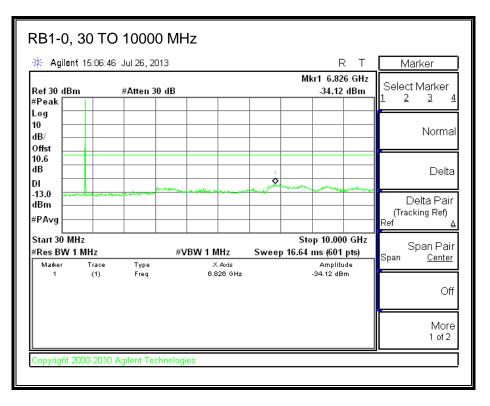
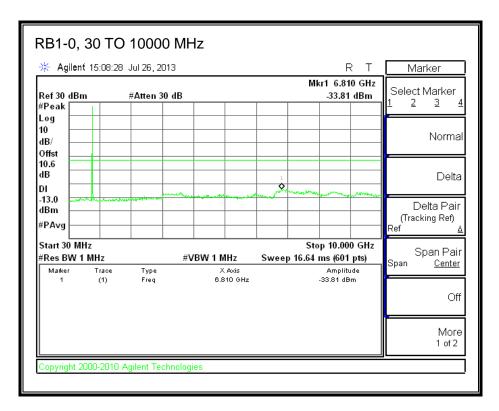
LTE QPSK Band 13, 784.5MHz (5MHz Bandwidth)



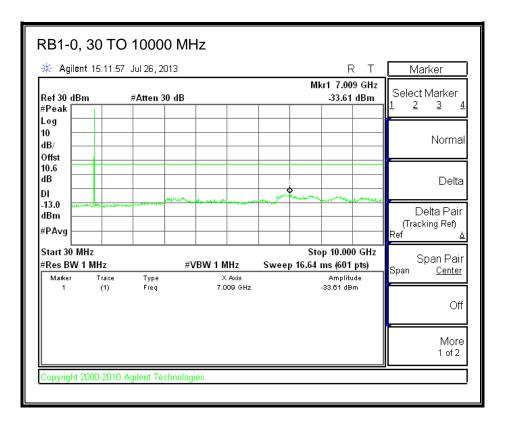
LTE 16QAM Band 13, 784.5MHz (5MHz Bandwidth)



LTE QPSK Band 13, 782MHz (10MHz Bandwidth)

₩ Agilent 15:10:59 Jul 26, 2013 R T										Marker		
Ref 30 dBn	n	#Atten 3	30 dB	Mkr1 6.859 G) dB33.42 dBi						Select Marke		
Peak		_								⊥ ≤	2	4
0 IB/											Norr	na
0.6 IB						1					De	
<u>и</u> –			al marine			×	many	m	man			
13.0 IBm										_	elta Pa king Re	
PAvg										Ref	ing ito	″.
Start 30 Mi Res BW 1			# \	/BW 1 N	1Hz	Swee	Sto p 16.64 (p 10.00 ms (601			ipan P	
Marker 1	Trace	Туре			Axis 59 GHz			Ampliti -33.42 dE		Span	<u>Cen</u>	te
1	(1)	Freq		0.8	69 GHZ			-33.42 dE	'n		(Of
											Mo	
											1 of	í2

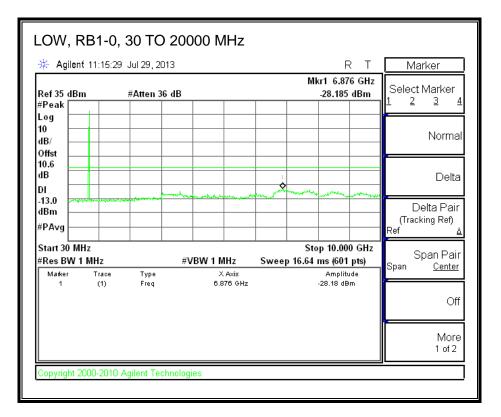
LTE 16QAM Band 13, 782MHz (10MHz Bandwidth)

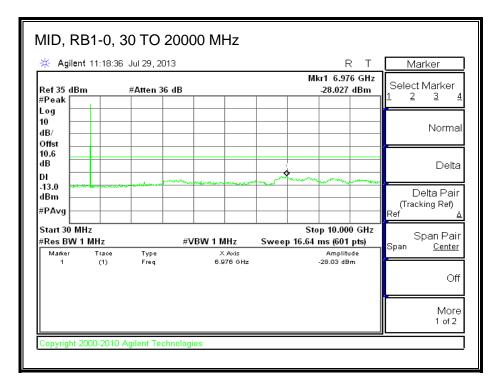


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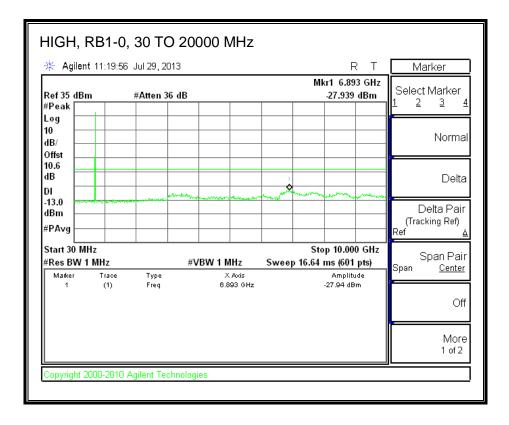
8.3.5. LTE BAND 17

LTE QPSK (5.0 MHz BAND WIDTH)

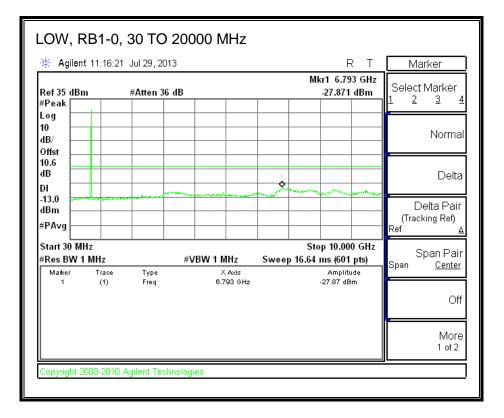


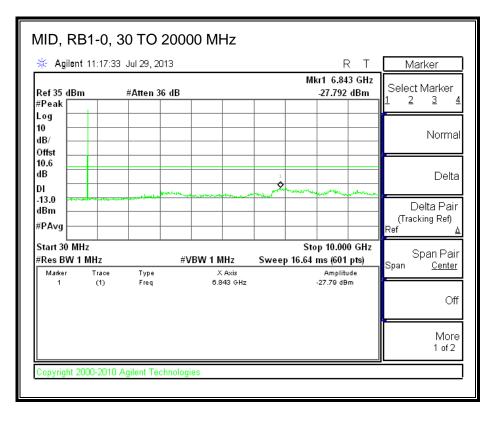


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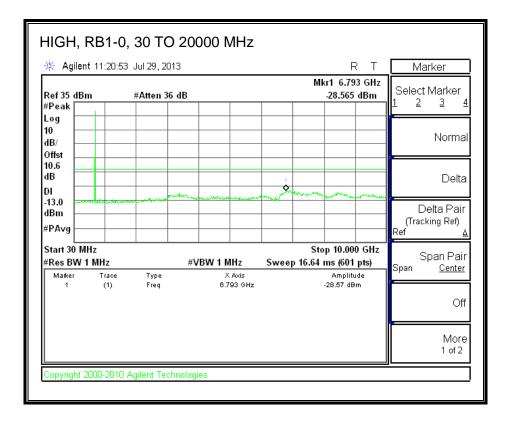


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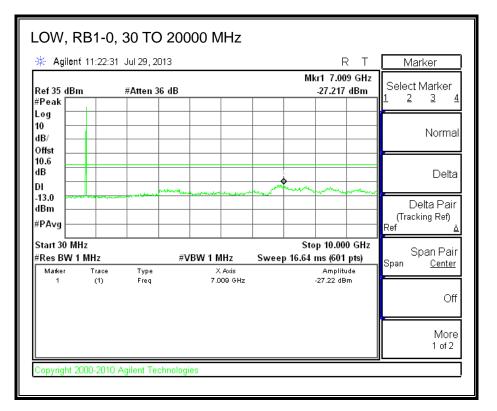
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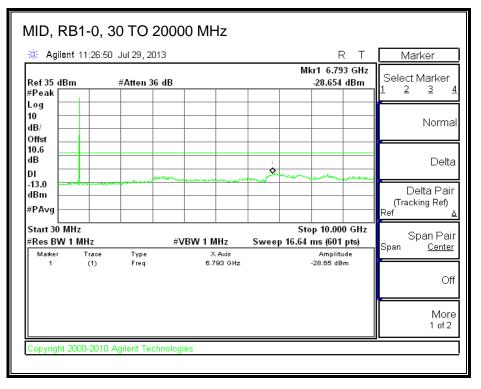


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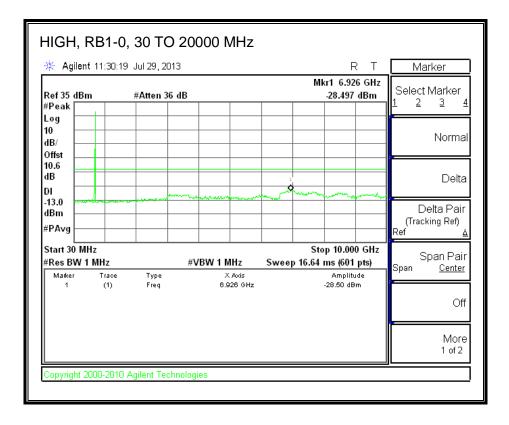
Band 17 (10.0 MHz BAND WIDTH)

LTE QPSK

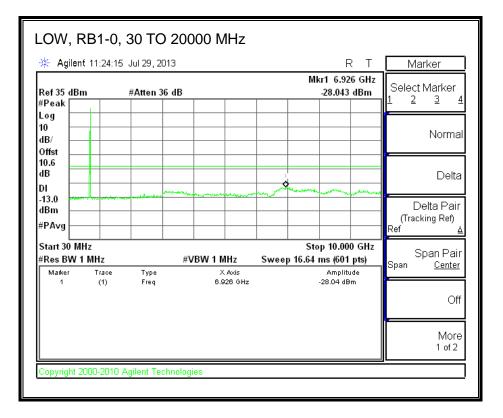


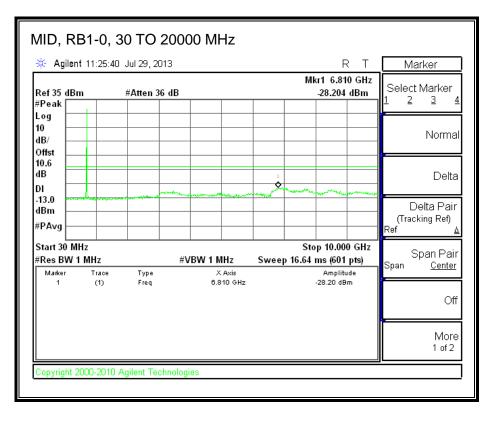


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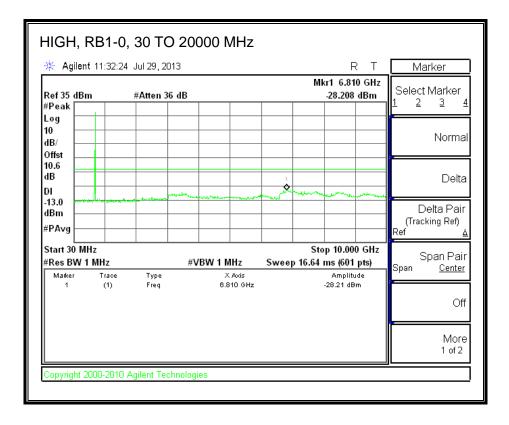


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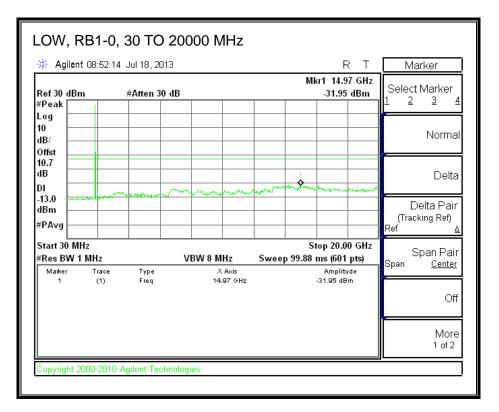
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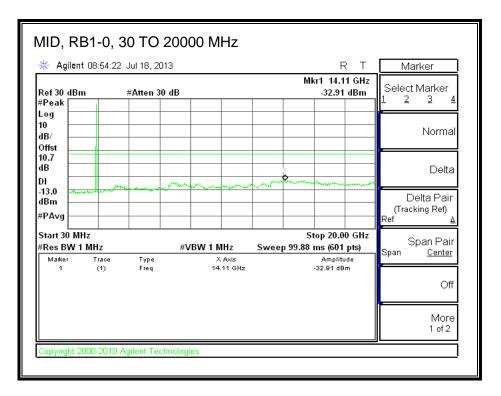


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8.3.6. LTE BAND 25

LTE QPSK (1.4 MHz BAND WIDTH)

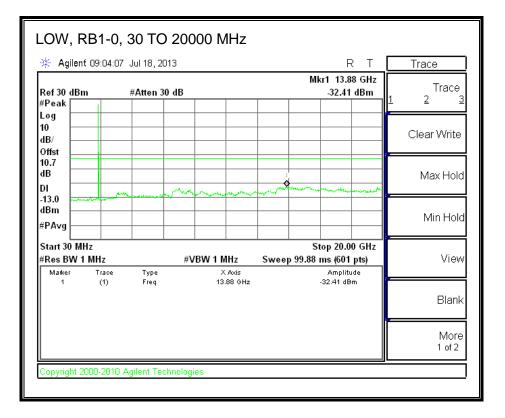


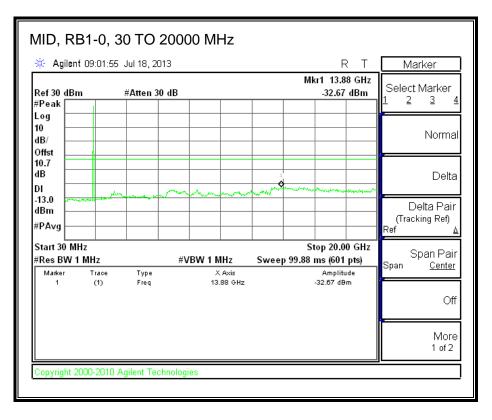


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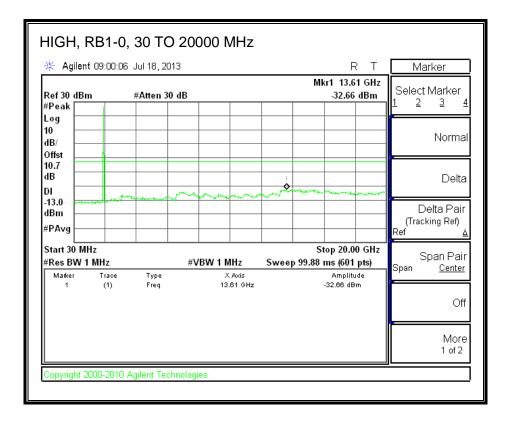
	00.01.24	Jul 18, 201	<u> </u>					<u>२</u> т	1110	arker
Ref 30 dBm		#Atten 30	dB			M	kr1 15.2 -32.73	27 GHz ⊜dBm	Select	t Marker <u>3</u> 4
#Peak									⊥ ≤	2 4
Log 10										
										Norma
Offst										
10.7										
dB						1				Delta
DI -13.0	and	Laura	min	mon	-	man and the	maria			
-13.0	and a second)elta Pair
#PAvg									(Trac	king Ref)
#FAVg									Ref	≙
Start 30 MH:						S	top 20.0	0 GHz		Span Pair
#Res BW 1 I	MHz		#VBV	V 1 MHz	Sw	eep 99.88	,	•	Span	Center
Marker 1	Trace (1)	Type Freg		X Axis 15.27 0			Amplite -32.73 dB		_	
'	0	rieq		10.27 0	712		-32.75 06	,		
										Off
										More
										1 of 2

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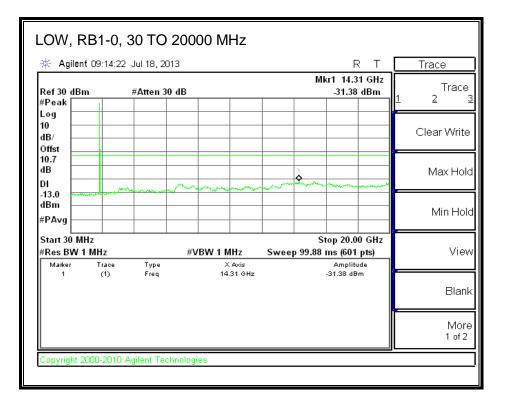


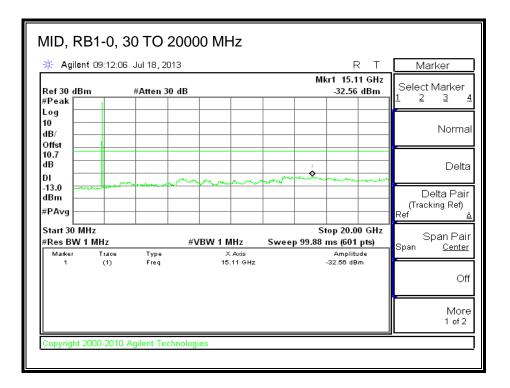
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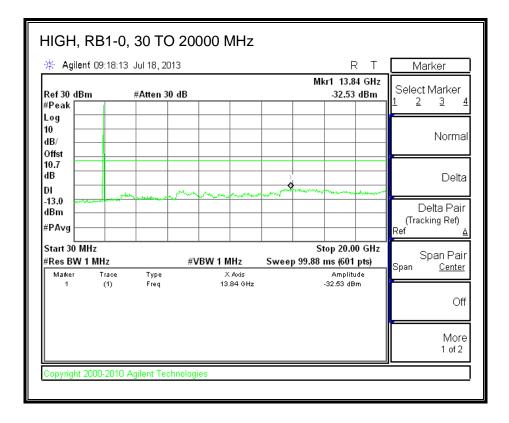
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LTE QPSK (3.0 MHz BAND WIDTH)

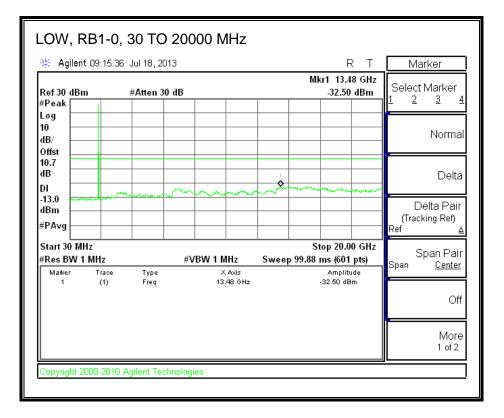


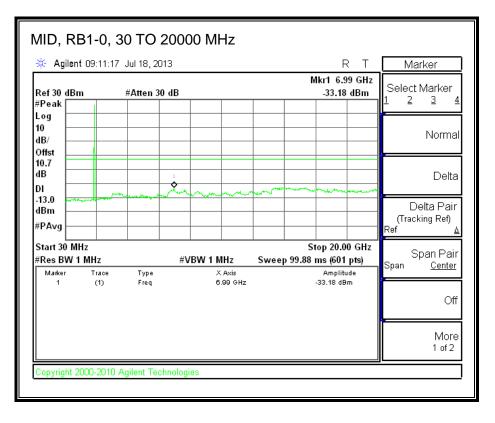


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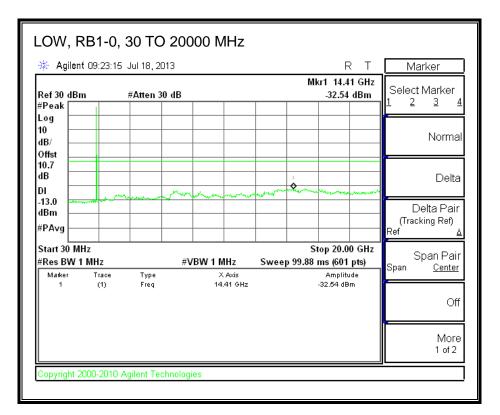


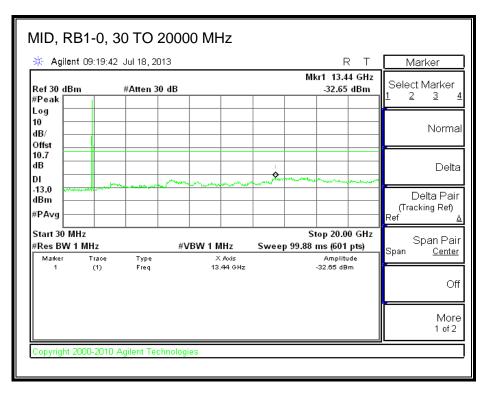
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	50.11.20	Jul 18, 20	10					g1 15.2	R Τ		arker
Ref 30 dBm		#Atten 30 dB						Select Marker			
#Peak Log	_									- <u>-</u>	
10											Normal
dB/	_										Normal
0ffst	-									<u> </u>	
dB							1				Delta
DI			Anna			- more	\$	man	-		Doita
-13.0	al areas	man at	<u>,</u>	ar garage						Г. Г.)elta Pair
dBm —											king Ref)
#PAvg										Ref	∆
Start 30 MHz							St	top 20.0	0 GHz		
#Res BW 1 N	/Hz		#V	BW 1 N	٨Hz	Swee	p 99.88	ms (601	pts)	् Span	Span Pair Center
Marker 1	Trace	Туре			Axis .21 GHz			Ampliti -32.21 dB		Opan	<u></u>
1	(1)	Freq		10	.21 GHZ			-32.21 08	^{, m}		
											Off
											More
											1 of 2

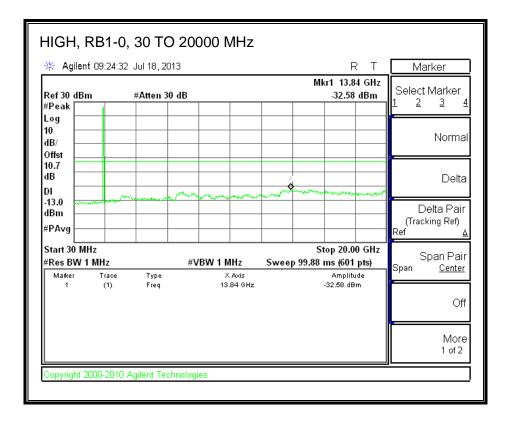
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LTE QPSK (5.0 MHz BAND WIDTH)

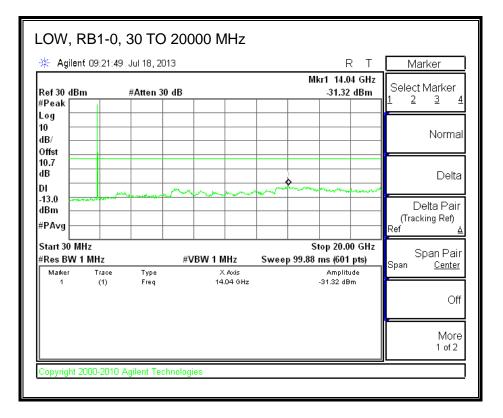


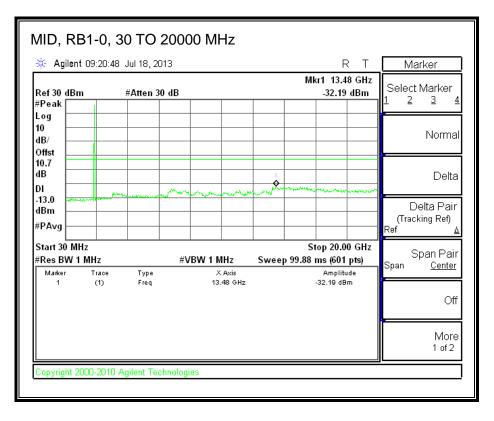


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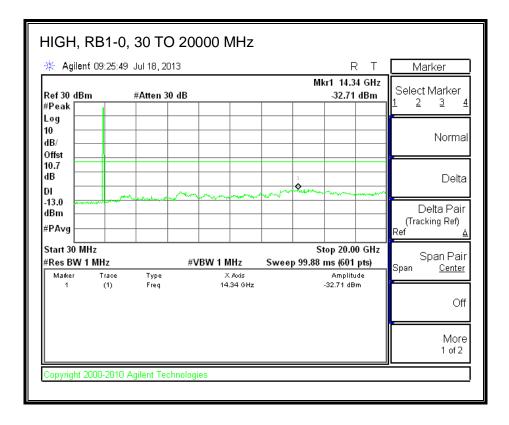


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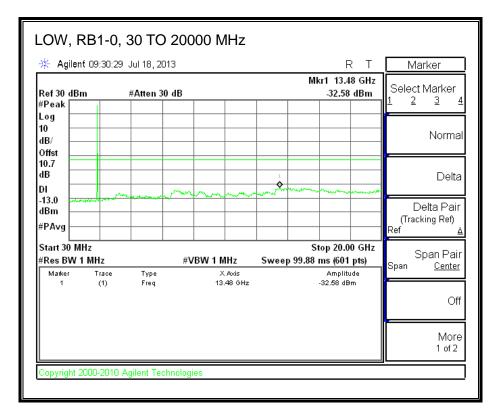


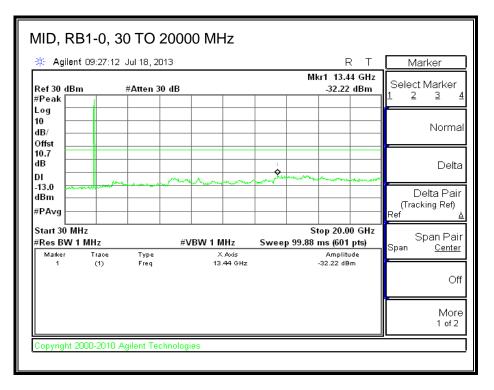
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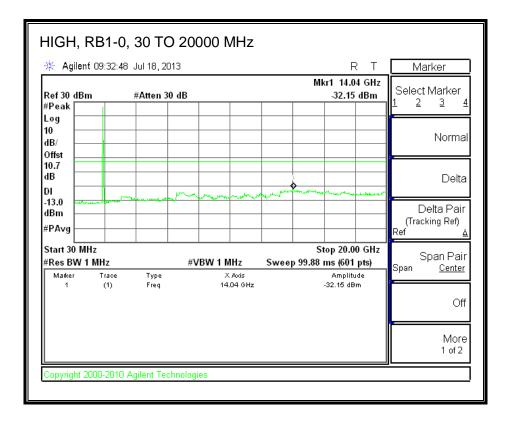
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LTE QPSK (10.0 MHz BAND WIDTH)

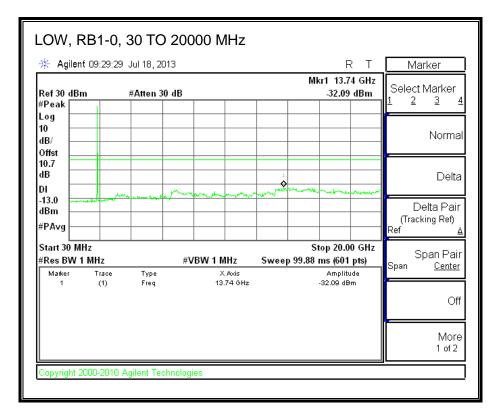


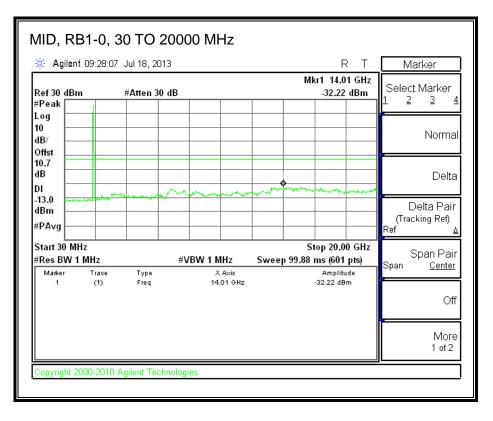


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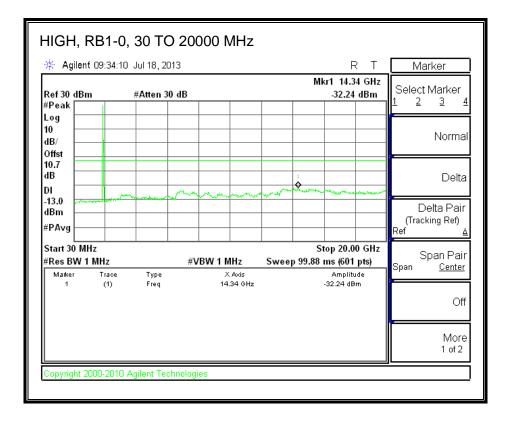


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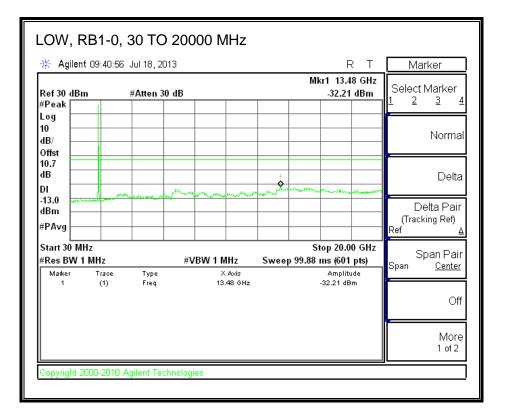


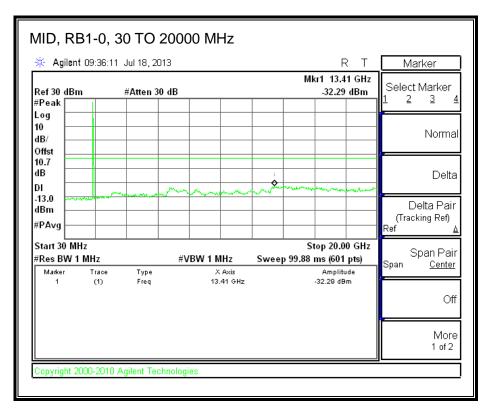
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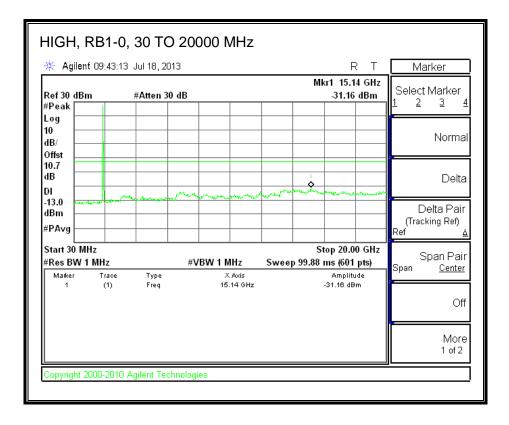
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LTE QPSK (15.0 MHz BAND WIDTH)

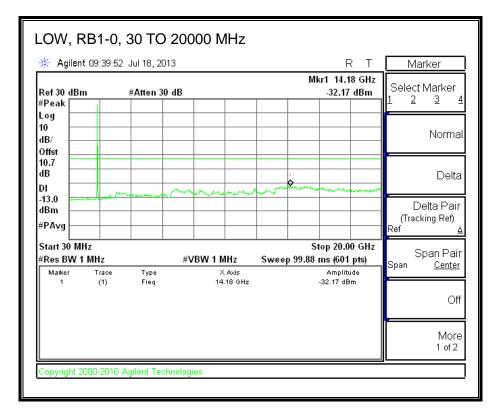


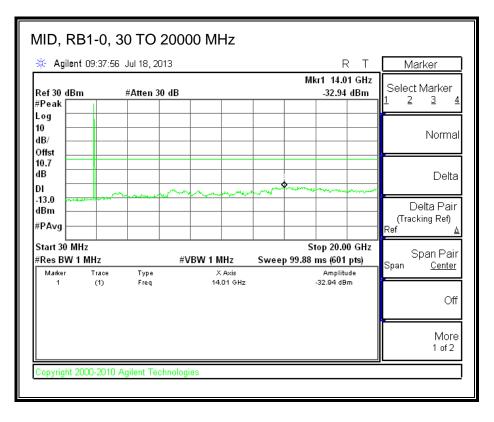


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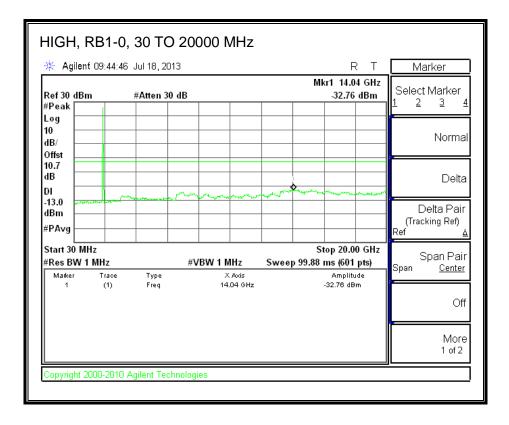


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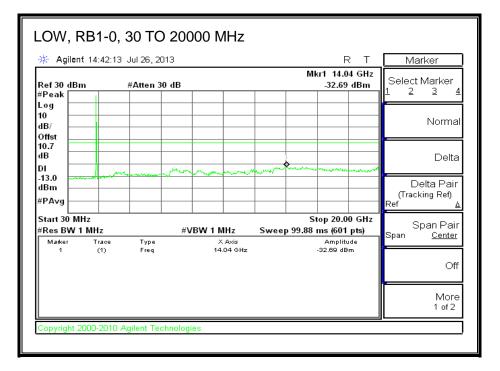
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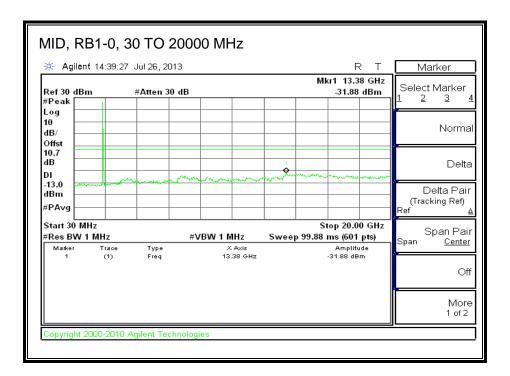


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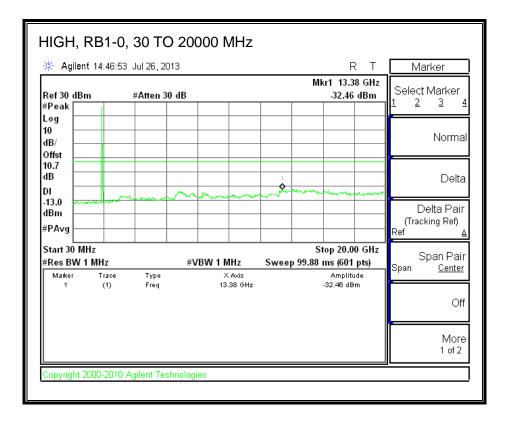
Band 25 (20.0 MHz BAND WIDTH)

LTE QPSK

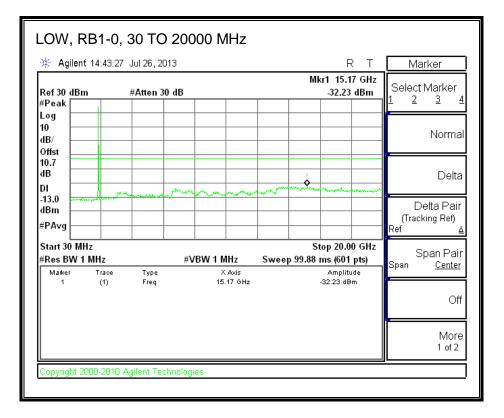


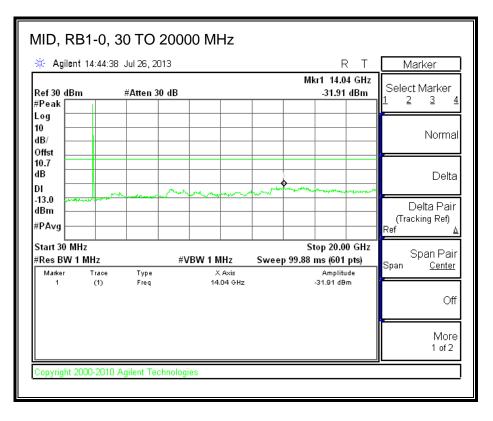


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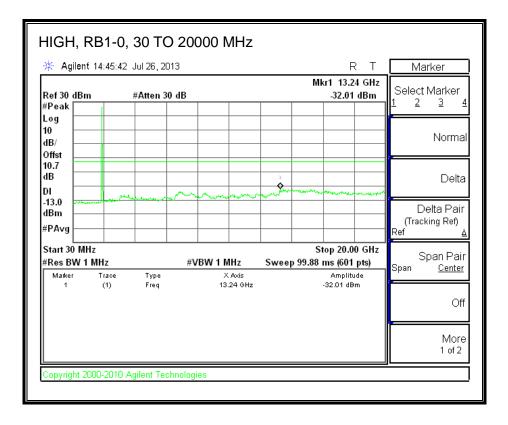


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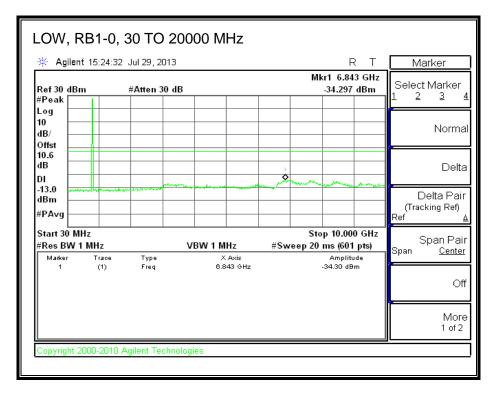
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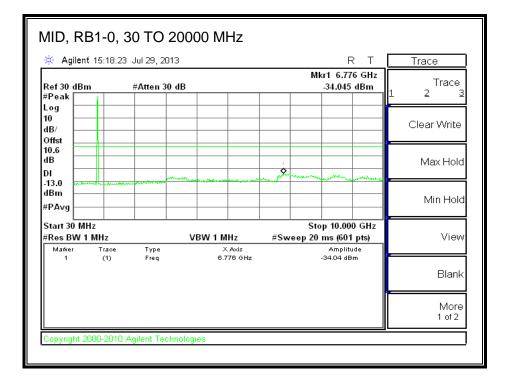


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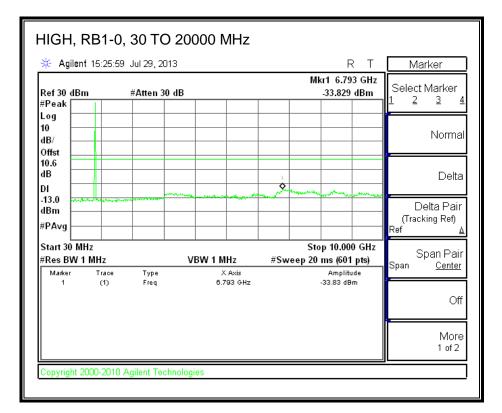
8.3.7. LTE BAND 26

3MHZ BW LTE QPSK



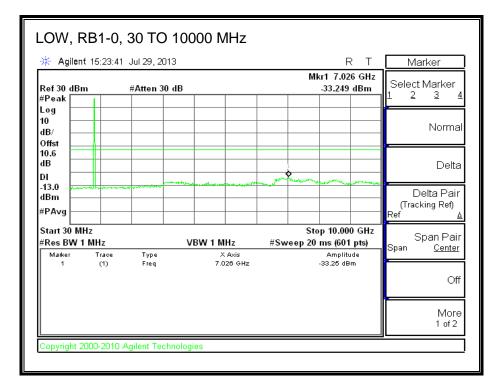


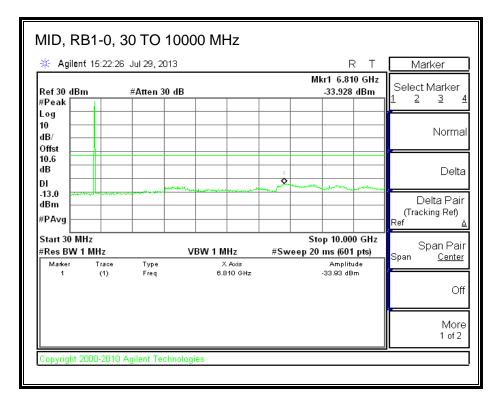
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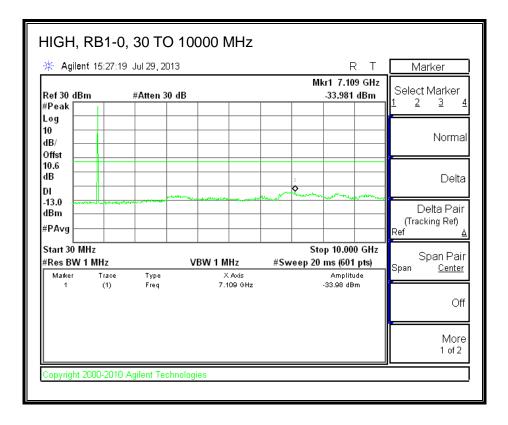
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LTE 16QAM



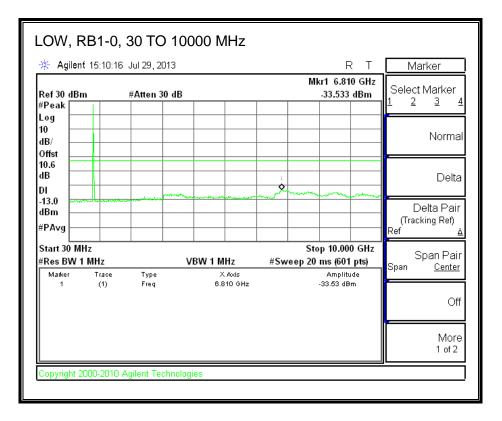


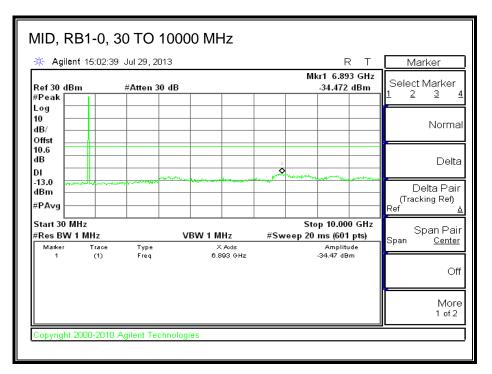
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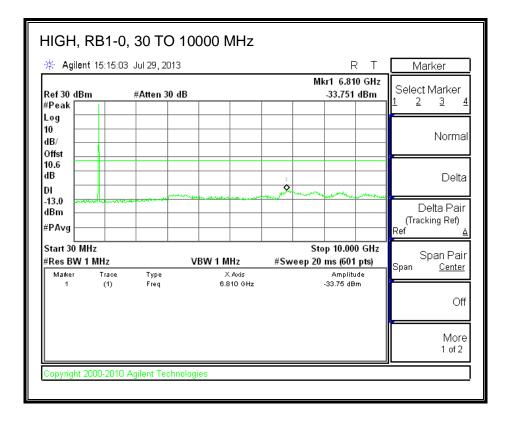
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LTE BAND 26 QPSK (5.0 MHz BAND WIDTH)



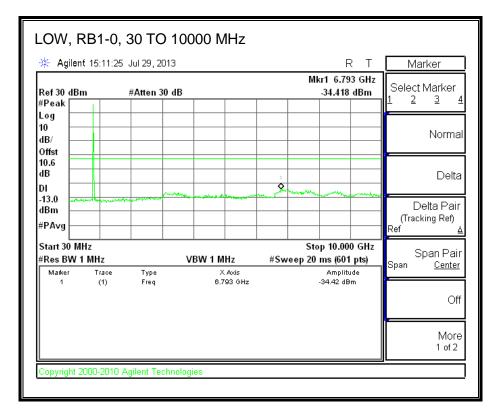


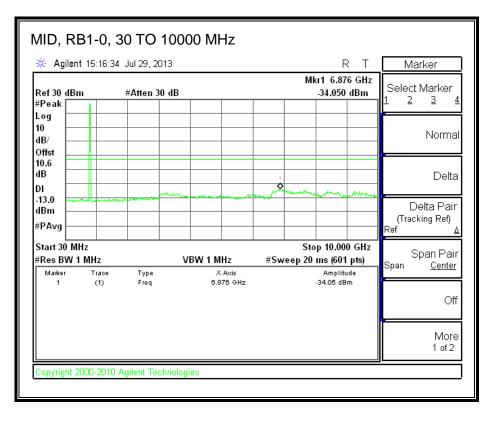
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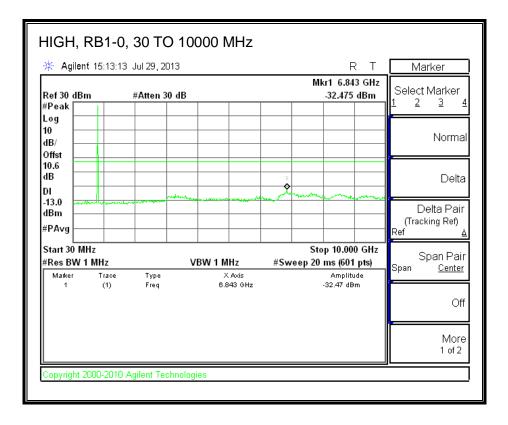
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LTE 16QAM





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8.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

22.355 & RSS-132 4.3 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage = low voltage, 3.4VDC, Normal, 3.8VDC and High voltage, 4.3VDC.

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

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26

RESULTS

See the following pages.

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Reference Frequency: Mid Channel 1879.999986 MHz @ 20°C				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4700.000	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999968	0.010	2.5
3.80	40	1879.999969	0.009	2.5
3.80	30	1879.999967	0.010	2.5
3.80	20	1879.999986	0	2.5
3.80	10	1879.999968	0.010	2.5
3.80	0	1879.999968	0.010	2.5
3.80	-10	1879.999993	-0.004	2.5
3.80	-20	1879.999966	0.011	2.5
3.80	-30	1879.999965	0.011	2.5
R	eference Frequency	: Mid Channel 187	9.999986 MHz @ 20%	C
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4700.000	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1879.999986	0	2.5
4.20	20	1879.999966	0.011	2.5
3.40	20	1879.999965	0.011	2.5
End Voltage(3.2V)	20	1879.999962	0.013	2.5

LTE BAND 2, QPSK - 1880.0 MHz

LTE BAND 2, 16QAM – 1880.0 MHz

Reference Frequency: Mid Channel 1879.999979 MHz @ 20°C				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4700.000	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999956	0.012	2.5
3.80	40	1879.999968	0.006	2.5
3.80	30	1879.999962	0.009	2.5
3.80	20	1879.999979	0	2.5
3.80	10	1879.999963	0.009	2.5
3.80	0	1879.999960	0.010	2.5
3.80	-10	1879.999987	-0.004	2.5
3.80	-20	1879.999961	0.010	2.5
3.80	-30	1879.999955	0.013	2.5
			9.999979 MHz @ 20%	C
Limit: within	the authorized bloc			Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1879.999979	0	2.5
4.20	20	1879.999958	0.011	2.5
3.40	20	1879.999961	0.010	2.5
End Voltage(3.2V)	20	1879.999957	0.012	2.5

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LTE BAND 4 – 1732.5 MHz QPSK

Reference Frequency: Mid Channel 1732.500008 MHz @ 20°C				
	the authorized bloc			Hz
Power Supply	Environment		viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500016	-0.005	2.5
3.80	40	1732.500015	-0.004	2.5
3.80	30	1732.500014	-0.003	2.5
3.80	20	1732.500008	0	2.5
3.80	10	1732.500016	-0.005	2.5
3.80	0	1732.500015	-0.004	2.5
3.80	-10	1732.500016	-0.005	2.5
3.80	-20	1732.500014	-0.003	2.5
3.80	-30	1732.500012	-0.002	2.5
R	eference Frequency	: Mid Channel 173	2.500008 MHz @ 20%	C
Limit: within	h the authorized bloc			Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.500008	0	2.5
4.20	20	1732.500015	-0.004	2.5
3.40	20	1732.500013	-0.003	2.5
End Voltage(3.2V)	20	1732.500012	-0.002	2.5

LTE BAND 4 - 1732.5 MHZ, 16QAM

Reference Frequency: Mid Channel 1732.500007 MHz @ 20°C				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4331.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500014	-0.004	2.5
3.80	40	1732.500013	-0.003	2.5
3.80	30	1732.500012	-0.003	2.5
3.80	20	1732.500007	0	2.5
3.80	10	1732.500013	-0.003	2.5
3.80	0	1732.500012	-0.003	2.5
3.80	-10	1732.500013	-0.003	2.5
3.80	-20	1732.500013	-0.003	2.5
3.80	-30	1732.500014	-0.004	2.5
R	eference Frequency	: Mid Channel 173	2.500007 MHz @ 20%	C
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4331.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.500007	0	2.5
4.20	20	1732.500015	-0.005	2.5
3.40	20	1732.500013	-0.003	2.5
End Voltage(3.2V)	20	1732.500014	-0.004	2.5

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2.5

LTE Band 5 QPSK – MID CHANNEL

Reference Frequency: Mid Channel 836.500004 MHz @ 20°C				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	2091.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.500008	-0.005	2.5
3.80	40	836.500007	-0.004	2.5
3.80	30	836.500007	-0.004	2.5
3.80	20	836.500004	0	2.5
3.80	10	836.500006	-0.002	2.5
3.80	0	836.500007	-0.004	2.5
3.80	-10	836.500008	-0.005	2.5
3.80	-20	836.500009	-0.006	2.5
3.80	-30	836.500009	-0.006	2.5
F	Reference Frequency	: Mid Channel 836	6.500004 MHz @ 20ºC	;
Limit: within	the authorized bloc	k or +- 2.5 ppm =	2091.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	836.500004	0	2.5
4.20	20	836.500007	-0.004	2.5
3.40	20	836.500008	-0.005	2.5

836.500007

-0.004

LTE Band 5 16QAM – MID CHANNEL

20

End Voltage(3.2V)

Reference Frequency: Mid Channel 836.500003 MHz @ 20°C				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	2091.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.500006	-0.004	2.5
3.80	40	836.500005	-0.002	2.5
3.80	30	836.500005	-0.002	2.5
3.80	20	836.500003	0	2.5
3.80	10	836.500007	-0.005	2.5
3.80	0	836.500006	-0.004	2.5
3.80	-10	836.500006	-0.004	2.5
3.80	-20	836.500007	-0.005	2.5
3.80	-30	836.500007	-0.005	2.5
R	Reference Frequency	: Mid Channel 836	6.500003 MHz @ 20ºC	
Limit: within	the authorized bloc	k or +- 2.5 ppm =	2091.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	-
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	836.500003	0	2.5
4.20	20	836.500008	-0.006	2.5
3.40	20	836.500008	-0.006	2.5
End Voltage(3.2V)	20	836.500007	-0.005	2.5

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LTE BAND 13, QPSK – 782.000 MHz

Reference Frequency: Mid Channel 781.999997 MHz @ 20°C					
Limit: within	Limit: within the authorized block or +- 2.5 ppm = 1955.000 Hz				
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)	
3.80	50	781.999999	-0.003	2.5	
3.80	40	782.000000	-0.004	2.5	
3.80	30	781.999991	0.008	2.5	
3.80	20	781.999997	0	2.5	
3.80	10	781.999991	0.008	2.5	
3.80	0	781.999992	0.006	2.5	
3.80	-10	781.999994	0.004	2.5	
3.80	-20	782.000001	-0.005	2.5	
3.80	-30	782.000000	-0.004	2.5	
				-	

Reference Frequency: Mid Channel 781.999997 MHz @ 20°C					
Limit: within	Limit: within the authorized block or +- 2.5 ppm = 1955.000 Hz				
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)	
3.80	20	781.999997	0	2.5	
4.20	20	781.999994	0.004	2.5	
3.40	20	781.999993	0.005	2.5	
End Voltage(3.2V)	20	781.999992	0.006	2.5	

LTE BAND 13, 16QAM- 782.000 MHz

Reference Frequency: Mid Channel 781.999997 MHz @ 20°C				
	the authorized bloc		1955.000	Hz
Power Supply	Environment		viation Measureed wi	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	781.999994	0.004	2.5
3.80	40	781.999995	0.003	2.5
3.80	30	781.999994	0.004	2.5
3.80	20	781.999997	0	2.5
3.80	10	781.999993	0.005	2.5
3.80	0	781.999993	0.005	2.5
3.80	-10	781.999998	-0.001	2.5
3.80	-20	781.999999	-0.003	2.5
3.80	-30	781.999993	0.005	2.5
F	Reference Frequency	: Mid Channel 781	.999997 MHz @ 20°C	;
Limit: within	the authorized bloc	k or +- 2.5 ppm =	1955.000	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	781.999997	0	2.5
4.20	20	781.999993	0.005	2.5
3.40	20	781.999992	0.006	2.5
End Voltage(3.2V)	20	781.999990	0.009	2.5

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LTE BAND 17 – 710 MHz, 5MHz

Reference Frequency: Mid Channel 709.999997 MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 1775.000 Hz					
Power Supply	Environment		iation Measureed wi		
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)	
3.80	50	709.999992	0.007	2.5	
3.80	40	709.999994	0.004	2.5	
3.80	30	709.999995	0.003	2.5	
3.80	20	709.999997	0	2.5	
3.80	10	710.000000	-0.004	2.5	
3.80	0	709.999992	0.007	2.5	
3.80	-10	709.999999	-0.003	2.5	
3.80	-20	710.000000	-0.004	2.5	
3.80	-30	709.999992	0.007	2.5	

Reference Frequency: Mid Channel 709.999997 MHz @ 20°C					
Limit: within the authorized block or +- 2.5 ppm = 1775.000 Hz					
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse				
(Vdc)	Temperature (*C)	ure (*C) (MHz) Delta (ppm) Limit (ppm)			
3.80	20	709.999997	0	2.5	
4.20	20	709.999993	0.006	2.5	
3.40	20	709.999994	0.004	2.5	
End Voltage(3.2V)	20	709.999992	0.007	2.5	

LTE BAND 17 – 710 MHz, 10MHz

Reference Frequency: Mid Channel 709.999996 MHz @ 20°C				
	the authorized bloc			Hz
Power Supply	Environment		viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	709.999994	0.003	2.5
3.80	40	709.999992	0.006	2.5
3.80	30	709.999993	0.004	2.5
3.80	20	709.999996	0	2.5
3.80	10	709.999993	0.004	2.5
3.80	0	709.999998	-0.003	2.5
3.80	-10	709.999993	0.004	2.5
3.80	-20	709.999992	0.006	2.5
3.80	-30	709.999992	0.006	2.5
			9.999996 MHz @ 20ºC	;
Limit: within	the authorized bloc		1775.000	Hz
Power Supply	Environment	<u> </u>	viation Measureed wi	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	709.999996	0	2.5
4.20	20	709.999993	0.004	2.5
3.40	20	709.999999	-0.004	2.5
End Voltage(3.2V)	20	709.999991	0.007	2.5

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2.5

2.5

LTE Band 25 QPSK – MID CHANNEL

Reference Frequency: Mid Channel 1882.499983 MHz @ 20°C				
Limit: withir	n the authorized bloc			Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1882.499968	0.008	2.5
3.80	40	1882.499971	0.006	2.5
3.80	30	1882.499966	0.009	2.5
3.80	20	1882.499983	0	2.5
3.80	10	1882.499968	0.008	2.5
3.80	0	1882.499969	0.007	2.5
3.80	-10	1882.499967	0.008	2.5
3.80	-20	1882.499968	0.008	2.5
3.80	-30	1882.499967	0.008	2.5
R	eference Frequency	: Mid Channel 188	2.499983 MHz @ 20%	C
Limit: withir	the authorized bloc	k or +- 2.5 ppm =	4706.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1882.499983	0	2.5
4.20	20	1882.499968	0.008	2.5

1882.499967

1882.499967

0.008

0.008

LTE Band 25 16QAM – MID CHANNEL

20

20

3.40

End Voltage(3.2V)

Reference Frequency: Mid Channel 1882.499985 MHz @ 20ºC				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4706.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1882.499968	0.009	2.5
3.80	40	1882.499970	0.008	2.5
3.80	30	1882.499969	0.008	2.5
3.80	20	1882.499985	0	2.5
3.80	10	1882.499995	-0.005	2.5
3.80	0	1882.499970	0.008	2.5
3.80	-10	1882.499971	0.007	2.5
3.80	-20	1882.499972	0.007	2.5
3.80	-30	1882.499971	0.007	2.5
R	eference Frequency	: Mid Channel 188	2.499985 MHz @ 20%	C
Limit: within	the authorized bloc	k or +- 2.5 ppm =	4706.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1882.499985	0	2.5
4.20	20	1882.499969	0.008	2.5
3.40	20	1882.499967	0.010	2.5
End Voltage(3.2V)	20	1882.499966	0.010	2.5

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LTE Band 26 QPSK – MID CHANNEL

Reference Frequency: Mid Channel 821.299996 MHz @ 20ºC				
Limit: within	n the authorized bloc	k or +- 2.5 ppm =	2053.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	ith Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	821.299992	0.005	2.5
3.80	40	821.299993	0.004	2.5
3.80	30	821.299990	0.007	2.5
3.80	20	821.299996	0	2.5
3.80	10	821.299992	0.005	2.5
3.80	0	821.299999	-0.004	2.5
3.80	-10	821.299991	0.006	2.5
3.80	-20	821.299993	0.004	2.5
3.80	-30	821.299992	0.005	2.5
	Reference Frequency	: Mid Channel 821	.299996 MHz @ 20º0	

Reference Frequency: Mid Channel 821.299996 MHz @ 20°C					
Limit: within the authorized block or +- 2.5 ppm = 2053.250 Hz					
Power Supply Environment Frequency Deviation Measureed with Time Elapse					
(Vdc)	Temperature (*C) (MHz) Delta (ppm) Limit (ppm)				
3.80	20	821.299996	0	2.5	
4.20	20	821.299992	0.005	2.5	
3.40	20	821.299991	0.006	2.5	
End Voltage(3.2V)	20	821.299989	0.009	2.5	

LTE Band 26 16QAM – MID CHANNEL

Reference Frequency: Mid Channel 821.299995 MHz @ 20ºC				
Limit: within	the authorized bloc	k or +- 2.5 ppm =	2053.250	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	821.299989	0.007	2.5
3.80	40	821.299991	0.005	2.5
3.80	30	821.299991	0.005	2.5
3.80	20	821.299995	0	2.5
3.80	10	821.299990	0.006	2.5
3.80	0	821.299992	0.004	2.5
3.80	-10	821.299991	0.005	2.5
3.80	-20	821.299997	-0.002	2.5
3.80	-30	821.299990	0.006	2.5
F	Reference Frequency	/: Mid Channel 821	1.299995 MHz @ 20ºC	;
	the authorized bloc			Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	821.299995	0	2.5
4.20	20	821.299990	0.006	2.5
3.40	20	821.299989	0.007	2.5
End Voltage(3.2V)	20	821.299988	0.009	2.5

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9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232 and §27.50

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) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.

27.50 (b)(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.

In addition, when the transmitter power is measured in terms of average value, the peak-toaverage ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17 KDB 971168 v02r01 RF power output using broadband peak and average power meter method.

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26

RESULTS

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BAND 2

EIRP LTE Band 2 (1.4 MHz BAND WIDTH)

			EIRP (Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
1.4MHz Band		1850.7	29.51	893.31
QPSK	6/0	1880.0	29.11	814.70
		1909.3	29.09	810.96
1.4MHz Band 16QAM		1850.7	28.51	709.58
	6/0	1880.0	28.11	647.14
		1909.3	28.09	644.17

EIRP LTE Band 2 (3.0 MHz BAND WIDTH)

			EIRP (Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
3.0MHz Band		1851.5	29.58	907.82
QPSK	15/0	1880.0	29.23	837.53
QPSK		1908.5	29.09	810.96
3.0MHz Band 16QAM		1851.5	28.66	734.51
	15/0	1880.0	28.31	677.64
TOQAIVI		1908.5	28.09	644.17

EIRP LTE Band 2 (5.0 MHz BAND WIDTH)

			EIRP (Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0MHz Band		1852.5	29.49	889.20
QPSK	25/0	1880.0	29.08	809.10
		1907.5	28.35	683.91
5.0MHz Band 16QAM		1852.5	28.34	682.34
	25/0	1880.0	28.01	632.41
IUQAW		1907.5	27.37	545.76

EIRP LTE Band 2 (10.0 MHz BAND WIDTH)

			EIRP (Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
10.0MHz Band		1855.0	29.89	974.99
QPSK	50/0	1880.0	29.40	870.96
		1905.0	29.23	837.53
10.0MHz Band 16QAM		1855.0	28.76	751.62
	50/0	1880.0	28.38	688.65
TOQAIVI		1905.0	28.19	659.17

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EIRP LTE Band 2 (15.0 MHz BAND WIDTH)

			EIRP (Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
15MHz Band		1857.5	29.81	957.19
QPSK	75/0	1880.0	29.51	893.31
		1902.5	29.48	887.16
15MHz Band 16QAM		1857.5	28.75	749.89
	75/0	1880.0	28.53	712.85
		1902.5	28.49	706.32

EIRP LTE Band 2 (20.0 MHz BAND WIDTH)

			EIRP (Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
20.0MHz Band		1860.0	30.15	1035.14
QPSK	100/0	1880.0	29.82	959.40
QFSK		1900.0	29.91	979.49
20MHz Band 16QAM		1860.0	29.15	822.24
	100/0	1880.0	28.73	746.45
TOQAIVI		1900.0	28.87	770.90

BAND 4

LAT EIRP LTE Band 4 (1.4 MHz BAND WIDTH)

			EIRP(Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
1.4 MHZ BAND		1710.7	27.89	615.18
QPSK	6/0	1732.5	28.40	691.83
		1754.3	27.85	609.54
1.4 MHZ BAND 16QAM		1710.7	26.99	500.03
	6/0	1732.5	27.89	615.18
IUQAIN		1754.3	26.99	500.03

EIRP LTE Band 4 (3.0 MHz BAND WIDTH)

			EIRP(Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
3.0 MHZ BAND	15/0	1711.5	28.04	636.80
QPSK		1732.5	28.66	734.51
QPSK		1753.5	28.17	656.15
3.0 MHZ BAND 16QAM		1711.5	27.04	505.82
	15/0	1732.5	27.66	583.45
		1753.5	27.17	521.19

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EIRP LTE Band 4 (5.0 MHz BAND WIDTH)

			EIRP(Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0 MHZ BAND QPSK		1712.5	28.63	729.46
	25/0	1732.5	28.39	690.24
		1752.5	28.49	706.32
5.0 MHZ BAND 16QAM	RAND	1712.5	27.63	579.43
	25/0	1732.5	27.39	548.28
IUQAW		1752.5	27.49	561.05

EIRP LTE Band 4 (10.0 MHz BAND WIDTH)

			EIRP(Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
10.0 MHZ BAND		1715.0	27.93	620.87
QPSK	50/0	1732.5	28.72	744.73
		1750.0	28.16	654.64
10.0 MHZ BAND 16QAM		1715.0	26.93	493.17
	50/0	1732.5	27.72	591.56
TOQAIVI		1750.0	27.16	520.00

EIRP LTE Band 4 (15.0 MHz BAND WIDTH)

			EIRP(Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
15.0 MHZ BAND		1717.5	27.98	628.06
QPSK	75/0	1732.5	28.69	739.61
		1747.5	28.13	650.13
15.0 MHZ BAND 16QAM		1717.5	26.98	498.88
	75/0	1732.5	27.69	587.49
TOQAIVI		1747.5	27.13	516.42

EIRP LTE Band 4 (20.0 MHz BAND WIDTH)

			EIRP(Peak)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
20.0 MHZ BAND		1720.0	28.10	645.65
QPSK	100/0	1732.5	28.64	731.14
		1745.0	27.99	629.51
20.0 MHZ BAND 16QAM		1720.0	27.10	512.86
	100/0	1732.5	27.64	580.76
TOQAIVI		1745.0	26.99	500.03

BAND 5

ERP LTE Band 5 (1.4 MHz BAND WIDTH)

			ERP (Average)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
1.4MHz Band	1/0	824.7	20.95	124.45
QPSK		836.5	21.82	152.05
QPSK		848.3	21.80	151.36
1.4MHz Band 16QAM		824.7	19.70	93.33
	1/0	836.5	20.76	119.12
		848.3	20.75	118.85

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ERP LTE Band 5 (3.0 MHz BAND WIDTH)

			ERP (Average)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
3.0 MHZ BAND		825.5	20.95	124.45
QPSK	1/0	836.5	21.90	154.88
QPSK		847.5	21.87	153.82
3.0 MHZ BAND 16QAM		825.5	19.90	97.72
	1/0	836.5	20.80	120.23
TOQAIVI		847.5	20.92	123.59

ERP LTE Band 5 (5.0 MHz BAND WIDTH)

			ERP (Average)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
		826.5	22.55	179.89
5MHz Band QPSK	1/0	836.5	23.25	211.35
		846.5	23.30	213.80
5MHz Band		826.5	19.80	95.50
16QAM	1/0	836.5	20.65	116.14
TOQAIVI		846.5	20.70	117.49

ERP LTE Band 5 (10.0 MHz BAND WIDTH)

		ERP (Average)		verage)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
10.0 MHZ BAND		829.0	21.00	125.89
QPSK	1/0	836.5	21.64	145.88
QPSK		844.0	21.83	152.41
10.0 MHZ BAND 16QAM	1/0	829.0	19.70	93.33
		836.5	20.40	109.65
		844.0	20.70	117.49

BAND 13

ERP LTE Band 13 (5.0 MHz BAND WIDTH)

			ERP (Average)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0 MHZ BAND		779.5	20.60	114.82
QPSK	1/0	782.0	21.10	128.82
		784.5	21.10	128.82
5.0 MHZ BAND 16QAM		779.5	19.50	89.13
	1/0	782.0	20.10	102.33
TOQAIVI		784.5	20.10	102.33

ERP BAND 13 (10.0 MHz BAND WIDTH)

			ERP (Av	erage)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
10 MHZ BAND QPSK	1/0	782.0	21.20	131.83
10 MHz BAND 16QAM	1/0	702.0	20.20	104.71

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BAND 17

ERP LTE Band 17 (5.0 MHz BAND WIDTH)

			ERP (Average)	
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5MHz Band QPSK		706.5	20.80	120.23
	1/0	710.0	21.22	132.43
		713.5	21.54	142.56
5MHz Band 16QAM		706.5	19.80	95.50
	1/0	710.0	20.22	105.20
		713.5	20.54	113.24

ERP LTE Band 17 (10.0 MHz BAND WIDTH)

			ERP (A	verage)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
10.0 MHZ BAND		709.0	20.70	117.49
QPSK	1/0	710.0	21.35	136.46
QF SN		711.0	21.46	139.96
10.0 MHZ BAND		709.0	19.75	94.41
16QAM	1/0	710.0	20.40	109.65
TOQAIVI		711.0	20.51	112.46

BAND 25

EIRP LTE Band 25 (1.4MHz BAND WIDTH)

			EIRP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
1.4 MHZ BAND		1850.7	29.52	895.36
QPSK	6/0	1880.0	29.79	952.80
QFON		1914.3	29.29	849.18
1.4 MHZ BAND		1850.7	28.52	711.21
1.4 MHZ BAND 16QAM	6/0	1880.0	28.79	756.83
IUQAIN		1914.3	28.29	674.53

EIRP LTE Band 25 (3.0MHz BAND WIDTH)

			EIRP((Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
3.0 MHZ BAND		1851.5	29.56	903.65
QPSK	15/0	1880.0	29.95	988.55
QION		1913.5	29.38	866.96
3.0 MHZ BAND		1851.5	28.61	726.11
16QAM	15/0	1880.0	29.00	794.33
IUQAIN		1913.5	28.43	696.63

EIRP LTE Band 25 (5.0MHz BAND WIDTH)

			EIRP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0 MHZ BAND		1852.5	29.51	893.31
QPSK	25/0	1880.0	29.75	944.06
QION		1912.5	29.39	868.96
5.0 MHZ BAND		1852.5	28.59	722.77
16QAM	25/0	1880.0	28.70	741.31
IUQAIVI		1912.5	28.38	688.65

EIRP LTE Band 25 (10.0MHz BAND WIDTH)

			EIRP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
10.0 MHZ BAND		1855.0	29.68	928.97
QPSK	50/0	1880.0	30.00	1000.00
QLOK		1910.0	29.86	968.28
10.0 MHZ BAND		1855.0	28.57	719.45
16QAM	50/0	1880.0	28.98	790.68
TOQAIVI		1910.0	28.86	769.13

EIRP LTE Band 25 (15.0MHz BAND WIDTH)

			EIRP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
15.0 MHZ BAND		1857.5	29.57	905.73
QPSK	75/0	1880.0	29.96	990.83
QFOR		1907.5	29.77	948.42
15.0 MHZ BAND		1857.5	28.56	717.79
16QAM	75/0	1880.0	28.92	779.83
TOQAM		1907.5	28.76	751.62

EIRP LTE Band 25 (20.0MHz BAND WIDTH)

			EIRP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
20.0 MHZ BAND		1860.0	29.77	948.42
QPSK	100/0	1880.0	30.18	1042.32
QION		1905.0	30.26	1061.70
20.0 MHZ BAND		1860.0	28.75	749.89
16QAM	100/0	1880.0	29.13	818.46
TOQAIVI		1905.0	29.27	845.28

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BAND 26

ERP LTE Band 26 (3.0 MHz BAND WIDTH)

			EIRP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
3.0 MHZ BAND		820.3	19.79	95.28
QPSK	1/0	821.3	20.12	102.80
QFON		822.3	19.80	95.50
3.0 MHZ BAND		820.3	18.70	74.13
16QAM	1/0	821.3	19.10	81.28
TOQAM		822.3	18.78	75.51

ERP LTE Band 26 (5.0 MHz BAND WIDTH)

			ERP(Peak)
Mode	RB/RB SIZE	f (MHz)	dBm	mW
5.0 MHZ BAND		818.8	19.91	97.95
QPSK	1/0	821.3	19.81	95.72
		823.8	19.88	97.27
5.0 MHZ BAND		818.8	18.80	75.86
16QAM	1/0	821.3	18.70	74.13
TOQAIM		823.8	18.80	75.86

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9.1.1. LTE BAND 2

EIRP LTE QPSK Band 2 (1.4 MHz BAND WIDTH)

<u>PEAK</u>

				ental Measuremen Services Chamber				
ompany		Apple						
roject #		13U15555						
ate:		08/19/13						
est Eng	neer:	Mona Hua						
onfigura		EUT Only						
lode:		LTE Band 2, 1	4MHz BW					
		QPSK, Peak, F	RB6-0					
est Equ								
010101000	p: Horn T344, and on: Horn T60 S	ubstitution,	8ft SMA Cable (2	Antenna Gain	se EIRP	Limit	Delta	Notes
ubstitut	on: Horn T60 S	ubstitution,	8ft SMA Cable (2			Limit (dBm)	Delta (dB)	Notes
f GHz Low Ch	on: Horn T60 S SG reading (dBm)	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.851	on: Horn T60 S SG reading (dBm) 19.3	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.39	(dBm) 33.0	(dB) _6.6	Notes
f GHz Low Ch	on: Horn T60 S SG reading (dBm)	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.851 1.851	on: Horn T60 S SG reading (dBm) 19.3	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.39	(dBm) 33.0	(dB) _6.6	Notes
f GHz Low Ch 1.851	on: Horn T60 S SG reading (dBm) 19.3	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.39	(dBm) 33.0	(dB) _6.6	Notes
f GHz Low Ch 1.851 1.851 Mid Ch	on: Horn T60 S SG reading (dBm) 19.3 21.6	Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 7.94 8.80	EIRP (dBm) 26.39 29.51	(dBm) 33.0 33.0	(dB) -6.6 -3.5	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880	on: Horn T60 S SG reading (dBm) 19.3 21.6 19.3	Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95	EIRP (dBm) 26.39 29.51 26.40	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.6 -3.5 -6.6	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.880	on: Horn T60 S SG reading (dBm) 19.3 21.6 19.3	Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95	EIRP (dBm) 26.39 29.51 26.40	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.6 -3.5 -6.6	Notes
distitut f GHz Low Ch 1.851 1.851 1.851 1.880 1.880 1.880 High Ch	on: Horn T60 S SG reading (dBm) 19.3 21.6 19.3 21.3	Ant. Pol. (H/V) V H V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95 8.68	EIRP (dBm) 26.39 29.51 26.40 29.11	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.6 -3.5 -6.6 -3.9	Notes

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EIRP LTE 16QAM Band 2 (1.4 MHz BAND WIDTH)

ompany	5 8	Apple						
roject #		13015555						
ate:		08/19/13						
est Eng		Mona Hua						
onfigura		EUT Only						
lode:		LTE Band 2. 1.	4MHz RW					
		16QAM, Peak						
est Equ	pment:							
			D SMA Cables					
ubstitut	ion: Horn 160 S	ubstitution,	off SMA Cable (2	245185004) Warehou	se			
	C reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	SG reading	ALL POI.	Capie Loss	Antenna Gain	EIKF	Limit	Dena	Notes
f CU-	(dDm)	1100			(dDm)	(dDm)		
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
GHz Low Ch					1 1			
GHz Low Ch 1.851	18.3	v	0.85	7.94	25.39	33.0	-7.6	
GHz Low Ch					1 1			
GHz Low Ch 1.851 1.851	18.3	v	0.85	7.94	25.39	33.0	-7.6	
GHz Low Ch 1.851	18.3	v	0.85	7.94	25.39	33.0	-7.6	
GHz Low Ch 1.851 1.851 Mid Ch	18.3 20.6	V H	0.85	7.94 8.80	25.39 28.51	33.0 33.0	-7.6 -4.5	
GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880	18.3 20.6 18.3	V H V	0.85	7.94 8.80 7.95	25.39 28.51 25.40	33.0 33.0 33.0	-7.6 -4.5 -7.6	
GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880 High Ch	18.3 20.6 18.3 20.3	V H V H	0.85 0.85 0.85 0.85 0.85	7.94 8.80 7.95 8.68	25.39 28.51 25.40 28.11	33.0 33.0 33.0 33.0 33.0	-7.6 -4.5 -7.6 -4.9	
GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880 High Ch 1.909	18.3 20.6 18.3 20.3 19.0	V H H V	0.85 0.85 0.85 0.85 0.85 0.85	7.94 8.80 7.95 8.68 7.97	25.39 28.51 25.40 28.11 26.14	33.0 33.0 33.0 33.0 33.0 33.0 33.0	-7.6 -4.5 -7.6 -4.9 -6.9	
GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880 High Ch	18.3 20.6 18.3 20.3	V H V H	0.85 0.85 0.85 0.85 0.85	7.94 8.80 7.95 8.68	25.39 28.51 25.40 28.11	33.0 33.0 33.0 33.0 33.0	-7.6 -4.5 -7.6 -4.9	

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EIRP LTE QPSK Band 2 (3.0 MHz BAND WIDTH)

Apple 13U15555 08/19/13 eer: Mona Hua ion: EUT Only LTE Band 2, 3 QPSK, Peak, ment: Horn T344, and Chamber n: Horn T60 Substitution,	k, RB15-0 er <mark>D SMA Cables</mark>					
08/19/13 eer: Mona Hua ion: EUT Only LTE Band 2, 3 QPSK, Peak, ment: Horn T344, and Chamber	k, RB15-0 er <mark>D SMA Cables</mark>					
eer: Mona Hua ion: EUT Only LTE Band 2, 3 QPSK, Peak, ment: Horn T344, and Chamber	k, RB15-0 er <mark>D SMA Cables</mark>					
ion: EUT Only LTE Band 2, 3 QPSK, Peak, ment: Horn T344, and Chamber	k, RB15-0 er <mark>D SMA Cables</mark>					
LTE Band 2, 3 QPSK, Peak, ment: Horn T344, and Chamber	k, RB15-0 er <mark>D SMA Cables</mark>					
QPSK, Peak, ment: Horn T344, and Chamber	k, RB15-0 er <mark>D SMA Cables</mark>					
<u>ment.</u> Horn T344, and Chamber	er D SMA Cables					
Horn T344, and Chamber						
n: Horn T60 Substitution,	n. 8ft SMA Cable (2					
		245185004) Warehou	se			
SG reading Ant. Pol.	. Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
(dBm) (H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
10.0 V	0.85	7.94	26.99	33.0	-6.0	
		8.80	29.58	33.0	-3.4	
21.6 H	0.85	0.00		1		
	0.85					
21.6 H			27.27	22.0	57	
21.6 H 20.2 V	0.85	7.95	27.27	33.0 33.0	-5.7 -3.8	
21.6 H			27.27 29.23	33.0 33.0	-5.7 -3.8	
21.6 H 20.2 V	0.85	7.95				
21.6 H 20.2 V	0.85	7.95				
		(dBm) (H/V) (dB)	(dBm) (H/V) (dB) (dBi)	(dBm) (H/V) (dB) (dBi) (dBm)	(dBm) (H/V) (dB) (dBi) (dBm) (dBm)	(dBm) (H/V) (dB) (dBi) (dBm) (dBm) (dB)

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EIRP LTE 16QAM Band 2 (3.0 MHz BAND WIDTH)

ompany	:	Apple						
roject #		13015555						
ate:		08/19/13						
est Eng		Mona Hua						
onfigura		EUT Only						
ode:		LTE Band 2. 3N	MHz BW					
		16QAM, Peak.						
est Equ	ipment							
10000000	g: Horn T344, a							
Jbstitut	ion: Horn 160 S	ubstitution,	Stt SMA Cable (2	245185004) Warehou	se			
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
- 18 A - 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			110000		Notes
GHz		(H/V) V	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		(dBm) 26.07	110000		Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.852 1.852	(dBm) 19.0	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.07	(dBm) 33.0	(dB) _6.9	Notes
GHz Low Ch 1.852 1.852 Mid Ch	(dBm) 19.0 20.7	<mark>(H/V)</mark> V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.07 28.66	(dBm) 33.0 33.0	(dB) 	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.880	(dBm) 19.0 20.7 19.3	<mark>(H/V)</mark> V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.07 28.66 26.35	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.9 -4.3 -6.7	Notes
GHz Low Ch 1.852 1.852 Mid Ch	(dBm) 19.0 20.7	<mark>(H/V)</mark> V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.07 28.66	(dBm) 33.0 33.0	(dB) 	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.880	(dBm) 19.0 20.7 19.3	<mark>(H/V)</mark> V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.07 28.66 26.35	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.9 -4.3 -6.7	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880	(dBm) 19.0 20.7 19.3	<mark>(H/V)</mark> V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.07 28.66 26.35	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.9 -4.3 -6.7	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880 High Ch	(dBm) 19.0 20.7 19.3 20.5	<mark>(H/V)</mark> V H H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.07 28.66 26.35 28.31	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.9 -4.3 -6.7 -4.7	Notes

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EIRP LTE QPSK Band 2 (5.0 MHz BAND WIDTH)

	2	WOLLOW						
ompany		Apple						
roject #		13U15555						
ate:		08/19/13						
est Engi		Mona Hua						
onfigura	ation:	EUT Only						
lode:		LTE Band 2, 5A	/Hz BW					
		QPSK, Peak, F	RB25-0					
	ipment:							
	g: Horn T344, a							
ubstituti	ion: Horn T60 S	ubstitution, l	8ft SMA Cable (2	245185004) Warehou	se			
	1					9	ř <u>– – – – – – – – – – – – – – – – – – –</u>	
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	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.853	(dBm) 19.6	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.65	(dBm) 33.0	(dB) -6.4	Notes
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.853 1.853	(dBm) 19.6	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.65	(dBm) 33.0	(dB) -6.4	Notes
f GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 19.6 21.5	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.65 29.49	(dBm) 33.0 33.0	(dB) -6.4 -3.5	Notes
f GHz 1.853 1.853 Mid Ch 1.880	(dBm) 19.6 21.5 20.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.65 29.49 27.19	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.4 -3.5 	Notes
f GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 19.6 21.5	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.65 29.49	(dBm) 33.0 33.0	(dB) -6.4 -3.5	Notes
f GHz Low Ch 1.853 1.853 Mid Ch 1.880 1.880	(dBm) 19.6 21.5 20.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.65 29.49 27.19	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.4 -3.5 	Notes
f GHz 1.853 1.853 Mid Ch 1.880	(dBm) 19.6 21.5 20.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.65 29.49 27.19	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.4 -3.5 	Notes
f GHz Low Ch 1.853 1.853 1.853 Mid Ch 1.880 1.880 High Ch	(dBm) 19.6 21.5 20.1 21.3	<u>(H/V)</u> V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.65 29.49 27.19 29.08	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.4 -3.5 	Notes

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EIRP LTE 16QAM Band 2 (5.0 MHz BAND WIDTH)

ompany	e	Apple						
roject #		13U15555						
ate:		08/19/13						
est Engi		Mona Hua						
onfigura		EUT Only						
lode:		LOT Only LTE Band 2, 5N	/Hz RW					
oue.		16QAM, Peak.						
est Equi	pment							
137.02 St. 7 A 3			D SMA Cables					
	on: norn tou s	ubstitution, a	on SWIA Cable (2	245185004) Warehou	58			
ubstitut								
_		Ant Pol	Cable Loss	Antenna Cain	EIDD	Limit	Dalta	Notes
f	SG reading		Cable Loss		EIRP (dBm)	Limit	Delta	Notes
f GHz		Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
f GHz Low Ch	SG reading (dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.853	SG reading (dBm) 18.5	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.59	(dBm) 33.0	(dB) -7.4	Notes
f GHz Low Ch	SG reading (dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.853	SG reading (dBm) 18.5	(H/V) V H	(dB) 0.85	(dBi) 7.94	(dBm) 25.59	(dBm) 33.0	(dB) -7.4	Notes
f GHz 1.853 1.853 Mid Ch 1.880	SG reading (dBm) 18.5 20.4 19.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.59 28.34 26.20	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.4 -4.7 -6.8	Notes
f GHz Low Ch 1.853 1.853 Mid Ch	SG reading (dBm) 18.5 20.4	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.59 28.34	(dBm) 33.0 33.0	(dB) -7.4 -4.7	Notes
f GHz Low Ch 1.853 1.853 Mid Ch 1.880 1.880	SG reading (dBm) 18.5 20.4 19.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.59 28.34 26.20	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.4 -4.7 -6.8	Notes
f GHz 1.853 1.853 Mid Ch 1.880	SG reading (dBm) 18.5 20.4 19.1	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.59 28.34 26.20	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.4 -4.7 -6.8	Notes
f GHz Low Ch 1.853 1.853 1.853 Mid Ch 1.880 1.880 High Ch	SG reading (dBm) 18.5 20.4 19.1 20.2	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.59 28.34 26.20 28.01	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.4 -4.7 -6.8 -5.0	Notes

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EIRP LTE QPSK Band 2 (10.0 MHz BAND WIDTH)

ompany	< X	Apple						
		Apple 13U15555						
roject #:								
ate:		08/19/13						
est Engi		Mona Hua						
onfigura		EUT Only						
lode:		LTE Band 2, 10	MHz BW					
		QPSK, Peak, F	RB50-0					
est Equi	pment:							
eceiving	g: Horn T344, ai	nd Chamber	D SMA Cables					
	ant Harn TEO C	ubstitution	8ft SMA Cable (2	45185004) Warehou	se			
ubstitut	OR. HOLH 100 3							
ubstitut	on. Horn 100 3	and a state of the	,					
ubstitut f	SG reading	Ant. Pol.	120 -	Antenna Gain	EIRP	Limit	Delta	Notes
			120 -	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
f	SG reading	Ant. Pol.	Cable Loss	S				Notes
f GHz	SG reading	Ant. Pol.	Cable Loss	S				Notes
f GHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.855 1.855	SG reading (dBm) 19.6	Ant. Pol. (H/V) V	Cable Loss (dB)	(dBi) 7.94	(dBm) 26.67	(dBm) 33.0	(dB) _6.3	Notes
f GHz Low Ch 1.855 1.855 Mid Ch	SG reading (dBm) 19.6 21.9	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.67 29.89	(dBm) 33.0 33.0	(dB) -6.3 -3.1	Notes
f GHz Low Ch 1.855 1.855 Mid Ch 1.880	SG reading (dBm) 19.6 21.9 20.2	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.67 29.89 27.33	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.3 -3.1 -5.7	Notes
f GHz Low Ch 1.855 1.855 Mid Ch	SG reading (dBm) 19.6 21.9	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.67 29.89	(dBm) 33.0 33.0	(dB) -6.3 -3.1	Notes
f GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880	SG reading (dBm) 19.6 21.9 20.2	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.67 29.89 27.33	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.3 -3.1 -5.7	Notes
f GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch	SG reading (dBm) 19.6 21.9 20.2 21.5	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.67 29.89 27.33 29.40	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.3 -3.1 	Notes
f GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880	SG reading (dBm) 19.6 21.9 20.2	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.67 29.89 27.33	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.3 -3.1 -5.7	Notes

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EIRP LTE 16QAM Band 2 (10.0 MHz BAND WIDTH)

ompany	. 8	Apple						
roject #		13015555						
ate:		08/19/13						
est Eng		Mona Hua						
onfigura		EUT Only						
ode:		LTE Band 2, 10	MHz RW					
		16QAM, Peak,						
est Equ	ipment:							
	g: Horn T344, a							
ubstitut	ion: Horn T60 S	ubstitution, 8	8ft SMA Cable (2	245185004) Warehou	se			
				Antenna Gain	EIRP	Limit	Delta	Notes
f	SG reading		Cable Loss		Contraction of the second s	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		NOICES
GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855	(dBm) 18.5	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.59	(dBm) 33.0	(dB) _7.4	Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855 1.855	(dBm) 18.5	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.59	(dBm) 33.0	(dB) _7.4	Notes
GHz Low Ch 1.855	(dBm) 18.5	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.59	(dBm) 33.0	(dB) _7.4	110123
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 18.5 20.8	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.59 28.76	(dBm) 33.0 33.0	(dB) -7.4 -4.2	Hotes
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880	(dBm) 18.5 20.8 19.2	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.59 28.76 26.30	(dBm) 33.0 33.0 33.0	(dB) -7.4 -4.2 -6.7	
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch	(dBm) 18.5 20.8 19.2 20.6	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.59 28.76 26.30 28.38	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.4 -4.2 	
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch 1.905	(dBm) 18.5 20.8 19.2 20.6 19.3	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68 7.97	(dBm) 25.59 28.76 26.30 28.38 26.42	(dBm) 33.0 33.0 33.0 33.0 33.0 33.0 33.0	(dB) -7.4 -7.4 -4.2 -6.7 -4.6 -6.6	
GHz Low Ch 1.855 1.855 Mid Ch 1.880 1.880 High Ch	(dBm) 18.5 20.8 19.2 20.6	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.59 28.76 26.30 28.38	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.4 -4.2 	

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EIRP LTE QPSK Band 2 (15.0 MHz BAND WIDTH)

ompany:	s - 6	Apple						
roject #:		13015555						
)ate:		08/19/13						
lest Engi	neer:	Mona Hua						
onfigura		EUT Only						
Aode:		LTE Band 2, 15	MHz BW					
loue.		QPSK, Peak, R						
lest Equi			2000 SAV					
eceiving	Horn T344 at	nd Chamber	D SMA Cables					
				45185004) Warehou	CO			
		abouton,	our ount ouble la	the record in an errou				
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 Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.858	(dBm) 19.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.80	(dBm) 33.0	(dB) -6.2	Notes
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.858 1.858	(dBm) 19.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.80	(dBm) 33.0	(dB) -6.2	Notes
f GHz Low Ch 1.858	(dBm) 19.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.80	(dBm) 33.0	(dB) -6.2	Notes
f GHz 1.858 1.858 Mid Ch	(dBm) 19.7 21.9	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.80 29.81	(dBm) 33.0 33.0	(dB) -6.2 -3.2	Notes
f GHz Low Ch 1.858 1.858 Mid Ch 1.880 1.880	(dBm) 19.7 21.9 20.6	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.80 29.81 27.73	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.3	Notes
f GHz Low Ch 1.858 1.858 Mid Ch 1.880 1.880 High Ch	(dBm) 19.7 21.9 20.6 21.7	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.80 29.81 27.73 29.51	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.3 -3.5	Notes
f GHz Low Ch 1.858 1.858 Mid Ch 1.880 1.880	(dBm) 19.7 21.9 20.6	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.80 29.81 27.73	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.3	Notes

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EIRP LTE 16QAM Band 2 (15.0 MHz BAND WIDTH)

company:		Apple						
roject #:		Apple 13U15555						
)ate:		08/19/13						
lest Engi		Mona Hua						
-								
Configura Node:		EUT Only	THE PAR					
lode:		LTE Band 2, 15						
fest Equi		16QAM, Peak,	ND/5-0					
		of Chambres	D SMA Cables					
ubstitut	ion: Horn 160 S	ubstitution,	8ft SMA Cable (2	245185004) Warehou	se			
					FIER		-	
f	SG reading		Cable Loss		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 Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.858	(dBm) 18.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.79	(dBm) 33.0	(dB) -7.2	Notes
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.858 1.858	(dBm) 18.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.79	(dBm) 33.0	(dB) -7.2	Notes
f GHz 1.858 1.858 Mid Ch	(dBm) 18.7 20.8	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.79 28.75	(dBm) 33.0 33.0	(dB) -7.2 -4.3	Notes
f GHz 1.858 1.858 Mid Ch 1.880	(dBm) 18.7 20.8 19.6	<u>(H/V)</u> V H V	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.79 28.75 26.70	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.2 -4.3 -6.3	Notes
f GHz 1.858 1.858 Mid Ch	(dBm) 18.7 20.8	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.79 28.75	(dBm) 33.0 33.0	(dB) -7.2 -4.3	Notes
f GHz Low Ch 1.858 1.858 Mid Ch 1.880 1.880	(dBm) 18.7 20.8 19.6	<u>(H/V)</u> V H V	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.79 28.75 26.70	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.2 -4.3 -6.3	Notes
f GHz Low Ch 1.858 1.858 Mid Ch 1.880 1.880 1.880 High Ch 1.903	(dBm) 18.7 20.8 19.6 20.7 19.4	<u>(H/V)</u> Ч Н Ч Ч	(dB) 0.85 0.85 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68 7.97	(dBm) 25.79 28.75 26.70 28.53 26.52	(dBm) 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.	(dB) -7.2 -4.3 	Notes
f GHz Low Ch 1.858 1.858 Mid Ch 1.880 1.880 High Ch	(dBm) 18.7 20.8 19.6 20.7	<u>(H/V)</u> Н Ч	(dB) 0.85 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.79 28.75 26.70 28.53	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.2 -4.3 	Notes

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EIRP LTE QPSK Band 2 (20.0 MHz BAND WIDTH)

Company: Project #: Date: Cest Engine Configuratio Mode: Test Equipr	eer: on:	Apple 13U15555 08/19/13 Mona Hua EUT Only LTE Band 2, 20 QPSK, Peak, F						
Date: Fest Engine Configuratio Mode:	eer: on:	08/19/13 Mona Hua EUT Only LTE Band 2, 20						
lest Engine Configuratio Aode:	eer: on:	Mona Hua EUT Only LTE Band 2, 20						
onfiguration lode:	on:	EUT Only LTE Band 2, 20						
Node:		LTE Band 2, 20						
est Equipr		an one i care r	10100					
Cor Equipt								
ecoluina:		nd Chamber	D SMA Cables					
Contraction of the second				245185004) Warehou	-			
ubstitution	n. nom too 3	absulution, o	on SMA Cable [2	45165004) Watehou	ise i			
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
Low Ch								
1.860	19.6	V	0.85	7.94	26.64	33.0	-6.4	
1.860	22.2	H	0.85	8.80	30.15	33.0	-2.9	
Mid Ch						-		
MIC UN			0.85	7.95	27.83	33.0	-5.2	
1.880	20.7	V	0.60	1.00				
	20.7 22.0	V H	0.85	8.68	29.82	33.0	-3.2	
1.880 1.880						33.0		
1.880 1.880 High Ch						33.0		
1.880 1.880	22.0	Н	0.85	8.68	29.82		-3.2	

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EIRP LTE 16QAM Band 2 (20.0 MHz BAND WIDTH)

ompany	<	Apple						
roject #		13U15555						
ate:		08/19/13						
est Engi		Mona Hua						
onfigura		EUT Only						
lode:		LTE Band 2, 20	MH2 BW					
		16QAM, Peak.						
est Equi	inment							
f	SG reading	Ant Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
0.000	SG reading		Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
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			100000000000000000000000000000000000000		1.5.5.5.5.5.5.5			Notes
GHz Low Ch 1.860 1.860	(dBm)	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.49	(dBm) 33.0	(dB) -7.5	Notes
GHz Low Ch 1.860 1.860 Mid Ch	(dBm) 18.4 21.2	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.49 29.15	(dBm) 33.0 33.0	(dB) -7.5 -3.9	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.880	(dBm) 18.4 21.2 19.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25,49 29.15 26.80	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.5 -3.9 -6.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch	(dBm) 18.4 21.2	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.49 29.15	(dBm) 33.0 33.0	(dB) -7.5 -3.9	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.880 1.880	(dBm) 18.4 21.2 19.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25,49 29.15 26.80	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.5 -3.9 -6.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.880	(dBm) 18.4 21.2 19.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25,49 29.15 26.80	(dBm) 33.0 33.0 33.0 33.0	(dB) -7.5 -3.9 -6.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.880 1.880 High Ch	(dBm) 18.4 21.2 19.7 20.9	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.49 29.15 26.80 28.73	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.5 -3.9 -6.2 -4.3	Notes

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9.1.2. LTE BAND 4

EIRP LTE QPSK Band 4 (1.4 MHz BAND WIDTH)

<u>PEAK</u>

ompany	e 8	Apple						
roject #		13015555						
)ate:		08/20/13						
lest Eng		Mona Hua						
onfigura		EUT Only						
Aode:		LTE band 4, 3N	MHz RIW					
		QPSK, Peak, F						
est Equi	pment							
eceiving			D SMA Cables					
ubstitut	on: Horn T60 S	ubstitution, a	oft SIMA Cable W	arenouse				
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz					EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
f GHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.711	SG reading (dBm) 17.3	Ant. Pol. (H/V) V	Cable Loss (dB) 1.50	Antenna Gain (dBi) 8.16	(dBm) 24.00	(dBm) 30.0	(dB) _6.0	Notes
f GHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.711 1.711	SG reading (dBm) 17.3	Ant. Pol. (H/V) V	Cable Loss (dB) 1.50	Antenna Gain (dBi) 8.16	(dBm) 24.00	(dBm) 30.0	(dB) _6.0	Notes
f GHz Low Ch 1.711	SG reading (dBm) 17.3	Ant. Pol. (H/V) V	Cable Loss (dB) 1.50	Antenna Gain (dBi) 8.16	(dBm) 24.00	(dBm) 30.0	(dB) _6.0	Notes
f GHz Low Ch 1.711 1.711 Mid Ch	SG reading (dBm) 17.3 20.8	Ant. Pol. (H/V) V H	Cable Loss (dB) 1.50 1.50	Antenna Gain (dBi) 8.16 8.59	(dBm) 24.00 27.89	(dBm) 30.0 30.0	(dB) -6.0 -2.1	Notes
f GHz Low Ch 1.711 1.711 Mid Ch 1.733 1.733	SG reading (dBm) 17.3 20.8 17.0	Ant. Pol. (H/V) V H	Cable Loss (dB) 1.50 1.50 1.50	Antenna Gain (dBi) 8.16 8.59 8.11	(dBm) 24.00 27.89 23.56	(dBm) 30.0 30.0 30.0	(dB) -6.0 -2.1 -6.4	Notes
f GHz Low Ch 1.711 1.711 Mid Ch 1.733 1.733 High Ch	SG reading (dBm) 17.3 20.8 17.0 21.2	Ant. Pol. (H/V) V H	Cable Loss (dB) 1.50 1.50 1.50 1.50	Antenna Gain (dBi) 8.16 8.59 8.11 8.69	(dBm) 24.00 27.89 23.56 28.40	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -6.0 -2.1 -6.4 -1.6	Notes
f GHz Low Ch 1.711 1.711 Mid Ch 1.733 1.733	SG reading (dBm) 17.3 20.8 17.0	Ant. Pol. (H/V) V H	Cable Loss (dB) 1.50 1.50 1.50	Antenna Gain (dBi) 8.16 8.59 8.11	(dBm) 24.00 27.89 23.56	(dBm) 30.0 30.0 30.0	(dB) -6.0 -2.1 -6.4	Notes

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EIRP LTE 16QAM Band 4 (1.4 MHz BAND WIDTH)

ompany	8 3	Apple						
roject #		13015555						
ate:		08/20/13						
est Eng		Mona Hua						
onfigura		EUT Only						
lode:		LTE band 4, 3N	IHz BW					
		16QAM, Peak.						
est Equi	ipment:							
1.			D SMA Cables					
ubstitut	ion: Horn 160 S	ubstitution, a	8ft SMA Cable W	/arehouse				
abbutut								
	SC reading	Ant Pol	Cable Loss	Antenna Cain	EIDD	Limit	Delta	Notes
f	SG reading		Cable Loss	Antenna Gain	EIRP (dBm)	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
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.711	(dBm) 16.5	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 23.14	(dBm) 30.0	(dB) -6.9	Notes
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.711	(dBm) 16.5	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 23.14 26.99	(dBm) 30.0	(dB) -6.9 -3.0	Notes
f GHz Low Ch 1.711 1.711	(dBm) 16.5 19.9 16.1	<u>(H/V)</u> V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.14 26.99 22.70	(dBm) 30.0 30.0 30.0	(dB) -6.9 -3.0 -7.3	Notes
f GHz Low Ch 1.711 1.711 Mid Ch	(dBm) 16.5 19.9	(H/V) V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 23.14 26.99	(dBm) 30.0 30.0	(dB) -6.9 -3.0	Notes
f GHz Low Ch 1.711 1.711 Mid Ch 1.733	(dBm) 16.5 19.9 16.1	<u>(H/V)</u> V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.14 26.99 22.70	(dBm) 30.0 30.0 30.0	(dB) -6.9 -3.0 -7.3	Notes
f GHz Low Ch 1.711 1.711 Mid Ch 1.733 1.733	(dBm) 16.5 19.9 16.1	<u>(H/V)</u> V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.14 26.99 22.70	(dBm) 30.0 30.0 30.0	(dB) -6.9 -3.0 -7.3	Notes
f GHz Low Ch 1.711 1.711 Mid Ch 1.733 1.733 High Ch	(dBm) 16.5 19.9 16.1 20.7	<u>(H/V)</u> V H V H	(dB) 1.50 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11 8.69	(dBm) 23.14 26.99 22.70 27.89	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -6.9 -3.0 -7.3 -2.1	Notes

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EIRP LTE QPSK Band 4 (3.0 MHz BAND WIDTH)

oject #: 13U15655 ste: 08/20/13 est Engineer: Mona Hua onfiguration: EUT Only ode: LTE band 4, 3MHz BW QPSK, Peak, RB15-0 est Equipment: acceiving: Horn T344, and Chamber D SMA Cables ubstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading Ant Pol. Cable Loss Antenna Gain EIRP Limit Delta Notes (dBm) (H/V) (dB) (dBi) (dBm) (dBm) (dB) Notes f 1.712 17.5 V 1.50 8.16 24.15 30.0 5.9 1.712 17.5 V 1.50 8.16 24.15 30.0 5.9 1.712 17.5 V 1.50 8.19 28.04 30.0 2.0 Mid Ch	ompany	• A	Apple							
Atte: 08/20/13 est Engineer: Mona Hua ponfiguration: EUT Only ode: LTE band 4, 3MHz BW QPSK, Peak, RB15-0 est Equipment: acceiving: Horn T344, and Chamber D SMA Cables abstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading (dBm) Ant. Pol. Cable Loss Antenna Gain (dBi) EIRP (dBm) Limit (dBm) Delta Notes GHz (dBm) (H/V) (dB) (dBi) (dBm) (dB) Notes Mid Ch			and the second se							
est Engineer: Mona Hua onfiguration: EUT Only ode: LTE band 4, 3MHz BW QPSK, Peak, RB15-0 est Equipment: ecciving: Horn T344, and Chamber D SMA Cables ubstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading Ant Pol. Cable Loss Antenna Gain EIRP Limit Delta Notes GHz (dBm) (H/V) (dB) (dB) (dBi) (dBm) (dBm) (dBm) GHz 17.5 V 1.50 8.16 24.15 30.0 -5.9 1.712 21.0 H 1.50 8.59 28.04 30.0 -2.0 Mid Ch										
Sonfiguration: EUT Only ode: LTE band 4, 3MHz BW QPSK, Peak, RB15-0 est Equipment: QPSK, Peak, RB15-0 seceiving: Horn T344, and Chamber D SMA Cables abstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading (dBm) Ant Pol. (H/V) Cable Loss (dB) Antenna Gain (dBi) EIRP (dBm) Limit (dB) Delta Notes 0.0w Ch 0<										
LTE band 4, 3MHz BW QPSK, Peak, RB15-0 set Equipment: seceiving: Horn T344, and Chamber D SMA Cables abstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading (dBm) Ant Pol. (H/V) Cable Loss (dB) Antenna Gain (dBi) EIRP (dBm) Limit (dBm) Delta Notes 6Hz (dBm) (H/V) (dB) (dBi) (dBm) (dB) Notes 0.0w Ch 0 0 0 0 0 0 0 1.712 17.5 V 1.50 8.16 24.15 30.0 -5.9 1.712 21.0 H 1.50 8.59 28.04 30.0 -2.0 Mid Ch 0 0 0 0 0 -0 -0 -0 1.733 17.2 V 1.50 8.69 28.66 30.0 -1.3 figh Ch 0 0 28.66 30.0 -1.3 -0										
QPSK, Peak, RB15-0 set Equipment: beceiving: Horn T344, and Chamber D SMA Cables ibstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading (dBm) Ant Pol. (H/V) Cable Loss (dB) Antenna Gain (dBi) EIRP (dBm) Limit (dBm) Delta Notes .ow Ch	10.45 T 14.45									
set Equipment: acciving: Horn T344, and Chamber D SMA Cables ibstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading (dBm) Ant. Pol. (H/V) Cable Loss (dB) Antenna Gain (dBi) EIRP (dBm) Limit (dBm) Delta Notes .ow Ch	oue.									
Ibstitution: Horn T60 Substitution, 8ft SMA Cable Warehouse f SG reading (dBm) Ant. Pol. (H/V) Cable Loss (dB) Antenna Gain (dBi) EIRP (dBm) Limit (dBm) Delta (dB) Notes .ow Ch	est Equi	pment:								
f SG reading (dBm) Ant Pol. (H/V) Cable Loss (dB) Antenna Gain (dBi) EIRP (dBm) Limit (dBm) Delta (dB) Notes .ow Ch	eceivin	g: Horn T344, ai	nd Chamber	D SMA Cables						
GHz (dBm) (H/V) (dB) (dBi) (dBm) (dBm) (dB) .ow Ch 1.712 17.5 V 1.50 8.16 24.15 30.0 -5.9 1.712 21.0 H 1.50 8.59 28.04 30.0 -2.0 Mid Ch		ion: Horn T60 S	ubstitution.	8ft SMA Cable W	arehouse					
GHz (dBm) (H/V) (dB) (dBi) (dBm) (dBm) (dB) .ow Ch 1.712 17.5 V 1.50 8.16 24.15 30.0 -5.9 1.712 21.0 H 1.50 8.59 28.04 30.0 -2.0 Mid Ch	ubstitut	on. Hom too 5								
.ow Ch							Provention			
1.712 17.5 V 1.50 8.16 24.15 30.0 -5.9 1.712 21.0 H 1.50 8.59 28.04 30.0 -2.0 Mid Ch	f	SG reading	Ant. Pol.			C. C. C. C. C. S. S.			Notes	
1.712 21.0 H 1.50 8.59 28.04 30.0 -2.0 Mid Ch		SG reading	Ant. Pol.			C. C. C. C. C. S. S.			Notes	
Mid Ch 1.733 17.2 V 1.50 8.11 23.85 30.0 -6.2 1.733 21.5 H 1.50 8.69 28.66 30.0 -1.3 ligh Ch	f GHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes	
1.733 17.2 V 1.50 8.11 23.85 30.0 -6.2 1.733 21.5 H 1.50 8.69 28.66 30.0 -1.3 ligh Ch Image: Character of the second seco	f GHz Low Ch 1.712	SG reading (dBm) 17.5	Ant. Pol. (H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.15	(dBm) 30.0	(dB) -5.9	Notes	
1.733 17.2 V 1.50 8.11 23.85 30.0 -6.2 1.733 21.5 H 1.50 8.69 28.66 30.0 -1.3 ligh Ch Image: Character of the second seco	f GHz Low Ch	SG reading (dBm) 17.5	Ant. Pol. (H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.15	(dBm) 30.0	(dB) -5.9	Notes	
1.733 21.5 H 1.50 8.69 28.66 30.0 -1.3 ligh Ch	f GHz Low Ch 1.712 1.712	SG reading (dBm) 17.5	Ant. Pol. (H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.15	(dBm) 30.0	(dB) -5.9	Notes	
ligh Ch	f GHz Low Ch 1.712 1.712 Mid Ch	SG reading (dBm) 17.5 21.0	Ant. Pol. (H/V) V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 24.15 28.04	(dBm) 30.0 30.0	(dB) -5.9 -2.0	Notes	
	f GHz Low Ch 1.712 1.712 Mid Ch 1.733	SG reading (dBm) 17.5 21.0 17.2	Ant. Pol. (H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.15 28.04 23.85	(dBm) 30.0 30.0 30.0	(dB) -5.9 -2.0 -6.2	Notes	
1.754 16.8 V 1.50 8.07 23.38 30.0 6.6	f GHz Low Ch 1.712 1.712 Mid Ch	SG reading (dBm) 17.5 21.0 17.2	Ant. Pol. (H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.15 28.04 23.85	(dBm) 30.0 30.0 30.0	(dB) -5.9 -2.0 -6.2	Notes	
	f GHz Low Ch 1.712 1.712 Mid Ch 1.733	SG reading (dBm) 17.5 21.0 17.2	Ant. Pol. (H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.15 28.04 23.85	(dBm) 30.0 30.0 30.0	(dB) -5.9 -2.0 -6.2	Notes	
1.754 20.9 H 1.50 8.79 28.17 30.0 -1.8	f GHz Low Ch 1.712 1.712 Mid Ch 1.733 1.733	SG reading (dBm) 17.5 21.0 17.2	Ant. Pol. (H/V) V H	(dB) 1.50 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11 8.69	(dBm) 24.15 28.04 23.85	(dBm) 30.0 30.0 30.0	(dB) -5.9 -2.0 -6.2	Notes	
	f GHz Low Ch 1.712 1.712 Mid Ch	SG reading (dBm) 17.5 21.0	Ant. Pol. (H/V) V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 24.15 28.04	(dBm) 30.0 30.0	(dB) -5.9 -2.0	No	

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EIRP LTE 16QAM Band 4 (3.0 MHz BAND WIDTH)

Notes

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EIRP LTE QPSK Band 4 (5.0 MHz BAND WIDTH)

		and the second se		ental Measuremen Services Chamber				
ompany:		Apple						
oject #:		13015555						
ate:		08/20/13						
est Engi		Mona Hua						
onfigura		EUT Only						
ode:		LTE Band 4, 5M	MHz BW					
QPSK, Peak, RB25-0								
		ar ord r order						
ubstituti f	: Horn T344, a on: Horn T60 S SG reading	Ant. Pol.	D SMA Cables 8ft SMA Cable W Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
eceiving ubstituti f GHz	: Horn T344, a on: Horn T60 S	ubstitution,	8ft SMA Cable W		EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
f GHz Low Ch	: Horn T344, a on: Horn T60 S SG reading (dBm)	ubstitution, i Ant. Pol. (H/V)	8ft SMA Cable W Cable Loss (dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.713	: Horn T344, al on: Horn T60 S SG reading (dBm) 17.8	Ant. Pol. (H/V)	8ft SMA Cable W Cable Loss (dB) 1.50	Antenna Gain (dBi) 8.16	(dBm) 24.50	(dBm) 30.0	(dB) -5.5	Notes
f GHz Low Ch	: Horn T344, a on: Horn T60 S SG reading (dBm)	ubstitution, i Ant. Pol. (H/V)	8ft SMA Cable W Cable Loss (dB)	Antenna Gain (dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.713	: Horn T344, al on: Horn T60 S SG reading (dBm) 17.8	Ant. Pol. (H/V)	8ft SMA Cable W Cable Loss (dB) 1.50	Antenna Gain (dBi) 8.16	(dBm) 24.50	(dBm) 30.0	(dB) -5.5	Notes
f GHz Low Ch 1.713 1.713 Mid Ch 1.733	: Horn T344, au on: Horn T60 S SG reading (dBm) 17.8 21.5 17.9	Ant. Pol. (H/V) V H	8ft SMA Cable W Cable Loss (dB) 1.50 1.50 1.50	Antenna Gain (dBi) 8.16 8.59 8.11	(dBm) 24.50 28.63 24.54	(dBm) 30.0	(dB) .5.5 .1.4 .5.5	Notes
f GHz Low Ch 1.713 1.713 Mid Ch	: Horn T344, au on: Horn T60 S SG reading (dBm) 17.8 21.5	Ant. Pol. (H/V) V H	8ft SMA Cable W Cable Loss (dB) 1.50 1.50	Antenna Gain (dBi) 8.16 8.59	(dBm) 24.50 28.63	(dBm) 30.0 30.0	(dB) -5.5 -1.4	Notes
f GHz Low Ch 1.713 1.713 Mid Ch 1.733	: Horn T344, au on: Horn T60 S SG reading (dBm) 17.8 21.5 17.9	Ant. Pol. (H/V) V H	8ft SMA Cable W Cable Loss (dB) 1.50 1.50 1.50	Antenna Gain (dBi) 8.16 8.59 8.11	(dBm) 24.50 28.63 24.54	(dBm) 30.0 30.0 30.0	(dB) .5.5 .1.4 .5.5	Notes
eceiving ubstituti f GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733	: Horn T344, au on: Horn T60 S SG reading (dBm) 17.8 21.5 17.9	Ant. Pol. (H/V) V H	8ft SMA Cable W Cable Loss (dB) 1.50 1.50 1.50	Antenna Gain (dBi) 8.16 8.59 8.11	(dBm) 24.50 28.63 24.54	(dBm) 30.0 30.0 30.0	(dB) .5.5 .1.4 .5.5	Notes

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EIRP LTE 16QAM Band 4 (5.0 MHz BAND WIDTH)

ompany	5 8	Apple							
roject #		13U15555							
ate:		08/20/13							
est Eng		Mona Hua							
onfigura		EUT Only							
ode:		LTE Band 4, 5MHz BW							
		16QAM, Peak, RB25-0							
est Equi	ipment:								
			D SMA Cables						
ubstitut	ion: Horn T60 S	substitution, l	8ft SMA Cable W	/arehouse					
40001000									
	SC reading	Ant Dol	Cable Loss	Antonno Coin	EIDD	Limit	Delta	Motor	
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP (dBm)	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	
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes	
f GHz Low Ch 1.713	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 23.50	(dBm) 30.0	(dB) -6.5	Notes	
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes	
f GHz Low Ch 1.713	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 23.50	(dBm) 30.0	(dB) -6.5	Notes	
f GHz Low Ch 1.713 1.713	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 23.50	(dBm) 30.0	(dB) -6.5	Notes	
f GHz Low Ch 1.713 1.713 Mid Ch	(dBm) 16.8 20.5	<mark>(Н/V)</mark> V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 23.50 27.63	(dBm) 30.0 30.0	(dB) -6.5 -2.4	Notes	
f GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733	(dBm) 16.8 20.5 16.9	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.50 27.63 23.54	(dBm) 30.0 30.0 30.0	(dB) -6.5 -2.4 -6.5	Notes	
f GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733 High Ch	(dBm) 16.8 20.5 16.9 20.2	(H/V) V H V	(dB) 1.50 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11 8.69	(dBm) 23.50 27.63 23.54 27.39	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -6.5 -2.4 -6.5 -2.6	Notes	
f GHz Low Ch 1.713 1.713 Mid Ch 1.733 1.733	(dBm) 16.8 20.5 16.9	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.50 27.63 23.54	(dBm) 30.0 30.0 30.0	(dB) -6.5 -2.4 -6.5	Notes	

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EIRP LTE QPSK Band 4 (10.0 MHz BAND WIDTH)

Company	s 8	Apple							
roject #:		13015555							
Date:		08/20/13							
lest Engi		Mona Hua							
Configura		EUT Only							
Aode:		LTE Band 4, 5MHz BW							
ioue.		QPSK, Peak, R							
lest Equi		uron, rean, n	10010-0						
	g: Horn T344, a	d Chamber	D SMA Cables						
				lasshaura					
UDSUTUT	ion: norn 160 S	ubstitution, a	Bft SMA Cable W	arenouse					
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							100000000	Notes	
f GHz		(H/V) V					100000000	Notes	
f GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes	
f GHz Low Ch 1.715 1.715	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.30	(dBm) 30.0	(dB) -5.7	Notes	
f GHz Low Ch 1.715 1.715 Mid Ch	(dBm)	<u>(H/V)</u> V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 24.30 27.93	(dBm) 30.0 30.0	(dB) -5.7 -2.1	Notes	
f GHz Low Ch 1.715 1.715 Mid Ch 1.733	(dBm) 17.6 20.8 17.4	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.30 27.93 24.03	(dBm) 30.0 30.0 30.0 30.0	(dB) .5.7 .2.1 .6.0	Notes	
f GHz Low Ch 1.715 1.715 Mid Ch	(dBm)	<u>(H/V)</u> V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 24.30 27.93	(dBm) 30.0 30.0	(dB) -5.7 -2.1	Notes	
f GHz Low Ch 1.715 1.715 Mid Ch 1.733 1.733	(dBm) 17.6 20.8 17.4	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.30 27.93 24.03	(dBm) 30.0 30.0 30.0 30.0	(dB) .5.7 .2.1 .6.0	Notes	
f GHz Low Ch 1.715 1.715 Mid Ch 1.733	(dBm) 17.6 20.8 17.4	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.30 27.93 24.03	(dBm) 30.0 30.0 30.0 30.0	(dB) .5.7 .2.1 .6.0	Notes	
f GHz Low Ch 1.715 1.715 Mid Ch 1.733 1.733 High Ch	(dBm) 17.6 20.8 17.4 21.5	(H/V) V H V	(dB) 1.50 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11 8.69	(dBm) 24.30 27.93 24.03 28.72	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -5.7 -2.1 -6.0 -1.3	Notes	

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EIRP LTE 16QAM Band 4 (10.0 MHz BAND WIDTH)

ompany		Apple							
oject #:		13U15555							
te:		08/20/13							
est Engi		Mona Hua							
onfigura		EUT Only LTE Band 4, 5MHz BW							
ode:									
		16QAM, Peak,							
st Foui	pment:	10000000000000000000000000000000000000							
			D SMA Cables	200020000000					
ibstitut	ion: Horn 160 S	ubstitution,	8ft SMA Cable W	arehouse					
	SG reading	Ant Pol	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes	
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP (dBm)	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	
f GHz .ow Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes	
f GHz ow Ch 1.715								Notes	
f GHz .ow Ch	(dBm) 16.6	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 23.30	(dBm) 30.0	(dB) _6.7	Notes	
f GHz ow Ch 1.715	(dBm) 16.6	(H/V) V H	(dB) 1.50	(dBi) 8.16	(dBm) 23.30	(dBm) 30.0	(dB) _6.7	Notes	
f GHz ow Ch 1.715 1.715 Mid Ch 1.733	(dBm) 16.6 19.8 16.4	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.30 26.93 23.03	(dBm) 30.0 30.0 30.0 30.0	(dB) -6.7 -3.1 -7.0	Notes	
f GHz .ow Ch 1.715 1.715 Mid Ch	(dBm) 16.6 19.8	(H/V) V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 23.30 26.93	(dBm) 30.0 30.0	(dB) 6.7 3.1	Notes	
f GHz ow Ch 1.715 1.715 Mid Ch 1.733	(dBm) 16.6 19.8 16.4	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.30 26.93 23.03	(dBm) 30.0 30.0 30.0 30.0	(dB) -6.7 -3.1 -7.0	Notes	
f GHz .ow Ch 1.715 1.715 1.715 Mid Ch 1.733 1.733	(dBm) 16.6 19.8 16.4	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 23.30 26.93 23.03	(dBm) 30.0 30.0 30.0 30.0	(dB) -6.7 -3.1 -7.0	Notes	
f GHz ow Ch 1.715 1.715 Mid Ch 1.733 1.733 ligh Ch	(dBm) 16.6 19.8 16.4 20.5	(H/V) V H V	(dB) 1.50 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11 8.69	(dBm) 23.30 26.93 23.03 27.72	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -6.7 -3.1 -7.0 -2.3	Notes	

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EIRP LTE QPSK Band 4 (15.0 MHz BAND WIDTH)

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EIRP LTE 16QAM Band 4 (15.0 MHz BAND WIDTH)

ompany		Apple							
roject #		13U15555							
ate:		08/20/13							
est Eng		Mona Hua							
onfigura		EUT Only LTE Band 4, 5MHz BW							
lode:									
		16QAM, Peak,							
est Fou	ipment:	1000 A. 1000 A. 1000 A.	0650-630-8						
ceivin	g: Horn 1344, a	nd Chamber	D SMA Cables						
ubstitut	ion: Horn T60 S	Substitution,	Bft SMA Cable W	arehouse					
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes	
I									
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)		
			(dB)	(dBi)	(dBm)	(dBm)	(dB)		
GHz Low Ch 1.718	16.8	v	1.50	8.16	23.49	30.0	-6.5		
GHz Low Ch									
GHz Low Ch 1.718 1.718	16.8	v	1.50	8.16	23.49	30.0	-6.5		
GHz Low Ch 1.718 1.718 Mid Ch	16.8 19.9	v	1.50 1.50	8.16	23.49 26.98	30.0 30.0	_6.5 _3.0		
GHz Low Ch 1.718 1.718	16.8	V H	1.50	8.16 8.59	23.49	30.0	-6.5		
GHz Low Ch 1.718 1.718 Mid Ch 1.733 1.733	16.8 19.9 16.4	V H V	1.50 1.50 1.50	8.16 8.59 8.11	23.49 26.98 23.02	30.0 30.0 30.0	<u>-6.5</u> -3.0 -7.0		
GHz Low Ch 1.718 1.718 Mid Ch 1.733 1.733 High Ch	16.8 19.9 16.4 20.5	V H V H	1.50 1.50 1.50 1.50	8.16 8.59 8.11 8.69	23.49 26.98 23.02 27.69	30.0 30.0 30.0 30.0 30.0	-6.5 -3.0 -7.0 -2.3		
GHz Low Ch 1.718 1.718 Mid Ch 1.733 1.733 High Ch 1.748	16.8 19.9 16.4 20.5	V H V H	1.50 1.50 1.50 1.50 1.50	8.16 8.59 8.11 8.69 8.07	23.49 26.98 23.02 27.69 22.07	30.0 30.0 30.0 30.0 30.0 30.0 30.0	-6.5 -3.0 -7.0 -2.3 -7.9		
GHz ow Ch 1.718 1.718 Mid Ch 1.733 1.733 High Ch	16.8 19.9 16.4 20.5	V H V H	1.50 1.50 1.50 1.50	8.16 8.59 8.11 8.69	23.49 26.98 23.02 27.69	30.0 30.0 30.0 30.0 30.0	-6.5 -3.0 -7.0 -2.3		

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EIRP LTE QPSK Band 4 (20.0 MHz BAND WIDTH)

company:		Apple							
Project #:		13U15555							
Date:		08/20/13							
lest Engi		Mona Hua							
onfiguration:		EUT Only							
lode:	(1	LTE Band 4, 5MHz BW							
	2	QPSK, Peak, R	RB100-0						
lest Equi	pment:								
100 C 100 C 100 C 100 C	g: Horn T344, an		8ft SMA Cable W	arehouse					
uusuuuu	on. norn roo 3	ubstitution, i	UIL SIMA GADIE H	arenouse					
f	SG reading	Ant Pol	Cable Loss	Antenna Gain	FIRP	l imit	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 1.720	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.67	(dBm) 30.0	(dB) -5.3	Notes	
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes	
GHz Low Ch 1.720 1.720	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.67	(dBm) 30.0	(dB) -5.3	Notes	
GHz Low Ch 1.720	(dBm)	(H/V) V	(dB) 1.50	(dBi) 8.16	(dBm) 24.67	(dBm) 30.0	(dB) -5.3	Notes	
GHz Low Ch 1.720 1.720 Mid Ch	(dBm) 18.0 21.0	(H/V) V H	(dB) 1.50 1.50	(dBi) 8.16 8.59	(dBm) 24.67 28.10	(dBm) 30.0 30.0	(dB) -5.3 -1.9	Notes	
GHz Low Ch 1.720 1.720 Mid Ch 1.733 1.733	(dBm) 18.0 21.0 17.5	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.67 28.10 24.10	(dBm) 30.0 30.0 30.0	(dB) -5.3 -1.9 -5.9	Notes	
GHz Low Ch 1.720 1.720 Mid Ch 1.733 1.733 High Ch	(dBm) 18.0 21.0 17.5 21.5	(H/V) V H V	(dB) 1.50 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11 8.69	(dBm) 24.67 28.10 24.10 28.64	(dBm) 30.0 30.0 30.0 30.0 30.0	(dB) -5.3 -1.9 -5.9 -1.4	Notes	
GHz Low Ch 1.720 1.720 Mid Ch 1.733 1.733	(dBm) 18.0 21.0 17.5	(H/V) V H	(dB) 1.50 1.50 1.50	(dBi) 8.16 8.59 8.11	(dBm) 24.67 28.10 24.10	(dBm) 30.0 30.0 30.0	(dB) -5.3 -1.9 -5.9	Notes	

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EIRP LTE 16QAM Band 4 (20.0 MHz BAND WIDTH)

1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	neer: ition:	13U15555 08/20/13 Mona Hua EUT Only LTE Band 4, 5M 16QAM, Peak,	RB100-0					
Fest Engi Configura Mode: <u>Fest Equi</u> Receiving	neer: ition: pment:	Mona Hua EUT Only LTE Band 4, 5M 16QAM, Peak,	RB100-0					
Configura Mode: <u>Test Equi</u> Receiving	tion: pment	EUT Only LTE Band 4, 5M 16QAM, Peak,	RB100-0					
Node: <u>Fest Equi</u> Receiving	pment	LTE Band 4, 5M 16QAM, Peak,	RB100-0					
<u>Fest Equi</u> Receiving	pment:	16QAM, Peak,	RB100-0					
Receiving	pment:							
Receiving	pment:							
C	" Horn T344 a	nd Chamber						
		nu champer	D SMA Cables					
Substituti	on: Horn T60 S	Substitution,	8ft SMA Cable W	/arehouse				
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
Low Ch								
1.720	17.0	V 1.50		8.16	23.67	30.0	-6.3	
1.720	20.0	Н	1.50	8.59	27.10	30.0	-2.9	
Mid Ch								
1.733	16.5	v	1.50	8.11	23.10	30.0	-6.9	
		Н	1.50	8.69	27.64	30.0	-2.4	
1.733	20.5							
1.733	20.3							
High Ch								
	20.5 15.5 19.7	v H	1.50 1.50	8.07	22.09	30.0 30.0	-7.9 -3.0	

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9.1.3. LTE BAND 5

ERP LTE QPSK Band 5 (1.4 MHz BAND WIDTH)

AVERAGE

ompany:		Apple						
roject #:		13U15555						
ate:		08/20/13						
est Engi	neer:	Mona Hua						
onfigura	tion:	EUT only						
lode:		LTE Band 5 ,	1.4MHz BW					
		QPSK, Averag	ge, RB1-0					
	-			able (Setup this e (SN # 20894700		-	, , ,	
ubstituti f	-	I: 00022117,	4ft SMA Cable	• •)3) Wareh	ouse.	Margin	Notes
ubstituti	on: Dipole S/N	I: 00022117,	4ft SMA Cable	e (SN # 20894700)3) Wareh	ouse.		Notes
ubstituti 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
ubstituti f MHz Low Ch 824.70	on: Dipole S/N SG reading (dBm) 21.55	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) 20.95	Limit (dBm)	Margin (dB)	Notes
ubstituti 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
ubstituti f MHz Low Ch 824.70	on: Dipole S/N SG reading (dBm) 21.55	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) 20.95 16.03	Limit (dBm)	Margin (dB)	Notes
ubstituti f MHz Low Ch 824.70 824.70 824.70 Mid Ch 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.63 22.42	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) 20.95 16.03 21.82	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.6	Notes
ubstituti f MHz Low Ch 824.70 824.70 Mid Ch	on: Dipole S/N SG reading (dBm) 21.55 16.63	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) 20.95 16.03	Limit (dBm) 38.5 38.5	Margin (dB) -17.5 -22.4	Notes
ubstituti f MHz Low Ch 824.70 824.70 824.70 Mid Ch 836.50 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.63 22.42	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) 20.95 16.03 21.82	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.6	Notes
ubstituti f MHz Low Ch 824.70 824.70 824.70 Mid Ch 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.63 22.42	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) 20.95 16.03 21.82	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.6	Notes

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ERP LTE 16QAM Band 5 (1.4 MHz BAND WIDTH)

	Compliance Certification Services Chamber D
Company:	Apple
Project #:	13U15555
Date:	08/20/13
Test Engineer:	Mona Hua
Configuration:	EUT only
Mode:	LTE Band 5 , 1.4MHz BW
	16QAM, Average, RB1-0

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)		
Low Ch								
824.70	20.30	V	0.6	0.0	19.70	38.5	-18.7	
824.70	15.40	Н	0.6	0.0	14.80	38.5	-23.6	
Mid Ch								
836.50	21.36	V	0.6	0.0	20.76	38.5	-17.7	
836.50	15.20	Н	0.6	0.0	14.60	38.5	-23.8	
High Ch								
848.30	21.35	V	0.6	0.0	20.75	38.5	-17.7	
848.30	14.44	Н	0.6	0.0	13.84	38.5	-24.6	
						ļ		

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ERP LTE QPSK Band 5 (3.0 MHz BAND WIDTH)

ompany		Apple						
oject #:		13U15555						
ate:		08/20/13						
est Engi	neer:	Mona Hua						
onfigura		EUT only						
ode:		LTE Band 5	3MHz BW					
		QPSK, Averag						
-	-			able (Setup this e (SN # 20894700		-	IT)	
-	-	l: 00022117,	4ft SMA Cabl)3) Wareh	-	Margin	Notes
ubstituti	on: Dipole S/N	l: 00022117,	4ft SMA Cabl	e (SN # 20894700)3) Wareh	ouse.	-	Notes
f MHz Low Ch	on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	4ft SMA Cabl Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm)	ouse. Limit (dBm)	Margin (dB)	Notes
f MHz Low Ch 825.50	on: Dipole S/N SG reading (dBm) 21.55	I: 00022117, Ant. Pol. (H/V) V	4ft SMA Cabl Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 20.95	Limit (dBm)	Margin (dB) -17.5	Notes
f MHz Low Ch	on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	4ft SMA Cabl Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm)	ouse. Limit (dBm)	Margin (dB)	Notes
f MHz Low Ch 825.50	on: Dipole S/N SG reading (dBm) 21.55	I: 00022117, Ant. Pol. (H/V) V	4ft SMA Cabl Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 20.95	Limit (dBm)	Margin (dB) -17.5	Notes
f MHz Low Ch 825.50 825.50	on: Dipole S/N SG reading (dBm) 21.55	I: 00022117, Ant. Pol. (H/V) V	4ft SMA Cabl Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 20.95	Limit (dBm)	Margin (dB) -17.5	Notes
f MHz Low Ch 825.50 825.50 Mid Ch	on: Dipole S/N SG reading (dBm) 21.55 16.68	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cabl Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	03) Wareh ERP (dBm) 20.95 16.08	Couse.	Margin (dB) -17.5 -22.4	Notes
f MHz Low Ch 825.50 825.50 Mid Ch 836.50 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.68 22.50	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cabl Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	03) Wareh ERP (dBm) 20.95 16.08 21.90	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.5	Notes
f MHz Low Ch 825.50 825.50 Mid Ch 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.68 22.50	I: 00022117, Ant. Pol. (H/V) V H V H	4ft SMA Cabl Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	20.95 (dBm) 20.95 16.08 21.90 15.85	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.5	Notes
f MHz Low Ch 825.50	on: Dipole S/N SG reading (dBm) 21.55	I: 00022117, Ant. Pol. (H/V) V	4ft SMA Cabl Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 20.95	Limit (dBm)	Margin (dB) -17.5	Notes
f MHz Low Ch 825.50 825.50 Mid Ch 836.50 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.68 22.50	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cabl Cable Loss (dB) 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	03) Wareh ERP (dBm) 20.95 16.08 21.90	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.5	Notes
dbstituti f MHz Low Ch 825.50 825.50 Mid Ch 836.50 836.50 High Ch	on: Dipole S/N SG reading (dBm) 21.55 16.68 22.50 16.45	I: 00022117, Ant. Pol. (H/V) V H V H	4ft SMA Cabl Cable Loss (dB) 0.6 0.6 0.6 0.6	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	20.95 (dBm) 20.95 16.08 21.90 15.85	Limit (dBm) 38.5 38.5 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.5 -22.6	Notes
f MHz Low Ch 825.50 825.50 Mid Ch 836.50 836.50 836.50	on: Dipole S/N SG reading (dBm) 21.55 16.68 22.50 16.45	I: 00022117, Ant. Pol. (H/V) V H	4ft SMA Cabl 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) 20.95 16.08 21.90	Limit (dBm) 38.5 38.5 38.5 38.5 38.5	Margin (dB) -17.5 -22.4 -16.5 -22.6	Notes

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ERP LTE 16QAM Band 5 (3.0 MHz BAND WIDTH)

ople
U15555
3/20/13
ona Hua
JT only
E Band 5 , 3MHz BW
QAM, Average, RB1-0

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)	
Low Ch								
825.50	20.50	V	0.6	0.0	19.90	38.5	-18.5	
825.50	15.50	Н	0.6	0.0	14.90	38.5	-23.5	
Mid Ch								
836.50	21.40	V	0.6	0.0	20.80	38.5	-17.6	
836.50	15.57	Н	0.6	0.0	14.97	38.5	-23.5	
High Ch								
847.50	21.52	V	0.6	0.0	20.92	38.5	-17.5	
847.50	14.64	Н	0.6	0.0	14.04	38.5	-24.4	
ev. 3.17.11	<u>i</u> <u>I</u>			<u> </u>		i	ll	

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ERP LTE QPSK Band 5 (5.0 MHz BAND WIDTH)

bject #: 13U15555 te: 07/31/13 st Engineer: Mona Hua nfiguration: EUT only de: LTE Band 5 , 5MHz BW QPSK, Average, RB1-0 st Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bestitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f SG reading Ant. Pol. Cable Loss (dBm) (H/V) (dB) (dBd) (dBm) wCh	roject #: ate: est Engine onfiguratio	er:	Apple 13U15555 07/31/13	e Certificatio	on Services Cha	amber D			
bject #: 13U15555 te: 07/31/13 st Engineer: Mona Hua nfiguration: EUT only de: LTE Band 5 , 5MHz BW QPSK, Average, RB1-0 st Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bestitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f SG reading Ant. Pol. Cable Loss (dBm) (H/V) (dB) (dBd) (dBm) wCh	onfiguratio	er:	13U15555 07/31/13						
ee: 07/31/13 st Engineer: Mona Hua nfiguration: EUT only de: LTE Band 5, 5MHz BW QPSK, Average, RB1-0 st Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bstitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f G reading Ant. Pol. Cable Loss Antenna Gain (dBm) (dBm) (dB) MHz (dBm) (H/V) (dB) Notes 26.50 21.69 V 0.6 0.0 21.09 38.5 -17.4 26.50 17.00 H 0.6 0.0 16.40 38.5 -22.0 Idd Ch Idd Ch Idd Ch	ate: est Engine onfiguratio	er:	07/31/13						
st Engineer: Mona Hua nfiguration: EUT only de: LTE Band 5 , 5MHz BW QPSK, Average, RB1-0 st Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bititution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f SG reading (dBm) Ant. Pol. (dB) Cable Loss Antenna Gain (dBm) ERP (dBm) Limit (dBm) Margin (dB) Notestication MHz (dBm) (H/V) 0.6 0.0 21.09 38.5 -17.4 26.50 21.69 V 0.6 0.0 21.09 38.5 -22.0 Idd Ch add ch add ch add ch add ch add ch 36.50 22.39 V 0.6 0.0 21.79 38.5 -16.7	est Engine onfiguratio	er:							
Infiguration: EUT only de: LTE Band 5 , 5MHz BW QPSK, Average, RB1-0 St Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bstitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f SG reading (dBm) Ant. Pol. (H/V) Cable Loss (dB) Antenna Gain (dBd) ERP (dBm) Limit (dBm) Margin (dB) Notestick 26.50 21.69 V 0.6 0.0 21.09 38.5 -17.4 26.50 21.69 V 0.6 0.0 16.40 38.5 -22.0 lid Ch	onfiguratio								
Infiguration: EUT only de: LTE Band 5 , 5MHz BW QPSK, Average, RB1-0 St Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bstitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f SG reading (dBm) Ant. Pol. (H/V) Cable Loss (dB) Antenna Gain (dBd) ERP (dBm) Limit (dBm) Margin (dB) Notestick 26.50 21.69 V 0.6 0.0 21.09 38.5 -17.4 26.50 21.69 V 0.6 0.0 16.40 38.5 -22.0 lid Ch	onfiguratio		Mona Hua						
de: LTE Band 5 , 5MHz BW QPSK, Average, RB1-0 <u>st Equipment:</u> ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bstitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. <u>f SG reading Ant. Pol. Cable Loss Antenna Gain ERP Limit Margin (dBm)</u> <u>MHz (dBm) (H/V) (dB) (dBd) (dBm) (dBm) (dB)</u> <u>w Ch (dBm) (H/V) 0.6 0.0 21.09 38.5 -17.4</u> 26.50 21.69 V 0.6 0.0 16.40 38.5 -22.0 <u>Id Ch 22.39 V 0.6 0.0 21.79 38.5 -16.7</u>	-	on:	EUT only						
QPSK, Average, RB1-0 at Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bistitution: 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) Cable Loss Antenna Gain ERP Limit Margin Notes 26.50 21.69 V 0.6 0.0 21.09 38.5 -17.4 26.50 17.00 H 0.6 0.0 16.40 38.5 -22.0 Id Ch	ioue.		-	5MHz BW					
st Equipment: ceiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) bestitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. f SG reading Ant. Pol. Cable Loss Antenna Gain ERP Limit Margin Notestitution MHz (dBm) (H/V) (dB) (dBd) (dBm) (dB) Notestitution 0w Ch 0 0.6 0.0 21.09 38.5 .17.4 26.50 21.69 V 0.6 0.0 16.40 38.5 .22.0 Idd Ch 36.50 22.39 V 0.6 0.0 21.79 38.5 .16.7									
26.50 21.69 V 0.6 0.0 21.09 38.5 -17.4 26.50 17.00 H 0.6 0.0 16.40 38.5 -22.0 lid Ch	MHz	-		(dB)	(dBd)	(dBm)	(dBm)		
26.50 17.00 H 0.6 0.0 16.40 38.5 -22.0 lid Ch	Laur Ch								
lid Ch 36.50 22.39 V 0.6 0.0 21.79 38.5 -16.7	·····				·····				
36.50 22.39 V 0.6 0.0 21.79 38.5 -16.7	826.50								
36.50 22.39 V 0.6 0.0 21.79 38.5 -16.7	·····								
36.50 17.20 H 0.6 0.0 16.60 38.5 -21.8	826.50 826.50								
	826.50	17.00	Н	0.6	0.0	16.40	38.5	-22.0	
	826.50 826.50 Mid Ch	17.00 22.39	H V	0.6	0.0	16.40 21.79	38.5 38.5	-22.0 -16.7	
	826.50 826.50 Mid Ch 836.50 836.50	17.00 22.39	H V	0.6	0.0	16.40 21.79	38.5 38.5	-22.0 -16.7	
	826.50 826.50 Mid Ch 836.50 836.50 High Ch	17.00 22.39 17.20	H V H	0.6 0.6 0.6	0.0	16.40 21.79 16.60	38.5 38.5 38.5	-22.0 -16.7 -21.8	
36.50 22.39 V 0.6 0.0 21.79 38.5 -16.7	Laure Ch								
	826.50 826.50 Mid Ch 836.50 836.50	17.00 22.39	H V	0.6	0.0	16.40 21.79	38.5 38.5	-22.0 -16.7	
	826.50 826.50 Aid Ch 836.50 836.50	17.00 22.39 17.20	H V H	0.6 0.6 0.6	0.0	16.40 21.79 16.60	38.5 38.5 38.5	-22.0 -16.7 -21.8	

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ERP LTE 16QAM Band 5 (5.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/20/13
Test Engineer:	Mona Hua
Configuration:	EUT only
Mode:	LTE Band 5 , 5MHz BW
	16QAM, Average, RB1-0

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)	
Low Ch								
826.50	20.40	V	0.6	0.0	19.80	38.5	-18.6	
826.50	15.68	Н	0.6	0.0	15.08	38.5	-23.4	
Mid Ch								
836.50	21.25	V	0.6	0.0	20.65	38.5	-17.8	
836.50	15.20	Н	0.6	0.0	14.60	38.5	-23.8	
High Ch								
846.50	21.30	V	0.6	0.0	20.70	38.5	-17.7	
846.50	14.64	Н	0.6	0.0	14.04	38.5	-24.4	
ev. 3.17.11	L			l			ll.	
w. J. H. H								

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ERP LTE QPSK Band 5 (10.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/20/13
Test Engineer:	Mona Hua
Configuration:	EUT only
Mode:	LTE Band 5 , 10MHz BW
	QPSK, Average, RB1-0

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								
829.00	21.60	V	0.6	0.0	21.00	38.5	-17.4	
829.00	16.50	Η	0.6	0.0	15.90	38.5	-22.5	
Mid Ch								
836.50	22.24	V	0.6	0.0	21.64	38.5	-16.8	
836.50	16.49	Η	0.6	0.0	15.89	38.5	-22.6	
ligh Ch								
844.00	22.43	V	0.6	0.0	21.83	38.5	-16.6	
844.00	15.90	Η	0.6	0.0	15.30	38.5	-23.1	
<i>i</i> . 3.17.11	II			l			ll	

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ERP LTE 16QAM Band 5 (10.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/20/13
Test Engineer:	Mona Hua
Configuration:	EUT only
Mode:	LTE Band 5 , 10MHz BW
	16QAM, Average, RB1-0

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)	
Low Ch								
829.00	20.30	V	0.6	0.0	19.70	38.5	-18.7	
829.00	15.35	Н	0.6	0.0	14.75	38.5	-23.7	
Mid Ch								
836.50	21.00	V	0.6	0.0	20.40	38.5	-18.0	
836.50	15.30	Н	0.6	0.0	14.70	38.5	-23.7	
High Ch								
844.00	21.30	V	0.6	0.0	20.70	38.5	-17.7	
844.00	14.94	Н	0.6	0.0	14.34	38.5	-24.1	
ev. 3.17.11	ll						ĮĮ	
ev. J. 17. 11								

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9.1.4. LTE BAND 13

ERP LTE QPSK, Band 13 (5.0 MHz BAND WIDTH)

AVERAGE

Project # Date: Test Eng Configur Mode: Test Equ	ineer:	13U15555 08/05/13 Mona Hua EUT only LTE BAND 13						
Test En <u>c</u> Configur Mode:		Mona Hua EUT only						
Configur Mode:		EUT only						
Mode:	ation:							
		TTE DAND 41						
Test Equ		LIE DANU 1.	3					
Test Equ		QPSK, 5MHz	BW, Average, R	B1-0				
	ipment:							
f	-		Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
Low Ch								
Low Ch 779.50	21.50	V	0.9	0.0	20.60	38.5	-17.8	
Low Ch		V H	0.9 0.9	0.0 0.0	20.60 18.39	38.5 38.5	-17.8 -20.1	
Low Ch 779.50	21.50	÷				å		
Low Ch 779.50 779.50	21.50 19.29 22.00	H V	0.9		18.39 21.10	38.5 38.5	-20.1 -17.3	
Low Ch 779.50 779.50 Mid Ch	21.50 19.29	H	0.9	0.0	18.39	38.5	-20.1	
Low Ch 779.50 779.50 Mid Ch 782.00 782.00	21.50 19.29 22.00	H V	0.9	0.0	18.39 21.10	38.5 38.5	-20.1 -17.3	
Low Ch 779.50 779.50 Mid Ch 782.00	21.50 19.29 22.00	H V	0.9	0.0	18.39 21.10	38.5 38.5	-20.1 -17.3	

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ERP LTE 16QAM Band 13 (5.0 MHz BAND WIDTH)

Company	:	Apple						
Project #	:	13U15555						
Date:		08/05/13						
Test Eng	ineer:	Mona Hua						
Configura		EUT only						
Mode:		LTE BAND 13	3					
		16QAM, 5MH	z BW, Average,	RB1-0				
Test Equ	ipment:							
Receivin	g: Sunol T407 a	and Chambe	er D N-type Ca	ble (Setup this o	one for te	sting EU	T)	
Substitut	ion [.] Dipole S/N	I· 00022117	8ft SMA Cable	e (SN # 20894700	3) Wareh	ouse		
					-,			
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	-							Notes
MHz Low Ch 779.50	(dBm)	(H/V) V	(dB) 0.9	(dBd) 0.0	(dBm) 19.50	(dBm) 38.5	(dB) -18.9	Notes
MHz Low Ch	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	Notes
MHz Low Ch 779.50 779.50	(dBm)	(H/V) V	(dB) 0.9	(dBd) 0.0	(dBm) 19.50	(dBm) 38.5	(dB) -18.9	Notes
MHz Low Ch 779.50 779.50 Mid Ch	(dBm) 20.40 18.30	(H/V) V H	(dB) 0.9 0.9	(dBd) 0.0 0.0	(dBm) 19.50 17.40	(dBm) 38.5 38.5	(dB) -18.9 -21.0	Notes
MHz Low Ch 779.50 779.50 Mid Ch 782.00	(dBm) 20.40 18.30 21.00	(H/V) V H	(dB) 0.9 0.9 0.9	(dBd) 0.0 0.0 0.0	(dBm) 19.50 17.40 20.10	(dBm) 38.5 38.5 38.5	(dB) -18.9 -21.0 -18.3	Notes
MHz Low Ch 779.50 779.50 Mid Ch	(dBm) 20.40 18.30	(H/V) V H	(dB) 0.9 0.9	(dBd) 0.0 0.0	(dBm) 19.50 17.40	(dBm) 38.5 38.5	(dB) -18.9 -21.0	Notes
MHz Low Ch 779.50 779.50 Mid Ch 782.00	(dBm) 20.40 18.30 21.00	(H/V) V H	(dB) 0.9 0.9 0.9	(dBd) 0.0 0.0 0.0	(dBm) 19.50 17.40 20.10	(dBm) 38.5 38.5 38.5	(dB) -18.9 -21.0 -18.3	Notes
MHz Low Ch 779.50 779.50 Mid Ch 782.00 782.00	(dBm) 20.40 18.30 21.00	(H/V) V H	(dB) 0.9 0.9 0.9	(dBd) 0.0 0.0 0.0	(dBm) 19.50 17.40 20.10	(dBm) 38.5 38.5 38.5	(dB) -18.9 -21.0 -18.3	Notes
MHz Low Ch 779.50 779.50 Mid Ch 782.00 782.00 High Ch	(dBm) 20.40 18.30 21.00 18.60	(H/V) V H V H	(dB) 0.9 0.9 0.9 0.9 0.9	(dBd) 0.0 0.0 0.0 0.0	(dBm) 19.50 17.40 20.10 17.70	(dBm) 38.5 38.5 38.5 38.5	(dB) -18.9 -21.0 -18.3 -20.7	Notes

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ERP LTE QPSK Band 13 (10.0 MHz BAND WIDTH)

Test Engineer: T Wang Configuration: EUT only Mode: LTE BAND 13 QPSK, 10MHz BW, Average, RB1-0	
Date: 07/31/13 Test Engineer: T Wang Configuration: EUT only Mode: LTE BAND 13	
Test Engineer: T Wang Configuration: EUT only Mode: LTE BAND 13 QPSK, 10MHz BW, Average, RB1-0	
Configuration: EUT only Mode: LTE BAND 13 QPSK, 10MHz BW, Average, RB1-0	
Mode: LTE BAND 13 QPSK, 10MHz BW, Average, RB1-0	
QPSK, 10MHz BW, Average, RB1-0	
Receiving: Sunol T407 and Chamber D N-type Cable (Setup this one for testing EUT)	
Substitution: Dipole S/N: 00022117, 8ft 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)	Notes
Mid Ch Mid Ch<	
782.00 22.10 V 0.9 0.0 21.20 38.5 -17.2	
782.00 H 0.9 0.0 18.60 38.5 -19.8	

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ERP LTE 16QAM Band 13 (10.0 MHz BAND WIDTH)

		Compliand	e Ceruncaud	on Services Cha	amper D			
ompany	:	Apple						
roject #:		13U15555						
ate:		08/05/13						
est Engi	ineer:	Mona Hua						
onfigura	ation:	EUT only						
ode:		LTE BAND 1	3					
		16QAM, 10M	Hz BW, Average,	, RB1-0				
est Equi	ipment:							
		Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
f MHz	SG reading (dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
MHz id Ch	(dBm)							
MHz d Ch 782.00	(dBm) 21.10	V	0.9	0.0	20.20	38.5	-18.2	
	(dBm)							

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9.1.5. LTE BAND 17

ERP LTE QPSK, Band 17 (5.0 MHz BAND WIDTH)

AVERAGE

				titution Measur on Services Cha				
mpany:		Apple						
oject #:		13U15555						
te:		08/05/13						
st Engine	er:	Mona Hua						
onfiguratio	on:	EUT only						
ode:		LTE Band 17,	5MHz BW					
		QPSK 5MHz						
ceiving: bstitutior	Sunol T704, an 1: Dipole S/N: 0	0022117, 8ft	t SMA Cable (le (Setup this or SN # 208955002) Antenna Gain	Warehou	ise.		Notes
_	Sunol T704, an	0022117, 8ft	t SMA Cable (Warehou		Margin (dB)	Notes
ceiving: bstitutior f	Sunol T704, an 1: Dipole S/N: 0 SG reading	00022117, 8ft Ant. Pol.	t SMA Cable (Cable Loss	SN # 208955002) Antenna Gain	Warehou ERP	ise. Limit	Margin	Notes
ceiving: bstitutior f MHz	Sunol T704, an 1: Dipole S/N: 0 SG reading	00022117, 8fr Ant. Pol. (H/V) V	t SMA Cable (Cable Loss	SN # 208955002) Antenna Gain	Warehou ERP	ise. Limit	Margin (dB) -14.0	Notes
f MHz Low Ch	Sunol T704, an 1: Dipole S/N: 0 SG reading (dBm)	00022117, 8fr Ant. Pol. (H/V)	t SMA Cable (Cable Loss (dB)	SN # 208955002) Antenna Gain (dBd)	Warehou ERP (dBm)	lse. Limit (dBm)	Margin (dB)	Notes
f MHz Low Ch 706.50	Sunol T704, an I: Dipole S/N: 0 SG reading (dBm) 21.70	00022117, 8fr Ant. Pol. (H/V) V	t SMA Cable (Cable Loss (dB) 0.9	SN # 208955002) Antenna Gain (dBd) 0.0	Warehou ERP (dBm) 20.80	Limit (dBm)	Margin (dB) -14.0	Notes
f MHz Low Ch 706.50 706.50 Mid Ch 710.00	Sunol T704, an Dipole S/N: 0 SG reading (dBm) 21.70 17.69 22.12	00022117, 8fr Ant. Pol. (H/V) V H	t SMA Cable (Cable Loss (dB) 0.9	SN # 208955002) Antenna Gain (dBd) 0.0	Warehou ERP (dBm) 20.80 16.79 21.22	Limit (dBm) 34.8 34.8 34.8	Margin (dB) -14.0 -18.0 -13.6	Notes
f MHz Low Ch 706.50 Mid Ch	Sunol T704, an : Dipole S/N: 0 SG reading (dBm) 21.70 17.69	00022117, 8fr Ant. Pol. (H/V) V H	t SMA Cable (Cable Loss (dB) 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0	Warehou ERP (dBm) 20.80 16.79	Limit (dBm) 34.8 34.8	Margin (dB) -14.0 -18.0	Notes
f MHz Low Ch 706.50 706.50 Mid Ch 710.00	Sunol T704, an Dipole S/N: 0 SG reading (dBm) 21.70 17.69 22.12	00022117, 8fr Ant. Pol. (H/V) V H	t SMA Cable (Cable Loss (dB) 0.9 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0 0.0	Warehou ERP (dBm) 20.80 16.79 21.22	Limit (dBm) 34.8 34.8 34.8	Margin (dB) -14.0 -18.0 -13.6	Notes
f MHz Low Ch 706.50 706.50 Mid Ch 710.00 710.00	Sunol T704, an Dipole S/N: 0 SG reading (dBm) 21.70 17.69 22.12	00022117, 8fr Ant. Pol. (H/V) V H	t SMA Cable (Cable Loss (dB) 0.9 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0 0.0	Warehou ERP (dBm) 20.80 16.79 21.22	Limit (dBm) 34.8 34.8 34.8	Margin (dB) -14.0 -18.0 -13.6	Notes

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ERP LTE 16QAM Band 17 (5.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/05/13
Test Engineer:	Mona Hua
Configuration:	EUT only
Mode:	LTE Band 17, 5MHz BW
	16QAM 5MHz AVG RB1-0

Test Equipment:

Receiving: Sunol T704, and Chamber D N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) 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								
706.50	20.70	V	0.9	0.0	19.80	34.8	-15.0	
706.50	16.69	Н	0.9	0.0	15.79	34.8	-19.0	
Aid Ch								
710.00	21.12	V	0.9	0.0	20.22	34.8	-14.6	
710.00	17.50	Н	0.9	0.0	16.60	34.8	-18.2	
ligh Ch								
713.50	21.44	V	0.9	0.0	20.54	34.8	-14.3	
713.50	17.94	Н	0.9	0.0	17.04	34.8	-17.8	
v. 3.17.11				J			à	

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ERP LTE QPSK Band 17 (10.0 MHz BAND WIDTH)

company:		Apple						
roject #:		13U15555						
ate:		08/05/13						
est Engine	er:	Mona Hua						
onfigurati		EUT only						
lode:		LTE Band 17,	10MHz BW					
		QPSK 10MHz						
ubstitutio	n: Dipole S/N: 0	0022117, 8ft	t SMA Cable (SN # 208955002)	Warehou	ise.		
f				SN # 208955002) Antenna Gain		use.	Margin	Notes
	n: Dipole S/N: 0 SG reading (dBm)					Limit	Margin (dB)	Notes
f	SG reading	Ant. Pol. (H/V)	Cable Loss	Antenna Gain	ERP (dBm)	Limit		Notes
f MHz Low Ch 709.00	SG reading (dBm) 21.60	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd) 0.0	ERP (dBm) 20.70	Limit (dBm) 34.8	(dB) -14.1	Notes
f MHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
f MHz Low Ch 709.00 709.00	SG reading (dBm) 21.60	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd) 0.0	ERP (dBm) 20.70	Limit (dBm) 34.8	(dB) -14.1	Notes
f MHz Low Ch 709.00	SG reading (dBm) 21.60	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd) 0.0	ERP (dBm) 20.70	Limit (dBm) 34.8	(dB) -14.1	Notes
f MHz Low Ch 709.00 709.00 Mid Ch	SG reading (dBm) 21.60 18.56	Ant. Pol. (H/V) V H	Cable Loss (dB)	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 20.70 17.66	Limit (dBm) 34.8 34.8	(dB) -14.1 -17.1	Notes
f MHz Low Ch 709.00 709.00 Mid Ch 710.00 710.00	SG reading (dBm) 21.60 18.56 22.25	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.9 0.9 0.9	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 20.70 17.66 21.35	Limit (dBm) 34.8 34.8 34.8	(dB) -14.1 -17.1 -13.4	Notes
f MHz Low Ch 709.00 709.00 Mid Ch 710.00 710.00 High Ch	SG reading (dBm) 21.60 18.56 22.25 19.05	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.9 0.9 0.9 0.9	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 20.70 17.66 21.35 18.15	Limit (dBm) 34.8 34.8 34.8 34.8	(dB) -14.1 -17.1 -13.4 -16.6	Notes
f MHz Low Ch 709.00 709.00 Mid Ch 710.00 710.00	SG reading (dBm) 21.60 18.56 22.25	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.9 0.9 0.9	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 20.70 17.66 21.35	Limit (dBm) 34.8 34.8 34.8	(dB) -14.1 -17.1 -13.4	Notes

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ERP LTE 16QAM Band 17 (10.0 MHz BAND WIDTH)

				titution Measur on Services Cha				
mpany:		Apple						
oject #:		13U15555						
te:		08/05/13						
st Engine	er:	Mona Hua						
onfiguratio	on:	EUT only						
ode:		LTE Band 17,	10MHz BW					
		QPSK 10MHz						
ceiving: bstitutior	Sunol T704, an 1: Dipole S/N: (0022117, 8ft	t SMA Cable (le (Setup this or SN # 208955002)	Warehou	ise.		N-4
bstitutior f	Sunol T704, an 1: Dipole S/N: 0 SG reading	00022117, 8ft Ant. Pol.	t SMA Cable (Cable Loss	SN # 208955002) Antenna Gain	Warehou ERP	ise.	Margin	Notes
ceiving: bstitutior f MHz	Sunol T704, an 1: Dipole S/N: (0022117, 8ft	t SMA Cable (SN # 208955002)	Warehou	ise.		Notes
ceiving: bstitutior f	Sunol T704, an 1: Dipole S/N: 0 SG reading	00022117, 8ft Ant. Pol.	t SMA Cable (Cable Loss	SN # 208955002) Antenna Gain	Warehou ERP	ise.	Margin	Notes
f MHz Low Ch	Sunol T704, an 1: Dipole S/N: 0 SG reading (dBm)	00022117, 8ft Ant. Pol. (H/V)	t SMA Cable (Cable Loss (dB)	SN # 208955002) Antenna Gain (dBd)	Warehou ERP (dBm)	lise. Limit (dBm)	Margin (dB)	Notes
f MHz Low Ch 709.00 709.00	Sunol T704, an I: Dipole S/N: (SG reading (dBm) 20.65	00022117, 8ft Ant. Pol. (H/V) V	Cable Loss (dB)	SN # 208955002) Antenna Gain (dBd) 0.0	Warehou ERP (dBm) 19.75	Limit (dBm)	Margin (dB) -15.0	Notes
f MHz Low Ch 709.00 Mid Ch	Sunol T704, an Dipole S/N: 0 SG reading (dBm) 20.65 17.61	00022117, 8ft Ant. Pol. (H/V) V H	t SMA Cable (Cable Loss (dB) 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0	Warehou ERP (dBm) 19.75 16.71	Limit (dBm) 34.8 34.8	Margin (dB) -15.0 -18.1	Notes
f MHz Low Ch 709.00 709.00	Sunol T704, an I: Dipole S/N: (SG reading (dBm) 20.65	00022117, 8ft Ant. Pol. (H/V) V	Cable Loss (dB)	SN # 208955002) Antenna Gain (dBd) 0.0	Warehou ERP (dBm) 19.75	Limit (dBm)	Margin (dB) -15.0	Notes
Acceiving: bstitution f MHz Low Ch 709.00 709.00 Mid Ch 710.00	Sunol T704, an Dipole S/N: 0 SG reading (dBm) 20.65 17.61 21.30	00022117, 8ft Ant. Pol. (H/V) V H	Cable Loss (dB) 0.9 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0 0.0	Warehou ERP (dBm) 19.75 16.71 20.40	use. Limit (dBm) 34.8 34.8 34.8	Margin (dB) -15.0 -18.1	Notes
f MHz Low Ch 709.00 709.00 Mid Ch 710.00 710.00 High Ch	Sunol T704, an Dipole S/N: C SG reading (dBm) 20.65 17.61 21.30 18.10	00022117, 8ft Ant. Pol. (H/V) V H V H	Cable Loss (dB) 0.9 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0 0.0	Warehou ERP (dBm) 19.75 16.71 20.40 17.20	Limit (dBm) 34.8 34.8 34.8 34.8	Margin (dB) -15.0 -18.1 -14.4 -17.6	Notes
Acceiving: bstitution f MHz Low Ch 709.00 709.00 Mid Ch 710.00	Sunol T704, an Dipole S/N: 0 SG reading (dBm) 20.65 17.61 21.30	00022117, 8ft Ant. Pol. (H/V) V H	Cable Loss (dB) 0.9 0.9 0.9	SN # 208955002) Antenna Gain (dBd) 0.0 0.0 0.0	Warehou ERP (dBm) 19.75 16.71 20.40	use. Limit (dBm) 34.8 34.8 34.8	Margin (dB) -15.0 -18.1	Notes

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9.1.6. LTE BAND 25

EIRP LTE QPSK Band 25 (1.4 MHz BAND WIDTH)

<u>PEAK</u>

				ental Measuremen Services Chamber				
Company:		Apple						
Project #:		13U15555						
)ate:		08/06/13						
lest Engi	neer:	Mona Hua						
Configura		EUT Only						
lode:		LTE Band 25, 1	.4MHz BW					
		QPSK, Peak, R	RB6-0					
lest Equi	pment:							
Substituti		ubstitution, 8	Bft SMA Cable (2	245185004) Warehou Antenna Gain		limit	Delta	Notes
				245185004) Warehou Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Substituti f GHz Low Ch	on: Horn T60 S SG reading (dBm)	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Substituti f GHz Low Ch 1.851	on: Horn T60 S SG reading (dBm) 19.6	Ant. Pol. (H/V)	Bft SMA Cable (2 Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.64	(dBm) 33.0	(dB) -6.4	Notes
Substituti f GHz Low Ch	on: Horn T60 S SG reading (dBm)	Ant. Pol. (H/V)	8ft SMA Cable (2 Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.851	on: Horn T60 S SG reading (dBm) 19.6	Ant. Pol. (H/V)	Bft SMA Cable (2 Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.64	(dBm) 33.0	(dB) -6.4	Notes
f GHz Low Ch 1.851 1.851	on: Horn T60 S SG reading (dBm) 19.6	Ant. Pol. (H/V)	Bft SMA Cable (2 Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.64	(dBm) 33.0	(dB) -6.4	Notes
GHz GHz Low Ch 1.851 1.851 Mid Ch	on: Horn T60 S SG reading (dBm) 19.6 21.6	Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 7.94 8.80	EIRP (dBm) 26.64 29.52	(dBm) 33.0 33.0	(dB) -6.4 -3.5	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.883 1.883	on: Horn T60 S SG reading (dBm) 19.6 21.6 20.4	Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95	EIRP (dBm) 26.64 29.52 27.48	(dBm) 33.0 33.0 33.0	(dB) -6.4 -3.5 -5.5	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.883	on: Horn T60 S SG reading (dBm) 19.6 21.6 20.4	Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95	EIRP (dBm) 26.64 29.52 27.48	(dBm) 33.0 33.0 33.0	(dB) -6.4 -3.5 -5.5	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.883 1.883 High Ch	on: Horn T60 S SG reading (dBm) 19.6 21.6 20.4 22.0	Ant. Pol. (H/V) V H V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95 8.68	EIRP (dBm) 26.64 29.52 27.48 29.79	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.4 -3.5 -5.5 -3.2	Notes

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EIRP LTE 16QAM Band 25 (1.4 MHz BAND WIDTH)

(dBm)	(dBm)	(dB)	
25.64	33.0	-7.4	
25.64 28.52	33.0 33.0	-7.4 -4.5	
28.52	33.0	-4.5	
28.52 26.48	33.0 33.0	-4.5 -6.5	
28.52 26.48	33.0 33.0	-4.5 -6.5	
	EIRP (dBm)		

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EIRP LTE QPSK Band 25 (3.0 MHz BAND WIDTH)

				ental Measuremen Services Chamber				
Company:		Apple						
Project #:		13U15555						
Date:		08/06/13						
Test Engi	neer:	Mona Hua						
Configura		EUT Only						
Node:		LTE Band 25, 3	MHz BW					
ineue.		QPSK, Peak, R						
Substituti	: Horn T344, a on: Horn T60 §	Substitution, 8		245185004) Warehou		1 imit	Delta	Notes
Receiving	: Horn T344, a			245185004) Warehou Antenna Gain (dBi)	se EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Receiving Substitutio	: Horn T344, a on: Horn T60 S SG reading	Substitution, 8 Ant. Pol.	8ft SMA Cable (2 Cable Loss	Antenna Gain	EIRP			Notes
Receiving Substitution f GHz	: Horn T344, a on: Horn T60 S SG reading	Substitution, 8 Ant. Pol.	8ft SMA Cable (2 Cable Loss	Antenna Gain	EIRP			Notes
Receiving Substitution f GHz Low Ch	: Horn T344, a on: Horn T60 S SG reading (dBm)	Substitution, 8 Ant. Pol. (H/V)	Bft SMA Cable (2 Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Receiving Substitution f GHz Low Ch 1.852 1.852	: Horn T344, a on: Horn T60 S SG reading (dBm) 19.8	Substitution, 8 Ant. Pol. (H/V) V	Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.85	(dBm) 33.0	(dB) -6.2	Notes
Receiving Substitution f GHz Low Ch 1.852	: Horn T344, a on: Horn T60 S SG reading (dBm) 19.8	Substitution, 8 Ant. Pol. (H/V) V	Cable Loss (dB) 0.85	Antenna Gain (dBi) 7.94	EIRP (dBm) 26.85	(dBm) 33.0	(dB) -6.2	Notes
Receiving Substitution f GHz Low Ch 1.852 1.852 Mid Ch	: Horn T344, a on: Horn T60 S SG reading (dBm) 19.8 21.6	Substitution, 8 Ant. Pol. (H/V) V H	Bft SMA Cable (2 Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 7.94 8.80	EIRP (dBm) 26.85 29.56	(dBm) 33.0 33.0	(dB) -6.2 -3.4	Notes
Receiving Substitution f GHz Low Ch 1.852 1.852 Mid Ch 1.883 1.883	: Horn T344, a on: Horn T60 S SG reading (dBm) 19.8 21.6 20.2	Substitution, 8 Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95	EIRP (dBm) 26.85 29.56 27.30	(dBm) 33.0 33.0 33.0	(dB) -6.2 -3.4 -5.7	Notes
Receiving Substitution f GHz Low Ch 1.852 1.852 Mid Ch 1.883	: Horn T344, a on: Horn T60 S SG reading (dBm) 19.8 21.6 20.2	Substitution, 8 Ant. Pol. (H/V) V H	8ft SMA Cable (2 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 7.94 8.80 7.95	EIRP (dBm) 26.85 29.56 27.30	(dBm) 33.0 33.0 33.0	(dB) -6.2 -3.4 -5.7	Notes

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EIRP LTE 16QAM Band 25 (3.0 MHz BAND WIDTH)

Company:		Apple						
Project #:		13U15555						
)ate:		08/06/13						
lest Engi	neer:	Mona Hua						
Configura		EUT Only						
/lode:		LTE Band 25, 3	MHz BW					
		16QAM, Peak, I						
lest Equi								
leceiving	g: Horn T344, a	nd Chamber I	D SMA Cables					
Substituti	on: Horn T60 S	Substitution, 8	3ft SMA Cable (2	45185004) Warehou	se			
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
	-							Notes
GHz	-							Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.852 1.852	(dBm)	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.90	(dBm) 33.0	(dB) -7.1	Notes
GHz Low Ch 1.852 1.852 Mid Ch	(dBm) 18.8 20.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.90 28.61	(dBm) 33.0 33.0	(dB) -7.1 -4.4	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.883	(dBm) 18.8 20.7 19.3	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.90 28.61 26.35	(dBm) 33.0 33.0 33.0	(dB) -7.1 -4.4 -6.7	Notes
GHz Low Ch 1.852 1.852 Mid Ch	(dBm) 18.8 20.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.90 28.61	(dBm) 33.0 33.0	(dB) -7.1 -4.4	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.883	(dBm) 18.8 20.7 19.3	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.90 28.61 26.35	(dBm) 33.0 33.0 33.0	(dB) -7.1 -4.4 -6.7	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.883 1.883	(dBm) 18.8 20.7 19.3	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.90 28.61 26.35	(dBm) 33.0 33.0 33.0	(dB) -7.1 -4.4 -6.7	Notes
GHz Low Ch 1.852 1.852 Mid Ch 1.883 1.883 High Ch	(dBm) 18.8 20.7 19.3 21.2	(H/V) V H V	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.90 28.61 26.35 29.00	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.1 -4.4 -6.7 -4.0	Notes

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EIRP LTE QPSK Band 25 (5.0 MHz BAND WIDTH)

High Frequency Fundamental Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/06/13
Test Engineer:	Mona Hua
Configuration:	EUT Only
Mode:	LTE Band 25, 5MHz BW
	QPSK, Peak, RB25-0

Test Equipment:

Receiving: Horn T344, and Chamber D SMA Cables Substitution: Horn T60 Substitution, 8ft SMA Cable (245185004) Warehouse

	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
19.6	V	0.85	7.94	26.70	33.0	-6.3	
21.6	Н	0.85	8.80	29.51	33.0	-3.5	
19.9	V	0.85	7.95	26.95	33.0	-6.1	
21.9	Н	0.85	8.68	29.75	33.0	-3.3	
20.0	V	0.85	7.97	27.09	33.0	-5.9	
21.7	Н	0.85	8.57	29.39	33.0	-3.6	
			L				
	19.6 21.6 19.9 21.9 20.0	19.6 V 21.6 H 19.9 V 21.9 H 20.0 V	19.6 V 0.85 21.6 H 0.85 19.9 V 0.85 21.9 H 0.85 20.0 V 0.85	19.6 V 0.85 7.94 21.6 H 0.85 8.80 19.9 V 0.85 7.95 21.9 H 0.85 8.68 20.0 V 0.85 7.97	19.6 V 0.85 7.94 26.70 21.6 H 0.85 8.80 29.51 19.9 V 0.85 7.95 26.95 21.9 H 0.85 8.68 29.75 20.0 V 0.85 7.97 27.09	19.6 V 0.85 7.94 26.70 33.0 21.6 H 0.85 8.80 29.51 33.0 19.9 V 0.85 7.95 26.95 33.0 19.9 V 0.85 8.68 29.75 33.0 21.9 H 0.85 8.68 29.75 33.0 20.0 V 0.85 7.97 27.09 33.0	19.6 V 0.85 7.94 26.70 33.0 -6.3 21.6 H 0.85 8.80 29.51 33.0 -3.5 19.9 V 0.85 7.95 26.95 33.0 -6.1 19.9 H 0.85 8.68 29.75 33.0 -6.1 21.9 H 0.85 7.97 27.09 33.0 -5.9

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EIRP LTE 16QAM Band 25 (5.0 MHz BAND WIDTH)

Company:		Apple						
Project #:		13U15555						
Date:		08/06/13						
lest Engi		Mona Hua						
Configura		EUT Only						
/lode:		LTE Band 25, 5						
loue.		16QAM, Peak, I						
lest Equi		rownin, reak,	1023-0					
	: Horn T344, a	nd Chamber I	D SMA Cables					
Substituti	on: Horn T60 S	ubstitution. 8	Sft SMA Cable (2	45185004) Warehou	se			
				,				
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
-								Notes
GHz								Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.853 1.853	(dBm) 18.6	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.67	(dBm) 33.0	(dB) -7.3	Notes
GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 18.6 20.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.67 28.59	(dBm) 33.0 33.0	(dB) -7.3 -4.4	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.883	(dBm) 18.6 20.6 18.8	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.67 28.59 25.86	(dBm) 33.0 33.0 33.0	(dB) -7.3 -4.4 -7.1	Notes
GHz Low Ch 1.853 1.853 Mid Ch	(dBm) 18.6 20.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.67 28.59	(dBm) 33.0 33.0	(dB) -7.3 -4.4	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.883 1.883	(dBm) 18.6 20.6 18.8	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.67 28.59 25.86	(dBm) 33.0 33.0 33.0	(dB) -7.3 -4.4 -7.1	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.883	(dBm) 18.6 20.6 18.8	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.67 28.59 25.86	(dBm) 33.0 33.0 33.0	(dB) -7.3 -4.4 -7.1	Notes
GHz Low Ch 1.853 1.853 Mid Ch 1.883 1.883 High Ch	(dBm) 18.6 20.6 18.8 20.9	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.67 28.59 25.86 28.70	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.3 -4.4 -7.1 -7.1 -4.3	Notes

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EIRP LTE QPSK Band 25 (10.0 MHz BAND WIDTH)

Company:		Apple						
Project #:		13U15555						
Date:		08/06/13						
Test Engi	neer:	Mona Hua						
_ Configura		EUT Only						
Mode:		LTE Band 25, 10	0MHz BW					
		QPSK, Peak, R						
Test Equi								
Receiving	g: Horn T344, a	nd Chamber [D SMA Cables					
-				245185004) Warehou	se			
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
-	-		1					Notes
GHz	-		1					Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855 1.855	(dBm) 19.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.81	(dBm) 33.0	(dB) -6.2	Notes
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 19.7 21.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.81 29.68	(dBm) 33.0 33.0	(dB) -6.2 -3.3	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883	(dBm) 19.7 21.7 20.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.81 29.68 27.55	(dBm) 33.0 33.0 33.0	(dB) -6.2 -3.3 -5.5	Notes
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 19.7 21.7	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.81 29.68	(dBm) 33.0 33.0	(dB) -6.2 -3.3	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883	(dBm) 19.7 21.7 20.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.81 29.68 27.55	(dBm) 33.0 33.0 33.0	(dB) -6.2 -3.3 -5.5	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883 1.883 1.883 High Ch 1.910	(dBm) 19.7 21.7 20.5 22.2 20.6	(H/V) V H V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68 7.97	(dBm) 26.81 29.68 27.55 30.00 27.75	(dBm) 33.0 33.0 33.0 33.0 33.0 33.0 33.0	(dB) -6.2 -3.3 -5.5 -3.0 -5.3	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883 1.883 High Ch	(dBm) 19.7 21.7 20.5 22.2	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.81 29.68 27.55 30.00	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.2 -3.3 -5.5 -3.0	Notes

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EIRP LTE 16QAM Band 25 (10.0 MHz BAND WIDTH)

company:		Apple						
roject #:		13U15555						
)ate:		08/06/13						
est Engi		Mona Hua						
onfigura		EUT Only						
lode:		LTE Band 25, 1						
iouc.		16QAM, Peak,						
est Equi		rog/ wi, r call, i	10 30 0					
	g: Horn T344, a	nd Chambor I	D SMA Cables					
-				45495004) Warahaw				
upsuluu	on. Horn 100 a	Substitution, d	on SIMA Cable (2	245185004) Warehou	56			
f	SG reading	Ant Pol	Cable Loss	Antenna Gain	FIRP	l imit	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	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	_							Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.855 1.855	(dBm) 18.8	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 25.84	(dBm) 33.0	(dB) -7.2	Notes
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 18.8 20.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.84 28.57	(dBm) 33.0 33.0	(dB) -7.2 -4.4	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883	(dBm) 18.8 20.6 19.4	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.84 28.57 26.49	(dBm) 33.0 33.0 33.0	(dB) -7.2 -4.4 -6.5	Notes
GHz Low Ch 1.855 1.855 Mid Ch	(dBm) 18.8 20.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 25.84 28.57	(dBm) 33.0 33.0	(dB) -7.2 -4.4	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883 1.883	(dBm) 18.8 20.6 19.4	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.84 28.57 26.49	(dBm) 33.0 33.0 33.0	(dB) -7.2 -4.4 -6.5	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883 1.883 High Ch	(dBm) 18.8 20.6 19.4 21.2	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 25.84 28.57 26.49 28.98	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -7.2 -4.4 -6.5 -4.0	Notes
GHz Low Ch 1.855 1.855 Mid Ch 1.883 1.883	(dBm) 18.8 20.6 19.4	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 25.84 28.57 26.49	(dBm) 33.0 33.0 33.0	(dB) -7.2 -4.4 -6.5	Notes

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EIRP LTE QPSK Band 25 (15.0 MHz BAND WIDTH)

ompany:		Apple						
roject #:		13U15555						
ate:		08/06/13						
est Engi	neer:	Mona Hua						
onfigura		EUT Only						
ode:		LTE Band 25, 1	5MHz BW					
		QPSK, Peak, R						
est Equi								
	g: Horn T344, a	nd Chamber I	D SMA Cables					
-				45185004) Warehou				
upstituti		abstitution, c		4010004/ Walenou	50			
f			Cable Lass	Austana Osia	EIRP	1 insté	Dalla	Notes
- T	SG reading	Ant. Pol.	Cable Loss	Antenna Gain		i Limit i	Deita	
	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)		Limit (dBm)	Delta (dB)	NOLES
GHz	dBm)	Ant. Pol. (H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz	-							NOLES
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	NOIES
GHz Low Ch 1.858	(dBm) 19.7	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.75	(dBm) 33.0	(dB) -6.3	NOLES
GHz Low Ch 1.858 1.858 Mid Ch	(dBm) 19.7 21.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.75 29.57	(dBm) 33.0 33.0	(dB) -6.3 -3.4	NOLES
GHz Low Ch 1.858 1.858 Mid Ch 1.883	(dBm) 19.7 21.6 20.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.75 29.57 27.56	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.3 -3.4 -5.4	NOLES
GHz Low Ch 1.858 1.858 Mid Ch	(dBm) 19.7 21.6	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.75 29.57	(dBm) 33.0 33.0	(dB) -6.3 -3.4	NOLES
GHz Low Ch 1.858 1.858 Mid Ch 1.883 1.883	(dBm) 19.7 21.6 20.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.75 29.57 27.56	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.3 -3.4 -5.4	Notes
GHz Low Ch 1.858 1.858 Mid Ch 1.883 1.883	(dBm) 19.7 21.6 20.5	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.75 29.57 27.56	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.3 -3.4 -5.4	
GHz Low Ch 1.858 1.858 Mid Ch 1.883 1.883 High Ch	(dBm) 19.7 21.6 20.5 22.1	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.75 29.57 27.56 29.96	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.3 -3.4 -5.4 -3.0	Notes

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EIRP LTE 16QAM Band 25 (15.0 MHz BAND WIDTH)

High Frequency Fundamental Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/06/13
Test Engineer:	Mona Hua
Configuration:	EUT Only
Mode:	LTE Band 25, 15MHz BW
	16QAM, Peak, RB75-0

Test Equipment:

Receiving: Horn T344, and Chamber D SMA Cables Substitution: Horn T60 Substitution, 8ft SMA Cable (245185004) Warehouse

f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
Low Ch								
1.858	18.7	V	0.85	7.94	25.74	33.0	-7.3	
1.858	20.6	Н	0.85	8.80	28.56	33.0	-4.4	
Mid Ch								
1.883	19.4	V	0.85	7.95	26.50	33.0	-6.5	
1.883	21.1	Н	0.85	8.68	28.92	33.0	-4.1	
High Ch								
1.908	19.2	V	0.85	7.97	26.28	33.0	-6.7	
1.908	21.0	Н	0.85	8.57	28.76	33.0	-4.2	
	L							
ev. 3.17.11								

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EIRP LTE QPSK Band 25 (20.0 MHz BAND WIDTH)

Company:		Apple						
Project #:		13U15555						
)ate:		08/06/13						
lest Engi	ineer:	Mona Hua						
Configura		EUT Only						
/lode:		LTE Band 25, 2	0MHz BW					
		QPSK, Peak, R						
lest Equi								
	g: Horn T344, a	nd Chamber I	D SMA Cables					
-				245185004) Warehou	6			
and beleased		aboutation, e	in outin outine (i	40100004) Marchou				
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz	SG reading (dBm)							Notes
-	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GHz	-							Notes
GHz Low Ch	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch 1.860 1.860	(dBm)	(H/V) V	(dB) 0.85	(dBi) 7.94	(dBm) 26.77	(dBm) 33.0	(dB) -6.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch	(dBm) 19.7 21.8	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.77 29.77	(dBm) 33.0 33.0	(dB) -6.2 -3.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.883	(dBm) 19.7 21.8 20.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.77 29.77 27.76	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch	(dBm) 19.7 21.8	(H/V) V H	(dB) 0.85 0.85	(dBi) 7.94 8.80	(dBm) 26.77 29.77	(dBm) 33.0 33.0	(dB) -6.2 -3.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.883 1.883	(dBm) 19.7 21.8 20.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.77 29.77 27.76	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.883	(dBm) 19.7 21.8 20.7	(H/V) V H	(dB) 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95	(dBm) 26.77 29.77 27.76	(dBm) 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.2	Notes
GHz Low Ch 1.860 1.860 Mid Ch 1.883 1.883 High Ch	(dBm) 19.7 21.8 20.7 22.4	(H/V) V H V H	(dB) 0.85 0.85 0.85 0.85	(dBi) 7.94 8.80 7.95 8.68	(dBm) 26.77 29.77 27.76 30.18	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -6.2 -3.2 -5.2 -2.8	Notes

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EIRP LTE 16QAM Band 25 (20.0 MHz BAND WIDTH)

		Apple						
Project #:		13U15555						
Date:		08/06/13						
lest Engi	neer:	Mona Hua						
Configura	tion:	EUT Only						
/lode:		LTE Band 25, 2	0MHz BW					
		16QAM, Peak,	RB100-0					
lest Equi			D SMA Cables					
				245185004) Warehou				
Substituti	on. Horn 160 3	Substitution, d	SINA Cable (A	(45165004) Warenou	56			
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
Low Ch								
			0.85	7.94	25.69	33.0	-7.3	
1.860	18.6	V	0.00	1.34				
	18.6 20.8	V H	0.85	8.80	28.75	33.0	-4.3	
1.860 1.860		-	•••		28.75	33.0	-4.3	
1.860 1.860 Mid Ch	20.8	H	0.85	8.80				
1.860 1.860		-	•••		28.75 26.80 29.13	33.0 33.0 33.0	_4.3 6.2 3.9	
1.860 1.860 Mid Ch 1.883 1.883	20.8 19.7	H	0.85	8.80 7.95	26.80	33.0	-6.2	
1.860 1.860 Mid Ch 1.883 1.883 High Ch	20.8 19.7 21.3	H V H	0.85 0.85 0.85	8.80 7.95 8.68	26.80 29.13	33.0 33.0	-6.2 -3.9	
1.860 1.860 Mid Ch 1.883 1.883	20.8 19.7	H	0.85	8.80 7.95	26.80	33.0	-6.2	

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9.1.7. LTE BAND 26

ERP LTE QPSK Band 26 (3.0 MHz BAND WIDTH)

AVERAGE

company:		Apple						
Project #:		13U15555						
Date:		08/19/13						
Test Engi	neer:	Mona Hua						
Configura		EUT Only						
Node:		LTE Band 26.	3MHz BW					
		QPSK, Averac						
_				ble (Setup this		-	, , ,	
_				(SN # 20894700		-	, , ,	
_		l: 00022117,	4ft SMA Cable			-	Margin	Notes
Substituti	on: Dipole S/N	l: 00022117,	4ft SMA Cable	(SN # 20894700)3) Wareh	ouse.	-	Notes
Substituti f	on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	4ft SMA Cable	(SN # 20894700 Antenna Gain	03) Wareh ERP (dBm)	ouse.	Margin	Notes
Substituti f MHz Low Ch 820.30	on: Dipole S/N SG reading (dBm) 20.39	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	(SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm) 19.79	Limit (dBm)	Margin (dB)	Notes
Substituti f MHz Low Ch	on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	(SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Substituti f MHz Low Ch 820.30 820.30	on: Dipole S/N SG reading (dBm) 20.39	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	(SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm) 19.79	Limit (dBm)	Margin (dB)	Notes
Substituti f MHz Low Ch 820.30 820.30 Mid Ch	on: Dipole S/N SG reading (dBm) 20.39 15.58	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) 19.79 14.98	Limit (dBm) 38.5 38.5	Margin (dB) -18.7 -23.5	Notes
Substituti f MHz Low Ch 820.30 820.30	on: Dipole S/N SG reading (dBm) 20.39	l: 00022117, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	(SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm) 19.79	Limit (dBm)	Margin (dB)	Notes
Substituti f MHz Low Ch 820.30 820.30 Mid Ch 821.30 821.30	SG reading (dBm) 20.39 15.58 20.72	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) 19.79 14.98 20.12	Couse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -18.7 -23.5 -18.3	Notes
Substituti f MHz Low Ch 820.30 820.30 Mid Ch 821.30 821.30 High Ch	on: Dipole S/N SG reading (dBm) 20.39 15.58 20.72 15.61	I: 00022117, Ant. Pol. (H/V) V H V H	4ft SMA Cable Cable Loss (dB) 0.6 0.6 0.6 0.6	(SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	03) Wareh ERP (dBm) 19.79 14.98 20.12 15.01	Limit (dBm) 38.5 38.5 38.5 38.5 38.5	Margin (dB) -18.7 -23.5 -18.3 -23.4	Notes
Substituti f MHz Low Ch 820.30 820.30 Mid Ch 821.30 821.30	SG reading (dBm) 20.39 15.58 20.72	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) 19.79 14.98 20.12	Couse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -18.7 -23.5 -18.3	Notes

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ERP LTE 16QAM Band 26 (3.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/19/13
Test Engineer:	Mona Hua
Configuration:	EUT Only
Mode:	LTE Band 26, 3MHz BW
	16QAM, Average, RB1-0

Test Equipment:

Receiving: Sunol T407, and Chamber D 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)	
Low Ch								
820.30	19.30	V	0.6	0.0	18.70	38.5	-19.7	
820.30	14.50	Н	0.6	0.0	13.90	38.5	-24.5	
Mid Ch								
821.30	19.70	V	0.6	0.0	19.10	38.5	-19.3	
821.30	14.60	Н	0.6	0.0	14.00	38.5	-24.4	
High Ch								
822.30	19.38	V	0.6	0.0	18.78	38.5	-19.7	
822.30	14.24	Н	0.6	0.0	13.64	38.5	-24.8	
	ļ						ll.	

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ERP LTE QPSK Band 26 (5.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/19/13
Test Engineer:	Mona Hua
Configuration:	EUT Only
Mode:	LTE Band 26, 5MHz BW
	QPSK, Average, RB1-0

Test Equipment:

Receiving: Sunol T407, and Chamber D N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f	-			Antenna Gain		Limit	Margin	Notes
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
Low Ch								
818.80	20.51	V	0.6	0.0	19.91	38.5	-18.5	
818.80	15.61	Н	0.6	0.0	15.01	38.5	-23.4	
Mid Ch								
821.30	20.41	V	0.6	0.0	19.81	38.5	-18.6	
821.30	15.51	Н	0.6	0.0	14.91	38.5	-23.5	
ligh Ch								
823.80	20.48	V	0.6	0.0	19.88	38.5	-18.6	
823.80	14.94	Н	0.6	0.0	14.34	38.5	-24.1	
	<u> </u>			<u> </u>			ļ	
v. 3.17.11								

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ERP LTE 16QAM Band 26 (5.0 MHz BAND WIDTH)

High Frequency Substitution Measurement Compliance Certification Services Chamber D

Company:	Apple
Project #:	13U15555
Date:	08/19/13
Test Engineer:	Mona Hua
Configuration:	EUT Only
Mode:	LTE Band 26, 5MHz BW
	16QAM, Average, RB1-0

Test Equipment:

Receiving: Sunol T407, and Chamber D N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
818.80	19.40	V	0.6	0.0	18.80	38.5	-19.6	
818.80	14.60	Н	0.6	0.0	14.00	38.5	-24.4	
Mid Ch								
821.30	19.30	V	0.6	0.0	18.70	38.5	-19.7	
821.30	14.50	Н	0.6	0.0	13.90	38.5	-24.5	
High Ch								
823.80	19.40	V	0.6	0.0	18.80	38.5	-19.6	
823.80	13.93	Н	0.6	0.0	13.33	38.5	-25.1	
	L			ll			L	
v. 3.17.11								

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9.2. PEAK-TO-AVERAGE RATIO

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB $\,$

LTE BAND 5

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	1.4	RB1-0	836.5	28.24	23.39	4.85
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
16QAM	1.4	RB1-0	836.5	28	22.3	5.7

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	3	RB1-0	836.5	28.08	23.42	4.66
	Channel			Couducted	Power (dBm)	Peak-to-
	Onannoi			Obuducicu		1 eak-10-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
Mode 16QAM		Ch. No. RB1-0	f (MHz) 836.5		· · · /	

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	5	RB1-0	836.5	27.84	23.48	4.36
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
16QAM	5	RB1-0	836.5	28.2	22.84	5.36
*Peak Readin	g = Average Re	eading + Pea	k-to-Averag	e Ratio		

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	10	RB1-0	836.5	26.94	22.38	4.56
						-
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
16QAM	10	RB1-0	836.5	28.16	22.48	5.68
*Peak Readin	g = Average Ro	eading + Pea	k-to-Average	e Ratio		

LTE BAND 13

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	5	RB1-0	782	27.29	22.78	4.51
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
Mode 16QAM	Band-width 5	Ch. No. RB1-0	f (MHz) 782	*Peak 27.13	Average 21.67	Average Ratio

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	10	RB1-0	782	27.16	22.86	4.3
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
16QAM	10	RB1-0	782	27.12	21.81	5.31

LTE BAND 17

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	5	RB1-0	710	28.5	23.73	4.77
						-
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
16QAM	5	RB1-0	710	28.06	22.53	5.53

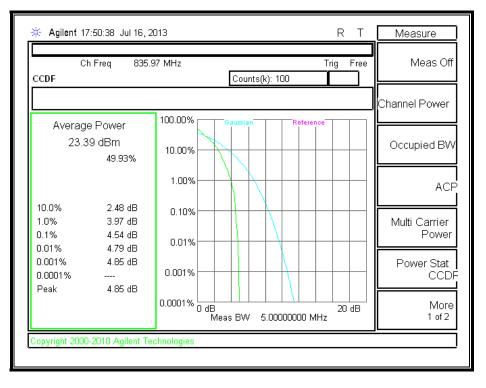
*Peak Reading = Average Reading + Peak-to-Average Ratio

	Channel Band-width			Couducted	Power (dBm)	Peak-to- Average Ratio
Mode	(MHZ)	Modulation	f (MHz)	*Peak	Average	(PAR)
QPSK	10	RB1-0	710	28.18	23.78	4.4
	Channel			Couducted	Power (dBm)	Peak-to-
Mode	Band-width	Ch. No.	f (MHz)	*Peak	Average	Average Ratio
16QAM	10	RB1-0	710	28	22.75	5.25

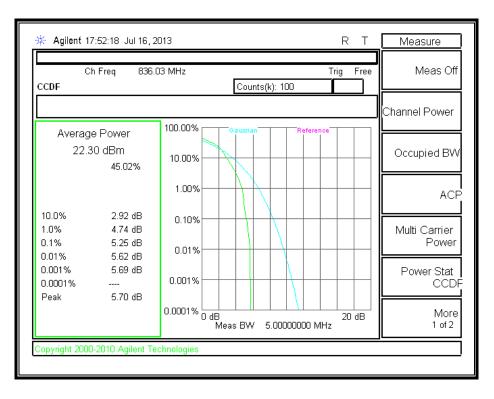
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LTE BAND 5

1.4MHz_QPSK

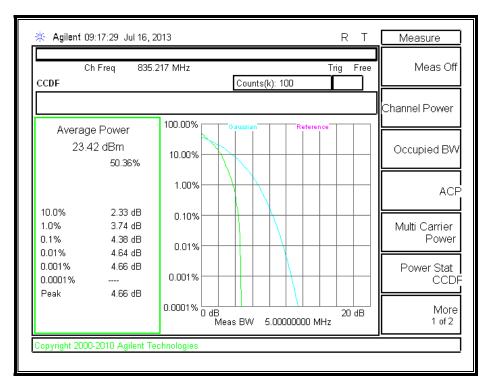


1.4MHz 16QAM

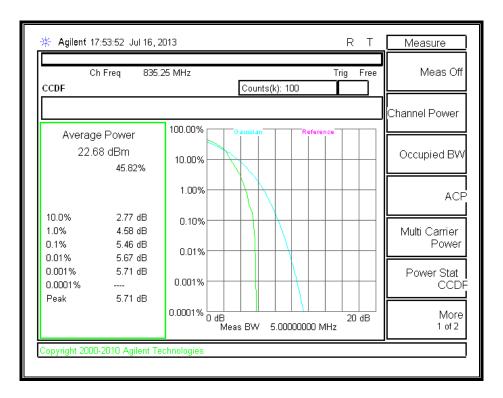


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3.0MHz_QPSK

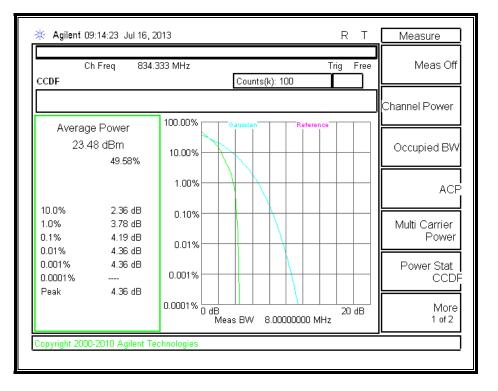


3.0MHz_16QAM

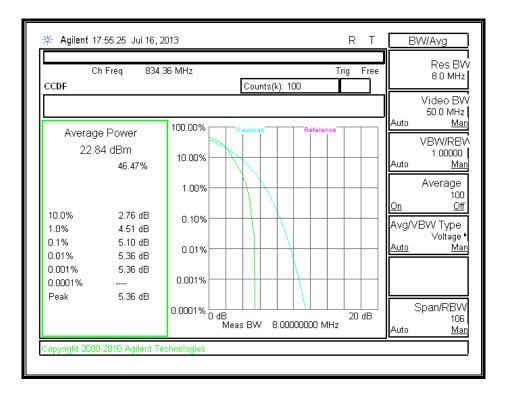


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5.0MHz_QPSK

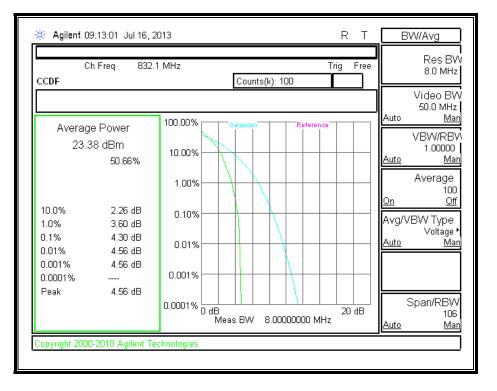


5.0MHz_16QAM

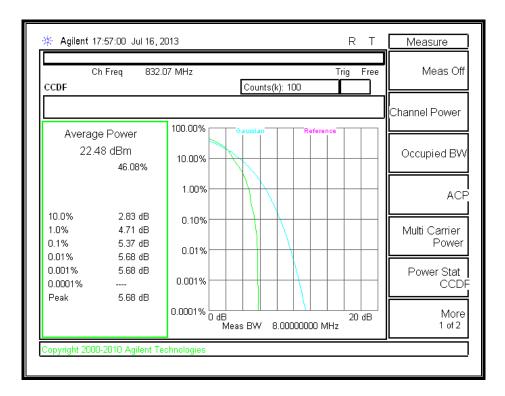


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10MHz_QPSK



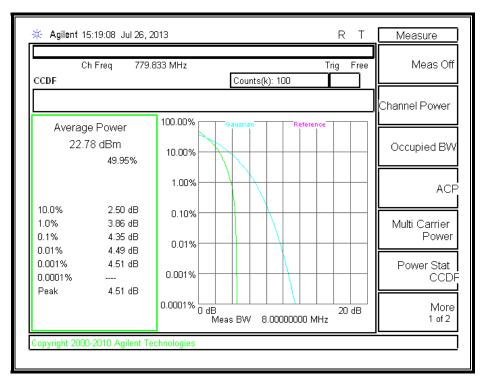
10MHz_16QAM



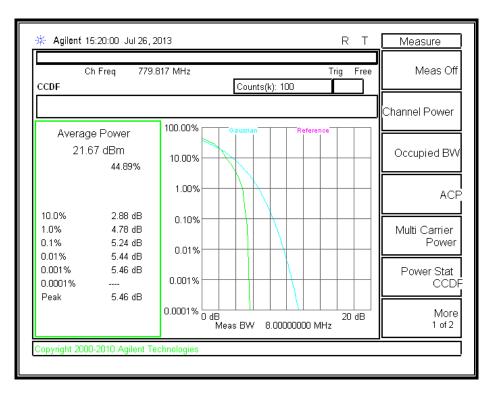
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BAND 13

5.0MHz_QPSK

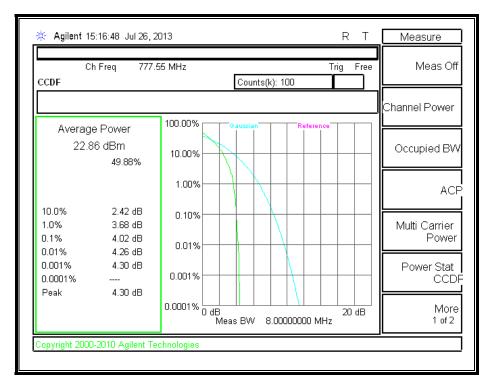


5.0MHz 16QAM

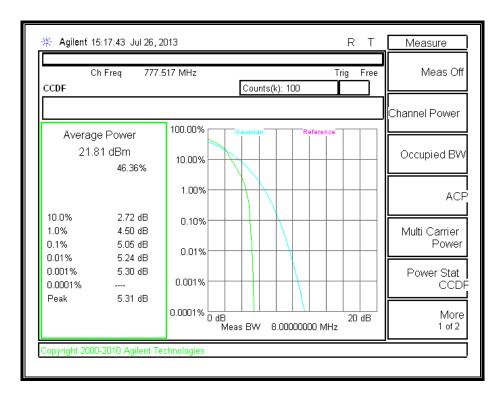


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10MHz_QPSK



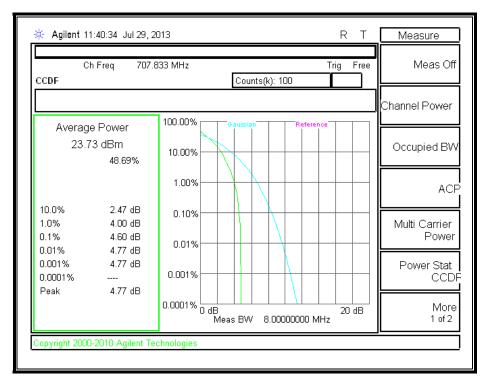
10MHz_16QAM



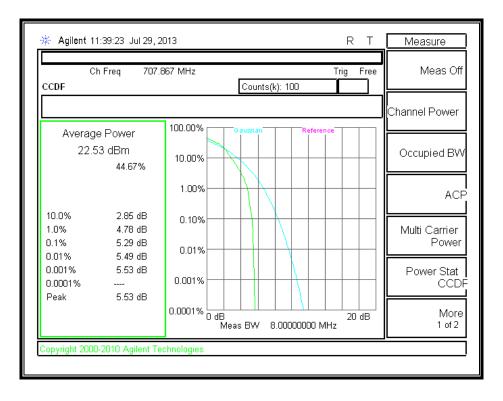
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BAND 17

5.0MHz_QPSK

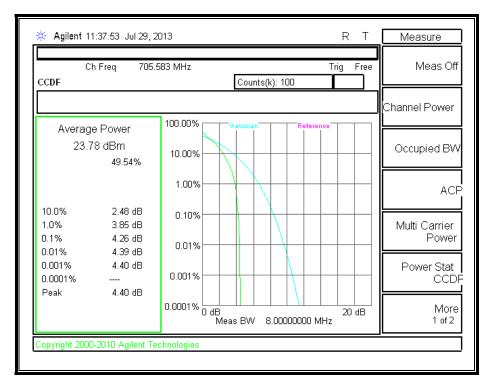


5.0MHz 16QAM

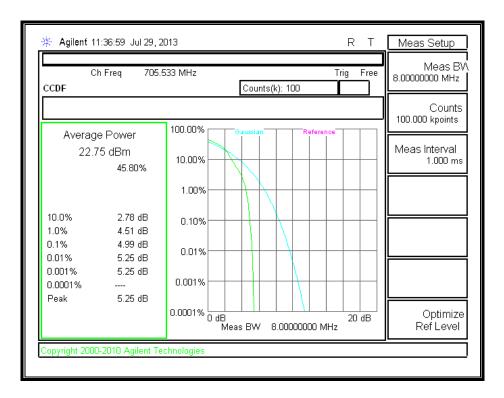


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10MHz_QPSK



10MHz_16QAM



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9.3. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238 and §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

• LTE BAND 2, 4, 5, 13, 17, 25 and 26

RESULTS

9.3.1. LTE BAND 2

QPSK BAND 2QPSK Band 2(1.4 MHz BANDWIDTH)

			Cor Above 1GH	npliance Ce z High Freq				ement	
Company Project # Date: Test Eng Configura Mode:	neer: ation:	Apple 13U15555 08/01/13 Mona Hua EUT only TX, LTE band 3	2, 1.4MHz, QPS	к					
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3m Chamber D 🗸		•	T145 84498	145 8449B 🗸		Filter 1 🚽		Part 24	-
f GHz	SG reading (dBm)		Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GHz	(dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GHz -ow Ch, (1 3.702	(dBm) 851 MHz) 9.9	(H/V) V	(m) 3.0	(dB) 30.2	(dB) 1.0	(dBm) -39.1	(dBm) -13.0	(dB) -26.1	Notes
GHz Low Ch, (1 3.702 5.553	(dBm) 851 MHz) 9.9 14.0	(H/V) V V	(m) 3.0 3.0	(dB) 30.2 28.4	(dB) 1.0 1.0	(dBm) -39.1 -41.4	(dBm) -13.0 -13.0	(dB) -26.1 -28.4	Notes
GHz Low Ch, (1 3.702 5.553 3.702	(dBm) 851 MHz) -9.9 -14.0 -9.5	(H/V) V V H	(m) 3.0 3.0 3.0	(dB) 30.2 28.4 30.2	(dB) 1.0 1.0 1.0	(dBm) -39.1 -41.4 -38.7	(dBm) -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7	Notes
GHz Low Ch, (1 3.702 5.553 3.702	(dBm) 851 MHz) 9.9 14.0	(H/V) V V	(m) 3.0 3.0	(dB) 30.2 28.4	(dB) 1.0 1.0	(dBm) -39.1 -41.4	(dBm) -13.0 -13.0	(dB) -26.1 -28.4	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553	(dBm) 851 MHz) -9.9 -14.0 -9.5 -12.2	(H/V) V V H	(m) 3.0 3.0 3.0	(dB) 30.2 28.4 30.2	(dB) 1.0 1.0 1.0	(dBm) -39.1 -41.4 -38.7	(dBm) -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1	(dBm) 851 MHz) -9.9 -14.0 -9.5 -12.2	(H/V) V V H	(m) 3.0 3.0 3.0	(dB) 30.2 28.4 30.2	(dB) 1.0 1.0 1.0	(dBm) -39.1 -41.4 -38.7	(dBm) -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760	(dBm) 851 MHz) -9.9 -14.0 -9.5 -12.2 880 MHz)	(H/V) V V H H	(m) 3.0 3.0 3.0 3.0 3.0	(dB) 30.2 28.4 30.2 28.4	(dB) 1.0 1.0 1.0 1.0	(dBm) -39.1 -41.4 -38.7 -39.6	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0	Note
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760 5.640 3.760	(dBm) 851 MHz) -9.9 -14.0 -9.5 -12.2 880 MHz) -8.0 -12.7 -9.1	(H/V) V V H H V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 30.2 28.4 30.2 28.4 30.1 28.3 30.1	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -39.1 -41.4 -38.7 -39.6 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0 -25.2	Note:
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760 5.640 3.760	(dBm) 851 MHz) -9.9 -14.0 -9.5 -12.2 880 MHz) -8.0 -12.7	(H/V) V H H V V V	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 30.2 28.4 30.2 28.4 30.1 28.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) 39.1 41.4 38.7 39.6 37.2 40.0	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760 5.640 5.640	(dBm) 851 MHz) 9.9 -14.0 -9.5 -12.2 880 MHz) -8.0 -12.7 9.1 -12.4	(H/V) V V H H V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 30.2 28.4 30.2 28.4 30.1 28.3 30.1	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -39.1 -41.4 -38.7 -39.6 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0 -25.2	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1	(dBm) 851 MHz) 9.9 -14.0 9.5 -12.2 880 MHz) -8.0 -12.7 9.1 -12.4 909.3 MHz)	(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) 30.2 28.4 30.2 28.4 30.1 28.3 30.1 28.3 30.1	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) 39.1 41.4 38.7 39.6 37.2 40.0 38.2 39.7	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0 -25.2 -26.7	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760 5.640 5.640 High Ch, (1 3.819	(dBm) 851 MHz) 9.9 -14.0 9.5 -12.2 880 MHz) 880 MHz) -12.7 -9.1 -12.4 909.3 MHz) 8.9	(H/V) V V H H V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 30.2 28.4 30.2 28.4 30.1 28.3 30.1 28.3 30.1 28.3 30.1 28.3 30.1	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) 39.1 41.4 38.7 39.6 	(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) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0 -25.2 -26.7 -25.0	Notes
GHz Low Ch, (1 3.702 5.553 3.702 5.553 Mid Ch, (1 3.760 5.640 3.760 5.640	(dBm) 851 MHz) 9.9 -14.0 9.5 -12.2 880 MHz) -8.0 -12.7 9.1 -12.4 909.3 MHz)	(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) 30.2 28.4 30.2 28.4 30.1 28.3 30.1 28.3 30.1	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) 39.1 41.4 38.7 39.6 37.2 40.0 38.2 39.7	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -26.1 -28.4 -25.7 -26.6 -24.2 -27.0 -25.2 -26.7	Notes

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16QAM Band 2 (1.4 MHz BANDWIDTH)

				mpliance Ce z High Freq				ement	
Company Project #		Apple 13U15555							
Date:		08/01/13							
Test Eng	ineer:	Mona Hua							
Configur		EUT only							
Mode:			2, 1.4MHz, 16Q	AM					
	Chambe	r	Pre-an	•		Filter		Lir	nit
31	3m Chamber D 🗸		T145 8449	B <u>-</u>	Fil	ter 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)	
	1851 MHz)								
3.702	-10.9	V	3.0	30.2	1.0	-40.1	-13.0	-27.1	
5.553	-15.0	V	3.0	28.4	1.0	-42.4 -39.6	-13.0	-29.4 -26.6	
3.702 5.553	-10.4 -13.1	H	3.0 3.0	30.2 28.4	1.0	-39.6	-13.0 -13.0	-26.6 -27.5	
J.JJJ	-13.1		5.0	20.4	1.0	-40.3	-13.0	-21.5	
Mid Ch, (1880 MHz)								
3.760	-8.9	V	3.0	30.1	1.0	-38.1	-13.0	-25.1	
5.640	-13.6	V	3.0	28.3	1.0	-40.9	-13.0	-27.9	
3.760	-10.0	H	3.0	30.1	1.0	-39.1	-13.0	-26.1	
5.640	-13.4	Н	3.0	28.3	1.0	-40.7	-13.0	-27.7	
J.040	1000 3 MH-1								
		V	3.0	30.1	1.0	-38.9	-13.0	-25.9	
High Ch, (1.0	-41.4	-13.0	-23.5	
High Ch, (3.819	-9.8		3.0	28.2					
High Ch, (3.819 5.728		V V H	3.0 3.0	28.2 30.1		-38.4	-13.0	-23.4	
High Ch, (3.819 5.728 3.819 5.728	-9.8 -14.2	V	3.0 3.0 3.0	28.2 30.1 28.2	1.0 1.0	-38.4 -39.7	-13.0 -13.0	-25.4 -26.7	

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QPSK Band 2 (3.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur: Mode:	ineer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 2	2, 3MHz, QPSK						
	Chambe	r	Pre-amplifer			Filter		Lir	mit
3m Chamber D ▼		•	T145 8449B 🗸		Fil	Filter 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
Low Ch, (1		(1.0.4)	(,	(42)	(40)	(ubiii)	(ubiii)	(40)	
3.704	-9.7	V	3.0	30.2	1.0	-38.9	-13.0	-25.9	
5.556	-13.6	V	3.0	28.4	1.0	-40.9	-13.0	-27.9	
3.704	-9.3	H	3.0	30.2	1.0	-38.5	-13.0	-25.5	
5.556	-12.0	H	3.0	28.4	1.0	-39.4	-13.0	-26.4	
Mid Ch, (1	880 MHz)								
3.760	-8.1	V	3.0	30.1	1.0	-37.3	-13.0	-24.3	
5.640	-12.4	V	3.0	28.3	1.0	-39.7	-13.0	-26.7	
3.760	-9.2	Н	3.0	30.1	1.0	-38.3	-13.0	-25.3	
5.640	-12.1	Н	3.0	28.3	1.0	-39.4	-13.0	-26.4	
REP OF 1	-9.0	V	3.0	30.1	1.0	-38.1	-13.0	-25.1	
	-9.0	V	3.0	28.2	1.0	-30.1	-13.0	-23.1	
High Ch, (' 3.818 5.727		-	3.0	30.1	1.0	-40.5	-13.0	-24.4	
3.818 5.727		н						·····	
.818	-13.1 -8.3 -11.3	H	3.0	28.2	1.0	-38.5	-13.0	-25.5	

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16QAM Band 2 (3.0 MHz BANDWIDTH)

ompany roject # ate: est Eng onfigura lode:	ineer: ation:	Apple 13U15555 08/01/13 Mona Hua EUT only TX, LTE band 2	2, 3MHz, 16QAI	N					
	Chambe	r	Pre-amplifer		Filter			Li	mit
3r	3m Chamber D 🗸		T145 8449	В 🚽	Filter 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
Low Ch, (1	· · ·	((()	(1	()	(()	
3.704	-10.6	V	3.0	30.2	1.0	-39.8	-13.0	-26.8	
5.556	-14.5	V	3.0	28.4	1.0	-41.8	-13.0	-28.8	
3.704	-10.3	H	3.0	30.2	1.0	-39.5	-13.0	-26.5	
5.556	-13.0	Н	3.0	28.4	1.0	-40.4	-13.0	-27.4	
Mid Ch, (1	880 MHz)								
3.760	-9.1	V	3.0	30.1	1.0	-38.3	-13.0	-25.3	
5.640	-13.3	V	3.0	28.3	1.0	-40.6	-13.0	-27.6	
3.760	-10.1	Н	3.0	30.1	1.0	-39.2	-13.0	-26.2	
5.640	-13.0	Н	3.0	28.3	1.0	-40.3	-13.0	-27.3	
High Ch, (1	(000 MH~)								
	-9.9	V	3.0	30.1	1.0	-39.0	-13.0	-26.0	
3 818	-14.0	V	3.0	28.2	1.0	-41.2	-13.0	-28.2	
		Ĥ	3.0	30.1	1.0	-38.4	-13.0	-25.4	
3.818 5.727 3.818	-9.3				1.0	-39.4	-13.0	-26.4	

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QPSK Band 2 (5.0 MHz BANDWIDTH)

Company: Apple Project #: 13U15555 Date: 08/01/13 Test Engineer: Mona Hua Configuration: EUT only Mode: TX, LTE band 2		2, 5MHz, QPSK									
	Chambe	r	Pre-amplifer		Filter			Li	Limit		
31	3m Chamber D 🚽		T145 8449	3 🗸	Filter 1 🗸		Part 24	•			
		Aret Dal	Distance	Deserve	Filter		1 1 14	Dalta	Nataa		
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		()	()	()	((()	()			
3.706	-9.4	V	3.0	30.2	1.0	-38.6	-13.0	-25.6			
5.559	-13.2	V	3.0	28.4	1.0	-40.5	-13.0	-27.5			
3.706	-9.4	Η	3.0	30.2	1.0	-38.6	-13.0	-25.6			
5.559	-11.7	Н	3.0	28.4	1.0	-39.1	-13.0	-26.1			
Mid Ch, (1	880 MHz)										
3.760	-8.2	V	3.0	30.1	1.0	-37.4	-13.0	-24.4			
5.640	-12.1	V	3.0	28.3	1.0	-39.4	-13.0	-26.4			
3.760	-8.7	H	3.0	30.1	1.0	-37.8	-13.0	-24.8			
	-12.0	Н	3.0	28.3	1.0	-39.3	-13.0	-26.3			
5.640											
5.640 High Ch, (1908 MHZ)		3.0	30.1	1.0	-37.9	-13.0	-24.9			
High Ch, (3.816	-8.8	V	<u>مە</u>			7 10 0	-13.0	-27.0			
High Ch, (3.816 5.724	-8.8 -12.8	V	3.0	28.2	1.0	_40.0	å				
High Ch, (3.816	-8.8		<u>مە</u>	28.2 30.1 28.2	1.0 1.0 1.0	-40.0 -37.7 -38.7	-13.0 -13.0 -13.0	-24.7 -25.7			

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16QAM Band 2 (5.0 MHz BANDWIDTH)

Company		Apple							
Project #		13U15555							
Date:	•	08/01/13							
Test Eng		Mona Hua							
Configur Mode:		EUT only							
	Chambe		2, 5MHz, 16QAN Pre-an			Filter		Lin	nit
3m Chamber D 🗸		• •	T145 8449B 🗸		Filter 1			Part 24	•
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	1853 MHz)					- 00 F	40.0		
3.706 5.559	-10.3 -14.2	V V	3.0 3.0	30.2 28.4	1.0 1.0	-39.5 -41.5	-13.0 -13.0	-26.5 -28.5	
3.706	-14.2	V H	3.0	28.4 30.2	1.0	-41.5	-13.0 -13.0	-28.5	
5.559	-10.3	H	3.0	28.4	1.0	-39.5	-13.0	-20.5	
3.333	-12.1		5.0	20,4	1.0	-40.1	-13.0	-21.1	
Mid Ch, (1880 MHz)								
3.760	-9.1	V	3.0	30.1	1.0	-38.3	-13.0	-25.3	
5.640	-13.1	V	3.0	28.3	1.0	-40.4	-13.0	-27.4	
3.760	-9.6	Η	3.0	30.1	1.0	-38.7	-13.0	-25.7	
5.640	-12.9	H	3.0	28.3	1.0	-40.2	-13.0	-27.2	
	1009 MU-1								
	1908 MHZ) _9.7	V	3.0	30.1	1.0	-38.8	-13.0	-25.8	
High Ch, (3 816	-9.7	V	3.0	28.2	1.0	-30.0	-13.0	-23.0 -27.9	
3.816	-13.1	V H	3.0	30.1	1.0	-40.5	-13.0	-21.5	
3.816 5.724	-9.4	••		28.2	1.0	-30.5	-13.0	-25.5	
	-9.4 -12.5	Н	3.0						

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QPSK Band 2 (10.0 MHz BANDWIDTH)

			ĸ						
Chambe	r	Pre-amplifer		Filter		Limit			
3m Chamber D 🗸		T145 8449	В	Filter 1 🚽		-	Part 24	•	
CC readin r	Ant Dal	Distance	Dreeme	Filter	FIDE	l insif	Delte	Natas	
-			•					Notes	
``	(1.0.4)	()	(40)	(40)		(abiii)			
-9.3	V	3.0	30.2	1.0	-38.5	-13.0	-25.5		
-13.1	V	3.0	28.4	1.0	-40.5	-13.0	-27.5		
-9.8	Н	3.0	30.2	1.0	-39.0	-13.0	-26.0		
-12.4	Н	3.0	28.4	1.0	-39.8	-13.0	-26.8		
380 MHz)					-				
-8.7	٧	3.0	30.2	1.0	-37.9	-13.0	-24.9		
-13.3	V	3.0	28.3	1.0	-40.6	-13.0	-27.6		
-8.7	Η	3.0	30.2	1.0	-37.8	-13.0	-24.8		
-12.6	H	3.0	28.3	1.0	-39.9	-13.0	-26.9		
905 MHz)					-				
-8.6	V	3.0	30.1	1.0	-37.7	-13.0	-24.7		
-13.4	V	3.0	28.2	1.0	-40.6	-13.0	-27.6		
-8.9	Н	3.0	30.1	1.0	-38.0	-13.0	-25.0		
-12.4	Н	3.0	28.2	1.0	-39.7	-13.0	-26.7		
	tion: Chamber Chamber D Chamber D SG reading (dBm) 355 MHz) -9.3 -13.1 -9.8 -13.4 380 MHz) -8.7 -13.3 -8.7 -12.6 905 MHz) -8.6 -13.4	08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 3 Chamber Chamber D Chamber D SG reading (dBm) Ant. Pol. (H/V) 355 MHz) -9.3 V -13.1 V -9.8 H -12.4 H -8.7 V -13.3 V -8.7 H -12.6 H 905 MHz) - -8.6 V -13.4 V	08/02/13 neer: Mona Hua EUT only TX, LTE band 2, 10MHz, QPSI Chamber Pre-an T145 84491 SG reading Ant. Pol. (H/V) Distance (m) 355 MHz) - </td <td>08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Chamber Pre-amplifer T145 8449B T145 8449B Chamber D SG reading (H/V) Ghamber (H/V) Distance (dBm) (H/V) Bistance (dBm) (H/V) Solution (GBM) (H/V) Solution (CBM) Solution (CBM) (H/V) Solution (CBM) (H/V) Solution (CBM) (H/V) Solution (CBM) (H/V) (H/V)<</td> <td>08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Chamber T145 8449B Fil SG reading Ant. Pol. (dBm) Distance (dB) Filter (dB) 9.3 V 3.0 30.2 1.0 -13.1 V 3.0 28.4 1.0 -9.8 H 3.0 30.2 1.0 -12.4 H 3.0 30.2 1.0 -13.3 V 3.0 28.3 1.0 -8.7 V 3.0 30.2 1.0 -13.3 V 3.0 28.3 1.0 -8.7 H 3.0 30.2 1.0 -13.4 V 3.0 28.3 1.0</td> <td>08/02/13 meer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Filter Chamber Pre-amplifer Filter Chamber D T145 8449B Filter SG reading (dBm) Ant. Pol. (H/V) Distance (m) Preamplifer (dB) Filter (dBm) 9.3 V 3.0 30.2 1.0 38.5 -13.1 V 3.0 28.4 1.0 40.5 9.8 H 3.0 30.2 1.0 -39.0 12.4 H 3.0 28.4 1.0 -39.8 380 MHz) </td> <td>08/02/13 meer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Pre-amplifer T145 Filter SG reading Ant. Pol. Distance Preamplifer Filter Limit (dBm) (H/V) Distance Preamplifer G(dB) Chamber Limit 9.3 V 3.0 30.2 1.0 -38.5 -13.0 9.3 V 3.0 28.4 1.0 40.5 -13.0 9.3 V 3.0 28.4 1.0 -39.0 -13.0 12.4 H 3.0 28.4 1.0 -39.0 -13.0 380 MHz) - - - - - 8.7 V 3.0 30.2 1.0 -37.9 -13.0 13.3 V 3.0 28.3 1.0 - - 905 MHz) - - - - - - 905 MHz) - - - - - - -</td> <td>08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Pre-amplifer Filter Lin Chamber T145 8449B Filter Lin Part 24 SG reading (dBm) Ant. Pol. (H/V) Distance Preamp (dB) Filter (dB) Limit (dB) Delta (dB) Delta (dB) 9.3 V 3.0 30.2 1.0 38.5 -13.0 -25.5 -13.1 V 3.0 30.2 1.0 -38.5 -13.0 -25.5 -13.1 V 3.0 28.4 1.0 40.5 -13.0 -25.5 -13.1 V 3.0 28.4 1.0 -40.5 -13.0 -25.5 -13.1 V 3.0 28.4 1.0 -39.8 -13.0 -26.8 9.8 H 3.0 28.4 1.0 -39.8 -13.0 -26.8 9.12.4 H 3.0 28.3 1.0 -37.9 -13.0 -24.9 -13.3 V 3.0 28.3 1.0</td>	08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Chamber Pre-amplifer T145 8449B T145 8449B Chamber D SG reading (H/V) Ghamber (H/V) Distance (dBm) (H/V) Bistance (dBm) (H/V) Solution (GBM) (H/V) Solution (CBM) Solution (CBM) (H/V) Solution (CBM) (H/V) Solution (CBM) (H/V) Solution (CBM) (H/V) (H/V)<	08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Chamber T145 8449B Fil SG reading Ant. Pol. (dBm) Distance (dB) Filter (dB) 9.3 V 3.0 30.2 1.0 -13.1 V 3.0 28.4 1.0 -9.8 H 3.0 30.2 1.0 -12.4 H 3.0 30.2 1.0 -13.3 V 3.0 28.3 1.0 -8.7 V 3.0 30.2 1.0 -13.3 V 3.0 28.3 1.0 -8.7 H 3.0 30.2 1.0 -13.4 V 3.0 28.3 1.0	08/02/13 meer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Filter Chamber Pre-amplifer Filter Chamber D T145 8449B Filter SG reading (dBm) Ant. Pol. (H/V) Distance (m) Preamplifer (dB) Filter (dBm) 9.3 V 3.0 30.2 1.0 38.5 -13.1 V 3.0 28.4 1.0 40.5 9.8 H 3.0 30.2 1.0 -39.0 12.4 H 3.0 28.4 1.0 -39.8 380 MHz)	08/02/13 meer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Pre-amplifer T145 Filter SG reading Ant. Pol. Distance Preamplifer Filter Limit (dBm) (H/V) Distance Preamplifer G(dB) Chamber Limit 9.3 V 3.0 30.2 1.0 -38.5 -13.0 9.3 V 3.0 28.4 1.0 40.5 -13.0 9.3 V 3.0 28.4 1.0 -39.0 -13.0 12.4 H 3.0 28.4 1.0 -39.0 -13.0 380 MHz) - - - - - 8.7 V 3.0 30.2 1.0 -37.9 -13.0 13.3 V 3.0 28.3 1.0 - - 905 MHz) - - - - - - 905 MHz) - - - - - - -	08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 2, 10MHz, QPSK Pre-amplifer Filter Lin Chamber T145 8449B Filter Lin Part 24 SG reading (dBm) Ant. Pol. (H/V) Distance Preamp (dB) Filter (dB) Limit (dB) Delta (dB) Delta (dB) 9.3 V 3.0 30.2 1.0 38.5 -13.0 -25.5 -13.1 V 3.0 30.2 1.0 -38.5 -13.0 -25.5 -13.1 V 3.0 28.4 1.0 40.5 -13.0 -25.5 -13.1 V 3.0 28.4 1.0 -40.5 -13.0 -25.5 -13.1 V 3.0 28.4 1.0 -39.8 -13.0 -26.8 9.8 H 3.0 28.4 1.0 -39.8 -13.0 -26.8 9.12.4 H 3.0 28.3 1.0 -37.9 -13.0 -24.9 -13.3 V 3.0 28.3 1.0	

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16QAM Band 2 (10.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 2	2, 10MHz, 16QA	M						
Chamber			Pre-amplifer			Filter		Limit		
3m Chamber D 🗸		T145 8449	В	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	
Low Ch, (1		()	()	(42)	(42)	(42.11)	(42.11)	(42)		
3.701	-10.2	V	3.0	30.2	1.0	-39.4	-13.0	-26.4		
5.551	-14.0	V	3.0	28.4	1.0	-41.4	-13.0	-28.4		
3.701	-10.8	H	3.0	30.2	1.0	-40.0	-13.0	-27.0		
5.551	-13.2	H	3.0	28.4	1.0	-40.6	-13.0	-27.6		
Mid Ch, (1	880 MHz)									
3.750	-9.5	V	3.0	30.2	1.0	-38.7	-13.0	-25.7		
5.625	-14.2	V	3.0	28.3	1.0	41.5	-13.0	-28.5		
3.750	-9.6	Η	3.0	30.2	1.0	-38.7	-13.0	-25.7		
5.625	-13.4	Н	3.0	28.3	1.0	-40.7	-13.0	-27.7		
High Ch, ('	1905 MH-)									
3.801	-9.5	V	3.0	30.1	1.0	-38.6	-13.0	-25.6		
5.702	-14.2	V	3.0	28.2	1.0	-30.0	-13.0	-28.5		
	-9.8	Ĥ	3.0	30.1	1.0	-38.9	-13.0	-25.9		
	··· 🎃	H	3.0	28.2	1.0	-40.6	-13.0	-27.6		
3.801 5.702	-13.3									

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QPSK Band 2(15.0 MHz BANDWIDTH)

Company: Project #: Date: Test Engi Configura Mode:	neer: tion:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 2	2, 15MHz, QPSI	ĸ						
Chamber			Pre-amplifer			Filter		Limit		
3m Chamber D →		•	T145 8449I	В	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	
Low Ch, (18		(177)	(111)	(00)	(00)	(ubiii)	(abiii)			
3.703	-10.0	V	3.0	30.2	1.0	-39.2	-13.0	-26.2		
	-14.5	V	3.0	28.4	1.0	41.8	-13.0	-28.8		
5.554						7 00 0	10.0			
3.703	-9.6	Н	3.0	30.2	1.0	-38.8	-13.0	-25.8		
3.703		H H	3.0 3.0	30.2 28.4	1.0 1.0	-38.8 -39.6	-13.0 -13.0	-25.8 -26.6		
3.703 5.554	-9.6 -12.2									
3.703	-9.6 -12.2									
3.703 5.554 Mid Ch, (18	-9.6 -12.2 880 MHz)	Н	3.0	28.4 30.1 28.3	1.0	-39.6 -37.1 -40.1	-13.0 -13.0 -13.0	-26.6 -24.1 -27.1		
3.703 5.554 Mid Ch, (11 3.760 5.621 3.760	-9.6 -12.2 380 MHz) -8.0 -12.8 -8.5	H V V H	3.0 3.0 3.0 3.0 3.0	28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0	-39.6 -37.1 -40.1 -37.6	-13.0 -13.0 -13.0 -13.0	-26.6 -24.1 -27.1 -24.6		
3.703 5.554 Mid Ch, (18 3.760 5.621 3.760	-9.6 -12.2 380 MHz) -8.0 -12.8	H V V	3.0 3.0 3.0	28.4 30.1 28.3	1.0 1.0 1.0	-39.6 -37.1 -40.1	-13.0 -13.0 -13.0	-26.6 -24.1 -27.1		
3.703 5.554 Mid Ch, (11 3.760 5.621 3.760 5.621	-9.6 -12.2 380 MHz) -8.0 -12.8 -8.5 -12.3	H V V H	3.0 3.0 3.0 3.0 3.0	28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0	-39.6 -37.1 -40.1 -37.6	-13.0 -13.0 -13.0 -13.0	-26.6 -24.1 -27.1 -24.6		
3.703 5.554 Mid Ch, (1) 3.760 5.621 3.760 5.621 High Ch, (1	-9.6 -12.2 380 MHz) -8.0 -12.8 -8.5 -12.3	H V V H	3.0 3.0 3.0 3.0 3.0	28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0	-39.6 -37.1 -40.1 -37.6	-13.0 -13.0 -13.0 -13.0	-26.6 -24.1 -27.1 -24.6		
3.703 5.554 Mid Ch, (11 3.760	-9.6 -12.2 380 MHz) -8.0 -12.8 -8.5 -12.3 903 MHz)	H V V H H	3.0 3.0 3.0 3.0 3.0	28.4 30.1 28.3 30.1 28.3	1.0 1.0 1.0 1.0 1.0	39.6 37.1 40.1 37.6 39.6	-13.0 -13.0 -13.0 -13.0 -13.0	-26.6 -24.1 -27.1 -24.6 -26.6		
3.703 5.554 Mid Ch, (1) 3.760 5.621 3.760 5.621 High Ch, (1 3.806	-9.6 -12.2 380 MHz) -8.0 -12.8 -8.5 -12.3 903 MHz) -8.9	H V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.4 30.1 28.3 30.1 28.3 30.1 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-39.6 -37.1 -40.1 -37.6 -39.6 -38.0	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-26.6 -24.1 -27.1 -24.6 -26.6 -25.0		

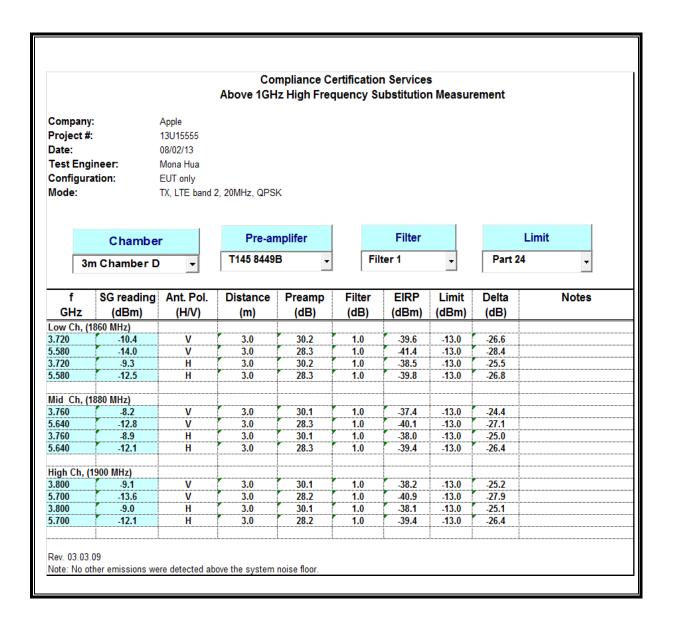
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16QAM Band 2 (15.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 2	2, 15MHz, 16QA	M						
	Chambe	r	Pre-amplifer			Filter		Limit		
3m Chamber D 👻		T145 8449B		Filter 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	
Low Ch, (1		(n/v)	(m)	(ub)	(ub)	(abiii)	(abm)	(ub)		
3.703	-10.9	V	3.0	30.2	1.0	-40.1	-13.0	-27.1		
5.554	-15.4	V	3.0	28.4	1.0	-42.8	-13.0	-29.8		
3.703	-10.5	H	3.0	30.2	1.0	-39.7	-13.0	-26.7		
5.554	-13.2	Н	3.0	28.4	1.0	-40.6	-13.0	-27.6		
Mid Ch, (1	880 MHz)									
3.760	-8.9	٧	3.0	30.1	1.0	-38.1	-13.0	-25.1		
	-13.8	V	3.0	28.3	1.0	_41.1	-13.0	-28.1		
5.621	-9.4	Н	3.0	30.1	1.0	-38.5	-13.0	-25.5		
5.621 3.760		Н	3.0	28.3	1.0	-40.5	-13.0	-27.5		
5.621 3.760	-13.2									
5.621 3.760 5.621	-13.2		•				1			
	-13.2	V	3.0	30.1	1.0	-39.0	-13.0	-26.0		
5.621 3.760 5.621 High Ch, ('	-13.2 1903 MHz)	VVV	3.0 3.0	30.1 28.2	1.0 1.0	-39.0 -41.4	-13.0 -13.0	-26.0 -28.4		
5.621 3.760 5.621 High Ch, (3.806	-13.2 1903 MHz) -9.9	-								

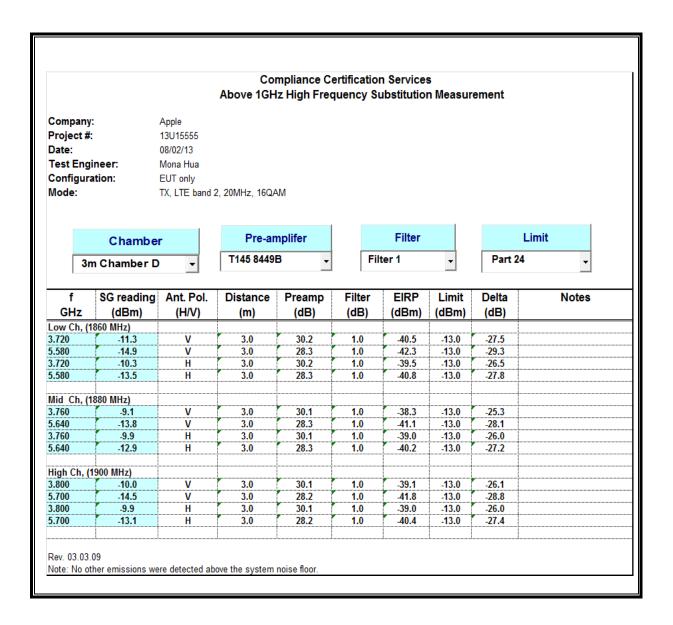
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QPSK Band 2 (20.0 MHz BANDWIDTH)



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16QAM Band 2 (20.0 MHz BANDWIDTH)



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9.3.2. LTE BAND 4

QPSK Band 4 (1.4 MHz BANDWIDTH)

neer: tion:	13U15555 08/02/13 Mona Hua EUT only	4, 1.4MHz BW,	QPSK						
Chamber			Pre-amplifer		Filter			mit	
3m Chamber D		T145 8449B 🗸		Filter 1			Part 27		
SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes	
(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
				,					
		· · · · · · · · · · · · · · · · · · ·							
-12.0	11	J.V	20.0	1.0	+0.J	-13.0	-21.J		
(32.5 MHz)									
-12.9	V	3.0	30.4	1.0	_42.3	-13.0	-29.3		
-14.8	V	3.0	28.7	1.0	-42.5	-13.0	-29.5		
-13.0	H	3.0	30.4	1.0	-42.4	-13.0			
-12.5	Н	3.0	28.7	1.0	-40.2	-13.0	-27.2		
754 3 MH-)									
	V	30	30.4	10	<u>12 1</u>	.13.0	.29.1		
-12.1	V	3.0	28.6	1.0	-42.7	-13.0	-29.7		
-12.8	Ĥ	3.0	30.4	1.0	-42.1	-13.0	-29.1		
	H	3.0	28.6	1.0	-40.7	-13.0	-27.7		
	neer: tion: Chambe n Chamber D SG reading (dBm) 710.7 MHz) -12.0 -14.0 -13.1 -12.6 732.5 MHz) -12.9 -14.8 -13.0 -12.5 -754.3 MHz) -12.7	13U15555 08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 4 Chamber Chamber D Chamber D SG reading (H/V) 710.7 MHz) -12.0 V -12.0 V -12.0 V -12.0 V -13.1 H -12.6 H -12.9 V -14.8 V -13.0 H -12.5 H -12.7	Apple 13U15555 08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 4, 1.4MHz BW, Chamber D Chamber D SG reading Ant. Pol. Distance (dBm) (H/V) (m) 710.7 MHz) -12.0 V 13.1 H 12.6 H 14.0 V 3.0 -14.0 V 3.0 -14.8 V 3.0 -12.5 H 3.0 -12.5 H 3.0 -12.7 V 3.0	Apple 13U15555 08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 4, 1.4MHz BW, QPSK Chamber T145 8449B Chamber D T145 8449B SG reading Ant. Pol. (dBm) (H/V) (H/V) (m) (dBm) (H/V) (10.7 MHz) - -12.0 V 3.0 3.0 28.8 -13.1 H 3.0 -12.6 H 3.0 -12.9 V 3.0 -12.9 V 3.0 -12.5 H 3.0 -12.5 H 3.0 -12.5 H 3.0 -12.7 V 3.0	Apple 13U15555 08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 4, 1.4MHz BW, QPSK Pre-amplifer T145 8449B Fil SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) (dB) 710.7 MHz) - - - -12.0 V 3.0 30.4 1.0 -13.1 H 3.0 28.8 1.0 -12.6 H 3.0 28.7 1.0 -12.9 V 3.0 30.4 1.0 -13.0 H 3.0 28.7 1.0 -13.0 H 3.0 30.4 1.0 -12.5 H 3.0 28.7 1.0 -12.5 H 3.0 28.7 1.0 -12.7 V 3.0 30.4 1.0	Apple 13U15555 08/02/13 neer: Mona Hua EUT only TX, LTE band 4, 1.4MHz BW, QPSK Chamber Y TX, LTE band 4, 1.4MHz BW, QPSK Filter Chamber D Y T145 8449B Filter SG reading Ant. Pol. (dBm) Distance Pre-amplifer Filter 12.0 V 3.0 30.4 1.0 41.5 14.0 V 3.0 28.8 1.0 41.8 13.1 H 3.0 30.4 1.0 42.5 12.6 H 3.0 30.4 1.0 42.5 13.0 H 3.0 30.4 1.0 42.5 13.0 H 3.0 28.7 1.0 42.4 12.5 H 3.0 28.7 1.0 42.5 13.0 H 3.0 28.7 1.0 42.4 12.5 H 3.0 28.7 1.0 40.2 732.5 MHz)	Apple 13U15555 08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 4, 1.4MHz BW, QPSK Chamber Pre-amplifer T145 8449B Filter Filter 1 Filter SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) Filter EIRP Limit 10.7 MHz)	13U15555 08/02/13 neer: Mona Hua tion: EUT only TX, LTE band 4, 1.4MHz BW, QPSK Filter Filter Limit Delta C hamber Filter Filter Limit Delta C hamber Pre-amplifer Filter EIRP Limit Delta C hamber O T145 84499B Filter EIRP Limit Delta G reading Ant. Pol. Distance Pre-amplifer Filter EIRP Limit Delta (dBm) (H/V) 3.0 2.8.5 T22.0 V 3.0 2.8.5 12.6 H 3.0 2.9.5 T22.0 V 3.0 2.9.5 <th 2"2"2"<="" colspa="2" td=""></th>	

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16QAM Band 4 (1.4 MHz BANDWIDTH)

Company: Project #: Date: Test Engi Configura Mode:	neer: tion:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 4	4, 1.4MHz BW,	16QAM						
Chamber			Pre-amplifer			Filter		Limit		
3m Chamber D 🗸		T145 8449I	В 🚽	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)	NOICS	
		· · · · · /	11	11	1/					
Low Ch. (1	710.7 MHz)									
Low Ch, (1) 3.421	10.7 MHz) -13.0	V	3.0	30.4	1.0	-42.5	-13.0	-29.5		
3.421 5.132		V V	3.0 3.0	30.4 28.8	1.0 1.0	_42.5 _42.7	-13.0 -13.0	-29.5 -29.7		
3.421 5.132 3.421	-13.0 -14.9 -14.1	V H	3.0 3.0	28.8 30.4	1.0 1.0	_42.7 _43.5	-13.0 -13.0	-29.7 -30.5		
3.421 5.132	-13.0 -14.9	V	3.0	28.8	1.0	_42.7	-13.0	-29.7		
3.421 5.132 3.421	-13.0 -14.9 -14.1 -13.6	V H	3.0 3.0	28.8 30.4	1.0 1.0	_42.7 _43.5	-13.0 -13.0	-29.7 -30.5		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465	-13.0 -14.9 -14.1 -13.6 (32.5 MHz) -13.7	V H H	3.0 3.0	28.8 30.4 28.8 30.4	1.0 1.0	_42.7 _43.5	-13.0 -13.0	-29.7 -30.5 -28.3 -30.1		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465 5.198	-13.0 -14.9 -14.1 -13.6 732.5 MHz) -13.7 -15.7	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	28.8 30.4 28.8 30.4 30.4 28.7	1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465 5.198 3.465	-13.0 -14.9 -14.1 -13.6 32.5 MHz) -13.7 -13.7 -15.7 -13.9	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.8 30.4 28.8 30.4 28.7 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4 43.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4 -30.3		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465 5.198	-13.0 -14.9 -14.1 -13.6 732.5 MHz) -13.7 -15.7	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	28.8 30.4 28.8 30.4 30.4 28.7	1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465 5.198 3.465	-13.0 -14.9 -14.1 -13.6 732.5 MHz) -13.7 -15.7 -15.7 -13.9 -13.6	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.8 30.4 28.8 30.4 28.7 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4 43.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4 -30.3		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465 5.198 3.465 5.198	-13.0 -14.9 -14.1 -13.6 732.5 MHz) -13.7 -15.7 -15.7 -13.9 -13.6	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.8 30.4 28.8 30.4 28.7 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4 43.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4 -30.3		
3.421 5.132 3.421 5.132 Mid Ch, (1) 3.465 5.198 3.465 5.198 High Ch, (1	-13.0 -14.9 -14.1 -13.6 732.5 MHz) -13.7 -15.7 -13.9 -13.6 754.3 MHz)	V H H H V V H H V V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.8 30.4 28.8 30.4 28.7 30.4 28.7 30.4 28.7	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4 43.3 41.3 41.3 41.3 41.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4 -30.3 -28.3 -28.3 -29.9 -30.7		
3.421 5.132 3.421 5.132 Mid. Ch, (1) 3.465 5.198 3.465 5.198 High Ch, (1 3.509	-13.0 -14.9 -14.1 -13.6 (32.5 MHz) -13.7 -13.7 -15.7 -13.9 -13.6 (754.3 MHz) -13.5	V H 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	28.8 30.4 28.8 30.4 28.7 30.4 28.7 30.4 28.7 30.4 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 43.5 41.3 43.1 43.4 43.3 41.3 41.3 42.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -30.5 -28.3 -30.1 -30.4 -30.3 -28.3 -28.3 -29.9		

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QPSK Band 4 (3.0 MHz BANDWIDTH)

			Col Above 1GH	mpliance Ce z High Freq				ement	
Company Project #:		Apple 13U15555							
Date:		08/02/13							
Test Eng	neer:	Mona Hua							
Configura		EUT only							
Mode:		TX, LTE band	4, 3MHz BW, Q	PSK					
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3n	n Chamber D		T145 8449	3 🗸	Fi	lter 1	•	Part 27	-
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (1 3.423	711.5 MHz) -12.1	V	3.0	30.4	1.0	-41.6	-13.0	-28.6	
5.135	-12.1	V	3.0	28.8	1.0	-41.7	-13.0	-28.7	
3.423	-13.6	H	3.0	30.4	1.0	-43.0	-13.0	-30.0	
5.135	-12.1	Н	3.0	28.8	1.0	-39.8	-13.0	-26.8	
Mid Ch. (1	732.5 MHz)								
3.465	-13.0	V	3.0	30.4	1.0	-42.4	-13.0	-29.4	
5.198	-14.6	V	3.0	28.7	1.0	-42.3	-13.0	-29.3	
3.465	-13.1	H	3.0	30.4	1.0	-42.5	-13.0	-29.5	
5.198	-12.6	H	3.0	28.7	1.0	-40.3	-13.0	-27.3	
	753.5 MHz)								
High Ch, (1	-13.1	V	3.0	30.4	1.0	-42.5	-13.0	-29.5	
3.507	-15.3	V	3.0	28.6	1.0	-42.9	-13.0	-29.9	
3.507 5.261		H	3.0	30.4	1.0	-42.4	-13.0 -13.0	-29.4 -28.6	
High Ch, (1 3.507 5.261 3.507 5.261	-13.1 -13.9	H	3.0	28.6	1.0	-41.6			

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16QAM Band 4 (3.0 MHz BANDWIDTH)

			Co Above 1GH	npliance Ce z High Freq				ement	
Company Project # Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band	4, 3MHz BW, 16	5QAM					
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
3n	n Chamber D) –	T145 8449	В	Fi	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	711.5 MHz)								
3.423	-13.0	V	3.0	30.4	1.0	-42.5	-13.0	-29.5	
5.135	-14.8	V	3.0	28.8	1.0	-42.6	-13.0	-29.6	
3.423 5.135	-14.5 -13.0	H	3.0 3.0	30.4 28.8	1.0 1.0	-43.9 -40.7	-13.0 -13.0	-30.9 -27.7	
5.155	-15.0		5.0	20.0	1.0	-1011	-10.0	-21.11	
	732.5 MHz)		•						
3.465	-14.0	V	3.0	30.4	1.0	-43.4	-13.0	-30.4	
5.198	-15.6	<u>v</u>	3.0	28.7	1.0	-43.3	-13.0	-30.3	
3.465 5.198	-14.1 -13.6	H H	3.0 3.0	30.4 28.7	1.0 1.0	-43.5 -41.3	-13.0	-30.5 -28.3	
J.130	-13.0	п	J. U	20.1	1.0	-41.3	-13.0	-20.Ĵ	
	1753.5 MHz)								
High Ch, (1	-14.0	V	3.0	30.4	1.0	-43.4	-13.0	-30.4	
		V	3.0	28.6	1.0	-43.8	-13.0	-30.8	
3.507 5.261	-16.2			7 20 4 7	1.0	-43.2	-13.0	-30.2	
High Ch, (* 3.507 5.261 3.507 5.261	-16.2 -13.9 -14.9	H	3.0 3.0	30.4 28.6	1.0	-42.6	-13.0	-29.6	

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QPSK Band 4 (5.0 MHz BANDWIDTH)

Company Project #: Date: Test Engi Configura Mode:	neer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 4	4, 5MHz BW, Q	PSK						
Chamber			Pre-amplifer			Filter		Limit		
3m Chamber D 🗸) 🗸	T145 8449I	449B 🗸 Filter 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	
	712.5 MHz)	(100)	(11)	(00)	(40)	(abiii)	(abiii)	(00)		
3.425	-11.7	V	3.0	30.4	1.0	-41.2	-13.0	-28.2		
5.138	-13.9	V	3.0	28.8	1.0	_41.7	-13.0	-28.7		
3.425	-12.9	H	3.0	30.4	1.0	-42.3	-13.0	-29.3		
5.138	-12.9	H	3.0	28.8	1.0	-40.6	-13.0	-27.6		
Mid Ch, (1	732.5 MHz)					-				
3.465	-13.0	V	3.0	30.4	1.0	-42.4	-13.0	-29.4		
5.198	-15.2	V	3.0	28.7	1.0	-42.9	-13.0	-29.9		
	-12.7	H	3.0	30.4	1.0	-42.1	-13.0	-29.1		
3.465	-12.8	Н	3.0	28.7	1.0	_40.5	-13.0	-27.5		
	-12.0									
3.465 5.198			•							
3.465 5.198	752.5 MHz) -12.8	V	3.0	30.4	1.0	-42.2	-13.0	-29.2		
3.465 5.198 High Ch, (1	752.5 MHz)	V V	3.0 3.0	30.4 28.6	1.0 1.0	_42.2 _42.0	-13.0 -13.0	-29.2 -29.0		
3.465 5.198 High Ch, (1 3.505	752.5 MHz) -12.8									

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16QAM Band 4 (5.0 MHz BANDWIDTH)

			Co Above 1GH	mpliance Ce z High Freq				ement	
Company Project #: Date: Test Engi Configura Mode:	ineer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 4	4, 5MHz BW, 16	5QAM					
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
3n	n Chamber D	• •	T145 8449	В 🚽	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	712.5 MHz)	(/		(/	(/	<u></u>		(/	
3.425	-12.6	V	3.0	30.4	1.0	-42.1	-13.0	-29.1	
5.138	-14.9	V	3.0	28.8	1.0	-42.7	-13.0	-29.7	
	-13.7	H	3.0 3.0	30.4 28.8	1.0 1.0	_43.1 _41.5	-13.0 -13.0	-30.1 -28.5	
						-41.0	-13.0	-20.3	
3.425 5.138	-13.8	Н	5.0	20.0	1.0				
5.138	-13.8 732.5 MHz)	H	5.0	20.0	1.0				
5.138		H V	3.0	30.4	1.0	-43.4	-13.0	-30.4	
5.138 Mid Ch, (1 3.465 5.198	732.5 MHz) -14.0 -16.1	v v v	3.0 3.0	30.4 28.7	1.0 1.0	-43.4 -43.8	-13.0	-30.8	
5.138 Mid Ch, (1 3.465 5.198 3.465	732.5 MHz) -14.0 -16.1 -13.7	V V H	3.0 3.0 3.0	30.4 28.7 30.4	1.0 1.0 1.0	-43.4 -43.8 -43.1	-13.0 -13.0	-30.8 -30.1	
5.138 Mid Ch, (1 3.465 5.198	732.5 MHz) -14.0 -16.1	v v v	3.0 3.0	30.4 28.7	1.0 1.0	-43.4 -43.8	-13.0	-30.8	
5.138 Mid Ch, (1 3.465 5.198 3.465 5.198	732.5 MHz) -14.0 -16.1 -13.7 -13.7	V V H	3.0 3.0 3.0	30.4 28.7 30.4	1.0 1.0 1.0	-43.4 -43.8 -43.1	-13.0 -13.0	-30.8 -30.1	
5.138 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1	732.5 MHz) -14.0 -16.1 -13.7	V V H	3.0 3.0 3.0	30.4 28.7 30.4	1.0 1.0 1.0	-43.4 -43.8 -43.1	-13.0 -13.0	-30.8 -30.1	
5.138 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1 3.505	732.5 MHz) -14.0 -16.1 -13.7 -13.7 -13.7 1752.5 MHz)	V V H H	3.0 3.0 3.0 3.0	30.4 28.7 30.4 28.7	1.0 1.0 1.0 1.0	43.4 43.8 43.1 41.4	-13.0 -13.0 -13.0	-30.8 -30.1 -28.4	
5.138 Mid Ch, (1 3.465 5.198 3.465 5.198	732.5 MHz) - 14.0 - 16.1 - 13.7 - 13.7 - 13.7 1752.5 MHz) - 13.8	V V H H	3.0 3.0 3.0 3.0 3.0 3.0	30.4 28.7 30.4 28.7 30.4 30.4	1.0 1.0 1.0 1.0 1.0	43.4 43.8 43.1 41.4 43.2	-13.0 -13.0 -13.0 -13.0	-30.8 -30.1 -28.4 -30.2	

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QPSK Band 4 (10.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configura Mode:	: ineer: ation:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 4	4, 10MHz BW, (QPSK					
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3r	3m Chamber D -		T145 8449	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		(100)	(111)	(00)		(ubiii)	(ubiii)		
3.430	-12.3	V	3.0	30.4	1.0	-41.7	-13.0	-28.7	
5.145	-13.6	V	3.0	28.8	1.0	-41.3	-13.0	-28.3	
3.430	-13.5	Η	3.0	30.4	1.0	-42.9	-13.0	-29.9	
5.145	-11.9	H	3.0	28.8	1.0	-39.6	-13.0	-26.6	
Mid Ch (1	1732.5 MHz)								
3.456	-12.9	V	3.0	30.4	1.0	-42.3	-13.0	-29.3	
5.184	-14.1	V	3.0	28.7	1.0	-41.9	-13.0	-28.9	
3.456	-13.3	H	3.0	30.4	1.0	-42.7	-13.0	-29.7	
5.184	-12.6	H	3.0	28.7	1.0	-40.3	-13.0	-27.3	
	17E0 MILL-)								
High Ch, (1/50 MHz) -13.0	V	3.0	30.4	1.0	-42.4	-13.0	-29.4	
2 /01	-13.0	V V	3.0	30.4 28.7	1.0	-42.4	-13.0 -13.0	-29.4 -29.3	
		V H	3.0	30.4	1.0	-42.5	-13.0 -13.0	-29.5	
3.491 5.236 3.491	13.7		3.0	28.7	1.0	-43.1	-13.0	-30.1	
	-13.7 -14.0	Н							

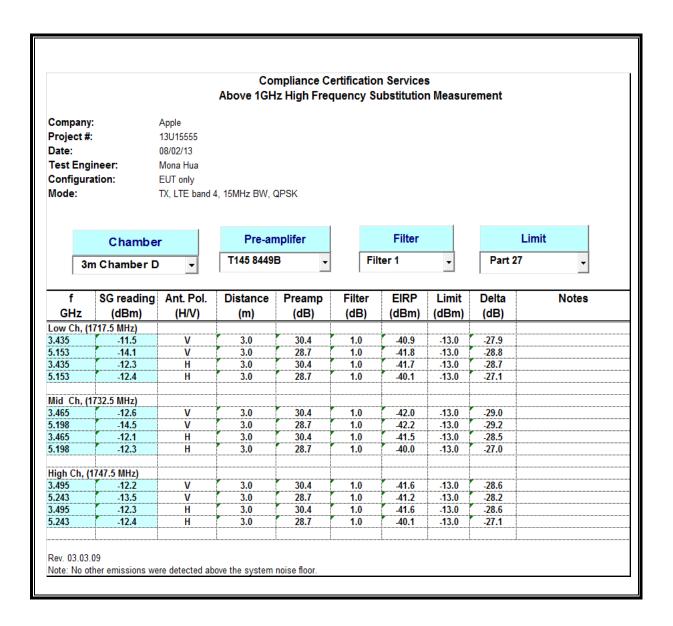
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16QAM Band 4 (10.0 MHz BANDWIDTH)

Company: Project #: Date: Test Engi Configura Mode:	neer: ition:	Apple 13U15555 08/02/13 Mona Hua EUT only TX, LTE band 4	4, 10MHz BW, 1	16QAM					
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3n	3m Chamber D -		T145 8449I	В	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)	Notes
Low Ch, (1		(<u>,</u> /	11				
3.430	-13.2	V	3.0	30.4	1.0	-42.6	-13.0	-29.6	
5.145	-14.5	V	3.0	28.8	1.0	-42.2	-13.0	-29.2	
3.430	-14.5	Η	3.0	30.4	1.0	-43.9	-13.0	-30.9	
5.145	-12.9	Н	3.0	28.8	1.0	-40.6	-13.0	-27.6	
Mid Ch, (1	732.5 MHz)					-			
3.465	-13.8	V	3.0	30.4	1.0	-43.2	-13.0	-30.2	
5.198	-15.2	V	3.0	28.7	1.0	42.9	-13.0	-29.9	
3.130	-14.3	Η	3.0	30.4	1.0	-43.7	-13.0	-30.7	
3.465		Н	3.0	28.7	1.0	-41.2	-13.0	-28.2	
	-13.5	••							
3.465 5.198			•						
3.465 5.198 High Ch, (1		V	3.0	30.4	1.0	-43.4	-13.0	-30.4	
3.465 5.198	750 MHz)		3.0 3.0	30.4 28.7	1.0 1.0	_43.4 _43.3	-13.0 -13.0	-30.4 -30.3	
3.465 5.198 High Ch, (1 3.500	750 MHz) -14.0	V				···			

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QPSK Band 4 (15.0 MHz BANDWIDTH)



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16QAM Band 4 (15.0 MHz BANDWIDTH)

Company: Project #: Date: Test Engin Configura Mode:	neer: tion:	Apple 13U14987 13U15555 08/02/13 Mona Hua TX, LTE band 4	4, 15MHz BW, 1	16QAM					
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3m	3m Chamber D -		T145 8449	З 🚽	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
		()	(,	(42)	(42)	(42.11)	(42.11)	(==)	
Low Ch. (1)	(17.5 MHz)								
Low Ch, (1) 3.435	17.5 MHz) -12.4	V	3.0	30.4	1.0	-41.8	-13.0	-28.8	
3.435 5.153	-12.4 -15.0	V	3.0	28.7	1.0	42.7	-13.0	-29.7	
3.435 5.153 3.435	-12.4 -15.0 -13.3	V H	3.0 3.0	28.7 30.4	1.0 1.0	_42.7 _42.7	-13.0 -13.0	-29.7 -29.7	
3.435 5.153	-12.4 -15.0	V	3.0	28.7	1.0	42.7	-13.0	-29.7	
3.435 5.153 3.435 5.153	-12.4 -15.0 -13.3 -13.4	V H	3.0 3.0	28.7 30.4	1.0 1.0	_42.7 _42.7	-13.0 -13.0	-29.7 -29.7	
3.435 5.153 3.435	-12.4 -15.0 -13.3 -13.4	V H	3.0 3.0	28.7 30.4	1.0 1.0	_42.7 _42.7	-13.0 -13.0	-29.7 -29.7	
3.435 5.153 3.435 5.153 Mid Ch, (1)	-12.4 -15.0 -13.3 -13.4 /32.5 MHz)	V H H	3.0 3.0 3.0	28.7 30.4 28.7	1.0 1.0 1.0	_42.7 _42.7 _41.1	-13.0 -13.0 -13.0	-29.7 -29.7 -28.1	
3.435 5.153 3.435 5.153 Mid Ch, (17 3.465 5.198 3.465	-12.4 -15.0 -13.3 -13.4 -13.5 -13.5 -15.4 -13.0	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 28.7 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 42.7 41.1 42.9 43.1 42.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -29.7 -28.1 -29.9 -30.1 -29.4	
3.435 5.153 3.435 5.153 Mid Ch, (1) 3.465 5.198	-12.4 -15.0 -13.3 -13.4 -13.4 -13.5 -13.5 -15.4	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 30.4 28.7	1.0 1.0 1.0 1.0 1.0	42.7 42.7 41.1 42.9 43.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -29.7 -28.1 -29.9 -29.9 -30.1	
3.435 5.153 3.435 5.153 Mid Ch, (17 3.465 5.198 3.465 5.198	-12.4 -15.0 -13.3 -13.4 -13.4 -732.5 MHz) -13.5 -15.4 -13.0 -13.3	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 28.7 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 42.7 41.1 42.9 43.1 42.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-29.7 -29.7 -28.1 -29.9 -30.1 -29.4	
3.435 5.153 3.435 5.153 Mid Ch, (1) 3.465 5.198 3.465 5.198 High Ch, (1	-12.4 -15.0 -13.3 -13.4 -13.5 -15.4 -13.0 -13.3 -13.3 -13.3 -13.3	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	28.7 30.4 28.7 30.4 28.7 30.4 28.7 30.4 28.7	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 42.7 41.1 42.9 43.1 42.4 41.0	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	29.7 29.7 28.1 29.9 -30.1 29.4 -28.0	
3.435 5.153 3.435 5.153 Mid Ch, (17 3.465 5.198 3.465 5.198	-12.4 -15.0 -13.3 -13.4 -13.4 -732.5 MHz) -13.5 -15.4 -13.0 -13.3	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 28.7 30.4 28.7 30.4 28.7 30.4 28.7 30.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 42.7 41.1 42.9 43.1 42.4 41.0 42.5	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	<u>-29.7</u> -29.7 -28.1 -29.9 -30.1 -29.4 -28.0 -29.5	
3.435 5.153 3.435 5.153 Mid Ch, (1) 3.465 5.198 3.465 5.198 High Ch, (1) 3.495	-12.4 -15.0 -13.3 -13.4 (32.5 MHz) -13.5 -15.4 -15.4 -13.0 -13.3 (747.5 MHz) -13.1	V H 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 3.0	28.7 30.4 28.7 30.4 28.7 30.4 28.7 30.4 28.7	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	42.7 42.7 41.1 42.9 43.1 42.4 41.0	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	29.7 29.7 28.1 29.9 -30.1 29.4 -28.0	

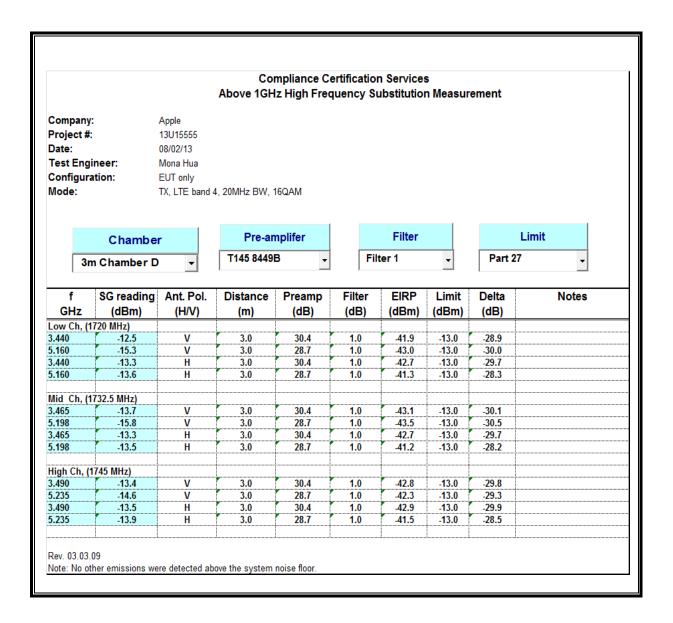
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QPSK Band 4 (20.0 MHz BANDWIDTH)

			Co Above 1GH	npliance Ce z High Freq				ement	
Company: Apple Project #: 13U15555 Date: 08/02/13 Test Engineer: Mona Hua Configuration: EUT only Mode: TX, LTE band			4, 20MHz BW, (QPSK					
	Chambe	r	Pre-an	nplifer		Filter		L	imit
3r	n Chamber D	• •	T145 8449	В 🚽	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									
3.440	-11.6	V	3.0	30.4	1.0	-41.0	-13.0	-28.0	
	-14.3	V	3.0	28.7	1.0	-42.0	-13.0	-29.0	
5.160	43.4		7 20	7 20 4 7					
3.440	-12.4	H	3.0	30.4	1.0	-41.8	-13.0	-28.8	
	-12.4 -12.7	H H	3.0 3.0	30.4 28.7	1.0 1.0	_41.8 _40.4	-13.0 -13.0	-28.8 -27.4	
3.440 5.160	-12.7								
3.440 5.160									
3.440 5.160 Mid Ch, (1 3.465	-12.7 1732.5 MHz)	Н	3.0	28.7	1.0	-40.4	-13.0	-27.4	
3.440 5.160 Mid Ch, (1 3.465 5.198 3.465	-12.7 1732.5 MHz) -12.9 -14.8 -12.3	H V	3.0 3.0	28.7 30.4 28.7 30.4	1.0 1.0	-40.4 -42.3 -42.5 -41.7	-13.0 -13.0 -13.0 -13.0	-27.4 -29.3	
3.440 5.160 Mid Ch, (1 3.465 5.198	-12.7 1732.5 MHz) -12.9 -14.8	H V V	3.0 3.0 3.0	28.7 30.4 28.7	1.0 1.0 1.0	-40.4 -42.3 -42.5	-13.0 -13.0 -13.0	-27.4 -29.3 -29.5	
3.440 5.160 Mid Ch, (1 3.465 5.198 3.465 5.198	-12.7 1732.5 MHz) -12.9 -14.8 -12.3 -12.4	H V V H	3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4	1.0 1.0 1.0 1.0	40.4 42.3 42.5 41.7	-13.0 -13.0 -13.0 -13.0	-27.4 -29.3 -29.5 -28.7	
3.440 5.160 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1	-12.7 1732.5 MHz) -12.9 -14.8 -12.3 -12.3 -12.4 1745 MHz)	H V V H H	3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 28.7	1.0 1.0 1.0 1.0 1.0	40.4 42.3 42.5 41.7 40.1	-13.0 -13.0 -13.0 -13.0 -13.0	-27.4 -29.3 -29.5 -28.7 -27.1	
3.440 5.160 Mid Ch, (1 3.465 5.198 3.465 5.198 High Ch, (1 3.490	-12.7 1732.5 MHz) -12.9 -14.8 -12.3 -12.4 1745 MHz) -12.5	H V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 28.7 30.4 30.4	1.0 1.0 1.0 1.0 1.0	40.4 42.3 42.5 41.7 40.1 41.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-27.4 -29.3 -29.5 -28.7 -27.1 -28.9	
3.440 5.160 Mid Ch, (1 3.465 5.198 3.465 5.198	-12.7 1732.5 MHz) -12.9 -14.8 -12.3 -12.3 -12.4 1745 MHz)	H V V H H	3.0 3.0 3.0 3.0 3.0	28.7 30.4 28.7 30.4 28.7	1.0 1.0 1.0 1.0 1.0	40.4 42.3 42.5 41.7 40.1	-13.0 -13.0 -13.0 -13.0 -13.0	-27.4 -29.3 -29.5 -28.7 -27.1	

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16QAM Band 4 (20.0 MHz BANDWIDTH)



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9.3.3. LTE BAND 5

QPSK Band 5 (1.4 MHz BANDWIDTH)

Company		Apple							
Project #:		13U15555							
Date:		09/10/13							
Test Engi	noor	Mona Hua							
Configura									
Mode:		EUT only TX, LTE B5 1.4	1M har QPSK						
	Chamber			Pre-amplifer		Filter			nit
3n	3m Chamber D		T145 8449			Filter 1 🚽		Part 22	
			ļ		J		_		
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8	24.7MHz)								
1.649	-28.5	V	3.0	32.7	1.0	-60.2	-13.0	-47.2	
2.474	-20.8	V	3.0	31.4	1.0	51.2	-13.0	-38.2	
1.649	-30.0	Н	3.0	32.7	1.0	-61.6	-13.0	-48.6	
2.474	-22.0	Н	3.0	31.4	1.0	-52.4	-13.0	-39.4	
Mid Ch, (8	36.5MHz)		3.0	32.6	1.0	-59.5	-13.0	-46.5	
1.673	-27.9	V	J.U						
Mid Ch, (8 1.673 2.510	-27.9 -20.8	V	3.0	31.5	1.0	51.3	-13.0	-38.3	
1.673 2.510 1.673	-27.9 -20.8 -29.8	V H	3.0 3.0	32.6	1.0	-61.4	-13.0	-48.4	
1.673 2.510 1.673	-27.9 -20.8	V	3.0	······································		· 🎃 · · · · · · · · · · · · · · · · · ·		,	
1.673 2.510 1.673 2.510	-27.9 -20.8 -29.8 -23.0	V H H	3.0 3.0	32.6	1.0	-61.4	-13.0 -13.0	-48.4	
1.673 2.510 1.673 2.510 High Ch, (8 1.697	-27.9 -20.8 -29.8 -23.0	V H	3.0 3.0	32.6	1.0	-61.4	-13.0	-48.4	
1.673 2.510 1.673 2.510 High Ch, (8 1.697 2.545	-27.9 -20.8 -29.8 -23.0 -23.0 -23.0 -28.2 -28.2 -21.9	V H H V V	3.0 3.0 3.0	32.6 31.5	1.0 1.0	-61.4 -53.5	-13.0 -13.0 -13.0 -13.0 -13.0	48.4 40.5 46.7 -39.4	
1.673 2.510 1.673 2.510 High Ch, (8 1.697	-27.9 -20.8 -29.8 -23.0 48.3MHz) -28.2	V H H V	3.0 3.0 3.0 3.0	32.6 31.5 32.6	1.0 1.0 1.0	-61.4 -53.5 -59.7	-13.0 -13.0 -13.0	_48.4 _40.5 _46.7	

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16QAM Band 5 (1.4 MHz BANDWIDTH)

Company	:	Apple							
Project #:		13U15555							
Date:		09/10/13							
Test Engi	ineer:	Mona Hua							
Configura	ation:	EUT only							
Mode:		TX, LTE B5 1.4	IM har 16QAM						
	Chambe	r	Pre-an	nplifer		Filter		Lir	nit
3n	Chamber 3m Chamber D 🚽		T145 8449	В	Filter 1		•	Part 22	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8	24.7MHz)								
1.649	-29.6	V	3.0	32.7	1.0	-61.2	-13.0	-48.2	
2.474	-21.7	V	3.0	31.4	1.0	-52.1	-13.0	-39.1	
1.649	-30.8	H	3.0	32.7	1.0	-62.5	-13.0	-49.5	
2.474	-22.9	H	3.0	31.4	1.0	-53.3	-13.0	-40.3	
Mid Ch, (8	36 5MHz)								
	-29.0	V	3.0	32.6	1.0	-60.6	-13.0	-47.6	
1.673	-21.8	v	3.0	31.5	1.0	-52.3	-13.0	-39.3	
1.673 2.510	-30.6	Н	3.0	32.6	1.0	-62.2	-13.0	-49.2	
	-30.0		3.0	31.5	1.0	-54.4	-13.0	-41.4	
2.510 1.673	-23.9	Н	3.0	31.3	1.0	·•••••••••••••••••••••••••••••••••••••			
2.510 1.673 2.510	-23.9	Н	3.0	31.3	1.0				
2.510 1.673 2.510 High Ch, (8	-23.9 348.3MHz)						.13.0	A7 7	
2.510 1.673 2.510 High Ch, (8 1.697	-23.9 48.3MHz) -29.2	v	3.0	32.6	1.0	-60.7	-13.0 -13.0	-47.7 -40.3	
2.510 1.673 2.510 High Ch, (8	-23.9 348.3MHz)						-13.0 -13.0 -13.0	47.7 40.3 49.4	

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QPSK Band 5 (3.0 MHz BANDWIDTH)

Company		Apple							
Project #:		13U15555							
Date:		09/10/13							
Test Engi	neer	Mona Hua							
_									
Configura Mode:	ation:	EUT only TX, LTE B5 3N	har ODSK						
moue.		TA, LTE DJ JIV							
	Chambe	r	Pre-an	nplifer		Filter		Lii	mit
			T145 8449B		Filter 1			Part 22	
3n	n Chamber D) -	1140 0445	- <u>-</u>	Filter 1		_	Fait 22	-
f	SG reading		Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8									
1.651	-28.4	V	3.0	32.7	1.0	-60.1	-13.0	-47.1	
2.477	-20.8	V	3.0	31.4	1.0	-51.2	-13.0	-38.2	
		Н	3.0	32.7	1.0	-61.0	-13.0	-48.0	
1.651	-29.3	¢							
1.651	-29.3 -22.6	Н	3.0	31.4	1.0	-53.0	-13.0	-40.0	
1.651 2.477	-22.6	¢	3.0	31.4	1.0	-33.0	-13.0	-40.0	
1.651 2.477 Mid Ch, (8	-22.6	¢	3.0 3.0	31.4 32.6	1.0	-55.0	-13.0 -13.0	-40.0 -46.6	
1.651	-22.6 36.5MHz)	H						_46.6 _38.7	
1.651 2.477 Mid Ch, (8 1.673 2.510 1.673	-22.6 36.5MHz) -28.0	H V V H	3.0	32.6 31.5 32.6	1.0	-59.6	-13.0	-46.6	
1.651 2.477 Mid Ch, (8 1.673 2.510 1.673	-22.6 36.5MHz) -28.0 -21.2	H V V	3.0 3.0	32.6 31.5	1.0	-59.6 -51.7	-13.0 -13.0	_46.6 _38.7	
1.651 2.477 Mid Ch, (8 1.673 2.510 1.673 2.510	-22.6 36.5MHz) -28.0 -21.2 -29.4 -21.4	H V V H	3.0 3.0 3.0	32.6 31.5 32.6	1.0 1.0 1.0	-59.6 -51.7 -61.0	-13.0 -13.0 -13.0	-46.6 -38.7 -48.0	
1.651 2.477 Mid Ch, (8 1.673 2.510 1.673 2.510 High Ch, (8	-22.6 36.5MHz) -28.0 -21.2 -29.4 -21.4 347.5MHz)	H V V H H	3.0 3.0 3.0 3.0	32.6 31.5 32.6 31.5	1.0 1.0 1.0 1.0	-59.6 -51.7 -61.0 -51.9	-13.0 -13.0 -13.0 -13.0	46.6 -38.7 -48.0 -38.9	
1.651 2.477 Mid Ch, (8 1.673 2.510 1.673 2.510 High Ch, (8 1.694	-22.6 36.5MHz) -28.0 -21.2 -29.4 -21.4 347.5MHz) -28.0	H V V H	3.0 3.0 3.0 3.0 3.0 3.0	32.6 31.5 32.6 31.5 31.5 32.6	1.0 1.0 1.0 1.0 1.0	-59.6 -51.7 -61.0 -51.9 -59.5	-13.0 -13.0 -13.0 -13.0 -13.0	46.6 -38.7 -48.0 -38.9 	
1.651 2.477 Mid Ch, (8 1.673 2.510 1.673 2.510 High Ch, (8	-22.6 36.5MHz) -28.0 -21.2 -29.4 -21.4 347.5MHz)	H V V H H	3.0 3.0 3.0 3.0	32.6 31.5 32.6 31.5	1.0 1.0 1.0 1.0	-59.6 -51.7 -61.0 -51.9	-13.0 -13.0 -13.0 -13.0	46.6 -38.7 -48.0 -38.9	

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16QAM Band 5 (3.0 MHz BANDWIDTH)

-									
Company		Apple							
Project #	:	13U15555							
Date:		09/10/13							
Test Eng	ineer:	Mona Hua							
Configur	ation:	EUT only							
Mode:		TX, LTE B5 3M	1 har QPSK						
			Pre-ar	nnlifor		Filter		Li	mit
	Chambe	r	Fie-ai	npiner		T IIIGI			
31	n Chamber D) -	T145 8449	в 🚽	Fil	ter 1	-	Part 22	•
1.			I		I			<u> </u>	
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (325.5MHz)								
1.651	-29.3	V	3.0	32.7	1.0	-61.0	-13.0	-48.0	
2.477	-21.8	V	3.0	31.4	1.0	-52.2	-13.0	-39.2	
1.651	-30.2	Н	3.0	32.7	1.0	-61.9	-13.0	-48.9	
2.477	-23.4	H	3.0	31.4	1.0	-53.8	-13.0	-40.8	
Mid Ch, ((36.5MHz)								
1.673	-28.9	V	3.0	32.6	1.0	-60.5	-13.0	-47.5	
2.510	-22.0	v	3.0	31.5	1.0	-52.5	-13.0	-39.5	
1.673	-30.3	Н	3.0	32.6	1.0	-61.9	-13.0	-48.9	
	-22.4	Н	3.0	31.5	1.0	-52.9	-13.0	-39.9	
2.510								•	
					4.0		42.0		
High Ch, (-29.1	V	3.0	32.6	1.0	-60.6	-13.0	-47.6	
High Ch, (1.695	7 22 2	V	3.0 3.0	31.4	1.0	-53.6	-13.0 -13.0	-40.6	
High Ch, (1.695 2.543	-23.2	U	: 50	32.6	1.0	-61.9	-13.0 -13.0	-48.9 -43.7	
High Ch, (1.695	-23.2 -30.4 -26.3	H H	3.0	31.4	1.0	-56.7			

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QPSK Band 5 (5.0 MHz BANDWIDTH)

Date: Test Engi	Project #: 13U15555 Date: 09/10/13 Fest Engineer: Mona Hua Configuration: EUT only									
	Chambe	r	Pre-amplifer		Filter			Limit		
3n	Chamber 3m Chamber D 🗸		T145 8449	В	Filter 1		•	Part 22	•	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, (8		()	()	(1	(/	((()		
1.649	-28.1	V	3.0	32.7	1.0	-59.8	-13.0	-46.8		
2.473	-19.9	V	3.0	31.4	1.0	-50.3	-13.0	-37.3		
1.649	-29.4	Η	3.0	32.7	1.0	-61.1	-13.0	-48.1		
2.473	-22.5	H	3.0	31.4	1.0	-52.8	-13.0	-39.8		
Mid Ch, (8	36.5MHz)									
1.668	-27.9	V	3.0	32.6	1.0	-59.5	-13.0	-46.5		
2.503	-18.1	V	3.0	31.5	1.0	-48.6	-13.0	-35.6		
1.668	-29.9	Н	3.0	32.6	1.0	-61.5	-13.0	-48.5		
2.503	-21.1	Н	3.0	31.5	1.0	-51.6	-13.0	-38.6		
2.303	346.5MHz)									
High Ch, (8			3.0	32.6	1.0	-59.8	-13.0	-46.8		
	-28.3	V	0.0			-50.5	-13.0	-37.5		
High Ch, (8 1.689 2.533	-28.3 -20.1	V V	3.0	31.5	1.0	· · · · · · · · · · · · · · · · · · ·	à	·····		
High Ch, (8 1.689	-28.3		· · · · · · · · · · · · · · · · · · ·	31.5 32.6 31.5	1.0 1.0 1.0	-50.5 -60.9 -52.2	-13.0 -13.0	-47.9 -39.2		

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16QAM Band 5 (5.0 MHz BANDWIDTH)

Company		Apple							
Project #		13U15555							
Date:		09/10/13							
Test Eng	ineer:	Mona Hua							
Configur	ation:	EUT only							
Mode:		TX, LTE B5 5M	l har 16QAM						
	Chambe	r	Pre-an	nplifer		Filter		Lin	nit
31	m Chamber D) -	T145 84498	3 🚽	Fil	ter 1	•	Part 22	-
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
Low Ch, ((100)	(111)	(ub)	(ub)		(ubiii)		
1.649	-28.4	V	3.0	32.7	1.0	-60.1	-13.0	-47.1	
2.473	-17.9	v	3.0	31.4	1.0	-48.3	-13.0	-35.3	
1.649	-29.3	H	3.0	32.7	1.0	-61.0	-13.0	-48.0	
2.473	-23.3	Н	3.0	31.4	1.0	-53.7	-13.0	-40.7	
	836.5MHz)				,				
			3.0	32.6	1.0	-59.4	-13.0	-46.4	
1.668	-27.8	V		× • • •				-36.4	
Mid Ch, (1.668 2.503	-27.8 -18.9	V	3.0	31.5	1.0	-49.4	-13.0		
1.668 2.503 1.668	-27.8 -18.9 -29.7	V H	3.0	32.6	1.0	-61.3	-13.0	-48.3	
1.668 2.503	-27.8 -18.9	V			,				
1.668 2.503 1.668 2.503	-27.8 -18.9 -29.7 -22.1	V H	3.0	32.6	1.0	-61.3	-13.0	-48.3	
1.668 2.503 1.668 2.503 High Ch, (-27.8 -18.9 -29.7 -22.1 846.5MHz)	V H H	3.0 3.0	32.6 31.5	1.0 1.0	-61.3 -52.6	-13.0 -13.0	-48.3 -39.6	
1.668 2.503 1.668 2.503 High Ch, (1.689	-27.8 -18.9 -29.7 -22.1 846.5MHz) -28.2	V H H	3.0 3.0 3.0	32.6 31.5 32.6	1.0 1.0 1.0	-61.3 -52.6 -59.7	-13.0 -13.0 -13.0	-48.3 -39.6 -46.7	
1.668 2.503 1.668 2.503	-27.8 -18.9 -29.7 -22.1 846.5MHz)	V H H	3.0 3.0	32.6 31.5	1.0 1.0	-61.3 -52.6	-13.0 -13.0	-48.3 -39.6	

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QPSK Band 5 (10.0 MHz BANDWIDTH)

			Above 1GH	-	-				
Company	:	Apple							
Project #	:	13U15555							
Date:		09/10/13							
Test Eng	ineer:	Mona Hua							
Configur	ation:	EUT only							
Mode:		TX, LTE B5 10	M har QPSK						
31	Chambe n Chamber E	-	Pre-an T145 8449		Fil	Filter ter 1	•	Lii Part 22	mit •
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8									
1.649	-28.5	V	3.0	32.7	1.0	-60.2	-13.0	-47.2	
2.474	-20.0	V	3.0	31.4	1.0	-50.3	-13.0	-37.3	
1.649	-29.2	H	3.0	32.7	1.0	-60.9	-13.0	-47.9	
2.474	-21.6	H	3.0	31.4	1.0	-52.0	-13.0	-39.0	
Mid Ch, (8	26 5MH-)								
1.664	-28.0	V	3.0	32.6	1.0	-59.6	-13.0	-46.6	
1.004	-19.3	v	3.0	31.5	1.0	-49.8	-13.0	-36.8	
2.496	-29.6	H	3.0	32.6	1.0	-61.2	-13.0	-48.2	
	-23.0	Н	3.0	31.5	1.0	-53.4	-13.0	-40.4	
2.496									
2.496 1.664 2.496		°							
2.496 1.664 2.496 High Ch, (-13.0	-46.7	
2.496 1.664 2.496 High Ch, (1.680	-28.1	v	3.0	32.6	1.0	-59.7	å		
2.496 1.664 2.496 High Ch, (1.680 2.519	-28.1 -21.5	v	3.0	31.5	1.0	-51.9	-13.0	-38.9	
2.496 1.664 2.496 High Ch, (1.680	-28.1	<u>.</u>					å	-38.9 -48.4 -38.0	

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16QAM Band 5 (10.0 MHz BANDWIDTH)

Date: Test Engi	Project #: 13U15555 Date: 09/10/13 Test Engineer: Mona Hua Configuration: EUT only Mode: TX, LTE B5 10		M har 16QAM						
	Chamber			Pre-amplifer		Filter			nit
Chamber 3m Chamber D 🗸		T145 8449	3 🗸			•	Part 22	•	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (8		(1114)	(11)	(40)	(48)	(ubiii)	(ubiii)	(40)	
1.649	-29.4	V	3.0	32.7	1.0	-61.1	-13.0	-48.1	
2.474	-20.9	V	3.0	31.4	1.0	-51.3	-13.0	-38.3	
1.649	-30.1	Η	3.0	32.7	1.0	-61.8	-13.0	-48.8	
2.474	-22.6	H	3.0	31.4	1.0	-53.0	-13.0	-40.0	
	36.5MHz)								
MICI C. 18	-28.9	V	3.0	32.6	1.0	-60.5	-13.0	-47.5	
Mia Ch, (8 1.664			3.0	31.5	1.0	-50.7	-13.0	-37.7	
	-20.2	V				7 00 0	-13.0	-49.0	
1.664 2.496 1.664	-20.2 -30.4	H	3.0	32.6	1.0	-62.0			
1.664 2.496	-20.2		3.0 3.0	32.6 31.5	1.0 1.0	-62.0 -54.2	-13.0	-41.2	
1.664 2.496 1.664	-20.2 -30.4 -23.7	H							
1.664 2.496 1.664 2.496	-20.2 -30.4 -23.7	H						<u>-41.2</u> -47.6	
1.664 2.496 1.664 2.496 High Ch, (8 1.680 2.519	-20.2 -30.4 -23.7 44MHz) -29.0 -22.4	H H V V	3.0	31.5 32.6 31.5	1.0 1.0 1.0	-54.2 -60.6 -52.9	-13.0 -13.0 -13.0	41.2 47.6 -39.9	
1.664 2.496 1.664 2.496 High Ch, (8 1.680	-20.2 -30.4 -23.7 44MHz) -29.0	H H V	3.0 3.0	31.5 32.6	1.0 1.0	-54.2 -60.6	-13.0 -13.0	<u>-41.2</u> -47.6	

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9.3.4. LTE BAND 13

QPSK Band 13 (5.0 MHz BANDWIDTH)

Company: Project #: Date: Test Engi Configura Mode:	neer: ition:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE Band	13, 5MHz, QPS	к					
	Chambe	r	Pre-an	nplifer		Filter		Lii	mit
3m	n Chamber D		T145 8449I	В	Fil	ter 1	•	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	79.5 MHz)				<u> </u>				
1.555	-16.9	V	3.0	32.9	1.0	-48.8	-13.0	-35.8	
2.332	-19.0	V	3.0	31.1	1.0	-49.2	-13.0	-36.2	
			· 70	32.9	1.0	-61.7	-13.0	-48.7	
1.555	-29.9	H	3.0			7 50 4	420 7	AE 4	
	-29.9 -28.0	H	3.0	31.1	1.0	-58.1	-13.0	-45.1	
1.555 2.332	-28.0					-58.1	-13.0	45.1	
1.555	-28.0					-58.1 -53.8	-13.0 -13.0	45.1 40.8	
1.555 2.332 Mid Ch, (7	-28.0 82 MHz)	Н	3.0	31.1	1.0				
1.555 2.332 Mid Ch, (7 1.560 2.340 1.560	-28.0 82 MHz) -21.9 -25.5 -30.0	H V V H	3.0 3.0 3.0 3.0 3.0	31.1 32.9 31.1 32.9	1.0 1.0 1.0 1.0	-53.8 -55.6 -61.8	-13.0 -13.0 -13.0	-40.8 -42.6 -48.8	
1.555 2.332 Mid Ch, (7 1.560 2.340	-28.0 82 MHz) -21.9 -25.5	H V V	3.0 3.0 3.0	31.1 32.9 31.1	1.0 1.0 1.0	-53.8 -55.6	-13.0 -13.0	_40.8 _42.6	
1.555 2.332 Mid Ch, (7) 1.560 2.340 1.560 2.340	-28.0 82 MHz) -21.9 -25.5 -30.0 -28.9	H V V H	3.0 3.0 3.0 3.0 3.0	31.1 32.9 31.1 32.9	1.0 1.0 1.0 1.0	-53.8 -55.6 -61.8	-13.0 -13.0 -13.0	-40.8 -42.6 -48.8	
1.555 2.332 Mid Ch, (7 1.560 2.340 1.560 2.340 High Ch, (7	-28.0 82 MHz) -21.9 -25.5 -30.0 -28.9 84.5 MHz)	H V V H H	3.0 3.0 3.0 3.0 3.0	31.1 32.9 31.1 32.9 31.1	1.0 1.0 1.0 1.0 1.0	-53.8 -55.6 -61.8 -59.0	-13.0 -13.0 -13.0 -13.0	40.8 42.6 48.8 46.0	
1.555 2.332 Mid Ch, (7 1.560 2.340 1.560 2.340 High Ch, (7 1.565	-28.0 82 MHz) -21.9 -25.5 -30.0 -28.9 84.5 MHz) -18.6	H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	31.1 32.9 31.1 32.9 31.1 32.9 31.1 32.9	1.0 1.0 1.0 1.0 1.0	-53.8 -55.6 -61.8 -59.0 -50.5	-13.0 -13.0 -13.0 -13.0 -13.0	40.8 42.6 48.8 46.0	
1.555 2.332 Mid Ch, (7 1.560 2.340 1.560 2.340 High Ch, (7	-28.0 82 MHz) -21.9 -25.5 -30.0 -28.9 84.5 MHz)	H V V H H	3.0 3.0 3.0 3.0 3.0	31.1 32.9 31.1 32.9 31.1	1.0 1.0 1.0 1.0 1.0	-53.8 -55.6 -61.8 -59.0	-13.0 -13.0 -13.0 -13.0	40.8 42.6 48.8 46.0	

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16QAM Band 13 (5.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur: Mode:	ineer: ation:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE Band	13, 5MHz, 16Q/	M					
	Chambe	r	Pre-an	nplifer		Filter		Lii	mit
3r	n Chamber D	• •	T145 8449	3 🗸	Fil	ter 1	•	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		(1/7)	(11)	(UD)	(ub)		(ubiii)		
1.555	-17.9	٧	3.0	32.9	1.0	-49.8	-13.0	-36.8	
2.332	-20.0	V	3.0	31.1	1.0	-50.2	-13.0	-37.2	
1.555	-30.7	Н	3.0	32.9	1.0	-62.5	-13.0	-49.5	
2.332	-28.9	Н	3.0	31.1	1.0	-59.0	-13.0	-46.0	
Mid Ch, (7	82 MHz)								
1.560	-22.9	V	3.0	32.9	1.0	-54.8	-13.0	-41.8	
2.340	-26.4	V	3.0	31.1	1.0	-56.5	-13.0	-43.5	
1.560	-31.0	H	3.0	32.9	1.0	-62.8	-13.0	-49.8	
2.340	-29.8	Н	3.0	31.1	1.0	-59.9	-13.0	-46.9	
	/84.5 MHz)								
High Ch, (V	3.0	32.9	1.0	-51.6	-13.0	-38.6	
1.565	-19.7				1.0	-50.4	-13.0	-37.4	
1.565 2.347	-19.7 -20.3	V	3.0	31.1					
1.565	-19.7		3.0 3.0 3.0	31.1 32.9 31.1	1.0	-62.8 -60.0	-13.0 -13.0	-49.8 -47.0	

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LTE QPSK Radiated Measurement in 1559-1610MHz Band

Company:			Co Above 1GH	mpliance Co Iz High Fred				rement	
Project #: Date: Test Engine Configuratio Mode:	eer: on:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band 5MHz, QPSK	13,						
	Chamber	r	Pre-an	nplifer		Filter		Li	mit
3m (Chamber D	-	T145 8449	B 🗸	F	ilter 1	•	Part 27	•
f S GHz	G reading (dBm)		Distance	Preamp (dB)	Filter	ERP	Limit	Delta (dB)	Notes
Low Ch, (779		(H/V)	(m)	(ab)	(dB)	(dBm)	(dBm)	(QD)	
1.555	.5 MHZ) -17.0	V	3.0	32.9	1.0	-48.8	-40.0	-8.8	
1.555	-29.9	Ĥ	3.0	32.9	1.0	-61.7	-40.0	-21.7	
Mid Ch, (782		V	2.0	22.0	4.0	F2 0	40.0	12.0	
1.560	-21.9 -30.0	v H	3.0 3.0	32.9 32.9	1.0 1.0	-53.8 -61.9	-40.0 -40.0	-13.8 -21.9	
1.500	-30.0	11	J.V	JL.J	1.0	-01.3	-40.0	-21.3	
High Ch, (784	.5 MHz)			•					
1.564	-18.6	V	3.0	32.9	1.0	-50.5	-40.0	-10.5	
1.564	-30.0	Н	3.0	32.9	1.0	-61.9	-40.0	-21.9	

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LTE 16QAM Radiated Measurement in 1559-1610MHz Band

			Co Above 1GH	mpliance Co Iz High Fred				ement	
Company: Project #: Date: Test Engi Configura Mode:	ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band 5MHz, 16QAM							
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
3n	n Chamber D	-	T145 8449	B 🔽	Fi	lter 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)	
GHZ	((100)							
Low Ch, (7		(1110)		(/					
Low Ch, (7 1.555	79.5 MHz) -17.8	V	3.0	32.9	1.0	-49.7	-40.0	-9.7	
Low Ch, (7 1.555	79.5 MHz)					-49.7 -62.6		-9.7 -22.6	
Low Ch, (7 1.555 1.555	79.5 MHz) -17.8 -30.8	V	3.0	32.9	1.0		-40.0		
Low Ch, (7 1.555 1.555 Mid Ch, (7	79.5 MHz) -17.8 -30.8 82 MHz)	V H	3.0 3.0	32.9 32.9	1.0 1.0	-62.6	-40.0 -40.0	-22.6	
Low Ch, (7 1.555 1.555 Mid Ch, (7 1.560	79.5 MHz) -17.8 -30.8 82 MHz) -22.8	V H V	3.0 3.0 3.0	32.9 32.9 32.9 32.9	1.0 1.0 1.0	-62.6 -54.7	_40.0 _40.0 _40.0	-22.6 -14.7	
Low Ch, (7 1.555 1.555 Mid Ch, (7	79.5 MHz) -17.8 -30.8 82 MHz)	V H	3.0 3.0	32.9 32.9	1.0 1.0	-62.6	-40.0 -40.0	-22.6	
Low Ch, (7 1.555 1.555 Mid Ch, (7 1.560 1.560	79.5 MHz) -17.8 -30.8 82 MHz) -22.8 -31.0	V H V	3.0 3.0 3.0	32.9 32.9 32.9 32.9	1.0 1.0 1.0	-62.6 -54.7	_40.0 _40.0 _40.0	-22.6 -14.7	
Low Ch, (7 1.555 1.555 Mid Ch, (7 1.560	79.5 MHz) -17.8 -30.8 82 MHz) -22.8 -31.0	V H V	3.0 3.0 3.0	32.9 32.9 32.9 32.9	1.0 1.0 1.0	-62.6 -54.7	_40.0 _40.0 _40.0	-22.6 -14.7	

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QPSK/16QAM Band 13 (10.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE band	13, 10MHz, QPS	SK/16QAM					
	Chambe	r	Pre-an	nplifer		Filter		Lim	nit
3r	n Chamber D	•	T145 8449	З –	Fil	ter 1	-	Part 27	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
QPSK	(ubiii)	(1.0.0)	()	(42)	(42)	(abiii)	(abiii)	(42)	
Mid Ch, (7	82 MHz)								
.555	-17.4	V	3.0	32.9	1.0	-49.3	-13.0	-36.3	
2.333	-19.6	V	3.0	31.1	1.0	-49.8	-13.0	-36.8	
1.555	-27.7	H	3.0	32.9	1.0	-59.5	-13.0	-46.5	
2.333	-27.3	Н	3.0	31.1	1.0	-57.4	-13.0	-44.4	
16QAM									
Mid Ch, (7	-18.3	V	3.0	32.9	1.0	-50.2	-13.0	-37.2	
Mid Ch, (7 1.555		V	3.0 3.0	31.1	1.0	-55.7	-13.0	-42.7	
Mid Ch, (7 1.555 2.333	-25.5	11	1 10	32.9	1.0 1.0	-60.5	-13.0 -13.0	-47.5 -45.1	
Mid Ch, (7 1.555		H H	3.0	31.1		-58.1			

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LTE QPSK/16QAM Radiated Measurement in 1559-1610MHz Band

2 h h								
Chamber		Pre-an	nplifer		Filter		Lim	it
amber D	-	T145 8449	3 -	Filt	ter 1	•	Part 27	•
		Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	()	()	(/	()	()	(()	
-17.4	V	3.0	32.9	1.0	-49.3	-40.0	-9.3	
-27.7	Η	3.0	32.9	1.0	-59.5	-40.0	-19.5	
) (782 MHz)								
					•			
-18.3	V	3.0	32.9	1.0	-50.2	-13.0	-37.2	
-28.7	Η	3.0	32.9	1.0	-60.5	-13.0	-47.5	
	Fireading A (dBm) (782 MHz) -17.4 -27.7 -17.4 -27.7 -18.3 -18.3 -28.7 -28.7	Freading (dBm) Ant. Pol. (H/V) (782 MHz)	Freading (dBm) Ant. Pol. (H/V) Distance (m) .17.4 V 3.0 .27.7 H 3.0 .17.4 V 3.0 .27.7 H 3.0 .17.4 V 3.0 .27.7 H 3.0 .18.3 V 3.0 .28.7 H 3.0	Greading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) .17.4 V 3.0 32.9 .27.7 H 3.0 32.9 .17.4 V 3.0 32.9 .27.7 H 3.0 32.9 .17.4 V 3.0 32.9 .17.4 V 3.0 32.9 .17.4 V 3.0 32.9 .17.4 V 3.0 32.9 .18.3 V 3.0 32.9	Greading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) Filter (dB) (782 MHz)	Greading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) Filter (dB) ERP (dBm) 17.4 V 3.0 32.9 1.0 49.3 27.7 H 3.0 32.9 1.0 59.5 n, (782 MHz)	Greading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) Filter (dB) ERP (dBm) Limit (dBm) (782 MHz) 3.0 32.9 1.0 49.3 40.0 -17.4 V 3.0 32.9 1.0 49.3 40.0 -27.7 H 3.0 32.9 1.0 -59.5 40.0 -18.3 V 3.0 32.9 1.0 -50.2 -13.0 -18.3 V 3.0 32.9 1.0 -60.5 -13.0	Greading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) Filter (dB) ERP (dBm) Limit (dBm) Delta (dBm) (782 MHz)

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9.3.5. LTE BAND 17

QPSK Band 17 (5.0 MHz BANDWIDTH)

Company: Project #: Date: Test Engin Configura Mode:	neer: tion:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE B17 5	M har QPSK						
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3m	Chamber D		T145 8449	•	Fil	ter 1	•	Part 27	•
f	SG reading		Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz Low Ch, (70	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
1.409	-18.6	V	3.0	33.1	1.0	-50.7	-13.0	-37.7	
2.113	-24.1	v	3.0	31.6	1.0	-54.7	-13.0	-41.7	
1.409	-25.8	Н	3.0	33.1	1.0	-57.9	-13.0	-44.9	
2.113	-28.9	Н	3.0	31.6	1.0	-59.5	-13.0	-46.5	
Mid Ch, (71	-18.8	v	3.0	33.1	1.0	-50.8	-13.0	-37.8	
1 /15	-10.0 -24.1	V	3.0	31.6	1.0	-50.0	-13.0 -13.0	-37.0	
1.415 2 123		-	3.0	33.1	1.0	-57.4	-13.0	-44.4	
2.123		H			•••		¢	-46.1	
2.123 1.415	-25.4 -28.5	H H	3.0	31.6	1.0	-59.1	-13.0	-40.1	
2.123 1.415 2.123	-25.4 -28.5		·	يية	1.0	-59.1	-13.0	-40.1	
2.123 1.415 2.123 High Ch, (7	-25.4 -28.5 13.5MHz)	H	3.0	31.6					
2.123 1.415 2.123 High Ch, (7 1.423	-25.4 -28.5 13.5MHz) -19.9	H V	3.0 3.0	31.6 33.1	1.0	-52.0	-13.0	-39.0	
2.123 1.415 2.123 High Ch, (7 1.423 2.134	-25.4 -28.5 13.5MHz) -19.9 -25.3	H V V	3.0 3.0 3.0	31.6 33.1 31.6	1.0 1.0	-52.0 -55.8	-13.0 -13.0	-39.0 -42.8	
2.123 1.415 2.123 High Ch, (7 1.423	-25.4 -28.5 13.5MHz) -19.9	H V	3.0 3.0	31.6 33.1	1.0	-52.0	-13.0	-39.0	

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16QAM Band 17 (5.0 MHz BANDWIDTH)

Company Project #: Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE B17 5	M har 16QAM						
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3n	n Chamber D	-	T145 8449	В 🕌	Fil	ter 1	-	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		(1.0.4)		(42)	(42)	(42.11)	(abiii)	(42)	
1.409	-19.5	V	3.0	33.1	1.0	-51.6	-13.0	-38.6	
2.113	-25.0	V	3.0	31.6	1.0	-55.6	-13.0	-42.6	
1.409	-26.8	Н	3.0	33.1	1.0	-58.9	-13.0	-45.9	
2.113	-30.0	H	3.0	31.6	1.0	-60.6	-13.0	-47.6	
Mid Ch, (7	'10MHz)								
1.415	-19.7	V	3.0	33.1	1.0	-51.7	-13.0	-38.7	
2.123	-25.0	V	3.0	31.6	1.0	-55.6	-13.0	-42.6	
1.415	-26.4	H	3.0	33.1	1.0	-58.4	-13.0	-45.4	
2.123	-29.5	Н	3.0	31.6	1.0	-60.1	-13.0	_47.1	
	742 5MU~\						•		
High Ch, (i	(13.3MHZ)		3.0	33.1	1.0	-52.9	-13.0	-39.9	
1.423	-20.8	V			1.0	7 50.0	-13.0	-43.9	
1.423 2.134	-20.8 -26.4	V	3.0	31.6	,	-56.9			
1.423	-20.8			31.6 33.1 31.6	1.0	-59.5 -59.5 -60.3	-13.0 -13.0 -13.0	-46.5 -47.3	

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QPSK Band 17 (10.0 MHz BANDWIDTH)

Company: Project #: Date: Test Engi Configura Mode:	neer: ation:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE B17 10	0M har QPSK						
	Chambe	r	Pre-an	nplifer		Filter		Lir	nit
3n	n Chamber D		T145 8449	З	Fil	ter 1	•	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		(10.07	(11)	(48)	(48)		(ubiii)	(40)	
1.413	-18.4	V	3.0	33.1	1.0	-50.5	-13.0	-37.5	
2.119	-23.6	V	3.0	31.6	1.0	-54.2	-13.0	-41.2	
1.413	-25.8	Н	3.0	33.1	1.0	-57.9	-13.0	-44.9	
2.119	-28.8	Н	3.0	31.6	1.0	-59.4	-13.0	-46.4	
111 CL /7	10MHz)								
MIC CN, (7	-18.6	V	3.0	33.1	1.0	-50.7	-13.0	-37.7	
1.412			3.0	31.6	1.0	-54.4	-13.0	-41.4	
1.412 2.117	-23.8	V				-57.5	-13.0	-44.5	
1.412 2.117 1.412	-23.8 -25.4	H	3.0	33.1	1.0				
1.412 2.117	-23.8		3.0 3.0	33.1 31.6	1.0 1.0	-57.5	-13.0	-46.2	
1.412 2.117 1.412	-23.8 -25.4 -28.6	H							
1.412 2.117 1.412 2.117	-23.8 -25.4 -28.6	H H V		31.6 33.1					
1.412 2.117 1.412 2.117 High Ch, (7 1.413 2.120	-23.8 -25.4 -28.6 /11MHz) -19.5 -24.6	H H V V	3.0 3.0 3.0	31.6 33.1 31.6	1.0 1.0 1.0	-59.2 -51.6 -55.2	-13.0 -13.0 -13.0	_46.2 38.6 _42.2	
1.412 2.117 1.412 2.117 High Ch, (7 1.413	-23.8 -25.4 -28.6 11MHz) -19.5	H H V	3.0 3.0	31.6 33.1	1.0 1.0	-59.2 -51.6	-13.0 -13.0	-46.2 -38.6	

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16QAM Band 17 (10.0 MHz BANDWIDTH)

Company	:	Apple							
Project #	:	13U15555							
Date:		09/10/13							
Test Eng	ineer:	M. Hua							
Configura	ation:	EUT only							
Mode:			0M har 16QAM						
	Chambe	r 🔤	Pre-an	nplifer		Filter		Lii	mit
3	n Chamber D		T145 8449	в ↓	Filt	ter 1	-	Part 27	•
			1		I			I	
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)								
1.413	-19.3	V	3.0	33.1	1.0	-51.4	-13.0	-38.4	
2.119	-24.7	V	3.0	31.6	1.0	-55.3	-13.0	-42.3	
1.413	-26.8	Н	3.0	33.1	1.0	-58.9	-13.0	-45.9	
2.119	-29.7	H	3.0	31.6	1.0	-60.3	-13.0	47.3	
	'10MHz)								
Mid Ch, (7		V	3.0	33.1	1.0	-51.7	-13.0	-38.7	
1.412	-19.6	V	-	31.6	1.0	-55.3	-13.0	-42.3	
1.412	-24.7	V	3.0						
1.412 2.117 1.412	-24.7 -26.4	V H	3.0	33.1	1.0	-58.5	-13.0	-45.5	
1.412 2.117 1.412	-24.7	V				-58.5 -60.1	-13.0 -13.0	_45.5 _47.1	
1.412 2.117 1.412 2.117	-24.7 -26.4 -29.5	V H	3.0	33.1	1.0		ģ		
1.412 2.117 1.412 2.117 High Ch, (i	-24.7 -26.4 -29.5	V H	3.0	33.1	1.0		ģ		
1.412 2.117 1.412 2.117 High Ch, (i 1.413	-24.7 -26.4 -29.5 711MHz)	V H H	3.0 3.0	33.1 31.6	1.0 1.0	-60.1	-13.0	47.1	
Mid Ch, (7 1.412 2.117 1.412 2.117 High Ch, (7 1.413 2.120 1.413	-24.7 -26.4 -29.5 //11MHz) -20.5	V H H	3.0 3.0 3.0	33.1 31.6 33.1	1.0 1.0 1.0	-60.1 -52.6	-13.0 -13.0	-47.1 -39.6	

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9.3.6. LTE BAND 25

QPSK Band 25 (1.4 MHz BANDWIDTH)

Company: Project #: Date: Fest Engin Configura Mode:	neer: tion:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE band 2	25, 1.4MHz, QP	SK					
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
3m	Chamber D	•	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
	(()	(,	()	(((()	
Low Ch, (18	350.7 MHz)								
Low Ch, (18 3.701	-27.4	V	3.0	30.2	1.0	-56.6	-13.0	-43.6	
3.701 5.552	-27.4 -32.9	V	3.0	28.4	1.0	-60.2	-13.0	-47.2	
3.701 5.552 3.701	-27.4 -32.9 -27.1	V H	3.0 3.0	28.4 30.2	1.0 1.0	-60.2 -56.3	-13.0 -13.0	-47.2 -43.3	
3.701 5.552	-27.4 -32.9	V	3.0	28.4	1.0	-60.2	-13.0	-47.2	
3.701 5.552 3.701 5.552	-27.4 -32.9 -27.1 -30.7	V H	3.0 3.0	28.4 30.2	1.0 1.0	-60.2 -56.3	-13.0 -13.0	-47.2 -43.3	
3.701 5.552 3.701	-27.4 -32.9 -27.1 -30.7	V H	3.0 3.0	28.4 30.2	1.0 1.0	-60.2 -56.3	-13.0 -13.0	-47.2 -43.3	
3.701 5.552 3.701 5.552 Mid Ch, (18	-27.4 -32.9 -27.1 -30.7 882.5 MHz)	V H H V V	3.0 3.0 3.0	28.4 30.2 28.4	1.0 1.0 1.0	-60.2 -56.3 -58.1	-13.0 -13.0 -13.0	47.2 43.3 45.1	
3.701 5.552 3.701 5.552 Mid Ch, (18 3.765 5.648 3.765	-27.4 -32.9 -27.1 -30.7 82.5 MHz) -26.7 -31.5 -28.0	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.4 30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-60.2 -56.3 -58.1 -55.8 -55.8 -58.8 -57.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.2 43.3 45.1 42.8 45.8 44.1	
3.701 5.552 3.701 5.552 Mid Ch, (18 3.765 5.648	-27.4 -32.9 -27.1 -30.7 382.5 MHz) -26.7 -31.5	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	28.4 30.2 28.4 30.1 28.3	1.0 1.0 1.0 1.0 1.0	-60.2 -56.3 -58.1 -55.8 -55.8 -58.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.2 43.3 45.1 42.8 45.8	
3.701 5.552 3.701 5.552 Mid Ch, (18 3.765 5.648 3.765 5.648	-27.4 -32.9 -27.1 -30.7 382.5 MHz) -26.7 -31.5 -28.0 -30.5	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.4 30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-60.2 -56.3 -58.1 -55.8 -55.8 -58.8 -57.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.2 43.3 45.1 42.8 45.8 44.1	
3.701 5.552 3.701 5.552 Mid Ch, (18 3.765 5.648 3.765	-27.4 -32.9 -27.1 -30.7 382.5 MHz) -26.7 -31.5 -28.0 -30.5	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.4 30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-60.2 -56.3 -58.1 -55.8 -55.8 -58.8 -57.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.2 43.3 45.1 42.8 45.8 44.1	
3.701 5.552 3.701 5.552 Mid Ch, (18 3.765 5.648 3.765 5.648 High Ch, (1 3.829	-27.4 -32.9 -27.1 -30.7 382.5 MHz) -26.7 -31.5 -28.0 -30.5 914.3 MHz)	V H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	28.4 30.2 28.4 30.1 28.3 30.1 28.3 30.1 28.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-60.2 -56.3 -58.1 -55.8 -55.8 -58.8 -57.1 -57.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.2 43.3 45.1 42.8 45.8 44.1 44.8	
3.701 5.552 3.701 5.552 Mid Ch, (18 3.765 5.648 3.765 5.648 High Ch, (1)	-27.4 -32.9 -27.1 -30.7 -26.7 -26.7 -31.5 -28.0 -30.5 -30.5 -31.5 -28.0 -30.5 -27.3	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 3.0	28.4 30.2 28.4 30.1 28.3 30.1 28.3 30.1 28.3 30.1 28.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-60.2 -56.3 -58.1 -55.8 -57.1 -57.8 -57.1 -57.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.2 43.3 45.1 42.8 45.8 44.1 44.8 43.4	

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16QAM Band 25 (1.4 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur Mode:	: ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE band 2	25, 1.4MHz, 160	ΩAM					
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
3r	n Chamber D		T145 8449	В	Fil	lter 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)	NOLES
	1850.7 MHz)	1		<u>,</u>	()			<u>,</u> /	
3.701	-28.2	V	3.0	30.2	1.0	-57.4	-13.0	-44.4	
5.701			7	20 4	1.0	-61.1	-13.0	-48.1	
5.552	-33.7	V	3.0	28.4					
5.552 3.701	-27.9	H	3.0	30.2	1.0	-57.1	-13.0	-44.1	
5.552 3.701	···· 🎃 ······	-							
5.552 3.701 5.552	-27.9 -31.6	H	3.0	30.2	1.0	-57.1	-13.0	-44.1	
5.552 3.701 5.552 Mid Ch, (1	-27.9	H	3.0	30.2	1.0	-57.1	-13.0	-44.1	
5.552 3.701 5.552 Mid Ch, (1 3.765	-27.9 -31.6 1882.5 MHz)	H	3.0 3.0	30.2 28.4	1.0 1.0	-57.1 -59.0	-13.0 -13.0	_44.1 _46.0	
5.552 3.701 5.552	-27.9 -31.6 1882.5 MHz) -27.5 -32.3 -28.9	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-57.1 -59.0 -56.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.1 46.0 43.7 46.6 45.0	
5.552 3.701 5.552 Mid Ch, (1 3.765 5.648 3.765	-27.9 -31.6 1882.5 MHz) -27.5 -32.3	H H V V	3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3	1.0 1.0 1.0 1.0	-57.1 -59.0 -56.7 -59.6	-13.0 -13.0 -13.0 -13.0 -13.0	44.1 -46.0 -43.7 -46.6	
5.552 3.701 5.552 Mid Ch, (1 3.765 5.648 3.765 5.648	27.9 31.6 882.5 MHz) 27.5 32.3 28.9 31.4	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-57.1 -59.0 -56.7 -59.6 -58.0	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.1 46.0 43.7 46.6 45.0	
5.552 3.701 5.552 Mid Ch, (1 3.765 5.648 3.765 5.648 High Ch, (1	27.9 31.6 882.5 MHz) 27.5 32.3 -28.9 31.4 1914.3 MHz)	H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1 28.3	1.0 1.0 1.0 1.0 1.0 1.0	-57.1 -59.0 -56.7 -59.6 -58.0 -58.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	<u>44.1</u> <u>46.0</u> <u>43.7</u> <u>46.6</u> <u>45.0</u> <u>45.7</u>	
5.552 3.701 5.552 Mid Ch, (1 3.765 5.648 3.765 5.648 High Ch, (3.829	27.9 31.6 882.5 MHz) 27.5 32.3 -28.9 31.4 1914.3 MHz) -28.3	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1 28.3 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-57.1 -59.0 -56.7 -59.6 -58.0 -58.7 -58.7 -57.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	<u>44.1</u> <u>46.0</u> <u>43.7</u> <u>46.6</u> <u>45.0</u> <u>45.7</u> <u>44.4</u>	
5.552 3.701 5.552 Mid Ch, (1 3.765 5.648 3.765 5.648	27.9 31.6 882.5 MHz) 27.5 32.3 -28.9 31.4 1914.3 MHz)	H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1 28.3	1.0 1.0 1.0 1.0 1.0 1.0	-57.1 -59.0 -56.7 -59.6 -58.0 -58.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	<u>44.1</u> <u>46.0</u> <u>43.7</u> <u>46.6</u> <u>45.0</u> <u>45.7</u>	

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QPSK Band 25 (3.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE band 2	25, 3MHz, QPSI	<					
Chamber		r	Pre-amplifer			Filter			mit
3m Chamber		•	T145 8449	З	Fil	ter 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)	
Low Ch, (1	851.5 MHz)						. ,		
3.703	-28.0	V	3.0	30.2	1.0	-57.2	-13.0	-44.2	
5.555	31.3	V	3.0	28.4	1.0	-58.7	-13.0	-45.7	
3.703	-27.8	H	3.0	30.2	1.0	-57.0	-13.0	-44.0	
5.555	-29.6	Н	3.0	28.4	1.0	-57.0	-13.0	-44.0	
Mid Ch. (1	882.5 MHz)								
3.765	-26.1	V	3.0	30.1	1.0	-55.3	-13.0	-42.3	
	-32.3	V	3.0	28.3	1.0	-59.6	-13.0	-46.6	
5.646	7	H	3.0	30.1	1.0	-55.4	-13.0	-42.4	
5.646 3.765	-26.3		3.0	28.3	1.0	-57.9	-13.0	-44.9	
5.646	-26.3 -30.6	Н	5.0			:			
5.646 3.765 5.646	-30.6	H	5.0						
5.646 3.765 5.646 High Ch, ('		H V	3.0	30.1	1.0	-55.4	-13.0	-42.4	
5.646 3.765 5.646 High Ch, (3.827	-30.6 1913.5 MHz)			30.1 28.2	1.0	-55.4 -58.9	-13.0 -13.0	-42.4 -45.9	
5.646 3.765 5.646	-30.6 1913.5 MHz) -26.3	v	3.0						

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16QAM Band 25 (3.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configura Mode:	ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 3MHz, 16Q/	AM					
	Chambe	r	Pre-an	nplifer		Filter		Lir	mit
3m Chamber D		• •	T145 8449	В 🚽	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
	851.5 MHz)	(180)	(,	(48)	(00)	(ubiii)	(ubiii)	(40)	
3.703	-29.0	۷	3.0	30.2	1.0	-58.2	-13.0	-45.2	
5.705			· · ·	7	4 0	-59.8	43 0	-46.8	
5.555	-32.4	V	3.0	28.4	1.0		-13.0		
5.555 3.703	-32.4 -29.0	Н	3.0	30.2	1.0	-58.2	-13.0	-45.2	
5.555 3.703	-32.4		· · · · · · · · · · · · · · · · · · ·						
5.555 3.703 5.555	-32.4 -29.0 -30.7	Н	3.0	30.2	1.0	-58.2	-13.0	-45.2	
5.555 3.703 5.555	-32.4 -29.0	Н	3.0	30.2	1.0	-58.2	-13.0	-45.2	
5.555 3.703 5.555 Mid Ch, (1	-32.4 -29.0 -30.7 882.5 MHz)	H H	3.0 3.0	30.2 28.4	1.0 1.0	-58.2 -58.1	-13.0 -13.0	45.2 45.1	
5.555 3.703 5.555 Mid Ch, (1 3.765 5.646 3.765	-32.4 -29.0 -30.7 882.5 MHz) -27.2 -33.3 -27.3	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-58.2 -58.1 -56.4 -60.6 -56.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	45.2 45.1 43.4 47.6 43.4	
5.555 3.703 5.555 Mid Ch, (1 3.765 5.646	-32.4 -29.0 -30.7 882.5 MHz) -27.2 -33.3	H H V V	3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3	1.0 1.0 1.0 1.0	-58.2 -58.1 -56.4 -60.6	-13.0 -13.0 -13.0 -13.0 -13.0	45.2 45.1 43.4 47.6	
5.555 3.703 5.555 Mid Ch, (1 3.765 5.646 3.765 5.646 5.646	-32.4 -29.0 -30.7 882.5 MHz) -27.2 -33.3 -27.3 -31.8	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-58.2 -58.1 -56.4 -60.6 -56.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	45.2 45.1 43.4 47.6 43.4	
5.555 3.703 5.555 Mid Ch, (1 3.765 5.646 3.765 5.646 High Ch, (1	-32.4 -29.0 -30.7 882.5 MHz) -27.2 -33.3 -27.3 -31.8 913.5 MHz)	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1 28.3	1.0 1.0 1.0 1.0 1.0 1.0	-58.2 -58.1 -56.4 -60.6 -56.4 -59.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	45.2 45.1 43.4 47.6 43.4 46.1	
5.555 3.703 5.555 Mid Ch, (1 3.765 5.646 3.765 5.646 5.646	-32.4 -29.0 -30.7 882.5 MHz) -27.2 -33.3 -27.3 -31.8	H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0	-58.2 -58.1 -56.4 -60.6 -56.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	45.2 45.1 43.4 47.6 43.4	
5.555 3.703 5.555 Mid Ch, (1 3.765 5.646 3.765 5.646 High Ch, (* 3.827	-32.4 -29.0 -30.7 882.5 MHz) -27.2 -33.3 -27.3 -31.8 1913.5 MHz) -27.4	H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	30.2 28.4 30.1 28.3 30.1 28.3 30.1 28.3 30.1	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-58.2 -58.1 -56.4 -56.4 -56.4 -59.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	45.2 45.1 43.4 47.6 43.4 46.1 43.5	

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QPSK Band 25 (5.0 MHz BANDWIDTH)

ineer:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 5MHz, QPS	к					
Chamber		Pre-an	Pre-amplifer		Filter			mit
n Chamber D) •	T145 8449	в 🗸	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)	
-28.3		······································	30.2			å		
Que	-	· • • • • • • • • • • • • • • • • • • •		,				
-23.3	п	3.0	20.4	1.0	-30.9	-13.0	-43.3	
	V	3.0	30.1	1.0	-56.6	-13.0	-43.6	
-27.5	v		28.3	1.0	-58.5	-13.0	-45.5	
	V V	3.0	20.3	1.0				
-27.5 -31.2 -27.5	V H	3.0	30.1	1.0	-56.6	-13.0	-43.6	
-27.5 -31.2	V	·•		,	-56.6 -57.2	-13.0 -13.0	-43.6 -44.2	
-27.5 -31.2 -27.5 -29.9	V H	3.0	30.1	1.0		å		
-27.5 -31.2 -27.5	V H	3.0	30.1	1.0		å		
-27.5 -31.2 -27.5 -29.9 1912.5 MHz)	V H H	3.0 3.0	30.1 28.3	1.0 1.0	-57.2	-13.0	-44.2	
-27.5 -31.2 -27.5 -29.9 1912.5 MHz) -27.6	V H H V	3.0 3.0 3.0	30.1 28.3 30.1	1.0 1.0 1.0	-57.2 -56.7	-13.0 -13.0	-44.2 -43.7	
	n Chamber E SG reading (dBm) 1852.5 MHz) -28.3 -30.8 -28.1 -29.5	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band Chamber D TX, LTE Band SG reading Ant. Pol. (dBm) (H/V) 1852.5 MHz) -28.3 V -30.8 V -28.1 H -29.5 H	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, QPS Chamber D ▼ Pre-an T145 84498 SG reading Ant. Pol. Distance (dBm) (H/V) (m) 1852.5 MHz) -28.3 V 3.0 -30.8 V 3.0 -28.1 H 3.0 -29.5 H 3.0	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, QPSK Chamber Pre-amplifer T145 8449B ▼ SG reading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) 1852.5 MHz) - - -28.3 V 3.0 30.2 -30.8 V 3.0 30.2 -28.1 H 3.0 30.2 -29.5 H 3.0 28.4	Image: Section of the section of t	Chamber Pre-amplifer Filter n Chamber v Pre-amplifer Filter n Chamber D v Pre-amplifer Filter SG reading Ant. Pol. Distance Preamplifer Filter SG reading Ant. Pol. Distance Preamplifer Filter 28.3 V 3.0 30.2 1.0 -57.5 -30.8 V 3.0 30.2 1.0 -57.3 -28.1 H 3.0 30.2 1.0 -57.3 -29.5 H 3.0 28.4 1.0 -56.9	Chamber Pre-amplifer n Chamber ▼ TX, LTE Band 25, 5MHz, QPSK Pre-amplifer TX, LTE Band 25, 5MHz, QPSK SG reading Ant. Pol. Distance Preamplifer Filter 1 SG reading Ant. Pol. Distance Preamplifer Filter 1 SG reading Ant. Pol. Distance Preamplifer (dB) (dBm) (Bm) (H/V) (m) (dB) (dB) (dBm) 1852.5 MHz) - - - - 28.3 V 3.0 30.2 1.0 -57.5 -13.0 30.8 V 3.0 30.2 1.0 -57.3 -13.0 -28.1 H 3.0 30.2 1.0 -57.3 -13.0 -29.5 H 3.0 28.4 1.0 -56.9 -13.0	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, QPSK Chamber Pre-amplifer T145 8449B Filter Filter 1 Part 24 SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) (dBm) (dBm) 1852.5 MHz) - - - - 28.3 V 3.0 30.2 1.0 -57.5 -13.0 44.5 30.8 V 3.0 30.2 1.0 -57.3 -13.0 44.3 -28.1 H 3.0 30.2 1.0 -57.3 -13.0 44.3 -29.5 H 3.0 28.4 1.0 -56.9 -13.0 43.9

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16QAM Band 25 (5.0 MHz BANDWIDTH)

ineer: ation:	13U15555 08/21/13 M. Hua EUT only	25, 5MHz, 16Q/	AM					
Chamber		er Pre-am			Filter		Lir	mit
n Chamber D		T145 8449	В	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)	
				,				
				,				
	-							
-29.1 -30.5	H H	3.0 3.0	30.2 28.4	1.0	-58.3	-13.0 -13.0	-45.3 -44.9	
	Π	3.0	20.4	1.0	-31.9	-13.0	-44.3	
-30.3								
-50.5 1882.5 MHz) -28.4	V	3.0	30.1	1.0	-57.6	-13.0	-44.6	
882.5 MHz)	V	3.0 3.0	28.3	1.0 1.0	-57.6 -59.3	-13.0	-44.6 -46.3	
882.5 MHz) -28.4 -32.0 -28.4	V H	3.0 3.0	28.3 30.1	1.0 1.0	-59.3 -57.5	-13.0 -13.0	-46.3 -44.5	
882.5 MHz) -28.4 -32.0	V	3.0	28.3	1.0	-59.3	-13.0	-46.3	
882.5 MHz) -28.4 -32.0 -28.4 -30.8	V H	3.0 3.0	28.3 30.1	1.0 1.0	-59.3 -57.5	-13.0 -13.0	-46.3 -44.5	
882.5 MHz) -28.4 -32.0 -28.4 -30.8 1912.5 MHz)	V H H	3.0 3.0 3.0	28.3 30.1 28.3	1.0 1.0 1.0	-59.3 -57.5 -58.1	-13.0 -13.0 -13.0	46.3 44.5 45.1	
882.5 MHz) -28.4 -32.0 -28.4 -30.8	V H	3.0 3.0	28.3 30.1	1.0 1.0	-59.3 -57.5	-13.0 -13.0	-46.3 -44.5	
882.5 MHz) -28.4 -32.0 -28.4 -30.8 1912.5 MHz) -28.5	V H H	3.0 3.0 3.0 3.0	28.3 30.1 28.3 30.1	1.0 1.0 1.0 1.0	-59.3 -57.5 -58.1 -57.6	-13.0 -13.0 -13.0 -13.0	46.3 44.5 45.1 44.6	
	: ineer: ation: Chambe n Chamber D SG reading	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band Chamber m Chamber D SG reading (dBm) (H/V) 1852.5 MHz) -29.2 V -31.7 V	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, 16Q/ Chamber n Chamber D ▼ SG reading (dBm) (H/V) (m) 1852.5 MHz) -29.2 V 3.0 -31.7 V 3.0	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, 16QAM Chamber D ▼ SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) 1852.5 MHz) -29.2 V 3.0 30.2 -31.7 V 3.0 28.4	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, 16QAM Chamber n Chamber D ▼ SG reading Ant. Pol. Distance Preamp Filter (dBm) (H/V) (m) (dB) (dB) (BS2.5 MHz) - 29.2 V 3.0 30.2 1.0 - 31.7 V 3.0 28.4 1.0	Image: Second system Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, 16QAM Chamber Pre-amplifer T145 8449B ▼ Filter Filter Filter 1 SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (dBm) (H/V) (dBm) (H/V) 29.2 V 3.0 30.2 3.0 28.4	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, 16QAM Chamber D ▼ Pre-amplifer T145 8449B ▼ Filter Filter 1 SG reading Ant. Pol. Distance Preamp Filter (dB) (dBm) (dBm) (dBm) (H/V) (m) (dB) (dB) (dBm) (dBm) 1852.5 MHz) 	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 5MHz, 16QAM Chamber D ▼ Pre-amplifer T145 8449B ▼ Filter I ▼ Limit Filter 1 ▼ Part 24 SG reading Ant. Pol. Distance Preamp Filter (dBm) (H/V) (m) (dB) (dB) (dBm) (dBm) (dB) (dBm) (dB) (dB) (dBm) (dB) (dB) (dB) (852.5 MHz) 29.2 V 3.0 30.2 1.0 -58.4 -13.0 -45.4 -29.2 V 3.0 28.4 1.0 -59.1 -13.0 -46.1

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QPSK Band 25 (10.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur Mode:	ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band :	25, 10MHz, QP3	SK					
Chamber		Pre-amplifer			Filter			nit	
3m Chamber D			T145 8449	В	Filt	ter 1	•	Part 24	•
f	SC roading	Ant. Pol.	Distance	Proome	Filter	EIRP	Limit	Delta	Notes
GHz	SG reading (dBm)	(H/V)	Uistance (m)	Preamp (dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
Low Ch, (1		((/	()		()	()	
3.699	-27.0	V	3.0	30.2	1.0	-56.2	-13.0	-43.2	
5.548	-30.6	V	3.0	28.4	1.0	-58.0	-13.0	-45.0	
3.699	-27.3	H	3.0	30.2	1.0	-56.5	-13.0	-43.5	
5.548	-30.7	H	3.0	28.4	1.0	-58.1	-13.0	_45.1	
Mid Ch. (1	882.5 MHz)								
3.756	-26.4	V	3.0	30.2	1.0	-55.6	-13.0	-42.6	
	-31.3	V	3.0	28.3	1.0	-58.6	-13.0	-45.6	
5.634		Н	3.0	30.2	1.0	-55.6	-13.0	-42.6	
5.634 3.756	-26.5			7 000 7	4.0	-56.1	-13.0	-43.1	
5.634 3.756	-26.5 -28.8	H	3.0	28.3	1.0				
5.634 3.756 5.634	-28.8		3.0	28.3	1.0				
5.634 3.756 5.634 High Ch, (-28.8		3.0 3.0	28.3	1.0	-56.2	-13.0	-43.2	
5.634 3.756 5.634 High Ch, (3.811	-28.8 1910 MHz)	Н						_43.2 _43.0	
	-28.8 1910 MHz) -27.1	H V	3.0	30.1	1.0	-56.2	-13.0		

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16QAM Band 25 (10.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur: Mode:	ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 10MHz, 16G	AM					
Chamber		Pre-amplifer			Filter			mit	
3m Chamber D			T145 8449	В 🔻	Fil	ter 1	•	Part 24	-
f GHz	SG reading		Distance	Preamp	Filter		Limit	Delta	Notes
GHZ Low Ch, (1	(dBm) 855 MHz)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
3.699	-28.0	V	3.0	30.2	1.0	-57.2	-13.0	-44.2	
5.548	-31.6	V	3.0	28.4	1.0	-59.0	-13.0	-46.0	
3.699	-28.3	Н	3.0	30.2	1.0	-57.5	-13.0	-44.5	
5.548	-31.6	H	3.0	28.4	1.0	-59.0	-13.0	-46.0	
Mid Ch. (1	882.5 MHz)								
3.756	-27.3	V	3.0	30.2	1.0	-56.5	-13.0	-43.5	
5.634	-32.5	V	3.0	28.3	1.0	-59.7	-13.0	-46.7	
3.756	-27.5	Н	3.0	30.2	1.0	-56.6	-13.0	-43.6	
5.634	-29.8	H	3.0	28.3	1.0	57.1	-13.0	-44.1	
	910 MHz)								
Hiah Ch. (V	3.0	30.1	1.0	-57.1	-13.0	-44.1	
High Ch, (3.811	-28.0		3.0	28.2	1.0	-56.9	-13.0	-43.9	
	-28.0 -29.7	V	3.0				40.0	-44.6	
3.811		V H	3.0 3.0 3.0	30.1 28.2	1.0	-57.6 -58.1	-13.0 -13.0	-45.1	

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QPSK Band 25 (15.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur Mode:	ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 15MHz, QP	δК					
Chamber		Pre-amplifer			Filter			nit	
3m Chamber		• •	T145 8449	3 🗸	Filt	ter 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)	Notes
	857.5 MHz)	(****/	()	(1	(1		(/		
3.702	-28.6	V	3.0	30.2	1.0	-57.8	-13.0	-44.8	
5.553	-31.8	V	3.0	28.4	1.0	-59.2	-13.0	-46.2	
3.702	-27.2	H	3.0	30.2	1.0	-56.4	-13.0	-43.4	
5.553	31.3	Н	3.0	28.4	1.0	-58.7	-13.0	-45.7	
Mid Ch. (1	882.5 MHz)								
3.753	-27.7	V	3.0	30.2	1.0	-56.8	-13.0	-43.8	
5.629	-31.0	V	3.0	28.3	1.0	-58.3	-13.0	-45.3	
	-27.6	Н	3.0	30.2	1.0	-56.7	-13.0	-43.7	
3.753	-30.3	Н	3.0	28.3	1.0	-57.6	-13.0	-44.6	
3.753 5.629	1								
5.629	1907.5 MHz)						42.0	-43.2	
5.629	1907.5 MHz) -27.1	V	3.0	30.1	1.0	-56.2	-13.0	-43.2	
5.629 High Ch, (V V	3.0 3.0	30.1 28.2	1.0 1.0	-56.2 -59.4	-13.0 -13.0	-45.2	
5.629 High Ch, (3.802	-27.1						å		

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16QAM Band 25 (15.0 MHz BANDWIDTH)

ineer:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 15MHz, 16G	AM					
Chamber		Pre-an	Pre-amplifer		Filter			mit
3m Chamber I		T145 8449	В	Fil	ter 1	•	Part 24	•
SG reading	Ant Pol	Distance	Preamn	Filter	FIRP	l imit	Delta	Notes
(dBm)	(H/V)		(dB)		(dBm)	(dBm)	(dB)	Notes
			. ,	. /		. ,		
-29.5	V	3.0	30.2	1.0	-58.7	-13.0	-45.7	
	V	3.0		1.0	-60.1			
-32.1	П	3.0	20.4	1.0	-၁୨.၁	-13.0	-40.3	
1								
882.5 MHz)					-57.8	-13.0	-44.8	
882.5 MHz) -28.6	V	3.0	30.2	1.0		-13.0		
	V V	3.0 3.0	30.2 28.3	1.0 1.0	-57.0	-13.0	-46.4	
-28.6 -32.1 -28.4	V H	3.0 3.0	28.3 30.2	1.0 1.0	-59.4 -57.5	-13.0 -13.0	-46.4 -44.5	
-28.6 -32.1	V	3.0	28.3	1.0	-59.4	-13.0	-46.4	
-28.6 -32.1 -28.4 -31.2	V H	3.0 3.0	28.3 30.2	1.0 1.0	-59.4 -57.5	-13.0 -13.0	-46.4 -44.5	
-28.6 -32.1 -28.4 -31.2 9907.5 MHz)	V H H	3.0 3.0 3.0	28.3 30.2 28.3	1.0 1.0 1.0	-59.4 -57.5 -58.5	-13.0 -13.0 -13.0	46.4 44.5 45.5	
-28.6 -32.1 -28.4 -31.2 907.5 MHz) -28.0	V H H V	3.0 3.0 3.0 3.0	28.3 30.2 28.3 30.1	1.0 1.0 1.0 1.0	-59.4 -57.5 -58.5 -57.1	-13.0 -13.0 -13.0 -13.0	46.4 44.5 45.5 44.1	
-28.6 -32.1 -28.4 -31.2 9907.5 MHz)	V H H	3.0 3.0 3.0	28.3 30.2 28.3	1.0 1.0 1.0	-59.4 -57.5 -58.5	-13.0 -13.0 -13.0	46.4 44.5 45.5	
	n Chamber D SG reading (dBm) 857.5 MHz)	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band Chamber n Chamber D SG reading Ant. Pol. (dBm) (H/V) 857.5 MHz) -29.5 V -32.7 V -28.1 H	: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 15MHz, 16C Chamber D ▼ SG reading Ant. Pol. Distance (dBm) (H/V) (m) 857.5 MHz) -29.5 V 3.0 -32.7 V 3.0 -28.1 H 3.0	∴ Apple ∴ 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 15MHz, 16QAM Chamber Pre-amplifer T145 8449B ▼ SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) 857.5 MHz) - - -29.5 V 3.0 30.2 -32.7 V 3.0 28.4 -28.1 H 3.0 30.2	: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 15MHz, 16QAM Chamber Pre-amplifer T145 8449B ▼ SG reading Ant. Pol. Distance Preamp Filter (dBm) (H/V) (m) (dB) (dB) 857.5 MHz) - - -29.5 V 3.0 30.2 1.0 -32.7 V 3.0 28.4 1.0 -28.1 H 3.0 30.2 1.0	∴ Apple ∴ 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 15MHz, 16QAM Chamber Pre-amplifer T145 8449B ✓ SG reading Ant. Pol. Distance Preamp Filter EIRP (dBm) (H/V) (m) (dB) (dBm) 857.5 MHz) – – 29.5 V 3.0 30.2 1.0 -58.7 -32.7 V 3.0 30.2 1.0 -57.3	∴ Apple ∴ 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 15MHz, 16QAM Chamber Pre-amplifer T145 8449B Filter Filter 1 Filter SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) (dBm) (dBm) 857.5 MHz) - - - 29.5 V 3.0 30.2 1.0 -58.7 -13.0 -32.7 V 3.0 30.2 1.0 -57.3 -13.0 -28.1 H 3.0 30.2 1.0 -57.3 -13.0	Image: second system Image: second system <t< td=""></t<>

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QPSK Band 25 (20.0 MHz BANDWIDTH)

ineer:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 20MHz, QP	БК					
Chamber		Pre-amplifer			Filter			nit
3m Chamber D		T145 8449	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)	
·····								
-28.0								
··· Que ······		· · · · · · · · · · · · · · · · · · ·		,				
-23.0		5.0	20.4	1.0	-51.0	-13.0	-44.0	
	•					•		
882.5 MHz)			30.2	1.0	-57.6	-13.0	-44.6	
882.5 MHz) -28.5	V	3.0	30.2	1.0				
	V V	3.0 3.0	28.3	1.0	-58.7	-13.0	-45.7	
-28.5 -31.4 -27.8	V H	3.0 3.0	28.3 30.2	1.0 1.0	-56.9	-13.0	-43.9	
-28.5 -31.4	V	3.0	28.3	1.0	·····		••••••••••••••••••••••••••••••••••••••	
-28.5 -31.4 -27.8 -29.5	V H	3.0 3.0	28.3 30.2	1.0 1.0	-56.9	-13.0	-43.9	
-28.5 -31.4 -27.8	V H	3.0 3.0	28.3 30.2	1.0 1.0	-56.9	-13.0	-43.9	
-28.5 -31.4 -27.8 -29.5 1905 MHz)	V H H	3.0 3.0 3.0	28.3 30.2 28.3 30.1	1.0 1.0 1.0	-56.9 -56.8	-13.0 -13.0	_43.9 _43.8	
-28.5 -31.4 -27.8 -29.5 1905 MHz) -26.6	V H H V	3.0 3.0 3.0 3.0	28.3 30.2 28.3	1.0 1.0 1.0	-56.9 -56.8 -55.7	-13.0 -13.0 -13.0	43.9 43.8 42.7	
	n Chamber D SG reading (dBm) 1860 MHz)	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band Chamber M Chamber D SG reading (dBm) (H/V) 860 MHz) -28.0 V -31.2 V -27.8 H	: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, QP3 Chamber Pre-an T145 84498 SG reading Ant. Pol. (dBm) (H/V) 860 MHz) – -28.0 V -27.8 H	: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, QPSK Chamber Pre-amplifer T145 8449B ▼ SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) 1860 MHz) -31.2 V 3.0 30.2 -31.2 V 3.0 30.2	: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, QPSK Chamber Pre-amplifer T145 8449B ▼ SG reading Ant. Pol. (dBm) (H/V) (H/V) (m) (dB) (dB) 860 MHz) - - - -31.2 V 3.0 30.2 -27.8 H	: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, QPSK Chamber Pre-amplifer T145 8449B Filter Filter 1 SG reading Ant. Pol. (dBm) (H/V) (H/V) (m) (dB) (dB) (dBm) (H/V) 28.0 V 3.0 30.2 1.0 -57.2 -31.2 V 3.0 30.2 1.0 -58.6 -27.8 H	∴ Apple ∴ 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, QPSK Chamber Pre-amplifer T145 8449B Filter Filter 1 Filter 1 SG reading Ant. Pol. Distance (dBm) (H/V) (m) (dB) (dB) (dBm) 1860 MHz) - - - - 28.0 V 3.0 30.2 1.0 -57.2 -13.0 -31.2 V 3.0 30.2 1.0 -57.0 -13.0 -27.8 H 3.0 30.2 1.0 -57.0 -13.0	Image: Image

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16QAM Band 25 (20.0 MHz BANDWIDTH)

: ineer: ation:	Apple 13U15555 08/21/13 M. Hua EUT only TX, LTE Band	25, 20MHz, 16Q	AM					
Chamber		Pre-amplifer			Filter			mit
n Chamber D) -	T145 84498	В	Fil	ter 1	•	Part 24	•
SG reading	Ant Pol	Distance	Preamp	Filter	FIRP	l imit	Delta	Notes
(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
1860 MHz)								
-28.9	V	3.0	30.2	1.0	-58.1	-13.0	-45.1	
···· 🏜 ······	_				··· 🏎 ······		••••••••••••••••••••••••••••••••••••••	
-30.3	п	3.0	20.4	1.0	-37.9	-13.0	-44.9	
1882.5 MHz)								
-29.3	V	3.0	30.2	1.0	-58.5	-13.0	-45.5	
-32.2	V	3.0	28.3	1.0	-59.5	-13.0	-46.5	
	Н	3.0	30.2	1.0	-57.8	-13.0	-44.8	
-28.7			28.3	1.0	-57.7	-13.0	-44.7	
-28.7 -30.4	H	3.0	20.3					
-30.4		3.0	20.3					
		3.0 3.0	30.1	1.0	-56.6	-13.0	-43.6	
-30.4 1905 MHz)	Н			1.0 1.0	-56.6 -59.2	-13.0 -13.0	-43.6 -46.2	
-30.4 1905 MHz) -27.5	H V	3.0	30.1					
	Chamber n Chamber I SG reading (dBm) (dBm) (dBm) (dBm) (dBm) (28.9 -32.1 -28.9 -32.1 -28.8 -30.5 (dBm)	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band Chamber n Chamber D SG reading (dBm) (H/V) (B60 MHz) 28.9 V 32.1 V -28.8 H -30.5 H (B82.5 MHz)	r: Apple : 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, 16C Chamber D ▼ Chamber D ▼ SG reading Ant. Pol. Distance (dBm) (H/V) (m) 1860 MHz) -28.9 V 3.0 -32.1 V 3.0 -32.1 V 3.0 -30.5 H 3.0 1882.5 MHz)	X Apple 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, 16QAM Chamber Pre-amplifer TL45 8449B • SG reading (dBm) Ant. Pol. (H/V) Distance (m) Preamp (dB) 1860 MHz) - - - 28.9 V 3.0 30.2 -32.1 V 3.0 28.4 -30.5 H 3.0 28.4 -882.5 MHz) - - - -29.3 V 3.0 30.2	Image: Signature Apple Image: Signature 13U15555 08/21/13 Ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, 16QAM Image: Signature Pre-amplifer T145 8449B Fill SG reading Ant. Pol. (H/V) Distance Preamp (dBm) (H/V) Gastron 1860 MHz) 7 3.0 28.9 V 3.0 30.2 1.0 -28.8 H 3.0 30.2 1.0 -28.8 H 3.0 28.4 1.0 1882.5 MHz) - - - - -29.3 V 3.0 30.2 1.0	X Apple 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, 16QAM Pre-amplifer Filter TX, LTE Band 25, 20MHz, 16QAM Chamber Pre-amplifer T145 8449B Filter SG reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) (dBm) 1860 MHz) 3.0 30.2 1.0 -58.1 -28.9 V 3.0 30.2 1.0 -58.1 -32.1 V 3.0 28.4 1.0 -59.5 -28.8 H 3.0 30.2 1.0 -58.0 -30.5 H 3.0 28.4 1.0 -57.9 1882.5 MHz) - - - - - -29.3 V 3.0 30.2 1.0 -58.5	X Apple 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, 16QAM TX, LTE Band 25, 20MHz, 16QAM Chamber Pre-amplifer Filter T145 8449B Filter 1 SG reading Ant. Pol. Distance Preamplifer (dBm) (H/V) (m) (dB) (dBm) 1860 MHz) 7 3.0 30.2 1.0 -58.1 -13.0 -28.9 V 3.0 30.2 1.0 -58.0 -13.0 -28.8 H 3.0 30.2 1.0 -58.0 -13.0 -30.5 H 3.0 28.4 1.0 -57.9 -13.0 -882.5 MHz) - - - - - -29.3 V 3.0 30.2 1.0 -58.5 -13.0	: 13U15555 08/21/13 ineer: M. Hua ation: EUT only TX, LTE Band 25, 20MHz, 16QAM Chamber D ▼ Pre-amplifer T145 8449B ▼ Filter Limit Part 24 SG reading Ant. Pol. Distance Preamp Filter EIRP Limit Delta (dBm) (dB) (H/V) (m) (dB) (dB) (dBm) (dBm) (dB) (dBm) (H/V) 3.0 30.2 1.0 58.1 13.0 45.1 32.1 V 3.0 28.4 1.0 59.5 13.0 46.5 28.8 H 3.0 30.2 1.0 58.0 13.0 45.0 30.5 H 3.0 28.4 1.0 59.5 13.0 46.5 28.8 H 3.0 30.2 1.0 58.0 13.0 45.0 30.5 H 3.0 28.4 1.0 59.5 13.0 45.0 30.5 H 3.0 28.4 1.0 59.5 13.0 45.0 30.5 H 3.0 28.4 1.0 57.9 13.0 44.9 1882.5 MHz)

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9.3.7. LTE BAND 26

QPSK Band 26 (3.0 MHz BANDWIDTH)

Company Project # Date: Test Eng Configur: Mode:	: ineer: ation:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE Band	26 3MHz QPSK	:					
Chamber		r Pre-amplifer			Filter			mit	
3m Chamber) –	T145 8449	B 🔻	Fil	ter 1	•	Part 22	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8	320.3MHz)								
1.638	-27.5	V	3.0	32.7	1.0	-59.2	-13.0	-46.2	
2.457	-27.2	V	3.0	31.3	1.0	-57.4	-13.0	-44.4	
1.638	-30.1	Н	3.0	32.7	1.0	-61.8	-13.0	-48.8	
2.457	-29.2	H	3.0	31.3	1.0	-59.5	-13.0	-46.5	
Mid Ch, (8	321.3MHz)								
1.640	-28.1	V	3.0	32.7	1.0	-59.8	-13.0	-46.8	
2.460	-27.5	V	3.0	31.3	1.0	-57.8	-13.0	-44.8	
1.640	-30.5	H	3.0	32.7	1.0	-62.2	-13.0	-49.2	
2.460	-29.4	H	3.0	31.3	1.0	-59.7	-13.0	-46.7	
High Ch, (B22.3MHz)								
1.642	-28.0	V	3.0	32.7	1.0	-59.7	-13.0	-46.7	
	-27.5	V	3.0	31.3	1.0	-57.8	-13.0	-44.8	
2.464	-30.9	H	3.0	32.7	1.0	-62.6	-13.0	-49.6	
2.464 1.642 2.464	-29.6	Н	3.0	31.3	1.0	-59.9	-13.0	-46.9	

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16QAM Band 26 (3.0 MHz BANDWIDTH)

Company Project #: Date: Test Engi Configura Mode:	ineer: ation:	Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE Band 2	26 3MHz 16QAI	N					
Chamber		r	Pre-an	nplifer		Filter		Li	mit
Chamb 3m Chamber) –	T145 8449	В	Fil	ter 1	•	Part 22	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
Low Ch, (8		((/	(1		()		
1.638	-28.4	V	3.0	32.7	1.0	-60.1	-13.0	-47.1	
		V	3.0	31.3	1.0	-58.6	-13.0	-45.6	
2.457	-28.3	v							
2.457 1.638	-28.3 -31.2	V H	3.0	32.7	1.0	-62.9	-13.0	-49.9	
1.638		_		32.7 31.3	1.0 1.0	-62.9 -60.4	-13.0 -13.0	_49.9 _47.4	
1.638 2.457	-31.2 -30.1	Н	3.0				å		
1.638 2.457 Mid Ch, (8	-31.2 -30.1	Н	3.0				å		
1.638	-31.2 -30.1 21.3MHz)	H H	3.0 3.0	31.3	1.0	-60.4	-13.0	-47.4	
1.638 2.457 Mid Ch, (8 1.640	-31.2 -30.1 21.3MHz) -29.0	H H V	3.0 3.0 3.0	31.3 32.7	1.0 1.0	-60.4 -60.7	-13.0 -13.0	_47.4 _47.7	
1.638 2.457 Mid Ch, (8 1.640 2.460 1.640	-31.2 -30.1 21.3MHz) -29.0 -28.5	H H V V	3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3	1.0 1.0 1.0	-60.4 -60.7 -58.8	-13.0 -13.0 -13.0	47.4 47.7 45.8	
1.638 2.457 Mid Ch, (8 1.640 2.460 1.640 2.460	-31.2 -30.1 21.3MHz) -29.0 -28.5 -31.5 -30.2	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7	1.0 1.0 1.0 1.0	-60.4 -60.7 -58.8 -63.1	-13.0 -13.0 -13.0 -13.0	47.4 47.7 45.8 -50.1	
1.638 2.457 Mid Ch, (8 1.640 2.460 1.640 2.460 High Ch, (8	-31.2 -30.1 21.3MHz) -29.0 -28.5 -31.5 -30.2 322.3MHz)	H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7 31.3	1.0 1.0 1.0 1.0 1.0	-60.4 -60.7 -58.8 -63.1 -60.5	-13.0 -13.0 -13.0 -13.0 -13.0	47.4 47.7 45.8 -50.1 47.5	
1.638 2.457 Mid Ch, (8 1.640 2.460 1.640 2.460	-31.2 -30.1 21.3MHz) -29.0 -28.5 -31.5 -30.2 322.3MHz) -28.9	H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7 31.3 32.7 32.7	1.0 1.0 1.0 1.0 1.0	-60.4 -60.7 -58.8 -63.1 -60.5 -60.6	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	47.4 47.7 45.8 -50.1	
1.638 2.457 Mid Ch, (8 1.640 2.460 1.640 2.460 High Ch, (8 1.642	-31.2 -30.1 21.3MHz) -29.0 -28.5 -31.5 -30.2 322.3MHz)	H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7 31.3	1.0 1.0 1.0 1.0 1.0	-60.4 -60.7 -58.8 -63.1 -60.5	-13.0 -13.0 -13.0 -13.0 -13.0	47.4 47.7 45.8 -50.1 47.5 47.6	

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QPSK Band 26 (5.0 MHz BANDWIDTH)

Company:		Apple								
Project #:		13U15555								
Date:		09/10/13								
Test Engineer: Configuration:		M. Hua								
		EUT only								
Mode:			26 5MHz QPSK							
moue.		TA, LTE Danu A								
	Chamber		Pre-amplifer		Filter			Limit		
30	3m Chamber D 👻		T145 84498	в 🗸	Fil	ter 1	-	Part 22	•	
			ļ							
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes	
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
	10 0MU-1									
Low Ch, (8	10.01/11/2)									
	-27.7	۷	3.0	32.7	1.0	-59.4	-13.0	-46.4		
1.633		V V	3.0 3.0	32.7 31.3	1.0 1.0	-57.6	-13.0 -13.0	-46.4 -44.6		
1.633 2.450 1.633	-27.7 -27.4 -30.2	V H	3.0 3.0	31.3 32.7	1.0 1.0	-57.6 -61.9	-13.0 -13.0	-44.6 -48.9		
1.633 2.450 1.633	-27.7 -27.4	V	3.0	31.3	1.0	-57.6	-13.0	-44.6		
1.633 2.450 1.633 2.450	-27.7 -27.4 -30.2 -29.0	V H	3.0 3.0	31.3 32.7	1.0 1.0	-57.6 -61.9	-13.0 -13.0	-44.6 -48.9		
1.633 2.450 1.633 2.450 Mid Ch, (8	-27.7 -27.4 -30.2 -29.0 21.3MHz)	V H H	3.0 3.0 3.0	31.3 32.7 31.3	1.0 1.0 1.0	-57.6 -61.9 -59.2	-13.0 -13.0 -13.0	44.6 48.9 46.2		
Low Ch, (8 1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457	-27.7 -27.4 -30.2 -29.0 21.3MHz) -28.3	V H	3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7	1.0 1.0 1.0	-57.6 -61.9 -59.2 -60.0	-13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2 47.0		
1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457	-27.7 -27.4 -30.2 -29.0 21.3MHz)	V H H	3.0 3.0 3.0	31.3 32.7 31.3	1.0 1.0 1.0	-57.6 -61.9 -59.2	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2		
1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457 1.638	-27.7 -27.4 -30.2 -29.0 21.3MHz) -28.3 -27.7	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7 32.7 31.3	1.0 1.0 1.0 1.0 1.0	-57.6 -61.9 -59.2 -60.0 -58.0	-13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2 47.0 45.0		
1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457 1.638 2.457 2.457	-27.7 -27.4 -30.2 -29.0 21.3MHz) -28.3 -27.7 -30.6 -29.1	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	31.3 32.7 31.3 32.7 31.3 32.7 31.3 32.7	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-57.6 -61.9 -59.2 -60.0 -58.0 -62.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2 47.0 45.0 49.3		
1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457 1.638 2.457 High Ch, (8	-27.7 -27.4 -30.2 -29.0 21.3MHz) -28.3 -27.7 -30.6 -29.1 223.8MHz)	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	31.3 32.7 31.3 32.7 31.3 32.7 31.3 32.7 31.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-57.6 -61.9 -59.2 -60.0 -58.0 -62.3 -59.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2 47.0 45.0 49.3 46.4		
1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457 1.638 2.457 High Ch, (8 1.643	-27.7 -27.4 -30.2 -29.0 21.3MHz) -28.3 -27.7 -30.6 -29.1 -28.1	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 3.0	31.3 32.7 31.3 32.7 31.3 32.7 31.3 32.7 31.3 32.7 31.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-57.6 -61.9 -59.2 -60.0 -58.0 -58.0 -59.4 -59.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2 47.0 45.0 49.3 46.4 46.8		
1.633 2.450 1.633 2.450 Mid Ch, (8 1.638 2.457 1.638 2.457 High Ch, (8	-27.7 -27.4 -30.2 -29.0 21.3MHz) -28.3 -27.7 -30.6 -29.1 223.8MHz)	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	31.3 32.7 31.3 32.7 31.3 32.7 31.3 32.7 31.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-57.6 -61.9 -59.2 -60.0 -58.0 -62.3 -59.4	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	44.6 48.9 46.2 47.0 45.0 49.3 46.4		

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16QAM Band 26 (5.0 MHz BANDWIDTH)

Project #: 13U1 Date: 09/10 Test Engineer: M. H Configuration: EUT		Apple 13U15555 09/10/13 M. Hua EUT only TX, LTE Band	9/10/13 1. Hua								
	Chamber		Pre-amplifer			Filter	Limit				
3m Chamber D 👻			T145 8449B 🗸		Filter 1 🗸			Part 22 🗸			
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes		
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)			
Low Ch, (,						
1.633	-28.6	V	3.0	32.7	1.0	-60.3	-13.0	-47.3			
2.450	-28.4	V	3.0	31.3	1.0	-58.6	-13.0	-45.6			
1.633	_31.1	H	3.0	32.7	1.0	-62.8	-13.0	-49.8			
2.450	-29.8	H	3.0	31.3	1.0	-60.1	-13.0	47.1			
Mid Ch, (221 3MH-7)										
1.638	-29.2	V	3.0	32.7	1.0	-60.9	-13.0	-47.9			
2.457	-23.2	v	3.0	31.3	1.0	-58.7	-13.0	45.7			
1.638	-20.4	Н	3.0	32.7	1.0	-63.2	-13.0	-50.2			
	-30.1	H	3.0	31.3	1.0	-60.3	-13.0	-47.3			
2.437											
	823 8MH-1			• •			•				
2.457 High Ch, (023.011112	V	3.0	32.7	1.0	-60.9	-13.0	-47.9			
	-29.2	V		7	1.0	-58.4	-13.0	-45.4			
High Ch, (V	3.0	31.3							
High Ch, (1.643	-29.2	-	3.0 3.0	31.3 32.7 31.3	1.0	-63.3	-13.0 -13.0	-50.3			

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