

Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position B

	trum Analyzer - Occupied										- 6 -
X RL	RF 50 Ω DC eq 763.000000			-	SENSE:EXT SOUR	RCE OFF AL	IGN AUTO			03:58:1 Radio Std: I	5 PM Jun 29, 2017 None
Center Fr				.	. Trig: Free	Run	Avg Hold:	5000	0/5000		
			#IFGai	n:Low	#Atten: 12	dB				Radio Devic	e: BTS
10 dB/div Log	Ref 37.00 dE	3m						_			
27.0											
17.0			\sim	~~~~~	mmm	mann	www.ww	m			
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-3.00		/							1		
-13.0		{							$ \rangle$		
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-23.0 -33.0	marganes								~~~	mon	and marked
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43.0								t			
-53.0								t			
Center 76	3 MHz									S	an 20 MHz
#Res BW	100 kHz				#VE	300 kHz	z			Swee	p 1.933 ms
Occur	ied Bandwid	ith			Total P	ower	39.9 d	Bm	`		
Occup					rotarr	01101	00.0 u		•		
	8	8.970	r Ini	HZ							
Transm	nit Freq Error	1	.711	kHz	% of O	BW Power	99.0	0 %	b		
v dB Ba	andwidth	٩	.801	MHz	x dB		-26.00	dE	2		
				1112	A GD		-20.00	u.	•		
SG							STATUS				

Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position B

Keysight Spectrum Analyzer - Occupied BW		SENSE:EXT SOURCE OFF ALI	GN AUTO	04:33:26 PM Jun 29, 2017
Center Freq 763.000000 N		Center Freq: 763.000000 N		Radio Std: None
	#IFGain:Low	#Atten: 10 dB	Avginola, socorooo	Radio Device: BTS
10 dB/div Ref 37.54 dBm	·			
27.5				
17.5	harm		mond	
7.54				
-2.46	/			
	~		hm	man man and an and a
-22.5 -32.5				1 Participation of the second
-42.5				
-52.5				
Center 763 MHz #Res BW 100 kHz		#VBW 300 kHz		Span 20 MHz Sweep 1.933 ms
Occupied Bandwidth	า	Total Power	40.5 dBm	
8.9	9736 MHz			
Transmit Freq Error	-515 Hz	% of OBW Power	99.00 %	
x dB Bandwidth	9.783 MHz	x dB	-26.00 dB	
MSG			STATUS	
mou			514105	



Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

Keysight Spec	trum Analyzer - Occupied								- 6 ×
	RF 50 Ω DC eq 763.000000			SENSE:EXT SOU Center Fre	RCE OFF AL	IGN AUTO		Radio Std:	3 PM Jun 29, 2017 None
]		#IFGain:Low	Trig: Free #Atten: 12		Avg Hold: 8	5000/5000	Radio Devi	e: BTS
10 dB/div	Ref 36.77 dE	Bm							
26.8									
16.8			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~	m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~		
6.77		1							
-3.23		1							
-13.2		{							
	- marting and a deserve	and 1							
-33.2	e It delet						100	wwwwww	warmer warmer
43.2									
-53.2									
Center 76 #Res BW				#VI	300 kHz	2			pan 20 MHz p 1.933 ms
Occup	ied Bandwid	dth		Total F	ower	39.9 di	Bm		
	8	8.9742	2 MHz						
Transm	nit Freq Error	-2	2.029 kHz	% of O	BW Power	99.00) %		
x dB Ba	andwidth	9.	799 MHz	x dB		-26.00	dB		
MSG						STATUS			

Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

Keysight Spectrum Analyzer - Occupied BV μα RL RF 50 Ω DC	v	SENSE:EXT SOURCE OFF ALI	GN AUTO	04:21:11 PM Jun 29, 2017
Center Freq 763.000000 I	MHz	Center Freq: 763.000000 N	AHz	Radio Std: None
	#IFGain:Low	- Trig: Free Run #Atten: 12 dB	Avg Hold: 5000/5000	Radio Device: BTS
10 dB/div Ref 37.74 dBn	n			
Log				
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7.74				
-2.26	_/			
-12.3				
-22.3	~		- www	a sandy many more than
-32.3				
42.3				
-52.3				
Center 763 MHz #Res BW 100 kHz		#VBW 300 kHz		Span 20 MHz Sweep 1.933 ms
Occupied Bandwidt	'n	Total Power	40.6 dBm	
•	 9699 MHz			
Transmit Freq Error	1.206 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	9.806 MHz	x dB	-26.00 dB	
NSG			STATUS	



Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position T

	ctrum Analyzer - Occupied								- 6 ×
Center Fr	RF 50 Ω DC reg 763.000000			SENSE:EXT SOU	RCE OFF AL	IGN AUTO		03:5 Radio Sto	9:41 PM Jun 29, 2017 : None
o critter 11]	/ 11112	+ #IFGain:Low	Trig: Free #Atten: 10		Avg Hold:	5000/5000	Radio De	vice: BTS
10 dB/div	Ref 37.07 dE	Bm							
27.1									
17.1			r	mm	mm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~		
7.07		/							
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-2.95							\square		
		rm					\square		
-22.9 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	a part of a far and a far a						1	many w	www.
-32.9									
-52.9									
-52.5									
Center 76 #Res BW				#VE	300 kHz	z			Span 20 MHz ep 1.933 ms
Occup	oied Bandwid	dth		Total P	ower	39.9 dl	Bm		
	8	8. <mark>97</mark> 2	8 MHz						
Transm	nit Freq Error	-5	5.015 kHz	% of O	BW Power	99.00)%		
x dB Ba	andwidth	9.	.803 MHz	x dB		-26.00	dB		
MSG						STATUS			

Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position T

Keysight Spectrum Analyzer - Occupied BW K RL RF 50 Ω DC		SENSE:EXT SOURCE OFF ALI	GN AUTO	04:35:00 PM Jun 29, 2017
Center Freq 763.000000 MHz		Center Freq: 763.000000 M Trig: Free Run	MHz Avg Hold: 5000/5000	Radio Std: None
	#IFGain:Low	#Atten: 10 dB	Avginola. coolicect	Radio Device: BTS
10 dB/div Ref 37.55 dBm				
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17.6	harren		m	
7.55	/			
-2.45	<u> </u>			
			h	Margan Margania
-22.5 -32.5 Mr Jun				C. C. S. C. C. C. March
-42.5				
-52.5				
Center 763 MHz #Res BW 100 kHz		#VBW 300 kHz	, ,	Span 20 MHz Sweep 1.933 ms
Occupied Bandwidth		Total Power	40.5 dBm	
	94 MHz			
Transmit Freq Error	-2.998 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	9.795 MHz	x dB	-26.00 dB	
MSG			STATUS	
mata			01/100	



Antenna A - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position B

	ctrum Analyzer - Occupied B	W								
Constan En	RF 50 Ω DC	BALL-		SENSE:EXT SOU	RCE OFF AL				04:01:00 Radio Std: N	5 PM Jun 29, 2017
Center Fr	eq 763.000000	MHZ	•	Trig: Free	Run	Avg Hold: (5000/500	0		
			#IFGain:Low	#Atten: 10	dB				Radio Devic	e: BTS
10 dB/div	Ref 35.02 dB	m					_			
Log 25.0										
		~	manner	hmm	mmm	~~~~~				
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5.02		-/					$ \uparrow \downarrow$	-		
-4.98							++			
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-25.0	man	~~~						mark	manling	mary marke
-35.0										· Tripinga
45.0										
-55.0										
-55.5										
Center 76										an 20 MHz
#Res BW	100 kHz			#VE	BW 300 kHz				Sweep) 1.933 ms
Occur	bied Bandwid	th		Total P	ower	38.4 dl	Bm			
				Totari		00.4 ui				
	8.	.9773	3 MHz							
Transn	nit Freq Error	6.	.965 kHz	% of O	BW Power	99.00) %			
v dB B	andwidth	9 9	832 MHz	x dB		-26.00	dB			
		0.0				20.00	ab			
MSG						STATUS				

Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position B

Keysight Spectrum Analyzer - Occupied BW		SENSE:EXT SOURCE OFF ALIC	SN AUTO	04:38:33 PM Jun 29, 2017
Center Freq 763.000000 M	/Hz	Center Freq: 763.000000 M		Radio Std: None
	#IFGain:Low	#Atten: 10 dB	Avginola. coolocco	Radio Device: BTS
10 dB/div Ref 36.21 dBm				
26.2				
16.2	m	monten	m	
6.21				
-3.79				
-13.8	~			Mural marine
-23.8 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				Andreage a second second
43.8				
-53.8				
Center 763 MHz				Span 20 MHz
#Res BW 100 kHz		#VBW 300 kHz		Sweep 1.933 ms
Occupied Bandwidt	h	Total Power	39.1 dBm	
	9808 MHz			
Transmit Freq Error	8.448 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	9.843 MHz	x dB	-26.00 dB	
MSG			STATUS	



Antenna A - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

	trum Analyzer - Occupied I	BW									- 0 × ×
Center Er	RF 50 Ω DC eq 763.000000	MHZ	_		SENSE:EXT SOU Center Fre	RCE OFF AL AL AL AL	IGN AUTO			03:52:1 Radio Std:	0 PM Jun 29, 2017 None
Center Fr	l	IVINZ			. Trig: Free	Run	Avg Hold:	5000	/5000		
			#IFGain:Lo	w	#Atten: 10	dB				Radio Devic	e: BTS
10 dB/div	Ref 35.31 dB	m									
25.3											
15.3			m	~~~	hann	mm	man	4~			
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5.31		/							\backslash		
-4.69											
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-34.7											
-44.7											
-54.7											
	0.0411-										
Center 76 #Res BW					#VE	300 kH	z				oan 20 MHz p 1.933 ms
							-	_			
Occup	ied Bandwid	lth			Total P	ower	38.4 d	Bm	1		
	8	. 9 819	9 MH	z							
Transm	nit Freq Error	6	5.851 kH	z	% of O	BW Power	99.00) %			
x dB Ba	andwidth	9.	.815 MH	z	x dB		-26.00	dB	3		
MSG							STATUS				
							314103				

Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

Keysight Spectrum Analyzer - Occupied BW RL RF 50 Ω DC	1	SENSE:EXT SOURCE OFF ALIC	GN AUTO	04:25:11 PM Jun 29, 2017
Center Freq 763.000000 M	ЛНz	Center Freq: 763.000000 N	AHz	Radio Std: None
	#IFGain:Low	Trig: Free Run #Atten: 10 dB	Avg Hold: 5000/5000	Radio Device: BTS
10 dB/div Ref 35.88 dBm				
Log				
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5.88			\	
-4.12	_/		_	
-14.1				
-24.1 -24.1	~~			www.waterson
-34.1				
-44.1				
-54.1				
Center 763 MHz #Res BW 100 kHz		#VBW 300 kHz		Span 20 MHz Sweep 1.933 ms
Occupied Bandwidt	h	Total Power	39.1 dBm	· · · · ·
• • • • • • • • • • • • • • • • • • • •	9787 MHz			
Transmit Freq Error	7.709 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	9.848 MHz	x dB	-26.00 dB	
MSG			STATUS	



Antenna A - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position T

	trum Analyzer - Occupied									- 6 X
Center Fr	RF 50 Ω DC eq 763.000000			SENSE:EXT SOU Center Fre	RCE OFF AL eq: 763.000000	IGN AUTO			04:02:20 Radio Std: N	6 PM Jun 29, 2017
Center Pr		7 10112		Trig: Free	Run	Avg Hold:	5000/	/5000		
			#IFGain:Low	#Atten: 12	dB				Radio Devic	e: BTS
10 dB/div Log	Ref 35.21 dE	3m								
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5.21										
-4.79								\langle		
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-24.8							П	V	MAR.	: Mary and
-34.8							Ħ			
-44.8							Ħ			
-54.8							Ħ			
Center 76	3 MHz								Sp	an 20 MHz
#Res BW	100 kHz			#VE	300 kHz	2			Sweep	o 1.933 ms
0.000	ind Dondwid	déla		Total F	ower	38.4 d	Bm			
Occup	ied Bandwig			Total P	OWEI	50.4 u	Dim			
	8	3.9806	6 MHz							
Transm	nit Freq Error	6.	.028 kHz	% of O	BW Power	99.00) %			
	andwidth	0.1	823 MHz	x dB		-26.00	dB			
	anuwium	5.0		X UD		-20.00	uв			
MSG						STATUS				

Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position T

Keysight Spectrum Analyzer - Occupied BW RL RF 50 Ω DC		SENSE:EXT SOURCE OFF ALL	IGN AUTO	04:41:44 PM Jun 29, 2017
Center Freq 763.000000 MHz		Center Freq: 763.000000		Radio Std: None
	#IFGain:Low	#Atten: 10 dB	Avginola. Secoloco	Radio Device: BTS
10 dB/div Ref 36.27 dBm				
26.3				
16.3	mannen	mont	mmm	
6.27	A		A	
-3.73	/			
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	+ +		· r	Church of a state of the second and
-33.7				
-43.7				
Center 763 MHz #Res BW 100 kHz		#VBW 300 kHz	2	Span 20 MHz Sweep 1.933 ms
Occupied Bandwidth		Total Power	39.1 dBm	
8.979	96 MHz			
Transmit Freq Error	7.852 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	9.837 MHz	x dB	-26.00 dB	
MSG			STATUS	



2.3 BAND EDGE

2.3.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1051 FCC CFR 47 Part 90, Clause 90.543(e)(1)(2)(3)

2.3.2 Date of Test and Modification State

29 June 2017 - Modification State 0

2.3.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.4 Environmental Conditions

Ambient Temperature22.5°CRelative Humidity55.2%

2.3.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01 Clause 6.

The EUT was connected to a Spectrum Analyser via 40 dB of attenuation. The path loss between the EUT and the Spectrum Analyser was measured using a Network Analyser. The measured path loss was entered as a Reference Level Offset in the Spectrum Analyser. The Spectrum Analyser RBW was adjusted to be at least 1% of the measured 26 dB Bandwidth. Using an RMS detector, the frequency spectrum up to 1 MHz away from the Band Edge was investigated. The display line was set to the worst case accounting for 2 Port MIMO operation in accordance with KDB 662911 D01. This equated to 43 + $10\log(P) - 10\log(2) = -16dBm$.



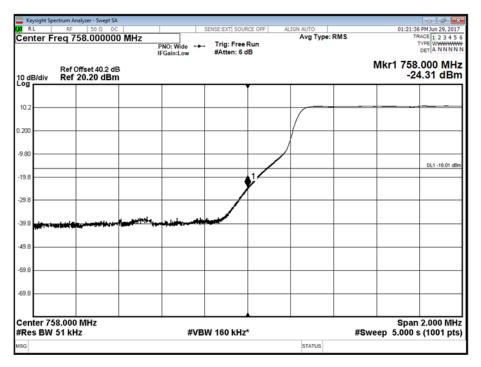
2.3.6 Test Results

Configuration 1

Maximum Output Power 30 dBm

Antonno			Band Edg	ge (MHz)
Antenna	LTE Modulation	LTE Carrier Bandwidth	Channel Position B	Channel Position T
A	QPSK	5.0 MHz	760.5	765.5
В	QPSK	5.0 MHz	760.5	765.5
А	16QAM	5.0 MHz	760.5	765.5
В	16QAM	5.0 MHz	760.5	765.5
A	64QAM	5.0 MHz	760.5	765.5
В	64QAM	5.0 MHz	760.5	765.5
A	QPSK	10.0 MHz	763.0	763.0
В	QPSK	10.0 MHz	763.0	763.0
A	16QAM	10.0 MHz	763.0	763.0
В	16QAM	10.0 MHz	763.0	763.0
A	64QAM	10.0 MHz	763.0	763.0
В	64QAM	10.0 MHz	763.0	763.0



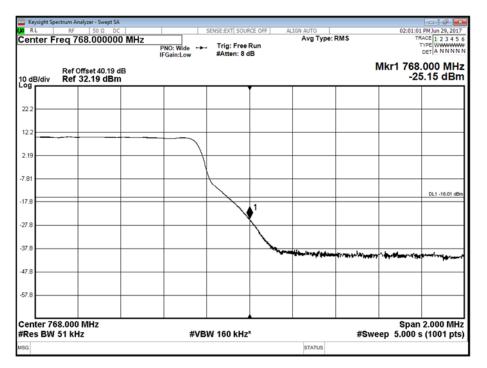




🛄 Keysight S 💭 R.L 11:52:19 AM Jun 29, 2017 TRACE 1 2 3 4 5 6 TYPE WWWWW DET A N N N N ALIGN Avg Type: RMS Center Freq 758.000000 MHz PNO: Wide ---- Trig: Free Run IFGain:Low #Atten: 6 dB Mkr1 758.000 MHz -25.32 dBm Ref Offset 40.2 dB Ref 20.20 dBm 10 dB/div 10.2 0.200 -9.80 DL1 -16.01 d -19.8 -29.8 -39.1 49.8 -59.8 -69.8 Center 758.000 MHz #Res BW 51 kHz Span 2.000 MHz #Sweep 5.000 s (1001 pts) #VBW 160 kHz* STATUS

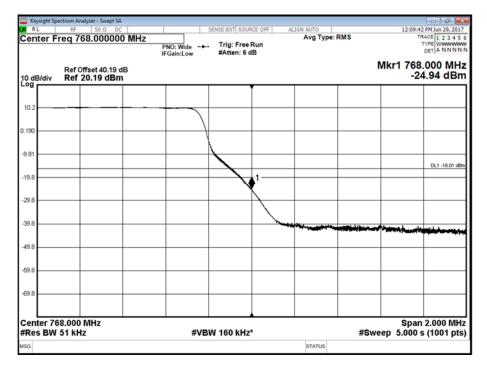
Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position B

Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position T

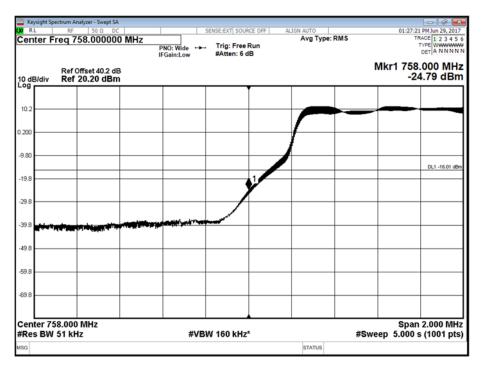




Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position T

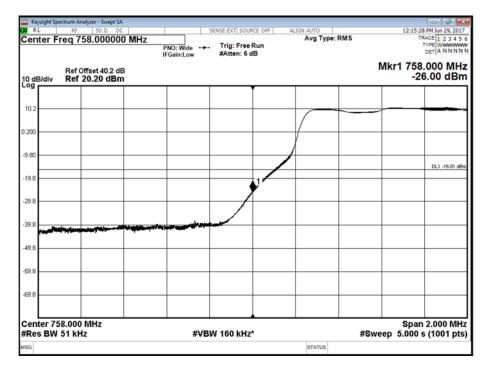


Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B

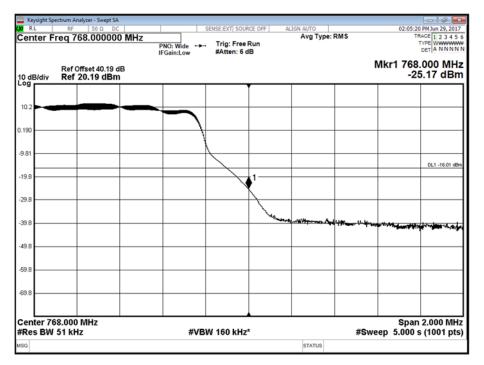




Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B

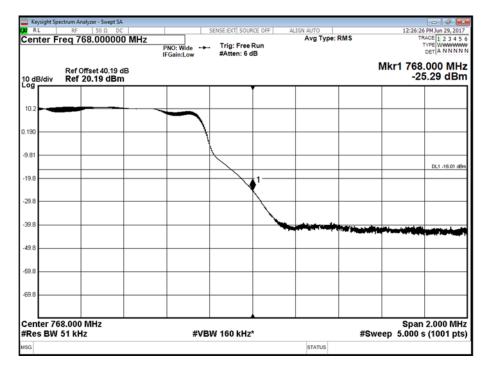


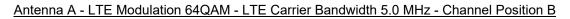


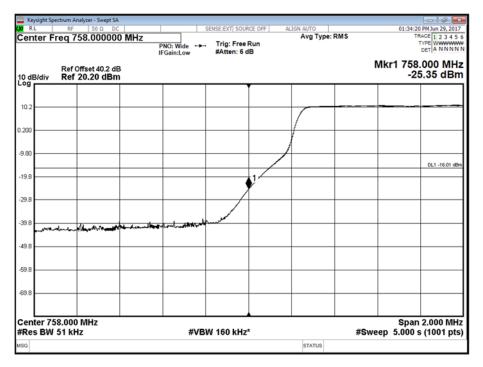




Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position T

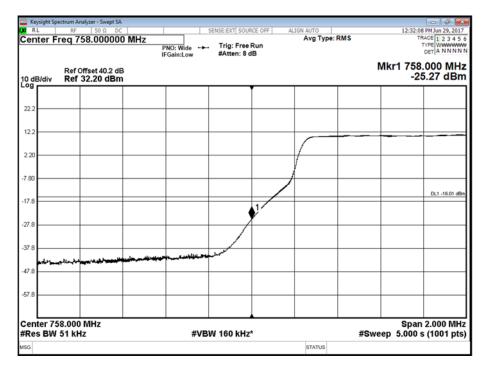


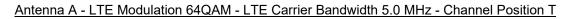


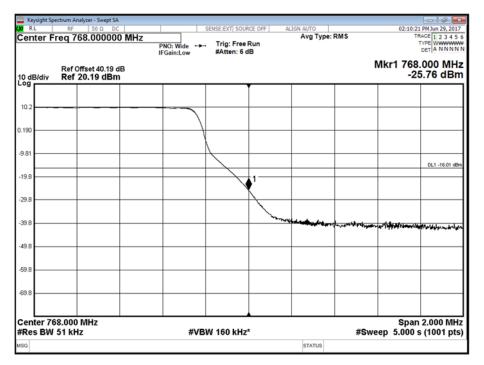




Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B

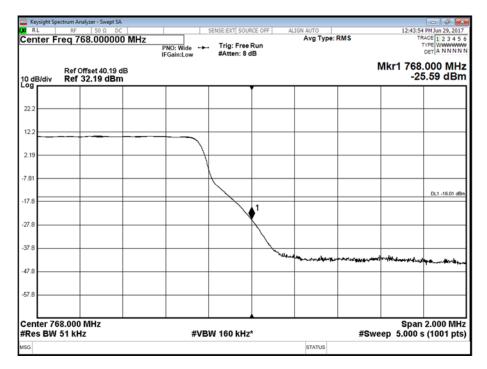


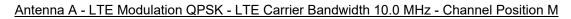


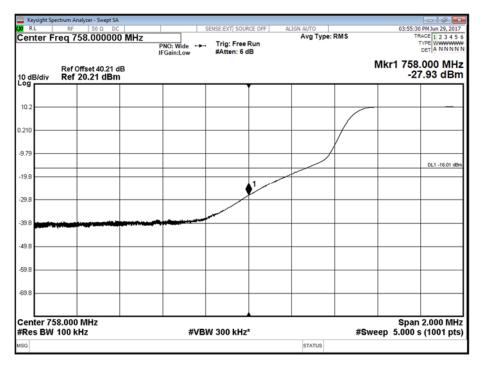




Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position T

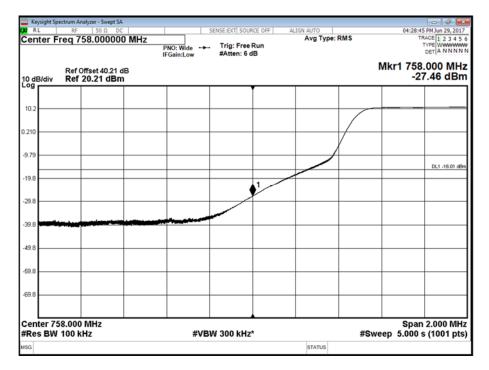


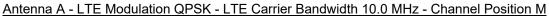


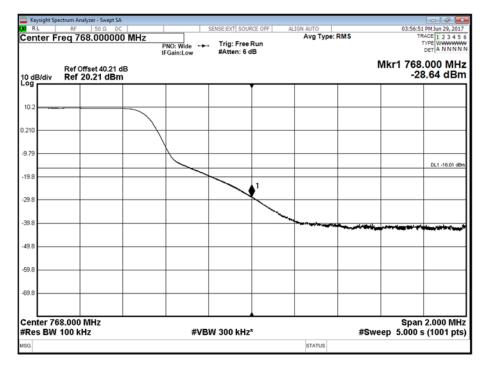




Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

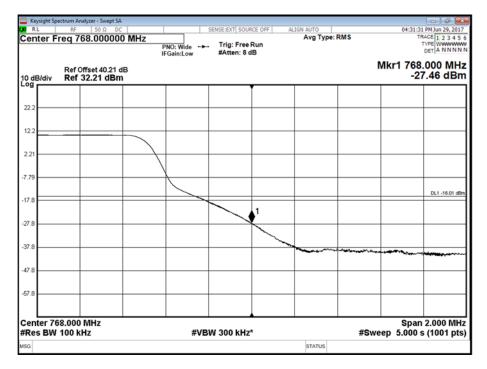


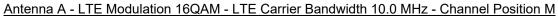


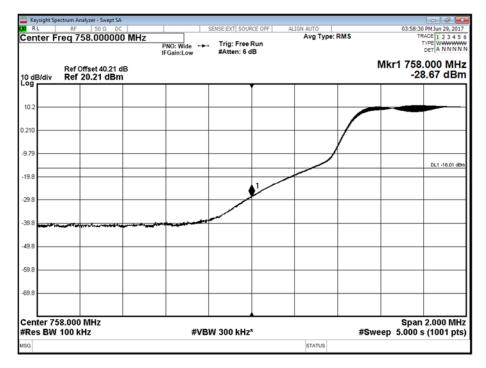




Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

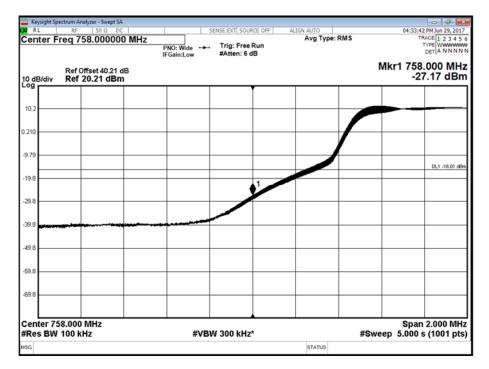


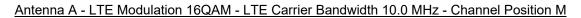


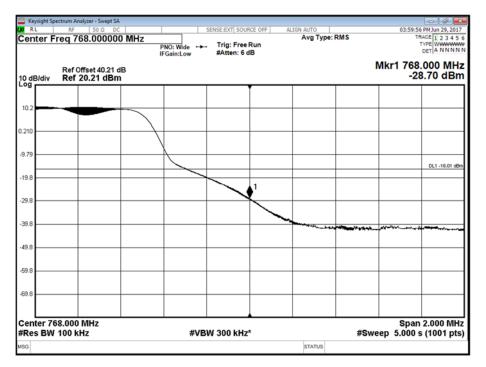




Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

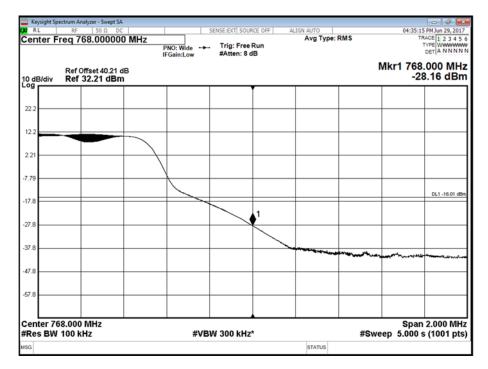


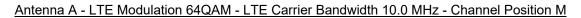


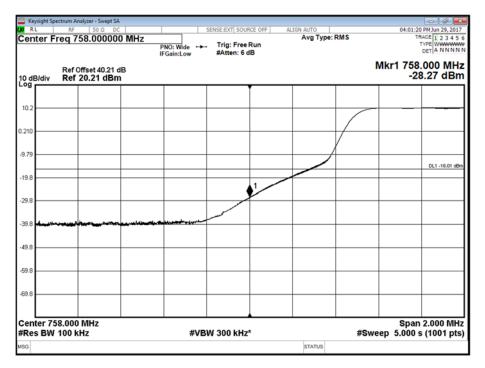




Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

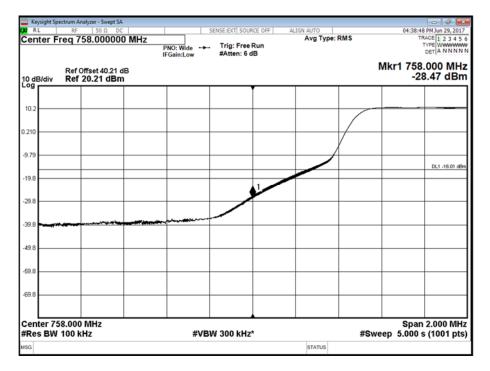


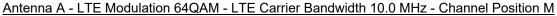


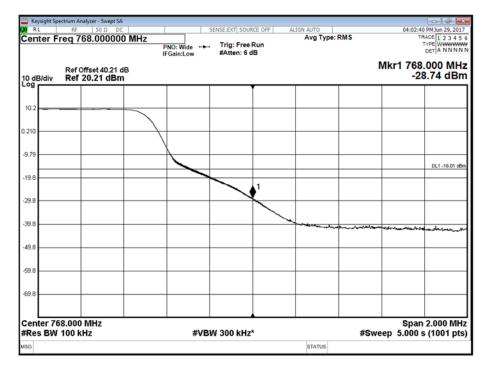




Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M









Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 10.0 MHz - Channel Position M

X RL	ectrum Analyzer - Swept SA RF 50 Ω DC req 768.000000		PNO: Wide →	SENSE:EXT SOU		LIGN AUTO Avg Type:	RMS		59 PM Jun 29, 2017
0 dB/div	Ref Offset 40.21 d Ref 32.21 dBm	в	FGain:Low	#Atten: 8				Mkr1 768 -2	3.000 MH: 7.87 dBn
22.2									
12.2									
2.21		\rightarrow							
.79									DL1 -16.01 dB
7.8					1				
7.8									
7.8								****	
57.8									
center 76	8.000 MHz							Spar	n 2.000 MH
Res BW			#VE	SW 300 kHz	*	STATUS	#Sw	eep 5.000	s (1001 pts

l imit	-13dBm
Limit	-16 dBm (2 port MIMO)



2.4 TRANSMITTER CONDUCTED SPURIOUS EMISSIONS

2.4.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1051 FCC CFR 47 Part 90, Clause 90.543(e)(1)(2)(3)(f)

2.4.2 Date of Test and Modification State

29 June 2017 - Modification State 0

2.4.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.4 Environmental Conditions

Ambient Temperature22.5°CRelative Humidity55.2%

2.4.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01 Clause 6.

The EUT was connected to a Spectrum Analyser via 40 dB of attenuation for measurements below 1.5 GHz and up to 8 GHz using 30 dB of attenuation and a high pass filter. Prior to testing, a Network Analyser was used to calibrate the path loss between the EUT and the Spectrum Analyser. The worst case path loss in the measured ranges was entered as a reference level offset. Over the measured ranges, the RBW was set to 1 MHz with a VBW of 3 MHz. All measurement results are specified as average with an RMS detector being used in conjunction with a trace setting of Max Hold. Measurements were performed in configurations of the EUT as reported below.

The EUT is capable of operating with a single carrier from each port simultaneously. This can be a MIMO mode of operation – Port A and B with the carriers at the same frequency.

The EUT can operate as either a fixed or mobile unit. Plots are shown which show limits for both Fixed and Mobile operation.

769 - 775 MHz and 799 - 805 MHz - Fixed Stations

 $76 + 10\log(P) + 10\log(2) = -49 \text{ dBm}$

<u>769 – 775 MHz and 799 – 805 MHz – Mobile Stations</u>

 $65 + 10\log(P) + 10\log(2) = -38 \text{ dBm}$

<u> 1559 – 1610 MHz</u>

 $-40 \text{ dBm} - 10 \log(2) = -43 \text{ dBm}$

Outside of the above listed bands:

 $43 + 10\log(P) + 10\log(2) = -16 \text{ dBm}$



2.4.6 Test Results

Configuration 1

Maximum Output Power 30 dBm

Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 1 - Range 0.009 to 1500 MHz

		Analyzer - Swept SA								- 0
Center	r Freq 7	50 Ω DC 750.004500			SENSE:EXT SOUR		HAVg Type	RMS	TR	PM Jun 29, 2017 ACE 1 2 3 4 5 6
			NFE	PNO: Fast ++	. Trig: Free #Atten: 6 d				1	DET A NNNN
10 dB/di	Ref iv Ref	Offset 40.7 dB 33.68 dBm							Mkr1 70 24	60.3 MHz I.21 dBm
209						1				
23.7						Y				
13.7										
3.68										
-6.32										
-16.3										DL1 -16.01 dBm
-26.3 —										
-36.3										
-46.3										*****
-56.3 —										
Start 9 #Res B	kHz SW 1.0 N	 ЛНz		#VB	W 3.0 MHz	*	STATUS	#Swee	Stop 1 ep 3.000 s	.5000 GHz (3000 pts)



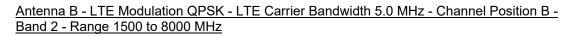
Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 2 - Range 1500 to 8000 MHz

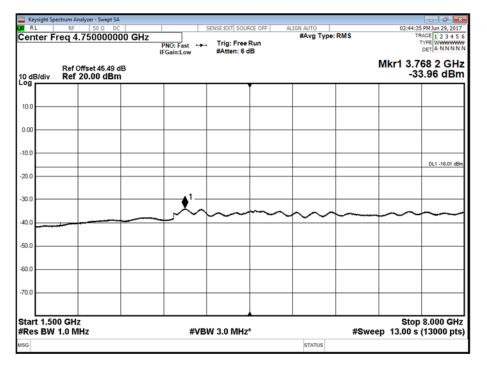
Keysight Sp	ectrum Analyzer - Swept SA RF 50 Ω DC		SENSE:EXT SOUR		IGN AUTO		02:20:21	🕞 🗗 💽
	req 4.750000000 GHz	PNO: Fast	Tria: Eree	Run	#Avg Type:	RMS	02:29:20 PW Jun 29, 2017 TRACE [1: 2 3 4 5 4 TIPE [WWWW DET A NNNH Mkr1 3.775 2 GHz -33.98 dBm 	
10 dB/div	Ref Offset 45.49 dB Ref 20.00 dBm						Mkr1 3.7 -3	75 2 GH 3.98 dBn
10.0								
0.00								
10.0								
20.0								DL1 -16.01 dB
30.0								-
40.0								
50.0								
60.0								
-70.0								
Start 1.50 #Res BW	00 GHz 1.0 MHz	#VB	W 3.0 MHz	*		#Swe	Stop ep 13.00 s	8.000 GHz (13000 pts
ISG					STATUS			



Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 1 - Range 0.009 to 1500 MHz

	ctrum Analyzer - Swep			course of course					
N RL	RF 50 Ω eq 750.0045			SENSE:EXT SOU	RCE OFF	ALIGN AUTO #Avg Type	RMS		16 AM Jun 29, 2017 TRACE 1 2 3 4 5
	eq 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6	Run dB				DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 36.70 de							Mkr1 2	761.3 MH 24.33 dBr
26.7					1				
20.7					ľ				
16.7									+
6.70					1				
3.30									
13.3									DL1 -16.01 dB
23.3									
33.3			_		1				
43.3									
53.3									
Start 9 kH	7							Ston	1.5000 GH
Res BW			#VB	W 3.0 MHz	*		#Sv	veep 3.000	s (3000 pts
ISG						STATUS			



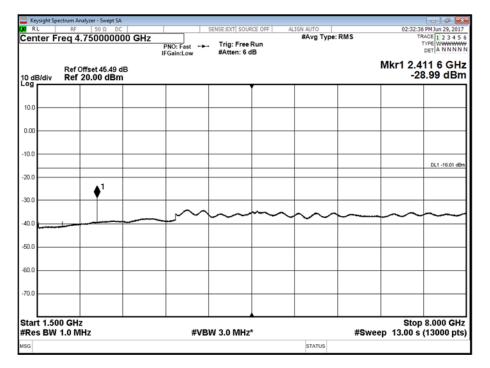




Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position M - Band 1 - Range 0.009 to 1500 MHz

	ectrum Analyzer - Swep							- 6 2
RL	RF 50 Ω			SENSE:EXT SOUR	CE OFF A	#Avg Type: RM		01:40:56 PM Jun 29, 2017 TRACE 1 2 3 4 5
	req 750.004	NFE	PNO: Fast	. Trig: Free #Atten: 6 d		weig Type. ein.	,	TYPE WWWWW DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 28.37 di						м	kr1 762.3 MH 24.09 dBn
					▼ 1			
18.4								
8.37			-					
1.63								
11.6								DL1 -16.01 dt
21.6								
31.6			_		H			
41.6					<u>η</u>			
51.6			A					
61.6								
Start 9 kl								Stop 1.5000 GH
	1.0 MHz		#VB	W 3.0 MHz	•		#Sweep 3	3.000 s (3000 pts
ISG						STATUS		

Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position M -Band 2 - Range 1500 to 8000 MHz

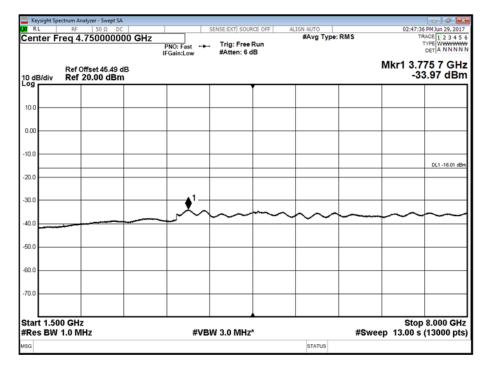




Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position M - Band 1 - Range 0.009 to 1500 MHz

			SENSE:EXT SOUR	RCE OFF		DMS		36 PM Jun 29, 2017 TRACE 1 2 3 4 5
eq 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6 d	Run 1B	word type:	Rin 5		DET A NNNN
							Mkr1	761.8 MH 24.03 dBr
				1				
_								
_								
								DL1 -16.01 d
				<u>/</u>				
				<u> </u>				
		#\/P	W 2 0 MH-	*		#0	Stop	1.5000 GH
.0 19162		#VB	W 3.0 WHZ		PTATUP	#51	weep 3.000	5 (3000 pt
	Ref Offset 40.7 Ref Offset 40.7 Ref 34.47 dB	Pq 750.004500 MHz NFE Ref Offset 40.7 dB Ref 34.47 dBm	RF 50 Ω 00 HZ 2q 750.004500 MHz PN0: Fast NFE PN0: Fast Ref Offset 40.7 dB Ref 34.47 dBm	PF 50 Ω SENSE:EXT SOUI PQ 750.004500 MHz IFG NFE PNC: Fast IFGain:Low #Atten: 6 c	RF 50 Ω 0C SEMSE:EXT SOURCE OFF PQ 750.004500 MHz IFG Trig: Free Run NFE PNO: Fast IFGain:Low #Atten: 6 dB	RF ISO D DC SENSE-EXT SOURCE OFF ALIGN AUTO PR0 Fast Trig: Free Run #Avg Type: RF Offset 40.7 dB #Atten: 6 dB #Iten: 6 dB	PF ISO 0 DC SENSE:EXT SOURCE OFF ALIGN AUTO PG 750.004500 MHz PNO: Fast Trig: Free Run #Avg Type: RMS Ref Offset 40.7 dB PNO: Fast Trig: Free Run #Atten: 6 dB Ref Offset 40.7 dB Image: Sense: S	RF ISO DC SENSE:EXT SOURCE OFF ALIGN AUTO 12:03: PROTE PNO: Fast Trig: Free Run #Avg Type: RMS #Avg Type: RMS Ref Offset 40.7 dB Mkr1 #Atten: 6 dB Mkr1 #Avg Type: RMS IFGaint.ow If Gaint.ow If Gai

Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position M -Band 2 - Range 1500 to 8000 MHz

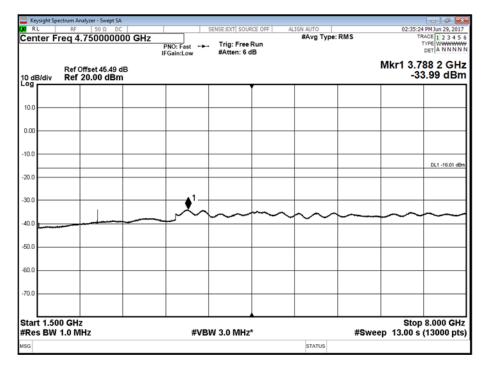




Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position T -Band 1 - Range 0.009 to 1500 MHz

	ctrum Analyzer - Swep								- 6
RL	RF 50 Ω			SENSE:EXT SOUR	RCE OFF	ALIGN AUTO #Avg Type	DMS		8 PM Jun 29, 2017
	eq 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6 d	Run IB	word type	. King		DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 34.95 de							Mkr1 7 2	765.3 MH 3.84 dBr
					▲ 1				
25.0									
15.0									+
4.95									
5.05			_						
15.1									DL1 -16.01 dE
25.1									
35.1			_		<u> </u>				
45.1					-				
55.1			_						
Start 9 kH	z							Stop	1.5000 GH
Res BW	1.0 MHz		#VB	W 3.0 MHz	*		#Sw	eep 3.000	s (3000 pts
ISG						STATUS			

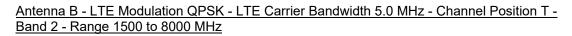
Antenna A - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position T -Band 2 - Range 1500 to 8000 MHz

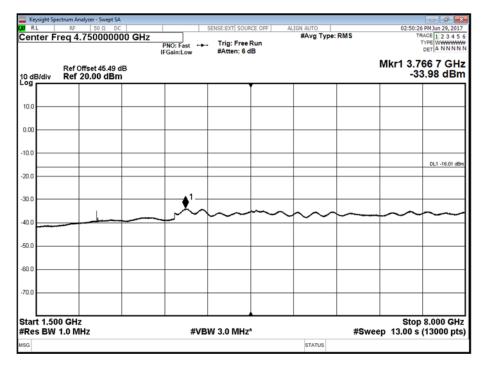




Antenna B - LTE Modulation QPSK - LTE Carrier Bandwidth 5.0 MHz - Channel Position T -Band 1 - Range 0.009 to 1500 MHz

Keysight Spect	rum Analyzer - Swept RF 50 Ω		1	SENSE:EXT SOUR	205.055	ALIGN AUTO		12,10.2	👝 🕞 💽 8 PM Jun 29, 2017
	eq 750.0045	00 MHz	PNO: Fast		Run	#Avg Type	RMS	т	RACE 1 2 3 4 5 TYPE WWWW DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 36.70 dB	dB m							65.3 MH 4.20 dBr
26.7					1				
					l.				
16.7									1
6.70									+
3.30									
13.3									DL1 -16.01 d8
23.3									
33.3					1				
43.3					/ L				
53.3									
Start 9 kHz #Res BW 1			#\/B	W 3.0 MHz	*		#Sw/	Stop eep 3.000	1.5000 GH
ISG	.0 11112		#*0	5.5 WINZ		STATUS	#3₩	eep 5.000	5 (5000 pts

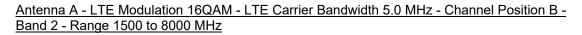


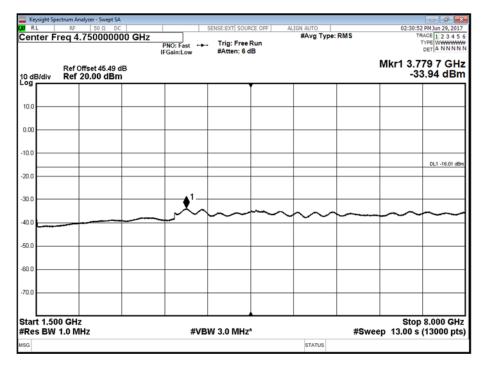




Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 1 - Range 0.009 to 1500 MHz

	rum Analyzer - Swept								
N RL	RF 50 Ω			SENSE:EXT SOU	RCE OFF	ALIGN AUTO #Avg Type	DMS	01:30:	02 PM Jun 29, 2017
Senter Fre	q 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6 d		word type	. King		DET A NNNN
	Ref Offset 40.7 Ref 36.70 dE							Mkr1 2	761.8 MH 4.80 dBr
					1				
26.7									
16.7									
6.70									
3.30									
13.3									DL1 -16.01 dB
23.3		_	_						
33.3		_	_		<u> </u>				
43.3					<u>}</u>				
53.3									
Start 9 kHz #Res BW 1.			#\/B	W 3.0 MHz	*		#5v	Stop veep 3.000	1.5000 GH
ISG						STATUS	<i>"</i>		0 (0000 pt.



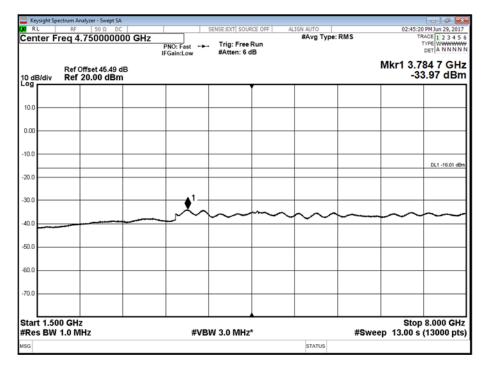




Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 1 - Range 0.009 to 1500 MHz

	SA							
RF 50 Ω			SENSE:EXT SOUR	RCE OFF	ALIGN AUTO #Ava Type:	RMS		38 PM Jun 29, 2017
q 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6 d	Run iB				DET A NNNN
							Mkr1 7 2	761.8 MH 4.60 dBr
				1				
				1				
_		_						
				7				
_								DL1 -16.01 d
				<u> </u>				
			12-10-14 - 14-14 - 14-14	[<u> </u>				
_								<u> </u>
			W 0 0 MU-				Stop	1.5000 GH
UIVIMZ		#VB	W 3.0 MHz	°	CTATHE	#Sv	veep 3.000	s (3000 pt
	q 750.0045	q 750.004500 MHz NFE Ref 34.11 dBm	g 750.004500 MHz NFE PNO: Fast → IFGaint.ow Ref 0ffset 40.7 dB Ref 34.11 dBm	q 750.004500 MHz NFE PNO: Fast Trig: Free #Atten: 6 c #Atten: 6	q 750.004500 MHz NFE PNO: Fast Trig: Free Run #Atten: 6 dB Ref 34.11 dBm	g 750.004500 MHz NFE PNO: Fast → Trig: Free Run #Avg Type: #Avg Type: #Av	q 750.004500 MHz #Avg Type: RMS NFE PNO: Fast → Trig: Free Run #Avg Type: RMS	q 750.004500 MHz #Avg Type: RMS NFE PNO: Fast → IFGain.tow #Atten: 6 dB Mkr1 7 2 Atten: 6 dB Mkr1 7 2 ↓ 1

Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 2 - Range 1500 to 8000 MHz

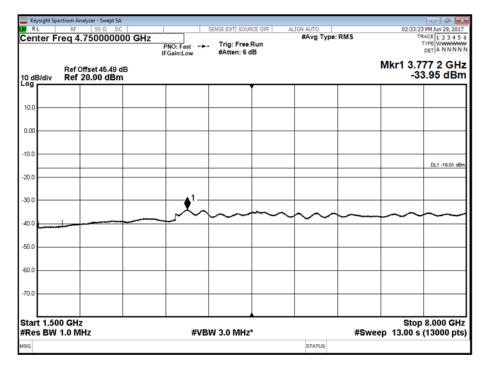




Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position M -Band 1 - Range 0.009 to 1500 MHz

	ectrum Analyzer - Swept								- 6
RL	RF 50 Ω			SENSE:EXT SOUR	CE OFF A	LIGN AUTO	DMC		5 PM Jun 29, 2017
Center F	req 750.0045	NFE	PNO: Fast	Trig: Free #Atten: 6 d	Run IB	#Avg Type:	RMS		TYPE WWWW DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 34.76 dB	dB						Mkr1 7 2	61.3 MH 4.32 dBr
					1				
24.8					1				
14.8					/				
4.76									
5.24									
15.2									DL1-16.01.d
25.2									
35.2					1				
45.2							•		
55.2									
Start 9 kH	12							Stop	1.5000 GH
Res BW			#VB	W 3.0 MHz	•		#Swe	eep 3.000	s (3000 pt
SG						STATUS			

Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position M -Band 2 - Range 1500 to 8000 MHz

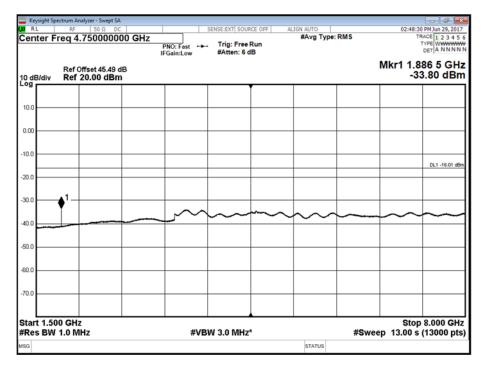




Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position M -Band 1 - Range 0.009 to 1500 MHz

	pectrum Analyzer - Sv								- 0
RL				SENSE:EXT SOU	RCE OFF	ALIGN AUTO #Avg Type	DMC		RACE 1 2 3 4 5
Center F	req 750.00	NFE NFE	PNO: Fast ++	. Trig: Free #Atten: 6 d	Run 1B	#Avg Type	- KMS		DET A NNNN
10 dB/div	Ref Offset 40 Ref 36.70					_		Mkr1 7 2	762.8 MH 4.45 dBn
26.7					1				
20.1					Ĭ				
16.7					,				
6.70			_						
3.30									
13.3									DL1 -16.01 dE
23.3									
33.3					<u> </u>				
43.3									
53.3									
Start 9 kl								Cton	1.5000 GH
	HZ / 1.0 MHz		#VB	W 3.0 MHz	*		#Sv	veep 3.000	s (3000 gH
ISG						STATUS			

Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position M -Band 2 - Range 1500 to 8000 MHz





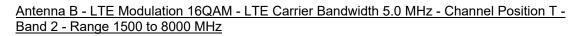
Antenna A - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position T -Band 1 - Range 0.009 to 1500 MHz

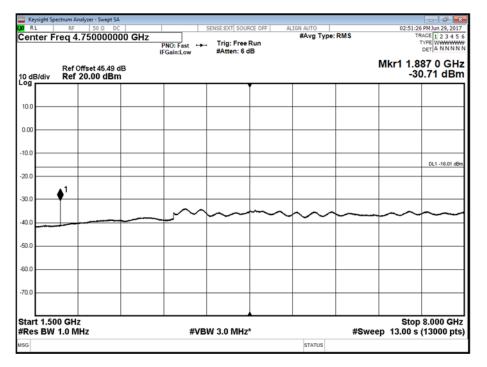
Keysight Spectr	um Analyzer - Swept S RF 50 Ω 0			SENSE:EXT SOUP	RCE OFF	ALIGN AUTO		02:06:5	👝 🗇 💽 3 PM Jun 29, 2017
Center Fre	q 750.00450	NFE	PNO: Fast	Trig: Free #Atten: 6 c	Run IB	#Avg Type:	RMS	т	TYPE WWWWWW
	Ref Offset 40.7 d Ref 34.21 dB							Mkr1 7 24	66.8 MH 4.03 dBr
24.2					♦ ¹				
24.2					4				
14.2									
4.21									
5.79									
15.8									DL1 -16.01 d
25.8									
35.8					<u></u>				
45.8			****		/		4.00-00 Jan		
55.8									
Start 9 kHz #Res BW 1.	0 MHz		#VB	W 3.0 MHz	*		#Sw	Stop veep 3.000	1.5000 GH s (3000 pt
ISG						STATUS		•	



Antenna B - LTE Modulation 16QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position T -Band 1 - Range 0.009 to 1500 MHz

	trum Analyzer - Swept								- 6
RL	RF 50 Ω			SENSE:EXT SOUR	RCE OFF	ALIGN AUTO #Avg Type	DMC	12:27:2	26 PM Jun 29, 2017
Center Fr	eq 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6 d		#Avg Type	RMS		TYPE WWWWW DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 36.70 dE							Mkr1 7 2	765.3 MH 4.73 dBn
					1				
26.7					Ĭ				
16.7									
6.70									
3.30									
13.3									DL1 -16.01 dE
23.3									
33.3									
43.3					1				
53.3		****							
Start 9 kHz	,							Stop	1.5000 GH
Res BW 1			#VB	W 3.0 MHz	*		#Sw	veep 3.000	s (3000 pts
SG						STATUS			

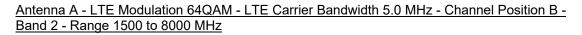


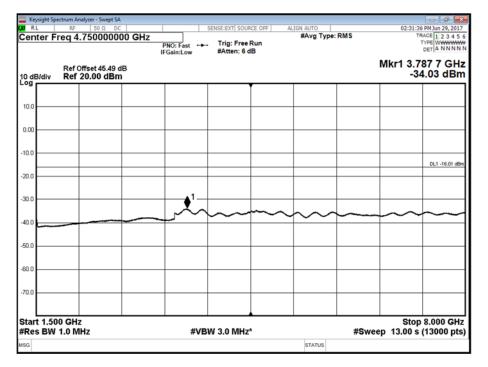




Antenna A - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 1 - Range 0.009 to 1500 MHz

	trum Analyzer - Swept SA							
RL Center Fre	RF 50 Ω DC eq 750.004500	MHz	SENSE:EXT SC	OURCE OFF	ALIGN AUTO #Avg Type:	RMS	01:35:0 T	9 PM Jun 29, 2017 RACE 1 2 3 4 5
	59750.004500	NFE PNO: Fas IFGain:Lo	Trig: From #Atten:					DET A N N N N
	Ref Offset 40.7 dB Ref 36.70 dBm						Mkr1 7 2	760.8 MH 4.31 dBr
				L 1				
26.7				Ĩ				
16.7								
6.70								
3.30								
13.3								DL1 -16.01 dE
23.3				_	_			
33.3					_			
43.3				\square				+
53.3					_			
Start 9 kHz #Res BW 1			#VBW 3.0 MH	lz*		#Swe	Stop	1.5000 GH s (3000 pts
sg					STATUS			- (







Antenna B - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B -Band 1 - Range 0.009 to 1500 MHz

	ctrum Analyzer - Swept								
N RL	RF 50 Ω			SENSE:EXT SOU	RCE OFF	ALIGN AUTO #Avg Type	PMS		13 PM Jun 29, 2017 TRACE 1 2 3 4 5
Jenter Fr	eq 750.0045	NFE	PNO: Fast	. Trig: Free #Atten: 6 d	Run 1B	word type	. KMS		DET A NNNN
10 dB/div	Ref Offset 40.7 Ref 34.61 dE			-				Mkr1	760.8 MH 24.21 dBn
					1				
24.6					Ĩ				
14.6			-						
4.61									
5.39									
15.4									DL1 -16.01 dt
25.4									
35.4					<u>}</u>				
45.4					\				
55.4									
Start 9 kHz #Res BW 1			#VB	W 3.0 MHz	*		#Sv	Stop weep 3.000	1.5000 GH
ISG						STATUS			

