## Annex 5

## Current National Frequency bands and National Interfaces for Mobile use

## Current UK regulations for mobile base stations and associated handsets

- 4.1 The list of frequency bands licenced to the mobile phone network operators is easily available from the Interactive Spectrum Map that Ofcom makes available on our website at <a href="http://static.ofcom.org.uk/static/spectrum/map.html">http://static.ofcom.org.uk/static/spectrum/map.html</a>
- 4.2 The search on the Interactive Spectrum Map can be narrowed, by just selecting the Mobile and Wireless Broadband category. Further, by selecting "Show Table", a helpful list can be generated of the frequency bands licenced to the mobile phone network operators.
- 4.3 The Interactive Spectrum Map indicated both the frequency bands available to be used for licensed mobile infrastructure and the associated mobile handsets. Handsets are licence exempt, provided they are under the control of a licensed network.
- 4.4 Annex 5 Table A5.1 lists the relevant national Interface Requirements (IR). It also lists the maximum permitted power, as specified within the IR.

Table A5.1 – UK National Interface Requirements (IR) list and associated maximum permitted power

National interface Requirement		Permitted Power
IR 2014	Minimum equipment requirements for mobile stations and repeaters operating in the 880 to 915 MHz band	39 dBm Power class 2 37 dBm Power class 3 33 dBm Power class 4 29 dBm Power class 5
	Minimum equipment requirements for base stations and repeaters operating in the 925 to 960 MHz band	62 dBm EIRP per carrier
IR 2019	Minimum requirements for the use of: - third generation mobile (mobile stations) operating in the 1899.9 to 1920 MHz band	24 dBm Power class 2 21 dBm Power class 3
	Minimum requirements for the use of: - third generation mobile (base stations) operating in the 1899.9 to 1920 MHz band	62 dBm EIRP 58 dBm/MHz EIRP
	Minimum requirements for the use of: - third	24 dBm Power class 3 23 dBm Power class 3bis

	generation mobile (mobile stations and repeaters) operating in the 880.1 to 914.9 MHz, 1710.1 to 1785 MHz or 1920 to 1980 MHz bands Minimum requirements for the use of: - third generation mobile (base stations and repeaters) operating in the 925.1 to 959.9 MHz, 1805.1 to 1880 MHz or 2110 to 2170 MHz	21 dBm Power Frequency bases 925.1 to 959. 2110 to 2170 1805.1 to 188	and 9 MHz 1 MHz	Maximu Power 62 dBm 62 dBm 58 dBm	EIRP EIRP EIRP	
IR2045	bands  Minimum requirements for the use of concurrent spectrum access: - Mobile stations and repeaters operating in the 1781.7 to 1785 MHz band.	The following frequency ba Frequency range as	nd: Max			oply within this
		measured from the lower frequency of the frequency band	om Und circu	er normal umstances		Under specific circumstances where all Licensees agree‡
		0 to 0.05 MHz 0.05 to 0.1 MHz 0.1 to 0.2 MHz 0.2 to 3.2 MHz 3.2 to 3.3 MHz	-26 + 60 0.05) -23 + 20 0.1) 0†	40 × ΔFL 0 × (ΔFL - 30 × (ΔFL 30 × (3.3 -	-	-33 + 140 × ΔFL -26 + 60 × (ΔFL - 0.05) -23 + 300 × (ΔFL - 0.1) 7† -23 + 300 × (3.3 - ΔFL)
		Notes:  ΔFL is the offset from the edge of the frequency band in MHz † within the occupied bandwidth of the transmission ‡ Subject to agreement between all licensees and notification of such agreement to Ofcom  The following emission limits apply below 1781.7 MHz: Frequency range as measured from the lower frequency of dBm/kHz				
		the frequency 0.0 to -0.1 MI -0.1 to -0.3 M -0.3 to -1.5 M -1.5 to -5.7 M Note:	y band Hz IHz IHz IHz	·	-33 - -47 - -53 -63	+ 140 × ΔFL + 30 × (ΔFL + 0.1) frequency band in MHz
		The following Frequency ra measured		n limits ap		oove 1785 MHz imum mean EIRP sity

	<del>,</del>		1		
	from the higher f		dBm	n/kHz	
	the frequency ba	ands		00 4511	
	0.0 to 0.05 MHz		-23 - 60 × ΔFH		
	0.05 to 0.2 MHz			- 140 × (ΔFH - 0.05)	
	0.2 to 0.4 MHz		-47 - 30 × (ΔFH - 0.2)		
	0.4 to 1.6 MHz		-53		
	1.6 to 5.8 MHz		-63		
	Note:				
		t from the edge	of the	frequency band in	
100	MHz		٠,	1 11 11 11	
Minimum requirements	rent frequency band: Frequency Maximum mean EIRP density			oply within this	
for the use of concurrent					
spectrum				RP density	
access: - Base stations	range as dBm/kHz		111.1		
and repeaters operating	measured	Under normal		Under specific	
in the 1876.7 to	from the lower	circumstances	3	circumstances where	
1880 MHz band	frequency of			all Licensees agree‡	
	the frequency				
	band	22.0 . 450.0		22.6   452.2 4	
	0 to 0.05 MHz	-33.6 + 153.3	×	-33.6 + 153.3 × Δ <sub>FL</sub>	
	0.05 to 0.1 MHz	ΔFL 26 ± 60 × (Δε	-,	26 + 60 × (A= 0.05)	
	·····	-26 + 60 × (Δ <sub>F</sub>	·L -	$-26 + 60 \times (\Delta_{FL} - 0.05)$	
	0.1 to 0.2 MHz 0.2 to 3.2 MHz	0.05) -23 + 230 × ( <i>L</i>	١-،	$-23 + 300 \times (\Delta_{FL} - 0.1)$ 7 <sub>†</sub>	
	3.2 to 3.3 MHz	0.1)	7LL -	<b>'</b> T	
	3.2 10 3.3 141112	0.1) 0†		-23 + 300 × (3.3 - Δ	
		01		FL)	
		-23 + 230 × (3	3 -	' -'	
		Δ <sub>FL</sub> )	).U		
		<u> </u>			
	Notes:				
	$\Delta_{FL}$ is the offset	from the lower	edge	e of the frequency	
	band in MHz				
	† within the occ	upied bandwid	th of	the transmission	
	‡ subject to agreement between		en all	licensees and	
	notification of such				
	agreement to O	tcom.			
	The following er	mission limits a		below 1876.7 MHz:	
	The following er	mission limits a	Max	imum mean EIRP	
	The following er Frequency range measured	mission limits a e as	Max	imum mean EIRP sity	
	The following er Frequency range measured from the lower fr	mission limits a e as	Max	imum mean EIRP	
	The following er Frequency range measured from the lower fre	mission limits a e as	Max	imum mean EIRP sity	
	The following er Frequency range measured from the lower frequency band	mission limits a e as	Max dens dBm	imum mean EIRP sity ı/kHz	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz	mission limits are as equency of	Max dens dBm	imum mean EIRP sity ı/kHz δ + 153.3 × Δ <sub>FL</sub>	
	The following er Frequency range measured from the lower fre the frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz	mission limits as as equency of	Max dens dBm	imum mean EIRP sity ı/kHz	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz	mission limits as as equency of	-33.0 -49	imum mean EIRP sity ı/kHz δ + 153.3 × Δ <sub>FL</sub>	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz	mission limits as as equency of	-33.0 -49 -53 -56	imum mean EIRP sity ı/kHz δ + 153.3 × Δ <sub>FL</sub>	
	The following er Frequency range measured from the lower fre the frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz	mission limits as as equency of	-33.0 -49	imum mean EIRP sity ı/kHz δ + 153.3 × Δ <sub>FL</sub>	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:	mission limits are as equency of	-33.0 -49 -53 -56 -74	imum mean EIRP sity n/kHz 6 + 153.3 × Δ <sub>FL</sub> + 20 × (Δ <sub>FL</sub> + 0.1)	
	The following er Frequency range measured from the lower from the frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  ΔFL is the offset	mission limits are as equency of	-33.0 -49 -53 -56 -74	imum mean EIRP sity ı/kHz δ + 153.3 × Δ <sub>FL</sub>	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  ΔFL is the offset band in MHz	mission limits as as equency of	-33.0 -49 -53 -56 -74	imum mean EIRP sity n/kHz 6 + 153.3 × Δ <sub>FL</sub> + 20 × (Δ <sub>FL</sub> + 0.1) e of the frequency	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  ΔFL is the offset band in MHz The following er	mission limits as as equency of from the lower mission limits a	-33.0 -49 -53 -56 -74 edge	imum mean EIRP sity n/kHz 6 + 153.3 × ΔFL + 20 × (ΔFL + 0.1) e of the frequency above 1880 MHz:	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  AFL is the offset band in MHz The following er Frequency range	mission limits as as equency of from the lower mission limits a	-33.1 -49 -53 -56 -74 edge	imum mean EIRP sity n/kHz 6 + 153.3 × ΔFL + 20 × (ΔFL + 0.1) e of the frequency above 1880 MHz: imum mean EIRP	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  \[ \Delta_{FL} \] is the offset band in MHz The following er Frequency range measured	mission limits as e as equency of from the lower mission limits as e as	-33.0 -49 -53 -56 -74 edge	imum mean EIRP sity h/kHz 6 + 153.3 × ΔFL + 20 × (ΔFL + 0.1) e of the frequency above 1880 MHz: imum mean EIRP sity	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  ΔFL is the offset band in MHz The following er Frequency range measured from the higher f	mission limits as e as equency of from the lower mission limits as e as	-33.0 -49 -53 -56 -74 edge	imum mean EIRP sity n/kHz 6 + 153.3 × ΔFL + 20 × (ΔFL + 0.1) e of the frequency above 1880 MHz: imum mean EIRP	
	The following er Frequency range measured from the lower from the lower from the frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  ΔFL is the offset band in MHz The following er Frequency range measured from the higher following from the higher following er  The following from the higher	mission limits as as equency of from the lower mission limits as as a requency of	-33.0 -49 -53 -56 -74 edge	imum mean EIRP sity h/kHz 6 + 153.3 × ΔFL + 20 × (ΔFL + 0.1) e of the frequency above 1880 MHz: imum mean EIRP sity	
	The following er Frequency range measured from the lower frequency band 0.0 to -0.1 MHz -0.1 to -0.3 MHz -0.3 to -0.9 MHz -0.9 to -1.5 MHz -1.5 to -5.7 MHz  Note:  ΔFL is the offset band in MHz The following er Frequency range measured from the higher f	mission limits as as equency of from the lower mission limits as as a requency of	-33.0 -49 -53 -56 -74 edge Max dens dBm	imum mean EIRP sity h/kHz 6 + 153.3 × ΔFL + 20 × (ΔFL + 0.1) e of the frequency above 1880 MHz: imum mean EIRP sity	

		T 0 0 = 1 0 0 0 0 0 0 0	00 450 6 45	
		0.05 to 0.2 MHz	-26 - 153.3 × (Δ <sub>FH</sub> - 0.05)	
		0.2 to 0.4 MHz	-49 - 20 × (Δ <sub>FH</sub> - 0.2)	
		0.4 to 1.0 MHz	-53	
		1.0 to 1.6 MHz	-56	
		1.6 to 5.8 MHz	-74	
		Note:		
		$\Delta_{\text{FH}}$ is the offset from the upper	er edge of the frequency	
		band in MHz	. ,	
IR 2072	Minimum requirements	23dBm Total Radiated Power (	TRP)	
	for the use of: terrestrial	2002 Fotal Hadiatou Fower (	,	
	systems capable of			
	providing electronic			
	communications			
	services operating in the			
	2500 to 2570 MHz band			
	Minimum requirements	Mobile or nomadic terminal stat	ions or repeaters:	
	for the use of: terrestrial	31dBm/(5 MHz) Total Radiated	•	
	systems capable of	Fixed or installed terminal static		
	providing electronic	35dBm/(5 MHz) EIRP	ons of repeaters.	
	communications	JOUDIT/(J MITZ) EIRF		
	services operating in the			
	2500 to 2570 MHz band			
	Minimum requirements	61dBm/(5 MHz) EIRP		
	for the use of: terrestrial			
	systems capable of			
	providing electronic			
	communications			
	services operating in the			
	2620 to 2690 MHz band			
	Minimum requirements	26dBm Total Radiated Power (	TRP)	
	for the use of: terrestrial			
	systems capable of			
	providing electronic			
	communications			
	services operating in the			
	2570 to 2620 MHz band			
	(terminal stations and			
	repeaters)			
	Minimum requirements	Mobile or nomadic terminal stat	ions or repeaters: 31dBm/(5	
	for the use of: terrestrial			
	systems capable of	Fixed or installed terminal stations or repeaters: 35dBm/(5		
	providing electronic	MHz) EIRP	-	
	communications	·		
	services operating in the			
	2570 to 2620 MHz band			
	(terminal stations and			
	repeaters)			
	Minimum requirements	Unrestricted spectrum blocks:		
	for the use of: terrestrial	61dBm/(5 MHz) EIRP		
	systems capable of	Restricted spectrum blocks:		
	providing electronic	25dBm/(5 MHz) EIRP		
	communications	Restricted spectrum blocks will	be specified in the	
	services operating in the	authorisation	20 opooniou iii uio	
	2570 to 2620 MHz band	addionsalion		
	(base stations and			
	`			
IR 2087	repeaters)	23dRm		
IK 208/	Minimum requirements for the use of: LTE and	23dBm		
	WiMAX operating in the			

	880-915 MHz or 1710- 1785 MHz bands	
	Minimum requirements for the use of: LTE and WiMAX operating in the 925-960 MHz or 1805- 1880 MHz bands	61dBm/(5 MHz) EIRP
IR 2090	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 791-821 MHz band	61dBm/(5 MHz) EIRP
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 832-862 MHz band	Mobile or nomadic terminal stations or repeaters: 23dBm TRP (total radiated power) Fixed or installed terminal stations or repeaters: 23dBm EIRP
IR 2092	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 1920-1980 MHz band	Mobile or nomadic terminal stations or repeaters: 24dBm Total Radiated Power (TRP) Fixed or installed terminal stations or repeaters: 24dBm EIRP
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2110-2170 MHz band	65dBm/(5 MHz) EIRP