Title CRs (Rel-6) to TS25.101, TS25.104 & TS25.141 for WI UMTS850 &

**UMTS1721** 

Source TSG RAN WG4

Agenda Item 8.9

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040408	25.101	346	1	F	Rel-6	6.4.0	Correction in the Band V (850MHz) additional frequency channel - UARFCN	RInImp- UMTS850
R4-040466	25.101	353		F	Rel-6	6.4.0	Frequency range correction of out-of-band blocking for Band IV	RInImp- UMTS1721
R4-040409	25.104	227	1	F	Rel-6	6.6.0	Correction in the Band V (850MHz) additional frequency channel - UARFCN	RInImp- UMTS850
R4-040410	25.141	351	1	F	Rel-6	6.5.0	Correction in the Band V (850MHz) additional frequency channel - UARFCN	RInImp- UMTS850

# Prague, Czech Republic 16 - 20 August 2004

				C	CHAN	IGE	REG	UE	ST	•				CR-Form-v7
$\varkappa$		25	.101	CR	346		жrev	1	¥	Currer	nt vers	sion:	6.4.0	¥
For <u>H</u>	<b>ELP</b> on u	sing t	his for	m, see	bottom	of this	page o	r look	at the	е рор-и	ıp text	over	the # sy	mbols.
Proposed change affects: UICC apps# ME X Radio Access Network Core Network  Title:   **Correction in the Band V (850MHz) additionnal frequency channel - UARFCN														
Title:	¥	Coi	rectio	n in the	Band V	(850 <mark>)</mark>	MHz) ad	dition	nal fr	equenc	y char	nnel -	UARFC	١
Source:	¥	RA	N WG	4										
Work ite	m code: ₩	RIn	Imp-U	MTS85	50					Da	ate: ೫	30/	08/2004	
Category	<i>r:</i> #	Deta	F (cor A (cor B (add C (fun D (edi iled ex	rection) respond dition of ctional r torial mo	wing cated as to a confeature), modification of the TR 21.900	rrection ion of fe n) above	n in an ea			2 R R R R R	one of	the for (GSN (Relea (Relea (Relea (Relea (Relea (Relea	d-6 M Phase 2) pase 1996) pase 1997) pase 1998) pase 1999) pase 4) pase 5) pase 6)	
Reason f	or change	e: X	V (8	50 MHz		orresp	onding	UARF	FCN is	s also r	not val		dded for t the UARI	
Summar	y of chang	<b>;e:</b> ૠ			frequen	•			nd the	e corres	spondi	ing U	ARFCN a	re
Consequ not appr		*	Isola	ited imp								·	and his U	ARFCN.
Clauses	affected:	Ж	5.4.3	3 (table	5.1A) a	nd 5.4	.4 (table	5.2)						
Other sp affected:		*	Y N X X	Test s	core sp specifica Specific	tions		¥	25.1 25.1					
Other co	mments:	$\mathfrak{R}$												

### **How to create CRs using this form:**

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

# 5.4 Channel arrangement

## 5.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

### 5.4.2 Channel raster

The channel raster is 200 kHz, for all bands which means that the centre frequency must be an integer multiple of 200 kHz. In addition a number of additional centre frequencies are specified according to table 5.1A, which means that the centre frequencies for these channels are shifted 100 kHz relative to the general raster.

#### 5.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The UARFCN values are defined as follows:

Table 5.1: UARFCN definition (general)

UE t	UPLINK (UL) ransmit, Node B receive	DOWNLINK (DL) UE receive, Node B transmit					
UARFCN	Carrier frequency [MHz] (FUL) (Note 1)	UARFCN Carrier frequency [M (F <sub>DL</sub> )) (Note 2)					
N <sub>u</sub> = 5 * F <sub>UL</sub>	0.0 MHz ≤ F <sub>UL</sub> ≤ 3276.6 MHz	$N_d = 5 * F_{DL}$	0.0 MHz ≤ F <sub>DL</sub> ≤ 3276.6 MHz				
	s the uplink frequency in MHz s the downlink frequency in MHz						

Table 5.1A: UARFCN definition (additional channels)

	UI	PLINK (UL)	DO	WNLINK (DL)				
Band	UE transr	nit, Node B receive	UE receive, Node B transmit					
Danu	UARFCN	Carrier frequency [MHz]	UARFCN	Carrier frequency [MHz]				
		(F <sub>UL)</sub> )		(F <sub>DL)</sub> )				
	-	-	-	-				
	$N_u = 5 * (F_{UL} -$	1852.5, 1857.5, 1862.5,	$N_d = 5 * (F_{DL} -$	1932.5, 1937.5, 1942.5,				
l II	1850.1 MHz)	1867.5, 1872.5, 1877.5,	1850.1 MHz)	1947.5, 1952.5, 1957.5,				
"		1882.5, 1887.5, 1892.5,		1962.5, 1967.5, 1972.5,				
		1897.5, 1902.5, 1907.5		1977.5, 1982.5, 1987.5				
III	-	-	-	-				
IV	$N_u = 5 * (F_{UL} -$	1712.5, 1717.5, 1722.5,	$N_d = 5 * (F_{DL} -$	2112.5, 2117.5, 2122.5,				
	1480.1 MHz)	1727.5, 1732.5, 1737.5	1820.1 MHz)	2127.5, 2132.5, 2137.5,				
		1742.5, 1747.5, 1752.5		2142.5, 2147.5, 2152.5				
V	$N_u = 5 * (F_{UL} -$	826.5, 827.5, 831.5,	$N_d = 5 * (F_{DL} -$	871.5, 872.5, 876. <u>65</u> ,				
	670.1 MHz)	832.5, 837.5, 842.5	670.1 MHz)	877.5, 882.5, 887.5				
VI	$N_u = 5 * (F_{UL} -$	832.5, 837.5	$N_d = 5 * (F_{DL} -$	877.5, 882.5				
	670.1 MHz)		670.1 MHz)					
	·		·					

## 5.4.4 UARFCN

The following UARFCN range shall be supported for each paired band

Table 5.2: UTRA Absolute Radio Frequency Channel Number

Band		olink (UL) it, Node B receive	Downlink (DL) UE receive, Node B transmit					
	General	Additional	General	Additional				
I	9612 to 9888	-	10562 to 10838	-				
II	9262 to 9538	12, 37, 62, 87, 112, 137, 162, 187, 212, 237, 262, 287	9662 to 9938	412, 437, 462, 487, 512, 537, 562, 587, 612, 637, 662, 687				
Ш	8562 to 8913	-	9037 to 9388	-				
IV	8562 to 8763	1162, 1187, 1212, 1237, 1262, 1287, 1312, 1337, 1362	10562 to 10763	1462, 1487, 1512, 1537, 1562, 1587, 1612, 1637, 1662				
V	4132 to 4233	782, 787, 807, 812, 837, 862	4357 to 4458	1007, 1012, <del>1035</del> 1032, 1037, 1062, 1087				
VI	4162 to 4188	812, 837	4387 to 4413	1037, 1062				

# 3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040466

## Prague, Czech Republic 16 - 20 August 2004

		CHAN	GE REQU	JEST			CR-Form-v7					
¥	25.101	CR 353	жrev	ж с	Current versio	6.4.0	¥					
For <a href="HELP">HELP</a> on using this form, see bottom of this page or look at the pop-up text over the \$\mathbb{X}\$ symbols.  Proposed change affects: UICC apps\$\mathbb{X} \text{ Radio Access Network } \text{ Core Network } \text{ Title:}												
Title: ₩	Frequenc	y range correction	on of out-of-ban	d blocking	g for Band IV							
Source:	RAN WG	4										
Work item code: ₩	RInImp-U	MTS1721			Date: ₩	30/08/2004						
	Jse <u>one</u> of F (con A (con B (add C (fun D (edi Detailed ex	the following categrection) responds to a condition of feature), ctional modification torial modification) clanations of the a 3GPP TR 21.900.	rection in an earlie	er release)	2 (0 R96 (H R97 (H R98 (H R99 (H Rel-4 (H Rel-5 (H	Rel-6 ne following rele GSM Phase 2) Release 1996) Release 1997) Release 1998) Release 1999) Release 4) Release 5) Release 6)	eases:					
Reason for change:	Ж <mark>Fre</mark> q	uency range 3 ir	table 7.7 for B	and IV is r	not correctly o	defined						
Summary of change	2240	uency range 3 ir 0 <f<12750 1<f<="" th="" to=""><th>&lt;<b>2025</b> / 2240<f< th=""><th>&lt;12750</th><th></th><th></th><th></th></f<></th></f<12750>	< <b>2025</b> / 2240 <f< th=""><th>&lt;12750</th><th></th><th></th><th></th></f<>	<12750								
Consequences if not approved:	ж Fred	uency range 3 ir	n table 7.7 for B	and IV is i	not correctly of	defined						
Clauses affected:	<b>米</b> 7.6.2	<u> </u>										
Other specs affected:	Y N  X  X	Other core spe Test specificati O&M Specifica	ons	第 34.12 <sup>°</sup>	1							
Other comments:	<b></b>											

### How to create CRs using this form:

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3)	With "track changes" of just in front of the claus which are not relevant	disabled, paste the enti se containing the first p to the change reques	re CR form (use CTRI piece of changed text.	L-A to select it) into the Delete those parts of	e specification the specification

# 7.6.2 Minimum requirement (Out of-band blocking)

The BER shall not exceed 0.001 for the parameters specified in Table 7.7. Out-of-band band blocking is defined for an unwanted interfering signal falling more than 15 MHz below or above the UE receive band. For Table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size. For these exceptions the requirements of clause 7.7 Spurious response are applicable.

Table 7.7: Out of band blocking

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3				
DPCH_Ec	dBm/3.84	<refsens>+3 dB</refsens>	<refsens>+3 dB</refsens>	<refsens>+3 dB</refsens>				
DFCI1_EC	MHz							
Îor	dBm/3.84	<refî<sub>or&gt; + 3 dB</refî<sub>	<refî<sub>or&gt; + 3 dB</refî<sub>	<refî<sub>or&gt; + 3 dB</refî<sub>				
	MHz	CIVEL 101/2 + 3 UD	CINET Tor> + 3 UD	CICLI Ior> + 3 dB				
I <sub>blocking</sub> (CW)	dBm	-44	-30	-15				
F <sub>uw</sub>	MHz	2050 <f <2095<="" td=""><td>2025 <f <2050<="" td=""><td>1&lt; f &lt;2025</td></f></td></f>	2025 <f <2050<="" td=""><td>1&lt; f &lt;2025</td></f>	1< f <2025				
(Band I operation)	IVII IZ	2185 <f <2230<="" td=""><td>2230 <f <2255<="" td=""><td>2255<f<12750< td=""></f<12750<></td></f></td></f>	2230 <f <2255<="" td=""><td>2255<f<12750< td=""></f<12750<></td></f>	2255 <f<12750< td=""></f<12750<>				
F <sub>uw</sub>	MHz	1870 <f <1915<="" td=""><td>1845 <f <1870<="" td=""><td>1&lt; f &lt;1845</td></f></td></f>	1845 <f <1870<="" td=""><td>1&lt; f &lt;1845</td></f>	1< f <1845				
(Band II operation)	IVII IZ	2005 <f <2050<="" td=""><td>2050 <f <2075<="" td=""><td>2075<f<12750< td=""></f<12750<></td></f></td></f>	2050 <f <2075<="" td=""><td>2075<f<12750< td=""></f<12750<></td></f>	2075 <f<12750< td=""></f<12750<>				
$F_{uw}$	MHz	1745 <f <1790<="" td=""><td>1720 <f 1745<="" <="" td=""><td>1&lt; f &lt;1720</td></f></td></f>	1720 <f 1745<="" <="" td=""><td>1&lt; f &lt;1720</td></f>	1< f <1720				
(Band III operation)	IVII IZ	1895 <f <1940<="" td=""><td>1940<f 1965<="" <="" td=""><td>1965<f<12750< td=""></f<12750<></td></f></td></f>	1940 <f 1965<="" <="" td=""><td>1965<f<12750< td=""></f<12750<></td></f>	1965 <f<12750< td=""></f<12750<>				
$F_{uw}$	MHz	2050< f <2095	2025< f <2050	1< f < <del>784</del> <u>2025</u>				
(Band IV operation)	IVII IZ	2170< f <2215	2215< f < 2240	2240 <f<12750< td=""></f<12750<>				
F <sub>uw</sub>	MHz	809< f <854	784< f <809	1< f <784				
(Band V operation)	IVII IZ	909< f <954	954< f < 979	979 <f<12750< td=""></f<12750<>				
Fuw	MHz	815 < f < 860	790 < f < 815	1 < f < 790				
(Band VI operation)	IVII IZ	900 < f < 945	970 < f < 12750					
UE transmitted	dBm		20 (for Power class 3)	)				
mean power			18 (for Power class 4)					
Band I operation	For 2095 <f<2110 2170<f<2185="" and="" appropriate="" blocking="" in-band="" mhz="" mhz,="" or<="" td="" the=""></f<2110>							
Danu i operation	adjacent channel selectivity in subclause 7.5.1 and subclause 7.6.1 shall be applied.							
Band II operation			05 MHz, the appropriate					
Bana ii operation	adjacent channel selectivity in subclause 7.5.1 and subclause 7.6.1 shall be applied							
Band III operation			95 MHz, the appropriate					
Dana in operation			e 7.5.1 and subclause 7					
Band IV operation			'0 MHz, the appropriate					
Dana IV operation			e 7.5.1 and subclause 7					
Band V operation				nd blocking or adjacent				
Dana v operation			nd subclause 7.6.1 shal					
Band VI operation				nd blocking or adjacent				
Danu vi operation	channel selectiv	ity in subclause 7.5.1 a	nd subclause 7.6.1 shal	be applied.				

# 3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040409

## Prague, Czech Republic 16 - 20 August 2004

			(	CHANG	GE I	REQ	UE	ST	•				CR-Form-v/
*	25.	104	CR	227	я	rev	1	¥	Current	versio	on: <b>6.</b>	6.0	$\mathbb{H}$
	For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \mathbb{X} symbols.  Proposed change affects: UICC apps\mathbb{X} ME Radio Access Network X Core Network												
Title: ∺	Cor	rection	in the	Band V (8	350MF	Hz) add	ditionr	nal fr	equency	chann	el - UA	RFCN	
Source: #	RAI	N WG4	1										
Work item code: ₩	RIn	Imp-Ul	MTS8	50					Dat	e: #	30/08/2	2004	
											Rel-6		
Category:  # F  Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.  Release: # Rel-6  Use one of the following release: # Rel-6  (Release: # Release: # Rel-6  (Release: # Rel-6  (Release: # Rel-6  (Release: # Release: # Rel-6  (Release: # Rel-6  (Release: # Release:									nase 2) 2 1996) 2 1997) 2 1998) 2 1999) 2 4) 2 5)	eases:			
Reason for change	e: X		e is an	error in on z).	e of t	he add	itionn	al fre	equency	channe	el adde	ed for th	ne band
Summary of chang	ge: ₩			frequency rrangemen		er in MI	Hz is	corr	ected acc	cording	the 85	50 MHz	Z
Consequences if not approved:	$\Re$	Isolat	One additionnal carrier could not be used.  Isolated impact:										
		This i	is a co	rrection in t	the cl	nannel	numb	erin	g for Ban	d V.			
Clauses affected:	¥	5.4.3	(table	5.1A).									
olauses allected.	[	YN	(lable	0.171).									
Other specs affected:	#	X X	Test:	core speci specification Specification	ns	ons	#	25.1 25.1					
Other comments:	$\aleph$												

#### How to create CRs using this form:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under  $\underline{\text{ftp://ftp.3gpp.org/specs/}}$  For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

# 5.4 Channel arrangement

### 5.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

### 5.4.2 Channel raster

The channel raster is 200 kHz for all bands, which means that the centre frequency must be an integer multiple of 200 kHz. In addition a number of additional centre frequencies are specified according to table 5.1A which means that the centre frequencies for these channels are shifted 100 kHz relative to the general raster.

#### 5.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The UARFCN values are defined as follows:

Table 5.1: UARFCN definition (general)

UE t	UPLINK (UL) ransmit, Node B receive	DOWNLINK (DL) UE receive, Node B transmit					
UARFCN	Carrier frequency [MHz] (F <sub>UL)</sub> ) (Note 1)	UARFCN	Carrier frequency [MHz] (F <sub>DL)</sub> ) (Note 2)				
N <sub>u</sub> = 5 * F <sub>UL</sub>	\ ==//\ \ /		0.0 MHz ≤ F <sub>DL</sub> ≤ 3276.6 MHz				
	the uplink frequency in MHz the downlink frequency in MHz						

Table 5.1A: UARFCN definition (additional channels)

		PLINK (UL) mit, Node B receive		WNLINK (DL) ve, Node B transmit		
Band	UARFCN	Carrier frequency [MHz]	UARFCN	Carrier frequency [MHz]		
		(F <sub>UL)</sub> )		(F <sub>DL)</sub> )		
I	-	-	-	-		
	$N_u = 5 * (F_{UL} -$	1852.5, 1857.5, 1862.5,	$N_d = 5 * (F_{DL} -$	1932.5, 1937.5, 1942.5,		
l 11	1850.1 MHz)	1867.5, 1872.5, 1877.5,	1850.1 MHz)	1947.5, 1952.5, 1957.5,		
"		1882.5, 1887.5, 1892.5,		1962.5, 1967.5, 1972.5,		
		1897.5, 1902.5, 1907.5		1977.5, 1982.5, 1987.5		
III	-	-	-	-		
IV	$N_u = 5 * (F_{UL} -$	1712.5, 1717.5, 1722.5,	$N_d = 5 * (F_{DL} -$	2112.5, 2117.5, 2122.5,		
	1480.1 MHz)	1727.5, 1732.5, 1737.5	1820.1 MHz)	2127.5, 2132.5, 2137.5,		
		1742.5, 1747.5, 1752.5		2142.5, 2147.5, 2152.5		
V	$N_u = 5 * (F_{UL} -$	826.5, 827.5, 831.5,	$N_d = 5 * (F_{DL} -$	871.5, 872.5, 876. <u>65</u> ,		
	670.1 MHz)	832.5, 837.5, 842.5	670.1 MHz)	877.5, 882.5, 887.5		
VI	$N_u = 5 * (F_{UL} -$	$832.5 \le F_{UL} \le 837.5$	$N_d = 5 * (F_{DL} -$	$877.5 \le F_{DL} \le 882.5$		
	670.1 MHz)		670.1 MHz)			
	·		·			

# 3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040410

# Prague, Czech Republic 16 - 20 August 2004

CHANGE REQUEST												
*	25.	141	CR	351	⊭rev	1	Ж	Current vers	ion:	6.6.0	*	
For <u>HELP</u> on u	sing tl	his for	m, see b	ottom of th	is page or	look	at the	e pop-up text	over t	he Ж syr	nbols.	
Proposed change affects: UICC apps# ME Radio Access Network X Core Network  Title:   **Correction is the Band V (850MHz) additionnal frequency channel - UARFCN												
Title: 第	Cori	rection	n is the E	Band V (850	MHz) add	litionr	al fre	equency char	nel - l	JARFCN		
Source: #	RAN	۱WG	4									
Work item code: ₩	RInl	mp-U	MTS850					Date: ∺	30/0	8/2004		
Category: Ж	F							Release: ₩	Rel-6	6		
outing on y	Use of F	(corrections)  (corrections)  (additions)  (document)  (document)  (document)  (document)  (document)  (document)	rection) responds dition of fe ctional mo torial mod	odification of lification) of the abov	on in an ea feature)		elease	Use <u>one</u> of 2 e) R96 R97 R98 R99	the foll (GSM (Relea (Relea (Relea	owing rele Phase 2) ise 1996) ise 1997) ise 1998) ise 1999) ise 4)	eases:	
		_								•		
Reason for change	e: #		e is an e 50 MHz).		of the add	itionn	al fre	quency chan	nel ad	ded for the	he band	
Summary of chang	ıe: ₩			equency cangement.	arrier in M	Hz is	corre	ected according	ng the	850 MHz	<u>7</u>	
Consequences if	Ħ	One	additionr	nal carrier o	could not b	e use	ed.					
not approved:			ted impa is a corre		e channel	numb	ering	g for Band V.				
Clauses affected:	$\mathfrak{R}$	3.5.3	(table 3	.2).								
Other specs affected:	¥	Y N X X	Test sp	ore specific ecifications pecification	;	Ж	25.1	01; 25.104				
Other comments:	$\mathbb{H}$											

#### How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under  $\underline{\text{ftp://ftp.3gpp.org/specs/}}$  For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 3.5 Channel arrangement

### 3.5.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

### 3.5.2 Channel raster

The channel raster is 200 kHz for all bands, which means that the centre frequency must be an integer multiple of 200 kHz. In addition an number of additional centre frequencies are specified according to table 3.2, which means that the centre frequencies for these channels are shifted 100 kHz relative to the general raster.

#### 3.5.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The UARFCNvalues are defined as follows.

Table 3.1: UARFCN definition (general)

UPLINK (UL) UE transmit, Node B receive		DOWNLINK (DL) UE receive, Node B transmit				
UARFCN	Carrier frequency [MHz] (F <sub>UL)</sub> ) (Note 1)	UARFCN	Carrier frequency [MHz] (F <sub>DL)</sub> ) (Note 2)			
$N_u = 5 * F_{UL}$	0.0 MHz ≤ F <sub>UL</sub> ≤ 3276.6 MHz	$N_d = 5 * F_{DL}$	$0.0 \text{ MHz} \le F_{DL} \le 3276.6 \text{ MHz}$			
Note 1: F <sub>UL</sub> is the uplink frequency in MHz Note 2: F <sub>DL</sub> is the downlink frequency in MHz						

Table 3.2: UARFCN definition (additional channels)

Band	UPLINK (UL) UE transmit, Node B receive		DOWNLINK (DL) UE receive, Node B transmit	
	UARFCN	Carrier frequency [MHz]	UARFCN	Carrier frequency [MHz]
		(F <sub>UL)</sub> )		(F <sub>DL)</sub> )
I	-	-	-	-
II	N <sub>u</sub> = 5 * (F <sub>UL</sub> – 1850.1 MHz)	1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5	N <sub>d</sub> = 5 * (F <sub>DL</sub> – 1850.1 MHz)	1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5
III	-	-	-	-
IV	N <sub>u</sub> = 5 * (F <sub>UL</sub> – 1480.1 MHz)	1712.5, 1717.5, 1722.5, 1727.5, 1732.5, 1737.5 1742.5, 1747.5, 1752.5	N <sub>d</sub> = 5 * (F <sub>DL</sub> – 1820.1 MHz)	2112.5, 2117.5, 2122.5, 2127.5, 2132.5, 2137.5, 2142.5, 2147.5, 2152.5
V	N <sub>u</sub> = 5 * (F <sub>UL</sub> – 670.1 MHz)	826.5, 827.5, 831.5, 832.5, 837.5, 842.5	N <sub>d</sub> = 5 * (F <sub>DL</sub> – 670.1 MHz)	871.5, 872.5, 876. <u>65,</u> 877.5, 882.5, 887.5
VI	N <sub>u</sub> = 5 * (F <sub>UL</sub> – 670.1 MHz)	832.5, 837.5	N <sub>d</sub> = 5 * (F <sub>DL</sub> – 670.1 MHz)	877.5, 882.5