

Imput: RF         Imput: RF         Coupling: DC         Align: Auto	Input Z: 50 Ω #Atten: 30 d Corr CCorr Freq Ref: Int (S) NFE: Adaptive	B PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) 1 2 3 4 5 Avg Hold: 100/100 Trig: Free Run A N N N N	30.000000000 GHz	Settings
Spectrum v			Mkr1 38.510 5 GH	Z 20.0000000 GHz	
cale/Div 10 dB	Ref Level 20	0.00 dBm	-20.18 dBi	Swept Span Zero Span	
				Full Span	
0.00				Start Freq 20.00000000 GHz	
20.0				Stop Freq 40.00000000 GHz	
30.0 Janay July Post for a first from the light of the	na se a ser a la seta de desta en la la la la ser a la s La ser a ser a la ser			AUTO TUNE	
10.0				CF Step 2.000000000 GHz	
50.0				Auto Man	
				Freq Offset 0 Hz	
tart 20.00 GHz	#Video BW	3.0 MHz*	Stop 40.00 GI	X Axis Scale	

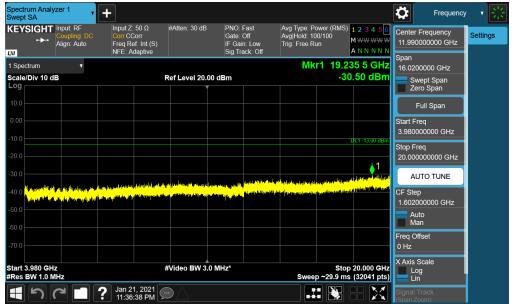
Plot 7-93. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



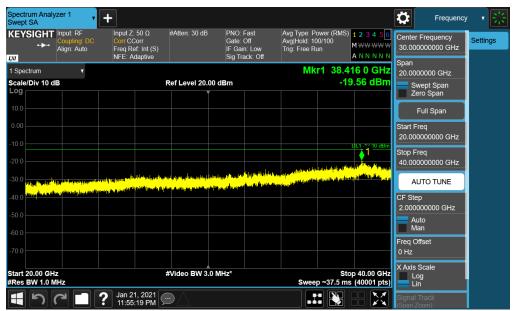
Plot 7-94. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

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Plot 7-95. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



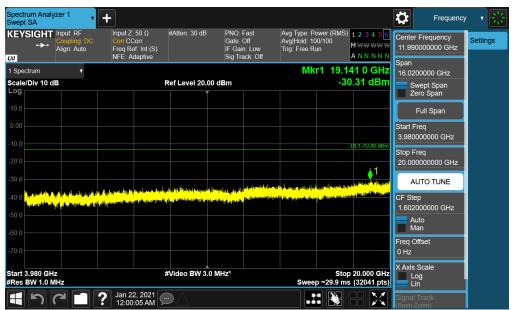
Plot 7-96. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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KEYSIGHT       Input: RF         Coupling: DC         Align: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive	#Atten: 30 dB	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RM Avg Hold: 100/100 Trig: Free Run	IS) <b>1 2 3 4 5 6</b> M WW WW W A N N N N N	Center Frequency 1.865000000 GHz Span	Settings
Spectrum v cale/Div 10 dB		Ref Level 20.00 o	dBm		.692 0 GHz 38.22 dBm	3.67000000 GHz	
						Full Span	
0.00					UL1 -13.00 dBm	Start Freq 30.000000 MHz Stop Freq	
						3.700000000 GHz	
10.0 50.0 politication of the state of the s		a a sha ta i fan sha ha sa an in tifad	restanden de skorjedeter	ha li fela a sedi i la sedi a sedi		CE Step	
	n ( and a stand and a stand and a standard for the stand of the standard for the standard for the standard for	<u>i na sina kata di sa kata kata ka</u>				Man	
						Freq Offset 0 Hz X Axis Scale	
tart 30 MHz Res BW 1.0 MHz		#Video BW 3.0 N	1Hz*		Stop 3.700 GHz 9 ms (7341 pts)	Log	

Plot 7-97. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-98. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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KEYSIGHT Input: RF Coupling: DC Align: Auto		C II	PNO: Fast Sate: Off F Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold: 80/100 Trig: Free Run	123456 MWWWWW ANNNNN	Center Frequency 30.000000000 GHz Span	Settings
1 Spectrum 🔹				Mkr1 39.3		20.0000000 GHz	
Scale/Div 10 dB	Ref	f Level 20.00 dBr	n	-20	.25 dBm	Swept Span Zero Span	
						Full Span	
10.00						Start Freq 20.000000000 GHz	
					UL1 -13.00 dBm	Stop Freq 40.00000000 GHz	
-30.0 (1997) - 1997 - 1			kun alle alle dan barrana Tura da ang ang ang ang ang ang ang ang ang an	in the second	a station of the state of the s	AUTO TUNE	
		and delined on the second				CF Step 2.000000000 GHz	
60.0						Auto Man	
						Freq Offset 0 Hz	
Start 20.00 GHz Res BW 1.0 MHz	#Vi	deo BW 3.0 MHz	*	Sto Sweep ~37.5 ms	p 40.00 GHz (40001 pts)	X Axis Scale Log Lin	
+ n c -	<b>?</b> Jan 22, 2021					Signal Track (Span Zoom)	

Plot 7-99. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

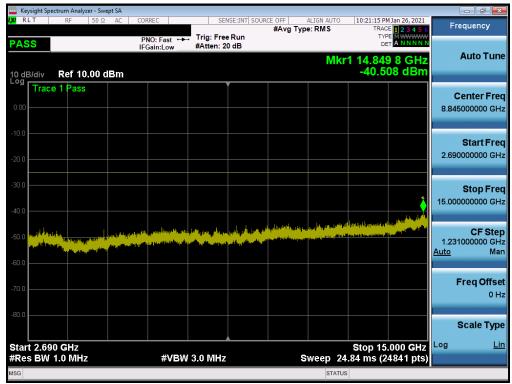
FCC ID: A3LSMA426U	PCTEST. Froad to be part of @ element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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# ULCA - LTE B41(PC2)

	pectrum Ana		pt SA								
(X) RLT	RF	50 Ω	AC (	CORREC	SE	NSE:INT SOUR	CE OFF #Avg Typ	ALIGN AUTO e: RMS		M Jan 26, 2021 DE 1 2 3 4 5 6	Frequency
PASS				PNO: Fast ← IFGain:Low	Trig: Free Atten: 30				TY D		Auto Tune
10 dB/div	Ref 2	20.00 d	Bm					Μ	1kr1 2.47 -27.4	5 0 GHz 83 dBm	Auto Tune
Log 10.0	ce 1 Pas	s				Ĭ					Center Freq
											1.252500000 GHz
0.00											Start Freq 30.000000 MHz
-10.0											
-20.0										1	Stop Fred 2.475000000 GHz
-30.0											0.5.01
						n in the fillen of the					<b>CF Step</b> 244.500000 MHz <u>Auto</u> Man
-5U.U											Freg Offse
-60.0											0 H2
-70.0											Scale Type
Start 0.0 #Res BM				#VB	W 3.0 MHz	<u> </u>		Sweep	Stop 2 3.275 ms (	.475 GHz (4913 pts)	Log <u>Lin</u>
MSG								STAT			

Plot 7-100. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-101. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

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Plot 7-102. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



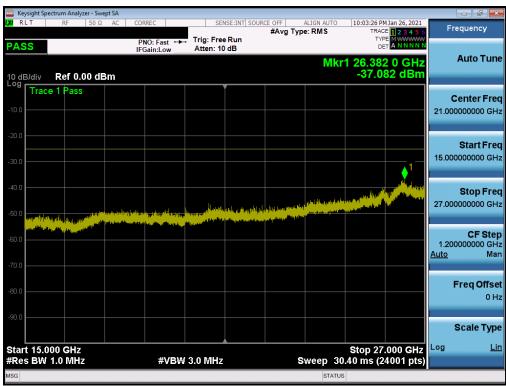
Plot 7-103. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMA426U	PCTEST* Proud to be part of @ element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
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R LT     RF     50 Ω     AC     CORREC     SENSE:INT SOURCE OFF     ALION AUTO     10:02:45 PM Jan 26, 2011       PNO: Fast     Trig: Free Run IFGain:Low     Trig: Free Run #Atten: 20 dB     Trace 12, 23 4 5 G     Frequency       0 dB/div     Ref 10.00 dBm     -35.272 dBm     Auto Tur
PNO: Fast     Trig: Free Run     Trig: Free Run       IFGain:Low     #Atten: 20 dB     DET ANNANA       Mkr1 2.717 0 GHz     Auto Tur       0 dB/div     Ref 10.00 dBm     -35.272 dBm
0 dB/div Ref 10.00 dBm -35.272 dBm
Trace 1 Pass         Center Fre           000         8.845000000 Gi
10.0 Start Fro 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0
30.0 1 Stop Fro 40.0 1 Stop Fro 40.0 1 Stop Fro
70.0 Freq Offs 0 0
80.0 Scale Typ
Start 2.690 GHz Stop 15.000 GHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 24.62 ms (24621 pts)
SG STATUS

Plot 7-104. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



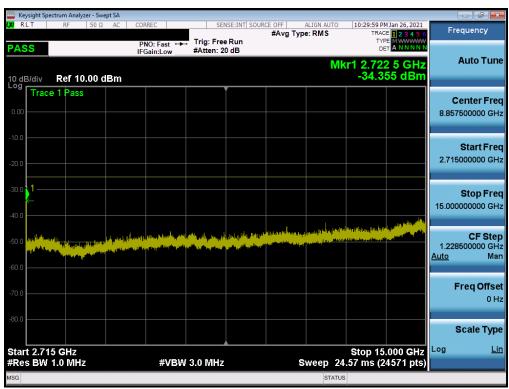
Plot 7-105. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

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XX     RLT     RF     50 Ω     AC     CORREC     SENSE:INT SOURCE OFF     ALIGN AUTO     10:27:55 PM Jan 26, 2021       #Avg Type: RMS     TRACE     2:34 5:6       Trig: Free Run       Trig: Free Run       DET ANNNNN	су
PAGC PNO: Fast →→ Trig: Free Run Type Minimum	
IFGall.LOW Attent of ab	_
Mkr1 2.492 6 GHz         Auto 1           10 dB/div         Ref 20.00 dBm         -35.859 dBm	Tune
10.0     Center       1.263000000	
0.00 Start 30.00000	
-20.0	
-40.0 -40.0 -5	F Step 00 MHz Man
-60.0	Offset 0 Hz
-70.0 Scale	
Start 0.030 GHz         Stop 2.496 GHz         Log           #Res BW 1.0 MHz         #VBW 3.0 MHz         Sweep 3.096 ms (5161 pts)	Lin
MSG	_

Plot 7-106. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-107. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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	Spectrum Analyz											
IXI RLT	RF	50 Ω	AC (	CORREC		SEN	ISE:INT SOUR	CE OFF #Avg Tvp	ALIGN AUT		MJan 26, 2021	Frequency
PASS				PNO: Fa IFGain:L		Trig: Free Atten: 10				T		
10 dB/div Log	Ref 0.0	)0 dB	m						Μ	kr1 26.34 -37.3	4 0 GHz 50 dBm	Auto Tune
-10.0	ce 1 Pass											Center Freq 21.00000000 GHz
-20.0											1	<b>Start Freq</b> 15.00000000 GHz
-40.0	141 - N <sup>ala</sup> ria di ma		الي بر مالي ويوريو. ماري مركز المورويونيو			Trans of States			yang alah dari yang ang ang ang ang ang ang ang ang ang			<b>Stop Freq</b> 27.000000000 GHz
-60.0												<b>CF Step</b> 1.20000000 GHz <u>Auto</u> Man
-80.0												<b>Freq Offset</b> 0 Hz
-90.0												Scale Type
	.000 GHz V 1.0 MHz			#	VBW	3.0 MHz		s	weep	Stop 27 30.40 ms (2	.000 GHZ	Log <u>Lin</u>
MSG										ATUS		

Plot 7-108. Conducted Spurious Plot (ULCA LTE B41(PC2) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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## 7.4 Band Edge Emissions at Antenna Terminal

## **Test Overview**

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is  $43 + 10 \log_{10}(P_{[Watts]})$ , where P is the transmitter power in Watts.

The minimum permissible attenuation level for Band 30 is >  $43 + 10 \log 10$  (P[Watts] at 2300-2305MHz & 2345-2360MHz, >  $55 + 10 \log 10$  (P[Watts]) at 2320-2324MHz & 2341-2345MHz, >  $61 + 10 \log 10$  (P[Watts]) at 2324-2328MHz & 2337-2341MHz, >  $67 + 10 \log 10$  (P[Watts]) at 2288-2292MHz & 2328-2337MHz, and >  $70 + 10 \log 10$  (P[Watts]) at frequencies < 2288MHz & >2365MHz.

The minimum permissible attenuation level for Band 7 and 41 is as noted in the Test Notes on the following page.

## Test Procedure Used

KDB 971168 D01 v03r01 - Section 6.0

## **Test Settings**

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW > 1% of the emission bandwidth
- 4. VBW  $\geq$  3 x RBW
- 5. Detector = RMS
- 6. Number of sweep points  $\geq 2 \times \text{Span/RBW}$
- 7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize

### Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-3. Test Instrument & Measurement Setup

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## Test Notes

- Per 27.53(h), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- 2. Per 27.53(a)(5) in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
- 3. Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.
- 4. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

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# LTE Band 30

	ectrum Analyzer - S										
XI RL	RF 50	Ω AC	CORREC	SEN	SE:INT	#Avg Type	ERMS	07:39:18 AM TRACE	123456	F	requency
			PNO: Wide IFGain:Low	Trig: Free Atten: 36				TYPE DET			Auto Tur
10 dB/div Log	Ref 25.00	dBm					Mkr1	2.305 0	00 GHz 31 dBm		Auto Tune
15.0											Center Free
5.00						สารของเหตุเขาสุภาษาสุการสารเรื่อง <sub>เ</sub> ป็นของเป	ha marana	Mayor water	alama Mu	2.30	<b>Start Fre</b> 01000000 GH
-15.0									DL1 -13.00 dBm	2.30	<b>Stop Fre</b> 09000000 GH
35.0		-	and the state of the state		1					<u>Auto</u>	<b>CF Ste</b> 800.000 k⊢ Ma
45.0	an a										Freq Offs 0 ⊦
65.0											Scale Typ
Center 2.3 Res BW	305000 GHz 120 kHz	2	#VBW	430 kHz		5	Sweep 4	Span 8. .000 ms (1	000 191112	Log	Li
ISG							STATUS				

Plot 7-109. Lower Band Edge Plot (LTE Band 30 - 10MHz QPSK - Full RB)

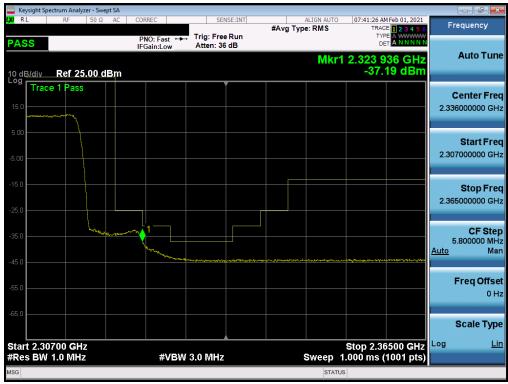


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	ectrum Analyzer - Swept SA					
RL	RF 50 Ω AC	PNO: Wide	SENSE:INT	ALIGN AUTO #Avg Type: RMS	07:40:35 AM Feb 01, 2021 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
0 dB/div	Ref 25.00 dBm	IFGain:Low	Atten: 36 dB	Mkr	1 2.315 00 GHz -34.064 dBm	Auto Tur
15.0						Center Fre 2.315000000 GH
5.00 .00	www.weathing.	ม มารถหน่าวในการณ์เกมต์เกมต์	m			<b>Start Fr</b> 2.310000000 Gi
25.0					DL1 -13.00 dBm	<b>Stop Fr</b> 2.320000000 G
15.0			Corport 1	when the work the second	Ang Well managed and a strate of the ange	CF Ste 1.000000 M <u>Auto</u> M
5.0						Freq Offs 0
i5.0						Scale Ty
	315000 GHz 120 kHz	#VBW	430 kHz	Sweep 5	Span 10.00 MHz .000 ms (1001 pts)	Log <u>l</u>
G				STATUS	3	



Plot 7-112. Extended Upper Band Edge Plot (LTE Band 30 - 10MHz QPSK – Full RB)

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🔤 Keysight Spectrum Ana								
LXIRL RF	50 Ω AC	CORREC	SENSE:INT	#Avg Type	ALIGN AUTO	07:48:34 AM Fe	b 01, 2021	Frequency
		PNO: Wide 😱	Trig: Free Run	and g i ype		TYPE		
		IFGain:Low	Atten: 36 dB					Auto Tune
					Mkr1	2.305 000	GHZ	Auto Tune
10 dB/div Ref 2	25.00 dBm					-52.15	uып	
								Center Freq
15.0								2.305000000 GHz
5.00							<b>A</b> - <b>B</b> - <b>A</b> -	
					$\sim$			Start Freq
-5.00								2.303000000 GHz
						DL1	-13.00 dBm	
-15.0								Stop Freq
								2.307000000 GHz
-25.0			1 <sup>-</sup> 1					
			· · · · · · · · · · · · · · · · · · ·					CF Step
-35.0			مر					400.000 kHz
-45.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~					<u>Auto</u> Man
-45.0								
-55.0								Freq Offset
00.0								0 Hz
-65.0								
								Scale Type
Center 2.305000		#\/D\\	200 643		Sucon 0	Span 4.00	/V IVII 12	Log <u>Lin</u>
#Res BW 56 kH		#VBW	200 kHz			000 ms (10	or pis)	
MSG					STATUS			

Plot 7-113. Lower Band Edge Plot (LTE Band 30 - 5MHz QPSK – Full RB)



Plot 7-114. Extended Lower Band Edge Plot (LTE Band 30 - 5MHz QPSK - Full RB)

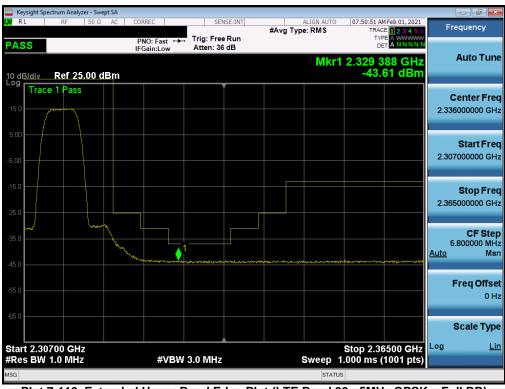
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	pectrum Analy:												
X/RL	RF	50 Ω	AC C	ORREC			NSE:INT	#Avg Ty	ALIGN AUTO	07:50:12 AM TRACE	1 2 3 4 5 6	Fi	requency
				PNO: Wide IFGain:Low	P	Trig: Fre Atten: 3				TYPE DET	A WWWWW A N N N N N		
10 dB/div	Ref 25	00 dE	3m						Mkı	1 2.315 ( -32.54	00 GHz 1 dBm		Auto Tune
		.00 02					Ť						
15.0													Senter Frec 5000000 GHz
10.0												2.31	5000000 GH2
5.00	mm	www.wh	man	eypor whom n	wryw	mm							Start Free
-5.00												2.31	0000000 GHz
										C	L1 -13.00 dBm		
-15.0													Stop Free
-25.0												2.32	0000000 GH:
/							<b>♦</b> <sup>1</sup>						CF Ster
-35.0													1.000000 MH
-45.0							polan	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Munner	mariant	$\gamma$	<u>Auto</u>	Mar
1010											m		
55.0													Freq Offset 0 Hz
65.0													
00.0													Scale Type
Center 2	.315000	GHz					<u> </u>			Span 10	.00 MHz	Log	Lir
#Res BW				#V	BW 2	200 kHz	2		Sweep (	5.000 ms (1	001 pts)		
ISG									STATU	s			

Plot 7-115. Upper Band Edge Plot (LTE Band 30 - 5MHz QPSK - Full RB)



Plot 7-116. Extended Upper Band Edge Plot (LTE Band 30 - 5MHz QPSK - Full RB)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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## LTE Band 7

	- ·	n Analyzer - S																- ē 🗙
L <mark>XI</mark> RL		RF 50	Ω [	DC	CORREC		Cent		ISE:INT eq: 21.000	00000		ALIGN AUTO		01:19:3 Radio S		Jan 21, 2021 None	F	requency
PASS							Trig:	Free	Run							ce: BTS		
TAS.	<u> </u>				IFGain	:Low	#Atte	en: 20	o dB				-	kadio L	evi	ce: BIS		
10 dB/ Log 🔽	div	Ref 40.	.00 c	Bm														
30.0																		Center Freq
20.0 -																	21.00	00000000 GHz
10.0																		
0.00									p	- California	and Interview	لمودعتهم ومرجوا	Montry	y and the party of	$\downarrow$			
-10.0									{						$\downarrow$			
-20.0																		
-30.0																		
-40.0		لي.	واسترجلها	er, pelle	فالمعمديها	in the state			N						Ψ.,	Manual address		
-50.0		م م العلمية ا			1.04	The L	11.66.0000		•							A handle to		
-30.0																		
Start	2.475	GHz												Stop	) 2.	525 GHz		CF Step
																		00000000 GHz
Spur	Range	Start Fr	eq	Sto	p Free	1	RBW	Fr	equency		Ampli	itude		∆ Limi			<u>Auto</u>	Man
1	1	2.4750 0		_	905 GH		1.000 MHz							-10.72				
2	2	2.4905 0			960 GH		1.000 MHz							-22.02				Freq Offset
3	3	2.4960 0			990 GH		1.000 MHz							-22.67				0 Hz
4	4 5	2.4990 0		_	000 GH		390.0 kHz							-23.95				
5	9	2.5000 0	SHZ	2.52	250 GH	Z	240.0 kHz	2.5	1379166	GHZ	3.117	uDIII		-21.88	dВ			
MSG												STA	TUS					

Plot 7-117. Lower ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB)



## Plot 7-118. Upper ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of @ element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 70 of 107	
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		n Analyzer - Spurio							
PASS		RF 50Ω I	DC CORREC	+++ Trig: I	SENSE:INT r Freq: 21.00000000 Free Run n: 26 dB	0 GHz	Radio Std: Radio Dev		Frequency
10 dB/	'div	Ref 40.00	dBm						
30.0 — 20.0 —									Center Fre 21.000000000 GH
10.0 0.00					and the second of the second of	Lagenselegen stegen for all services	٩		
-10.0									
-30.0 — -40.0 —					* <mark>~</mark> ^		W Hotoppenhan	putity of polassist	
50.0		, and the second se							
	2.475 0						Stop 2	.525 GHz	CF Ste 1.20000000 GH
tart		GHz	Stop Freq	RBW	Frequency	Amplitude	Stop 2	.525 GHz	
itart	2.475 0	GHz			Frequency 2.488898333 GHz				1.20000000 G
tart Spur	2.475 C	GHz Start Freq	Stop Freq	1.000 MHz		-34.58 dBm	∆ Limit		1.20000000 GI <u>Auto</u> Mi
start Spur	2.475 C	GHZ Start Freq 2.4750 GHz	Stop Freq 2.4905 GHz	1.000 MHz 1.000 MHz 1.000 MHz	2.488898333 GHz 2.493653333 GHz 2.497875000 GHz	-34.58 dBm -33.99 dBm -31.87 dBm	∆ Limit -9.578 dB		1.200000000 Gi <u>Auto</u> M Freq Offs
	2.475 C	Start Freq 2.4750 GHz 2.4905 GHz	<b>Stop Freq</b> 2.4905 GHz 2.4960 GHz	1.000 MHz 1.000 MHz 1.000 MHz	2.488898333 GHz 2.493653333 GHz	-34.58 dBm -33.99 dBm -31.87 dBm	Δ Limit -9.578 dB -20.99 dB		1.20000000 G
start Spur	2.475 C	<b>Start Freq</b> 2.4750 GHz 2.4905 GHz 2.4960 GHz	<b>Stop Freq</b> 2.4905 GHz 2.4960 GHz 2.4990 GHz	1.000 MHz           1.000 MHz           1.000 MHz           300.0 kHz	2.488898333 GHz 2.493653333 GHz 2.497875000 GHz	-34.58 dBm -33.99 dBm -31.87 dBm -33.89 dBm	Δ Limit -9.578 dB -20.99 dB -21.87 dB		1.200000000 GI <u>Auto</u> Mi Freq Offs

Plot 7-119. Lower ACP Plot (LTE Band 7 - 15MHz QPSK – Full RB)





FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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ASS		RF 50 Ω	DC CORREC	Cente	SENSE:INT er Freq: 21.000000 Free Run en: 26 dB	ALIGN AU 0000 GHz	UTO 01:25:07 A Radio Std		Frequency
10 dB/		Ref 40.00					Titalio Bel		
30.0									Center Fre 21.000000000 GH
10.0 D.00					janunanindan	The state of the s			
0.0									
20.0									
40.0			annimum ann ann ann ann ann ann ann ann ann an		**	May Marine	rtylandan and	Mary mol Marilesky	
0.0		A STATE OF THE OWNER						I DE LE CONTRA	
	2.475 0	and a state of the						2.525 GHz	
itart	2.475 C	GHz	Stop Fred	RBW	Frequency	Amplitude			1.20000000 G
itart		GHz	Stop Fred		Frequency		Stop 2	2.525 GHz	1.20000000 G
tart Spur	Range	GHz	Stop Fred 2.4905 GH	z 1.000 MHz		Hz -39.75 dBm	Stop 2	2.525 GHz	1.200000000 G <u>Auto</u> M
start Spur	Range	GHZ Start Freq 2.4750 GHz	<b>Stop Fred</b> 2.4905 GH 2.4960 GH	z 1.000 MHz z 1.000 MHz	2.490500000 GI	Hz -39.75 dBm Hz -32.88 dBm	Stop 2	2.525 GHz	1.200000000 Gi <u>Auto</u> M <b>Freq Offs</b>
start Spur	Range	GHz Start Freq 2.4750 GHz 2.4905 GHz	<b>Stop Fred</b> 2.4905 GH 2.4960 GH 2.4990 GH	Iz 1.000 MHz Iz 1.000 MHz Iz 1.000 MHz Iz 1.000 MHz	2.490500000 Gl 2.495486667 Gl	Hz -39.75 dBm Hz -32.88 dBm Hz -30.88 dBm	Stop 2 Δ Limit -14.75 df -19.88 df	2.525 GHz	1.200000000 Gi <u>Auto</u> M <b>Freq Offs</b>
Spur	<b>Range</b> 1 2 3	Start Freq 2.4750 GHz 2.4905 GHz 2.4960 GHz	<b>Stop Fred</b> 2.4905 GH 2.4960 GH 2.4990 GH 2.5000 GH	IZ 1.000 MHz IZ 1.000 MHz IZ 1.000 MHz IZ 200.0 KHz	2.490500000 GH 2.495486667 GH 2.498995000 GH	Iz         -39.75 dBm           Iz         -32.88 dBm           Iz         -30.88 dBm           Iz         -30.88 dBm	Stop 2 ▲ Limit -14.75 dE -19.88 dE -20.88 dE	2.525 GHz	CF Ste 1.20000000 G <u>Auto</u> M Freq Offs 0 I
tart Spur	Range 1 2 3 4	Start Freq 2.4750 GHz 2.4905 GHz 2.4960 GHz 2.4990 GHz	<b>Stop Fred</b> 2.4905 GH 2.4960 GH 2.4990 GH 2.5000 GH	IZ 1.000 MHz IZ 1.000 MHz IZ 1.000 MHz IZ 200.0 KHz	2.490500000 GH 2.495486667 GH 2.498995000 GH 2.499945000 GH	Iz         -39.75 dBm           Iz         -32.88 dBm           Iz         -30.88 dBm           Iz         -30.88 dBm	Stop 2 ▲ Limit -14.75 dE -19.88 dE -20.88 dE -23.65 dE	2.525 GHz	1.200000000 Gi <u>Auto</u> M <b>Freq Offs</b>

Plot 7-121. Lower ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB)



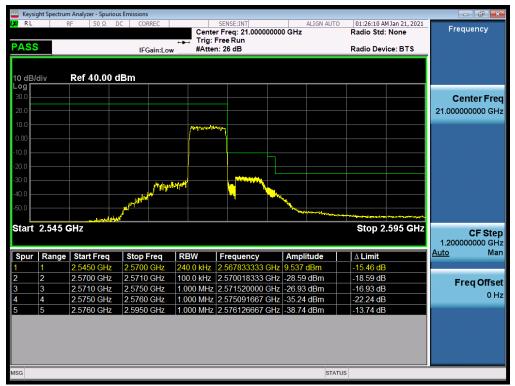
Plot 7-122. Upper ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-123. Lower ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB)

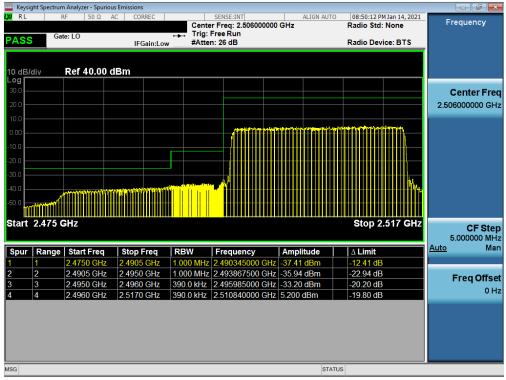


Plot 7-124. Upper ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB)

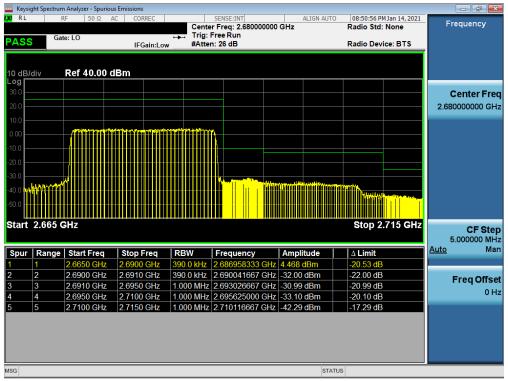
FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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# LTE Band 41(PC2)



Plot 7-125. Lower ACP Plot (LTE Band 41(PC2) - 20MHz QPSK - Full RB)

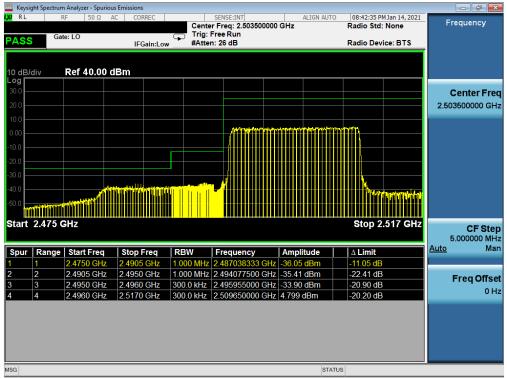


Plot 7-126. Upper ACP Plot (LTE Band 41(PC2) - 20MHz QPSK - Full RB)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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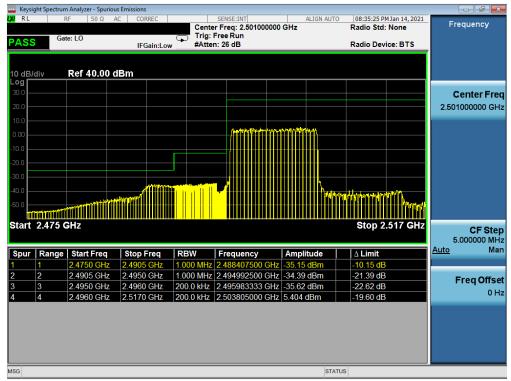
Plot 7-127. Lower ACP Plot (LTE Band 41(PC2) - 15MHz QPSK - Full RB)



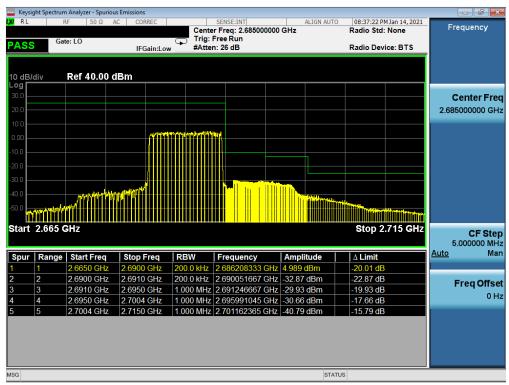
Plot 7-128. Upper ACP Plot (LTE Band 41(PC2) - 15MHz QPSK – Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of @ element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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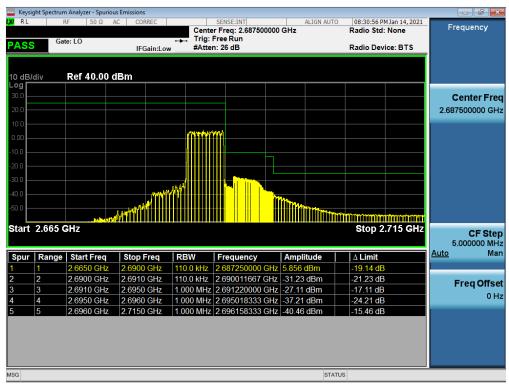


FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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50 Ω     AC     CORREC     SENSE:INT     ALIGN AUTO     108:30:23 PM Jan 14, 2021       Center Freq: 2.498500000 GHz       Radio Std: None       Trig: Free Run       #Atten: 26 dB     Radio Device: BTS	Frequency
Trig: Free Run IFGain:Low #Atten: 26 dB Radio Device: BTS	
40.00 dBm	
	Center Free
	2.498500000 GH:
Stop 2.517 GHz	CF Step
	5.000000 MH
rt Freg   Stop Freg   RBW   Frequency   Amplitude     ∆ Limit Au	<u>ito</u> Mar
50 GHz 2.4905 GHz 1.000 MHz 2.490422500 GHz -39.62 dBm -14.62 dB	
05 GHz 2.4950 GHz 1.000 MHz 2.494722500 GHz -30.26 dBm -17.26 dB	Freq Offse
03 GHZ 2.4930 GHZ 1.000 MHZ 2.494722300 GHZ -30.26 dBm -17.26 dB	
US GHZ         2.4950 GHZ         1.000 MHZ         2.494122500 GHZ         -30.26 dBM         -17.26 dB           50 GHz         2.4960 GHz         110.0 kHz         2.495975000 GHz         -32.37 dB         -19.37 dB	0 Ha
Stop Freq         Row         Frequency         Amplitude         A Limit           '50 GHz         2.4905 GHz         1.000 MHz         2.490422500 GHz         -39.62 dBm         -14.62 dB	_

Plot 7-131. Lower ACP Plot (LTE Band 41(PC2) - 5MHz QPSK - Full RB)





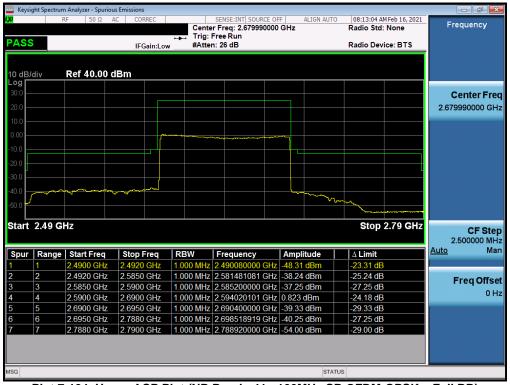
FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 86 of 127
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## NR Band n41

Keysig		m Analyzer - Sp RF 50 Ω		issions CORREC			SENSE:II	NT			ALIGN AUT	0	12:50:46 P	M Jan 21, 2021		
		10 20 32	be	CONNEC			er Freq: 2	2.506020	0000	GHz	ALIGN ACT		Radio Std		Fre	equency
PASS	;			IFGain			Free Rui n: 26 dB						Radio Dev	ice: BTS		
				IFGain	LOW	#/Atte	in. 20 ab					_	Radio Dev	ICE. DTS		
10 dB/ Log <b>Г</b>	div	Ref 40.0	10 dBr	n							1	_				
30.0															C	enter Fred
20.0																020000 GH
															2.000	020000 0112
10.0																
0.00						<u> </u>										
-10.0				_	-					┦╴						
-20.0																
-30.0																
-40.0					J								~			
				1							- march	~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
-50.0 —				/												
Start	2.396	GHz											Stop 2	.696 GHz		
															517	CF Step 204000 MHz
Spur	Range	Start Fre	a Is	top Fre	a	RBW	Frequ	encv		Ampl	itude		∆ Limit		Auto	Mar
1	1	2.3960 GH		4905 GF		1.000 MHz							-12.22 dE	}		
2	2	2.4905 GI		4950 GF		1.000 MHz							-23.82 dE		-	
3	3	2.4950 GH	-Iz 2.	4960 GF	lz.	1.000 MHz	2.4960	00000 (	GHz	27.71	dBm		-14.71 dE	}	-	req Offset
4	4	2.4960 GH	-Iz 2.	5960 GH	łz 🛛	1.000 MHz	2.5105	72864 (	GHz	1. <mark>92</mark> 3	dBm		-23.08 dE	;		0 Hz
5	5	2.5960 GI		6010 GF		1.000 MHz							-25.30 dE			
6	6	2.6010 G		6940 GF		1.000 MHz							-24.20 dE			
7	7	2.6940 G	IZ 2.	6960 GH	Z	1.000 MHz	2.6942	60000 (	GHz	-53.38	dBm		-28.38 dE			
MSG											STA	TUS				
_	-	400 1	_				-	_		0.01		_			<b>E</b>	

Plot 7-133. Lower ACP Plot (NR Band n41 - 100MHz CP-OFDM-QPSK - Full RB)



### Plot 7-134. Upper ACP Plot (NR Band n41 - 100MHz CP-OFDM-QPSK - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of the element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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ASS	F 50Ω)	AC CORREC	🛶 Trig: I	SENSE:INT SOURCE O r Freq: 2.506020000 Free Run n: 26 dB		08:16:55 AM Feb 16, 2021 Radio Std: None Radio Device: BTS	Frequency
0 dB/div	Ref 40.00 (	dBm					
20.0							Center Fre 2.506020000 GH
10.0 0.00 10.0							
20.0							
40.0 50.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					- manual	
tart 2.416 C	θHz					Stop 2.656 GHz	CF Ste 2.500000 Mi
Spur   Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	∆ Limit	<u>Auto</u> Ma
1	2.4160 GHz	2.4905 GHz	1.000 MHz	2.489493243 GHz	-37.08 dBm	-12.08 dB	
2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493695000 GHz	-36.72 dBm	-23.72 dB	Freq Offs
3	2.4950 GHz	2.4960 GHz	820.0 kHz	2.495990000 GHz	-37.06 dBm	-24.06 dB	
4	2.4960 GHz	2.5760 GHz	1.000 MHz	2.512100629 GHz	2.019 dBm	-22.98 dB	01
5	2.5760 GHz	2.5810 GHz	1.000 MHz	2.580500000 GHz	-38.83 dBm	-28.83 dB	
6	2.5810 GHz	2.6541 GHz	1.000 MHz	2.606206897 GHz	-39.28 dBm	-26.28 dB	
7	2.6541 GHz	2.6560 GHz	1.000 MHz	2.655069000 GHz	-48.68 dBm	-23.68 dB	

Plot 7-135. Lower ACP Plot (NR Band n41 - 80MHz CP-OFDM-QPSK - Full RB)



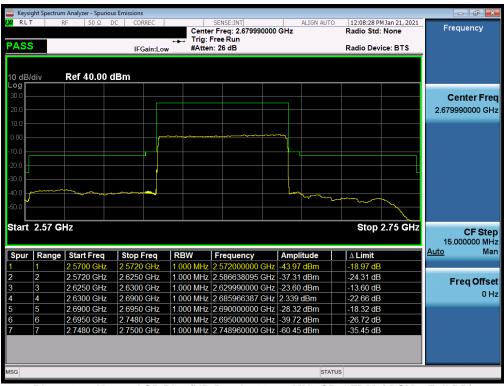
Plot 7-136. Upper ACP Plot (NR Band n41 - 80MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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PAS		RF 50 Ω		ORREC Gain:Lo	+++ Trig:	SENSE:INT er Freq: 2.5060 Free Run n: 26 dB	20000 GH		N AUTO	11:53:26 A Radio Std Radio Dev		Frequency
10 dB	/div	Ref 40.00	dBm									
- <b>og</b> 30.0 - 20.0 -												Center Fre 2.506020000 GH
10.0 - 0.00 - 10.0 -												
-20.0 -30.0												
-40.0 -												
Start	2.436 (	GHz								Stop 2	.616 GHz	CF Ste 15.00000 MH
Spur	Range	Start Freq	Stop	Freq	RBW	Frequency	A	mplitude	)	∆ Limit		<u>Auto</u> Ma
1	1	2.4360 GHz	2.490	5 GHz	1.000 MHz	2.49050000	) GHz -3	6.54 dBn	n	-11.54 dB		
2	2	2.4905 GHz	2.495	0 GHz	1.000 MHz	2.494625000	) GHz -3	5.01 dBn	n	-22.01 dE		Freq Offs
3	3	2.4950 GHz	2.496	0 GHz	620.0 kHz	2.49600000	) GHz  -3	6.50 dBn	n	-23.50 dE		
4	4	2.4960 GHz		0 GHz	1.000 MHz	2.510117647	7 GHz   1.	57 dBm		-23.44 dE		01
•	5	2.5560 GHz		0 GHz		2.55600000				-18.14 dE		
5	6	2.5610 GHz		0 GHz		2.562009524				-24.69 dE		
		2.6140 GHz	2.616	0 GHz	1.000 MHz	2.614740000	) GHz [-4]	7.17 dBn	n	-22.17 dE		
5 5 7	7											

Plot 7-137. Lower ACP Plot (NR Band n41 - 60MHz CP-OFDM-QPSK – Full RB)



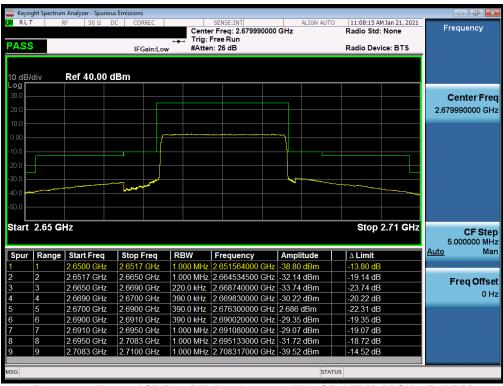
Plot 7-138. Upper ACP Plot (NR Band n41 - 60MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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ASS		F 50 Ω		ORREC		Center Trig: F	SENSE:INT Freq: 2.506020 ree Run : 26 dB	0000 GH		IGN AUTO	Radio S	5 AM Jan 21, 2021 td: None	Frequency
0 dB/	'div	Ref 40.00	dBm										
30.0 — 20.0 —													Center Fr 2.506020000 0
10.0													
20.0													
40.0				U				,	~				
\$0.0													
50.0	2.456 0	Hz									Stop	2.576 GHz	5.000000 N
io.o	2.456 C		Stop	Freq	RBW		Frequency	Ar	nplitu	ıde	Stop		
io.o	Range	Start Freq 2.4560 GHz	2.490	Freq 15 GHz			Frequency 2.490500000 C					t	5.000000 N
so.o Start	Range	Start Freq	2.490		1.000	MHz 2		GHz -35	.35 dl	Bm	∆ Limi	t dB	5.000000 M Auto M
io.o itart Spur	Range	Start Freq 2.4560 GHz	2.490 2.495	5 GHz	1.000 1.000	MHz 2 MHz 2	2.490500000	GHz -35 GHz -34	.35 dl .05 dl	Bm Bm	∆ Limi	t dB dB	5.000000 M <u>Auto</u> M
o.o start	Range 1 2 3 4	<b>Start Freq</b> 2.4560 GHz 2.4905 GHz	2.490 2.495 2.496 2.536	5 GHz 0 GHz 0 GHz 0 GHz 0 GHz	1.000 1.000 390.0	MHz MHz kHz	2.490500000 2.494955000 0	GHz -35 GHz -34 GHz -36	.35 dl .05 dl .96 dl	Bm Bm Bm	∆ Limit -10.35 -21.05	t dB dB dB	5.000000 M Auto M
Spur	Range 1 2 3 4 5	<b>Start Freq</b> 2.4560 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5360 GHz	2.490 2.495 2.496 2.536 2.537	15 GHz 10 GHz 10 GHz	1.000 1.000 390.0 820.0 820.0	MHz 2 MHz 2 kHz 2 kHz 2 kHz 2	2.490500000 ( 2.494955000 ( 2.495990000 ( 2.510000000 ( 2.536020000 (	GHz -35 GHz -34 GHz -36 GHz 2.3 GHz 2.3 GHz -34	.35 dl .05 dl .96 dl 57 dB .44 dl	Bm Bm Bm Bm Bm	Δ Limi -10.35 -21.05 -23.96	t dB dB dB dB	5.000000 M <u>Auto</u> M
Spur	Range           1           2           3           4           5           6	<b>Start Freq</b> 2.4560 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5360 GHz 2.5370 GHz	2.490 2.495 2.496 2.536 2.537 2.537	5 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz	1.000 1.000 390.0 820.0 820.0 1.000	MHz 2 MHz 2 kHz 2 kHz 2 kHz 2 MHz 2	2.490500000 C 2.494955000 C 2.495990000 C 2.510000000 C 2.536020000 C 2.537000000 C	GHz         -35           GHz         -34           GHz         -36           GHz         2.3           GHz         2.3           GHz         2.3           GHz         -34           GHz         34           GHz         34           GHz         34           GHz         34           GHz         34	.35 dl .05 dl .96 dl 57 dB .44 dl .71 dl	Bm B	Δ Limi -10.35 -21.05 -23.96 -22.64 -24.44 -24.71	t dB dB dB dB dB dB dB	5.000000 M <u>Auto</u> M
Spur	Range           1           2           3           4           5           6           7	<b>Start Freq</b> 2.4560 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5360 GHz 2.5370 GHz 2.5410 GHz	2.490 2.495 2.496 2.536 2.537 2.541 2.573	15 GHz 60 GHz 60 GHz 60 GHz 70 GHz 70 GHz 89 GHz	1.000 1.000 390.0 820.0 820.0 1.000 1.000	MHz 2 MHz 2 kHz 2 kHz 2 kHz 2 MHz 2 MHz 2	2.490500000 ( 2.494955000 ( 2.495990000 ( 2.510000000 ( 2.536020000 ( 2.537000000 ( 2.537000000 ( 2.541000000 (	GHz         -35           GHz         -34           GHz         -36           GHz         2.36           GHz         2.36           GHz         2.34           GHz         -34           GHz         -34           GHz         -34           GHz         -34           GHz         -34	.35 dl .05 dl .96 dl 57 dB .44 dl .71 dl .97 dl	Bm B	Δ Limi -10.35 -21.05 -23.96 -22.64 -24.44 -24.71 -23.97	t dB dB dB dB dB dB dB	5.000000 M <u>Auto</u> M
50.0	Range           1           2           3           4           5           6           7	<b>Start Freq</b> 2.4560 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5360 GHz 2.5370 GHz	2.490 2.495 2.496 2.536 2.537 2.541 2.573	5 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz	1.000 1.000 390.0 820.0 820.0 1.000 1.000	MHz 2 MHz 2 kHz 2 kHz 2 kHz 2 MHz 2 MHz 2	2.490500000 C 2.494955000 C 2.495990000 C 2.510000000 C 2.536020000 C 2.537000000 C	GHz         -35           GHz         -34           GHz         -36           GHz         2.36           GHz         2.36           GHz         2.34           GHz         -34           GHz         -34           GHz         -34           GHz         -34           GHz         -34	.35 dl .05 dl .96 dl 57 dB .44 dl .71 dl .97 dl	Bm B	Δ Limi -10.35 -21.05 -23.96 -22.64 -24.44 -24.71	t dB dB dB dB dB dB dB	5.000000 M <u>Auto</u> M

Plot 7-139. Lower ACP Plot (NR Band n41 - 40MHz CP-OFDM-QPSK - Full RB)



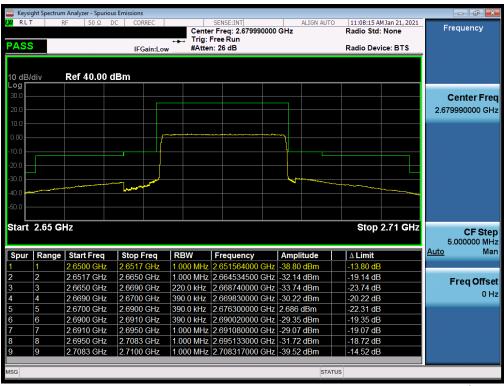
Plot 7-140. Upper ACP Plot (NR Band n41 - 40MHz CP-OFDM-QPSK – Full RB)

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PASS		F 50 Ω		CORREC	⊷ Low	Trig:	SENSE:INT er Freq: 2.50 Free Run n: 26 dB	6020000	GHz	ALIGN AUTO	Radio	36 AM Jan 21, 202 Std: None Device: BTS	<u>-</u> F	Frequency
0 dB/	/div	Ref 40.00	dBm											
30.0 — 20.0 —													2.5	Center Fre 06020000 GH
10.0														
20.0 30.0					_									
											and the second s			
40.0 - 50.0 -	~													
50.0	2.476 G	SHz									Stop	o 2.536 GH		CF Ste 5.000000 M
io.o			Sto	p Freq	R	BW	Frequenc	÷y	Ampl	itude	Stop A Lim		z <u>Auto</u>	5.000000 M
itart	Range			p Freq 05 GH			Frequenc		-			it		5.000000 M
itart	Range 1	Start Freq	2.49		z 1.	000 MHz		00 GHz	-33.75	dBm	∆ Lim	it dB		5.000000 M M
io.o itart Spur	Range 1 2	Start Freq 2.4760 GHz	2.49 2.49	05 GH:	z 1. z 1.	000 MHz 000 MHz	2.4905000	00 GHz	-33.75 -30.39	dBm dBm	∆ Lim -8.747	it dB dB		5.000000 Mi M
io.o itart Spur	Range           1           2           3	<b>Start Freq</b> 2.4760 GHz 2.4905 GHz	2.49 2.49 2.49	05 GH 50 GH	z 1.0 z 1.0 z 20	000 MHz 000 MHz 00.0 kHz	2.4905000 2.4945500	00 GHz 00 GHz 00 GHz	-33.75 -30.39 -33.74	dBm dBm dBm	∆ Lim -8.747 -17.39	it dB dB dB		5.000000 Mi M
itart	Range 1 2 3 4 5	<b>Start Freq</b> 2.4760 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5160 GHz	2.49 2.49 2.49 2.51 2.51	<mark>05 GH</mark> 50 GH 60 GH	z 1.0 z 1.0 z 20 z 39	000 MHz 000 MHz 00.0 kHz 00.0 kHz	2.4905000 2.4945500 2.4959950	00 GHz 00 GHz 00 GHz 00 GHz 62 GHz	-33.75 -30.39 -33.74 2.852	dBm dBm dBm dBm	Δ Lim -8.747 -17.39 -20.74	it dB dB dB dB		5.000000 Mi M
Start	Range 1 2 3 4 5	<b>Start Freq</b> 2.4760 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz	2.49 2.49 2.49 2.51 2.51	<mark>05 GH</mark> 50 GH 60 GH 60 GH	z 1.0 z 1.0 z 20 z 39 z 39	000 MHz 000 MHz 0.0 kHz 0.0 kHz 0.0 kHz	2.4905000 2.4945500 2.4959950 2.5136237	00 GHz 00 GHz 00 GHz 62 GHz 00 GHz	-33.75 -30.39 -33.74 2.852 -29.71	dBm dBm dBm dBm dBm	Δ Lim -8.747 -17.39 -20.74 -22.15	it dB dB dB dB dB dB		
50.0 Start	Range           1           2           3           4           5           6	<b>Start Freq</b> 2.4760 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5160 GHz	2.49 2.49 2.49 2.51 2.51 2.51 2.52	05 GH: 50 GH: 60 GH: 60 GH: 70 GH:	z 1.0 z 1.0 z 20 z 39 z 39 z 1.0	000 MHz 000 MHz 0.0 kHz 0.0 kHz 0.0 kHz 0.0 kHz	2.4905000 2.4945500 2.4959950 2.5136237 2.5160000	00 GHz 00 GHz 00 GHz 62 GHz 00 GHz 00 GHz	-33.75 -30.39 -33.74 2.852 -29.71 -29.23	dBm dBm dBm dBm dBm dBm dBm	Δ Lim -8.747 -17.39 -20.74 -22.15 -19.71	it dB dB dB dB dB dB dB dB		5.000000 M M Freq Offs
50.0	Range           1           2           3           4           5           6           7	<b>Start Freq</b> 2.4760 GHz 2.4905 GHz 2.4950 GHz 2.4960 GHz 2.5160 GHz 2.5170 GHz	2.49 2.49 2.51 2.51 2.51 2.52 2.53	05 GH: 50 GH: 60 GH: 60 GH: 70 GH: 10 GH:	z 1.0 z 1.0 z 20 z 39 z 39 z 1.0 z 1.0 z 1.0	000 MHz 000 MHz 0.0 kHz 00.0 kHz 00.0 kHz 000 MHz 000 MHz	2.4905000 2.4945500 2.4959950 2.5136237 2.5160000 2.5170000	000 GHz 000 GHz 000 GHz 000 GHz 000 GHz 000 GHz 000 GHz	-33.75 -30.39 -33.74 2.852 -29.71 -29.23 -33.03	dBm dBm dBm dBm dBm dBm dBm dBm	Δ Lim -8.747 -17.39 -20.74 -22.15 -19.71 -19.23	it dB dB dB dB dB dB dB dB dB		5.000000 Mi M

Plot 7-141. Lower ACP Plot (NR Band n41 - 20MHz CP-OFDM-QPSK - Full RB)

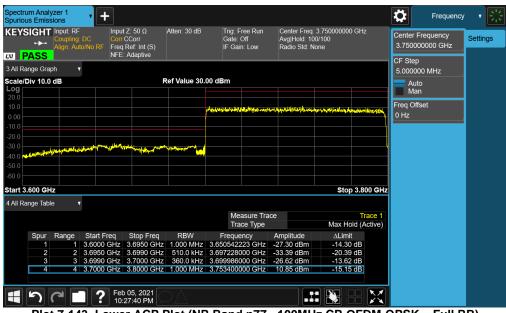


Plot 7-142. Upper ACP Plot (NR Band n41 - 20MHz CP-OFDM-QPSK - Full RB)

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## NR Band n77



Plot 7-143. Lower ACP Plot (NR Band n77 - 100MHz CP-OFDM-QPSK - Full RB) pectrum Analyzer 1 purious Emissions **O** Frequency + Center Freq: 3.930000000 GHz Avg|Hold: 100/100 Radio Std: None Input Z: 50 Ω Trig: Free Run Gate: Off IF Gain: Low KEYSIGHT Input: RF Atten: 30 dB Center Frequency 3.930000000 GHz Settinas + Freq Ref: Int (S) NFE: Adaptive Da PASS CF Step 3 All Range Graph 5.000000 MHz Scale/Div 10.0 dB Ref Value 30.00 dBm Auto Man Freq Offset Start 3.880 GHz Stop 4.080 GHz 4 All Range Table Measure Trace Trace Type Trace 1 Max Hold (Active) 
 Start Freq
 Stop Freq
 RBW
 Frequency
 Amplitude

 3.8800 GHz
 3.9800 GHz
 1.000 MHz
 3.975500000 GHz
 10.60 dBm

 3.9800 GHz
 3.9810 GHz
 3.000 NHz
 3.98001000 GHz
 -26.40 dBm

 3.9810 GHz
 3.9850 (12 50.0 kHz)
 3.989001000 GHz
 -24.40 dBm

 3.9850 GHz
 4.0800 GHz
 51.00 kHz
 3.984000 GHz
 -34.19 dBm

 3.9850 GHz
 4.0800 GHz
 1.000 MHz
 4.024520000 GHz
 -27.98 dBm
 Spur Range ∧Limit -15.40 dB -13.40 dB 6 7 8 -21.19 dB -14.98 dB

 $\mathbf{X}$ 

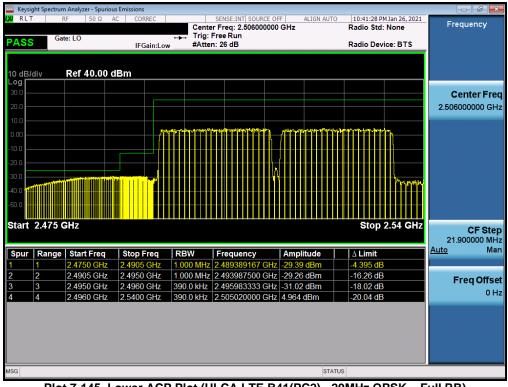
E 5 C 5, 2021 11:54:48 PM

Plot 7-144. Upper ACP Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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## ULCA - LTE Band 41(PC2)



Plot 7-145. Lower ACP Plot (ULCA LTE B41(PC2) - 20MHz QPSK - Full RB)



## Plot 7-146. Upper ACP Plot (ULCA LTE B41(PC2) - 20MHz QPSK - Full RB)

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## 7.5 Conducted Power Output Data

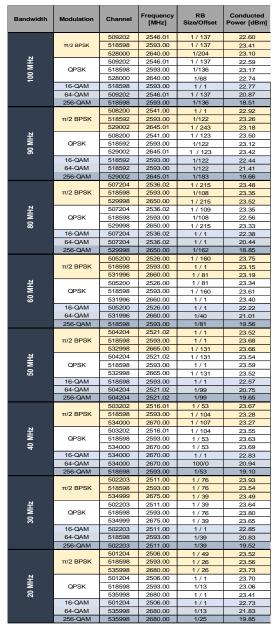


Table 7-2. Conducted Power Output Data (NR Band n41)

FCC ID: A3LSMA426U	PCTEST* Proud to be part of @element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		650000	3750.00	1/68	23.24
	π/2 BPSK	656000	3840.00	1/68	23.31
		662000	3930.00	1/68	22.35
MHz		650000	3750.00	1/68	23.11
	QPSK	656000	3840.00	1/68	23.34
100		662000	3930.00	1/68	22.29
	16-QAM	650000	3750.00	1/68	21.74
	64-QAM	650000	3750.00	1/68	20.51
	256-QAM	650000	3750.00	1/68	19.20

Table 7-3. Conducted Power Output Data (NR Band n77)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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## 7.6 Radiated Power (EIRP)

## **Test Overview**

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

## Test Procedures Used

KDB 971168 D01 v03r01 - Section 5.2.1

ANSI/TIA-603-E-2016 - Section 2.2.17

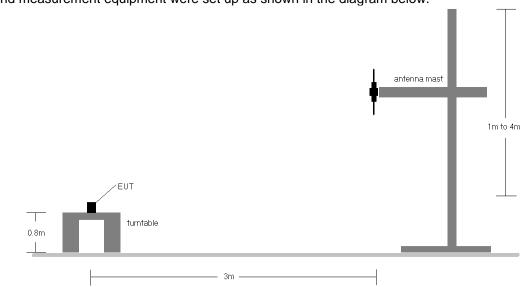
### Test Settings

- 1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
- 2. RBW = 1 5% of the expected OBW, not to exceed 1MHz
- 3. VBW  $\geq$  3 x RBW
- 4. Span = 1.5 times the OBW
- 5. No. of sweep points  $\geq 2 \times \text{span} / \text{RBW}$
- 6. Detector = RMS
- 7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
- 8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
- 9. Trace mode = trace averaging (RMS) over 100 sweeps
- 10. The trace was allowed to stabilize

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### Test Setup



The EUT and measurement equipment were set up as shown in the diagram below.

Figure 7-4. Radiated Test Setup <1GHz

## Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 4) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
MHz	QPSK	2310.0	н	Х	107	64	10.34	1/0	11.21	21.55	0.143	23.98	-2.43
≥ 0	16-QAM	2310.0	Н	Х	107	64	10.34	1/0	10.65	20.99	0.125	23.98	-2.99
10	64-QAM	2310.0	Н	Х	107	64	10.34	1 / 25	9.61	19.95	0.099	23.98	-4.03
		2307.5	Н	Х	107	64	10.33	1/0	10.90	21.24	0.133	23.98	-2.74
우	QPSK	2310.0	Н	Х	107	64	10.34	1/0	10.81	21.15	0.130	23.98	-2.83
MHz		2312.5	Н	Х	107	64	10.34	1/0	10.80	21.14	0.130	23.98	-2.84
5	16-QAM	2310.0	Н	Х	107	64	10.34	1 / 12	10.33	20.67	0.117	23.98	-3.31
	64-QAM	2310.0	Н	Х	107	64	10.34	1 / 24	9.41	19.75	0.094	23.98	-4.23
10 MHz	Opposite Pol.	2310.0	V	Z	278	39	10.34	1/0	10.64	20.98	0.125	23.98	-3.00

Table 7-4. EIRP Data (LTE Band 30)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
		2510.0	V	Z	311	17	9.42	1 / 50	14.32	23.74	0.237	33.01	-9.27
원	QPSK	2535.0	V	Z	301	17	9.41	1/0	12.92	22.33	0.171	33.01	-10.68
20 MHz		2560.0	V	Z	326	32	9.45	1 / 99	11.06	20.51	0.112	33.01	-12.50
20	16-QAM	2510.0	V	Z	311	17	9.42	1 / 50	13.32	22.74	0.188	33.01	-10.27
	64-QAM	2510.0	V	Z	311	17	9.42	1 / 50	12.37	21.79	0.151	33.01	-11.22
		2507.5	V	Z	311	17	9.42	1 / 36	14.27	23.69	0.234	33.01	-9.32
MHz	QPSK	2535.0	V	Z	301	17	9.41	1/0	12.77	22.18	0.165	33.01	-10.83
×		2562.5	V	Z	326	32	9.46	1/0	11.19	20.65	0.116	33.01	-12.36
15	16-QAM	2507.5	V	Z	311	17	9.42	1/0	13.44	22.86	0.193	33.01	-10.15
	64-QAM	2507.5	V	Z	311	17	9.42	1/0	12.65	22.07	0.161	33.01	-10.94
		2505.0	V	Z	311	17	9.42	1/0	14.43	23.85	0.243	33.01	-9.16
MHz	QPSK	2535.0	V	Z	301	17	9.41	1/0	12.83	22.24	0.168	33.01	-10.77
		2565.0	V	Z	326	32	9.47	1 / 49	11.28	20.75	0.119	33.01	-12.26
10	16-QAM	2505.0	V	Z	311	17	9.42	1/0	13.44	22.86	0.193	33.01	-10.15
	64-QAM	2505.0	V	Z	311	17	9.42	1 / 25	12.71	22.13	0.163	33.01	-10.88
		2502.5	V	Z	311	17	9.42	1 / 24	14.50	23.92	0.247	33.01	-9.09
부	QPSK	2535.0	V	Z	301	17	9.41	1/0	12.83	22.24	0.168	33.01	-10.77
5 MHz		2567.5	V	Z	326	32	9.48	1 / 12	11.24	20.72	0.118	33.01	-12.29
5	16-QAM	2502.5	V	Z	311	17	9.42	1 / 24	13.44	22.86	0.193	33.01	-10.15
	64-QAM	2502.5	V	Z	311	17	9.42	1 / 12	12.70	22.12	0.163	33.01	-10.89
20 MHz	Opposite Pol.	2510.0	Н	Y	103	327	9.45	1 / 50	12.94	22.39	0.173	33.01	-10.62

Table 7-5. EIRP Data (LTE Band 7)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
		2506.0	V	Z	224	29	9.42	1/0	14.65	24.07	0.255	33.01	-8.94
문	QPSK	2593.0	V	Z	212	42	9.59	1/0	14.49	24.08	0.256	33.01	-8.93
20 MHz		2680.0	V	Z	230	40	9.71	1/0	9.62	19.33	0.086	33.01	-13.68
20	16-QAM	2506.0	V	Z	224	29	9.42	1/0	13.77	23.19	0.209	33.01	-9.82
	64-QAM	2506.0	V	Z	224	29	9.42	1/0	12.68	22.10	0.162	33.01	-10.91
		2503.5	V	Z	224	29	9.42	1/0	14.37	23.79	0.239	33.01	-9.22
MHz	QPSK	2593.0	V	Z	212	42	9.59	1 / 74	14.48	24.07	0.255	33.01	-8.94
		2682.5	V	Z	230	40	9.71	1/0	9.75	19.46	0.088	33.01	-13.55
15	16-QAM	2503.5	V	Z	224	29	9.42	1/0	14.04	23.46	0.222	33.01	-9.55
	64-QAM	2503.5	V	Z	224	29	9.42	1/0	12.77	22.19	0.166	33.01	-10.82
		2501.0	V	Z	224	29	9.42	1/0	14.95	24.37	0.274	33.01	-8.64
MHz	QPSK	2593.0	V	Z	212	42	9.59	1/0	14.66	24.25	0.266	33.01	-8.76
Σ		2685.0	V	Z	230	40	9.71	1/0	9.19	18.90	0.078	33.01	-14.11
10	16-QAM	2593.0	V	Z	212	42	9.59	1/0	13.42	23.01	0.200	33.01	-10.00
	64-QAM	2593.0	V	Z	212	42	9.59	1/0	11.90	21.49	0.141	33.01	-11.52
		2498.5	V	Z	224	29	9.43	1/0	15.28	24.71	0.296	33.01	-8.30
부	QPSK	2593.0	V	Z	212	42	9.59	1 / 12	15.32	24.91	0.310	33.01	-8.10
5 MHz		2687.5	V	Z	230	40	9.71	1/0	10.16	19.87	0.097	33.01	-13.14
5	16-QAM	2593.0	V	Z	212	42	9.59	1 / 24	13.14	22.73	0.187	33.01	-10.28
	64-QAM	2593.0	V	Z	212	42	9.59	1 / 24	12.17	21.76	0.150	33.01	-11.25
5 MHz	Opposite Pol.	2593.0	Н	Y	119	322	9.58	1/0	14.29	23.87	0.244	33.01	-9.14

Table 7-6. EIRP Data (LTE Band 41(PC2))

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz		2546.0	V	Z	191	7	9.41	1/1	10.15	19.56	0.090	33.01	-13.45
	π/2 BPSK	2593.0	V	Z	197	350	9.59	1/1	7.71	17.30	0.054	33.01	-15.71
		2640.0	V	Z	155	27	9.68	1/1	7.58	17.26	0.053	33.01	-15.75
		2546.0	V	Z	191	7	9.41	1/1	10.55	19.96	0.099	33.01	-13.05
Σ	QPSK	2593.0	V	Z	197	350	9.59	1/1	7.91	17.50	0.056	33.01	-15.51
100		2640.0	V	Z	155	27	9.68	1/1	7.22	16.90	0.049	33.01	-16.11
•	16-QAM	2546.0	V	Z	191	7	9.41	1/1	9.27	18.68	0.074	33.01	-14.33
	64-QAM	2546.0	V	Z	191	7	9.41	1/1	8.83	18.24	0.067	33.01	-14.77
	256-QAM	2546.0	V	Z	191	7	9.41	1/1	8.41	17.82	0.061	33.01	-15.19
		2536.0	V	Z	191	7	9.41	1 / 215	11.03	20.44	0.111	33.01	-12.57
	π/2 BPSK	2593.0	V	Z	197	350	9.59	1 / 109	7.82	17.41	0.055	33.01	-15.60
		2650.0	V	Z	155	27	9.69	1 / 215	8.05	17.74	0.059	33.01	-15.27
우		2536.0	V	Z	191	7	9.41	1 / 109	11.31	20.72	0.118	33.01	-12.29
80 MHz	QPSK	2593.0	V	Z	197	350	9.59	1 / 109	7.31	16.90	0.049	33.01	-16.11
80		2650.0	V	Z	155	27	9.69	1 / 215	7.42	17.12	0.052	33.01	-15.89
	16-QAM	2536.0	V	Z	191	7	9.41	1/1	9.24	18.65	0.073	33.01	-14.36
	64-QAM	2536.0	V	Z	191	7	9.41	1/1	8.40	17.81	0.060	33.01	-15.20
	256-QAM	2536.0	V	Z	191	7	9.41	1/1	8.37	17.78	0.060	33.01	-15.23
	π/2 BPSK	2526.0	V	Z	191	7	9.42	1 / 160	11.29	20.71	0.118	33.01	-12.30
		2593.0	V	Z	197	350	9.59	1/1	7.62	17.21	0.053	33.01	-15.80
		2660.0	V	Z	155	27	9.70	1 / 81	7.71	17.41	0.055	33.01	-15.60
우		2526.0	V	Z	191	7	9.42	1 / 81	11.29	20.71	0.118	33.01	-12.30
60 MHz	QPSK	2593.0	V	Z	197	350	9.59	1 / 160	8.36	17.95	0.062	33.01	-15.06
60		2660.0	V	Z	155	27	9.70	1/1	7.49	17.19	0.052	33.01	-15.82
	16-QAM	2526.0	V	Z	191	7	9.42	1/1	9.07	18.49	0.071	33.01	-14.52
	64-QAM	2526.0	V	Z	191	7	9.42	1/1	8.34	17.76	0.060	33.01	-15.25
	256-QAM	2526.0	V	Z	191	7	9.42	1/1	9.17	18.59	0.072	33.01	-14.42
	π/2 BPSK	2516.0	V	Z	191	7	9.42	1 / 53	11.21	20.63	0.116	33.01	-12.38
		2593.0	V	Z	197	350	9.59	1 / 104	7.75	17.34	0.054	33.01	-15.67
		2670.0	V	Z	155	27	9.71	1 / 107	7.79	17.49	0.056	33.01	-15.52
₽	QPSK	2516.0	V	Z	191	7	9.42	1 / 104	11.50	20.92	0.124	33.01	-12.09
40 MHz		2593.0	V	Z	197	350	9.59	1 / 53	8.38	17.97	0.063	33.01	-15.04
\$		2670.0	V	Z	155	27	9.71	1 / 53	7.77	17.48	0.056	33.01	-15.53
,	16-QAM	2516.0	V	Z	191	7	9.42	1/1	9.07	18.49	0.071	33.01	-14.52
	64-QAM	2516.0	V	Z	191	7	9.42	1/1	8.63	18.05	0.064	33.01	-14.96
	256-QAM	2516.0	V	Z	191	7	9.42	1/1	8.56	17.98	0.063	33.01	-15.03
	π/2 BPSK	2506.0	v	Z	191	7	9.42	1/49	11.06	20.48	0.112	33.01	-12.53
20 MHz		2593.0	v	Z	197	350	9.59	1/26	8.03	17.62	0.058	33.01	-15.39
		2680.0	v	Z	155	27	9.71	1 / 26	8.24	17.95	0.062	33.01	-15.06
	QPSK	2506.0	v	Z	191	7	9.42	1/1	11.65	21.07	0.128	33.01	-11.94
		2593.0	v	Z	197	350	9.59	1 / 49	8.28	17.87	0.061	33.01	-15.14
		2680.0	V	Z	155	27	9.71	1/43	7.49	17.20	0.052	33.01	-15.81
	16-QAM	2506.0	V	Z	191	7	9.42	1/1	9.58	19.00	0.079	33.01	-14.01
	64-QAM	2506.0	V	Z	191	7	9.42	1/1	9.20	18.62	0.073	33.01	-14.39
	256-QAM	2506.0	V	Z	191	7	9.42	1/1	8.88	18.30	0.068	33.01	-14.71
100 MHz	QPSK (Opposite Pol.)	2546.0	Н	X	207	114	9.41	1/1	9.42	18.83	0.076	33.01	-14.18
100 1012		2040.0		-	-		-	Sand n41		10.00	0.010	00.01	14.10

## Table 7-7. EIRP Data (NR Band n41)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz	π/2 BPSK	3750.0	V	Y	107.0	63.0	6.82	1 / 99	14.08	20.90	0.123	33.01	-12.11
		3840.0	V	Y	109.0	47.0	6.76	1/0	14.86	21.62	0.145	33.01	-11.39
		3930.0	V	Y	100.0	32.0	6.65	1/0	14.47	21.12	0.129	33.01	-11.89
	QPSK	3750.0	V	Y	107.0	63.0	6.82	1 / 99	13.52	20.34	0.108	33.01	-12.67
		3840.0	V	Y	109.0	47.0	6.76	1/0	14.46	21.22	0.132	33.01	-11.79
		3930.0	V	Y	100.0	32.0	6.65	1/0	14.14	20.79	0.120	33.01	-12.22
	16-QAM	3840.0	V	Y	109.0	47.0	6.76	1/0	13.95	20.71	0.118	33.01	-12.30
	64-QAM	3930.0	V	Y	100.0	32.0	6.65	1/0	12.27	18.92	0.078	33.01	-14.09
	256-QAM	3840.0	V	Y	109.0	47.0	6.76	1/0	10.21	16.97	0.050	33.01	-16.04
100 MHz	Opposite Pol.	3750.0	Н	Z	143.0	346.0	5.94	1 / 50	12.03	17.97	0.063	33.01	-15.04

Table 7-8. EIRP Data (NR Band n77)

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## 7.7 Radiated Spurious Emissions Measurements

## **Test Overview**

Radiated spurious emissions measurements are performed using the field strength conversion method described in KDB 971168 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

### **Test Procedures Used**

KDB 971168 D01 v03r01 - Section 5.8

### **Test Settings**

- 1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 2. VBW  $\geq$  3 x RBW
- 3. Span = 1.5 times the OBW
- 4. No. of sweep points > 2 x span / RBW
- 5. Detector = RMS
- 6. Trace mode = Average (Max Hold for pulsed emissions)
- 7. The trace was allowed to stabilize

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## Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

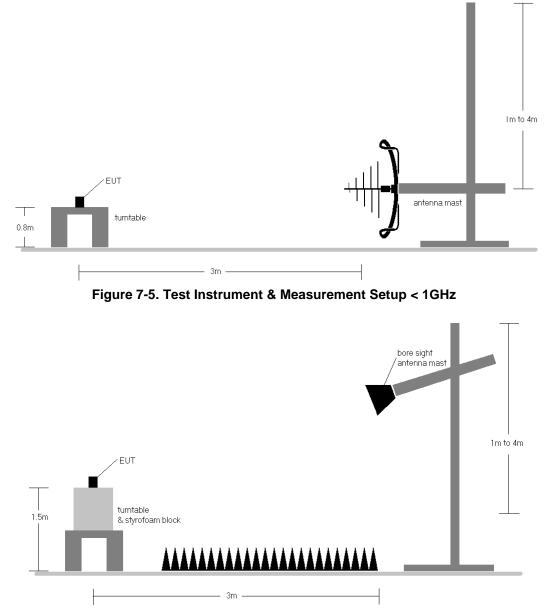


Figure 7-6. Test Instrument & Measurement Setup >1 GHz

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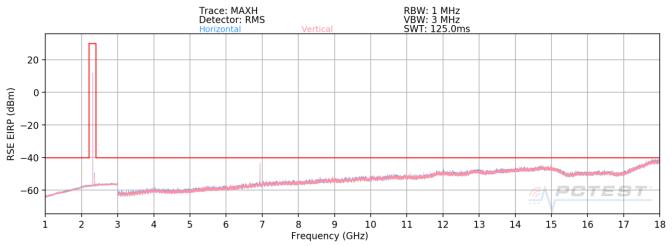
### Test Notes

- Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
   a) E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
   b) EIRP (dBm) = E(dBµV/m) + 20logD 104.8; where D is the measurement distance in meters.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 5) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 6) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 7) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 8) ULCA spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
- 9) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
- 10) Spurious emissions shown in this section are measured while operating in EN-DC mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor). Spurious emissions from the NR carrier device, is subject to the rules under which the NR carrier operates. Spurious emission caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

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# LTE Band 30





Bandwidth (MHz):	5
Frequency (MHz):	2307.5
RB / Offset:	1 / 25
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
4615.0	Н	133	355	-74.91	1.63	33.72	-61.54	-40.00	-21.54
6922.5	Н	149	338	-65.49	7.56	49.07	-46.19	-40.00	-6.19
9230.0	Н	-	-	-81.53	11.44	36.91	-58.35	-40.00	-18.35
11537.5	Н	-	-	-82.01	14.51	39.50	-55.76	-40.00	-15.76
13845.0	Н	-	-	-82.64	18.26	42.62	-52.64	-40.00	-12.64
16152.5	Н	-	-	-82.48	16.15	40.67	-54.58	-40.00	-14.58

Table 7-9. Radiated Spurious Data (LTE Band 30 – Low Channel)

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Bandwidth (MHz):	5
Frequency (MHz):	2310.0
RB / Offset:	1/0
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1 MHz / 3 MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
4620.0	Н	103	1	-75.34	1.62	33.28	-61.98	-40.00	-21.98
6930.0	Н	165	340	-66.18	7.58	48.40	-46.86	-40.00	-6.86
9240.0	Н	-	-	-81.80	11.51	36.71	-58.55	-40.00	-18.55
11550.0	Н	-	-	-82.54	14.55	39.01	-56.25	-40.00	-16.25
13860.0	Н	-	-	-82.83	18.30	42.47	-52.79	-40.00	-12.79
16170.0	Н	-	-	-83.04	16.20	40.16	-55.10	-40.00	-15.10

Table 7-10. Radiated Spurious Data (LTE Band 30 – Mid Channel)

10
2310.0
1 / 25
RMS / Average
1MHz / 3MHz

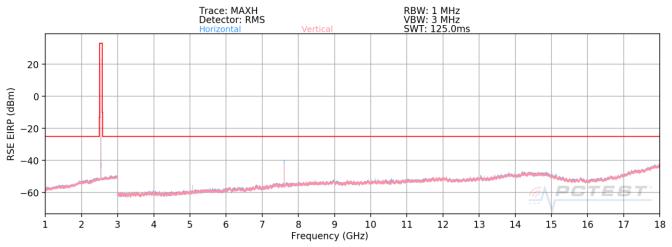
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
4620.00	Н	101	6	-76.71	1.61	31.90	-63.36	-40.00	-23.36
6930.00	Н	179	335	-66.10	7.59	48.49	-46.77	-40.00	-6.77
9240.00	Н	-	-	-81.92	11.59	36.67	-58.59	-40.00	-18.59
11550.00	Н	-	-	-82.35	14.58	39.23	-56.03	-40.00	-16.03
13860.00	Н	-	-	-82.88	18.34	42.46	-52.80	-40.00	-12.80
16170.00	Н	-	-	-82.57	16.24	40.67	-54.58	-40.00	-14.58

Table 7-11. Radiated Spurious Data (LTE Band 30 – High Channel)

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# LTE Band 7





Bandwidth (MHz):	20
Frequency (MHz):	2510.0
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5020.0	Н	313	9	-72.37	4.14	38.77	-56.49	-25.00	-31.49
7530.0	Н	137	24	-59.77	9.39	56.62	-38.64	-25.00	-13.64
10040.0	Н	120	26	-76.50	11.63	42.13	-53.13	-25.00	-28.13
12550.0	Н	-	-	-80.69	14.09	40.40	-54.86	-25.00	-29.86
15060.0	Н	-	-	-80.77	15.81	42.04	-53.21	-25.00	-28.21
17570.0	Н	-	-	-80.82	19.31	45.49	-49.77	-25.00	-24.77

Table 7-12. Radiated Spurious Data (LTE Band 7 – Low Channel)

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Bandwidth (MHz):	20
Frequency (MHz):	2535.0
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5070.0	Н	302	359	-70.95	4.26	40.31	-54.95	-25.00	-29.95
7605.0	Н	121	50	-61.27	9.29	55.02	-40.24	-25.00	-15.24
10140.0	Н	220	339	-76.12	11.82	42.70	-52.56	-25.00	-27.56
12675.0	Н	-	-	-80.86	13.89	40.03	-55.23	-25.00	-30.23
15210.0	Н	-	-	-81.09	15.29	41.20	-54.06	-25.00	-29.06
17745.0	Н	-	-	-81.39	21.42	47.03	-48.23	-25.00	-23.23

Table 7-13. Radiated Spurious Data (LTE Band 7 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2560.0
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1MHz / 3MHz

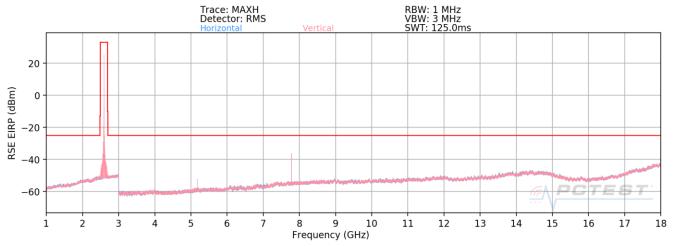
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5120.00	Н	182	352	-70.95	4.37	40.42	-54.84	-25.00	-29.84
7680.00	Н	118	50	-62.40	9.79	54.39	-40.87	-25.00	-15.87
10240.00	Н	218	337	-76.46	12.18	42.72	-52.54	-25.00	-27.54
12800.00	Н	-	-	-81.09	14.26	40.17	-55.08	-25.00	-30.08
15360.00	Н	-	-	-81.42	14.20	39.78	-55.48	-25.00	-30.48
17920.00	Н	-	-	-81.29	22.13	47.84	-47.42	-25.00	-22.42

Table 7-14. Radiated Spurious Data (LTE Band 7 – High Channel)

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# LTE Band 41(PC2)





Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW/VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.0	Н	135	305	-66.11	4.06	44.95	-50.31	-25.00	-25.31
7518.0	Н	130	46	-50.95	9.27	65.32	-29.93	-25.00	-4.93
10024.0	Н	200	349	-75.14	11.48	43.34	-51.92	-25.00	-26.92
12530.0	Н	160	291	-79.18	14.13	41.95	-53.31	-25.00	-28.31
15036.0	Н	-	-	-79.41	16.36	43.95	-51.31	-25.00	-26.31

Table 7-15. Radiated Spurious Data (LTE Band 41(PC2) – Low Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW/VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.0	Н	210	45	-63.88	4.87	47.99	-47.26	-25.00	-22.26
7779.0	Н	259	49	-57.34	9.15	58.81	-36.45	-25.00	-11.45
10372.0	Н	193	314	-76.92	12.11	42.19	-53.07	-25.00	-28.07
12965.0	Н	198	329	-77.95	14.50	43.55	-51.70	-25.00	-26.70
15558.0	Н	-	-	-79.20	13.41	41.21	-54.05	-25.00	-29.05

Table 7-16. Radiated Spurious Data (LTE Band 41(PC2) – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2680.0
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW/VBW:	1MHz / 3MHz

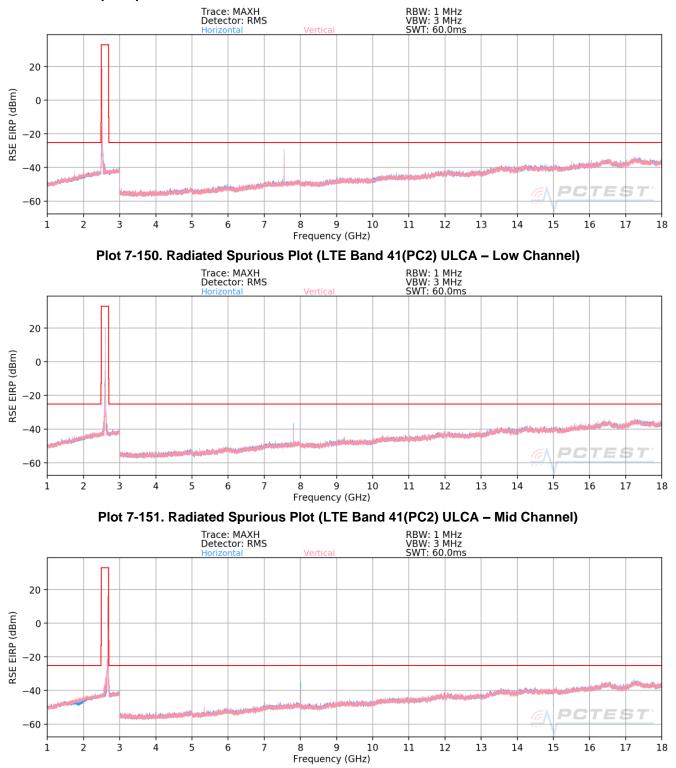
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.0	Н	145	349	-66.06	4.67	45.61	-49.65	-25.00	-24.65
8040.0	Н	237	38	-54.76	10.38	62.62	-32.64	-25.00	-7.64
10720.0	Н	165	317	-76.40	12.97	43.57	-51.68	-25.00	-26.68
13400.0	Н	188	337	-75.20	15.10	46.90	-48.36	-25.00	-23.36
16080.0	Н	-	-	-79.53	13.79	41.26	-53.99	-25.00	-28.99

Table 7-17. Radiated Spurious Data (LTE Band 41(PC2) – High Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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## LTE Band 41(PC2) ULCA



Plot 7-152. Radiated Spurious Plot (LTE Band 41(PC2) ULCA – High Channel)

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RBW/VBW:	1MHz / 3MHz
Detector / Trace Mode:	RMS / Average
SCC RB / Offset:	1/0
SCC Frequency (MHz):	2525.8
SCC Bandwidth (MHz):	20
PCC RB / Offset:	1 / 99
PCC Frequency (MHz):	2506.0
PCC Bandwidth (MHz):	20

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.0	Н	180	46	-72.82	10.20	44.38	-50.88	-25.00	-25.88
7518.0	Н	116	55	-55.85	15.81	66.96	-28.30	-25.00	-3.30
10024.0	Н	-	-	-76.55	19.59	50.04	-45.22	-25.00	-20.22
12530.0	Н	-	-	-77.22	23.33	53.11	-42.15	-25.00	-17.15
15036.0	Н	-	-	-78.51	27.90	56.39	-38.87	-25.00	-13.87

Table 7-18. Radiated Spurious Data (LTE Band 41(PC2) – ULCA – Low Channel)

PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	2593.0
PCC RB / Offset:	1 / 99
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	2612.8
SCC RB / Offset:	1/0
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.0	Н	129	64	-72.65	10.38	44.73	-50.53	-25.00	-25.53
7779.0	Н	280	9	-63.28	16.11	59.83	-35.42	-25.00	-10.42
10372.0	Н	-	-	-75.86	20.14	51.28	-43.98	-25.00	-18.98
12965.0	Н	-	-	-77.66	24.55	53.89	-41.37	-25.00	-16.37
15558.0	Н	-	-	-77.57	29.05	58.48	-36.78	-25.00	-11.78

Table 7-19. Radiated Spurious Data (LTE Band 41(PC2) – ULCA – Mid Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 110 of 127
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PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	2680.0
PCC RB / Offset:	1/0
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	2660.2
SCC RB / Offset:	1 / 99
Detector / Trace Mode:	RMS / Average
RBW/VBW:	1MHz / 3MHz

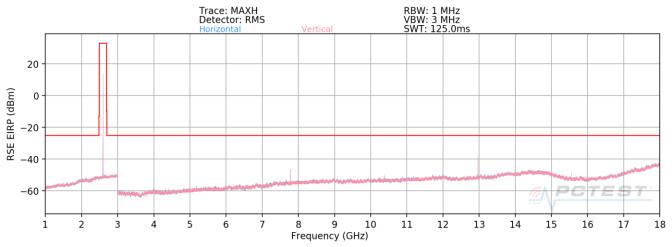
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.0	Н	141	54	-70.59	11.12	47.53	-47.73	-25.00	-22.73
8040.0	Н	168	45	-60.32	16.78	63.46	-31.80	-25.00	-6.80
10720.0	Н	-	-	-75.94	20.29	51.35	-43.90	-25.00	-18.90
13400.0	Н	-	-	-77.34	25.08	54.74	-40.51	-25.00	-15.51
16080.0	Н	-	-	-77.95	28.86	57.91	-37.34	-25.00	-12.34

Table 7-20. Radiated Spurious Data (LTE Band 41(PC2) – ULCA – High Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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# NR Band n41





Bandwidth (MHz):	100
Frequency (MHz):	2546.01
RB / Offset:	1 / 271
Mode:	Standalone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5092.0	Н	151	11	-72.23	4.39	39.16	-56.10	-25.00	-31.10
7638.0	Н	119	137	-72.02	9.78	44.76	-50.49	-25.00	-25.49
10184.0	Н	236	12	-69.25	12.36	50.11	-45.15	-25.00	-20.15
12730.1	Н	170	322	-65.57	14.04	55.47	-39.79	-25.00	-14.79
15276.1	Н	119	39	-72.25	14.90	49.65	-45.61	-25.00	-20.61
17822.1	Н	357	344	-79.63	22.87	50.24	-45.02	-25.00	-20.02

Table 7-21. Radiated Spurious Data (NR Band n41 – Low Channel)

Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1 / 271
Mode:	Standalone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.0	Н	151	358	-72.51	4.87	39.36	-55.89	-25.00	-30.89
7779.0	Н	153	320	-68.96	9.15	47.19	-48.07	-25.00	-23.07
10372.0	Н	112	315	-75.55	12.11	43.56	-51.70	-25.00	-26.70
12965.0	Н	112	330	-65.48	14.50	56.02	-39.23	-25.00	-14.23
15557.9	Н	120	11	-75.78	13.41	44.63	-50.63	-25.00	-25.63

Table 7-22. Radiated Spurious Data (NR Band n41 – Mid Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Bandwidth (MHz):	100
Frequency (MHz):	2640.00
RB / Offset:	1 / 137
Mode:	Standalone

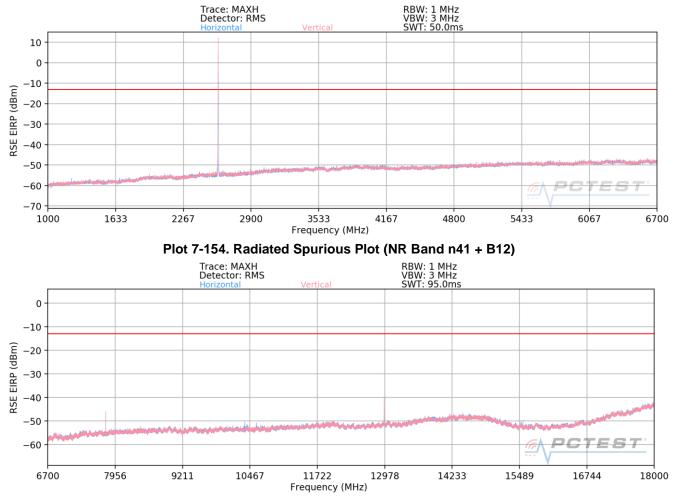
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5280.0	Н	124	345	-74.44	4.39	36.95	-58.31	-25.00	-33.31
7920.0	н	149	323	-68.96	10.04	48.08	-47.18	-25.00	-22.18
10560.0	Н	211	60	-77.42	12.06	41.64	-53.62	-25.00	-28.62
13200.0	Н	156	330	-65.80	14.53	55.73	-39.53	-25.00	-14.53
15840.0	Н	112	16	-76.08	14.95	45.87	-49.39	-25.00	-24.39

Table 7-23. Radiated Spurious Data (NR Band n41 – High Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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### NR Band n41 – B12



Plot 7-155. Radiated Spurious Plot (NR Band n41 + B12)

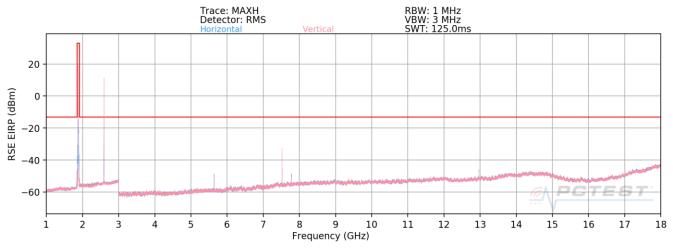
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1178.0	Н	-	-	-70.76	2.48	38.72	-56.54	-13.00	-43.54
3063.5	Н	-	-	-71.91	1.01	36.10	-59.16	-13.00	-46.16
4478.5	Н	-	-	-76.77	2.75	32.98	-62.28	-13.00	-49.28
5186.0	Н	133	352	-73.12	4.87	38.75	-56.50	-13.00	-43.50
7779.0	Н	172	287	-69.42	9.15	46.73	-48.53	-13.00	-35.53
10372.0	Н	191	87	-75.51	12.11	43.60	-51.66	-13.00	-38.66
12978.0	Н	234	313	-62.51	14.56	59.05	-36.20	-13.00	-23.20

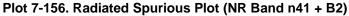
Table 7-24. Radiated Spurious Data (NR Band n41 – B12)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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## NR Band n41 – B2





Bandwidth (MHz):	100/20
Frequency (MHz):	2593/1880
RB / Offset:	1/136 & 1/50
Mode:	EN-DC
Anchor Band:	2

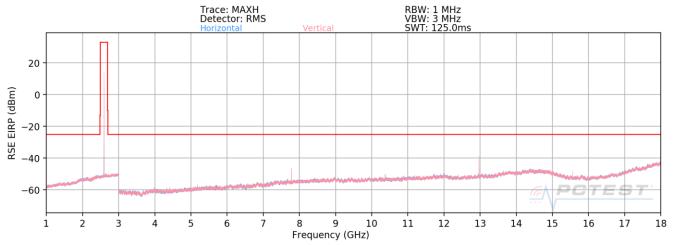
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1167.0	V	-	-	-72.08	2.26	37.18	-58.08	-25.00	-33.08
1685.0	V	-	-	-74.46	3.83	36.37	-58.89	-25.00	-33.89
2398.0	V	-	-	-76.01	6.68	37.67	-57.59	-25.00	-32.59
5640.0	V	126	247	-63.39	5.01	48.62	-46.64	-25.00	-21.64
7520.2	V	284	352	-53.56	9.28	62.72	-32.54	-25.00	-7.54
7779.0	V	248	338	-73.04	9.15	43.11	-52.15	-25.00	-27.15
12965.0	V	225	19	-67.51	14.50	53.99	-41.26	-25.00	-16.26

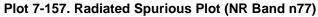
Table 7-25. Radiated Spurious Data (NR Band n41 – B2)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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# NR Band n77





Bandwidth (MHz):	1(	00							
Frequency (MHz):	375	0.00							
RB / Offset:	1/	137							
Mode:	Stand	lalone							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1435.8	Н	-	-	-77.39	-5.93	23.68	-71.58	-13.00	-58.58
7500.0	Н	112	336	-63.19	10.20	54.01	-41.25	-13.00	-28.25
11250.0	Н	197	26	-69.81	12.65	49.84	-45.42	-13.00	-32.42
15000.0	Н	153	13	-81.17	15.96	41.79	-53.47	-13.00	-40.47

Table 7-26. Radiated Spurious Data (NR Band n77 – Low Channel)

FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Bandwidth (MHz):	100
Frequency (MHz):	3840.00
RB / Offset:	1 / 137
Mode:	Standalone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1526.0	Н	386	340	-76.39	-5.87	24.74	-70.52	-13.00	-57.52
7680.0	Н	259	335	-63.37	9.55	53.18	-42.08	-13.00	-29.08
11520.0	Н	119	26	-69.03	13.62	51.59	-43.67	-13.00	-30.67
15360.0	Н	161	13	-81.22	14.39	40.17	-55.09	-13.00	-42.09

Table 7-27. Radiated Spurious Data (NR Band n77 – Mid Channel)

Bandwidth (MHz):	100
Frequency (MHz):	3930.00
RB / Offset:	1 / 137
Mode:	Standalone

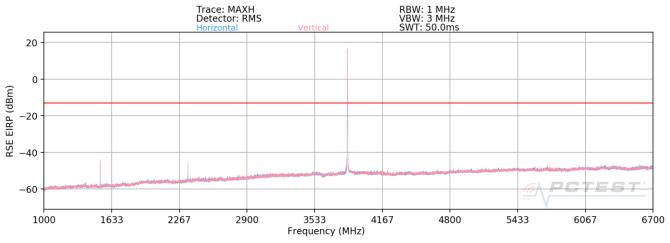
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1567.2	Н	159	333	-55.44	-5.48	46.08	-49.18	-13.00	-36.18
7860.0	Н	252	333	-63.47	10.50	54.03	-41.23	-13.00	-28.23
11790.0	Н	176	342	-68.63	13.91	52.28	-42.97	-13.00	-29.97
15720.0	Н	157	16	-79.78	14.29	41.51	-53.75	-13.00	-40.75

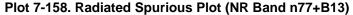
## Table 7-28. Radiated Spurious Data (NR Band n77 – High Channel)

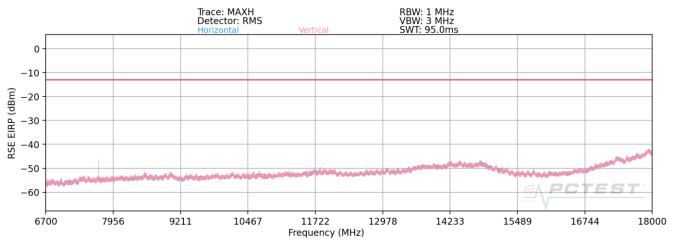
FCC ID: A3LSMA426U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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## NR Band n77-B13







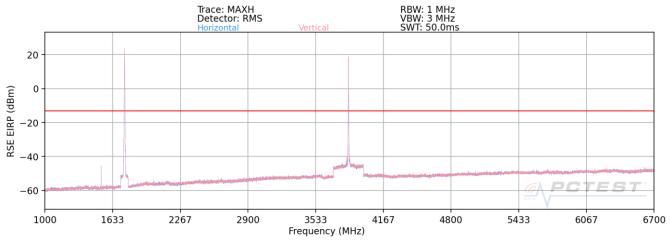
Plot 7-159. Radiated Spurious Plot (NR Band n77+B13)

Bandwidth (MHz):	100	)/10	1						
Frequency (MHz):	3840	/1745							
RB / Offset:	1/136	&1/50							
Mode:	EN	-DC							
Anchor Band:	1	3							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Marg [dB]
1525.5	V	308	265	-50.80	3.01	59.21	-36.05	-13.00	-23.0
2346.0	V	121	318	-60.97	6.49	52.52	-42.74	-13.00	-29.7
2776.0	V	-	-	-79.10	7.55	35.45	-59.81	-13.00	-34.8
5334.0	V	-	-	-75.95	14.22	45.27	-49.99	-13.00	-36.9
6898.0	V	-	-	-76.64	8.09	38.45	-56.81	-13.00	-43.8
7680.0	V	157	280	-66.68	9.55	49.87	-45.39	-13.00	-32.3
8392.0	V	-	-	-76.54	10.52	40.98	-54.28	-13.00	-41.2
	V	-	-	-76.98	11.23	41.25	-54.01	-13.00	-41.0

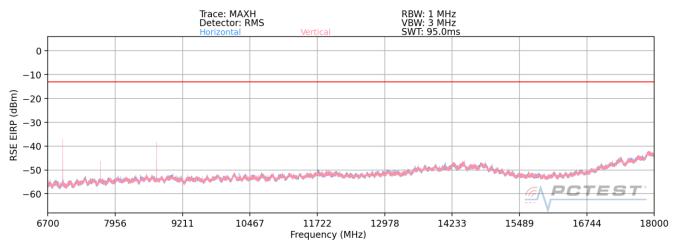
FCC ID: A3LSMA426U	PCTEST* Proud to be part of @ diement	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 118 of 127
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## NR Band n77-B66







Plot 7-161. Radiated Spurious Plot (NR Band n77+B66)

Bandwidth (MHz):	100/20
Frequency (MHz):	3840/1745
RB / Offset:	1/136 &1/50
Mode:	EN-DC
Anchor Band:	66

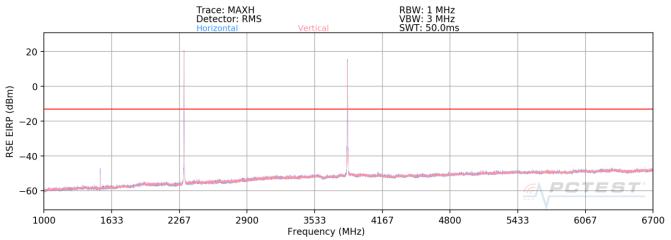
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1525.5	V	362	68	-52.21	3.01	57.80	-37.46	-13.00	-24.46
6980.0	V	258	331	-57.31	8.52	58.21	-37.04	-13.00	-24.04
7680.0	V	134	264	-68.28	9.55	48.27	-46.99	-13.00	-33.99
8030.0	V	-	-	-76.99	10.82	40.83	-54.43	-13.00	-41.43
8730.0	V	250	357	-66.53	11.04	51.51	-43.74	-13.00	-30.74
10125.0	V	-	-	-77.31	12.29	41.98	-53.28	-13.00	-40.28
10825.0	V	-	-	-77.38	12.12	41.74	-53.51	-13.00	-40.51

### Table 7-30. Radiated Spurious Data (NR Band n77 – B66)

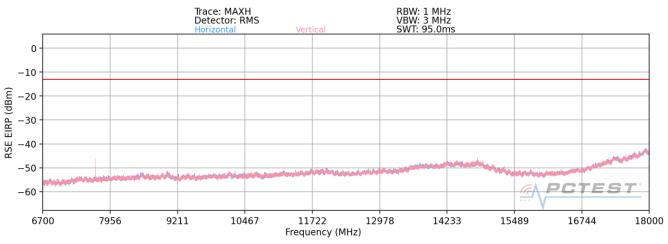
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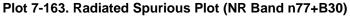


## NR Band n77-B30









Bandwidth (MHz):	100/10
Frequency (MHz):	3840/2310
RB / Offset:	1/136 &1/25
Mode:	EN-DC
Anchor Band:	30

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1525.5	V	172	67	-61.70	3.01	48.31	-46.95	-13.00	-33.95
6930.5	V	383	216	-62.50	8.40	52.90	-42.36	-13.00	-29.36
7680.0	V	315	217	-68.40	9.55	48.15	-47.11	-13.00	-34.11
8400.0	V	-	-	-78.78	10.59	38.81	-56.45	-13.00	-43.45
8430.0	V	-	-	-79.16	11.40	39.24	-56.02	-13.00	-43.02

Table 7-31. Radiated Spurious Data (NR Band n77 – B30)

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## 7.8 Frequency Stability / Temperature Variation

### Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

#### Test Procedure Used

ANSI/TIA-603-E-2016

### **Test Settings**

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

#### Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

#### Test Notes

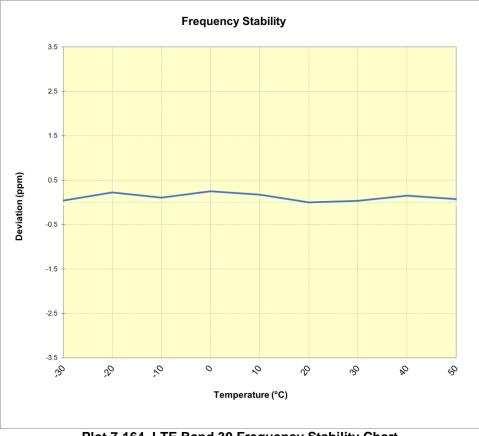
None

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LTE Band 30								
	Operating F	Frequency (Hz):	2,310,0	00,000				
	Ref.	Voltage (VDC):	4.3	38				
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)			
		- 30	2,310,000,000	-133	-0.0000058			
		- 20	2,309,999,975	-158	-0.0000068			
		- 10	2,310,000,252	119	0.0000052			
		0	2,309,999,757	-376	-0.0000163			
100 %	4.38	+ 10	2,310,000,161	28	0.0000012			
		+ 20 (Ref)	2,310,000,133	0	0.0000000			
		+ 30	2,310,000,324	191	0.000083			
		+ 40	2,310,000,017	-116	-0.0000050			
		+ 50	2,310,000,067	-66	-0.0000029			
Battery Endpoint	3.51	+ 20	2,309,999,806	-327	-0.0000142			

Table 7-32. LTE Band 30 Frequency Stability Data



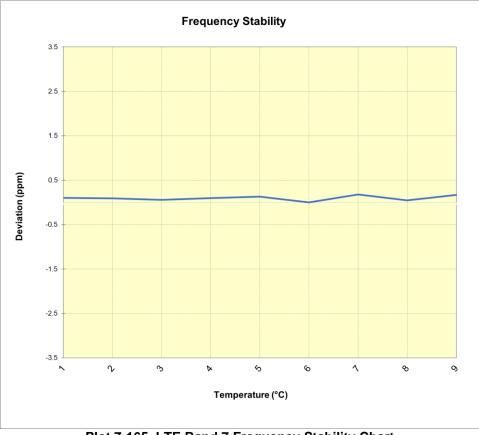
Plot 7-164. LTE Band 30 Frequency Stability Chart

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LTE Band 7								
	Operating F	requency (Hz):	2,535,0	00,000				
	Ref.	Voltage (VDC):	4.3	38				
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)			
		- 30	2,534,999,955	253	0.0000100			
		- 20	2,534,999,940	238	0.0000094			
		- 10	2,534,999,851	149	0.0000059			
		0	2,534,999,952	250	0.0000099			
100 %	4.38	+ 10	2,535,000,036	334	0.0000132			
		+ 20 (Ref)	2,534,999,702	0	0.0000000			
		+ 30	2,535,000,152	450	0.0000178			
		+ 40	2,534,999,825	123	0.0000049			
		+ 50	2,535,000,131	429	0.0000169			
Battery Endpoint	3.51	+ 20	2,535,000,069	367	0.0000145			

Table 7-33. LTE Band 7 Frequency Stability Data



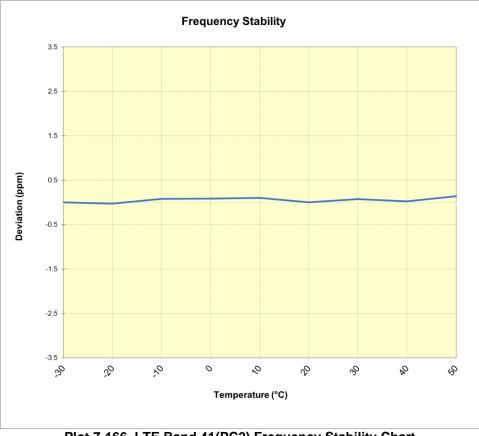
Plot 7-165. LTE Band 7 Frequency Stability Chart

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LTE Band 41								
	Operating F	Frequency (Hz):	2,593,0	00,000				
	Ref.	Voltage (VDC):	4.3	38				
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)			
		- 30	2,592,999,787	-1	0.0000000			
		- 20	2,592,999,715	-73	-0.000028			
		- 10	2,592,999,993	205	0.0000079			
		0	2,593,000,006	218	0.000084			
100 %	4.38	+ 10	2,593,000,056	268	0.0000103			
		+ 20 (Ref)	2,592,999,788	0	0.0000000			
		+ 30	2,592,999,982	194	0.0000075			
		+ 40	2,592,999,857	69	0.0000027			
		+ 50	2,593,000,152	364	0.0000140			
Battery Endpoint	3.51	+ 20	2,593,000,048	260	0.0000100			

Table 7-34. LTE Band 41(PC2) Frequency Stability Data



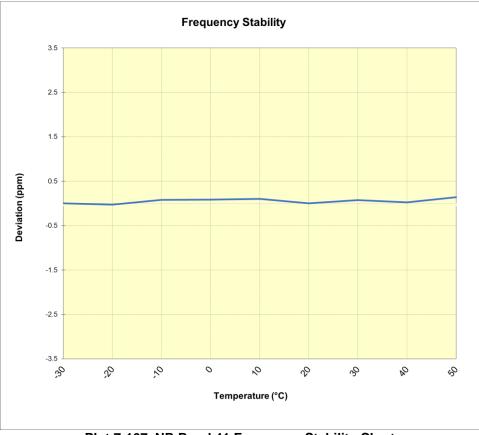
Plot 7-166. LTE Band 41(PC2) Frequency Stability Chart

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NR Band n41						
	Operating Frequency (Hz):		2,593,000,000		1	
	Ref. Voltage (VDC):		4.38			
					-	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)	
		- 30	2,593,000,090	35	0.0000013	
		- 20	2,593,000,016	-39	-0.0000015	
		- 10	2,593,000,233	178	0.000069	
		0	2,593,000,164	109	0.0000042	
100 %	4.38	+ 10	2,593,000,176	121	0.0000047	
		+ 20 (Ref)	2,593,000,055	0	0.0000000	
		+ 30	2,592,999,685	-370	-0.0000143	
		+ 40	2,592,999,896	-159	-0.0000061	
		+ 50	2,592,999,860	-195	-0.0000075	
Battery Endpoint	3.51	+ 20	2,592,999,836	-219	-0.0000084	

Table 7-35. NR Band 41 Frequency Stability Data



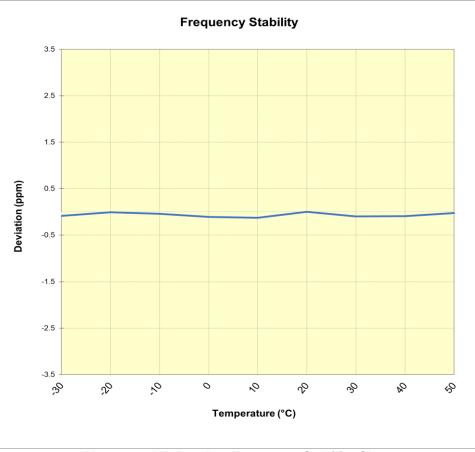
Plot 7-167. NR Band 41 Frequency Stability Chart

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NR Band n77					
	perating Frequency (Hz):		3,840,000,000		
	Ref. Voltage (VDC):		4.38		
					-
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.38	- 30	3,840,000,017	-327	-0.000085
		- 20	3,840,000,322	-22	-0.000006
		- 10	3,840,000,193	-151	-0.000039
		0	3,839,999,935	-409	-0.0000107
		+ 10	3,839,999,853	-491	-0.0000128
		+ 20 (Ref)	3,840,000,344	0	0.0000000
		+ 30	3,839,999,978	-366	-0.0000095
		+ 40	3,839,999,994	-350	-0.0000091
		+ 50	3,840,000,255	-89	-0.000023
attery Endpoi	3.51	+ 20	3,840,000,272	-72	-0.0000019

Table 7-36. NR Band 77 Frequency Stability Data



Plot 7-168. NR Band 77 Frequency Stability Chart

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# 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the Samsung **Portable Handset FCC ID: A3LSMA426U** complies with all the requirements of Part 27 of the FCC rules.

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