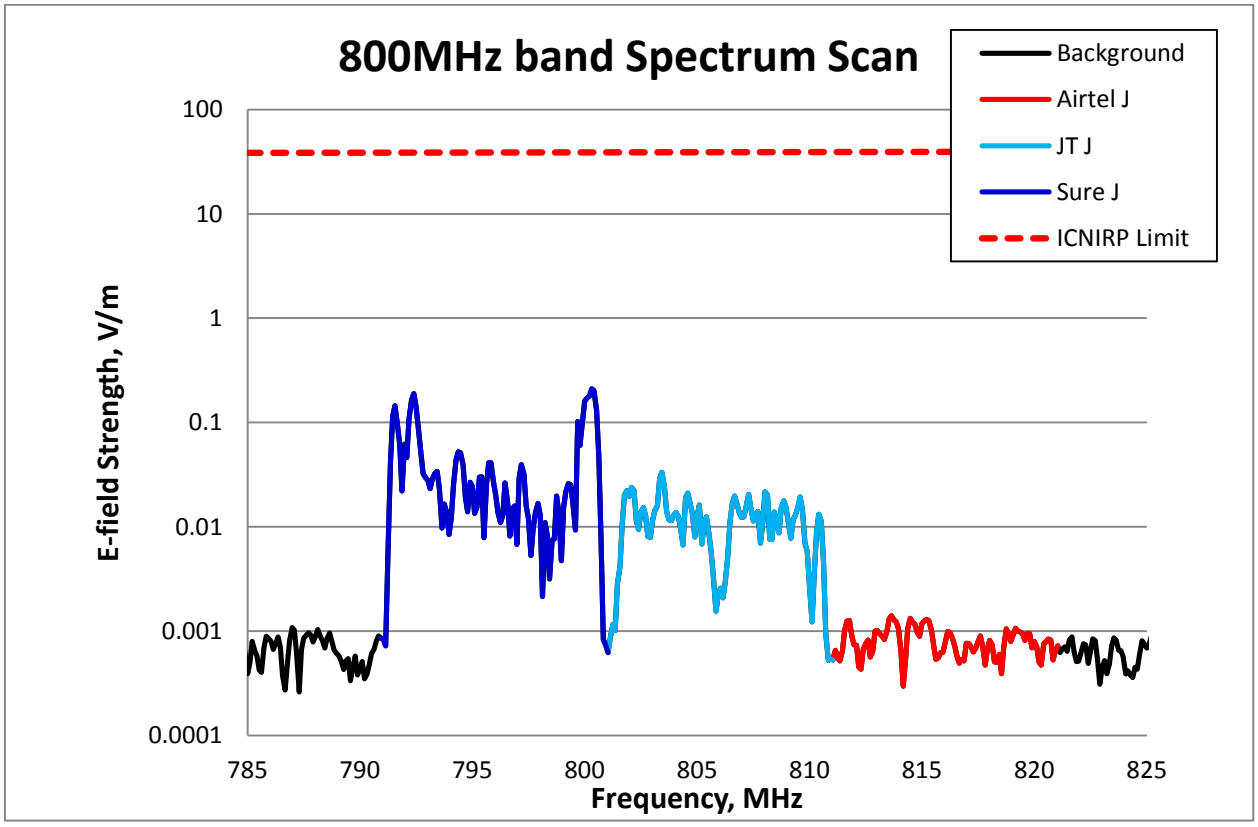

Figure 4 - 800MHz band Spectrum Scan

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 0.2107 V/m (Sure J), which is 185 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
La Moye	Airtel J	800	0.001397	27839	1.8823E-08	1/ 53126483
	JT J		0.03326	1169	4.57168E-06	1/ 218738
	Sure J		0.2107	185	0.00011058	1/ 9043
				total band EQ	0.000115171	1/ 8683

Table 2– 800MHz band Exposure Quotient at La Moye

2.2 900 MHz Band

The graph for the 900 MHz activity is shown below:

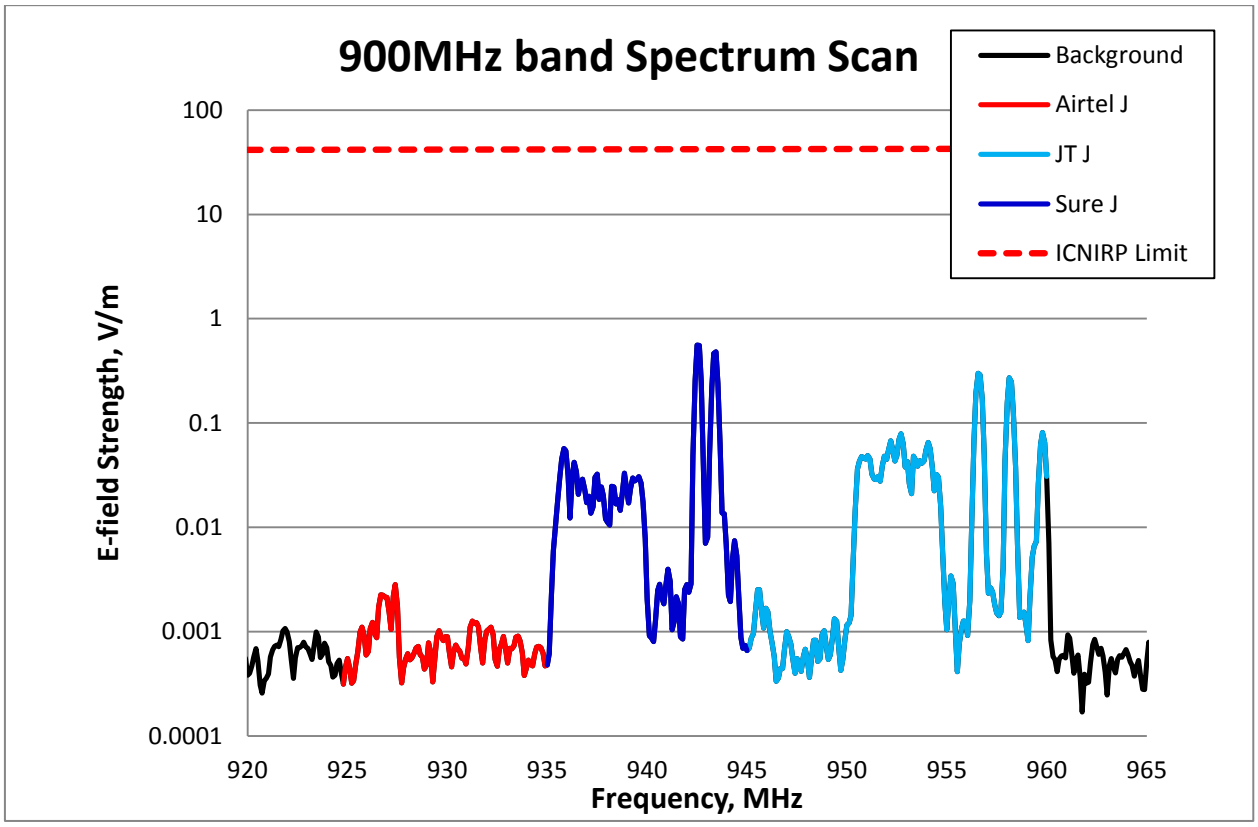

Figure 5 - 900MHz band Spectrum Scan

No field level recorded across the band was higher than 0.5573 V/m (Sure J), which is 74 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
La Moye	Airtel J	900	0.002819	14633	2.39105E-08	1/ 41822703
	JT J		0.2992	138	0.00014104	1/ 7090
	Sure J		0.5573	74	0.000359737	1/ 2780
				total band EQ	0.000500801	1/ 1997

Table 3– 900MHz band Exposure Quotient at La Moye

2.3 1800 MHz Band

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

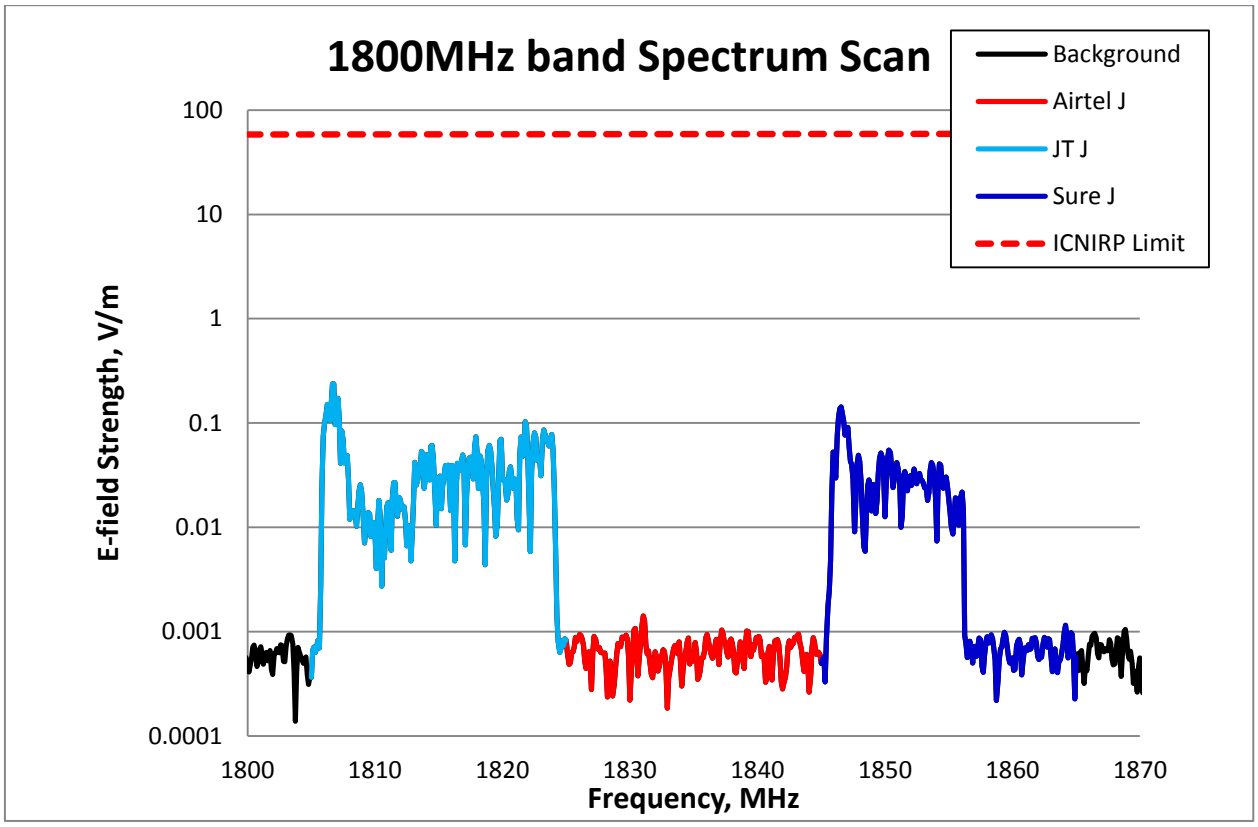

Figure 6 - 1800MHz Spectrum Scan

No field level recorded across the band was higher than 0.2372 V/m (JT J), which is 246 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
La Moye	Airtel J	1800	0.001407	41461	2.36757E-08	1/ 42237472
	JT J		0.2372	246	0.000139501	1/ 7168
	Sure J		0.1425	409	5.09131E-05	1/ 19641
				total band EQ	0.000190438	1/ 5251

Table 4 – 1800MHz band Exposure Quotient at La Moye

2.4 2100MHz Band

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

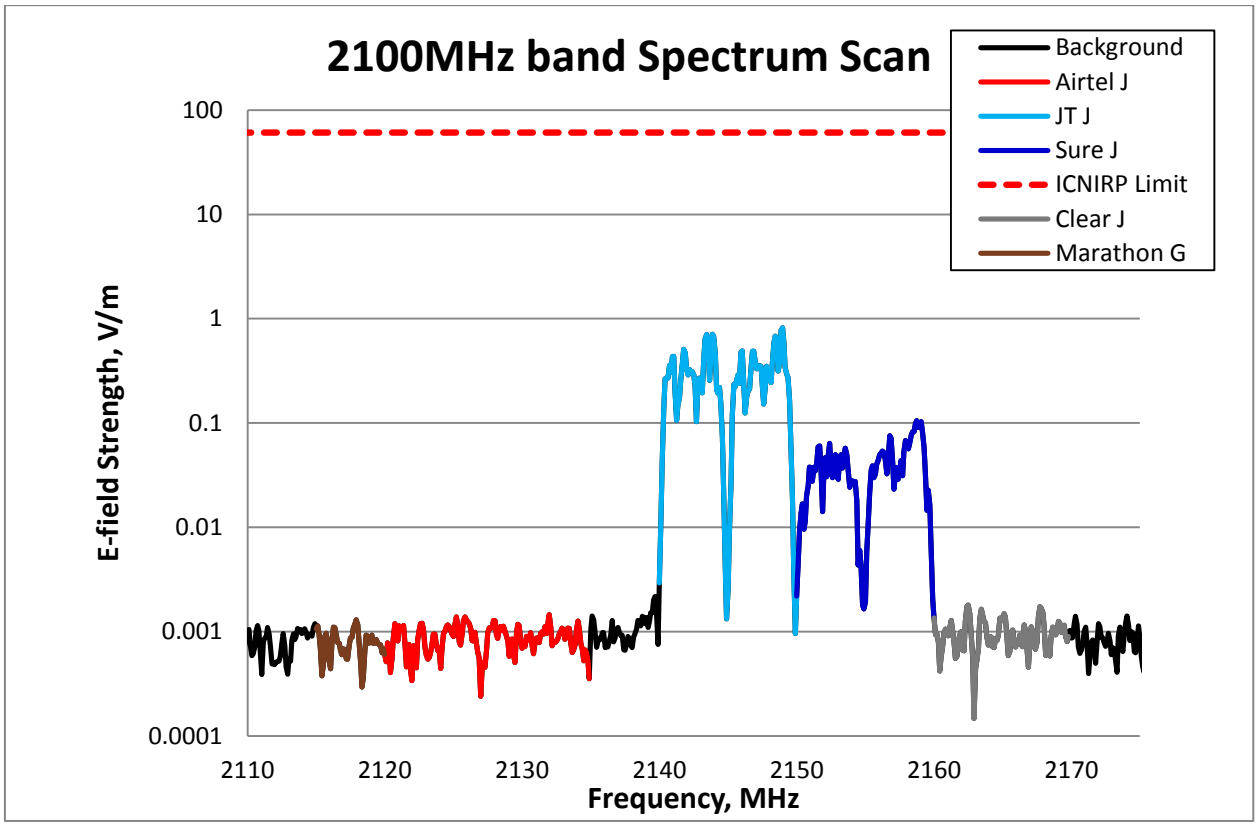

Figure 7 – 2100MHz band Spectrum Scan

No field level recorded across the band was higher than 0.8155 V/m (JT J), which is 75 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
La Moye	Airtel J	2100	0.001453	41982	3.1296E-08	1/ 31953001
	Clear J		0.001797	33945	2.60946E-08	1/ 38322049
	JT J		0.8155	75	0.003156668	1/ 317
	Marathon J		0.001299	46959	8.64567E-09	1/ 115664820
	Sure J		0.1055	578	5.41948E-05	1/ 18452
				total band EQ	0.003210929	1/ 311

Table 5 – 2100MHz band Exposure Quotient at La Moye

2.5 2600MHz band

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

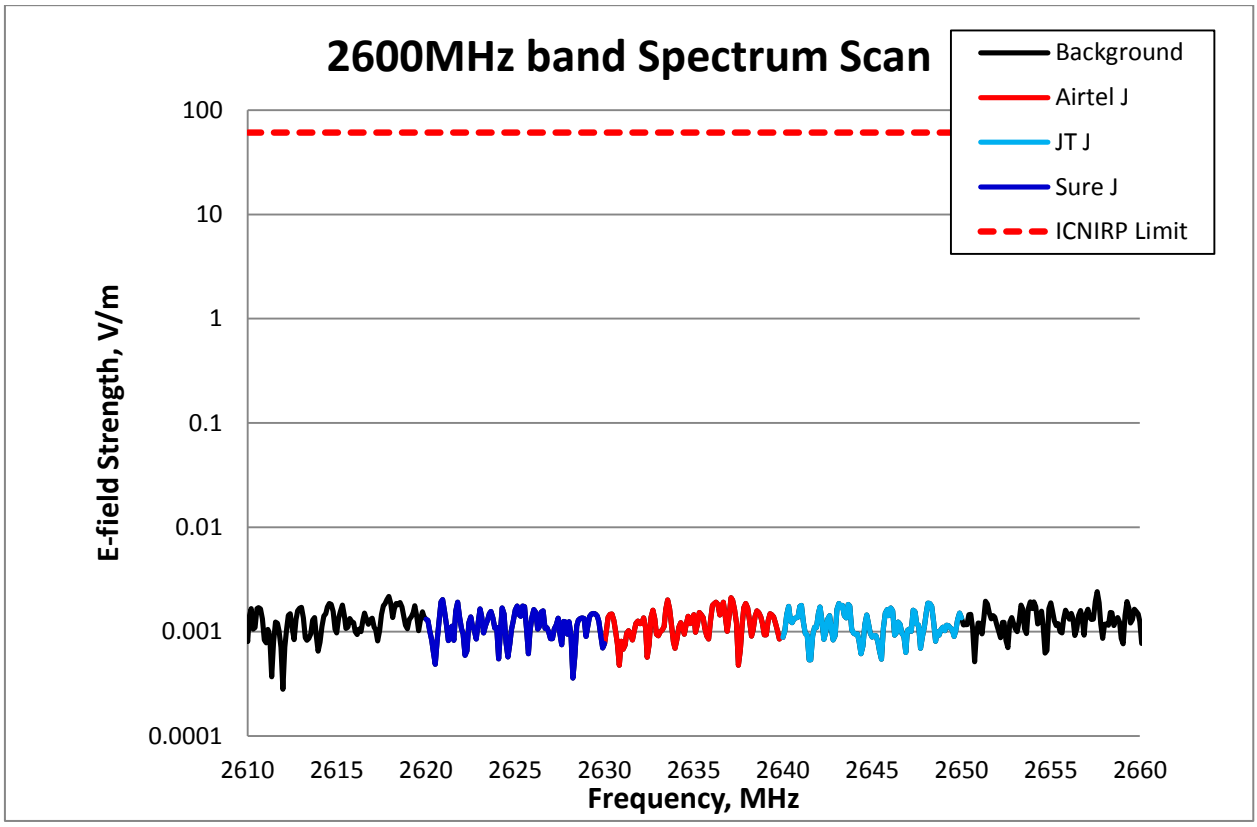

Figure 8 – 2600MHz band Spectrum Scan

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
La Moye	Airtel J	2600	0.002115	28842	4.20507E-08	1/ 23780837
	JT J		0.001875	32533	3.95958E-08	1/ 25255207
	Sure J		0.002027	30094	3.8719E-08	1/ 25827108
				total band EQ	1.20365E-07	1/ 8308031

Table 6 – 2600MHz band Exposure Quotient at La Moye

End