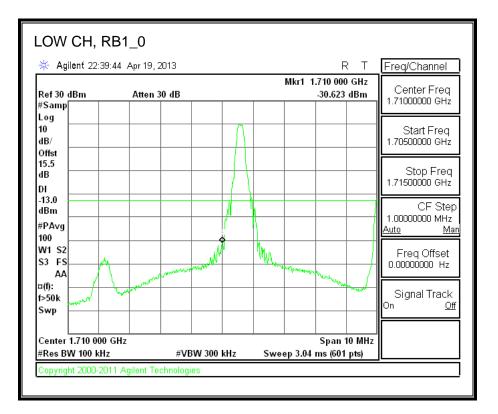
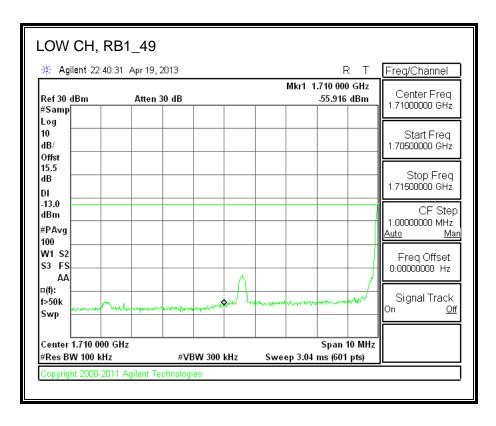


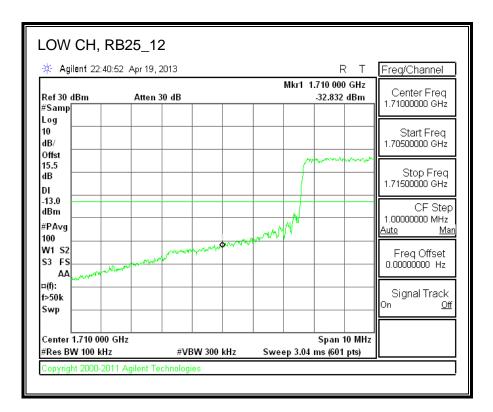
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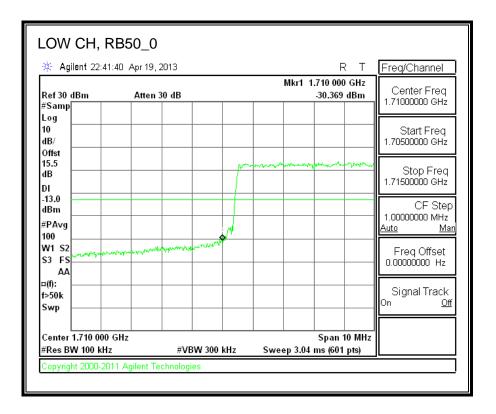
LOW-16QAM





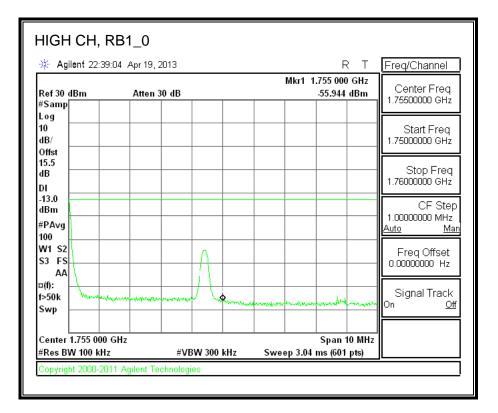
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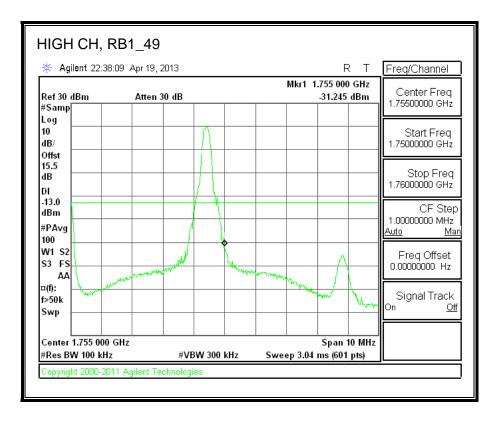




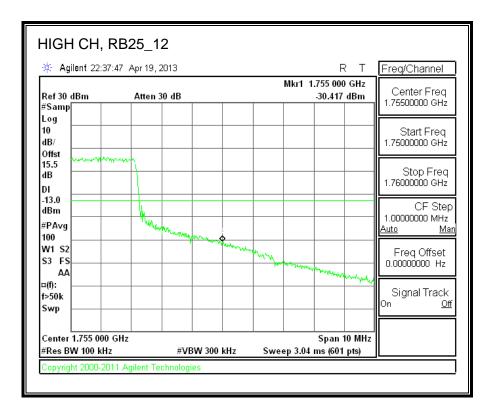
Page 145 of 286

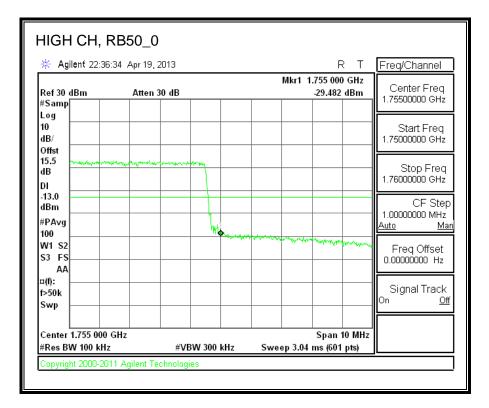
HIGH-16QAM





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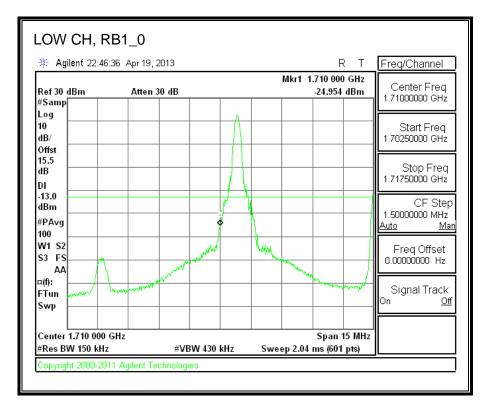


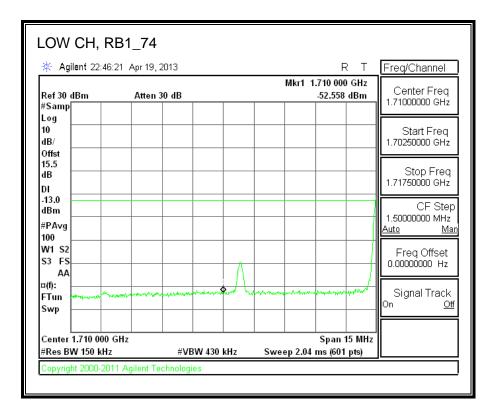


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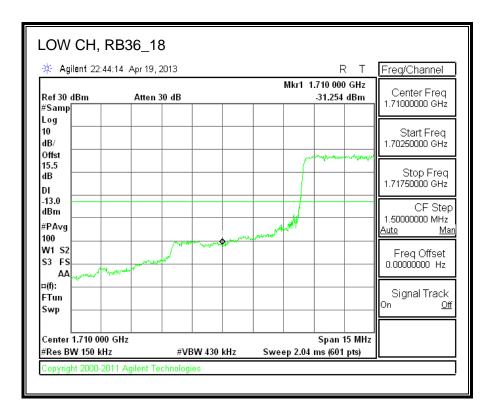
8.2.9. LTE BAND 4-15MHZ BANDWIDTH

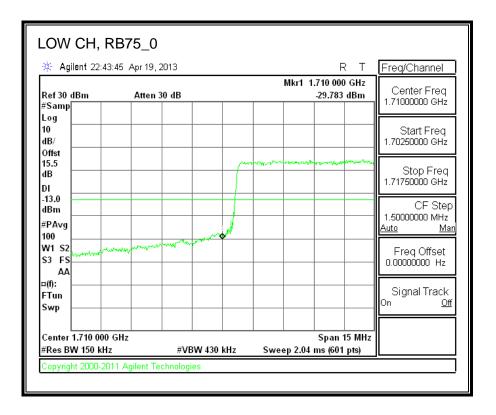
LOW-QPSK





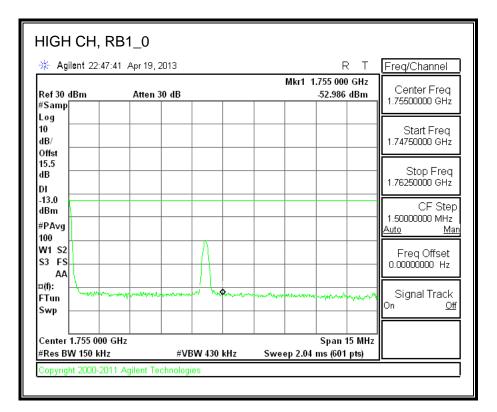
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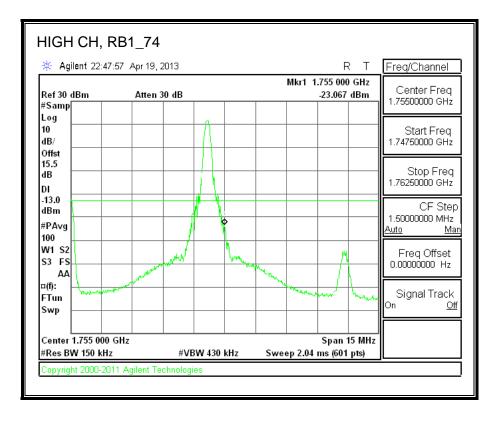




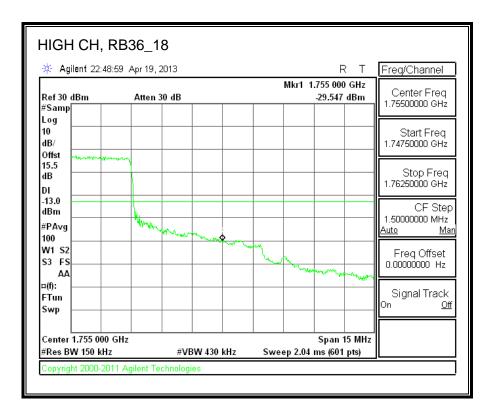
Page 149 of 286

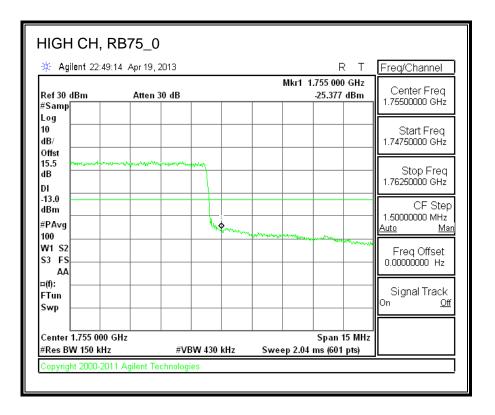
HIGH-QPSK





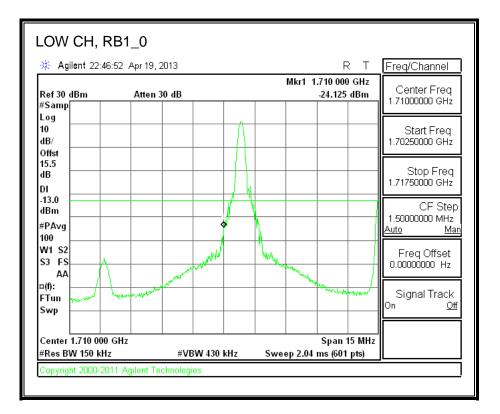
Page 150 of 286

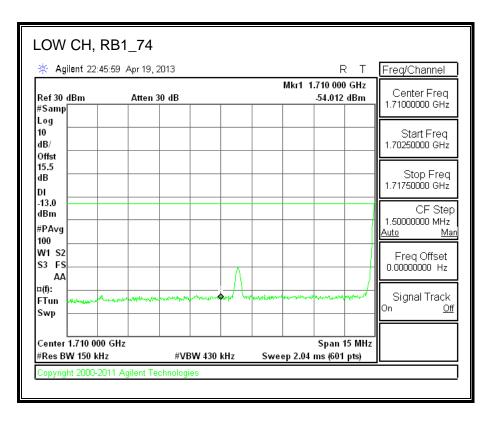




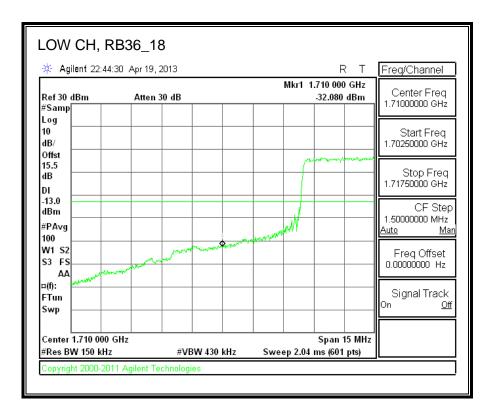
Page 151 of 286

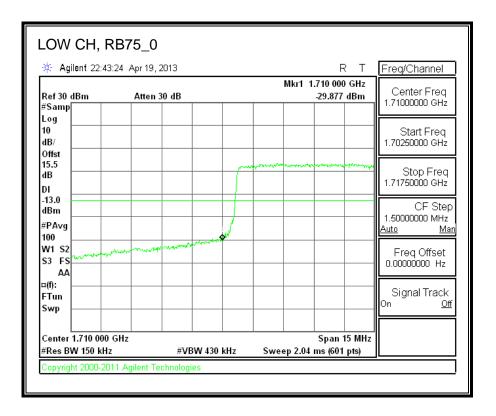
LOW-16QAM





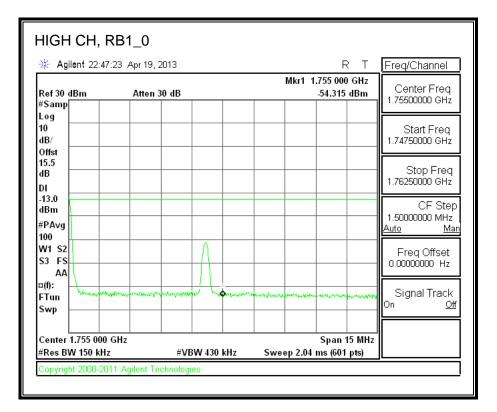
Page 152 of 286

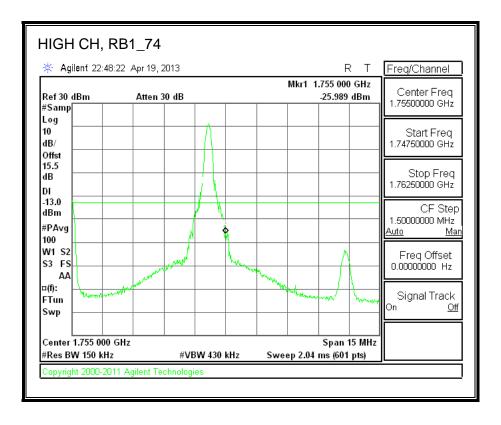




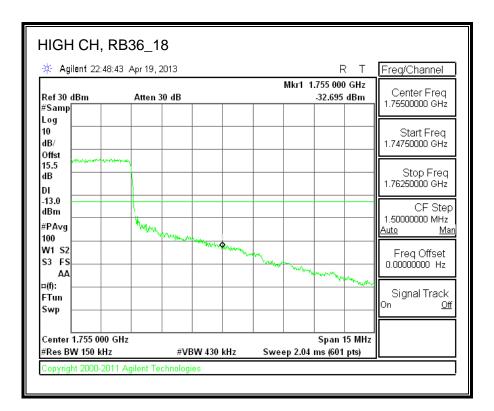
Page 153 of 286

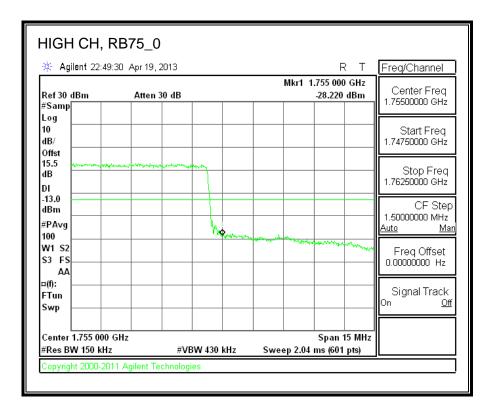
HIGH-QPSK





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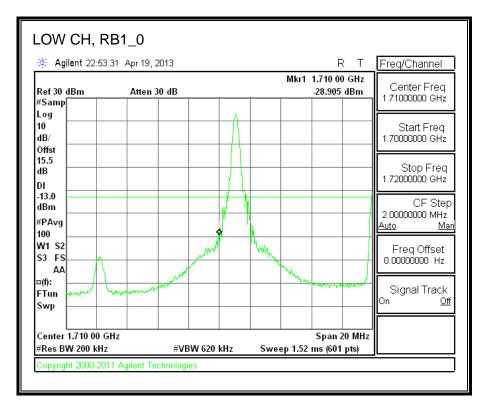


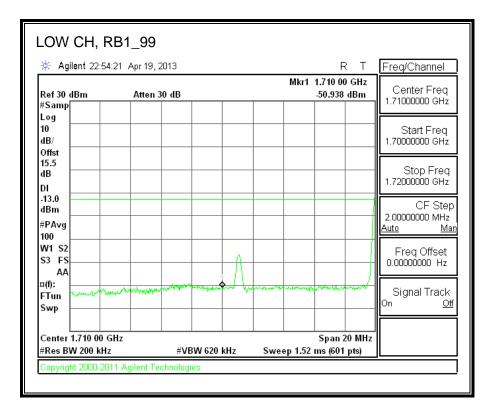


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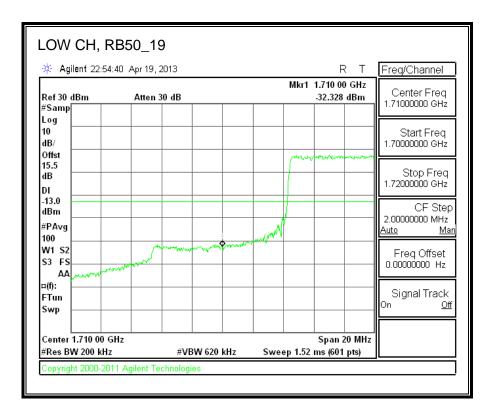
8.2.10. LTE BAND 4-20MHZ BANDWIDTH

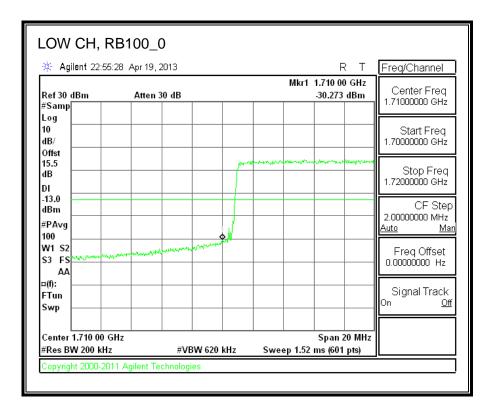
LOW-QPSK





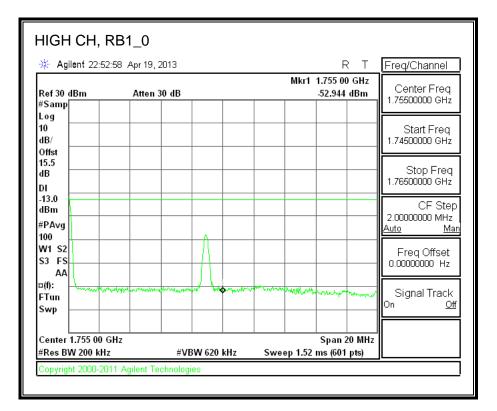
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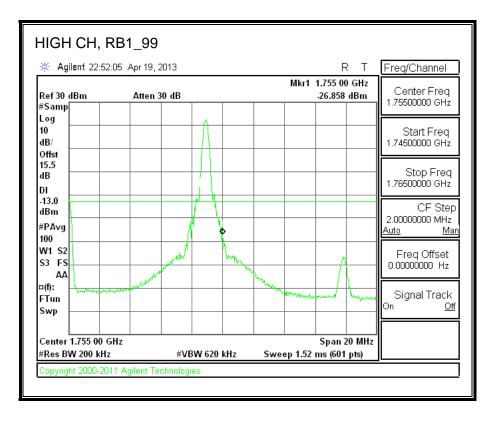




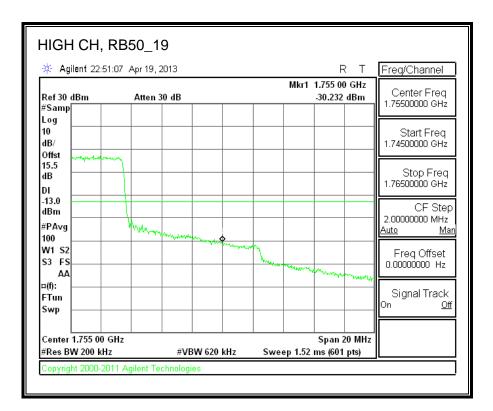
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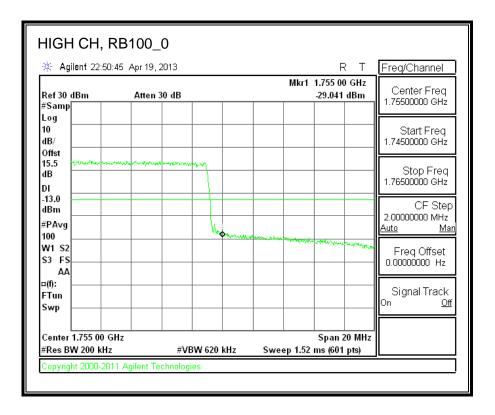
HIGH-QPSK





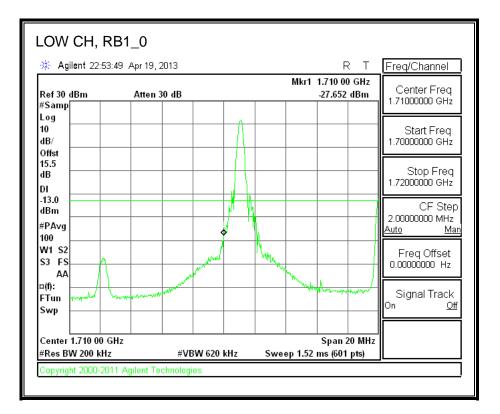
Page 158 of 286

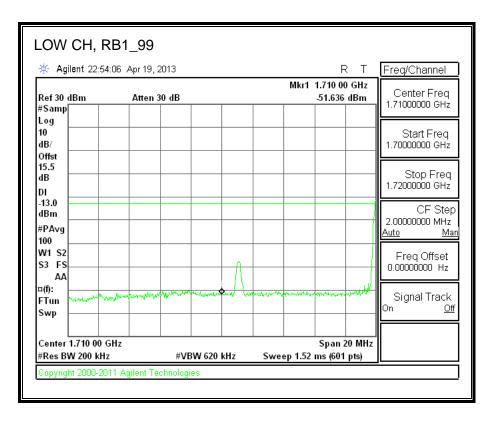




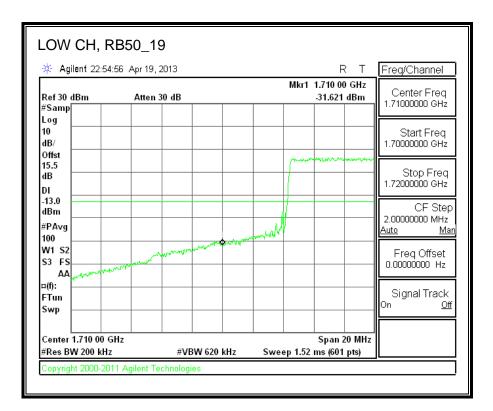
Page 159 of 286

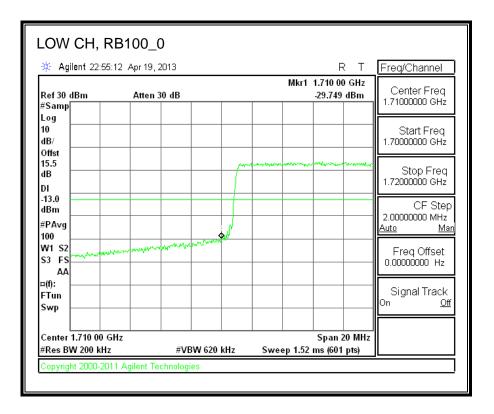
LOW-16QAM





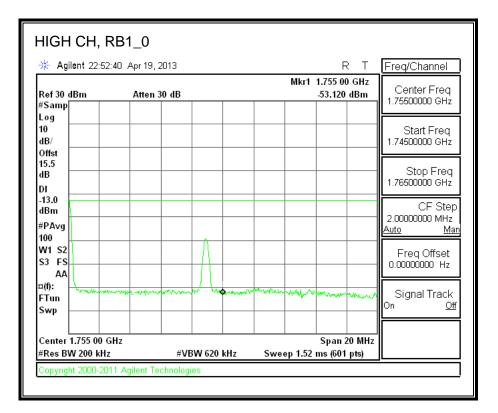
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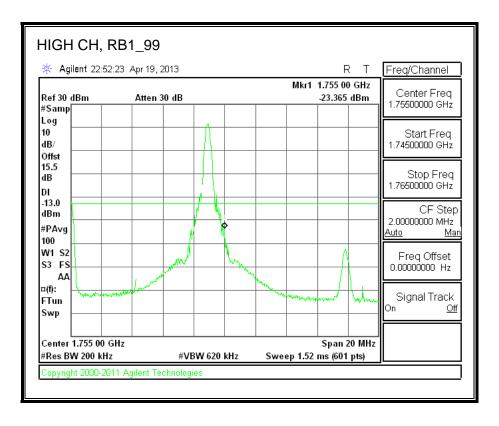




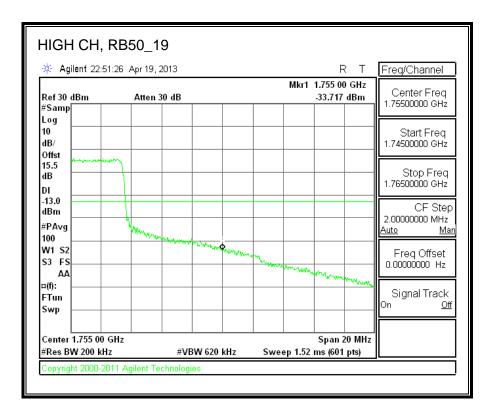
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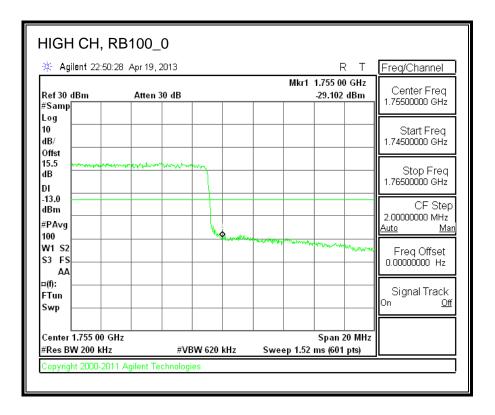
HIGH-16QAM





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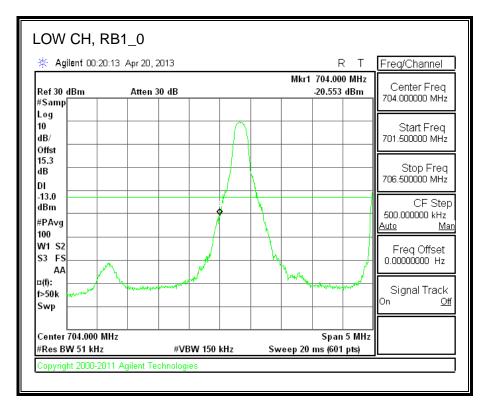


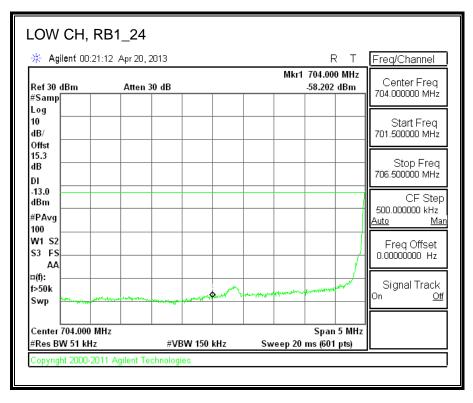


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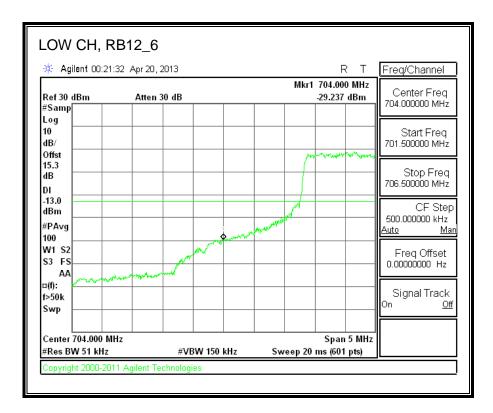
8.2.11. LTE BAND 17-5MHz BANDWIDTH

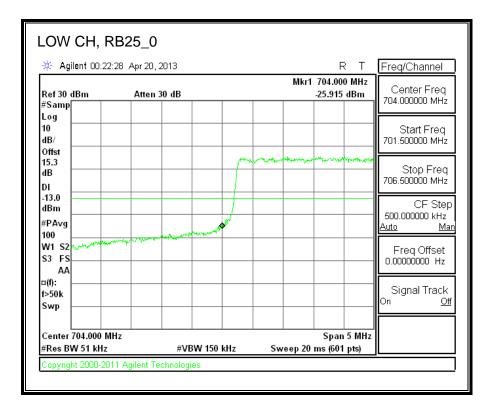
LOW-QPSK





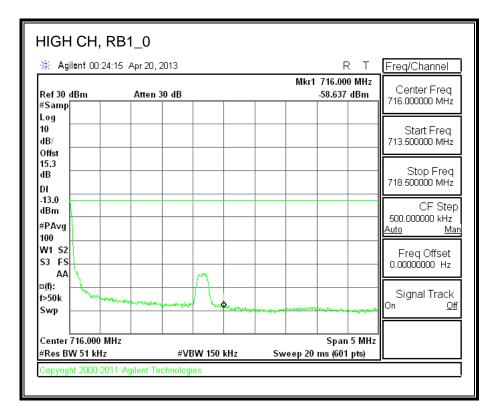
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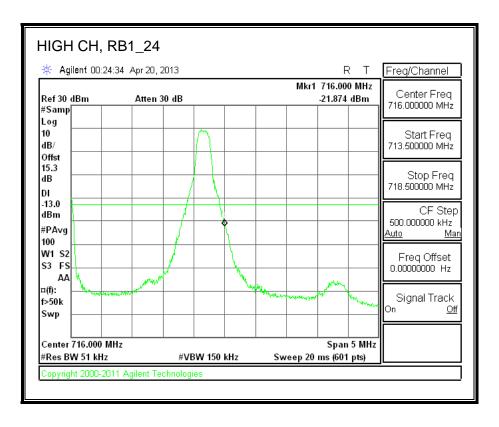




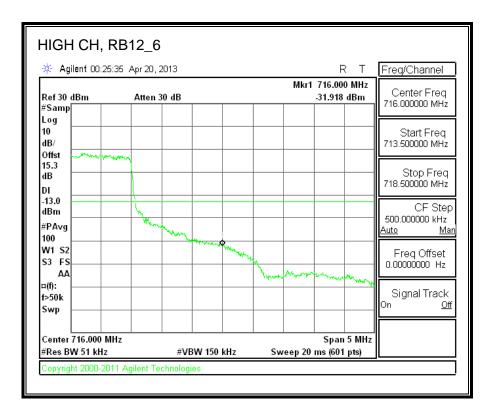
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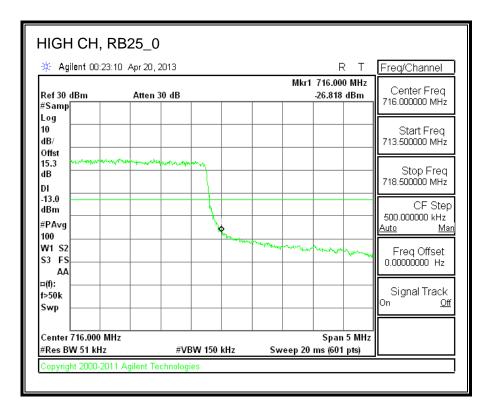
HIGH-QPSK





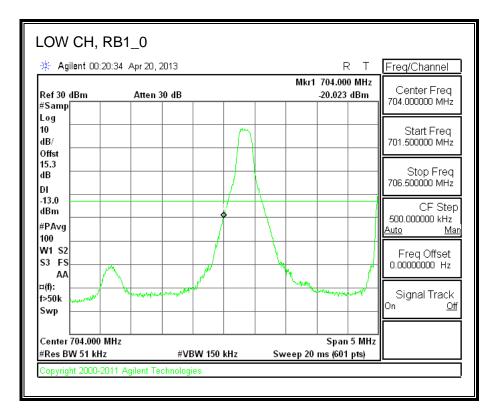
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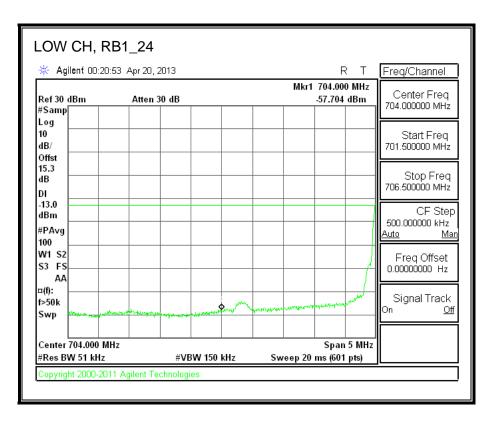




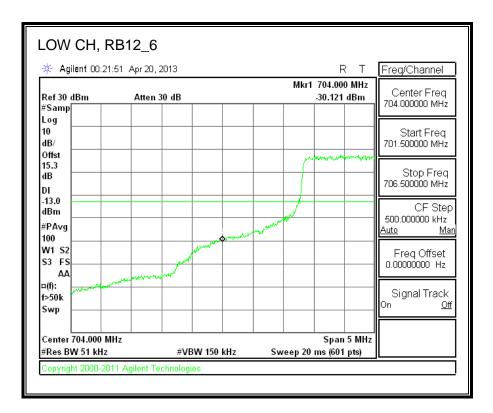
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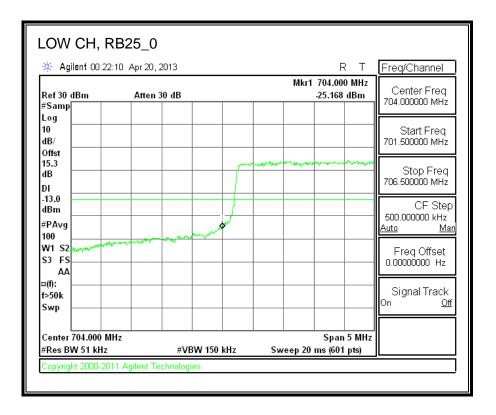
LOW-16QAM





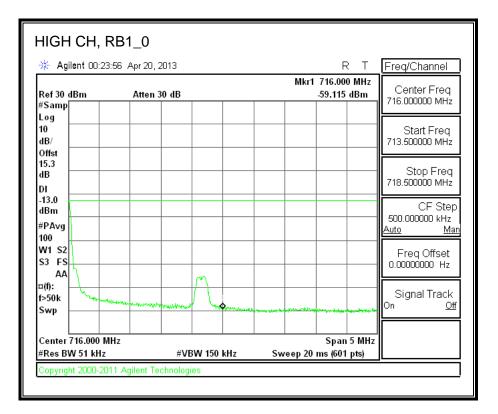
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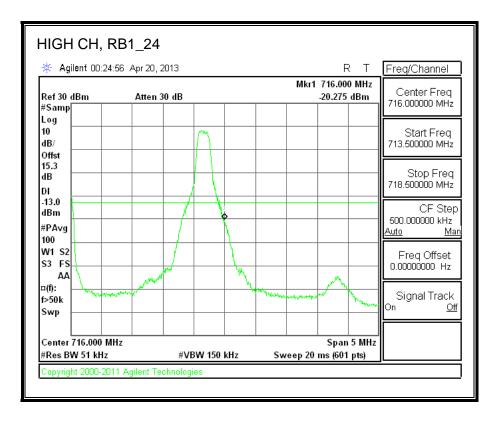




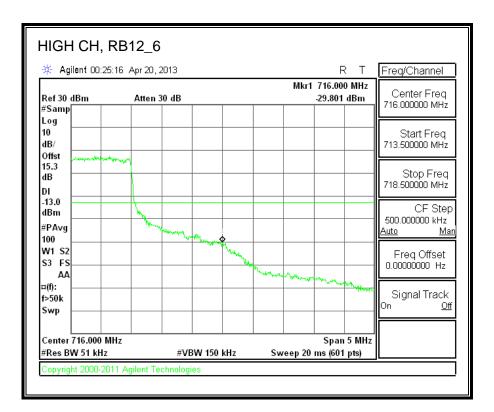
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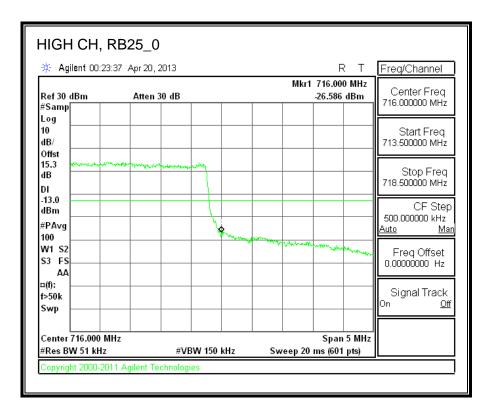
HIGH-16QAM





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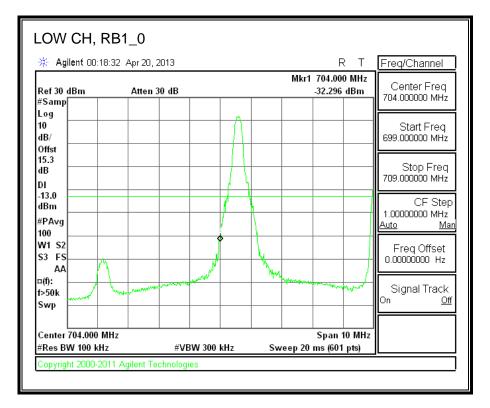


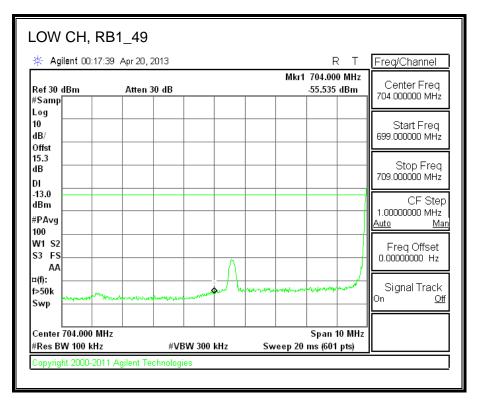


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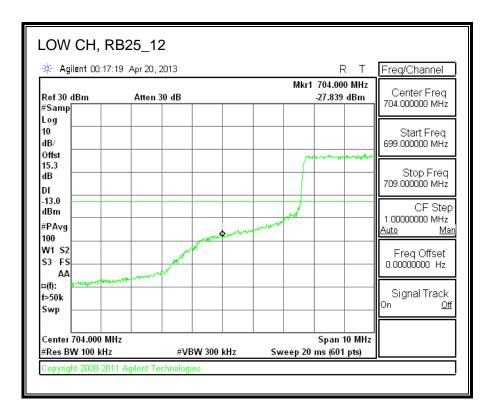
8.2.12. LTE BAND 17-10MHz BANDWIDTH

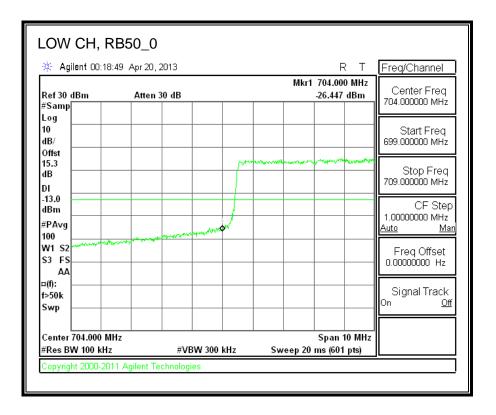
LOW-QPSK





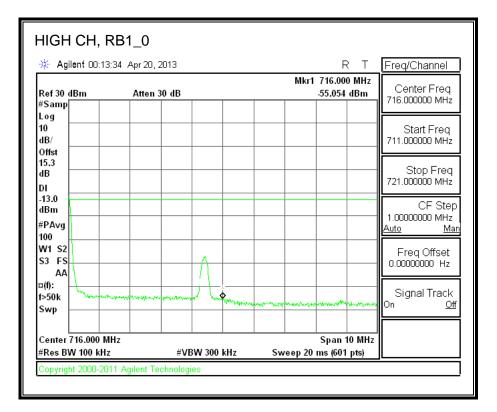
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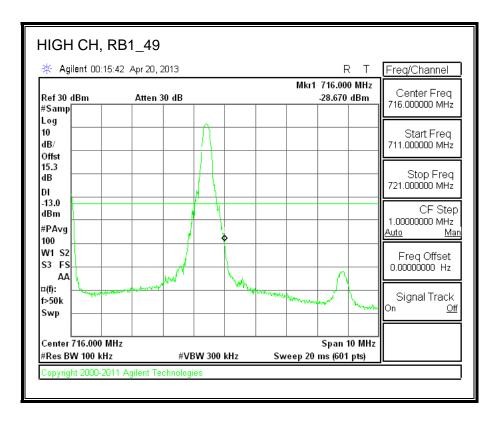




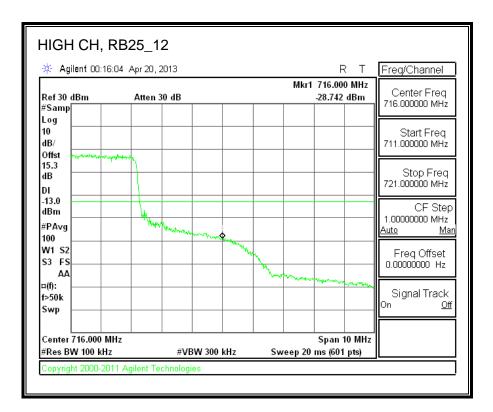
Page 173 of 286

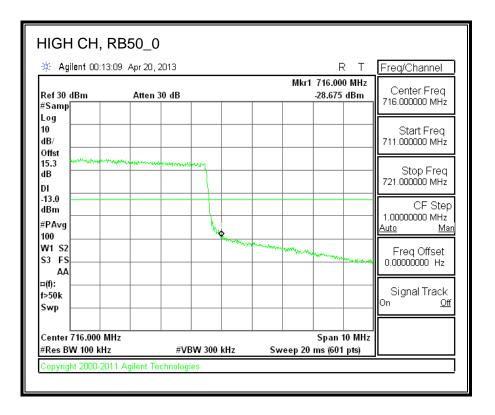
HIGH-QPSK





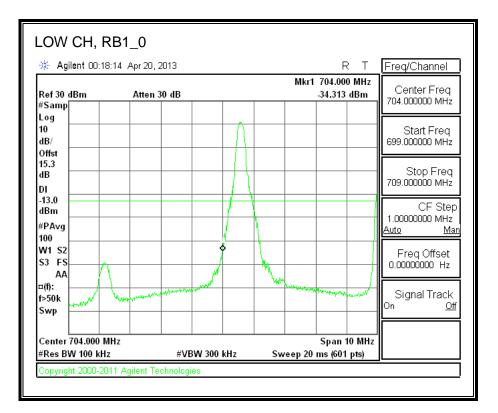
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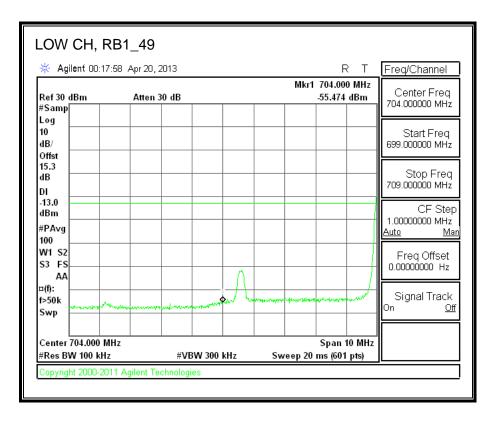




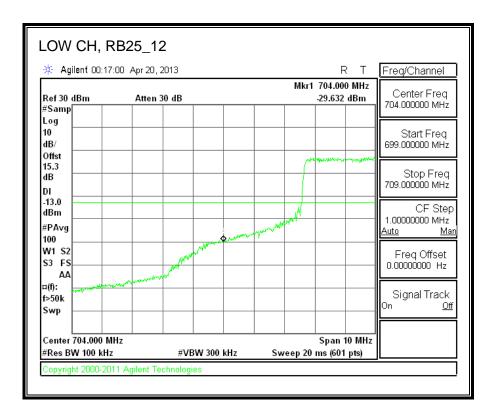
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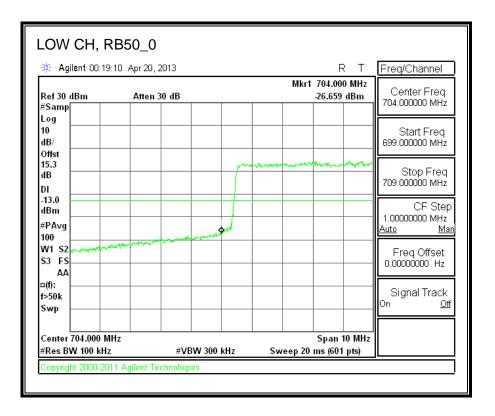
LOW-16QAM





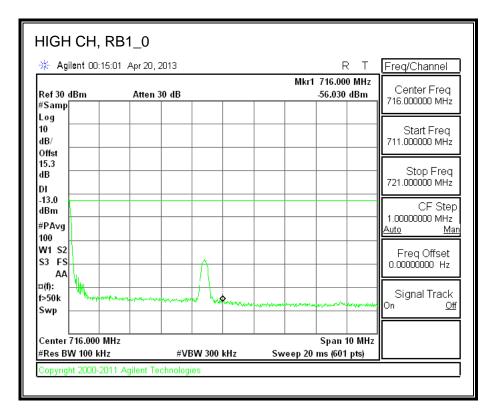
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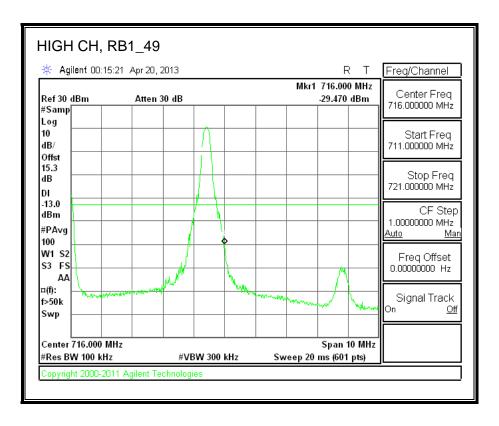




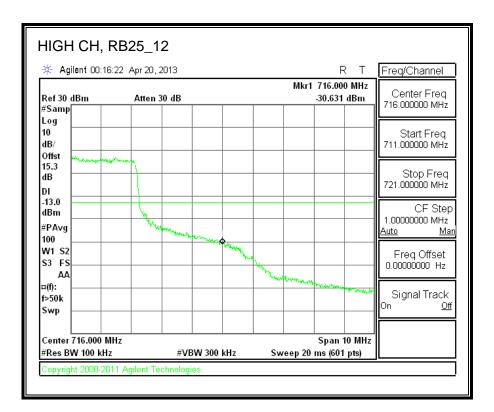
Page 177 of 286

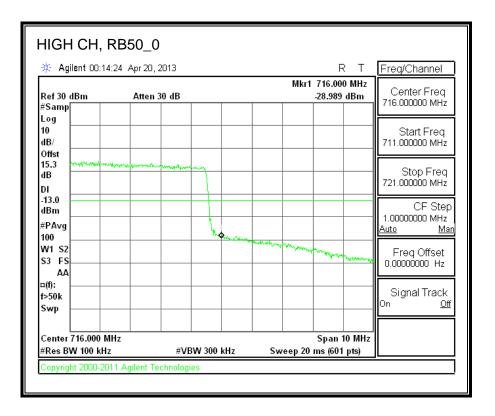
HIGH-16QAM





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8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P) dB$.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

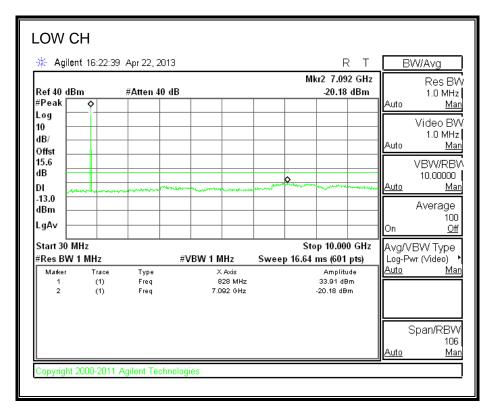
MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

8.3.1. GSM-GPRS

CELL BAND



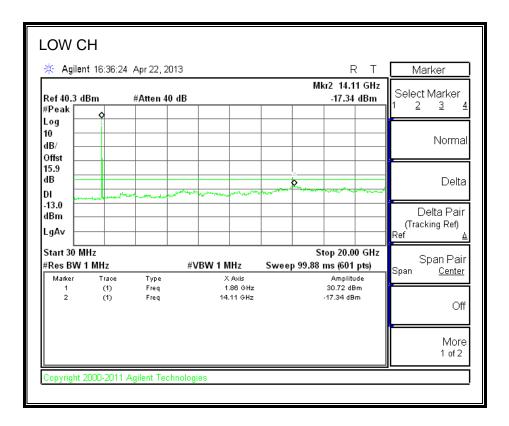
🔆 Agilen	it 16:29:05	Apr 22, 201	3		R T	Marker
Ref 40 dBı	m	#Atten 40 (lΒ		Mkr2 7.075 GHz -21.61 dBm	Select Marker
#Peak	Ŷ					1 2 3 4
Log	1					
						Normal
Offst						
15.6						
dB				Å		- Delta
DI 🔜	-	an an an an an	man when and and and and and and and and and an	and the second	ser brown warmen	7
-13.0 Bm						Delta Pair
						(Tracking Ref)
LgAv –						Ref
Start 30 M	Hz				Stop 10.000 GHz	Craw Dain
#Res BW 1	1 MHz		#VBW 1 MHz	Sweep 16.	64 ms (601 pts)	Span Pair Span <u>Center</u>
Marker	Trace	Туре	X Axis		Amplitude	- Opani <u>Center</u>
	(1) (1)	Freq Freq	828 MHz 7.075 GHz		31.63 dBm -21.61 dBm	
						Off
						More
						1 of 2
						1 012

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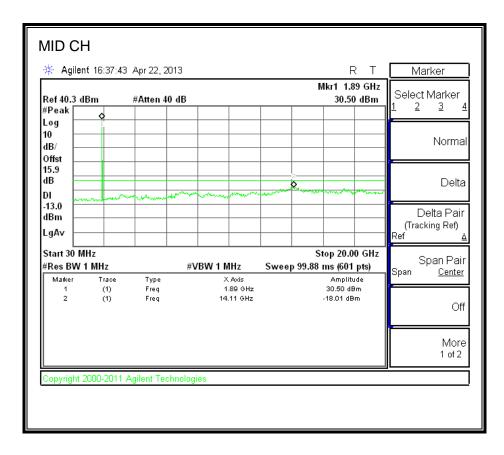
UL VERIFICATION SERVICES INC. 47173 BENICIA STREET, FREMONT, CA 94538, USA This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc..

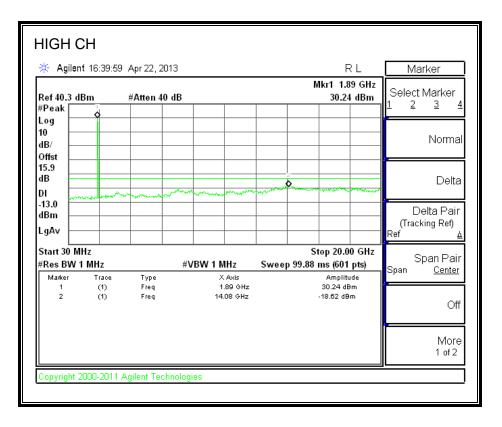
🔆 Agilent 1	16:30:19	Apr 22, 20	13					F	R T	Marker	
Ref 40 <u>dBm</u>		#Atten 40	dB				I	Mkr1 84 33.72	l4 MHz 2 dBm	Select Marker	
#Peak	^										
10 — dB/										Norma	
Offst 15.6 dB DI							an and so that	~~~~		Delta	
-13.0 dBm	ulay (ngayon) (ka				-ferrander-					Delta Pair (Tracking Ref)	
Start 30 MHz #Res BW 1 M			#\/P	W 1 M	10-	Euro a	Sto 5 16.64	p 10.00		Ref <u>4</u> Span Pair	
Marker	Trace	Туре	#VD		Axis	Swee	5 10.04	Amplitu	• ·	Span <u>Center</u>	
1 2	(1) (1)	Freq Freq		8	44 MHz 59 GHz			33.72 dE -22.11 dB) m	Off	
										More 1 of 2	

PCS BAND



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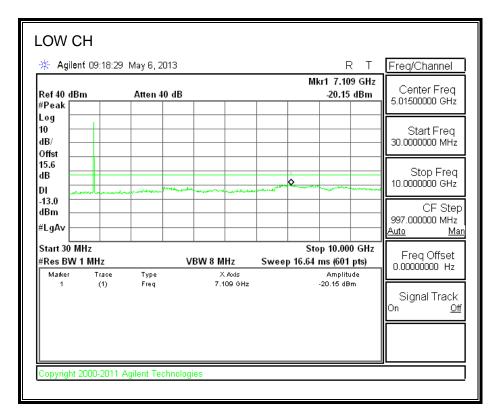


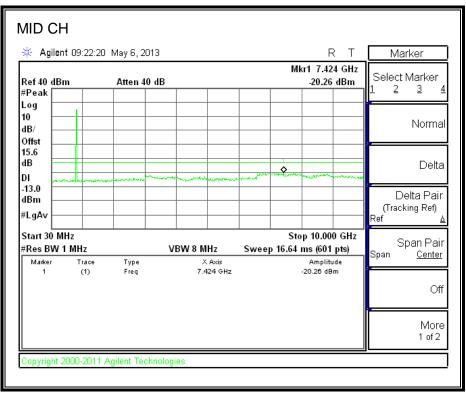


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8.3.2. GSM-EGPRS

CELL BAND



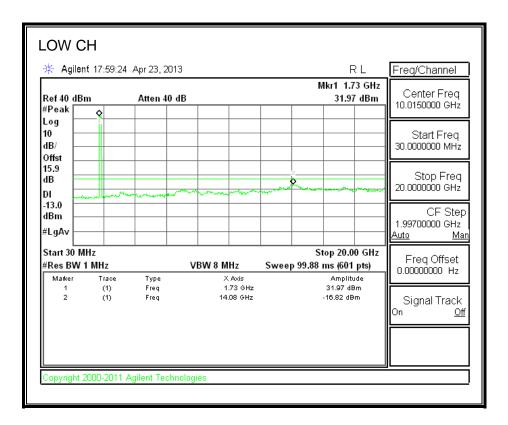


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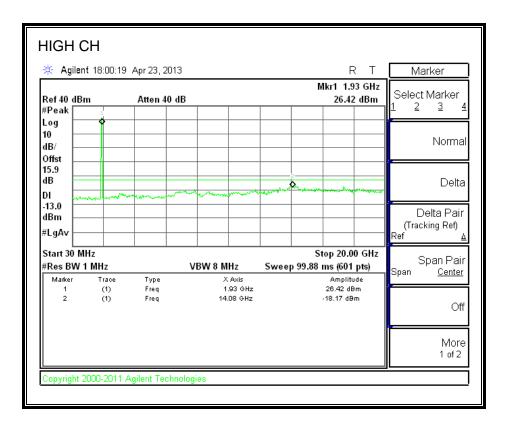
HIGH C		Мау 6, 2013					F	. २ т	Marker
Ref 40 dBm #Peak		Atten 40 dB				Mi	ar1 7.25		Select Marker
Log 10 dB/ Offst									Normal
15.6 dB DI -13.0	- Annonen		and the second state	a		A			Delta
dBm #LgAv									Delta Pair (Tracking Ref) Ref <u>∆</u>
Start 30 MH #Res BW 1 Marker 1	-	Type Freq		Hz Axis 58 GHz	Swee	p 16.64	p 10.00 ms (601 Ampliti -21.13 dB	pts) ude	Span Pair Span <u>Center</u>
	0	rieq	1.2	38 GH2			-21.13 05	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Off
									More 1 of 2
Copyright 20	00-2011 A	gilent Technol	ogies						

PCS BAND



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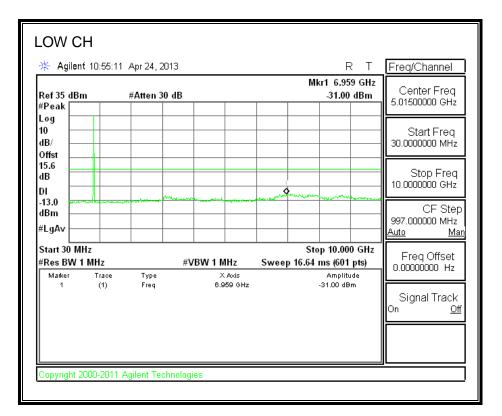
🔆 Agilen	t 17:57:17	Apr 23, 20	13				F	R L	<u> </u>	arker
Ref 35 dBi	n .	Atten 30	dB			Mk	ar2 14.1 -27.93		Selec 1 <u>2</u>	t Marker <u>3</u> 4
#Peak	Ŷ								' <i>≤</i>	2 5
Log 10										
										Norma
Offst										
15.9										
dB						2				Delta
DI -13.0	m	-	monum	many	mound		and and a start and	man		
dBm									-	Delta Pair
#LgAv									(Trac	cking Ref)
Ľ									Ref	<u> </u>
Start 30 M							top 20.0		<pre></pre>	Span Pair
#Res BW 1			VBW 8 M		Swee	p 99.88	,	• ·	Span	<u>Center</u>
Marker 1	Trace (1)	Type Freq		. Axis .89 GHz			Amplitu 31.51 dB			
2	(Ť)	Freq		14 GHz			-27.93 dB	Im		0.0
										Off
										More
										1 of 2



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8.3.3. UMTS-REL 99

CELL BAND



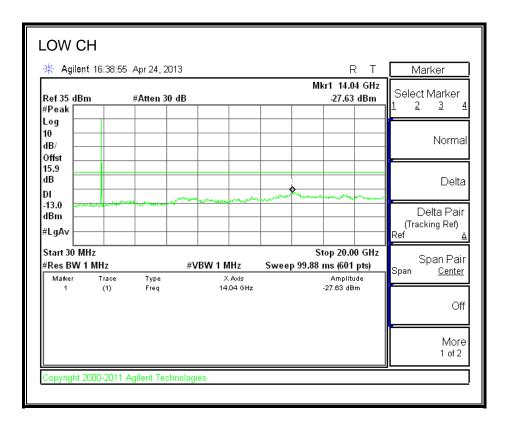
🔆 Agilent	. 10.51.51	Api 24, 20	10			м	R (r1 7.22	Freq/Ch	annei
Ref35 dBn #Peak	n	#Atten 30	dB				-31.56	Center 5.0150000	
Log 10 dB/ Offst								 Stari 30.000000	t Freq 00 MHz
15.6 dB DI						_1		Stop 10.000000	o Freq 30 GHz
-13.0 dBm #LgAv								 0997.00000 <u>Auto</u>	F Step 30 MHz <u>Mar</u>
Start 30 Mi #Res BW 1			#VBW 1	MHz	Swee		p 10.000 ms (601	Freq (
Marker 1	Trace (1)	Type Freq	7	X Axis 7.225 GHz			Amplitu -31.56 dBr		Track

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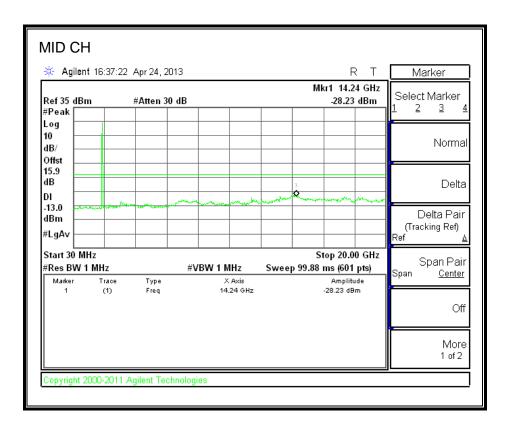
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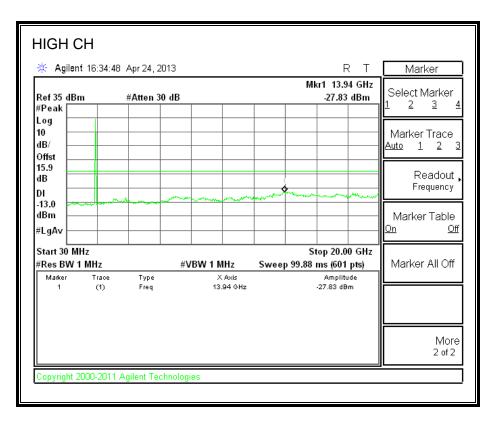
Ref 35 d	Bm	#Atten 30	dB			Mk	ur1 6.67	′7 GHz ∶dBm	Center Freq		
#Peak		#Atten 50					-52.15		5.01500000 GH	١ż	
Log 10 - dB/ - Offst									Start Fre 30.0000000 Mł		
15.6 dB DI									Stop Fre 10.000000 GH		
-13.0 dBm - #LgAv -	A Concert Marianan	27-2-4, 17-1997-2-197-2-197 		*********					CF S1 997.000000 Mi <u>Auto</u>		
Start 30 #Res BV	V 1 MHz		#VBW 1		Swee	Sto 5 16.64	,	pts)	Freq Offse 0.00000000 H		
Marker 1	Trace (1)	Type Freq		X Axis 677 GHz			Ampliti -32.13 dB		Signal Trac On	ck <u>Of</u>	

PCS BAND

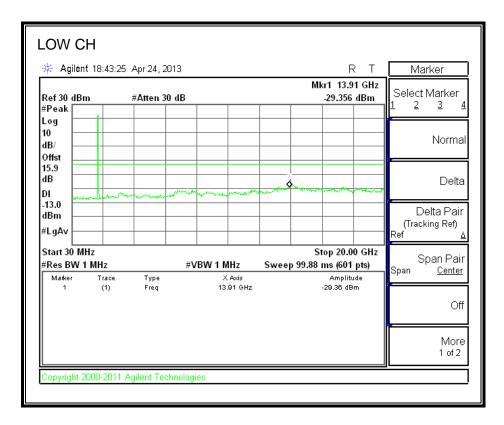


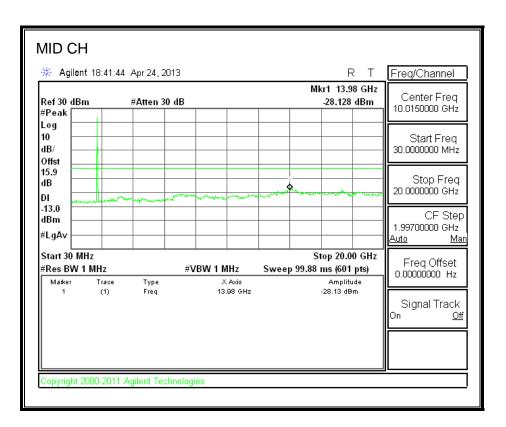
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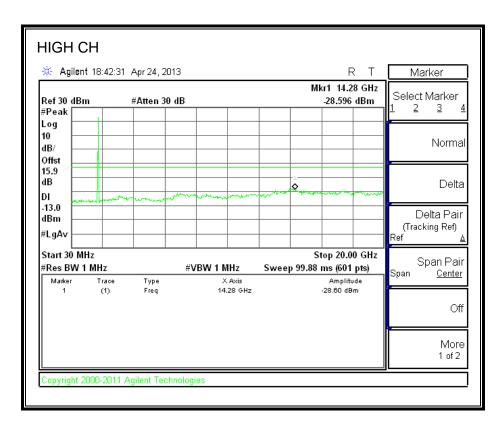


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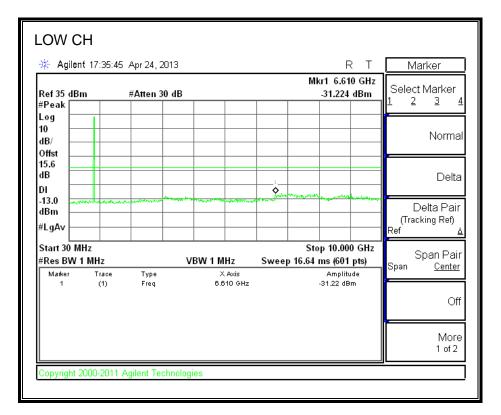
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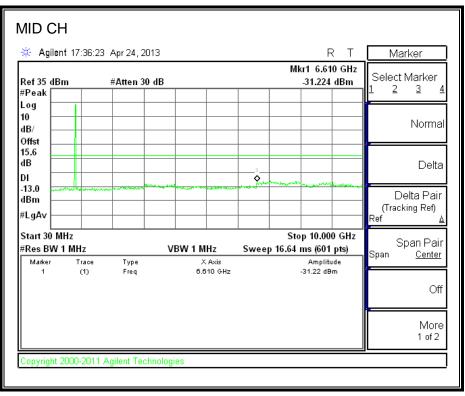


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8.3.4. UMTS-HSDPA

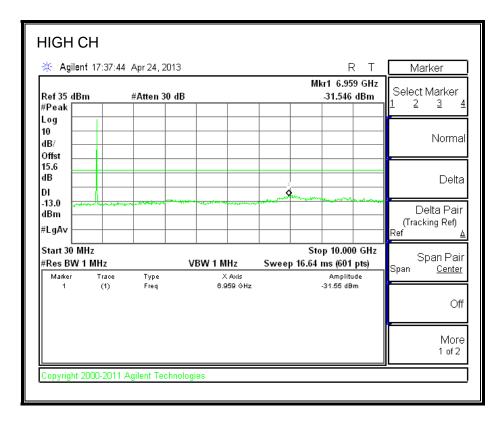
CELL BAND



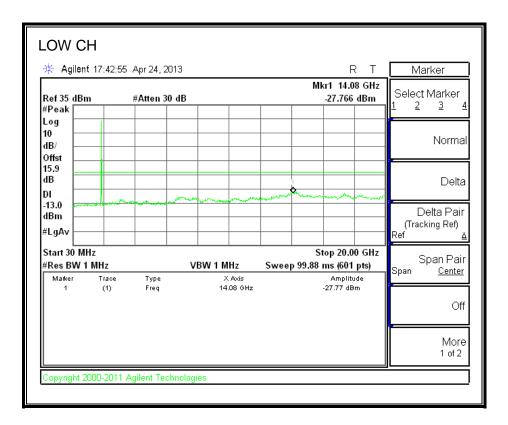


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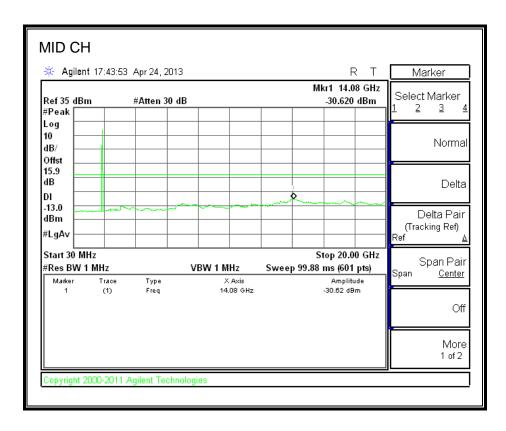
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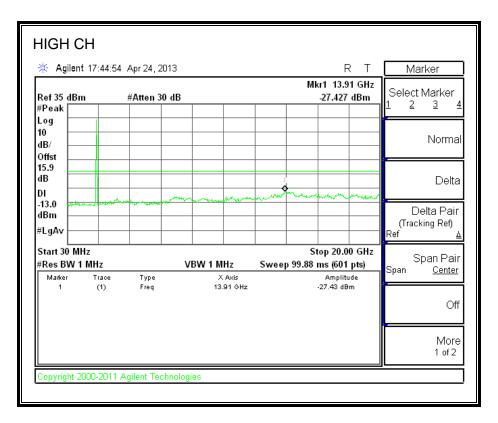


PCS BAND



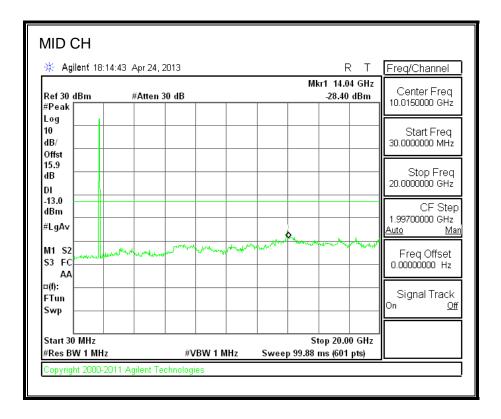
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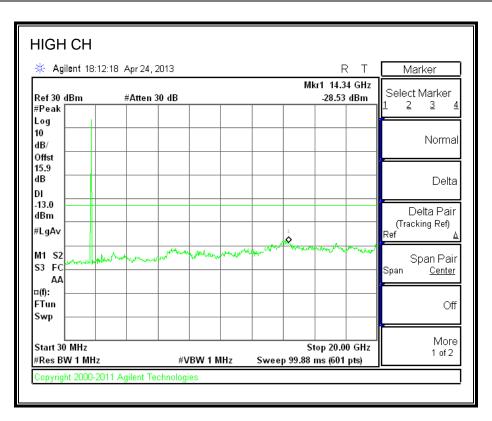


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🔆 Agile	ent 18:15:41	Apr 24, 2013			R	_	Freq/Channel
Ref30dE #Peak ∏	3m	#Atten 30 dE	3		Mkr1 14.18 -28.33 d		Center Freq 10.0150000 GHz
Log 10 dB/ Offst							Start Freq 30.000000 MHz
15.9 dB DI							Stop Freq 20.0000000 GHz
-13.0 dBm #LgA∨				1		_	CF Step 1.99700000 GHz <u>Auto Mar</u>
M1 S2 S3 FC AA	new warden	nound	man		-	N. and	Freq Offset 0.00000000 Hz
¤(f): FTun Swp —							Signal Track On <u>Off</u>
Start 30 I #Res BW			#VBW 1 MHz	Sweep 99.8	Stop 20.00 (8 ms (601 pt		



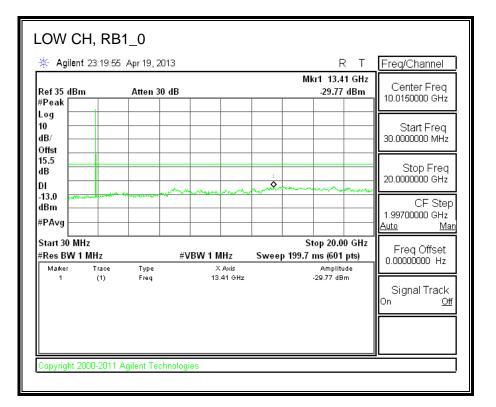
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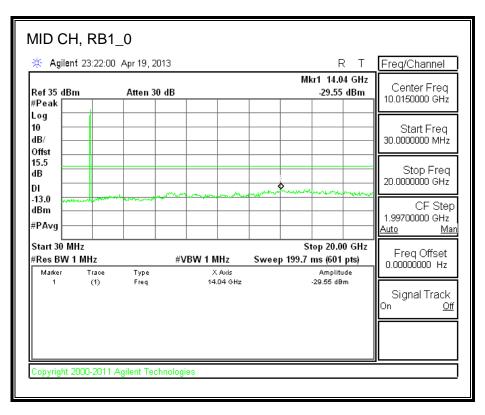


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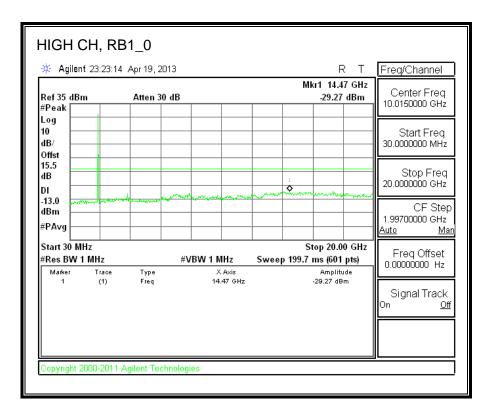
8.3.5. LTE BAND 2-5MHz BNADWIDTH

<u>QPSK</u>

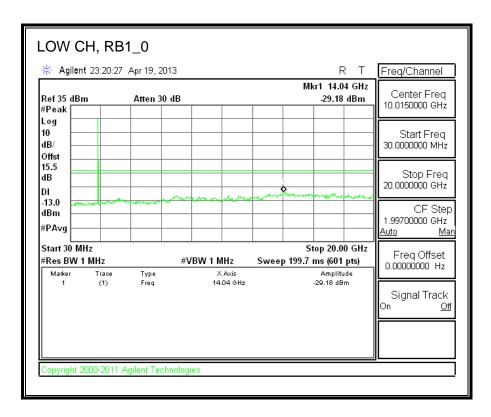




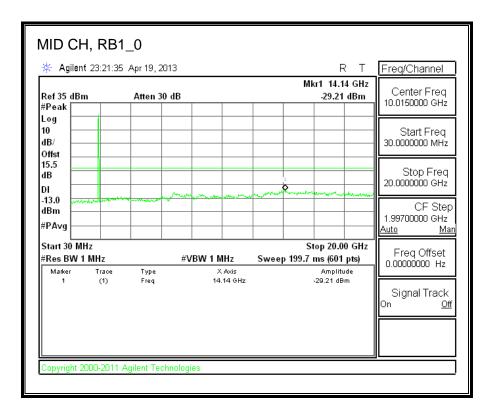
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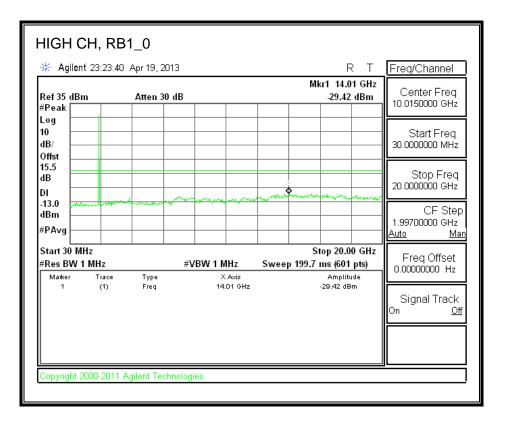


<u>16QAM</u>



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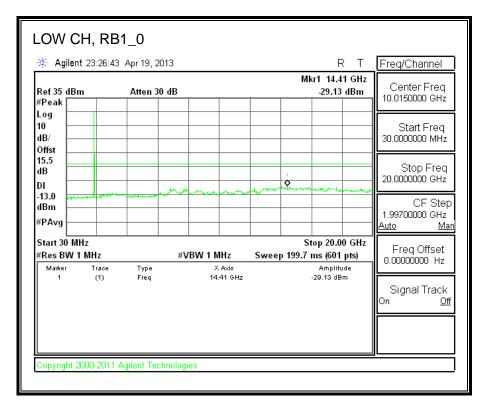


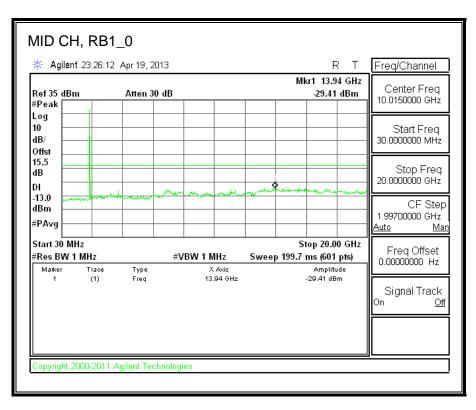


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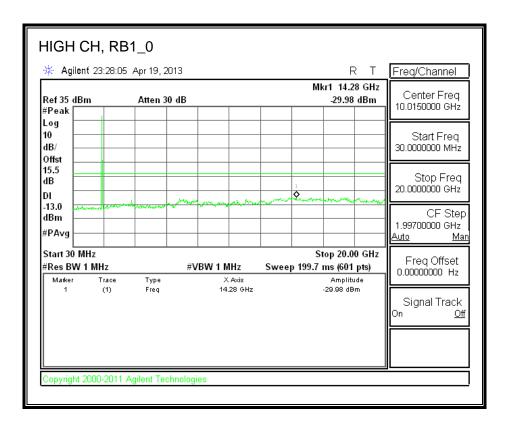
8.3.6. LTE BAND 2-10MHz BNADWIDTH

<u>QPSK</u>

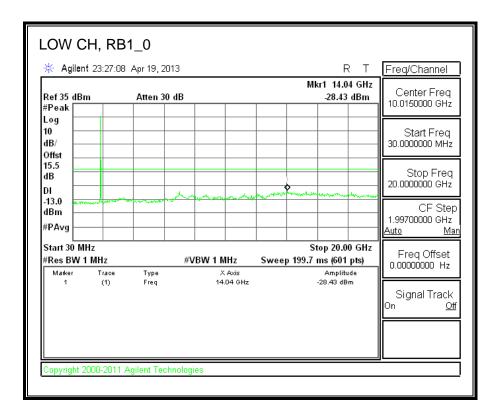




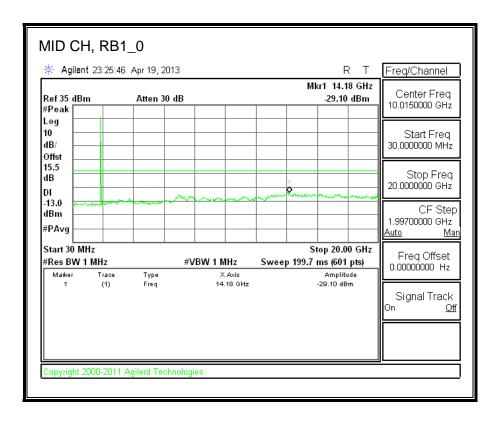
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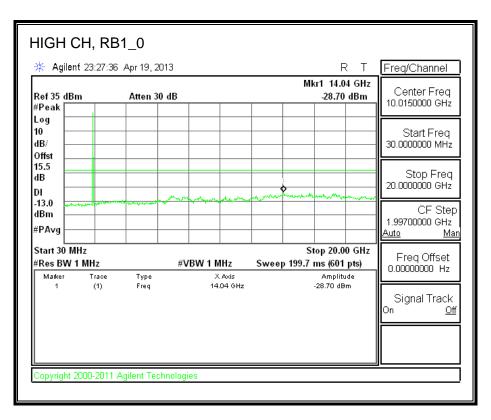


<u>16QAM</u>



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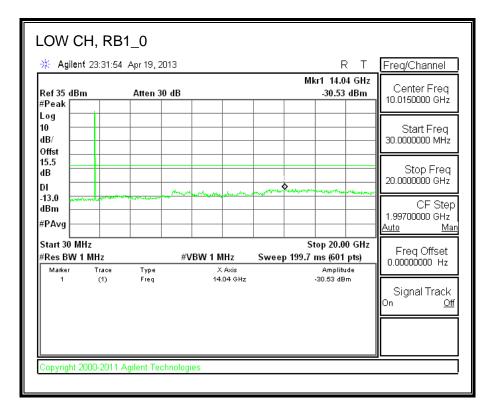


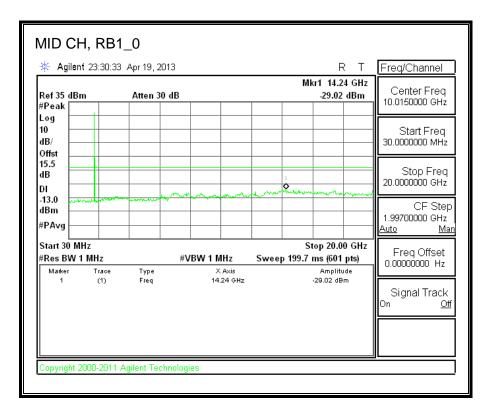


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8.3.7. LTE BAND 2-5MHz BNADWIDTH

<u>QPSK</u>

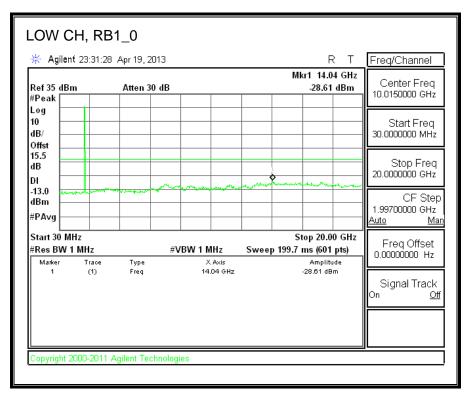




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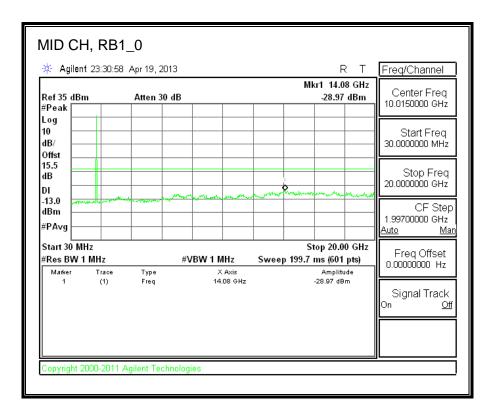
A Adirei	1 20.20.00	Apr 19, 201				м	ar1 14.0	₹ T)4 GHz	Freq/Channel
Ref35 dBı #Peak	m	Atten 30 (IB				-28.75	dBm	Center Freq 10.0150000 GHz
Log									
10									Start Freq 30.000000 MHz
Offst									
15.5 dB			_						Stop Freq
DI			min	the marker	a me	Runner		man	20.0000000 GHz
-13.0 🛹	and a local state of the second state of the s	and we have the							CF Step
#PAvg —									1.99700000 GHz Auto Ma
Start 30 M	Hz					St	top 20.0	0 GHz	
#Res BW ′			#VBW	1 MHz	Swee	p 199.7			Freq Offset 0.00000000 Hz
Marker 1	Trace (1)	Type Freq		X Axis 14.04 GHz			Ampliti -28.75 dB		
									Signal Track
									On <u>Off</u>

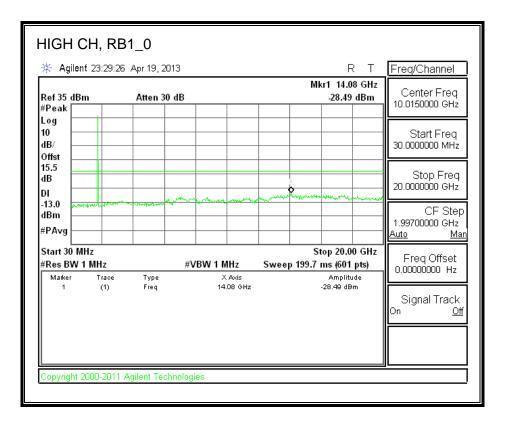
<u>16QAM</u>



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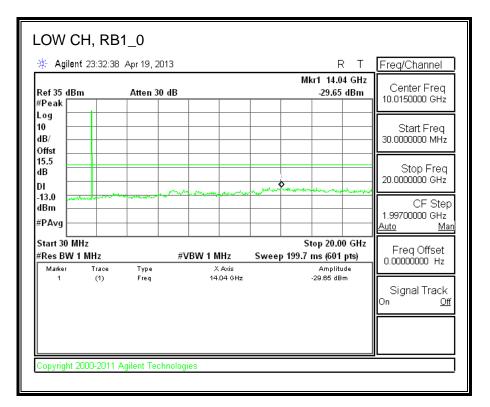


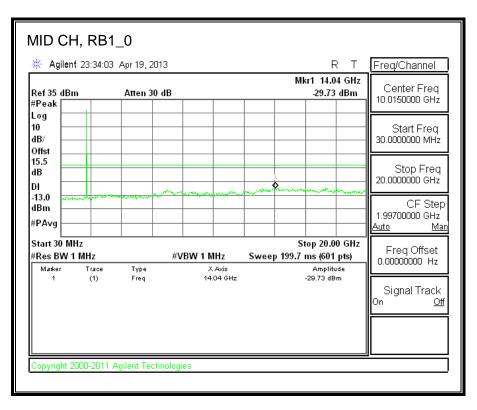


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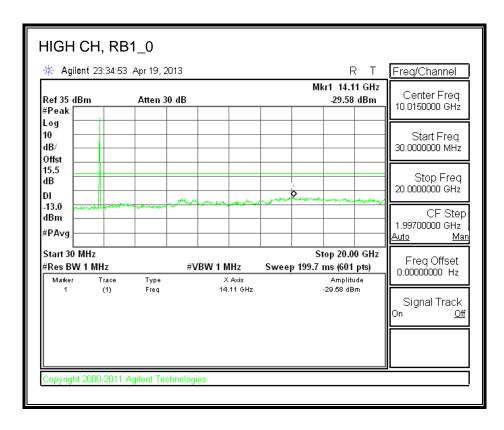
8.3.8. LTE BAND 2-10MHz BANDWIDTH

<u>QPSK</u>

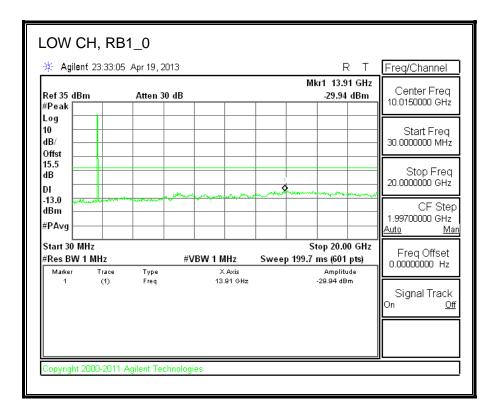




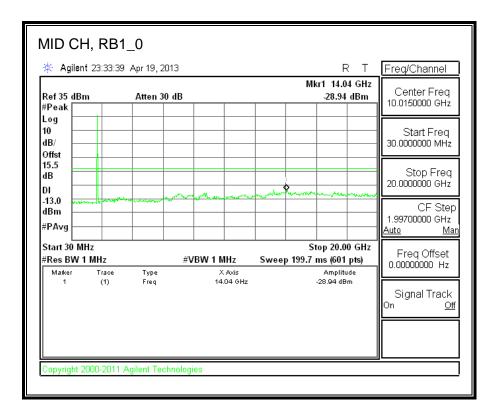
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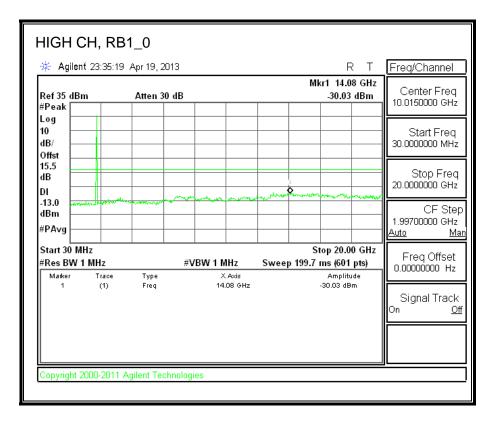


<u>16QAM</u>



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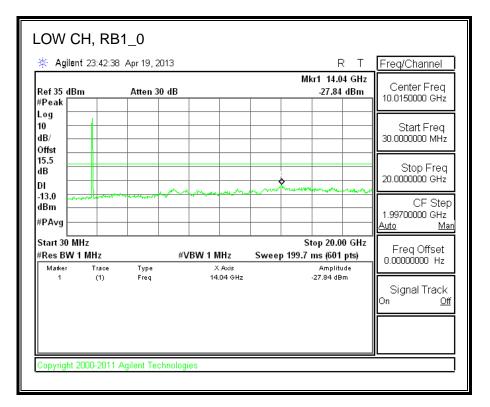


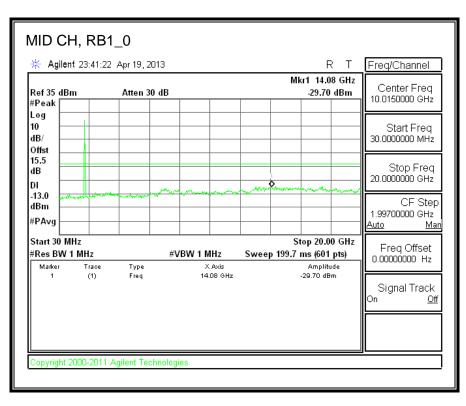


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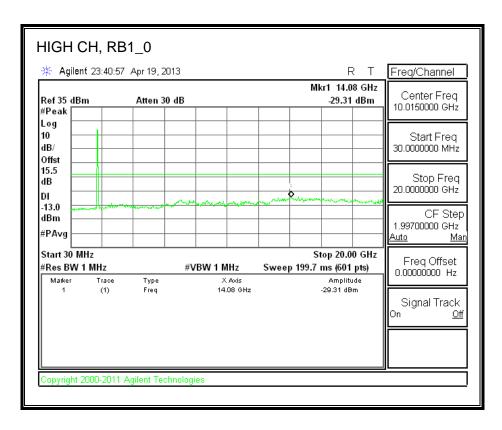
8.3.9. LTE BAND 2-15MHz BANDWIDTH

<u>QPSK</u>

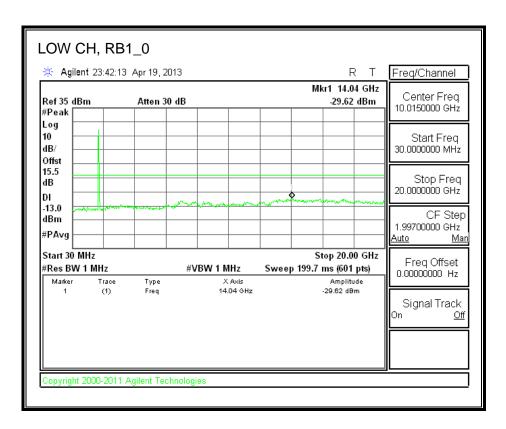




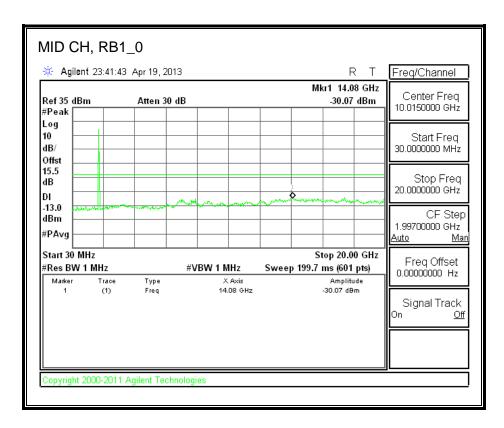
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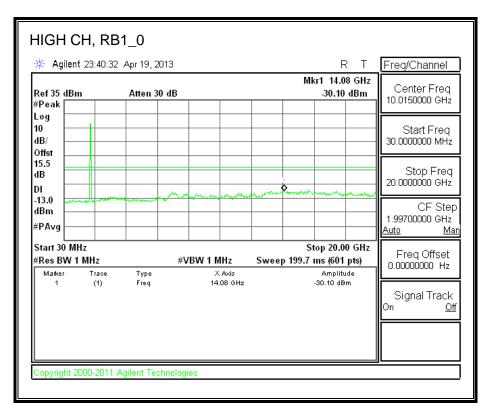


<u>16QAM</u>



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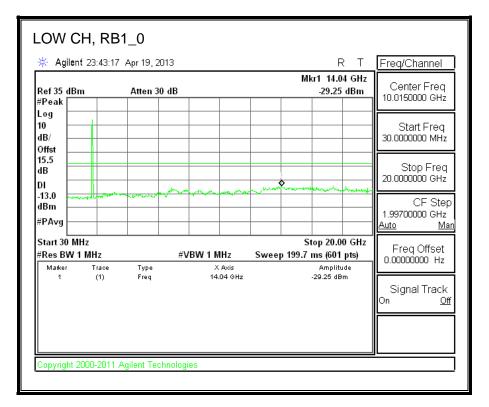


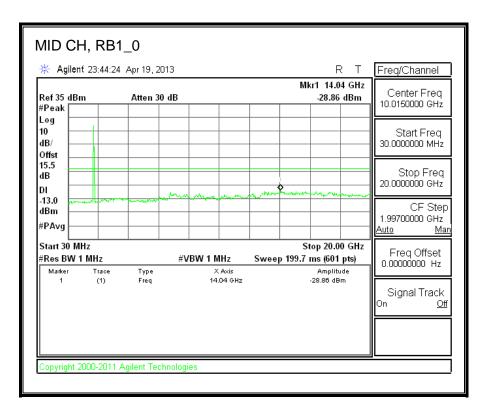


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8.3.10. LTE BAND 2-20MHz BANDWIDTH

<u>QPSK</u>

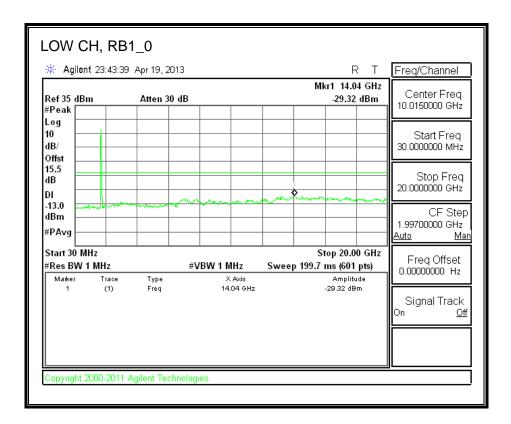




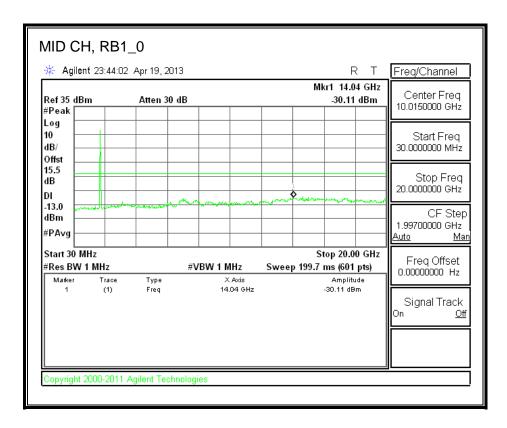
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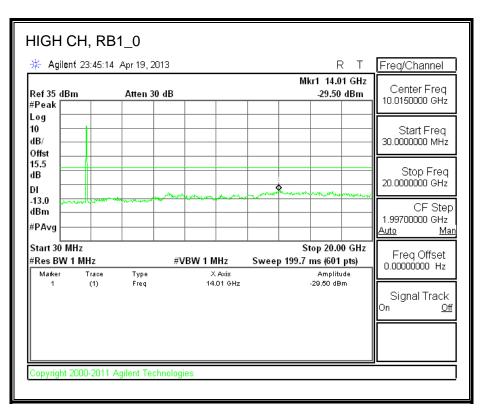
Ref 35 dB		Atten 30	л			Mk	ar1 14.0 -28.95		Center F	Frea
#Peak	<u>n</u>	Atten 30					-20.95	abm	10.0150000	
Log 10 dB/									Start F 30.0000000	
Offst 15.5 dB									Stop 20.0000000	
DI -13.0		and the second second	muna		warm	n	mmm	-	CF	: Step
#PAvg —									1.99700000 <u>Auto</u>	IGHz <u>Ma</u>
Start 30 M #Res BW 1	MHz		#VBV	V 1 MHz	Swee	St p 199.7	,	pts)	Freq 01 0.00000000	
Marker 1	Trace (1)	Type Freq		X Axis 14.01 GH:	z		Amplitu -28.95 dB		Signal T On	rack <u>Of</u>

<u> 16QAM</u>



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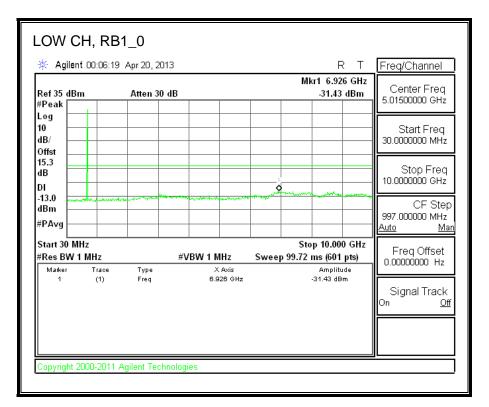


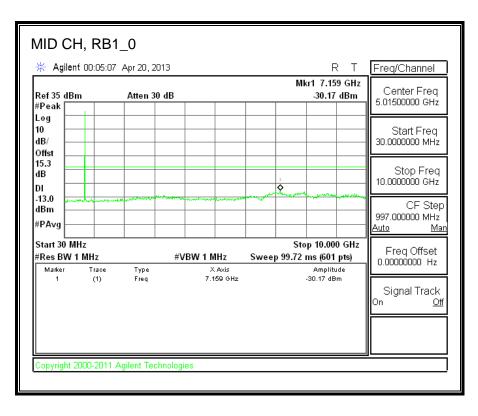


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8.3.11. LTE BAND 17-5MHz BANDWIDTH

<u>QPSK</u>

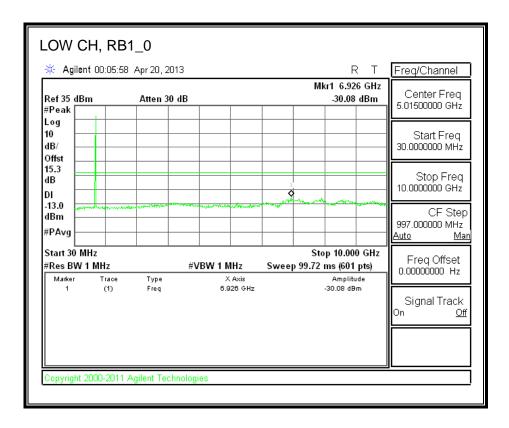




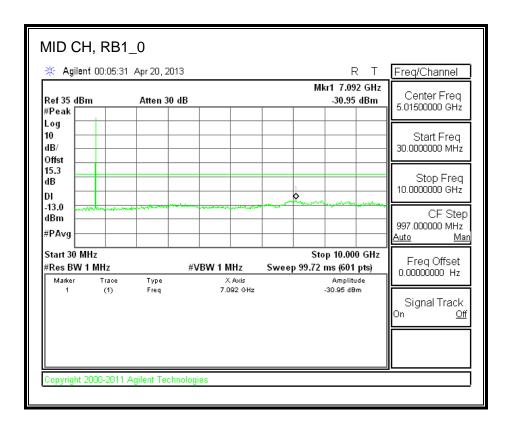
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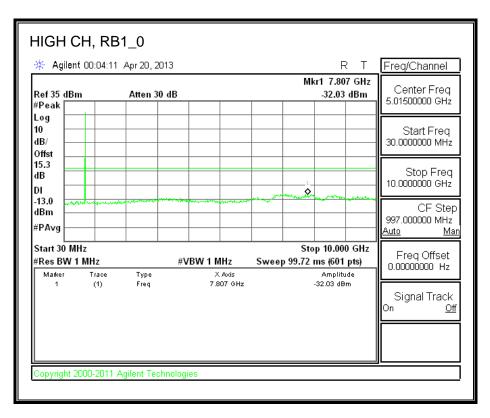
an right	Sint 00.04.0	8 Apr 20, 201				Mł	a1 7.34	र T I GHz	Freq/Channel
Ref 35 di #Databa	Bm	Atten 30 d	IB				-31.19	dBm	Center Freq 5.01500000 GHz
#Peak Log									
10 -									Start Freq
dB/									30.0000000 MHz
Offst _ 15.3									
dB						1			Stop Freq 10.0000000 GHz
DI						- 2	- me		10.0000000 9112
-13.0 🗔 dBm 🗕	enstra ma	allow hard hard hard hard hard hard hard hard		a far a sha a s					CF Step
#PAvg -				_					997.000000 MHz Auto Ma
Start 30	MU-						р 10.00		
#Res BW			#VBW 1	MHz	Swee	это р 99.72	-		Freq Offset
Marker	Trace	Type		X Axis			Amplit	Jde	0.00000000 Hz
1	(1)	Freq		7.341 GHz			-31.19 dB	'm	Signal Track
									On Of

<u>16QAM</u>



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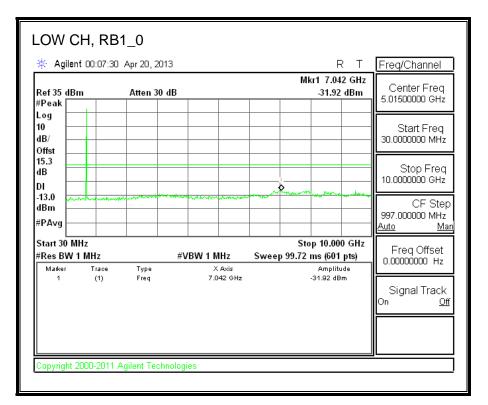


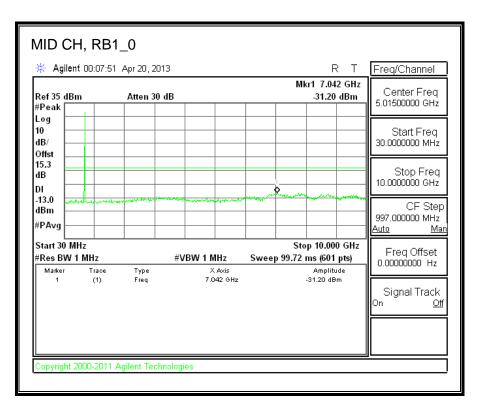


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8.3.12. LTE BAND 17-10MHz BANDWIDTH

<u>QPSK</u>

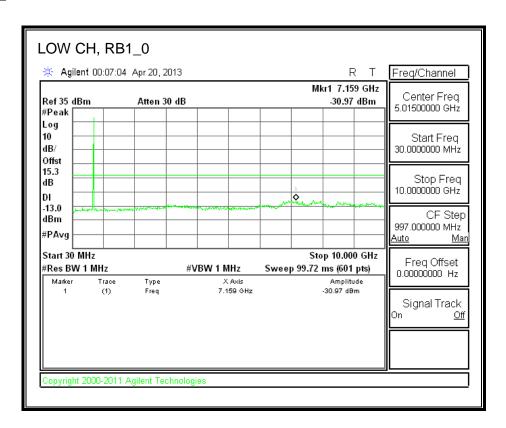




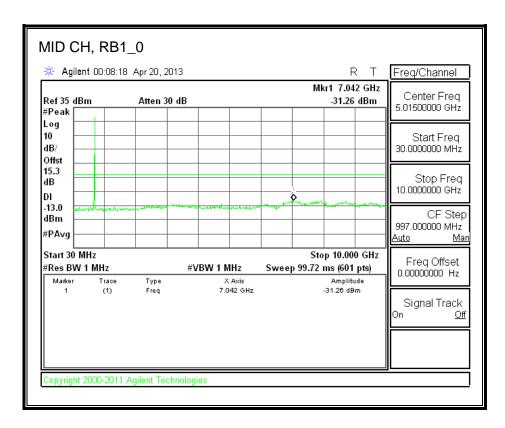
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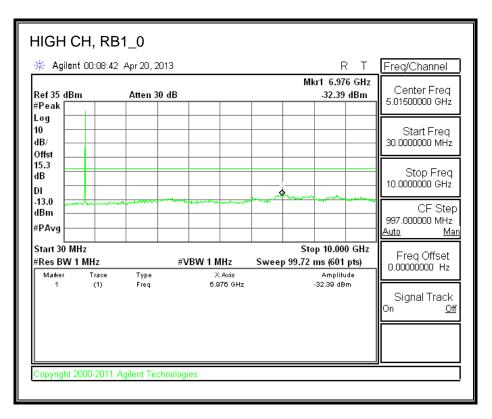
🔆 Agiler	t 00:09:04	Apr 20, 2013			RT	Freq/Channel
Ref35 dBi #Peak ⊡	m	Atten 30 dE	3	MI	kr1 6.976 GHz -31.49 dBm	Center Freq 5.01500000 GHz
Log 10 dB/ Offst						Start Freq 30.000000 MHz
15.3 dB DI					Martin and Martin	Stop Freq 10.0000000 GHz
dBm #PAvg			51-201 pr (- 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2			CF Step 997.000000 MHz <u>Auto Man</u>
Start 30 M #Res BW 1			#VBW 1 MHz	Sto Sweep 99.72	op 10.000 GHz ms (601 pts)	Freq Offset 0.00000000 Hz
Marker 1	Trace (1)	Type Freq	X Axis 6.976 GHz		Amplitude -31.49 dBm	Signal Track On <u>Off</u>

<u>16QAM</u>



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9. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54.

<u>LIMITS</u>

22.355 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

§24.235 & §27.54 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use Agilent 8960 and CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage = Normal, 3.7Vdc, Low, 3.5Vdc and High, 4.26Vdc.

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

See the following pages.

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CELL, GPRS MODULATION - MID CHANNEL

Refere	Reference Frequency: Cellular Mid Channel 836.600012MHz @ 20ºC							
	Limit: to s	tay +- 2.5 ppm =	2091.500	Hz				
DC Power Supply	Environment	Frequency Devi	ation Measureed w	ith Time Elapse				
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)				
3.70	50	836.600020	-0.010	2.5				
3.70	40	836.600014	-0.002	2.5				
3.70	30	836.600009	0.004	2.5				
3.70	20	836.600012	0	2.5				
3.70	10	836.600016	-0.005	2.5				
3.70	0	836.600011	0.001	2.5				
3.70	-10	836.600013	-0.001	2.5				
3.70	-20	836.600014	-0.002	2.5				
3.70	-30	836.600017	-0.006	2.5				
Refere	ence Frequency: Ce	Ilular Mid Channe	el 836.600012MHz @	20°C				
	Limit: to s	tay +- 2.5 ppm =	2091.500	Hz				
DC Power Supply	Environment	Frequency Devi	ation Measureed w	ith Time Elapse				
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)				
3.70	20	836.600012	0.000	2.5				
4.20	20	836.599990	0.026	2.5				
3.30	20	836.599985	0.032	2.5				
End Volt (3.1)	20	836.599974	0.045	2.5				

PCS, GPRS MODULATION - MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC						
Limit: within	the authorized blo	ock or +- 2.5 ppm =	4700.000	Hz		
Power Supply	Environment	Frequency Dev	viation Measureed wit	th Time Elapse		
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.70	50	1879.999996	-0.003	2.5		
3.70	40	1879.999997	-0.004	2.5		
3.70	30	1879.999993	-0.002	2.5		
3.70	20	1879.999990	0	2.5		
3.70	10	1879.999988	0.001	2.5		
3.70	0	1879.999980	0.005	2.5		
3.70	-10	1879.999975	0.008	2.5		
3.70	-20	1879.999976	0.007	2.5		
3.70	-30	1879.999973	0.009	2.5		
Refe	erence Frequency:	PCS Mid Channel 1	879.999990MHz @ 20º	С		
Limit: within	the authorized blo	ock or +- 2.5 ppm =	4700.000	Hz		
Power Supply	Environment	Frequency Dev	viation Measureed wit	th Time Elapse		
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.70	20	1879.999990	0	2.5		
4.20	20	1879.999982	0.004	2.5		
3.30	20	1879.999988	0.001	2.5		
End Volt(3.1)	20	1879.999986	0.002	2.5		

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Refere	Reference Frequency: Cellular Mid Channel 835.999996MHz @ 20ºC						
Limit: to stay +- 2.5 ppm = 2090.000 Hz							
DC Power Supply	Environment	Frequency Devi	ation Measureed w	ith Time Elapse			
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)			
3.70	50	835.999986	0.012	2.5			
3.70	40	835.999988	0.010	2.5			
3.70	30	835.999990	0.007	2.5			
3.70	20	835.999996	0	2.5			
3.70	10	835.999998	-0.002	2.5			
3.70	0	835.999990	0.007	2.5			
3.70	-10	835.999980	0.019	2.5			
3.70	-20	835.999988	0.010	2.5			
3.70	-30	835.999985	0.013	2.5			

CELL WCDMA - MID CHANNEL

Reference Frequency: Cellular Mid Channel 835.999996MHz @ 20ºC Limit: to stay +- 2.5 ppm = 2090.000 Hz						
DC Power Supply Environment Frequency Deviation Measureed with Time Elapse						
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.80	20	835.999996	0.000	2.5		
4.20	20	835.999990	0.007	2.5		
3.30	20	835.999988	0.010	2.5		
End Volt (3.1)	20	835.999977	0.023	2.5		

PCS, WCDMA – MIDCHANNEL

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Environment	Frequency De	viation Measureed with	n Time Elapse			
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)			
3.70	50	1879.999980	0.005	2.5			
3.70	40	1879.999985	0.003	2.5			
3.70	30	1879.999989	0.001	2.5			
3.70	20	1879.999990	0	2.5			
3.70	10	1879.999992	-0.001	2.5			
3.70	0	1879.999989	0.001	2.5			
3.70	-10	1879.999988	0.001	2.5			
3.70	-20	1879.999980	0.005	2.5			
3.70	-30	1879.999978	0.006	2.5			

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz						
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse					
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.80	20	1879.999990	0	2.5		
4.20	20	1879.999989	0.001	2.5		
3.30	20	1879.999980	0.005	2.5		
End Volt(3.1)	20	1879.999975	0.008	2.5		

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AWS WCDMA - MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.600007MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz						
Power Supply	Environment					
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.70	50	1732.600012	-0.003	2.5		
3.70	40	1732.600009	-0.001	2.5		
3.70	30	1732.600007	0.000	2.5		
3.70	20	1732.600007	0	2.5		
3.70	10	1732.600008	-0.001	2.5		
3.70	0	1732.600009	-0.001	2.5		
3.70	-10	1732.600011	-0.002	2.5		
3.70	-20	1732.600012	-0.003	2.5		
3.70	-30	1732.600010	-0.002	2.5		

Reference Frequency: PCS Mid Channel 1732.600007MHz @ 20ºC						
Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz						
Power Supply	Environment	Frequency Devi	ation Measureed w	ith Time Elapse		
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.70	20	1732.600007	0	2.5		
4.26	20	1732.600004	0.002	2.5		
3.30	20	1732.600002	0.003			
End Volt (3.1)	20	1732.599990	0.010	2.5		

LTE BAND 2 - MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999987MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz						
Power Supply	Environment	Frequency Devia	tion Measureed	with Time Elapse		
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.80	50	1879.999972	0.008	2.5		
3.80	40	1879.999984	0.002	2.5		
3.80	30	1879.999975	0.006	2.5		
3.80	20	1879.999987	0	2.5		
3.80	10	1879.999986	0.001	2.5		
3.80	0	1879.999976	0.006	2.5		
3.80	-10	1879.999976	0.006	2.5		
3.80	-20	1879.999985	0.001	2.5		
3.80	-30	1879.999974	0.007	2.5		

Reference Frequency: PCS Mid Channel 1879.999987MHz @ 20°C						
Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz						
Power Supply	Environment	Environment Frequency Deviation Measureed with Time Elapse				
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.80	20	1879.999987	0	2.5		
4.37	20	1879.999976	0.006	2.5		
3.23	20	1879.999976	0.006	2.5		

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LTE BAND 4 – MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.599985MHz @ 20°C				
	thin the authorized bl			Hz
Power Supply	Environment	Frequency Dev	viation Measureed wit	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500012	57.701	2.5
3.80	40	1732.500011	57.702	2.5
3.80	30	1732.500014	57.700	2.5
3.80	20	1732.599985	0	2.5
3.80	10	1732.500010	57.702	2.5
3.80	0	1732.500011	57.702	2.5
3.80	-10	1732.500013	57.701	2.5
3.80	-20	1732.500011	57.702	2.5
3.80	-30	1732.500012	57.701	2.5

Reference Frequency: PCS Mid Channel 1732.599985MHz @ 20°C				
Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz				
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse			
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.599985	0	2.5
4.37	20	1732.499990	57.714	2.5
3.23	20	1732.499989	57.714	2.5

LTE BAND 17 - MID CHANNEL

Reference Frequency: Cellular Mid Channel 710.000014MHz @ 20ºC Limit: to stay +- 2.5 ppm = 1775.000 Hz					
DC Power Supply	Environment		Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)	
3.80	50	709.999991	0.033	2.5	
3.80	40	709.999992	0.031	2.5	
3.80	30	710.000008	0.009	2.5	
3.80	20	710.000014	0	2.5	
3.80	10	709.999991	0.032	2.5	
3.80	0	709.999992	0.031	2.5	
3.80	-10	710.000007	0.010	2.5	
3.80	-20	709.999992	0.031	2.5	
3.80	-30	710.000009	0.007	2.5	

Reference Frequency: Cellular Mid Channel 710.000014MHz @ 20°C				
Limit: to stay +- 2.5 ppm = 1775.000 Hz				
DC Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	710.000014	0.000	2.5
4.37	20	709.999991	0.032	2.5
3.23	20	709.999993	0.030	2.5

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10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50(d) (2)

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50 (c)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

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			ERP	
Mode	Channel	f (MHz)	dBm	mW
	128	824.20	27.01	502.34
GPRS	190	836.60	28.10	645.65
	251	848.80	28.82	762.08
	128	824.20	24.60	288.40
EGPRS	190	836.60	24.81	302.69
	251	848.80	25.44	349.95

			EIRP	
Mode	Channel	f (MHz)	dBm	mW
	512	1850.20	28.75	749.89
GPRS	661	1880.00	29.35	860.99
	810	1909.80	28.11	647.14
	512	1850.20	26.63	460.26
EGPRS	661	1880.00	27.06	508.16
	810	1909.80	25.73	374.11

			ERP	
Mode	Channel	f (MHz)	dBm	mW
UMTS850,	4357	826.40	21.64	145.88
REL 99	4405	836.00	20.38	109.14
KEL 99	4455	846.00	22.53	179.06
UMTS850,	4357	826.40	22.02	159.22
HSDPA	4405	836.00	21.42	138.68
TISDEA	4455	846.00	23.72	235.50

			EIRP	
Mode	Channel	f (MHz)	dBm	mW
UMTS1900,	9662	1852.40	25.87	386.37
REL 99	9800	1880.00	25.81	381.07
REL 99	9938	1907.60	24.55	285.10
UMTS1900,	9662	1852.40	26.72	469.89
HSDPA	9800	1880.00	26.46	442.59
TISDEA	9938	1907.60	25.50	354.81

			EIRP		
Mode	Channel	f (MHz)	dBm	mW	
UMTS1700,	1312	1712.40	26.55	451.86	
REL 99	1413	1732.60	26.39	435.51	
REL 99	1513	1752.60	24.63	290.40	
UMTS1700,	1312	1712.40	27.36	544.50	
HSDPA	1413	1732.60	27.20	524.81	
TISDEA	1513	1752.60	25.44	349.95	

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			EI	RP
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0 MHZ BAND		1852.50	28.07	641.21
QPSK		1880.00	26.51	447.71
QI OIN	25/0	1907.50	27.85	609.54
5.0 MHZ BAND	25/0	1852.50	27.17	521.19
16QAM		1880.00	25.71	372.39
TOQAN		1907.50	26.95	495.45
10.0 MHZ BAND		1855.00	29.07	807.24
QPSK		1880.00	27.91	618.02
QFON	50/0	1905.00	28.25	668.34
10.0 MHZ BAND	50/0	1855.00	28.67	736.21
16QAM		1880.00	27.31	538.27
TOQAM		1905.00	27.45	555.90

EIRP LTE BAND 4

			EI	RP
Mode	RB/RB SIZE	f (MHz)	dBm	mW
		1712.50	26.77	475.34
5.0 MHZ BAND QPSK		1732.50	27.61	576.77
QFSK	25/0	1752.50	26.15	412.10
5.0 MHZ BAND	23/0	1712.50	26.47	443.61
16QAM		1732.50	26.91	490.91
TOQAIVI		1752.50	25.65	367.28
10.0 MHZ BAND		1715.00	27.57	571.48
QPSK		1732.50	28.01	632.41
QFSK	50/0	1750.00	27.55	568.85
10.0 MHZ BAND	50/0	1715.00	26.87	486.41
16QAM		1732.50	27.01	502.34
TOQAIVI		1750.00	26.45	441.57
15.0 MHZ BAND		1717.50	27.97	626.61
QPSK		1732.50	28.61	726.11
QFON	75/0	1747.50	28.65	732.82
15.0 MHZ BAND	75/0	1717.50	26.97	497.74
16QAM		1732.50	27.81	603.95
TOQAIVI		1747.50	27.85	609.54
20.0 MHZ BAND		1720.00	27.47	558.47
		1732.50	27.61	576.77
QF3N	100/0	1745.00	27.25	530.88
20.0 MHZ BAND	100/0	1720.00	26.47	443.61
20.0 MHZ BAND 16QAM		1732.50	27.11	514.04
IUQAIVI		1745.00	26.85	484.17

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ERP LTE BAND 17

			El	RP
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0 MHZ BAND		706.50	18.78	75.51
QPSK		710.00	20.26	106.17
QFON	25/0	713.50	20.36	108.64
5.0 MHZ BAND	25/0	706.50	16.61	45.81
16QAM		710.00	18.99	79.25
TOQAN		713.50	19.07	80.72
10.0 MHZ BAND		709.00	19.86	96.83
QPSK		710.00	20.14	103.28
QFSK	50/0	711.00	21.02	126.47
10.0 MHZ BAND 16QAM	30/0	709.00	18.75	74.99
		710.00	19.23	83.75
IUQAIVI		711.00	20.10	102.33

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10.1.1. GSM-GPRS

CELL BAND (ERP)

Company		LG						
Project #:		13U14980						
Date:		04/20/13						
Test Engi	neer:	Mengistu Mek	turia					
Configura		EUT Only						
Aode:		Tx. GPRS Mo	de Cell Band					
	g: Sunol T243, on: Dipole S/N			e (SN # 20894700		-	.,	
Substituti	on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	4ft SMA Cable	e (SN # 20894700 Antenna Gain	03) Wareh ERP	Limit	Margin	Notes
Substituti	on: Dipole S/N	l: 00022117,	4ft SMA Cable	e (SN # 20894700)3) Wareh	iouse.		Notes
Substituti f MHz	on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	4ft SMA Cable	e (SN # 20894700 Antenna Gain	03) Wareh ERP	Limit	Margin	Notes
f MHz Low Ch	on: Dipole S/N SG reading (dBm)	I: 00022117, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
f MHz Low Ch 824.70 824.70	on: Dipole S/N SG reading (dBm) 27.61	I: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 27.01	Limit (dBm)	Margin (dB) -11.4	Notes
f MHz Low Ch 824.70 824.70 Mid Ch	on: Dipole S/N SG reading (dBm) 27.61 12.57	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	03) Wareh ERP (dBm) 27.01 11.97	Limit (dBm) 38.5 38.5	Margin (dB) -11.4 -26.5	Notes
f MHz Low Ch 824.70 824.70	on: Dipole S/N SG reading (dBm) 27.61	I: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 27.01	Limit (dBm)	Margin (dB) -11.4	Notes
f MHz Low Ch 824.70 824.70 Mid Ch 836.52	on: Dipole S/N SG reading (dBm) 27.61 12.57 28.70	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	03) Wareh ERP (dBm) 27.01 11.97 28.10	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -11.4 -26.5 -10.3	Notes
f MHz Low Ch 824.70 824.70 Mid Ch 836.52 836.52 High Ch	on: Dipole S/N SG reading (dBm) 27.61 12.57 28.70 16.43	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.6 0.6 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	03) Wareh ERP (dBm) 27.01 11.97 28.10 15.83	Limit (dBm) 38.5 38.5 38.5 38.5 38.5	Margin (dB) -11.4 -26.5 -10.3 -22.6	Notes
f MHz Low Ch 824.70 824.70 Mid Ch 836.52 836.52	on: Dipole S/N SG reading (dBm) 27.61 12.57 28.70	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	03) Wareh ERP (dBm) 27.01 11.97 28.10	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -11.4 -26.5 -10.3	Notes

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PCS BAND (EIRP)

Company	e	LG						
Project #		13U14980						
Date:		04/20/13						
Test Eng		04/20/15 Mengistu Meku						
Configur		EUT Only	ild.					
Mode:		Tx. GPRS Mod	DOC Band					
Test Equ	ipment: g: Horn T59, an	d Chamber B	SMA Cables					
				(244639001) Wareho	use			
Jubstitut								
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
f GHz	and a second sec		100000000000000000000000000000000000000			1		Notes
f GHz Low Ch	(dBm) 21.0	(H/V) V	(dB) 0.85		(dBm) 28.75	(dBm) 33.0	(dB) -4.3	Notes
f GHz Low Ch 1.850	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.850 1.850	(dBm) 21.0	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.75	(dBm) 33.0	(dB) -4.3	Notes
f GHz Low Ch 1.850 1.850 Mid Ch	(dBm) 21.0 15.2	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 28.75 22.77	(dBm) 33.0 33.0	(dB) 4.3 -10.2	Notes
f GHz Low Ch 1.850 1.850 Mid Ch 1.880	(dBm) 21.0 15.2 21.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 28.75 22.77 29.35	(dBm) 33.0 33.0 33.0 33.0	(dB) 4.3 -10.2 -3.7	Notes
f GHz Low Ch 1.850 1.850 Mid Ch 1.880	(dBm) 21.0 15.2	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 28.75 22.77	(dBm) 33.0 33.0	(dB) 4.3 -10.2	Notes
f GHz Low Ch 1.850 1.850 Mid Ch 1.880 1.880 High Ch	(dBm) 21.0 15.2 21.7 14.9	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 28.75 22.77 29.35 22.41	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) 4.3 -10.2 -3.7	Notes
f GHz Low Ch 1.850 1.850 Mid Ch	(dBm) 21.0 15.2 21.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 28.75 22.77 29.35	(dBm) 33.0 33.0 33.0 33.0	(dB) 4.3 -10.2 -3.7	Notes

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10.1.2. GSM-EGPRS

CELL BAND (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company:	LG
Project #:	13U14980
Date:	04/20/13
Test Engineer:	Mengistu Mekuria
Configuration:	EUT Only
Mode:	Tx, EGPRS Mode Cell Band

Test Equipment:

Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
_ow Ch								
824.70	25.20	V	0.6	0.0	24.60	38.5	-13.8	
824.70	10.05	Н	0.6	0.0	9.45	38.5	-29.0	
Mid Ch	•							
848.31	25.41	V	0.6	0.0	24.81	38.5	-13.6	
848.31	12.06	Н	0.6	0.0	11.46	38.5	-27.0	
ligh Ch	•							
848.31	26.04	V	0.6	0.0	25.44	38.5	-13.0	
848.31	12.13	Н	0.6	0.0	11.53	38.5	-26.9	

PCS BAND (EIRP)

				ental Measuremen Services Chamber				
Company	:	LG						
Project #		13U14980						
Date:		04/20/13						
Test Eng	ineer:	Mengistu Meku	ria					
Configura	ation:	EUT Only						
Mode:		Tx, EGPRS Mo	de PCS Band					
	g: Horn T59, an			244639001) Wareho	use			
4								
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.850	(dBm) 18.9	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.63	(dBm) 33.0	(dB) -6.4	Notes
GHz Low Ch 1.850	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.850 1.850	(dBm) 18.9	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.63	(dBm) 33.0	(dB) -6.4	Notes
1.	(dBm) 18.9	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.63	(dBm) 33.0	(dB) -6.4	Notes
GHz Low Ch 1.850 1.850 Mid 1.880	(dBm) 18.9 13.4	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.63 21.04	(dBm) 33.0 33.0	(dB) -6.4 -12.0	Notes
GHz Low Ch 1.850 1.850 Mid 1.880 1.880	(dBm) 18.9 13.4 19.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.63 21.04 27.06	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.4 -12.0 -5.9	Notes
GHz Low Ch 1.850 1.850 Mid 1.880 1.880 High Ch	(dBm) 18.9 13.4 19.5 13.3	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 26.63 21.04 27.06 20.77	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.4 -12.0 -5.9 -12.2	Notes
GHz Low Ch 1.850 1.850 Mid	(dBm) 18.9 13.4 19.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.63 21.04 27.06	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.4 -12.0 -5.9	Notes

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10.1.3. UMTS-REL 99

CELL BAND (ERP)

		-		titution Measur on Services Cha				
ompany		LG						
roject #:		13U14980						
ate:		05/19/13						
est Engi	neer:	Mengistu Mek	turia					
onfigura	tion:	EUT only						
lode:		TX, 850MHz E	AND WCDMA F	lel 99				
eceiving ubstituti f	: Sunol T243, on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	4ft SMA Cable	able (Setup this e (SN # 20894700 Antenna Gain	3) Wareh	ouse. Limit	Margin	Notes
ubstituti f MHz	: Sunol T243, on: Dipole S/N	l: 00022117,	4ft SMA Cable	e (SN # 20894700	3) Wareh	ouse.		Notes
eceiving ubstituti f <u>MHz</u> Low Ch	: Sunol T243, on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	3) Wareh ERP (dBm)	ouse. Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f MHz	: Sunol T243, on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	4ft SMA Cable	e (SN # 20894700 Antenna Gain	3) Wareh	ouse. Limit	Margin	Notes
eceiving ubstituti f MHz Low Ch 826.40 826.40	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.14	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 21.64	Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f MHz Low Ch 826.40	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.14	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 21.64	Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f <u>MHz</u> Low Ch 826.40 826.40 Mid Ch	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.14 7.57	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	3) Wareh ERP (dBm) 21.64 7.07	Couse. Limit (dBm) 38.5 38.5	Margin (dB) -16.8 -31.4	Notes
eceiving ubstituti f MHz Low Ch 826.40 826.40 Mid Ch 836.00 836.00	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.14 7.57 20.88	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 21.64 7.07 20.38	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -16.8 -31.4 -18.1	Notes
eceiving ubstituti f <u>MHz</u> Low Ch 826.40 826.40 Mid Ch 836.00	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.14 7.57 20.88	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 21.64 7.07 20.38	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -16.8 -31.4 -18.1	Notes

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PCS BAND (EIRP)

				ental Measuremen Services Chamber				
Company	5 A	LG						
Project #		13U14980						
Date:		05/19/13						
Test Eng	ineer:	Mengistu Meku	ria					
Configura		EUT only						
Mode:			VCDMA Rel 99					
Receivin Substitut	g: Horn T59, and ion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho		1 Enable	Della	Notos
	g: Horn T59, and			(244639001) Wareho Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Receivin Substitut f	g: Horn T59, and ion: Horn T217 SG reading	Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP		and the second se	Notes
Receivin Substitut f GHz	g: Horn T59, and ion: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Receivin Substitut f GHz 1.852	g: Horn T59, and ion: Horn T217 SG reading (dBm) 18,1	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 25.87	(dBm) 33.0	(dB)	Notes
Receivin Substitut GHz 1.852	g: Horn T59, ani ion: Horn T217 SG reading (dBm) 18.1 7.8	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 25.87 15.42	(dBm) 33.0 33.0	(dB) -7.1 -17.6	Notes
Receiving Substitut GHz 1.852 1.852 1.880	g: Horn T59, ani ion: Horn T217 SG reading (dBm) 18.1 7.8 18.2	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 25.87 15.42 25.81	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.1 -17.6 -7.2	Notes

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AWS BAND (EIRP)

				ental Measuremen Services Chamber				
Company		LG						
Project #		13U14980						
Date:		05/19/13						
Test Eng		Mengistu Meku	ria					
Configur		EUT only	480					
Mode:		TX, AWS 1700.	Rel 99					
ecelvin	g: Horn T59, an			(244639001) Wareho	use			
	g: Horn T59, an			(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Receivin Substitut f GHz	g: Horn T59, an ion: Horn T217 SG reading (dBm)	Substitution	4ft SMA Cable Cable Loss (dB)	Antenna Gain	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz	g: Horn T59, an ion: Horn T217 SG reading	Substitution Ant. Pol. (H/V)	4ft SMA Cable Cable Loss	Antenna Gain (dBi)	EIRP	1.0		Notes
f GHz 1.712	g: Horn T59, an ion: Horn T217 SG reading (dBm) 18.8 11.6	Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 26.55 19.21	(dBm) 33.0 33.0	(dB) -6.5 -13.8	Notes
Receivin Substitut GHz 1.712 1.712	g: Horn T59, an: ion: Horn T217 SG reading (dBm) 18.8 11.6 18.8	Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 26.55 19.21 26.39	(dBm) 33.0 33.0 33.0	(dB) -6.5 -13.8 -6.6	Notes
Receivin Substitut GHz 1.712 1.712	g: Horn T59, an ion: Horn T217 SG reading (dBm) 18.8 11.6	Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 26.55 19.21	(dBm) 33.0 33.0	(dB) -6.5 -13.8	Notes
Receivin Substitut GHz 1.712	g: Horn T59, an: ion: Horn T217 SG reading (dBm) 18.8 11.6 18.8	Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 26.55 19.21 26.39	(dBm) 33.0 33.0 33.0	(dB) -6.5 -13.8 -6.6	Notes

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10.1.4. UMTS-HSDPA

CELL BAND (ERP)

		-		titution Measur n Services Cha				
ompany		LG						
roject #:		13U14980						
ate:		05/19/13						
est Engi	neer:	Mengistu Mek	turia					
onfigura		EUT only						
ode:		-	AND WCDMA H	ISDPA				
ubstituti	: Sunol T243, on: Dipole S/N	I: 00022117,	4ft SMA Cable	able (Setup this e (SN # 20894700 Antenna Gain	3) Wareh	iouse.		Notes
eceiving ubstituti f MHz	: Sunol T243,	I: 00022117,	4ft SMA Cable	· ·		Limit	IT) Margin (dB)	Notes
eceiving ubstituti f <u>MHz</u> Low Ch	j: Sunol T243, on: Dipole S/N SG reading (dBm)	I: 00022117, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	3) Wareh ERP (dBm)	louse. Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f MHz Low Ch 826.40	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.52	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	3) Wareh ERP (dBm) 22.02	Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f <u>MHz</u> Low Ch	j: Sunol T243, on: Dipole S/N SG reading (dBm)	I: 00022117, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	3) Wareh ERP (dBm)	louse. Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f MHz Low Ch 826.40	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.52	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	3) Wareh ERP (dBm) 22.02	Limit (dBm)	Margin (dB) -16.4 -31.0	Notes
eceiving ubstituti f <u>MHz</u> Low Ch 826.40 826.40 Mid Ch 836.00	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.52 7.96 21.92	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 22.02 7.46 21.42	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -16.4 -31.0 -17.0	Notes
eceiving ubstituti f MHz Low Ch 826.40 826.40 Mid Ch	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.52 7.96	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	3) Wareh ERP (dBm) 22.02 7.46	Limit (dBm) 38.5 38.5	Margin (dB) -16.4 -31.0	Notes
eceiving ubstituti f MHz Low Ch 826.40 826.40 Mid Ch 836.00 836.00	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.52 7.96 21.92	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 22.02 7.46 21.42	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -16.4 -31.0 -17.0	Notes
eceiving ubstituti f <u>MHz</u> Low Ch 826.40 826.40 Mid Ch 836.00	: Sunol T243, on: Dipole S/N SG reading (dBm) 22.52 7.96 21.92	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 22.02 7.46 21.42	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -16.4 -31.0 -17.0	Notes

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PCS BAND (EIRP)

	2			ental Measuremen Services Chamber				
Company	e 0	LG						
Project #		13U14980						
Date:		05/19/13						
Test Eng	ineer.	Mengistu Meku	ria					
Configura	ation:	EUT only						
Mode:	1	TX PCS Band V	VCDMA_HSDPA					
Receivin Substitut	g: Horn T59, and ion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	200000	1		
	g: Horn T59, and			(244639001) Wareho Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Receivin Substitut f	g: Horn T59, and ion: Horn T217 SG reading	Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP			Notes
Receivin Substitut f GHz	g: Horn T59, and ion: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Receivin Substitut f GHz 1.852	g: Horn T59, and ion: Horn T217 SG reading (dBm) 19.0	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 26,72	(dBm) 33.0	(dB) .6.3	Notes
Receivin Substitut GHz 1.852 1.852	g: Horn T59, and ion: Horn T217 SG reading (dBm) 19.0 11.6	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 26.72 19.20	(dBm) 33.0 33.0	(dB) .6.3 .13.8	Notes
Receivin Substitut f GHz 1.852 1.852 1.880	g: Horn T59, and ion: Horn T217 SG reading (dBm) 19.0 11.6 18.9	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 26.72 19.20 26.46	(dBm) 33.0 33.0 33.0	(dB) .6.3 .13.8 .6.5	Notes

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				ental Measuremen Services Chamber				
Company	e 3	LG						
Project #		13U14980						
Date:	N	05/19/13						
Test Eng	ineer:	Mengistu Meku	na					
Configur		EUT only with A						
Mode:		TX. AWS 1700.	100 M 100					
Test Equ Receivin Substitut	ipment: g: Horn T59, and ion: Horn T217	d Chamber B Substitution,	4ft SMA Cable	(244639001) Wareho			0.0	Make
<u>Test Equ</u> Receivin	ipment: g: Horn T59, and	d Chamber B		(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Deita (dB)	Notes
Test Equ Receivin Substitut f	ipment: g: Horn T59, and ion: Horn T217 SG reading	d Chamber B Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP			Notes
Test Equ Receivin Substitut f GHz	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm)	d Chamber B Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Test Equ Receivin Substitut f GHz 1.712	ipment: g: Horn T59, and ion: Horn T217 SG reading (dBm) 19.6	d Chamber B Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 27.36	(dBm) 33.0	(dB) .5.6	Notes
Test Equ Receivin Substitut f GHz 1.712 1.712	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 19.6 12.3	d Chamber B Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 27.36 19.92	(dBm) 33.0 33.0	(dB) -5.6 -13.1	Notes
Test Equ Receivin Substitut GHz 1.712 1.712 1.733	ipment: g: Horn T59, and ion: Horn T217 SG reading (dBm) 19.6 12.3 19.6	d Chamber B Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 27.36 19.92 27.20	(dBm) 33.0 33.0 33.0	(dB) -5.6 -13.1 -5.8	Notes

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10.1.5. LTE BAND 2-5MHz BANDWIDTH

QPSK (EIRP)

Company	c) (3)	LG						
Project #		13U14980						
Date:	23	04/20/13						
Test Eng	ineer:	Mona Hua						
Configur		EUT Only						
Mode:		LTE band 2. 5M	IHz BW					
	9	QPSK, Peak, R	B25-0					
Test Equ	ipment:							
Receivin	g: Horn T59, an	d Chamber B	SMA Cables					
Substitut	ion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	use			
-			the second second			100 100		
f	SG reading		Cable Loss		EIRP	Limit	Delta	Notes
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.853	(dBm) 20.3	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.07	(dBm) 33.0	(dB) 4.9	Notes
GHz Low Ch 1.853	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.853 1.853	(dBm) 20.3	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.07	(dBm) 33.0	(dB) 4.9	Notes
GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 20.3 14.1	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 28.07 21.72	(dBm) 33.0 33.0	(dB) -4.9 -11.3	Notes
	(dBm) 20.3	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.07	(dBm) 33.0	(dB) 4.9	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.880 1.880	(dBm) 20.3 14.1 18.9	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 28.07 21.72 26.51	(dBm) 33.0 33.0 33.0 33.0	(dB) 4.9 -11.3 -6.5	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.880 1.880 High Ch	(dBm) 20.3 14.1 18.9 13.8	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 28.07 21.72 26.51 21.31	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) 4.9 -11.3 -6.5 -11.7	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.880	(dBm) 20.3 14.1 18.9	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 28.07 21.72 26.51	(dBm) 33.0 33.0 33.0 33.0	(dB) 4.9 -11.3 -6.5	Notes

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16QAM (EIRP)

Company		LG						
Project #		13U14980						
Date:		04/20/13						
Test Eng		Mona Hua						
Configur	ation:	EUT Only						
Mode:		LTE band 2, 5M	IHz BW					
		16QAM, Peak,	RB25-0					
lest Equ	ipment:							
Receivin	g: Horn T59, an	d Chamber B	8 SMA Cables					
Substitut	tion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	use			
		Ant Dal	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f	SG reading	Ant. Pol.				24 State 1.12		
f GHz	SG reading (dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)				
GHz Low Ch 1.853	(dBm) 19.4	(H/V) V	(dB) 0.85	(dBi) 8.62	27.17	33.0	-5.8	
GHz Low Ch 1.853	(dBm)	(H/V)	(dB)	(dBi)				
GHz Low Ch 1.853 1.853	(dBm) 19.4	(H/V) V	(dB) 0.85	(dBi) 8.62	27.17	33.0	-5.8	
GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 19.4 12.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	27.17 20.32	33.0	-5.8 -12.7	
GHz Low Ch 1.853 1.853 Mid Ch 1.880	(dBm) 19.4 12.7 18.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	27.17 20.32 25.71	33.0 33.0 33.0	-5.8 -12.7 -7.3	
GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 19.4 12.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	27.17 20.32	33.0	-5.8 -12.7	
GHz Low Ch 1.853 1.853 Mid Ch 1.880 1.880	(dBm) 19.4 12.7 18.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	27.17 20.32 25.71	33.0 33.0 33.0	-5.8 -12.7 -7.3	
GHz Low Ch 1.853 1.853 Mid Ch 1.880	(dBm) 19.4 12.7 18.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	27.17 20.32 25.71	33.0 33.0 33.0	-5.8 -12.7 -7.3	
GHz Low Ch 1.853 1.853 Mid Ch 1.880 1.880 High Ch	(dBm) 19.4 12.7 18.1 12.8	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	27.17 20.32 25.71 20.31	33.0 33.0 33.0 33.0 33.0	-5.8 -12.7 -7.3 -12.7	

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10.1.6.

QPSK (EIRP)

Company		LG						
Project #		13U14980						
Date:		04/20/13						
Test Eng		Mona Hua						
Configur		EUT Only						
Mode:		LTE band 2 10	MH ₇ BW					
inouc.		QPSK. Peak. R						
	-	Substitution,	4ft SMA Cable	(244639001) Wareho				
11						Limit	Dalla	Notes
f	SG reading		Cable Loss		EIRP	# 100 CSS 100 CSS	Delta	Notes
f GHz	SG reading (dBm)	Ant Pol. (H/V)	(dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855	(dBm) 21.3	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 29.07	(dBm) 33.0	(dB) -3.9	Notes
GHz Low Ch 1.855	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855 1.855	(dBm) 21.3	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 29.07	(dBm) 33.0	(dB) -3.9	Notes
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 21.3	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 29.07	(dBm) 33.0 33.0	(dB) -3.9	Notes
GHz Low Ch 1.855 1.855	(dBm) 21.3 14.2	(H/V) V н	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 29.07 21.82	(dBm) 33.0	(dB) -3.9 -11.2	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880	(dBm) 21.3 14.2 20.3	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 29.07 21.82 27.91	(dBm) 33.0 33.0 33.0 33.0	(dB) -3.9 -11.2 -5.1	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch	(dBm) 21.3 14.2 20.3 13.9	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 29.07 21.82 27.91 21.41	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) 3.9 -11.2 -5.1 -11.6	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880	(dBm) 21.3 14.2 20.3	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 29.07 21.82 27.91	(dBm) 33.0 33.0 33.0 33.0	(dB) -3.9 -11.2 -5.1	

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16QAM (EIRP)

		25						
Company	r:	LG						
Project #	ŧ.	13U14980						
Date:		04/20/13						
Test Eng	ineer:	Mona Hua						
Configur	ation:	EUT Only						
Mode:		LTE band 2, 10	MHz BW					
		16QAM, Peak,	RB50-0					
Test Equ	ipment:							
Receivin	g: Horn T59, an	d Chamber B	SMA Cables					
Substitut	tion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	use			
						5-1 B	11	
					EIDD.	Limit	Delta	Notes
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	LUBR	Della	NULES
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	NOICS
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855	(dBm) 20.9	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.67	(dBm) 33.0	(dB) -4.3	Notes
GHz Low Ch 1.855	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855 1.855	(dBm) 20.9	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.67	(dBm) 33.0	(dB) -4.3	Notes
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 20.9 13.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 28.67 21.32	(dBm) 33.0 33.0	(dB) -4.3 -11.7	Notes
GHz Low Ch 1.855 1.855	(dBm) 20.9	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 28.67	(dBm) 33.0	(dB) -4.3	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880	(dBm) 20.9 13.7 19.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 28.67 21.32 27.31	(dBm) 33.0 33.0 33.0 33.0	(dB) 4.3 -11.7 -5.7	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch	(dBm) 20.9 13.7 19.7 13.8	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 28.67 21.32 27.31 21.31	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -4.3 -11.7 -5.7 -11.7	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch 1.905	(dBm) 20.9 13.7 19.7 13.8 20.0	(H/V) V H V V V	(dB) 0.85 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36 8.30	(dBm) 28.67 21.32 27.31 21.31 27.45	(dBm) 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.	(dB) -4.3 -11.7 -5.7 -11.7 -5.6	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch	(dBm) 20.9 13.7 19.7 13.8	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 28.67 21.32 27.31 21.31	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -4.3 -11.7 -5.7 -11.7	

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10.1.7. LTE BAND 4-5MHz BANDWIDTH

QPSK (EIRP)

ompany	: 0	LG						
roject #:		13U14980						
ate:		04/20/13						
lest Engi	ineer:	Mona Hua						
Configura	ation:	EUT Only						
lode:		LTE band 4, 5M	IHz BW					
		QPSK. Peak. R	B25-0					
1000 100000	g: Horn T59, and ion: Horn T217			(244639001) Wareho	use	~ ~	60 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
- 1812 B					125.8			Notes
GHz Low Ch 1.713	(dBm) 19.0	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.77	(dBm) 30.0	(dB) -3.2	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.713 1.713	(dBm) 19.0	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.77	(dBm) 30.0	(dB) -3.2	Notes
GHz Low Ch 1.713	(dBm) 19.0	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.77	(dBm) 30.0	(dB) -3.2	Notes
GHz Low Ch 1.713 1.713 Mid Ch	(dBm) 19.0 15.3	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.77 22.92	(dBm) 30.0 30.0	(dB) -3.2 -7.1	Notes
GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733	(dBm) 19.0 15.3 20.0	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.77 22.92 27.61	(dBm) 30.0 30.0 30.0 30.0	(dB) 3.2 -7.1 -2.4	Notes
GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733 High Ch	(dBm) 19.0 15.3 20.0 16.7	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 26.77 22.92 27.61 24.21	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -3.2 -7.1 -2.4 -5.8	Notes
GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733	(dBm) 19.0 15.3 20.0	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.77 22.92 27.61	(dBm) 30.0 30.0 30.0 30.0	(dB) 3.2 -7.1 -2.4	Notes

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16QAM (EIRP)

ompany		LG						
roject #		13U14980						
ate:		04/20/13						
est Engi	ineer:	Mona Hua						
onfigura	ation:	EUT Only						
ode:		LTE band 4, 5/V	(Hz BW					
		16QAM, Peak,	RB25-0					
est Equi	ipment:							
eceiving	g: Horn T59, an	d Chamber B	SMA Cables					
ubstituti	ion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	use			
						.		
		the second s						
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	Notes
The second		(H/V)						Notes
GHz Low Ch 1.713	(dBm) 18.7	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.47	(dBm) 30.0	(dB) -3.5	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.713 1.713	(dBm) 18.7	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.47	(dBm) 30.0	(dB) -3.5	Notes
GHz Low Ch 1.713 1.713 Mid Ch	(dBm) 18.7 14.5	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.47 22.12	(dBm) 30.0 30.0	(dB) -3.5 -7.9	Notes
GHz Low Ch 1.713 1.713 Mid Ch 1.733	(dBm) 18.7 14.5 19.3	(H/V) V H V	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.47 22.12 26.91	(dBm) 30.0 30.0 30.0 30.0	(dB) 3.5 7.9 3.1	NOTES
GHz Low Ch 1.713 1.713 Mid Ch	(dBm) 18.7 14.5	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.47 22.12	(dBm) 30.0 30.0	(dB) -3.5 -7.9	Notes
GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733	(dBm) 18.7 14.5 19.3	(H/V) V H V	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.47 22.12 26.91	(dBm) 30.0 30.0 30.0 30.0	(dB) 3.5 7.9 3.1	Notes
GHz Low Ch 1.713 1.713 Mid Ch 1.733	(dBm) 18.7 14.5 19.3	(H/V) V H V	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.47 22.12 26.91	(dBm) 30.0 30.0 30.0 30.0	(dB) 3.5 7.9 3.1	NOTES
GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733 High Ch	(dBm) 18.7 14.5 19.3 15.3	<u>(H/V)</u> V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 26.47 22.12 26.91 22.81	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) 3.5 -7.9 	NOTES

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10.1.8. LTE BAND 4-10MHz BANDWIDTH

QPSK (EIRP)

ompany:	: <u> </u>	LG						
roject #:		13U14980						
Date:		04/20/13						
est Engi	ineer:	Mona Hua						
Configura		EUT Only						
Aode:		LTE band 4, 10	MHz BW					
		QPSK, Peak, R						
ubstituti	on: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	use			
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1000	(dBm)	(H/V)	1	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.715	(dBm) 19.8	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 27.57	(dBm) 30.0	(dB) -2.4	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.715	(dBm) 19.8	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 27.57	(dBm) 30.0	(dB) -2.4	Notes
GHz Low Ch 1.715 1.715	(dBm) 19.8	(H/V) V H	(dB) 0.85	(dBi) 8.62	(dBm) 27.57	(dBm) 30.0	(dB) -2.4	Notes
GHz Low Ch 1.715 1.715 Mid Ch	(dBm) 19.8 16.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 27.57 24.22	(dBm) 30.0 30.0	(dB) -2.4 -5.8	Notes
GHz Low Ch 1.715 1.715 Mid Ch 1.733 1.733	(dBm) 19.8 16.6 20.4	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 27.57 24.22 28.01	(dBm) 30.0 30.0 30.0	(dB) -2.4 -5.8 -2.0	Notes
GHz Low Ch 1.715 1.715 Mid Ch 1.733	(dBm) 19.8 16.6 20.4	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 27.57 24.22 28.01	(dBm) 30.0 30.0 30.0	(dB) -2.4 -5.8 -2.0	Notes

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16QAM (EIRP)

est Eng onfigur lode: <u>est Equ</u> eceiv <mark>i</mark> n	ineer: ation: ipment:	LG 13U14980 04/20/13 Mona Hua EUT Only LTE band 4, 10 16QAM, Peak.						
late: 'est Eng configur lode: ' <u>est Equ</u> leceiv <mark>i</mark> n	ineer: ation: ipment:	04/20/13 Mona Hua EUT Only LTE band 4, 10						
est Eng configur lode: <u>est Equ</u> leceiv <mark>i</mark> n	ineer: I ation: I ipment:	Mona Hua EUT Only LTE band 4, 10						
onfigur Iode: <u>est Equ</u> eceivin	ation: I	EUT Only LTE band 4, 10						
lode: <u>est Equ</u> leceivin	ipment:	LTE band 4, 10						
est Equ leceivin	ipment:							
eceivin	ipment:	16QAM, Peak,	RB50-0					
eceivin								
	g: Horn T59, and							
ubstitut	tion: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho	use			
f	C reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
24524-	SG reading				100 C			Notes
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
		V	0.85	8.62	26.87	30.0	-3.1	
Low Ch	40.4	v		8.47	23.32	30.0	-5.1	
1.715	19.1		0.85		LJUJL	30.0	-0.1	
	19.1 15.7	Ĥ	0.85	0.11				
1.715 1.715			0.85					
1.715			0.85	8.46	27.01	30.0	-3.0	
1.715 1.715 Mid Ch	15.7	Н			27.01 23.41	30.0 30.0	-3.0 -6.6	
1.715 1.715 Mid Ch 1.733 1.733	15.7 19.4 15.9	H V	0.85	8.46				
1.715 1.715 Mid Ch 1.733 1.733 High Ch	15.7 19.4 15.9	H V H	0.85	8.46 8.36	23.41	30.0	-6.6	
1.715 1.715 Mid Ch 1.733 1.733	15.7 19.4 15.9	H V	0.85	8.46				

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10.1.9. LTE BAND 4-15MHz BANDWIDTH

QPSK (EIRP)

Company	8 18	LG						
Project #:		13U14980						
Date:		04/20/13						
lest Engi	neer:	Mona Hua						
Configura		EUT Only						
lode:		LTE band 4, 15	MHz BW					
		QPSK. Peak. F	(B75-0					
1.	g: Horn T59, an on: Horn T217			(244639001) Wareho	use			
f	SG reading		Cable Loss		EIRP	Limit	Delta	Notes
Contraction of the		(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	110103
GHz	(dBm)							
GHz Low Ch	(apm)	()						
Low Ch 1.718	20.2	v	0.85	8.62	27.97	30.0	-2.0	
Low Ch			0.85 0.85	8.62 8.47		30.0 30.0	-2.0 -6.2	
Low Ch 1.718	20.2	v			27.97			
Low Ch 1.718 1.718	20.2	V H V			27.97			
Low Ch 1.718 1.718 Mid Ch	20.2 16.2	V H	0.85	8.47	27.97 23.82	30.0	-6.2	
Low Ch 1.718 1.718 Mid Ch 1.733 1.733	20.2 16.2 21.0	V H V	0.85	8.47	27.97 23.82 28.61	30.0	-6.2	
Low Ch 1.718 1.718 Mid Ch 1.733	20.2 16.2 21.0	V H V	0.85	8.47	27.97 23.82 28.61	30.0	-6.2	

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16QAM (EIRP)

	¥ 18	LG						
ompany		and the second second						
roject #		13U14980						
ate:		04/20/13						
est Eng		Mona Hua						
onfigura		EUT Only						
ode:		LTE band 4, 15						
		16QAM, Peak,	RB75-0					
	ipment:							
1997 Jack 19	g: Horn T59, an							
ubstitut	ion: Horn T217	Substitution,	4ft SMA Cable ((244639001) Wareho	use			
			Cable Loss					
1. A. 1. 2			Cable Loce	Antenna Gain	EIRP	Limit	Delta	Notes
f	SG reading	Ant. Pol.			State of the second	1.00 (SS11) (G)		
f GHz	SG reading (dBm)	Ant Pol. (H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)			
GHz Low Ch 1.718	(dBm) 19.2	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.97	30.0	-3.0	
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)			
GHz Low Ch 1.718 1.718	(dBm) 19.2	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.97	30.0	-3.0	
GHz Low Ch 1.718 1.718 Mid Ch	(dBm) 19.2 15.5	<mark>(H/V)</mark> V н	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.97 23.12	30.0 30.0	_3.0 _6.9	
GHz Low Ch 1.718 1.718 Mid Ch 1.733	(dBm) 19.2 15.5 20.2	<u>(H/V)</u> V H	(dB) 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.97 23.12 27.81	30.0 30.0 30.0		
GHz Low Ch 1.718 1.718 Mid Ch	(dBm) 19.2 15.5	<mark>(H/V)</mark> V н	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.97 23.12	30.0 30.0	_3.0 _6.9	
GHz Low Ch 1.718 1.718 Mid Ch 1.733	(dBm) 19.2 15.5 20.2 16.1	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 26.97 23.12 27.81 23.61	30.0 30.0 30.0 30.0 30.0	-2.2 -6.4	
GHz Low Ch 1.718 1.718 Mid Ch 1.733 1.733 High Ch 1.748	(dBm) 19.2 15.5 20.2 16.1 20.4	(H/V) V H V V	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36 8.30	(dBm) 26.97 23.12 27.81 23.61 27.85	30.0 30.0 30.0 30.0 30.0 30.0 30.0	-3.0 -6.9 -2.2 -6.4 -2.2	
GHz Low Ch 1.718 1.718 Mid Ch 1.733 1.733 High Ch	(dBm) 19.2 15.5 20.2 16.1	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 26.97 23.12 27.81 23.61	30.0 30.0 30.0 30.0 30.0	-2.2 -6.4	

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10.1.10. LTE BAND 4-20MHz BANDWIDTH

QPSK (EIRP)

Test Engi Configura Mode: <u>Test Equi</u> Receiving	ineer: ation:	LG 13U14980 04/20/13 Mona Hua EUT Only LTE band 4, 20 QPSK, Peak, F d Chamber B	RB100-0					
Date: Fest Engi Configura Mode: Fest Equi Receiving	ineer: ation:	04/20/13 Mona Hua EUT Only LTE band 4, 20 QPSK, Peak, F	RB100-0					
Test Engi Configura Mode: <u>Test Equi</u> Receiving	ineer: ation: ipment:	Mona Hua EUT Only LTE band 4, 20 QPSK, Peak, F	RB100-0					
Configura Node: Test Equi Receiving	ition:	EUT Only LTE band 4, 20 QPSK, Peak, R	RB100-0					
lode: est Equi leceiving	ipment:	LTE band 4, 20 QPSK, Peak, F	RB100-0					
lest Equi	ipment:	QPSK, Peak, F	RB100-0					
Receiving	pment:							
Receiving		d Chamber B	SMA Cables					
10-200 A								
ubetituti				(244639001) Wareho				
ubstitut	on. noni 1217	Substitution,	HIL SINA Gable	(244035001) Waterio	use			
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
Low Ch								
	19.7	V	0.85	8.62	27.47	30.0	-2.5	
1.720		Н	0.85	8.47	23.22	30.0	-6.8	
1.720 1.720	15.6		1.					
1.720		н				1		
		v	0.85	8.46	27.61	30.0	-2.4	
1.720 Mid Ch	15.6		0.85	8.46 8.36	27.61 23.91	30.0 30.0	-2.4 -6.1	
1.720 Mid Ch 1.733 1.733	15.6 20.0	v						
1.720 Mid Ch 1.733 1.733 High Ch	15.6 20.0 16.4	V H	0.85	8.36	23.91	30.0	-6.1	
1.720 Mid Ch 1.733	15.6 20.0	v						

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16QAM (EIRP)

ompany:		LG						
roject #:		13U14980						
ate:		04/20/13						
est Engi		Mona Hua						
onfigura		EUT Only						
ode:		LTE band 4, 20	MHz BW					
		16QAM, Peak,	RB100-0					
	pment: p: Horn T59, an							
	ALL DE RELEASE STORY			(244639001) Wareho				
Insuran	OII. HOIII 1217	Substitution,	AIL SIMA Cable	(244035001) Waterio	use			
			Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f	SC reading	Ant Pol						
f GH7	SG reading	Ant. Pol.	1.0000000000000000000000000000000000000			(dBm)	(dB)	
GHz	SG reading (dBm)	Ant. Pol. (H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
122-13			1.0000000000000000000000000000000000000			(dBm) 30.0	(dB)	
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)			
GHz Low Ch 1.720 1.720	(dBm) 18.7	(H/V) V	(dB) 0.85	(dBi) 8.62	(dBm) 26.47	30.0	-3.5	
GHz Low Ch 1.720 1.720 Mid Ch	(dBm) 18.7 15.0	<mark>(H/V)</mark> v н	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.47 22.62	30.0 30.0	-3.5 -7.4	
GHz Low Ch 1.720 1.720 Mid Ch 1.733	(dBm) 18.7 15.0 19.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.47 22.62 27.11	30.0 30.0 30.0	-3.5 -7.4 -2.9	
GHz Low Ch 1.720 1.720 Mid Ch	(dBm) 18.7 15.0	<mark>(H/V)</mark> v н	(dB) 0.85 0.85	(dBi) 8.62 8.47	(dBm) 26.47 22.62	30.0 30.0	-3.5 -7.4	
GHz Low Ch 1.720 1.720 Mid Ch 1.733 1.733	(dBm) 18.7 15.0 19.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.47 22.62 27.11	30.0 30.0 30.0	-3.5 -7.4 -2.9	
GHz Low Ch 1.720 1.720 Mid Ch 1.733 1.733 High Ch	(dBm) 18.7 15.0 19.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 26.47 22.62 27.11 23.31	30.0 30.0 30.0 30.0 30.0	3.5 -7.4 -2.9 -6.7	
GHz Low Ch 1.720 1.720 Mid Ch 1.733 1.733	(dBm) 18.7 15.0 19.5 15.8	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 26.47 22.62 27.11	30.0 30.0 30.0	-3.5 -7.4 -2.9	

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10.1.11. LTE BAND 17-5MHz BANDWIDTH

QPSK (ERP)

		-		titution Measur n Services Cha				
npany:		LG						
ject #:		13U14980						
e:		05/19/13						
t Engine	er:	Mengistu Mek	uria					
figuratio	on:	EUT Only						
de:		LTE Band 17,	5MHz BW					
		QPSK, Peak,	RB25-0					
eiving: I	Horn T59, and I: Horn T217 S	ubstitution,	4ft SMA Cable	e (244639001) Wa			Margin	Notes
eiving: H stitution f	Horn T59, and I: Horn T217 S SG reading	ubstitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	ERP	Limit	Margin (dB)	Notes
eiving: H stitution f MHz	Horn T59, and I: Horn T217 S	ubstitution,	4ft SMA Cable				Margin (dB)	Notes
eiving: H stitution f MHz ow Ch	Horn T59, and I: Horn T217 S SG reading	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable	Antenna Gain	ERP	Limit		Notes
eiving: H stitution f MHz ow Ch 06.50	Horn T59, and : Horn T217 S SG reading (dBm)	ubstitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
eiving: H stitution f MHz ow Ch 706.50 706.50	Horn T59, and : Horn T217 S SG reading (dBm) 19.28	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.5	Antenna Gain (dBd)	ERP (dBm) 18.78	Limit (dBm) 34.8	(dB) -16.0	Notes
f MHz ow Ch 706.50 Aid Ch	Horn T59, and : Horn T217 S SG reading (dBm) 19.28 10.61	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 18.78 10.11	Limit (dBm) 34.8 34.8	(dB) -16.0 -24.7	Notes
ostitution	Horn T59, and : Horn T217 S SG reading (dBm) 19.28	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.5	Antenna Gain (dBd)	ERP (dBm) 18.78	Limit (dBm) 34.8	(dB) -16.0	Notes
seiving: H ostitution f MHz ow Ch 706.50 706.50 Viid Ch 710.00 710.00	Horn T59, and : Horn T217 S SG reading (dBm) 19.28 10.61 20.76	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 18.78 10.11 20.26	Limit (dBm) 34.8 34.8 34.8	(dB) -16.0 -24.7 -14.5	Notes
reiving: F sstitution f MHz ow Ch 706.50 706.50 706.50 Mid Ch 710.00 710.00	Horn T59, and : Horn T217 S SG reading (dBm) 19.28 10.61 20.76 12.53	ubstitution, Ant. Pol. (H/V) V H V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0 0.0	ERP (dBm) 18.78 10.11 20.26 12.03	Limit (dBm) 34.8 34.8 34.8 34.8	(dB) -16.0 -24.7 -14.5 -22.8	Notes
f AHz MHz WW Ch 06.50 06.50 06.50 id Ch 10.00 10.00	Horn T59, and : Horn T217 S SG reading (dBm) 19.28 10.61 20.76	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 18.78 10.11 20.26	Limit (dBm) 34.8 34.8 34.8	(dB) -16.0 -24.7 -14.5	Notes

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16QAM (ERP)

		-		titution Measur on Services Cha				
mpany:		LG						
oject #:		13U14980						
te:		05/19/13						
st Engine	eer:	Mengistu Mek	turia					
nfigurati	on:	EUT Only						
de:		LTE Band 17.	5MHz BW					
		16QAM, Peak						
bstitution	Horn T59, and n: Horn T217 S	ubstitution,	4ft SMA Cable	e (244639001) Wa			••	
ceiving: bstitution f	Horn T59, and n: Horn T217 S SG reading	ubstitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	ERP	Limit	Margin	Notes
ceiving: bstitution f MHz	Horn T59, and n: Horn T217 S	ubstitution,	4ft SMA Cable				Margin (dB)	Notes
ceiving: bstitution f MHz Low Ch	Horn T59, and n: Horn T217 S SG reading (dBm)	ubstitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
ceiving: bstitution f MHz Low Ch 706.50	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm) 16.61	Limit (dBm) 34.8	(dB) -18.2	Notes
ceiving: bstitution f MHz Low Ch	Horn T59, and n: Horn T217 S SG reading (dBm)	ubstitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
ceiving: bstitution f MHz Low Ch 706.50	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm) 16.61	Limit (dBm) 34.8	(dB) -18.2	Notes
ceiving: bstitution f MHz Low Ch 706.50 706.50 Mid Ch 710.00	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11 10.50 19.49	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 16.61 10.00 18.99	Limit (dBm) 34.8 34.8 34.8	(dB) -18.2 -24.8 -15.8	Notes
ceiving: bstitution f MHz Low Ch 706.50 706.50 Mid Ch	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11 10.50	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 16.61 10.00	Limit (dBm) 34.8 34.8	(dB) -18.2 -24.8	Notes
ceiving: bstitution f MHz Low Ch 706.50 706.50 706.50 Mid Ch 710.00 710.00	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11 10.50 19.49	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 16.61 10.00 18.99	Limit (dBm) 34.8 34.8 34.8	(dB) -18.2 -24.8 -15.8	Notes
ceiving: bstitution f MHz Low Ch 706.50 706.50 706.50 Mid Ch 710.00 710.00 High Ch	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11 10.50 19.49 12.72	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0 0.0	ERP (dBm) 16.61 10.00 18.99 12.22	Limit (dBm) 34.8 34.8 34.8 34.8	(dB) -18.2 -24.8 -15.8 -22.6	Notes
ceiving: bstitution f MHz Low Ch 706.50 706.50 706.50 Mid Ch 710.00 710.00	Horn T59, and n: Horn T217 S SG reading (dBm) 17.11 10.50 19.49	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 16.61 10.00 18.99	Limit (dBm) 34.8 34.8 34.8	(dB) -18.2 -24.8 -15.8	Notes

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10.1.12. LTE BAND 17-10MHz BANDWIDTH

QPSK (ERP)

				titution Measur n Services Cha				
mpany:		LG						
oject #:		13U14980						
te:		05/19/13						
st Engine	er:	Mengistu Mek	uria					
onfiguratio	on:	EUT Only						
ode:		LTE Band 17,	10MHz BW					
		QPSK, RB50-	0					
-	lorn T59, and : Horn T217 S	ubstitution,	4ft SMA Cable	e (244639001) Wa Antenna Gain	rehouse	Limit	Margin	Notes
ceiving: H bstitution	Horn T59, and : Horn T217 S SG reading	ubstitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	ERP	Limit	Margin (dB)	Notes
ceiving: H bstitution f MHz	lorn T59, and : Horn T217 S	ubstitution,	4ft SMA Cable				Margin (dB)	Notes
ceiving: H bstitution	Horn T59, and : Horn T217 S SG reading	ubstitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	ERP	Limit		Notes
f MHz over Ch 709.00	Horn T59, and : Horn T217 S SG reading (dBm)	ubstitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
f MHz Low Ch 709.00	Horn T59, and : Horn T217 S SG reading (dBm) 20.36	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.5	Antenna Gain (dBd)	ERP (dBm) 19.86	Limit (dBm) 34.8	(dB) -14.9	Notes
f MHz Low Ch 709.00 Mid Ch	Horn T59, and : Horn T217 S SG reading (dBm) 20.36 13.09	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 19.86 12.59	Limit (dBm) 34.8 34.8	(dB) -14.9 -22.2	Notes
reiving: H bstitution f MHz Low Ch 709.00 709.00 Mid Ch 710.00	Horn T59, and : Horn T217 S SG reading (dBm) 20.36 13.09 20.64	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 19.86 12.59 20.14	Limit (dBm) 34.8 34.8 34.8	(dB) -14.9 -22.2 -14.7	Notes
f MHz Low Ch 709.00	Horn T59, and : Horn T217 S SG reading (dBm) 20.36 13.09	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 19.86 12.59	Limit (dBm) 34.8 34.8	(dB) -14.9 -22.2	Notes
reliving: H bstitution f MHz Low Ch 709.00 709.00 Mid Ch 710.00 710.00	Horn T59, and : Horn T217 S SG reading (dBm) 20.36 13.09 20.64	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 19.86 12.59 20.14	Limit (dBm) 34.8 34.8 34.8	(dB) -14.9 -22.2 -14.7	Notes
f MHz Low Ch 709.00 Mid Ch 710.00	Horn T59, and : Horn T217 S SG reading (dBm) 20.36 13.09 20.64	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 19.86 12.59 20.14	Limit (dBm) 34.8 34.8 34.8	(dB) -14.9 -22.2 -14.7	Notes

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16QAM (ERP)

		-		titution Measur on Services Cha				
ompany:		LG						
oject #:		13U14980						
ate:		05/19/13						
est Engine	er:	Mengistu Mek	turia					
onfiguratio		EUT Only						
ode:		LTE Band 17,	10MHz BW					
		16QAM, RB50						
Ibstitution	Horn T59, and I: Horn T217 S	ubstitution,	4ft SMA Cabl	e (244639001) Wa			Margin	Notes
eceiving: l Ibstitution f	Horn T59, and I: Horn T217 S SG reading	ubstitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	ERP	Limit	Margin (dB)	Notes
eceiving: I Ibstitution f MHz	Horn T59, and I: Horn T217 S	ubstitution,	4ft SMA Cabl				Margin (dB)	Notes
eceiving: l Ibstitution f	Horn T59, and I: Horn T217 S SG reading	ubstitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	ERP	Limit	-	Notes
f MHz Low Ch	Horn T59, and I: Horn T217 S SG reading (dBm)	ubstitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
f MHz Low Ch 709.00 709.00	Horn T59, and 1: Horn T217 S SG reading (dBm) 19.25	ubstitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.5	Antenna Gain (dBd)	ERP (dBm) 18.75	Limit (dBm) 34.8	(dB) -16.0	Notes
f MHz Low Ch 709.00 Mid Ch	Horn T59, and :: Horn T217 S SG reading (dBm) 19.25 11.76	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 18.75 11.26	Limit (dBm) 34.8 34.8	(dB) -16.0 -23.5	Notes
f MHz Low Ch 709.00 709.00 Mid Ch 710.00	Horn T59, and :: Horn T217 S SG reading (dBm) 19.25 11.76 19.73	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 18.75 11.26	Limit (dBm) 34.8 34.8 34.8	(dB) -16.0 -23.5 -15.6	Notes
f MHz Low Ch 709.00 Mid Ch	Horn T59, and :: Horn T217 S SG reading (dBm) 19.25 11.76	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 18.75 11.26	Limit (dBm) 34.8 34.8	(dB) -16.0 -23.5	Notes
f MHz Low Ch 709.00 709.00 Mid Ch 710.00	Horn T59, and :: Horn T217 S SG reading (dBm) 19.25 11.76 19.73	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 18.75 11.26	Limit (dBm) 34.8 34.8 34.8	(dB) -16.0 -23.5 -15.6	Notes
eceiving: I abstitution f MHz Low Ch 709.00 709.00 Mid Ch 710.00 710.00	Horn T59, and :: Horn T217 S SG reading (dBm) 19.25 11.76 19.73	ubstitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 18.75 11.26	Limit (dBm) 34.8 34.8 34.8	(dB) -16.0 -23.5 -15.6	Notes

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10.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, & §27.53

<u>LIMIT</u>

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. 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. 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. 100 kHz or 1 percent of emission bandwidth, as specified). 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.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, 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. 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 or 1 percent of emission bandwidth, as specified). 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.

MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

<u>RESULTS</u>

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10.2.1. GSM-GPRS

CELL BAND

			Cor Above 1GH	npliance Ce z High Freq				ement	
Company	:	LG							
Project #	:	13U14980							
Date:		04/18/13							
Test Eng	ineer:	Lieu Nguyen							
Configur	ation:	EUT with AC a	dapter and head	lset					
Mode:		Tx, GPRS 850							
	Chamber		Pre-an	nplifer		Filter		Li	mit
5n	n Chamber A	•	T144 8449	В	Fil	ter 1	•	Part 22	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8									
1.648	-15.2	V	3.0	38.2	1.0	-52.3	-13.0	-39.3	
2.473 1.648	-11.7	V H	3.0 3.0	37.5 38.2	1.0 1.0	-48.2	-13.0 -13.0	-35.2 -41.5	
2.473	-17.4	п Н	3.0	37.5	1.0	-54.5	-13.0	-41.5 -38.8	
2.413	-15.5		5.0	51.5	1.0	-01.0	-13.0	-30.0	
Mid Ch, (8	336.4MHz)		•					<u></u>	
1.673	-16.1	V	3.0	38.1	1.0	-53.2	-13.0	-40.2	
2.510	-12.2	V	3.0	37.5	1.0	-48.7	-13.0	-35.7	
1.673	-17.4	H	3.0	38.1	1.0	-54.5	-13.0	-41.5	
2.510	-13.6	H	3.0	37.5	1.0	-50.0	-13.0	-37.0	
	848.8MHz)								
	····	V	3.0	38.1	1.0	-51.8	-13.0	-38.8	
High Ch, (1.698	-14.7		3.0	37.5	1.0	-48.8	-13.0	-35.8	
High Ch, (1.698	-14.7 -12.3	V			4 0	-50.8	-13.0	-37.8	
High Ch, (V H	3.0	38.1 37.5	1.0	-30.6	-13.0	-36.9	

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PCS BAND

ineer: ation:	13U14980 04/18/13 Lieu Nguyen EUT with AC a		lset					
Chambe	r	Pre-an	nplifer		Filter		Lin	nit
n Chamber A	•	T144 8449E	3 🗸	Fil	ter 1	•	Part 24	•
SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
850.2MHz)							l	
-2.3	V	3.0	36.8	1.0	-38.1	-13.0	-25.1	
	-	ي			··			
						å		
1.3	H	3.0	36.3	1.0	-33.9	-13.0	-20.9	
						•		
-4.1	V	3.0	36.8	1.0	-39.9	-13.0	-26.9	
1.8	V	3.0	36.3	1.0	-33.5	-13.0	-20.5	
-4.9	Н	3.0	36.8	1.0	-40.7	-13.0	-27.7	
2.8	Η	3.0	36.3	1.0	-32.5	-13.0	-19.5	
909 8MHz)								
-4.5	V	3.0	36.7	1.0	-40.2	-13.0	-27.2	
1.7	v	3.0	36.3	1.0	-33.6	-13.0	-20.6	
	Н	3.0	36.7	1.0	-39.6	-13.0	-26.6	
-3.9			36.5	1.0	-31.4	-13.0	-18.4	
	ineer: ation: Chambe n Chamber A SG reading (dBm) 850.2MHz) -2.3 -0.4 -2.5 1.3 880MHz) -4.1 1.8 4.9 2.8 1909.8MHz)	: 13U14980 04/18/13 ineer: Lieu Nguyen ation: EUT with AC a Tx, GPRS 190 C hamber n Chamber A ▼ SG reading Ant. Pol. (dBm) (H/V) 1850.2MHz) -2.3 V -0.4 V -2.5 H 1.3 H 1880MHz) 4.1 V 4.9 H 2.8 H 1909.8MHz)	Above 1GH : LG : 13U14980 04/18/13 ineer: Lieu Nguyen ation: EUT with AC adapter and head Tx, GPRS 1900 Chamber Pre-an T144 8449E SG reading (dBm) Ant. Pol. (H/V) Distance (m) [850.2MHz]	Above 1GHz High Freq : LG : 13U14980 04/18/13 04/18/13 ineer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 Ttuber Pre-amplifer T144 8449B T T144 8449B SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) 850.2MHz) - - 2.3 V 3.0 36.8 0.4 V 3.0 36.3 2.5 H 3.0 36.3 1.3 H 3.0 36.3 4.1 V 3.0 36.3 4.9 H 3.0 36.3 1.8 V 3.0 36.3 1.8 V 3.0 36.3 1.8 H 3.0 36.3 1.8 H 3.0 36.3 1.9 H 3.0 36.3 1.9 H 3.0 36.3 <td>Above 1GHz High Frequency Summary Supervision S</td> <td>Above 1GHz High Frequency Substitution : LG : 13U14980 04/18/13 04/18/13 ineer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 T144 8449B Filter Filter SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) (dBm) (80.2MHz) - - - 2.3 V 3.0 36.8 1.0 -38.7 2.5 H 3.0 36.3 1.0 -33.9 1.3 H 3.0 36.3 1.0 -33.9 1.8 V 3.0 36.3 1.0 -33.5 4.9 H 3.0 36.3 1.0 -33.5 4.9 H 3.0 36.3 1.0 -32.5 1909.8MHz) - - - -</td> <td>: LG : 13U14980 04/18/13 ineer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 Image: Chamber A Image: Chamber A SG reading Ant. Pol. (dB) Distance Preamp (dB) Filter (dBm) (dBm) (BM) (H/V) (m) 36.8 2.3 V 3.0 36.8 1.0 38.1 13.0 2.5 H 3.0 36.8 1.0 38.3 13.0 2.5 H 3.0 36.8 1.0 38.3 13.0 1.3 H 3.0 36.8 1.0 39.9 13.0 1.3 H 3.0 36.3 1.0 33.5 13.0 1.8 V 3.0 36.3 1.0 4.0 7 13.0 1.8 V 3.0 36.3 1.0 4.0 7 13.0 1</td> <td>Above 1GHz High Frequency Substitution Measurement : LG : 13U14980 04/18/13 incer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 T144 8449B Filter Filter SG reading Ant. Pol. Distance Pre-amplifer (dBm) (H/V) (m) (dB) (dBm) (dBm) (dBm) (H/V) 036.8 1.0 -38.1 -13.0 -25.1 0.4 V 3.0 36.8 1.0 -38.1 -13.0 -25.1 0.4 V 3.0 36.8 1.0 -38.1 -13.0 -25.1 0.4 V 3.0 36.8 1.0 -38.3 -13.0 -25.3 1.3 H 3.0 36.8 1.0 -38.1 -13.0 -25.3 1.3 H 3.0 36.8 1.0 -33.2 -13.0 -26.9 1.8 V 3.0 36.8 1.0 -33.5 -13.0 -20.5</td>	Above 1GHz High Frequency Summary Supervision S	Above 1GHz High Frequency Substitution : LG : 13U14980 04/18/13 04/18/13 ineer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 T144 8449B Filter Filter SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) (dBm) (80.2MHz) - - - 2.3 V 3.0 36.8 1.0 -38.7 2.5 H 3.0 36.3 1.0 -33.9 1.3 H 3.0 36.3 1.0 -33.9 1.8 V 3.0 36.3 1.0 -33.5 4.9 H 3.0 36.3 1.0 -33.5 4.9 H 3.0 36.3 1.0 -32.5 1909.8MHz) - - - -	: LG : 13U14980 04/18/13 ineer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 Image: Chamber A Image: Chamber A SG reading Ant. Pol. (dB) Distance Preamp (dB) Filter (dBm) (dBm) (BM) (H/V) (m) 36.8 2.3 V 3.0 36.8 1.0 38.1 13.0 2.5 H 3.0 36.8 1.0 38.3 13.0 2.5 H 3.0 36.8 1.0 38.3 13.0 1.3 H 3.0 36.8 1.0 39.9 13.0 1.3 H 3.0 36.3 1.0 33.5 13.0 1.8 V 3.0 36.3 1.0 4.0 7 13.0 1.8 V 3.0 36.3 1.0 4.0 7 13.0 1	Above 1GHz High Frequency Substitution Measurement : LG : 13U14980 04/18/13 incer: Lieu Nguyen ation: EUT with AC adapter and headset Tx, GPRS 1900 T144 8449B Filter Filter SG reading Ant. Pol. Distance Pre-amplifer (dBm) (H/V) (m) (dB) (dBm) (dBm) (dBm) (H/V) 036.8 1.0 -38.1 -13.0 -25.1 0.4 V 3.0 36.8 1.0 -38.1 -13.0 -25.1 0.4 V 3.0 36.8 1.0 -38.1 -13.0 -25.1 0.4 V 3.0 36.8 1.0 -38.3 -13.0 -25.3 1.3 H 3.0 36.8 1.0 -38.1 -13.0 -25.3 1.3 H 3.0 36.8 1.0 -33.2 -13.0 -26.9 1.8 V 3.0 36.8 1.0 -33.5 -13.0 -20.5

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10.2.2. GSM-EGPRS

CELL BAND

Company Project # Date: Test Eng Configur: Mode:	ineer: ation:	LG 13U14980 04/18/13 Lieu Nguyen EUT with AC a Tx, EGPRS 85	idapter and head	lset					
	Chamber		Pre-an	nplifer		Filter		Lin	nit
5m	ı Chamber A	•	T144 84498	3 🔽	Fil	ter 1	-	Part 22	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (8		(1.0.4)	()	(42)	(42)		(uBiii)	(42)	
1.648	-15.9	V	3.0	38.2	1.0	-53.0	-13.0	-40.0	
2.473	-11.5	V	3.0	37.5	1.0	-48.0	-13.0	-35.0	
1.648	-17.0	Н	3.0	38.2	1.0	-54.1	-13.0	-41.1	
2.473	-13.1	Н	3.0	37.5	1.0	-49.6	-13.0	-36.6	
	20 4001->								
Mid Ch, (8 1.673	-13.0	v	3.0	38.1	1.0	-50.1	-13.0	-37.1	
2.510	-13.0	V V	3.0	37.5	1.0	-30.1	-13.0	-37.1	
1.673	-12.2	H	3.0	38.1	1.0	-40.7	-13.0	-40.5	
2.510	-15.1	H	3.0	37.5	1.0	-51.5	-13.0	-38.5	
High Ch, (2.0	20.4	4.0	40.0	42.0	25.0	
1.698	-11.5	V	3.0	38.1	1.0	-48.6	-13.0	-35.6	
		-	<u>.</u>			···			
2.546 1.698 2.546 Rev. 03.03	-9.2 -13.1 -12.3	V H H	3.0 3.0 3.0	37.5 38.1 37.5	1.0 1.0 1.0	-45.7 -50.2 -48.8	-13.0 -13.0 -13.0	-32.7 -37.2 -35.8	

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PCS BAND

Compan	v	LG							
Project	-	13U14980							
Date:		04/18/13							
Test En	nineer:	Lieu Nguyen							
Configu	-		adapter and head	eet					
Mode:	ation.	Tx. EGPRS 19		361					
5	Chambe m Chamber A		Pre-am T144 8449E	•	Fil	Filter ter 1	•	Lin Part 24	nit •
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
⊥ow cn, 3.700	1850.2MHz) -4.3	v	3.0	36.8	1.0	-40.1	-13.0	-27.1	
5.555	2.5	v	3.0	36.3	1.0	-32.8	-13.0	-19.8	
3.700	-3.8	H	3.0	36.8	1.0	-39.6	-13.0	-26.6	
5.555	1.7	Н	3.0	36.3	1.0	-33.5	-13.0	-20.5	
	400000000								
Mid Ch, 3.760	1880MHz) 4.3	V	3.0	36.8	1.0	-40.1	-13.0	-27.1	
5.640	-4.5	V	3.0	36.3	1.0	-40.1	-13.0	-20.5	
3.760	-1.7	H	3.0	36.8	1.0	-37.5	-13.0	-20.5	
5.640	2.8	H	3.0	36.3	1.0	-32.5	-13.0	-19.5	
	(1909.8MHz)	V		26.7	4.0	40.2	42.0	27.2	
	-4.5	V V	3.0 3.0	36.7 36.3	1.0 1.0	-40.2	-13.0 -13.0	-27.2 -20.6	
3.820		V H	3.0	36.7	1.0	-33.6	-13.0	-20.6	
3.820 5.729				36.5	1.0	-39.0	-13.0	-20.0	
3.820	-3.9	Н	3.0	10 D -					

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10.2.3. UMTS-REL 99

CELL BAND

			Con Above 1GHz	npliance Ce z High Freq				ement	
Company: Project #: Date:01/29 Test Engi Configura Mode:	9/2013 neer: tion:	LG 13U14980 05/02/13 Lieu Nguyen EUT with AC a Tx, WCDMA, (dapter and heads CELL Rel 99	set					
	Chamber		Pre-am	plifer		Filter			Limit
5m	Chamber B	•	T145 8449B	3 -	Filt	er 1	-	Part 2	2 🗸
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (8		((/	()	((()	
1.654	-13.1	V	3.0	35.5	1.0	-47.7	-13.0	-34.7	
2.475	-12.8	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
1.654	-13.9	Н	3.0	35.5	1.0	-48.5	-13.0	-35.5	
2.475	-16.6	Н	3.0	35.4	1.0	-51.0	-13.0	-38.0	
			<u> </u>						
	36MHz)		s			8	Į		
Mid Ch, (8 1.672	36MHz) -13.9	V	3.0	35.5	1.0	-48.4	-13.0	-35.4	
Mid Ch, (8		V V	3.0 3.0	35.5 35.4	1.0 1.0	-48.4 -42.7	-13.0 -13.0	-35.4 -29.7	
Mid Ch, (8 1.672	-13.9					<u></u>	§		
Mid Ch, (8 1.672 2.504 1.672	-13.9 -8.3	V	3.0	35.4	1.0	-42.7	-13.0	-29.7	
Mid Ch, (8: 1.672 2.504 1.672 2.504	-13.9 -8.3 -15.7 -10.8	V H	3.0 3.0	35.4 35.5	1.0 1.0	-42.7 -50.3	-13.0 -13.0	-29.7 -37.3	
Mid Ch, (8: 1.672 2.504 1.672 2.504 High Ch, (8	-13.9 -8.3 -15.7 -10.8 46 MHz)	V H H	3.0 3.0 3.0	35.4 35.5 35.4	1.0 1.0 1.0	-42.7 -50.3 -45.2	-13.0 -13.0 -13.0	-29.7 -37.3 -32.2	
Mid Ch, (8: 1.672 2.504 1.672 2.504 High Ch, (8 1.693	-13.9 -8.3 -15.7 -10.8 46 MHz) -15.7	V H H	3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5	1.0 1.0 1.0	-42.7 -50.3 -45.2 -50.2	-13.0 -13.0 -13.0 -13.0	-29.7 -37.3 -32.2 -37.2	
Mid Ch, (8: 1.672 2.504 1.672 2.504 High Ch, (8	-13.9 -8.3 -15.7 -10.8 46 MHz)	V H H	3.0 3.0 3.0	35.4 35.5 35.4	1.0 1.0 1.0	-42.7 -50.3 -45.2	-13.0 -13.0 -13.0	-29.7 -37.3 -32.2	

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PCS BAND

			Cor Above 1GH	mpliance Ce z High Freq				ement	
Company:		LG							
Project #:		13U14980							
Date:		05/02/13							
Test Engi	neer:	Lieu Nguyen							
Configura		• •	dapter and head	lset					
Mode:		WCDMA,PCS							
5n	Chambe n Chamber B		Pre-an T145 8449	-	Filt	Filter ter 1	•	L Part 24	imit •
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GHz Low Ch, (1	(dBm) 852.4MHz)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch, (13 3.704	(dBm)			• •		1			Notes
GHz Low Ch, (1 3.704 7.408	(dBm) 852.4MHz) -15.0	(H/V) V	(m) 3.0	(dB) 35.4	(dB) 1.0	(dBm) -49.3	(dBm) -13.0	(dB) -36.3	Notes
GHz Low Ch, (1) 3.704 7.408 3.705	(dBm) 852.4MHz) -15.0 -8.5	(H/V) V V	(m) 3.0 3.0	(dB) 35.4 35.7	(dB) 1.0 1.0	(dBm) -49.3 -43.2	(dBm) -13.0 -13.0	(dB) -36.3 -30.2	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3	(H/V) V V H	(m) 3.0 3.0 3.0	(dB) 35.4 35.7 35.4	(dB) 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8	(dBm) -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410 Mid Ch, (1)	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz)	(H/V) V V H	(m) 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7	(dB) 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0	(dBm) -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3	(H/V) V V H H	(m) 3.0 3.0 3.0	(dB) 35.4 35.7 35.4	(dB) 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8	(dBm) -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410 Mid Ch, (1) 3.760 7.520 3.760	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz) -17.9	(H/V) V H H V V V H	(m) 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3	(dB) 1.0 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0 -52.3	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0 -39.3	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410 Mid Ch, (1) 3.760 7.520 3.760	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz) -17.9 -12.1	(H/V) V H H V V V	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.7 35.3 35.7	(dB) 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0 -52.3 -46.8	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0 -39.3 -39.3 -33.8	Notes
GHz Low Ch, (11 3.704 3.705 7.408 3.705 7.410 Mid Ch, (11 3.760 7.520 3.760 7.520	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz) -17.9 -12.1 -14.7 -9.0	(H/V) V H H V V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.3 35.7 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0 -52.3 -46.8 -49.0	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0 -39.3 -39.3 -33.8 -36.0	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410 Mid Ch, (1) 3.760 7.520 3.760	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz) -17.9 -12.1 -14.7 -9.0	(H/V) V H H V V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.3 35.7 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0 -52.3 -46.8 -49.0	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0 -39.3 -39.3 -33.8 -36.0	Notes
GHz Low Ch, (1: 3.704 7.408 3.705 7.410 Mid Ch, (1: 3.760 7.520 3.760 7.520 High Ch, (1: 3.815	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz) -17.9 -12.1 -14.7 -9.0 907.6MHz)	(H/V) V H H V V V H H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.7 35.3 35.7 35.3 35.7	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0 -52.3 -46.8 -49.0 -43.7	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0 -39.3 -33.8 -36.0 -30.7 -30.7	Notes
GHz Low Ch, (1) 3.704 7.408 3.705 7.410 Mid Ch, (1) 3.760 7.520 3.760 7.520 High Ch, (1)	(dBm) 852.4MHz) -15.0 -8.5 -14.5 -7.3 880MHz) -17.9 -12.1 -14.7 -9.0 907.6MHz) -15.9	(H/V) V H H V V V H H V V	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.7 35.3 35.7 35.3 35.7 35.3 35.7	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -49.3 -43.2 -48.8 -42.0 -52.3 -46.8 -49.0 -43.7 -50.2	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -36.3 -30.2 -35.8 -29.0 -39.3 -33.8 -36.0 -30.7 -30.7 -37.2	Notes

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AWS BAND

				mpliance Ce					
			Above 1GH	z High Freq	luency Su	Ibstitution	n Measur	ement	
Company	:	LG							
Project #	:	13U14980							
Date:		05/02/13							
Test Eng	ineer:	Lieu Nguyen							
Configura		• •	adapter and head	dset					
Node:			S, 1700 Rel 99						
	Chambe	r	Pre-an	nplifer		Filter			Limit
5	n Chamber B	3 -	T145 8449	B 🚽	Filt	ter 1	-	Part 2	27 🚽
			1		L			I	
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	712.4MHz)	<u></u>		("")	("")	()	((40)	1
3.424	-12.4	v	3.0	35.5	1.0	-46.9	-13.0	-33.9	
.137	-6.2	v	3.0	35.3	1.0	-40.5	-13.0	-27.5	1
5.848	-11.5	V	3.0	35.7	1.0	-46.2	-13.0	-33.2	
3.425	-14.9	Н	3.0	35.5	1.0	-49.4	-13.0	-36.4	
5.137	-4.2	H	3.0	35.3	1.0	-38.5	-13.0	-25.5	
6.850	-8.0	Н	3.0	35.7	1.0	-42.7	-13.0	-29.7	
Mid Ch. (1	732.6MHz)								
3.465	-10.5	v	3.0	35.5	1.0	-45.0	-13.0	-32.0	
5.198	-8.0	V	3.0	35.3	1.0	-42.3	-13.0	-29.3	
5.930	-8.7	V	3.0	35.7	1.0	-43.4	-13.0	-30.4	
3.465	-9.1	Н	3.0	35.5	1.0	-43.5	-13.0	-30.5	<u> </u>
5.198	-7.1	H	3.0	35.3	1.0	-41.4	-13.0	-28.4	
.930	-1.9	Н	3.0	35.7	1.0	-36.6	-13.0	-23.6	
	1752.5MHz)								
Hign Ch, ('	-14.7	V	3.0	35.4	1.0	-49.1	-13.0	-36.1	
.505	-9.7	V	3.0	35.3	1.0	-44.1	-13.0	-31.1	
.505 .258	and the second	V	3.0	35.7	1.0	-44.0	-13.0	-31.0	
.505 .258 .010	-9.3			7 05 4 7	1.0	-47.3	-13.0	-34.3	
.505 .258 .010 .505	-9.3 -12.8	Н	3.0	35.4		7			8
	-9.3		3.0 3.0 3.0	35.4 35.3 35.7	1.0 1.0	-41.4 -41.6	-13.0 -13.0	-28.4 -28.6	

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10.2.4. UMTS-HSDPA

CELL BAND

			Cor Above 1GH	npliance Ce z High Frec				ement		
Company: Project #: Date: Test Engi Configura Mode:	neer: ition:	LG 13U14980 05/02/13 Lieu Nguyen EUT with AC a Tx, WCDMA,C	dapter and head ELL HSDPA	set						
	Chamber		Pre-an	nplifer		Filter			Limit	
5m	Chamber B	T	T145 8449B		Filter 1			Part 22		
f	SG reading		Distance	Preamp	Filter	EIRP		Delta	Notes	
GHz Low Ch, (8)	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
	26.4IVIHZ)			1		8	8 8			
1 654	-13.2	V	30	35.5	10	-47.8	-13.0	-34.8		
	-13.2 -16.6	V V	3.0 3.0	35.5 35.4	1.0 1.0	-47.8 -51.0	-13.0 -13.0	-34.8 -38.0		
1.654 2.479 1.654	-13.2 -16.6 -16.1	V V H	3.0 3.0 3.0	35.5 35.4 35.5	1.0 1.0 1.0	-47.8 -51.0 -50.7	-13.0 -13.0 -13.0	-34.8 -38.0 -37.7		
2.479 1.654	-16.6	V	3.0	35.4	1.0	-51.0	-13.0	-38.0		
2.479 1.654 2.479	-16.6 -16.1 -17.5	V H	3.0 3.0	35.4 35.5	1.0 1.0	-51.0 -50.7	-13.0 -13.0	-38.0 -37.7		
2.479 1.654 2.479 Mid Ch, (8:	-16.6 -16.1 -17.5 36MHz)	V H H	3.0 3.0 3.0	35.4 35.5 35.4	1.0 1.0 1.0	-51.0 -50.7 -51.9	-13.0 -13.0 -13.0	-38.0 -37.7 -38.9		
2.479 1.654 2.479 Mid Ch, (8: 1.672	-16.6 -16.1 -17.5 36MHz) -14.2	V H H V	3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5	1.0 1.0 1.0	-51.0 -50.7 -51.9 -48.7	-13.0 -13.0 -13.0 -13.0	-38.0 -37.7 -38.9 -35.7		
2.479 1.654 2.479	-16.6 -16.1 -17.5 36MHz)	V H H	3.0 3.0 3.0	35.4 35.5 35.4	1.0 1.0 1.0	-51.0 -50.7 -51.9	-13.0 -13.0 -13.0	-38.0 -37.7 -38.9		
2.479 1.654 2.479 Mid Ch, (8: 1.672 2.508 1.672	-16.6 -16.1 -17.5 36MHz) -14.2 -12.8	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.5 35.4	1.0 1.0 1.0 1.0	-51.0 -50.7 -51.9 -48.7 -47.2	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-38.0 -37.7 -38.9 -35.7 -34.2		
2.479 1.654 2.479 Mid Ch, (8: 1.672 2.508 1.672 2.508	-16.6 -16.1 -17.5 36MHz) -14.2 -12.8 88.3 -12.2	V H H V V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.5 35.4 35.5	1.0 1.0 1.0 1.0 1.0 1.0	-51.0 -50.7 -51.9 -48.7 -47.2 53.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-38.0 -37.7 -38.9 -35.7 -34.2 66.7		
2.479 1.654 2.479 Mid Ch, (8: 1.672 2.508 1.672 2.508 High Ch, (8	-16.6 -16.1 -17.5 36MHz) -14.2 -12.8 88.3 -12.2 46.MHz)	V H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5 35.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-51.0 -50.7 -51.9 -48.7 -47.2 53.7 -46.6	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-38.0 -37.7 -38.9 -35.7 -34.2 66.7 -33.6		
2.479 1.654 2.479 Mid Ch, (8: 1.672 2.508 1.672 2.508 High Ch, (8 1.693	-16.6 -16.1 -17.5 36MHz) -14.2 -12.8 88.3 -12.2 46.MHz) -15.0	V H H V V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-51.0 -50.7 -51.9 -48.7 -48.7 -47.2 53.7 -46.6 -49.5	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-38.0 -37.7 -38.9 -35.7 -34.2 66.7 -33.6 -36.5		
2.479 1.654 2.479 Mid Ch, (8: 1.672 2.508 1.672 2.508	-16.6 -16.1 -17.5 36MHz) -14.2 -12.8 88.3 -12.2 46.MHz)	V H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5 35.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-51.0 -50.7 -51.9 -48.7 -47.2 53.7 -46.6	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-38.0 -37.7 -38.9 -35.7 -34.2 66.7 -33.6		

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PCS BAND

			Cor Above 1GH	npliance Ce z High Freq				ement	
Company:		LG							
Project #:		13U14980							
Date:		05/02/13							
Test Engi	neer:	Lieu Nguyen							
Configura		• •	dapter and head	lset					
•		WCDMA,PCS	•						
5n	Chambe n Chamber B		Pre-an T145 8449	-	Filt	Filter ter 1	•	Part 24	Limit
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
				• •		1			Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
Low Ch, (1	852.4MHz)			(dB)		(dBm)	(dBm)	(dB)	Notes
Low Ch, (1 3.704		(H/V) V V	(m) 3.0 3.0	• •	(dB) 1.0 1.0	1			NULES
Low Ch, (1 3.704 7.408	852.4MHz) -8.1	V	3.0	(dB) 35.4	1.0	(dBm) -42.4	(dBm) -13.0	(dB) -29.4	Notes
Low Ch, (1 3.704 7.408 3.705	852.4MHz) -8.1 -3.0	V V	3.0 3.0	(dB) 35.4 35.7	1.0 1.0	(dBm) -42.4 -37.7	(dBm) -13.0 -13.0	(dB) -29.4 -24.7	
Low Ch, (1) 3.704 7.408 3.705 7.410	852.4MHz) -8.1 -3.0 -6.3 -0.7	V V H	3.0 3.0 3.0	(dB) 35.4 35.7 35.4	1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6	(dBm) -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6	
Low Ch, (1 3.704 7.408 3.705 7.410 Mid Ch, (1	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz)	V V H	3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7	1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4	(dBm) -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4	
Low Ch, (1) 3.704 7.408 3.705 7.410	852.4MHz) -8.1 -3.0 -6.3 -0.7	V V H H	3.0 3.0 3.0	(dB) 35.4 35.7 35.4	1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6	(dBm) -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6	
Low Ch, (1) 3.704 7.408 3.705 7.410 Mid Ch, (1) 3.760	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz) -10.1	V V H H	3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3	1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4 -44.5	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4 -31.5	
Low Ch, (1: 3.704 7.408 3.705 7.410 Mid Ch, (1: 3.760 7.520 3.760	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz) -10.1 -4.8	V V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.3 35.7	1.0 1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4 -44.5 -39.5	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4 -31.5 -26.5	
Low Ch, (1: 3.704 7.408 3.705 7.410 Mid Ch, (1: 3.760 7.520 3.760 7.520	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz) -10.1 -4.8 -8.8 0.4	V V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.3 35.7 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4 -44.5 -39.5 -43.1	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4 -31.5 -26.5 -30.1	
Low Ch, (1: 3.704 7.408 3.705 7.410 Mid Ch, (1: 3.760 7.520 3.760 7.520 High Ch, (1	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz) -10.1 -4.8 -8.8 0.4 907.6MHz)	V V H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.7 35.3 35.7 35.3 35.7	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4 -44.5 -39.5 -43.1 -34.3	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4 -31.5 -26.5 -30.1 -21.3	
Low Ch, (1: 3.704 7.408 3.705 7.410 Mid Ch, (1: 3.760 7.520 3.760 7.520 High Ch, (1 3.815	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz) -10.1 -4.8 -8.8 0.4 907.6MHz) -9.5	V V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.7 35.3 35.7 35.3 35.7 35.3 35.7 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4 -44.5 -39.5 -43.1 -34.3 -43.8	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4 -31.5 -26.5 -30.1 -21.3 -30.8	
Low Ch, (1: 3.704 7.408 3.705 7.410 Mid Ch, (1: 3.760 7.520 3.760 7.520 High Ch, (1	852.4MHz) -8.1 -3.0 -6.3 -0.7 880MHz) -10.1 -4.8 -8.8 0.4 907.6MHz)	V V H H V V H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.7 35.4 35.7 35.3 35.7 35.3 35.7 35.3 35.7	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -42.4 -37.7 -40.6 -35.4 -44.5 -39.5 -43.1 -34.3	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -29.4 -24.7 -27.6 -22.4 -31.5 -26.5 -30.1 -21.3	

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AWS BAND

	LG	Above 1GH	z High Freq	luency Su	bstitutior	n Measure	ement	
	LG							
	13U14980							
	05/02/13							
neer:	Lieu Nguyen							
	• •	dapter and head	lset					
		•						
Chambe	r	Pre-an	nplifer		Filter			Limit
Chambor B		T145 8449	З 🚽	Filt	er 1	T	Part 2	.7 -
	<u> </u>	I					I	
SG reading	Ant. Pol	Distance	Preamn	Filter	EIRP	Limit	Delta	Notes
							(dB)	
	<u>("")</u>		((42)			(
-10.8	V	3.0	35.5	1.0	-45.3	-13.0	-32.3	
-5.2	v	3.0	35.3	1.0	-39.5	-13.0	-26.5	
-9.5	V	3.0	35.7	1.0	-44.2	-13.0	-31.2	
-13.9	Н	3.0	35.5	1.0	-48.4	-13.0	-35.4	
-3.7	Н	3.0	35.3	1.0	-38.0	-13.0	-25.0	
-6.5	Н	3.0	35.7	1.0	-41.2	-13.0	-28.2	
732.6MHz)								
-10.0	V	3.0	35.5	1.0	-44.5	-13.0	-31.5	
-7.6	V	3.0	35.3	1.0	-41.9	-13.0	-28.9	
-5.8	V	3.0	35.7	1.0	-40.5	-13.0	-27.5	
-9.6	Н	3.0	35.5	1.0	-44.0	-13.0	-31.0	
-6.8	Н	3.0	35.3	1.0	-41.1	-13.0	-28.1	
-1.9	Н	3.0	35.7	1.0	-36.6	-13.0	-23.6	
752 5MH 7)								
	V	3.0	35.4	1.0	-46.7	-13.0	-33.7	
-9.7	v	3.0	35.3	1.0	-44.1	-13.0	-31.1	
-8.5	v	3.0	35.7	1.0	-43.2	-13.0	-30.2	
-11.7	H	3.0	35.4	1.0	-46.2	-13.0	-33.2	
-6.5	Н	3.0	35.3	1.0	-40.8	-13.0	-27.8	
	Н	3.0	35.7	1.0	-39.4	-13.0	-26.4	
	Chamber Chamber B SG reading (dBm) 12.4MHz) -10.8 -5.2 -9.5 -13.9 -3.7 -6.5 32.6MHz) -10.0 -7.6 -5.8 -9.6 -6.8 -1.9 -72.5MHz) -12.3 -9.7 -8.5	WCDMA, AWS Chamber B Chamber B Chamber B SG reading (dBm) Ant. Pol. (H/V) 12.4MHz) - -10.8 V -5.2 V -9.5 V -13.9 H -3.7 H -6.5 H 32.6MHz) - -10.0 V -7.6 V -9.6 H -6.8 H -1.9 H -72.5MHz) - -12.3 V -9.7 V -8.5 V	Chamber Pre-an Chamber B Chamber B Chamber B SG reading (dBm) (H/V) (H/V) Distance (dBm) (H/V) 10.8 V -10.8 V -5.2 V -10.8 V -3.7 H -3.7 H -10.0 V -6.5 H -10.0 V -3.7 H -3.0	WCDMA, AWS, 1700 HSDPA Pre-amplifer T145 8449B v Chamber B v T145 8449B v SG reading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) 10.8 V 3.0 35.5 -5.2 V 3.0 35.5 -3.7 H 3.0 35.5 -3.7 H 3.0 35.5 -6.5 H 3.0 35.5 -7.6 V 3.0 35.7 -9.6 H 3.0 35.5 -6.8 H 3.0 35.7 -9.6 H 3.0 35.7 -1.9 H 3.0 35.7 -7.5 V 3.0 35.7 -7.5 V	WCDMA, AWS, 1700 HSDPA Pre-amplifer Chamber B T145 8449B Filter Chamber B T145 8449B Filter Greading (dBm) Ant. Pol. (H/V) Distance (m) Pre-amplifer Filter 10.8 V 3.0 35.5 1.0 -10.8 V 3.0 35.5 1.0 -5.2 V 3.0 35.5 1.0 -10.8 V 3.0 35.5 1.0 -3.7 H 3.0 35.5 1.0 -3.7 H 3.0 35.3 1.0 -5.5 H 3.0 35.5 1.0 -3.7 H 3.0 35.5 1.0 -5.5 H 3.0 35.5 1.0 -5.8 V 3.0 35.5 1.0 -5.8 V 3.0 35.5 1.0 -5.8 V 3.0 35.7 1.0 -5.8 H	WCDMA, AWS, 1700 HSDPA Pre-amplifer Filter Chamber B Filter T145 8449B Filter Filter Chamber B Filter Chamber B Filter Colspan="2">Filter (dBm) Chamber B Filter Colspan="2">Colspan="2">Filter (dBm) (H/V) Colspan="2">Colspan="2">Colspan="2">Filter Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Filter Colspan="2">Colspan="2">Colspan="2">Filter Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2">Colspan="2"C	WCDMA, AWS, 1700 HSDPA Pre-amplifer Filter Chamber B Filter CBRP Chamber M Chamber M Greading Ant. Pol. Distance Preamp Filter EIRP Limit (dBm) (dBm) Glean degree 10.0 45.3 13.0	WCDMA, AWS, 1700 HSDPA Chamber Pre-amplifer Filter Part 2 Chamber B T145 8449B Filter Part 2 SG reading Ant. Pol. (H/V) Distance (dB) Preamp (dB) Filter (dB) Part 2 10.8 V 3.0 35.5 1.0 45.3 -13.0 -32.3 -10.8 V 3.0 35.5 1.0 44.2 -13.0 -31.2 -13.9 H 3.0 35.5 1.0 48.4 -13.0 -35.4 -3.7 H 3.0 35.5 1.0 -41.2 -13.0 -28.5 -10.0 V 3.0 35.5 1.0 -44.5 -13.0 -28.5 -3.7 H 3.0 35.5 1.0 -44.1 -13.0 -28.2 -10.0 V 3.0 35.5 1.0 -44.5 -13.0 -28.9 -5.8 V 3.0 35.7 1.0 -40.5 -13.0 -27.5

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10.2.5. LTE BAND 2-5MHz BANDWIDTH

<u>QPSK</u>

Project #: 13U14980 Date: 05/01/13 Test Engineer: Megistu Mekuri Configuration: EUT and AC Addition		dapter	QPSK					
Chambe	r	Pre-am	plifer		Filter		Lii	mit
5m Chamber B		T145 8449	3 🗸	Fil	ter 1	•	Part 24	-
		Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	()	()	()	()	(((
-12.5	V	3.0	35.4	1.0	-46.9	-13.0	-33.9	
· · · · · · · · · · · · · · · · · · ·	V	3.0						
	Н	3.0	35.4	1.0	-46.7	-13.0	-33.7	
-12.4		7			1 11	120 7		
-12.4 -7.0	H	3.0	35.4	1.0	-41.4	-13.0	-28.4	
-7.0		3.0	35.4	1.0	-41,4	-13.0	-28.4	
		3.0 3.0	35.4 35.3	1.0	-41.4	-13.0	-28.4	
-7.0 880MHz)	Н							
-7.0 880MHz) -14.6 -4.5 -59.2	H V V H	3.0 3.0 3.0	35.3 35.4 35.3	1.0 1.0 1.0	-48.9 -38.9 -93.5	-13.0 -13.0 -13.0	-35.9 -25.9 -80.5	
-7.0 880MHz) -14.6 -4.5	H V V	3.0 3.0	35.3 35.4	1.0 1.0	-48.9 -38.9	-13.0 -13.0	-35.9 -25.9	
-7.0 880MHz) -14.6 -4.5 -59.2 -8.2	H V V H	3.0 3.0 3.0	35.3 35.4 35.3	1.0 1.0 1.0	-48.9 -38.9 -93.5	-13.0 -13.0 -13.0	-35.9 -25.9 -80.5	
-7.0 880MHz) -14.6 -4.5 -59.2 -8.2 907.5MHz)	H V V H	3.0 3.0 3.0 3.0	35.3 35.4 35.3 35.4	1.0 1.0 1.0 1.0	-48.9 -38.9 -93.5 -42.6	-13.0 -13.0 -13.0 -13.0	-35.9 -25.9 -80.5 -29.6	
-7.0 880MHz) -14.6 -4.5 -59.2 -8.2	H V V H H	3.0 3.0 3.0	35.3 35.4 35.3	1.0 1.0 1.0	-48.9 -38.9 -93.5	-13.0 -13.0 -13.0	-35.9 -25.9 -80.5	
-7.0 880MHz) -14.6 -4.5 -59.2 -8.2 907.5MHz) -11.8	H V H H	3.0 3.0 3.0 3.0 3.0 3.0	35.3 35.4 35.3 35.4 35.4 35.3	1.0 1.0 1.0 1.0 1.0	-48.9 -38.9 -93.5 -42.6 -46.1	-13.0 -13.0 -13.0 -13.0 -13.0	-35.9 -25.9 -80.5 -29.6 -33.1	
	neer: tion: Chambe n Chamber B SG reading (dBm) 852.5MHz)	13U14980 05/01/13 neer: Megistu Mekur tion: EUT and AC A TX, LTE Band 3 Chamber n Chamber B SG reading (dBm) (H/V) 852.5MHz) -12.5	13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, Chamber Pre-am T145 84491 SG reading Ant. Pol. Distance (dBm) (H/V) (m) 852.5MHz) 3.0	13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 8449B SG reading Ant. Pol. (dBm) (H/V) % 3.0	13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Image: Chamber B Image: Chamber B Image: Chamber B <td>13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 Filter Filter 1 Filter 1 SG reading Ant. Pol. Distance (dBm) (H/V) (m) (dB) (dBm) 852.5MHz) - - - - -12.5 V 3.0 35.4 1.0 -46.9</td> <td>13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 Filter Filter 1 ▼ SG reading Ant. Pol. Distance (dBm) (H/V) (m) (dB) (dB) (dBm) (dBm) 46.9 -13.0</td> <td>13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 8449B Filter Lin Filter 1 Part 24 SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) (dB) (dBm) (dB) 3.0</td>	13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 Filter Filter 1 Filter 1 SG reading Ant. Pol. Distance (dBm) (H/V) (m) (dB) (dBm) 852.5MHz) - - - - -12.5 V 3.0 35.4 1.0 -46.9	13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 Filter Filter 1 ▼ SG reading Ant. Pol. Distance (dBm) (H/V) (m) (dB) (dB) (dBm) (dBm) 46.9 -13.0	13U14980 05/01/13 neer: Megistu Mekuria ition: EUT and AC Adapter TX, LTE Band 2 5.0MHz BW, QPSK Chamber Pre-amplifer T145 8449B Filter Lin Filter 1 Part 24 SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) (dB) (dBm) (dB) 3.0

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Company: LG Project #: 13U14980 Date: 05/01/13 Test Engineer: Megistu Mekur Configuration: EUT and AC A Mode: TX, LTE Band 2			16QAM						
	Chambe	r	Pre-am	nplifer		Filter		Li	mit
5m Chamber B		T145 8449	B 🔽	Fil	ter 1	•	Part 24	•	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	852.5MHz)	(()	(1		((/	
3.705	-12.1	V	3.0	35.4	1.0	-46.4	-13.0	-33.4	
5.558	-3.6	V	3.0	35.4	1.0	-38.0	-13.0	-25.0	
3.705 5.558	-12.0 -8.5	H H	3.0 3.0	35.4 35.4	1.0	-46.4 -42.9	-13.0 -13.0	-33.4 -29.9	
7.000	-0.5	"	5.0	55.4	1.0	-72.3	-13.0	-2313	
Mid Ch, (1		•					•		
3.760	-14.1	V	3.0	35.3	1.0	-48.4	-13.0	-35.4	
5.640	-6.8	V	3.0	35.4	1.0	-41.3	-13.0	-28.3	
3.760 5.640	-60.1 -9.8	H	3.0 3.0	35.3 35.4	1.0	-94.4 -44.3	-13.0 -13.0	-81.4 -31.3	
5.040	-3.0	п	J.U	JJ.4	1.0	-44.J	-13.0	-31.3	
High Ch. (1907.5MHz)								
3.815	-13.6	V	3.0	35.3	1.0	-47.9	-13.0	-34.9	
	-3.8	V	3.0	35.4	1.0	-38.3	-13.0	-25.3	
5.723	-14.0	Н	3.0	35.3	1.0	-48.3	-13.0	-35.3	
5.723 3.815 5.723	-5.0	Н	3.0	35.4	1.0	-39.5	-13.0	-26.5	

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10.2.6. LTE BAND 2-10MHz BANDWIDTH

<u>QPSK</u>

Company Project # Date: Test Eng Configur Mode:	: ineer: ation:	LG 13U14980 05/01/13 Megistu Mekur EUT and AC A TX, LTE Band 2		QPSK					
	Chambe	r	Pre-am	plifer		Filter		Lii	mit
51	n Chamber B	•	T145 8449I	3 🔽	Fil	ter 1	•	Part 24	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	1855.0MHz)	()	()	(((/	()	(/	
3.710	-13.5	V	3.0	35.4	1.0	-47.8	-13.0	-34.8	
5.565	-5.4	V	3.0	35.4	1.0	-39.8	-13.0	-26.8	
3.710	-14.5	H	3.0	35.4	1.0	-48.9	-13.0	-35.9	
5.565	-8.5	Н	3.0	35.4	1.0	-42.9	-13.0	-29.9	
Mid Ch, (1880MHz)								
3.760	-15.3	V	3.0	35.3	1.0	-49.6	-13.0	-36.6	
	-12.0	V	3.0	35.4	1.0	-46.4	-13.0	-33.4	
5.640	-60.0	H	3.0	35.3	1.0	-94.3	-13.0	-81.3	
3.760	1	H	3.0	35.4	1.0	-46.0	-13.0	-33.0	
3.760	-11.6								
3.760 5.640							•		
		V	3.0	35.3	1.0	-48.5	-13.0	-35.5	
3.760 5.640 High Ch, (3.810 5.715	1905MHz) -14.2 -2.9	V V	3.0	35.4	1.0	-37.4	-13.0	-24.4	
3.760 5.640 High Ch, (3.810	1905MHz) -14.2	V					۵		

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Project #: 13U14980 Date: 05/01/13 Test Engineer: Megistu Meku Configuration: EUT and AC A		05/01/13 Megistu Meku EUT and AC A		16QAM							
	Chambe	r	Pre-am	nplifer	Filter			Limit			
5r	Chamber 5m Chamber B ▼		T145 8449			Filter 1			Part 24		
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes		
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)			
	855.0MHz)					7 17 0	40.0				
.710 .565	-13.2	V V	3.0 3.0	35.4 35.4	1.0 1.0	-47.6	-13.0 -13.0	-34.6 -28.0			
.565	-0.0	V H	3.0	35.4 35.4	1.0	-41.0 -47.9	-13.0 -13.0	-20.0 -34.9			
5.565	-13.0	H	3.0	35.4	1.0	-41.5	-13.0	-30.8			
	-0.0		5.0	55.4		-10.0	-10.0	-50.0			
Mid Ch, (1	880MHz)						•				
3.760	-13.9	V	3.0	35.3	1.0	-48.3	-13.0	-35.3			
5.640	-4.4	V	3.0	35.4	1.0	-38.8	-13.0	-25.8			
3.760	-60.8	Н	3.0	35.3	1.0	-95.2	-13.0	-82.2			
5.640	-7.1	Н	3.0	35.4	1.0	-41.6	-13.0	-28.6			
					4.0		42.0				
High Ch, (-13.9	V	3.0	35.3	1.0	-48.2	-13.0	-35.2			
3.810		V	3.0 3.0	35.4	1.0	-40.2	-13.0	-27.2			
3.810 5.715	-5.8			35.3	1.0	-48.7 -40.8	-13.0 -13.0	-35.7 -27.8			
High Ch, (3.810 5.715 3.821 5.715	-5.8 -14.4 -6.3	H	3.0	35.4	1.0						

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10.2.7. LTE BAND 4-5MHz BANDWIDTH

<u>QPSK</u>

: ineer: ation:	EUT and AC A	dapter	PSK					
Chambe	r	Pre-am	nplifer		Filter		Li	mit
n Chamber B	· •	T145 8449	B 🔽	Fil	ter 1	-	Part 27	-
-		Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	()	()	()	((()	(
-19.0	V	3.0	35.5	1.0	-53.5	-13.0	-40.5	
-18.3	V	3.0	35.3	1.0	-52.7	-13.0	-39.7	
			35.5				-39.5	
-17.7	Н	3.0	35.3	1.0	-52.0	-13.0	-39.0	
732.5MHz)						•		
-22.4	V	3.0	35.5	1.0	-56.9	-13.0	-43.9	
-18.3	V	3.0	35.3	1.0	-52.6	-13.0	-39.6	
-21.0	H	3.0	35.5	1.0	-55.5	-13.0	-42.5	
-13.7	Н	3.0	35.3	1.0	-48.0	-13.0	-35.0	
1752.5MHz)								
	V	3.0	35.4	1.0	-57.9	-13.0	-44.9	
-23.5			35.3	1.0	-53.4	-13.0	-40.4	
-23.5 -19.0	V	3.0			Y		-45.1	
	V H	3.0	35.4	1.0	-58.1	-13.0 -13.0	-40.1	
	Chambe ation: Chamber n Chamber E SG reading (dBm) 712.5MHz) -18.3 -18.0 -17.7 -732.5MHz) -22.4 -18.3	Ineer: 13U14980 05/01/13 05/01/13 Ineer: Megistu Mekun ation: EUT and AC A TX, LTE Band TX, LTE Band Image: Chamber B ▼ SG reading (dBm) Ant. Pol. (H/V) 1712.5MHz) - -19.0 V -18.3 V -17.7 H -17.7 H -18.3 V -18.3 V -18.3 V -18.3 V -18.3 V -22.4 V -18.3 V -18.3 V	: LG : 13U14980 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QF Chamber Pre-am T145 84491 SG reading Ant. Pol. (dBm) (H/V) (18.3 V 18.0 H 18.0 H 172.5MHz) - -18.3 V 3.0 - 18.0 H 3.0 - 18.0 H 3.0 - -18.3 V -22.4 V -21.0 H	: LG : 13U14980 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK Chamber Pre-amplifer T145 8449B ▼ SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) ▼ 19.0 V 3.0 35.5 3.1 18.3 V 3.0 35.5 3.1 18.0 H 3.0 35.5 3.1 732.5MHz) - - - - - 3.0 35.5 - - - - - - - - - - - 3.0 35.5 <td>Image: LG 13U14980 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK Image: Chamber B Image: Pre-amplifer T145 8449B Filter (dBm) (H/V) (H/V) Distance Preamplifer Filter (dBm) (H/V) (H/V) 3.0 35.5 1.0 -18.3 V 3.0 35.5 1.0 -18.0 H 3.0 35.5 1.0 -17.7 H 3.0 35.5 1.0 -18.3 V -22.4 V 3.0 35.5 1.0 -18.3 V 3.0 35.5 1.0 -18.3 V 3.0 35.5 1.0 -18.3 V 3.0 35.5 </td> <td>LG 13U14980 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK Chamber Pre-amplifer T145 8449B Filter SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) filter 19.0 V 3.0 35.5 1.0 -53.5 18.3 V 3.0 35.5 1.0 -52.7 18.0 H 3.0 35.3 1.0 -52.7 18.0 H 3.0 35.3 1.0 -52.5 17.7 H 3.0 35.3 1.0 -52.6 18.3 V 3.0 35.3 1.0 -52.6 18.3 V 3.0 35.3 1.0 -52.6 21.0 H 3.0 35.5 1.0 -52.6</td> <td>Image: LG 13U14980 05/01/13 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK TX, LTE Band 4 5MHz BW, QPSK Image: Chamber B Image: Chamber Filter SG reading Ant. Pol. Distance Mathematical (dBm) (H/V) (m) (dB) T12.5MHz) Image: Chamber B Image: Chamber B T12.5MHz) Image: Chamber B Image: Chamber B T12.5MHz) Image: Chamber B Image: Chamber B T13.0 30.0 35.5 1.0 -53.5 T145.3 V 3.0 35.5 1.0 -52.7 T18.0 H 3.0 35.5 1.0 -52.5 -13.0 T17.7 H 3.0 35.5 1.0 -52.0 -13.0 T22.5MHz) Image: Chamber B T12.5MHz) Image: Chamber B T12.5MHz Imag</td> <td>Image: second secon</td>	Image: LG 13U14980 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK Image: Chamber B Image: Pre-amplifer T145 8449B Filter (dBm) (H/V) (H/V) Distance Preamplifer Filter (dBm) (H/V) (H/V) 3.0 35.5 1.0 -18.3 V 3.0 35.5 1.0 -18.0 H 3.0 35.5 1.0 -17.7 H 3.0 35.5 1.0 -18.3 V -22.4 V 3.0 35.5 1.0 -18.3 V 3.0 35.5 1.0 -18.3 V 3.0 35.5 1.0 -18.3 V 3.0 35.5	LG 13U14980 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK Chamber Pre-amplifer T145 8449B Filter SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) filter 19.0 V 3.0 35.5 1.0 -53.5 18.3 V 3.0 35.5 1.0 -52.7 18.0 H 3.0 35.3 1.0 -52.7 18.0 H 3.0 35.3 1.0 -52.5 17.7 H 3.0 35.3 1.0 -52.6 18.3 V 3.0 35.3 1.0 -52.6 18.3 V 3.0 35.3 1.0 -52.6 21.0 H 3.0 35.5 1.0 -52.6	Image: LG 13U14980 05/01/13 05/01/13 ineer: Megistu Mekuria ation: EUT and AC Adapter TX, LTE Band 4 5MHz BW, QPSK TX, LTE Band 4 5MHz BW, QPSK Image: Chamber B Image: Chamber Filter SG reading Ant. Pol. Distance Mathematical (dBm) (H/V) (m) (dB) T12.5MHz) Image: Chamber B Image: Chamber B T12.5MHz) Image: Chamber B Image: Chamber B T12.5MHz) Image: Chamber B Image: Chamber B T13.0 30.0 35.5 1.0 -53.5 T145.3 V 3.0 35.5 1.0 -52.7 T18.0 H 3.0 35.5 1.0 -52.5 -13.0 T17.7 H 3.0 35.5 1.0 -52.0 -13.0 T22.5MHz) Image: Chamber B T12.5MHz) Image: Chamber B T12.5MHz Imag	Image: second secon

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Project #: 13U14980 Date: 05/01/13 Test Engineer: Megistu N Configuration: EUT and A		Megistu Meku EUT and AC A		QAM .					
	Chambe	r	Pre-am	nplifer		Filter		Lii	mit
5n	n Chamber B	3 -	T145 8449I	B 🔻	Fil	ter 1	•	Part 27	-
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1		(/		(/	(/		((/	
3.425	-20.1	V	3.0	35.5	1.0	-54.5	-13.0	-41.5	
	-14.5	V	3.0	35.3	1.0	-48.9	-13.0	-35.9	
5.138	7 00 0		3.0	35.5	1.0	-54.7	-13.0	-41.7	
3.425	-20.2	H		25.2			12 0	25.2	
	-20.2 -13.9	H	3.0	35.3	1.0	-48.2	-13.0	-35.2	
3.425 5.138	-13.9			35.3			-13.0	-35.2	
3.425 5.138 Mid Ch, (1 3.465	-13.9	H		35.3 35.5	1.0		-13.0	-42.7	
3.425 5.138 Mid Ch, (1 3.465 5.198	-13.9 732.5MHz) -21.2 -15.4	H V V	3.0 3.0 3.0	35.5 35.3	1.0 1.0 1.0	-48.2 -55.7 -49.7	-13.0 -13.0	-42.7 -36.7	
3.425 5.138 Mid Ch, (1 3.465 5.198 3.465	-13.9 732.5MHz) -21.2 -15.4 -21.0	H V V H	3.0 3.0 3.0 3.0 3.0	35.5 35.3 35.5	1.0 1.0 1.0 1.0	-48.2 -55.7 -49.7 -55.5	-13.0 -13.0 -13.0	-42.7 -36.7 -42.5	
3.425 5.138 Mid Ch, (1 3.465 5.198	-13.9 732.5MHz) -21.2 -15.4	H V V	3.0 3.0 3.0	35.5 35.3	1.0 1.0 1.0	-48.2 -55.7 -49.7	-13.0 -13.0	-42.7 -36.7	
3.425 5.138 Mid Ch. (1 3.465 5.198 3.465 5.198	-13.9 732.5MHz) -21.2 -15.4 -21.0 -13.5	H V V H	3.0 3.0 3.0 3.0 3.0	35.5 35.3 35.5	1.0 1.0 1.0 1.0	-48.2 -55.7 -49.7 -55.5	-13.0 -13.0 -13.0	-42.7 -36.7 -42.5	
3.425 5.138 Mid Ch. (1 3.465 5.198 3.465 5.198 High Ch, (1	-13.9 732.5MHz) -21.2 -15.4 -21.0 -13.5 752.5MHz)	H V V H	3.0 3.0 3.0 3.0 3.0	35.5 35.3 35.5 35.3	1.0 1.0 1.0 1.0 1.0	48.2 -55.7 49.7 -55.5 47.8	-13.0 -13.0 -13.0 -13.0	42.7 -36.7 -42.5 -34.8	
3.425 5.138 Mid Ch. (1 3.465 5.198 3.465 5.198	-13.9 732.5MHz) -21.2 -15.4 -21.0 -13.5	H V V H H	3.0 3.0 3.0 3.0 3.0	35.5 35.3 35.5	1.0 1.0 1.0 1.0	-48.2 -55.7 -49.7 -55.5	-13.0 -13.0 -13.0	-42.7 -36.7 -42.5	
3.425 5.138 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1 3.505	-13.9 732.5MHz) -21.2 -15.4 -21.0 -13.5 752.5MHz) -23.4	H V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.5 35.3 35.5 35.3 35.3 35.4	1.0 1.0 1.0 1.0 1.0	48.2 -55.7 49.7 -55.5 47.8 -57.9	-13.0 -13.0 -13.0 -13.0 -13.0	42.7 -36.7 -42.5 -34.8 -44.9	

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10.2.8. LTE BAND 4-10MHz BANDWIDTH

<u>QPSK</u>

Project #: 13U14980 Date: 05/02/13 Test Engineer: Megistu Mek Configuration: EUT and AC		05/02/13 Megistu Meku EUT and AC A		QPSK					
	Chamber Pre-amplifer			Filter		Limit			
51	n Chamber B	\$ •	T145 8449	З	Fil	ter 1	•	Part 27	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, ('	715.0MHz)								
3.430	-18.9	V	3.0	35.5	1.0	-53.4	-13.0	-40.4	
5 .1 45	-20.4	V	3.0	35.3	1.0	-54.8	-13.0	-41.8	
3.430	-18.7	Н	3.0	35.5	1.0	-53.2	-13.0	-40.2	
5.145	-11.7	H	3.0	35.3	1.0	-46.0	-13.0	-33.0	
Mid Ch, (732.5MHz)								
3.465	-21.5	V	3.0	35.5	1.0	-56.0	-13.0	-43.0	
5.198	-5.0	V	3.0	35.3	1.0	-39.4	-13.0	-26.4	
3.465	-19.7	Н	3.0	35.5	1.0	-54.2	-13.0	-41.2	
5.198	-7.9	H	3.0	35.3	1.0	-42.3	-13.0	-29.3	
	1750MHz)								
High Ch, (-21.9	V	3.0	35.4	1.0	-56.4	-13.0	-43.4	
		V	3.0	35.3	1.0	-51.9	-13.0	-38.9	
High Ch, (3.500 5.250	-17.5		7	35.4	1.0	-58.7	-13.0	-45.7	
3.500	-17.5 -24.3 -16.9	H	3.0	JJ.4		-51.2	-13.0	-38.2	

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Company: LG Project #: 13U14980 Date: 05/02/13 Test Engineer: Megistu Mekur Configuration: EUT and AC Ar		Above 1GH					ement			
	Chamber		Pre-amplifer			Filter		Limit		
5n	5m Chamber B		T145 8449	T145 8449B		ter 1	-	Part 27	-	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, (1		(1	(,	(42)	(42)		(42.11)	(42)		
3.430	-20.4	V	3.0	35.5	1.0	-54.9	-13.0	-41.9		
5.145	-15.4	V	3.0	35.3	1.0	-49.8	-13.0	-36.8		
3.430	-18.9	Н	3.0	35.5	1.0	-53.4	-13.0	-40.4		
5.145	-14.7	Н	3.0	35.3	1.0	-49.1	-13.0	-36.1		
Mid Ch, (1	732.5MHz)									
3.465	-21.5	٧	3.0	35.5	1.0	-56.0	-13.0	-43.0		
5.198	-5.1	V	3.0	35.3	1.0	-39.4	-13.0	-26.4		
3.465	-20.2	Н	3.0	35.5	1.0	-54.6	-13.0	-41.6		
5.198	-10.2	Н	3.0	35.3	1.0	-44.5	-13.0	-31.5		
Web Ch. (4	750000-1									
High Ch, (1 3.500	-23.4	V	3.0	35.4	1.0	-57.9	-13.0	-44.9		
5.250	-23.4	V V	3.0	35.4 35.3	1.0	-57.9	-13.0 -13.0	-44.9 -43.2		
3.500	-21.0	V H	3.0	35.4	1.0	-57.5	-13.0	-43.2		
5.250	-16.5	H	3.0	35.3	1.0	-50.9	-13.0	-37.9		

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10.2.9. LTE BAND 4-15MHz BANDWIDTH

<u>QPSK</u>

			Co Above 1GH	mpliance Co z High Fred				ement	
Company: Project #: Date: Test Engi Configura Mode:	ineer: ation:	LG 13U14980 05/09/13 Lieu Nguyen EUT and AC A TX, LTE Band	dapter 4 15.0MHz BW	QPSK					
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
5n	n Chamber B	•	T145 8449	B 🚽	Fi	lter 1	•	Part 27	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1		. ,		. ,			. ,	<u> </u>	
3.430	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
5.145	-18.4	V	3.0	35.3	1.0	-52.8	-13.0	-39.8	
	-16.9	Н	3.0	35.5	1.0	-51.4	-13.0	-38.4	
3.430				7 959 7	1.0	7 440	-13.0	31.8	
3.430 5.145	-10.4	H	3.0	35.3	1.0	-44.8	-13.0		
5.145		H	3.0	30.3	1.0	-44.0	-13.0		
		H	3.0	35.5	1.0	-44.0	-13.0	-42.3	
5.145 Mid Ch, (1	732.5MHz)								
5.145 Mid Ch, (1 3.465 5.198 3.465	732.5MHz) -20.8	v	3.0	35.5 35.3 35.5	1.0	-55.3 -37.8 -52.5	-13.0 -13.0 -13.0	_42.3 _24.8 _39.5	
5.145 Mid Ch, (1 3.465 5.198	732.5MHz) -20.8 -3.4	VVV	3.0 3.0	35.5 35.3	1.0 1.0	-55.3 -37.8	-13.0 -13.0	_42.3 _24.8	
5.145 Mid Ch, (1 3.465 5.198 3.465 5.198	732.5MHz) -20.8 -3.4 -18.1 -7.0	V V H	3.0 3.0 3.0	35.5 35.3 35.5	1.0 1.0 1.0	-55.3 -37.8 -52.5	-13.0 -13.0 -13.0	_42.3 _24.8 _39.5	
5.145 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1	732.5MHz) -20.8 -3.4 -18.1 -7.0	V V H	3.0 3.0 3.0 3.0	35.5 35.3 35.5 35.3	1.0 1.0 1.0 1.0	-55.3 -37.8 -52.5 -41.3	-13.0 -13.0 -13.0 -13.0	_42.3 _24.8 _39.5	
5.145 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1 3.500	732.5MHz) -20.8 -3.4 -18.1 -7.0 750MHz) -21.3	V V H H	3.0 3.0 3.0 3.0 3.0	35.5 35.3 35.5 35.3 35.3 35.4	1.0 1.0 1.0 1.0 1.0	-55.3 -37.8 -52.5 -41.3 -55.7	-13.0 -13.0 -13.0 -13.0 -13.0	42.3 24.8 39.5 28.3 42.7	
5.145 Mid Ch, (1 3.465 5.198 3.465 5.198	732.5MHz) -20.8 -3.4 -18.1 -7.0 750MHz)	V V H H	3.0 3.0 3.0 3.0	35.5 35.3 35.5 35.3	1.0 1.0 1.0 1.0	-55.3 -37.8 -52.5 -41.3	-13.0 -13.0 -13.0 -13.0	42.3 -24.8 -39.5 -28.3	

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			Co Above 1GH	mpliance Co z High Free				ement	
Company	:	LG							
Project #	:	13U14980							
Date:		05/09/13							
Test Eng	ineer:	Lieu Nguyen							
Configur		EUT and AC A	dapter						
Mode:			4 20.0MHz BW	16-QAM					
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
			T145 8449	B -	Fil	ter 1	-	Part 27	
51	n Chamber E	•	1140 0445		1		•	Tart 27	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (1715.0MHz)								
3.430	-17.4	V	3.0	35.5	1.0	-51.9	-13.0	-38.9	
5.145	-15.6	V	3.0	35.3	1.0	-50.0	-13.0	-37.0	
3.430	-15.7	H	3.0	35.5	1.0	-50.2	-13.0	-37.2	
5.145	-10.2	Н	3.0	35.3	1.0	-44.6	-13.0	-31.6	
Mid Ch (1732.5MHz)								
3.465	-19.5	v	3.0	35.5	1.0	-54.0	-13.0	-41.0	
	-13.5	v	3.0	35.3	1.0	-34.0	-13.0	-24.9	
2 198	-16.4	v H	3.0	35.5	1.0	-50.8	-13.0	-37.8	
5.198 3.465	-6.8	H	3.0	35.3	1.0	-41.1	-13.0	-28.1	
3.465		f							
3.465	1750MHz)				1.0	-53.3	-13.0	-40.3	
3.465 5.198 High Ch, (3.500	-18.9	V	3.0	35.4					
3.465 5.198 High Ch, (3.500 5.250	-18.9 -16.6	V	3.0	35.3	1.0	-50.9	-13.0	-37.9	
3.465 5.198 High Ch, (-18.9		· · · · · · · · · · · · · · · · · · ·			-50.9 -56.1 -49.7	-13.0 -13.0 -13.0	-37.9 -43.1 -36.7	

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10.2.10. LTE BAND 4-20MHz BANDWIDTH

<u>QPSK</u>

			Co Above 1GH	mpliance Co z High Free				ement	
Company	:	LG							
Project #		13U14980							
Date:		05/09/13							
Test Eng	ineer:	Lieu Nguyen							
Configura	ation:	EUT and AC A	dapter						
Mode:		TX, LTE Band	4 20.0MHz BW,	QPSK					
	Chambe	r I	Pre-an	plifer		Filter			Limit
_			T145 8449	B -	Fil	ter 1	_	Part 27	
or	n Chamber E	• <u>•</u>					•		
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (1	715.0MHz)								
3.430	-16.4	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
5.145	-15.1	V	3.0	35.3	1.0	-49.5	-13.0	-36.5	
3.430	-15.6	Н	3.0	35.5	1.0	-50.1	-13.0	-37.1	
5.145	-9.8	H	3.0	35.3	1.0	-44.2	-13.0	-31.2	
Mid Ch. (1	732.5MHz)								
3.465	-18.9	V	3.0	35.5	1.0	-53.4	-13.0	-40.4	
5.198	-3.9	V	3.0	35.3	1.0	-38.3	-13.0	-25.3	
3.465	-15.9	Н	3.0	35.5	1.0	-50.3	-13.0	-37.3	
5.198	-6.9	Н	3.0	35.3	1.0	-41.2	-13.0	-28.2	
High Ch, ((750MH-)								
	-19.1	v	3.0	35.4	1.0	-53.5	-13.0	-40.5	
3 500	-15.7	v	3.0	35.3	1.0	-50.0	-13.0	-40.5	
	-21.3	ů H	3.0	35.4	1.0	-55.7	-13.0	-42.7	
3.500 5.250 3.500			3.0	35.3	1.0	-49.0	-13.0	-36.0	
	-14.7	H							

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			Co Above 1GH	mpliance Co z High Free				ement	
Company	<i>r</i> :	LG							
Project #		13U14980							
Date:		05/09/13							
Test Eng	ineer:	Lieu Nguyen							
Configur		EUT and AC A	dapter						
Mode:			4 15.0MHz BW	16-QAM					
		,							
	Chambe	r	Pre-an	nplifer		Filter		L	imit
5	m Chamber B		T145 8449	B 🚽	Fil	ter 1	-	Part 27	•
0			1						
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (1715.0MHz)								
3.430	-16.8	V	3.0	35.5	1.0	-51.3	-13.0	-38.3	
5.145	-18.0	V	3.0	35.3	1.0	-52.4	-13.0	-39.4	
3.430	-15.9	H	3.0	35.5	1.0	-50.4	-13.0	-37.4	
5.145	-9.8	Н	3.0	35.3	1.0	-44.2	-13.0	-31.2	
	1732.5MHz)								
	-19.6	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
	-4.3	v	3.0	35.3	1.0	-38.7	-13.0	-25.7	
Mid Ch, (3.465 5.198		H	3.0	35.5	1.0	-51.2	-13.0	-38.2	
3.465	-16.8	П							
3.465 5.198 3.465	-16.8 -7.5	п Н	3.0	35.3	1.0	-41.8	-13.0	-28.8	
3.465 5.198 3.465 5.198	-7.5				1.0	-41.8	-13.0	-28.8	
3.465 5.198 3.465 5.198 High Ch, (-7.5 1750MHz)	Н	3.0	35.3					
3.465 5.198 3.465 5.198 High Ch, (3.500	-7.5 1750MHz) -19.9	H	3.0 3.0	35.3 35.4	1.0	-54.3	-13.0	-41.3	
3.465 5.198 3.465 5.198 High Ch, (3.500 5.250	-7.5 1750MHz) -19.9 -16.5	H V V	3.0 3.0 3.0	35.3 35.4 35.3	1.0 1.0	-54.3 -50.8	-13.0 -13.0	_41.3 _37.8	
3.465 5.198 3.465	-7.5 1750MHz) -19.9	H	3.0 3.0	35.3 35.4	1.0	-54.3	-13.0	-41.3	

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10.2.11. LTE BAND 17-5MHz BANDWIDTH

<u>QPSK</u>

Company Project # Date: Test Eng Configur Mode:	ineer: ation:	LG 13U14980 05/03/13 Megistu Mekui EUT and AC A LTE Band 17,	dapter						
	Chambe	r	Pre-ar	nplifer		Filter		Li	mit
51	n Chamber B	3 🗸	T145 8449	B 🔽	Fil	ter 1	•	Part 27	•
f	SG reading		Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (i	706.5MHz)								
1.413	-31.2	V	3.0	35.8	1.0	-66.0	-13.0	-53.0	
2.119	-20.3	V	3.0	35.4	1.0	-54.6	-13.0	-41.6	
1.413	-28.9	H	3.0	35.8	1.0	-63.7	-13.0	-50.7	
2.119	-24.1	H	3.0	35.4	1.0	-58.5	-13.0	-45.5	
Mid Ch, (i	(10MH-7)	•		······					
1.420	-14.8	V	3.0	35.7	1.0	-49.5	-13.0	-36.5	
2.130	-14.3	v	3.0	35.4	1.0	-48.7	-13.0	-35.7	
1.420	-15.0	Ĥ	3.0	35.7	1.0	-49.7	-13.0	-36.7	
2.130	-16.3	Н	3.0	35.4	1.0	-50.7	-13.0	-37.7	
				ļ					
High Ch, (N N	2.0	25.7	10	C4.0	42.0	E1 0	
1.427	-30.1 -25.9	V V	3.0 3.0	35.7 35.4	1.0 1.0	-64.8 -60.3	-13.0 -13.0	-51.8 -47.3	
	-20.9	V H	3.0	30.4 35.7	1.0	-60.3	-13.0	-47.3	
	-30.2	H	3.0	35.1 35.4	1.0	-64.9	-13.0 -13.0	-51.9	
2.141 1.427 2.141			3.0	JJ.4	1.0	-00.3	-13.0	-41.3	

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Company Project # Date: Test Eng Configura Mode:	ineer:	LG 13U14980 05/03/13 Megistu Meku EUT and AC A LTE Band 17,	dapter						
	Chambe	er	Pre-an	nplifer		Filter		Li	mit
5r	n Chamber E	3 🗸	T145 8449	3 🗸	Fil	ter 1	•	Part 27	-
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
_ow Ch, (7									
.413	-29.6	V	3.0	35.8	1.0	-64.3	-13.0	-51.3	
2.119 1.413	-21.8 -30.4	V H	3.0 3.0	35.4 35.8	1.0 1.0	-56.2 -65.2	-13.0 -13.0	-43.2 -52.2	
1.413 2.119	-30.4 -25.6	п Н	3.0	35.6 35.4	1.0	-60.2	-13.0 -13.0	-32.2 -46.9	
Mid Ch, (7	10MHz)								
1.420	-15.6	V	3.0	35.7	1.0	-50.3	-13.0	-37.3	
2.130	-12.9	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
1.420	85.3	Н	3.0	35.7	1.0	50.6	-13.0	63.6	
2.130	-14.3	Н	3.0	35.4	1.0	-48.7	-13.0	-35.7	
High Ch, (i						ļ			
1.427	-31.1	V	3.0	35.7	1.0	-65.8	-13.0	-52.8	
2.141 1.427	-25.7	V	3.0	35.4 35.7	1.0 1.0	-60.1 -64.7	-13.0	_47.1 _51.7	
2.141	-30.0	H	3.0	······································			-13.0 13.0		
	-26.6	H	3.0	35.4	1.0	-61.0	-13.0	-48.0	

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10.2.12. LTE BAND 17-10MHz BANDWIDTH

<u>QPSK</u>

Company Project # Date: Test Eng Configur: Node:	ineer: ation:	LG 13U14980 05/03/13 Megistu Meku EUT and AC A LTE Band 17,							
	Chamba	•	Pre-am	plifer		Filter			Limit
5m Chamber				•	Part 27				
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (7	/	(17/2)	(111)	(UD)	(ub)	(ubiii)	(ubiii)		
1.418	-30.3	V	3.0	35.7	1.0	-65.1	-13.0	-52.1	
2.127	-25.7	V	3.0	35.4	1.0	-60.1	-13.0	-47.1	
1.418	-31.7	Н	3.0	35.7	1.0	-66.4	-13.0	-53.4	
2.127	-24.1	Н	3.0	35.4	1.0	-58.5	-13.0	-45.5	
Mid Ch, (7	(10MHz)								
1.420	-28.6	٧	3.0	35.7	1.0	-63.4	-13.0	-50.4	
2.130	-21.6	٧	3.0	35.4	1.0	-55.9	-13.0	-42.9	
1.420	-28.4	Н	3.0	35.7	1.0	-63.1	-13.0	-50.1	
2.130	-26.2	H	3.0	35.4	1.0	-60.6	-13.0	-47.6	
	7 11 MHz)								
High Ch, (i	99.4	V	3.0	35.7	1.0	64.7	-13.0	77.7	
1.422			7 20 7	35.4	1.0	-60.0	-13.0	-47.0	
1.422 2.133	-25.6	V	3.0						
1.422		V H H	3.0 3.0 3.0	35.7 35.4	1.0 1.0	-63.9 -61.0	-13.0 -13.0	-50.9 -48.0	

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Company Project # Date: Test Eng Configur: Mode:	ineer: ation:	LG 13U14980 05/03/13 Megistu Meku EUT and AC A LTE Band 17,							
	Chambe	r	Pre-ar	nplifer		Filter		L	imit
5m Chamber B		T145 8449B 🗸		Filter 1			Part 27		
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (7	09MHz)								
.418	-28.7	V	3.0	35.7	1.0	-63.5	-13.0	-50.5	
2.127	-25.5	V	3.0	35.4	1.0	-59.9	-13.0	-46.9	
2.121		Н	3.0	35.7	1.0	-65.9	-13.0	-52.9	
1.418	-31.2								
1.418	-31.2 -24.4	H	3.0	35.4	1.0	-58.8	-13.0	-45.8	
1.418 2.127	-24.4		3.0	35.4	1.0	-58.8	-13.0	-45.8	
1.418 2.127 Mid Ch, (7	-24.4 10MHz)	Н							
1.418 2.127 Mid Ch, (7 1.420	-24.4 10MHz) -29.9	H	3.0	35.7	1.0	-64.6	-13.0	-51.6	
1.418 2.127 Mid Ch, (7 1.420 2.130	-24.4 10MHz) -29.9 -24.9	H V V	3.0 3.0	35.7 35.4	1.0 1.0	-64.6 -59.3	-13.0 -13.0	-51.6 -46.3	
1.418 2.127 Mid Ch, (7 1.420	-24.4 10MHz) -29.9	H	3.0	35.7	1.0	-64.6	-13.0	-51.6	
1.418 2.127 Mid Ch, (7 1.420 2.130 1.420 2.130	-24.4 10MHz) -29.9 -24.9 -31.5 -24.1	H V V H	3.0 3.0 3.0	35.7 35.4 35.7	1.0 1.0 1.0	-64.6 -59.3 -66.2	-13.0 -13.0 -13.0	-51.6 -46.3 -53.2	
1.418 2.127 Mid Ch, (7 1.420 2.130 1.420 2.130 High Ch, (7	-24.4 10MHz) -29.9 -24.9 -31.5 -24.1 '11MHz)	H V V H H	3.0 3.0 3.0	35.7 35.4 35.7 35.4	1.0 1.0 1.0	-64.6 -59.3 -66.2 -58.5	-13.0 -13.0 -13.0 -13.0	-51.6 -46.3 -53.2	
1.418 2.127 Mid Ch, (7 1.420 2.130 1.420 2.130 High Ch, (7 1.422	-24.4 10MHz) -29.9 -24.9 -31.5 -24.1 '11MHz) -30.7	H V H H	3.0 3.0 3.0 3.0 3.0 3.0	35.7 35.4 35.7 35.4 35.4 35.7	1.0 1.0 1.0 1.0	-64.6 -59.3 -66.2 -58.5 -65.4	-13.0 -13.0 -13.0 -13.0 -13.0	-51.6 -46.3 -53.2 -45.5 -52.4	
1.418 2.127 Mid Ch, (7 1.420 2.130 1.420 2.130 High Ch, (7 1.422 2.133	-24.4 10MHz) -29.9 -24.9 -31.5 -24.1 11MHz) -30.7 -24.9	H V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.7 35.4 35.7 35.4 35.4 35.4 35.7 35.4	1.0 1.0 1.0 1.0 1.0	-64.6 -59.3 -66.2 -58.5 -65.4 -59.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-51.6 -46.3 -53.2 -45.5 -52.4 -6.3	
1.418 2.127 Mid Ch, (7 1.420 2.130 1.420 2.130 High Ch, (7 1.422	-24.4 10MHz) -29.9 -24.9 -31.5 -24.1 '11MHz) -30.7	H V H H	3.0 3.0 3.0 3.0 3.0 3.0	35.7 35.4 35.7 35.4 35.4 35.7	1.0 1.0 1.0 1.0	-64.6 -59.3 -66.2 -58.5 -65.4	-13.0 -13.0 -13.0 -13.0 -13.0	-51.6 -46.3 -53.2 -45.5 -52.4	

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