



# UK Cellular Frequency Allocations

Q2 2019

0166-BRF v10.0



# UK Cellular Spectrum

There have been a few significant changes in the last quarter – 5G and 900MHz spectrum swaps amongst them:

## **5G**

EE have launched their 5G service with appropriate amounts of hoopla and razzmatazz – the initial 5G cells have been deployed using a 40MHz channel in the 3400-3600MHz (N78) band.

Vodafone have announced that they will be launching in July and we've added details of the channel that they are expected to use (although this hasn't been officially confirmed)

As we've mentioned before, 5G currently works in 'non-standalone' mode, where each 5G base station operates under the control of an existing 4G base station. Further channels and radio bands can be expected to be added over time and, of course, new 5G-capable survey devices will be needed before anyone can actually survey any of these 5G cells.

## **Spectrum Swap**

Traditionally, Vodafone and O2 have shared the original 'Primary' GSM-900 band between them – the original sharing pattern saw the operators using alternative groups of channels that gave them two sets of allocated channels each in a pattern that looked like this – VF 4.7MHz, O2 7.6MHz, VF 7.8MHz, O2 4.8MHz

All UK networks have been engaged in a process of replacing GSM with 3G or 4G services in the 900 and 1800 bands for the past few years and the relatively narrow alternating allocations in the 900 band were seen as a barrier to the efficient reuse of that spectrum, so VF and O2, with Ofcom's permission, agreed to swap the middle parts of the allocation.

This has led to a revised shared allocation in the P-GSM900 band that looks like this – VF 12.3MHz, O2 12.8MHz – which offers the potential to retain some GSM capacity but refarm the remainder for 3G (UMTS900) or 4G (LTE900) services.

The swap began earlier this year and RF Surveyors will already be able to notice VF cells being broadcast on channels that were previously used by O2 and vice versa. There are also new 3G and 4G channels springing up that hadn't been used before.

**Updated allocations are highlighted in pink in the tables**



# UK Cellular Spectrum 800-900MHz

	Channel Numbers		Use	Comments
800 band	<b>LTE800</b>	<b>Band 20</b>		
	H3G	6175	5MHz channel	
	EE	6225	5MHz channel	
	VF	6300	10MHz channel	
	O2	6400	10MHz channel	
900 band	<b>GSM900</b>	<b>From</b>	<b>To</b>	
	VF (E-GSM)	975	999	now used by UMTS900 or LTE900
	O2 (E-GSM)	1000	1023 + 0	now used by UMTS900 or LTE900
	VF	24	41	still used for GSM900
	VF	42	61	available for use by UMTS900 or LTE900
	O2	62	100	available for use by UMTS900 or LTE900
	O2	101	124	still used for GSM900
	<b>UMTS900</b>			
	VF	2938		HSPA
	VF	2987		HSPA
	O2	2963		HSPA
	O2	3050		HSPA new allocation in 2019 post spectrum swap
	<b>LTE900</b>	<b>Band 08</b>		
	O2	3624		5MHz channel new allocation in 2019 post spectrum swap
	VF	3698		5MHz channel new allocation in 2019 post spectrum swap
VF	3574		5MHz channel new allocation in 2019 post spectrum swap	



# UK Cellular Spectrum 1500-1800MHz

		Channel Numbers		Use	Comments
1500	LTE1500	Band 32			Supplementary Downlink band
	VF	10020		20MHz	Downlink Only
	H3G	10220		20MHz	Downlink Only
1800 band	GSM1800				
	O2	512	540		
	VF	541	569		
	EE	645	719		channels 570-644 divested to H3G for LTE1800 services
	EE	720	869		
	LTE1800	Band 03			
	O2	1226		5MHz channel	macrocell use
	O2	1228		5MHz channel	used for microcells, offset from macrocell channel (1226)
	VF	1288		5MHz channel	
	H3G	1342		5MHz channel	used if 1392 isn't in use
	H3G	1367		10MHz channel	used if 1392 isn't in use
	H3G	1392		15MHz channel	used if 1342 & 1367 aren't in use
	EE	1617		10MHz channel	used if 1667 isn't in use (not used any more)
EE	1667		20MHz channel	used if 1617 isn't in use	
EE	1811		10MHz channel	new in 2017	
EE	1808		10MHz channel	small cells	



# UK Cellular Spectrum 2100MHz

	Channel Numbers	Use	Comments	
2100 band	<b>UMTS2100</b>			
	H3G	10564	HSPA	
	H3G	10588	HSPA	
	H3G	10612	HSPA	
	O2	10637	HSPA	
	O2	10661	HSPA	
	VF	10687	Sure Signal femtocells/HSPA	
	VF	10712	HSPA	
	VF	10736	HSPA	
	EE	10761	HSPA	
	EE	10786	HSPA	
	EE	10811	HSPA	
	EE	10836	HSPA	
	<b>LTE2100</b>	<b>Band 01</b>		
	H3G	99	10MHz channel	replaces UMTS 10588 & 10612
	O2	199	10MHz channel	replaces UMTS 10637 & 10661. Default now
	O2	272	5MHz channel	replaces UMTS 10637 only
	O2	324	5MHz channel	replaces UMTS 10661 only
	VF	323	15MHz channel	replaces UMTS 10687, 10712 & 10736
	VF	347	10MHz channel	replaces UMTS 10712 & 10736 only
VF	372	5MHz channel	replaces 10736 only. Not recently observed radiating	
EE	547	10MHz channel	replaces UMTS 10811 & 10836	
EE	522	15MHz channel	replaces UMTS 10786, 1811 & 10836	



# UK Cellular Spectrum 2300-2600MHz

		Channel Numbers		Use	Comments
2300	LTE2300 TDD	Band 40			
	O2	39250		20MHz channel	
	O2	39448		20MHz channel	
2600 band	LTE2600 FDD	Band 07			
	VF	2850		20MHz channel	
	BT/EE	3026		15MHz channel	small cell kiosks
	EE	3176		15MHz channel	small cell kiosks
	EE	3179		15MHz channel	alternative to 3176
	EE	3350		20MHz channel	
	LTE 2600 TDD	Band 38			
	VF	37900		20MHz channel	
BT	TBD				



# UK Cellular Spectrum 3400-3600MHz

		Channel Numbers	Use	Comments
3400-3600 bands	LTE 3400	Band 42		
	VF	TBD	10MHz channel	
	VF	TBD	20MHz channel	
	VF	TBD	20MHz channel	
	H3G	TBD	20MHz channel	
	H3G	TBD	20MHz channel	
	UK BB (H3G)	42490	20MHz channel	new in 2019
	UK BB (H3G)	43490	20MHz channel	new in 2019
	UK BB (H3G)	43740	20MHz channel	new in 2019
	UK BB (H3G)	43940	20MHz channel	new in 2019
	UK BB (H3G)	44140	20MHz channel	new in 2019
	UK BB (H3G)	44340	20MHz channel	new in 2019
	O2	TBD	20MHz channel	
	O2	TBD	20MHz channel	
	EE	TBD	20MHz channel	
	EE	TBD	20MHz channel	
	5G 3400-3600	N78		
	EE	637334	40MHz channel	new in 2019
VF	629332	50MHz channel	new in 2019	



If you have questions or comments please let us know

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