



UK Cellular Frequency Allocations

v14 – Q3 2020





UK Cellular Spectrum Q3 2020

Even in lockdown the expansion and upgrade of the UK's cellular resources has continued and as we head into the Summer, here's a round-up of what's changed –as ever, we've pooled the results of our own RF survey data with updates provided by Dr Peter Clarke (of pedroc.co.uk) to produce this latest UK cellular spectrum guide.

2G

O2 have been rolling out 4G EARFCN 3725 in the 900MHz band, leaving 2G in just the top end of their range on these sites.

Vodafone (VF) appear to have an emerging plan to use a minimal amount of spectrum as dedicated 2G capacity and then embed other 2G channels in 3G/4G carriers as required.

EE's deployed 2G channel portfolio is also decreasing to support 40MHz L18.

4G

As mentioned above, O2 have been deploying a 10MHz 4G carrier of EARFCN 3725 in the 900MHz band to some sites. EARFCN 3700 at 5MHz remains present in other areas.

VF have deployed 4G to parts of the London Underground using a range of bands, including 900MHz which provided the first introduction to EARFCN 3610 10MHz. Outside of the Underground, various VF 4G 900MHz deployments exist, such as EARFCN 3626.

EE have in some areas increased the bandwidth of their second 1800MHz carrier to 20MHz using the new EARFCN of 1815. Channels 1761 (10MHz) and 1788 (15MHz) are expected to remain for some time however.

5G

An additional VF 5G channel has been detected in some parts of the country on NR-ARFCN 628032.

And that's it, really – quite a quiet quarter, maybe the pace of change will pick as Summer arrives and the lockdown eases.

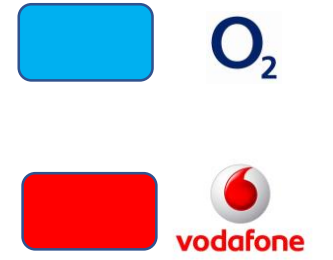
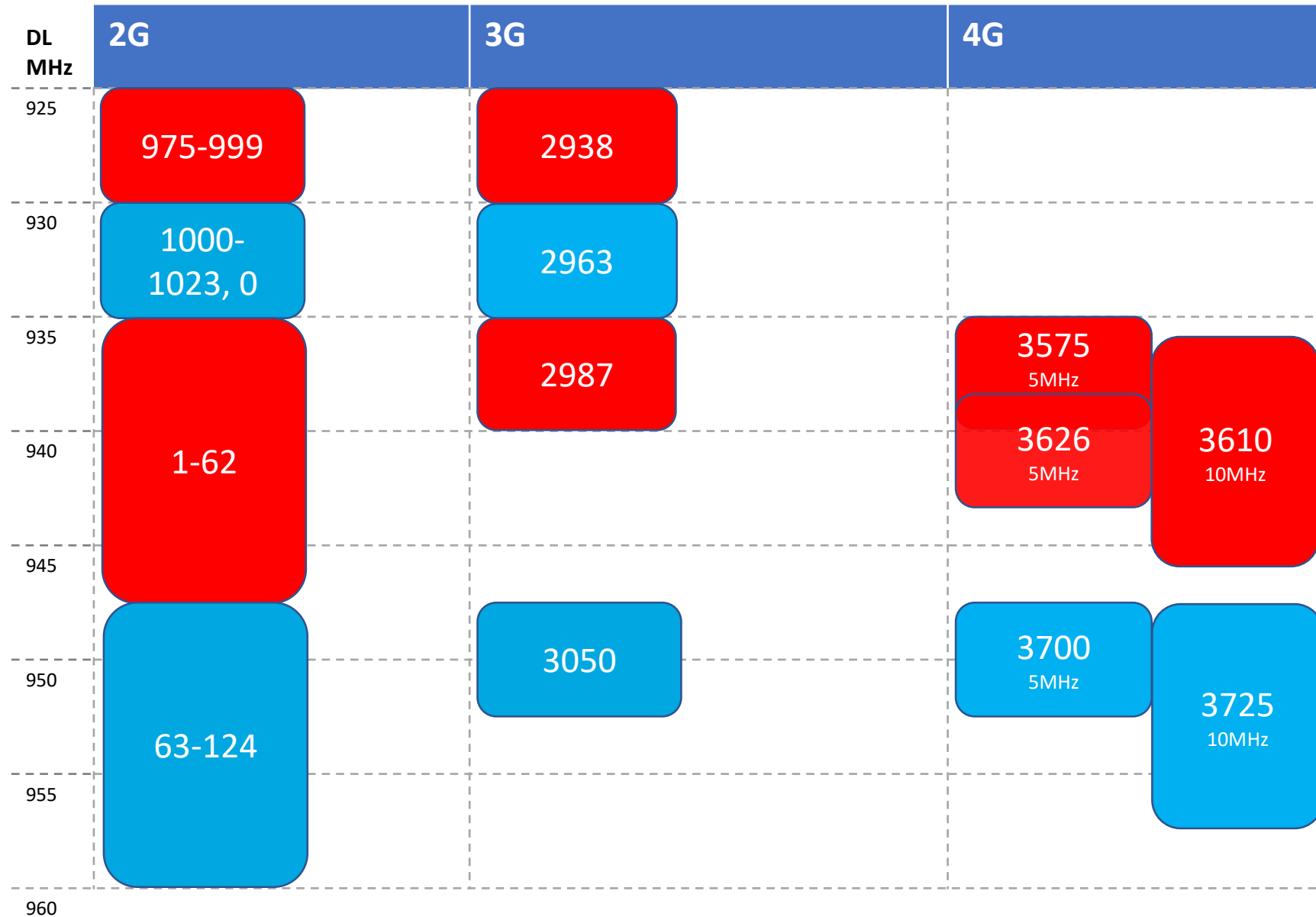


UK Cellular Spectrum 800-900MHz

		Channel Numbers		Downlink Frequency (MHz)		Bandwidth (if 4G)	Comments
800 - B20	LTE800 FDD	EARFCN		Centre			
	H3G	6175		793.5		5MHz channel	
	EE	6225		798.5		5MHz channel	
	VF	6300		806.0		10MHz channel	
	O2	6400		816.0		10MHz channel	
900 - B8	GSM900 FDD	ARFCN from	ARFCN to	from	to		
	VF	975	999	925.1	930.1		Refarmed for U09 2938 +/- embedded GSM channels
	O2	1000	1023, 0	930.1	935.1		Refarmed for U09 2963
	VF	1	62	935.1	947.5		Channel range includes various usage +/- embedded GSM channels
	VF (common)	26	59	940.1	946.9		Commonly seen GSM range
	O2	63	124	947.5	959.9		Channel range includes various usage
	O2 (common)	101	124	955.1	959.9		Commonly seen GSM range
	UMTS900 FDD	UARFCN		Centre			
	VF	2938		927.6			
	O2	2963		932.6			
	VF	2987		937.4			Decreasing in use due to L09 refarming
	O2	3050		950.0			Decreasing in use due to L09 refarming
	LTE900 FDD	EARFCN		Centre			
	VF	3574/5		937.4/937.5		5MHz channel	Replaces UARFCN 2987
	VF	3610		941.0		10MHz channel	Underground. Replaces various spectrum use
	VF	3626		942.6		5MHz channel	Leytonstone. Replaces various spectrum use
	O2	3700		950.0		5MHz channel	Replaces UARFCN 3050
	O2	3725		952.5		10MHz channel	Replaces UARFCN 3050 and some GSM



Band 8 – 900MHz



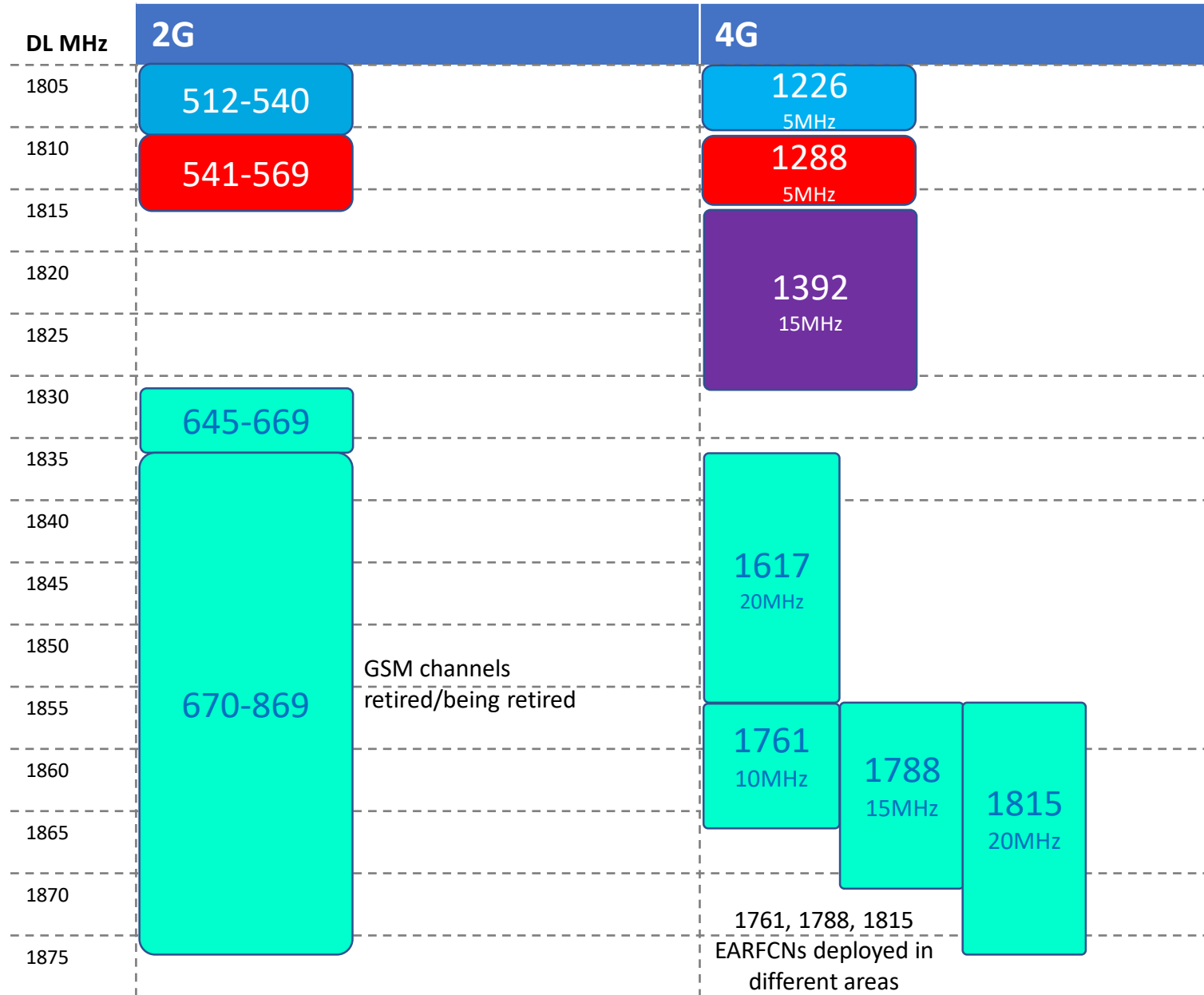


UK Cellular Spectrum 1500-1800MHz

		Channel Numbers		Downlink Frequency (MHz)		Bandwidth (if 4G)	Comments
1500 - B32	LTE1500 SDL	EARFCN		Centre			Supplementary Downlink band
	VF	10020		1462.0		20MHz	Downlink Only
	H3G	10220		1482.0		20MHz	Downlink Only
1800 - B3	GSM1800 FDD	ARFCN from	ARFCN to	from	to		
	O2	512	540	1805.1	1810.9		Mostly refarmed for 4G
	VF	541	569	1810.9	1816.7		Mostly refarmed for 4G
	EE	645	669	1831.7	1836.7		Primary GSM channels
	EE	670	869	1836.7	1876.7		Mostly/completely retired for 4G refarm
	EE	845	869	1871.7	1876.7		Secondary GSM channels seen in some locations; being retired
	LTE1800 FDD	EARFCN		Centre			
	O2	1226		1807.6		5MHz channel	Macrocell use
	O2	1227		1807.7		5MHz channel	Niche use
	O2	1228		1807.8		5MHz channel	Microcell use
	O2	1229		1807.9		5MHz channel	Niche use
	O2	1230		1808.0		5MHz channel	Niche use
	VF	1288		1813.8		5MHz channel	
	H3G	1392		1824.2		15MHz channel	
	EE	1617		1846.7		20MHz channel	Primary L18
	EE	1761		1861.1		10MHz channel	10MHz secondary L18 carrier
	EE	1788		1863.8		15MHz channel	15MHz secondary L18 carrier
	EE	1815		1866.5		20MHz channel	20MHz secondary L18 carrier
	EE	offset					Small cells - offset channel. Cannot survey - Cov19



Band 3 – 1800MHz



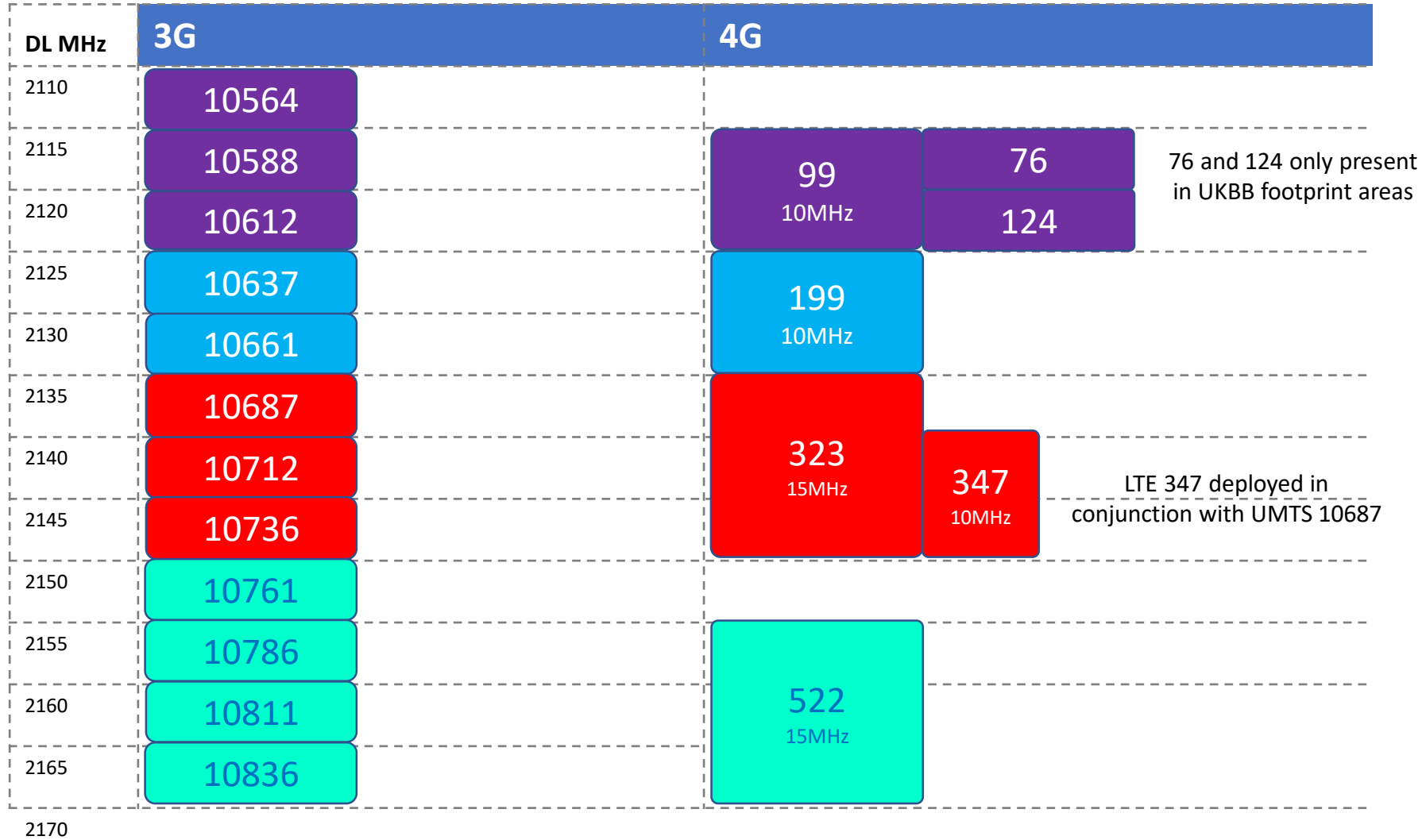


UK Cellular Spectrum 2100MHz

		Channel Numbers		Downlink frequency (MHz)		Bandwidth (if 4G)	Comments
2100 - B1	UMTS2100 FDD	UARFCN		Centre			
	H3G	10564		2112.8			
	H3G	10588		2117.6			Being retired for 4G refarm
	H3G	10612		2122.4			Being retired for 4G refarm
	O2	10637		2127.4			Being retired for 4G refarm
	O2	10661		2132.2			Being retired for 4G refarm
	VF	10687		2137.4			Being retired for 4G refarm
	VF	10712		2142.4			Being retired for 4G refarm
	VF	10736		2147.2			Being retired for 4G refarm
	EE	10761		2152.2			
	EE	10786		2157.2			Deprecated. Retired for 4G refarm
	EE	10811		2162.2			Rare. Retired for 4G refarm mostly
	EE	10836		2167.2			Deprecated. Retired for 4G refarm
	LTE2100 FDD	EARFCN		Centre			
	H3G	76		2117.6		5MHz channel	23420 L21 in UKBB areas replacing UARFCN 10588
	H3G	99		2119.9		10MHz channel	Replaces UARFCNs 10588 & 10612
	H3G UKBB	124		2122.4		5MHz channel	23451 L21 in UKBB areas replacing UARFCN 10612
	O2	199		2129.9		10MHz channel	Replaces UARFCNs 10637 & 10661
	O2	224		2132.4		5MHz channel	Niche use. Replaces UARFCN 10661 only
	VF	323		2142.3		15MHz channel (MIB)	Replaces UARFCNs 10687, 10712 & 10736
	VF	347		2144.7		10MHz channel	Replaces UARFCNs 10712 & 10736 only
	EE	522		2162.2		15MHz channel	Replaces UARFCNs 10786, 10811 & 10836



Band 1 – 2100MHz



All UARFCNs apart from 10564 and 10761 are being refarmed to 4G



UK Cellular Spectrum 2300-2600MHz

		Channel Numbers		Downlink frequency (MHz)		Bandwidth	Comments
2300 - B40	LTE2300 TDD	EARFCN		Centre			
	O2	39250		2360.0		20MHz channel	
	O2	39448		2379.8		20MHz channel	
2600 - B7	LTE2600 FDD	EARFCN		Centre			
	VF	2850		2630.0		20MHz channel	
	EE	3026		2647.6		15MHz channel	Small cells
	EE	3029		2647.9		15MHz channel	Third L26 carrier, currently ultra loaded sites only
	EE	3176		2662.6		15MHz channel	Small cells
	EE	3179		2662.9		15MHz channel	Secondary L26 carrier
	EE	3350		2680.0		20MHz channel	Primary L26 carrier
2600 - B38	LTE2600 TDD	EARFCN		Centre			
	VF	37900		2585.0		20MHz channel	



UK Cellular Spectrum 3400-3700MHz

		Channel Numbers		Frequency (MHz)		Bandwidth	Comments
3400-3600 - B42/B43/N78	LTE34-3700 TDD	EARFCN		Centre			
	UK BB (H3G)	42490		3490.0		20MHz channel	
	UK BB (H3G)	43490		3590.0		20MHz channel	
	UK BB (H3G)	43740		3615.0		20MHz channel	
	UK BB (H3G)	43940		3635.0		20MHz channel	
	UK BB (H3G)	44140		3655.0		20MHz channel	
	UK BB (H3G)	44290		3670.0		20MHz channel	
	UK BB (H3G)	44340		3675.0		20MHz channel	In sib5, but 20MHz carrier would extend above allocation
	NR34-3700 TDD	NRARFCN					
	VF	627638				50MHz channel	
	VF	627648				50MHz channel	
	VF	627932				50MHz channel	
	VF	628032				40MHz channel	
	VF	628320				40MHz channel	
	VF	628588				40MHz channel	
	VF	629332				40/50MHz channel	Zone dependent
	O2	633696				40MHz channel	
	O2	634368				20MHz channel	
	O2	634656				40MHz channel	
	O2	634666				40MHz channel	
	EE	637334				40MHz channel	
	H3G	640548				40/100MHz channel	

NB: NRARFCNs are not necessarily the midpoint of the carrier



If you have questions or comments please let us know

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