

## 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 <http://static.ofcom.org.uk/static/spectrum/map.html>
- 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	21 dBm Power class 4			
	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 bands	Frequency band 925.1 to 959.9 MHz 2110 to 2170 MHz 1805.1 to 1880 MHz	Maximum Transmit Power 62 dBm EIRP  62 dBm EIRP 62 dBm EIRP 58 dBm/MHz EIRP		
IR2045	Minimum requirements for the use of concurrent spectrum access: - Mobile stations and repeaters operating in the 1781.7 to 1785 MHz band.	The following transmit power limits apply within this frequency band:			
		Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz		
			Under normal circumstances	Under specific circumstances where all Licensees agree‡	
		0 to 0.05 MHz	-33 + 140 × ΔFL	-33 + 140 × ΔFL	
		0.05 to 0.1 MHz	-26 + 60 × (ΔFL - 0.05)	-26 + 60 × (ΔFL - 0.05)	
		0.1 to 0.2 MHz	-23 + 230 × (ΔFL - 0.1)	-23 + 300 × (ΔFL - 0.1)	
		0.2 to 3.2 MHz	0†	7†	
		3.2 to 3.3 MHz	-23 + 230 × (3.3 - ΔFL)	-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 the frequency band		Maximum mean EIRP density dBm/kHz			
0.0 to -0.1 MHz		-33 + 140 × ΔFL			
-0.1 to -0.3 MHz		-47 + 30 × (ΔFL + 0.1)			
-0.3 to -1.5 MHz		-53			
-1.5 to -5.7 MHz		-63			
Note: ΔFL is the offset from the edge of the frequency band in MHz					
The following emission limits apply above 1785 MHz					
Frequency range as measured		Maximum mean EIRP density			

		from the higher frequency of the frequency bands	dBm/kHz	
		0.0 to 0.05 MHz 0.05 to 0.2 MHz 0.2 to 0.4 MHz 0.4 to 1.6 MHz 1.6 to 5.8 MHz	-23 - 60 × ΔFH -26 - 140 × (ΔFH - 0.05) -47 - 30 × (ΔFH - 0.2) -53 -63	
		Note: ΔFH is the offset from the edge of the frequency band in MHz		
Minimum requirements for the use of concurrent spectrum access: - Base stations and repeaters operating in the 1876.7 to 1880 MHz band	The following transmit power limits apply within this frequency band:			
	Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz		
		Under normal circumstances	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	-33.6 + 153.3 × ΔFL -26 + 60 × (ΔFL - 0.05) -23 + 230 × (ΔFL - 0.1) 0† -23 + 230 × (3.3 - ΔFL)	-33.6 + 153.3 × ΔFL -26 + 60 × (ΔFL - 0.05) -23 + 300 × (ΔFL - 0.1) 7† -23 + 300 × (3.3 - ΔFL)	
	<b>Notes:</b> ΔFL is the offset from the lower 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 1876.7 MHz:			
	Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz		
	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	-33.6 + 153.3 × ΔFL -49 + 20 × (ΔFL + 0.1) -53 -56 -74		
	<b>Note:</b> ΔFL is the offset from the lower edge of the frequency band in MHz The following emission limits apply above 1880 MHz:			
	Frequency range as measured from the higher frequency of the frequency bands	Maximum mean EIRP density dBm/kHz		
0 to 0.05 MHz	-23 - 60 × ΔFH			

		0.05 to 0.2 MHz 0.2 to 0.4 MHz 0.4 to 1.0 MHz 1.0 to 1.6 MHz 1.6 to 5.8 MHz	-26 - $153.3 \times (\Delta_{FH} - 0.05)$ -49 - $20 \times (\Delta_{FH} - 0.2)$ -53 -56 -74
		<b>Note:</b> $\Delta_{FH}$ is the offset from the upper edge of the frequency band in MHz	
IR 2072	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2500 to 2570 MHz band	23dBm Total Radiated Power (TRP)	
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2500 to 2570 MHz band	Mobile or nomadic terminal stations or repeaters: 31dBm/(5 MHz) Total Radiated Power (TRP) Fixed or installed terminal stations or repeaters: 35dBm/(5 MHz) EIRP	
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2620 to 2690 MHz band	61dBm/(5 MHz) EIRP	
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2570 to 2620 MHz band (terminal stations and repeaters)	26dBm Total Radiated Power (TRP)	
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2570 to 2620 MHz band (terminal stations and repeaters)	Mobile or nomadic terminal stations or repeaters: 31dBm/(5 MHz) Total Radiated Power (TRP) Fixed or installed terminal stations or repeaters: 35dBm/(5 MHz) EIRP	
	Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 2570 to 2620 MHz band (base stations and repeaters)	Unrestricted spectrum blocks: 61dBm/(5 MHz) EIRP Restricted spectrum blocks: 25dBm/(5 MHz) EIRP Restricted spectrum blocks will be specified in the authorisation	
IR 2087	Minimum requirements for the use of: LTE and WiMAX operating in the	23dBm	

	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