

Summary Report of the 2019 Channel Islands Mast Emission Audits



A total of 29 sites were surveyed in 2019, scattered over the 4 main islands of the Channel Islands (Jersey, Guernsey, Alderney and Sark).

The choice of sites audited in 2019 was dictated by whether they were:

- New sites
- New operator joining an existing site
- Major changes made by the operator to the site (e.g. addition of new technologies such as 4G at 2600MHz or refarming of technologies)
- Sites measured in the previous years with the highest emission levels

The sites in Sark and Alderney were audited as a routine check.

The Table overleaf shows the emission levels measured at the sites audited in 2019 (blue columns) and compares them to the levels previously measured at these sites (2017 or 2018) as a ratio to the ICNIRP levels (yellow columns).

The last column “Yearly Change” contains colour-coded cells to show which sites’ emission level went up (red), down (green) or remained stable (yellow). We used an arbitrary $\pm 20\%$ tolerance in yearly level when considering that a site remained stable.

New sites (a total of 6 were measured in 2019) have no emission level history.

Summary Emission Levels Table - 2019

Previous survey

2019 survey

iWS ID	Site Name	Parish	Island	Height (m)	Changes to site	Previously measured Total EQ	Total EQ as a ratio	% ICNIRP	Previous Survey Date	2019 Total EQ	2019 Total EQ as a ratio	2019 % ICNIRP	2019 Date Surveyed	Yearly Change
AL-01	Alderney Exchange	Alderney	Alderney	22	New technologies added	0.0003901678	1/ 2563	0.039	24-Sep-18	0.0002732987	1/ 3659	0.027	21-Sep-19	-0.30
AL-04	Fort Doyle	Alderney	Alderney	5	No change since 2017	0.0103092784	1/ 97	1.031	24-Sep-18	0.0069444444	1/ 144	0.694	21-Sep-19	-0.33
AL-06	Alderney Water Tower	St Anne	Alderney	23	No change since 2017	0.0000243813	1/ 41015	0.002	24-Sep-18	0.0000188462	1/ 53061	0.002	21-Sep-19	-0.23
GU-05	Airport-Shed	Forest	Guernsey	6	Site moved	0.0085017522	1/ 118	0.850	11-May-17	0.0092290020	1/ 108	0.923	21-Sep-19	0.09
GU-23	First Tower Lane	St Peter Port	Guernsey	14	5G trial site	0.0010040161	1/ 996	0.100	25-Sep-18	0.0021816010	1/ 458	0.218	23-Sep-19	1.17
GU-24	Fish-Co-op	St Peter Port	Guernsey	4	Previously high EMF site	0.1453725703	1/ 7	14.537	19-May-17	0.0314423825	1/ 32	3.144	22-Sep-19	-0.78
GU-25	Fort St George	St Peter Port	Guernsey	20	New technology added	0.0020205069	1/ 495	0.202	15-May-17	0.0006917186	1/ 1446	0.069	23-Sep-19	-0.66
GU-38	Jerbourg	St Martin	Guernsey	14	New technology added	0.0021373018	1/ 468	0.214	19-May-17	0.0011261782	1/ 888	0.113	23-Sep-19	-0.47
GU-77	Les Douvres Hotel	St Martin	Guernsey	8	New site					0.0004464706	1/ 2240	0.045	21-Sep-19	
GU-78	Nineteen Golf Club	St Peter Port	Guernsey	14	New site					0.0005786730	1/ 1728	0.058	21-Sep-19	
JE-033	CTV	St Helier	Jersey	8	New technology added	0.0005373485	1/ 1861	0.054	10-Jun-17	0.0007643867	1/ 1308	0.076	25-Sep-19	0.42
JE-064	Fort Regent	St Helier	Jersey	6	5G trial site	0.0093461925	1/ 107	0.935	11-Jun-17	0.0524949044	1/ 19	5.249	24-Sep-19	4.62
JE-092	Kensington Car Park	St Helier	Jersey	20	Previously high reading site	0.0873710070	1/ 11	8.737	18-Jul-17	0.0586786815	1/ 17	5.868	25-Sep-19	-0.33
JE-120	Living Legend	St Peter	Jersey	12	No change	0.0054191976	1/ 185	0.542	17-Jul-17	0.0008717321	1/ 1147	0.087	25-Sep-19	-0.84
JE-161	Sand Street Car Park	St Helier	Jersey	22	New site share	0.1250000000	1/ 8	12.500	22-Sep-18	0.1830009652	1/ 5	18.300	25-Sep-19	0.46
JE-168	St Aubin Harbour	St Brelade	Jersey	3	No change	0.0779838621	1/ 13	7.798	27-Jul-17	0.0071558556	1/ 140	0.716	24-Sep-19	-0.91
JE-179	Stafford Hotel	St Helier	Jersey	20	No change	0.0842946440	1/ 12	8.429	01-Aug-17	0.0493167493	1/ 20	4.932	24-Sep-19	-0.41
JE-201	Co-Operative Grand Marché	St Helier	Jersey	16	New operator added	0.0133333333	1/ 75	1.333	22-Sep-18	0.0494684649	1/ 20	4.947	24-Sep-19	2.71
JE-203	Hampshire Hotel	St Helier	Jersey	15	New site					0.0009999292	1/ 1000	0.100	24-Sep-19	
JE-204	Handois	St Lawrence	Jersey	6	New site					0.0002753301	1/ 3632	0.028	25-Sep-19	
JE-205	Hotel de France Lido	St Helier	Jersey	6	New site (relocated HdF)					0.0066792001	1/ 150	0.668	24-Sep-19	
JE-206	Millbrook lab	St Lawrence	Jersey	6	New site					0.0003329251	1/ 3004	0.033	25-Sep-19	
SA-01	Little Sark	Sark	Sark	5	No change	0.0077519380	1/ 129	0.775	23-Sep-18	0.0038352336	1/ 261	0.384	23-Sep-19	-0.51
SA-02	Dixcart	Sark	Sark	6	site change to a monopole					0.0001305217	1/ 7662	0.013	23-Sep-19	
SA-03 & 05	Sark Harbour	Sark	Sark	6	No change	0.0003033060	1/ 3297	0.030	23-Sep-18	0.0001699011	1/ 5886	0.017	23-Sep-19	-0.44
SA-04	Sark Harbour Crane Shed	Sark	Sark	6	No change	0.0016666667	1/ 600	0.167	23-Sep-18	0.0042114520	1/ 237	0.421	23-Sep-19	1.53
SA-06	La Moinerie	Sark	Sark	4.5	site change to a monopole					0.0020748531	1/ 482	0.207	23-Sep-19	
SA-07	Maseline Harbour	Sark	Sark	5	No change	0.0256410256	1/ 39	2.564	23-Sep-18	0.0058604970	1/ 171	0.586	23-Sep-19	-0.77
SA-08	Sark Telephone Exchange	Sark	Sark	20	No change	0.0006101281	1/ 1639	0.061	23-Sep-18	0.0009955678	1/ 1004	0.100	23-Sep-19	0.63

Key Findings from the 2019 surveys

Previously audited sites

In general, the sites that were previously measured with the highest readings remained high during the 2019 surveys but still well within the ICNIRP guideline levels. Relatively small variations were observed in 2019 which are normal and would be the result of changes made to the sites by the operators (changes of technology, addition of channels), the expected variability of radiowave propagation, and the changes in the actual location of the measurement probe. The changes are however relatively modest and nothing suggest that these sites will exceed the ICNIRP limit during operation. Below are a few examples of sites surveyed in 2019 – all the other sites surveyed in 2019 had emissions levels lower than 1% of ICNIRP.

Sand Street Car Park, Jersey 18.3%

The Total emission level at Sand Street Car Park (Site JE-161) was measured at 18.3% of ICNIRP (up from 12.5% in 2018). This is still well within the ICNIRP guidelines limit and is not a concern, but this site is higher than most sites and should be closely monitored for any changes. This site probably has the highest emissions of all mast locations across the Channel Islands as a result of having all 3 mobile operators using all of their allocated spectrum.

Co-operative Grand Marché, Jersey 4.9%

The Total emission level at Co-operative Grand Marché (Site JE-201) was measured at 4.9% of ICNIRP (up from 1.3% in 2018). This site was only used by Airtel in 2018 but has since seen Sure join the site.

Kensington Car Park, Jersey 5.8%

The Total emission level at Kensington Car Park (Site JE-092) was measured at 5.8% of ICNIRP (down from 8.7% in 2018).

Stafford Hotel, Jersey 4.9%

The Total emission level at Stafford Hotel (Site JE-179) was measured at 4.9% of ICNIRP (down from 8.4% in 2017).

Fort Regent, Jersey 5.2%

The Total emission level at Fort Regent (Site JE-064) was measured at 5.2% of ICNIRP (up from 0.9% in 2017).

Fish Co-op, Guernsey 3.1%

The Total emission level at Fish Co-op (Site GU-024) was measured at 3.1% of ICNIRP (down from 14.5% in 2017).

Notes regarding specific sites

Fort Regent in Jersey had a noticeable increase in emission levels (from 0.9% in 2017 to 5.2% in 2019). This site is now shared by all 3 mobile operators, one of whom (JT) was trialling a 5G transmission test. The additional 5G emissions as shown in the associated report weren't the cause of the increase but more likely to be down to one of the possible reasons mentioned at the top of this page.

Conclusions and Recommendations

General

All levels measured in 2019 remained below the ICNIRP guideline levels for the General Public. The findings are consistent with previous years where sites measured the highest in comparison with other sites were found to be ranked high again this year. We also observed a balanced proportion of sites that have recorded decreased (green) and increased emission levels (red) compared to previous years' surveys – see table on page 3.

Changes to Operators Allocated Spectrum

In May 2019, Ofcom changed the frequency allocation for the Channel Islands operators. These changes primarily affected the 2100MHz and the 2600MHz bands. The operators allocations have been slightly reshuffled in order to allow wider, continuous channels which provide better spectrum efficiency. As a result, some operators have seen their frequency move up or down in order to make room for the neighbouring operator. The result of this is that the radiowave environment has slightly changed compared to the previous year and might explain some of the variations observed this year and reported on the previous page.

5G trial sites

This year, iWireless also surveyed two sites where one operator (JT) was trialling a 5G test service at 3.5GHz (First Tower Lane in Guernsey and Fort Regent in Jersey). We found that the site in Guernsey was not operating at the time of the survey but the one in Jersey was transmitting. The emissions in this band were found to be very low and did not contribute anything significant in the total emission levels.

Recommendation

Looking at the last 3 years of audits, we can draw the following conclusions:

- All the sites are safe and well within the ICNIRP recommended guideline levels, but a few sites in the Channel Islands can be seen as being higher than the majority of the sites. These sites have aggregated emission levels of between 1% and 18.3% of ICNIRP. In general, these sites are rooftop macrocells (i.e. serving a wide area) but located in proximity to where the public has access (rooftop car parks for example). Changes to these sites over the years (addition of new technologies, channels and new operators) have not caused sufficient increases in the level of emissions
- The large majority of the sites is in rural locations far from the public. In the majority of cases, we measured low emission levels around these sites.
- Concerns expressed by some Islanders about emissions, in particular around the possible launch of 5G services, have been noted.

From the above observations, we recommend that surveys are carried out every year on a carefully selected number of sites rather than carry out a blanket audit of all the sites. The latter takes too long to complete and includes too many sites that do not generally cause concern to the local residents.

As mobile technology evolves, it is also important to continue to respond to those concerns expressed by the public relating to emissions and demonstrate that monitoring is independent, continuous and robust. The media exposure that the yearly audits attracts also helps put the message firmly across that CICRA is proactive and considers the health & safety from emissions as one of its priorities.

5G is also likely to lead to a multiplication of small, localised, low power sites to provide the high data rate services this technology promises to deliver. Responding swiftly to this rapid deployment should help allay public concerns.

iWS ID	Site Name	Parish	Island	Height (m)	Changes to site	Lat	Long	Site Type	Operator 1	Operator 2	Operator 3	Site Address	Postcode
AL-01	Alderney Exchange	Alderney	Alderney	22	New technologies added	49.713911	-2.201523	Lattice Mast	JT	Sure		Longis Road	GY9 3YB
AL-04	Fort Doyle	Alderney	Alderney	5	No change since 2017	49.721240	-2.207900	Monopole	Sure			Platte Saline Road	
AL-06	Alderney Water Tower	St Anne	Alderney	23	No change since 2017	49.715080	-2.207860	Rooftop	Airtel			Mouriaux Water Tower, Les Mouriaux	
GU-05	Airport-Shed	Forest	Guernsey	6	Site moved	49.432430	-2.595380	Rooftop	JT			Generator Shed, States Airport, La Villiaze	
GU-23	First Tower Lane	St Peter Port	Guernsey	14	5G trial site	49.469700	-2.536110	Lattice Mast	JT			First Tower Lane	
GU-24	Fish-Co-op	St Peter Port	Guernsey	4	Previously high EMF site	49.452940	-2.532100	Outdoor Wall	JT			Castel Emplacement	
GU-25	Fort St George	St Peter Port	Guernsey	20	New technology added	49.445010	-2.539300	Lattice Mast	Airtel	JT	Sure	Rue De La Douzaine/Fort Road	
GU-38	Jerbourg	St Martin	Guernsey	14	New technology added	49.426120	-2.536000	Monopole	Airtel	JT	Sure	Route De Jerbourg	GY4 6BJ
GU-77	Les Douvres Hotel	St Martin	Guernsey	8	New site	49.429722	-2.559333	Rooftop	Sure			Rue de La Motte	GY4 6ER
GU-78	Nineteen Golf Club	St Peter Port	Guernsey	14	New site	49.459444	-2.565277	Lattice Mast	Sure			Rohais de Haut	GY1 1FD
JE-033	CTV	St Helier	Jersey	8	New technology added	49.200530	-2.110620	Rooftop	JT			La Pouquelaye	
JE-064	Fort Regent	St Helier	Jersey	6	5G trial site	49.182850	-2.104700	Rooftop	Airtel	JT	Sure	Fort Regent Signal Station/Sports & Leisure Centre	JE2 4UX
JE-092	Kensington Car Park	St Helier	Jersey	20	Previously high reading site	49.187700	-2.115130	Rooftop	JT	Sure		Car Park, 59 Kensington Place	
JE-120	Living Legend	St Peter	Jersey	12	No change	49.220390	-2.165630	Monopole	JT			La Rue du Petit l'Aleval	
JE-161	Sand Street Car Park	St Helier	Jersey	22	New site share	49.185200	-2.110560	Rooftop	JT	Sure	Airtel	Sand Street	JE2 3QF
JE-168	St Aubin Harbour	St Brelade	Jersey	3	No change	49.185550	-2.168400	Outdoor wall	JT			Sub Station, Le Boulevard	
JE-179	Stafford Hotel	St Helier	Jersey	20	No change	49.188190	-2.113060	Rooftop	JT			Kensington Place	
JE-201	Co-Operative Grand Marché	St Helier	Jersey	16	New operator added	49.188360	-2.099060	Rooftop	Airtel	Sure		La Rue Le Masurier	JE2 4YE
JE-203	Hampshire Hotel	St Helier	Jersey	15	New site	49.191432	-2.102456	Rooftop	Airtel			Val Plaisant	
JE-204	Handois	St Lawrence	Jersey	6	New site	49.230765	-2.133770	Monopole	JT			Ville es Gazeaux	
JE-205	Hotel de France Lido	St Helier	Jersey	6	New site (relocated HdF)	49.190880	-2.096400	Outdoor wall	JT			St Saviour's Hill	
JE-206	Millbrook lab	St Lawrence	Jersey	6	New site	49.204004	-2.133312	Monopole	JT			Le Chemin des Moulins	
SA-01	Little Sark	Sark	Sark	5	No change	49.416400	-2.371840	Monopole	JT	Sure		Clos De La Pointe Field, Little Sark	
SA-02	Dixcart	Sark	Sark	6	site change to a monopole	49.427300	-2.360100	Monopole	Sure			Stocks Hotel Dixcart	GY10 1SD
SA-03 &	Sark Harbour	Sark	Sark	6	No change	49.430622	-2.342838	Outdoor wall	JT	Sure		Harbour Office	
SA-04	Sark Harbour Crane Shed	Sark	Sark	6	No change	49.431132	-2.342714	Outdoor wall	JT	Sure		Harbour Hill	
SA-06	La Moinerie	Sark	Sark	4.5	site change to a monopole	49.428460	-2.360660	Monopole	JT	Sure		La Rondellerie, Rue de la Moinerie	
SA-07	Maseline Harbour	Sark	Sark	5	No change	49.432210	-2.342740	Monopole	Sure			Harbour Sark	
SA-08	Sark Telephone Exchange	Sark	Sark	20	No change	49.433711	-2.354428	Lattice Mast	Airtel	JT	Sure	Telephone Exchange, Rue Lucas	GY10 1SG

Photo Pack – new sites

Les Douvres Hotel, GU



Handois, JE



Hampshire Hotel, JE



Hotel de France Lido, JE



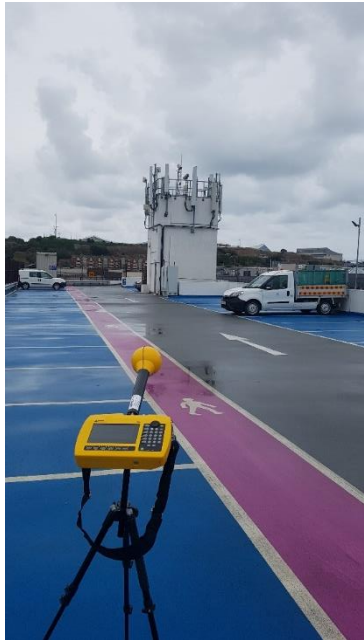
Millbrook lab, JE



Nineteen Golf Club, GU



Photo pack – sites with highest emission readings



**Kensington Car Park –
5.8% of ICNIRP limit**



**Cooperative Grand
Marché 5.2% of ICNIRP
limit**



**Stafford Hotel
4.9% of ICNIRP limit**

**Fish Coop
3.1% of ICNIRP limit**

**Sand Street Car Park –
18.3% of ICNIRP limit**



**Fort Regent –
5.2% of ICNIRP limit**

