Page 41 of 61

Agilen	gilent Spectrum Analyzer - Swept SA														
LXI RI	tor Fr	RF	50 Ω		∧ ⊔			INT REF	Ava		ALIGN OFF	09:40:12 TRA	PM May 06, 2015	Frequ	ency
Gen		eq	15.078		PNO: F IFGain:	ast 🔸	Trig: F #Atten	ree Run : 30 dB	Avg	Hold: 9	98/100	TY I			
10 dE	3/div	Ref Ref	Offset 7. 27.41	41 dB dBm								Mkr1 -46.8	150 kHz 19 dBm	Au	to Tune
17.4														Cent 15.075	t er Freq 000 MHz
7.41 -2.59														St a 150	a rt Freq .000 kHz
-12.6 -22.6														Sto 30.000	op Freq 000 MHz
-32.6	1												-33.00 dBm	(2.985 <u>Auto</u>	CF Step 000 MHz Man
-52.6														Free	q Offset 0 Hz
-62.6 Star	t 150	տ⊮(Լ ĸHz	ancurrent	homely	harrenth	hanhfudul	yhannan	Jup Water plan	i porti m icenti fica	("Allow	har war	Www.jym Stop :	<mark>ነጫዋቂንነለብት</mark> 30.00 MHz		
#Re	s BW	10 kl	IZ			#VBW	30 kH	Z*		#	Sweep :	50.0 ms	(1000 pts)		

(Plot 4.5.2 B2: Channel 4183: 836.60 MHz @ WCDMA Band V)



(Plot 4.5.2 B3: Channel 4183: 836.60 MHz @ WCDMA Band V)

Page 42 of 61

Agilen	it Spectru	ım Analyzer - Sw	vept SA								
LXI RI		RF 50 Ω	2 AC			INT REF	A	ALIGN OFF	09:40:32 P	M May 06, 2015	Frequency
Cen	ter Fr	eq 4.0000	000000 G	HZ NO∙East ⊷►	Trig: Free	Run	Avg Hold:	43/100	J INAC TYF	E M WWWWW	
_	_		İF	Gain:Low	#Atten: 40	dB	100		DE		
		Ref Offcet 8	7 dB					M	(r1 5.98	5 6 GHz	Auto Tune
10 dE	3/div	Ref 30.00	dBm						-35.4	45 dBm	
Log											
											Center Freq
20.0											4.000000000 GHz
10.0											Otart From
											Start Freq
0.00											1.00000000 GHZ
-10.0										-13.00 dBm	Stop Freg
											7.000000000 GHz
-20.0											
-30.0									1		CF Step
			and the state		stars of sheets			ومعاقف وحاور والدراري	ad didate listenante.	وروبين مرافع أحاجا والمانية	Auto Man
-40.0		di na ang kiti katalah di katalah			de de			Louise, Little Disco	appi. Billinkat fibilitational (a	A A AMBINITATION OF A DESCRIPTION OF A D	
-50.0											FreqOnset
											0 Hz
-60.0											
Star	t 1.00) GH7							Stop 7	000 GHz	
#Re	s BW	1.0 MHz		#VBW	3.0 MHz	*	-	#Sweep	50.4 ms (6200 pts)	

(Plot 4.5.2 B4: Channel 4183: 836.60 MHz @ WCDMA Band V)



(Plot 4.5.2 B5: Channel 4183: 836.60 MHz @ WCDMA Band V)

Page 43 of 61



(Plot 4.5.2 C1: Channel 4233: 846.60 MHz @ WCDMA Band V)

Agilen	t Spectr	rum Ani	alyzer - S	wept SA			22	INT REE		ALIGN OFF	00:41:110	M May 06, 2015	_	
Cen	ter F	req	15.07	5000	MHz	. Foot + h	Trig: Fr	ee Run	Avg Type AvgIHold:	: Pwr(RMS) 99/100	TRAC		F	requency
					IFGa	n:Low	#Atten:	30 dB			D			
10 dE	3/div	Ref Ref	Offset 7 27.41	′.41 dB dBm							Mkr1 -45.3	150 kHz 86 dBm		Auto Tune
209														Center Freq
17.4													1	15.075000 MHz
7.41												-		
27.59														Start Freq 150.000 kHz
-2.33														
-12.6														Stop Freq
-22.6							-						3	80.000000 MHz
												-33.00 dBm		CE Stop
-32.6 :												-00.00 4.5/1	0	2.985000 MHz
-42.6	<u> </u>												Auto	Man
-52.6														Freq Offset
														0 Hz
-62.6	Maria	No. of the life				h	ب باسان		a addatada.co.	and the				
Star	t 150	kH7	VIALEUUATAN	ቘዀኯዀኯ፟ጚጚኯ	~~~	ሃነ <mark>ኔ</mark> ሎት ስለ ችንት	www.anmager	AND AN ANY ANY A	- The second second		Ston 3	ቀጥላጫባቸው። በ በበ MHz		
#Res	s BW	10 k	Hz			#VBV	/ 30 kHz	*	ŧ	≠Sweep ⊹	50.0 ms (1000 pts)		

(Plot 4.5.2 C2: Channel 4233: 846.60 MHz @ WCDMA Band V)

Page 44 of 61

Agilen	gilent Spectrum Analyzer - Swept SA												
COD	tor E	RF 50 Ω	2 AC			INT REF		ALIGN OFF	09:41:22 P	M May 06, 2015	Frequency		
Gen		req 515.00	0000	PNO: Fast ++- IFGain:Low	Trig: Free #Atten: 30	e Run) dB	Avg Hold	100/100	TY D		Auto Tuno		
10 dE	3/div	Ref Offset 8. Ref 28.05	05 dB dBm					M	kr2 928 -51.7	3.1 MHz 25 dBm	Auto Tune		
18.1									1 		Center Freq 515.000000 MHz		
8.05 -1.95											Start Freq 30.000000 MHz		
-12.0 -22.0										-13.00 dBm	Stop Freq 1.000000000 GHz		
-32.0 -42.0											CF Step 97.000000 MHz <u>Auto</u> Man		
-52.0	ris-ands	and for all the second	-* 5 \$ \$ 10.00	P & Contractor of Property of	an a	l harran a harran a san di sa	and the second	an tanga tang tang tang tang tang tang t	and how and	2	Freq Offset 0 Hz		
-62.0 Star #Res	t 30.0 s BW	MHz 1.0 MHz		#VBW	3.0 MHz	*		#Sweep 4	Stop 1.0 50.0 ms (0000 GHz 1000 pts)			

(Plot 4.5.2 C3: Channel 4233: 846.60 MHz @ WCDMA Band V)



(Plot 4.5.2 C4: Channel 4233: 846.60 MHz @ WCDMA Band V)

Agilent	t Spectru	um Analyzer -	Swept SA								
	or Fr	RF 50	DΩ AC			INT REF		ALIGN OFF	09:41:42 TR4	PM May 06, 2015	Frequency
Cent		eq 10.50	00000	PNO: Fast IFGain:Lov	Trig:	Free Run en: 30 dB	Avg Hold:	45/100	יד ا		
10 dB	3/div	Ref Offset Ref 29.74	9.74 dB 4 dBm					Mkr	12.57 -45.2	'9 8 GHz 268 dBm	Auto Tune
19.7											Center Freq 10.300000000 GHz
9.74 - -0.26 -											Start Freq 7.000000000 GHz
-10.3 -20.3 -										-13.00 dBm	Stop Freq 13.600000000 GHz
-30.3 -									1-		CF Step 660.000000 MHz <u>Auto</u> Man
-50.3		antana ka ata ata ata ata ata ata ata ata ata	i i i di si di seco	un die netering been	allantino, a <mark>bahasi</mark> a	çıranı direterinen a			ing the second second	leite wrath giften ant g	Freq Offset 0 Hz
-60.3											
Start #Res	17.000 BW	0 GHz 1.0 MHz		#V	'BW 3.0 N	1Hz*	-	#Sweep :	Stop 1: 50.3 ms	3.600 GHz (6800 pts)	



4.6.3 For UMTS/TM1/WCDMA Band IV Test Results

A. Test Verdict

Test Mode/ Channel	Frequency (MHz)	Frequency Range	Refer to Plot	Limit (dBm)	Verdict
		9KHz-150KHz	Plot 4.5.3 A1	-13.00	PASS
		150KHz-30MHz	Plot 4.5.3 A2	-13.00	PASS
UMTS/TM1/WCDMA	1710 /	30MHz-1GHz	Plot 4.5.3 A3	-13.00	PASS
Band IV /1312	1712.4	1GHz-7GHz	Plot 4.5.3 A4	-13.00	PASS
		7GHz-13.6GHz	Plot 4.5.3 A5	-13.00	PASS
		13.6GHz-25GHz	Plot 4.5.3 A6	-13.00	PASS
		9KHz-150KHz	Plot 4.5.3 B1	-13.00	PASS
		150KHz-30MHz	Plot 4.5.3 B2	-13.00	PASS
UMTS/TM1/WCDMA	1732.6	30MHz-1GHz	Plot 4.5.3 B3	-13.00	PASS
Band IV /1413	17.52.0	1GHz-7GHz	Plot 4.5.3 B4	-13.00	PASS
		7GHz-13.6GHz	Plot 4.5.3 B5	-13.00	PASS
		13.6GHz-25GHz	Refer to Plot L z Plot 4.5.3 A1 1z Plot 4.5.3 A2 z Plot 4.5.3 A3 z Plot 4.5.3 A3 z Plot 4.5.3 A4 z Plot 4.5.3 A5 1z Plot 4.5.3 A5 1z Plot 4.5.3 A5 1z Plot 4.5.3 A5 1z Plot 4.5.3 B1 z Plot 4.5.3 B1 z Plot 4.5.3 B2 z Plot 4.5.3 B3 z Plot 4.5.3 B4 z Plot 4.5.3 C1 z Plot 4.5.3 C2 z Plot 4.5.3 C3 z Plot 4.5.3 C4 z Plot 4.5.3 C5 z Plot 4.5.3 C5 z Plot 4.5.3 C6 z Plot 4.5.3 C6	-13.00	PASS
		9KHz-150KHz	Plot 4.5.3 C1	-13.00	PASS
		150KHz-30MHz	Plot 4.5.3 C2	-13.00	PASS
UMTS/TM1/WCDMA	1752.6	30MHz-1GHz	Plot 4.5.3 C3	-13.00	PASS
Band IV /1513	1752.0	1GHz-7GHz	Plot 4.5.3 C4	-13.00	PASS
		7GHz-13.6GHz	Plot 4.5.3 C5	-13.00	PASS
		13.6GHz-25GHz	Plot 4.5.3 C6	-13.00	PASS

Note:

In general, the worse case attenuation requirement shown above was applied.
*** means that the emission level is too low to be measured or at least 20 dB down than the limit.

B. Test Plots

Page 46 of 61

Agilent Spectrum Analyzer - Swept SA													
IXI RL		RF 50 Ω	DC 🚺		SE	NSE:INT		ALIGN OFF	04:30:15 F	M Sep 06, 2015		requency	
Cen	ter Fre	q 79.500	kHz		Trig: Free	Run	Avg Type AvalHold:	25/100	TY	E 1 2 3 4 5 6 E M WWWWW		roquonoy	
				IFGain:Low	#Atten: 46	6 dB			D		1		
									Mkr1 67	.29 kHz		Auto Tune	
10 dF	Bidiv	Ref 0015et 8.	/ aB dBm						-59.2	38 dBm	4		
Log							1						
												Center Freq	
20.0										<u>.</u>		79.500 kHz	
10.0			-							-			
												Start Freq	
0.00		<u>.</u>	9	S.		_	3			5		9.000 kHz	
-10.0			_	-						-			
												Stop Freq	
-20.0			3	e.								150.000 kHz	
-30.0					_							CF Step	
-30.0												14.100 kHz	
40.0											<u>Auto</u>	Man	
-40.0										-43.00 dBm	en Ferr	1	
FO 0												Fred Offset	
-50.0					1.1							0 Hz	
					\							0112	
-60.0	MY WILL	mannahla	MA math	Makler & Mr.	1 Jahanna Arty	M. Astales	Aluhan mar an	Ante Mark 161	Varializa den.	March Ala	1		
	Υų	in in the set of	it has a compared of the	WHICH KAN A	A	Les of LIN	I TAIL I PARTA	An American M	. A A W. D	and a deal and			
Star	t 9.00 k	Hz	1						Stop 1	50.00 kHz			
#Res	s BW 1.	.0 kHz		#VBW	10 kHz*			Sweep	168 ms (1000 pts)			
MSG								STATUS	Alian N	ow. All requi	red		
										1	Party and		

(Plot 4.5.3 A1: Channel 1312: 1712.4MHz @ Traffic WCDMA Band IV)

Agiler	t Spectrum Analyze	er - Swept SA									
Cen	ter Frea 15.	50 Ω A DC	lz	SE	NSE;INT	Avg Type	ALIGN OFF	04:30:36 P TRAC	M Sep 06, 2015	Frequency	
			PNO: Wide 😱 IFGain:Low	Trig: Free #Atten: 40	e Run) dB	Avg Hold:	12/100	TYI Di			
10 dl	Ref Offs B/div Ref 30	set 8.7 dB 9.00 dBm					Μ	kr1 13.7 -60.9	45 MHz 47 dBm	Auto Ti	une
20.0			c							Center F 15.075000 f	req MHz
10.0 0.00										Start F 150.000	req kHz
-10.0 -20.0										Stop F 30.000000 r	req MHz
-30.0									-33.00 dBm	CF S 2.985000 r Auto	t ep MHz Man
-50.0				1						Freq Off	fset 0 Hz
-60.0	watershippy	without until which	anallahandi pandikalikana	p.ton' p. h. f. Witzahai	ertakakalan	un her hermanlighter	httemp	-	aly-lawinger-ye		
Star #Re	t 150 kHz s BW 10 k <u>Hz</u>		#VBW	30 kHz*			Sweep	Stop 3 368 ms (0.00 MHz 1000 pt <u>s)</u>		
MSG							STATUS	🛛 🕄 Align N	ow, All requi	red	

(Plot 4.5.3 A2: Channel 1312: 1712.4MHz @ Traffic WCDMA Band IV)

Page 47 of 61

Agilent	agilent Spectrum Analyzer - Swept SA												
CODE	or Fro	RF 50 Ω	AC	1-7	SE	NSE:INT		ALIGN OFF	04:30:43 F	M Sep 06, 2015	Frequency		
Cent		q 515.000		12 PNO: Fast 😱 FGain:Low) Trig: Free #Atten: 30	e Run) dB	Avg Hold:	>100/100	TY D				
10 dB	R div F	tef Offset 8.9 1 28.90	∂dB d Bm					ľ	45.6 Vikr1	0.9 MHz 07 dBm	Auto Tune		
18.9 -				8					2		Center Freq 515.000000 MHz		
8.90 - -1:10 -									5		Start Freq 30.000000 MHz		
-11.1 - -21.1 -										-13.00 dBm	Stop Freq 1.000000000 GHz		
-31.1 - -41.1 -									1		CF Step 97.000000 MHz <u>Auto</u> Man		
-51.1	<mark>, ^artsk/starti</mark> tsvít	himmen	dates de balandes	yayaliyolahar Alaya	alter-low-loghted	uh-indusine	ulliliansteldford	ndelermenen	กมีอาร์ปอลองไกล์ไกลอ	male on brief lands a	Freq Offset 0 Hz		
-61.1 Start #Res	: 30.0 M BW 1.0	Hz 0 MHz		#VBW	3.0 MHz	*		Sweep	Stop 1.0	0000 GHz (1000 pts)			
MSG								STATU	s 🐼 Align N	ow, All requi	red		

(Plot 4.5.3 A3: Channel 1312: 1712.4MHz @ Traffic WCDMA Band IV)



(Plot 4.5.3 A4: Channel 1312: 1712.4MHz @ Traffic WCDMA Band IV)

Page 48 of 61

Agiler	Agilent Spectrum Analyzer - Swept SA												
LXI R	tor Fr	RF 50 Ω		NU	SE	NSE:INT			04:31:01 P	M Sep 06, 2015	Frequency		
Gen	ILET FI	eq 10.300	P	NO: Fast 😱	Trig: Free	Run	Avg Hold:	75/100	TYF				
	_		IF	Gain:Low	#Atten: 30	0 dB			DE				
		Ref Offset 8.	9 dB					Mki	1 13.53	1 1 GHz	Autorune		
10 di Loa	3/div	Ref 28.90	dBm						-42.2	98 aBm			
Ű											Center Fred		
18.9			9	L'	2				2	<u>c</u>	10.300000000 GHz		
8.90				-						-,			
											Start Freq		
-1.10	——		9	.e							7.00000000 GHz		
-11.1										-13.00 dBm	Stop Freq		
											13.60000000 GHz		
-21.1													
											CE Sten		
-31.1					9 						660.000000 MHz		
										\	<u>Auto</u> Man		
-41.1	the state of the		بالمله المرابط المرابط	and hat out to affect the	المعادلة ومقاطنا والمعادر		a del ava part di bista del se	an a bha a shinta	a chi datta bi dana	distriction distribution			
-51.1	International States	the state share		a she and a state of the state	and the state of the second	in the second		الالفائدة والملية وال			Freq Offset		
											0 Hz		
-61.1				-									
Star	+ 7 000								Stop 42	600 CH-			
star #Re	s BW_1	.0 MHz		#VBW	3.0 MHz			Sweep	11.3 ms (6800 pts)			
MSG								STATU	s 🕄 Alian N	ow All requi	red		
									- angit it	on, miroqui	l d		

(Plot 4.5.3 A5: Channel 1312: 1712.4MHz @ Traffic WCDMA Band IV)



(Plot 4.5.3 A6: Channel 1312: 1712.4MHz @ Traffic WCDMA Band IV)

Page 49 of 61

Agilen	jlent Spectrum Analyzer - Swept SA													
LXI RI	tor Er	RF	50 Ω <mark>/</mark>			SE	NSE:INT			04:31:40 F	M Sep 06, 2015	F	requency	
Gen		eq 79.	500 F		PNO: Close 🕞 IFGain:Low	Trig: Free #Atten: 40	e Run 6 dB	Avg Hold:	24/100	TY D				
10 dE	3/div	Ref Off Ref 3	set 8.7 0.00 d	dB Bm					I	Mkr1 13 -58.8	.38 kHz 82 dBm		Auto Tune	
20.0													Center Freq 79.500 kHz	
10.0 0.00			9						· · · · · · · · · · · · · · · · · · ·				Start Freq 9.000 kHz	
-10.0 -20.0													Stop Freq 150.000 kHz	
-30.0 -40.0											-43.00 dBm	<u>Auto</u>	CF Step 14.100 kHz Man	
-50.0	↓ ¹												Freq Offset 0 Hz	
-60.0 Star	₩₩µ [^] t 9.00	₩₩ <mark>₩</mark> ₩	MM	Madralph	happhara fatra	millionni	wy ALAN MA		hr. March hand	Stop 1	איז			
#Re:	s BW 1	1.0 kHz			#VBV	/ 10 kHz*			Sweep	168 ms (1000 pts)			
MSG									STATUS	🛛 🕄 Align N	ow, All requi	red		

(Plot 4.5.3 B1: Channel 1413:1732.6MHz @ Traffic WCDMA Band IV)

Agilent	t Spectrum /	nalyzer - Sw	ept SA	-							
Cent	ter Fred	RF 50 Ω	AC 0000 MH	7	SE	NSE:INT	Avg Type	ALIGN OFF	03:11:11F	M Sep 06, 2015	Frequency
			P	NO: Fast 😱 Gain:Low	Trig: Free #Atten: 30	e Run) dB	Avg Hold:	> 100/100	דץ ס Mkr1 83 1		Auto Tune
10 dE	Re Maiv R e	ef Offset 8.9 ef 28.90 ()dB d Bm					•	-45.8	27 dBm	
Log 18.9				3						<u>.</u>	Center Freq 515.000000 MHz
8.90 -1.10											Start Freq 30.000000 MHz
-11.1										-13.00 dBm	Stop Freq 1.000000000 GHz
-31.1											CF Step 97.000000 MHz Auto Man
-41.1 -51.1	hul Muschal	hten and the	at alughter an	www.lastryl	Malplander Britslyther	helling the states of the stat	ور اونه الإيرويوني في ال	hallow and the state	1 พฤษาสิมหาร์สาม	nyuhuyu Abhutuu	Freq Offset
-61.1											
Start #Res	t 30.0 MH s BW 1.0	lz MHz		#VBW	3.0 MHz	۲,		Sweep	Stop 1.0	0000 GHz (1000 pts)	
MSG								STATU	<mark>is</mark> 🐼 Align N	ow, All requi	red

(Plot 4.5.3 B2: Channel 1413:1732.6MHz @ Traffic WCDMA Band IV)

Page 50 of 61

Agilent	Spectru	m Analyzer - S	wept SA								
LXI RL		RF 50	Ω AC		SE	VSE:INT			04:32:09 F	M Sep 06, 2015	Frequency
Cent	ler Fr	eq 515.00	J0000 N	PNO: Fast IFGain:Low	Trig: Free #Atten: 30	e Run) dB	Avg Hold:	>100/100	TY D		
10 dB	/div	Ref Offset 8 Ref 28.90	8.9 dB I dBm					Γ	45.6 Vikr1	3.6 MHz 31 dBm	Auto Tune
18.9 -									8		Center Freq 515.000000 MHz
8.90 - -1.10 -											Start Freq 30.000000 MHz
-11.1 - -21.1 -									2 2 3	-13.00 dBm	Stop Freq 1.000000000 GHz
-31.1 - -41.1 -									1		CF Step 97.000000 MHz <u>Auto</u> Man
-51.1	enhadri	n al Polyman land	grafildrighten	untre lander and	and the state of the second	MANGANAA	njunderthyddindd	uluineeeee	un and the second	hja-4/hdorietalinaanigin	Freq Offset 0 Hz
-61.1											
start #Res	30.0 BW 1	I.0 MHz		#VBW	3.0 MHz	*		Sweep	Stop 1. 1.20 ms (1000 GHZ	
MSG								STATU	s 🐼 Align N	ow, All requi	red

(Plot 4.5.3 B3: Channel 1413:1732.6MHz @ Traffic WCDMA Band IV)



(Plot 4.5.3 B4: Channel 9400: 1880.0MHz @ Traffic WCDMA Band II)

Page 51 of 61

Agilen	it Spectru	m Analyzer - Sw	rept SA								
LXI R		RF 50 Ω	AC AC	NI I	SE	NSE:INT			04:32:27 P	M Sep 06, 2015	Frequency
Cen	lier Fr	eq 10.300	P	NO: Fast 😱	Trig: Free	Run	Avg Hold:	75/100	TY		
			IF	Gain:Low	#Atten: 30) dB	1220		D		
		Ref Offset 8.	9 dB					Mk	r1 13.13	2 1 GHz	Auto Tune
10 di	3/div	Ref 28.90	dBm						-42.0	58 dBm	
LOg											Contor From
18.9			3	9					2	0	Center Freq
10.2018											10.30000000 GH2
8.90			~								
											Start Freq
-1.10			3	19					2	6	7.00000000 GHz
-11.1									8	-13.00 dBm	
											Stop Freq
-21.1		<u>s</u> .	8	2	2		<u>.</u>		2	8	13.600000000 GHz
-31.1		-	8	2			-		8	÷	CF Step
										1	660.000000 MHz
-41.1		n Ro- annan					a dire a diferen	in the second second	Las Distances en	the law of the law	<u>Auto</u> man
			na led melande alta	and the second second		A AND REAL PROPERTY.					
-51.1				a paragenter de terres.							Freq Offset
											0 Hz
-61.1											
Star	t 7.000	GHz							Stop 13	.600 GHz	
#Re	s BW 1	.0 MHz		#VBW	3.0 MHz	*		Sweep	11.3 ms (6800 pts)	
MSG								STATU	s 🔀 Align N	ow, All requi	red
								_			

(Plot 4.5.3 B5: Channel 1413:1732.6MHz @ Traffic WCDMA Band IV)



(Plot 4.5.3 B6: Channel 1413:1732.6MHz @ Traffic WCDMA Band IV)

Page 52 of 61

Agilen	t Spectrum	Analyzer - Sw	ept SA									
LXI RI		RF 50 Ω	<u>∧</u> DC		SEI	VSE:INT			04:33:33 P	M Sep 06, 2015	F	requency
Cen	ter Fred	79.500	KHZ	PNO: Close 😱 FGain:Low) Trig: Free #Atten: 46	e Run ∂dB	Avg Hold:	>100/100	TYF			
10 dE	R B/div R	ef Offset 8.3 ef 30.00 (7 dB d B m					l	Mkr1 11 -57.9	.82 kHz 08 dBm		Auto Tune
20.0											0	Center Freq
10.0			-									79.500 KHZ
0.0												Start Freq
10.00												
-10.0												Stop Freq 150.000 kHz
-20.0												CE Stan
-30.0											Auto	14.100 kHz Man
-40.0										-43.00 dBm		
-50.0	<u>_</u> 1		-									Freq Offset
-60.0	- Anne all and	AND MARIN AND A	www.www.h	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MMMunhapp	www.	1Land Holdoward MA	yman	Louis Warmary	Winner	1	0112
Star #Re:	t 9.00 kl s BW 1.(lz) kHz		#VBW	10 kHz*			Sweep	Stop 15 168 ms (i0.00 kHz 1000 pts)		
MSG								STATUS	🛛 Align N	ow, All requi	red	

(Plot 4.5.3 C1: Channel 1513: 1752.6MHz @ Traffic WCDMA Band IV)

Agilen	t Spectru	m Analyzer -	Swept SA				44					
Cen	ter Fr	eq 15.07	5000 MI	lz	SE	NSE:INT	Avg Type	RMS	04:40:01 P	M Sep 06, 2015 E <mark>1 2 3 4 5 6</mark>	Fre	quency
				PNO: Wide 🖵 IFGain:Low	Trig: Free #Atten: 40	≘Run)dB	Avg Hold:	12/100	TYI			
10 dE	3/div	Ref Offset Ref 30.0	8.7 dB 0 dBm					M	kr1 25.1 -61.5	00 MHz 42 dBm		Auto Tune
20.0				a	-						C(15.(e nter Freq 075000 MHz
10.0 0.00											,	Start Freq 150.000 kHz
-10.0 -20.0											30.0	Stop Freq 000000 MHz
-30.0										-33.00 dBm	2.9 <u>Auto</u>	CF Step 985000 MHz Man
-50.0									<u>_1</u>		F	req Offset 0 Hz
-60.0		hushin/home	ennelten	landan lander an	nhhimhnmhumhumhumh	yan yang yang yang yang yang yang yang y	mphilisenantedard	World at all and any	freise with	deplosites typestos		
Star #Re:	t 150 k s BW 1	Hz 0 kHz		#VBW	30 kHz*			Sweep	Stop 3 368 ms (0.00 MHz 1000 pts)		
MSG								STATUS	🛛 🔁 Align N	ow, All requi	red	

(Plot 4.5.3 C2: Channel 1513: 1752.6MHz @ Traffic WCDMA Band IV)

Page 53 of 61

Agilen	lent Spectrum Analyzer - Swept SA											
Cen	ter Er	RF	50 Ω		7	SE	NSE:INT	Ava Type	ALIGN OFF	04:40:09 P	M Sep 06, 2015	Frequency
Gen		eq 515	.0000	P IF	AO: Fast 🕞 Gain:Low	Trig: Free #Atten: 30	e Run) dB	Avg Hold:	>100/100	TYF De		Auto Tuno
10 dE	3/div	Ref Offs Ref 28.	et 8.9 d . 90 dB	B Sm					N	46.7	5.0 MHz 44 dBm	Auto Tune
L09												Center Freq
18.9												515.000000 MHz
8.90			-									Start Fred
-1.10			2		6							30.000000 MHz
-11.1											13.00 (9)	
											-13.00 dbm	Stop Freq 1.00000000 GHz
-21.1												
-31.1			~		. C.							CF Step 97.000000 MHz
-41.1											1-	<u>Auto</u> Man
-51.1	nthe the	with any mark	the states		and a start and a start of the	<u>\</u>	Maral Maral Maral	han hab	ald any locked and by the		the way to the second	Freq Offset
												0 Hz
-61.1												
Star	t 30.0	MHz								Stop 1.0	0000 GHz	
#Res	s BW 1	.0 MHz			#VBW	3.0 MHz	*		Sweep	1.20 ms (1000 pts)	
MSG									STATUS	Align N	ow, All requi	red

(Plot 4.5.3 C3: Channel 1513: 1752.6MHz @ Traffic WCDMA Band IV)

Agilent Sp	ectrum Analyzer - Swept SA		2	-	45				
Center	r Freq 4.000000000) GHz	SE	NSE;INT	Avg Type	ALIGN OFF	04:40:19P TRAC	M Sep 06, 2015 E <mark>1 2 3 4 5 6</mark>	Frequency
		PNO: Fast 😱 IFGain:Low	#Atten: 3	e Run 0 dB	Avg Hold:	85/100	TYI		
10 dB/di	Ref Offset 8.9 dB					Mł	(r2 3.65 -41.6	7 8 GHz 07 dBm	Auto Tune
18.9 —	\¢ ¹		¢						Center Freq 4.000000000 GHz
8.90									Start Freq 1.000000000 GHz
-11.1 -21.1								-13.00 dBm	Stop Freq 7.000000000 GHz
-31.1			¢ ²						CF Step 600.000000 MHz <u>Auto</u> Man
-51.1								debullense stragslikk	Freq Offset 0 Hz
-61.1 Start 1.	.000 GHz						Stop 7	.000 GHz	
#Res B	SW 1.0 MHz	#VBW	3.0 MHz	*		Sweep	10.3 ms (6200 pts)	rod
MSG						STATUS	Align N	ow, All requi	rea

(Plot 4.5.3 C4: Channel 1513: 1752.6MHz @ Traffic WCDMA Band IV)

Page 54 of 61

Agilent Spectrum Analyzer - Swept	t SA				
(X) RL RF 50 Ω	AC CILI-	SENSE:INT	ALIGN OFF	04:40:27 PM Sep 06, 2015	Frequency
Center Freq 10.30000	PNO: Fast	Trig: Free Run	Avg Hold: 75/100		
Ref Offset 8.9 d 10 dB/div Ref 28.90 dE	IB Bm	WRITER OF WE	Mkı	1 12.671 0 GHz -42.054 dBm	Auto Tune
18.9					Center Freq 10.300000000 GHz
-1.10					Start Freq 7.000000000 GHz
-11.1				-13.00 dBm	Stop Freq 13.600000000 GHz
-31.1		i Linarda	ar 10 al sei tris se sterrari	1 a kan ur han ban da a ta a da a da a da a da a da a da	CF Step 660.000000 MHz <u>Auto</u> Man
-51.1	hiling bet men for all the spin of the second s	δηλη τη διαλογία του μέτα δημοτικού του	n an	ne in the second se	Freq Offset 0 Hz
Start 7.000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz*	Sweep	Stop 13.600 GHz 11.3 ms (6800 pts)	
MSG			STATU	s 🔀 Align Now, All requi	red

(Plot 4.5.3 C5: Channel 1513: 1752.6MHz @ Traffic WCDMA Band IV)



(Plot 4.5.3 C6: Channel 1513: 1752.6MHz @ Traffic WCDMA Band IV)

4.6. Frequency Stability Test

TEST APPLICABLE

- 1. According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30°C to +50°C centigrade.
- 2. According to FCC Part 2 Section 2.1055 (E) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
- 3. Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried voltage equipment and the end voltage point was 3.40V.

TEST PROCEDURE

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

- 1. Measure the carrier frequency at room temperature;
- 2. Subject the EUT to overnight soak at -30℃;
- 3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on middle channel of WCDMA Band II/IV/V, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming;
- 4. Repeat the above measurements at 10[°]C increments from -30[°]C to +50[°]C. Allow at least 0.5 hours at each temperature, unpowered, before making measurements;
- Remeasure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments remeasuring carrier frequency at each voltage. Pause at nominal voltage for 0.5 hours unpowered, to allow any self-heating to stabilize, before continuing;
- 6. Subject the EUT to overnight soak at +50°℃;
- 7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming;
- Repeat the above measurements at 10[°]C increments from +50[°]C to -30[°]C. Allow at least 0.5 hours at each temperature, unpowered, before making measurements;
- 9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure;

TEST CONFIGURATION



TEST LIMITS

For Hand carried battery powered equipment

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized

Page 56 of 61

frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.40VDC and 4.20VDC, with a nominal voltage of 3.70DC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

For equipment powered by primary supply voltage

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

TEST RESULTS

		UMTS/TM1/W	CDMA Band II		
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict
3.40	20	4.51	0.00	2.50	PASS
3.70	20	-8.08	0.00	2.50	PASS
4.20	20	-1.82	0.00	2.50	PASS
3.70	-30	5.77	0.00	2.50	PASS
3.70	-20	2.46	0.00	2.50	PASS
3.70	-10	-4.44	0.00	2.50	PASS
3.70	0	5.98	0.00	2.50	PASS
3.70	10	0.29	0.00	2.50	PASS
3.70	20	-1.34	0.00	2.50	PASS
3.70	30	4.90	0.00	2.50	PASS
3.70	40	5.65	0.00	2.50	PASS
3.70	50	-0.31	0.00	2.50	PASS

	UMTS/TM1/WCDMA Band IV								
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict				
3.40	20	4.52	0.00	2.50	PASS				
3.70	20	-4.01	0.00	2.50	PASS				
4.20	20	-1.82	0.00	2.50	PASS				
3.70	-30	6.30	0.00	2.50	PASS				
3.70	-20	0.60	0.00	2.50	PASS				
3.70	-10	3.36	0.00	2.50	PASS				
3.70	0	1.02	0.00	2.50	PASS				
3.70	10	-3.72	0.00	2.50	PASS				
3.70	20	0.20	0.00	2.50	PASS				
3.70	30	1.92	0.00	2.50	PASS				
3.70	40	2.15	0.00	2.50	PASS				
3.70	50	2.29	0.00	2.50	PASS				

	UMTS/TM1/WCDMA Band V								
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict				
3.40	20	206.32	0.25	2.50	PASS				
3.70	20	297.89	0.36	2.50	PASS				
4.20	20	306.74	0.37	2.50	PASS				
3.70	-30	206.33	0.25	2.50	PASS				
3.70	-20	297.91	0.36	2.50	PASS				
3.70	-10	306.84	0.37	2.50	PASS				
3.70	0	197.24	0.24	2.50	PASS				
3.70	10	604.28	0.72	2.50	PASS				
3.70	20	202.62	0.24	2.50	PASS				
3.70	30	4.90	0.00	2.50	PASS				
3.70	40	5.65	0.00	2.50	PASS				
3.70	50	-0.31	0.00	2.50	PASS				

4.7. Peak-to-Average Ratio (PAR)

LIMIT

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

TEST CONFIGURATION



TEST PROCEDURE

- 1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- 2. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
- 3. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 4. Set the measurement interval as follows:
 - 1). for continuous transmissions, set to 1 ms,

2). for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

5. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

UMTS/TM1/ WCDMA Band II							
Channel	Measured						
Number	(MHz)	(dB)					
9262	1852.4	2.79					
9400	1880.0	2.87					
9538	1907.6	2.73					

	UMTS/TM1/ WCDMA Band IV							
Channel	Frequency	Measured						
Number	(MHz)	(dB)						
1312	1712.4	2.91						
1413	1732.6	2.92						
1513	1752.6	2.90						

Page 59 of 61

Report No.: MWR150900602



Page 60 of 61

Report No.: MWR150900602



5. Test Setup Photos of the EUT

Please refer to separated files for Test Setup Photos of the EUT.

6. External Photos of the EUT

Please refer to separated files for External Photos of the EUT.

7. Internal Photos of the EUT

Please refer to separated files for Internal Photos of the EUT.

.....End of Report.....