

Cellular mast emissions survey: Les Pres d'Auvergne Car Park



Document details

Document name	Cellular mast emissions survey:	Les Pres d'Auvergne Car Park
Survey date	16-09-2025 at 10:46	
Report issue date	13-10-2025	
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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, the JCRA commissioned surveys to measure the electromagnetic field (EMF) emission levels at all the sites hosting mobile telecommunication equipment within the island. Further surveys have been conducted in each subsequent year focussing on new sites, those where significant changes have been made by the operators or those where the public have raised concerns to the JCRA in the previous year. This report presents the results of the survey conducted at the Les Pres d'Auvergne Car Park site in 2025.

In 2025, the Jersey mobile network operators have launched their first commercial 5G services. This year's audits therefore include the frequency bands used for 5G, noting however that not all sites currently have 5G transmitting equipment.

The Les Pres d'Auvergne Car Park site was used by a single operator at the time of the survey: JT. Surveys were conducted at all cellular frequency bands (700, 800, 900, 1800, 2100, 2600 and 3400MHz) for all mobile cellular technologies (2G, 3G, 4G and 5G) 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 – Total EQ by frequency band

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
Les Pres d'Auvergne car park	700	0.5104	JT	76	0.002282	1/ 438
	800	0.3541	JT	110	0.001276687	1/ 783
	900	1.391	JT	30	0.001929354	1/ 518
	1800	0.002402	JT	24287	2.20663E-07	1/ 4531803
	2100	0.01128	Sure	5408	4.93793E-07	1/ 2025142
	2600	0.003139	JT	19433	3.41333E-07	1/ 2929694
	3400	0.003766	Sure	10327	8.33406E-07	1/ 1199895
Total Site EQ					0.005489931	1/ 182

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.

The results show that the total EQ was measured at 0.548% of ICNIRP's *General Public* Reference Levels (or about 1/182) and the site therefore remains safe.

The graphs which follow show the activity on all the frequency bands surveyed. The plots are colour-coded for easy identification of the operator. On each plot, the solid red line represents the Airtel activity, the light blue is JT, the dark blue is Sure, the light grey is Clear (Clear only operates in the 2100MHz band) and the green line is Newtel (Newtel only operates a license in the 3400MHz band). Note however that not all operators are present in each frequency band but the colour assigned to each operator remains the same throughout.

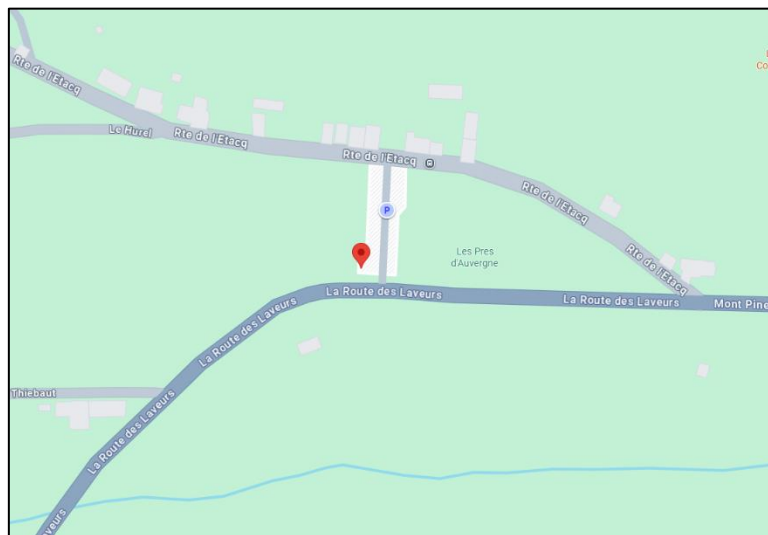
ICNIRP's *General Public* Reference Level is also shown as the dashed line at the top of the graphs. For clarity, each step on the vertical axis represents a 10-fold increase. The same scaling and colour scheme will be used on the plots throughout this report.

The graphs are also supported by the equivalent statistical tables derived from the measured levels at the site for added clarity.

2 Site details

2.1 Site location

Figure 1 – Map of the site area



Site name:	Les Pres d'Auvergne Car Park
Site address:	La Route de l'Etacq (JE3 2FD)
Site latitude:	49.234921
Site longitude:	-2.229538

2.2 Site description

Operators:	JT
Antenna types:	Monopole
Approximate height:	7m
Site type:	Monopole
Description:	The antenna at Les Pres d'Auvergne Car Park is installed on the ground within a fenced enclosure adjacent to the car park.

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.

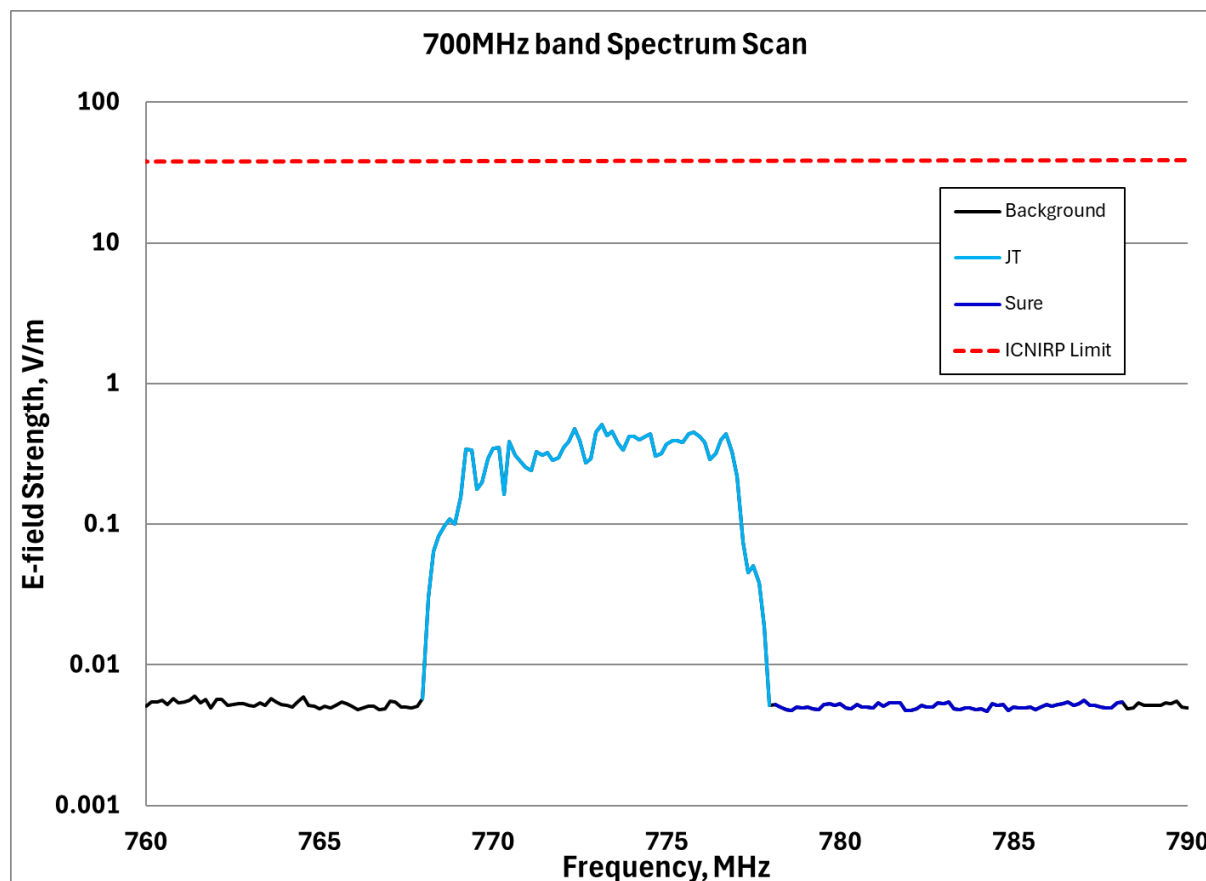
The spectrum readings reported further down this report were recorded over a period of six minutes as advised by ICNIRP.

3 Survey results

3.1 700MHz band

The graph for the 700MHz activity is shown below with the E-field strength levels measured at the site plotted on a logarithmic scale.

Figure 4 – 700MHz band spectrum scan



No field level recorded across the band was higher than 0.5104 V/m (JT), which is 76 times smaller than the ICNIRP Reference Level.

The EQ results for the 700MHz band are shown below.

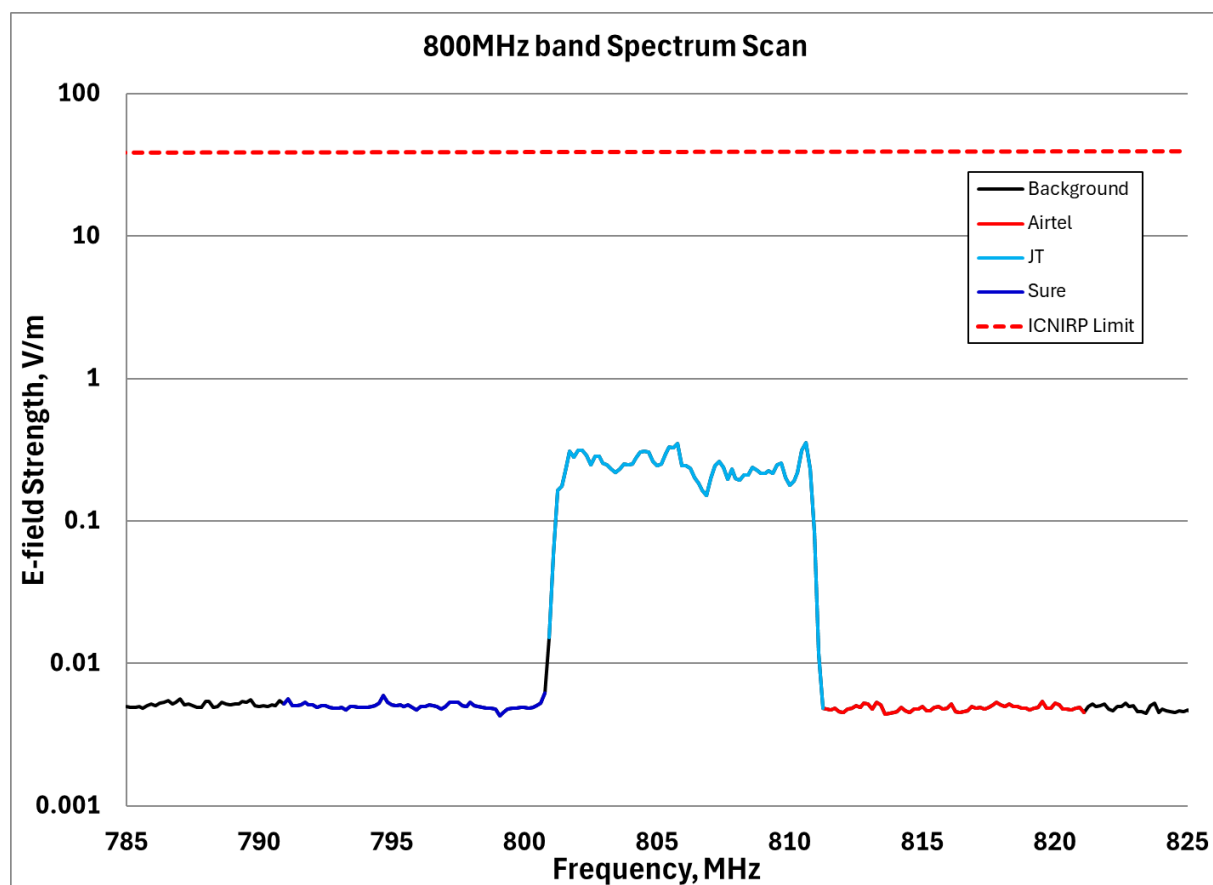
Table 2 – 700MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	JT	700	0.5104	76	0.002281431	1/ 438
	Sure		0.005647	6887	5.68695E-07	1/ 1758411
total band EQ					0.002282	1/ 438

3.2 800MHz band

The graph for the 800MHz activity is shown below.

Figure 5 – 800MHz band spectrum scan



No field level recorded across the band was higher than 0.3541 V/m (JT), which is 110 times smaller than the ICNIRP Reference Level.

The EQ results for the 800MHz band are shown below.

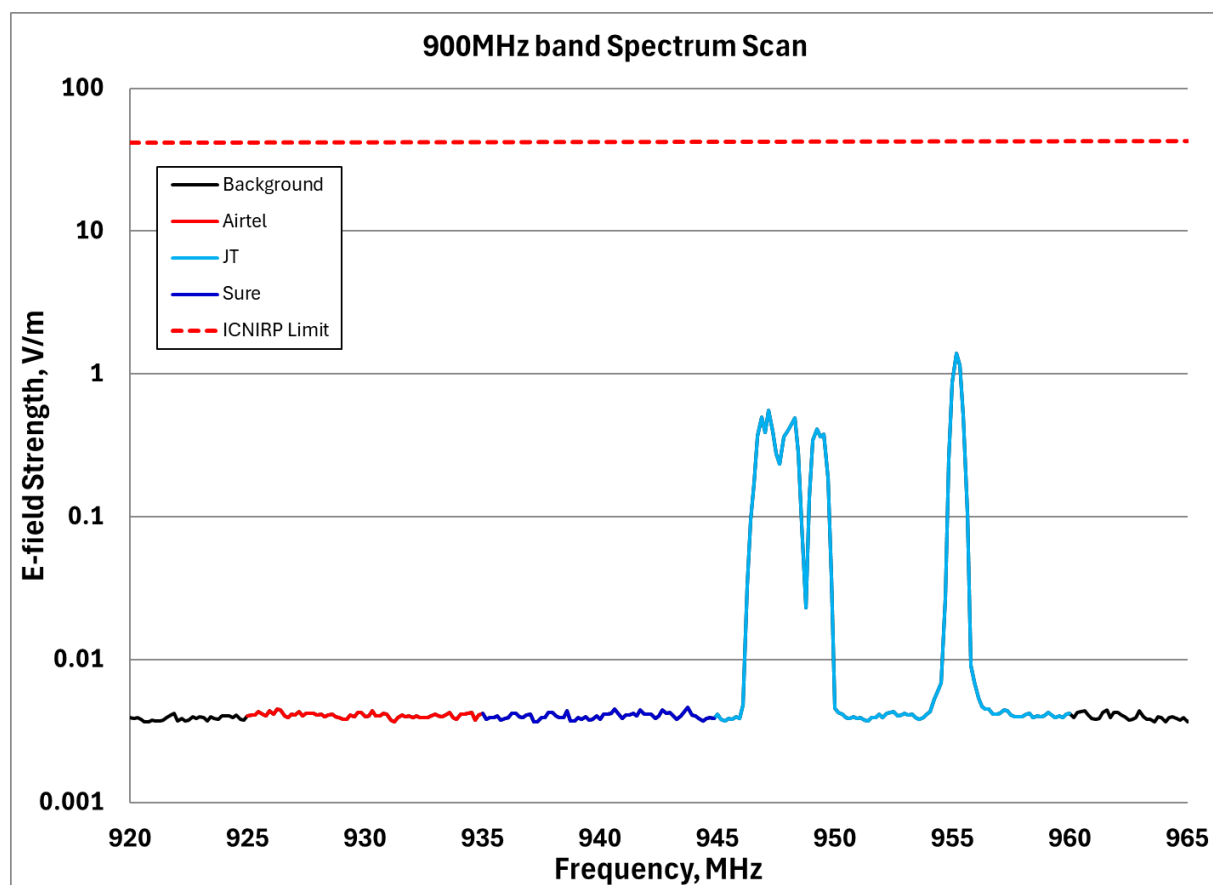
Table 3 – 800MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	Airtel	800	0.005432	7160	4.90516E-07	1/ 2038671
	JT		0.3541	110	0.00127558	1/ 784
	Sure		0.01514	2569	6.16669E-07	1/ 1621614
total band EQ					0.001276687	1/ 783

3.3 900MHz band

The graph for the 900MHz activity is shown below.

Figure 6 – 900MHz band spectrum scan



No field level recorded across the band was higher than 1.391 V/m (JT), which is 30 times smaller than the ICNIRP Reference Level.

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

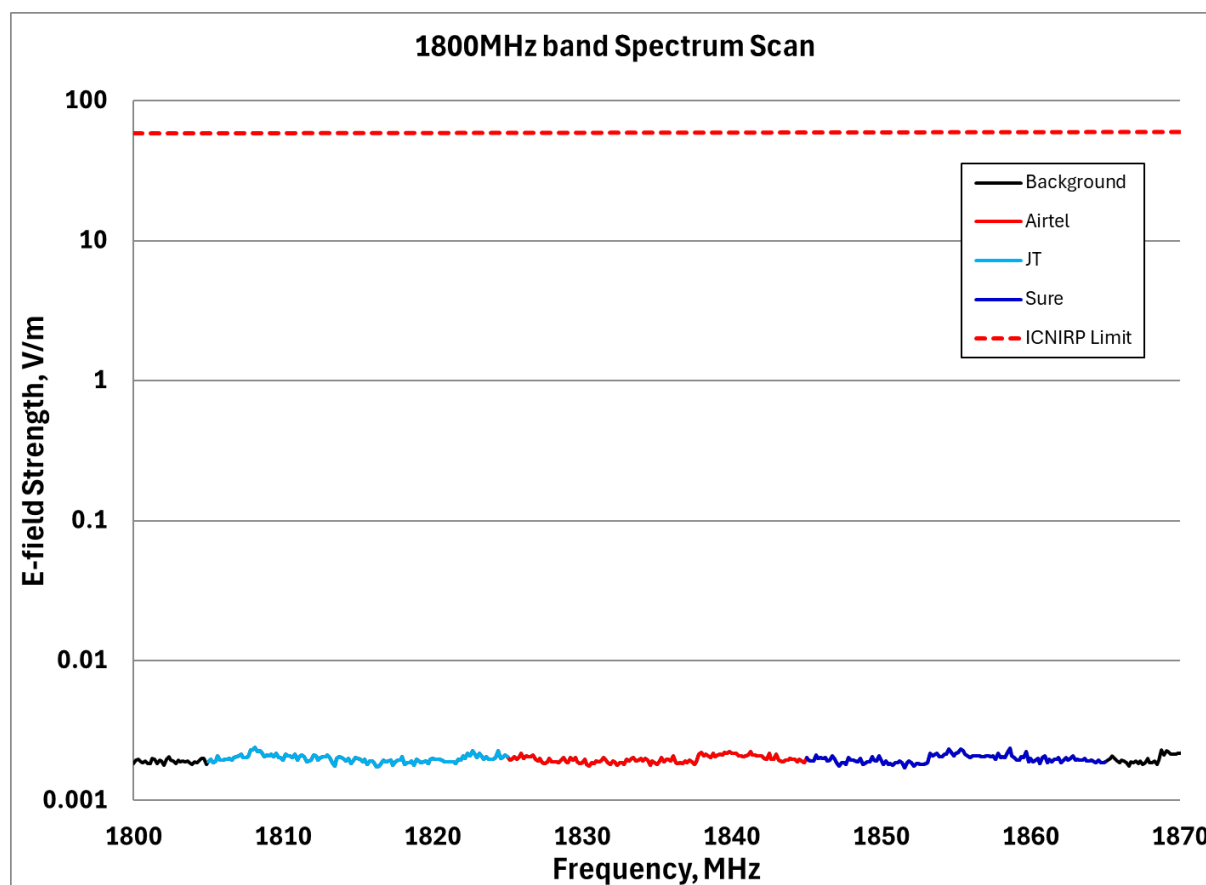
Table 4 – 900MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	Airtel	900	0.004473	9222	3.05995E-07	1/ 3268024
	JT		1.391	30	0.001928755	1/ 518
	Sure		0.004632	8905	2.93185E-07	1/ 3410821
total band EQ					0.001929354	1/ 518

3.4 1800MHz band

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

Figure 7 – 1800MHz spectrum scan



No meaningful activity was recorded at this site on the 1800MHz band. The EQ results for the band are shown below.

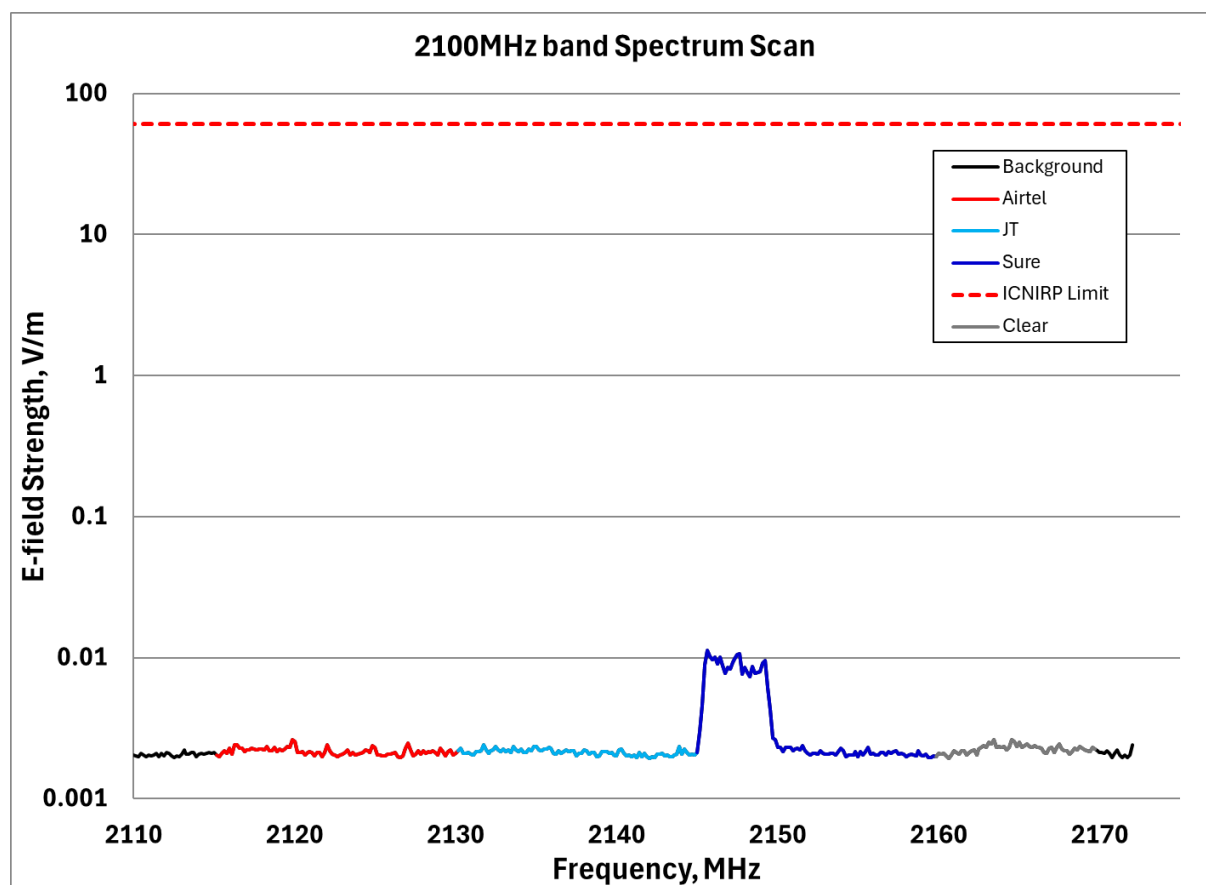
Table 5 – 1800MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	Airtel	1800	0.002241	26031	7.29556E-08	1/ 13706962
	JT		0.002402	24287	7.51856E-08	1/ 13300416
	Sure		0.002363	24687	7.25215E-08	1/ 13789020
total band EQ					2.20663E-07	1/ 4531803

3.5 2100MHz band

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

Figure 8 – 2100MHz band spectrum scan



No field level recorded across the band was higher than 0.01128 V/m (Sure), which is 5408 times smaller than the ICNIRP Reference Level.

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

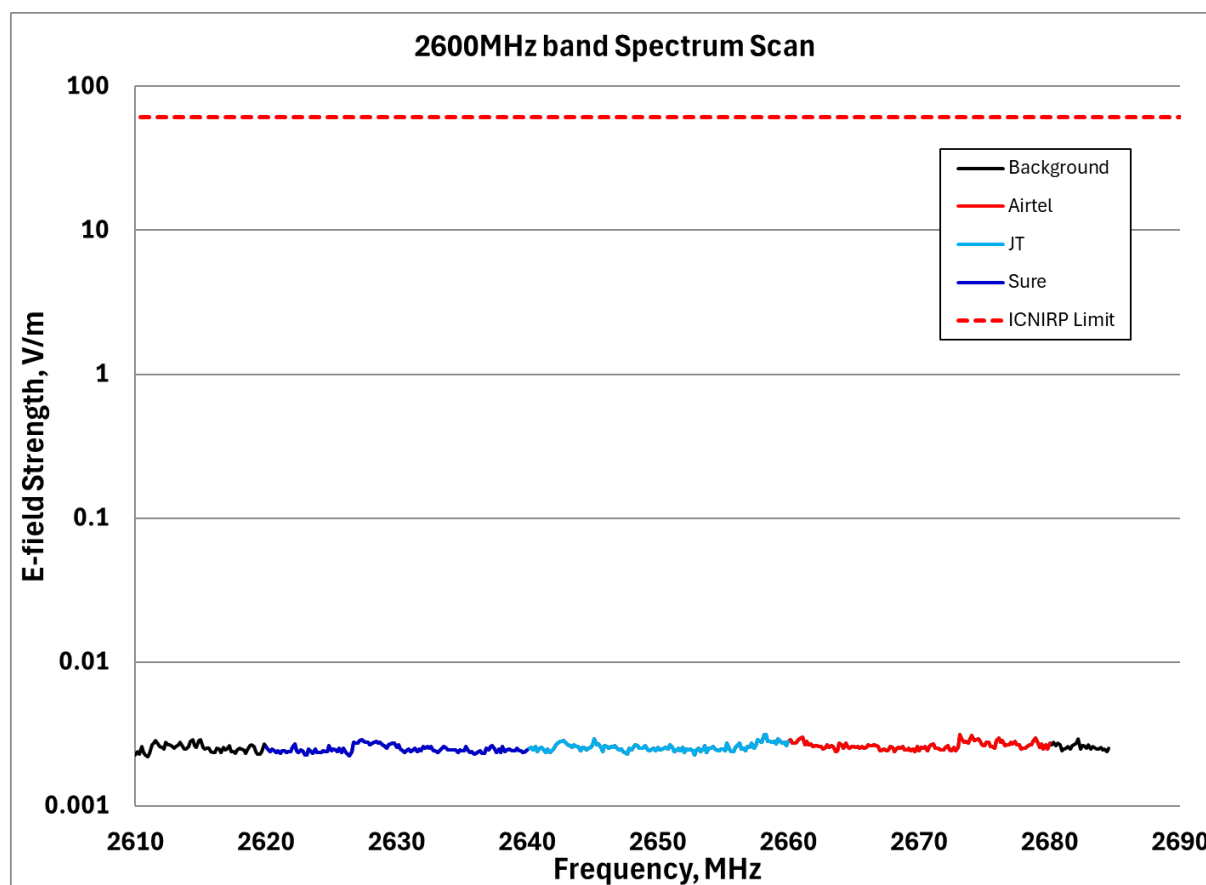
Table 6 – 2100MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	Airtel	2100	0.00263	23194	6.12614E-08	1/ 16323500
	Clear		0.002608	23390	4.39678E-08	1/ 22743941
	JT		0.002406	25353	5.90236E-08	1/ 16942367
	Sure		0.01128	5408	3.2954E-07	1/ 3034534
total band EQ					4.93793E-07	1/ 2025142

3.6 2600MHz band

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

Figure 9 – 2600MHz band spectrum scan



No meaningful activity was recorded at this site in the 2600MHz band. The EQ results for the band are shown below.

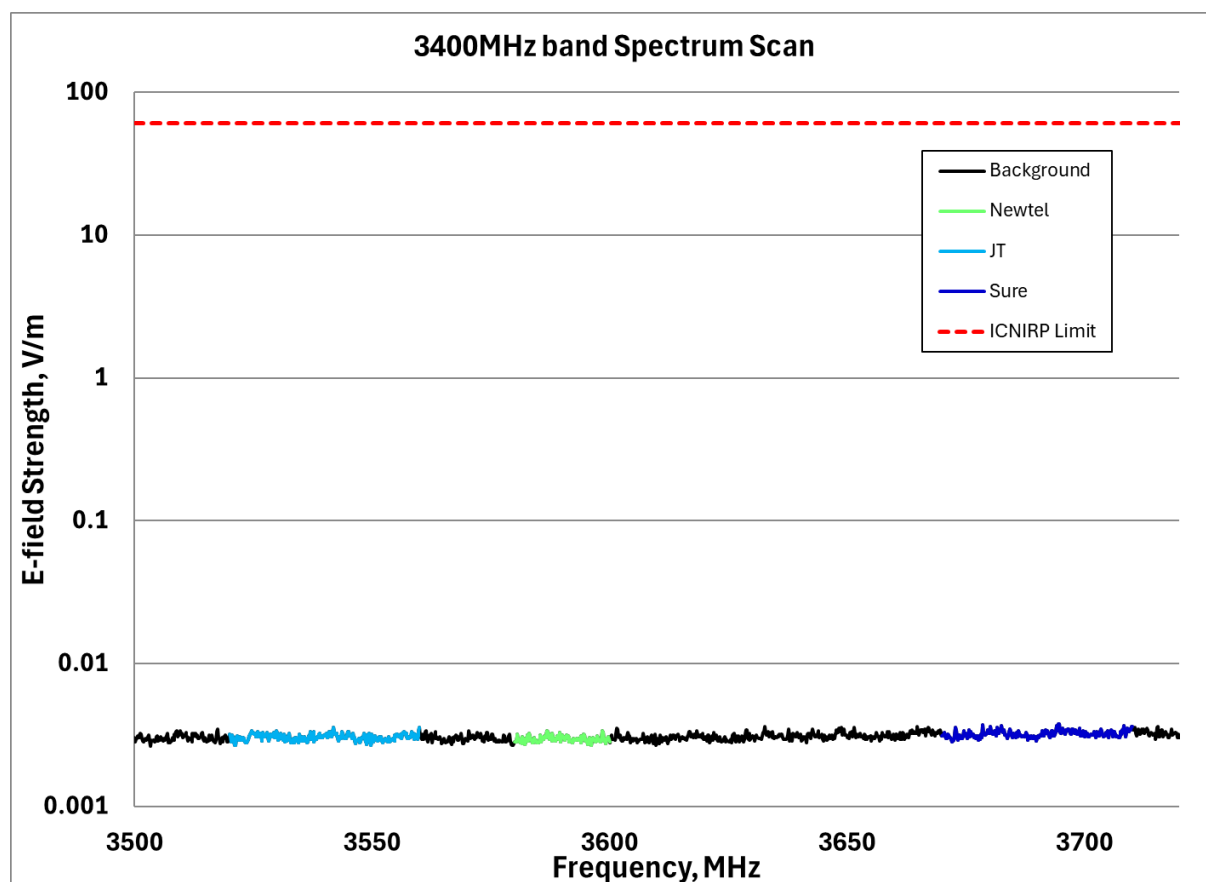
Table 7 – 2600MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	Airtel	2600	0.00311	19614	1.20213E-07	1/ 8318546
	JT		0.003139	19433	1.14189E-07	1/ 8757389
	Sure		0.002864	21299	1.0693E-07	1/ 9351910
total band EQ					3.41333E-07	1/ 2929694

3.7 3400MHz band

The graph for the 3400-3800MHz band activity around the site is shown below.

Figure 10 – 3400MHz band spectrum scan



No meaningful activity was recorded at this site in the 3400MHz band. The EQ results for the band are shown below.

Table 8 – 3400MHz band exposure quotient at Les Pres d'Auvergne Car Park

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
Les Pres d'Auvergne car park	Newtel	3400	0.003397	11449	1.52765E-07	1/ 6546016
	JT		0.003556	10937	3.22278E-07	1/ 3102910
	Sure		0.003766	10327	3.58364E-07	1/ 2790463
total band EQ					8.33406E-07	1/ 1199895

END