

**WIRELESS TELEGRAPHY ACT, 1926****WIRELESS TELEGRAPHY (FURTHER TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES) (NO.2) REGULATIONS 2021**

Temporary Licence for terrestrial systems capable of providing Electronic Communications Services

Licence under section 5 of the Act of 1926 to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 of the Act of 1926 hereby grants the following licence to **Three Ireland (Hutchison) Limited of 28/29 Sir John Rogerson's Quay, Dublin 2** (“the Licensee”).

The Licensee is hereby authorised to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in Part 2 of this Licence, subject to such apparatus being installed, maintained, worked and used in accordance with the terms, conditions and restrictions set out in the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.2) Regulations 2021 ( S.I. No.137 of 2021) (“the Regulations”), including but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the conditions contained within the Regulations and within Parts 1 to 4 of this Licence; and
- (2) The Licensee shall ensure that it makes payment of the fee detailed in the Regulations.

For the purpose of this Licence, the definitions set out in the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.2) Regulations 2021 apply.

This Licence shall come into effect on **02 April 2021** (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on **1 July 2021**.

Signed:

For and on behalf of the Commission for Communications Regulation

Date of Issue: 30 March 2021

**Part 1**

## Commencement and expiry dates of Spectrum Blocks

<b>Authorised Band</b>	<b>Name of Spectrum Block</b>	<b>Frequency Assigned to Spectrum Block</b>	<b>Commencement Date per Spectrum Block</b>	<b>Expiry Date per Spectrum Block</b>
<i>700 MHz Duplex</i>	<i>Blocks C and D</i>	<i>713–723 MHz / 768–778 MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>
<i>2.1 GHz</i>	<i>Block A</i>	<i>1920–1925MHz / 2110–2115MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>
<i>2.1 GHz</i>	<i>Block B</i>	<i>1925-1930 MHz/2115-2120 MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>
<i>2.1 GHz</i>	<i>Block C</i>	<i>1930–1935 MHz / 2120–2125MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>
<i>2.1 GHz</i>	<i>Block J</i>	<i>1965–1970MHz/ 2155–2160MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>
<i>2.1 GHz</i>	<i>Block K</i>	<i>1970–1975 MHz/2160–2165MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>
<i>2.1 GHz</i>	<i>Block L</i>	<i>1975-1980 MHz/2165-2170MHz</i>	<i>02 April 2021</i>	<i>01 July 2021</i>

**Part 2**

The Apparatus to which this Licence applies

<b>Equipment Ref. Index</b>	<b>Equipment Description</b>	<b>Equipment Number</b>	<b>Manufacturer</b>
1	BTS	Redacted	Redacted
2	BTS	Redacted	Redacted
3	BTS	Redacted	Redacted
4	BTS	Redacted	Redacted
5	BTS	Redacted	Redacted
6	BTS	Redacted	Redacted
7	BTS	Redacted	Redacted
8	BTS	Redacted	Redacted
9	Antenna	Redacted	Redacted
10	Antenna	Redacted	Redacted
11	Antenna	Redacted	Redacted
12	Antenna	Redacted	Redacted
13	Antenna	Redacted	Redacted
14	Antenna	Redacted	Redacted
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18	Antenna	Redacted	Redacted
19	Antenna	Redacted	Redacted
20	Antenna	Redacted	Redacted
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159	Repeater	Redacted	Redacted
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165	Repeater	Redacted	Redacted
166	Repeater	Redacted	Redacted
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174	Antenna	Redacted	Redacted
175	Antenna	Redacted	Redacted
176	Repeater	Redacted	Redacted
177	Repeater	Redacted	Redacted
178	Repeater	Redacted	Redacted
179	Antenna	Redacted	Redacted
180	BTS	Redacted	Redacted

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212	Repeater	Redacted	Redacted
213	Antenna	Redacted	Redacted
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215	Antenna	Redacted	Redacted
216	Repeater	Redacted	Redacted
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265	Antenna	Redacted	Redacted
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267	Antenna	Redacted	Redacted
268	Antenna	Redacted	Redacted



**Part 3**

## Apparatus Location and Details

<b>Site Identity</b>	<b>Eastings</b>	<b>Northings</b>	<b>Authorised Band (MHz)</b>
CE0032	164162	171670	2100
CE0032	164162	171670	2100
CE0035	102678	164290	2100
CE0035	102678	164290	2100
CE0098	161189	165829	2100
CE0098	161189	165829	2100
CE0104	103908	174648	2100
CE0104	103908	174648	2100
CE0107	139858	180615	2100
CE0107	139858	180615	2100
CE0118	105896	156907	2100
CE0118	105896	156907	2100
CE0119	127175	182792	700
CE0119	127175	182792	700
CE0119	127175	182792	2100
CE0119	127175	182792	2100
CE0121	135044	173784	700
CE0121	135044	173784	700
CE0121	135044	173784	2100
CE0121	135044	173784	2100
CE0137	133681	177103	2100
CE0137	133681	177103	2100
CE0142	148583	178043	700
CE0142	148583	178043	700
CE0142	148583	178043	2100
CE0142	148583	178043	2100
CE0145	155662	171958	700
CE0145	155662	171958	700
CE0145	155662	171958	2100
CE0145	155662	171958	2100
CE0151	87427	158114	700
CE0151	87427	158114	700
CE0151	87427	158114	2100
CE0151	87427	158114	2100
CE0158	152341	164244	700
CE0158	152341	164244	700
CE0158	152341	164244	2100
CE0158	152341	164244	2100
CE0164	170117	172879	700
CE0164	170117	172879	700
CE0164	170117	172879	2100
CE0164	170117	172879	2100

CK0001	167750	71983	700
CK0001	167750	71983	700
CK0001	167750	71983	2100
CK0001	167750	71983	2100
CK0002	167493	73178	700
CK0002	167493	73178	700
CK0002	167493	73178	2100
CK0002	167493	73178	2100
CK0007	169463	71816	700
CK0007	169463	71816	700
CK0007	169463	71816	2100
CK0007	169463	71816	2100
CK0009	168478	73756	700
CK0009	168478	73756	700
CK0009	168478	73756	2100
CK0009	168478	73756	2100
CK0022	167119	68169	700
CK0022	167119	68169	700
CK0022	167119	68169	2100
CK0022	167119	68169	2100
CK0039	174657	64761	700
CK0039	174657	64761	700
CK0039	174657	64761	2100
CK0039	174657	64761	2100
CK0044	167405	74362	700
CK0044	167405	74362	700
CK0044	167405	74362	2100
CK0044	167405	74362	2100
CK0045	170914	72472	700
CK0045	170914	72472	700
CK0045	170914	72472	2100
CK0045	170914	72472	2100
CK0075	161251	75777	700
CK0075	161251	75777	700
CK0075	161251	75777	2100
CK0075	161251	75777	2100
CK0077	164205	74446	700
CK0077	164205	74446	700
CK0077	164205	74446	2100
CK0077	164205	74446	2100
CK0079	167193	71754	2100
CK0079	167193	71754	2100
CK0082	167820	71720	700
CK0082	167820	71720	700
CK0082	167820	71720	2100
CK0082	167820	71720	2100

CK0096	171085	110518	700
CK0096	171085	110518	700
CK0096	171085	110518	2100
CK0096	171085	110518	2100
CK0099	188023	73222	700
CK0099	188023	73222	700
CK0099	188023	73222	2100
CK0099	188023	73222	2100
CK0103	210259	77418	700
CK0103	210259	77418	700
CK0103	210259	77418	2100
CK0103	210259	77418	2100
CK0116	195198	73555	700
CK0116	195198	73555	700
CK0116	195198	73555	2100
CK0116	195198	73555	2100
CK0121	149516	54999	700
CK0121	149516	54999	700
CK0121	149516	54999	2100
CK0121	149516	54999	2100
CK0124	164768	72936	700
CK0124	164768	72936	700
CK0124	164768	72936	2100
CK0124	164768	72936	2100
CK0141	167411	71686	2100
CK0141	167411	71686	2100
CK0145	133872	50224	2100
CK0145	133872	50224	2100
CK0151	142603	95650	700
CK0151	142603	95650	700
CK0151	142603	95650	2100
CK0151	142603	95650	2100
CK0152	138660	80296	700
CK0152	138660	80296	700
CK0152	138660	80296	2100
CK0152	138660	80296	2100
CK0158	131885	92586	700
CK0158	131885	92586	700
CK0158	131885	92586	2100
CK0158	131885	92586	2100
CK0178	187683	61428	2100
CK0178	187683	61428	2100
CK0180	121474	107894	2100
CK0180	121474	107894	2100
CK0182	146479	112446	700
CK0182	146479	112446	700

CK0182	146479	112446	2100
CK0182	146479	112446	2100
CK0246	173121	76123	700
CK0246	173121	76123	700
CK0246	173121	76123	2100
CK0246	173121	76123	2100
CK0249	179140	95914	700
CK0249	179140	95914	700
CK0249	179140	95914	2100
CK0249	179140	95914	2100
CK0365	183747	90266	2100
CK0365	183747	90266	2100
CK0367	171860	70547	700
CK0367	171860	70547	700
CK0367	171860	70547	2100
CK0367	171860	70547	2100
CK0373	144498	53405	700
CK0373	144498	53405	700
CK0373	144498	53405	2100
CK0373	144498	53405	2100
CK0384	114009	52917	2100
CK0384	114009	52917	2100
CK0409	147831	82271	2100
CK0409	147831	82271	2100
CK0410	144139	61670	2100
CK0410	144139	61670	2100
CK0420	166550	74648	2100
CK0420	166550	74648	2100
CK0437	164858	70154	700
CK0437	164858	70154	700
CK0437	164858	70154	2100
CK0437	164858	70154	2100
CK0456	146855	90340	2100
CK0456	146855	90340	2100
CK0457	159824	74146	700
CK0457	159824	74146	700
CK0457	159824	74146	2100
CK0457	159824	74146	2100
CK0465	165077	69522	700
CK0465	165077	69522	700
CK0465	165077	69522	2100
CK0465	165077	69522	2100
CK0466	159873	70731	700
CK0466	159873	70731	700
CK0466	159873	70731	2100
CK0466	159873	70731	2100

CK0474	172687	59888	700
CK0474	172687	59888	700
CK0474	172687	59888	2100
CK0474	172687	59888	2100
CK0478	190393	68963	700
CK0478	190393	68963	700
CK0478	190393	68963	2100
CK0478	190393	68963	2100
CK0483	179678	59963	700
CK0483	179678	59963	700
CK0483	179678	59963	2100
CK0483	179678	59963	2100
CK0498	156119	98527	700
CK0498	156119	98527	700
CK0498	156119	98527	2100
CK0498	156119	98527	2100
CK0502	165712	95776	700
CK0502	165712	95776	700
CK0502	165712	95776	2100
CK0502	165712	95776	2100
CK0510	155154	98604	2100
CK0510	155154	98604	2100
CK0515	172616	70099	700
CK0515	172616	70099	700
CK0515	172616	70099	2100
CK0515	172616	70099	2100
CK0519	199752	67382	2100
CK0519	199752	67382	2100
CK0522	166998	72074	700
CK0522	166998	72074	700
CK0522	166998	72074	2100
CK0522	166998	72074	2100
CK0527	165309	70782	700
CK0527	165309	70782	700
CK0527	165309	70782	2100
CK0527	165309	70782	2100
CK0545	167784	72499	2100
CK0545	167784	72499	2100
CK0551	148475	121203	700
CK0551	148475	121203	700
CK0551	148475	121203	2100
CK0551	148475	121203	2100
CK0552	199391	84040	700
CK0552	199391	84040	700
CK0552	199391	84040	2100
CK0552	199391	84040	2100

CK0554	166297	73440	700
CK0554	166297	73440	700
CK0554	166297	73440	2100
CK0554	166297	73440	2100
CK0555	170021	69637	2100
CK0555	170021	69637	2100
CK0557	188023	74989	700
CK0557	188023	74989	700
CK0557	188023	74989	2100
CK0557	188023	74989	2100
CK0558	162471	67417	700
CK0558	162471	67417	700
CK0558	162471	67417	2100
CK0558	162471	67417	2100
CK0563	164774	72433	2100
CK0563	164774	72433	2100
CK0569	168460	72628	700
CK0569	168460	72628	700
CK0569	168460	72628	2100
CK0569	168460	72628	2100
CK0576	209939	75985	700
CK0576	209939	75985	700
CK0576	209939	75985	2100
CK0576	209939	75985	2100
CK0582	165062	71342	700
CK0582	165062	71342	700
CK0582	165062	71342	2100
CK0582	165062	71342	2100
CK0583	172223	70765	700
CK0583	172223	70765	700
CK0583	172223	70765	2100
CK0583	172223	70765	2100
CK0586	167354	71414	2100
CK0586	167354	71414	2100
CK0592	166308	71037	700
CK0592	166308	71037	700
CK0592	166308	71037	2100
CK0592	166308	71037	2100
CK0593	197088	91402	2100
CK0593	197088	91402	2100
CK0594	210880	77287	700
CK0594	210880	77287	700
CK0594	210880	77287	2100
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CK0595	174399	62945	700
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CK0597	167737	73863	700
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CK0607	164936	81328	700
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CK0610	166674	71589	700
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CK0614	178023	78114	700
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CK0618	180972	73257	700
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CK0619	172960	62792	700
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CK0621	167704	72143	700
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CK0622	170855	74484	2100
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CK0625	165808	72429	2100
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CK0631	176765	84184	700
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CK0640	156357	95177	700
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CL0002	273055	175881	2100
CL0002	273055	175881	2100
CL0003	272729	176992	2100
CL0003	272729	176992	2100
CL0009	272066	176742	2100
CL0009	272066	176742	2100
CL0039	285460	173247	2100
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CL0040	290562	156954	2100
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CL0053	274277	162102	2100
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CL0055	286563	173230	2100
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CL0062	269663	166063	700
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CL0064	289047	161458	700
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CL0074	273680	177339	700
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CN0070	270114	300072	2100
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CN0091	242194	304427	700
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CN0094	267941	296467	2100
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CN0099	260368	289529	700
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CN0103	278464	295132	700
CN0103	278464	295132	700
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CN0105	253977	295879	700
CN0105	253977	295879	700
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DO0041	198976	384889	700
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DO0042	208796	417319	700
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DO0049	222441	426882	700
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DO0069	190437	367751	700
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DO0071	167457	415203	700
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DO0139	219608	416757	2100
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DO0158	232512	405629	700
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DO0163	217687	411690	2100
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DO0168	213016	422090	700
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DO0169	213936	434689	700
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DO0171	223568	404837	2100
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DO0203	186445	424477	2100
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DO0208	216934	411480	2100
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DO0212	235102	431753	700
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DO0213	210741	366663	700
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DU0013	315242	234744	700
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DU0015	314736	234476	700
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DU0030	317204	235802	700
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DU0032	316649	236419	2100
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DU0035	315976	236204	2100
DU0035	315976	236204	2100
DU0039	313314	235838	2100
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DU0063	316513	231810	700
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DU0064	315513	232081	700
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DU0069	320294	236970	700
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DU0090	319286	238357	700
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DU0102	316535	230818	700
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DU0123	320294	224450	700
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DU0185	309664	233741	700
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DU0191	312544	233050	2100
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DU0197	306526.54	235088.98	700
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DU0199	304627	235226	700
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DU0202	321317	239171	700
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DU0238	305620	227672	700
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DU0251	311034	237156	700
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DU0256	319122	246490	700
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DU0267	305508	241532	2100
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DU0282	312125	240578	700
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DU0304	315981	235009	700
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DU0307	315888	234519	700
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DU0344	314430	227369	700
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DU0359	325494	254718	700
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DU0377	314918	240553	700
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DU0380	304920	231035	2100
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DU0384	317144	245510	700
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DU0390	315367	234257	2100
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DU0403	307154	239589	700
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DU0611	310876	224980	700
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DU0649	315925	232442	700
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DU0827	318735	226968	700
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DU0828	317096	234256	700
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DU0842	317865	263942	2100
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DU0846	314071	234027	700
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DU0860	315346	257985	2100
DU0860	315346	257985	2100
DU0871	322004	223560	2100
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DU0873	320732	240179	700
DU0873	320732	240179	700
DU0873	320732	240179	2100
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DU0876	322582	243668	700
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DU0881	303881	239442	2100
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DU0892	318105	232572	700
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DU0895	317475	228163	2100
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DU0900	315638	234132	700
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DU0902	309802	237623	700
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DU0913	324559	228222	700
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DU0915	318718	247943	700
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DU0916	322815	255500	2100
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DU0948	321286	238061	700
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DU0952	315542	231456	700
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DU0977	317611	232833	700
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DU0981	315004	234374	700
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DU0983	313379	235075	700
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DU0991	317775	230478	700
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DU0997	318024	234440	700
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DU0999	315011	232715	700
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DU1014	315603.47	232886.71	700
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DU1031	315352	235384	2100
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DU1043	318585	234738	2100
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DU1078	309957	234311	700
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DU1079	307778	242236	700
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DU1095	310264	237652	700
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DU1098	316693	239420	700
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DU1141	313973	255292	2100
DU1141	313973	255292	2100
DU1154	319330	263355	700
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DU1155	303629	227311	700
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DU1157	306684	238038	700
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DU1159	325583	256920	700
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DU1168	322708	251229	700
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DU1168	322708	251229	2100
DU1172	309836	244809	700
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DU1177	308448	228825	700
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DU1183	320648	242369	700
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DU1189	316279	234275	700
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DU1195	315301	236675	700
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DU1196	317245	234022	700
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DU1196	317245	234022	2100
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DU1211	325034	260389	700
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DU1213	317929	235204	700
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DU1222	300858	235294	700
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DU1222	300858	235294	2100
DU1225	303094	234198	700
DU1225	303094	234198	700
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DU1232	316780	243508	700
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DU1234	308224	228238	700
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DU1236	309617	226510	700
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DU1237	301751	222773	700
DU1237	301751	222773	700
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DU1281	315563	239085	700
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DU1294	310746	228992	2100
DU1294	310746	228992	2100
DU1297	300526	227569	700
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DU1323	319654.52	229791.91	2100
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DU1357	316030	234474	700
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DU1371	326609	254101	700
DU1371	326609	254101	700
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DU1373	312480	237573	700
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DU1376	316523	235929	2100
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DU1380	320146	245271	700
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DU1391	317368	234584	700
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DU1421	314937	235019	700
DU1421	314937	235019	700
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DU1422	312712	236293	700
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DU1435	316768	235237	700
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DU1467	316688	235021	700
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DU1486	317050	232816	700
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DU1488	303874	227933	700
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DU1518	318341	240636	700
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DU1526	313003	233737	2100
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DU1541	301212	234068	700
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DU1547	323311	239785	700
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DU1549	317636	235550	700
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DU1568	317100	233248	700
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DU1578	310023	241098	2100
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DU1579	310019	241095	2100
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DU1594	315413.61	230155.01	700
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DU1594	315413.61	230155.01	2100
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DU1598	317944	226370	700
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GA0024	133485	225292	2100
GA0024	133485	225292	2100
GA0040	141176	219994	700
GA0040	141176	219994	700
GA0040	141176	219994	2100
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GA0041	150705	241354	700
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GA0056	190312	219177	2100
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GA0070	101955	225335	2100
GA0070	101955	225335	2100
GA0087	168119	204816	2100
GA0087	168119	204816	2100
GA0240	152150	254512	700
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GA0248	144120	247080	2100
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GA0258	185287	231044	2100
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GA0276	124717	225040	2100
GA0276	124717	225040	2100
GA0278	129489	225028	2100
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GA0289	113652	237197	700
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GA0293	129084	226460	700
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GA0299	155156	211282	2100
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GA0306	149450	266766	700
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GA0313	163430	249594	700
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GA0314	121446	232604	700
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GA0316	150485	221205	700
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GA0351	145549	239719	700
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GA0358	132152	227021	2100
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GA0359	129829	225363	700
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GA0363	130149	225230	700
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GA0367	145872	212426	700
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GA0369	126482	224192	700
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GA0370	93097	225013	700
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GA0371	185002	205147	2100
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GA0375	128002	223686	700
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GA0376	174634	258040	2100
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GA0377	185529	229980	700
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GA0381	128393	227065	700
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GA0385	125874	227384	700
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GA0387	129938	225406	700
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KD0027	275670	201488	700
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KD0029	283969	226975	700
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KD0157	274628	227022	700
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KD0177	278216	196552	2100
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KD0180	278999	202470	700
KD0180	278999	202470	700
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KD0214	283886	209750	700
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KD0215	292243	236633	2100
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KD0216	287915	240155	700
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KD0222	296972	233700	2100
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KD0224	289281	222697	2100
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KD0225	295649	233588	2100
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KD0228	298420	237141	700
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KD0236	278338	223630	2100
KD0238	293611	238039	700
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KD0240	298546	235936	700
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KD0249	293035	223131	700
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KD0250	268865	242282	700
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KD0253	272678	189980	700
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KK0005	250649	155704	2100
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KK0025	262788	132408	2100
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KK0031	252453	165636	700
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KK0055	256913	175061	700
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KK0102	251385	156218	700
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KK0107	266292	145600	700
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KR0173	96310	91091	700
KR0173	96310	91091	700

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KR0183	77505	96550	700
KR0183	77505	96550	700
KR0183	77505	96550	2100
KR0183	77505	96550	2100
KR0197	112666	105393	700
KR0197	112666	105393	700
KR0197	112666	105393	2100
KR0197	112666	105393	2100
KR0203	121439	81816	700
KR0203	121439	81816	700
KR0203	121439	81816	2100
KR0203	121439	81816	2100
KR0206	97162	135125	700
KR0206	97162	135125	700
KR0206	97162	135125	2100
KR0206	97162	135125	2100
KR0207	98910	115105	700
KR0207	98910	115105	700
KR0207	98910	115105	2100
KR0207	98910	115105	2100
KR0208	71496	64780	700
KR0208	71496	64780	700
KR0208	71496	64780	2100
KR0208	71496	64780	2100
KR0209	95074	114087	700
KR0209	95074	114087	700
KR0209	95074	114087	2100
KR0209	95074	114087	2100
KR0210	99758	99251	700
KR0210	99758	99251	700
KR0210	99758	99251	2100
KR0210	99758	99251	2100
KR0212	109066	143027	700
KR0212	109066	143027	700
KR0212	109066	143027	2100
KR0212	109066	143027	2100
LF0002	218795	284201	2100
LF0002	218795	284201	2100
LF0045	218139	267729	2100
LF0045	218139	267729	2100
LF0049	213103	275484	700
LF0049	213103	275484	700
LF0049	213103	275484	2100
LF0049	213103	275484	2100



LF0053	201636	269297	700
LF0053	201636	269297	700
LF0053	201636	269297	2100
LF0053	201636	269297	2100
LF0055	212978	274136	700
LF0055	212978	274136	700
LF0055	212978	274136	2100
LF0055	212978	274136	2100
LK0004	157126	156454	2100
LK0004	157126	156454	2100
LK0006	157161	155672	700
LK0006	157161	155672	700
LK0006	157161	155672	2100
LK0006	157161	155672	2100
LK0016	158155	156829	700
LK0016	158155	156829	700
LK0016	158155	156829	2100
LK0016	158155	156829	2100
LK0059	126694	142026	2100
LK0059	126694	142026	2100
LK0069	172559	125214	700
LK0069	172559	125214	700
LK0069	172559	125214	2100
LK0069	172559	125214	2100
LK0172	165700	156776	700
LK0172	165700	156776	700
LK0172	165700	156776	2100
LK0172	165700	156776	2100
LK0182	179113	117937	700
LK0182	179113	117937	700
LK0182	179113	117937	2100
LK0182	179113	117937	2100
LK0191	157355	156575	2100
LK0191	157355	156575	2100
LK0218	162869	158103	2100
LK0218	162869	158103	2100
LK0224	146663	144850	700
LK0224	146663	144850	700
LK0224	146663	144850	2100
LK0224	146663	144850	2100
LK0225	159075	156529	700
LK0225	159075	156529	700
LK0225	159075	156529	2100
LK0225	159075	156529	2100
LO0001	297558	287439	700
LO0001	297558	287439	700

LO0001	297558	287439	2100
LO0001	297558	287439	2100
LO0009	304900	306909	2100
LO0009	304900	306909	2100
LO0010	306172	306827	700
LO0010	306172	306827	700
LO0010	306172	306827	2100
LO0010	306172	306827	2100
LO0012	302637	308883	700
LO0012	302637	308883	700
LO0012	302637	308883	2100
LO0012	302637	308883	2100
LO0085	295084	292998	2100
LO0085	295084	292998	2100
LO0094	308146.6	274186.45	700
LO0094	308146.6	274186.45	700
LO0094	308146.6	274186.45	2100
LO0094	308146.6	274186.45	2100
LO0098	305808	303060	700
LO0098	305808	303060	700
LO0098	305808	303060	2100
LO0098	305808	303060	2100
LO0100	309201	275026	2100
LO0100	309201	275026	2100
LO0101	306009	287955	700
LO0101	306009	287955	700
LO0101	306009	287955	2100
LO0101	306009	287955	2100
LO0110	308805	275529	2100
LO0110	308805	275529	2100
LO0115	305064	277919	700
LO0115	305064	277919	700
LO0115	305064	277919	2100
LO0115	305064	277919	2100
LO0116	302829	301229	700
LO0116	302829	301229	700
LO0116	302829	301229	2100
LO0116	302829	301229	2100
LO0118	304237	289126	700
LO0118	304237	289126	700
LO0118	304237	289126	2100
LO0118	304237	289126	2100
LO0119	313797	280795	2100
LO0119	313797	280795	2100
LO0126	293981	301353	2100
LO0126	293981	301353	2100

LO0128	308514	276096	700
LO0128	308514	276096	700
LO0128	308514	276096	2100
LO0128	308514	276096	2100
LO0129	304758	307234	700
LO0129	304758	307234	700
LO0129	304758	307234	2100
LO0129	304758	307234	2100
LO0131	317426	307787	700
LO0131	317426	307787	700
LO0131	317426	307787	2100
LO0131	317426	307787	2100
LO0132	304458	304164	700
LO0132	304458	304164	700
LO0132	304458	304164	2100
LO0132	304458	304164	2100
LO0133	305705	305662	700
LO0133	305705	305662	700
LO0133	305705	305662	2100
LO0133	305705	305662	2100
LT0014	222443	303545	2100
LT0014	222443	303545	2100
LT0040	220572	299334	2100
LT0040	220572	299334	2100
LT0043	196706	300923	2100
LT0043	196706	300923	2100
LT0048	201781	314026	2100
LT0048	201781	314026	2100
LX0024	229424	210825	700
LX0024	229424	210825	700
LX0024	229424	210825	2100
LX0024	229424	210825	2100
LX0086	254895	211244	700
LX0086	254895	211244	700
LX0086	254895	211244	2100
LX0086	254895	211244	2100
LX0100	258340	185207	2100
LX0100	258340	185207	2100
LX0101	266981	173696	2100
LX0101	266981	173696	2100
LX0102	234493	178466	700
LX0102	234493	178466	700
LX0102	234493	178466	2100
LX0102	234493	178466	2100
LX0106	245871	199717	2100
LX0106	245871	199717	2100

LX0108	243417	184924	2100
LX0108	243417	184924	2100
LX0109	254396	212432	700
LX0109	254396	212432	700
LX0109	254396	212432	2100
LX0109	254396	212432	2100
LX0111	235814	190304	700
LX0111	235814	190304	700
LX0111	235814	190304	2100
LX0111	235814	190304	2100
LX0114	258567	194022	2100
LX0114	258567	194022	2100
LX0116	250247	195589	700
LX0116	250247	195589	700
LX0116	250247	195589	2100
LX0116	250247	195589	2100
LX0121	219772	178754	700
LX0121	219772	178754	700
LX0121	219772	178754	2100
LX0121	219772	178754	2100
LX0122	257344	210716	700
LX0122	257344	210716	700
LX0122	257344	210716	2100
LX0122	257344	210716	2100
MH0012	254196	340087	2100
MH0012	254196	340087	2100
MH0013	280497	310694	2100
MH0013	280497	310694	2100
MH0021	286819	326328	2100
MH0021	286819	326328	2100
MH0054	269182	329078	2100
MH0054	269182	329078	2100
MH0056	270758	312103	2100
MH0056	270758	312103	2100
MH0057	287000	302960	700
MH0057	287000	302960	700
MH0057	287000	302960	2100
MH0057	287000	302960	2100
MH0060	263335	326679	2100
MH0060	263335	326679	2100
MH0065	287239	325030	700
MH0065	287239	325030	700
MH0065	287239	325030	2100
MH0065	287239	325030	2100
MH0082	257690	324627	700
MH0082	257690	324627	700

MH0082	257690	324627	2100
MH0082	257690	324627	2100
MH0084	277987	326037	2100
MH0084	277987	326037	2100
MH0085	273603	332707	700
MH0085	273603	332707	700
MH0085	273603	332707	2100
MH0085	273603	332707	2100
MH0148	268247	334752	700
MH0148	268247	334752	700
MH0148	268247	334752	2100
MH0148	268247	334752	2100
MH0149	264613	319453	700
MH0149	264613	319453	700
MH0149	264613	319453	2100
MH0149	264613	319453	2100
MT0041	291977	280290	2100
MT0041	291977	280290	2100
MT0045	253173	274030	2100
MT0045	253173	274030	2100
MT0122	280560	271787	700
MT0122	280560	271787	700
MT0122	280560	271787	2100
MT0122	280560	271787	2100
MT0128	305281	253027	700
MT0128	305281	253027	700
MT0128	305281	253027	2100
MT0128	305281	253027	2100
MT0134	279879	255815	700
MT0134	279879	255815	700
MT0134	279879	255815	2100
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MT0140	285653	266971	700
MT0140	285653	266971	700
MT0140	285653	266971	2100
MT0140	285653	266971	2100
MT0143	273889	275995	700
MT0143	273889	275995	700
MT0143	273889	275995	2100
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MT0144	284124	248716	2100
MT0144	284124	248716	2100
MT0149	301840	257132	2100
MT0149	301840	257132	2100
MT0150	270792	245720	2100
MT0150	270792	245720	2100

MT0166	310055	273943	2100
MT0166	310055	273943	2100
MT0168	287109	267400	700
MT0168	287109	267400	700
MT0168	287109	267400	2100
MT0168	287109	267400	2100
MT0181	275140	249814	700
MT0181	275140	249814	700
MT0181	275140	249814	2100
MT0181	275140	249814	2100
MT0182	283573	283892	700
MT0182	283573	283892	700
MT0182	283573	283892	2100
MT0182	283573	283892	2100
MT0186	286291	268919	700
MT0186	286291	268919	700
MT0186	286291	268919	2100
MT0186	286291	268919	2100
MT0195	272281	276471	2100
MT0195	272281	276471	2100
MT0197	266371	255159	2100
MT0197	266371	255159	2100
MT0203	282653	259793	2100
MT0203	282653	259793	2100
MT0205	291108	248804	700
MT0205	291108	248804	700
MT0205	291108	248804	2100
MT0205	291108	248804	2100
MT0207	288773	256839	700
MT0207	288773	256839	700
MT0207	288773	256839	2100
MT0207	288773	256839	2100
MT0208	273088	258301	700
MT0208	273088	258301	700
MT0208	273088	258301	2100
MT0208	273088	258301	2100
MT0210	281915	256085	700
MT0210	281915	256085	700
MT0210	281915	256085	2100
MT0210	281915	256085	2100
MT0214	299775	246348	700
MT0214	299775	246348	700
MT0214	299775	246348	2100
MT0214	299775	246348	2100
MT0217	287219	289873	700
MT0217	287219	289873	700

MT0217	287219	289873	2100
MT0217	287219	289873	2100
MT0225	301899	251834	700
MT0225	301899	251834	700
MT0225	301899	251834	2100
MT0225	301899	251834	2100
MT0229	311441.53	262235.1	700
MT0229	311441.53	262235.1	700
MT0229	311441.53	262235.1	2100
MT0229	311441.53	262235.1	2100
MY0005	114746	290076	700
MY0005	114746	290076	700
MY0005	114746	290076	2100
MY0005	114746	290076	2100
MY0013	118924	264509	700
MY0013	118924	264509	700
MY0013	118924	264509	2100
MY0013	118924	264509	2100
MY0017	70457	332267	2100
MY0017	70457	332267	2100
MY0060	119078	330922	700
MY0060	119078	330922	700
MY0060	119078	330922	2100
MY0060	119078	330922	2100
MY0063	81080	337483	700
MY0063	81080	337483	700
MY0063	81080	337483	2100
MY0063	81080	337483	2100
MY0064	62123	319312	700
MY0064	62123	319312	700
MY0064	62123	319312	2100
MY0064	62123	319312	2100
MY0075	129340	287039	2100
MY0075	129340	287039	2100
MY0139	123617	250948	2100
MY0139	123617	250948	2100
MY0156	115280	338452	2100
MY0156	115280	338452	2100
MY0160	138891	282508	2100
MY0160	138891	282508	2100
MY0164	99926	283976	2100
MY0164	99926	283976	2100
MY0165	124227	318928	700
MY0165	124227	318928	700
MY0165	124227	318928	2100
MY0165	124227	318928	2100

MY0180	96716	275511	2100
MY0180	96716	275511	2100
MY0185	149431	279476	700
MY0185	149431	279476	700
MY0185	149431	279476	2100
MY0185	149431	279476	2100
MY0199	134194	275097	2100
MY0199	134194	275097	2100
MY0202	110624	286897	700
MY0202	110624	286897	700
MY0202	110624	286897	2100
MY0202	110624	286897	2100
MY0204	116041	289675	700
MY0204	116041	289675	700
MY0204	116041	289675	2100
MY0204	116041	289675	2100
MY0206	98950	282163	700
MY0206	98950	282163	700
MY0206	98950	282163	2100
MY0206	98950	282163	2100
MY0208	127074	304477	700
MY0208	127074	304477	700
MY0208	127074	304477	2100
MY0208	127074	304477	2100
MY0209	148329	287546	700
MY0209	148329	287546	700
MY0209	148329	287546	2100
MY0209	148329	287546	2100
MY0210	130404	280019	700
MY0210	130404	280019	700
MY0210	130404	280019	2100
MY0210	130404	280019	2100
OF0006	233670	224784	700
OF0006	233670	224784	700
OF0006	233670	224784	2100
OF0006	233670	224784	2100
OF0019	220492	230145	700
OF0019	220492	230145	700
OF0019	220492	230145	2100
OF0019	220492	230145	2100
OF0023	213295	201945	2100
OF0023	213295	201945	2100
OF0026	252121	221226	700
OF0026	252121	221226	700
OF0026	252121	221226	2100
OF0026	252121	221226	2100



OF0038	234240	227859	700
OF0038	234240	227859	700
OF0038	234240	227859	2100
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OF0072	263274	232560	700
OF0072	263274	232560	700
OF0072	263274	232560	2100
OF0072	263274	232560	2100
OF0073	205912	204702	700
OF0073	205912	204702	700
OF0073	205912	204702	2100
OF0073	205912	204702	2100
OF0074	225812	233171	2100
OF0074	225812	233171	2100
OF0076	261077	223562	700
OF0076	261077	223562	700
OF0076	261077	223562	2100
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OF0086	233934	225109	2100
OF0086	233934	225109	2100
OF0088	208897	223726	2100
OF0088	208897	223726	2100
OF0091	202391	216066	700
OF0091	202391	216066	700
OF0091	202391	216066	2100
OF0091	202391	216066	2100
OF0093	252460	213340	700
OF0093	252460	213340	700
OF0093	252460	213340	2100
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OF0096	211392	224775	700
OF0096	211392	224775	700
OF0096	211392	224775	2100
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RS0017	188522	315086	2100
RS0017	188522	315086	2100
RS0027	160590	298215	2100
RS0027	160590	298215	2100
RS0039	167890	278840	700
RS0039	167890	278840	700
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RS0039	167890	278840	2100
RS0079	167967	288204	2100
RS0079	167967	288204	2100
RS0080	177624	305300	2100
RS0080	177624	305300	2100

RS0089	189113	258238	2100
RS0089	189113	258238	2100
RS0090	197858	254196	2100
RS0090	197858	254196	2100
RS0093	187226	264420	700
RS0093	187226	264420	700
RS0093	187226	264420	2100
RS0093	187226	264420	2100
RS0095	161966	294782	700
RS0095	161966	294782	700
RS0095	161966	294782	2100
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RS0096	161620	276818	700
RS0096	161620	276818	700
RS0096	161620	276818	2100
RS0096	161620	276818	2100
RS0100	200749	241245	700
RS0100	200749	241245	700
RS0100	200749	241245	2100
RS0100	200749	241245	2100
RS0105	181161	282724	700
RS0105	181161	282724	700
RS0105	181161	282724	2100
RS0105	181161	282724	2100
RS0107	192710	280957	700
RS0107	192710	280957	700
RS0107	192710	280957	2100
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RS0108	171996	270623	700
RS0108	171996	270623	700
RS0108	171996	270623	2100
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RS0110	174957	275759	700
RS0110	174957	275759	700
RS0110	174957	275759	2100
RS0110	174957	275759	2100
SI0003	169335	335502	700
SI0003	169335	335502	700
SI0003	169335	335502	2100
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SI0015	160163	346700	2100
SI0015	160163	346700	2100
SI0062	182127	322184	2100
SI0062	182127	322184	2100
SI0069	146462	328801	2100
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SI0094	166053	346801	2100
SI0094	166053	346801	2100
SI0095	169359	335705	700
SI0095	169359	335705	700
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SI0096	169623	334472	2100
TP0004	240383	120741	2100
TP0004	240383	120741	2100
TP0025	240115	128889	2100
TP0025	240115	128889	2100
TP0026	220885	133443	700
TP0026	220885	133443	700
TP0026	220885	133443	2100
TP0026	220885	133443	2100
TP0041	235393	134311	2100
TP0041	235393	134311	2100
TP0142	185727	152224	2100
TP0142	185727	152224	2100
TP0150	191186	132328	2100
TP0150	191186	132328	2100
TP0155	196731	111413	2100
TP0155	196731	111413	2100
TP0173	186935	178959	700
TP0173	186935	178959	700
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TP0178	185435	179073	2100
TP0178	185435	179073	2100
TP0184	173068	161556	2100
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TP0185	213208	126027	700
TP0185	213208	126027	700
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TP0189	207709	140834	700
TP0189	207709	140834	700
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TP0190	212560	158735	700
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TP0193	207483	139942	700
TP0193	207483	139942	700
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TP0193	207483	139942	2100
TP0195	197268	190027	2100
TP0195	197268	190027	2100
TP0197	191323	194718	2100
TP0197	191323	194718	2100
TP0203	220259	122320	2100
TP0203	220259	122320	2100
TP0206	217993	122874	700
TP0206	217993	122874	700
TP0206	217993	122874	2100
TP0206	217993	122874	2100
TP0208	217813	156211	2100
TP0208	217813	156211	2100
TP0211	212037	162974	700
TP0211	212037	162974	700
TP0211	212037	162974	2100
TP0211	212037	162974	2100
TP0214	211409	156973	2100
TP0214	211409	156973	2100
TP0215	222354	147841	2100
TP0215	222354	147841	2100
WK0007	325543	217272	2100
WK0007	325543	217272	2100
WK0009	327707	215256	700
WK0009	327707	215256	700
WK0009	327707	215256	2100
WK0009	327707	215256	2100
WK0012	327133	212551	700
WK0012	327133	212551	700
WK0012	327133	212551	2100
WK0012	327133	212551	2100
WK0022	329314	207452	2100
WK0022	329314	207452	2100
WK0029	331120	192544	2100
WK0029	331120	192544	2100
WK0044	295588	206072	2100
WK0044	295588	206072	2100
WK0045	292744	195400	2100
WK0045	292744	195400	2100
WK0046	303168	218365	2100
WK0046	303168	218365	2100
WK0047	314069	190938	2100
WK0047	314069	190938	2100

WK0049	303307	177229	700
WK0049	303307	177229	700
WK0049	303307	177229	2100
WK0049	303307	177229	2100
WK0054	306755	171671	2100
WK0054	306755	171671	2100
WK0109	295745	208098	2100
WK0109	295745	208098	2100
WK0111	329651	212539	2100
WK0111	329651	212539	2100
WK0114	322392	217187	2100
WK0114	322392	217187	2100
WK0115	303311	172836	700
WK0115	303311	172836	700
WK0115	303311	172836	2100
WK0115	303311	172836	2100
WK0117	288325	194520	2100
WK0117	288325	194520	2100
WK0118	319001	187748	700
WK0118	319001	187748	700
WK0118	319001	187748	2100
WK0118	319001	187748	2100
WK0129	325724	210957	2100
WK0129	325724	210957	2100
WK0135	326404	218796	700
WK0135	326404	218796	700
WK0135	326404	218796	2100
WK0135	326404	218796	2100
WK0139	329644	211003	700
WK0139	329644	211003	700
WK0139	329644	211003	2100
WK0139	329644	211003	2100
WK0142	326518	216858	700
WK0142	326518	216858	700
WK0142	326518	216858	2100
WK0142	326518	216858	2100
WK0146	327475	205686	2100
WK0146	327475	205686	2100
WK0149	323510	204804	700
WK0149	323510	204804	700
WK0149	323510	204804	2100
WK0149	323510	204804	2100
WK0164	316356	196168	700
WK0164	316356	196168	700
WK0164	316356	196168	2100
WK0164	316356	196168	2100

WK0165	329672	212121	700
WK0165	329672	212121	700
WK0165	329672	212121	2100
WK0165	329672	212121	2100
WK0167	285831	189597	2100
WK0167	285831	189597	2100
WM0005	247598	254630	2100
WM0005	247598	254630	2100
WM0095	259791	263451	2100
WM0095	259791	263451	2100
WM0104	204333	241518	700
WM0104	204333	241518	700
WM0104	204333	241518	2100
WM0104	204333	241518	2100
WM0106	206555	242103	2100
WM0106	206555	242103	2100
WM0108	251627	244023	2100
WM0108	251627	244023	2100
WM0109	246487	240514	2100
WM0109	246487	240514	2100
WM0110	204443	241960	700
WM0110	204443	241960	700
WM0110	204443	241960	2100
WM0110	204443	241960	2100
WM0114	206454	240863	700
WM0114	206454	240863	700
WM0114	206454	240863	2100
WM0114	206454	240863	2100
WM0119	243443	253010	700
WM0119	243443	253010	700
WM0119	243443	253010	2100
WM0119	243443	253010	2100
WM0125	251855	258128	2100
WM0125	251855	258128	2100
WM0126	228098	246791	700
WM0126	228098	246791	700
WM0126	228098	246791	2100
WM0126	228098	246791	2100
WM0135	243811	254153	700
WM0135	243811	254153	700
WM0135	243811	254153	2100
WM0135	243811	254153	2100
WT0003	259587	111967	700
WT0003	259587	111967	700
WT0003	259587	111967	2100
WT0003	259587	111967	2100

WT0008	260706	111913	700
WT0008	260706	111913	700
WT0008	260706	111913	2100
WT0008	260706	111913	2100
WT0036	209300	87196	2100
WT0036	209300	87196	2100
WT0044	197933	100809	700
WT0044	197933	100809	700
WT0044	197933	100809	2100
WT0044	197933	100809	2100
WT0045	268939	99997	2100
WT0045	268939	99997	2100
WT0055	267354	101018	2100
WT0055	267354	101018	2100
WT0102	267702	104211	2100
WT0102	267702	104211	2100
WT0105	217418	87049	700
WT0105	217418	87049	700
WT0105	217418	87049	2100
WT0105	217418	87049	2100
WT0107	205303	95030	700
WT0107	205303	95030	700
WT0107	205303	95030	2100
WT0107	205303	95030	2100
WT0110	260444	112386	700
WT0110	260444	112386	700
WT0110	260444	112386	2100
WT0110	260444	112386	2100
WT0114	226063	93006	700
WT0114	226063	93006	700
WT0114	226063	93006	2100
WT0114	226063	93006	2100
WT0122	258062	110914	700
WT0122	258062	110914	700
WT0122	258062	110914	2100
WT0122	258062	110914	2100
WT0123	245740	113171	2100
WT0123	245740	113171	2100
WT0128	259834	112705	2100
WT0128	259834	112705	2100
WT0131	262415	110400	700
WT0131	262415	110400	700
WT0131	262415	110400	2100
WT0131	262415	110400	2100
WT0135	228241	121682	2100
WT0135	228241	121682	2100

WT0139	211967	77853	700
WT0139	211967	77853	700
WT0139	211967	77853	2100
WT0139	211967	77853	2100
WT0140	218249	90698	700
WT0140	218249	90698	700
WT0140	218249	90698	2100
WT0140	218249	90698	2100
WT0141	204470	98276	700
WT0141	204470	98276	700
WT0141	204470	98276	2100
WT0141	204470	98276	2100
WT0155	258807.15	111992.12	700
WT0155	258807.15	111992.12	700
WT0155	258807.15	111992.12	2100
WT0155	258807.15	111992.12	2100
WX0005	303969	121499	2100
WX0005	303969	121499	2100
WX0015	310114	114855	700
WX0015	310114	114855	700
WX0015	310114	114855	2100
WX0015	310114	114855	2100
WX0024	304791	120867	700
WX0024	304791	120867	700
WX0024	304791	120867	2100
WX0024	304791	120867	2100
WX0033	306941	138436	2100
WX0033	306941	138436	2100
WX0111	318157	162467	700
WX0111	318157	162467	700
WX0111	318157	162467	2100
WX0111	318157	162467	2100
WX0118	296947	103873	700
WX0118	296947	103873	700
WX0118	296947	103873	2100
WX0118	296947	103873	2100
WX0119	296356	139862	700
WX0119	296356	139862	700
WX0119	296356	139862	2100
WX0119	296356	139862	2100
WX0129	300400	136466	2100
WX0129	300400	136466	2100
WX0130	272646	126795	700
WX0130	272646	126795	700
WX0130	272646	126795	2100
WX0130	272646	126795	2100



WX0134	271975	127450	2100
WX0134	271975	127450	2100
WX0135	306321	127067	2100
WX0135	306321	127067	2100
WX0146	291260	130236	700
WX0146	291260	130236	700
WX0146	291260	130236	2100
WX0146	291260	130236	2100
WX0150	283132	124763	700
WX0150	283132	124763	700
WX0150	283132	124763	2100
WX0150	283132	124763	2100
WX0154	320444	147662	2100
WX0154	320444	147662	2100
WX0155	302281	157134	700
WX0155	302281	157134	700
WX0155	302281	157134	2100
WX0155	302281	157134	2100
WX0157	294967	141949	700
WX0157	294967	141949	700
WX0157	294967	141949	2100
WX0157	294967	141949	2100
WX0159	311251	107083	700
WX0159	311251	107083	700
WX0159	311251	107083	2100
WX0159	311251	107083	2100
WX0160	292911	113094	700
WX0160	292911	113094	700
WX0160	292911	113094	2100
WX0160	292911	113094	2100
WX0166	300940	143296	700
WX0166	300940	143296	700
WX0166	300940	143296	2100
WX0166	300940	143296	2100
WX0167	298380	144278	700
WX0167	298380	144278	700
WX0167	298380	144278	2100
WX0167	298380	144278	2100
WX0169	319446	167444	700
WX0169	319446	167444	700
WX0169	319446	167444	2100
WX0169	319446	167444	2100
WX0170	318871	154448	700
WX0170	318871	154448	700
WX0170	318871	154448	2100
WX0170	318871	154448	2100

WX0192	300202	120994	700
WX0192	300202	120994	700
WX0192	300202	120994	2100
WX0192	300202	120994	2100
WX0194	315820	165962	700
WX0194	315820	165962	700
WX0194	315820	165962	2100
WX0194	315820	165962	2100

## Part 4

### Licence Conditions

#### Section 1: General

##### *Harmful Interference*

1. In the event of Harmful Interference, the affected Licensees shall exchange information with a view to resolving the Harmful Interference by mutual consent. Where resolution cannot be agreed between the affected Licensees, the Commission may mediate in accordance with its statutory functions, objectives and duties.

#### Section 2: Technical Conditions

##### *Definitions*

1. The following additional definitions shall apply to this Licence:

“2RN” means RTÉ Transmission Network DAC (trading as 2rn);

“Active Antenna Systems” or “AAS” means a Base Station and an antenna system where the amplitude and/or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment. This excludes long-term beam shaping such as fixed electrical down tilt. In AAS Base Stations the antenna system is integrated as part of the Base Station system or product;

“Non-Active Antenna Systems” or “non-AAS” means a Base Station and an antenna system that provides one or more antenna connectors, which are connected to one or more separately designed passive antenna elements to radiate radio waves. The amplitude and phase of the signals to the antenna elements is not continually adjusted in response to short term changes in the radio environment;

“Aeronautical Primary Radars” means apparatus (including “Star2000” and “TA10” models) providing primary aircraft detection used in airport surveillance networks at Dublin, Cork and Shannon airports;

“Base Station” means Apparatus connected to a backhaul network which provides a Radiocommunication Service to Terminal Stations using spectrum in the 700 MHz Duplex, 2.1 GHz Band or 2.6 GHz Band;

“Block Edge Mask” or “BEM” is an emission mask that is defined as a function of frequency in relation to a ‘block edge’, the latter being the frequency boundary of a spectrum block for which rights of use are assigned to a Licensee. The BEM consists of several elements which are defined for certain measurement bandwidths.

“dBm” means decibels of power referenced to one milliwatt;

“Downlink” means transmissions from a Base Station to a Terminal Station;

“IAA” means the Irish Aviation Authority;

“Inter-Licensee Synchronisation Procedure” means the synchronisation procedure set out in Section 3 of this Licence;

“MNO” means a mobile network operator with an existing network in Ireland;

“Power Flux Density limit” or pfd limit (dBW/m<sup>2</sup>) equals the interference threshold at radar receiver input (measured in dBW) minus the radar antenna gain (measured in dBi) plus  $10^{\log(4\pi/\lambda^2)}$ , where  $\lambda$  is the wavelength in meters;

“TD-LTE” means the TDD variant of LTE (Long Term Evolution) technology;

“TRP” (total radiated power) is a measure of how much power the antenna actually radiates and is defined as the integral of the power transmitted in different directions over the entire radiation sphere;

“Terminal Station” means mobile user equipment and fixed customer premise equipment which communicates with a Base Station using spectrum in the 700 MHz Duplex, 2.1 GHz Band or 2.6 GHz Band;

“Uplink” means transmissions from a Terminal Station to a Base Station; and

“Virgin Media” means Virgin Media Ireland Limited.

### *Technical Conditions*

#### 2. The 700 MHz Duplex

- (a) Only terrestrial systems compatible with the Decision of 2016 can be worked and used in the 700 MHz Duplex.
- (b) The FDD mode of operation shall be used in the 700 MHz Duplex. The duplex spacing shall be 55 MHz with Terminal Station transmission (FDD uplink) located in the lower frequency band 703-733 MHz and Base Station transmission (FDD downlink) located in the upper frequency band 758-788 MHz.
- (c) The Licensee shall comply with all Memoranda of Understanding (‘MoU’)<sup>1</sup> agreed between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications (“Ofcom”) in the UK, or its successor, in relation to the 700 MHz Duplex.

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<sup>1</sup> [Memorandum of Understanding](#) on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at [www.comreg.ie](http://www.comreg.ie)

- (d) The Licensee shall comply with the 700 MHz Coordination Procedures as agreed to by the MNOs, 2RN and Virgin Media on 3 April 2020 and published by the Commission on 7 April 2020 as Annex 4 to Commission Document 20/27.

#### Base Stations

- (e) Within a 700 MHz Duplex Block assigned to the Licensee, the in-block power from a Base Station must not exceed a maximum mean EIRP of 64 dBm/5 MHz per antenna.
- (f) Outside of the 700 MHz Duplex Block(s) assigned to the Licensee, the Licensee shall comply with the out-of-block BEM as specified in Section B of the Annex of the Decision of 2016.

#### Terminal Stations

- (g) The maximum mean in-block power limit of 23 dBm for Terminal Stations shall apply<sup>2</sup>.
- (h) The out-of-block technical conditions set out in Table 10 to Table 12 of the Annex to the Decision of 2016 shall apply.
- (i) Where a Licensee holds more than  $2 \times 10$  MHz in the 700 MHz Duplex and if this assignment is deployed starting at 703 MHz, the licensee shall not deploy a bandwidth greater than 10 MHz for Terminal Stations in order to meet the conditions as set out in Table 12 of the Annex to the Decision of 2016 to provide protection to the frequency range 470 - 694 MHz.

### 3. The 2.1 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2012 can be worked and used in the 2.1 GHz Band.
- (b) The duplex mode of operation shall be FDD. The duplex spacing shall be 190 MHz with Terminal Station transmission (FDD uplink) located in the lower part of the band starting at 1920 MHz and finishing at 1980 MHz and Base Station transmission (FDD downlink) located in the upper part of the band starting at 2110 MHz and finishing at 2170 MHz.

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<sup>2</sup> This power limit is specified as EIRP for Terminal Stations designed to be fixed or installed and as total radiated power (TRP) for Terminal Stations designed to be mobile or nomadic. This value is subject to a tolerance of up to + 2 dB, to take account of operation under extreme environmental conditions and production spread.

- (c) The Licensee shall comply with all MoU<sup>3</sup> between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications (“Ofcom”) in the UK, or its successor, in relation to the spectrum in the 2.1 GHz Band.

#### Base Stations

- (d) Within a 2.1 GHz Band Block assigned to the Licensee, the in-block radiated power from a Base Station transmitter in the downlink direction must not exceed:
- (i) an EIRP of 64 dBm/5 MHz per antenna for non-AAS; and
  - (ii) a TRP limit of 57 dBm/5MHz per cell for AAS.
- (e) Outside of the 2.1 GHz Band Block(s) assigned to the Licensee, the Licensee shall comply with the out-of-block BEM as specified in Section C of the Annex to the Decision of 2012.

#### Terminal Stations

- (f) The maximum mean in-block power limit over frequencies of FDD Uplink of 24 dBm for Terminal Stations shall apply<sup>4</sup>.

### 4. The 2.6 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2008 can be worked and used in the 2.6 GHz Band.
- (b) Within the 2.6 GHz Band FDD Generic Frequency Blocks, the duplex mode of operation is FDD, where the duplex spacing shall be 120 MHz with terminal station transmission (Uplink) located in the lower part of the band starting at 2500 MHz (extending to 2570 MHz) and base station transmission (downlink) located in the upper part of the band starting at 2620 MHz.
- (c) Within the 2570 - 2620 MHz frequency range of the 2.6 GHz Band, the modes of operation permitted in accordance with the Decision of 2008 are:
- (i) TDD;

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<sup>3</sup> [Memorandum of Understanding](#) on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at [www.comreg.ie](http://www.comreg.ie)

<sup>4</sup> This power limit is specified as EIRP for terminal stations designed to be fixed or installed and as TRP for terminal stations designed to be mobile or nomadic. EIRP and TRP are equivalent for isotropic antennas. It is recognised that this value may be subject to a tolerance defined in the harmonised standards to take account of operation under extreme environmental conditions and production spread.

- (ii) Base Station transmission only; and
  - (iii) Terminal Station transmission only.
- (d) To achieve coexistence of adjacent FDD and TDD networks:
- (i) the 2.6 GHz Band TDD Fixed Frequency Block (Lower) is a restricted spectrum block as described in the Annex of the Decision of 2008; and
  - (ii) the 2.6 GHz Band TDD Fixed Frequency Block (Upper) may be utilised in accordance with the Decision of 2008 noting that it may suffer an increased risk of interference due to the emissions from the FDD downlink.
- (e) Licensees assigned 2.6 GHz Band TDD Blocks shall comply with the Inter-Licensee Synchronisation Procedure set out in Section 3 of this Licence.
- (f) The Licensee shall comply with all MoU<sup>5</sup> between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications (“Ofcom”) in the UK, or its successor, in relation to spectrum in the 2.6 GHz Band.

#### Base Stations

- (g) Within any 2.6 GHz Band FDD Generic Frequency Blocks, any 2.6 GHz Band TDD Generic Frequency Blocks, and the 2.6 GHz Band TDD Fixed Frequency Block (Upper)<sup>6</sup> assigned to a Licensee, the in-block radiated power from a Base Station transmitter must not exceed an upper limit of:
- (i) 68 dBm/5 MHz per antenna for Non-AAS; and
  - (ii) 60 dBm/5 MHz per cell for AAS.
- (h) Within the 2.6 GHz Band TDD Fixed Frequency Block (Lower), assigned to a Licensee, the in-block radiated power from a Base Station transmitter in the downlink direction must not exceed a mean in-block power of:
- (i) 25 dBm/5 MHz EIRP per antenna for Non-AAS; and
  - (ii) 22 dBm/5 MHz TRP limit per cell for AAS.

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<sup>5</sup> [Memorandum of Understanding](#) on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at [www.comreg.ie](http://www.comreg.ie)

<sup>6</sup> The 2.6 GHz Band TDD Fixed Frequency Block (Upper), which is immediately adjacent to the FDD downlink, may suffer an increased risk of interference due to the emissions from the FDD downlink.

- (i) Outside of any 2.6 GHz Band FDD Generic Frequency Blocks assigned to the Licensee, the Licensee shall comply with the out-of-block BEM which is built up by combining Tables 2, 3 and 4 of Section C of the Annex of the Decision of 2008, in such a way that the limit for each frequency is given by the higher value out of the baseline and the in-block power limits.
- (j) Outside of the 2.6 GHz Band TDD Fixed Frequency Block (Lower), any 2.6 GHz Band TDD Generic Frequency Blocks and the 2.6 GHz Band TDD Fixed Frequency Block (Upper) assigned to a Licensee, the Licensee shall comply with the Inter Licensee Synchronisation procedure set out in Section 3.
- (k) Outside of the 2.6 GHz Band TDD Fixed Frequency Block (Lower) and where Base Station antennas are placed indoors, the BEM for Non-AAS may be in line with Table 6 of Section C of the Annex of the Decision of 2008, provided that at geographical borders to other Member States, Table 3 of Section C of the Annex of the Decision of 2008 applies and that Table 5 of Section C of the Annex of the Decision of 2008 remains valid nationwide.
- (l) Unless otherwise agreed between the Licensee and the IAA in writing, the Licensee shall ensure protection of all Aeronautical Primary Radars<sup>7</sup>, by:
  - i. deploying Base Stations outside of exclusion zones defined in Figures 4.3, 4.5, 4.6 and 5.3 of the Plum Report (Commission Document 19/124c)<sup>8</sup>; and
  - ii. complying with the relevant Power Flux Density (pfd) limits with respect to:
    - I. the STAR2000 radars with locations as set out in Chapter 3 of Commission Document 19/59c<sup>9</sup> as follows:
      - A. an out-of-band Base Station pfd limit of -145 dBW/m<sup>2</sup>/MHz per operator to address impact of spurious MFCN emissions at the radar antenna; and
      - B. an in-band Base Station pfd limit of -83 dBW/m<sup>2</sup> per operator, to address the impact of blocking and intermodulation effects at radar receivers.
    - II. the TA10 radar with a location as set out in Chapter 5 of Commission Document 19/124c<sup>10</sup> as follows:

<sup>7</sup> Aeronautical radar locations (Dublin, Shannon and Cork) and technical parameters are detailed in Plum Report, Commission Documents 19/59c and 19/124c, available at [www.comreg.ie](http://www.comreg.ie)

<sup>8</sup> Shape files (.SHP) representing these figures are available at [www.comreg.ie](http://www.comreg.ie)

<sup>9</sup> Commission Document 19/59c, available at [www.comreg.ie](http://www.comreg.ie)

<sup>10</sup> Commission Document 19/124c, available at [www.comreg.ie](http://www.comreg.ie)



- A. an out-of-band Base Station pfd limit of  $-156 \text{ dBW/m}^2/\text{MHz}$  per operator to address the impact of spurious MFCN emissions at the radar antenna; and
- B. an in-band Base Station pfd limit of  $-93 \text{ dBW/m}^2$  per operator, to address the impact of blocking and intermodulation effects at radar receivers.

For deployments in compliance with condition (1) above, the Licensee shall nominate a point of contact for coordination with the IAA and provide written notification to the IAA of any 2.6 GHz Band deployments at least 48 hours in advance of their deployment, and provide such information on any 2.6 GHz Band deployments as may reasonably be required by the IAA, including information on antenna height, antenna orientation, and predicted coverage plots.

#### Terminal Stations

- (m) The maximum mean in-block power (including Automatic Transmitter Power Control range) of:
  - (i)  $35 \text{ dBm}/5 \text{ MHz}$  EIRP; and
  - (ii)  $31 \text{ dBm}/5 \text{ MHz}$  TRP,
 shall apply to Terminal Stations<sup>11</sup>.

### Section 3: Inter-Licensee Synchronisation Procedure

*This Section 3 applies only to Licensees who have been assigned 2.6 GHz Band TDD Blocks.*

#### Definitions

1. The following additional definitions shall apply in this section:

“Default Frame Structure” means the frame structure as detailed in detailed in 3(1) below;

“Indoor Small Cell” means either a Non-AAS Base Station with an EIRP of less than or equal to  $24 \text{ dBm}$  per  $20 \text{ MHz}$  carrier or an AAS Base Station with a TRP of less than or equal to  $16$

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<sup>11</sup> EIRP should be used for fixed or installed terminal stations and the TRP should be used for the mobile or nomadic terminal stations. TRP is a measure of how much power the antenna actually radiates. The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.

dBm per 20 MHz carrier that is located indoors either within a residential or non-residential property;

“Other Frame Structure” means a frame structure other than the Default Frame Structure;

“Restrictive BEM” means, for Licensees utilising the Other Frame Structure (or failing to synchronise with adjacent channel networks for any other reason): for any 2.6 GHz Band TDD Blocks assigned to a Licensee, a restrictive BEM is given by combining Table 3 and either Table 2<sup>12</sup> or Table 5<sup>13</sup> as appropriate in Section C of the Annex of the Decision of 2008, in such a way that the limit for each frequency is given by the higher value out of the baseline and the in-block power limits applies;

“Unrestrictive BEM” means Operators utilising the Default Frame Structure on their network (and having a common reference phase clock with adjacent channel operators<sup>14</sup>): for any 2.6 GHz Band TDD Blocks assigned to a Licensee, a BEM given by combining Table 2<sup>12</sup> or Table 5<sup>13</sup> as appropriate, Tables 3 and 4 of Section C. of the Annex of the Decision of 2008, in such a way that the limit for each frequency is given by the higher value out of the baseline and the in-block power limits applies ;

### *Introduction*

2. (1) Licensees assigned 2.6 GHz Band TDD Blocks shall be bound by the inter-Licensee synchronisation procedure set out in this Section 3.

(2) Licensees shall co-operate in such a way that one network deployment within spectrum in the 2.6 GHz Band does not cause Harmful Interference to that of another Licensee.

(3) This procedure sets out the circumstances in which Licensees may use the Unrestrictive BEM and the Restrictive BEM, so as to minimise the risk of Harmful Interference to other Licensees.

### *Conditions for using the Unrestrictive BEM*

3. Default Frame Structure - The technical conditions for Unrestrictive BEM shall apply where a Licensee’s Base Station complies with the Default Frame Structure outlined below:

- (a) Transmissions from a Licensee’s Base Station(s) shall have a frame structure as shown in Table 1. Indicated timeslots (or subframes) must not be allocated to

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<sup>12</sup> For 2.6 GHz Band TDD Generic Frequency Blocks and the 2.6 GHz Band TDD Fixed Frequency Block (Upper)

<sup>13</sup> For the case of 2.6 GHz Band TDD Fixed Frequency Block (Lower)

<sup>14</sup> Each operator needs to ensure the start of frame is aligned with adjacent channel operators above and below its assignment

anything other than Downlink (D) and Uplink (U) transmissions. ‘S’ denotes a special subframe. TD-LTE frame configuration 2 (Downlink: Uplink, 3:1) with special subframe configuration 6 or equivalent frame structures whose transmit and receive periods are aligned with this configuration are permitted;

- (b) Timeslots shall have a duration of 1 millisecond; and
- (c) Licensees shall ensure that frames start at a common reference time (+/- 1.5  $\mu$ s) so that all Licensees’ frames are aligned and transmissions synchronised.

DL/UL ratio	Timeslot or Subframe number									
	0	1	2	3	4	5	6	7	8	9
3:1	D	S	U	D	D	D	S	U	D	D

**Table 1: Default Frame Structure**

*Conditions for using the Restrictive BEM*

4. Other Frame Structure — the technical conditions for Restrictive BEM shall apply where a Licensee’s Base Station complies with the Other Frame Structure as outlined below:

- (a) All frame configurations that are not compatible with TD-LTE frame configuration 2 (3:1) with special sub-frame configuration 6 or equivalent frame structure whose transmit and receive periods are aligned with this configuration are permitted;
- (b) Licensees shall co-operate to minimise Harmful Interference caused by sub-frame overlaps if different technologies are used; and
- (c) Licensees using the Restrictive BEM shall not cause Harmful Interference to those Licensees’ networks that use the Default Frame Structure (or equivalent). Achieving this may include applying internal guard bands and/or reduced in block power levels in blocks adjacent to those Licensees’ networks that use the Default Frame Structure (or equivalent).

*Indoor Small Cells*

5. Indoor Small Cells for indoor domestic and other indoor locations are permitted to operate under the Unrestrictive BEM on the condition that they do not cause Harmful Interference to any other Licensees.

**Section 4: Coverage Requirements**

## 1. Coverage at specific locations in the State

<b>Coverage</b>	<b>Location</b>	<b>Obligation</b>
Outdoors	Specific locations in relation to the extraordinary situation arising from COVID-19 as may be determined from time to time by the Government and communicated to the Commission by the Department of the Environment, Climate and Communications	Best efforts using all rights of use available to the Licensee

**Table 1: Outdoor coverage obligations at specific locations in relation to the extraordinary situation arising from COVID-19**