

Cellular mast emissions survey: Midvale Road Car Park Kiosk



Document details

Document name	Cellular mast emissions survey: Midvale Road Car Park Kiosk
Survey date	14-09-2024 at 10:58
Report issue date	24-09-2024
Survey engineer	Aleem Alvi
Report compiled by	Fatima Tuz Zehra
Checked and approved by	Bachir Belloul

Contents page

1	Executive summary	3
2	Site details	4
2.1	Site location	4
2.2	Site description	4
2.3	Site photo	5
2.4	Test location	5
3	Survey results	6
3.1	800MHz band	6
3.2	900MHz band	7
3.3	1800MHz band	8
3.4	2100MHz band	9
3.5	2600MHz band	10

Lists of figures

Figure 1 – Map of the site area	4
Figure 2 – Location of the peak where emission levels were measured.	5
Figure 3 – Survey area with spot measurement markers.....	5
Figure 4 – 800MHz band spectrum scan.....	6
Figure 5 – 900MHz band spectrum scan.....	7
Figure 6 – 1800MHz spectrum scan.....	8
Figure 7 – 2100MHz band spectrum scan.....	9
Figure 8 – 2600MHz band spectrum scan.....	10

List of tables

Table 1 – Cumulative exposure quotient.....	3
Table 2 – 800MHz band exposure quotient at Midvale Road Car Park Kiosk.....	6
Table 3 – 900MHz band exposure quotient at Midvale Road Car Park Kiosk.....	7
Table 4 – 1800MHz band exposure quotient at Midvale Road Car Park Kiosk.....	8
Table 5 – 2100MHz band exposure quotient at Midvale Road Car Park Kiosk.....	9
Table 6 – 2600MHz band exposure quotient at Midvale Road Car Park Kiosk.....	10

1 Executive summary

The Jersey Competition and Regulatory Authority or JCRA regularly monitors emission levels from the cellular masts in Jersey¹ 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 levels from the sites meet the internationally recognised standards and guidelines regarding health and safety limits for the public.

In 2017, JCRA commissioned EM emission level surveys at all the sites within the island. The surveys were repeated in each subsequent year for all new sites and sites where major changes were made by the operators in the previous year. This report presents the results of the survey conducted at the Midvale Road Car Park Kiosk site in 2024.

The Midvale Road Car Park Kiosk site was used by a single operator at the time of the survey: JT. Surveys were 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. Even though the reported levels are expected to be predominantly emitted from this site, the test equipment does not discriminate between nearby sites which means that the levels are cumulated over all site emissions detected by the test instrument.

The survey established that the emission levels around the 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 recorded around the site following a peak search. The levels were found to be lower at all the other locations round this site. The recorded values are true at the time of testing and can go up or down depending on the level of user activity on the site.

The total Exposure Quotient (EQ) for the site recorded across all detected cellular frequency bands is given at the bottom of the summary table below. A total EQ close to 1 (one) for the site would mean that emission levels approach the safety limit advised by ICNIRP in their guidelines.

Table 1 – Cumulative exposure quotient

Site Name	Band [MHz]	Max E-field in band [V/m]	Operator at Max E-field	ICNIRP Limit Relative to Max E-field	Band Exposure Quotient	Band EQ Relative to ICNIRP
Midvale Road car park Kiosk	800	0.04546	Airtel	855	6.56405E-05	1/ 15235
	900	2.723	JT	15	0.007657086	1/ 131
	1800	0.0443	Airtel	1317	3.60601E-05	1/ 27731
	2100	0.02339	Sure	2608	7.81202E-06	1/ 128008
	2600	0.02135	Sure	2857	1.35115E-05	1/ 74011
Total Site EQ					0.007780111	1/ 129

The results show that the total EQ was measured at 1/129 and therefore remains well below the ICNIRP guidelines.

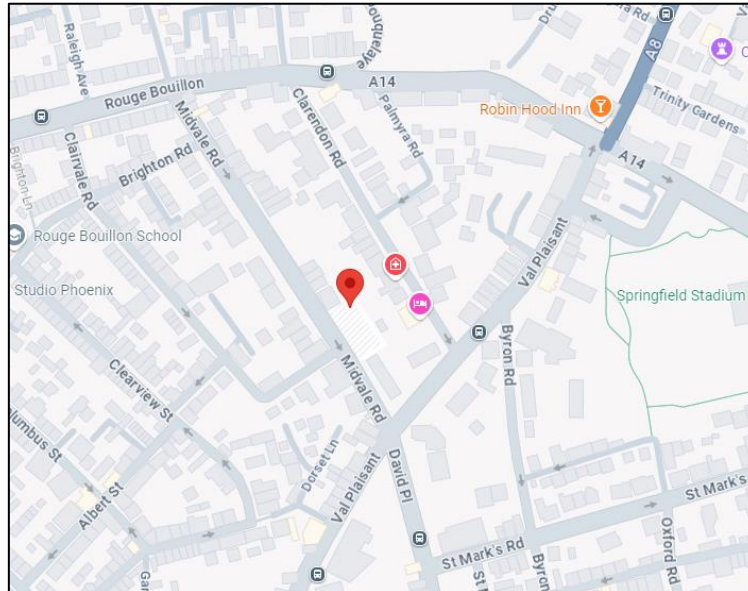
The graphs which follow show the activity on all the frequency bands surveyed. The plots are colour-coded for easy identification of the three main operators: Airtel in red, Jersey Telecom in light blue and Sure in dark blue. The graphs are also supported by the equivalent statistical figures derived from the measured levels at the site for added clarity.

¹ Prior to 1 July 2020, the JCRA and the Guernsey Competition & Regulatory Authority coordinated their activities in the Channel Islands as the Channel Islands Competition Regulatory Authorities (CICRA). Earlier reports may refer to CICRA rather than JCRA.

2 Site details

2.1 Site location

Figure 1 – Map of the site area



Site name:	Midvale Road Car Park Kiosk
Site address:	Midvale Road
Site latitude:	49.191615
Site longitude:	-2.104149

2.2 Site description

Operators:	JT
Antenna types:	Omni Antenna
Approximate height:	2m
Site type:	Kiosk
Description:	The antenna at Midvale Road Car Park is installed within the sealed ceiling of the kiosk.

2.3 Site photo

Figure 2 – Location of the peak where emission levels were measured.



2.4 Test location

Figure 3 – Survey area with spot measurement markers



As part of the peak search procedure, spot measurements were taken at locations around the antennas as shown on the above sketch.

The blue triangle is the antenna location, yellow lines are the walk route, the green 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.

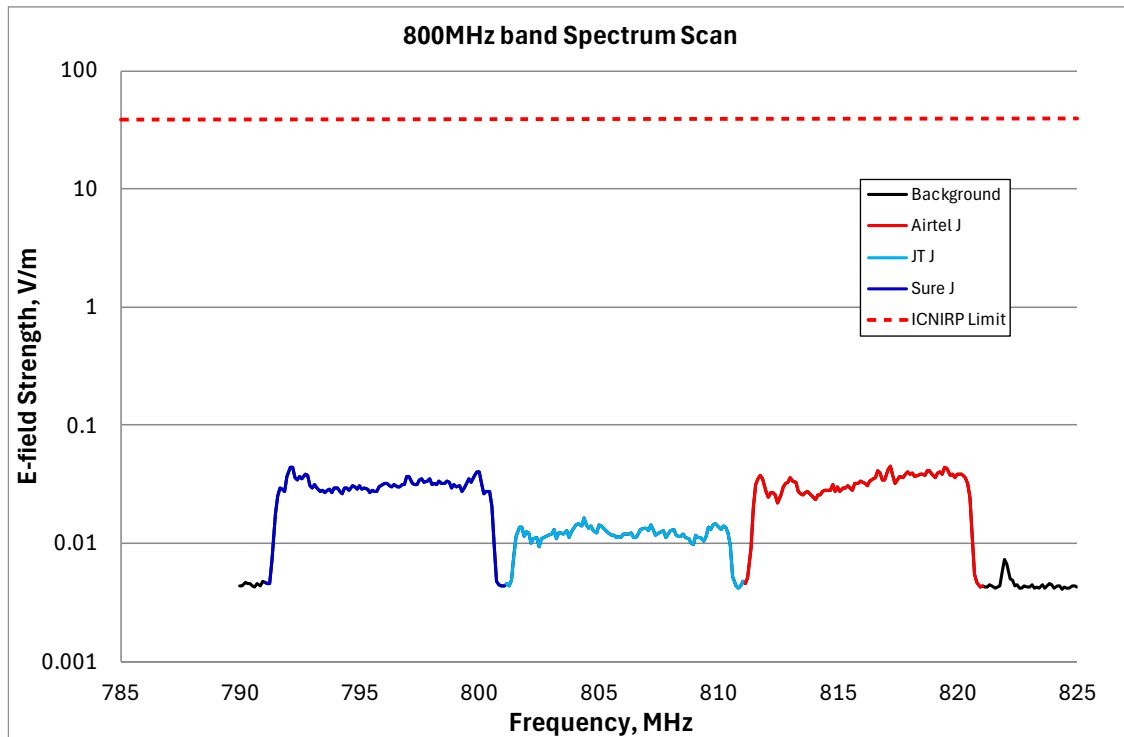
The spectrum readings reported further down this report were recorded over a period of six minutes as advised by ICNIRP.

3 Survey results

3.1 800MHz band

The graph for the 800MHz 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 *General Public* Reference level 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 0.04546 V/m (Airtel), which is 855 times smaller than the ICNIRP Reference Level.

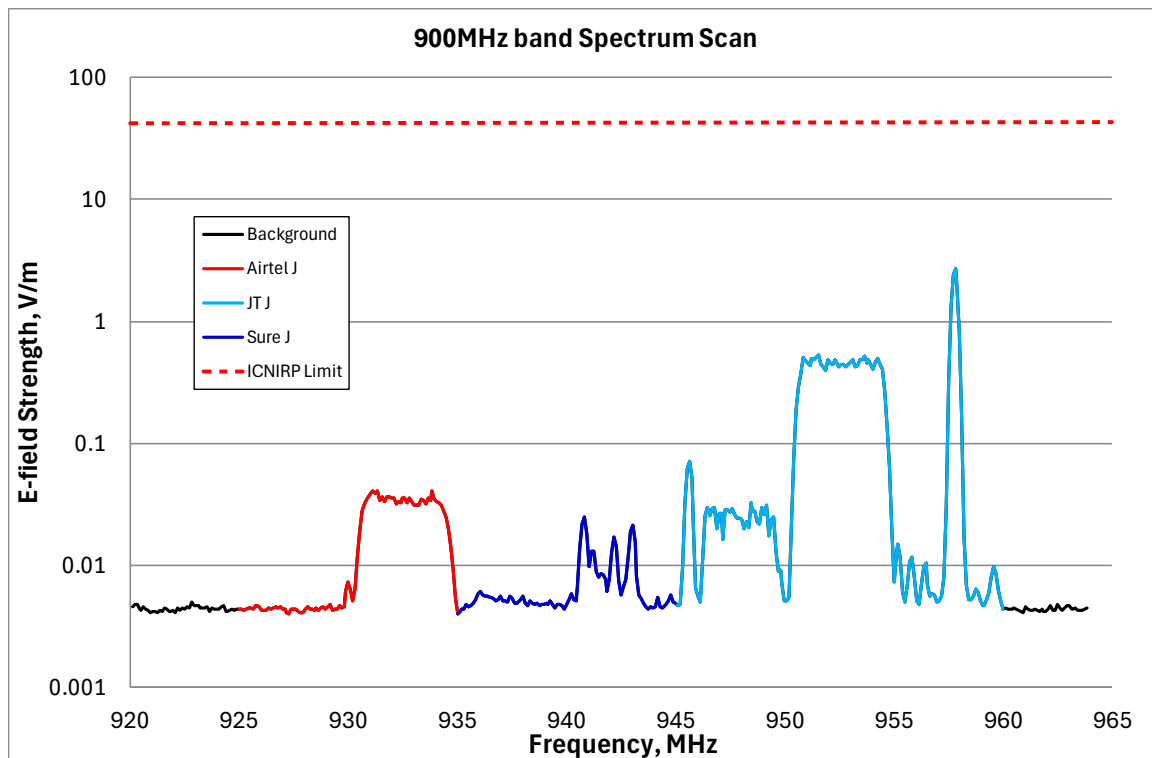
Table 2 – 800MHz band exposure quotient at Midvale Road Car Park Kiosk

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
Midvale Road car park Kiosk	Airtel	800	0.04546	855	3.21431E-05	1/ 31111
	JT		0.01644	2366	4.44755E-06	1/ 224843
	Sure		0.04427	878	2.90498E-05	1/ 34424
total band EQ					6.56405E-05	1/ 15235

3.2 900MHz band

The graph for the 900MHz activity is shown below.

Figure 5 – 900MHz band spectrum scan



No field level recorded across the band was higher than 2.723 V/m (JT), which is 15 times smaller than the ICNIRP Reference Level.

The EQ results for the 900MHz band are shown below.

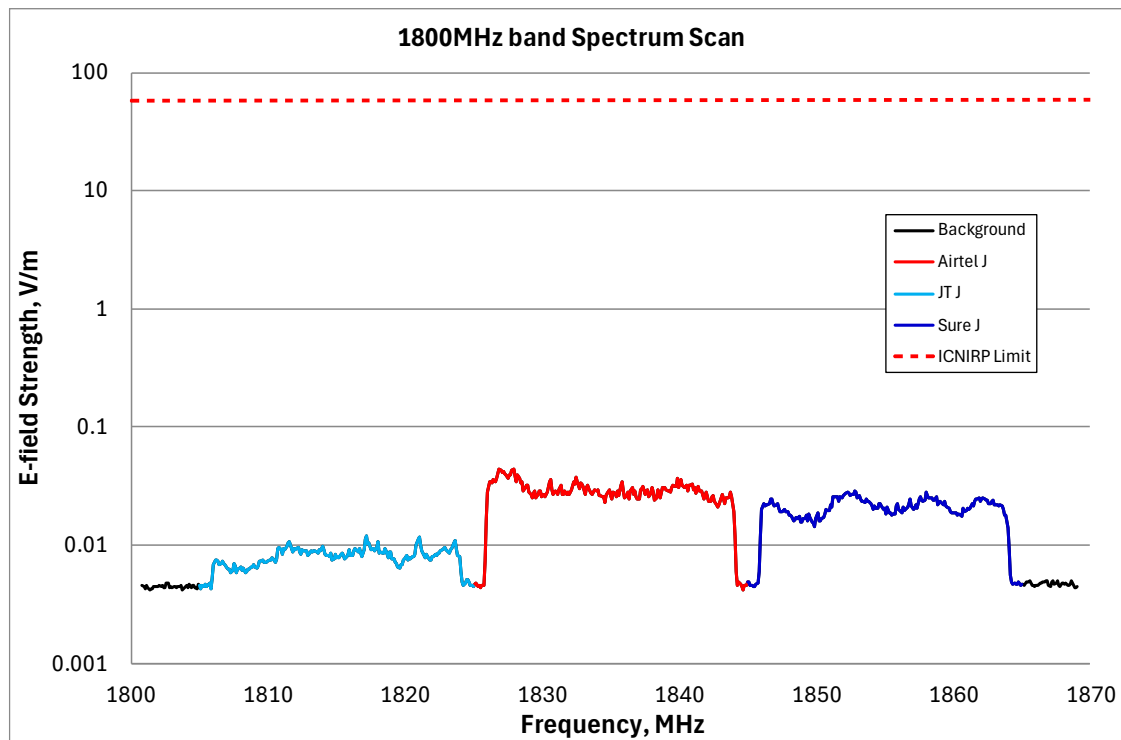
Table 3 – 900MHz band exposure quotient at Midvale Road Car Park Kiosk

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
Midvale Road car park Kiosk	Airtel	900	0.04041	1021	1.33283E-05	1/ 75028
	JT		2.723	15	0.007641979	1/ 131
	Sure		0.02464	1674	1.77927E-06	1/ 562027
total band EQ					0.007657086	1/ 131

3.3 1800MHz band

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

Figure 6 – 1800MHz spectrum scan



No field level recorded across the band was higher than 0.0443 V/m (Airtel), which is 1317 times smaller than the ICNIRP Reference Level.

The EQ results for the 1800MHz band are shown below.

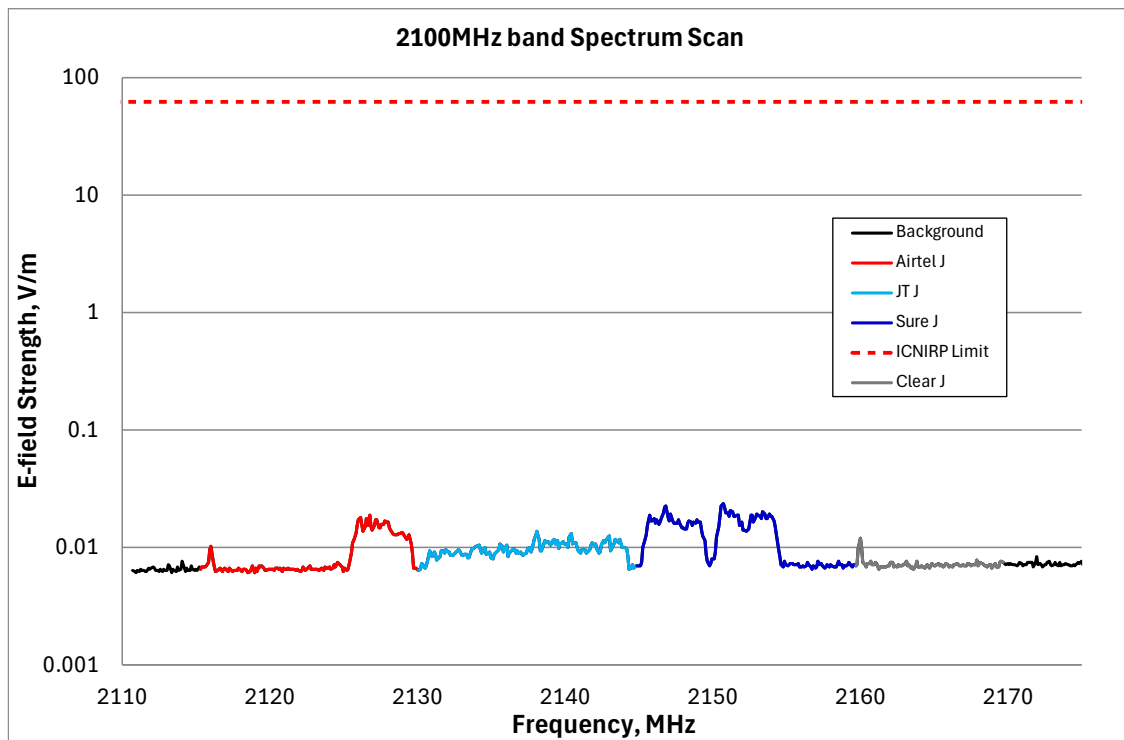
Table 4 – 1800MHz band exposure quotient at Midvale Road Car Park Kiosk

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
Midvale Road car park Kiosk	Airtel	1800	0.0443	1317	2.26329E-05	1/ 44183
	JT		0.01185	4923	1.80809E-06	1/ 553071
	Sure		0.02861	2039	1.16191E-05	1/ 86065
total band EQ					3.60601E-05	1/ 27731

3.4 2100MHz band

The graph for the 2100MHz band activity around the site is shown below.

Figure 7 – 2100MHz band spectrum scan



No field level recorded across the band was higher than 0.02339 V/m (Sure), which is 2608 times smaller than the ICNIRP Reference Level.

The EQ results for the 2100MHz band are shown below.

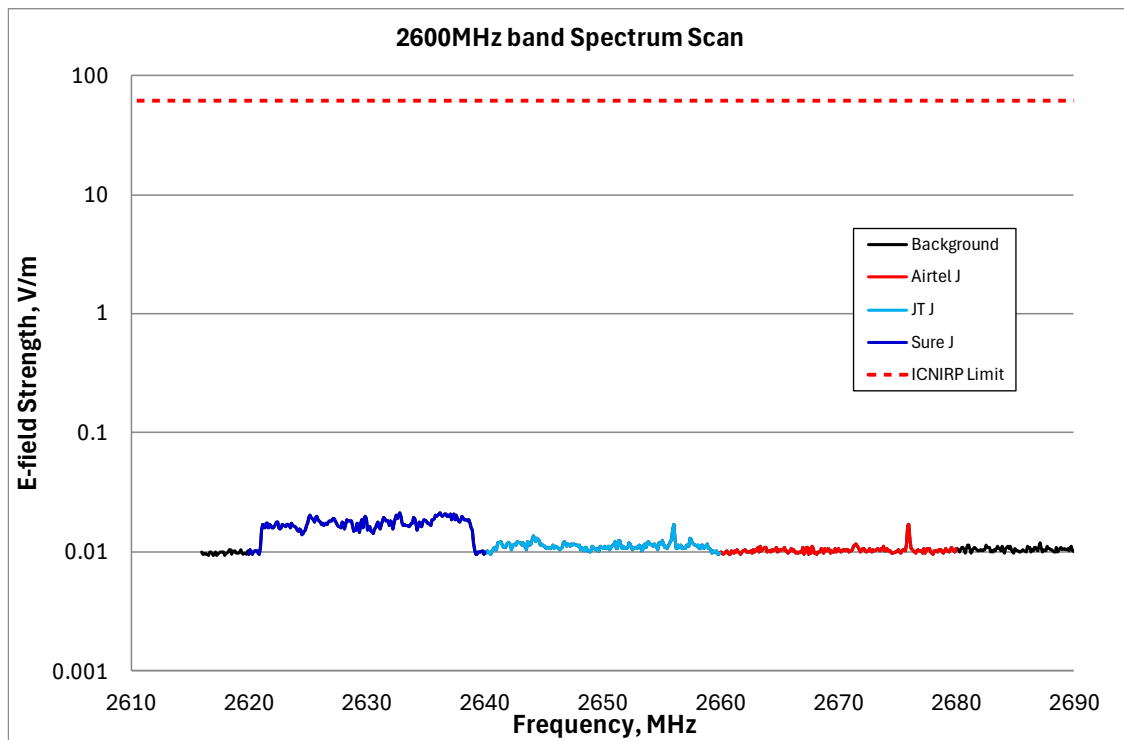
Table 5 – 2100MHz band exposure quotient at Midvale Road Car Park Kiosk

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
Midvale Road car park Kiosk	Airtel	2100	0.01856	3287	1.736E-06	1/ 576037
	Clear		0.01202	5075	6.72628E-07	1/ 1486705
	JT		0.01353	4508	1.7913E-06	1/ 558254
	Sure		0.02339	2608	3.6121E-06	1/ 276848
total band EQ					7.81202E-06	1/ 128008

3.5 2600MHz band

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

Figure 8 – 2600MHz band spectrum scan



No field level recorded across the band was higher than 0.02135 V/m (Sure), which is 2857 times smaller than the ICNIRP Reference Level.

The EQ results for the 2600MHz band are shown below.

Table 6 – 2600MHz band exposure quotient at Midvale Road Car Park Kiosk

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
Midvale Road car park Kiosk	Airtel	2600	0.01696	3597	2.77223E-06	1/ 360720
	JT		0.01713	3561	3.26324E-06	1/ 306444
	Sure		0.02135	2857	7.47603E-06	1/ 133761
total band EQ					1.35115E-05	1/ 74011

END