16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	22.6	V	1.15	9.34	30.81	33.0	-2.2	
2.504	21.9	H	1.15	9.34	30.08	33.0	-2.9	
Mid Ch								
2.593	21.1	V	1.16	9.47	29.40	33.0	-3.6	
2.593	21.5	H	1.16	9.47	29.83	33.0	-3.2	
High Ch								
2.683	18.6	V	1.17	9.76	27.20	33.0	-5.8	
2.683	19.8	H	1.17	9.76	28.38	33.0	-4.6	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	23.5	V	1.15	9.34	31.67	33.0	-1.3	
2.506	22.9	H	1.15	9.34	31.14	33.0	-1.9	
Mid Ch								
2.593	21.3	V	1.16	9.47	29.63	33.0	-3.4	
2.593	22.5	H	1.16	9.47	30.81	33.0	-2.2	
High Ch								
2.680	20.1	V	1.17	9.76	28.73	33.0	-4.3	
2.680	21.1	H	1.17	9.76	29.64	33.0	-3.4	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	22.5	V	1.15	9.34	30.72	33.0	-2.3	
2.506	22.1	H	1.15	9.34	30.26	33.0	-2.7	
Mid Ch								
2.593	20.7	V	1.16	9.47	29.04	33.0	-4.0	
2.593	21.6	H	1.16	9.47	29.94	33.0	-3.1	
High Ch								
2.680	19.3	V	1.17	9.76	27.93	33.0	-5.1	
2.680	20.5	H	1.17	9.76	29.05	33.0	-4.0	

Rev. 01.05.16

10.2. RADIATED POWER (ERP & EIRP), ANTENNA D

EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	1850.7	**23.39**	218.27
		1880.0	22.10	162.18
		1909.3	21.38	137.40
1.4MHz Band 16QAM	1/0	1850.7	**22.12**	162.93
		1880.0	20.40	109.65
		1909.3	20.44	110.66

EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0MHz Band QPSK	1/0	1851.5	**23.59**	228.56
		1880.0	22.38	172.98
		1908.5	22.16	164.44
3.0MHz Band 16QAM	1/0	1851.5	**22.96**	197.70
		1880.0	21.57	143.55
		1908.5	21.26	133.66

EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0MHz Band QPSK	1/0	1852.5	**23.80**	239.88
		1880.0	22.33	171.00
		1907.5	22.16	164.44
5.0MHz Band 16QAM	1/0	1852.5	**22.92**	195.88
		1880.0	21.63	145.55
		1907.5	21.38	137.40

EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0MHz Band QPSK	1/0	1855.0	**23.74**	236.59
		1880.0	22.65	184.08
		1905.0	22.79	190.11
10.0MHz Band 16QAM	1/0	1855.0	**23.06**	202.30
		1880.0	21.77	150.31
		1905.0	22.03	159.59

EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15MHz Band QPSK	1/0	1857.5	**23.33**	215.28
		1880.0	22.40	173.78
		1902.5	22.84	192.31
15MHz Band 16QAM	1/0	1857.5	**22.50**	177.83
		1880.0	21.76	149.97
		1902.5	22.08	161.44

EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHz Band QPSK	1/0	1860.0	**23.61**	229.61
		1880.0	22.50	177.83
		1900.0	22.95	197.24
20MHz Band 16QAM	1/0	1860.0	**22.84**	192.31
		1880.0	21.78	150.66
		1900.0	21.64	145.88

EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1710.7	**22.46**	176.20
		1732.5	21.58	143.88
		1754.3	21.20	131.83
1.4 MHZ BAND 16QAM	1/0	1710.7	**21.06**	127.64
		1732.5	20.17	103.99
		1754.3	20.15	103.51

EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	1711.5	**23.06**	202.30
		1732.5	21.95	156.68
		1753.5	21.78	150.66
3.0 MHZ BAND 16QAM	1/0	1711.5	**22.24**	167.49
		1732.5	21.05	127.35
		1753.5	20.75	118.85

EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1712.5	**23.03**	200.91
		1732.5	21.91	155.24
		1752.5	21.85	153.11
5.0 MHZ BAND 16QAM	1/0	1712.5	**22.42**	174.58
		1732.5	21.24	133.05
		1752.5	21.16	130.62

EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	1715.0	**23.37**	217.27
		1732.5	21.78	150.66
		1750.0	22.24	167.49
10.0 MHZ BAND 16QAM	1/0	1715.0	**22.59**	181.55
		1732.5	20.88	122.46
		1750.0	21.12	129.42

EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	1/0	1717.5	**23.45**	221.31
		1732.5	21.38	137.40
		1747.5	22.01	158.85
15.0 MHZ BAND 16QAM	1/0	1717.5	**22.39**	173.38
		1732.5	20.68	116.95
		1747.5	21.22	132.43

EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	1/0	1720.0	**22.92**	195.88
		1732.5	21.48	140.60
		1745.0	21.75	149.62
20.0 MHZ BAND 16QAM	1/0	1720.0	**21.99**	158.12
		1732.5	20.50	112.20
		1745.0	21.24	133.05

ERP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	824.7	**18.85**	76.74
		836.5	17.84	60.81
		848.3	**18.85**	76.74
1.4MHz Band 16QAM	1/0	824.7	18.13	65.01
		836.5	17.26	53.21
		848.3	**18.32**	67.92

ERP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	825.5	**18.90**	77.62
		836.5	17.83	60.67
		847.5	18.71	74.30
3.0 MHZ BAND 16QAM	1/0	825.5	18.16	65.46
		836.5	17.19	52.36
		847.5	**18.29**	67.45

ERP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
5MHz Band QPSK	1/0	826.5	**19.12**	81.66
		836.5	18.14	65.16
		846.5	18.53	71.29
5MHz Band 16QAM	1/0	826.5	**18.02**	63.39
		836.5	17.44	55.46
		846.5	17.77	59.84

ERP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	829.0	**18.94**	78.34
		836.5	18.19	65.92
		844.0	18.76	75.16
10.0 MHZ BAND 16QAM	1/0	829.0	**18.13**	65.01
		836.5	17.41	55.08
		844.0	17.57	57.15

EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2502.5	**29.83**	961.61
		2535.0	29.16	824.14
		2567.5	29.00	794.33
5.0 MHZ BAND 16QAM	25/0	2502.5	**28.82**	762.08
		2535.0	28.31	677.64
		2567.5	27.99	629.51

EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2505.0	**29.70**	933.25
		2535.0	29.18	827.94
		2565.0	28.92	779.83
10.0 MHZ BAND 16QAM	50/0	2505.0	**28.94**	783.43
		2535.0	28.13	650.13
		2565.0	27.98	628.06

EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2507.5	**29.93**	984.01
		2535.0	29.35	860.99
		2562.5	28.92	779.83
15.0 MHZ BAND 16QAM	75/0	2507.5	**29.04**	801.68
		2535.0	28.13	650.13
		2562.5	27.80	602.56

EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2510.0	**30.07**	1016.25
		2535.0	29.30	851.14
		2560.0	28.93	781.63
20.0 MHZ BAND 16QAM	100/0	2510.0	**29.17**	826.04
		2535.0	28.36	685.49
		2560.0	27.95	623.73

ERP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	699.7	18.13	65.01
		707.5	**19.33**	85.70
		715.3	18.87	77.09
1.4MHz Band 16QAM	1/0	699.7	17.15	51.88
		707.5	**18.18**	65.77
		715.3	18.11	64.71

ERP POWER FOR LTE BAND 12 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	700.5	18.09	64.42
		707.5	18.74	74.82
		714.5	**18.85**	76.74
3.0 MHZ BAND 16QAM	1/0	700.5	17.08	51.05
		707.5	**18.17**	65.61
		714.5	18.07	64.12

ERP POWER FOR LTE BAND 12 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
5MHz Band QPSK	1/0	701.5	18.04	63.68
		707.5	18.99	79.25
		713.5	**19.21**	83.37
5MHz Band 16QAM	1/0	701.5	17.43	55.34
		707.5	**18.40**	69.18
		713.5	18.28	67.30

ERP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	704.0	18.01	63.24
		707.5	18.67	73.62
		711.0	**18.87**	77.09
10.0 MHZ BAND 16QAM	1/0	704.0	17.21	52.60
		707.5	18.01	63.24
		711.0	**18.09**	64.42

ERP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	779.5	19.47	88.51
		782.0	**19.67**	92.68
		784.5	19.28	84.72
5.0 MHZ BAND 16QAM	1/0	779.5	**18.88**	77.27
		782.0	18.87	77.09
		784.5	18.12	64.86

ERP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10 MHZ BAND QPSK	1/0	782.0	**19.44**	87.90
10 MHz BAND 16QAM	1/0		**19.03**	79.98

ERP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5MHz Band QPSK	1/0	706.5	18.92	77.98
		710.0	**19.13**	81.85
		713.5	19.04	80.17
5MHz Band 16QAM	1/0	706.5	**18.34**	68.23
		710.0	18.26	66.99
		713.5	18.01	63.24

EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	710.0	**18.95**	78.52
10.0 MHZ BAND 16QAM		710.0	**18.40**	69.18

EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1850.7	**24.51**	282.49
		1882.5	22.49	177.42
		1914.3	22.65	184.08
1.4 MHZ BAND 16QAM	1/0	1850.7	**23.55**	226.46
		1882.5	21.44	139.32
		1914.3	21.58	143.88

EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	1851.5	**24.22**	264.24
		1882.5	22.49	177.42
		1913.5	22.85	192.75
3.0 MHZ BAND 16QAM	1/0	1851.5	**23.06**	202.30
		1882.5	21.72	148.59
		1913.5	21.79	151.01

EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1852.5	**24.08**	255.86
		1882.5	22.92	195.88
		1912.5	22.84	192.31
5.0 MHZ BAND 16QAM	1/0	1852.5	**22.96**	197.70
		1882.5	21.84	152.76
		1912.5	22.04	159.96

EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	1855.0	**24.57**	286.42
		1882.5	23.10	204.17
		1910.0	23.03	200.91
10.0 MHZ BAND 16QAM	1/0	1855.0	**23.36**	216.77
		1882.5	22.16	164.44
		1910.0	21.92	155.60

EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	1/0	1857.5	**24.46**	279.25
		1882.5	22.88	194.09
		1907.5	22.82	191.43
15.0 MHZ BAND 16QAM	1/0	1857.5	**23.56**	226.99
		1882.5	22.25	167.88
		1907.5	21.66	146.55

EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	1/0	1860.0	**24.01**	251.77
		1882.5	22.97	198.15
		1905.0	22.79	190.11
20.0 MHZ BAND 16QAM	1/0	1860.0	**23.08**	203.24
		1882.5	22.30	169.82
		1905.0	21.76	149.97

ERP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	814.7	**20.58**	114.29
		819.0	20.32	107.65
		823.3	19.84	96.38
1.4 MHZ BAND 16QAM	1/0	814.7	**19.58**	90.78
		819.0	18.30	67.61
		823.3	18.80	75.86

ERP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	815.5	**20.64**	115.88
		819.0	20.57	114.02
		822.5	20.20	104.71
3.0 MHZ BAND 16QAM	1/0	815.5	**19.93**	98.40
		819.0	19.59	90.99
		822.5	19.50	89.13

ERP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	816.5	**20.96**	124.74
		819.0	20.47	111.43
		821.5	20.18	104.23
5.0 MHZ BAND 16QAM	1/0	816.5	19.86	96.83
		819.0	19.92	98.17
		821.5	**20.04**	100.93

ERP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	819.0	**20.69**	117.22
10.0 MHZ BAND 16QAM	1/0	819.0	**19.89**	97.50

ERP POWER FOR LTE BAND 27 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	814.7	19.14	82.04
		819.0	19.18	82.79
		823.3	**19.50**	89.13
1.4 MHZ BAND 16QAM	1/0	814.7	18.34	68.23
		819.0	18.24	66.68
		823.3	**18.70**	74.13

ERP POWER FOR LTE BAND 27 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	815.5	**19.14**	82.04
		819.0	18.78	75.51
		822.5	19.10	81.28
3.0 MHZ BAND 16QAM	1/0	815.5	**18.34**	68.23
		819.0	17.98	62.81
		822.5	18.30	67.61

ERP POWER FOR LTE BAND 27 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	816.5	19.14	82.04
		819.0	**19.28**	84.72
		821.5	19.10	81.28
5.0 MHZ BAND 16QAM	1/0	816.5	18.19	65.92
		819.0	**18.33**	68.08
		821.5	18.25	66.83

ERP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	819.0	**19.08**	80.91
10.0 MHZ BAND 16QAM	1/0	819.0	**18.13**	65.01

EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5MHz Band QPSK	1/0	2307.5	**19.18**	82.79
		2310.0	18.86	76.91
		2312.5	19.14	82.04
5MHz Band 16QAM	1/0	2307.5	**18.64**	73.11
		2310.0	18.07	64.12
		2312.5	18.33	68.08

EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	2310.0	**18.70**	74.13
10.0 MHZ BAND 16QAM		2310.0	**18.16**	65.46

EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2498.5	**29.27**	845.28
		2593.0	27.06	508.16
		2687.5	25.41	347.54
5.0 MHZ BAND 16QAM	25/0	2498.5	**28.38**	688.65
		2593.0	26.04	401.79
		2687.5	24.54	284.45

EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2501.0	**29.81**	957.19
		2593.0	27.35	543.25
		2685.0	26.06	403.65
10.0 MHZ BAND 16QAM	50/0	2501.0	**28.98**	790.68
		2593.0	26.38	434.51
		2685.0	25.08	322.11

EIRP POWER FOR LTE BAND 41(15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2503.5	**30.07**	1016.25
		2593.0	28.35	683.91
		2682.5	26.66	463.45
15.0 MHZ BAND 16QAM	75/0	2503.5	**29.03**	799.83
		2593.0	27.39	548.28
		2682.5	25.44	349.95

EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2506.0	**30.48**	1116.86
		2593.0	28.86	769.13
		2680.0	26.74	472.06
20.0 MHZ BAND 16QAM	100/0	2506.0	**29.36**	862.98
		2593.0	27.98	628.06
		2680.0	27.81	603.95

10.2.1. LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

High Frequency Fundamental Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	16.3	V	0.98	8.05	23.39	33.0	-9.6	
1.851	13.6	H	0.98	8.05	20.72	33.0	-12.3	
Mid Ch								
1.880	15.1	V	0.98	8.03	22.10	33.0	-10.9	
1.880	12.8	H	0.98	8.03	19.82	33.0	-13.2	
High Ch								
1.909	14.3	V	0.98	8.05	21.38	33.0	-11.6	
1.909	12.2	H	0.98	8.05	19.24	33.0	-13.8	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	15.1	V	0.98	8.05	22.12	33.0	-10.9	
1.851	13.1	H	0.98	8.05	20.21	33.0	-12.8	
Mid Ch								
1.880	13.4	V	0.98	8.03	20.40	33.0	-12.6	
1.880	12.1	H	0.98	8.03	19.13	33.0	-13.9	
High Ch								
1.909	13.4	V	0.98	8.05	20.44	33.0	-12.6	
1.909	11.7	H	0.98	8.05	18.78	33.0	-14.2	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	16.5	V	0.98	8.05	23.59	33.0	-9.4	
1.852	13.5	H	0.98	8.05	20.61	33.0	-12.4	
Mid Ch								
1.880	15.3	V	0.98	8.03	22.38	33.0	-10.6	
1.880	12.5	H	0.98	8.03	19.54	33.0	-13.5	
High Ch								
1.909	15.1	V	0.98	8.05	22.16	33.0	-10.8	
1.909	12.4	H	0.98	8.05	19.48	33.0	-13.5	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	15.9	V	0.98	8.05	22.96	33.0	-10.0	
1.852	12.7	H	0.98	8.05	19.81	33.0	-13.2	
Mid Ch								
1.880	14.5	V	0.98	8.03	21.57	33.0	-11.4	
1.880	12.0	H	0.98	8.03	19.02	33.0	-14.0	
High Ch								
1.909	14.2	V	0.98	8.05	21.26	33.0	-11.7	
1.909	11.5	H	0.98	8.05	18.54	33.0	-14.5	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	16.7	V	0.98	8.05	23.80	33.0	-9.2	
1.853	13.9	H	0.98	8.05	20.92	33.0	-12.1	
Mid Ch								
1.880	15.3	V	0.98	8.03	22.33	33.0	-10.7	
1.880	12.8	H	0.98	8.03	19.83	33.0	-13.2	
High Ch								
1.908	15.1	V	0.98	8.04	22.16	33.0	-10.8	
1.908	12.6	H	0.98	8.04	19.64	33.0	-13.4	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	15.9	V	0.98	8.05	22.92	33.0	-10.1	
1.853	13.4	H	0.98	8.05	20.44	33.0	-12.6	
Mid Ch								
1.880	14.6	V	0.98	8.03	21.63	33.0	-11.4	
1.880	12.3	H	0.98	8.03	19.31	33.0	-13.7	
High Ch								
1.908	14.3	V	0.98	8.04	21.38	33.0	-11.6	
1.908	11.7	H	0.98	8.04	18.81	33.0	-14.2	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	16.7	V	0.98	8.05	23.74	33.0	-9.3	
1.855	13.6	H	0.98	8.05	20.62	33.0	-12.4	
Mid Ch								
1.880	15.6	V	0.98	8.03	22.65	33.0	-10.3	
1.880	13.3	H	0.98	8.03	20.34	33.0	-12.7	
High Ch								
1.905	15.7	V	0.98	8.04	22.79	33.0	-10.2	
1.905	13.2	H	0.98	8.04	20.25	33.0	-12.8	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	16.0	V	0.98	8.05	23.06	33.0	-9.9	
1.855	12.8	H	0.98	8.05	19.86	33.0	-13.1	
Mid Ch								
1.880	14.7	V	0.98	8.03	21.77	33.0	-11.2	
1.880	12.8	H	0.98	8.03	19.83	33.0	-13.2	
High Ch								
1.905	15.0	V	0.98	8.04	22.03	33.0	-11.0	
1.905	12.6	H	0.98	8.04	19.65	33.0	-13.4	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	16.3	V	0.98	8.04	23.33	33.0	-9.7	
1.858	13.6	H	0.98	8.04	20.68	33.0	-12.3	
Mid Ch								
1.880	15.4	V	0.98	8.03	22.40	33.0	-10.6	
1.880	13.1	H	0.98	8.03	20.10	33.0	-12.9	
High Ch								
1.903	15.8	V	0.98	8.03	22.84	33.0	-10.2	
1.903	13.6	H	0.98	8.03	20.62	33.0	-12.4	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	15.4	V	0.98	8.04	22.50	33.0	-10.5	
1.858	13.1	H	0.98	8.04	20.14	33.0	-12.9	
Mid Ch								
1.880	14.7	V	0.98	8.03	21.76	33.0	-11.2	
1.880	12.5	H	0.98	8.03	19.59	33.0	-13.4	
High Ch								
1.903	15.0	V	0.98	8.03	22.08	33.0	-10.9	
1.903	12.7	H	0.98	8.03	19.78	33.0	-13.2	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	16.6	V	0.98	8.04	23.61	33.0	-9.4	
1.860	13.5	H	0.98	8.04	20.58	33.0	-12.4	
Mid Ch								
1.880	15.5	V	0.98	8.03	22.50	33.0	-10.5	
1.880	13.2	H	0.98	8.03	20.22	33.0	-12.8	
High Ch								
1.900	15.9	V	0.98	8.02	22.95	33.0	-10.1	
1.900	13.7	H	0.98	8.02	20.77	33.0	-12.2	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/25/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 2 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	15.8	V	0.98	8.04	22.84	33.0	-10.2	
1.860	12.8	H	0.98	8.04	19.85	33.0	-13.2	
Mid Ch								
1.880	14.7	V	0.98	8.03	21.78	33.0	-11.2	
1.880	12.4	H	0.98	8.03	19.47	33.0	-13.5	
High Ch								
1.900	14.6	V	0.98	8.02	21.64	33.0	-11.4	
1.900	13.0	H	0.98	8.02	20.08	33.0	-12.9	

Rev. 11.20.15

10.2.2. LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.711	15.1	V	0.95	8.27	22.46	30.0	-7.5	
1.711	12.6	H	0.95	8.27	19.89	30.0	-10.1	
Mid Ch								
1.733	14.3	V	0.95	8.23	21.58	30.0	-8.4	
1.733	13.2	H	0.95	8.23	20.43	30.0	-9.6	
High Ch								
1.754	14.0	V	0.95	8.18	21.20	30.0	-8.8	
1.754	12.9	H	0.95	8.18	20.09	30.0	-9.9	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.711	13.7	V	0.95	8.27	21.06	30.0	-8.9	
1.711	11.6	H	0.95	8.27	18.88	30.0	-11.1	
Mid Ch								
1.733	12.9	V	0.95	8.23	20.17	30.0	-9.8	
1.733	11.8	H	0.95	8.23	19.05	30.0	-10.9	
High Ch								
1.754	12.9	V	0.95	8.18	20.15	30.0	-9.8	
1.754	12.0	H	0.95	8.18	19.20	30.0	-10.8	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	15.7	V	0.95	8.27	23.06	30.0	-6.9	
1.712	13.2	H	0.95	8.27	20.49	30.0	-9.5	
Mid Ch								
1.733	14.7	V	0.95	8.23	21.95	30.0	-8.0	
1.733	13.5	H	0.95	8.23	20.80	30.0	-9.2	
High Ch								
1.754	14.5	V	0.95	8.18	21.78	30.0	-8.2	
1.754	13.9	H	0.95	8.18	21.14	30.0	-8.9	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	14.9	V	0.95	8.27	22.24	30.0	-7.8	
1.712	12.4	H	0.95	8.27	19.71	30.0	-10.3	
Mid Ch								
1.733	13.8	V	0.95	8.23	21.05	30.0	-8.9	
1.733	12.8	H	0.95	8.23	20.12	30.0	-9.9	
High Ch								
1.754	13.5	V	0.95	8.18	20.75	30.0	-9.3	
1.754	13.0	H	0.95	8.18	20.23	30.0	-9.8	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	15.7	V	0.95	8.27	23.03	30.0	-7.0	
1.713	13.2	H	0.95	8.27	20.56	30.0	-9.4	
Mid Ch								
1.733	14.6	V	0.95	8.23	21.91	30.0	-8.1	
1.733	13.9	H	0.95	8.23	21.19	30.0	-8.8	
High Ch								
1.753	14.6	V	0.95	8.18	21.85	30.0	-8.2	
1.753	13.9	H	0.95	8.18	21.13	30.0	-8.9	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	15.1	V	0.95	8.27	22.42	30.0	-7.6	
1.713	12.7	H	0.95	8.27	20.05	30.0	-9.9	
Mid Ch								
1.733	14.0	V	0.95	8.23	21.24	30.0	-8.8	
1.733	13.1	H	0.95	8.23	20.42	30.0	-9.6	
High Ch								
1.753	13.9	V	0.95	8.18	21.16	30.0	-8.8	
1.753	13.0	H	0.95	8.18	20.27	30.0	-9.7	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.715	16.1	V	0.95	8.26	23.37	30.0	-6.6	
1.715	13.6	H	0.95	8.26	20.88	30.0	-9.1	
Mid Ch								
1.733	14.5	V	0.95	8.23	21.78	30.0	-8.2	
1.733	13.5	H	0.95	8.23	20.75	30.0	-9.2	
High Ch								
1.750	15.0	V	0.95	8.19	22.24	30.0	-7.8	
1.750	13.7	H	0.95	8.19	20.91	30.0	-9.1	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.715	15.3	V	0.95	8.26	22.59	30.0	-7.4	
1.715	13.0	H	0.95	8.26	20.29	30.0	-9.7	
Mid Ch								
1.733	13.6	V	0.95	8.23	20.88	30.0	-9.1	
1.733	13.1	H	0.95	8.23	20.34	30.0	-9.7	
High Ch								
1.750	13.9	V	0.95	8.19	21.12	30.0	-8.9	
1.750	12.6	H	0.95	8.19	19.80	30.0	-10.2	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	16.1	V	0.95	8.26	23.45	30.0	-6.6	
1.718	13.6	H	0.95	8.26	20.93	30.0	-9.1	
Mid Ch								
1.733	14.1	V	0.95	8.23	21.38	30.0	-8.6	
1.733	13.3	H	0.95	8.23	20.61	30.0	-9.4	
High Ch								
1.748	14.8	V	0.95	8.19	22.01	30.0	-8.0	
1.748	13.3	H	0.95	8.19	20.51	30.0	-9.5	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	15.1	V	0.95	8.26	22.39	30.0	-7.6	
1.718	13.0	H	0.95	8.26	20.27	30.0	-9.7	
Mid Ch								
1.733	13.4	V	0.95	8.23	20.68	30.0	-9.3	
1.733	12.6	H	0.95	8.23	19.91	30.0	-10.1	
High Ch								
1.748	14.0	V	0.95	8.19	21.22	30.0	-8.8	
1.748	12.1	H	0.95	8.19	19.39	30.0	-10.6	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	15.6	V	0.95	8.25	22.92	30.0	-7.1	
1.720	13.0	H	0.95	8.25	20.29	30.0	-9.7	
Mid Ch								
1.733	14.2	V	0.95	8.23	21.48	30.0	-8.5	
1.733	13.3	H	0.95	8.23	20.55	30.0	-9.4	
High Ch								
1.745	14.5	V	0.95	8.20	21.75	30.0	-8.2	
1.745	12.9	H	0.95	8.20	20.17	30.0	-9.8	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 4 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	14.7	V	0.95	8.25	21.99	30.0	-8.0	
1.720	12.1	H	0.95	8.25	19.41	30.0	-10.6	
Mid Ch								
1.733	13.2	V	0.95	8.23	20.50	30.0	-9.5	
1.733	12.3	H	0.95	8.23	19.53	30.0	-10.5	
High Ch								
1.745	14.0	V	0.95	8.20	21.24	30.0	-8.8	
1.745	12.5	H	0.95	8.20	19.73	30.0	-10.3	

Rev. 11.20.15

10.2.3. LTE BAND 5

QPSK EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
824.70	13.88	V	0.6	0.0	13.26	15.41	38.45	40.60	-25.2	
824.70	19.47	H	0.6	0.0	18.85	21.00	38.45	40.60	-19.6	
Mid Ch										
836.50	12.98	V	0.6	0.0	12.37	14.52	38.45	40.60	-26.1	
836.50	18.46	H	0.6	0.0	17.84	19.99	38.45	40.60	-20.6	
High Ch										
848.30	12.35	V	0.6	0.0	11.73	13.88	38.45	40.60	-26.7	
848.30	19.47	H	0.6	0.0	18.85	21.00	38.45	40.60	-19.6	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
824.70	12.91	V	0.6	0.0	12.29	14.44	38.45	40.60	-26.2	
824.70	18.75	H	0.6	0.0	18.13	20.28	38.45	40.60	-20.3	
Mid Ch										
836.50	12.36	V	0.6	0.0	11.75	13.90	38.45	40.60	-26.7	
836.50	17.88	H	0.6	0.0	17.26	19.41	38.45	40.60	-21.2	
High Ch										
848.30	11.66	V	0.6	0.0	11.04	13.19	38.45	40.60	-27.4	
848.30	18.94	H	0.6	0.0	18.32	20.47	38.45	40.60	-20.1	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	13.61	V	0.6	0.0	12.99	15.14	38.45	40.60	-25.5	
825.50	19.52	H	0.6	0.0	18.90	21.05	38.45	40.60	-19.5	
Mid Ch										
836.50	13.22	V	0.6	0.0	12.61	14.76	38.45	40.60	-25.8	
836.50	18.45	H	0.6	0.0	17.83	19.98	38.45	40.60	-20.6	
High Ch										
847.50	12.43	V	0.6	0.0	11.81	13.96	38.45	40.60	-26.6	
847.50	19.33	H	0.6	0.0	18.71	20.86	38.45	40.60	-19.7	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	12.92	V	0.6	0.0	12.30	14.45	38.45	40.60	-26.1	
825.50	18.78	H	0.6	0.0	18.16	20.31	38.45	40.60	-20.3	
Mid Ch										
836.50	12.56	V	0.6	0.0	11.95	14.10	38.45	40.60	-26.5	
836.50	17.81	H	0.6	0.0	17.19	19.34	38.45	40.60	-21.3	
High Ch										
847.50	11.75	V	0.6	0.0	11.13	13.28	38.45	40.60	-27.3	
847.50	18.91	H	0.6	0.0	18.29	20.44	38.45	40.60	-20.2	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
826.50	13.85	V	0.6	0.0	13.23	15.38	38.45	40.60	-25.2	
826.50	19.74	H	0.6	0.0	19.12	21.27	38.45	40.60	-19.3	
Mid Ch										
836.50	13.02	V	0.6	0.0	12.41	14.56	38.45	40.60	-26.0	
836.50	18.76	H	0.6	0.0	18.14	20.29	38.45	40.60	-20.3	
High Ch										
846.50	12.46	V	0.6	0.0	11.84	13.99	38.45	40.60	-26.6	
846.50	19.15	H	0.6	0.0	18.53	20.68	38.45	40.60	-19.9	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
826.50	13.12	V	0.6	0.0	12.50	14.65	38.45	40.60	-25.9	
826.50	18.64	H	0.6	0.0	18.02	20.17	38.45	40.60	-20.4	
Mid Ch										
836.50	12.63	V	0.6	0.0	12.02	14.17	38.45	40.60	-26.4	
836.50	18.06	H	0.6	0.0	17.44	19.59	38.45	40.60	-21.0	
High Ch										
846.50	11.85	V	0.6	0.0	11.23	13.38	38.45	40.60	-27.2	
846.50	18.39	H	0.6	0.0	17.77	19.92	38.45	40.60	-20.7	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	13.66	V	0.6	0.0	13.04	15.19	38.45	40.60	-25.4	
829.00	19.56	H	0.6	0.0	18.94	21.09	38.45	40.60	-19.5	
Mid Ch										
836.50	13.48	V	0.6	0.0	12.87	15.02	38.45	40.60	-25.6	
836.50	18.81	H	0.6	0.0	18.19	20.34	38.45	40.60	-20.3	
High Ch										
844.00	12.96	V	0.6	0.0	12.34	14.49	38.45	40.60	-26.1	
844.00	19.38	H	0.6	0.0	18.76	20.91	38.45	40.60	-19.7	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 5 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	12.97	V	0.6	0.0	12.35	14.50	38.45	40.60	-26.1	
829.00	18.75	H	0.6	0.0	18.13	20.28	38.45	40.60	-20.3	
Mid Ch										
836.50	12.67	V	0.6	0.0	12.06	14.21	38.45	40.60	-26.4	
836.50	18.03	H	0.6	0.0	17.41	19.56	38.45	40.60	-21.0	
High Ch										
844.00	12.38	V	0.6	0.0	11.76	13.91	38.45	40.60	-26.7	
844.00	18.19	H	0.6	0.0	17.57	19.72	38.45	40.60	-20.9	

Rev. 11.24.15

10.2.4. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.503	21.6	V	1.15	9.34	29.83	33.0	-3.2	
2.503	18.2	H	1.15	9.34	26.43	33.0	-6.6	
Mid Ch								
2.535	20.9	V	1.16	9.38	29.16	33.0	-3.8	
2.535	16.8	H	1.16	9.38	25.01	33.0	-8.0	
High Ch								
2.568	20.7	V	1.17	9.43	29.00	33.0	-4.0	
2.568	16.1	H	1.17	9.43	24.35	33.0	-8.6	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.503	20.6	V	1.15	9.34	28.82	33.0	-4.2	
2.503	17.3	H	1.15	9.34	25.52	33.0	-7.5	
Mid Ch								
2.535	20.1	V	1.16	9.38	28.31	33.0	-4.7	
2.535	15.9	H	1.16	9.38	24.09	33.0	-8.9	
High Ch								
2.568	19.7	V	1.17	9.43	27.99	33.0	-5.0	
2.568	15.3	H	1.17	9.43	23.51	33.0	-9.5	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.505	21.5	V	1.15	9.34	29.70	33.0	-3.3	
2.505	18.3	H	1.15	9.34	26.51	33.0	-6.5	
Mid Ch								
2.535	21.0	V	1.16	9.38	29.18	33.0	-3.8	
2.535	16.9	H	1.16	9.38	25.10	33.0	-7.9	
High Ch								
2.565	20.7	V	1.17	9.43	28.92	33.0	-4.1	
2.565	16.2	H	1.17	9.43	24.47	33.0	-8.5	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.505	20.8	V	1.15	9.34	28.94	33.0	-4.1	
2.505	17.5	H	1.15	9.34	25.68	33.0	-7.3	
Mid Ch								
2.535	19.9	V	1.16	9.38	28.13	33.0	-4.9	
2.535	15.8	H	1.16	9.38	24.02	33.0	-9.0	
High Ch								
2.565	19.7	V	1.17	9.43	27.98	33.0	-5.0	
2.565	15.0	H	1.17	9.43	23.21	33.0	-9.8	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.508	21.7	V	1.15	9.34	29.93	33.0	-3.1	
2.508	18.3	H	1.15	9.34	26.50	33.0	-6.5	
Mid Ch								
2.535	21.1	V	1.16	9.38	29.35	33.0	-3.6	
2.535	17.0	H	1.16	9.38	25.18	33.0	-7.8	
High Ch								
2.563	20.7	V	1.17	9.42	28.92	33.0	-4.1	
2.563	16.3	H	1.17	9.42	24.51	33.0	-8.5	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.508	20.9	V	1.15	9.34	29.04	33.0	-4.0	
2.508	17.4	H	1.15	9.34	25.55	33.0	-7.4	
Mid Ch								
2.535	19.9	V	1.16	9.38	28.13	33.0	-4.9	
2.535	15.8	H	1.16	9.38	23.99	33.0	-9.0	
High Ch								
2.563	19.5	V	1.17	9.42	27.80	33.0	-5.2	
2.563	14.9	H	1.17	9.42	23.20	33.0	-9.8	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.510	21.9	V	1.15	9.35	30.07	33.0	-2.9	
2.510	18.2	H	1.15	9.35	26.43	33.0	-6.6	
Mid Ch								
2.535	21.1	V	1.16	9.38	29.30	33.0	-3.7	
2.535	16.8	H	1.16	9.38	25.04	33.0	-8.0	
High Ch								
2.560	20.7	V	1.17	9.42	28.93	33.0	-4.1	
2.560	16.2	H	1.17	9.42	24.47	33.0	-8.5	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/5/2016
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 7 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.510	21.0	V	1.15	9.35	29.17	33.0	-3.8	
2.510	17.3	H	1.15	9.35	25.53	33.0	-7.5	
Mid Ch								
2.535	20.1	V	1.16	9.38	28.36	33.0	-4.6	
2.535	15.8	H	1.16	9.38	24.05	33.0	-9.0	
High Ch								
2.560	19.7	V	1.17	9.42	27.95	33.0	-5.1	
2.560	15.5	H	1.17	9.42	23.72	33.0	-9.3	

Rev. 01.05.16

10.2.5. LTE BAND 12

QPSK EIRP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
699.70	11.74	V	0.55	0.0	11.19	13.34	34.77	36.99	-23.7	
699.70	18.68	H	0.55	0.0	18.13	20.28	34.77	36.99	-16.7	
Mid Ch										
707.50	12.58	V	0.55	0.0	12.03	14.18	34.77	36.99	-22.8	
707.50	19.88	H	0.55	0.0	19.33	21.48	34.77	36.99	-15.5	
High Ch										
715.30	12.18	V	0.55	0.0	11.63	13.78	34.77	36.99	-23.2	
715.30	19.42	H	0.55	0.0	18.87	21.02	34.77	36.99	-16.0	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
699.70	10.58	V	0.55	0.0	10.03	12.18	34.77	36.99	-24.8	
699.70	17.70	H	0.55	0.0	17.15	19.30	34.77	36.99	-17.7	
Mid Ch										
707.50	11.78	V	0.55	0.0	11.23	13.38	34.77	36.99	-23.6	
707.50	18.73	H	0.55	0.0	18.18	20.33	34.77	36.99	-16.7	
High Ch										
715.30	11.62	V	0.55	0.0	11.07	13.22	34.77	36.99	-23.8	
715.30	18.66	H	0.55	0.0	18.11	20.26	34.77	36.99	-16.7	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 12 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
700.50	11.39	V	0.55	0.0	10.84	12.99	34.77	36.99	-24.0	
700.50	18.64	H	0.55	0.0	18.09	20.24	34.77	36.99	-16.8	
Mid Ch										
707.50	12.35	V	0.55	0.0	11.80	13.95	34.77	36.99	-23.0	
707.50	19.29	H	0.55	0.0	18.74	20.89	34.77	36.99	-16.1	
High Ch										
714.50	12.21	V	0.55	0.0	11.66	13.81	34.77	36.99	-23.2	
714.50	19.40	H	0.55	0.0	18.85	21.00	34.77	36.99	-16.0	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 12 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
700.50	10.72	V	0.55	0.0	10.17	12.32	34.77	36.99	-24.7	
700.50	17.63	H	0.55	0.0	17.08	19.23	34.77	36.99	-17.8	
Mid Ch										
707.50	11.64	V	0.55	0.0	11.09	13.24	34.77	36.99	-23.7	
707.50	18.72	H	0.55	0.0	18.17	20.32	34.77	36.99	-16.7	
High Ch										
714.50	11.50	V	0.55	0.0	10.95	13.10	34.77	36.99	-23.9	
714.50	18.62	H	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 12 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
701.50	11.78	V	0.55	0.0	11.23	13.38	34.77	36.99	-23.6	
701.50	18.59	H	0.55	0.0	18.04	20.19	34.77	36.99	-16.8	
Mid Ch										
707.50	12.30	V	0.55	0.0	11.75	13.90	34.77	36.99	-23.1	
707.50	19.54	H	0.55	0.0	18.99	21.14	34.77	36.99	-15.9	
High Ch										
713.50	12.72	V	0.55	0.0	12.17	14.32	34.77	36.99	-22.7	
713.50	19.76	H	0.55	0.0	19.21	21.36	34.77	36.99	-15.6	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 12 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
701.50	10.79	V	0.55	0.0	10.24	12.39	34.77	36.99	-24.6	
701.50	17.98	H	0.55	0.0	17.43	19.58	34.77	36.99	-17.4	
Mid Ch										
707.50	11.63	V	0.55	0.0	11.08	13.23	34.77	36.99	-23.8	
707.50	18.95	H	0.55	0.0	18.40	20.55	34.77	36.99	-16.4	
High Ch										
713.50	11.97	V	0.55	0.0	11.42	13.57	34.77	36.99	-23.4	
713.50	18.83	H	0.55	0.0	18.28	20.43	34.77	36.99	-16.6	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
704.00	11.33	V	0.55	0.0	10.78	12.93	34.77	36.99	-24.1	
704.00	18.56	H	0.55	0.0	18.01	20.16	34.77	36.99	-16.8	
Mid Ch										
707.50	11.85	V	0.55	0.0	11.30	13.45	34.77	36.99	-23.5	
707.50	19.22	H	0.55	0.0	18.67	20.82	34.77	36.99	-16.2	
High Ch										
711.00	12.45	V	0.55	0.0	11.90	14.05	34.77	36.99	-22.9	
711.00	19.42	H	0.55	0.0	18.87	21.02	34.77	36.99	-16.0	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 11/30/2015
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
704.00	10.50	V	0.55	0.0	9.95	12.10	34.77	36.99	-24.9	
704.00	17.76	H	0.55	0.0	17.21	19.36	34.77	36.99	-17.6	
Mid Ch										
707.50	10.93	V	0.55	0.0	10.38	12.53	34.77	36.99	-24.5	
707.50	18.56	H	0.55	0.0	18.01	20.16	34.77	36.99	-16.8	
High Ch										
711.00	11.52	V	0.55	0.0	10.97	13.12	34.77	36.99	-23.9	
711.00	18.64	H	0.55	0.0	18.09	20.24	34.77	36.99	-16.8	

Rev. 11.24.15

10.2.6. LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 13 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
779.50	14.96	V	0.55	0.0	14.41	16.56	34.77	36.99	-20.4	
779.50	20.02	H	0.55	0.0	19.47	21.62	34.77	36.99	-15.4	
Mid Ch										
782.00	15.18	V	0.55	0.0	14.63	16.78	34.77	36.99	-20.2	
782.00	20.22	H	0.55	0.0	19.67	21.82	34.77	36.99	-15.2	
High Ch										
784.50	15.60	V	0.55	0.0	15.05	17.20	34.77	36.99	-19.8	
784.50	19.83	H	0.55	0.0	19.28	21.43	34.77	36.99	-15.6	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 13 16QAM5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
779.50	14.10	V	0.55	0.0	13.55	15.70	34.77	36.99	-21.3	
779.50	19.43	H	0.55	0.0	18.88	21.03	34.77	36.99	-16.0	
Mid Ch										
782.00	14.57	V	0.55	0.0	14.02	16.17	34.77	36.99	-20.8	
782.00	19.42	H	0.55	0.0	18.87	21.02	34.77	36.99	-16.0	
High Ch										
784.50	14.54	V	0.55	0.0	13.99	16.14	34.77	36.99	-20.9	
784.50	18.67	H	0.55	0.0	18.12	20.27	34.77	36.99	-16.7	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 13 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
782.00	14.92	V	0.55	0.0	14.37	16.52	34.77	36.99	-20.5	
782.00	19.99	H	0.55	0.0	19.44	21.59	34.77	36.99	-15.4	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 13 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
782.00	14.40	V	0.55	0.0	13.85	16.00	34.77	36.99	-21.0	
782.00	19.58	H	0.55	0.0	19.03	21.18	34.77	36.99	-15.8	

Rev. 11.24.15

10.2.7. LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 17 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
706.50	13.29	V	0.55	0.0	12.74	14.89	34.77	36.99	-22.1	
706.50	19.47	H	0.55	0.0	18.92	21.07	34.77	36.99	-15.9	
Mid Ch										
710.00	13.35	V	0.55	0.0	12.80	14.95	34.77	36.99	-22.0	
710.00	19.68	H	0.55	0.0	19.13	21.28	34.77	36.99	-15.7	
High Ch										
713.50	13.43	V	0.55	0.0	12.88	15.03	34.77	36.99	-22.0	
713.50	19.59	H	0.55	0.0	19.04	21.19	34.77	36.99	-15.8	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 17 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
706.50	12.66	V	0.55	0.0	12.11	14.26	34.77	36.99	-22.7	
706.50	18.89	H	0.55	0.0	18.34	20.49	34.77	36.99	-16.5	
Mid Ch										
710.00	12.75	V	0.55	0.0	12.20	14.35	34.77	36.99	-22.6	
710.00	18.81	H	0.55	0.0	18.26	20.41	34.77	36.99	-16.6	
High Ch										
713.50	12.44	V	0.55	0.0	11.89	14.04	34.77	36.99	-23.0	
713.50	18.56	H	0.55	0.0	18.01	20.16	34.77	36.99	-16.8	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 17 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
710.00	13.34	V	0.55	0.0	12.79	14.94	34.77	36.99	-22.0	
710.00	19.50	H	0.55	0.0	18.95	21.10	34.77	36.99	-15.9	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 17 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
710.00	12.45	V	0.55	0.0	11.90	14.05	34.77	36.99	-22.9	
710.00	18.95	H	0.55	0.0	18.40	20.55	34.77	36.99	-16.4	

Rev. 11.24.15

10.2.8. LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	17.4	V	0.98	8.05	24.51	33.0	-8.5	
1.851	14.8	H	0.98	8.05	21.85	33.0	-11.2	
Mid Ch								
1.883	15.4	V	0.98	8.03	22.49	33.0	-10.5	
1.883	13.9	H	0.98	8.03	20.90	33.0	-12.1	
High Ch								
1.914	15.6	V	0.98	8.07	22.65	33.0	-10.4	
1.914	13.4	H	0.98	8.07	20.53	33.0	-12.5	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	16.5	V	0.98	8.05	23.55	33.0	-9.5	
1.851	13.6	H	0.98	8.05	20.65	33.0	-12.4	
Mid Ch								
1.883	14.4	V	0.98	8.03	21.44	33.0	-11.6	
1.883	12.7	H	0.98	8.03	19.78	33.0	-13.2	
High Ch								
1.914	14.5	V	0.98	8.07	21.58	33.0	-11.4	
1.914	12.7	H	0.98	8.07	19.76	33.0	-13.2	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	17.2	V	0.98	8.05	24.22	33.0	-8.8	
1.852	14.6	H	0.98	8.05	21.71	33.0	-11.3	
Mid Ch								
1.883	15.4	V	0.98	8.03	22.49	33.0	-10.5	
1.883	13.7	H	0.98	8.03	20.77	33.0	-12.2	
High Ch								
1.914	15.8	V	0.98	8.07	22.85	33.0	-10.2	
1.914	13.3	H	0.98	8.07	20.36	33.0	-12.6	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	16.0	V	0.98	8.05	23.06	33.0	-9.9	
1.852	13.5	H	0.98	8.05	20.61	33.0	-12.4	
Mid Ch								
1.883	14.7	V	0.98	8.03	21.72	33.0	-11.3	
1.883	13.0	H	0.98	8.03	20.08	33.0	-12.9	
High Ch								
1.914	14.7	V	0.98	8.07	21.79	33.0	-11.2	
1.914	12.5	H	0.98	8.07	19.57	33.0	-13.4	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	17.0	V	0.98	8.05	24.08	33.0	-8.9	
1.853	14.9	H	0.98	8.05	21.92	33.0	-11.1	
Mid Ch								
1.883	15.9	V	0.98	8.03	22.92	33.0	-10.1	
1.883	13.8	H	0.98	8.03	20.80	33.0	-12.2	
High Ch								
1.913	15.8	V	0.98	8.06	22.84	33.0	-10.2	
1.913	13.4	H	0.98	8.06	20.52	33.0	-12.5	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	15.9	V	0.98	8.05	22.96	33.0	-10.0	
1.853	13.6	H	0.98	8.05	20.71	33.0	-12.3	
Mid Ch								
1.883	14.8	V	0.98	8.03	21.84	33.0	-11.2	
1.883	12.9	H	0.98	8.03	19.98	33.0	-13.0	
High Ch								
1.913	15.0	V	0.98	8.06	22.04	33.0	-11.0	
1.913	12.4	H	0.98	8.06	19.46	33.0	-13.5	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	17.5	V	0.98	8.05	24.57	33.0	-8.4	
1.855	15.0	H	0.98	8.05	22.07	33.0	-10.9	
Mid Ch								
1.883	16.1	V	0.98	8.03	23.10	33.0	-9.9	
1.883	13.5	H	0.98	8.03	20.51	33.0	-12.5	
High Ch								
1.910	16.0	V	0.98	8.05	23.03	33.0	-10.0	
1.910	13.4	H	0.98	8.05	20.51	33.0	-12.5	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	16.3	V	0.98	8.05	23.36	33.0	-9.6	
1.855	13.8	H	0.98	8.05	20.91	33.0	-12.1	
Mid Ch								
1.883	15.1	V	0.98	8.03	22.16	33.0	-10.8	
1.883	12.3	H	0.98	8.03	19.38	33.0	-13.6	
High Ch								
1.910	14.9	V	0.98	8.05	21.92	33.0	-11.1	
1.910	12.7	H	0.98	8.05	19.74	33.0	-13.3	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	17.4	V	0.98	8.04	24.46	33.0	-8.5	
1.858	15.1	H	0.98	8.04	22.21	33.0	-10.8	
Mid Ch								
1.883	15.8	V	0.98	8.03	22.88	33.0	-10.1	
1.883	14.0	H	0.98	8.03	21.05	33.0	-11.9	
High Ch								
1.908	15.8	V	0.98	8.04	22.82	33.0	-10.2	
1.908	13.6	H	0.98	8.04	20.70	33.0	-12.3	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	16.5	V	0.98	8.04	23.56	33.0	-9.4	
1.858	13.8	H	0.98	8.04	20.91	33.0	-12.1	
Mid Ch								
1.883	15.2	V	0.98	8.03	22.25	33.0	-10.8	
1.883	12.8	H	0.98	8.03	19.88	33.0	-13.1	
High Ch								
1.908	14.6	V	0.98	8.04	21.66	33.0	-11.3	
1.908	12.7	H	0.98	8.04	19.75	33.0	-13.3	

Rev. 11.20.15

QPSK EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	17.0	V	0.98	8.04	24.01	33.0	-9.0	
1.860	14.7	H	0.98	8.04	21.81	33.0	-11.2	
Mid Ch								
1.883	15.9	V	0.98	8.03	22.97	33.0	-10.0	
1.883	13.7	H	0.98	8.03	20.76	33.0	-12.2	
High Ch								
1.905	15.7	V	0.98	8.04	22.79	33.0	-10.2	
1.905	13.4	H	0.98	8.04	20.49	33.0	-12.5	

Rev. 11.20.15

16QAM EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 25 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T344, and Chamber D SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	16.0	V	0.98	8.04	23.08	33.0	-9.9	
1.860	14.1	H	0.98	8.04	21.12	33.0	-11.9	
Mid Ch								
1.883	15.3	V	0.98	8.03	22.30	33.0	-10.7	
1.883	12.5	H	0.98	8.03	19.58	33.0	-13.4	
High Ch								
1.905	14.7	V	0.98	8.04	21.76	33.0	-11.2	
1.905	12.3	H	0.98	8.04	19.34	33.0	-13.7	

Rev. 11.20.15

10.2.9. LTE BAND 26

QPSK EIRP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
814.70	14.76	V	0.62	0.0	14.14	16.29	38.45	40.60	-24.3	
814.70	21.20	H	0.62	0.0	20.58	22.73	38.45	40.60	-17.9	
Mid Ch										
819.00	14.82	V	0.62	0.0	14.20	16.35	38.45	40.60	-24.3	
819.00	20.94	H	0.62	0.0	20.32	22.47	38.45	40.60	-18.1	
High Ch										
823.30	14.52	V	0.62	0.0	13.90	16.05	38.45	40.60	-24.6	
823.30	20.46	H	0.62	0.0	19.84	21.99	38.45	40.60	-18.6	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
814.70	13.86	V	0.62	0.0	13.24	15.39	38.45	40.60	-25.2	
814.70	20.20	H	0.62	0.0	19.58	21.73	38.45	40.60	-18.9	
Mid Ch										
819.00	13.81	V	0.62	0.0	13.19	15.34	38.45	40.60	-25.3	
819.00	18.92	H	0.62	0.0	18.30	20.45	38.45	40.60	-20.1	
High Ch										
823.30	13.53	V	0.62	0.0	12.91	15.06	38.45	40.60	-25.5	
823.30	19.42	H	0.62	0.0	18.80	20.95	38.45	40.60	-19.7	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
815.50	14.85	V	0.62	0.0	14.23	16.38	38.45	40.60	-24.2	
815.50	21.26	H	0.62	0.0	20.64	22.79	38.45	40.60	-17.8	
Mid Ch										
819.00	15.05	V	0.62	0.0	14.43	16.58	38.45	40.60	-24.0	
819.00	21.19	H	0.62	0.0	20.57	22.72	38.45	40.60	-17.9	
High Ch										
822.50	14.88	V	0.62	0.0	14.26	16.41	38.45	40.60	-24.2	
822.50	20.82	H	0.62	0.0	20.20	22.35	38.45	40.60	-18.3	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
815.50	14.13	V	0.62	0.0	13.51	15.66	38.45	40.60	-24.9	
815.50	20.55	H	0.62	0.0	19.93	22.08	38.45	40.60	-18.5	
Mid Ch										
819.00	14.12	V	0.62	0.0	13.50	15.65	38.45	40.60	-25.0	
819.00	20.21	H	0.62	0.0	19.59	21.74	38.45	40.60	-18.9	
High Ch										
822.50	13.92	V	0.62	0.0	13.30	15.45	38.45	40.60	-25.2	
822.50	20.12	H	0.62	0.0	19.50	21.65	38.45	40.60	-19.0	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
816.50	14.89	V	0.62	0.0	14.27	16.42	38.45	40.60	-24.2	
816.50	21.58	H	0.62	0.0	20.96	23.11	38.45	40.60	-17.5	
Mid Ch										
819.00	14.96	V	0.62	0.0	14.34	16.49	38.45	40.60	-24.1	
819.00	21.09	H	0.62	0.0	20.47	22.62	38.45	40.60	-18.0	
High Ch										
821.50	14.73	V	0.62	0.0	14.11	16.26	38.45	40.60	-24.3	
821.50	20.80	H	0.62	0.0	20.18	22.33	38.45	40.60	-18.3	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
816.50	14.10	V	0.62	0.0	13.48	15.63	38.45	40.60	-25.0	
816.50	20.48	H	0.62	0.0	19.86	22.01	38.45	40.60	-18.6	
Mid Ch										
819.00	14.23	V	0.62	0.0	13.61	15.76	38.45	40.60	-24.8	
819.00	20.54	H	0.62	0.0	19.92	22.07	38.45	40.60	-18.5	
High Ch										
821.50	20.66	V	0.62	0.0	20.04	22.19	38.45	40.60	-18.4	
821.50	12.69	H	0.62	0.0	12.07	14.22	38.45	40.60	-26.4	

Rev. 11.24.15

QPSK EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin EIRP (dB)	Notes
Mid Ch										
819.00	15.20	V	0.62	0.0	14.58	16.73	38.45	40.60	-23.9	
819.00	21.31	H	0.62	0.0	20.69	22.84	38.45	40.60	-17.8	

Rev. 11.24.15

16QAM EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 15U22428
Date: 12/1/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 26 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Mid Ch										
819.00	14.61	V	0.62	0.0	13.99	16.14	38.45	40.60	-24.5	
819.00	20.51	H	0.62	0.0	19.89	22.04	38.45	40.60	-18.6	

Rev. 11.24.15

10.2.10. LTE BAND 27

QPSK EIRP POWER FOR LTE BAND 27 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	15.85	V	0.62	0.0	15.23	24.00	-8.8	
814.70	19.76	H	0.62	0.0	19.14	24.00	-4.9	
Mid Ch								
819.00	16.30	V	0.62	0.0	15.68	24.00	-8.3	
819.00	19.80	H	0.62	0.0	19.18	24.00	-4.8	
High Ch								
823.30	15.94	V	0.62	0.0	15.32	24.00	-8.7	
823.30	20.12	H	0.62	0.0	19.50	24.00	-4.5	

Rev. 12.14.15

16QAM EIRP POWER FOR LTE BAND 27 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	14.94	V	0.62	0.0	14.32	24.00	-9.7	
814.70	18.96	H	0.62	0.0	18.34	24.00	-5.7	
Mid Ch								
819.00	15.36	V	0.62	0.0	14.74	24.00	-9.3	
819.00	18.90	H	0.62	0.0	18.28	24.00	-5.7	
High Ch								
823.30	14.97	V	0.62	0.0	14.35	24.00	-9.7	
823.30	19.32	H	0.62	0.0	18.70	24.00	-5.3	

Rev. 12.14.15

QPSK EIRP POWER FOR LTE BAND 27 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
815.50	15.45	V	0.62	0.0	14.83	24.00	-9.2	
815.50	19.76	H	0.62	0.0	19.14	24.00	-4.9	
Mid Ch								
819.00	15.60	V	0.62	0.0	14.98	24.00	-9.0	
819.00	19.40	H	0.62	0.0	18.78	24.00	-5.2	
High Ch								
822.50	15.94	V	0.62	0.0	15.32	24.00	-8.7	
822.50	19.72	H	0.62	0.0	19.10	24.00	-4.9	

Rev. 12.14.15

16QAM EIRP POWER FOR LTE BAND 27 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
815.50	14.53	V	0.62	0.0	13.91	24.00	-10.1	
815.50	18.96	H	0.62	0.0	18.34	24.00	-5.7	
Mid Ch								
819.00	14.66	V	0.62	0.0	14.04	24.00	-10.0	
819.00	18.60	H	0.62	0.0	17.98	24.00	-6.0	
High Ch								
822.50	15.03	V	0.62	0.0	14.41	24.00	-9.6	
822.50	18.92	H	0.62	0.0	18.30	24.00	-5.7	

Rev. 12.14.15

QPSK EIRP POWER FOR LTE BAND 27 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
816.5	16.35	V	0.62	0.0	15.73	24.00	-8.3	
816.5	19.76	H	0.62	0.0	19.14	24.00	-4.9	
Mid Ch								
819.0	15.90	V	0.62	0.0	15.28	24.00	-8.7	
819.0	19.90	H	0.62	0.0	19.28	24.00	-4.7	
High Ch								
821.5	16.04	V	0.62	0.0	15.42	24.00	-8.6	
821.5	19.72	H	0.62	0.0	19.10	24.00	-4.9	

Rev. 12.14.15

16QAM EIRP POWER FOR LTE BAND 27 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
816.5	15.41	V	0.62	0.0	14.79	24.00	-9.2	
816.5	18.81	H	0.62	0.0	18.19	24.00	-5.8	
Mid Ch								
819.0	15.00	V	0.62	0.0	14.38	24.00	-9.6	
819.0	18.95	H	0.62	0.0	18.33	24.00	-5.7	
High Ch								
821.5	15.13	V	0.62	0.0	14.51	24.00	-9.5	
821.5	18.87	H	0.62	0.0	18.25	24.00	-5.8	

Rev. 12.14.15

QPSK EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Mid Ch								
819.00	15.60	V	0.62	0.0	14.98	24.00	-9.0	
819.00	19.70	H	0.62	0.0	19.08	24.00	-4.9	

Rev. 12.14.15

16QAM EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/25/2016
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T120, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Mid Ch								
819.00	14.55	V	0.62	0.0	13.93	24.00	-10.1	
819.00	18.75	H	0.62	0.0	18.13	24.00	-5.9	

Rev. 12.14.15

10.2.11. LTE BAND 30

QPSK EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 30 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.308	11.0	V	1.15	9.37	19.18	24.0	-4.8	
2.308	7.7	H	1.15	9.37	15.96	24.0	-8.0	
Mid Ch								
2.310	10.7	V	1.16	9.37	18.86	24.0	-5.1	
2.310	8.2	H	1.16	9.37	16.44	24.0	-7.6	
High Ch								
2.313	10.9	V	1.17	9.37	19.14	24.0	-4.9	
2.313	8.0	H	1.17	9.37	16.19	24.0	-7.8	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 30 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.308	10.4	V	1.15	9.37	18.64	24.0	-5.4	
2.308	7.3	H	1.15	9.37	15.50	24.0	-8.5	
Mid Ch								
2.310	9.9	V	1.16	9.37	18.07	24.0	-5.9	
2.310	7.5	H	1.16	9.37	15.74	24.0	-8.3	
High Ch								
2.313	10.1	V	1.17	9.37	18.33	24.0	-5.7	
2.313	7.4	H	1.17	9.37	15.56	24.0	-8.4	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 30 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
2.310	10.5	V	1.15	9.37	18.70	24.0	-5.3	
2.310	7.5	H	1.15	9.37	15.71	24.0	-8.3	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 30 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
2.310	9.9	V	1.15	9.37	18.16	24.0	-5.8	
2.310	6.9	H	1.15	9.37	15.09	24.0	-8.9	

Rev. 01.05.16

10.2.12. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.499	21.1	V	1.15	9.33	29.27	33.0	-3.7	
2.499	17.2	H	1.15	9.33	25.39	33.0	-7.6	
Mid Ch								
2.593	18.8	V	1.16	9.47	27.06	33.0	-5.9	
2.593	15.7	H	1.16	9.47	23.98	33.0	-9.0	
High Ch								
2.688	16.8	V	1.17	9.78	25.41	33.0	-7.6	
2.688	13.0	H	1.17	9.78	21.61	33.0	-11.4	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.499	20.2	V	1.15	9.33	28.38	33.0	-4.6	
2.499	16.3	H	1.15	9.33	24.47	33.0	-8.5	
Mid Ch								
2.593	17.7	V	1.16	9.47	26.04	33.0	-7.0	
2.593	14.8	H	1.16	9.47	23.06	33.0	-9.9	
High Ch								
2.688	15.9	V	1.17	9.78	24.54	33.0	-8.5	
2.688	11.9	H	1.17	9.78	20.55	33.0	-12.4	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.501	21.6	V	1.15	9.33	29.81	33.0	-3.2	
2.501	17.8	H	1.15	9.33	25.94	33.0	-7.1	
Mid Ch								
2.593	20.3	V	1.16	9.47	28.56	33.0	-4.4	
2.593	15.9	H	1.16	9.47	24.18	33.0	-8.8	
High Ch								
2.685	19.5	V	1.17	9.77	28.06	33.0	-4.9	
2.685	13.2	H	1.17	9.77	21.77	33.0	-11.2	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.501	20.8	V	1.15	9.33	28.98	33.0	-4.0	
2.501	17.0	H	1.15	9.33	25.22	33.0	-7.8	
Mid Ch								
2.593	18.1	V	1.16	9.47	26.38	33.0	-6.6	
2.593	14.9	H	1.16	9.47	23.17	33.0	-9.8	
High Ch								
2.685	16.5	V	1.17	9.77	25.08	33.0	-7.9	
2.685	12.3	H	1.17	9.77	20.95	33.0	-12.1	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	21.9	V	1.15	9.34	30.07	33.0	-2.9	
2.504	18.3	H	1.15	9.34	26.48	33.0	-6.5	
Mid Ch								
2.593	20.0	V	1.16	9.47	28.35	33.0	-4.6	
2.593	16.2	H	1.16	9.47	24.54	33.0	-8.5	
High Ch								
2.683	18.1	V	1.17	9.76	26.66	33.0	-6.3	
2.683	13.6	H	1.17	9.76	22.16	33.0	-10.8	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	20.8	V	1.15	9.34	29.03	33.0	-4.0	
2.504	17.1	H	1.15	9.34	25.28	33.0	-7.7	
Mid Ch								
2.593	19.1	V	1.16	9.47	27.39	33.0	-5.6	
2.593	15.5	H	1.16	9.47	23.82	33.0	-9.2	
High Ch								
2.683	16.8	V	1.17	9.76	25.44	33.0	-7.6	
2.683	12.6	H	1.17	9.76	21.15	33.0	-11.9	

Rev. 01.05.16

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	22.3	V	1.15	9.34	30.48	33.0	-2.5	
2.506	18.1	H	1.15	9.34	26.30	33.0	-6.7	
Mid Ch								
2.593	20.6	V	1.16	9.47	28.86	33.0	-4.1	
2.593	16.3	H	1.16	9.47	24.59	33.0	-8.4	
High Ch								
2.680	18.2	V	1.17	9.76	26.74	33.0	-6.3	
2.680	13.9	H	1.17	9.76	22.47	33.0	-10.5	

Rev. 01.05.16

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 15U22428
Date: 1/4/2016
Test Engineer: M. Hua
Configuration: EUT only
Mode: LTE Band 41 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	21.2	V	1.15	9.34	29.36	33.0	-3.6	
2.506	17.3	H	1.15	9.34	25.46	33.0	-7.5	
Mid Ch								
2.593	19.7	V	1.16	9.47	27.98	33.0	-5.0	
2.593	15.4	H	1.16	9.47	23.68	33.0	-9.3	
High Ch								
2.680	19.2	V	1.17	9.76	27.81	33.0	-5.2	
2.680	15.0	H	1.17	9.76	23.63	33.0	-9.4	

Rev. 01.05.16

10.3. 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

10.3.1. LTE BAND 2

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	1.4	1880.0	QPSK	28.22	24.47	3.75
			16QAM	29.05	23.58	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	3.0	1880.0	QPSK	28.14	24.47	3.67
			16QAM	27.98	23.56	4.42
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	5.0	1880.0	QPSK	28.03	24.43	3.60
			16QAM	27.93	23.58	4.35
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	10.0	1880.0	QPSK	29.28	24.48	4.8
			16QAM	29.12	23.5	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	15.0	1880.0	QPSK	28.23	24.48	3.75
			16QAM	29.2	23.58	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	20.0	1880.0	QPSK	28.07	24.47	3.6
			16QAM	27.82	23.4	4.42
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.2. LTE BAND 4

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	1.4	1732.5	QPSK	28.71	23.99	4.72
			16QAM	28.54	22.92	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	3.0	1732.5	QPSK	28.63	23.91	4.72
			16QAM	28.45	22.98	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	5.0	1732.5	QPSK	28.64	23.92	4.72
			16QAM	28.31	22.91	5.4
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	10.0	1732.5	QPSK	28.58	24.00	4.58
			16QAM	28.29	22.96	5.33
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	15.0	1732.5	QPSK	28.57	23.99	4.58
			16QAM	28.31	22.98	5.33
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	20.0	1732.5	QPSK	28.37	23.95	4.42
			16QAM	28.06	22.96	5.10
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.3. LTE BAND 5

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	1.4	836.5	QPSK	29.28	24.41	4.87
			16QAM	28.56	23.46	5.1
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	3.0	836.5	QPSK	29.25	24.45	4.8
			16QAM	28.52	23.42	5.1
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	5.0	836.5	QPSK	29.19	24.39	4.8
			16QAM	28.59	23.49	5.1
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	10.0	836.5	QPSK	29.06	24.41	4.65
			16QAM	28.55	23.45	5.10
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.4. LTE BAND 12

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 12 RB1-0	1.4	707.5	QPSK	29.97	24.87	5.1
			16QAM	29.85	23.93	5.92
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 12 RB1-0	3.0	707.5	QPSK	28.34	24.82	3.52
			16QAM	29.65	23.95	5.7
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 12 RB1-0	5.0	707.5	QPSK	29.82	24.87	4.95
			16QAM	29.76	24.06	5.7
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 12 RB1-0	10.0	707.5	QPSK	29.58	24.86	4.72
			16QAM	29.62	23.92	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.5. LTE BAND 13

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 13 RB1-0	5.0	782.0	QPSK	27.51	23.91	3.60
			16QAM	28.61	22.91	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 13 RB1-0	10.0	782.0	QPSK	27.82	23.99	3.83
			16QAM	28.74	22.96	5.78
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.6. LTE BAND 17

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 17 RB1-0	5.0	710.0	QPSK	29.86	24.91	4.95
			16QAM	29.6	23.90	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 17 RB1-0	10.0	710.0	QPSK	29.68	24.88	4.80
			16QAM	29.79	23.94	5.85
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.7. LTE BAND 25

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	1.4	1882.5	QPSK	28.06	24.46	3.60
			16QAM	28.01	23.43	4.58
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	3.0	1882.5	QPSK	28.11	24.36	3.75
			16QAM	28.14	23.64	4.50
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	5.0	1882.5	QPSK	28.76	24.48	4.28
			16QAM	29.28	23.58	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	10.0	1882.5	QPSK	29.25	24.45	4.80
			16QAM	29.19	23.57	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	15.0	1882.5	QPSK	27.97	24.37	3.60
			16QAM	29.11	23.49	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	20.0	1882.5	QPSK	27.82	24.37	3.45
			16QAM	27.66	23.38	4.28
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.8. LTE BAND 26

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	1.4	819.0	QPSK	29.39	24.44	4.95
			16QAM	29.01	23.31	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	3.0	819.0	QPSK	29.11	24.31	4.80
			16QAM	28.75	23.20	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	5.0	819.0	QPSK	29.07	24.27	4.80
			16QAM	28.73	23.26	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	10.0	819.0	QPSK	29.01	24.36	4.65
			16QAM	28.39	23.36	5.03
*Peak Reading = Average Reading + Peak-to-Average Ratio						

10.3.9. LTE BAND 27

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 27 RB1-0	1.4	819.0	QPSK	29.65	24.93	4.72
			16QAM	29.69	23.99	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 27 RB1-0	3.0	819.0	QPSK	29.61	24.89	4.72
			16QAM	29.46	23.91	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 27 RB1-0	5.0	819.0	QPSK	29.71	24.91	4.80
			16QAM	29.43	23.96	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 27 RB1-0	10.0	819.0	QPSK	29.60	24.88	4.72
			16QAM	29.45	23.90	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

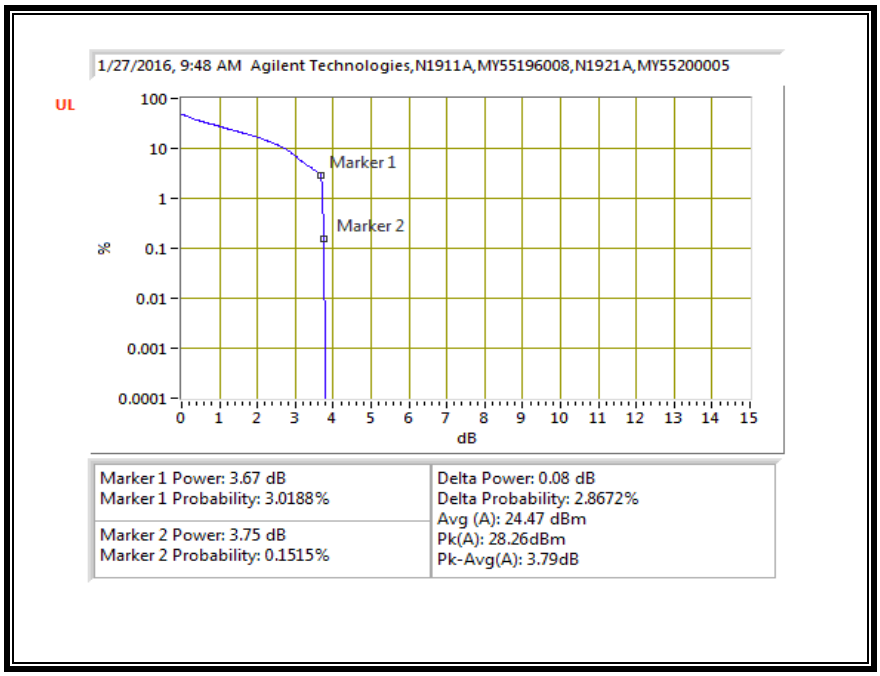
10.3.10. LTE BAND 30

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 30 RB1-0	5.0	2310.0	QPSK	26.07	22.17	3.90
			16QAM	26.11	21.24	4.87
*Peak Reading = Average Reading + Peak-to-Average Ratio						

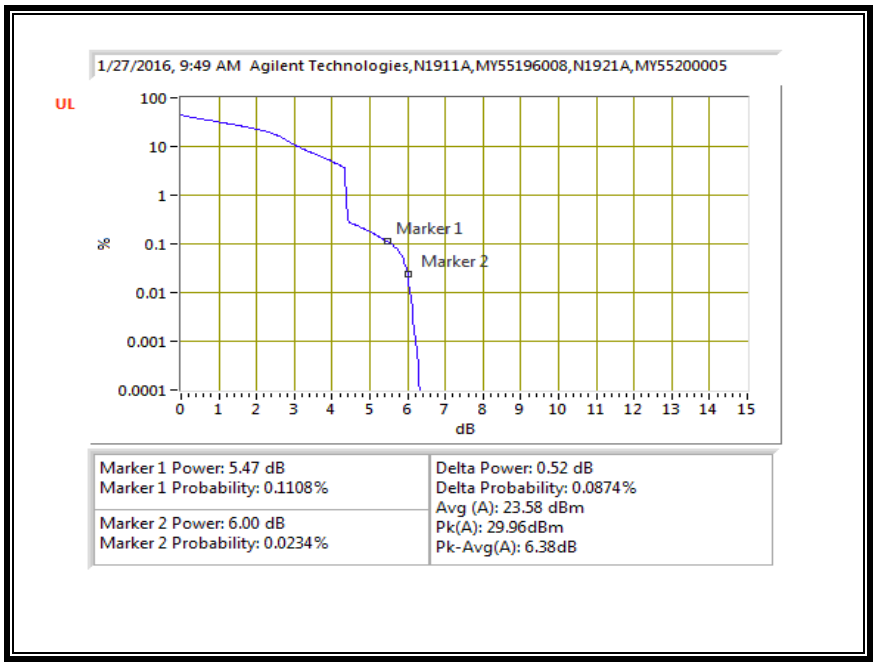
Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 30 RB1-0	10.0	2310.0	QPSK	26.09	22.11	3.98
			16QAM	25.69	21.19	4.50
*Peak Reading = Average Reading + Peak-to-Average Ratio						

LTE BAND 2

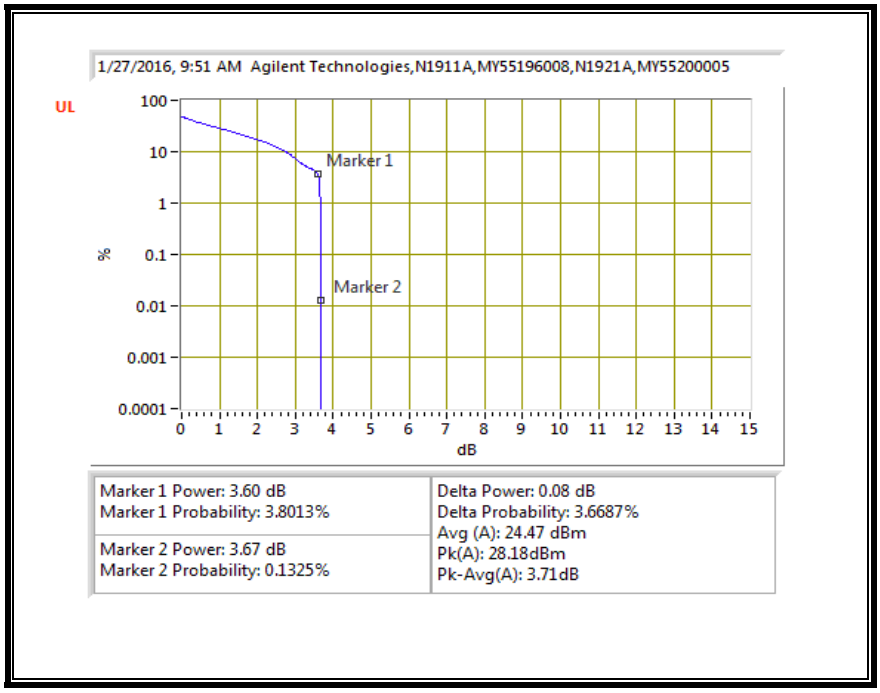
QPSK, (1.4 MHz BAND WIDTH)



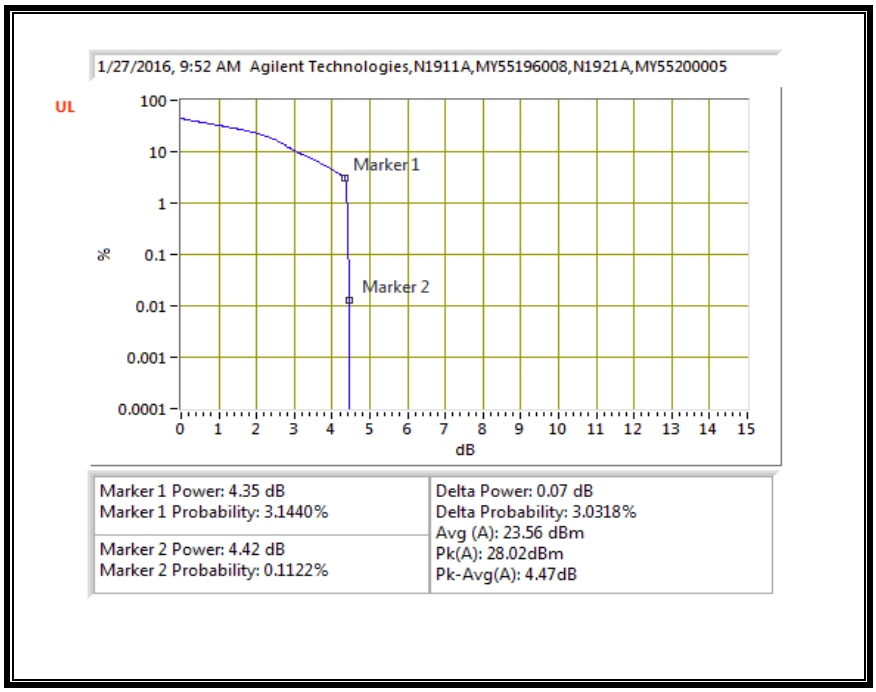
16QAM, (1.4 MHz BAND WIDTH)



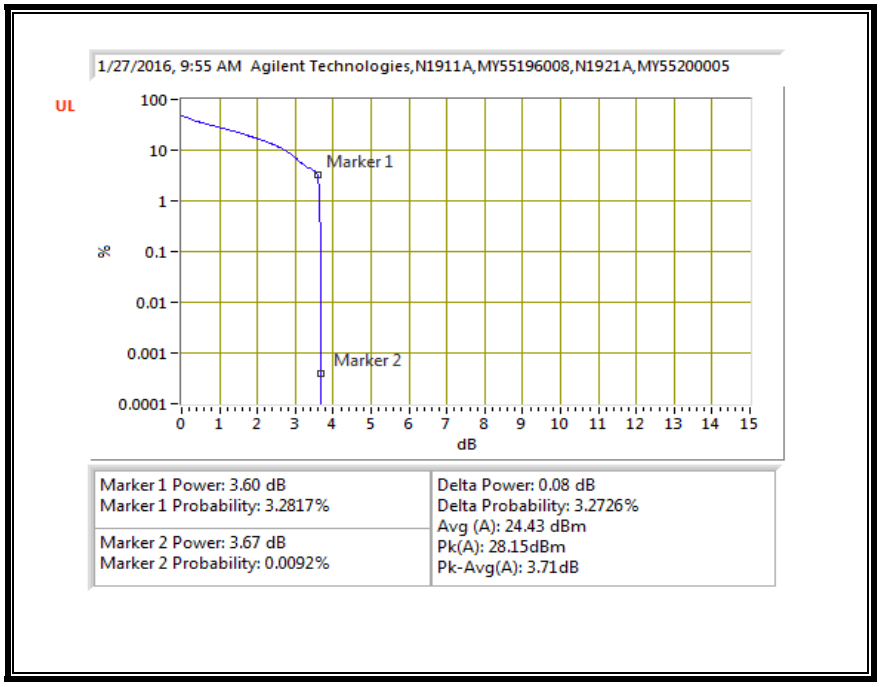
QPSK, (3.0 MHz BAND WIDTH)



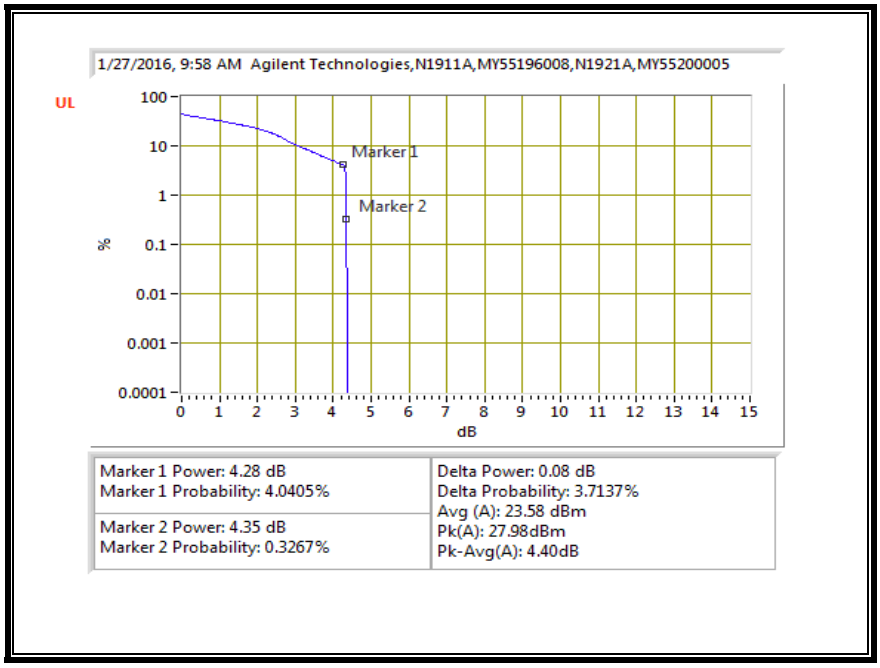
16QAM, (3.0 MHz BAND WIDTH)



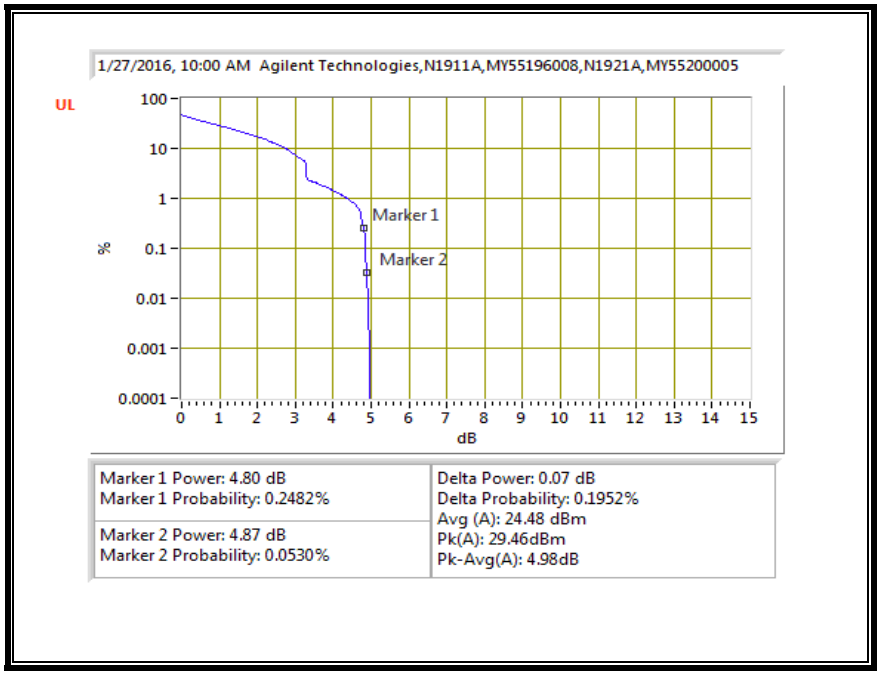
QPSK, (5.0 MHz BAND WIDTH)



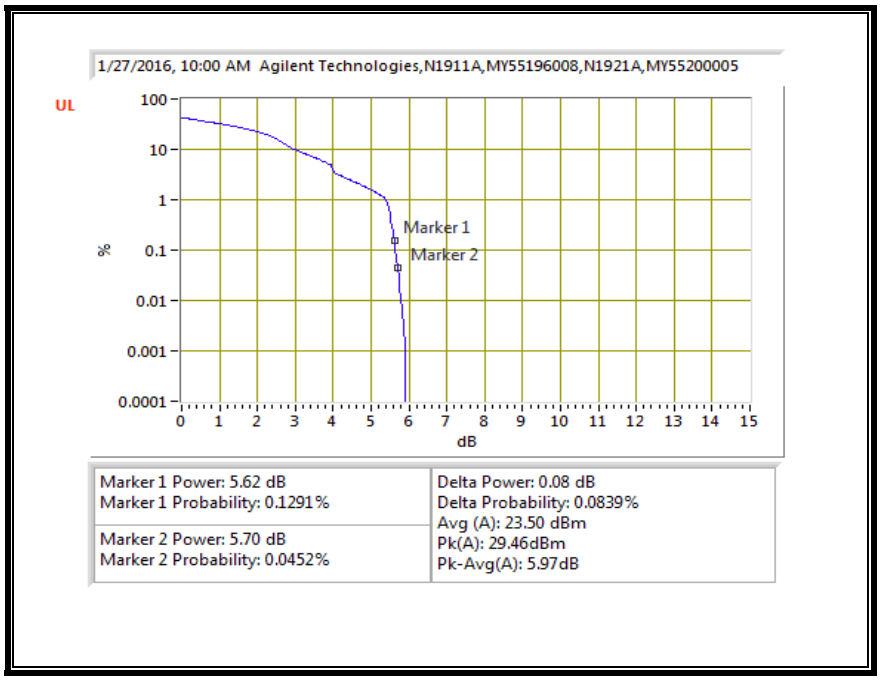
16QAM, (5.0 MHz BAND WIDTH)



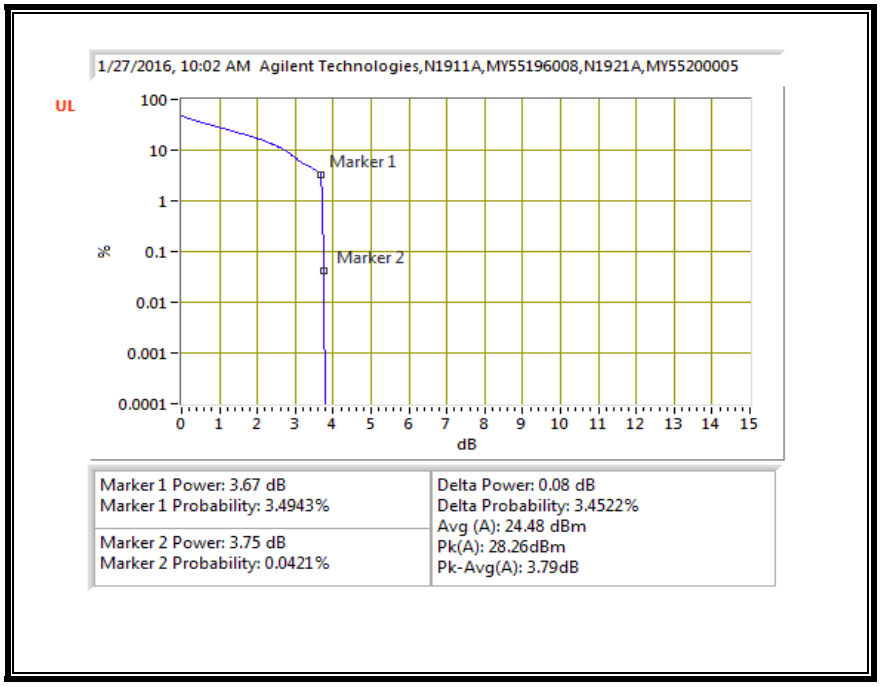
QPSK, (10.0 MHz BAND WIDTH)



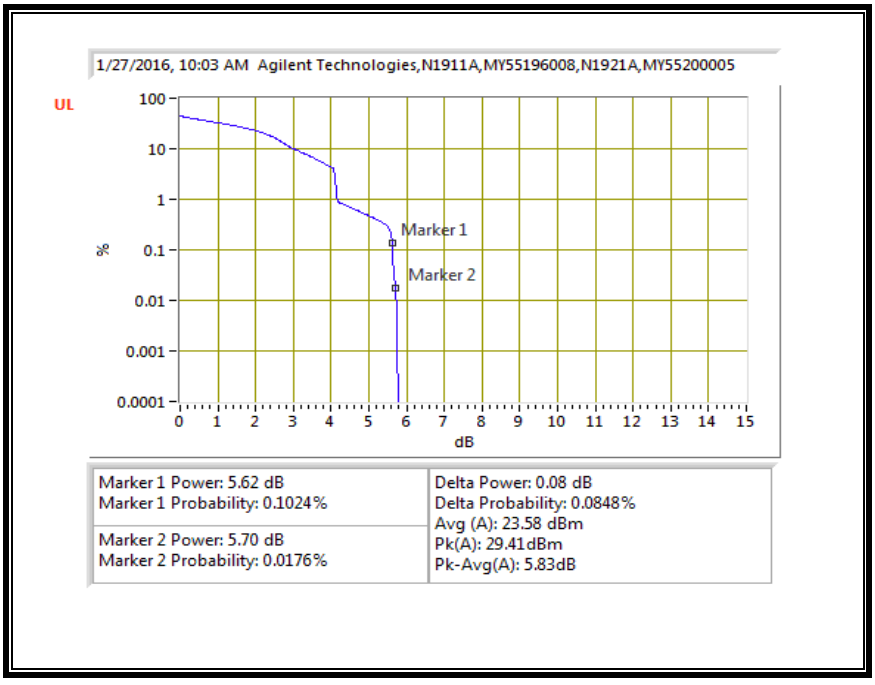
16QAM, (10.0 MHz BAND WIDTH)



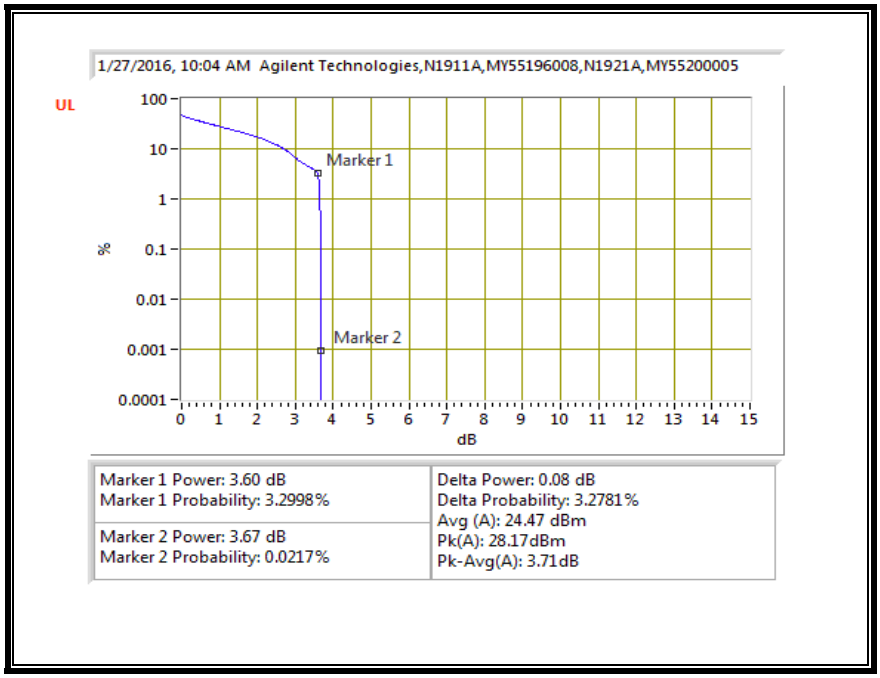
QPSK, (15.0 MHz BAND WIDTH)



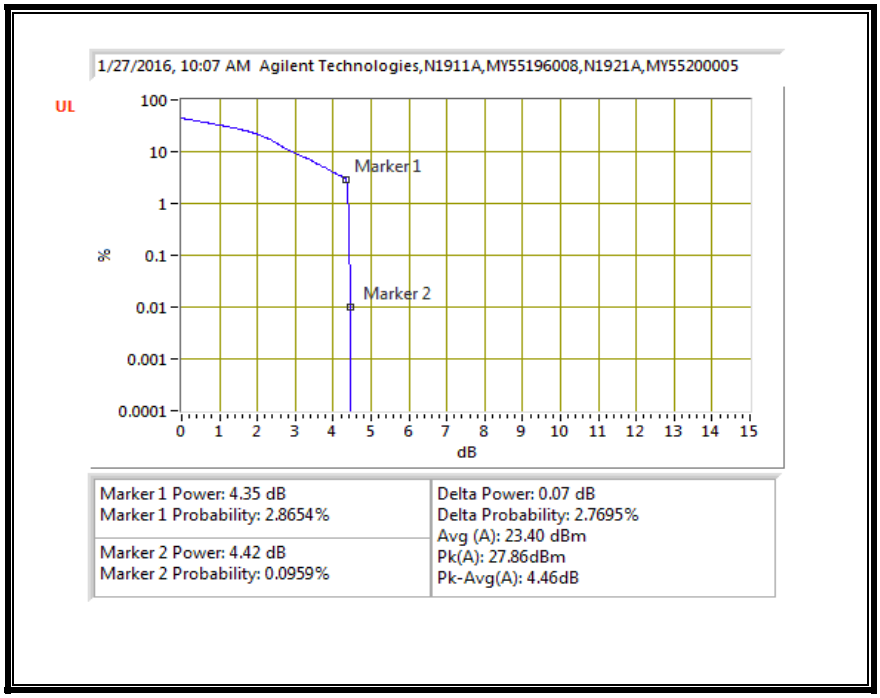
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

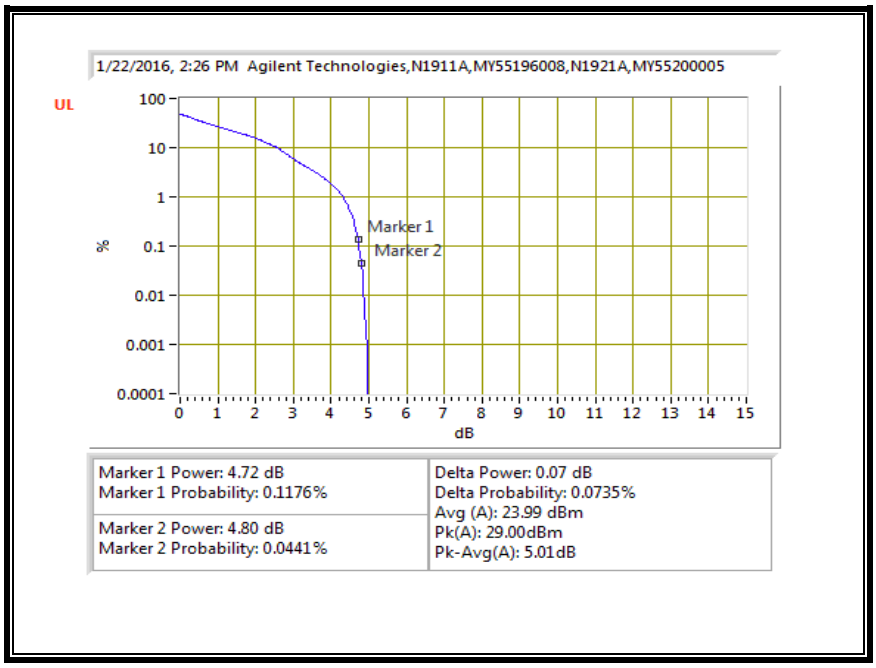


16QAM, (20.0 MHz BAND WIDTH)

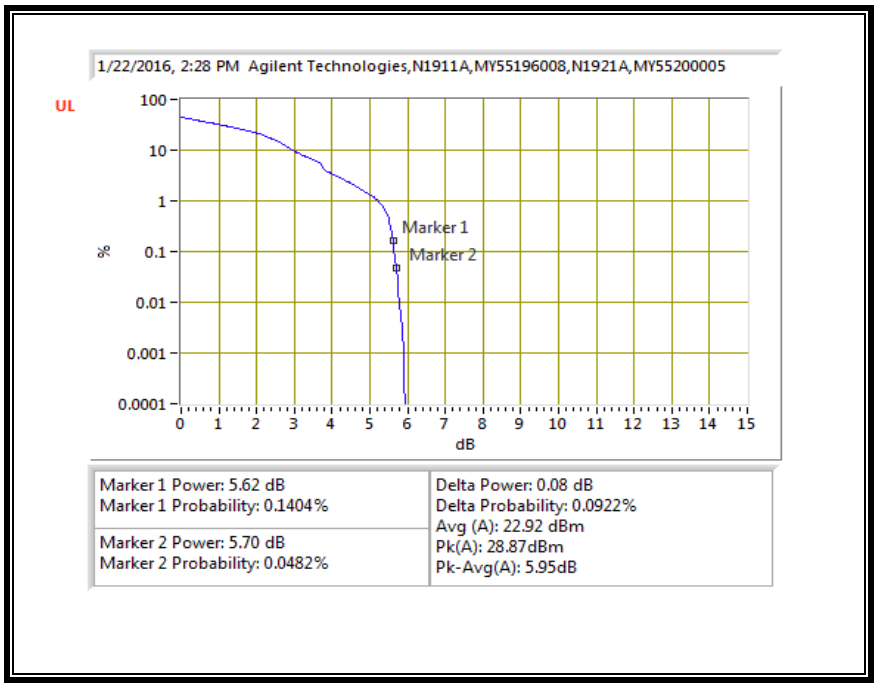


LTE BAND 4

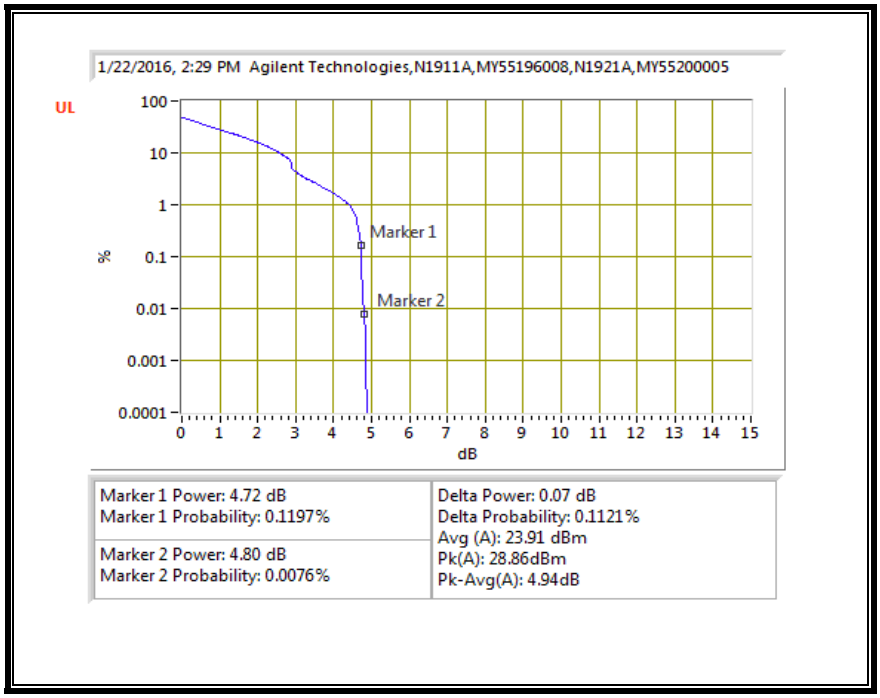
QPSK, (1.4 MHz BAND WIDTH)



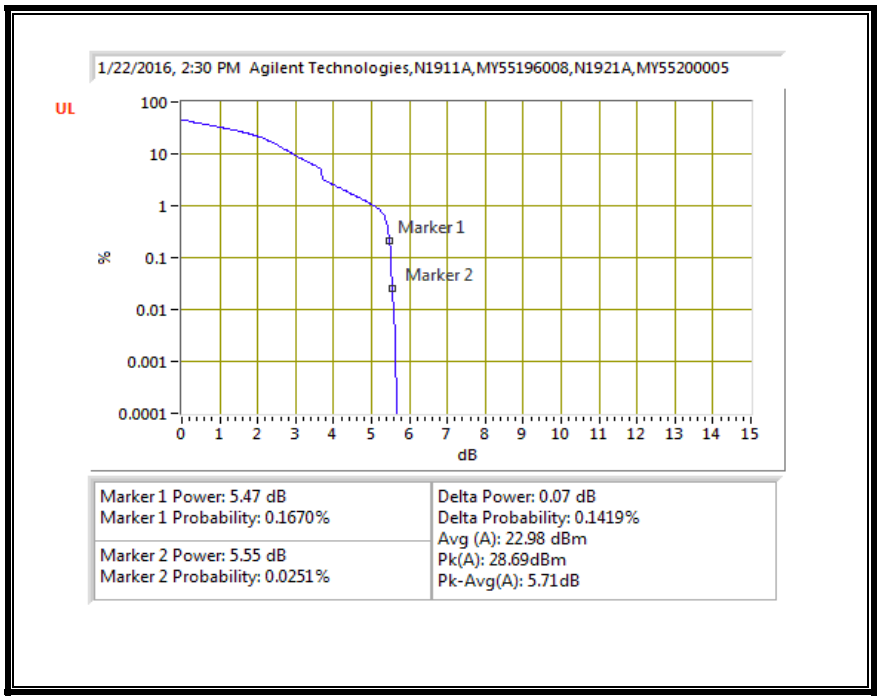
16QAM, (1.4 MHz BAND WIDTH)



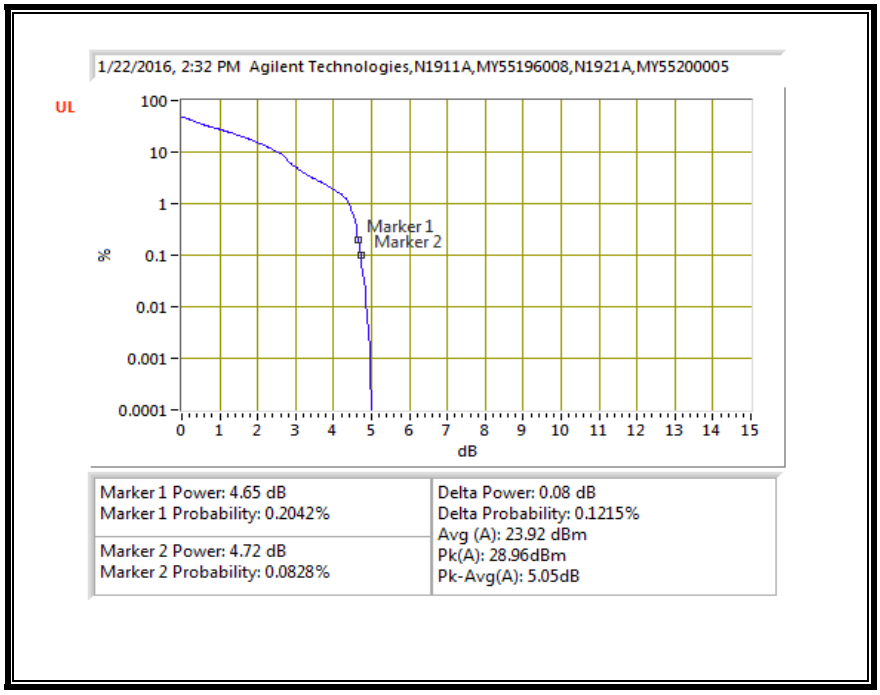
QPSK, (3.0 MHz BAND WIDTH)



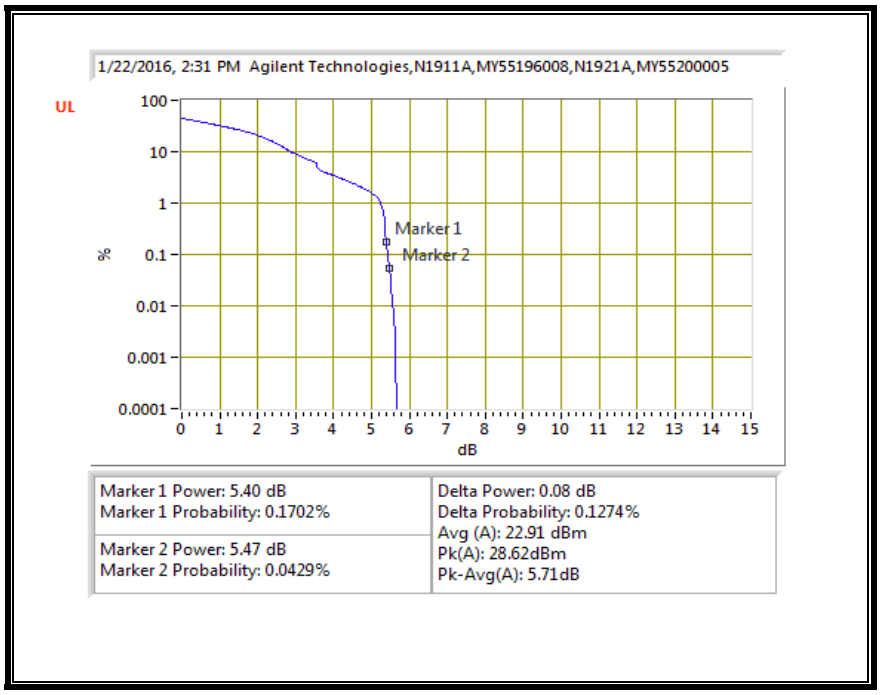
16QAM, (3.0 MHz BAND WIDTH)



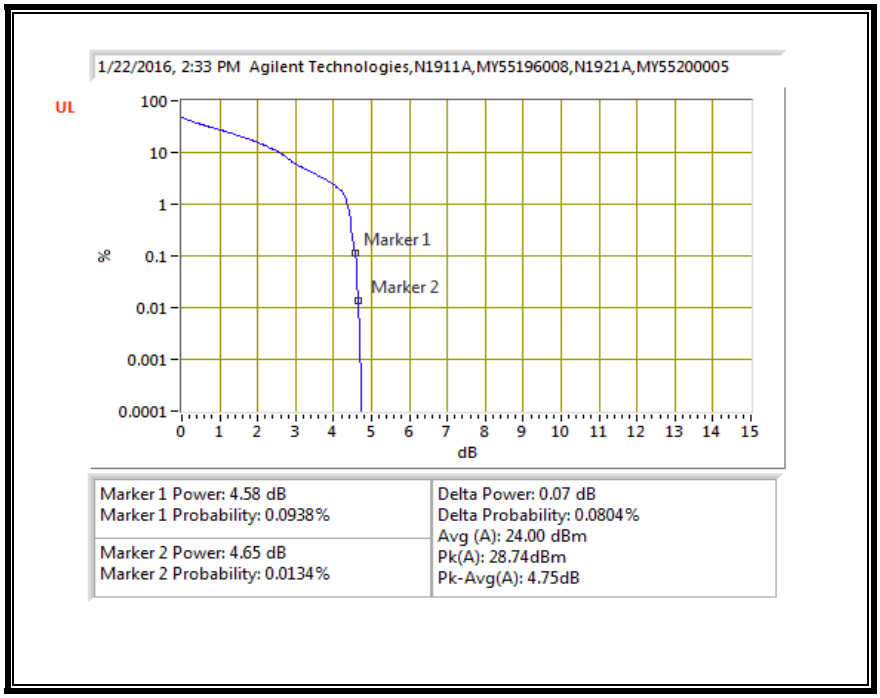
QPSK, (5.0 MHz BAND WIDTH)



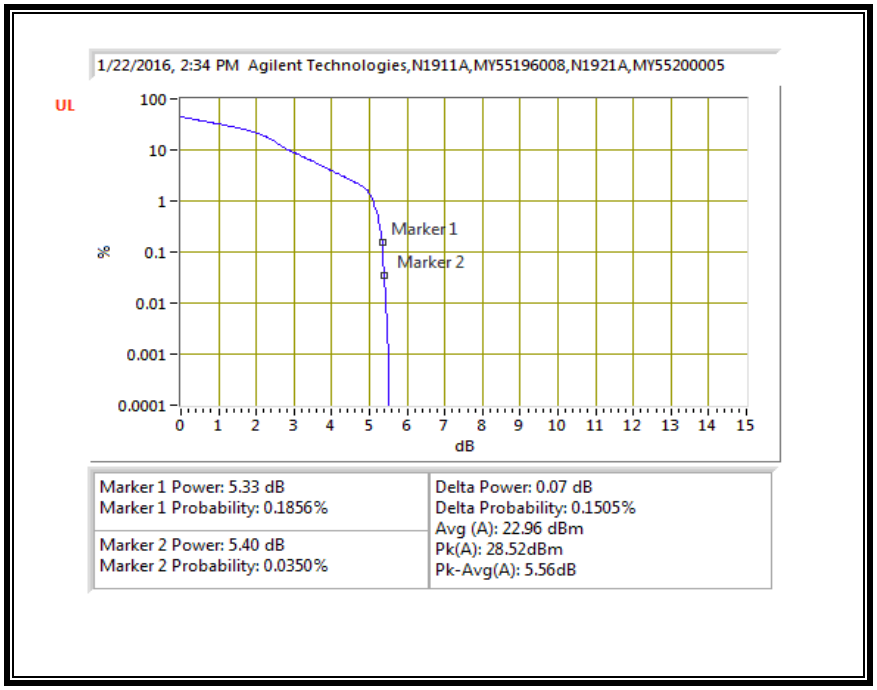
16QAM, (5.0 MHz BAND WIDTH)



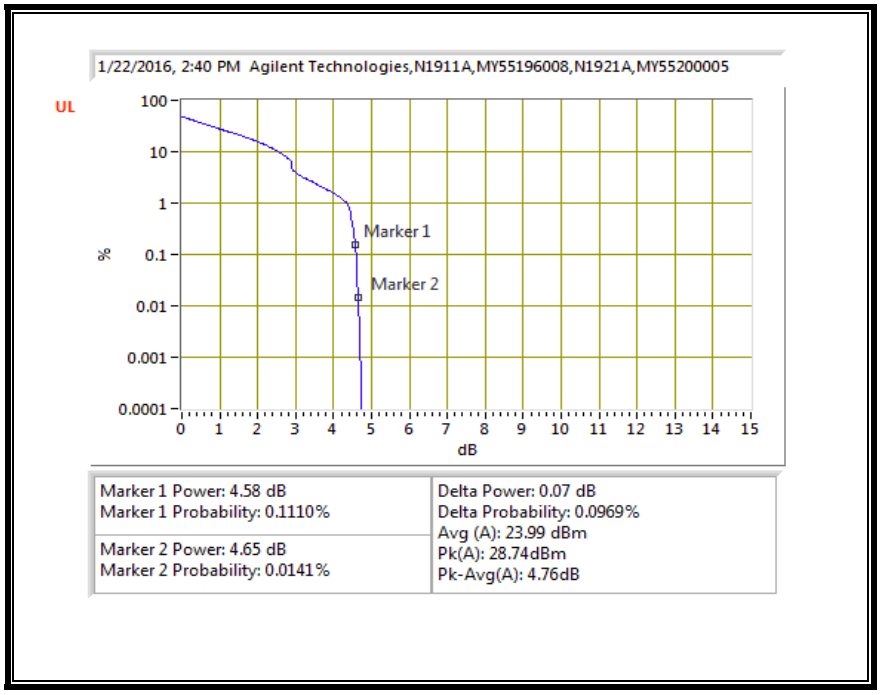
QPSK, (10.0 MHz BAND WIDTH)



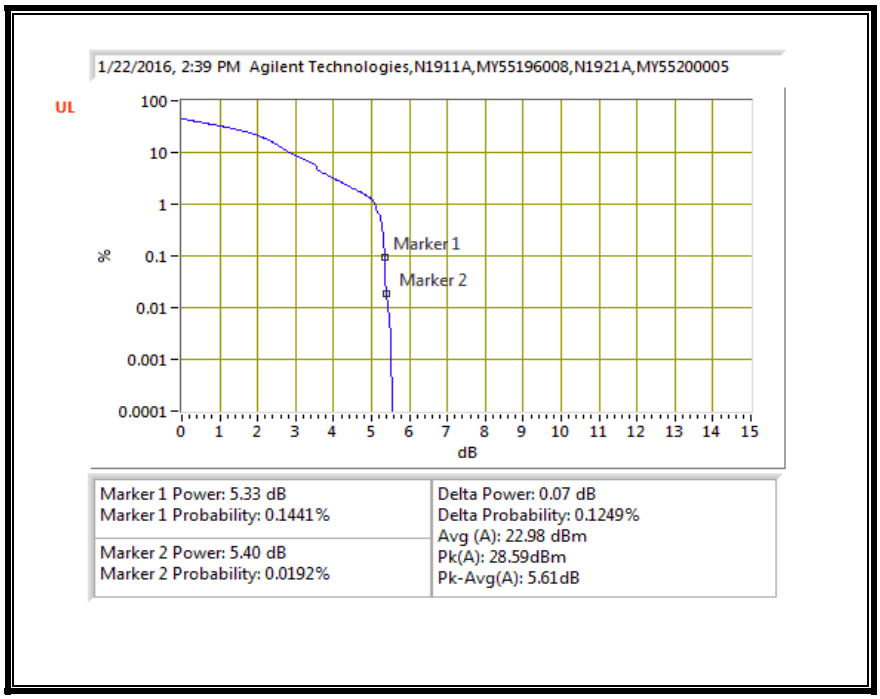
16QAM, (10.0 MHz BAND WIDTH)



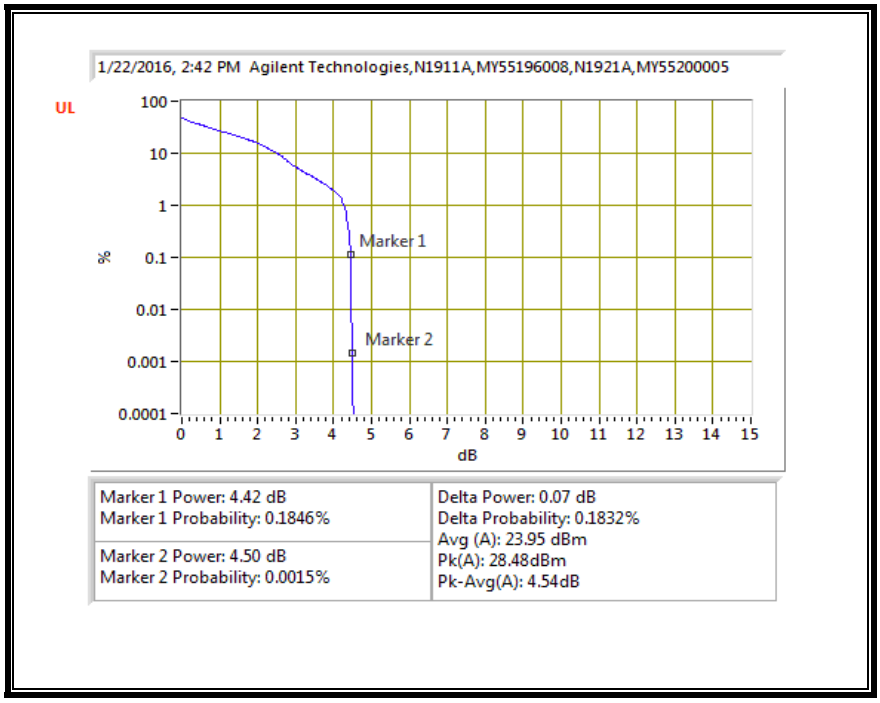
QPSK, (15.0 MHz BAND WIDTH)



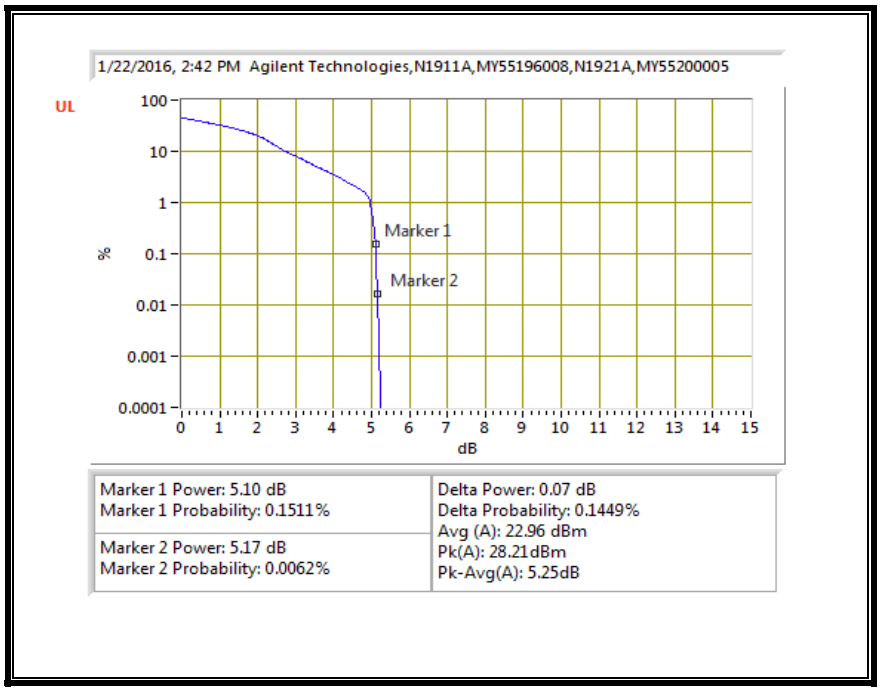
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

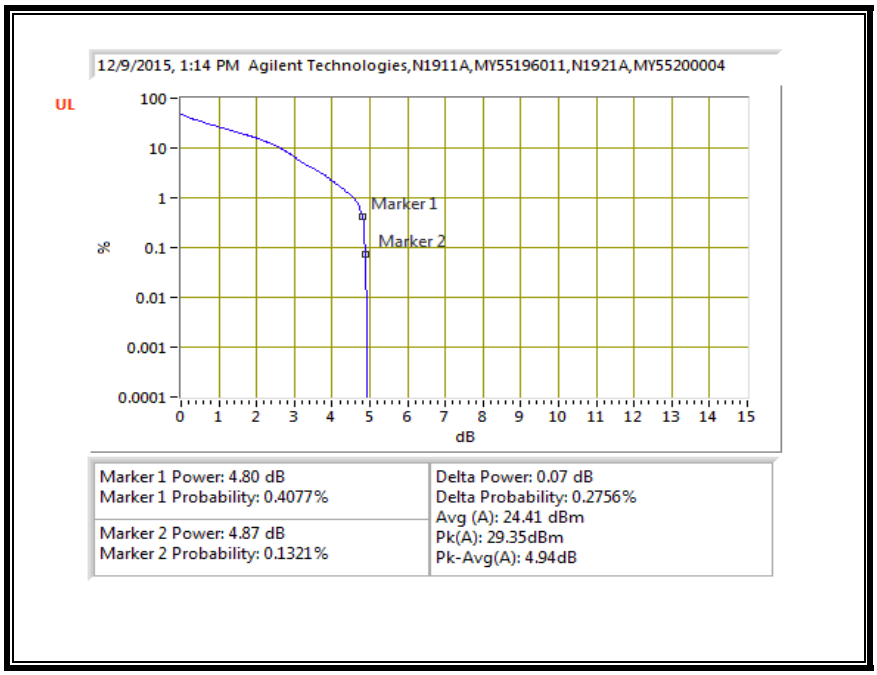


16QAM, (20.0 MHz BAND WIDTH)

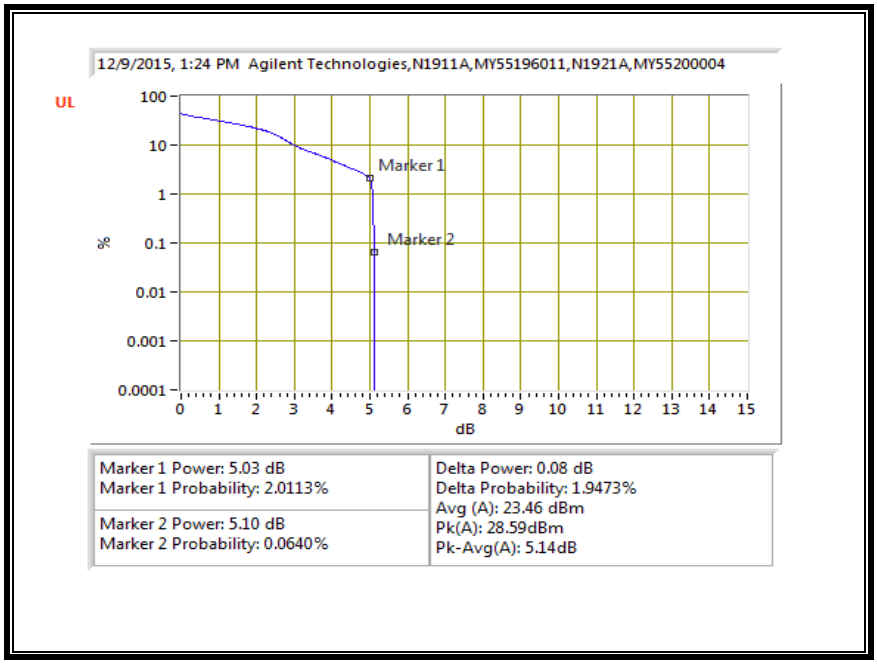


LTE BAND 5

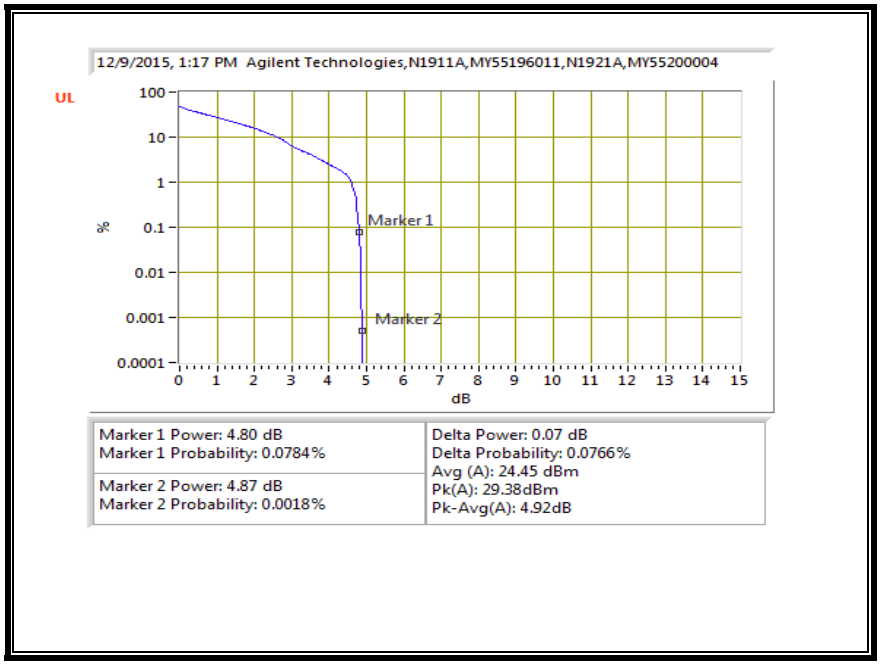
QPSK, (1.4 MHz BAND WIDTH)



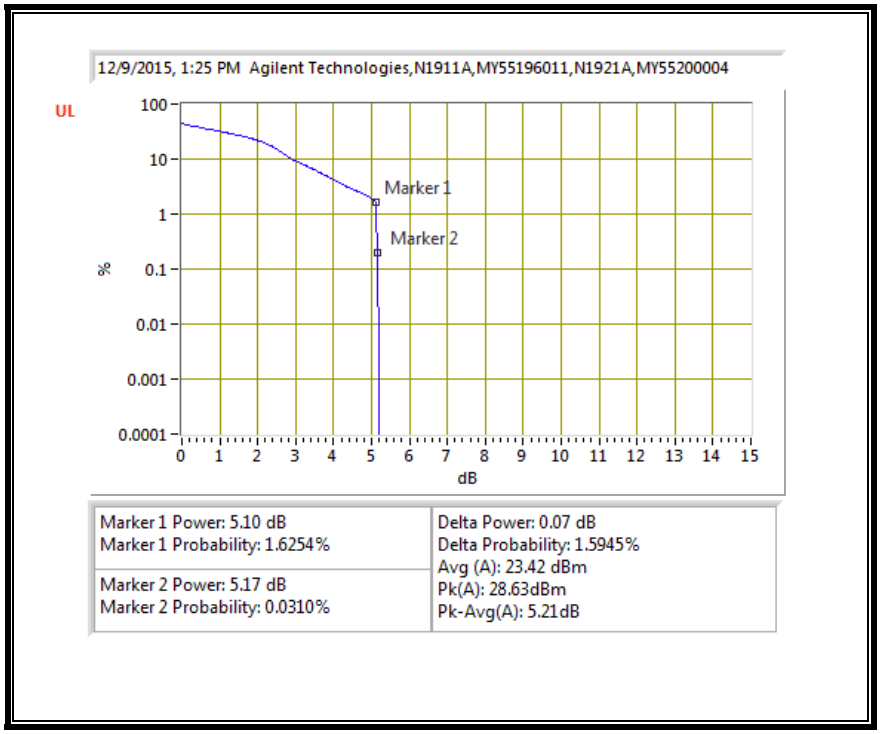
16QAM, (1.4 MHz BAND WIDTH)



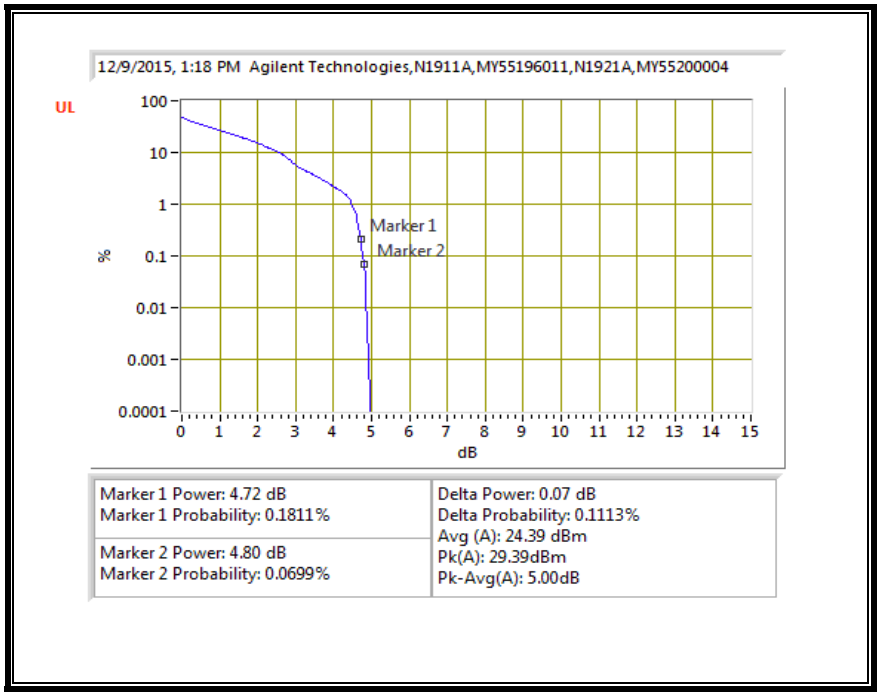
QPSK, (3.0 MHz BAND WIDTH)



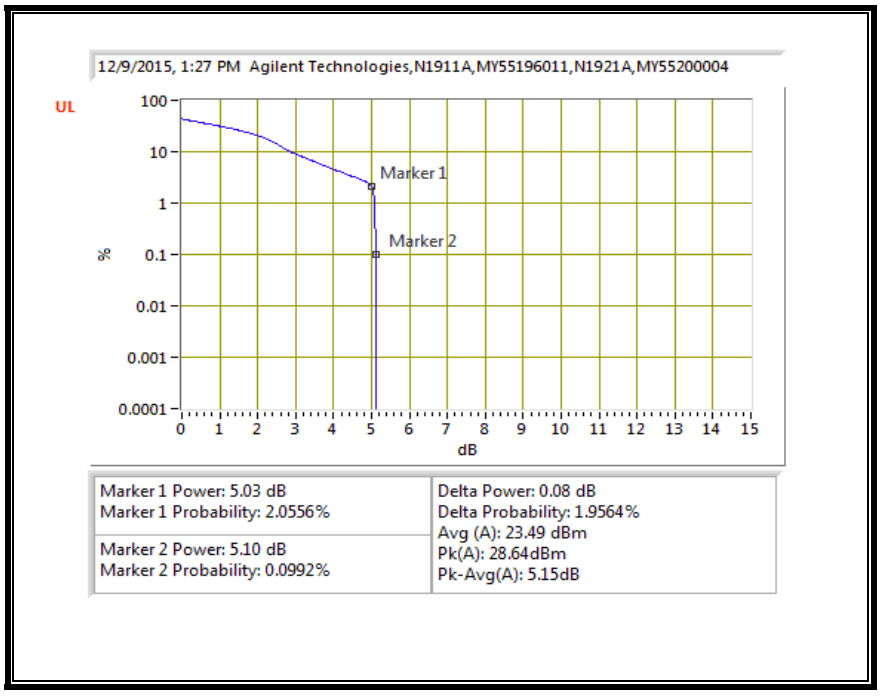
16QAM, (3.0 MHz BAND WIDTH)



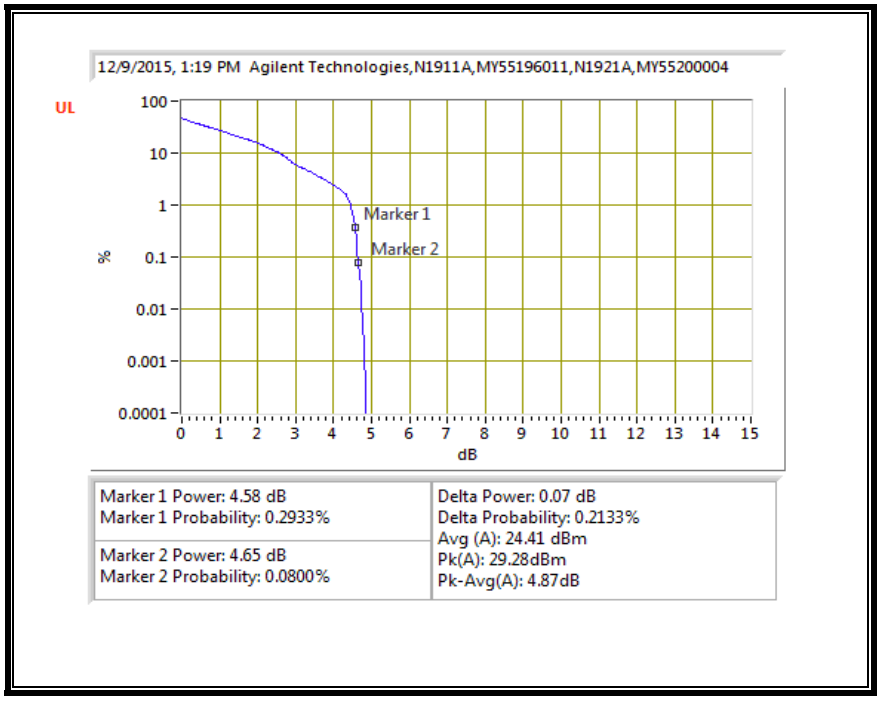
QPSK, (5.0 MHz BAND WIDTH)



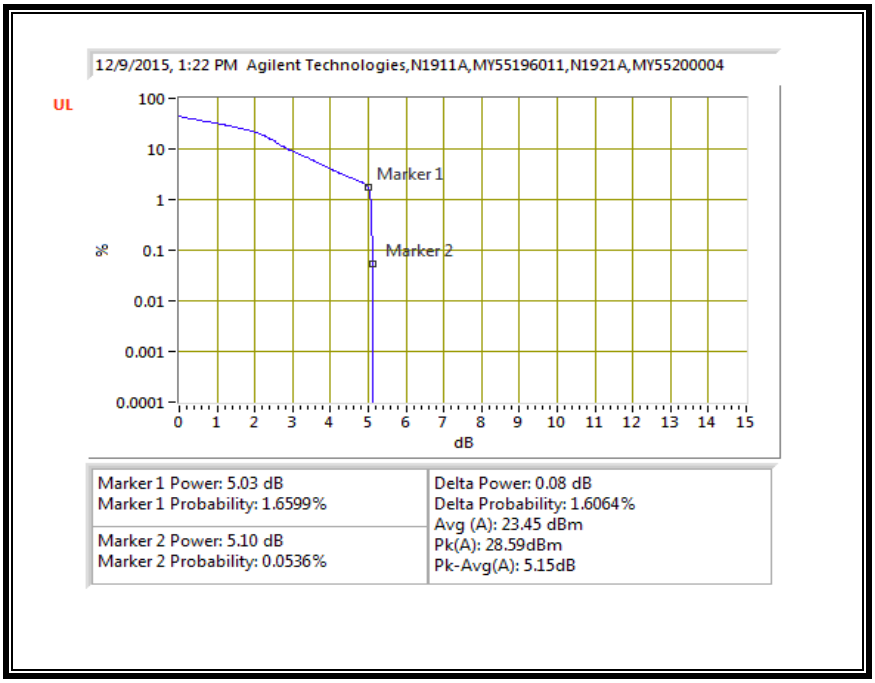
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

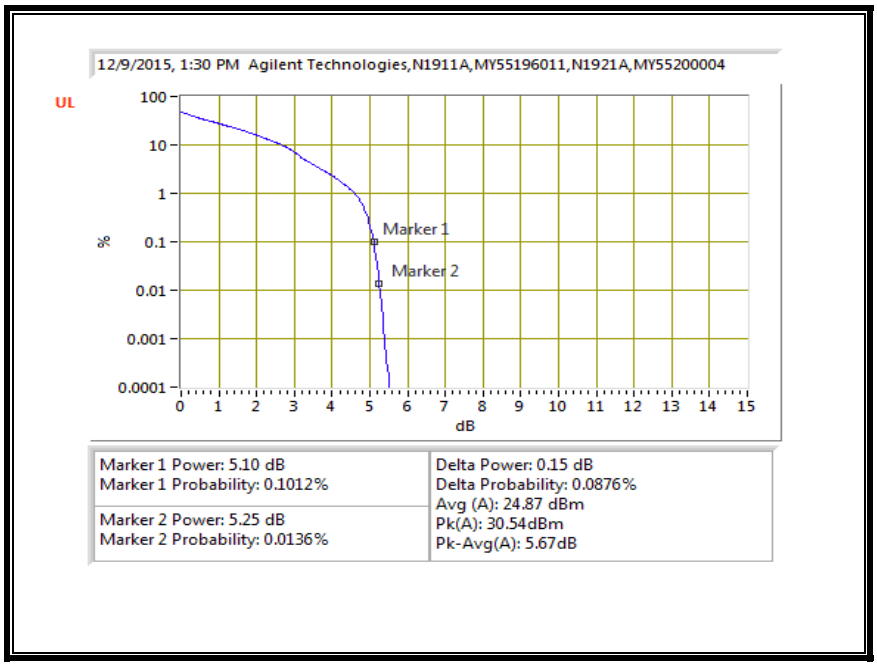


16QAM, (10.0 MHz BAND WIDTH)

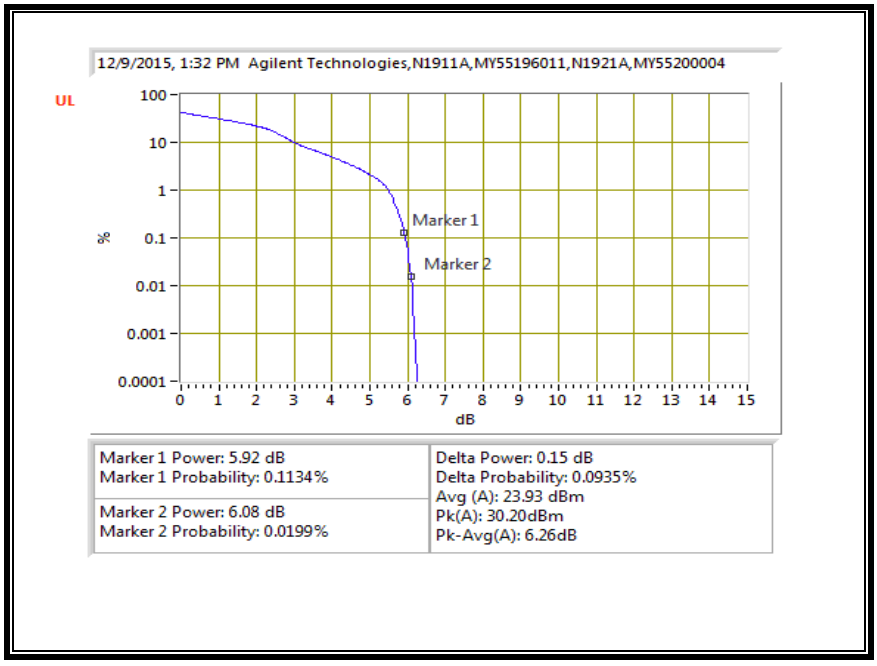


LTE BAND 12

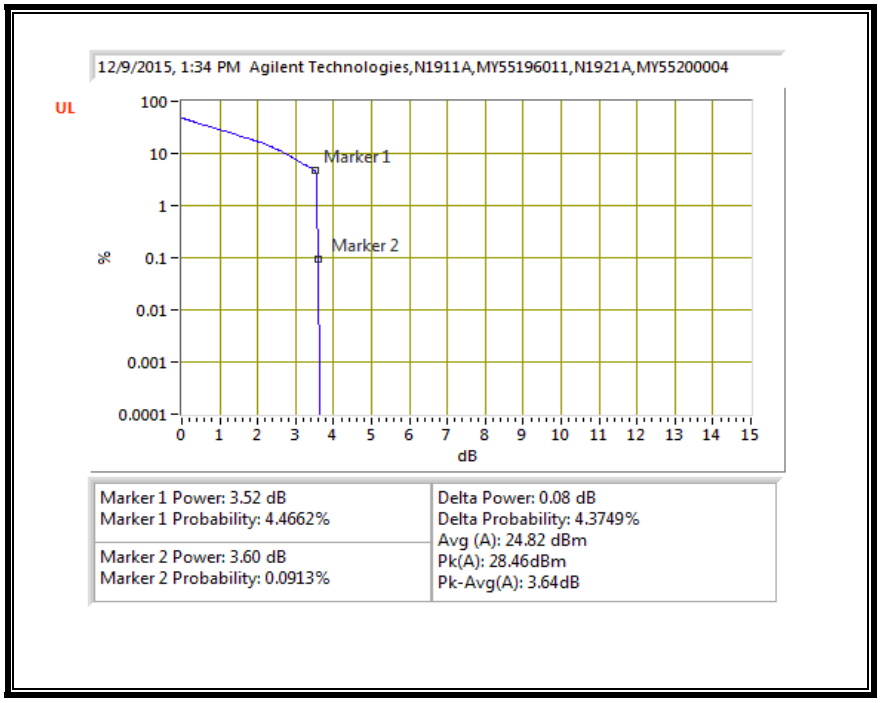
QPSK, (1.4 MHz BAND WIDTH)



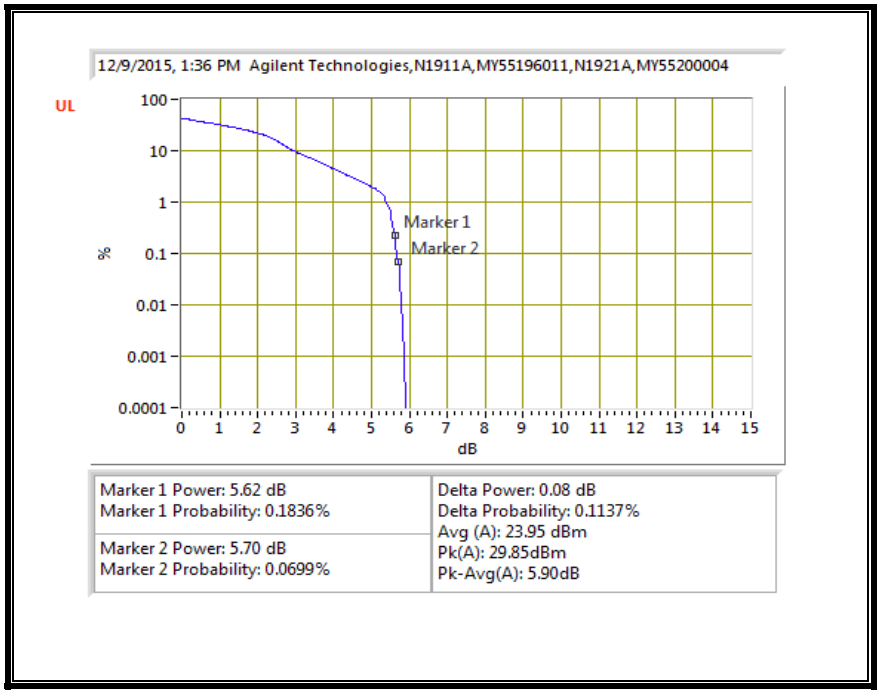
16QAM, (1.4 MHz BAND WIDTH)



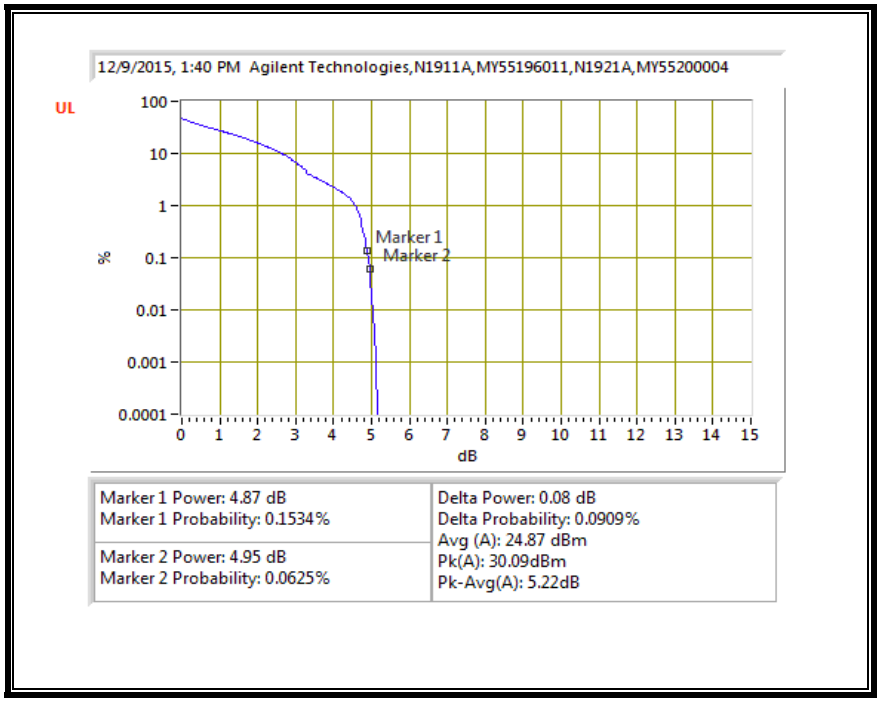
QPSK, (3.0 MHz BAND WIDTH)



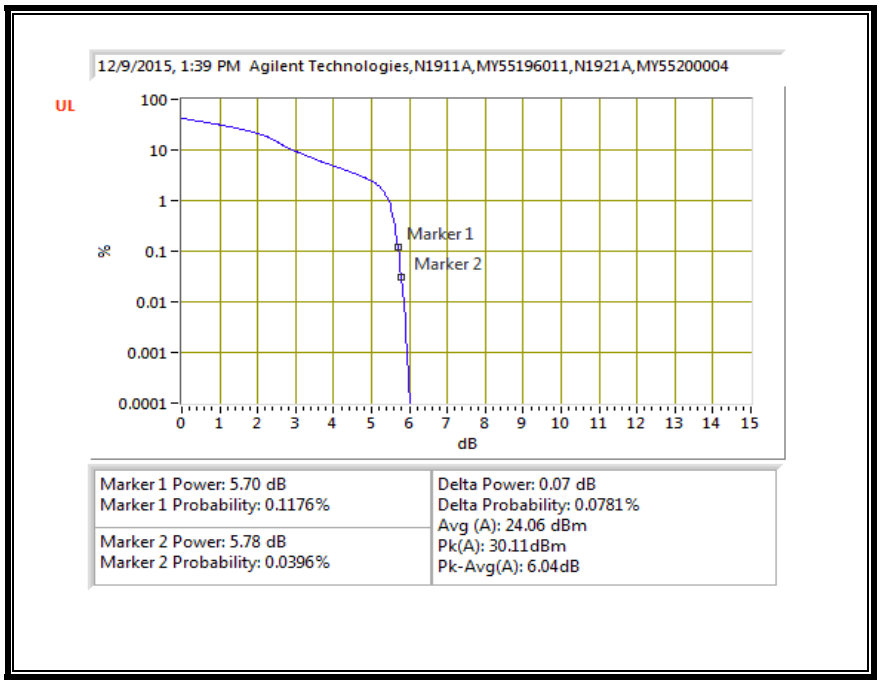
16QAM, (3.0 MHz BAND WIDTH)



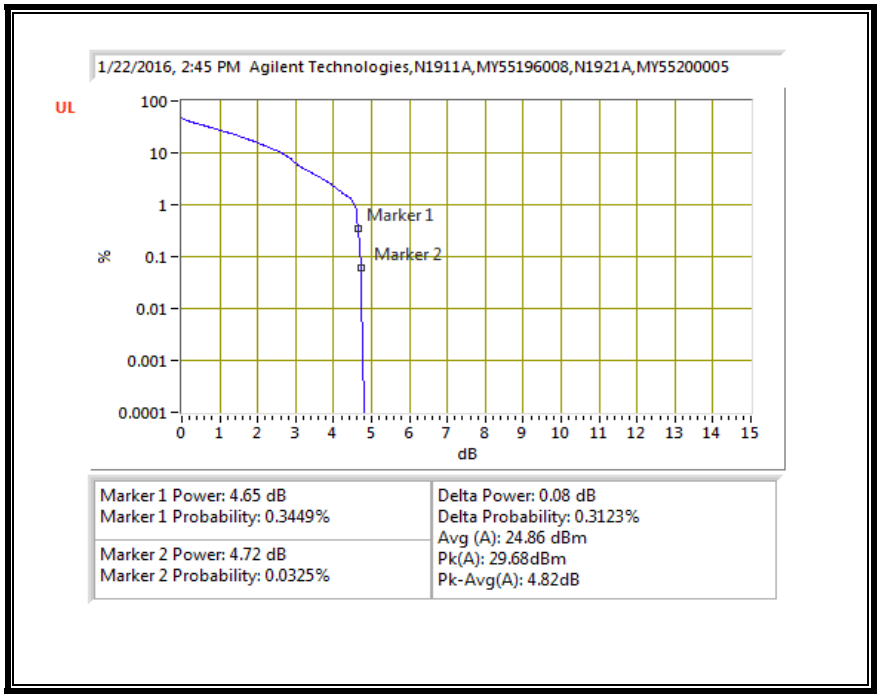
QPSK, (5.0 MHz BAND WIDTH)



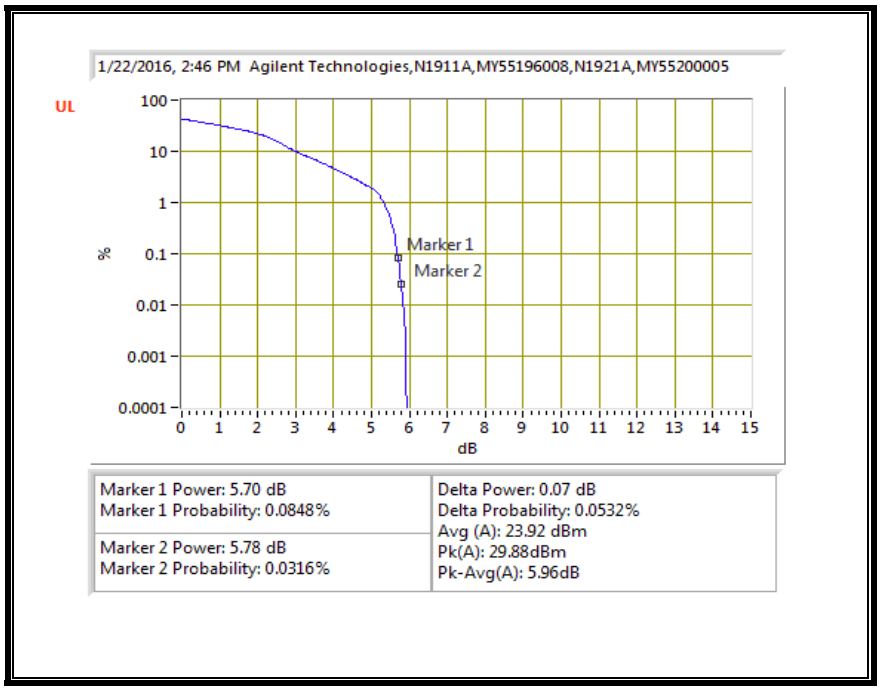
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

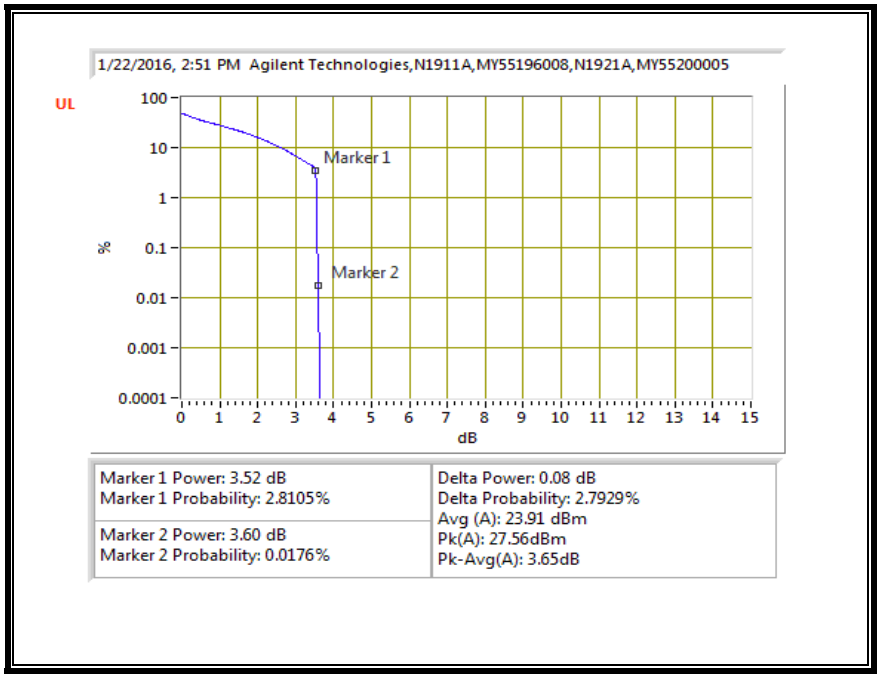


16QAM, (10.0 MHz BAND WIDTH)

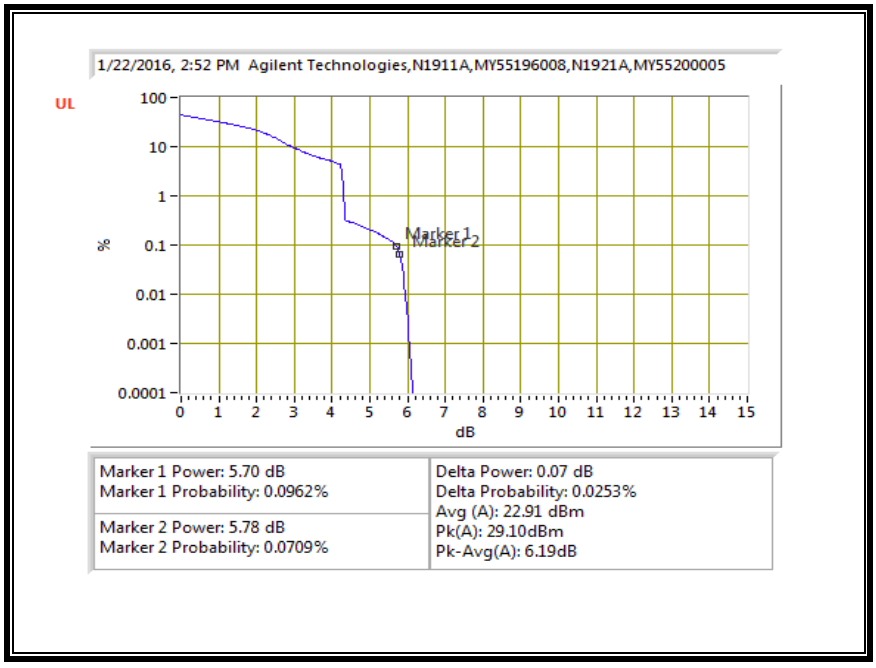


LTE BAND 13

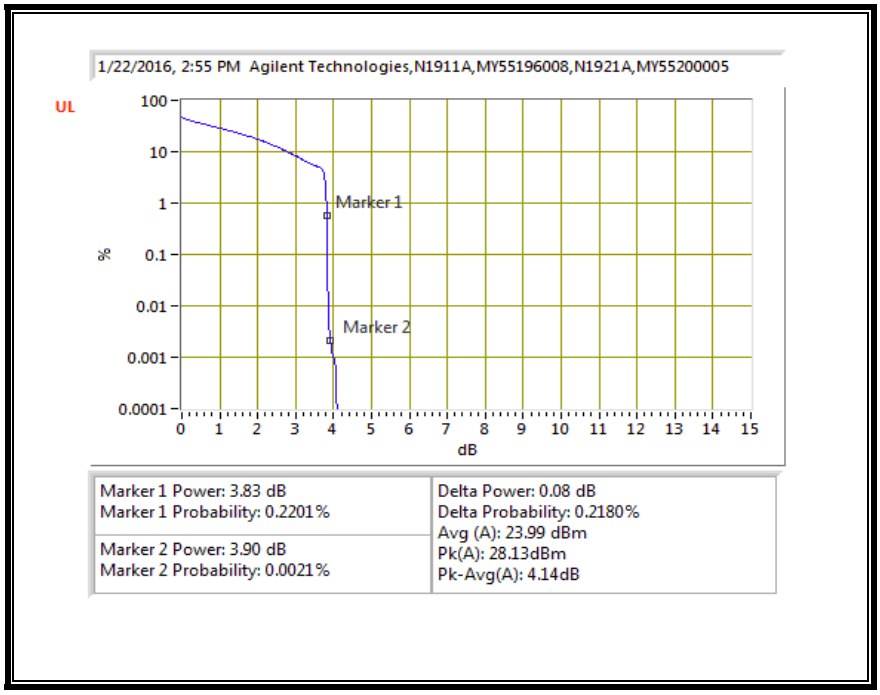
QPSK, (5.0 MHz BAND WIDTH)



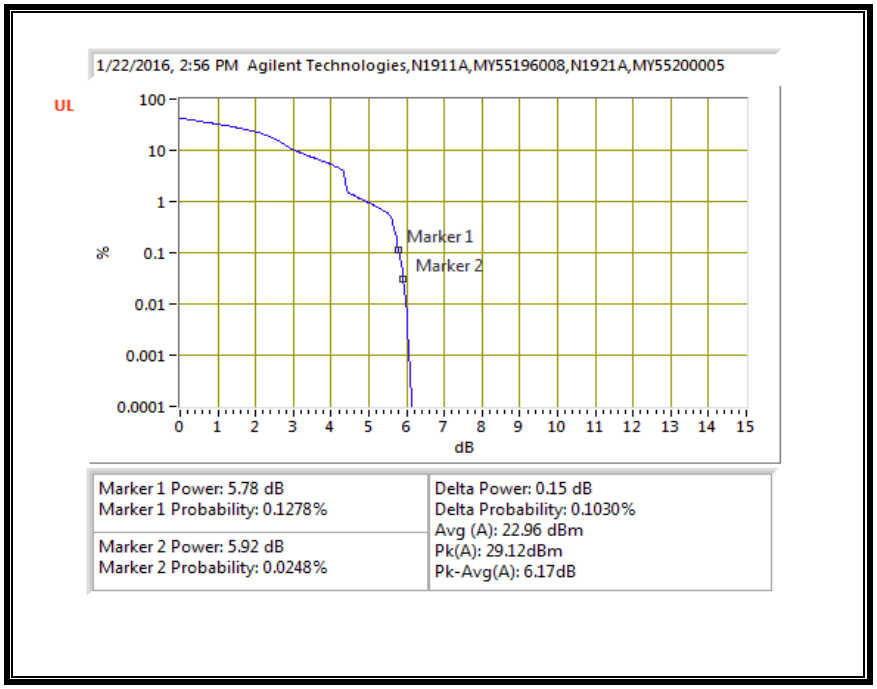
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

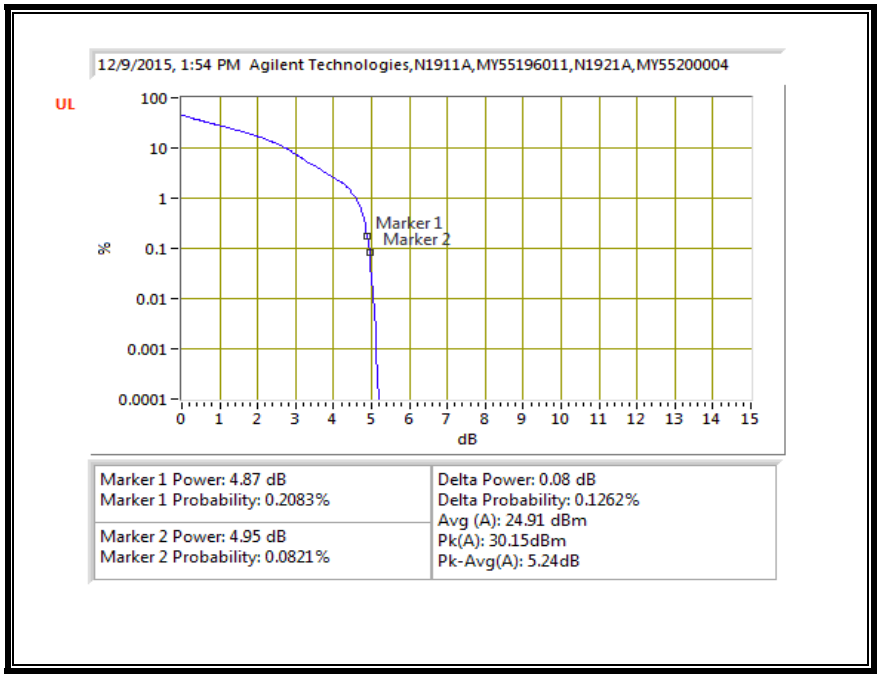


16QAM, (10.0 MHz BAND WIDTH)

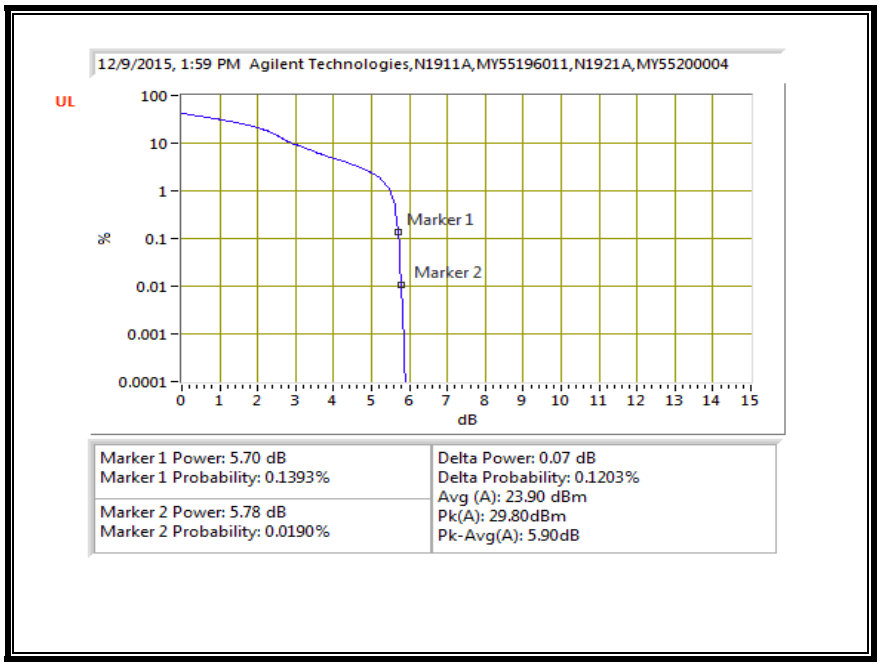


LTE BAND 17

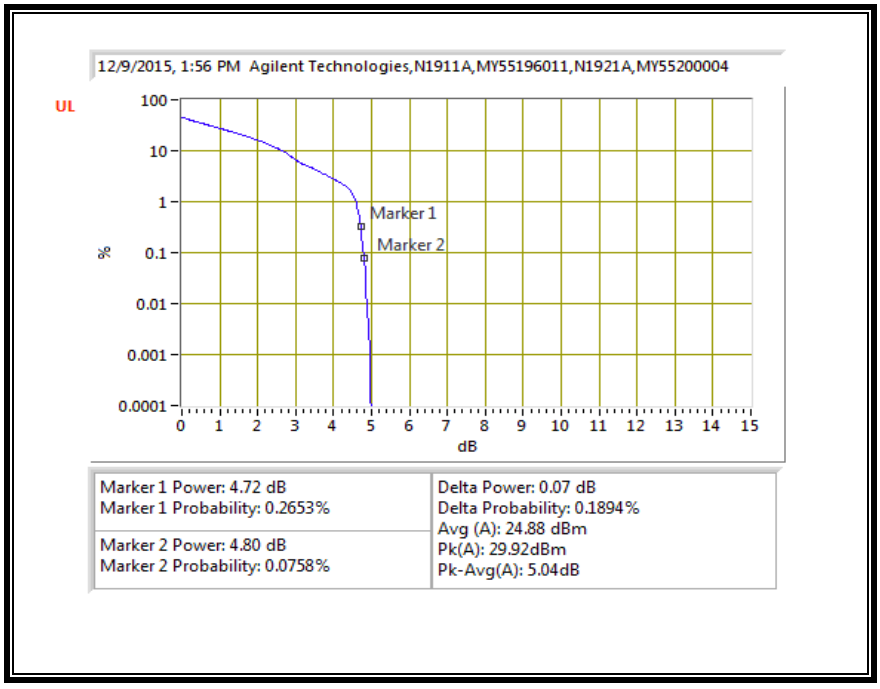
QPSK, (5.0 MHz BAND WIDTH)



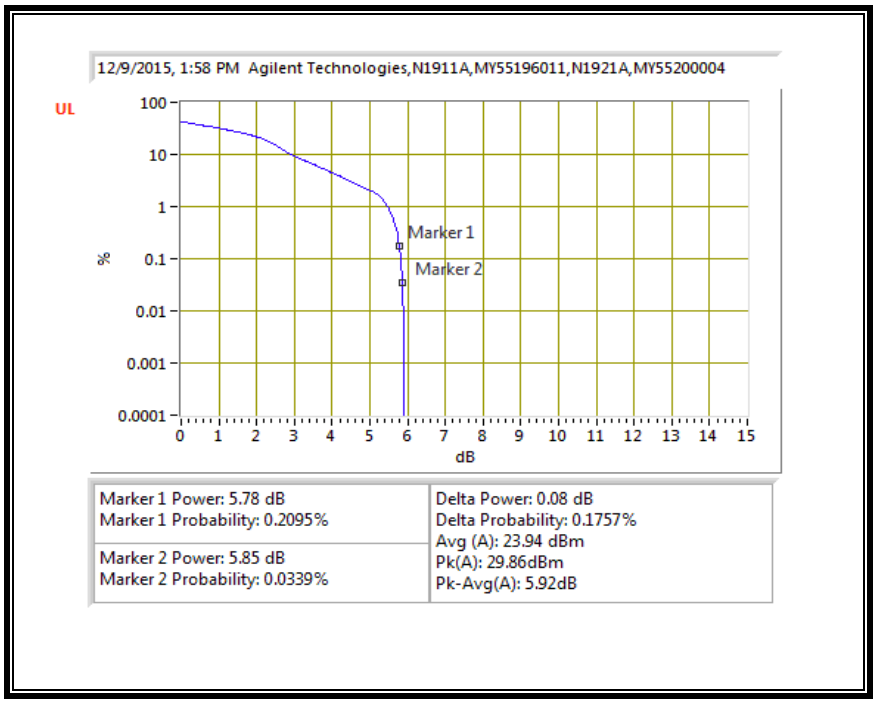
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

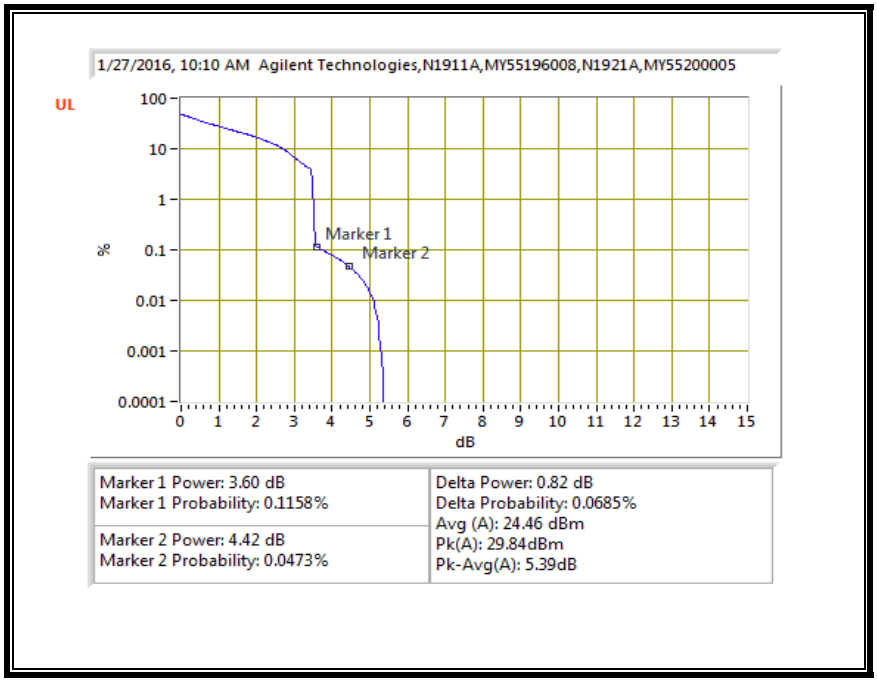


16QAM, (10.0 MHz BAND WIDTH)

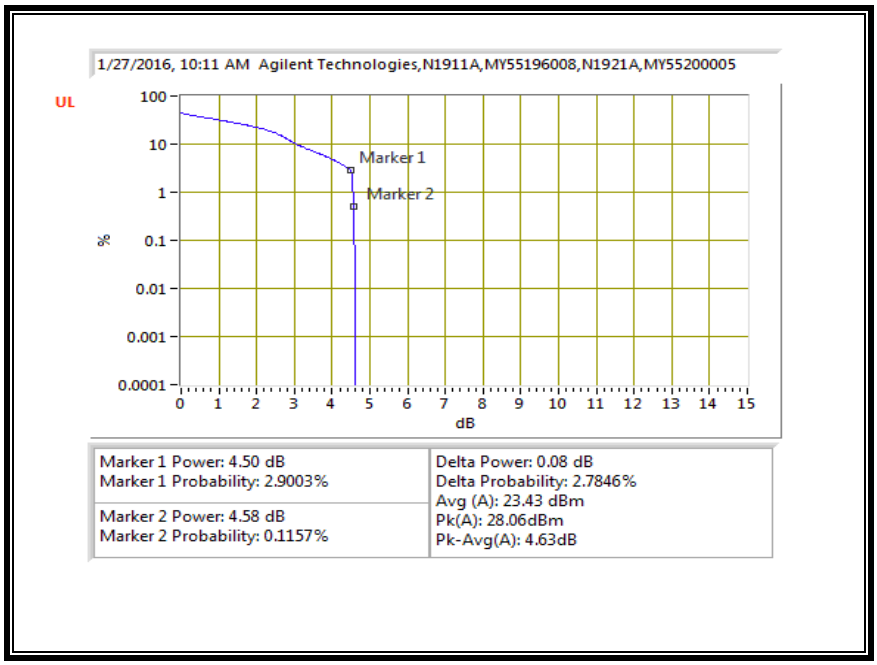


LTE BAND 25

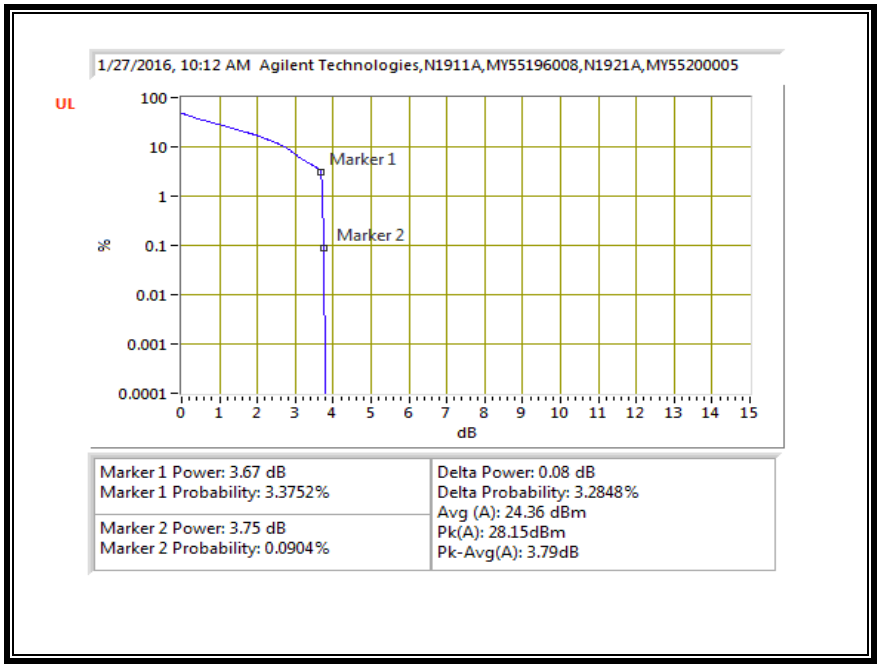
QPSK, (1.4 MHz BAND WIDTH)



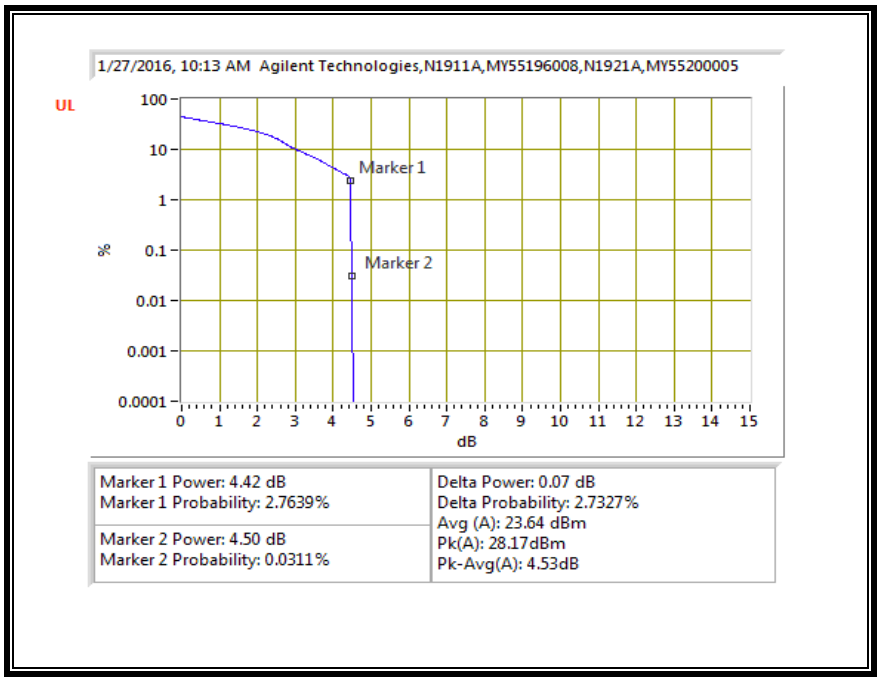
16QAM, (1.4 MHz BAND WIDTH)



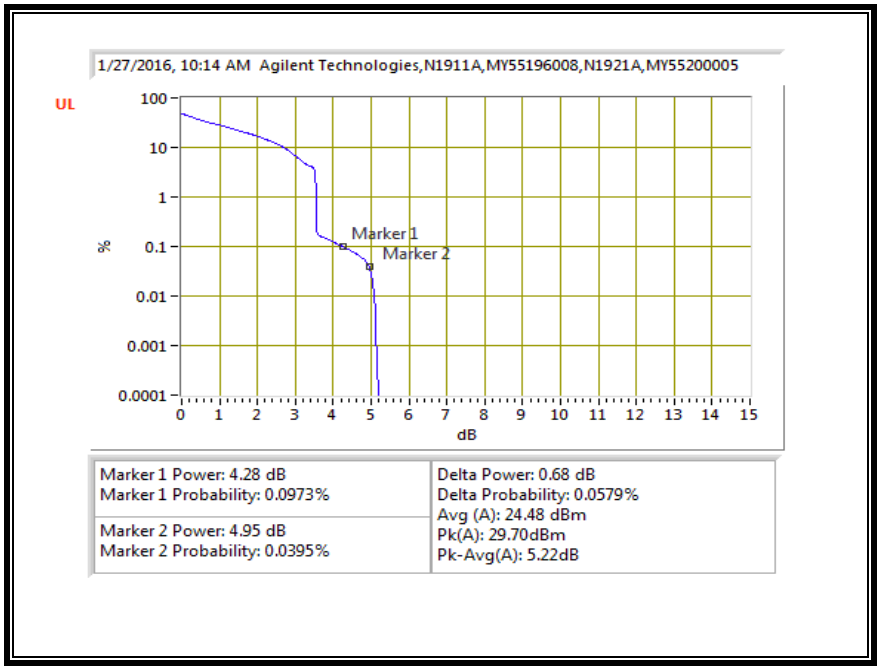
QPSK, (3.0 MHz BAND WIDTH)



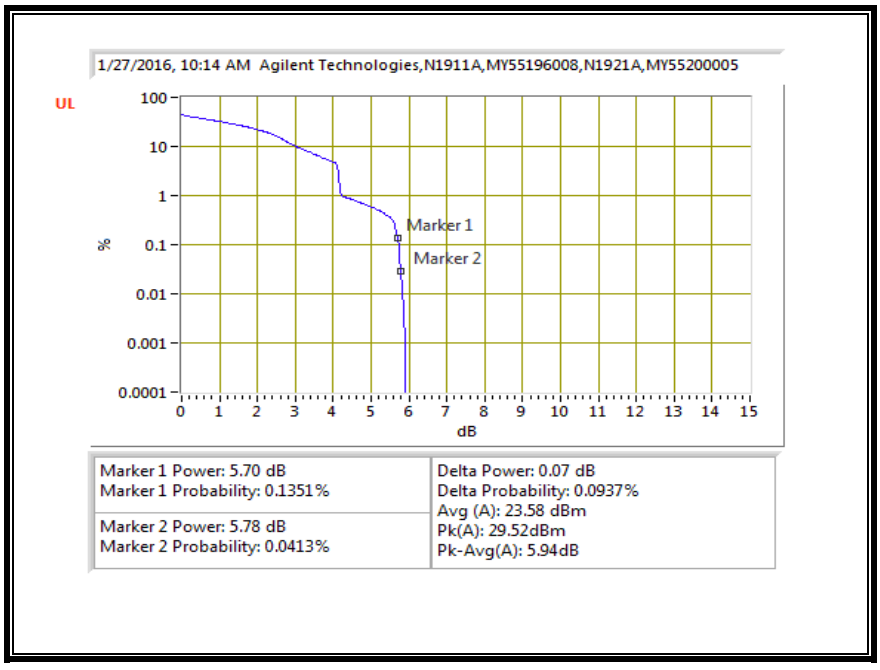
16QAM, (3.0 MHz BAND WIDTH)



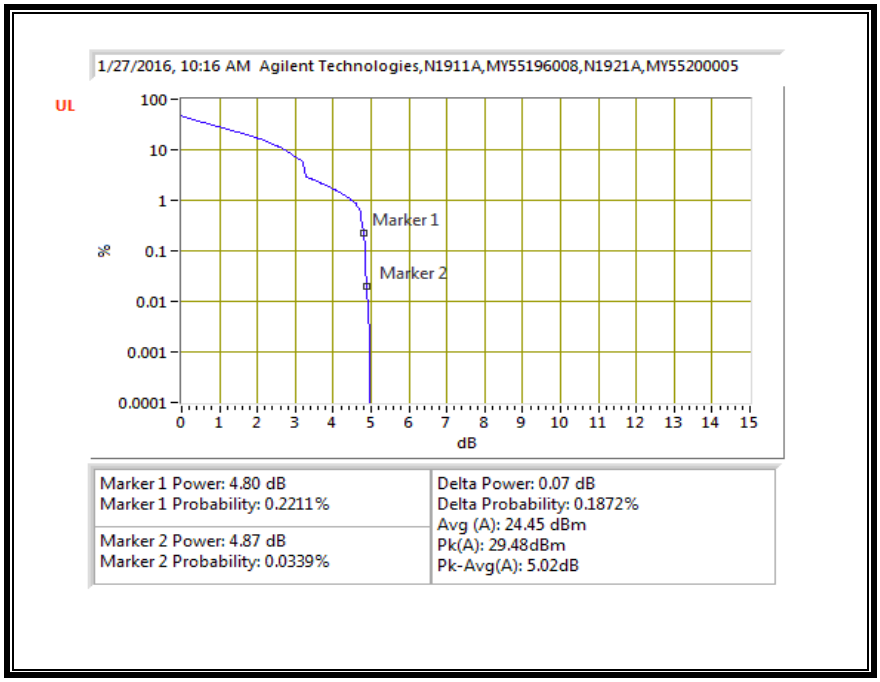
QPSK, (5.0 MHz BAND WIDTH)



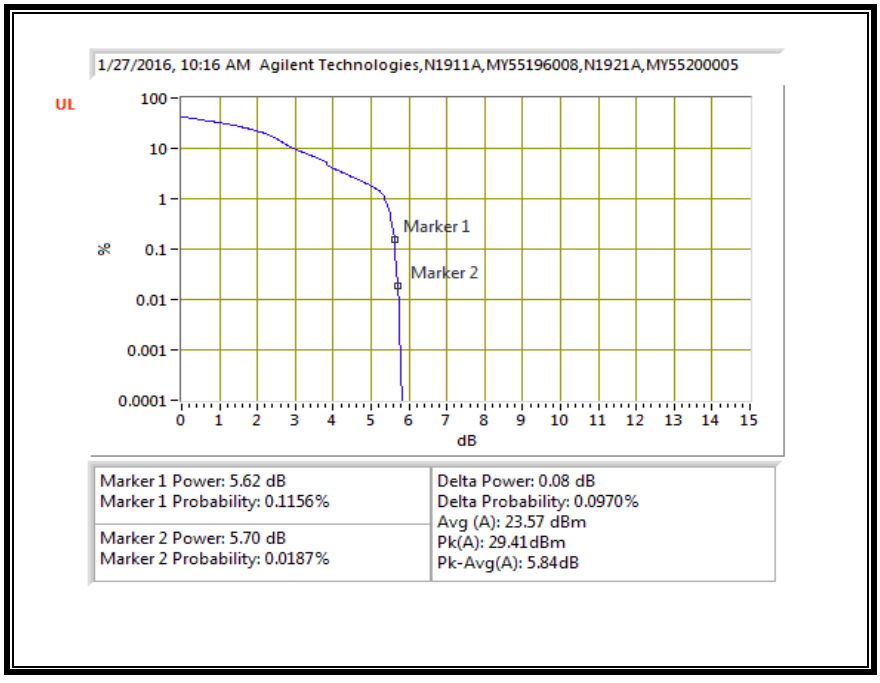
16QAM, (5.0 MHz BAND WIDTH)



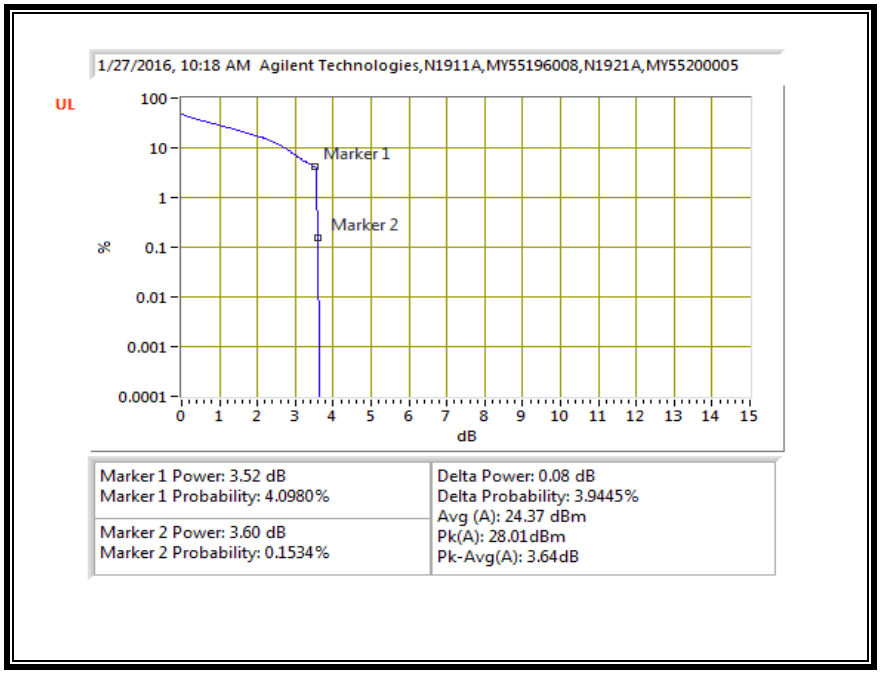
QPSK, (10.0 MHz BAND WIDTH)



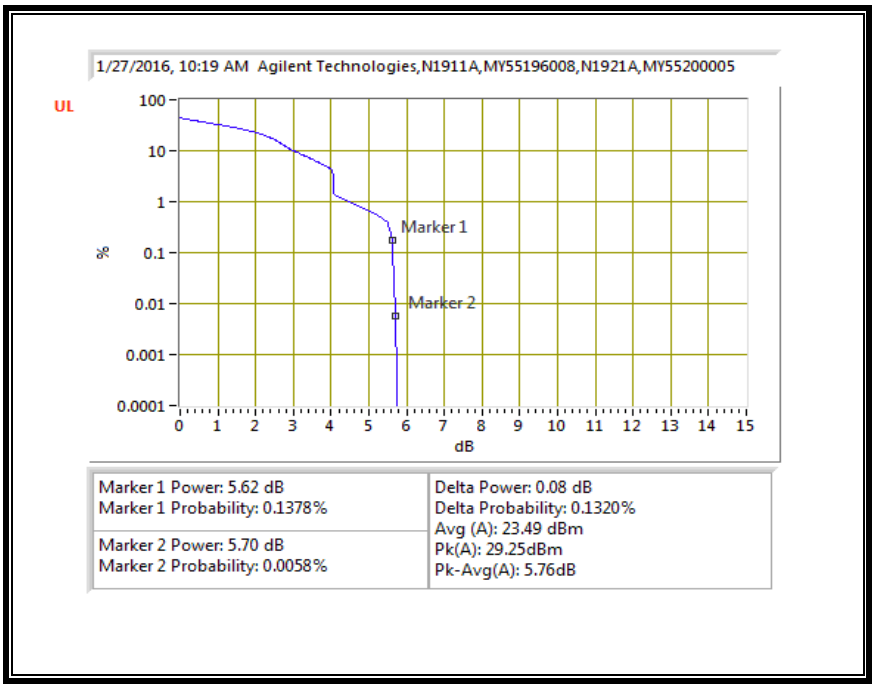
16QAM, (10.0 MHz BAND WIDTH)



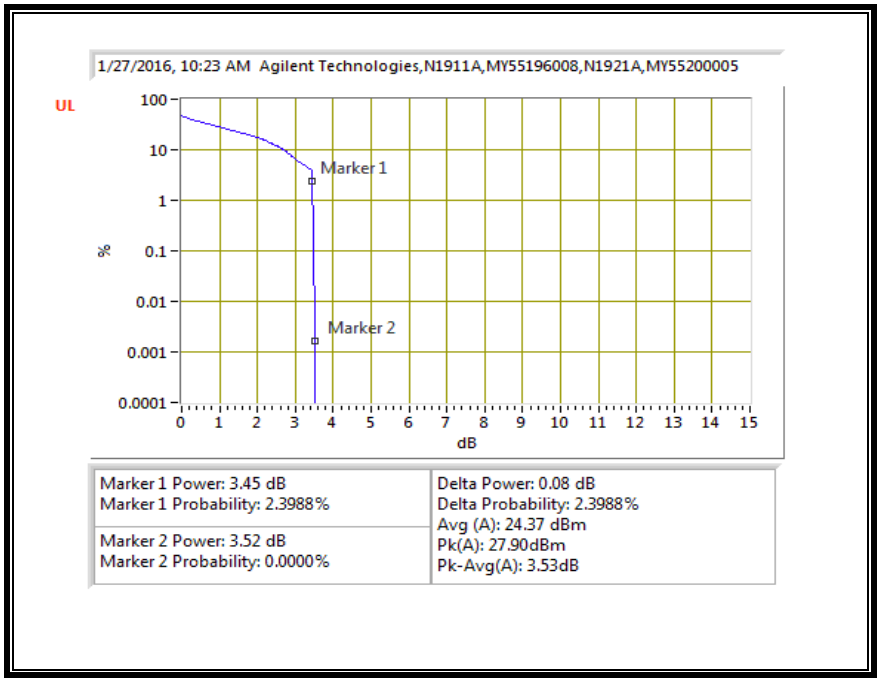
QPSK, (15.0 MHz BAND WIDTH)



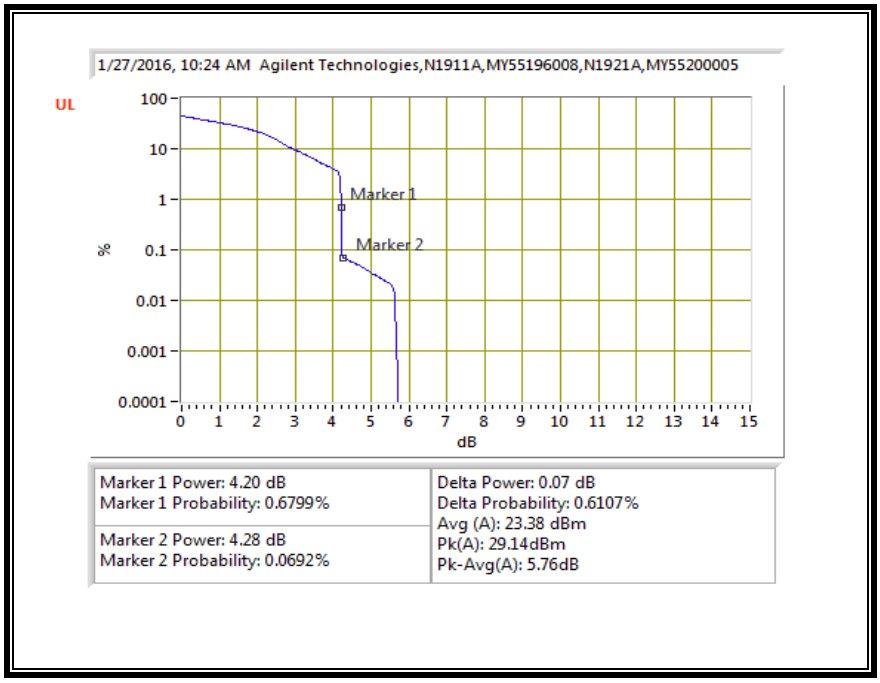
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

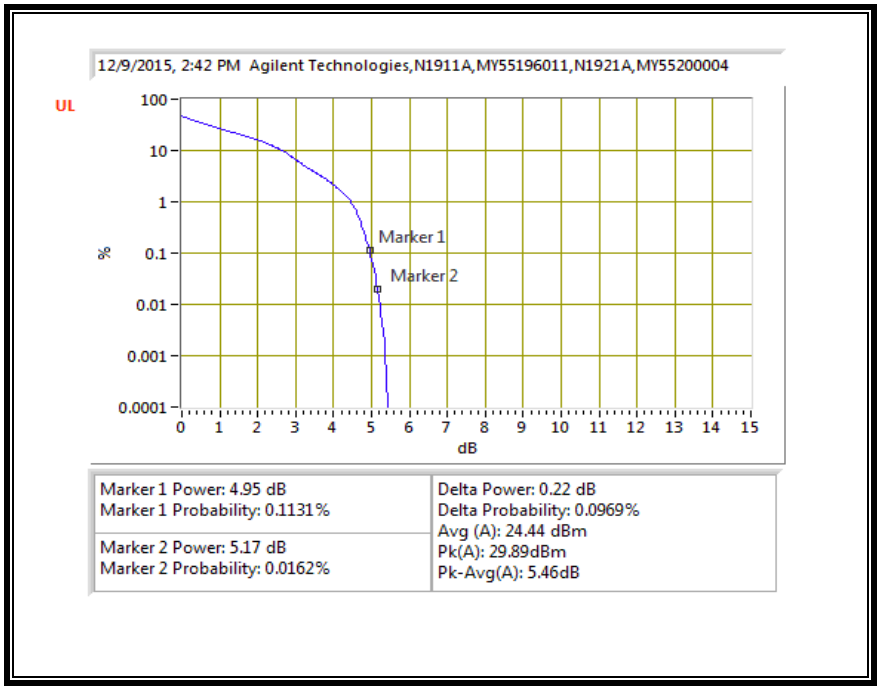


16QAM, (20.0 MHz BAND WIDTH)

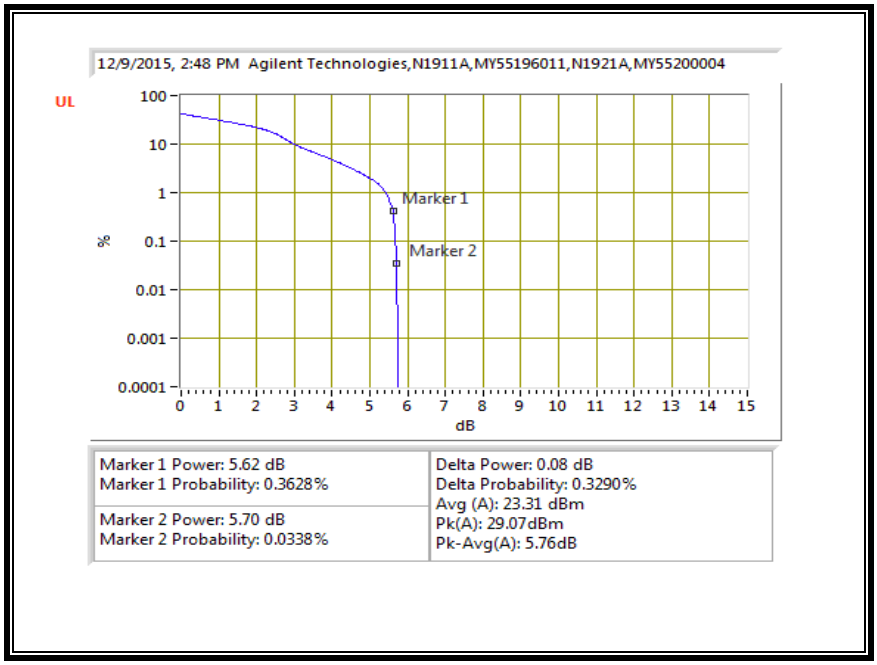


LTE BAND 26

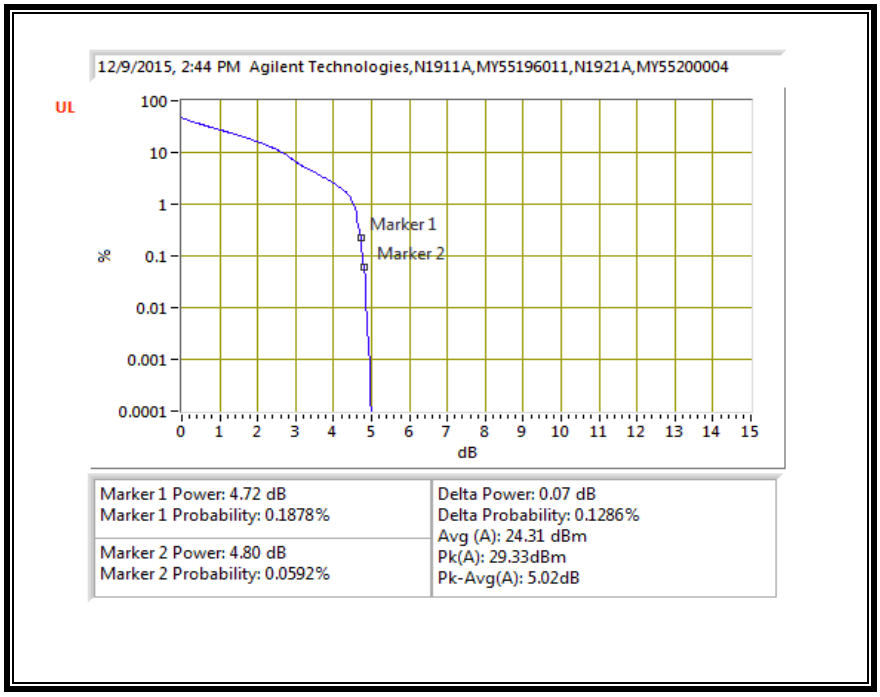
QPSK, (1.4 MHz BAND WIDTH)



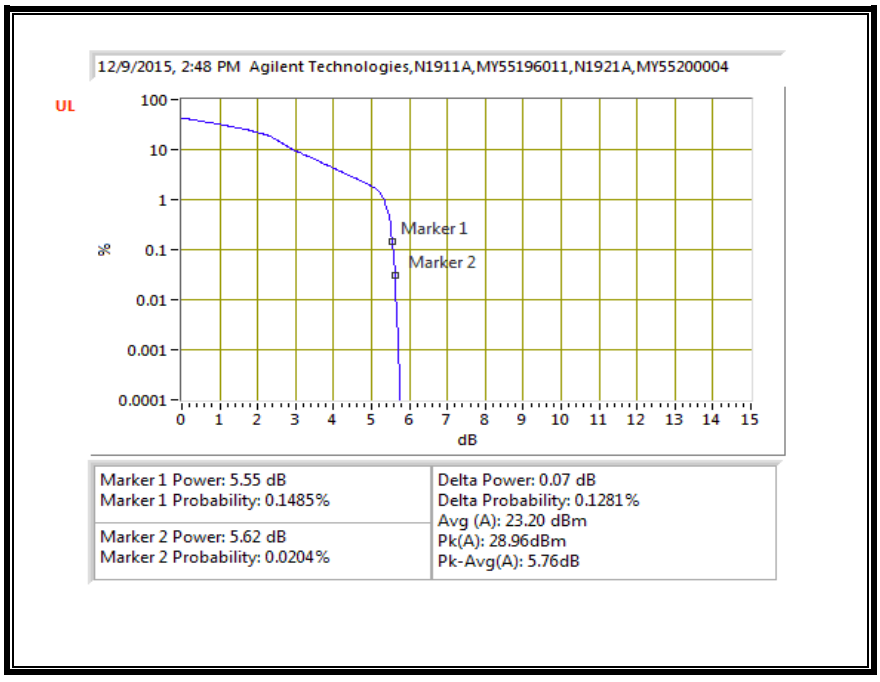
16QAM, (1.4 MHz BAND WIDTH)



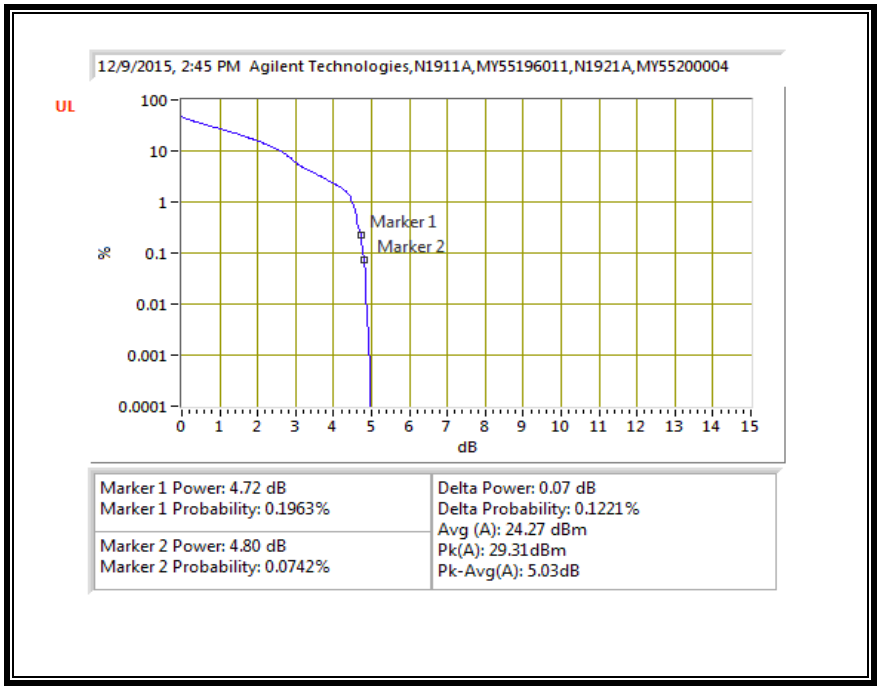
QPSK, (3.0 MHz BAND WIDTH)



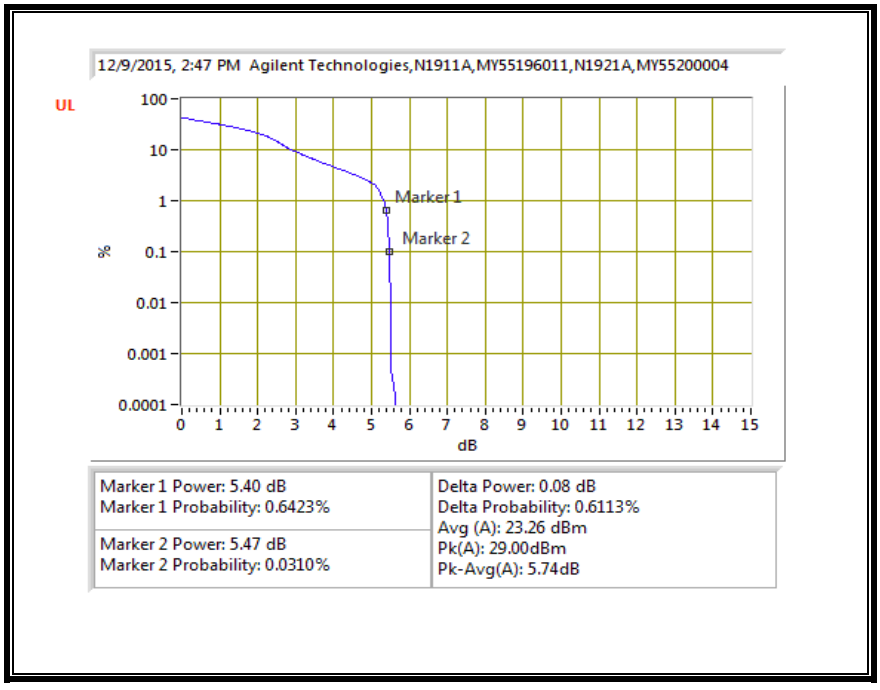
16QAM, (3.0 MHz BAND WIDTH)



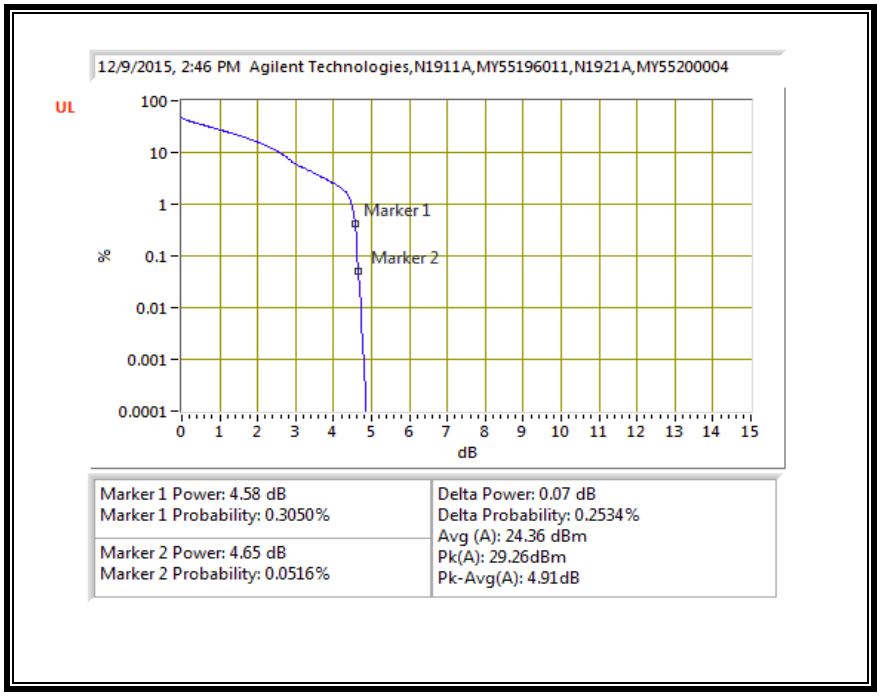
QPSK, (5.0 MHz BAND WIDTH)



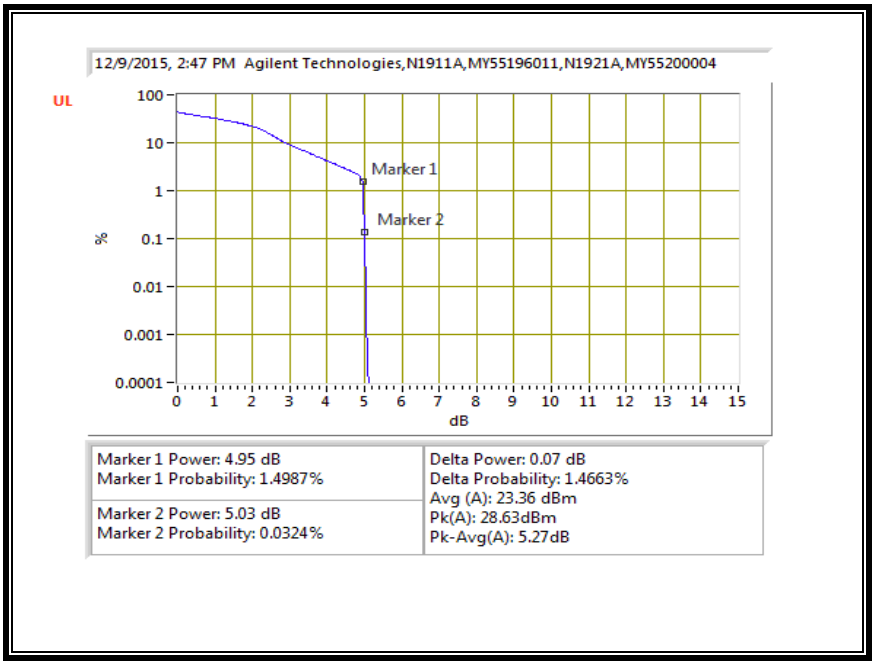
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

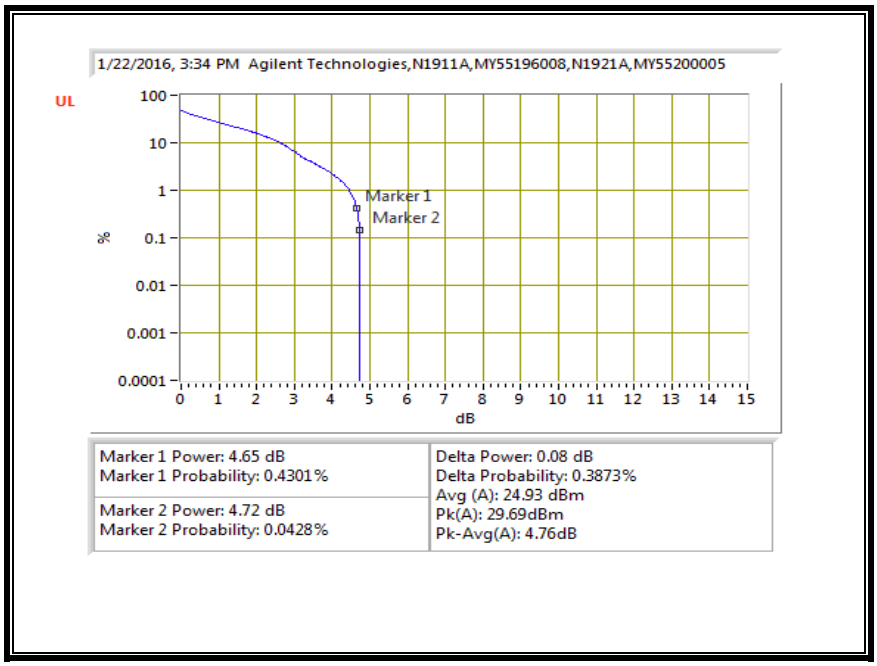


16QAM, (10.0 MHz BAND WIDTH)

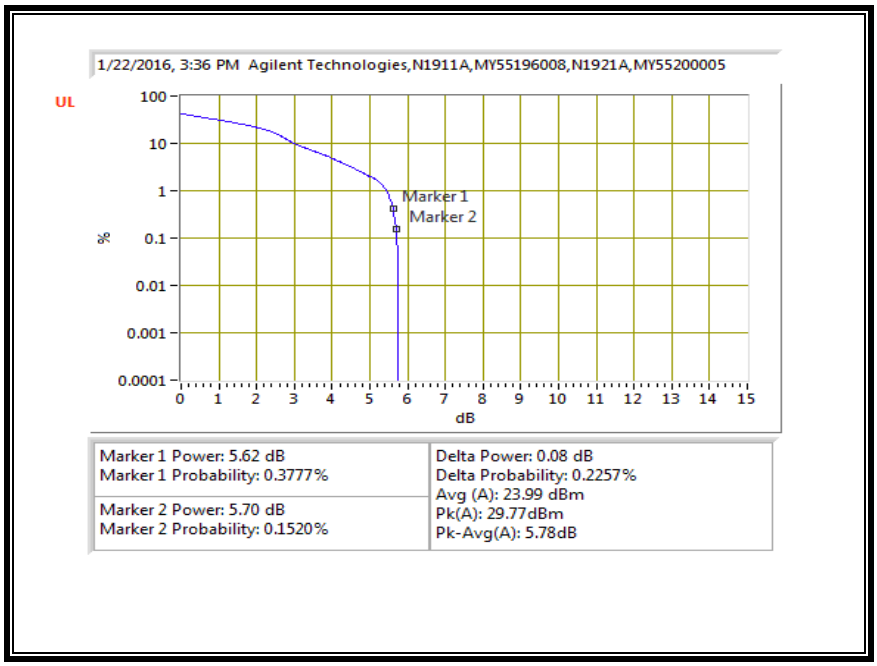


LTE BAND 27

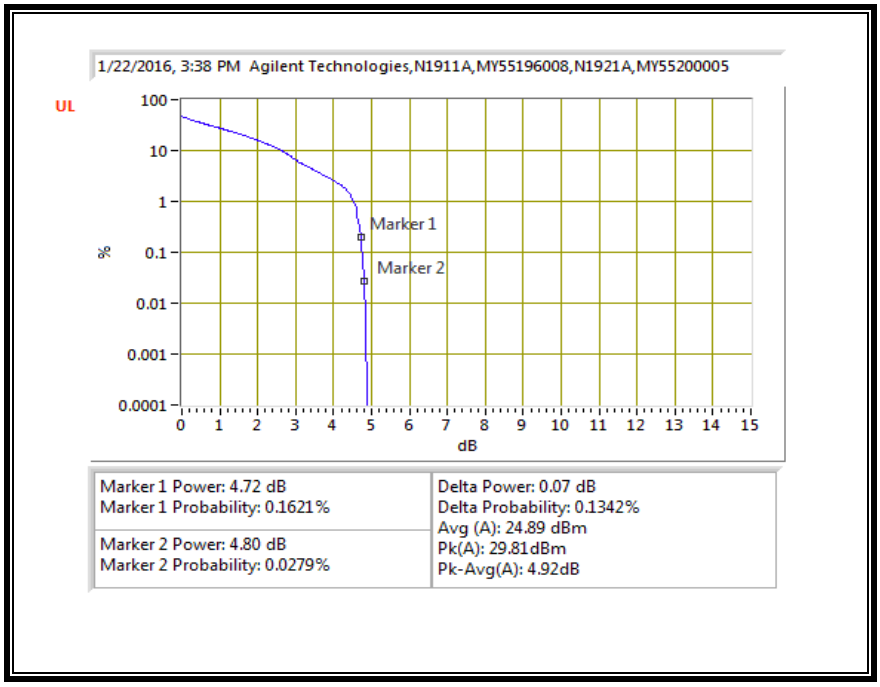
QPSK, (1.4 MHz BAND WIDTH)



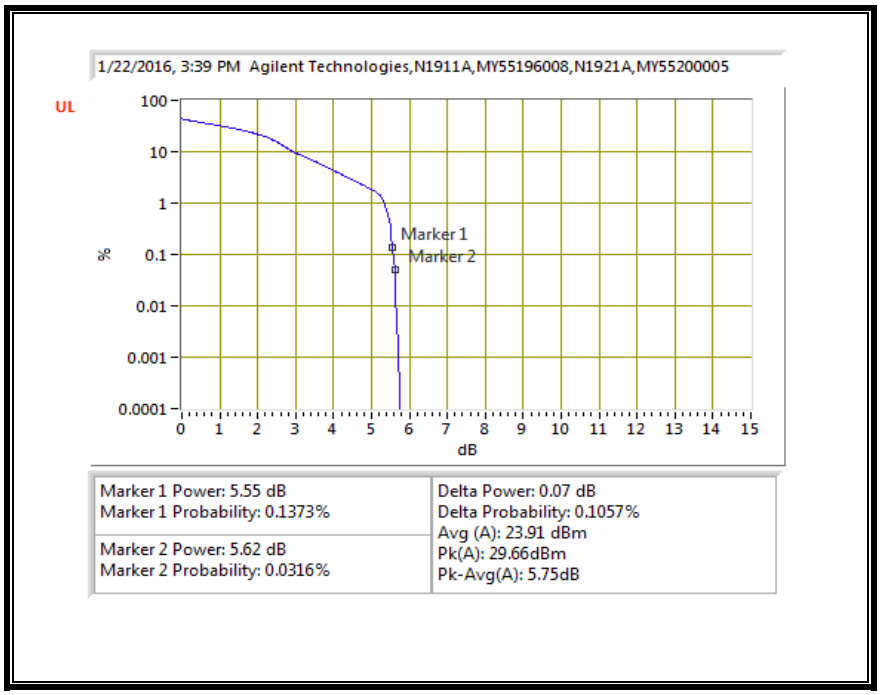
16QAM, (1.4 MHz BAND WIDTH)



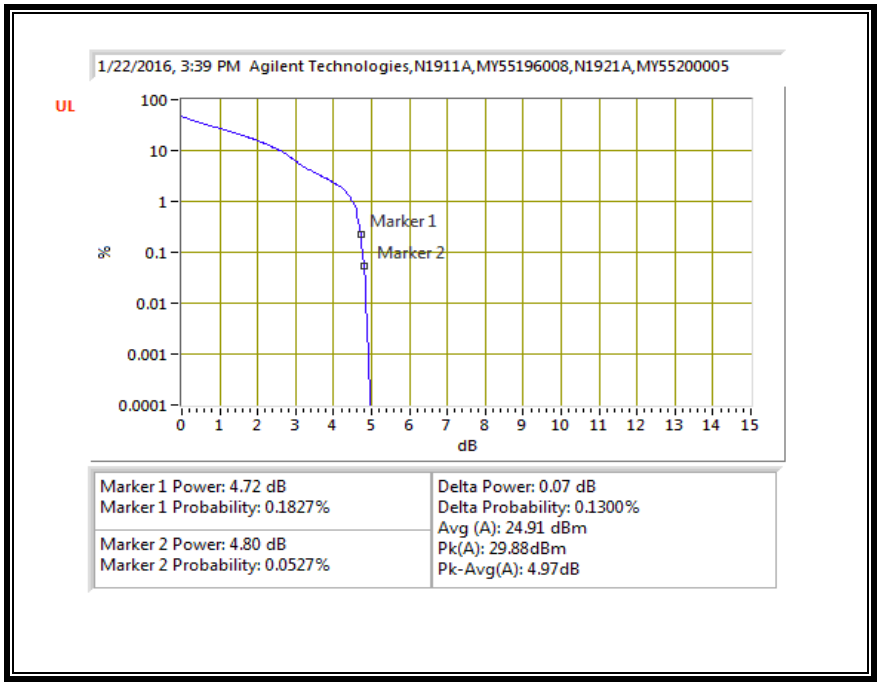
QPSK, (3.0 MHz BAND WIDTH)



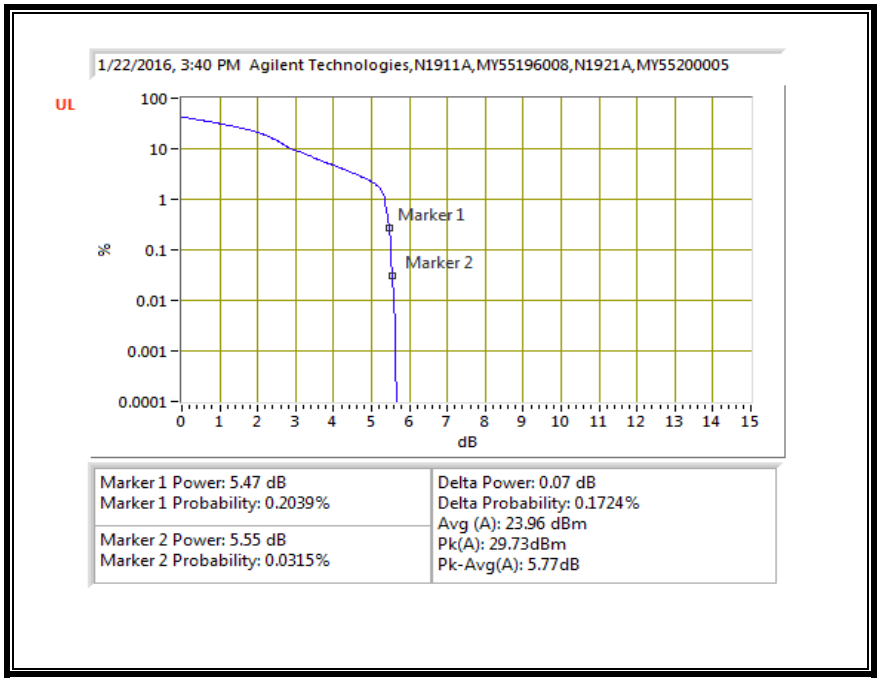
16QAM, (3.0 MHz BAND WIDTH)



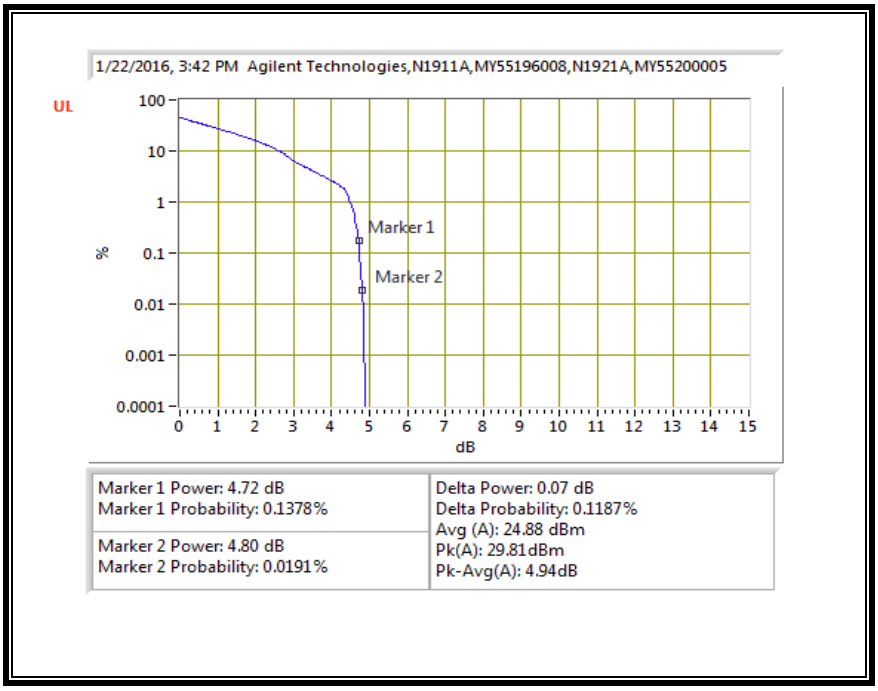
QPSK, (5.0 MHz BAND WIDTH)



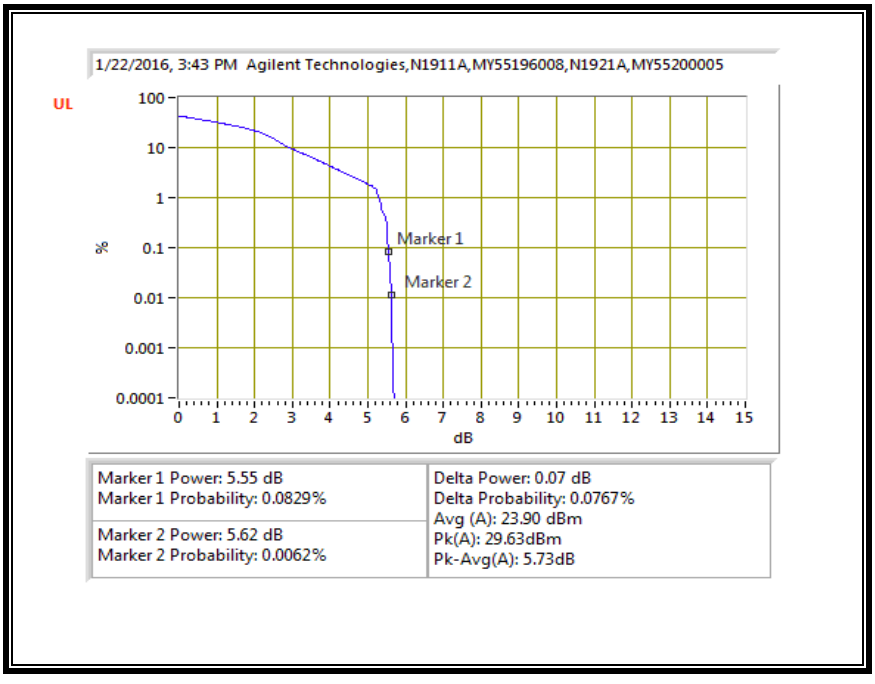
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

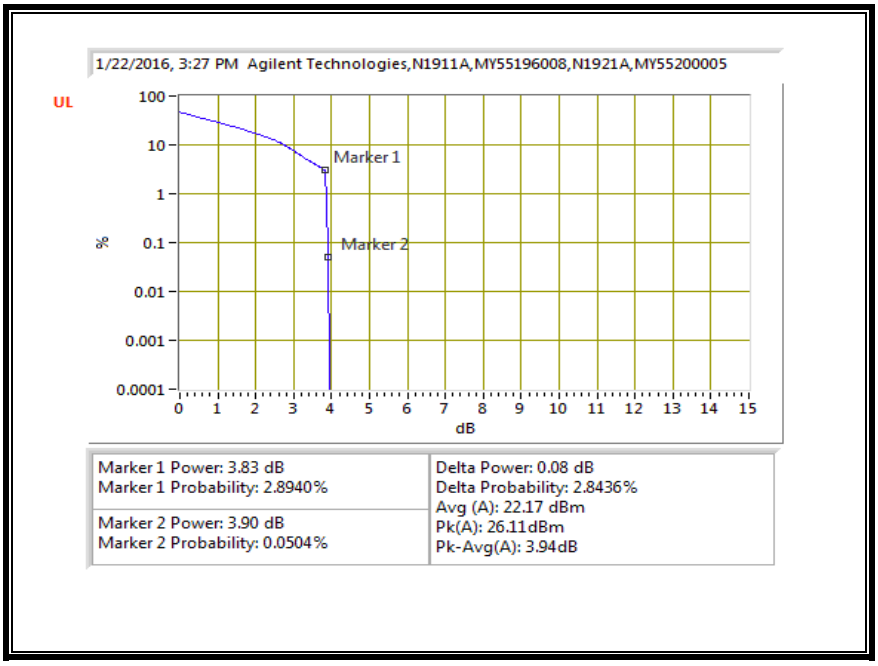


16QAM, (10.0 MHz BAND WIDTH)

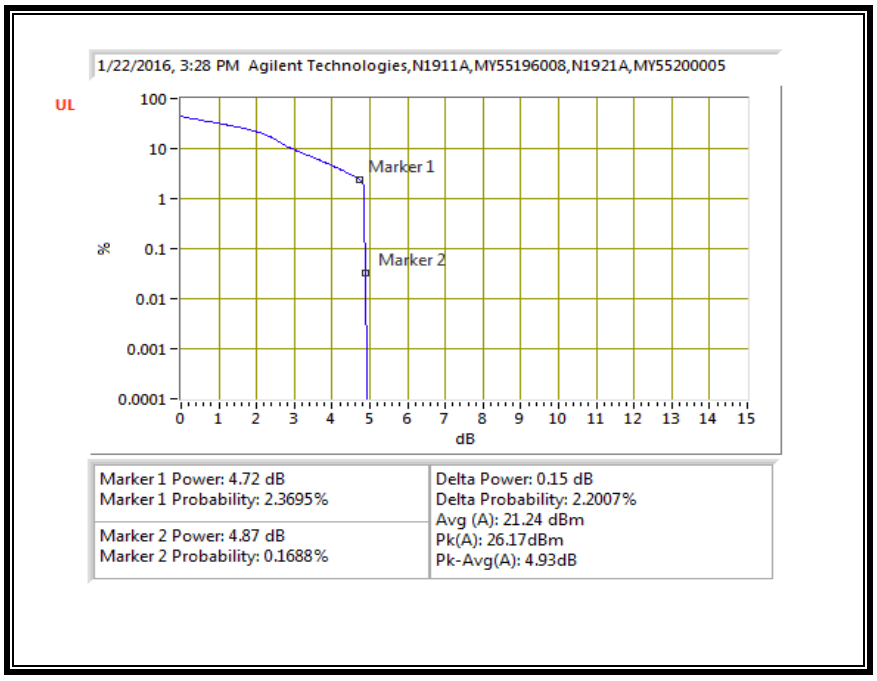


LTE BAND 30

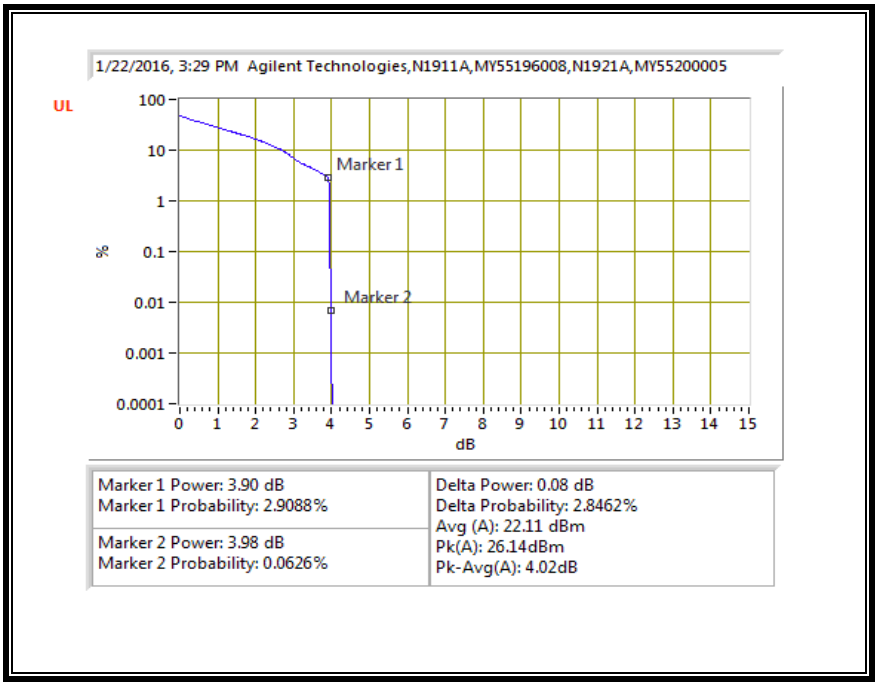
QPSK, (5.0 MHz BAND WIDTH)



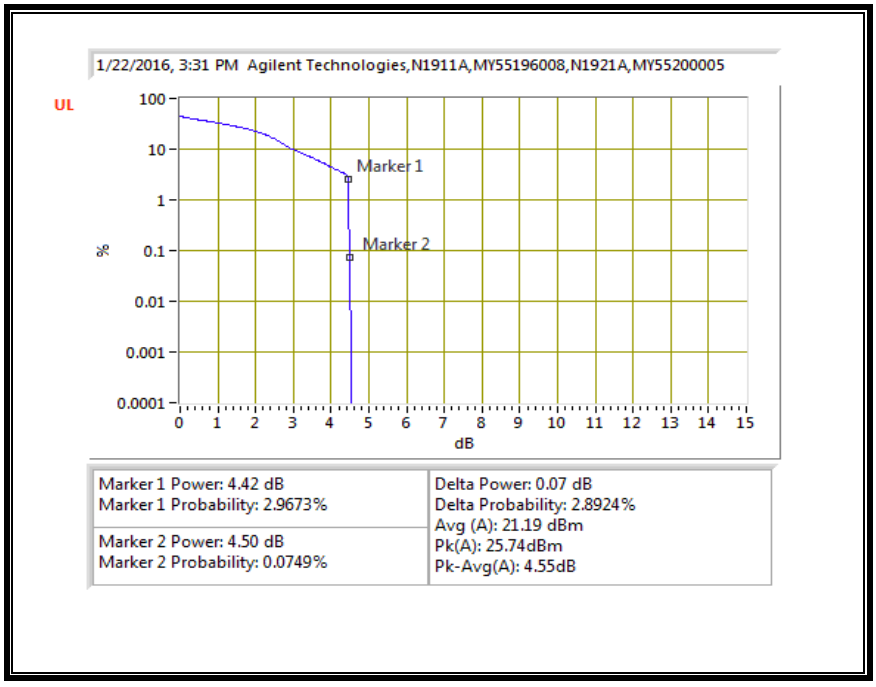
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)



16QAM, (10.0 MHz BAND WIDTH)



10.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANTENNA C

RULE PART(S)

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

LIMIT

§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.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:

a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB; and

b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (p) at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 27
- LTE Band 30
- LTE Band 41

RESULTS

10.4.1. LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 2, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.72	-67.6	H	3.0	-19.6	33.5	1.0	-52.1	-13.0	-39.1	
3.72	-65.5	V	3.0	-17.5	33.5	1.0	-50.0	-13.0	-37.0	
Mid Channel (1880MHz)										
3.760	-66.2	H	3.0	-18.1	33.5	1.0	-50.6	-13.0	-37.6	
3.76	-61.8	V	3.0	-13.7	33.5	1.0	-46.2	-13.0	-33.2	
High Channel (1900MHz)										
3.80	-66.5	H	3.0	-18.3	33.6	1.0	-50.8	-13.0	-37.8	
3.80	-64.3	V	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 2, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.72	-67.9	H	3.0	-19.9	33.5	1.0	-52.4	-13.0	-39.4	
3.72	-66.1	V	3.0	-18.1	33.5	1.0	-50.6	-13.0	-37.6	
Mid Channel (1880MHz)										
3.76	-65.9	H	3.0	-17.8	33.5	1.0	-50.3	-13.0	-37.3	
3.76	-62.1	V	3.0	-14.0	33.5	1.0	-46.5	-13.0	-33.5	
High Channel (1900MHz)										
3.80	-67.1	H	3.0	-18.8	33.6	1.0	-51.4	-13.0	-38.4	
3.80	-64.6	V	3.0	-16.4	33.6	1.0	-48.9	-13.0	-35.9	

Rev. 05.21.15

10.4.2. LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 4, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
3.42	-58.5	H	3.0	-11.4	33.3	1.0	-43.7	-13.0	-30.7	
5.13	-67.7	H	3.0	-17.1	32.9	1.0	-49.0	-13.0	-36.0	
3.42	-58.8	V	3.0	-11.6	33.3	1.0	-43.9	-13.0	-30.9	
5.13	-64.2	V	3.0	-14.1	32.9	1.0	-46.0	-13.0	-33.0	
Mid Channel (1732.5MHz)										
3.45	-58.0	H	3.0	-10.8	33.3	1.0	-43.1	-13.0	-30.1	
5.17	-68.1	H	3.0	-17.4	32.9	1.0	-49.3	-13.0	-36.3	
3.45	-59.0	V	3.0	-11.7	33.3	1.0	-44.0	-13.0	-31.0	
5.17	-65.3	V	3.0	-15.1	32.9	1.0	-46.9	-13.0	-33.9	
High Channel (1745MHz)										
3.47	-53.6	H	3.0	-6.3	33.3	1.0	-38.6	-13.0	-25.6	
5.21	-67.1	H	3.0	-16.4	32.9	1.0	-48.3	-13.0	-35.3	
3.47	-57.2	V	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
5.21	-65.5	V	3.0	-15.2	32.9	1.0	-47.0	-13.0	-34.0	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 4, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
3.42	-58.3	H	3.0	-11.2	33.3	1.0	-43.5	-13.0	-30.5	
5.13	-66.9	H	3.0	-16.3	32.9	1.0	-48.2	-13.0	-35.2	
3.42	-58.4	V	3.0	-11.2	33.3	1.0	-43.6	-13.0	-30.6	
5.13	-62.5	V	3.0	-12.3	32.9	1.0	-44.2	-13.0	-31.2	
Mid Channel (1732.5MHz)										
3.45	-58.2	H	3.0	-11.0	33.3	1.0	-43.3	-13.0	-30.3	
5.17	-68.3	H	3.0	-17.7	32.9	1.0	-49.5	-13.0	-36.5	
3.45	-59.0	V	3.0	-11.7	33.3	1.0	-44.1	-13.0	-31.1	
5.17	-64.1	V	3.0	-13.9	32.9	1.0	-45.8	-13.0	-32.8	
High Channel (1745MHz)										
3.47	-56.6	H	3.0	-9.3	33.3	1.0	-41.7	-13.0	-28.7	
5.21	-67.5	H	3.0	-16.8	32.9	1.0	-48.7	-13.0	-35.7	
3.47	-58.9	V	3.0	-11.5	33.3	1.0	-43.9	-13.0	-30.9	
5.21	-65.0	V	3.0	-14.7	32.9	1.0	-46.6	-13.0	-33.6	

Rev. 05.21.15

10.4.3. LTE BAND 5

QPSK EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 5, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (829MHz)										
1.65	-65.7	H	3.0	-24.0	35.0	1.0	-58.0	-13.0	-45.0	
1.65	-67.0	V	3.0	-25.0	35.0	1.0	-59.0	-13.0	-46.0	
Mid Channel (836.5MHz)										
1.67	-67.5	H	3.0	-25.7	35.0	1.0	-59.7	-13.0	-46.7	
1.67	-66.9	V	3.0	-24.9	35.0	1.0	-58.9	-13.0	-45.9	
High Channel (844MHz)										
1.68	-66.5	H	3.0	-24.7	35.0	1.0	-58.7	-13.0	-45.7	
1.68	-66.0	V	3.0	-23.9	35.0	1.0	-58.0	-13.0	-45.0	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/16
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 5, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (829MHz)										
1.65	-66.5	H	3.0	-24.7	35.0	1.0	-58.7	-13.0	-45.7	
1.65	-66.6	V	3.0	-24.6	35.0	1.0	-58.6	-13.0	-45.6	
Mid Channel (836.5MHz)										
1.67	-65.6	H	3.0	-23.8	35.0	1.0	-57.8	-13.0	-44.8	
1.67	-67.6	V	3.0	-25.5	35.0	1.0	-59.5	-13.0	-46.5	
High Channel (844MHz)										
1.68	-65.8	H	3.0	-23.9	35.0	1.0	-58.0	-13.0	-45.0	
1.68	-66.2	V	3.0	-24.2	35.0	1.0	-58.2	-13.0	-45.2	

Rev. 05.21.15

10.4.4. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/16
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 7, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3mChamber D	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.00	-70.5	H	3.0	-20.2	33.0	1.0	-52.2	-25.0	-27.2	
5.00	-69.1	V	3.0	-19.1	33.0	1.0	-51.1	-25.0	-26.1	
Mid Channel (2535MHz)										
5.05	-69.6	H	3.0	-19.2	33.0	1.0	-51.1	-25.0	-26.1	
5.05	-68.9	V	3.0	-18.8	33.0	1.0	-50.8	-25.0	-25.8	
High Channel (2560MHz)										
5.05	-70.1	H	3.0	-19.7	33.0	1.0	-51.6	-25.0	-26.6	
5.05	-69.5	V	3.0	-19.4	33.0	1.0	-51.4	-25.0	-26.4	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/16
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 7, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3mChamber D	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.00	-70.1	H	3.0	-19.7	33.0	1.0	-51.7	-25.0	-26.7	
5.00	-69.6	V	3.0	-19.5	33.0	1.0	-51.5	-25.0	-26.5	
Mid Channel (2535MHz)										
5.05	-69.6	H	3.0	-19.2	33.0	1.0	-51.2	-25.0	-26.2	
5.05	-70.5	V	3.0	-20.4	33.0	1.0	-52.3	-25.0	-27.3	
High Channel (2560MHz)										
5.05	-70.0	H	3.0	-19.6	33.0	1.0	-51.5	-25.0	-26.5	
5.05	-70.2	V	3.0	-20.1	33.0	1.0	-52.1	-25.0	-27.1	

Rev. 05.21.15

10.4.5. LTE BAND 12

QPSK EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 01/07/16
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (704MHz)										
2.17	-74.6	H	3.0	-30.9	33.8	1.0	-63.7	-13.0	-50.7	
2.30	-73.4	H	3.0	-29.5	34.0	1.0	-62.5	-13.0	-49.5	
3.10	-73.4	H	3.0	-25.9	34.8	1.0	-59.7	-13.0	-46.7	
2.04	-74.1	V	3.0	-30.4	33.5	1.0	-62.9	-13.0	-49.9	
2.41	-73.5	V	3.0	-28.8	34.2	1.0	-61.9	-13.0	-48.9	
3.10	-72.9	V	3.0	-25.0	34.8	1.0	-58.8	-13.0	-45.8	
Mid Channel (707.5MHz)										
2.17	-74.1	H	3.0	-30.4	33.8	1.0	-63.1	-13.0	-50.1	
2.59	-73.9	H	3.0	-29.2	34.2	1.0	-62.4	-13.0	-49.4	
3.19	-73.8	H	3.0	-26.0	34.7	1.0	-59.7	-13.0	-46.7	
2.13	-74.4	V	3.0	-30.5	33.7	1.0	-63.2	-13.0	-50.2	
2.56	-72.6	V	3.0	-27.5	34.2	1.0	-60.7	-13.0	-47.7	
3.19	-72.1	V	3.0	-23.9	34.7	1.0	-57.7	-13.0	-44.7	
High Channel (711MHz)										
2.17	-74.0	H	3.0	-30.3	33.8	1.0	-63.1	-13.0	-50.1	
2.63	-73.6	H	3.0	-28.7	34.3	1.0	-62.0	-13.0	-49.0	
3.81	-70.8	H	3.0	-20.6	34.4	1.0	-54.0	-13.0	-41.0	
2.20	-74.0	V	3.0	-29.9	33.8	1.0	-62.7	-13.0	-49.7	
3.61	-72.0	V	3.0	-22.4	34.5	1.0	-55.9	-13.0	-42.9	
5.12	-72.6	V	3.0	-19.6	34.2	1.0	-52.8	-13.0	-39.8	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 01/07/16
Test Engineer: M. Hua
Configuration: EUT Only
Mode: LTE Band 12, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (704MHz)										
2.17	-75.1	H	3.0	-31.4	33.8	1.0	-64.2	-13.0	-51.2	
2.30	-74.4	H	3.0	-30.5	34.0	1.0	-63.5	-13.0	-50.5	
3.10	-74.3	H	3.0	-26.8	34.8	1.0	-60.6	-13.0	-47.6	
2.04	-75.1	V	3.0	-31.4	33.5	1.0	-63.9	-13.0	-50.9	
2.41	-74.1	V	3.0	-29.4	34.2	1.0	-62.6	-13.0	-49.6	
3.10	-73.6	V	3.0	-25.8	34.8	1.0	-59.6	-13.0	-46.6	
Mid Channel (707.5MHz)										
2.17	-75.2	H	3.0	-31.5	33.8	1.0	-64.3	-13.0	-51.3	
2.59	-74.6	H	3.0	-29.9	34.2	1.0	-63.1	-13.0	-50.1	
3.19	-74.4	H	3.0	-26.5	34.7	1.0	-60.3	-13.0	-47.3	
2.13	-75.8	V	3.0	-31.9	33.7	1.0	-64.6	-13.0	-51.6	
2.56	-73.1	V	3.0	-28.0	34.2	1.0	-61.2	-13.0	-48.2	
3.19	-73.5	V	3.0	-25.4	34.7	1.0	-59.1	-13.0	-46.1	
High Channel (711MHz)										
2.17	-75.1	H	3.0	-31.4	33.8	1.0	-64.2	-13.0	-51.2	
2.63	-74.2	H	3.0	-29.3	34.3	1.0	-62.6	-13.0	-49.6	
3.81	-71.9	H	3.0	-21.7	34.4	1.0	-55.0	-13.0	-42.0	
2.20	-75.0	V	3.0	-30.9	33.8	1.0	-63.7	-13.0	-50.7	
3.61	-72.4	V	3.0	-22.8	34.5	1.0	-56.3	-13.0	-43.3	
5.12	-73.5	V	3.0	-20.5	34.2	1.0	-53.7	-13.0	-40.7	

Rev. 05.21.15

10.4.6. LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 13, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.55	-66.4	H	3.0	-24.9	35.0	1.0	-58.9	-13.0	-45.9	
1.55	-66.6	V	3.0	-24.9	35.0	1.0	-58.9	-13.0	-45.9	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 13, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.55	-66.5	H	3.0	-25.1	35.0	1.0	-59.1	-13.0	-46.1	
1.55	-66.1	V	3.0	-24.3	35.0	1.0	-58.3	-13.0	-45.3	

Rev. 05.21.15

10.4.7. LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 17, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (710MHz)										
1.41	-66.9	H	3.0	-26.1	34.8	1.0	-59.9	-13.0	-46.9	
1.41	-66.8	V	3.0	-25.6	34.8	1.0	-59.4	-13.0	-46.4	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 17, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (710MHz)										
1.41	-66.8	H	3.0	-25.9	34.8	1.0	-59.7	-13.0	-46.7	
1.41	-67.1	V	3.0	-26.0	34.8	1.0	-59.8	-13.0	-46.8	

Rev. 05.21.15

10.4.8. LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/16
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 25, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.70	-66.3	H	3.0	-18.4	33.5	1.0	-50.9	-13.0	-37.9	
5.55	-66.3	H	3.0	-15.0	32.5	1.0	-46.5	-13.0	-33.5	
3.70	-65.7	V	3.0	-17.7	33.5	1.0	-50.2	-13.0	-37.2	
5.55	-64.3	V	3.0	-13.3	32.5	1.0	-44.8	-13.0	-31.8	
Mid Channel (1882.5MHz)										
3.75	-66.0	H	3.0	-18.0	33.5	1.0	-50.5	-13.0	-37.5	
5.62	-69.4	H	3.0	-18.0	32.4	1.0	-49.4	-13.0	-36.4	
3.75	-63.9	V	3.0	-15.8	33.5	1.0	-48.4	-13.0	-35.4	
5.62	-69.3	V	3.0	-18.2	32.4	1.0	-49.6	-13.0	-36.6	
High Channel (1905MHz)										
3.79	-66.3	H	3.0	-18.1	33.6	1.0	-50.6	-13.0	-37.6	
5.69	-69.0	H	3.0	-17.4	32.3	1.0	-48.8	-13.0	-35.8	
3.79	-61.7	V	3.0	-13.6	33.6	1.0	-46.1	-13.0	-33.1	
5.69	-66.9	V	3.0	-15.6	32.3	1.0	-46.9	-13.0	-33.9	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/16
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 25, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.70	-68.2	H	3.0	-20.3	33.5	1.0	-52.8	-13.0	-39.8	
5.53	-66.9	H	3.0	-15.7	32.5	1.0	-47.2	-13.0	-34.2	
3.70	-65.9	V	3.0	-18.0	33.5	1.0	-50.5	-13.0	-37.5	
5.55	-64.4	V	3.0	-13.3	32.5	1.0	-44.8	-13.0	-31.8	
Mid Channel (1882.5MHz)										
3.75	-65.8	H	3.0	-17.7	33.5	1.0	-50.2	-13.0	-37.2	
5.62	-69.1	H	3.0	-17.7	32.4	1.0	-49.1	-13.0	-36.1	
3.75	-64.4	V	3.0	-16.3	33.5	1.0	-48.8	-13.0	-35.8	
5.62	-70.0	V	3.0	-18.8	32.4	1.0	-50.2	-13.0	-37.2	
High Channel (1905MHz)										
3.79	-65.8	H	3.0	-17.5	33.6	1.0	-50.1	-13.0	-37.1	
5.69	-69.1	H	3.0	-17.6	32.3	1.0	-48.9	-13.0	-35.9	
3.79	-61.8	V	3.0	-13.6	33.6	1.0	-46.2	-13.0	-33.2	
5.69	-66.4	V	3.0	-15.1	32.3	1.0	-46.4	-13.0	-33.4	

Rev. 05.21.15

10.4.9. LTE BAND 26

QPSK EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.16	-65.2	H	3.0	-25.5	34.4	1.0	-58.9	-13.0	-45.9	
1.62	-66.2	V	3.0	-24.3	35.0	1.0	-58.3	-13.0	-45.3	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.62	-66.5	H	3.0	-24.8	35.0	1.0	-58.8	-13.0	-45.8	
1.62	-66.2	V	3.0	-24.2	35.0	1.0	-58.3	-13.0	-45.3	

Rev. 05.21.15

10.4.10. LTE BAND 27

QPSK EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 01/25/16
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.64	-70.2	H	3.0	-28.8	37.8	1.0	-65.6	-13.0	-52.6	
2.46	-68.4	H	3.0	-25.3	36.7	1.0	-60.9	-13.0	-47.9	
3.28	-66.6	H	3.0	-20.7	36.5	1.0	-56.2	-13.0	-43.2	
1.64	-70.9	V	3.0	-29.1	37.8	1.0	-66.0	-13.0	-53.0	
2.46	-68.6	V	3.0	-24.7	36.7	1.0	-60.3	-13.0	-47.3	
3.28	-67.7	V	3.0	-21.9	36.5	1.0	-57.4	-13.0	-44.4	

16QAM EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 01/25/16
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 27, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.64	-71.1	H	3.0	-29.7	37.8	1.0	-66.5	-13.0	-53.5	
2.46	-68.6	H	3.0	-25.5	36.7	1.0	-61.1	-13.0	-48.1	
3.28	-68.5	H	3.0	-22.6	36.5	1.0	-58.1	-13.0	-45.1	
1.64	-70.8	V	3.0	-29.0	37.8	1.0	-65.9	-13.0	-52.9	
2.46	-68.8	V	3.0	-24.9	36.7	1.0	-60.5	-13.0	-47.5	
3.28	-67.4	V	3.0	-21.6	36.5	1.0	-57.1	-13.0	-44.1	

10.4.11. LTE BAND 30

QPSK EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 30, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B30

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (2310MHz)										
4.61	-70.0	H	3.0	-16.2	37.9	1.0	-53.1	-40.0	-13.1	
4.61	-70.7	V	3.0	-16.9	37.9	1.0	-53.9	-40.0	-13.9	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 30, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B30

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2306.5MHz)										
4.61	-70.4	H	3.0	-21.8	36.1	1.0	-57.0	-40.0	-17.0	
4.61	-69.1	V	3.0	-20.3	36.1	1.0	-55.5	-40.0	-15.5	

10.4.12. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 41, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
4.98	-66.1	H	3.0	-15.8	33.0	1.0	-47.8	-25.0	-22.8	
4.98	-65.8	V	3.0	-15.8	33.0	1.0	-47.8	-25.0	-22.8	
Mid Channel (2593MHz)										
5.17	-65.7	H	3.0	-15.1	32.9	1.0	-47.0	-25.0	-22.0	
5.17	-66.3	V	3.0	-16.1	32.9	1.0	-48.0	-25.0	-23.0	
High Channel (2680MHz)										
5.34	-66.9	H	3.0	-15.9	32.7	1.0	-47.7	-25.0	-22.7	
5.34	-66.6	V	3.0	-16.0	32.7	1.0	-47.7	-25.0	-22.7	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 11/23/15
Test Engineer: T. Wang
Configuration: EUT Only
Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
4.98	-65.1	H	3.0	-14.8	33.0	1.0	-46.8	-25.0	-21.8	
4.98	-65.0	V	3.0	-15.0	33.0	1.0	-47.0	-25.0	-22.0	
Mid Channel (2593MHz)										
5.17	-65.0	H	3.0	-14.4	32.9	1.0	-46.3	-25.0	-21.3	
5.17	-65.9	V	3.0	-15.7	32.9	1.0	-47.6	-25.0	-22.6	
High Channel (2680MHz)										
5.34	-67.8	H	3.0	-16.9	32.7	1.0	-48.6	-25.0	-23.6	
5.34	-67.2	V	3.0	-16.7	32.7	1.0	-48.4	-25.0	-23.4	

Rev. 05.21.15

10.5. FIELD STRENGTH OF SPURIOUS RADIATION, ANTENNA D

10.5.1. LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 2, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.15	-67.9	H	3.0	-21.6	33.1	1.0	-53.7	-13.0	-40.7	
4.16	-67.7	H	3.0	-18.6	33.6	1.0	-51.2	-13.0	-38.2	
7.25	-69.8	H	3.0	-15.6	30.6	1.0	-45.2	-13.0	-32.2	
2.96	-67.3	V	3.0	-21.3	33.1	1.0	-53.4	-13.0	-40.4	
4.84	-67.7	V	3.0	-17.9	33.1	1.0	-50.1	-13.0	-37.1	
7.32	-70.5	V	3.0	-16.1	30.5	1.0	-45.6	-13.0	-32.6	
Mid Channel (1880MHz)										
4.05	-67.6	H	3.0	-18.7	33.7	1.0	-51.3	-13.0	-38.3	
6.03	-69.1	H	3.0	-17.0	32.0	1.0	-47.9	-13.0	-34.9	
7.53	-70.3	H	3.0	-15.8	30.2	1.0	-45.0	-13.0	-32.0	
3.21	-67.4	V	3.0	-20.8	33.2	1.0	-52.9	-13.0	-39.9	
6.04	-68.8	V	3.0	-16.7	31.9	1.0	-47.7	-13.0	-34.7	
8.06	-71.0	V	3.0	-15.8	29.6	1.0	-44.4	-13.0	-31.4	
High Channel (1900MHz)										
3.14	-66.6	H	3.0	-20.3	33.1	1.0	-52.4	-13.0	-39.4	
4.83	-67.6	H	3.0	-17.5	33.1	1.0	-49.6	-13.0	-36.6	
7.19	-70.0	H	3.0	-15.9	30.7	1.0	-45.6	-13.0	-32.6	
4.32	-67.3	V	3.0	-18.1	33.5	1.0	-50.6	-13.0	-37.6	
5.07	-68.6	V	3.0	-18.5	33.0	1.0	-50.5	-13.0	-37.5	
7.18	-70.6	V	3.0	-16.2	30.7	1.0	-45.9	-13.0	-32.9	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 2, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
4.37	-67.1	H	3.0	-17.7	33.4	1.0	-50.1	-13.0	-37.1	
5.04	-67.4	H	3.0	-17.0	33.0	1.0	-49.0	-13.0	-36.0	
6.46	-69.8	H	3.0	-16.9	31.5	1.0	-47.4	-13.0	-34.4	
3.27	-68.1	V	3.0	-21.3	33.2	1.0	-53.5	-13.0	-40.5	
4.43	-67.9	V	3.0	-18.6	33.4	1.0	-51.0	-13.0	-38.0	
6.90	-69.8	V	3.0	-15.9	31.0	1.0	-45.9	-13.0	-32.9	
Mid Channel (1880MHz)										
3.44	-67.5	H	3.0	-20.3	33.3	1.0	-52.6	-13.0	-39.6	
4.83	-67.3	H	3.0	-17.2	33.1	1.0	-49.3	-13.0	-36.3	
6.50	-68.9	H	3.0	-16.0	31.4	1.0	-46.4	-13.0	-33.4	
3.45	-67.5	V	3.0	-20.2	33.3	1.0	-52.5	-13.0	-39.5	
4.34	-67.7	V	3.0	-18.5	33.5	1.0	-51.0	-13.0	-38.0	
6.15	-69.2	V	3.0	-16.9	31.8	1.0	-47.7	-13.0	-34.7	
High Channel (1900MHz)										
3.60	-67.9	H	3.0	-20.3	33.4	1.0	-52.7	-13.0	-39.7	
5.18	-68.2	H	3.0	-17.6	32.9	1.0	-49.5	-13.0	-36.5	
7.73	-70.4	H	3.0	-15.6	30.0	1.0	-44.6	-13.0	-31.6	
3.10	-67.5	V	3.0	-21.1	33.1	1.0	-53.2	-13.0	-40.2	
4.18	-67.3	V	3.0	-18.3	33.6	1.0	-50.9	-13.0	-37.9	
7.60	-70.3	V	3.0	-15.6	30.2	1.0	-44.7	-13.0	-31.7	

Rev. 05.21.15

10.5.2. LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 4, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
2.81	-67.4	H	3.0	-22.1	33.3	1.0	-54.4	-13.0	-41.4	
4.35	-68.1	H	3.0	-18.7	33.5	1.0	-51.2	-13.0	-38.2	
5.22	-68.3	H	3.0	-17.6	32.8	1.0	-49.4	-13.0	-36.4	
3.88	-67.4	V	3.0	-19.0	33.6	1.0	-51.6	-13.0	-38.6	
5.43	-69.0	V	3.0	-18.3	32.6	1.0	-49.9	-13.0	-36.9	
6.24	-69.6	V	3.0	-17.1	31.7	1.0	-47.8	-13.0	-34.8	
Mid Channel (1732.5MHz)										
3.86	-67.8	H	3.0	-19.4	33.6	1.0	-52.0	-13.0	-39.0	
4.83	-67.7	H	3.0	-17.6	33.1	1.0	-49.7	-13.0	-36.7	
8.09	-70.4	H	3.0	-15.2	29.6	1.0	-43.7	-13.0	-30.7	
3.65	-67.4	V	3.0	-19.6	33.5	1.0	-52.1	-13.0	-39.1	
6.45	-69.4	V	3.0	-16.4	31.5	1.0	-46.9	-13.0	-33.9	
9.76	-70.5	V	3.0	-13.7	27.5	1.0	-40.3	-13.0	-27.3	
High Channel (1745MHz)										
2.62	-66.4	H	3.0	-21.8	33.6	1.0	-54.3	-13.0	-41.3	
4.65	-68.4	H	3.0	-18.5	33.3	1.0	-50.8	-13.0	-37.8	
9.16	-71.7	H	3.0	-15.1	28.3	1.0	-42.4	-13.0	-29.4	
3.18	-68.4	V	3.0	-21.8	33.1	1.0	-54.0	-13.0	-41.0	
5.14	-68.3	V	3.0	-18.1	32.9	1.0	-50.0	-13.0	-37.0	
7.68	-70.9	V	3.0	-16.1	30.1	1.0	-45.1	-13.0	-32.1	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 4, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
2.40	-67.3	H	3.0	-23.6	34.4	1.0	-56.9	-13.0	-43.9	
4.83	-67.8	H	3.0	-17.7	33.1	1.0	-49.8	-13.0	-36.8	
6.26	-69.3	H	3.0	-16.7	31.7	1.0	-47.4	-13.0	-34.4	
4.32	-67.7	V	3.0	-18.5	33.5	1.0	-51.0	-13.0	-38.0	
6.86	-70.2	V	3.0	-16.4	31.1	1.0	-46.4	-13.0	-33.4	
9.10	-72.2	V	3.0	-16.0	28.3	1.0	-43.3	-13.0	-30.3	
Mid Channel (1732.5MHz)										
3.17	-67.8	H	3.0	-21.4	33.1	1.0	-53.5	-13.0	-40.5	
5.50	-68.9	H	3.0	-17.7	32.5	1.0	-49.2	-13.0	-36.2	
8.87	-71.5	H	3.0	-15.3	28.6	1.0	-42.9	-13.0	-29.9	
2.61	-67.5	V	3.0	-22.7	33.6	1.0	-55.3	-13.0	-42.3	
4.12	-67.9	V	3.0	-19.0	33.6	1.0	-51.7	-13.0	-38.7	
6.44	-70.1	V	3.0	-17.1	31.5	1.0	-47.6	-13.0	-34.6	
High Channel (1745MHz)										
4.90	-68.2	H	3.0	-18.0	33.1	1.0	-50.1	-13.0	-37.1	
6.68	-69.5	H	3.0	-16.3	31.2	1.0	-46.5	-13.0	-33.5	
9.14	-72.0	H	3.0	-15.5	28.3	1.0	-42.8	-13.0	-29.8	
3.16	-66.0	V	3.0	-19.5	33.1	1.0	-51.7	-13.0	-38.7	
6.76	-69.5	V	3.0	-15.8	31.2	1.0	-46.0	-13.0	-33.0	
9.59	-72.3	V	3.0	-15.7	27.7	1.0	-42.5	-13.0	-29.5	

Rev. 05.21.15

10.5.3. LTE BAND 5

QPSK EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 5, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (829MHz)										
1.65	-66.4	H	3.0	-24.6	35.0	1.0	-58.6	-13.0	-45.6	
1.65	-66.3	V	3.0	-24.3	35.0	1.0	-58.4	-13.0	-45.4	
Mid Channel (836.5MHz)										
1.66	-67.4	H	3.0	-25.5	35.0	1.0	-59.6	-13.0	-46.6	
1.66	-67.7	V	3.0	-25.7	35.0	1.0	-59.7	-13.0	-46.7	
High Channel (844MHz)										
1.68	-67.0	H	3.0	-25.2	35.0	1.0	-59.2	-13.0	-46.2	
1.68	-67.5	V	3.0	-25.4	35.0	1.0	-59.4	-13.0	-46.4	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 5, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (829MHz)										
1.65	-66.0	H	3.0	-24.3	35.0	1.0	-58.3	-13.0	-45.3	
1.65	-67.0	V	3.0	-25.0	35.0	1.0	-59.0	-13.0	-46.0	
Mid Channel (836.5MHz)										
1.66	-67.2	H	3.0	-25.4	35.0	1.0	-59.4	-13.0	-46.4	
1.66	-68.1	V	3.0	-26.0	35.0	1.0	-60.1	-13.0	-47.1	
High Channel (844MHz)										
1.68	-67.1	H	3.0	-25.2	35.0	1.0	-59.3	-13.0	-46.3	
1.68	-66.6	V	3.0	-24.5	35.0	1.0	-58.6	-13.0	-45.6	

Rev. 05.21.15

10.5.4. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 7, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
4.26	-67.3	H	3.0	-18.1	33.5	1.0	-50.6	-25.0	-25.6	
5.39	-68.6	H	3.0	-17.6	32.7	1.0	-49.3	-25.0	-24.3	
7.30	-70.4	H	3.0	-16.2	30.5	1.0	-45.7	-25.0	-20.7	
3.68	-67.9	V	3.0	-20.0	33.5	1.0	-52.5	-25.0	-27.5	
6.03	-69.0	V	3.0	-17.0	32.0	1.0	-47.9	-25.0	-22.9	
8.69	-71.6	V	3.0	-15.8	28.8	1.0	-43.7	-25.0	-18.7	
Mid Channel (2535MHz)										
4.30	-67.1	H	3.0	-17.9	33.5	1.0	-50.4	-25.0	-25.4	
5.45	-68.7	H	3.0	-17.6	32.6	1.0	-49.2	-25.0	-24.2	
8.92	-71.4	H	3.0	-15.1	28.6	1.0	-42.7	-25.0	-17.7	
4.74	-68.2	V	3.0	-18.5	33.2	1.0	-50.7	-25.0	-25.7	
5.31	-68.2	V	3.0	-17.7	32.7	1.0	-49.4	-25.0	-24.4	
6.22	-69.6	V	3.0	-17.1	31.7	1.0	-47.9	-25.0	-22.9	
High Channel (2560MHz)										
3.62	-67.1	H	3.0	-19.5	33.4	1.0	-51.9	-25.0	-26.9	
5.40	-68.7	H	3.0	-17.7	32.6	1.0	-49.4	-25.0	-24.4	
7.22	-70.0	H	3.0	-15.8	30.6	1.0	-45.5	-25.0	-20.5	
5.56	-68.7	V	3.0	-17.6	32.5	1.0	-49.1	-25.0	-24.1	
6.16	-69.6	V	3.0	-17.3	31.8	1.0	-48.1	-25.0	-23.1	
8.92	-71.7	V	3.0	-15.7	28.6	1.0	-43.2	-25.0	-18.2	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 7, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
4.44	-67.8	H	3.0	-18.3	33.4	1.0	-50.6	-25.0	-25.6	
6.86	-70.0	H	3.0	-16.4	31.1	1.0	-46.4	-25.0	-21.4	
11.00	-71.0	H	3.0	-13.2	27.8	1.0	-40.1	-25.0	-15.1	
4.95	-67.7	V	3.0	-17.8	33.0	1.0	-49.8	-25.0	-24.8	
6.35	-69.0	V	3.0	-16.2	31.6	1.0	-46.8	-25.0	-21.8	
7.23	-69.9	V	3.0	-15.5	30.6	1.0	-45.1	-25.0	-20.1	
Mid Channel (2535MHz)										
4.90	-68.3	H	3.0	-18.0	33.1	1.0	-50.1	-25.0	-25.1	
7.49	-70.6	H	3.0	-16.1	30.3	1.0	-45.4	-25.0	-20.4	
9.62	-71.9	H	3.0	-14.7	27.7	1.0	-41.4	-25.0	-16.4	
4.94	-67.7	V	3.0	-17.8	33.0	1.0	-49.8	-25.0	-24.8	
8.33	-71.1	V	3.0	-15.7	29.3	1.0	-43.9	-25.0	-18.9	
9.98	-72.5	V	3.0	-15.6	27.3	1.0	-41.8	-25.0	-16.8	
High Channel (2560MHz)										
3.60	-68.1	H	3.0	-20.5	33.4	1.0	-52.9	-25.0	-27.9	
5.91	-68.6	H	3.0	-16.6	32.1	1.0	-47.7	-25.0	-22.7	
8.75	-71.2	H	3.0	-15.2	28.8	1.0	-42.9	-25.0	-17.9	
4.35	-67.7	V	3.0	-18.6	33.5	1.0	-51.0	-25.0	-26.0	
5.91	-69.1	V	3.0	-17.3	32.1	1.0	-48.4	-25.0	-23.4	
8.45	-70.9	V	3.0	-15.3	29.1	1.0	-43.5	-25.0	-18.5	

Rev. 05.21.15

10.5.5. LTE BAND 12

QPSK EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 12, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (704MHz)										
1.40	-69.1	H	3.0	-28.3	34.8	1.0	-62.1	-13.0	-49.1	
1.40	-67.9	V	3.0	-26.8	34.8	1.0	-60.6	-13.0	-47.6	
Mid Channel (707.5MHz)										
1.46	-68.9	H	3.0	-27.8	34.9	1.0	-61.7	-13.0	-48.7	
1.46	-69.2	V	3.0	-27.7	34.9	1.0	-61.6	-13.0	-48.6	
High Channel (711MHz)										
1.41	-69.5	H	3.0	-28.6	34.8	1.0	-62.4	-13.0	-49.4	
1.41	-69.5	V	3.0	-28.3	34.8	1.0	-62.2	-13.0	-49.2	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 12, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (704MHz)										
1.40	-68.9	H	3.0	-28.1	34.8	1.0	-61.9	-13.0	-48.9	
1.40	-69.1	V	3.0	-28.0	34.8	1.0	-61.8	-13.0	-48.8	
Mid Channel (707.5MHz)										
1.41	-69.3	H	3.0	-28.4	34.8	1.0	-62.2	-13.0	-49.2	
1.41	-67.8	V	3.0	-26.7	34.8	1.0	-60.5	-13.0	-47.5	
High Channel (711MHz)										
1.43	-69.9	H	3.0	-28.9	34.9	1.0	-62.8	-13.0	-49.8	
1.43	-69.6	V	3.0	-28.3	34.9	1.0	-62.2	-13.0	-49.2	

Rev. 05.21.15

10.5.6. LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 13, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-67.8	H	3.0	-26.4	35.0	1.0	-60.4	-13.0	-47.4	
1.56	-67.1	V	3.0	-25.3	35.0	1.0	-59.3	-13.0	-46.3	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 13, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-68.0	H	3.0	-26.5	35.0	1.0	-60.5	-13.0	-47.5	
1.56	-68.0	V	3.0	-26.2	35.0	1.0	-60.2	-40.0	-20.2	

Rev. 05.21.15

10.5.7. LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 17, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (710MHz)										
1.41	-69.5	H	3.0	-28.6	34.8	1.0	-62.4	-13.0	-49.4	
1.41	-68.4	V	3.0	-27.2	34.8	1.0	-61.0	-13.0	-48.0	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/15/15
Test Engineer: Jose A.
Configuration: EUT Only
Mode: LTE Band 17, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (710MHz)										
1.41	-69.2	H	3.0	-28.3	34.8	1.0	-62.2	-13.0	-49.2	
1.41	-69.7	V	3.0	-28.6	34.8	1.0	-62.4	-13.0	-49.4	

Rev. 05.21.15

10.5.8. LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 25, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.80	-67.7	H	3.0	-19.5	33.6	1.0	-52.1	-13.0	-39.1	
5.19	-68.9	H	3.0	-18.2	32.9	1.0	-50.1	-13.0	-37.1	
10.00	-71.4	H	3.0	-13.8	27.2	1.0	-40.1	-13.0	-27.1	
3.60	-67.9	V	3.0	-20.2	33.4	1.0	-52.6	-13.0	-39.6	
6.00	-68.8	V	3.0	-16.8	32.0	1.0	-47.8	-13.0	-34.8	
9.20	-72.3	V	3.0	-16.1	28.2	1.0	-43.3	-13.0	-30.3	
Mid Channel (1882.5MHz)										
3.15	-67.2	H	3.0	-20.9	33.1	1.0	-53.0	-13.0	-40.0	
5.92	-68.6	H	3.0	-16.6	32.1	1.0	-47.7	-13.0	-34.7	
8.93	-71.4	H	3.0	-15.2	28.5	1.0	-42.7	-13.0	-29.7	
4.89	-67.7	V	3.0	-17.8	33.1	1.0	-49.9	-13.0	-36.9	
5.56	-68.5	V	3.0	-17.4	32.5	1.0	-48.9	-13.0	-35.9	
9.36	-72.2	V	3.0	-15.8	28.0	1.0	-42.8	-13.0	-29.8	
High Channel (1905MHz)										
3.70	-67.6	H	3.0	-19.7	33.5	1.0	-52.2	-13.0	-39.2	
6.09	-68.9	H	3.0	-16.6	31.9	1.0	-47.5	-13.0	-34.5	
9.95	-72.3	H	3.0	-14.7	27.3	1.0	-41.0	-13.0	-28.0	
4.36	-67.7	V	3.0	-18.5	33.5	1.0	-51.0	-13.0	-38.0	
6.44	-69.7	V	3.0	-16.7	31.5	1.0	-47.2	-13.0	-34.2	
7.60	-70.4	V	3.0	-15.7	30.2	1.0	-44.9	-13.0	-31.9	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 25, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
2.90	-67.5	H	3.0	-22.0	33.2	1.0	-54.1	-13.0	-41.1	
4.29	-68.1	H	3.0	-18.8	33.5	1.0	-51.4	-13.0	-38.4	
8.62	-70.9	H	3.0	-15.0	28.9	1.0	-42.9	-13.0	-29.9	
3.40	-68.0	V	3.0	-20.9	33.3	1.0	-53.2	-13.0	-40.2	
5.21	-68.7	V	3.0	-18.4	32.8	1.0	-50.2	-13.0	-37.2	
8.81	-71.8	V	3.0	-15.9	28.7	1.0	-43.6	-13.0	-30.6	
Mid Channel (1882.5MHz)										
2.96	-67.6	H	3.0	-21.9	33.1	1.0	-53.9	-13.0	-40.9	
4.92	-67.8	H	3.0	-17.6	33.1	1.0	-49.6	-13.0	-36.6	
8.90	-71.2	H	3.0	-15.0	28.6	1.0	-42.6	-13.0	-29.6	
2.68	-67.4	V	3.0	-22.4	33.5	1.0	-54.8	-13.0	-41.8	
5.56	-68.3	V	3.0	-17.3	32.5	1.0	-48.7	-13.0	-35.7	
7.14	-70.0	V	3.0	-15.7	30.7	1.0	-45.4	-13.0	-32.4	
High Channel (1905MHz)										
3.20	-67.8	H	3.0	-21.4	33.2	1.0	-53.5	-13.0	-40.5	
4.91	-67.3	H	3.0	-17.1	33.1	1.0	-49.2	-13.0	-36.2	
6.99	-70.0	H	3.0	-16.2	30.9	1.0	-46.1	-13.0	-33.1	
3.66	-66.7	V	3.0	-18.8	33.5	1.0	-51.3	-13.0	-38.3	
5.50	-68.9	V	3.0	-18.0	32.5	1.0	-49.5	-13.0	-36.5	
6.74	-69.9	V	3.0	-16.3	31.2	1.0	-46.5	-13.0	-33.5	

Rev. 05.21.15

10.5.9. LTE BAND 26

QPSK EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.41	-66.3	H	3.0	-25.5	34.8	1.0	-59.3	-13.0	-46.3	
4.31	-67.4	H	3.0	-18.1	33.5	1.0	-50.6	-13.0	-37.6	
8.75	-71.4	H	3.0	-15.4	28.8	1.0	-43.1	-13.0	-30.1	
1.90	-66.8	V	3.0	-24.2	35.1	1.0	-58.3	-13.0	-45.3	
4.76	-68.2	V	3.0	-18.5	33.2	1.0	-50.7	-13.0	-37.7	
7.82	-70.5	V	3.0	-15.6	29.9	1.0	-44.4	-13.0	-31.4	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.37	-66.5	H	3.0	-25.8	34.8	1.0	-59.6	-13.0	-46.6	
3.90	-67.9	H	3.0	-19.3	33.6	1.0	-52.0	-13.0	-39.0	
8.46	-70.9	H	3.0	-15.2	29.1	1.0	-43.3	-13.0	-30.3	
1.16	-65.8	V	3.0	-26.2	34.4	1.0	-59.6	-13.0	-46.6	
2.38	-67.1	V	3.0	-23.1	34.4	1.0	-56.5	-13.0	-43.5	
6.52	-69.1	V	3.0	-16.0	31.4	1.0	-46.4	-13.0	-33.4	

Rev. 05.21.15

10.5.10. LTE BAND 27

QPSK EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 01/25/16
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.64	-71.1	H	3.0	-29.7	37.8	1.0	-66.5	-13.0	-53.5	
2.46	-68.3	H	3.0	-25.2	36.7	1.0	-60.8	-13.0	-47.8	
3.28	-68.1	H	3.0	-22.2	36.5	1.0	-57.7	-13.0	-44.7	
1.64	-70.7	V	3.0	-28.9	37.8	1.0	-65.8	-13.0	-52.8	
2.46	-68.2	V	3.0	-24.3	36.7	1.0	-59.9	-13.0	-46.9	
3.28	-66.4	V	3.0	-20.6	36.5	1.0	-56.1	-13.0	-43.1	

16QAM EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 01/25/16
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 27, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.64	-71.7	H	3.0	-30.3	37.8	1.0	-67.1	-13.0	-54.1	
2.46	-69.0	H	3.0	-25.9	36.7	1.0	-61.5	-13.0	-48.5	
3.28	-68.4	H	3.0	-22.5	36.5	1.0	-58.0	-13.0	-45.0	
1.64	-71.3	V	3.0	-29.5	37.8	1.0	-66.4	-13.0	-53.4	
2.46	-68.7	V	3.0	-24.8	36.7	1.0	-60.4	-13.0	-47.4	
3.28	-67.8	V	3.0	-22.0	36.5	1.0	-57.5	-13.0	-44.5	

10.5.11. LTE BAND 30

QPSK EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 30, 5MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B30

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2307.5MHz)										
3.62	-66.6	H	3.0	-18.9	33.4	1.0	-51.4	-40.0	-11.4	
6.05	-69.1	H	3.0	-16.9	31.9	1.0	-47.9	-40.0	-7.9	
7.99	-70.1	H	3.0	-15.0	29.7	1.0	-43.7	-40.0	-3.7	
4.49	-68.7	V	3.0	-19.3	33.4	1.0	-51.7	-40.0	-11.7	
6.04	-69.2	V	3.0	-17.1	31.9	1.0	-48.0	-40.0	-8.0	
8.06	-70.6	V	3.0	-15.4	29.6	1.0	-44.0	-40.0	-4.0	
Mid Channel (2310MHz)										
4.06	-68.4	H	3.0	-19.5	33.7	1.0	-52.2	-40.0	-12.2	
4.96	-68.0	H	3.0	-17.7	33.0	1.0	-49.8	-40.0	-9.8	
5.80	-68.5	H	3.0	-16.8	32.2	1.0	-48.0	-40.0	-8.0	
3.62	-68.6	V	3.0	-20.9	33.4	1.0	-53.3	-40.0	-13.3	
5.18	-68.6	V	3.0	-18.4	32.9	1.0	-50.3	-40.0	-10.3	
6.54	-70.0	V	3.0	-16.8	31.4	1.0	-47.2	-40.0	-7.2	
High Channel (2312.5MHz)										
4.18	-68.4	H	3.0	-19.3	33.6	1.0	-51.9	-40.0	-11.9	
5.55	-69.5	H	3.0	-18.2	32.5	1.0	-49.7	-40.0	-9.7	
7.82	-70.9	H	3.0	-16.0	29.9	1.0	-44.9	-40.0	-4.9	
4.83	-67.8	V	3.0	-18.0	33.1	1.0	-50.2	-40.0	-10.2	
6.05	-70.0	V	3.0	-17.8	31.9	1.0	-48.8	-40.0	-8.8	
7.53	-71.3	V	3.0	-16.6	30.2	1.0	-45.9	-40.0	-5.9	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 30, 5MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B30

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2307.5MHz)										
5.07	-66.7	H	3.0	-16.3	33.0	1.0	-48.2	-40.0	-8.2	
6.06	-69.7	H	3.0	-17.5	31.9	1.0	-48.4	-40.0	-8.4	
7.12	-70.0	H	3.0	-16.0	30.7	1.0	-45.7	-40.0	-5.7	
4.28	-68.5	V	3.0	-19.4	33.5	1.0	-51.9	-40.0	-11.9	
5.52	-68.8	V	3.0	-17.8	32.5	1.0	-49.3	-40.0	-9.3	
6.50	-69.8	V	3.0	-16.7	31.4	1.0	-47.1	-40.0	-7.1	
Mid Channel (2310MHz)										
3.69	-67.5	H	3.0	-19.6	33.5	1.0	-52.1	-40.0	-12.1	
5.16	-68.2	H	3.0	-17.6	32.9	1.0	-49.5	-40.0	-9.5	
6.15	-67.9	H	3.0	-15.6	31.8	1.0	-46.4	-40.0	-6.4	
4.49	-67.9	V	3.0	-18.6	33.4	1.0	-50.9	-40.0	-10.9	
5.55	-68.4	V	3.0	-17.3	32.5	1.0	-48.8	-40.0	-8.8	
7.05	-70.4	V	3.0	-16.2	30.8	1.0	-46.0	-40.0	-6.0	
High Channel (2312.5MHz)										
3.78	-66.9	H	3.0	-18.7	33.6	1.0	-51.3	-40.0	-11.3	
5.20	-68.5	H	3.0	-17.9	32.9	1.0	-49.7	-40.0	-9.7	
6.71	-71.0	H	3.0	-17.6	31.2	1.0	-47.8	-40.0	-7.8	
3.63	-68.1	V	3.0	-20.3	33.5	1.0	-52.8	-40.0	-12.8	
5.51	-68.5	V	3.0	-17.5	32.5	1.0	-49.1	-40.0	-9.1	
6.63	-69.2	V	3.0	-15.9	31.3	1.0	-46.2	-40.0	-6.2	

Rev. 05.21.15

10.5.12. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 41, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
4.32	-67.9	H	3.0	-18.6	33.5	1.0	-51.1	-25.0	-26.1	
5.88	-68.5	H	3.0	-16.6	32.1	1.0	-47.7	-25.0	-22.7	
7.80	-71.0	H	3.0	-16.1	29.9	1.0	-45.0	-25.0	-20.0	
4.14	-68.7	V	3.0	-19.8	33.6	1.0	-52.4	-25.0	-27.4	
7.23	-69.4	V	3.0	-15.1	30.6	1.0	-44.7	-25.0	-19.7	
9.68	-71.5	V	3.0	-14.9	27.6	1.0	-41.5	-25.0	-16.5	
Mid Channel (2593MHz)										
3.77	-67.2	H	3.0	-19.1	33.6	1.0	-51.6	-25.0	-26.6	
5.90	-69.0	H	3.0	-17.1	32.1	1.0	-48.2	-25.0	-23.2	
7.70	-70.7	H	3.0	-16.0	30.0	1.0	-45.0	-25.0	-20.0	
4.29	-67.3	V	3.0	-18.2	33.5	1.0	-50.7	-25.0	-25.7	
5.90	-68.0	V	3.0	-16.2	32.1	1.0	-47.3	-25.0	-22.3	
7.59	-70.3	V	3.0	-15.5	30.2	1.0	-44.7	-25.0	-19.7	
High Channel (2680MHz)										
4.30	-67.1	H	3.0	-17.8	33.5	1.0	-50.3	-25.0	-25.3	
6.03	-69.0	H	3.0	-16.8	32.0	1.0	-47.8	-25.0	-22.8	
7.83	-70.1	H	3.0	-15.2	29.9	1.0	-44.1	-25.0	-19.1	
3.84	-68.0	V	3.0	-19.7	33.6	1.0	-52.3	-25.0	-27.3	
6.74	-68.8	V	3.0	-15.2	31.2	1.0	-45.4	-25.0	-20.4	
9.12	-71.0	V	3.0	-14.8	28.3	1.0	-42.1	-25.0	-17.1	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U22428
Date: 12/10/15
Test Engineer: F. Guarnerro
Configuration: EUT Only
Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber D	3m Chamber D	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
4.25	-68.1	H	3.0	-18.9	33.5	1.0	-51.4	-25.0	-26.4	
5.44	-69.7	H	3.0	-18.6	32.6	1.0	-50.2	-25.0	-25.2	
7.59	-70.1	H	3.0	-15.5	30.2	1.0	-44.7	-25.0	-19.7	
3.87	-68.0	V	3.0	-19.6	33.6	1.0	-52.2	-25.0	-27.2	
6.86	-69.3	V	3.0	-15.4	31.1	1.0	-45.5	-25.0	-20.5	
8.56	-71.2	V	3.0	-15.6	29.0	1.0	-43.6	-25.0	-18.6	
Mid Channel (2593MHz)										
4.28	-66.8	H	3.0	-17.6	33.5	1.0	-50.1	-25.0	-25.1	
7.43	-70.2	H	3.0	-15.8	30.4	1.0	-45.2	-25.0	-20.2	
9.76	-72.3	H	3.0	-15.0	27.5	1.0	-41.5	-25.0	-16.5	
3.92	-67.9	V	3.0	-19.4	33.7	1.0	-52.0	-25.0	-27.0	
5.79	-69.1	V	3.0	-17.6	32.2	1.0	-48.8	-25.0	-23.8	
7.48	-70.1	V	3.0	-15.4	30.3	1.0	-44.7	-25.0	-19.7	
High Channel (2680MHz)										
4.07	-68.1	H	3.0	-19.2	33.7	1.0	-51.9	-25.0	-26.9	
5.86	-69.0	H	3.0	-17.2	32.1	1.0	-48.3	-25.0	-23.3	
7.60	-70.2	H	3.0	-15.6	30.2	1.0	-44.8	-25.0	-19.8	
4.37	-64.4	V	3.0	-15.2	33.4	1.0	-47.6	-25.0	-22.6	
5.56	-68.5	V	3.0	-17.5	32.5	1.0	-48.9	-25.0	-23.9	
7.61	-70.3	V	3.0	-15.6	30.1	1.0	-44.7	-25.0	-19.7	

Rev. 05.21.15