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 **Vodafone Ireland Limited** of **Mountainview, Leopardstown Road, Dublin 18** ("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

Authorised Band	Name of Spectrum Block	Frequency Assigned to Spectrum Block	Commencement Date per Spectrum Block	Expiry Date per Spectrum Block
700	*Blocks E and F*	*723–733 MHz / 778–788 MHz*	*02 April 2021*	*01 July 2021*
2.1 GHz	*Blocks G to I*	*1950–1965 MHz / 2140–2155 MHz*	*02 April 2021*	*01 July 2021*

Part 2

The Apparatus to which this Licence applies

Equipment Ref. Index	Equipment Description	Manufacturer	Equipment Number
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
15	Antenna	Redacted	Redacted
16	Antenna	Redacted	Redacted
17	Antenna	Redacted	Redacted
18	Antenna	Redacted	Redacted
19	Antenna	Redacted	Redacted
20	Antenna	Redacted	Redacted
21	Antenna	Redacted	Redacted
22	Antenna	Redacted	Redacted
23	Antenna	Redacted	Redacted
24	Antenna	Redacted	Redacted
25	Antenna	Redacted	Redacted
26	Antenna	Redacted	Redacted
27	Antenna	Redacted	Redacted
28	Antenna	Redacted	Redacted
29	Antenna	Redacted	Redacted
30	Antenna	Redacted	Redacted
31	Antenna	Redacted	Redacted
32	Antenna	Redacted	Redacted
33	Antenna	Redacted	Redacted
34	Antenna	Redacted	Redacted
35	Antenna	Redacted	Redacted
36	Antenna	Redacted	Redacted
37	Antenna	Redacted	Redacted
38	Antenna	Redacted	Redacted
39	Antenna	Redacted	Redacted
40	Antenna	Redacted	Redacted
41	Antenna	Redacted	Redacted
42	Antenna	Redacted	Redacted

Part 3

Apparatus Location and Details

Site Identity	Eastings	Northings	Authorised Band (MHz)
CE014	122449	156251	700
CE014	122449	156251	700
CE019	133680	177106	2100
CE019	133680	177106	2100
CE019	133680	177106	700
CE019	133680	177106	700
CE023	127171	182793	2100
CE023	127171	182793	2100
CE023	127171	182793	700
CE023	127171	182793	700
CE054	160677	165265	700
CE054	160677	165265	700
CE058	155141	172441	2100
CE058	155141	172441	2100
CE058	155141	172441	700
CE058	155141	172441	700
CK027	173121	76123	2100
CK027	173121	76123	2100
CK032	135464	40485	2100
CK032	135464	40485	2100
CK039	130867	108953	2100
CK039	130867	108953	2100
CK053	167002	72074	2100
CK053	167002	72074	2100
CK055	167474	72051	2100
CK055	167474	72051	2100
CK071	141389	45402	700
CK071	141389	45402	700
CK107	68605	45822	2100
CK107	68605	45822	2100
CK107	68605	45822	700
CK107	68605	45822	700
CK152	172167	90814	700
CK152	172167	90814	700
CK219	166911	71622	2100
CK219	166911	71622	2100
CK224	167406	71654	2100
CK224	167406	71654	2100
CK243	164203	71133	2100
CK243	164203	71133	2100
CK302	162178	69404	2100

CK302	162178	69404	2100
CK302	162178	69404	700
CK302	162178	69404	700
CK307	172232	70764	2100
CK307	172232	70764	2100
CK349	168378	73744	2100
CK349	168378	73744	2100
CK349	168378	73744	700
CK349	168378	73744	700
CK354	148937	54948	2100
CK354	148937	54948	2100
CK355	163709	50509	2100
CK355	163709	50509	2100
CK356	138500	41688	2100
CK356	138500	41688	2100
CK357	112359	33586	2100
CK357	112359	33586	2100
CK392	168987	72504	2100
CK392	168987	72504	2100
CK392	168987	72504	700
CK392	168987	72504	700
CK446	168093	75089	2100
CK446	168093	75089	2100
CK446	168093	75089	700
CK446	168093	75089	700
CK604	165616	71287	2100
CK604	165616	71287	2100
CK608	165602	71244	2100
CK608	165602	71244	2100
CK634	175939	72507	2100
CK634	175939	72507	2100
CKCHF	166297	73450	2100
CKCHF	166297	73450	2100
CKCKA	168338	66296	2100
CKCKA	168338	66296	2100
CKCOH	166835	49469	700
CKCOH	166835	49469	700
CKDYX	165117	71016	2100
CKDYX	165117	71016	2100
CKE53	133903	72130	2100
CKE53	133903	72130	2100
CKELF	187982	77933	700
CKELF	187982	77933	700
CKGHS	197249	91404	2100
CKGHS	197249	91404	2100
CKKNH	192176	108707	700

CKKNH	192176	108707	700
CKLQY	167983	71848	2100
CKLQY	167983	71848	2100
CKMLW	155915	98627	2100
CKMLW	155915	98627	2100
CKQKR	167710	71001	2100
CKQKR	167710	71001	2100
CN020	235698	293242	2100
CN020	235698	293242	2100
CN050	239148	300285	2100
CN050	239148	300285	2100
CN061	264411	313078	2100
CN061	264411	313078	2100
CN070	260219	315083	2100
CN070	260219	315083	2100
DL103	192876	378416	2100
DL103	192876	378416	2100
DLBDN	182135	358808	2100
DLBDN	182135	358808	2100
DLSOR	216112	393763	2100
DLSOR	216112	393763	2100
DN011	313161	239656	2100
DN011	313161	239656	2100
DN047	319254	237201	2100
DN047	319254	237201	2100
DN083	315284	234010	2100
DN083	315284	234010	2100
DN094	319141	229897	2100
DN094	319141	229897	2100
DN099	320518	224445	2100
DN099	320518	224445	2100
DN109	317828	230502	2100
DN109	317828	230502	2100
DN113	313142	240948	2100
DN113	313142	240948	2100
DN141	316787	234862	2100
DN141	316787	234862	2100
DN141	316787	234862	700
DN141	316787	234862	700
DN146	324588	228244	2100
DN146	324588	228244	2100
DN152	315718	233112	2100
DN152	315718	233112	2100
DN167	307807	226989	2100
DN167	307807	226989	2100
DN176	323956	224316	2100

DN176	323956	224316	2100
DN176	323956	224316	700
DN176	323956	224316	700
DN179	320622	227693	2100
DN179	320622	227693	2100
DN189	316792	235289	2100
DN189	316792	235289	2100
DN1FN	311608	233667	2100
DN1FN	311608	233667	2100
DN252	319212	224018	2100
DN252	319212	224018	2100
DN291	322004	223560	2100
DN291	322004	223560	2100
DN302	310378	230551	2100
DN302	310378	230551	2100
DN316	325042	227298	2100
DN316	325042	227298	2100
DN316	325042	227298	700
DN316	325042	227298	700
DN323	324240	223201	2100
DN323	324240	223201	2100
DN334	318474	233461	2100
DN334	318474	233461	2100
DN340	318156	225647	2100
DN340	318156	225647	2100
DN344	315495	232088	2100
DN344	315495	232088	2100
DN353	320318	226934	2100
DN353	320318	226934	2100
DN358	308142	228618	2100
DN358	308142	228618	2100
DN368	309664	233741	2100
DN368	309664	233741	2100
DN430	316230	235547	2100
DN430	316230	235547	2100
DN433	310051	241415	2100
DN433	310051	241415	2100
DN442	321286	238061	2100
DN442	321286	238061	2100
DN470	316791	234518	2100
DN470	316791	234518	2100
DN485	312713	236293	2100
DN485	312713	236293	2100
DN491	318883	239869	2100
DN491	318883	239869	2100
DN495	316837	233008	2100

DN495	316837	233008	2100
DN501	313627	237333	2100
DN501	313627	237333	2100
DN517	319762	239254	2100
DN517	319762	239254	2100
DN535	319423	236422	2100
DN535	319423	236422	2100
DN555	318243	246652	2100
DN555	318243	246652	2100
DN573	317473	233447	2100
DN573	317473	233447	2100
DN576	314628	232510	2100
DN576	314628	232510	2100
DN588	313613	240038	2100
DN588	313613	240038	2100
DN614	319626	230681	2100
DN614	319626	230681	2100
DN614	319626	230681	700
DN614	319626	230681	700
DN661	311016	237130	2100
DN661	311016	237130	2100
DN677	314286	251516	2100
DN677	314286	251516	2100
DN677	314286	251516	700
DN677	314286	251516	700
DN680	317990	240535	2100
DN680	317990	240535	2100
DN686	303874	239448	2100
DN686	303874	239448	2100
DN719	315400	230147	2100
DN719	315400	230147	2100
DN719	315400	230147	700
DN719	315400	230147	700
DN748	318137	235483	2100
DN748	318137	235483	2100
DN760	305382	240907	2100
DN760	305382	240907	2100
DN763	307770	242233	2100
DN763	307770	242233	2100
DN786	306759	244008	2100
DN786	306759	244008	2100
DN786	306759	244008	700
DN786	306759	244008	700
DN788	315589	246799	2100
DN788	315589	246799	2100
DN791	317145	245511	2100

DN791	317145	245511	2100
DN795	320145	245270	2100
DN795	320145	245270	2100
DN801	324502	249428	2100
DN801	324502	249428	2100
DN801	324502	249428	700
DN801	324502	249428	700
DN822	315561	234645	2100
DN822	315561	234645	2100
DN823	314911	240557	2100
DN823	314911	240557	2100
DN823	314911	240557	700
DN823	314911	240557	700
DN842	316682	234096	2100
DN842	316682	234096	2100
DN864	306497	232854	2100
DN864	306497	232854	2100
DN864	306497	232854	700
DN864	306497	232854	700
DN872	319128	246487	2100
DN872	319128	246487	2100
DN875	309208	230358	2100
DN875	309208	230358	2100
DN880	316297	233481	2100
DN880	316297	233481	2100
DN888	317554	234228	2100
DN888	317554	234228	2100
DN892	309862	227576	2100
DN892	309862	227576	2100
DN893	319821	225966	2100
DN893	319821	225966	2100
DN900	314733	231295	2100
DN900	314733	231295	2100
DN923	317628	232830	2100
DN923	317628	232830	2100
DN947	314823	233230	2100
DN947	314823	233230	2100
DN947	314823	233230	700
DN947	314823	233230	700
DN981	317024	243156	2100
DN981	317024	243156	2100
DNAB1	316177	233753	2100
DNAB1	316177	233753	2100
DNABC	315623	233633	2100
DNABC	315623	233633	2100
DNABS	317662	231513	2100

DNABS	317662	231513	2100
DNAGI	299331	227303	2100
DNAGI	299331	227303	2100
DNBDE	323285	239731	2100
DNBDE	323285	239731	2100
DNBDT	307282	239283	2100
DNBDT	307282	239283	2100
DNBE1	314218	226821	2100
DNBE1	314218	226821	2100
DNBE1	314218	226821	700
DNBE1	314218	226821	700
DNBLB	313424	226918	2100
DNBLB	313424	226918	2100
DNBLP	320331	239840	2100
DNBLP	320331	239840	2100
DNBW1	300313	233141	2100
DNBW1	300313	233141	2100
DNCAB	313026	236032	2100
DNCAB	313026	236032	2100
DNCF1	315929	232443	2100
DNCF1	315929	232443	2100
DNCLD	306099	231352	2100
DNCLD	306099	231352	2100
DNCP1	311006	239827	2100
DNCP1	311006	239827	2100
DNCX1	316593	235912	2100
DNCX1	316593	235912	2100
DNDBN	314066	233428	2100
DNDBN	314066	233428	2100
DNDCT	315714	233965	2100
DNDCT	315714	233965	2100
DNDOC	320168	235111	2100
DNDOC	320168	235111	2100
DNDP1	318211	234798	2100
DNDP1	318211	234798	2100
DNDSD	315976	236204	2100
DNDSD	315976	236204	2100
DNEA1	315889	234526	2100
DNEA1	315889	234526	2100
DNHB1	313366	232659	2100
DNHB1	313366	232659	2100
DNIGB	317811	233896	2100
DNIGB	317811	233896	2100
DNITE	315973	235025	2100
DNITE	315973	235025	2100
DNLCN	304621	235217	2100

DNLCN	304621	235217	2100
DNNGE	315634	227932	2100
DNNGE	315634	227932	2100
DNNS2	321218	223910	2100
DNNS2	321218	223910	2100
DNNUT	318440	230830	2100
DNNUT	318440	230830	2100
DNPAL	307884	234073	2100
DNPAL	307884	234073	2100
DNPRP	319966	228536	2100
DNPRP	319966	228536	2100
DNSAN	316464	240049	2100
DNSAN	316464	240049	2100
DNSBS	317819	245630	2100
DNSBS	317819	245630	2100
DNSKL	325246	221658	2100
DNSKL	325246	221658	2100
DNSL1	315509	240817	2100
DNSL1	315509	240817	2100
DNTLH	308896	228024	2100
DNTLH	308896	228024	2100
DNWSE	308765	231335	2100
DNWSE	308765	231335	2100
DX084	314967	232434	2100
DX084	314967	232434	2100
DX194	323023	240787	2100
DX194	323023	240787	2100
DX194	323023	240787	700
DX194	323023	240787	700
DX212	308560	238820	2100
DX212	308560	238820	2100
DX237	325255	224027	2100
DX237	325255	224027	2100
GY047	128388	227071	2100
GY047	128388	227071	2100
GY047	128388	227071	700
GY047	128388	227071	700
GY048	144743	228652	2100
GY048	144743	228652	2100
GY090	129768	225166	2100
GY090	129768	225166	2100
GY093	127928	224682	2100
GY093	127928	224682	2100
GY111	130176	224769	2100
GY111	130176	224769	2100
GY111	130176	224769	700

GY111	130176	224769	700
GY122	64482	256345	700
GY122	64482	256345	700
GY125	126113	224894	2100
GY125	126113	224894	2100
GY125	126113	224894	700
GY125	126113	224894	700
GY127	130044	225297	2100
GY127	130044	225297	2100
GY172	129551	225048	2100
GY172	129551	225048	2100
GY191	133315	226970	2100
GY191	133315	226970	2100
GY208	167558	255891	700
GY208	167558	255891	700
GY212	161004	239654	2100
GY212	161004	239654	2100
GY212	160990	239629	700
GY212	160990	239629	700
GY564	143954	252685	2100
GY564	143954	252685	2100
GYGAL	129825	225361	2100
GYGAL	129825	225361	2100
GYMVW	132152	227021	2100
GYMVW	132152	227021	2100
GYSLA	129027	225154	2100
GYSLA	129027	225154	2100
GYTBY	125965	227344	2100
GYTBY	125965	227344	2100
KE021	272690	189970	2100
KE021	272690	189970	2100
KE021	272690	189970	700
KE021	272690	189970	700
KE024	284452	210077	2100
KE024	284452	210077	2100
KE071	291676	215816	2100
KE071	291676	215816	2100
KE089	260944	172225	700
KE089	260944	172225	700
KE105	292227	236620	2100
KE105	292227	236620	2100
KECUP	300571	220563	700
KECUP	300571	220563	700
KEDNU	280420	215058	2100
KEDNU	280420	215058	2100
KK006	256910	175053	2100

KK006	256910	175053	2100
KK036	260942	172223	2100
KK036	260942	172223	2100
KK036	59950	110883	700
KK036	59950	110883	700
KY013	108927	120815	2100
KY013	108927	120815	2100
KY016	90952	72985	2100
KY016	90952	72985	2100
KY055	97881	124565	700
KY055	97881	124565	700
KY057	59941	110874	2100
KY057	59941	110874	2100
KY057	274836	219295.77	700
KY057	274836	219295.77	700
KY089	95076	114093	700
KY089	95076	114093	700
KY108	83515	114567	2100
KY108	83515	114567	2100
KY108	83515	114567	700
KY108	83515	114567	700
KY152	68823	66856	2100
KY152	68823	66856	2100
KY155	96645	90593	2100
KY155	96645	90593	2100
KY155	96645	90593	700
KY155	96645	90593	700
KYDQN	71496	64780	700
KYDQN	71496	64780	700
LD014	213956	273732	2100
LD014	213956	273732	2100
LD014	264580	187964	700
LD014	264580	187964	700
LH028	302823	301228	2100
LH028	302823	301228	2100
LH052	308631	275198	2100
LH052	308631	275198	2100
LH075	309204	275027	2100
LH075	309204	275027	2100
LH080	309020	276605	2100
LH080	309020	276605	2100
LH093	313862	292483	2100
LH093	313862	292483	2100
LHDDK	304896	306912	2100
LHDDK	304896	306912	2100
LK008	145096	143805	2100

LK008	145096	143805	2100
LK010	151618	144912	2100
LK010	151618	144912	2100
LK014	134252	140344	2100
LK014	134252	140344	2100
LK018	128348	153858	2100
LK018	128348	153858	2100
LK018	128348	153858	700
LK018	128348	153858	700
LK050	155802	152537	2100
LK050	155802	152537	2100
LK060	156344	154480	2100
LK060	156344	154480	2100
LK068	160819	155560	2100
LK068	160819	155560	2100
LK068	160819	155560	700
LK068	160819	155560	700
LK074	156672	156361	2100
LK074	156672	156361	2100
LK077	154930	155616	2100
LK077	154930	155616	2100
LK083	163000	154354	2100
LK083	163000	154354	2100
LK083	163000	154354	700
LK083	163000	154354	700
LK089	155598	159431	2100
LK089	155598	159431	2100
LK093	138303	148974	2100
LK093	138303	148974	2100
LK094	158362	157731	2100
LK094	158362	157731	2100
LK094	158362	157731	700
LK094	158362	157731	700
LK097	133503	151221	2100
LK097	133503	151221	2100
LK108	157292	157361	2100
LK108	157292	157361	2100
LK127	155686	151775	2100
LK127	155686	151775	2100
LK127	155686	151775	700
LK127	155686	151775	700
LK129	125293	151472	2100
LK129	125293	151472	2100
LK132	155258	153182	2100
LK132	155258	153182	2100
LKATD	159172	159404	2100

LKATD	159172	159404	2100
LKCHD	155122	157733	2100
LKCHD	155122	157733	2100
LKKNP	121714	134470	700
LKKNP	121714	134470	700
LKLMK	157703	156791	2100
LKLMK	157703	156791	2100
LM032	250240	195567	700
LM032	250240	195567	700
LS021	250240	195567	2100
LS021	250240	195567	2100
LS021	213951.5	273722.74	700
LS021	213951.5	273722.74	700
LS024	264580	187964	2100
LS024	264580	187964	2100
LS024	193612.96	346488	700
LS024	193612.96	346488	700
LS054	254395	212430	2100
LS054	254395	212430	2100
LSCPD	236629	206771	700
LSCPD	236629	206771	700
MH022	282095	291749	2100
MH022	282095	291749	2100
MH022	282095	291749	700
MH022	282095	291749	700
MH037	293644	243765	2100
MH037	293644	243765	2100
MH037	270795	245725	700
MH037	270795	245725	700
MH055	276956	260238	2100
MH055	276956	260238	2100
MH064	270795	245725	2100
MH064	270795	245725	2100
MH064	273587.82	332680.91	700
MH064	273587.82	332680.91	700
MH090	273884	276014	2100
MH090	273884	276014	2100
MN034	264610.82	319444.95	700
MN034	264610.82	319444.95	700
MN036	113019	273704	700
MN036	113019	273704	700
MN043	278698	323091	700
MN043	278698	323091	700
MO042	116038	289683	2100
MO042	116038	289683	2100
MO049	293644	243765	700

MO049	293644	243765	700
MO092	115400	290450	2100
MO092	115400	290450	2100
MO108	137532	299425	2100
MO108	137532	299425	2100
MOCMH	133659	275659	2100
MOCMH	133659	275659	2100
MOTCH	129550	291999	700
MOTCH	129550	291999	700
OY042	261248	227541	2100
OY042	261248	227541	2100
OY042	261248	227541	700
OY042	261248	227541	700
OY045	235896	225160	2100
OY045	235896	225160	2100
OY045	235896	225160	700
OY045	235896	225160	700
OY046	235896	225160	700
OY046	235896	225160	700
OY050	220945	221060	2100
OY050	220945	221060	2100
RN031	161620	276818	700
RN031	161620	276818	700
RN034	192713	280952	2100
RN034	192713	280952	2100
RN034	192713	280952	700
RN034	192713	280952	700
RN035	187524	288820	2100
RN035	187524	288820	2100
RN035	187524	288820	700
RN035	187524	288820	700
RN036	161880.87	284449.14	700
RN036	161880.87	284449.14	700
RN037	186589	296238	2100
RN037	186589	296238	2100
RN037	186589.39	296237.77	700
RN037	186589.39	296237.77	700
RN042	193790	291891	2100
RN042	193790	291891	2100
RN042	193789.99	291890.8	700
RN042	193789.99	291890.8	700
RN046	188451	242325	2100
RN046	188451	242325	2100
RN056	200814	246481	2100
RN056	200814	246481	2100
RN059	191048	266718	2100

RN059	191048	266718	2100
RN059	191048.38	266718.18	700
RN059	191048.38	266718.18	700
RN067	309120.85	149822.92	700
RN067	309120.85	149822.92	700
RNSLM	174643	257961	700
RNSLM	174643	257961	700
SO039	182969.33	257295.23	700
SO039	182969.33	257295.23	700
TY080	212038	162974	2100
TY080	212038	162974	2100
TY080	137511.42	328289.93	700
TY080	137511.42	328289.93	700
TY082	177954	180034	2100
TY082	177954	180034	2100
TY082	212038	162974	700
TY082	212038	162974	700
WD009	234013	110610	700
WD009	234013	110610	700
WD011	197932	100800	2100
WD011	197932	100800	2100
WD011	197931.52	100800.21	700
WD011	197931.52	100800.21	700
WD014	258805	111995	2100
WD014	258805	111995	2100
WD014	197933	100803	700
WD014	197933	100803	700
WD026	269222	100075	2100
WD026	269222	100075	2100
WD097	257882	111409	2100
WD097	257882	111409	2100
WD097	257882	111409	700
WD097	257882	111409	700
WDCHN	227301	100787	700
WDCHN	227301	100787	700
WDGLH	259302	112565	2100
WDGLH	259302	112565	2100
WDWTD	260864	112449	2100
WDWTD	260864	112449	2100
WH012	206995	242004	2100
WH012	206995	242004	2100
WHLIN	255703	252718	2100
WHLIN	255703	252718	2100
WW030	327014	218681	2100
WW030	327014	218681	2100
WW056	329627	211003	2100

WW056	329627	211003	2100
WW079	330860	194767	2100
WW079	330860	194767	2100
WX020	312979	157972	2100
WX020	312979	157972	2100
WX020	312979	157972	700
WX020	312979	157972	700
WX042	310120	114852	2100
WX042	310120	114852	2100
WX065	292913	113094	2100
WX065	292913	113094	2100
WX065	292913.16	113093.58	700
WX065	292913.16	113093.58	700
WX079	319819	156221	2100
WX079	319819	156221	2100
WX083	271184	128236	2100
WX083	271184	128236	2100
WX093	311255	107087	2100
WX093	311255	107087	2100
WX159	318872	154449	2100
WX159	318872	154449	2100
WX159	318872.33	154449.46	700
WX159	318872.33	154449.46	700
WX180	309121	149823	2100
WX180	309121	149823	2100
WX180	258805	111995	700
WX180	258805	111995	700
WXSME	298097	119260	2100
WXSME	298097	119260	2100
WXSME	298097	119260	700
WXSME	298097	119260	700

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, 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^2) equals the interference threshold at radar receiver input (measured in dBW) minus the radar antenna gain (measured in dBi) plus 10^log(4π/λ2), where λ 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, 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

(a) Only terrestrial systems compatible with the Decision of 2016 can be worked and used in the 700.

(b) The FDD mode of operation shall be used in the 700. 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')[1] 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.

[1] 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

(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 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 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[2].

(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 × 10 MHz in the 700 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.

[2] 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[3] 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[4].

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;

[3] 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

[4] 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[5] 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)[6] 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.

[5] 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

[6] 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[7], 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)[8]; 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[9] as follows:

A. an out-of-band Base Station pfd limit of -145 dBW/m^2/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^2 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[10] as follows:

[7] 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
[8] Shape files (.SHP) representing these figures are available at www.comreg.ie
[9] Commission Document 19/59c, available at www.comreg.ie
[10] Commission Document 19/124c, available at www.comreg.ie

A. an out-of-band Base Station pfd limit of -156 dBW/m^2/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 dBW/m^2 per operator, to address the impact of blocking and intermodulation effects at radar receivers.

For deployments in compliance with condition (l) 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 dBm/5 MHz EIRP; and

(ii) 31 dBm/5 MHz TRP,

shall apply to Terminal Stations[11].

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 dBm per 20 MHz carrier or an AAS Base Station with a TRP of less than or equal to 16

[11] 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[12] or Table 5[13] 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[14]): for any 2.6 GHz Band TDD Blocks assigned to a Licensee, a BEM given by combining Table 2[12] or Table 5[13] 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

[12] For 2.6 GHz Band TDD Generic Frequency Blocks and the 2.6 GHz Band TDD Fixed Frequency Block (Upper)
[13] For the case of 2.6 GHz Band TDD Fixed Frequency Block (Lower)
[14] 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 µs) 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

Coverage	Location	Obligation
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