

10.2. RADIATED POWER (ERP & EIRP), UAT

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	21.98	157.76
		1880.0	22.31	170.22
		1909.3	22.42	174.58
1.4MHz Band 16QAM	1/0	1850.7	21.08	128.23
		1880.0	21.43	139.00
		1909.3	21.55	142.89

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	22.68	185.35
		1880.0	22.63	183.23
		1908.5	22.55	179.89
3.0MHz Band 16QAM	1/0	1851.5	21.98	157.76
		1880.0	21.83	152.41
		1908.5	21.75	149.62

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	22.78	189.67
		1880.0	22.83	191.87
		1907.5	22.84	192.31
5.0MHz Band 16QAM	1/0	1852.5	21.98	157.76
		1880.0	22.03	159.59
		1907.5	22.04	159.96

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	22.52	178.65
		1880.0	22.63	183.23
		1905.0	22.78	189.67
10.0MHz Band 16QAM	1/0	1855.0	21.58	143.88
		1880.0	21.73	148.94
		1905.0	21.88	154.17

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	22.76	188.80
		1880.0	22.78	189.67
		1902.5	22.83	191.87
15MHz Band 16QAM	1/0	1857.5	21.78	150.66
		1880.0	21.98	157.76
		1902.5	21.93	155.96

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	22.68	185.35
		1880.0	22.50	177.83
		1900.0	22.82	191.43
20MHz Band 16QAM	1/0	1860.0	21.88	154.17
		1880.0	21.73	148.94
		1900.0	21.97	157.40

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	21.08	128.23
		1732.5	21.36	136.77
		1754.3	21.57	143.55
1.4 MHZ BAND 16QAM	1/0	1710.7	20.28	106.66
		1732.5	20.49	111.94
		1754.3	20.67	116.68

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	21.03	126.77
		1732.5	21.27	133.97
		1753.5	21.59	144.21
3.0 MHZ BAND 16QAM	1/0	1711.5	20.08	101.86
		1732.5	20.49	111.94
		1753.5	20.76	119.12

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	20.99	125.60
		1732.5	21.46	139.96
		1752.5	21.60	144.54
5.0 MHZ BAND 16QAM	1/0	1712.5	20.28	106.66
		1732.5	20.64	115.88
		1752.5	20.77	119.40

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	21.18	131.22
		1732.5	21.74	149.28
		1750.0	21.65	146.22
10.0 MHZ BAND 16QAM	1/0	1715.0	20.37	108.89
		1732.5	21.09	128.53
		1750.0	20.75	118.85

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	21.06	127.64
		1732.5	21.44	139.32
		1747.5	21.35	136.46
15.0 MHZ BAND 16QAM	1/0	1717.5	20.26	106.17
		1732.5	20.59	114.55
		1747.5	20.60	114.82

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	21.88	154.17
		1732.5	21.94	156.31
		1745.0	21.62	145.21
20.0 MHZ BAND 16QAM	1/0	1720.0	21.06	127.64
		1732.5	21.09	128.53
		1745.0	20.76	119.12

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	19.39	86.90
		836.5	19.48	88.72
		848.3	18.91	77.80
1.4MHz Band 16QAM	1/0	824.7	18.59	72.28
		836.5	18.78	75.51
		848.3	18.01	63.24

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	19.19	82.99
		836.5	19.39	86.90
		847.5	18.63	72.95
3.0 MHZ BAND 16QAM	1/0	825.5	18.39	69.02
		836.5	18.48	70.47
		847.5	17.81	60.39

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	19.59	90.99
		836.5	19.63	91.83
		846.5	19.11	81.47
5MHz Band 16QAM	1/0	826.5	18.69	73.96
		836.5	18.78	75.51
		846.5	18.21	66.22

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	19.59	90.99
		836.5	19.28	84.72
		844.0	19.31	85.31
10.0 MHZ BAND 16QAM	1/0	829.0	18.69	73.96
		836.5	18.48	70.47
		844.0	18.51	70.96

EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2502.5	20.07	101.62
		2535.0	20.12	102.80
		2567.5	20.65	116.14
5.0 MHZ BAND 16QAM	25/0	2502.5	19.42	87.50
		2535.0	19.47	88.51
		2567.5	20.00	100.00

EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2505.0	19.86	96.83
		2535.0	20.55	113.50
		2565.0	20.41	109.90
10.0 MHZ BAND 16QAM	50/0	2505.0	19.21	83.37
		2535.0	19.90	97.72
		2565.0	19.76	94.62

EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2507.5	19.56	90.36
		2535.0	20.34	108.14
		2562.5	20.28	106.66
15.0 MHZ BAND 16QAM	75/0	2507.5	18.96	78.70
		2535.0	19.74	94.19
		2562.5	19.68	92.90

EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2510.0	19.50	89.13
		2535.0	20.43	110.41
		2560.0	20.33	107.89
20.0 MHZ BAND 16QAM	100/0	2510.0	18.95	78.52
		2535.0	20.05	101.16
		2560.0	20.04	100.93

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	18.02	63.39
		707.5	17.87	61.24
		715.3	17.82	60.53
1.4MHz Band 16QAM	1/0	699.7	17.23	52.84
		707.5	16.82	48.08
		715.3	17.05	50.70

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	17.80	60.26
		707.5	18.00	63.10
		714.5	17.83	60.67
3.0 MHZ BAND 16QAM	1/0	700.5	17.03	50.47
		707.5	17.22	52.72
		714.5	17.05	50.70

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	17.89	61.52
		707.5	17.90	61.66
		713.5	18.05	63.83
5MHz Band 16QAM	1/0	701.5	17.13	51.64
		707.5	17.12	51.52
		713.5	17.25	53.09

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	18.07	64.12
		707.5	17.92	61.94
		711.0	18.05	63.83
10.0 MHZ BAND 16QAM	1/0	704.0	17.23	52.84
		707.5	17.02	50.35
		711.0	17.25	53.09

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	18.07	64.12
		782.0	17.90	61.66
		784.5	17.97	62.66
5.0 MHZ BAND 16QAM	1/0	779.5	17.28	53.46
		782.0	17.01	50.23
		784.5	17.06	50.82

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	18.71	74.30
10 MHZ BAND 16QAM	1/0		17.91	61.80

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	16.27	42.36
		710.0	16.30	42.66
		713.5	16.20	41.69
5MHz Band 16QAM	1/0	706.5	15.57	36.06
		710.0	15.60	36.31
		713.5	15.50	35.48

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	16.27	42.36
10.0 MHZ BAND 16QAM		710.0	15.56	35.97

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	21.45	139.64
		1882.5	21.46	139.96
		1914.3	21.49	140.93
1.4 MHZ BAND 16QAM	1/0	1850.7	20.65	116.14
		1882.5	20.66	116.41
		1914.3	20.69	117.22

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	20.65	116.14
		1882.5	20.58	114.29
		1913.5	21.08	128.23
3.0 MHZ BAND 16QAM	1/0	1851.5	19.86	96.83
		1882.5	19.79	95.28
		1913.5	20.29	106.91

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	20.12	102.80
		1882.5	20.58	114.29
		1912.5	21.39	137.72
5.0 MHZ BAND 16QAM	1/0	1852.5	19.31	85.31
		1882.5	19.77	94.84
		1912.5	20.58	114.29

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	20.38	109.14
		1882.5	20.12	102.80
		1910.0	20.81	120.50
10.0 MHZ BAND 16QAM	1/0	1855.0	19.60	91.20
		1882.5	19.34	85.90
		1910.0	20.03	100.69

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	21.22	132.43
		1882.5	21.17	130.92
		1907.5	21.31	135.21
15.0 MHZ BAND 16QAM	1/0	1857.5	20.42	110.15
		1882.5	20.37	108.89
		1907.5	20.51	112.46

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	21.11	129.12
		1882.5	21.41	138.36
		1905.0	20.99	125.60
20.0 MHZ BAND 16QAM	1/0	1860.0	20.32	107.65
		1882.5	20.62	115.35
		1905.0	20.20	104.71

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	20.31	107.40
		819.0	20.31	107.40
		823.3	20.26	106.17
1.4 MHZ BAND 16QAM	1/0	814.7	19.49	88.92
		819.0	19.49	88.92
		823.3	19.44	87.90

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	20.55	113.50
		819.0	20.40	109.65
		822.5	20.10	102.33
3.0 MHZ BAND 16QAM	1/0	815.5	19.74	94.19
		819.0	19.59	90.99
		822.5	19.29	84.92

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	20.71	117.76
		819.0	20.62	115.35
		821.5	20.43	110.41
5.0 MHZ BAND 16QAM	1/0	816.5	19.92	98.17
		819.0	19.83	96.16
		821.5	19.64	92.04

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	20.53	112.98
10.0 MHZ BAND 16QAM	1/0	819.0	19.72	93.76

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	22.11	162.55
		819.0	22.20	165.96
		823.3	21.74	149.28
1.4 MHZ BAND 16QAM	1/0	814.7	21.68	147.23
		819.0	21.76	149.97
		823.3	21.24	133.05

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	21.64	145.88
		819.0	21.02	126.47
		822.5	20.42	110.15
3.0 MHZ BAND 16QAM	1/0	815.5	21.13	129.72
		819.0	20.80	120.23
		822.5	20.79	119.95

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	21.58	143.88
		819.0	20.80	120.23
		821.5	20.24	105.68
5.0 MHZ BAND 16QAM	1/0	816.5	21.23	132.74
		819.0	20.80	120.23
		821.5	20.77	119.40

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	20.79	119.95
10.0 MHZ BAND 16QAM	1/0	819.0	20.42	110.15

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	19.67	92.68
		2310.0	19.31	85.31
		2312.5	19.30	85.11
5MHz Band 16QAM	1/0	2307.5	18.93	78.16
		2310.0	18.57	71.94
		2312.5	18.56	71.78

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	19.30	85.11
10.0 MHZ BAND 16QAM		2310.0	18.60	72.44

EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2498.5	19.72	93.76
		2593.0	20.12	102.80
		2687.5	21.66	146.55
5.0 MHZ BAND 16QAM	25/0	2498.5	19.06	80.54
		2593.0	19.72	93.76
		2687.5	21.12	129.42

EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2501.0	19.52	89.54
		2593.0	20.88	122.46
		2685.0	21.04	127.06
10.0 MHZ BAND 16QAM	50/0	2501.0	19.19	82.99
		2593.0	20.58	114.29
		2685.0	20.71	117.76

EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2503.5	19.43	87.70
		2593.0	21.48	140.60
		2682.5	21.55	142.89
15.0 MHZ BAND 16QAM	75/0	2503.5	18.93	78.16
		2593.0	19.55	90.16
		2682.5	20.88	122.46

EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2506.0	19.29	84.92
		2593.0	20.98	125.31
		2680.0	21.53	142.23
20.0 MHZ BAND 16QAM	100/0	2506.0	18.69	73.96
		2593.0	19.52	89.54
		2680.0	20.47	111.43

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 #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 1.4MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.851	14.0	V	0.98	8.05	21.05	33.0	-12.0	
1.851	14.9	H	0.98	8.05	21.98	33.0	-11.0	
Mid Ch								
1.880	13.8	V	0.98	8.03	20.89	33.0	-12.1	
1.880	15.3	H	0.98	8.03	22.31	33.0	-10.7	
High Ch								
1.909	13.7	V	0.98	8.05	20.75	33.0	-12.3	
1.909	15.3	H	0.98	8.05	22.42	33.0	-10.6	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 1.4MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.851	13.2	V	0.98	8.05	20.25	33.0	-12.8	
1.851	14.0	H	0.98	8.05	21.08	33.0	-11.9	
Mid Ch								
1.880	12.9	V	0.98	8.03	19.96	33.0	-13.0	
1.880	14.4	H	0.98	8.03	21.43	33.0	-11.6	
High Ch								
1.909	12.9	V	0.98	8.05	19.95	33.0	-13.1	
1.909	14.5	H	0.98	8.05	21.55	33.0	-11.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 3MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.852	13.7	V	0.98	8.05	20.75	33.0	-12.3	
1.852	15.6	H	0.98	8.05	22.68	33.0	-10.3	
Mid Ch								
1.880	13.9	V	0.98	8.03	20.96	33.0	-12.0	
1.880	15.6	H	0.98	8.03	22.63	33.0	-10.4	
High Ch								
1.909	13.7	V	0.98	8.05	20.74	33.0	-12.3	
1.909	15.5	H	0.98	8.05	22.55	33.0	-10.5	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/2/2016 Test Engineer: 45200 Configuration: EUT Only Mode: LTE Band 2 16QAM 3MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.852	13.0	V	0.98	8.05	20.05	33.0	-13.0	
1.852	14.9	H	0.98	8.05	21.98	33.0	-11.0	
Mid Ch								
1.880	13.1	V	0.98	8.03	20.16	33.0	-12.8	
1.880	14.8	H	0.98	8.03	21.83	33.0	-11.2	
High Ch								
1.909	12.9	V	0.98	8.05	19.95	33.0	-13.1	
1.909	14.7	H	0.98	8.05	21.75	33.0	-11.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 5MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.853	13.3	V	0.98	8.05	20.35	33.0	-12.7	
1.853	15.7	H	0.98	8.05	22.78	33.0	-10.2	
Mid Ch								
1.880	13.2	V	0.98	8.03	20.25	33.0	-12.8	
1.880	15.8	H	0.98	8.03	22.83	33.0	-10.2	
High Ch								
1.908	13.0	V	0.98	8.04	20.04	33.0	-13.0	
1.908	15.8	H	0.98	8.04	22.84	33.0	-10.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/2/2016 Test Engineer: 45200 Configuration: EUT only Mode: LTE Band 2 16QAM 5MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.853	12.4	V	0.98	8.05	19.45	33.0	-13.6	
1.853	14.9	H	0.98	8.05	21.98	33.0	-11.0	
Mid Ch								
1.880	12.4	V	0.98	8.03	19.46	33.0	-13.5	
1.880	15.0	H	0.98	8.03	22.03	33.0	-11.0	
High Ch								
1.908	12.3	V	0.98	8.04	19.34	33.0	-13.7	
1.908	15.0	H	0.98	8.04	22.04	33.0	-11.0	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/2/2016						
Test Engineer:		45200						
Configuration:		EUT Only						
Mode:		LTE Band 2 QPSK 10MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.855	14.7	V	0.98	8.05	21.79	33.0	-11.2	
1.855	15.5	H	0.98	8.05	22.52	33.0	-10.5	
Mid Ch								
1.880	14.2	V	0.98	8.03	21.21	33.0	-11.8	
1.880	15.6	H	0.98	8.03	22.63	33.0	-10.4	
High Ch								
1.905	14.2	V	0.98	8.04	21.23	33.0	-11.8	
1.905	15.7	H	0.98	8.04	22.78	33.0	-10.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 10MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.855	14.0	V	0.98	8.05	21.05	33.0	-12.0	
1.855	14.5	H	0.98	8.05	21.58	33.0	-11.4	
Mid Ch								
1.880	13.4	V	0.98	8.03	20.46	33.0	-12.5	
1.880	14.7	H	0.98	8.03	21.73	33.0	-11.3	
High Ch								
1.905	13.3	V	0.98	8.04	20.33	33.0	-12.7	
1.905	14.8	H	0.98	8.04	21.88	33.0	-11.1	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/2/2016 Test Engineer: 45200 Configuration: EUT Only Mode: LTE Band 2 QPSK 15MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.858	14.8	V	0.98	8.04	21.87	33.0	-11.1	
1.858	15.7	H	0.98	8.04	22.76	33.0	-10.2	
Mid Ch								
1.880	14.3	V	0.98	8.03	21.36	33.0	-11.6	
1.880	15.7	H	0.98	8.03	22.78	33.0	-10.2	
High Ch								
1.903	14.7	V	0.98	8.03	21.72	33.0	-11.3	
1.903	15.8	H	0.98	8.03	22.83	33.0	-10.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/2/2016 Test Engineer: 45200 Configuration: EUT Only Mode: LTE Band 2 16QAM 15MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.858	14.0	V	0.98	8.04	21.04	33.0	-12.0	
1.858	14.7	H	0.98	8.04	21.78	33.0	-11.2	
Mid Ch								
1.880	13.4	V	0.98	8.03	20.46	33.0	-12.5	
1.880	14.9	H	0.98	8.03	21.98	33.0	-11.0	
High Ch								
1.903	13.9	V	0.98	8.03	20.92	33.0	-12.1	
1.903	14.9	H	0.98	8.03	21.93	33.0	-11.1	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 20MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.860	14.8	V	0.98	8.04	21.84	33.0	-11.2	
1.860	15.6	H	0.98	8.04	22.68	33.0	-10.3	
Mid Ch								
1.880	14.3	V	0.98	8.03	21.40	33.0	-11.6	
1.880	15.4	H	0.98	8.03	22.50	33.0	-10.5	
High Ch								
1.900	15.5	V	0.98	8.02	22.52	33.0	-10.5	
1.900	15.8	H	0.98	8.02	22.82	33.0	-10.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/2/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 20MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.860	14.0	V	0.98	8.04	21.04	33.0	-12.0	
1.860	14.8	H	0.98	8.04	21.88	33.0	-11.1	
Mid Ch								
1.880	13.4	V	0.98	8.03	20.46	33.0	-12.5	
1.880	14.7	H	0.98	8.03	21.73	33.0	-11.3	
High Ch								
1.900	14.7	V	0.98	8.02	21.72	33.0	-11.3	
1.900	14.9	H	0.98	8.02	21.97	33.0	-11.0	
Rev. 10.24.13								

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 #: 16U23328 Date: 6/3/2016 Test Engineer: 30554 Configuration: EUT Only Mode: LTE Band 4 QPSK 1.4MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.711	6.9	V	0.95	8.27	14.20	30.0	-15.8	
1.711	13.8	H	0.95	8.27	21.08	30.0	-8.9	
Mid Ch								
1.733	7.5	V	0.95	8.23	14.76	30.0	-15.2	
1.733	14.1	H	0.95	8.23	21.36	30.0	-8.6	
High Ch								
1.754	6.9	V	0.95	8.18	14.16	30.0	-15.8	
1.754	14.3	H	0.95	8.18	21.57	30.0	-8.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/3/2016								
Test Engineer: 30554								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 1.4MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.711	6.1	V	0.95	8.27	13.40	30.0	-16.6	
1.711	13.0	H	0.95	8.27	20.28	30.0	-9.7	
Mid Ch								
1.733	6.7	V	0.95	8.23	13.96	30.0	-16.0	
1.733	13.2	H	0.95	8.23	20.49	30.0	-9.5	
High Ch								
1.754	6.2	V	0.95	8.18	13.38	30.0	-16.6	
1.754	13.4	H	0.95	8.18	20.67	30.0	-9.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/3/2016 Test Engineer: 30554 Configuration: EUT Only Mode: LTE Band 4 QPSK 3MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.712	7.1	V	0.95	8.27	14.45	30.0	-15.6	
1.712	13.7	H	0.95	8.27	21.03	30.0	-9.0	
Mid Ch								
1.733	8.1	V	0.95	8.23	15.41	30.0	-14.6	
1.733	14.0	H	0.95	8.23	21.27	30.0	-8.7	
High Ch								
1.754	7.5	V	0.95	8.18	14.71	30.0	-15.3	
1.754	14.4	H	0.95	8.18	21.59	30.0	-8.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/3/2016								
Test Engineer: 30554								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 3MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.712	6.4	V	0.95	8.27	13.70	30.0	-16.3	
1.712	12.8	H	0.95	8.27	20.08	30.0	-9.9	
Mid Ch								
1.733	7.2	V	0.95	8.23	14.46	30.0	-15.5	
1.733	13.2	H	0.95	8.23	20.49	30.0	-9.5	
High Ch								
1.754	6.8	V	0.95	8.18	13.98	30.0	-16.0	
1.754	13.5	H	0.95	8.18	20.76	30.0	-9.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/3/2016								
Test Engineer: 30554								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 5MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.713	7.4	V	0.95	8.27	14.74	30.0	-15.3	
1.713	13.7	H	0.95	8.27	20.99	30.0	-9.0	
Mid Ch								
1.733	8.5	V	0.95	8.23	15.79	30.0	-14.2	
1.733	14.2	H	0.95	8.23	21.46	30.0	-8.5	
High Ch								
1.753	7.8	V	0.95	8.18	15.00	30.0	-15.0	
1.753	14.4	H	0.95	8.18	21.60	30.0	-8.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/3/2016 Test Engineer: 30554 Configuration: EUT Only Mode: LTE Band 4 16QAM 5MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.713	6.6	V	0.95	8.27	13.89	30.0	-16.1	
1.713	13.0	H	0.95	8.27	20.28	30.0	-9.7	
Mid Ch								
1.733	7.6	V	0.95	8.23	14.86	30.0	-15.1	
1.733	13.4	H	0.95	8.23	20.64	30.0	-9.4	
High Ch								
1.753	7.1	V	0.95	8.18	14.29	30.0	-15.7	
1.753	13.5	H	0.95	8.18	20.77	30.0	-9.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		30554						
Configuration:		EUT Only						
Mode:		LTE Band 4 QPSK 10MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.715	8.3	V	0.95	8.26	15.64	30.0	-14.4	
1.715	13.9	H	0.95	8.26	21.18	30.0	-8.8	
Mid Ch								
1.733	8.4	V	0.95	8.23	15.71	30.0	-14.3	
1.733	14.5	H	0.95	8.23	21.74	30.0	-8.3	
High Ch								
1.750	8.3	V	0.95	8.19	15.51	30.0	-14.5	
1.750	14.4	H	0.95	8.19	21.65	30.0	-8.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/3/2016 Test Engineer: 30554 Configuration: EUT Only Mode: LTE Band 4 16QAM 10MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.715	7.7	V	0.95	8.26	15.04	30.0	-15.0	
1.715	13.1	H	0.95	8.26	20.37	30.0	-9.6	
Mid Ch								
1.733	7.5	V	0.95	8.23	14.76	30.0	-15.2	
1.733	13.8	H	0.95	8.23	21.09	30.0	-8.9	
High Ch								
1.750	7.7	V	0.95	8.19	14.89	30.0	-15.1	
1.750	13.5	H	0.95	8.19	20.75	30.0	-9.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/3/2016 Test Engineer: 30554 Configuration: EUT Only Mode: LTE Band 4 QPSK 15MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.718	8.2	V	0.95	8.26	15.55	30.0	-14.4	
1.718	13.8	H	0.95	8.26	21.06	30.0	-8.9	
Mid Ch								
1.733	8.9	V	0.95	8.23	16.21	30.0	-13.8	
1.733	14.2	H	0.95	8.23	21.44	30.0	-8.6	
High Ch								
1.748	8.5	V	0.95	8.19	15.76	30.0	-14.2	
1.748	14.1	H	0.95	8.19	21.35	30.0	-8.6	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/3/2016								
Test Engineer: 30554								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 15MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.718	7.4	V	0.95	8.26	14.68	30.0	-15.3	
1.718	13.0	H	0.95	8.26	20.26	30.0	-9.7	
Mid Ch								
1.733	8.2	V	0.95	8.23	15.46	30.0	-14.5	
1.733	13.3	H	0.95	8.23	20.59	30.0	-9.4	
High Ch								
1.748	7.7	V	0.95	8.19	14.90	30.0	-15.1	
1.748	13.4	H	0.95	8.19	20.60	30.0	-9.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/3/2016								
Test Engineer: 30554								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 20MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.720	8.2	V	0.95	8.25	15.47	30.0	-14.5	
1.720	14.6	H	0.95	8.25	21.88	30.0	-8.1	
Mid Ch								
1.733	8.5	V	0.95	8.23	15.81	30.0	-14.2	
1.733	14.7	H	0.95	8.23	21.94	30.0	-8.1	
High Ch								
1.745	8.0	V	0.95	8.20	15.28	30.0	-14.7	
1.745	14.4	H	0.95	8.20	21.62	30.0	-8.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/3/2016 Test Engineer: 30554 Configuration: EUT Only Mode: LTE Band 4 16QAM 20MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.720	7.7	V	0.95	8.25	15.03	30.0	-15.0	
1.720	13.8	H	0.95	8.25	21.06	30.0	-8.9	
Mid Ch								
1.733	7.7	V	0.95	8.23	14.96	30.0	-15.0	
1.733	13.8	H	0.95	8.23	21.09	30.0	-8.9	
High Ch								
1.745	7.4	V	0.95	8.20	14.60	30.0	-15.4	
1.745	13.5	H	0.95	8.20	20.76	30.0	-9.2	
Rev. 10.24.13								

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 #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 5 QPSK 1.4MHz BW										
Test Equipment: Receiving: Sunoi T408, and Chamber E 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	5.74	V	0.6	0.0	5.12	7.27	38.45	40.60	-33.3	
824.70	20.01	H	0.6	0.0	19.39	21.54	38.45	40.60	-19.1	
Mid Ch										
836.50	5.64	V	0.6	0.0	5.02	7.17	38.45	40.60	-33.4	
836.50	20.10	H	0.6	0.0	19.48	21.63	38.45	40.60	-19.0	
High Ch										
848.30	5.89	V	0.6	0.0	5.27	7.42	38.45	40.60	-33.2	
848.30	19.53	H	0.6	0.0	18.91	21.06	38.45	40.60	-19.5	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 5 16QAM 1.4MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	4.36	V	0.6	0.0	3.74	5.89	38.45	40.60	-34.7	
824.70	19.21	H	0.6	0.0	18.59	20.74	38.45	40.60	-19.9	
Mid Ch										
836.50	4.87	V	0.6	0.0	4.25	6.40	38.45	40.60	-34.2	
836.50	19.40	H	0.6	0.0	18.78	20.93	38.45	40.60	-19.7	
High Ch										
848.30	5.01	V	0.6	0.0	4.39	6.54	38.45	40.60	-34.1	
848.30	18.63	H	0.6	0.0	18.01	20.16	38.45	40.60	-20.4	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 5 QPSK 3MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	11.98	V	0.6	0.0	11.36	13.51	38.45	40.60	-27.1	
825.50	19.81	H	0.6	0.0	19.19	21.34	38.45	40.60	-19.3	
Mid Ch										
836.50	12.76	V	0.6	0.0	12.14	14.29	38.45	40.60	-26.3	
836.50	20.01	H	0.6	0.0	19.39	21.54	38.45	40.60	-19.1	
High Ch										
847.50	11.71	V	0.6	0.0	11.09	13.24	38.45	40.60	-27.4	
847.50	19.25	H	0.6	0.0	18.63	20.78	38.45	40.60	-19.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 5 16QAM 3MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	11.36	V	0.6	0.0	10.74	12.89	38.45	40.60	-27.7	
825.50	19.01	H	0.6	0.0	18.39	20.54	38.45	40.60	-20.1	
Mid Ch										
836.50	11.87	V	0.6	0.0	11.25	13.40	38.45	40.60	-27.2	
836.50	19.10	H	0.6	0.0	18.48	20.63	38.45	40.60	-20.0	
High Ch										
847.50	11.01	V	0.6	0.0	10.39	12.54	38.45	40.60	-28.1	
847.50	18.43	H	0.6	0.0	17.81	19.96	38.45	40.60	-20.6	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 5 QPSK 5MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	12.02	V	0.6	0.0	11.40	13.55	38.45	40.60	-27.0	
826.50	20.21	H	0.6	0.0	19.59	21.74	38.45	40.60	-18.9	
Mid Ch										
836.50	13.00	V	0.6	0.0	12.38	14.53	38.45	40.60	-26.1	
836.50	20.25	H	0.6	0.0	19.63	21.78	38.45	40.60	-18.8	
High Ch										
846.50	12.55	V	0.6	0.0	11.93	14.08	38.45	40.60	-26.5	
846.50	19.73	H	0.6	0.0	19.11	21.26	38.45	40.60	-19.3	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 5 16QAM 5MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	11.36	V	0.6	0.0	10.74	12.89	38.45	40.60	-27.7	
826.50	19.31	H	0.6	0.0	18.69	20.84	38.45	40.60	-19.8	
Mid Ch										
836.50	12.27	V	0.6	0.0	11.65	13.80	38.45	40.60	-26.8	
836.50	19.40	H	0.6	0.0	18.78	20.93	38.45	40.60	-19.7	
High Ch										
846.50	12.01	V	0.6	0.0	11.39	13.54	38.45	40.60	-27.1	
846.50	18.83	H	0.6	0.0	18.21	20.36	38.45	40.60	-20.2	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/6/2016										
Test Engineer: 52279										
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	12.36	V	0.6	0.0	11.74	13.89	38.45	40.60	-26.7	
829.00	20.21	H	0.6	0.0	19.59	21.74	38.45	40.60	-18.9	
Mid Ch										
836.50	12.57	V	0.6	0.0	11.95	14.10	38.45	40.60	-26.5	
836.50	19.90	H	0.6	0.0	19.28	21.43	38.45	40.60	-19.2	
High Ch										
844.00	12.21	V	0.6	0.0	11.59	13.74	38.45	40.60	-26.9	
844.00	19.93	H	0.6	0.0	19.31	21.46	38.45	40.60	-19.1	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/6/2016										
Test Engineer: 52279										
Configuration: EUT only										
Mode: LTE Band 5 16QAM 10MHz BW										
Test Equipment:										
Receiving: Sunol T408, and Chamber E 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	11.56	V	0.6	0.0	10.94	13.09	38.45	40.60	-27.5	
829.00	19.31	H	0.6	0.0	18.69	20.84	38.45	40.60	-19.8	
Mid Ch										
836.50	11.67	V	0.6	0.0	11.05	13.20	38.45	40.60	-27.4	
836.50	19.10	H	0.6	0.0	18.48	20.63	38.45	40.60	-20.0	
High Ch										
844.00	11.41	V	0.6	0.0	10.79	12.94	38.45	40.60	-27.7	
844.00	19.13	H	0.6	0.0	18.51	20.66	38.45	40.60	-19.9	
Rev. 10.24.13										

10.2.4. LTE BAND 7

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT only						
Mode:		LTE Band 7 QPSK 5MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	9.7	V	1.15	9.34	17.87	33.0	-15.1	
2.503	11.9	H	1.15	9.34	20.07	33.0	-12.9	
Mid Ch								
2.535	10.5	V	1.16	9.38	18.73	33.0	-14.3	
2.535	11.9	H	1.16	9.38	20.12	33.0	-12.9	
High Ch								
2.568	10.4	V	1.17	9.43	18.68	33.0	-14.3	
2.568	12.4	H	1.17	9.43	20.65	33.0	-12.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT Only						
Mode:		LTE Band 7 16QAM 5MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	9.0	V	1.15	9.34	17.22	33.0	-15.8	
2.503	11.2	H	1.15	9.34	19.42	33.0	-13.6	
Mid Ch								
2.535	9.9	V	1.16	9.38	18.08	33.0	-14.9	
2.535	11.2	H	1.16	9.38	19.47	33.0	-13.5	
High Ch								
2.568	9.8	V	1.17	9.43	18.03	33.0	-15.0	
2.568	11.7	H	1.17	9.43	20.00	33.0	-13.0	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/3/2016 Test Engineer: 52291 Configuration: EUT Only Mode: LTE Band 7 QPSK 10MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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	9.1	V	1.15	9.34	17.28	33.0	-15.7	
2.505	11.7	H	1.15	9.34	19.86	33.0	-13.1	
Mid Ch								
2.535	9.8	V	1.16	9.38	18.00	33.0	-15.0	
2.535	12.3	H	1.16	9.38	20.55	33.0	-12.5	
High Ch								
2.565	10.3	V	1.17	9.43	18.57	33.0	-14.4	
2.565	12.2	H	1.17	9.43	20.41	33.0	-12.6	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT only						
Mode:		LTE Band 7 16QAM 10MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	8.4	V	1.15	9.34	16.63	33.0	-16.4	
2.505	11.0	H	1.15	9.34	19.21	33.0	-13.8	
Mid Ch								
2.535	9.1	V	1.16	9.38	17.35	33.0	-15.7	
2.535	11.7	H	1.16	9.38	19.90	33.0	-13.1	
High Ch								
2.565	9.7	V	1.17	9.43	17.92	33.0	-15.1	
2.565	11.5	H	1.17	9.43	19.76	33.0	-13.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT only						
Mode:		LTE Band 7 QPSK 15MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	8.9	V	1.15	9.34	17.08	33.0	-15.9	
2.508	11.4	H	1.15	9.34	19.56	33.0	-13.4	
Mid Ch								
2.535	9.5	V	1.16	9.38	17.71	33.0	-15.3	
2.535	12.1	H	1.16	9.38	20.34	33.0	-12.7	
High Ch								
2.563	9.7	V	1.17	9.42	17.97	33.0	-15.0	
2.563	12.0	H	1.17	9.42	20.28	33.0	-12.7	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT only						
Mode:		LTE Band 7 16QAM 15MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	8.3	V	1.15	9.34	16.48	33.0	-16.5	
2.508	10.8	H	1.15	9.34	18.96	33.0	-14.0	
Mid Ch								
2.535	8.9	V	1.16	9.38	17.11	33.0	-15.9	
2.535	11.5	H	1.16	9.38	19.74	33.0	-13.3	
High Ch								
2.563	9.1	V	1.17	9.42	17.37	33.0	-15.6	
2.563	11.4	H	1.17	9.42	19.68	33.0	-13.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT only						
Mode:		LTE Band 7 QPSK 20MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	8.8	V	1.15	9.35	16.99	33.0	-16.0	
2.510	11.3	H	1.15	9.35	19.50	33.0	-13.5	
Mid Ch								
2.535	9.6	V	1.16	9.38	17.84	33.0	-15.2	
2.535	12.2	H	1.16	9.38	20.43	33.0	-12.6	
High Ch								
2.560	9.7	V	1.17	9.42	17.97	33.0	-15.0	
2.560	12.1	H	1.17	9.42	20.33	33.0	-12.7	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/3/2016						
Test Engineer:		52291						
Configuration:		EUT only						
Mode:		LTE Band 7 16QAM 20MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	8.2	V	1.15	9.35	16.44	33.0	-16.6	
2.510	10.8	H	1.15	9.35	18.95	33.0	-14.1	
Mid Ch								
2.535	9.1	V	1.16	9.38	17.29	33.0	-15.7	
2.535	11.8	H	1.16	9.38	20.05	33.0	-13.0	
High Ch								
2.560	9.2	V	1.17	9.42	17.42	33.0	-15.6	
2.560	11.8	H	1.17	9.42	20.04	33.0	-13.0	
Rev. 10.24.13								

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 #: 16U23328 Date: 6/7/2016 Test Engineer: 30554 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	8.79	V	0.55	0.0	8.24	10.39	34.77	36.99	-26.6	
699.70	18.56	H	0.55	0.0	18.02	20.17	34.77	36.99	-16.8	
Mid Ch										
707.50	8.74	V	0.55	0.0	8.19	10.34	34.77	36.99	-26.6	
707.50	18.42	H	0.55	0.0	17.87	20.02	34.77	36.99	-17.0	
High Ch										
715.30	9.15	V	0.55	0.0	8.60	10.75	34.77	36.99	-26.2	
715.30	18.37	H	0.55	0.0	17.82	19.97	34.77	36.99	-17.0	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/7/2016										
Test Engineer: 30554										
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	8.11	V	0.55	0.0	7.56	9.71	34.77	36.99	-27.3	
699.70	17.77	H	0.55	0.0	17.23	19.38	34.77	36.99	-17.6	
Mid Ch										
707.50	8.08	V	0.55	0.0	7.53	9.68	34.77	36.99	-27.3	
707.50	17.37	H	0.55	0.0	16.82	18.97	34.77	36.99	-18.0	
High Ch										
715.30	8.37	V	0.55	0.0	7.82	9.97	34.77	36.99	-27.0	
715.30	17.60	H	0.55	0.0	17.05	19.20	34.77	36.99	-17.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/7/2016 Test Engineer: 30554 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	8.77	V	0.55	0.0	8.22	10.37	34.77	36.99	-26.6	
700.50	18.34	H	0.55	0.0	17.80	19.95	34.77	36.99	-17.0	
Mid Ch										
707.50	8.66	V	0.55	0.0	8.11	10.26	34.77	36.99	-26.7	
707.50	18.55	H	0.55	0.0	18.00	20.15	34.77	36.99	-16.8	
High Ch										
714.50	9.14	V	0.55	0.0	8.59	10.74	34.77	36.99	-26.3	
714.50	18.38	H	0.55	0.0	17.83	19.98	34.77	36.99	-17.0	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/7/2016 Test Engineer: 30554 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	8.11	V	0.55	0.0	7.56	9.71	34.77	36.99	-27.3	
700.50	17.57	H	0.55	0.0	17.03	19.18	34.77	36.99	-17.8	
Mid Ch										
707.50	7.98	V	0.55	0.0	7.43	9.58	34.77	36.99	-27.4	
707.50	17.77	H	0.55	0.0	17.22	19.37	34.77	36.99	-17.6	
High Ch										
714.50	8.37	V	0.55	0.0	7.82	9.97	34.77	36.99	-27.0	
714.50	17.60	H	0.55	0.0	17.05	19.20	34.77	36.99	-17.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/7/2016										
Test Engineer: 30554										
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	8.85	V	0.55	0.0	8.30	10.45	34.77	36.99	-26.5	
701.50	18.43	H	0.55	0.0	17.89	20.04	34.77	36.99	-17.0	
Mid Ch										
707.50	8.76	V	0.55	0.0	8.21	10.36	34.77	36.99	-26.6	
707.50	18.45	H	0.55	0.0	17.90	20.05	34.77	36.99	-16.9	
High Ch										
713.50	9.37	V	0.55	0.0	8.82	10.97	34.77	36.99	-26.0	
713.50	18.60	H	0.55	0.0	18.05	20.20	34.77	36.99	-16.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/7/2016 Test Engineer: 30554 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	8.11	V	0.55	0.0	7.56	9.71	34.77	36.99	-27.3	
701.50	17.67	H	0.55	0.0	17.13	19.28	34.77	36.99	-17.7	
Mid Ch										
707.50	8.38	V	0.55	0.0	7.83	9.98	34.77	36.99	-27.0	
707.50	17.67	H	0.55	0.0	17.12	19.27	34.77	36.99	-17.7	
High Ch										
713.50	8.57	V	0.55	0.0	8.02	10.17	34.77	36.99	-26.8	
713.50	17.80	H	0.55	0.0	17.25	19.40	34.77	36.99	-17.6	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/7/2016 Test Engineer: 30554 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	8.22	V	0.55	0.0	7.67	9.82	34.77	36.99	-27.2	
704.00	18.61	H	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	
Mid Ch										
707.50	8.86	V	0.55	0.0	8.31	10.46	34.77	36.99	-26.5	
707.50	18.47	H	0.55	0.0	17.92	20.07	34.77	36.99	-16.9	
High Ch										
711.00	9.14	V	0.55	0.0	8.59	10.74	34.77	36.99	-26.3	
711.00	18.60	H	0.55	0.0	18.05	20.20	34.77	36.99	-16.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/7/2016 Test Engineer: 30554 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	7.41	V	0.55	0.0	6.86	9.01	34.77	36.99	-28.0	
704.00	17.77	H	0.55	0.0	17.23	19.38	34.77	36.99	-17.6	
Mid Ch										
707.50	8.08	V	0.55	0.0	7.53	9.68	34.77	36.99	-27.3	
707.50	17.57	H	0.55	0.0	17.02	19.17	34.77	36.99	-17.8	
High Ch										
711.00	8.37	V	0.55	0.0	7.82	9.97	34.77	36.99	-27.0	
711.00	17.80	H	0.55	0.0	17.25	19.40	34.77	36.99	-17.6	
Rev. 10.24.13										

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 #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 13 QPSK 5MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	11.24	V	0.55	0.0	10.69	12.84	34.77	36.99	-24.2	
779.50	18.62	H	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	
Mid Ch										
782.00	11.41	V	0.55	0.0	10.86	13.01	34.77	36.99	-24.0	
782.00	18.45	H	0.55	0.0	17.90	20.05	34.77	36.99	-16.9	
High Ch										
784.50	11.13	V	0.55	0.0	10.58	12.73	34.77	36.99	-24.3	
784.50	18.52	H	0.55	0.0	17.97	20.12	34.77	36.99	-16.9	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 13 16QAM 5MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	10.38	V	0.55	0.0	9.83	11.98	34.77	36.99	-25.0	
779.50	17.83	H	0.55	0.0	17.28	19.43	34.77	36.99	-17.6	
Mid Ch										
782.00	9.61	V	0.55	0.0	9.06	11.21	34.77	36.99	-25.8	
782.00	17.56	H	0.55	0.0	17.01	19.16	34.77	36.99	-17.8	
High Ch										
784.50	10.26	V	0.55	0.0	9.71	11.86	34.77	36.99	-25.1	
784.50	17.61	H	0.55	0.0	17.06	19.21	34.77	36.99	-17.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 Configuration: EUT only Mode: LTE Band 13 QPSK 10MHz BW										
Test Equipment: Receiving: Sunol T408, and Chamber E 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	11.55	V	0.55	0.0	11.00	13.15	34.77	36.99	-23.8	
782.00	19.26	H	0.55	0.0	18.71	20.86	34.77	36.99	-16.1	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/6/2016										
Test Engineer: 52279										
Configuration: EUT only										
Mode: LTE Band 13 16QAM 10MHz BW										
Test Equipment:										
Receiving: Sunol T408, and Chamber E 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	10.74	V	0.55	0.0	10.19	12.34	34.77	36.99	-24.7	
782.00	18.46	H	0.55	0.0	17.91	20.06	34.77	36.99	-16.9	
Rev. 10.24.13										

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 #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 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	9.17	V	0.55	0.0	8.62	10.77	34.77	36.99	-26.2	
706.50	16.82	H	0.55	0.0	16.27	18.42	34.77	36.99	-18.6	
Mid Ch										
710.00	9.32	V	0.55	0.0	8.77	10.92	34.77	36.99	-26.1	
710.00	16.85	H	0.55	0.0	16.30	18.45	34.77	36.99	-18.5	
High Ch										
713.50	9.24	V	0.55	0.0	8.69	10.84	34.77	36.99	-26.1	
713.50	16.75	H	0.55	0.0	16.20	18.35	34.77	36.99	-18.6	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/6/2016 Test Engineer: 52279 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	8.47	V	0.55	0.0	7.92	10.07	34.77	36.99	-26.9	
706.50	16.12	H	0.55	0.0	15.57	17.72	34.77	36.99	-19.3	
Mid Ch										
710.00	8.62	V	0.55	0.0	8.07	10.22	34.77	36.99	-26.8	
710.00	16.15	H	0.55	0.0	15.60	17.75	34.77	36.99	-19.2	
High Ch										
713.50	8.54	V	0.55	0.0	7.99	10.14	34.77	36.99	-26.8	
713.50	16.05	H	0.55	0.0	15.50	17.65	34.77	36.99	-19.3	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #:		16U23328								
Date:		6/6/2016								
Test Engineer:		52279								
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	9.70	V	0.55	0.0	9.15	11.30	34.77	36.99	-25.7	
710.00	16.82	H	0.55	0.0	16.27	18.42	34.77	36.99	-18.6	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/6/2016										
Test Engineer: 52279										
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	8.99	V	0.55	0.0	8.44	10.59	34.77	36.99	-26.4	
710.00	16.11	H	0.55	0.0	15.56	17.71	34.77	36.99	-19.3	
Rev. 10.24.13										

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 #: 16U23328 Date: 6/30/2016 Test Engineer: 52291 Configuration: EUT Only Mode: LTE Band 25 QPSK 1.4MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.851	14.4	V	0.98	8.05	21.45	33.0	-11.5	
1.851	12.0	H	0.98	8.05	19.10	33.0	-13.9	
Mid Ch								
1.883	14.4	V	0.98	8.03	21.46	33.0	-11.5	
1.883	13.6	H	0.98	8.03	20.60	33.0	-12.4	
High Ch								
1.914	14.4	V	0.98	8.07	21.49	33.0	-11.5	
1.914	12.1	H	0.98	8.07	19.16	33.0	-13.8	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 16QAM 1.4MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.851	13.6	V	0.98	8.05	20.65	33.0	-12.3	
1.851	11.2	H	0.98	8.05	18.30	33.0	-14.7	
Mid Ch								
1.883	13.6	V	0.98	8.03	20.66	33.0	-12.3	
1.883	12.8	H	0.98	8.03	19.80	33.0	-13.2	
High Ch								
1.914	13.6	V	0.98	8.07	20.69	33.0	-12.3	
1.914	11.3	H	0.98	8.07	18.36	33.0	-14.6	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 QPSK 3MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.852	13.6	V	0.98	8.05	20.65	33.0	-12.3	
1.852	11.1	H	0.98	8.05	18.21	33.0	-14.8	
Mid Ch								
1.883	13.5	V	0.98	8.03	20.58	33.0	-12.4	
1.883	12.5	H	0.98	8.03	19.56	33.0	-13.4	
High Ch								
1.914	14.0	V	0.98	8.07	21.08	33.0	-11.9	
1.914	12.3	H	0.98	8.07	19.39	33.0	-13.6	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 16QAM 3MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.852	12.8	V	0.98	8.05	19.86	33.0	-13.1	
1.852	10.4	H	0.98	8.05	17.42	33.0	-15.6	
Mid Ch								
1.883	12.7	V	0.98	8.03	19.79	33.0	-13.2	
1.883	11.7	H	0.98	8.03	18.77	33.0	-14.2	
High Ch								
1.914	13.2	V	0.98	8.07	20.29	33.0	-12.7	
1.914	11.5	H	0.98	8.07	18.60	33.0	-14.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 52291 Configuration: EUT Only Mode: LTE Band 25 QPSK 5MHz BW								
Test Equipment: Receiving: Horn T712, and Chamber D 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								
1.853	13.1	V	0.98	8.05	20.12	33.0	-12.9	
1.853	11.1	H	0.98	8.05	18.20	33.0	-14.8	
Mid Ch								
1.883	13.5	V	0.98	8.03	20.58	33.0	-12.4	
1.883	12.2	H	0.98	8.03	19.26	33.0	-13.7	
High Ch								
1.913	14.3	V	0.98	8.06	21.39	33.0	-11.6	
1.913	11.1	H	0.98	8.06	18.20	33.0	-14.8	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 16QAM 5MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.853	12.2	V	0.98	8.05	19.31	33.0	-13.7	
1.853	10.3	H	0.98	8.05	17.39	33.0	-15.6	
Mid Ch								
1.883	12.7	V	0.98	8.03	19.77	33.0	-13.2	
1.883	11.4	H	0.98	8.03	18.45	33.0	-14.5	
High Ch								
1.913	13.5	V	0.98	8.06	20.58	33.0	-12.4	
1.913	10.3	H	0.98	8.06	17.39	33.0	-15.6	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 QPSK 10MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.855	13.3	V	0.98	8.05	20.38	33.0	-12.6	
1.855	11.1	H	0.98	8.05	18.12	33.0	-14.9	
Mid Ch								
1.883	13.1	V	0.98	8.03	20.12	33.0	-12.9	
1.883	11.6	H	0.98	8.03	18.67	33.0	-14.3	
High Ch								
1.910	13.7	V	0.98	8.05	20.81	33.0	-12.2	
1.910	10.8	H	0.98	8.05	17.90	33.0	-15.1	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 16QAM 10MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.855	12.5	V	0.98	8.05	19.60	33.0	-13.4	
1.855	10.3	H	0.98	8.05	17.34	33.0	-15.7	
Mid Ch								
1.883	12.3	V	0.98	8.03	19.34	33.0	-13.7	
1.883	10.8	H	0.98	8.03	17.89	33.0	-15.1	
High Ch								
1.910	13.0	V	0.98	8.05	20.03	33.0	-13.0	
1.910	10.1	H	0.98	8.05	17.12	33.0	-15.9	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 QPSK 15MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.858	14.2	V	0.98	8.04	21.22	33.0	-11.8	
1.858	12.2	H	0.98	8.04	19.22	33.0	-13.8	
Mid Ch								
1.883	14.1	V	0.98	8.03	21.17	33.0	-11.8	
1.883	12.3	H	0.98	8.03	19.38	33.0	-13.6	
High Ch								
1.908	14.2	V	0.98	8.04	21.31	33.0	-11.7	
1.908	11.8	H	0.98	8.04	18.89	33.0	-14.1	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 16QAM 15MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.858	13.4	V	0.98	8.04	20.42	33.0	-12.6	
1.858	11.4	H	0.98	8.04	18.42	33.0	-14.6	
Mid Ch								
1.883	13.3	V	0.98	8.03	20.37	33.0	-12.6	
1.883	11.5	H	0.98	8.03	18.58	33.0	-14.4	
High Ch								
1.908	13.4	V	0.98	8.04	20.51	33.0	-12.5	
1.908	11.0	H	0.98	8.04	18.09	33.0	-14.9	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 QPSK 20MHz BW								
Test Equipment:								
Receiving: Horn T712, and Chamber D 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								
1.860	14.0	V	0.98	8.04	21.11	33.0	-11.9	
1.860	12.4	H	0.98	8.04	19.45	33.0	-13.5	
Mid Ch								
1.883	14.4	V	0.98	8.03	21.41	33.0	-11.6	
1.883	12.3	H	0.98	8.03	19.31	33.0	-13.7	
High Ch								
1.905	13.9	V	0.98	8.04	20.99	33.0	-12.0	
1.905	12.0	H	0.98	8.04	19.05	33.0	-14.0	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/30/2016								
Test Engineer: 52291								
Configuration: EUT Only								
Mode: LTE Band 25 16QAM 20MHz BW								
<u>Test Equipment:</u>								
Receiving: Horn T712, and Chamber D 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								
1.860	13.3	V	0.98	8.04	20.32	33.0	-12.7	
1.860	11.6	H	0.98	8.04	18.66	33.0	-14.3	
Mid Ch								
1.883	13.6	V	0.98	8.03	20.62	33.0	-12.4	
1.883	11.5	H	0.98	8.03	18.52	33.0	-14.5	
High Ch								
1.905	13.1	V	0.98	8.04	20.20	33.0	-12.8	
1.905	11.2	H	0.98	8.04	18.26	33.0	-14.7	
Rev. 10.24.13								

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 #: 16U23328 Date: 6/30/2016 Test Engineer: 45200 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	11.79	V	0.62	0.0	11.17	13.32	38.45	40.60	-27.3	
814.70	20.93	H	0.62	0.0	20.31	22.46	38.45	40.60	-18.1	
Mid Ch										
819.00	10.81	V	0.62	0.0	10.19	12.34	38.45	40.60	-28.3	
819.00	20.93	H	0.62	0.0	20.31	22.46	38.45	40.60	-18.1	
High Ch										
823.30	11.07	V	0.62	0.0	10.45	12.60	38.45	40.60	-28.0	
823.30	20.88	H	0.62	0.0	20.26	22.41	38.45	40.60	-18.2	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 45200 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	10.97	V	0.62	0.0	10.35	12.50	38.45	40.60	-28.1	
814.70	20.11	H	0.62	0.0	19.49	21.64	38.45	40.60	-19.0	
Mid Ch										
819.00	9.99	V	0.62	0.0	9.37	11.52	38.45	40.60	-29.1	
819.00	20.11	H	0.62	0.0	19.49	21.64	38.45	40.60	-19.0	
High Ch										
823.30	10.25	V	0.62	0.0	9.63	11.78	38.45	40.60	-28.8	
823.30	20.06	H	0.62	0.0	19.44	21.59	38.45	40.60	-19.0	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 30554 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	10.88	V	0.62	0.0	10.26	12.41	38.45	40.60	-28.2	
815.50	21.17	H	0.62	0.0	20.55	22.70	38.45	40.60	-17.9	
Mid Ch										
819.00	11.75	V	0.62	0.0	11.13	13.28	38.45	40.60	-27.3	
819.00	21.02	H	0.62	0.0	20.40	22.55	38.45	40.60	-18.0	
High Ch										
822.50	10.95	V	0.62	0.0	10.33	12.48	38.45	40.60	-28.1	
822.50	20.72	H	0.62	0.0	20.10	22.25	38.45	40.60	-18.4	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 30554 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	10.07	V	0.62	0.0	9.45	11.60	38.45	40.60	-29.0	
815.50	20.36	H	0.62	0.0	19.74	21.89	38.45	40.60	-18.7	
Mid Ch										
819.00	10.94	V	0.62	0.0	10.32	12.47	38.45	40.60	-28.1	
819.00	20.21	H	0.62	0.0	19.59	21.74	38.45	40.60	-18.9	
High Ch										
822.50	10.14	V	0.62	0.0	9.52	11.67	38.45	40.60	-28.9	
822.50	19.91	H	0.62	0.0	19.29	21.44	38.45	40.60	-19.2	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 30554 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	11.66	V	0.62	0.0	11.04	13.19	38.45	40.60	-27.4	
816.50	21.33	H	0.62	0.0	20.71	22.86	38.45	40.60	-17.7	
Mid Ch										
819.00	11.51	V	0.62	0.0	10.89	13.04	38.45	40.60	-27.6	
819.00	21.24	H	0.62	0.0	20.62	22.77	38.45	40.60	-17.8	
High Ch										
821.50	11.45	V	0.62	0.0	10.83	12.98	38.45	40.60	-27.6	
821.50	21.05	H	0.62	0.0	20.43	22.58	38.45	40.60	-18.0	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 30554 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	10.87	V	0.62	0.0	10.25	12.40	38.45	40.60	-28.2	
816.50	20.54	H	0.62	0.0	19.92	22.07	38.45	40.60	-18.5	
Mid Ch										
819.00	10.72	V	0.62	0.0	10.10	12.25	38.45	40.60	-28.3	
819.00	20.45	H	0.62	0.0	19.83	21.98	38.45	40.60	-18.6	
High Ch										
821.50	10.66	V	0.62	0.0	10.04	12.19	38.45	40.60	-28.4	
821.50	20.26	H	0.62	0.0	19.64	21.79	38.45	40.60	-18.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company: Project #: 16U23328 Date: 6/30/2016 Test Engineer: 30554 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	11.54	V	0.62	0.0	10.92	13.07	38.45	40.60	-27.5	
819.00	21.15	H	0.62	0.0	20.53	22.68	38.45	40.60	-17.9	

Rev. 10.24.13

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D										
Company:										
Project #: 16U23328										
Date: 6/30/2016										
Test Engineer: 30554										
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	10.73	V	0.62	0.0	10.11	12.26	38.45	40.60	-28.3	
819.00	20.34	H	0.62	0.0	19.72	21.87	38.45	40.60	-18.7	
Rev. 10.24.13										

10.2.10. LTE BAND 27

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company: Project #: 16U23328 Date: 6/11/2016 Test Engineer: 45200 Configuration: EUT Only Mode: LTE Band 27 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)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	11.26	V	0.62	0.0	10.64	50.00	-39.4	
814.70	22.73	H	0.62	0.0	22.11	50.00	-27.9	
Mid Ch								
819.00	12.75	V	0.62	0.0	12.13	50.00	-37.9	
819.00	22.82	H	0.62	0.0	22.20	50.00	-27.8	
High Ch								
823.30	12.68	V	0.62	0.0	12.06	50.00	-37.9	
823.30	22.36	H	0.62	0.0	21.74	50.00	-28.3	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/11/2016								
Test Engineer: 45200								
Configuration: EUT Only								
Mode: LTE Band 27 16QAM 1.4MHz BW								
<u>Test Equipment:</u>								
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)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	10.86	V	0.62	0.0	10.24	50.00	-39.8	
814.70	22.30	H	0.62	0.0	21.68	50.00	-28.3	
Mid Ch								
819.00	12.62	V	0.62	0.0	12.00	50.00	-38.0	
819.00	22.38	H	0.62	0.0	21.76	50.00	-28.2	
High Ch								
823.30	12.08	V	0.62	0.0	11.46	50.00	-38.5	
823.30	21.86	H	0.62	0.0	21.24	50.00	-28.8	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/7/2016								
Test Engineer: 30554								
Configuration: EUT ONLY								
Mode: LTE Band 27 QPSK 3MHz BW								
<u>Test Equipment:</u>								
Receiving: Sunol T408, and Chamber E 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	10.68	V	0.62	0.0	10.06	50.00	-39.9	
815.50	22.26	H	0.62	0.0	21.64	50.00	-28.4	
Mid Ch								
819.00	11.84	V	0.62	0.0	11.22	50.00	-38.8	
819.00	21.64	H	0.62	0.0	21.02	50.00	-29.0	
High Ch								
822.50	11.94	V	0.62	0.0	11.32	50.00	-38.7	
822.50	21.04	H	0.62	0.0	20.42	50.00	-29.6	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/7/2016								
Test Engineer: 30554								
Configuration: EUT ONLY								
Mode: LTE Band 27 16QAM 3MHz BW								
<u>Test Equipment:</u>								
Receiving: Sunol T408, and Chamber E 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	10.76	V	0.62	0.0	10.14	50.00	-39.9	
815.50	21.75	H	0.62	0.0	21.13	50.00	-28.9	
Mid Ch								
819.00	11.62	V	0.62	0.0	11.00	50.00	-39.0	
819.00	21.42	H	0.62	0.0	20.80	50.00	-29.2	
High Ch								
822.50	11.57	V	0.62	0.0	10.95	50.00	-39.1	
822.50	21.41	H	0.62	0.0	20.79	50.00	-29.2	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/7/2016								
Test Engineer: 30554								
Configuration: EUT ONLY								
Mode: LTE Band 27 QPSK 5MHz BW								
Test Equipment:								
Receiving: Sunol T408, and Chamber E 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								
816.50	11.00	V	0.62	0.0	10.38	50.00	-39.6	
816.50	22.20	H	0.62	0.0	21.58	50.00	-28.4	
Mid Ch								
819.00	11.03	V	0.62	0.0	10.41	50.00	-39.6	
819.00	21.42	H	0.62	0.0	20.80	50.00	-29.2	
High Ch								
821.50	10.86	V	0.62	0.0	10.24	50.00	-39.8	
821.50	20.86	H	0.62	0.0	20.24	50.00	-29.8	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/7/2016								
Test Engineer: 30554								
Configuration: EUT ONLY								
Mode: LTE Band 27 16QAM 5MHz BW								
<u>Test Equipment:</u>								
Receiving: Sunol T408, and Chamber E 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								
816.50	11.17	V	0.62	0.0	10.55	50.00	-39.5	
816.50	21.85	H	0.62	0.0	21.23	50.00	-28.8	
Mid Ch								
819.00	12.23	V	0.62	0.0	11.61	50.00	-38.4	
819.00	21.42	H	0.62	0.0	20.80	50.00	-29.2	
High Ch								
821.50	12.23	V	0.62	0.0	11.61	50.00	-38.4	
821.50	21.39	H	0.62	0.0	20.77	50.00	-29.2	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/7/2016								
Test Engineer: 30554								
Configuration: EUT ONLY								
Mode: LTE Band 27 QPSK 10MHz BW								
Test Equipment:								
Receiving: Sunol T408, and Chamber E 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	11.97	V	0.62	0.0	11.35	50.00	-38.7	
819.00	21.41	H	0.62	0.0	20.79	50.00	-29.2	
Rev. 04.28.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 16U23328								
Date: 6/7/2016								
Test Engineer: 30554								
Configuration: EUT ONLY								
Mode: LTE Band 27 16QAM 10MHz BW								
Test Equipment:								
Receiving: Sunol T408, and Chamber E 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	12.34	V	0.62	0.0	11.72	50.00	-38.3	
819.00	21.04	H	0.62	0.0	20.42	50.00	-29.6	
Rev. 04.28.15								

10.2.11. LTE BAND 30

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/30/2016						
Test Engineer:		30554						
Configuration:		EUT Only						
Mode:		LTE Band 30 QPSK 5MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	1.0	V	1.15	9.37	9.20	24.0	-14.8	
2.308	11.4	H	1.15	9.37	19.67	24.0	-4.3	
Mid Ch								
2.310	1.4	V	1.16	9.37	9.58	24.0	-14.4	
2.310	11.1	H	1.16	9.37	19.31	24.0	-4.7	
High Ch								
2.313	1.8	V	1.17	9.37	10.03	24.0	-14.0	
2.313	11.1	H	1.17	9.37	19.30	24.0	-4.7	
Rev. 04.24.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/30/2016						
Test Engineer:		30554						
Configuration:		EUT Only						
Mode:		LTE Band 30 16QAM 5MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	0.2	V	1.15	9.37	8.46	24.0	-15.5	
2.308	10.7	H	1.15	9.37	18.93	24.0	-5.1	
Mid Ch								
2.310	0.6	V	1.16	9.37	8.84	24.0	-15.2	
2.310	10.4	H	1.16	9.37	18.57	24.0	-5.4	
High Ch								
2.313	1.1	V	1.17	9.37	9.29	24.0	-14.7	
2.313	10.4	H	1.17	9.37	18.56	24.0	-5.4	
Rev. 04.24.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/30/2016						
Test Engineer:		30554						
Configuration:		EUT Only						
Mode:		LTE Band 30 QPSK 10MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	0.6	V	1.15	9.37	8.86	24.0	-15.1	
2.310	11.1	H	1.15	9.37	19.30	24.0	-4.7	
Rev. 04.24.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #:		16U23328						
Date:		6/30/2016						
Test Engineer:		30554						
Configuration:		EUT Only						
Mode:		LTE Band 30 16QAM 10MHz BW						
Test Equipment:								
Receiving: Horn T712, and Chamber D 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	-0.1	V	1.15	9.37	8.16	24.0	-15.8	
2.310	10.4	H	1.15	9.37	18.60	24.0	-5.4	
Rev. 04.24.15								

10.2.12. LTE BAND 41

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23328						
Date:		6/20/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		LTE Band 41 QPSK 5MHz BW						
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	9.4	V	1.15	9.33	17.62	33.0	-15.4	
2.499	11.5	H	1.15	9.33	19.72	33.0	-13.3	
Mid Ch								
2.593	9.3	V	1.16	9.47	17.61	33.0	-15.4	
2.593	11.8	H	1.16	9.47	20.12	33.0	-12.9	
High Ch								
2.688	9.2	V	1.17	9.78	17.84	33.0	-15.2	
2.688	13.0	H	1.17	9.78	21.66	33.0	-11.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23328						
Date:		6/20/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		LTE Band 41 16QAM 5MHz BW						
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	9.0	V	1.15	9.33	17.16	33.0	-15.8	
2.499	10.9	H	1.15	9.33	19.06	33.0	-13.9	
Mid Ch								
2.593	8.7	V	1.16	9.47	17.01	33.0	-16.0	
2.593	11.4	H	1.16	9.47	19.72	33.0	-13.3	
High Ch								
2.688	9.0	V	1.17	9.78	17.58	33.0	-15.4	
2.688	12.5	H	1.17	9.78	21.12	33.0	-11.9	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23328						
Date:		6/20/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		LTE Band 41 QPSK 10MHz BW						
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	9.2	V	1.15	9.33	17.39	33.0	-15.6	
2.501	11.3	H	1.15	9.33	19.52	33.0	-13.5	
Mid Ch								
2.593	9.6	V	1.16	9.47	17.91	33.0	-15.1	
2.593	12.6	H	1.16	9.47	20.88	33.0	-12.1	
High Ch								
2.685	9.9	V	1.17	9.77	18.49	33.0	-14.5	
2.685	12.4	H	1.17	9.77	21.04	33.0	-12.0	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23328								
Date: 6/20/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: LTE Band 41 16QAM 10MHz BW								
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	8.3	V	1.15	9.33	16.51	33.0	-16.5	
2.501	11.0	H	1.15	9.33	19.19	33.0	-13.8	
Mid Ch								
2.593	9.0	V	1.16	9.47	17.32	33.0	-15.7	
2.593	12.3	H	1.16	9.47	20.58	33.0	-12.4	
High Ch								
2.685	9.2	V	1.17	9.77	17.80	33.0	-15.2	
2.685	12.1	H	1.17	9.77	20.71	33.0	-12.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23328								
Date: 6/20/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: LTE Band 41 QPSK 15MHz BW								
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	9.5	V	1.15	9.34	17.67	33.0	-15.3	
2.504	11.2	H	1.15	9.34	19.43	33.0	-13.6	
Mid Ch								
2.593	10.8	V	1.16	9.47	19.09	33.0	-13.9	
2.593	13.2	H	1.16	9.47	21.48	33.0	-11.5	
High Ch								
2.683	9.6	V	1.17	9.76	18.21	33.0	-14.8	
2.683	13.0	H	1.17	9.76	21.55	33.0	-11.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23328								
Date: 6/20/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: LTE Band 41 16QAM 15MHz BW								
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	8.7	V	1.15	9.34	16.87	33.0	-16.1	
2.504	10.7	H	1.15	9.34	18.93	33.0	-14.1	
Mid Ch								
2.593	9.2	V	1.16	9.47	17.46	33.0	-15.5	
2.593	11.2	H	1.16	9.47	19.55	33.0	-13.5	
High Ch								
2.683	9.1	V	1.17	9.76	17.71	33.0	-15.3	
2.683	12.3	H	1.17	9.76	20.88	33.0	-12.1	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23328						
Date:		6/20/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		LTE Band 41 QPSK 20MHz BW						
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	9.8	V	1.15	9.34	17.98	33.0	-15.0	
2.506	11.1	H	1.15	9.34	19.29	33.0	-13.7	
Mid Ch								
2.593	9.7	V	1.16	9.47	17.99	33.0	-15.0	
2.593	12.7	H	1.16	9.47	20.98	33.0	-12.0	
High Ch								
2.680	10.1	V	1.17	9.76	18.71	33.0	-14.3	
2.680	12.9	H	1.17	9.76	21.53	33.0	-11.5	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23328								
Date: 6/20/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: LTE Band 41 16QAM 20MHz BW								
Test Equipment:								
Receiving: Horn T711, and Chamber E 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	9.4	V	1.15	9.34	17.59	33.0	-15.4	
2.506	10.5	H	1.15	9.34	18.69	33.0	-14.3	
Mid Ch								
2.593	8.8	V	1.16	9.47	17.11	33.0	-15.9	
2.593	11.2	H	1.16	9.47	19.52	33.0	-13.5	
High Ch								
2.680	9.5	V	1.17	9.76	18.11	33.0	-14.9	
2.680	11.9	H	1.17	9.76	20.47	33.0	-12.5	
Rev. 10.24.13								

10.3. PEAK-TO-AVERAGE RATIO

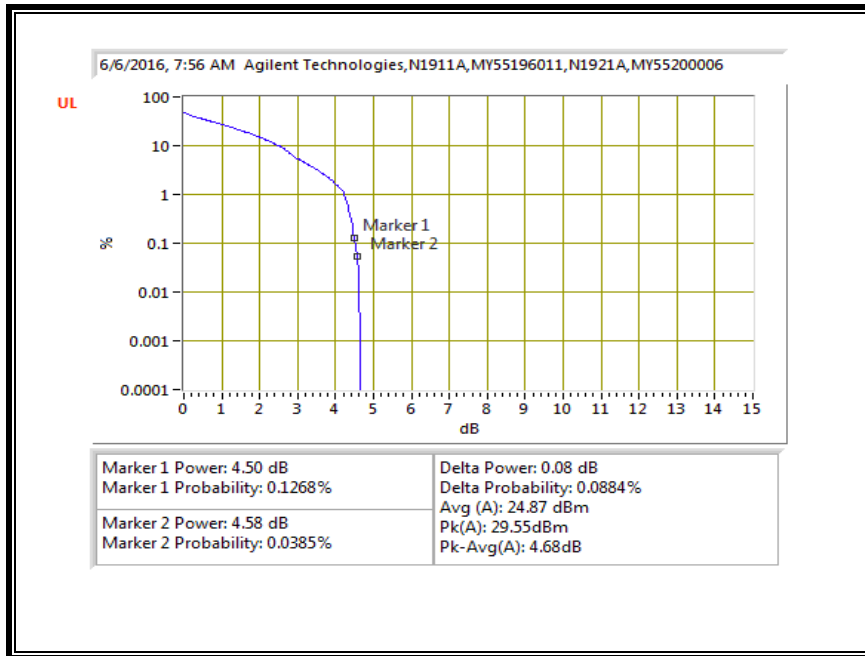
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB

RESULT

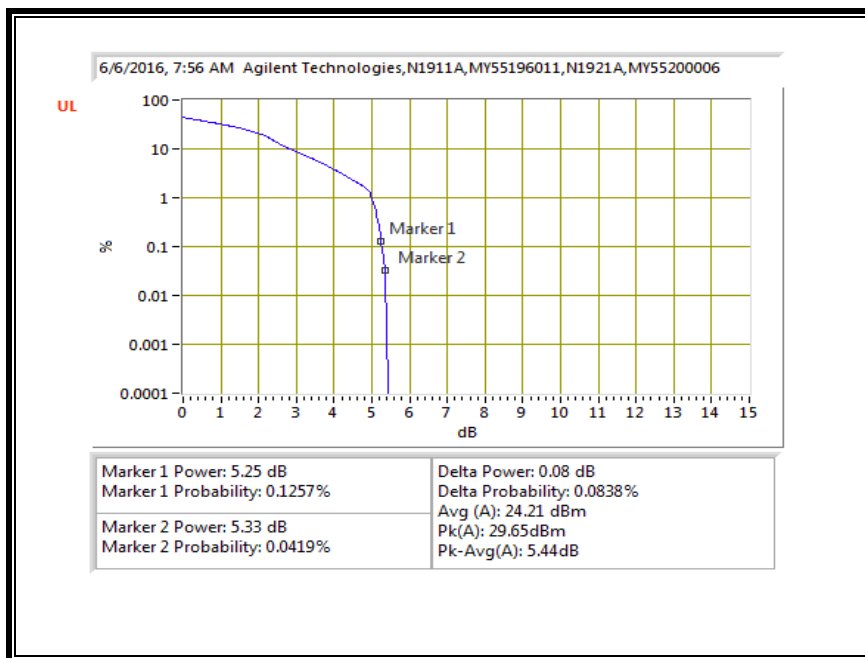
The results from all CCDF plots are passed with 13dB peak-to-average ratio criteria.

10.3.1. LTE BAND 2

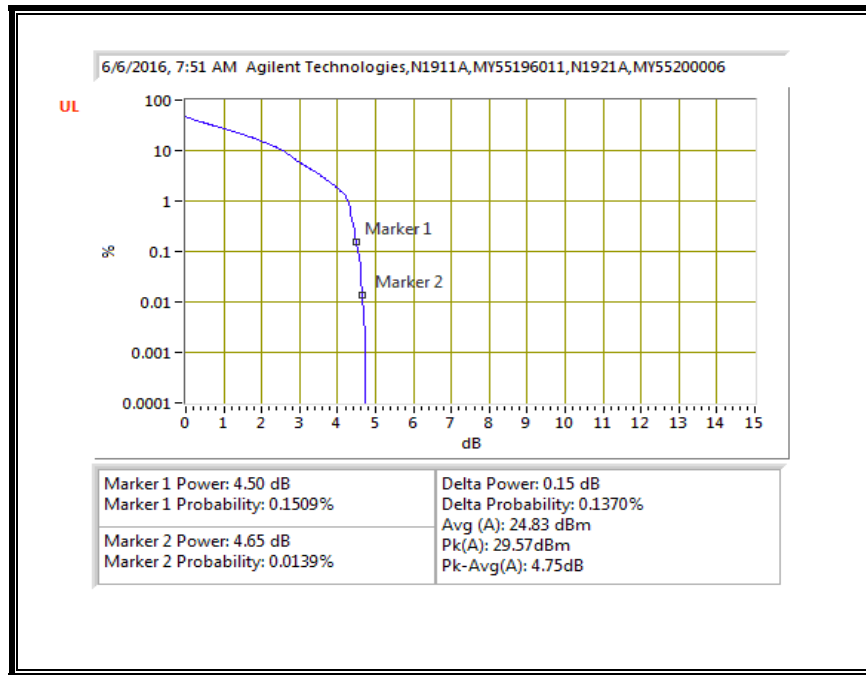
QPSK, (1.4 MHz BAND WIDTH)



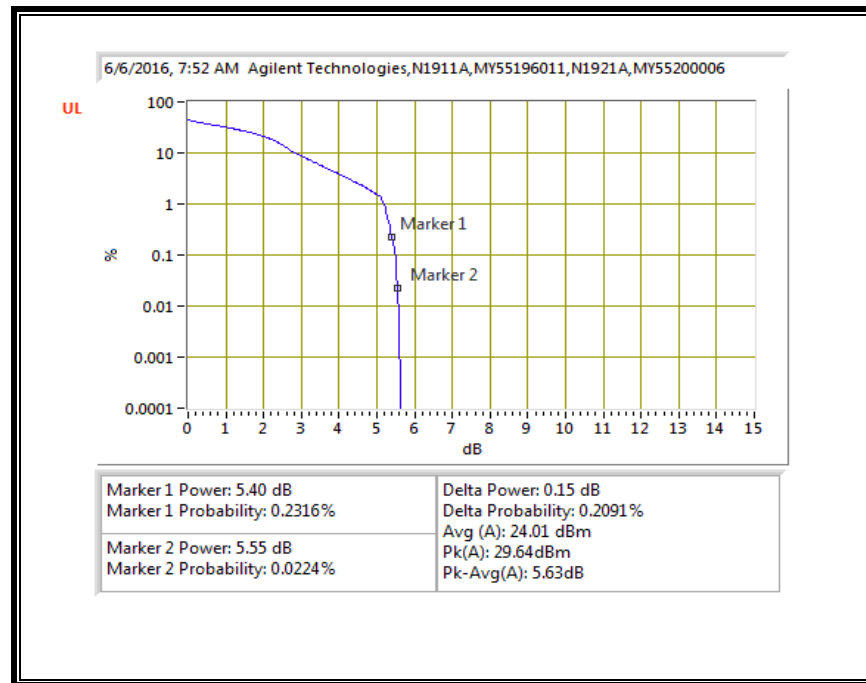
16QAM, (1.4 MHz BAND WIDTH)



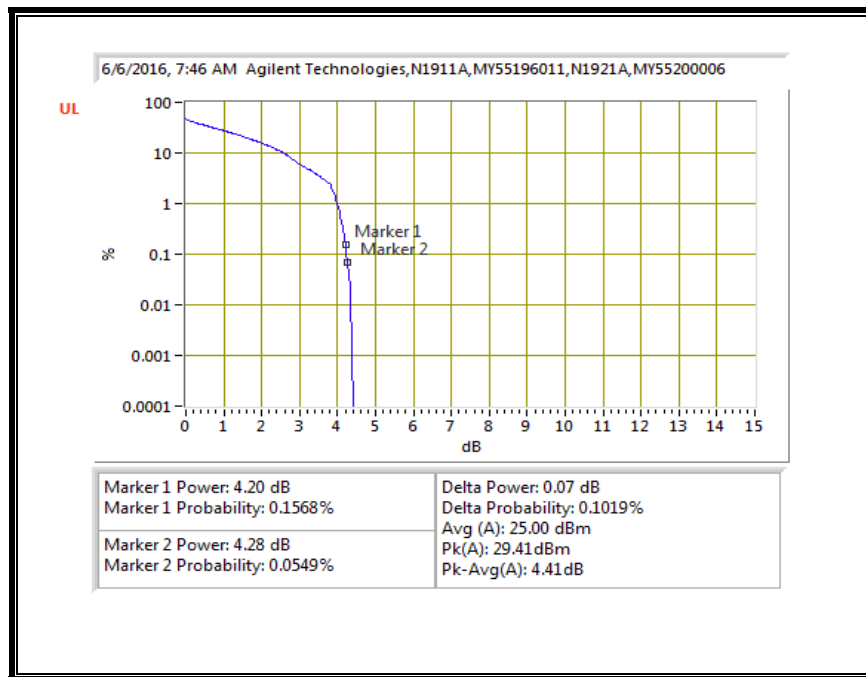
QPSK, (3.0 MHz BAND WIDTH)



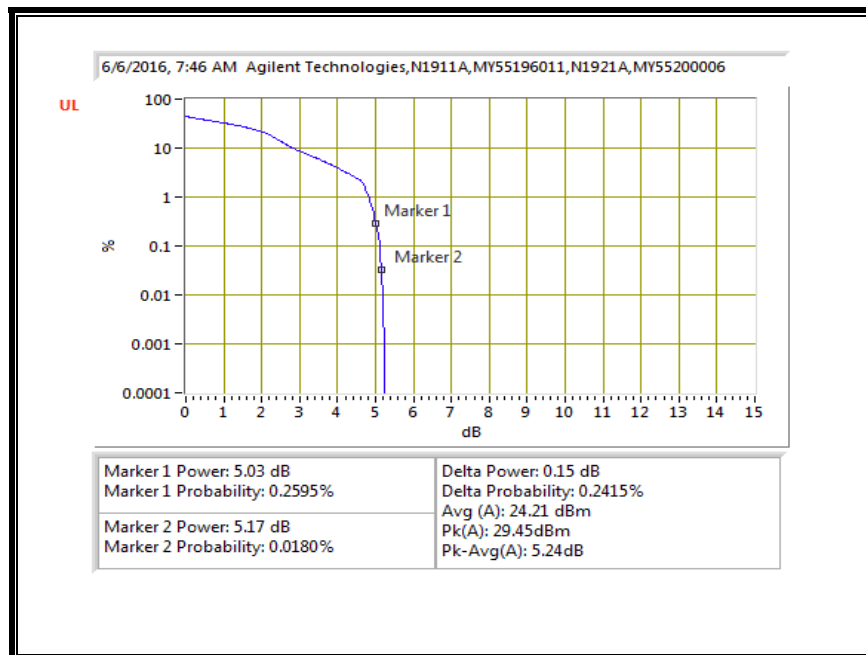
16QAM, (3.0 MHz BAND WIDTH)



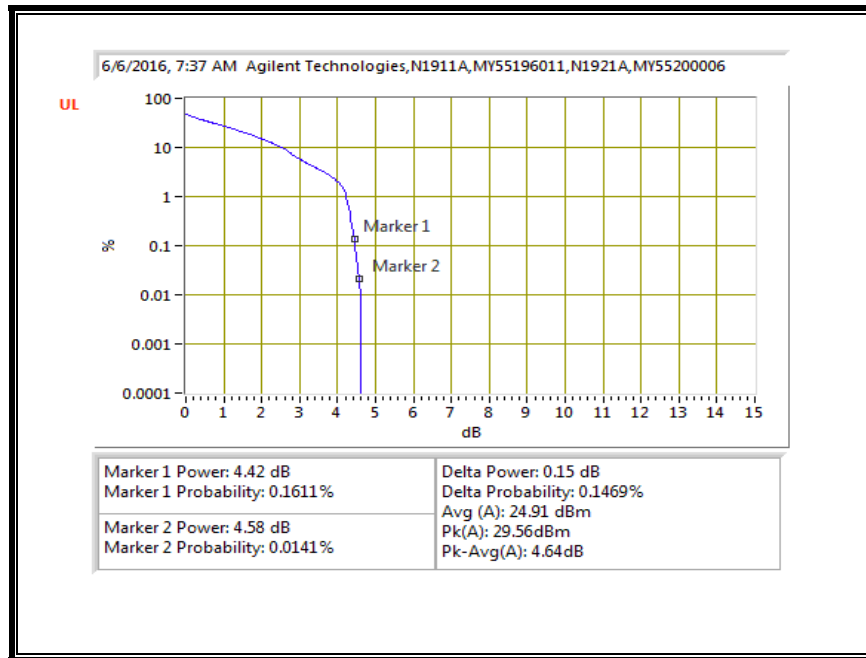
QPSK, (5.0 MHz BAND WIDTH)



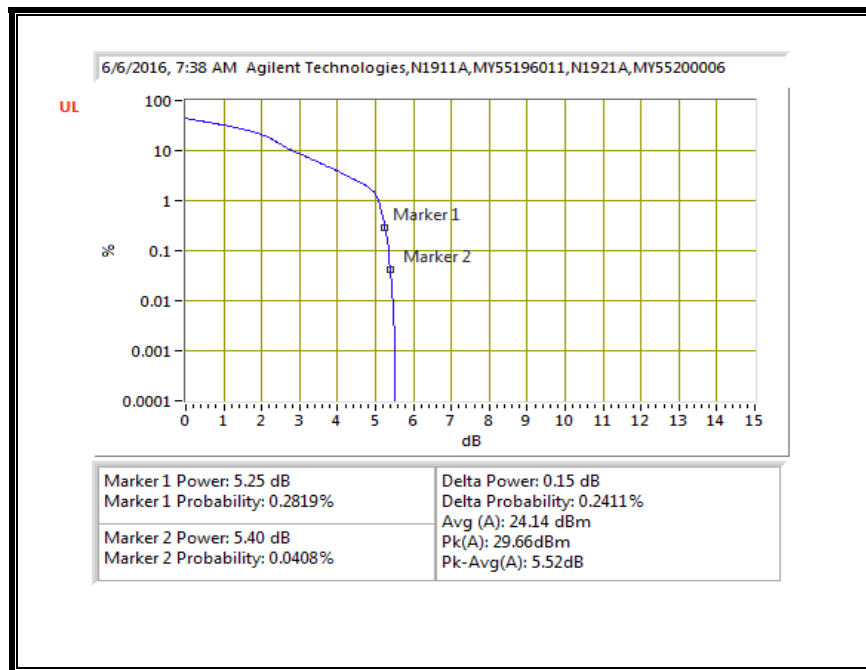
16QAM, (5.0 MHz BAND WIDTH)



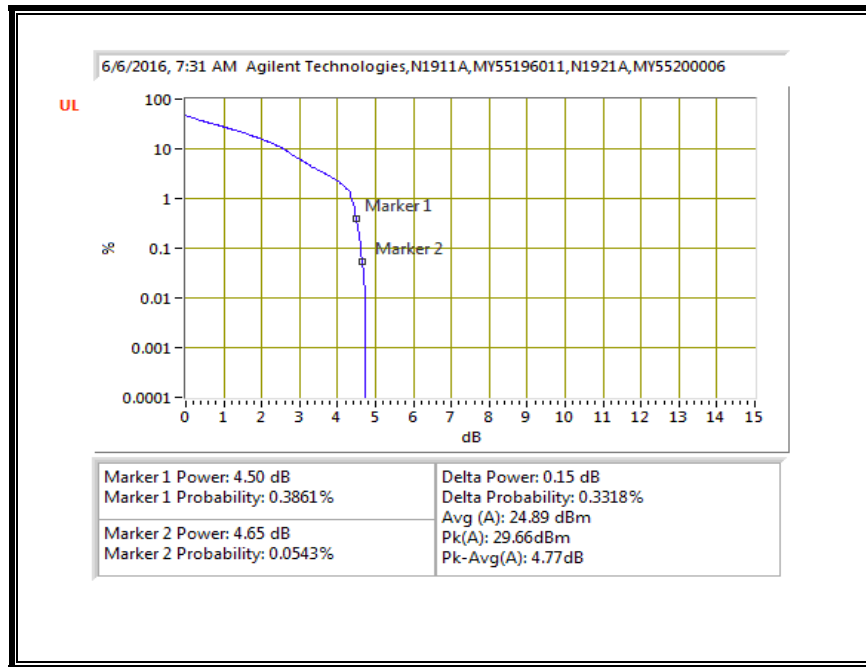
QPSK, (10.0 MHz BAND WIDTH)



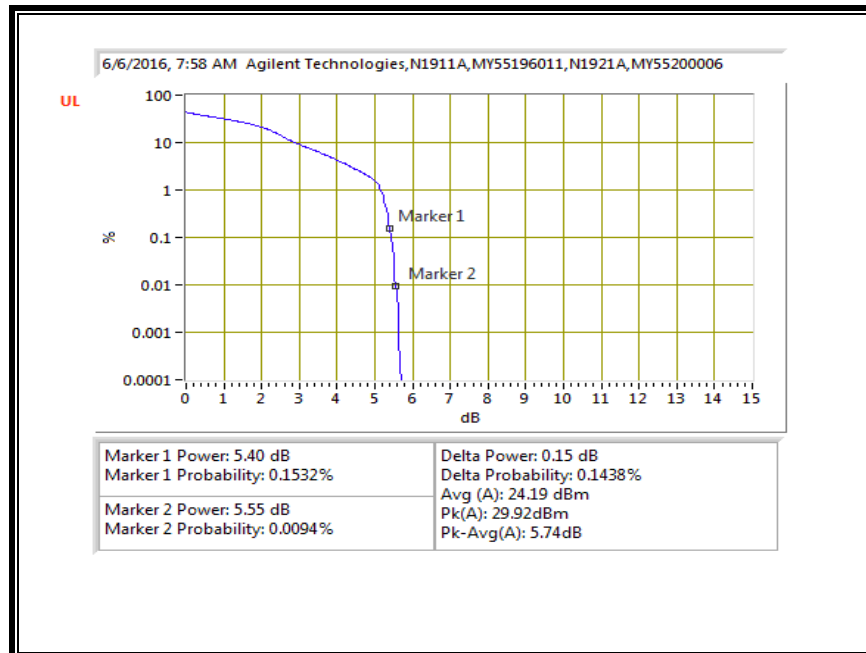
16QAM, (10.0 MHz BAND WIDTH)



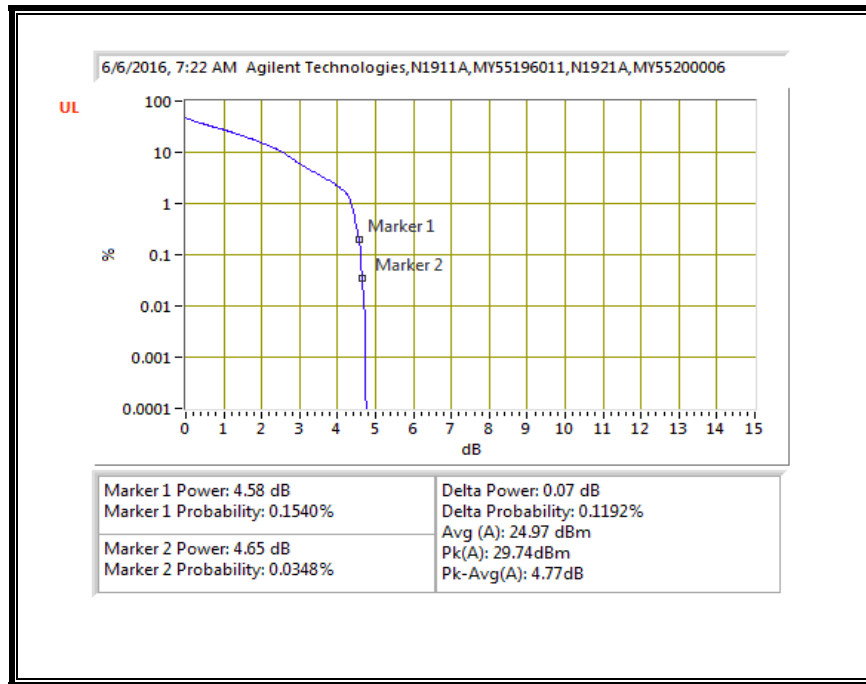
QPSK, (15.0 MHz BAND WIDTH)



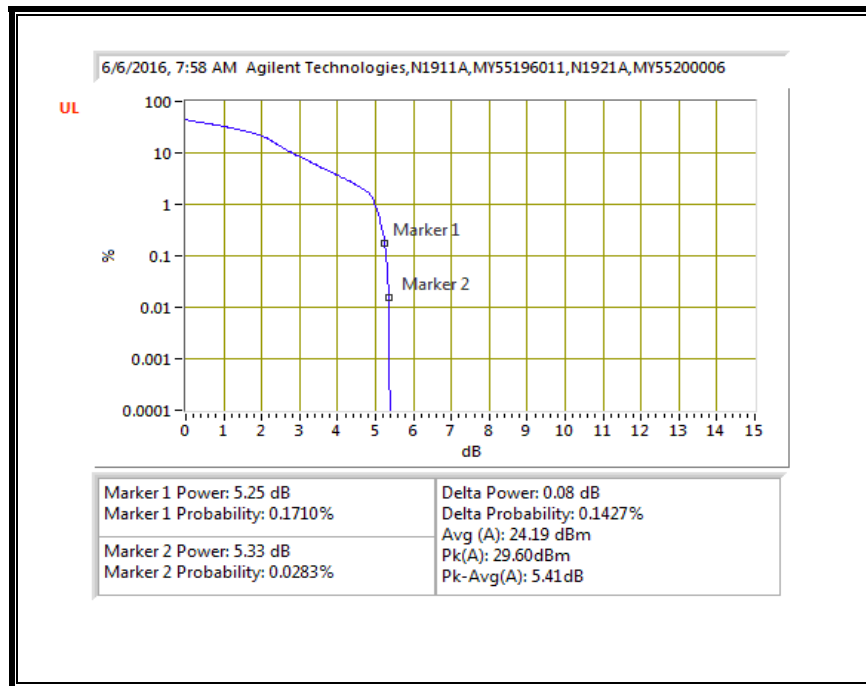
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

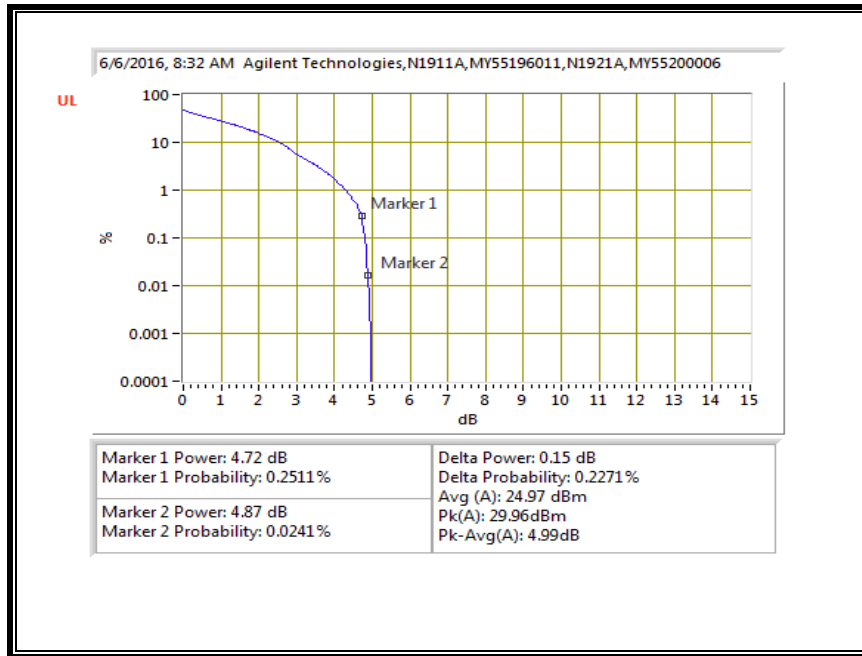


16QAM, (20.0 MHz BAND WIDTH)

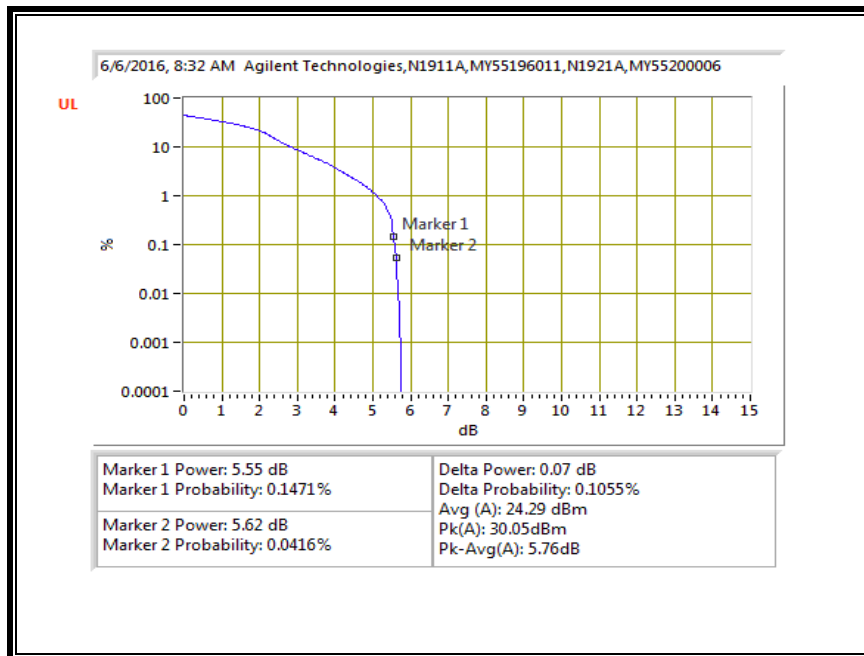


10.3.2. LTE BAND 4

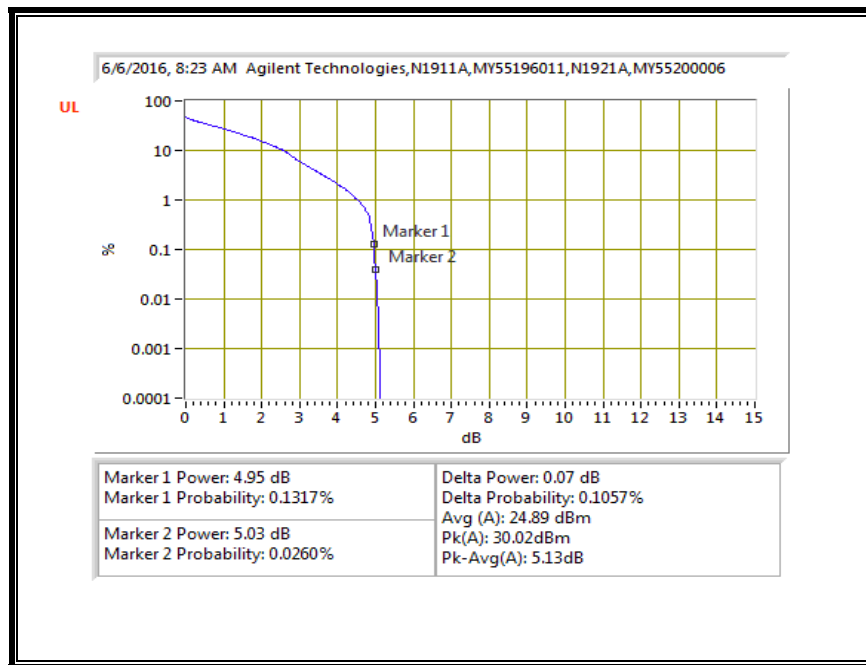
QPSK, (1.4 MHz BAND WIDTH)



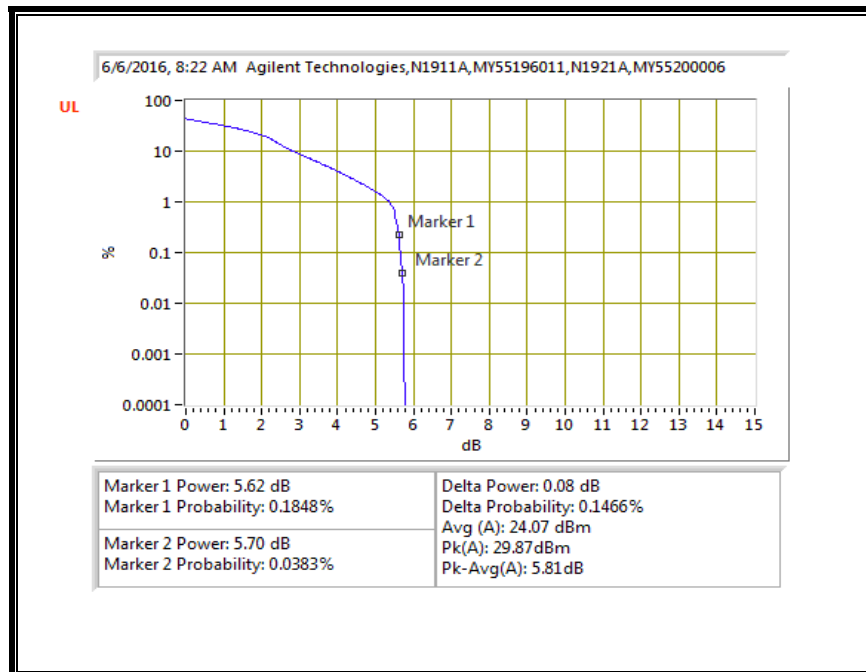
16QAM, (1.4 MHz BAND WIDTH)



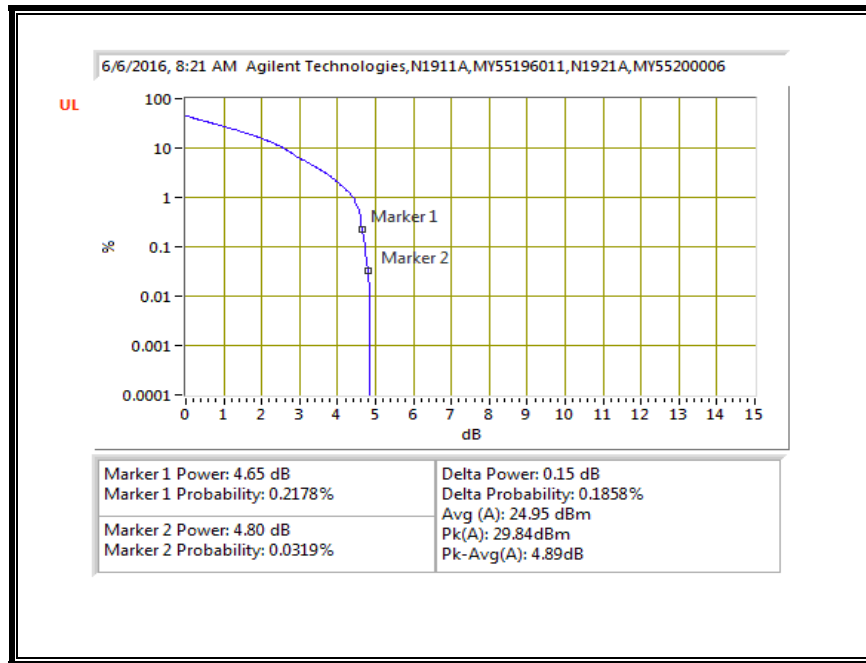
QPSK, (3.0 MHz BAND WIDTH)



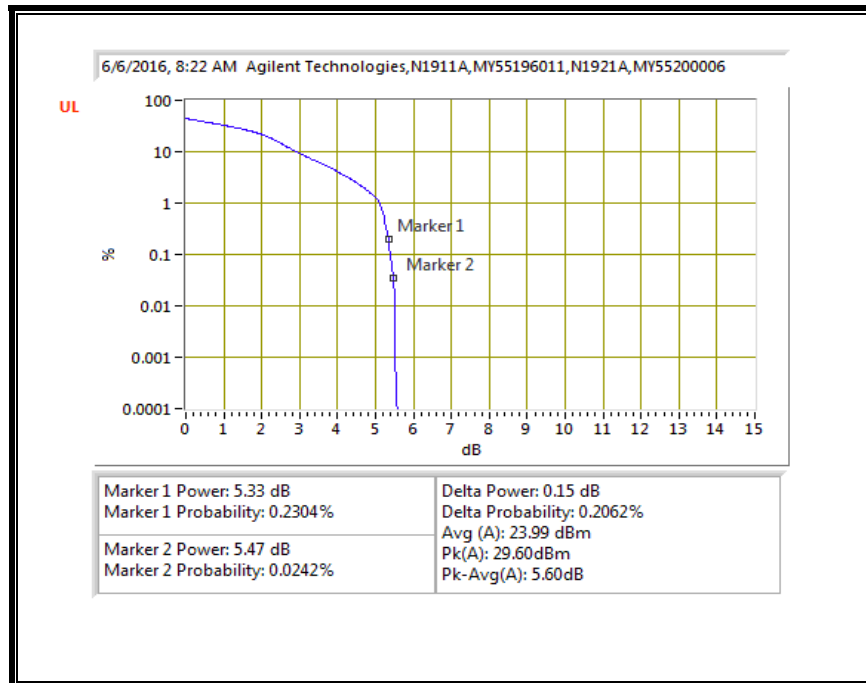
16QAM, (3.0 MHz BAND WIDTH)



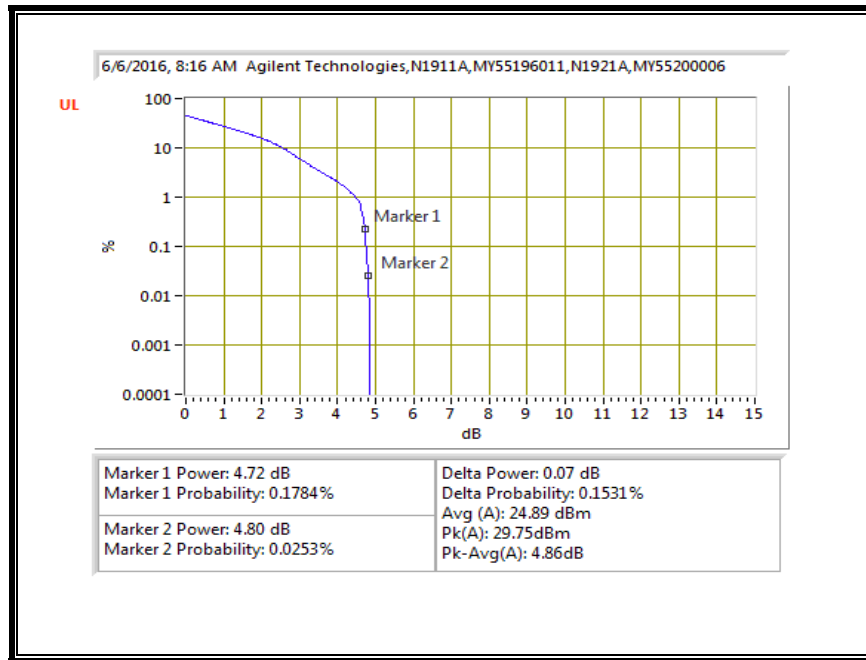
QPSK, (5.0 MHz BAND WIDTH)



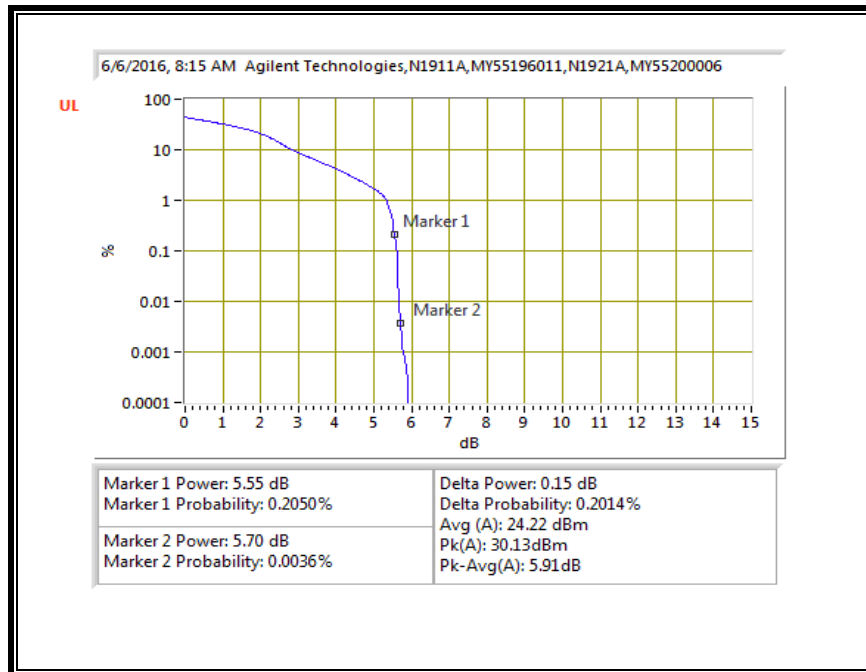
16QAM, (5.0 MHz BAND WIDTH)



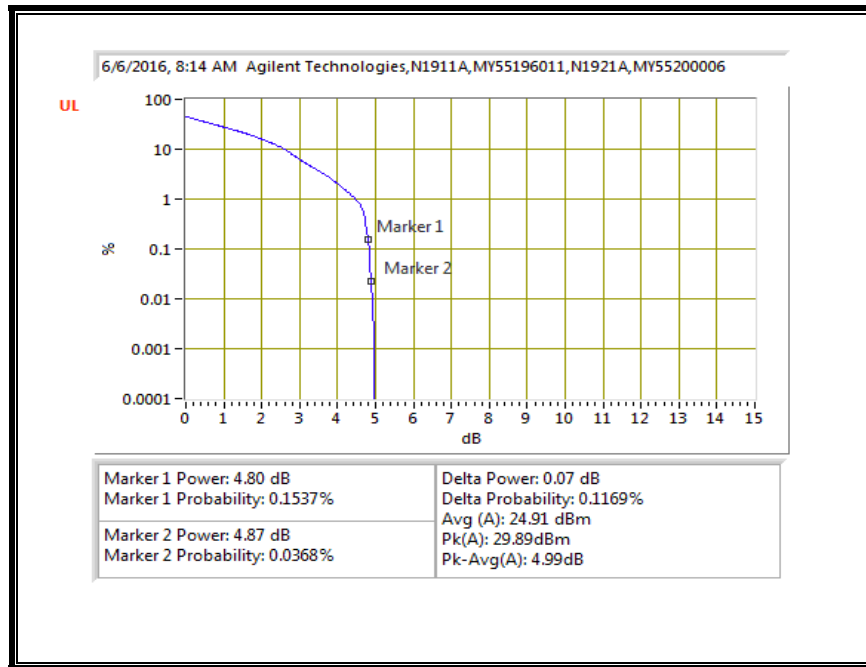
QPSK, (10.0 MHz BAND WIDTH)



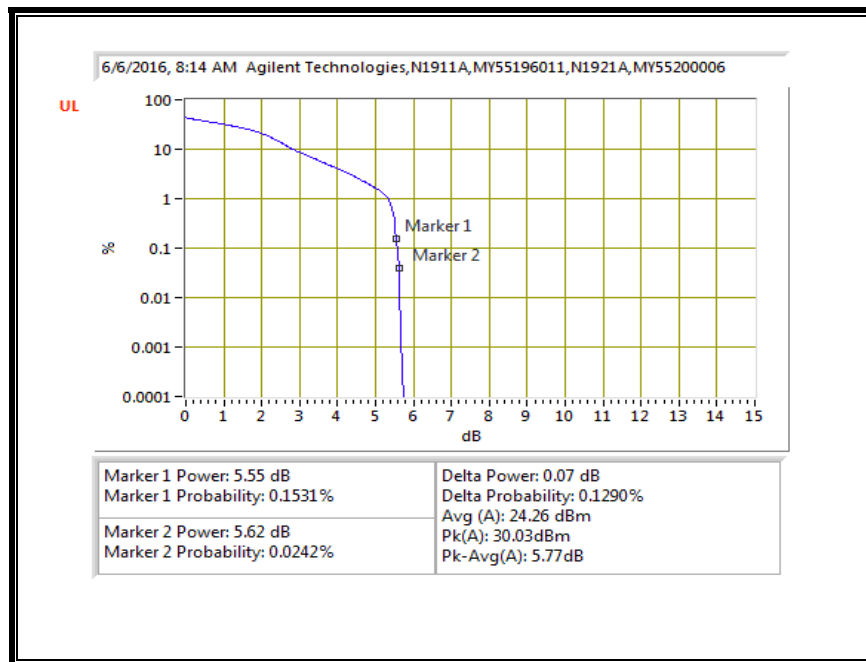
16QAM, (10.0 MHz BAND WIDTH)



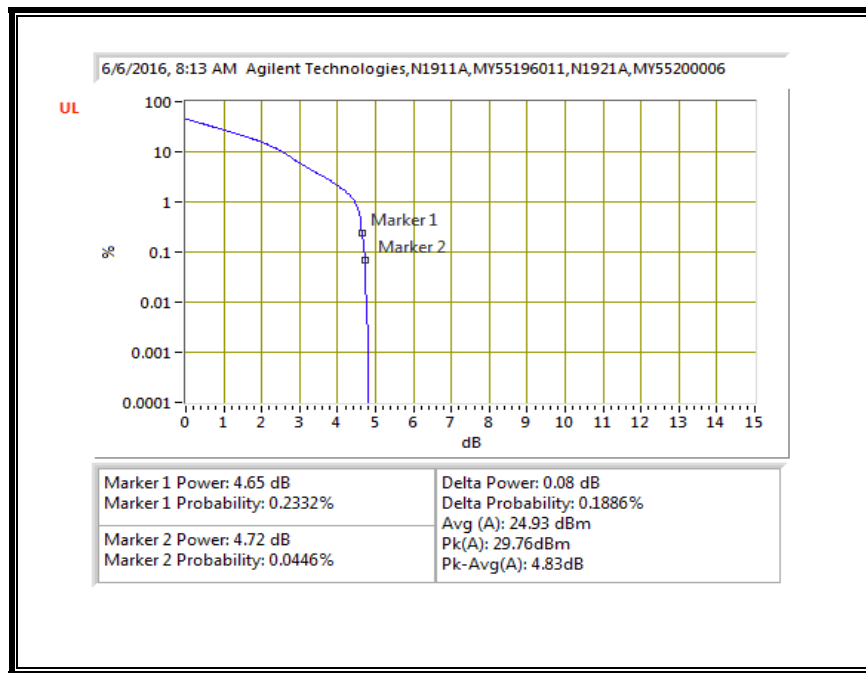
QPSK, (15.0 MHz BAND WIDTH)



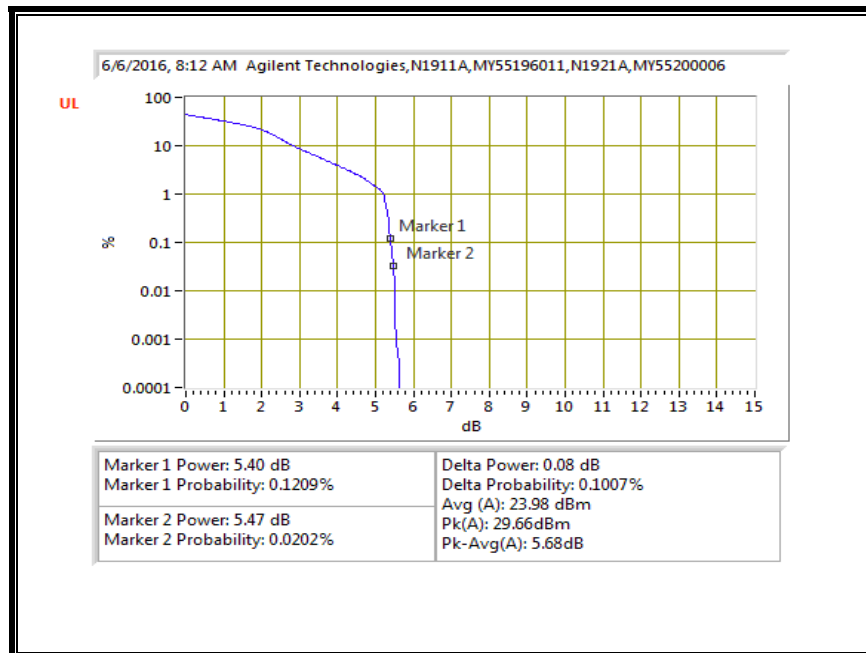
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

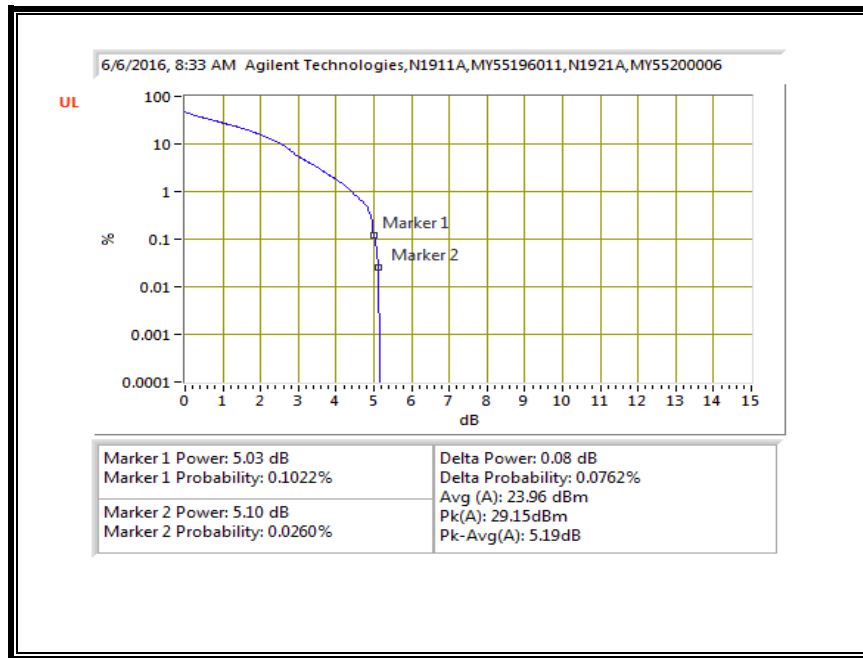


16QAM, (20.0 MHz BAND WIDTH)

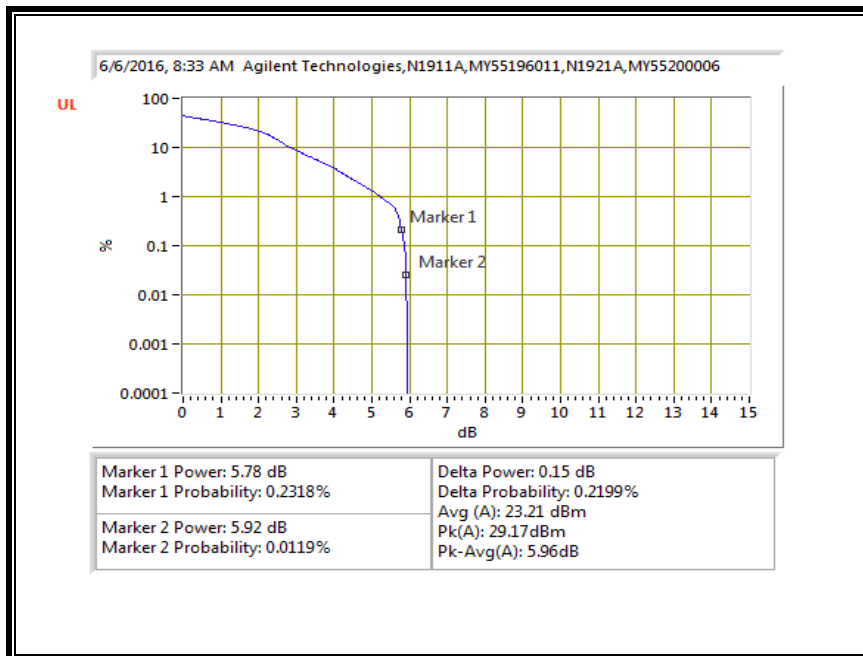


10.3.3. LTE BAND 5

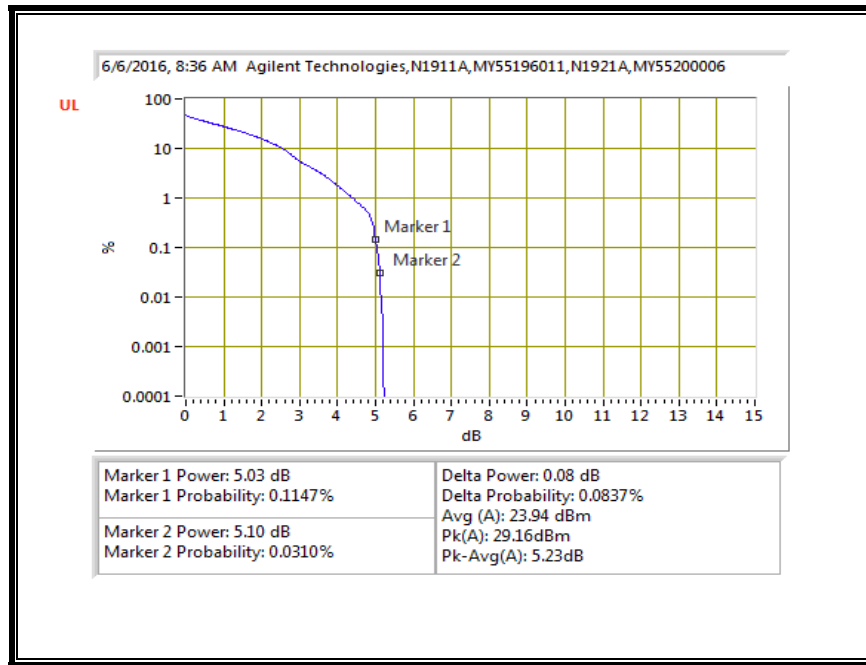
QPSK, (1.4 MHz BAND WIDTH)



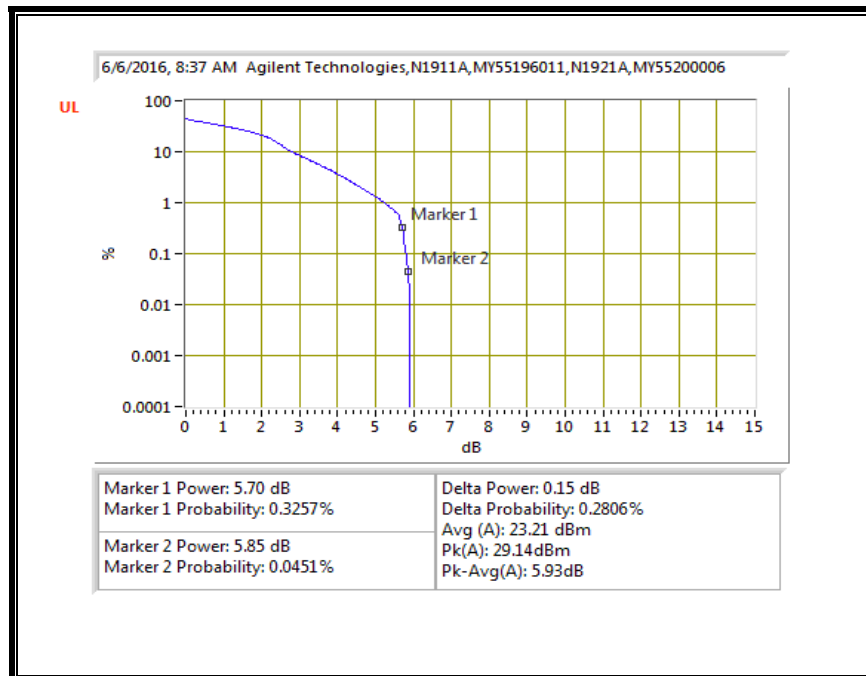
16QAM, (1.4 MHz BAND WIDTH)



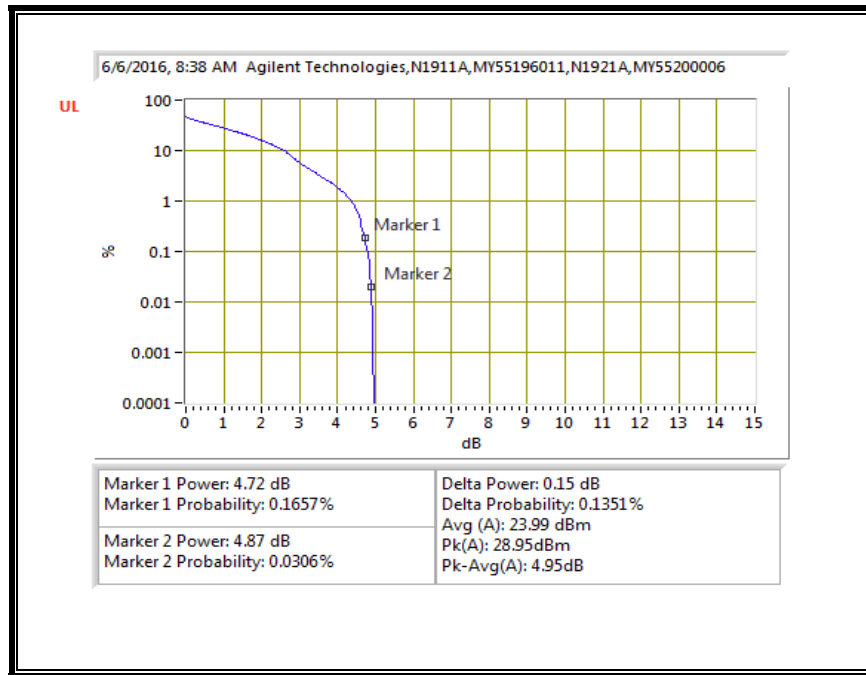
QPSK, (3.0 MHz BAND WIDTH)



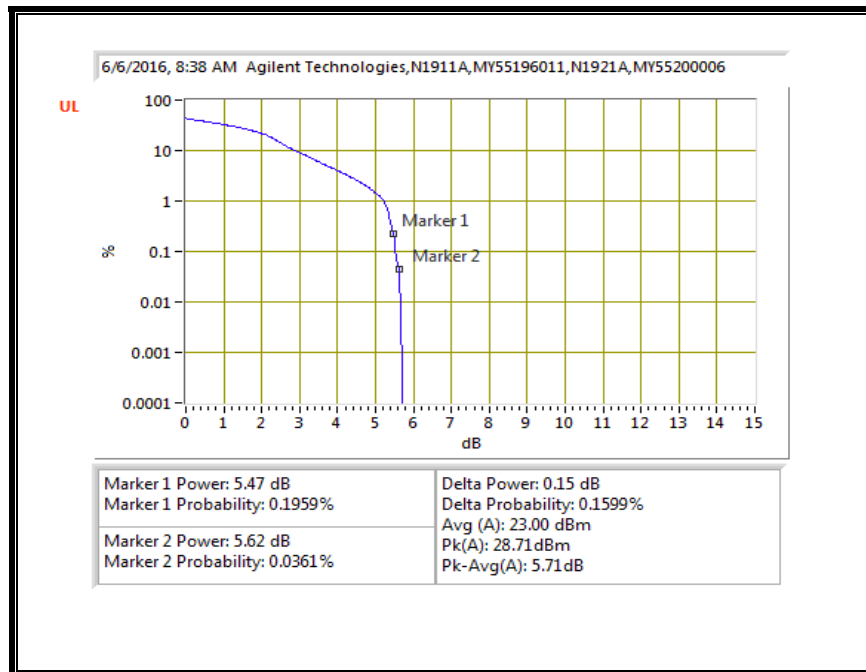
16QAM, (3.0 MHz BAND WIDTH)



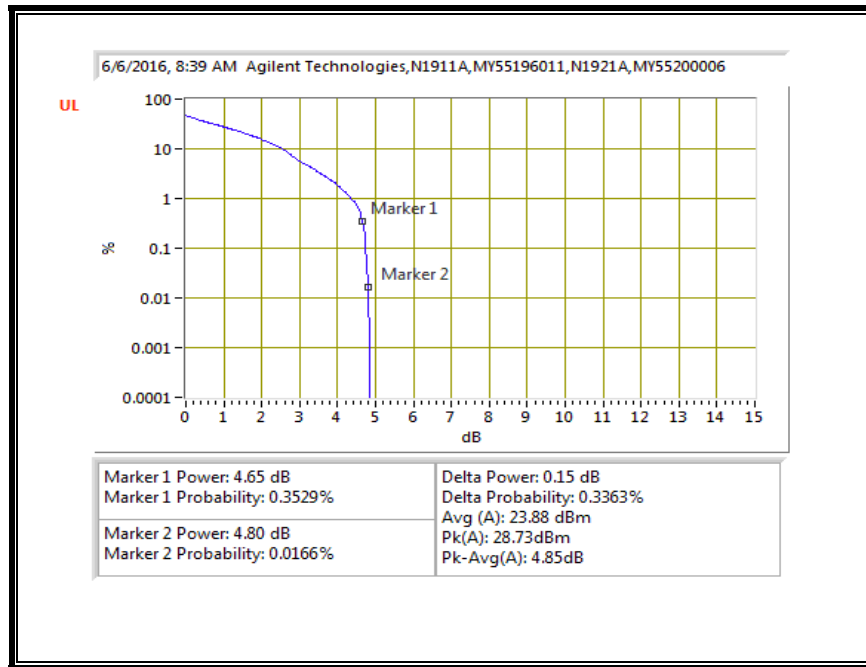
QPSK, (5.0 MHz BAND WIDTH)



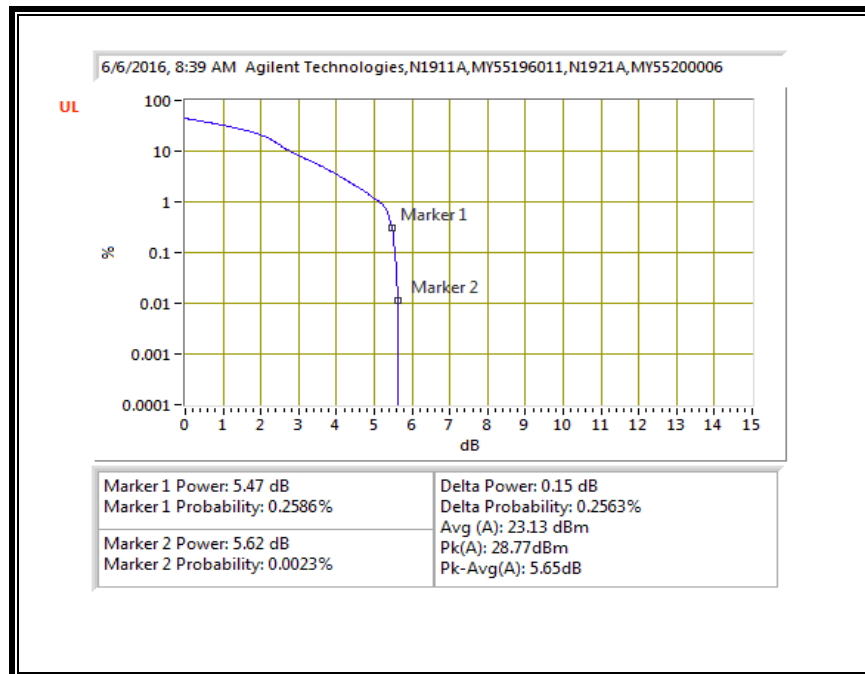
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

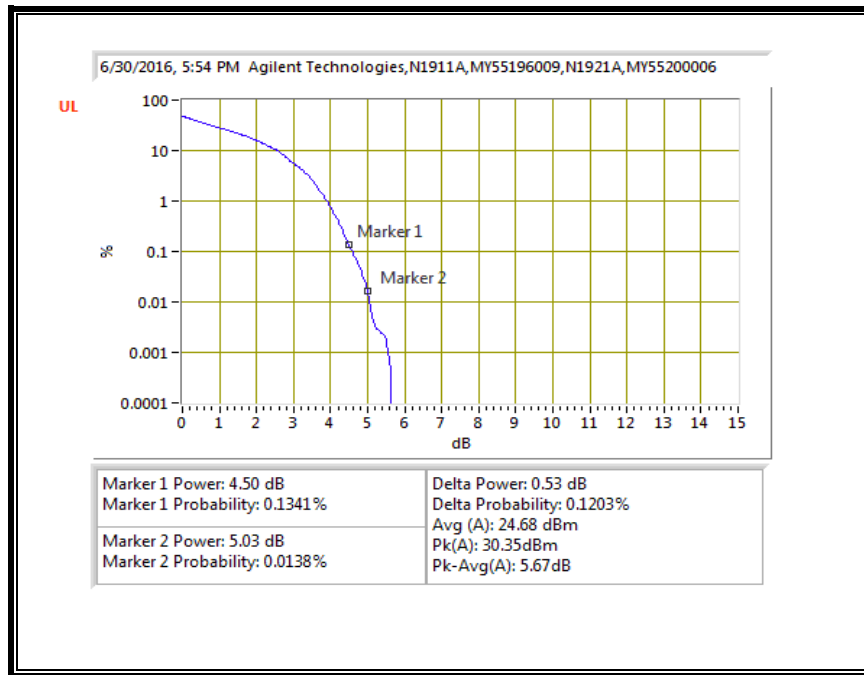


16QAM, (10.0 MHz BAND WIDTH)

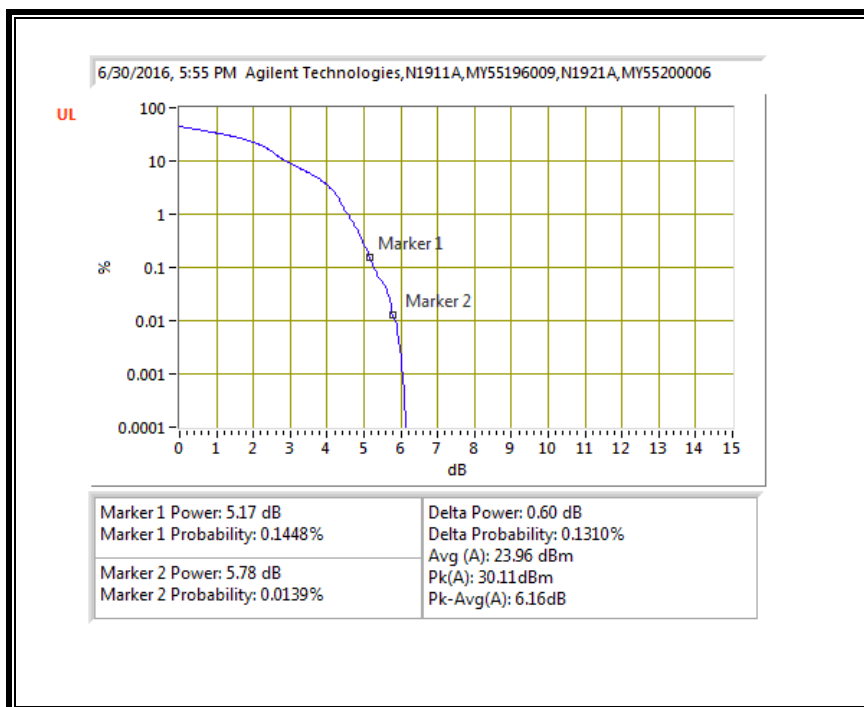


10.3.4. LTE BAND 7

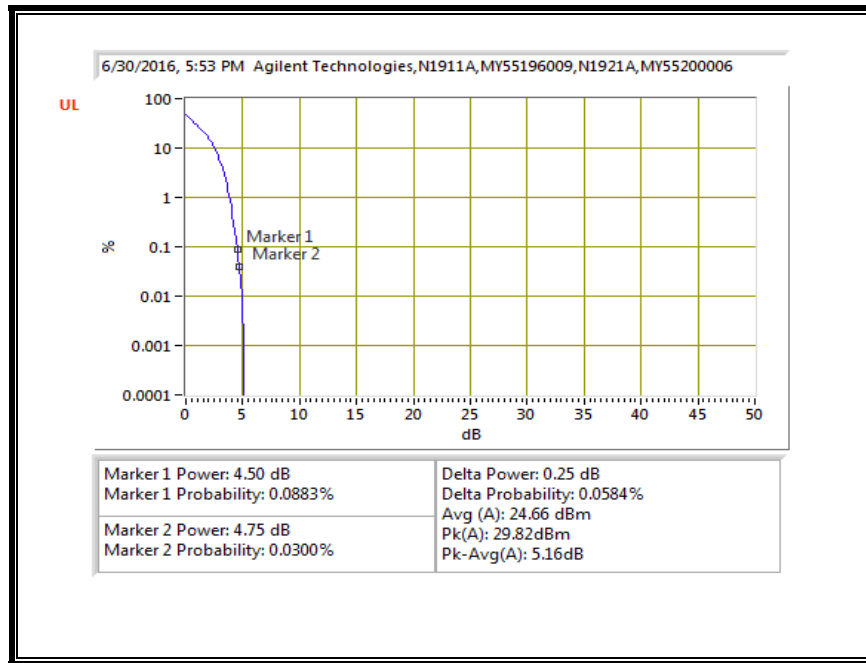
QPSK, (5.0 MHz BAND WIDTH)



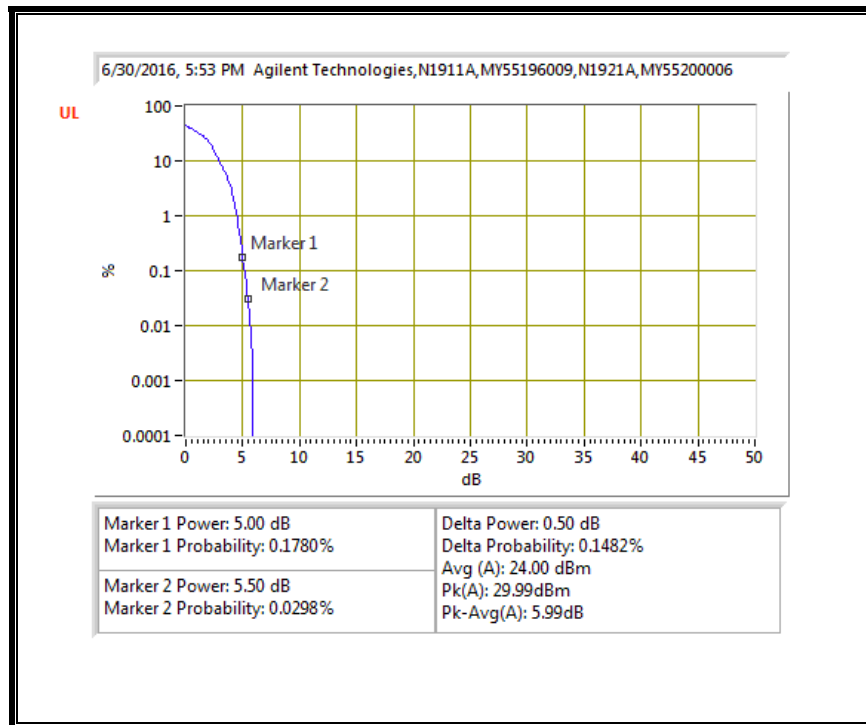
16QAM, (5.0 MHz BAND WIDTH)



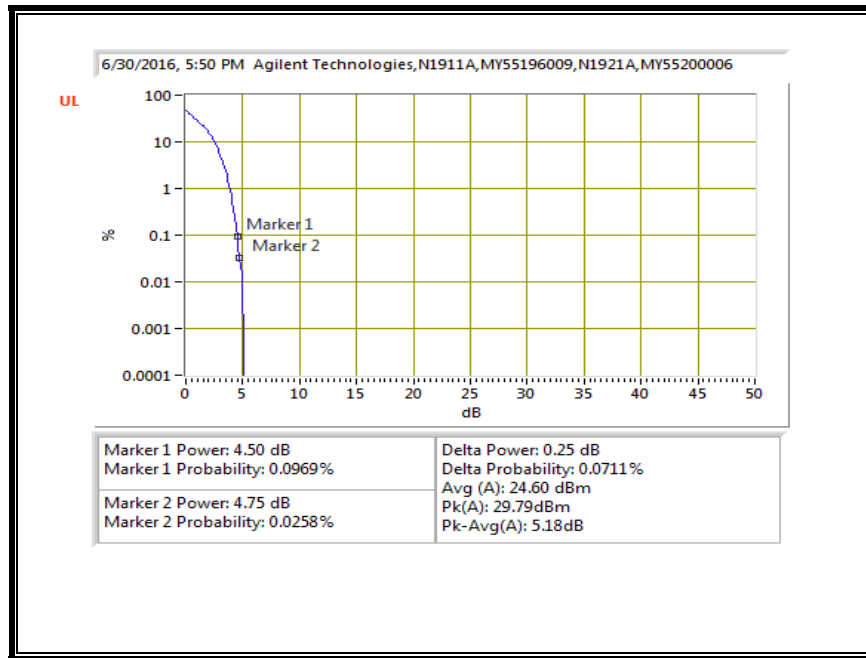
QPSK, (10.0 MHz BAND WIDTH)



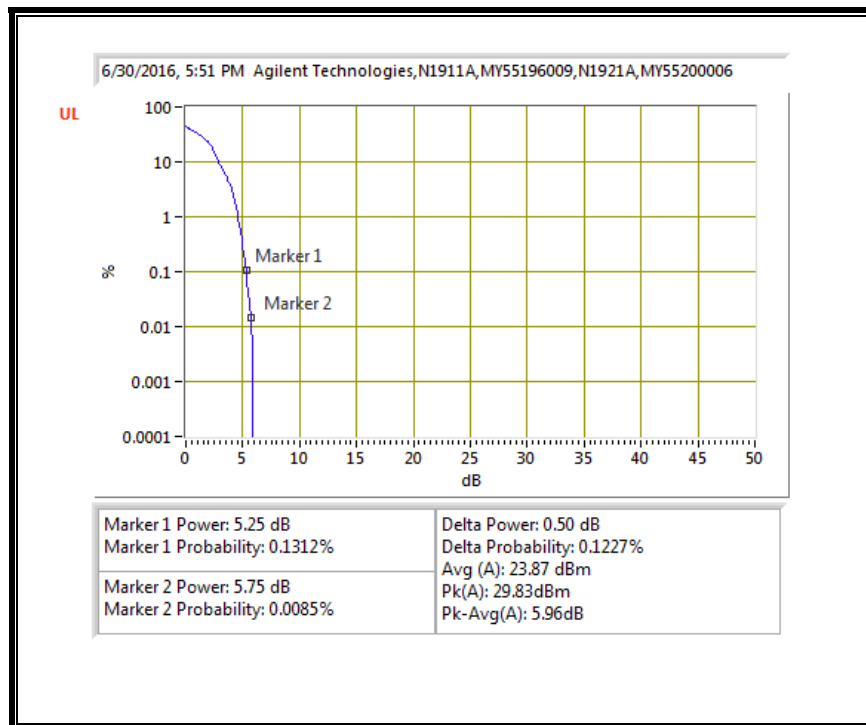
16QAM, (10.0 MHz BAND WIDTH)



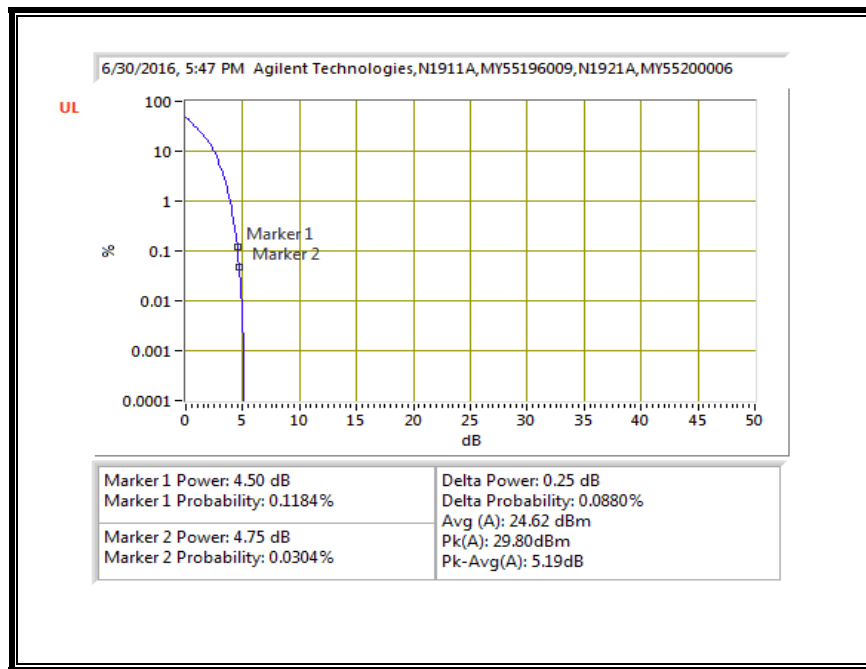
QPSK, (15.0 MHz BAND WIDTH)



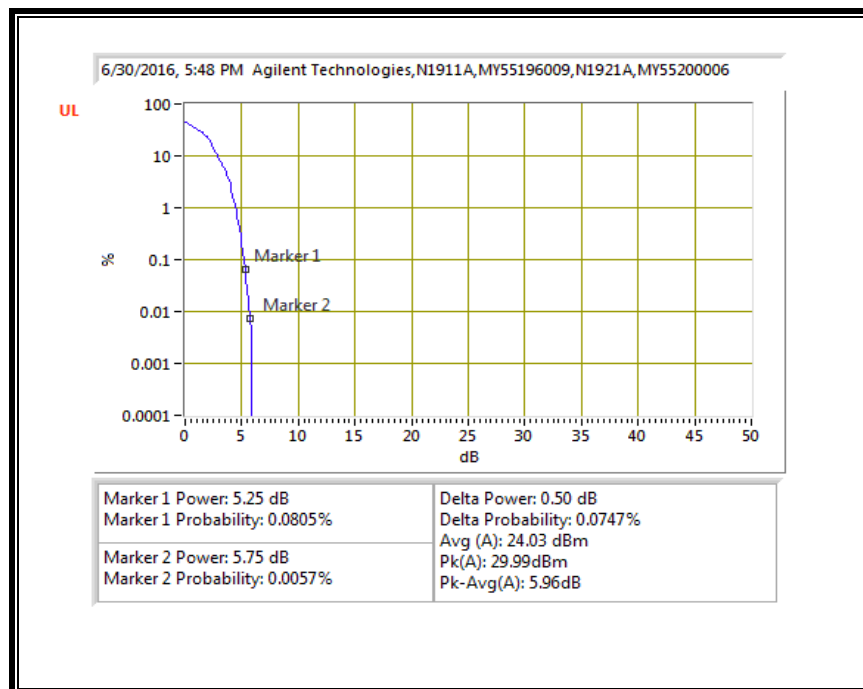
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

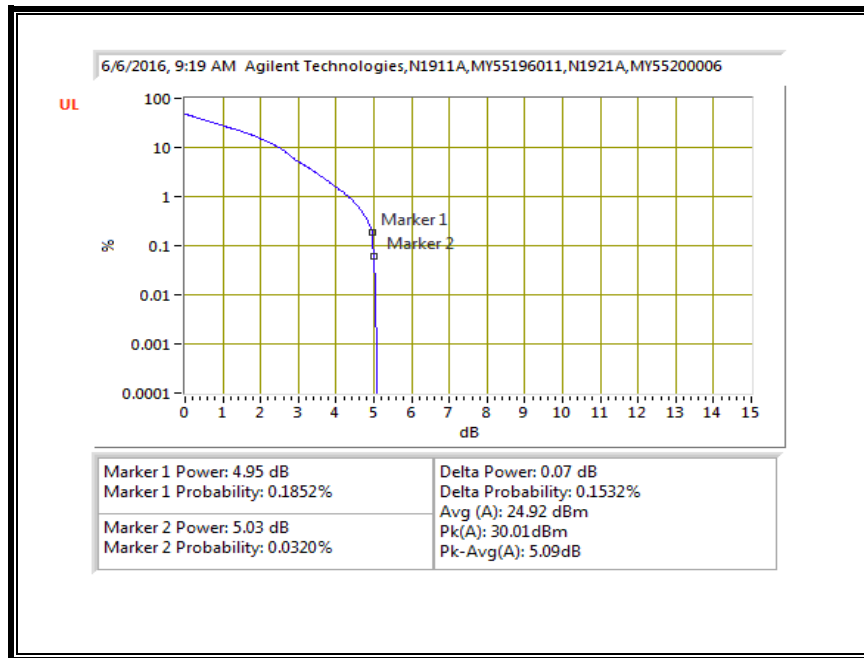


16QAM, (20.0 MHz BAND WIDTH)

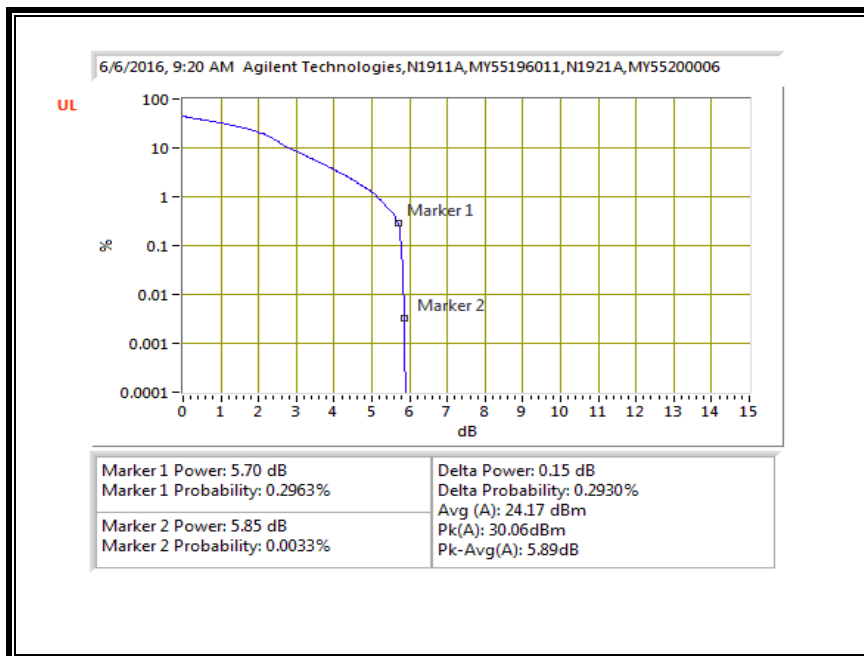


10.3.5. LTE BAND 12

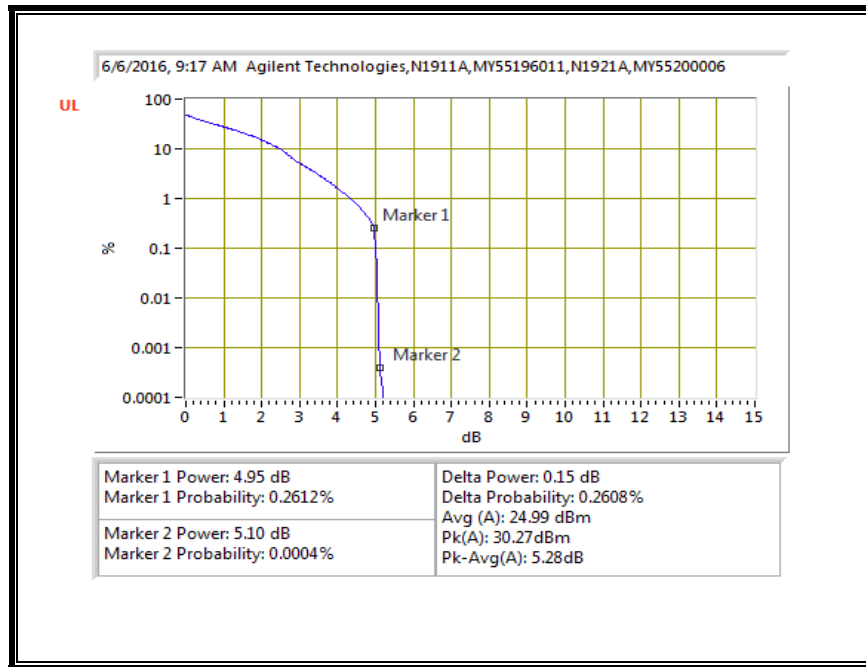
QPSK, (1.4 MHz BAND WIDTH)



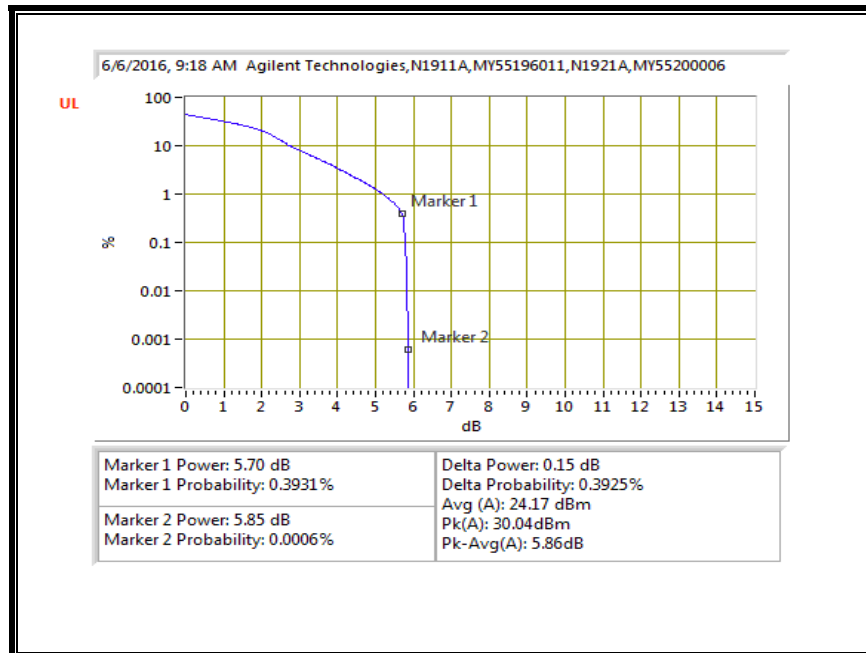
16QAM, (1.4 MHz BAND WIDTH)



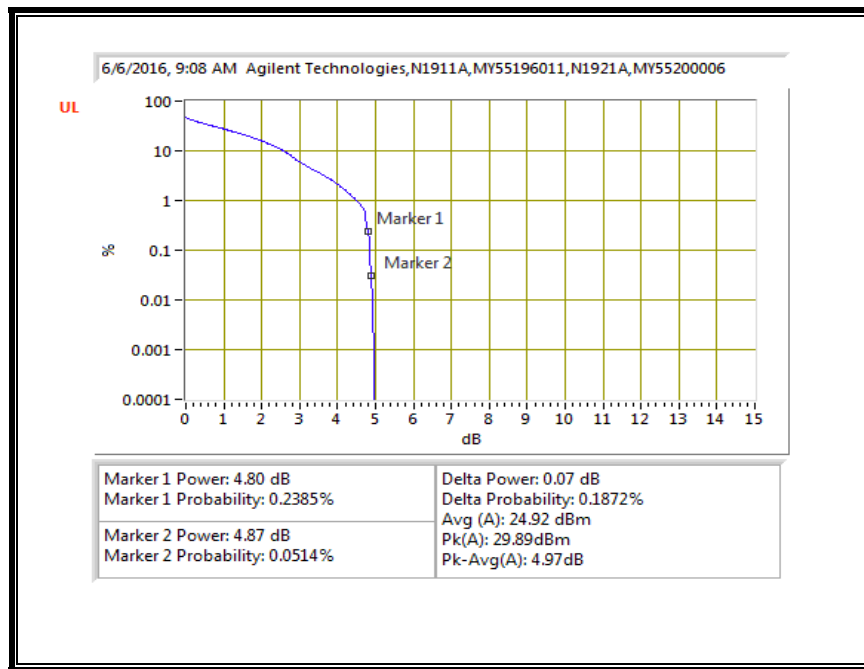
QPSK, (3.0 MHz BAND WIDTH)



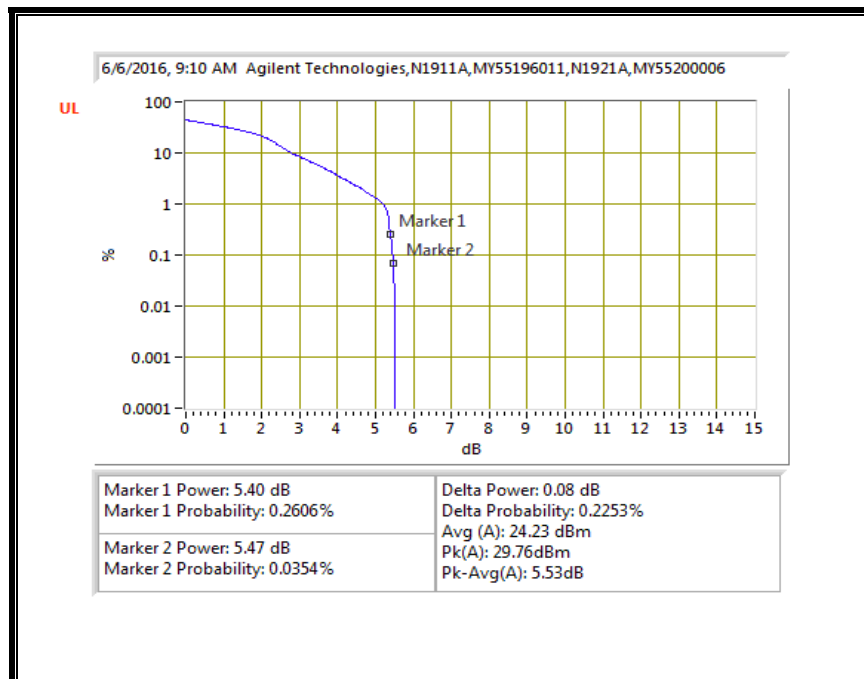
16QAM, (3.0 MHz BAND WIDTH)



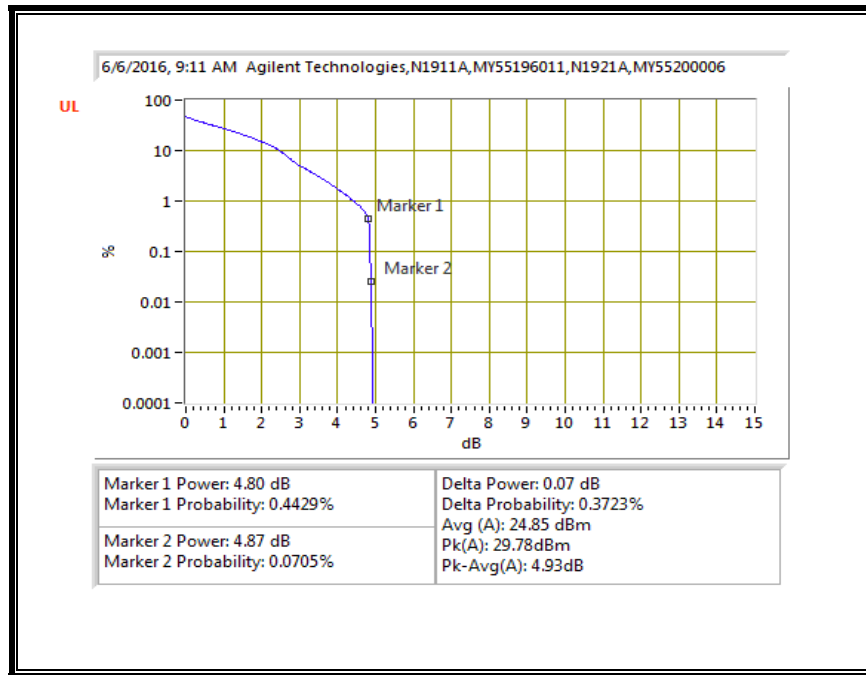
QPSK, (5.0 MHz BAND WIDTH)



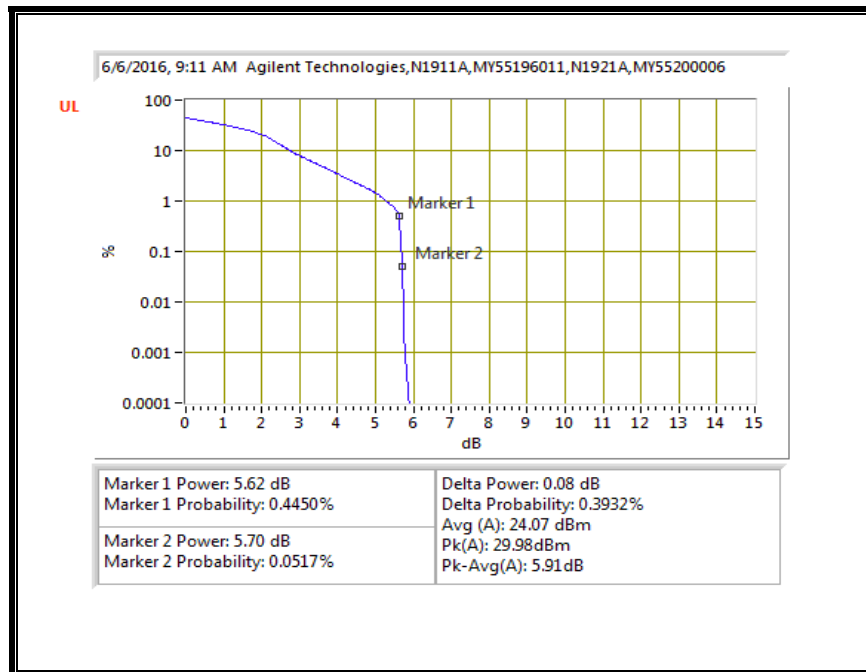
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

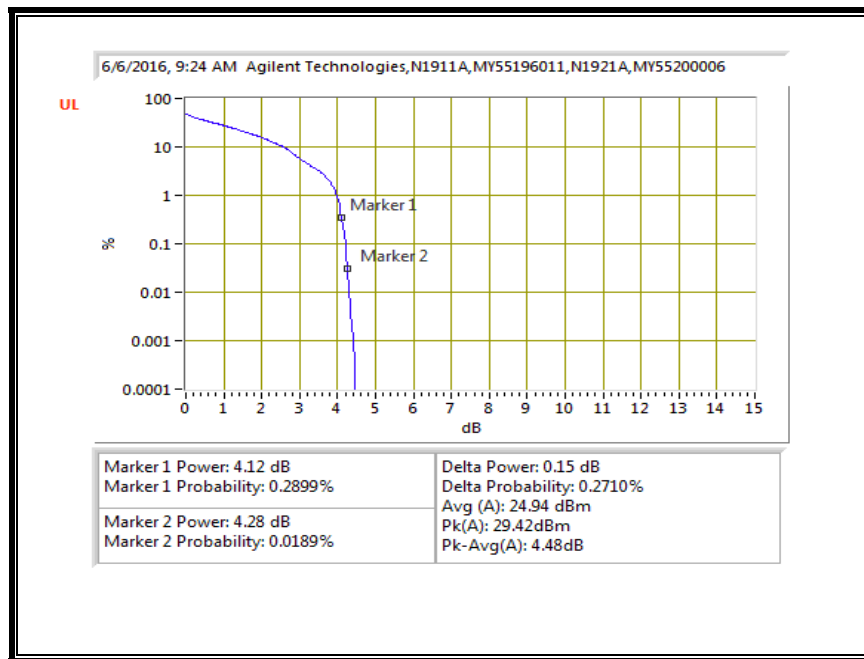


16QAM, (10.0 MHz BAND WIDTH)

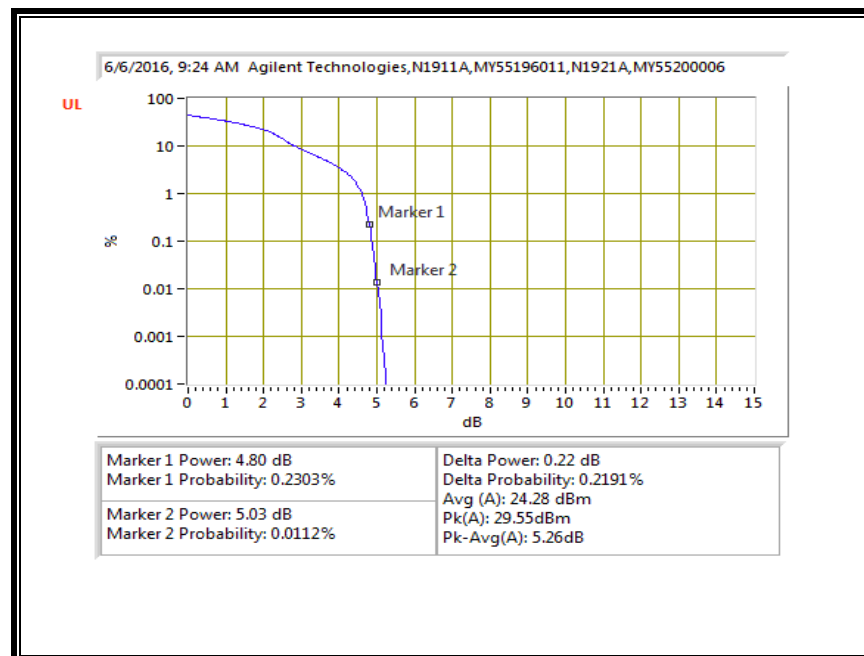


10.3.6. LTE BAND 13

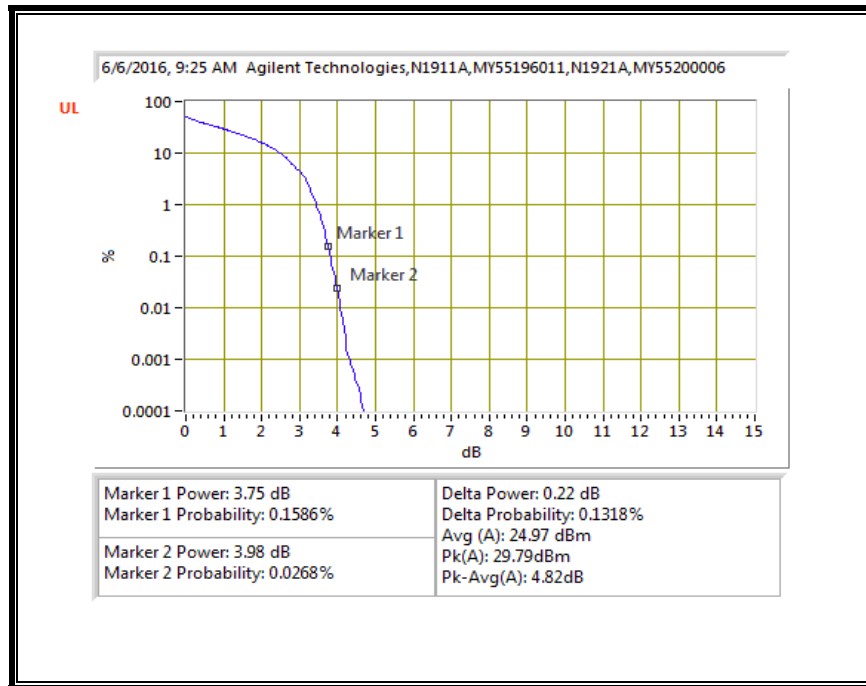
QPSK, (5.0 MHz BAND WIDTH)



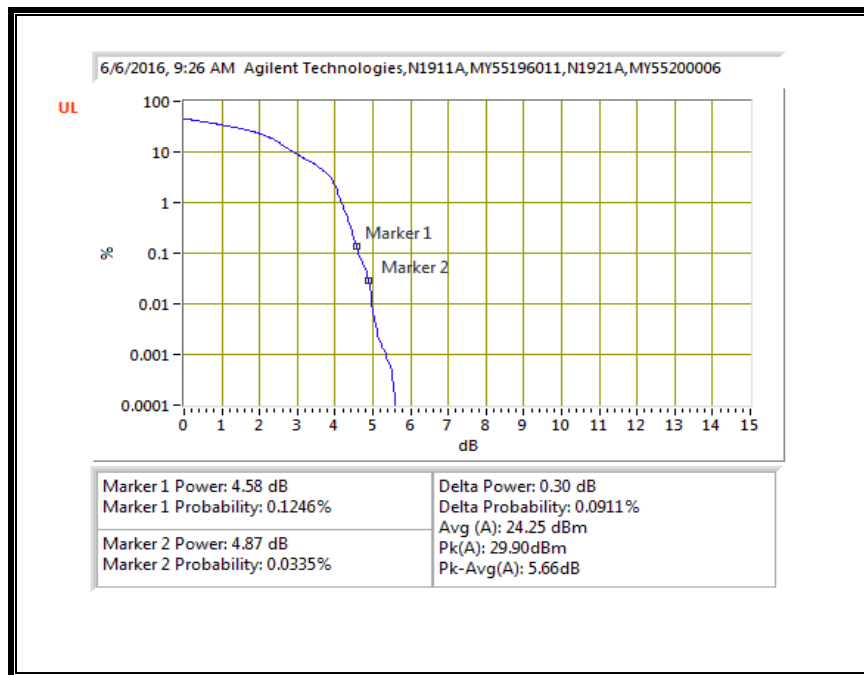
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

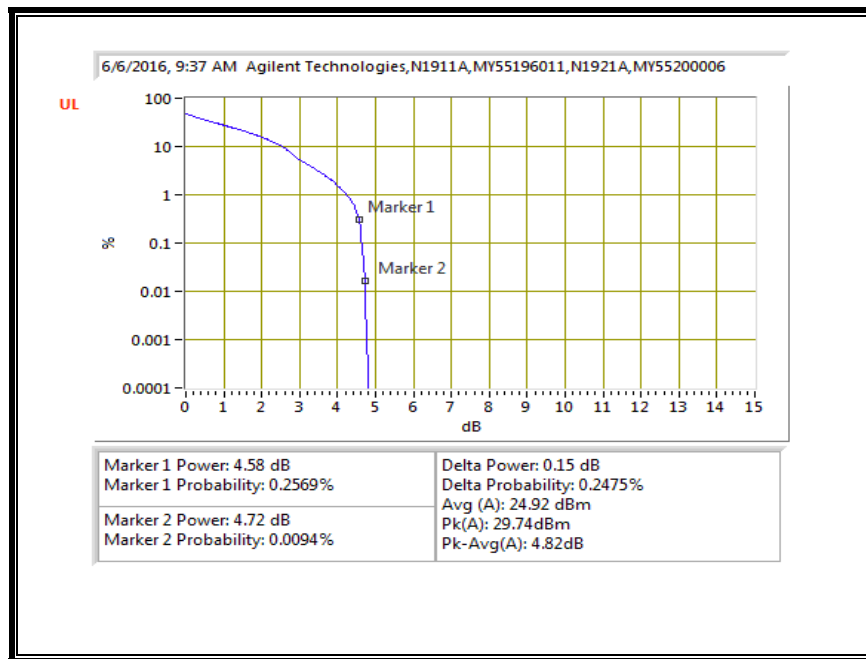


16QAM, (10.0 MHz BAND WIDTH)

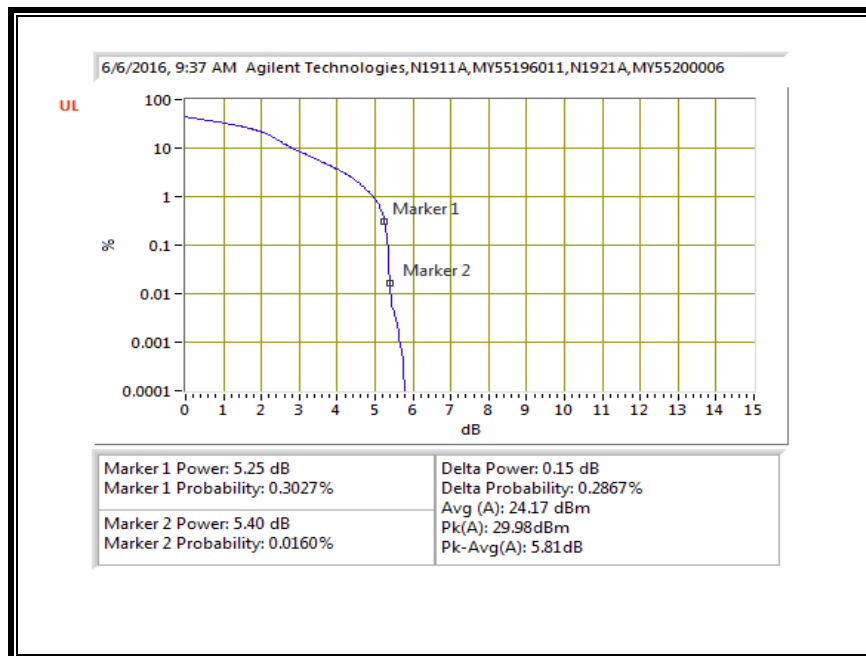


10.3.7. LTE BAND 17

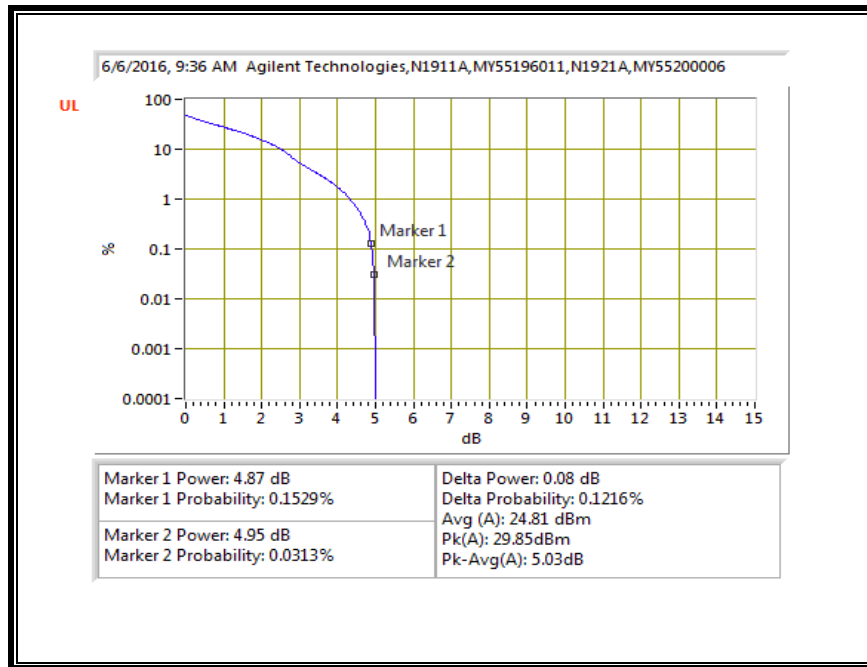
QPSK, (5.0 MHz BAND WIDTH)



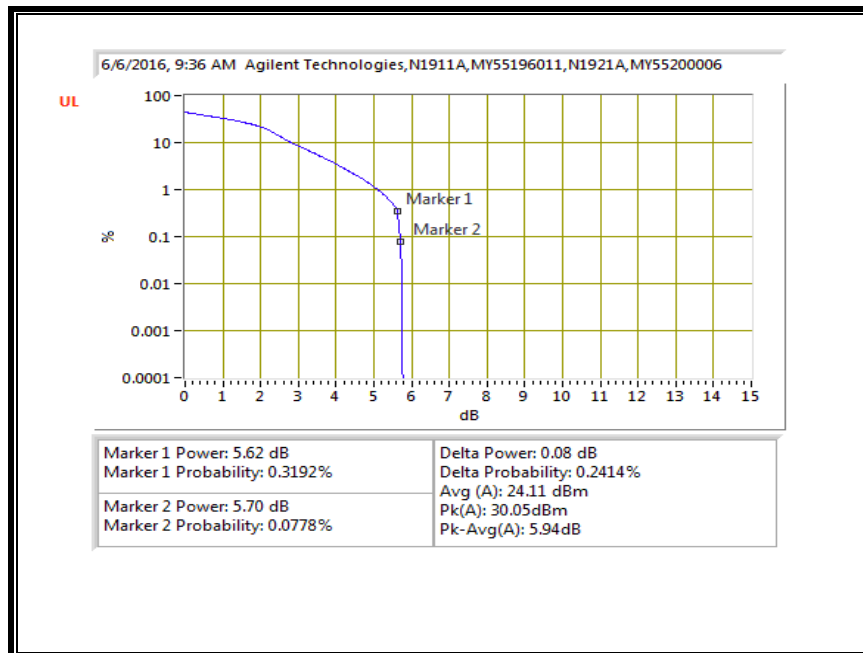
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

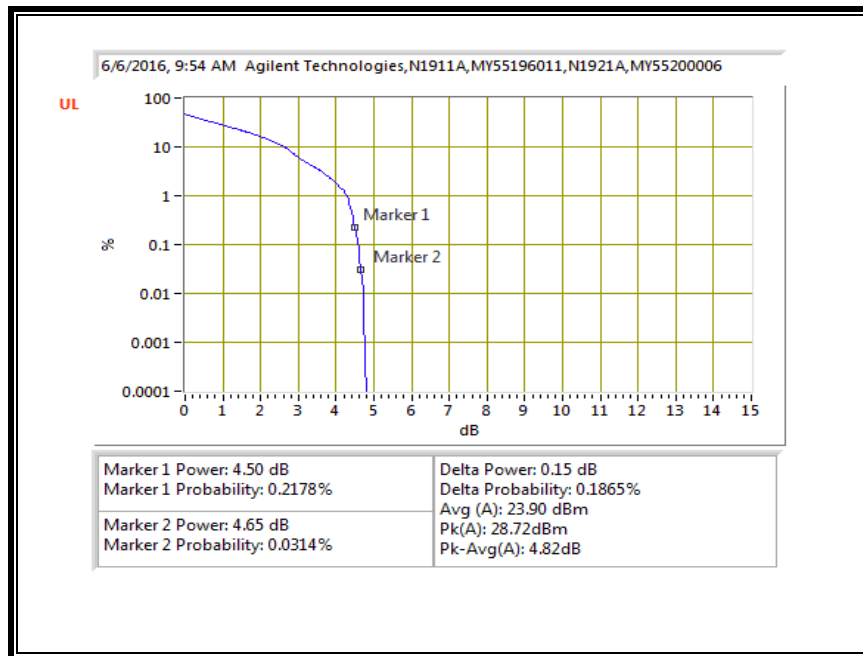


16QAM, (10.0 MHz BAND WIDTH)

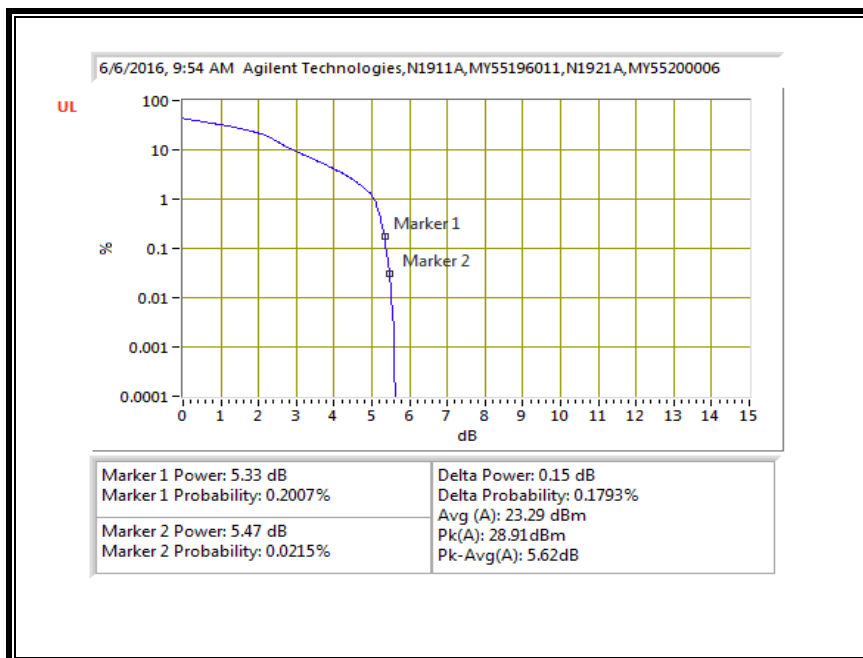


10.3.8. LTE BAND 25

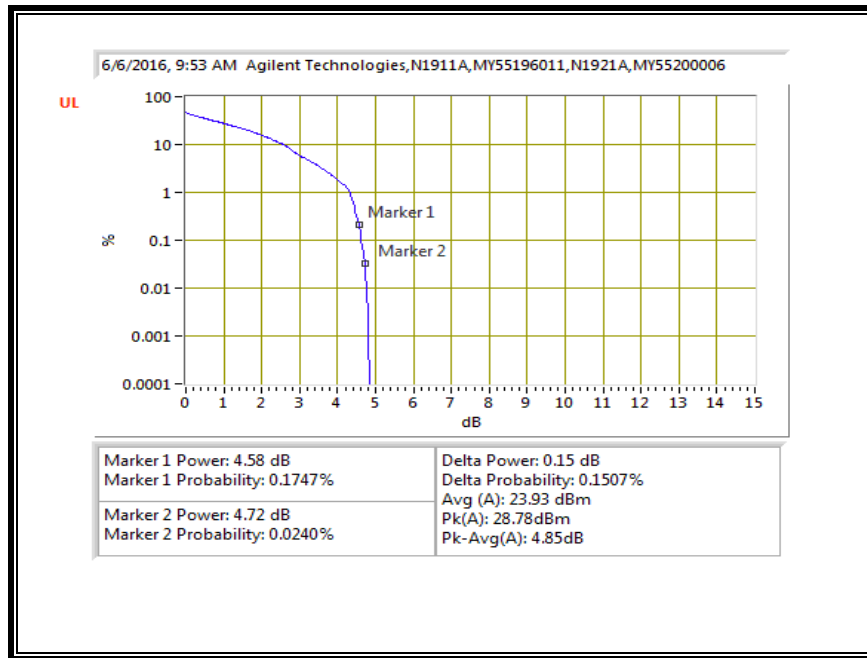
QPSK, (1.4 MHz BAND WIDTH)



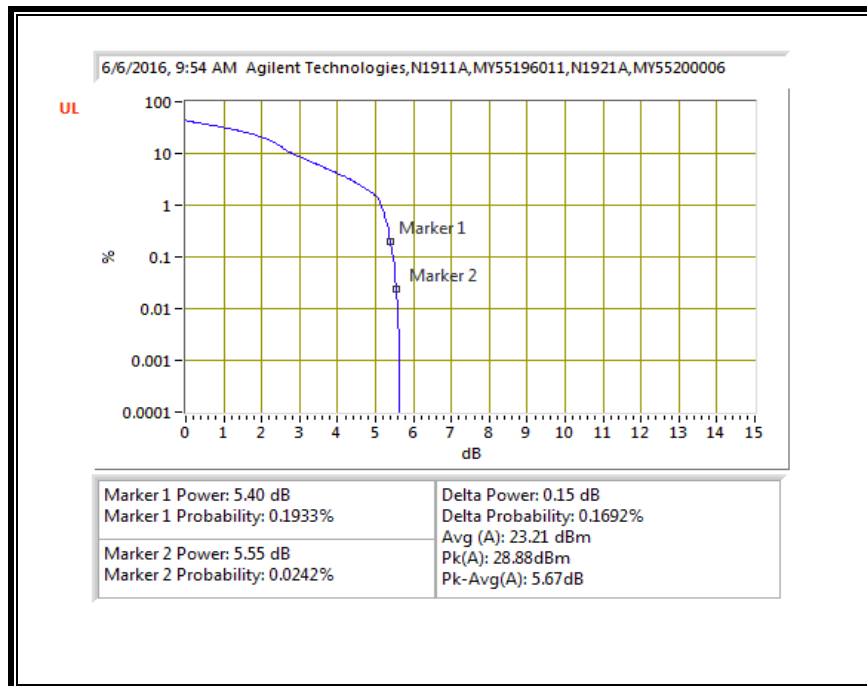
16QAM, (1.4 MHz BAND WIDTH)



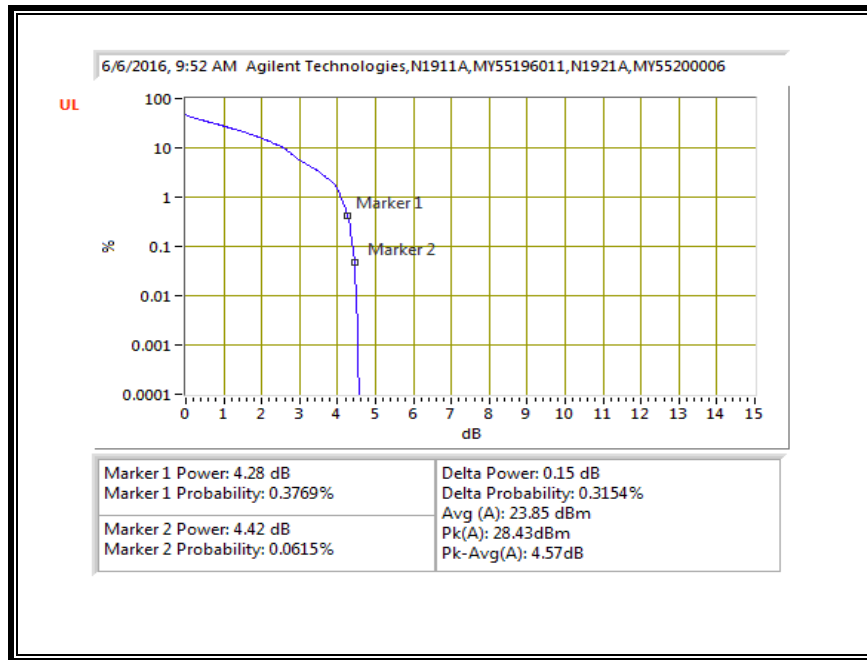
QPSK, (3.0 MHz BAND WIDTH)



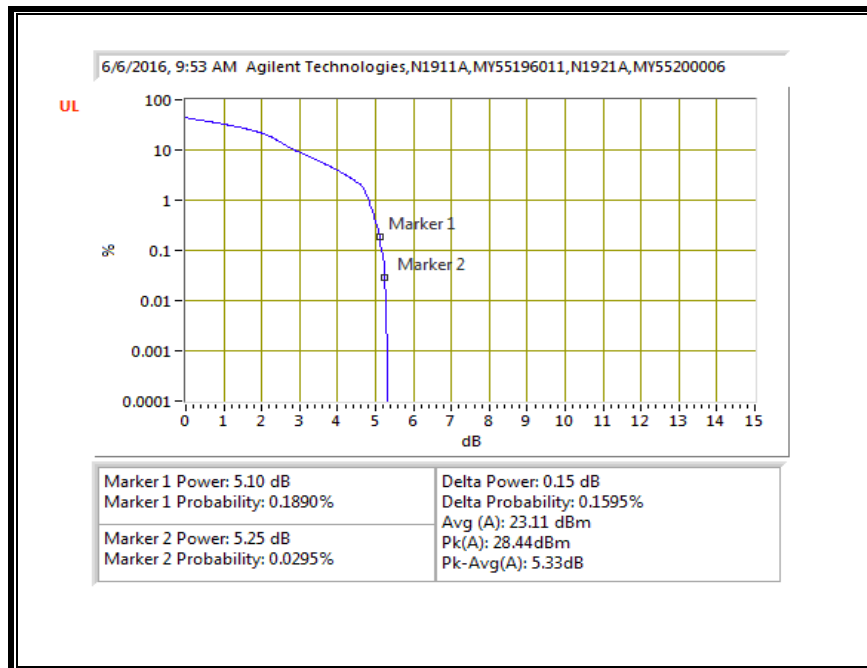
16QAM, (3.0 MHz BAND WIDTH)



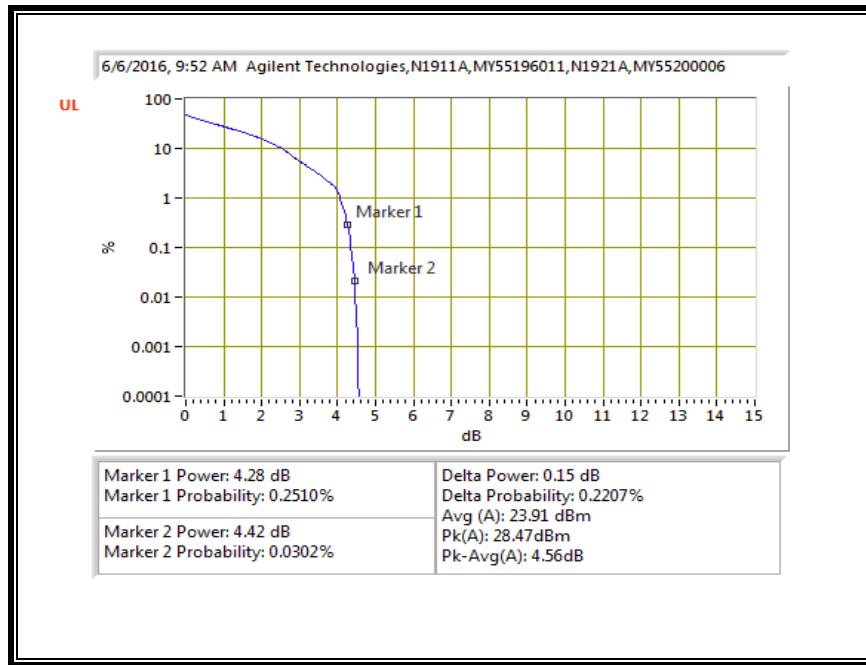
QPSK, (5.0 MHz BAND WIDTH)



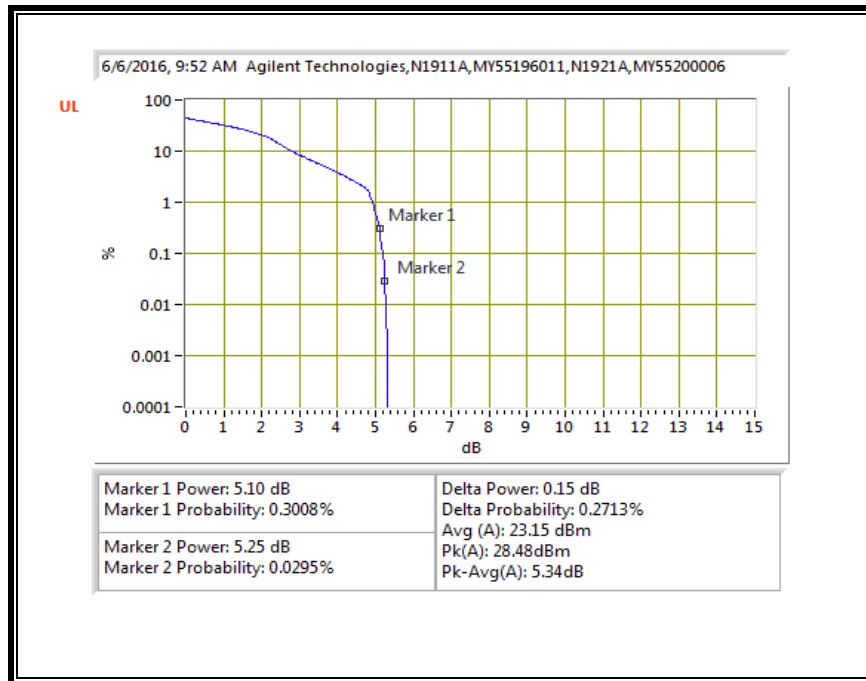
16QAM, (5.0 MHz BAND WIDTH)



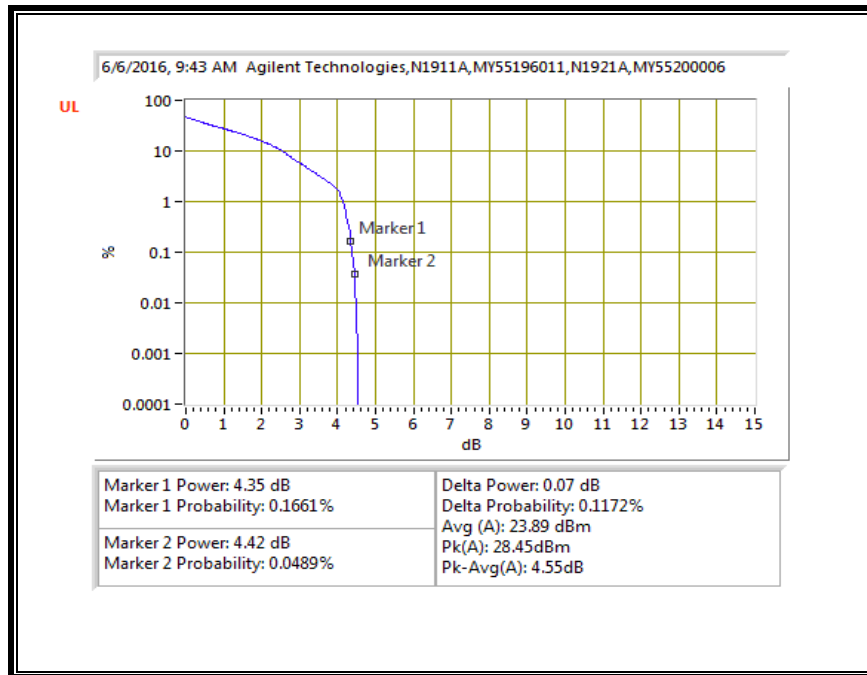
QPSK, (10.0 MHz BAND WIDTH)



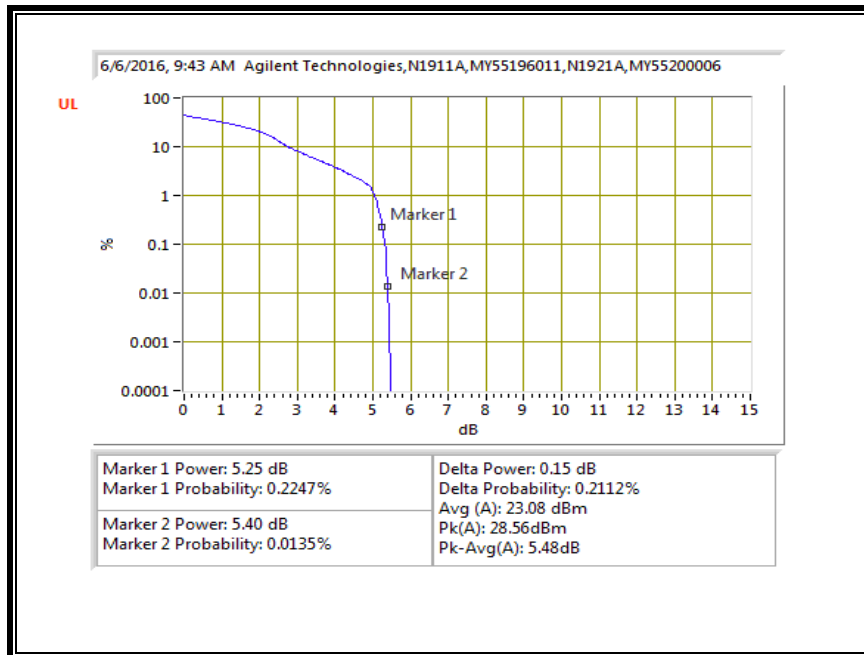
16QAM, (10.0 MHz BAND WIDTH)



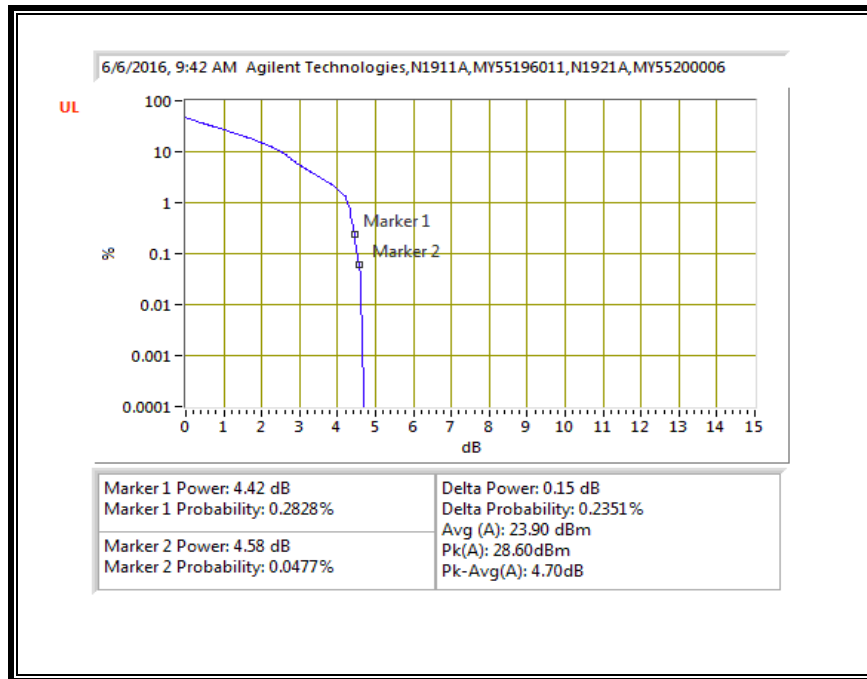
QPSK, (15.0 MHz BAND WIDTH)



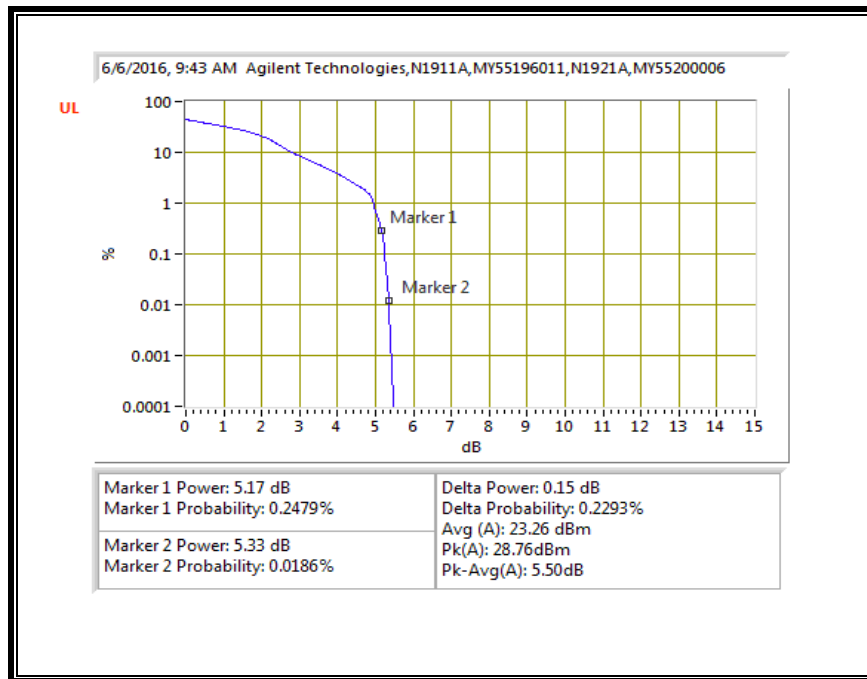
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

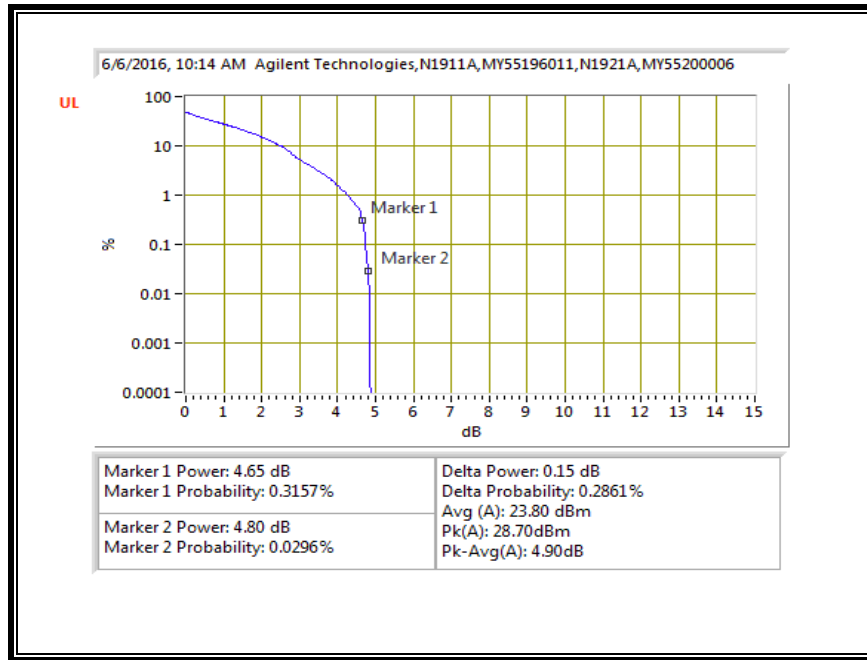


16QAM, (20.0 MHz BAND WIDTH)

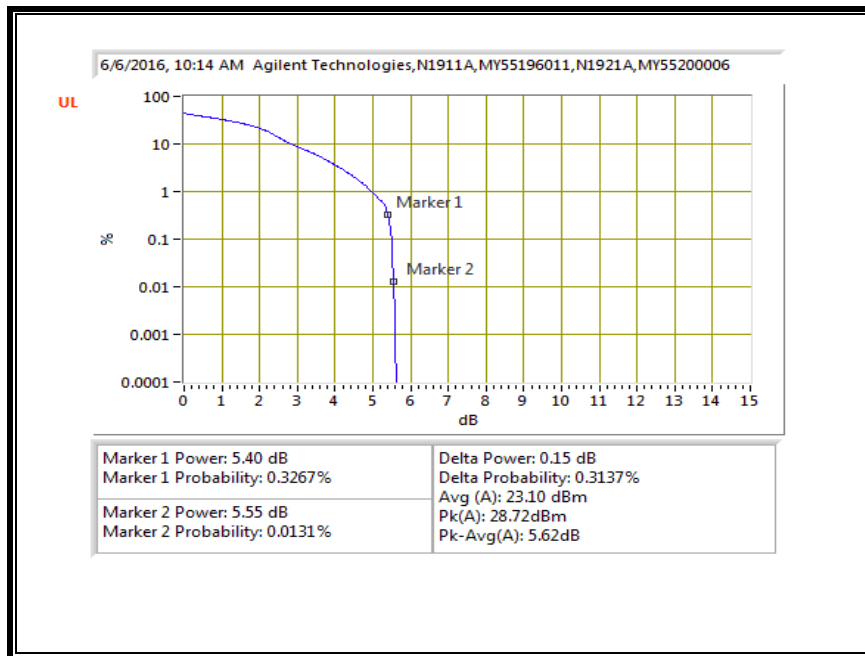


10.3.9. LTE BAND 26

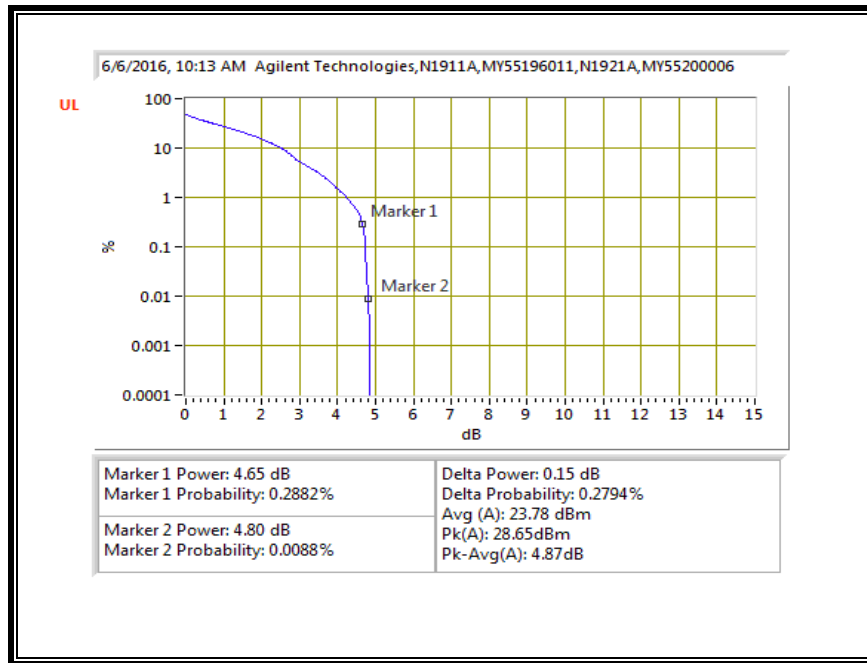
QPSK, (1.4 MHz BAND WIDTH)



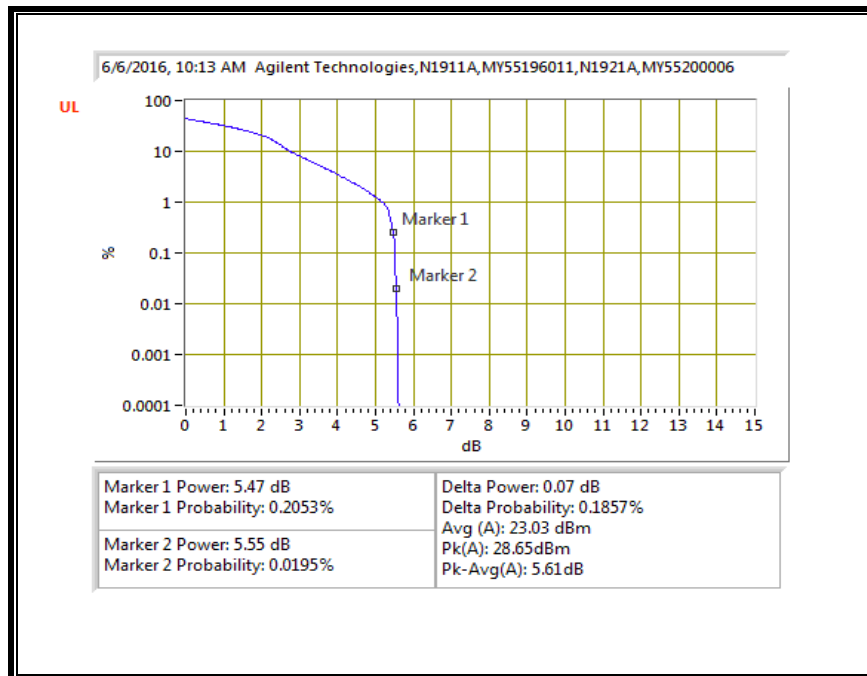
16QAM, (1.4 MHz BAND WIDTH)



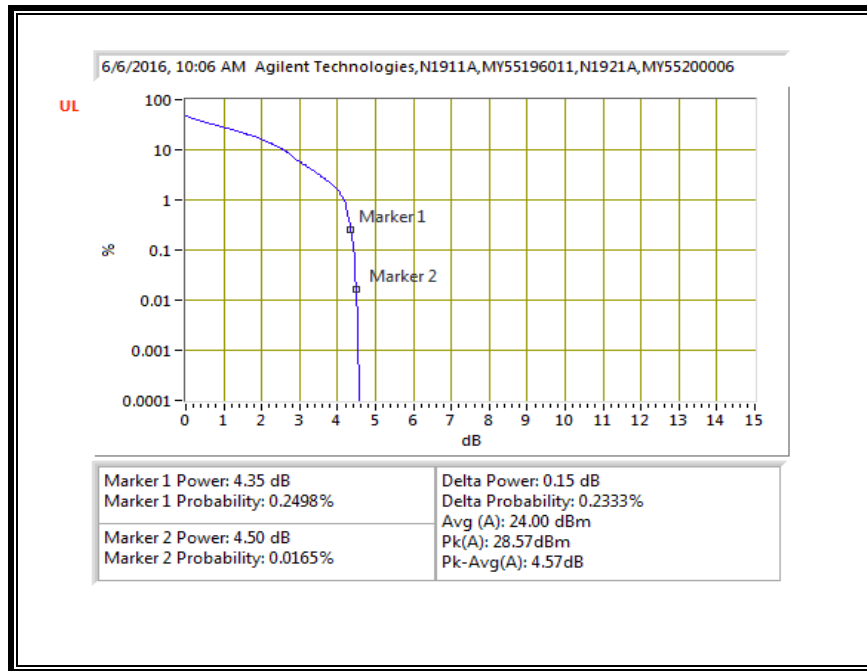
QPSK, (3.0 MHz BAND WIDTH)



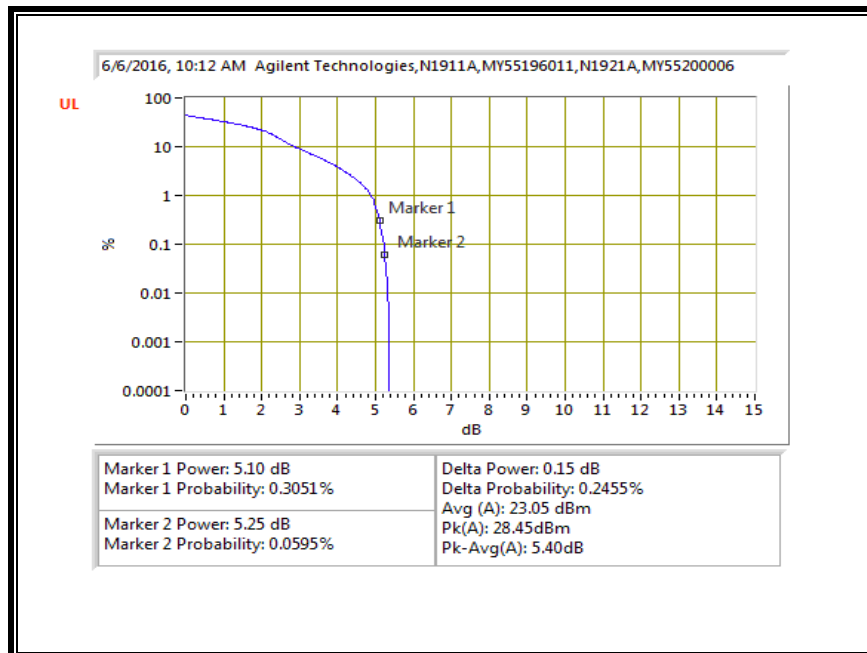
16QAM, (3.0 MHz BAND WIDTH)



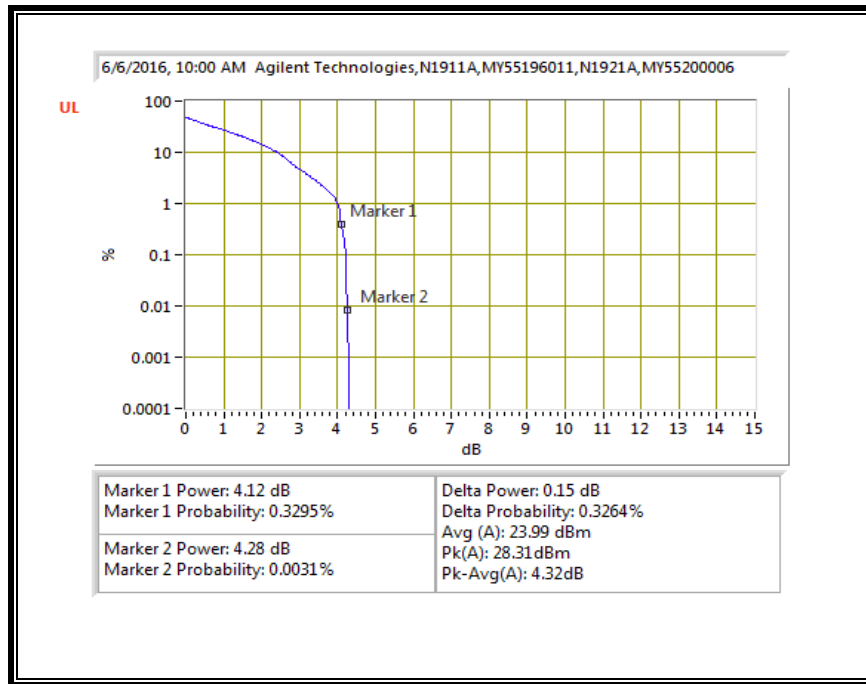
QPSK, (5.0 MHz BAND WIDTH)



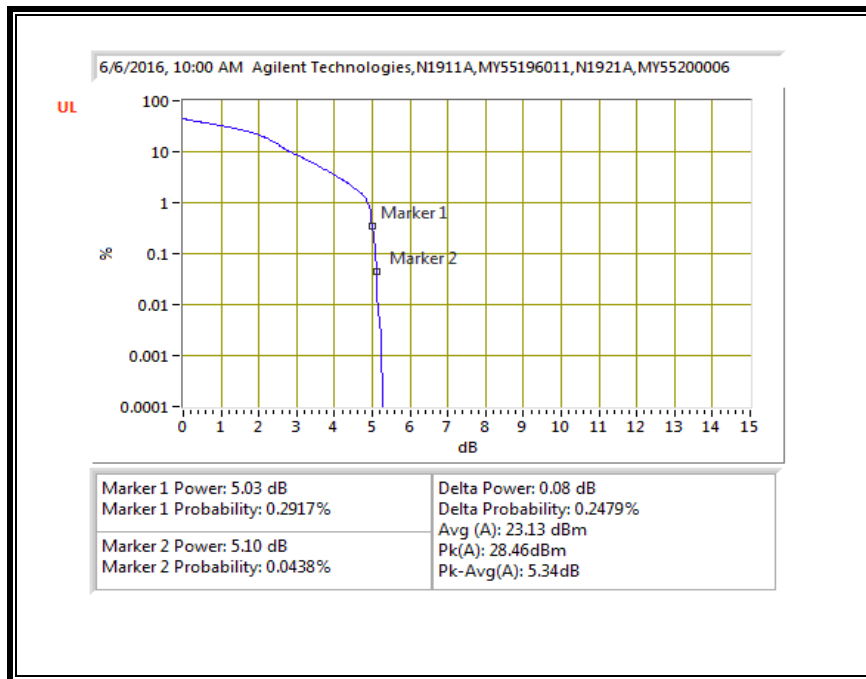
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

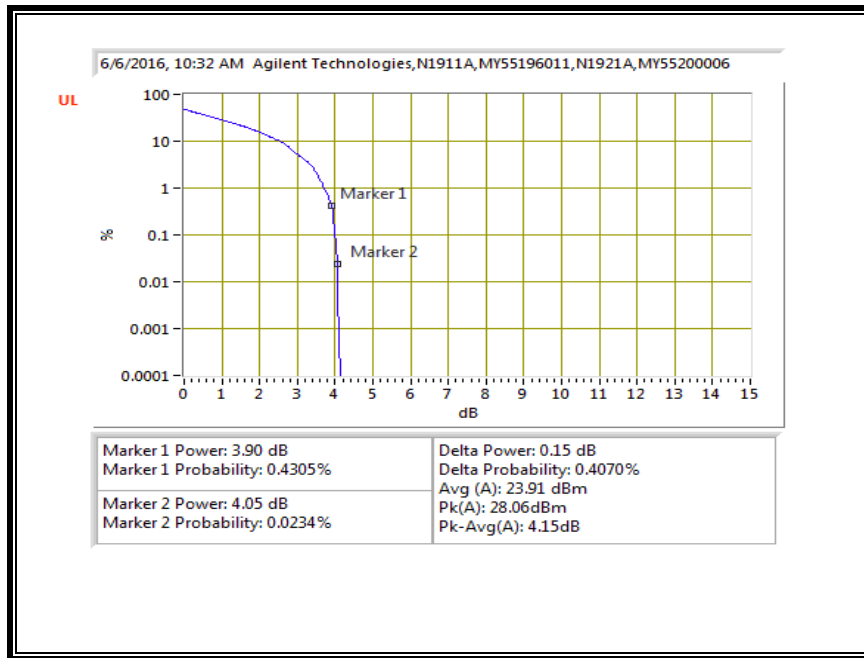


16QAM, (10.0 MHz BAND WIDTH)

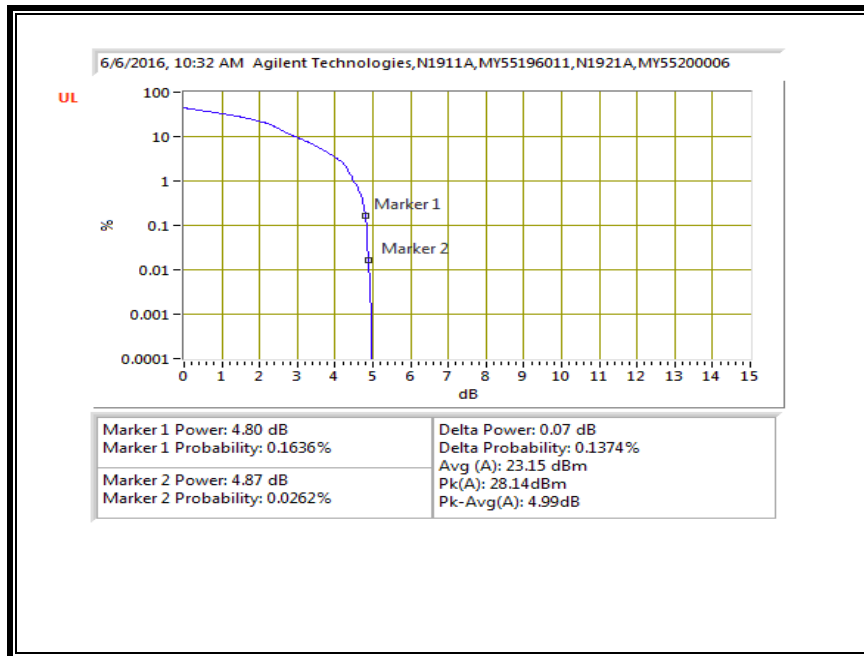


10.3.10. LTE BAND 27

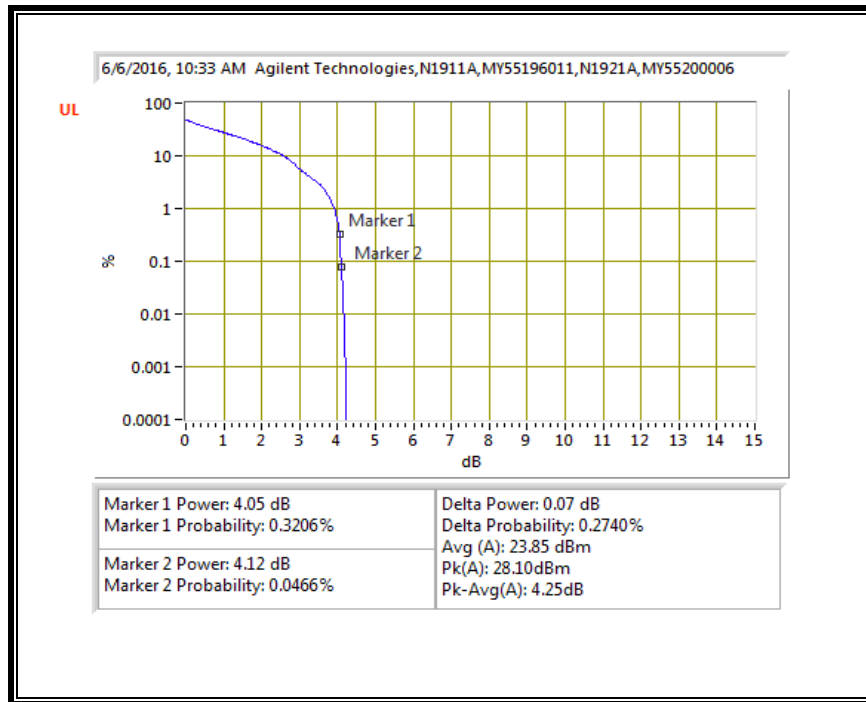
QPSK, (1.4 MHz BAND WIDTH)



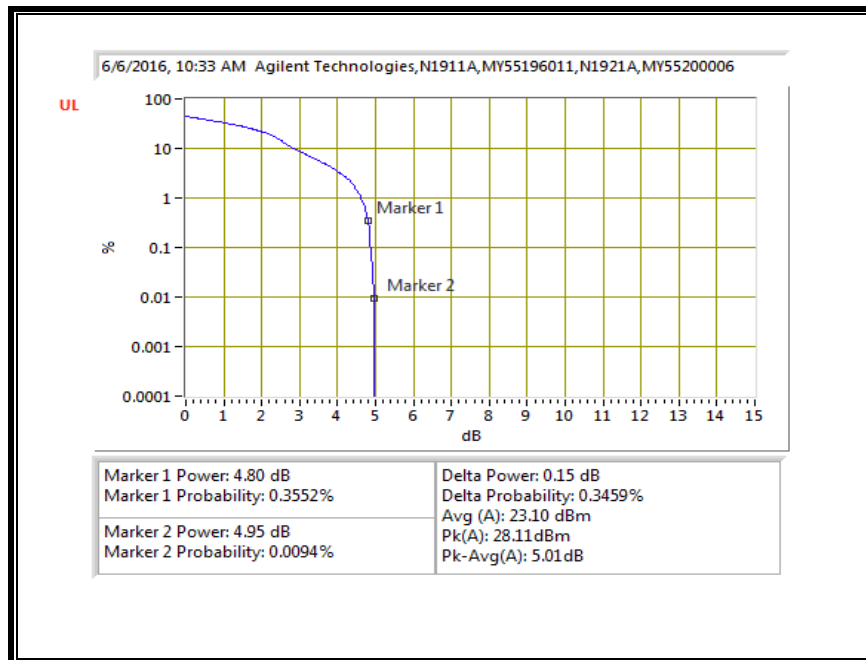
16QAM, (1.4 MHz BAND WIDTH)



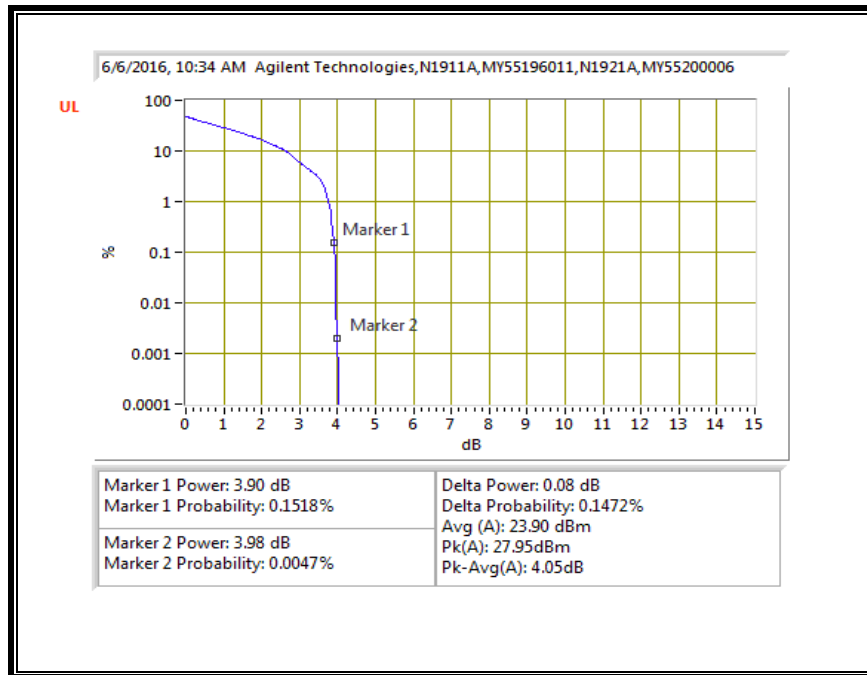
QPSK, (3.0 MHz BAND WIDTH)



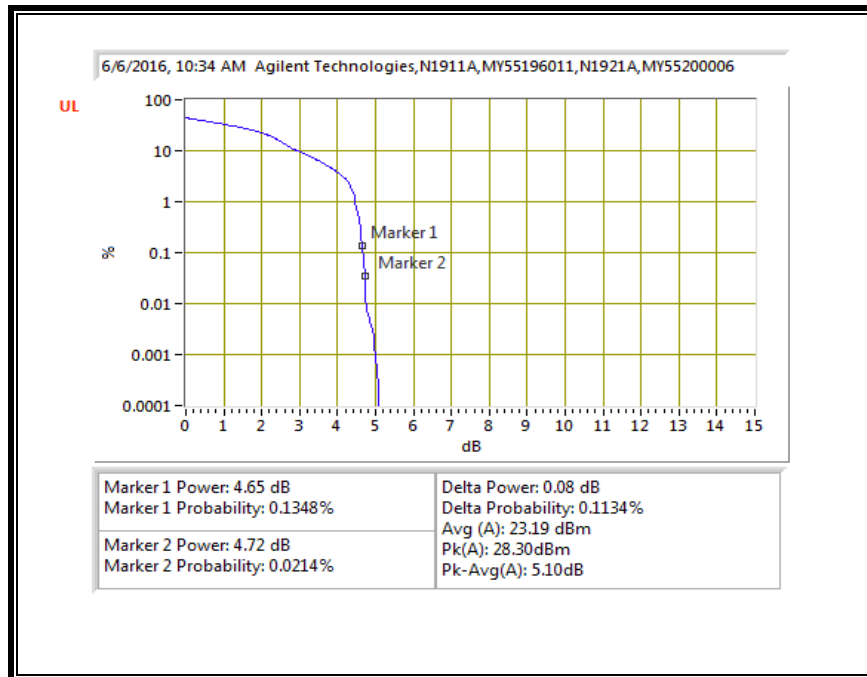
16QAM, (3.0 MHz BAND WIDTH)



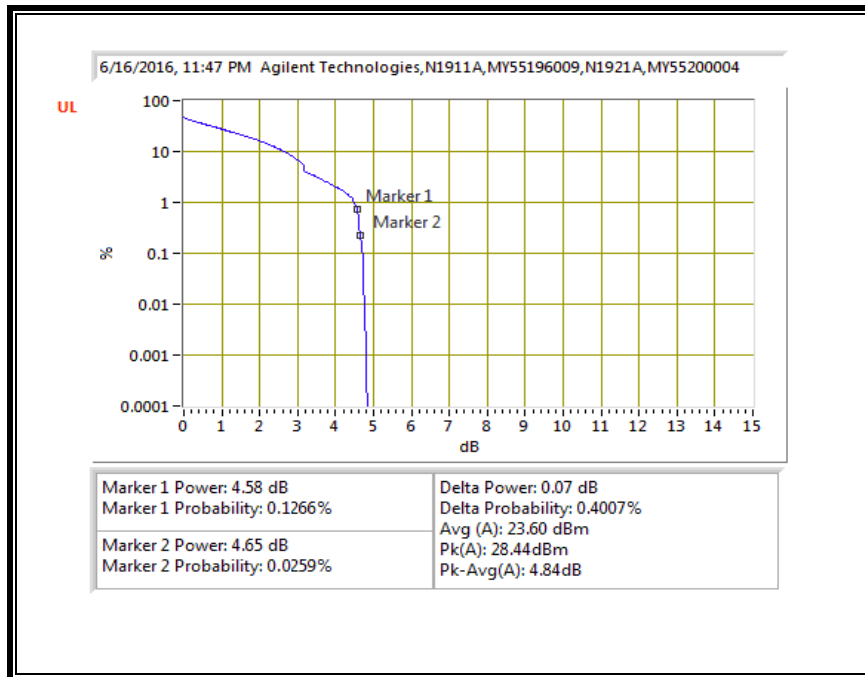
QPSK, (5.0 MHz BAND WIDTH)



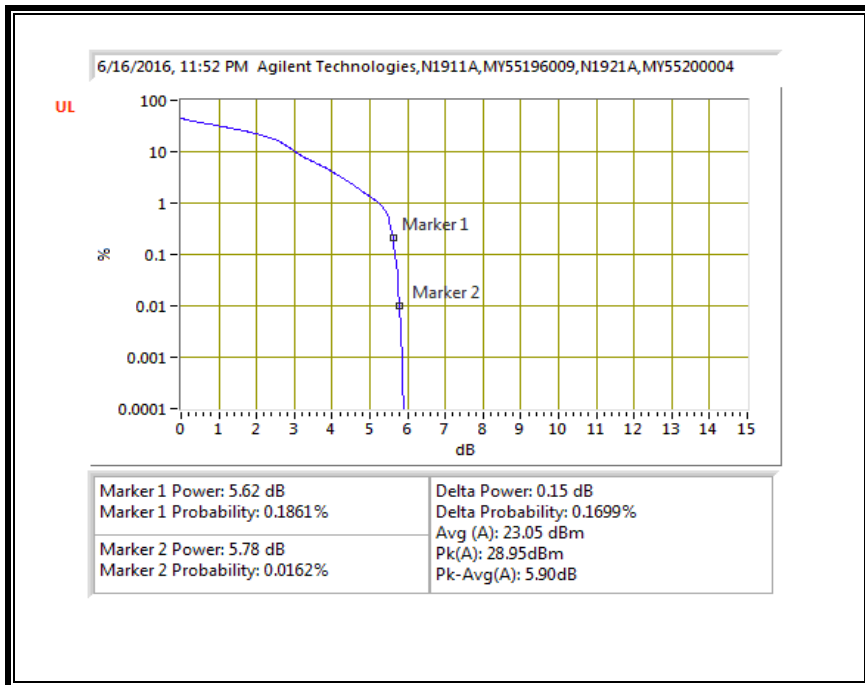
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

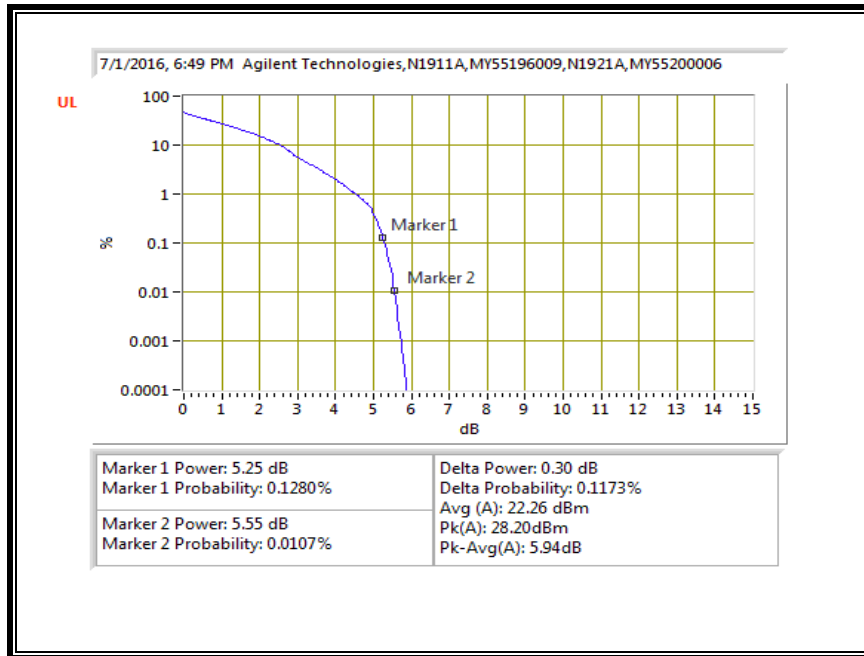


16QAM, (10.0 MHz BAND WIDTH)

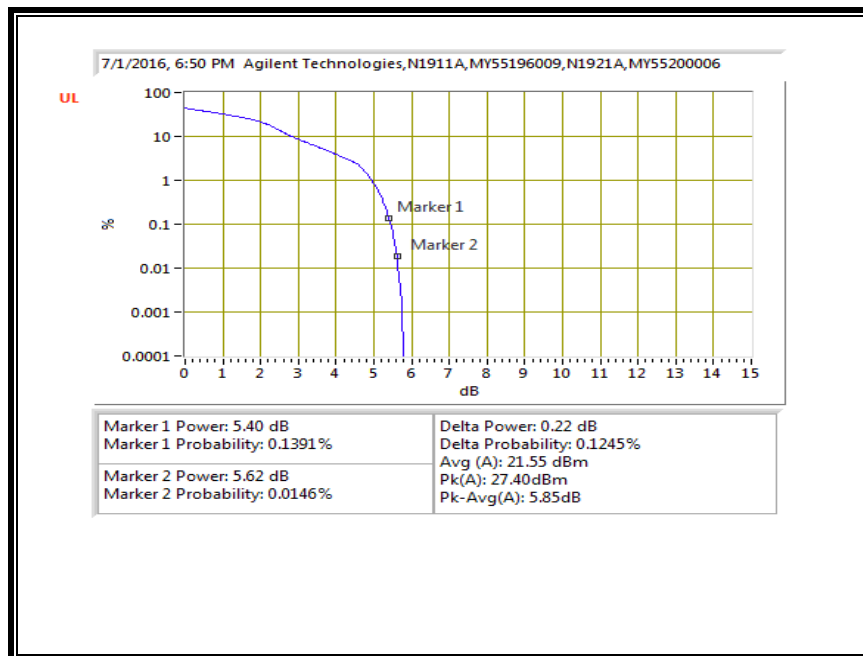


10.3.11. LTE BAND 30

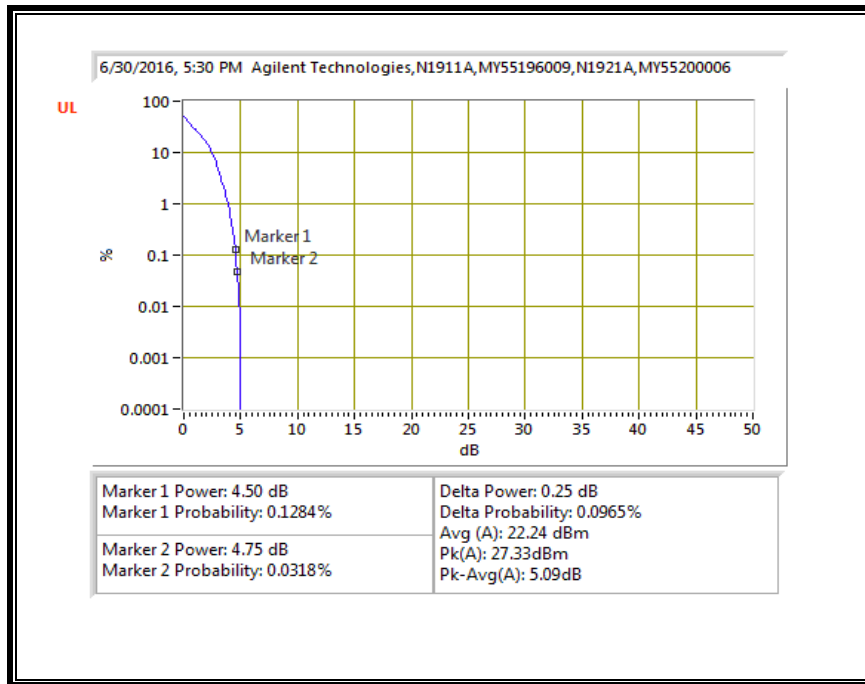
QPSK, (5.0 MHz BAND WIDTH)



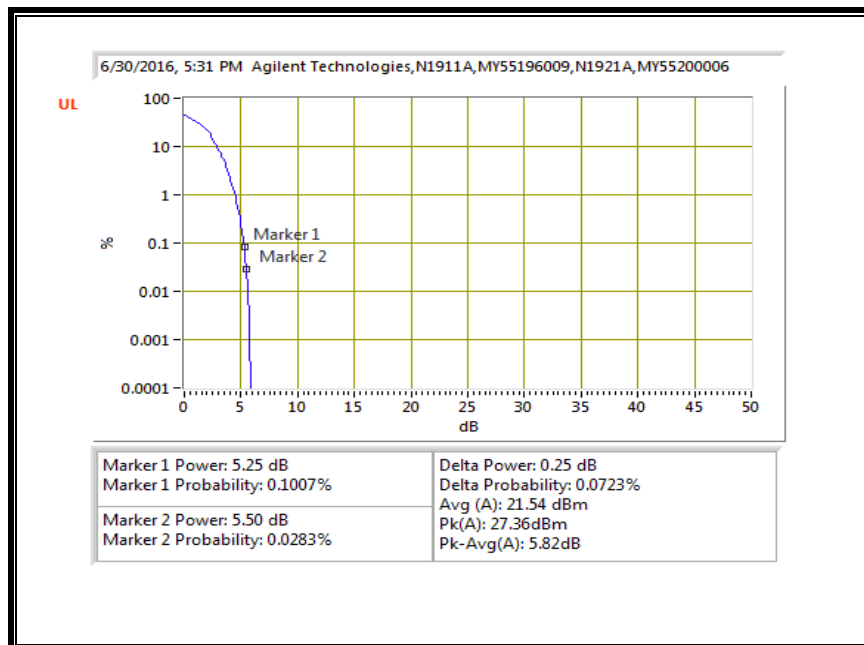
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

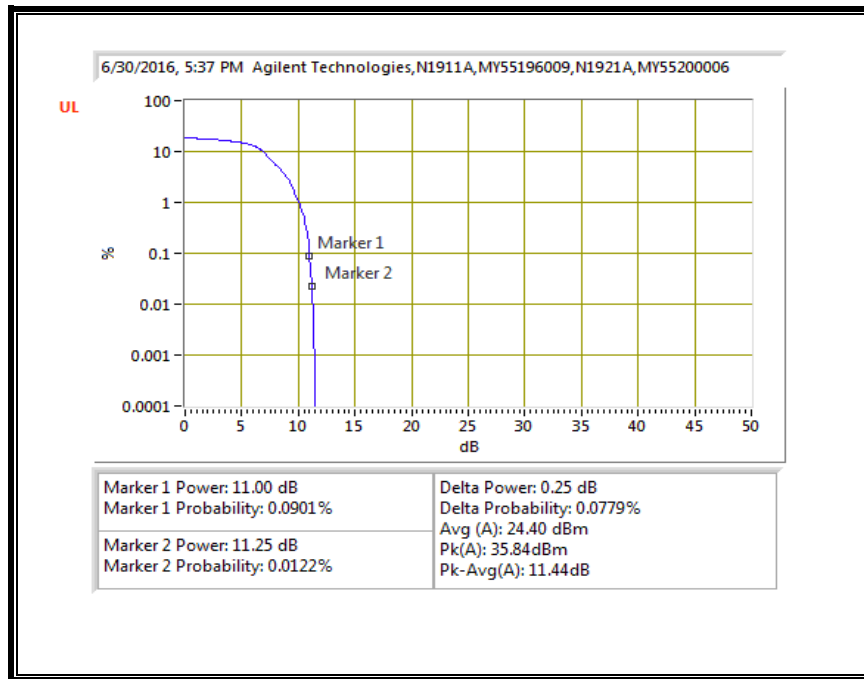


16QAM, (10.0 MHz BAND WIDTH)

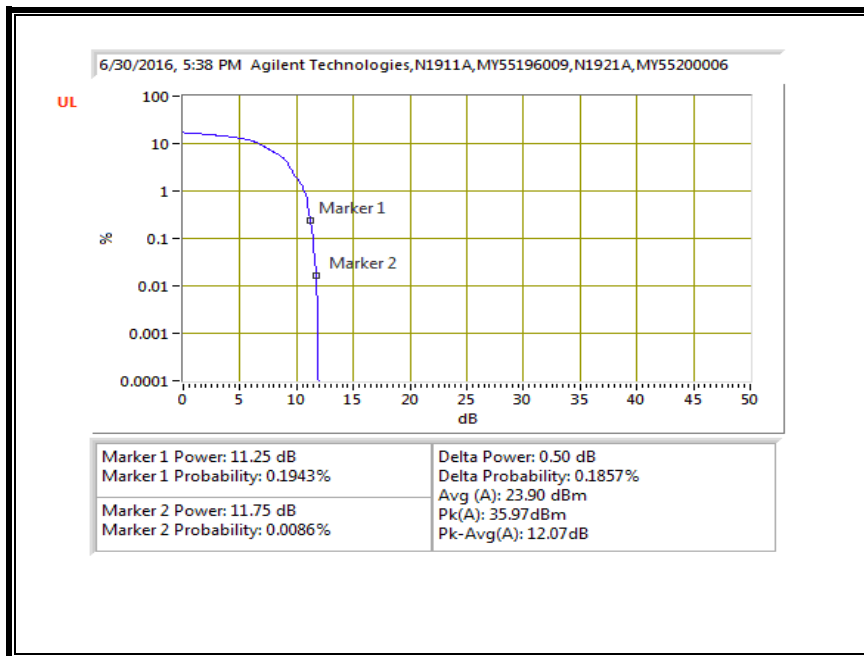


10.3.12. LTE BAND 41

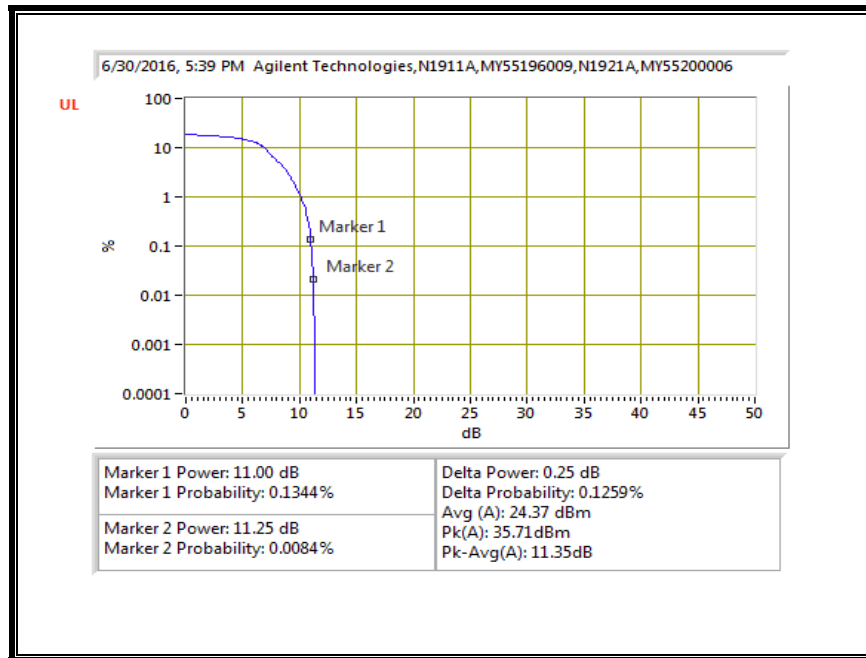
QPSK, (5.0 MHz BAND WIDTH)



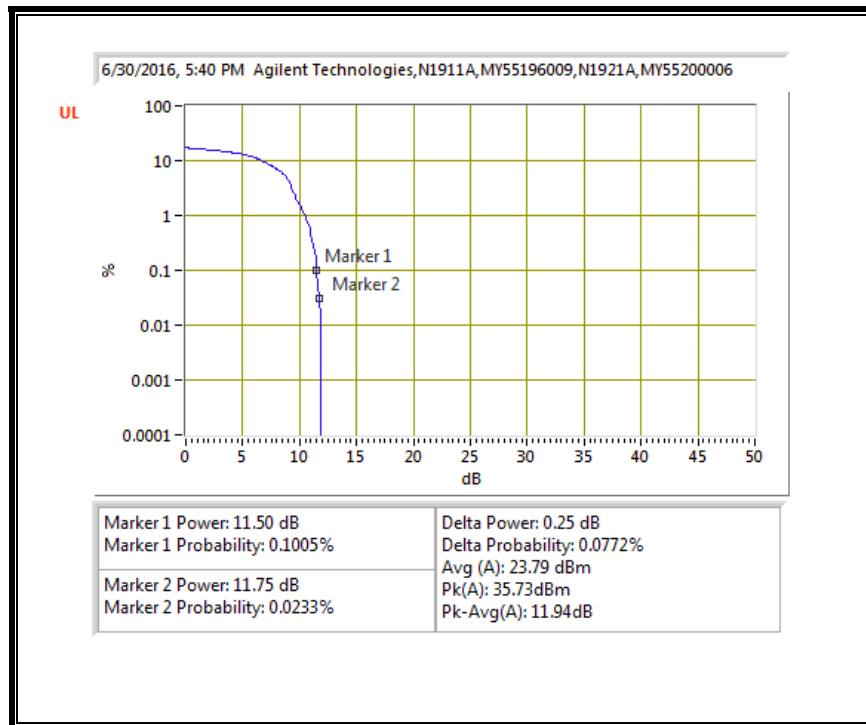
16QAM, (5.0 MHz BAND WIDTH)



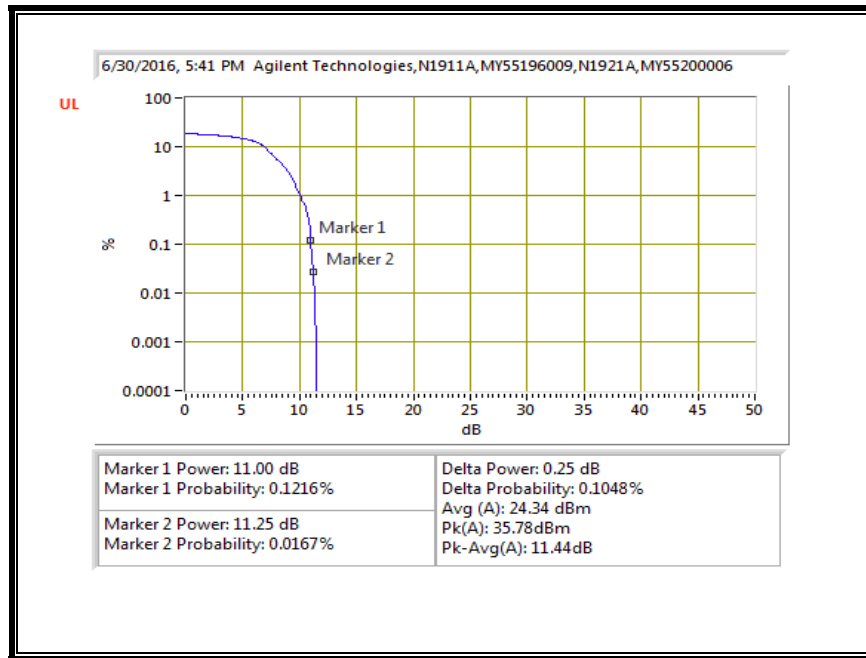
QPSK, (10.0 MHz BAND WIDTH)



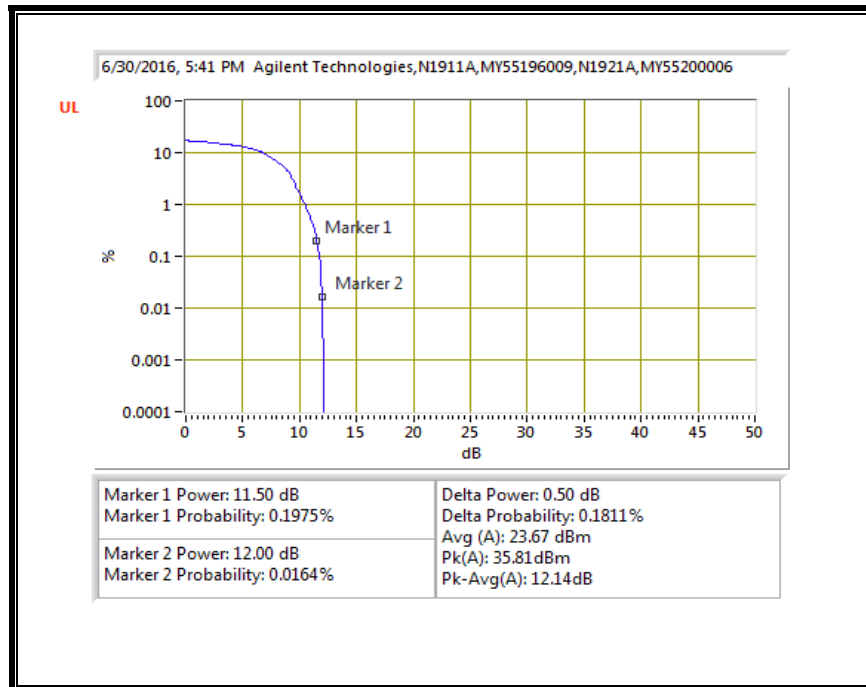
16QAM, (10.0 MHz BAND WIDTH)



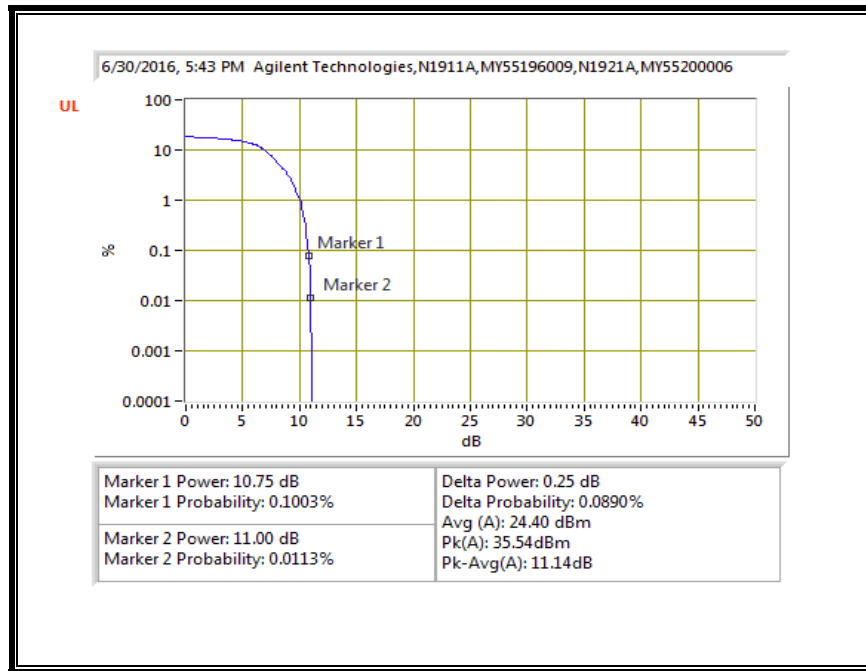
QPSK, (15.0 MHz BAND WIDTH)



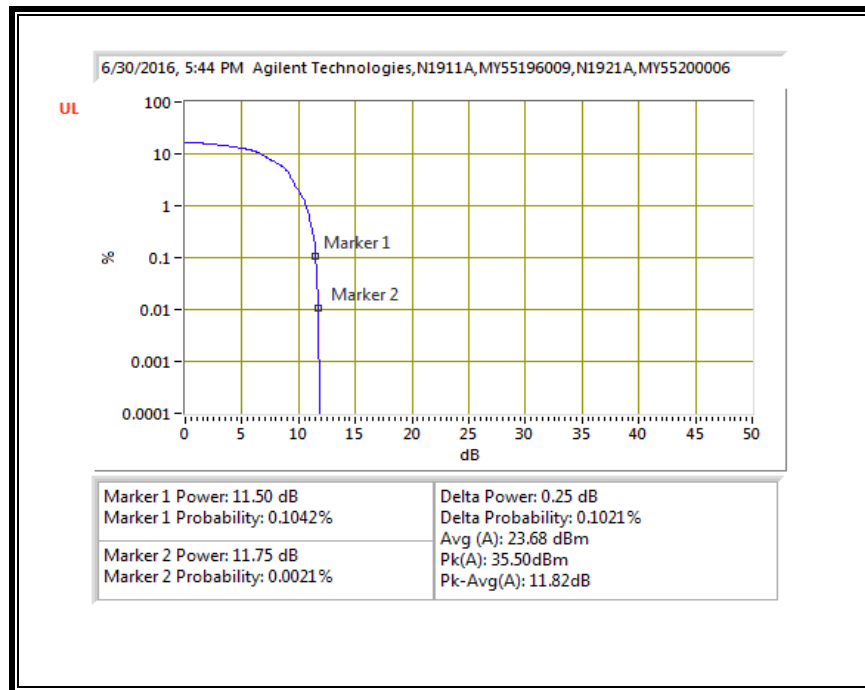
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)



16QAM, (20.0 MHz BAND WIDTH)



10.4. FIELD STRENGTH OF SPURIOUS RADIATION, LAT

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53 and §90.691

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 $43 + 10 \log_{10}(P)$ dB.

§90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10} (f/6.1)$ decibels or $50 + 10 \log_{10} (P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

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 $43 + 10 \log_{10}(p)$, dB; and
- b. for mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, dB at the channel edges and $55 + 10 \log_{10}(p)$ 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 #: 16U23328
Date: 05/05/16
Test Engineer: 30554
Configuration: EUT Only
Mode: LTE Band 2, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-65.0	H	3.0	-15.2	34.4	1.0	-48.6	-13.0	-35.6	
5.58	-62.2	H	3.0	-8.7	34.1	1.0	-41.8	-13.0	-28.8	
7.44	-61.2	H	3.0	-4.8	33.6	1.0	-37.4	-13.0	-24.4	
3.72	-63.2	V	3.0	-13.3	34.4	1.0	-46.7	-13.0	-33.7	
5.58	-63.9	V	3.0	-10.2	34.1	1.0	-43.3	-13.0	-30.3	
7.44	-62.1	V	3.0	-5.9	33.6	1.0	-38.5	-13.0	-25.5	
Mid Channel (1880MHz)										
3.76	-62.8	H	3.0	-12.8	34.4	1.0	-46.2	-13.0	-33.2	
5.64	-61.3	H	3.0	-7.7	34.1	1.0	-40.8	-13.0	-27.8	
7.52	-63.3	H	3.0	-6.8	33.5	1.0	-39.3	-13.0	-26.3	
3.76	-62.5	V	3.0	-12.4	34.4	1.0	-45.8	-13.0	-32.8	
5.64	-61.4	V	3.0	-7.6	34.1	1.0	-40.7	-13.0	-27.7	
7.52	-62.7	V	3.0	-6.4	33.5	1.0	-39.0	-13.0	-26.0	
High Channel (1900MHz)										
3.80	-62.4	H	3.0	-12.3	34.4	1.0	-45.7	-13.0	-32.7	
5.70	-63.5	H	3.0	-9.8	34.1	1.0	-42.9	-13.0	-29.9	
7.60	-64.1	H	3.0	-7.5	33.5	1.0	-40.0	-13.0	-27.0	
3.80	-62.1	V	3.0	-11.9	34.4	1.0	-45.3	-13.0	-32.3	
5.70	-61.9	V	3.0	-8.0	34.1	1.0	-41.1	-13.0	-28.1	
7.60	-62.9	V	3.0	-6.5	33.5	1.0	-39.0	-13.0	-26.0	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/05/16
Test Engineer: 30554
Configuration: EUT Only
Mode: LTE Band 2, 20MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-62.4	H	3.0	-12.6	34.4	1.0	-46.0	-13.0	-33.0	
5.58	-62.7	H	3.0	-9.2	34.1	1.0	-42.4	-13.0	-29.4	
7.44	-61.7	H	3.0	-5.3	33.6	1.0	-37.9	-13.0	-24.9	
3.72	-61.6	V	3.0	-11.6	34.4	1.0	-45.1	-13.0	-32.1	
5.58	-61.4	V	3.0	-7.7	34.1	1.0	-40.8	-13.0	-27.8	
7.44	-62.6	V	3.0	-6.4	33.6	1.0	-39.0	-13.0	-26.0	
Mid Channel (1880MHz)										
3.76	-62.1	H	3.0	-12.2	34.4	1.0	-45.6	-13.0	-32.6	
5.64	-63.3	H	3.0	-9.8	34.1	1.0	-42.9	-13.0	-29.9	
7.52	-61.2	H	3.0	-4.7	33.5	1.0	-37.3	-13.0	-24.3	
3.76	-62.9	V	3.0	-12.8	34.4	1.0	-46.2	-13.0	-33.2	
5.64	-62.5	V	3.0	-8.8	34.1	1.0	-41.9	-13.0	-28.9	
7.52	-62.4	V	3.0	-6.1	33.5	1.0	-38.7	-13.0	-25.7	
High Channel (1900MHz)										
3.80	-63.2	H	3.0	-13.0	34.4	1.0	-46.4	-13.0	-33.4	
5.70	-62.2	H	3.0	-8.5	34.1	1.0	-41.6	-13.0	-28.6	
7.60	-61.6	H	3.0	-5.0	33.5	1.0	-37.5	-13.0	-24.5	
3.80	-63.2	V	3.0	-13.0	34.4	1.0	-46.4	-13.0	-33.4	
5.70	-62.8	V	3.0	-9.0	34.1	1.0	-42.1	-13.0	-29.1	
7.60	-63.7	V	3.0	-7.3	33.5	1.0	-39.8	-13.0	-26.8	

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 #: 16U23328
Date: 05/05/16
Test Engineer: 30554
Configuration: EUT Only
Mode: LTE Band 4, 20MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
3.44	-62.2	H	3.0	-13.4	34.6	1.0	-47.0	-13.0	-34.0	
5.16	-63.2	H	3.0	-10.4	34.2	1.0	-43.6	-13.0	-30.6	
6.88	-61.8	H	3.0	-6.2	33.9	1.0	-39.2	-13.0	-26.2	
3.44	-62.6	V	3.0	-13.6	34.6	1.0	-47.2	-13.0	-34.2	
5.16	-62.3	V	3.0	-9.2	34.2	1.0	-42.4	-13.0	-29.4	
6.88	-62.4	V	3.0	-7.0	33.9	1.0	-39.9	-13.0	-26.9	
Mid Channel (1732.5MHz)										
3.47	-62.4	H	3.0	-13.5	34.6	1.0	-47.1	-13.0	-34.1	
5.20	-62.5	H	3.0	-9.6	34.2	1.0	-42.8	-13.0	-29.8	
6.93	-61.4	H	3.0	-5.7	33.9	1.0	-38.6	-13.0	-25.6	
3.47	-62.4	V	3.0	-13.3	34.6	1.0	-46.9	-13.0	-33.9	
5.20	-63.3	V	3.0	-10.2	34.2	1.0	-43.3	-13.0	-30.3	
6.93	-62.9	V	3.0	-7.4	33.9	1.0	-40.3	-13.0	-27.3	
High Channel (1745MHz)										
3.50	-63.2	H	3.0	-14.2	34.6	1.0	-47.8	-13.0	-34.8	
5.25	-64.6	H	3.0	-11.6	34.2	1.0	-44.8	-13.0	-31.8	
7.00	-61.4	H	3.0	-5.6	33.9	1.0	-38.5	-13.0	-25.5	
3.50	-62.8	H	3.0	-13.8	34.6	1.0	-47.4	-13.0	-34.4	
5.25	-62.4	H	3.0	-9.4	34.2	1.0	-42.6	-13.0	-29.6	
7.00	-63.1	V	3.0	-7.5	33.9	1.0	-40.5	-13.0	-27.5	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/05/16
Test Engineer: 30554
Configuration: EUT Only
Mode: LTE Band 4, 20MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
3.44	-62.1	H	3.0	-13.4	34.6	1.0	-46.9	-13.0	-33.9	
5.16	-63.2	H	3.0	-10.4	34.2	1.0	-43.6	-13.0	-30.6	
6.88	-62.4	H	3.0	-6.9	33.9	1.0	-39.8	-13.0	-26.8	
3.44	-63.3	V	3.0	-14.3	34.6	1.0	-47.9	-13.0	-34.9	
5.16	-63.2	V	3.0	-10.1	34.2	1.0	-43.3	-13.0	-30.3	
6.88	-62.8	V	3.0	-7.4	33.9	1.0	-40.3	-13.0	-27.3	
Mid Channel (1732.5MHz)										
3.47	-62.7	H	3.0	-13.8	34.6	1.0	-47.4	-13.0	-34.4	
5.20	-63.2	H	3.0	-10.3	34.2	1.0	-43.5	-13.0	-30.5	
6.93	-62.8	H	3.0	-7.1	33.9	1.0	-40.0	-13.0	-27.0	
3.47	-61.5	V	3.0	-12.5	34.6	1.0	-46.0	-13.0	-33.0	
5.20	-63.3	V	3.0	-10.1	34.2	1.0	-43.3	-13.0	-30.3	
6.93	-62.2	V	3.0	-6.7	33.9	1.0	-39.6	-13.0	-26.6	
High Channel (1745MHz)										
3.50	-62.4	H	3.0	-13.4	34.6	1.0	-46.9	-13.0	-33.9	
5.25	-61.9	H	3.0	-8.9	34.2	1.0	-42.1	-13.0	-29.1	
7.00	-61.5	H	3.0	-5.7	33.9	1.0	-38.6	-13.0	-25.6	
3.50	-62.2	V	3.0	-13.0	34.6	1.0	-46.6	-13.0	-33.6	
5.25	-62.7	V	3.0	-9.4	34.2	1.0	-42.6	-13.0	-29.6	
7.00	-63.2	V	3.0	-7.7	33.9	1.0	-40.6	-13.0	-27.6	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 5, 10MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
1.70	-66.2	H	3.0	-24.7	33.7	1.0	-57.4	-13.0	-44.4	
2.47	-64.3	H	3.0	-20.2	34.1	1.0	-53.3	-13.0	-40.3	
3.36	-62.8	H	3.0	-14.3	34.6	1.0	-48.0	-13.0	-35.0	
1.65	-67.2	V	3.0	-23.8	33.7	1.0	-56.5	-13.0	-43.5	
2.47	-64.7	V	3.0	-20.0	34.1	1.0	-53.1	-13.0	-40.1	
3.36	-62.9	V	3.0	-14.2	34.6	1.0	-47.8	-13.0	-34.8	
Mid Channel (836.5MHz)										
1.72	-66.5	H	3.0	-24.9	33.7	1.0	-57.5	-13.0	-44.5	
2.59	-63.9	H	3.0	-19.3	34.2	1.0	-52.5	-13.0	-39.5	
3.38	-64.0	H	3.0	-15.5	34.6	1.0	-49.1	-13.0	-36.1	
1.72	-66.2	V	3.0	-22.8	33.7	1.0	-55.4	-13.0	-42.4	
2.52	-64.1	V	3.0	-19.2	34.1	1.0	-52.3	-13.0	-39.3	
3.31	-63.6	V	3.0	-15.0	34.7	1.0	-48.7	-13.0	-35.7	
High Channel (844MHz)										
1.71	-65.6	H	3.0	-24.0	33.7	1.0	-56.7	-13.0	-43.7	
2.55	-63.2	H	3.0	-18.7	34.2	1.0	-51.9	-13.0	-38.9	
3.36	-63.1	H	3.0	-14.6	34.6	1.0	-48.3	-13.0	-35.3	
1.72	-65.7	V	3.0	-22.3	33.7	1.0	-54.9	-13.0	-41.9	
2.51	-63.2	V	3.0	-18.4	34.1	1.0	-51.5	-13.0	-38.5	
3.39	-62.9	V	3.0	-14.1	34.6	1.0	-47.7	-13.0	-34.7	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 5, 10MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-66.8	H	3.0	-25.2	33.7	1.0	-57.9	-13.0	-44.9	
2.47	-64.9	H	3.0	-20.8	34.1	1.0	-53.9	-13.0	-40.9	
3.36	-63.9	H	3.0	-15.4	34.6	1.0	-49.1	-13.0	-36.1	
1.66	-66.7	V	3.0	-23.3	33.7	1.0	-56.0	-13.0	-43.0	
2.49	-64.6	V	3.0	-19.8	34.1	1.0	-52.9	-13.0	-39.9	
3.32	-63.6	V	3.0	-15.0	34.6	1.0	-48.6	-13.0	-35.6	
Mid Channel (836.5MHz)										
1.67	-66.6	H	3.0	-24.8	33.7	1.0	-57.5	-13.0	-44.5	
2.51	-63.8	H	3.0	-19.2	34.1	1.0	-52.3	-13.0	-39.3	
3.35	-63.5	H	3.0	-15.0	34.6	1.0	-48.6	-13.0	-35.6	
1.67	-66.2	V	3.0	-22.6	33.7	1.0	-55.3	-13.0	-42.3	
2.51	-63.2	V	3.0	-18.3	34.1	1.0	-51.4	-13.0	-38.4	
3.35	-64.5	V	3.0	-15.9	34.6	1.0	-49.6	-13.0	-36.6	
High Channel (844MHz)										
1.69	-66.0	H	3.0	-24.3	33.7	1.0	-57.0	-13.0	-44.0	
2.53	-64.4	H	3.0	-20.0	34.1	1.0	-53.1	-13.0	-40.1	
3.38	-62.7	H	3.0	-14.2	34.6	1.0	-47.8	-13.0	-34.8	
1.69	-66.7	V	3.0	-23.2	33.7	1.0	-55.9	-13.0	-42.9	
2.53	-63.1	V	3.0	-18.2	34.1	1.0	-51.4	-13.0	-38.4	
3.38	-63.9	V	3.0	-15.1	34.6	1.0	-48.7	-13.0	-35.7	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 7, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.01	-64.1	H	3.0	-11.6	34.2	1.0	-44.8	-25.0	-19.8	
7.62	-67.1	H	3.0	-10.5	33.4	1.0	-42.9	-25.0	-17.9	
10.11	-67.7	H	3.0	-7.9	31.7	1.0	-38.6	-25.0	-13.6	
5.04	-64.2	V	3.0	-11.4	34.2	1.0	-44.5	-25.0	-19.5	
7.61	-67.5	V	3.0	-11.1	33.5	1.0	-43.6	-25.0	-18.6	
10.14	-68.0	V	3.0	-8.2	31.7	1.0	-38.9	-25.0	-13.9	
Mid Channel (2535MHz)										
5.00	-64.4	H	3.0	-11.8	34.2	1.0	-45.0	-25.0	-20.0	
7.69	-67.0	H	3.0	-10.3	33.4	1.0	-42.7	-25.0	-17.7	
10.15	-67.3	H	3.0	-7.4	31.7	1.0	-38.1	-25.0	-13.1	
5.04	-64.0	V	3.0	-11.1	34.2	1.0	-44.3	-25.0	-19.3	
7.70	-67.2	V	3.0	-10.7	33.4	1.0	-43.1	-25.0	-18.1	
10.14	-67.1	V	3.0	-7.3	31.7	1.0	-38.0	-25.0	-13.0	
High Channel (2560MHz)										
5.08	-64.6	H	3.0	-11.9	34.2	1.0	-45.1	-25.0	-20.1	
7.67	-66.9	H	3.0	-10.2	33.4	1.0	-42.6	-25.0	-17.6	
10.22	-67.1	H	3.0	-7.2	31.8	1.0	-38.0	-25.0	-13.0	
5.07	-65.0	V	3.0	-12.1	34.2	1.0	-45.3	-25.0	-20.3	
7.63	-66.6	V	3.0	-10.2	33.4	1.0	-42.6	-25.0	-17.6	
10.19	-66.9	V	3.0	-7.0	31.8	1.0	-37.8	-25.0	-12.8	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 7, 20MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
4.96	-65.2	H	3.0	-12.7	34.2	1.0	-45.9	-25.0	-20.9	
7.59	-67.3	H	3.0	-10.8	33.5	1.0	-43.2	-25.0	-18.2	
10.11	-68.0	H	3.0	-8.1	31.7	1.0	-38.9	-25.0	-13.9	
5.01	-64.5	V	3.0	-11.7	34.2	1.0	-44.9	-25.0	-19.9	
7.61	-66.7	V	3.0	-10.3	33.5	1.0	-42.7	-25.0	-17.7	
10.10	-68.1	V	3.0	-8.2	31.7	1.0	-38.9	-25.0	-13.9	
Mid Channel (2535MHz)										
5.09	-64.3	H	3.0	-11.6	34.2	1.0	-44.8	-25.0	-19.8	
7.68	-66.7	H	3.0	-10.0	33.4	1.0	-42.4	-25.0	-17.4	
10.18	-68.5	H	3.0	-8.5	31.8	1.0	-39.3	-25.0	-14.3	
5.12	-65.0	V	3.0	-12.0	34.2	1.0	-45.1	-25.0	-20.1	
7.63	-66.4	V	3.0	-9.9	33.4	1.0	-42.4	-25.0	-17.4	
10.19	-66.9	V	3.0	-7.0	31.8	1.0	-37.8	-25.0	-12.8	
High Channel (2560MHz)										
5.04	-65.1	H	3.0	-12.5	34.2	1.0	-45.7	-25.0	-20.7	
7.78	-67.0	H	3.0	-10.2	33.3	1.0	-42.5	-25.0	-17.5	
10.30	-67.0	H	3.0	-7.0	31.9	1.0	-37.9	-25.0	-12.9	
5.03	-65.1	V	3.0	-12.3	34.2	1.0	-45.4	-25.0	-20.4	
7.66	-67.0	V	3.0	-10.5	33.4	1.0	-42.9	-25.0	-17.9	
10.19	-67.5	V	3.0	-7.6	31.8	1.0	-38.4	-25.0	-13.4	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 12, 10MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
1.44	-65.5	H	3.0	-25.6	34.0	1.0	-58.6	-13.0	-45.6	
2.06	-65.3	H	3.0	-21.7	33.6	1.0	-54.3	-13.0	-41.3	
2.83	-65.7	H	3.0	-19.6	34.6	1.0	-53.1	-13.0	-40.1	
1.38	-65.7	V	3.0	-23.6	34.1	1.0	-56.7	-13.0	-43.7	
2.20	-66.1	V	3.0	-22.0	33.8	1.0	-54.8	-13.0	-41.8	
2.72	-65.6	V	3.0	-19.6	34.4	1.0	-53.1	-13.0	-40.1	
Mid Channel (707.5MHz)										
1.48	-65.3	H	3.0	-25.2	33.9	1.0	-58.1	-13.0	-45.1	
2.12	-66.0	H	3.0	-22.4	33.7	1.0	-55.0	-13.0	-42.0	
2.85	-65.7	H	3.0	-19.5	34.6	1.0	-53.1	-13.0	-40.1	
1.48	-65.1	V	3.0	-22.0	33.9	1.0	-54.8	-13.0	-41.8	
2.12	-65.3	V	3.0	-21.4	33.7	1.0	-54.1	-13.0	-41.1	
2.80	-66.2	V	3.0	-19.8	34.5	1.0	-53.3	-13.0	-40.3	
High Channel (711MHz)										
1.32	-65.3	H	3.0	-26.0	34.2	1.0	-59.2	-13.0	-46.2	
2.17	-66.0	H	3.0	-22.3	33.8	1.0	-55.0	-13.0	-42.0	
2.91	-65.8	H	3.0	-19.2	34.7	1.0	-52.9	-13.0	-39.9	
1.48	-65.7	V	3.0	-22.6	33.9	1.0	-55.4	-13.0	-42.4	
2.05	-65.7	V	3.0	-22.0	33.6	1.0	-54.6	-13.0	-41.6	
2.83	-65.4	V	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 12, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.35	-65.5	H	3.0	-26.1	34.2	1.0	-59.3	-13.0	-46.3	
2.07	-65.5	H	3.0	-21.9	33.6	1.0	-54.5	-13.0	-41.5	
2.82	-65.4	H	3.0	-19.4	34.5	1.0	-53.0	-13.0	-40.0	
1.43	-65.3	V	3.0	-22.6	34.0	1.0	-55.6	-13.0	-42.6	
2.20	-65.8	V	3.0	-21.7	33.8	1.0	-54.5	-13.0	-41.5	
2.88	-66.0	V	3.0	-19.2	34.6	1.0	-52.8	-13.0	-39.8	
Mid Channel (707.5MHz)										
1.34	-64.9	H	3.0	-25.5	34.2	1.0	-58.7	-13.0	-45.7	
2.17	-65.3	H	3.0	-21.6	33.8	1.0	-54.4	-13.0	-41.4	
2.91	-65.2	H	3.0	-18.6	34.7	1.0	-52.3	-13.0	-39.3	
1.34	-65.3	V	3.0	-23.5	34.2	1.0	-56.6	-13.0	-43.6	
2.17	-65.5	V	3.0	-21.5	33.8	1.0	-54.2	-13.0	-41.2	
2.92	-65.7	V	3.0	-18.6	34.7	1.0	-52.3	-13.0	-39.3	
High Channel (711MHz)										
1.46	-65.8	H	3.0	-25.8	33.9	1.0	-58.7	-13.0	-45.7	
2.21	-65.7	H	3.0	-21.9	33.8	1.0	-54.8	-13.0	-41.8	
2.93	-65.9	H	3.0	-19.2	34.7	1.0	-52.9	-13.0	-39.9	
1.44	-66.0	V	3.0	-23.2	34.0	1.0	-56.2	-13.0	-43.2	
2.17	-66.0	V	3.0	-21.9	33.8	1.0	-54.7	-13.0	-41.7	
2.84	-65.8	V	3.0	-19.2	34.6	1.0	-52.8	-13.0	-39.8	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 13, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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	-65.2	H	3.0	-24.6	33.8	1.0	-57.4	-40.0	-17.4	
2.25	-66.2	H	3.0	-22.4	33.9	1.0	-55.3	-13.0	-42.3	
3.19	-65.1	H	3.0	-17.2	34.7	1.0	-51.0	-13.0	-38.0	
1.56	-65.6	V	3.0	-22.2	33.8	1.0	-55.0	-40.0	-15.0	
2.42	-63.0	V	3.0	-18.3	34.2	1.0	-51.5	-13.0	-38.5	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 13, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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	-65.6	H	3.0	-25.0	33.8	1.0	-57.8	-40.0	-17.8	
2.35	-63.4	H	3.0	-19.5	34.1	1.0	-52.6	-13.0	-39.6	
3.22	-62.9	H	3.0	-15.0	34.7	1.0	-48.7	-13.0	-35.7	
1.56	-65.2	V	3.0	-21.9	33.8	1.0	-54.7	-40.0	-14.7	
2.28	-64.0	V	3.0	-19.7	34.0	1.0	-52.6	-13.0	-39.6	
3.22	-65.0	V	3.0	-16.8	34.7	1.0	-50.5	-13.0	-37.5	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 17, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.38	-66.2	H	3.0	-26.6	34.1	1.0	-59.6	-13.0	-46.6	
2.12	-66.1	H	3.0	-22.4	33.7	1.0	-55.1	-13.0	-42.1	
2.82	-65.6	H	3.0	-19.6	34.6	1.0	-53.1	-13.0	-40.1	
1.47	-65.5	V	3.0	-22.4	33.9	1.0	-55.3	-13.0	-42.3	
2.21	-66.0	V	3.0	-21.9	33.8	1.0	-54.7	-13.0	-41.7	
2.92	-65.5	V	3.0	-18.5	34.7	1.0	-52.2	-13.0	-39.2	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 17, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.39	-65.3	H	3.0	-25.6	34.1	1.0	-58.7	-13.0	-45.7	
2.04	-65.8	H	3.0	-22.2	33.5	1.0	-54.8	-13.0	-41.8	
2.85	-66.2	H	3.0	-19.9	34.6	1.0	-53.5	-13.0	-40.5	
1.43	-65.7	V	3.0	-23.1	34.0	1.0	-56.0	-13.0	-43.0	
2.19	-65.0	V	3.0	-20.9	33.8	1.0	-53.7	-13.0	-40.7	
2.76	-66.1	V	3.0	-19.9	34.5	1.0	-53.4	-13.0	-40.4	

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 #: 16U23328
Date: 05/05/16
Test Engineer: 30554
Configuration: EUT only
Mode: LTE Band 25, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-63.5	H	3.0	-13.6	34.4	1.0	-47.1	-13.0	-34.1	
5.58	-64.4	H	3.0	-10.9	34.1	1.0	-44.0	-13.0	-31.0	
7.44	-64.7	H	3.0	-8.3	33.6	1.0	-40.9	-13.0	-27.9	
3.72	-63.4	V	3.0	-13.5	34.4	1.0	-46.9	-13.0	-33.9	
5.58	-64.3	V	3.0	-10.7	34.1	1.0	-43.8	-13.0	-30.8	
7.44	-64.7	V	3.0	-8.5	33.6	1.0	-41.1	-13.0	-28.1	
Mid Channel (1882.5MHz)										
3.77	-63.9	H	3.0	-13.9	34.4	1.0	-47.3	-13.0	-34.3	
5.65	-64.0	H	3.0	-10.4	34.1	1.0	-43.5	-13.0	-30.5	
7.53	-64.5	H	3.0	-8.1	33.5	1.0	-40.6	-13.0	-27.6	
3.77	-63.6	V	3.0	-13.5	34.4	1.0	-46.9	-13.0	-33.9	
5.65	-64.8	V	3.0	-11.0	34.1	1.0	-44.1	-13.0	-31.1	
7.53	-65.3	V	3.0	-9.0	33.5	1.0	-41.5	-13.0	-28.5	
High Channel (1905MHz)										
3.81	-63.9	H	3.0	-13.7	34.4	1.0	-47.1	-13.0	-34.1	
5.72	-64.2	H	3.0	-10.5	34.1	1.0	-43.6	-13.0	-30.6	
7.62	-65.5	H	3.0	-8.9	33.4	1.0	-41.3	-13.0	-28.3	
3.81	-63.4	V	3.0	-13.1	34.4	1.0	-46.5	-13.0	-33.5	
5.72	-64.2	V	3.0	-10.4	34.1	1.0	-43.5	-13.0	-30.5	
7.62	-65.2	V	3.0	-8.8	33.4	1.0	-41.2	-13.0	-28.2	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/05/16
Test Engineer: 30554
Configuration: EUT only
Mode: LTE Band 25, 20MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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	-62.3	H	3.0	-12.5	34.4	1.0	-45.9	-13.0	-32.9	
5.58	-61.8	H	3.0	-8.3	34.1	1.0	-41.4	-13.0	-28.4	
7.44	-63.4	H	3.0	-7.1	33.6	1.0	-39.6	-13.0	-26.6	
3.72	-62.9	V	3.0	-12.9	34.4	1.0	-46.4	-13.0	-33.4	
5.58	-62.5	V	3.0	-8.8	34.1	1.0	-41.9	-13.0	-28.9	
7.44	-63.4	V	3.0	-7.3	33.6	1.0	-39.8	-13.0	-26.8	
Mid Channel (1882.5MHz)										
3.77	-62.2	H	3.0	-12.2	34.4	1.0	-45.6	-13.0	-32.6	
5.65	-62.4	H	3.0	-8.8	34.1	1.0	-41.9	-13.0	-28.9	
7.53	-63.2	H	3.0	-6.7	33.5	1.0	-39.2	-13.0	-26.2	
3.77	-64.9	V	3.0	-14.8	34.4	1.0	-48.2	-13.0	-35.2	
5.65	-63.2	V	3.0	-9.5	34.1	1.0	-42.6	-13.0	-29.6	
7.53	-62.8	V	3.0	-6.5	33.5	1.0	-39.0	-13.0	-26.0	
High Channel (1905MHz)										
3.81	-61.8	H	3.0	-11.6	34.4	1.0	-45.0	-13.0	-32.0	
5.72	-61.6	H	3.0	-7.9	34.1	1.0	-41.0	-13.0	-28.0	
7.62	-62.6	H	3.0	-6.0	33.4	1.0	-38.4	-13.0	-25.4	
3.81	-63.3	V	3.0	-13.0	34.4	1.0	-46.4	-13.0	-33.4	
5.72	-61.6	V	3.0	-7.7	34.1	1.0	-40.8	-13.0	-27.8	
7.62	-61.2	V	3.0	-4.8	33.4	1.0	-37.2	-13.0	-24.2	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.58	-66.0	H	3.0	-25.3	33.8	1.0	-58.1	-13.0	-45.1	
2.54	-65.8	H	3.0	-21.4	34.1	1.0	-54.6	-13.0	-41.6	
3.22	-62.9	H	3.0	-15.0	34.7	1.0	-48.7	-13.0	-35.7	
1.63	-63.3	V	3.0	-19.9	33.7	1.0	-52.6	-13.0	-39.6	
2.37	-64.2	V	3.0	-19.6	34.1	1.0	-52.7	-13.0	-39.7	
3.29	-63.5	V	3.0	-15.1	34.7	1.0	-48.8	-13.0	-35.8	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.57	-65.0	H	3.0	-24.4	33.8	1.0	-57.2	-13.0	-44.2	
2.36	-65.5	H	3.0	-21.6	34.1	1.0	-54.7	-13.0	-41.7	
3.22	-65.4	H	3.0	-17.5	34.7	1.0	-51.2	-13.0	-38.2	
1.62	-65.3	V	3.0	-21.9	33.7	1.0	-54.7	-13.0	-41.7	
2.51	-65.1	V	3.0	-20.2	34.1	1.0	-53.3	-13.0	-40.3	
3.21	-65.5	V	3.0	-17.3	34.7	1.0	-51.0	-13.0	-38.0	

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 27, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819.0MHz)										
1.61	-65.8	H	3.0	-24.9	33.7	1.0	-57.6	-13.0	-44.6	
2.35	-63.6	H	3.0	-19.7	34.1	1.0	-52.8	-13.0	-39.8	
3.23	-62.8	H	3.0	-14.8	34.7	1.0	-48.5	-13.0	-35.5	
1.71	-65.1	V	3.0	-21.7	33.7	1.0	-54.3	-13.0	-41.3	
2.49	-64.2	V	3.0	-19.5	34.1	1.0	-52.5	-13.0	-39.5	
3.21	-63.4	V	3.0	-15.2	34.7	1.0	-48.9	-13.0	-35.9	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 27, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819.0MHz)										
1.71	-63.9	H	3.0	-22.3	33.7	1.0	-55.0	-13.0	-42.0	
2.48	-64.0	H	3.0	-19.9	34.1	1.0	-53.0	-13.0	-40.0	
3.21	-64.2	H	3.0	-16.3	34.7	1.0	-50.0	-13.0	-37.0	
1.73	-64.4	V	3.0	-21.0	33.7	1.0	-53.6	-13.0	-40.6	
2.43	-64.2	V	3.0	-19.5	34.2	1.0	-52.6	-13.0	-39.6	
3.21	-64.3	V	3.0	-16.1	34.7	1.0	-49.8	-13.0	-36.8	

Rev. 05.21.15

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 30, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
4.71	-65.6	H	3.0	-11.6	38.0	1.0	-48.6	-40.0	-8.6	
6.98	-67.1	H	3.0	-8.4	36.4	1.0	-43.8	-40.0	-3.8	
9.25	-70.2	H	3.0	-8.6	34.9	1.0	-42.5	-40.0	-2.5	
4.71	-65.3	V	3.0	-11.4	38.0	1.0	-48.4	-40.0	-8.4	
6.90	-67.2	V	3.0	-7.8	36.5	1.0	-43.3	-40.0	-3.3	
9.25	-70.3	V	3.0	-8.5	34.9	1.0	-42.4	-40.0	-2.4	

Rev. 05.21.15

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: 16U23328 Date: 05/06/16 Test Engineer: 43575 Configuration: EUT Only Mode: LTE Band 30, 10MHz 16QAM										
Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		Filter		Limit				
3m Chamber F		3m Chamber F		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)										
4.58	-65.7	H	3.0	-11.8	38.0	1.0	-48.8	-40.0	-8.8	
7.00	-67.4	H	3.0	-8.7	36.4	1.0	-44.1	-40.0	-4.1	
9.32	-70.3	H	3.0	-8.7	34.9	1.0	-42.6	-40.0	-2.6	
4.64	-66.5	V	3.0	-12.7	38.0	1.0	-49.7	-40.0	-9.7	
6.91	-67.7	V	3.0	-8.3	36.5	1.0	-43.8	-40.0	-3.8	
9.33	-70.4	V	3.0	-8.6	34.9	1.0	-42.4	-40.0	-2.4	
Rev. 05.21.15										

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 #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 41, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.04	-64.9	H	3.0	-12.3	34.2	1.0	-45.5	-25.0	-20.5	
7.47	-67.1	H	3.0	-10.7	33.6	1.0	-43.2	-25.0	-18.2	
10.06	-68.4	H	3.0	-8.6	31.7	1.0	-39.2	-25.0	-14.2	
5.01	-64.6	V	3.0	-11.9	34.2	1.0	-45.0	-25.0	-20.0	
7.48	-67.3	V	3.0	-11.1	33.5	1.0	-43.6	-25.0	-18.6	
10.01	-67.7	V	3.0	-8.0	31.6	1.0	-38.6	-25.0	-13.6	
Mid Channel (2593MHz)										
5.10	-65.2	H	3.0	-12.5	34.2	1.0	-45.7	-25.0	-20.7	
7.69	-66.5	H	3.0	-9.8	33.4	1.0	-42.2	-25.0	-17.2	
10.32	-67.9	H	3.0	-7.9	31.9	1.0	-38.8	-25.0	-13.8	
5.20	-65.5	V	3.0	-12.3	34.2	1.0	-45.5	-25.0	-20.5	
7.69	-66.4	V	3.0	-9.9	33.4	1.0	-42.3	-25.0	-17.3	
10.34	-67.5	V	3.0	-7.5	31.9	1.0	-38.4	-25.0	-13.4	
High Channel (2680MHz)										
5.41	-66.6	H	3.0	-13.4	34.1	1.0	-46.5	-25.0	-21.5	
8.13	-67.2	H	3.0	-9.9	33.1	1.0	-42.0	-25.0	-17.0	
10.71	-68.3	H	3.0	-8.0	32.2	1.0	-39.2	-25.0	-14.2	
5.29	-65.9	V	3.0	-12.6	34.2	1.0	-45.8	-25.0	-20.8	
8.07	-66.8	V	3.0	-9.7	33.1	1.0	-41.8	-25.0	-16.8	
10.79	-67.8	V	3.0	-7.3	32.3	1.0	-38.6	-25.0	-13.6	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:

Project #: 16U23328

Date: 05/06/16

Test Engineer: 43575

Configuration: EUT Only

Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.01	-64.6	H	3.0	-12.1	34.2	1.0	-45.3	-25.0	-20.3	
7.59	-67.7	H	3.0	-11.2	33.5	1.0	-43.6	-25.0	-18.6	
10.07	-68.4	H	3.0	-8.5	31.7	1.0	-39.2	-25.0	-14.2	
5.02	-64.4	V	3.0	-11.6	34.2	1.0	-44.8	-25.0	-19.8	
7.55	-66.8	V	3.0	-10.5	33.5	1.0	-43.0	-25.0	-18.0	
10.03	-68.4	V	3.0	-8.6	31.6	1.0	-39.3	-25.0	-14.3	
Mid Channel (2593MHz)										
5.09	-65.3	H	3.0	-12.6	34.2	1.0	-45.8	-25.0	-20.8	
7.76	-66.6	H	3.0	-9.8	33.3	1.0	-42.2	-25.0	-17.2	
10.45	-67.8	H	3.0	-7.7	32.0	1.0	-38.7	-25.0	-13.7	
5.13	-66.1	V	3.0	-13.1	34.2	1.0	-46.3	-25.0	-21.3	
7.79	-66.2	V	3.0	-9.5	33.3	1.0	-41.9	-25.0	-16.9	
10.31	-67.3	V	3.0	-7.3	31.9	1.0	-38.1	-25.0	-13.1	
High Channel (2680MHz)										
5.29	-65.6	H	3.0	-12.6	34.2	1.0	-45.8	-25.0	-20.8	
8.05	-66.8	H	3.0	-9.6	33.1	1.0	-41.8	-25.0	-16.8	
10.78	-68.5	H	3.0	-8.2	32.3	1.0	-39.4	-25.0	-14.4	
5.30	-66.3	V	3.0	-13.0	34.2	1.0	-46.2	-25.0	-21.2	
8.06	-66.7	V	3.0	-9.6	33.1	1.0	-41.8	-25.0	-16.8	
10.76	-67.8	V	3.0	-7.4	32.2	1.0	-38.7	-25.0	-13.7	

Rev. 05.21.15

10.5. FIELD STRENGTH OF SPURIOUS RADIATION, UAT

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 #: 16U23328
Date: 05/09/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 2, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-67.8	H	3.0	-18.0	34.4	1.0	-51.4	-13.0	-38.4	
5.58	-68.4	H	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
7.44	-71.8	H	3.0	-15.4	33.6	1.0	-48.0	-13.0	-35.0	
3.72	-67.1	V	3.0	-17.2	34.4	1.0	-50.6	-13.0	-37.6	
5.58	-68.5	V	3.0	-14.8	34.1	1.0	-48.0	-13.0	-35.0	
7.44	-72.3	V	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	
Mid Channel (1880MHz)										
3.76	-67.4	H	3.0	-17.4	34.4	1.0	-50.8	-13.0	-37.8	
5.64	-67.6	H	3.0	-14.0	34.1	1.0	-47.1	-13.0	-34.1	
7.52	-71.2	H	3.0	-14.7	33.5	1.0	-47.2	-13.0	-34.2	
3.76	-67.7	V	3.0	-17.6	34.4	1.0	-51.0	-13.0	-38.0	
5.64	-67.9	V	3.0	-14.2	34.1	1.0	-47.3	-13.0	-34.3	
7.52	-70.5	V	3.0	-14.2	33.5	1.0	-46.7	-13.0	-33.7	
High Channel (1900MHz)										
3.80	-66.7	H	3.0	-16.6	34.4	1.0	-50.0	-13.0	-37.0	
5.70	-67.7	H	3.0	-14.0	34.1	1.0	-47.1	-13.0	-34.1	
7.60	-70.4	H	3.0	-13.8	33.5	1.0	-46.3	-13.0	-33.3	
3.80	-67.6	V	3.0	-17.4	34.4	1.0	-50.8	-13.0	-37.8	
5.70	-69.0	V	3.0	-15.2	34.1	1.0	-48.3	-13.0	-35.3	
7.60	-71.6	V	3.0	-15.2	33.5	1.0	-47.7	-13.0	-34.7	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/09/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 2, 20MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-67.7	H	3.0	-17.9	34.4	1.0	-51.3	-13.0	-38.3	
5.58	-69.4	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.44	-70.7	H	3.0	-14.3	33.6	1.0	-46.9	-13.0	-33.9	
3.72	-65.7	V	3.0	-15.8	34.4	1.0	-49.2	-13.0	-36.2	
5.58	-68.7	V	3.0	-15.0	34.1	1.0	-48.2	-13.0	-35.2	
7.44	-70.9	V	3.0	-14.7	33.6	1.0	-47.3	-13.0	-34.3	
Mid Channel (1880MHz)										
3.76	-66.6	H	3.0	-16.6	34.4	1.0	-50.0	-13.0	-37.0	
5.64	-68.5	H	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
7.52	-70.9	H	3.0	-14.4	33.5	1.0	-46.9	-13.0	-33.9	
3.76	-67.4	V	3.0	-17.3	34.4	1.0	-50.7	-13.0	-37.7	
5.64	-69.4	V	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
7.52	-70.1	V	3.0	-13.8	33.5	1.0	-46.3	-13.0	-33.3	
High Channel (1900MHz)										
3.80	-66.9	H	3.0	-16.8	34.4	1.0	-50.2	-13.0	-37.2	
5.70	-68.1	H	3.0	-14.4	34.1	1.0	-47.5	-13.0	-34.5	
7.60	-70.8	H	3.0	-14.2	33.5	1.0	-46.7	-13.0	-33.7	
3.80	-67.4	V	3.0	-17.2	34.4	1.0	-50.6	-13.0	-37.6	
5.70	-69.2	V	3.0	-15.4	34.1	1.0	-48.5	-13.0	-35.5	
7.60	-70.7	V	3.0	-14.3	33.5	1.0	-46.8	-13.0	-33.8	

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 #: 16U23328
Date: 05/09/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 4, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
3.44	-67.2	H	3.0	-18.4	34.6	1.0	-52.0	-13.0	-39.0	
5.16	-68.5	H	3.0	-15.7	34.2	1.0	-48.9	-13.0	-35.9	
6.88	-70.5	H	3.0	-14.9	33.9	1.0	-47.8	-13.0	-34.8	
3.44	-66.2	V	3.0	-17.2	34.6	1.0	-50.8	-13.0	-37.8	
5.16	-68.7	V	3.0	-15.6	34.2	1.0	-48.8	-13.0	-35.8	
6.88	-71.1	V	3.0	-15.7	33.9	1.0	-48.7	-13.0	-35.7	
Mid Channel (1732.5MHz)										
3.47	-66.8	H	3.0	-17.9	34.6	1.0	-51.5	-13.0	-38.5	
5.20	-68.5	H	3.0	-15.6	34.2	1.0	-48.8	-13.0	-35.8	
6.93	-70.7	H	3.0	-15.0	33.9	1.0	-48.0	-13.0	-35.0	
3.47	-66.7	V	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
5.20	-68.6	V	3.0	-15.4	34.2	1.0	-48.6	-13.0	-35.6	
6.93	-70.5	V	3.0	-15.0	33.9	1.0	-48.0	-13.0	-35.0	
High Channel (1745MHz)										
3.50	-67.5	H	3.0	-18.5	34.6	1.0	-52.0	-13.0	-39.0	
5.25	-68.8	H	3.0	-15.8	34.2	1.0	-49.0	-13.0	-36.0	
7.00	-69.9	H	3.0	-14.1	33.9	1.0	-47.0	-13.0	-34.0	
3.50	-67.2	V	3.0	-18.0	34.6	1.0	-51.5	-13.0	-38.5	
5.25	-68.4	V	3.0	-15.2	34.2	1.0	-48.3	-13.0	-35.3	
7.00	-70.8	V	3.0	-15.2	33.9	1.0	-48.1	-13.0	-35.1	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/09/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 4, 20MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
3.44	-67.7	H	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	
5.16	-68.6	H	3.0	-15.8	34.2	1.0	-49.0	-13.0	-36.0	
6.88	-70.4	H	3.0	-14.8	33.9	1.0	-47.7	-13.0	-34.7	
3.44	-66.8	V	3.0	-17.8	34.6	1.0	-51.4	-13.0	-38.4	
5.16	-68.5	V	3.0	-15.4	34.2	1.0	-48.6	-13.0	-35.6	
6.88	-70.1	V	3.0	-14.7	33.9	1.0	-47.6	-13.0	-34.6	
Mid Channel (1732.5MHz)										
3.47	-66.8	H	3.0	-17.9	34.6	1.0	-51.5	-13.0	-38.5	
5.20	-68.0	H	3.0	-15.2	34.2	1.0	-48.3	-13.0	-35.3	
6.93	-70.9	H	3.0	-15.2	33.9	1.0	-48.2	-13.0	-35.2	
3.47	-67.2	V	3.0	-18.1	34.6	1.0	-51.7	-13.0	-38.7	
5.20	-69.3	V	3.0	-16.1	34.2	1.0	-49.3	-13.0	-36.3	
6.93	-70.4	V	3.0	-14.9	33.9	1.0	-47.9	-13.0	-34.9	
High Channel (1745MHz)										
3.50	-67.3	H	3.0	-18.2	34.6	1.0	-51.8	-13.0	-38.8	
5.25	-69.6	H	3.0	-16.6	34.2	1.0	-49.8	-13.0	-36.8	
7.00	-69.9	H	3.0	-14.1	33.9	1.0	-47.0	-13.0	-34.0	
3.50	-67.2	V	3.0	-18.0	34.6	1.0	-51.6	-13.0	-38.6	
5.25	-67.9	V	3.0	-14.7	34.2	1.0	-47.8	-13.0	-34.8	
7.00	-69.6	V	3.0	-14.1	33.9	1.0	-47.0	-13.0	-34.0	

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 5, 10MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
1.66	-67.7	H	3.0	-26.5	33.7	1.0	-59.2	-13.0	-46.2	
2.49	-64.9	H	3.0	-20.7	34.1	1.0	-53.8	-13.0	-40.8	
3.32	-63.2	H	3.0	-14.9	34.6	1.0	-48.5	-13.0	-35.5	
1.66	-66.3	V	3.0	-22.9	33.7	1.0	-55.6	-13.0	-42.6	
2.49	-65.5	V	3.0	-20.7	34.1	1.0	-53.8	-13.0	-40.8	
3.32	-65.0	V	3.0	-16.5	34.6	1.0	-50.1	-13.0	-37.1	
Mid Channel (836.5MHz)										
1.67	-67.6	H	3.0	-26.2	33.7	1.0	-58.9	-13.0	-45.9	
2.51	-65.3	H	3.0	-21.1	34.1	1.0	-54.1	-13.0	-41.1	
3.35	-64.3	H	3.0	-15.9	34.6	1.0	-49.5	-13.0	-36.5	
1.67	-67.2	V	3.0	-23.7	33.7	1.0	-56.4	-13.0	-43.4	
2.51	-65.3	V	3.0	-20.4	34.1	1.0	-53.5	-13.0	-40.5	
3.35	-64.5	V	3.0	-15.8	34.6	1.0	-49.4	-13.0	-36.4	
High Channel (844MHz)										
1.69	-67.5	H	3.0	-26.1	33.7	1.0	-58.7	-13.0	-45.7	
2.53	-66.2	H	3.0	-21.9	34.1	1.0	-55.0	-13.0	-42.0	
3.38	-64.9	H	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
1.69	-67.5	V	3.0	-24.0	33.7	1.0	-56.7	-13.0	-43.7	
2.53	-65.4	V	3.0	-20.4	34.1	1.0	-53.5	-13.0	-40.5	
3.38	-63.7	V	3.0	-14.9	34.6	1.0	-48.5	-13.0	-35.5	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 5, 10MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-68.1	H	3.0	-26.9	33.7	1.0	-59.6	-13.0	-46.6	
2.47	-65.3	H	3.0	-21.2	34.1	1.0	-54.3	-13.0	-41.3	
3.36	-63.6	H	3.0	-15.2	34.6	1.0	-48.9	-13.0	-35.9	
1.66	-66.7	V	3.0	-23.3	33.7	1.0	-56.0	-13.0	-43.0	
2.49	-65.9	V	3.0	-21.1	34.1	1.0	-54.2	-13.0	-41.2	
3.32	-65.4	V	3.0	-16.9	34.6	1.0	-50.5	-13.0	-37.5	
Mid Channel (836.5MHz)										
1.67	-68.0	H	3.0	-26.7	33.7	1.0	-59.4	-13.0	-46.4	
2.51	-65.7	H	3.0	-21.5	34.1	1.0	-54.6	-13.0	-41.6	
3.35	-64.7	H	3.0	-16.3	34.6	1.0	-49.9	-13.0	-36.9	
1.67	-67.6	V	3.0	-24.2	33.7	1.0	-56.9	-13.0	-43.9	
2.51	-65.7	V	3.0	-20.9	34.1	1.0	-54.0	-13.0	-41.0	
3.35	-64.9	V	3.0	-16.3	34.6	1.0	-49.9	-13.0	-36.9	
High Channel (844MHz)										
1.69	-67.9	H	3.0	-26.5	33.7	1.0	-59.2	-13.0	-46.2	
2.53	-66.6	H	3.0	-22.2	34.1	1.0	-55.4	-13.0	-42.4	
3.38	-65.3	H	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
1.69	-67.9	V	3.0	-24.5	33.7	1.0	-57.2	-13.0	-44.2	
2.53	-65.8	V	3.0	-20.9	34.1	1.0	-54.0	-13.0	-41.0	
3.38	-64.1	V	3.0	-15.3	34.6	1.0	-49.0	-13.0	-36.0	

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 7, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.01	-67.8	H	3.0	-15.2	34.2	1.0	-48.4	-25.0	-23.4	
7.62	-68.5	H	3.0	-11.9	33.4	1.0	-44.3	-25.0	-19.3	
10.11	-69.1	H	3.0	-9.2	31.7	1.0	-39.9	-25.0	-14.9	
5.04	-67.6	V	3.0	-14.7	34.2	1.0	-47.9	-25.0	-22.9	
7.61	-66.9	V	3.0	-10.5	33.5	1.0	-42.9	-25.0	-17.9	
10.14	-67.3	V	3.0	-7.5	31.7	1.0	-38.2	-25.0	-13.2	
Mid Channel (2535MHz)										
5.07	-68.2	H	3.0	-15.5	34.2	1.0	-48.7	-25.0	-23.7	
7.61	-68.4	H	3.0	-11.8	33.5	1.0	-44.3	-25.0	-19.3	
10.14	-69.2	H	3.0	-9.3	31.7	1.0	-40.0	-25.0	-15.0	
5.07	-67.6	V	3.0	-14.7	34.2	1.0	-47.9	-25.0	-22.9	
7.61	-67.6	V	3.0	-11.2	33.5	1.0	-43.6	-25.0	-18.6	
10.14	-68.7	V	3.0	-8.9	31.7	1.0	-39.6	-25.0	-14.6	
High Channel (2560MHz)										
5.12	-68.2	H	3.0	-15.5	34.2	1.0	-48.6	-25.0	-23.6	
7.68	-67.6	H	3.0	-10.9	33.4	1.0	-43.3	-25.0	-18.3	
10.24	-69.8	H	3.0	-9.8	31.8	1.0	-40.7	-25.0	-15.7	
5.12	-66.8	V	3.0	-13.8	34.2	1.0	-47.0	-25.0	-22.0	
7.68	-68.0	V	3.0	-11.5	33.4	1.0	-43.9	-25.0	-18.9	
10.24	-68.4	V	3.0	-8.4	31.8	1.0	-39.2	-25.0	-14.2	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 7, 20MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.02	-66.5	H	3.0	-13.9	34.2	1.0	-47.1	-25.0	-22.1	
7.53	-67.1	H	3.0	-10.6	33.5	1.0	-43.1	-25.0	-18.1	
10.04	-68.5	H	3.0	-8.7	31.7	1.0	-39.3	-25.0	-14.3	
5.02	-67.3	V	3.0	-14.5	34.2	1.0	-47.6	-25.0	-22.6	
7.53	-67.6	V	3.0	-11.3	33.5	1.0	-43.8	-25.0	-18.8	
10.04	-69.0	V	3.0	-9.2	31.7	1.0	-39.9	-25.0	-14.9	
Mid Channel (2535MHz)										
5.07	-66.9	H	3.0	-14.2	34.2	1.0	-47.4	-25.0	-22.4	
7.61	-67.6	H	3.0	-11.0	33.5	1.0	-43.5	-25.0	-18.5	
10.14	-69.2	H	3.0	-9.3	31.7	1.0	-40.1	-25.0	-15.1	
5.07	-67.8	V	3.0	-14.9	34.2	1.0	-48.1	-25.0	-23.1	
7.61	-67.4	V	3.0	-11.0	33.5	1.0	-43.4	-25.0	-18.4	
10.14	-68.3	V	3.0	-8.5	31.7	1.0	-39.2	-25.0	-14.2	
High Channel (2560MHz)										
5.12	-67.3	H	3.0	-14.6	34.2	1.0	-47.8	-25.0	-22.8	
7.68	-68.2	H	3.0	-11.5	33.4	1.0	-43.9	-25.0	-18.9	
10.24	-68.8	H	3.0	-8.8	31.8	1.0	-39.6	-25.0	-14.6	
5.12	-68.5	V	3.0	-15.5	34.2	1.0	-48.7	-25.0	-23.7	
7.68	-67.8	V	3.0	-11.3	33.4	1.0	-43.7	-25.0	-18.7	
10.24	-69.6	V	3.0	-9.7	31.8	1.0	-40.5	-25.0	-15.5	

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 F

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 12, 10MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
1.44	-67.0	H	3.0	-27.1	34.0	1.0	-60.1	-13.0	-47.1	
2.06	-65.1	H	3.0	-21.5	33.6	1.0	-54.1	-13.0	-41.1	
2.83	-65.2	H	3.0	-19.1	34.6	1.0	-52.7	-13.0	-39.7	
1.38	-67.8	V	3.0	-25.6	34.1	1.0	-58.7	-13.0	-45.7	
2.20	-65.7	V	3.0	-21.6	33.8	1.0	-54.4	-13.0	-41.4	
2.72	-64.9	V	3.0	-18.9	34.4	1.0	-52.3	-13.0	-39.3	
Mid Channel (707.5MHz)										
1.48	-68.2	H	3.0	-28.1	33.9	1.0	-60.9	-13.0	-47.9	
2.12	-63.7	H	3.0	-20.0	33.7	1.0	-52.7	-13.0	-39.7	
2.85	-65.2	H	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	
1.48	-69.1	V	3.0	-26.0	33.9	1.0	-58.8	-13.0	-45.8	
2.12	-65.4	V	3.0	-21.5	33.7	1.0	-54.2	-13.0	-41.2	
2.80	-64.2	V	3.0	-17.8	34.5	1.0	-51.3	-13.0	-38.3	
High Channel (711MHz)										
1.32	-68.1	H	3.0	-28.8	34.2	1.0	-62.0	-13.0	-49.0	
2.17	-65.9	H	3.0	-22.2	33.8	1.0	-55.0	-13.0	-42.0	
2.91	-64.5	H	3.0	-17.9	34.7	1.0	-51.6	-13.0	-38.6	
1.48	-68.1	V	3.0	-24.9	33.9	1.0	-57.8	-13.0	-44.8	
2.05	-66.2	V	3.0	-22.4	33.6	1.0	-55.0	-13.0	-42.0	
2.83	-65.7	V	3.0	-19.2	34.6	1.0	-52.7	-13.0	-39.7	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 12, 10MHz 16QAM

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
1.35	-68.1	H	3.0	-28.7	34.2	1.0	-61.9	-13.0	-48.9	
2.07	-65.3	H	3.0	-21.7	33.6	1.0	-54.3	-13.0	-41.3	
2.82	-63.6	H	3.0	-17.6	34.5	1.0	-51.1	-13.0	-38.1	
1.43	-66.7	V	3.0	-24.0	34.0	1.0	-57.0	-13.0	-44.0	
2.20	-65.9	V	3.0	-21.8	33.8	1.0	-54.6	-13.0	-41.6	
2.88	-65.4	V	3.0	-18.6	34.6	1.0	-52.2	-13.0	-39.2	
Mid Channel (707.5MHz)										
1.34	-68.0	H	3.0	-28.6	34.2	1.0	-61.8	-13.0	-48.8	
2.17	-65.7	H	3.0	-22.0	33.8	1.0	-54.8	-13.0	-41.8	
2.91	-64.7	H	3.0	-18.1	34.7	1.0	-51.8	-13.0	-38.8	
1.34	-67.6	V	3.0	-25.8	34.2	1.0	-58.9	-13.0	-45.9	
2.17	-65.7	V	3.0	-21.7	33.8	1.0	-54.4	-13.0	-41.4	
2.92	-64.9	V	3.0	-17.9	34.7	1.0	-51.6	-13.0	-38.6	
High Channel (711MHz)										
1.46	-67.9	H	3.0	-27.9	33.9	1.0	-60.8	-13.0	-47.8	
2.21	-66.6	H	3.0	-22.8	33.8	1.0	-55.7	-13.0	-42.7	
2.93	-65.3	H	3.0	-18.6	34.7	1.0	-52.3	-13.0	-39.3	
1.44	-67.9	V	3.0	-25.2	34.0	1.0	-58.1	-13.0	-45.1	
2.17	-65.8	V	3.0	-21.8	33.8	1.0	-54.5	-13.0	-41.5	
2.84	-64.1	V	3.0	-17.5	34.6	1.0	-51.1	-13.0	-38.1	

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 13, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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	-67.4	H	3.0	-26.8	33.8	1.0	-59.6	-40.0	-19.6	
2.25	-66.3	H	3.0	-22.5	33.9	1.0	-55.4	-13.0	-42.4	
3.19	-64.9	H	3.0	-17.1	34.7	1.0	-50.8	-13.0	-37.8	
1.56	-66.5	V	3.0	-23.2	33.8	1.0	-55.9	-40.0	-15.9	
2.42	-65.0	V	3.0	-20.3	34.2	1.0	-53.4	-13.0	-40.4	
3.17	-64.2	V	3.0	-16.2	34.7	1.0	-49.9	-13.0	-36.9	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 13, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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	-68.1	H	3.0	-27.5	33.8	1.0	-60.3	-40.0	-20.3	
2.35	-65.3	H	3.0	-21.4	34.1	1.0	-54.5	-13.0	-41.5	
3.22	-63.6	H	3.0	-15.7	34.7	1.0	-49.4	-13.0	-36.4	
1.56	-66.7	V	3.0	-23.3	33.8	1.0	-56.1	-40.0	-16.1	
2.28	-65.9	V	3.0	-21.6	34.0	1.0	-54.5	-13.0	-41.5	
3.22	-65.4	V	3.0	-17.2	34.7	1.0	-50.9	-13.0	-37.9	

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 17, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.38	-68.3	H	3.0	-28.7	34.1	1.0	-61.8	-13.0	-48.8	
2.12	-65.5	H	3.0	-21.9	33.7	1.0	-54.5	-13.0	-41.5	
2.82	-63.8	H	3.0	-17.7	34.6	1.0	-51.3	-13.0	-38.3	
1.47	-66.9	V	3.0	-23.8	33.9	1.0	-56.7	-13.0	-43.7	
2.21	-66.1	V	3.0	-21.9	33.8	1.0	-54.8	-13.0	-41.8	
2.92	-65.6	V	3.0	-18.6	34.7	1.0	-52.3	-13.0	-39.3	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 17, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.39	-68.3	H	3.0	-28.7	34.1	1.0	-61.7	-13.0	-48.7	
2.04	-65.5	H	3.0	-21.9	33.5	1.0	-54.5	-13.0	-41.5	
2.85	-63.8	H	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
1.43	-66.9	V	3.0	-24.2	34.0	1.0	-57.2	-13.0	-44.2	
2.19	-66.1	V	3.0	-22.0	33.8	1.0	-54.8	-13.0	-41.8	
2.76	-65.6	V	3.0	-19.4	34.5	1.0	-52.9	-13.0	-39.9	

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 #: 16U23328
Date: 05/09/16
Test Engineer: 29435
Configuration: EUT only
Mode: LTE Band 25, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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	-66.6	H	3.0	-16.8	34.4	1.0	-50.2	-13.0	-37.2	
5.58	-68.5	H	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.44	-70.3	H	3.0	-13.9	33.6	1.0	-46.5	-13.0	-33.5	
3.72	-67.1	V	3.0	-17.2	34.4	1.0	-50.6	-13.0	-37.6	
5.58	-67.1	V	3.0	-13.4	34.1	1.0	-46.5	-13.0	-33.5	
7.44	-70.1	V	3.0	-14.0	33.6	1.0	-46.5	-13.0	-33.5	
Mid Channel (1882.5MHz)										
3.77	-66.6	H	3.0	-16.6	34.4	1.0	-50.0	-13.0	-37.0	
5.65	-68.9	H	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
7.53	-70.9	H	3.0	-14.4	33.5	1.0	-46.9	-13.0	-33.9	
3.77	-67.6	V	3.0	-17.5	34.4	1.0	-50.9	-13.0	-37.9	
5.65	-68.5	V	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
7.53	-70.4	V	3.0	-14.1	33.5	1.0	-46.6	-13.0	-33.6	
High Channel (1905MHz)										
3.81	-67.9	H	3.0	-17.7	34.4	1.0	-51.1	-13.0	-38.1	
5.72	-68.4	H	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
7.62	-70.9	H	3.0	-14.3	33.4	1.0	-46.7	-13.0	-33.7	
3.81	-67.8	V	3.0	-17.6	34.4	1.0	-50.9	-13.0	-37.9	
5.72	-68.7	V	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
7.62	-70.6	V	3.0	-14.2	33.4	1.0	-46.6	-13.0	-33.6	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/09/16
Test Engineer: 29435
Configuration: EUT only
Mode: LTE Band 25, 20MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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	-18.1	34.4	1.0	-51.5	-13.0	-38.5	
5.58	-68.8	H	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
7.44	-70.9	H	3.0	-14.5	33.6	1.0	-47.1	-13.0	-34.1	
3.72	-67.2	V	3.0	-17.3	34.4	1.0	-50.7	-13.0	-37.7	
5.58	-68.7	V	3.0	-15.0	34.1	1.0	-48.2	-13.0	-35.2	
7.44	-70.1	V	3.0	-13.9	33.6	1.0	-46.5	-13.0	-33.5	
Mid Channel (1882.5MHz)										
3.77	-67.5	H	3.0	-17.5	34.4	1.0	-50.9	-13.0	-37.9	
5.65	-66.8	H	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
7.53	-69.6	H	3.0	-13.1	33.5	1.0	-45.6	-13.0	-32.6	
3.77	-67.4	V	3.0	-17.3	34.4	1.0	-50.7	-13.0	-37.7	
5.65	-68.8	V	3.0	-15.0	34.1	1.0	-48.2	-13.0	-35.2	
7.53	-71.3	V	3.0	-15.0	33.5	1.0	-47.5	-13.0	-34.5	
High Channel (1905MHz)										
3.81	-67.7	H	3.0	-17.5	34.4	1.0	-50.9	-13.0	-37.9	
5.72	-67.8	H	3.0	-14.1	34.1	1.0	-47.2	-13.0	-34.2	
7.62	-70.2	H	3.0	-13.6	33.4	1.0	-46.0	-13.0	-33.0	
3.81	-65.9	V	3.0	-15.7	34.4	1.0	-49.0	-13.0	-36.0	
5.72	-67.7	V	3.0	-13.9	34.1	1.0	-47.0	-13.0	-34.0	
7.62	-69.6	V	3.0	-13.2	33.4	1.0	-45.6	-13.0	-32.6	

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.58	-67.9	H	3.0	-27.2	33.8	1.0	-60.0	-13.0	-47.0	
2.54	-65.1	H	3.0	-20.7	34.1	1.0	-53.8	-13.0	-40.8	
3.22	-63.4	H	3.0	-15.5	34.7	1.0	-49.1	-13.0	-36.1	
1.63	-66.5	V	3.0	-23.1	33.7	1.0	-55.8	-13.0	-42.8	
2.37	-65.7	V	3.0	-21.1	34.1	1.0	-54.2	-13.0	-41.2	
3.29	-65.2	V	3.0	-16.8	34.7	1.0	-50.4	-13.0	-37.4	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/06/16
Test Engineer: 43575
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
1.57	-68.4	H	3.0	-27.8	33.8	1.0	-60.5	-13.0	-47.5	
2.36	-66.1	H	3.0	-22.2	34.1	1.0	-55.3	-13.0	-42.3	
3.22	-65.1	H	3.0	-17.2	34.7	1.0	-50.9	-13.0	-37.9	
1.62	-68.0	V	3.0	-24.6	33.7	1.0	-57.3	-13.0	-44.3	
2.51	-66.1	V	3.0	-21.3	34.1	1.0	-54.4	-13.0	-41.4	
3.21	-65.3	V	3.0	-17.1	34.7	1.0	-50.8	-13.0	-37.8	

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 27, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819.0MHz)										
1.61	-67.0	H	3.0	-26.1	33.7	1.0	-58.9	-13.0	-45.9	
2.35	-64.7	H	3.0	-20.8	34.1	1.0	-53.9	-13.0	-40.9	
3.23	-63.7	H	3.0	-15.7	34.7	1.0	-49.4	-13.0	-36.4	
1.71	-66.6	V	3.0	-23.2	33.7	1.0	-55.8	-13.0	-42.8	
2.49	-64.7	V	3.0	-19.9	34.1	1.0	-53.0	-13.0	-40.0	
3.21	-63.9	V	3.0	-15.7	34.7	1.0	-49.4	-13.0	-36.4	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 27, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819.0MHz)										
1.71	-67.6	H	3.0	-26.0	33.7	1.0	-58.7	-13.0	-45.7	
2.48	-65.3	H	3.0	-21.2	34.1	1.0	-54.3	-13.0	-41.3	
3.21	-64.3	H	3.0	-16.4	34.7	1.0	-50.1	-13.0	-37.1	
1.73	-67.2	V	3.0	-23.8	33.7	1.0	-56.4	-13.0	-43.4	
2.43	-65.3	V	3.0	-20.6	34.2	1.0	-53.7	-13.0	-40.7	
3.21	-64.5	V	3.0	-16.3	34.7	1.0	-50.0	-13.0	-37.0	

Rev. 05.21.15

10.5.11. LTE BAND 30

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 30, 10MHz QPSK

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
4.71	-68.6	H	3.0	-14.6	38.0	1.0	-51.6	-40.0	-11.6	
6.98	-68.8	H	3.0	-10.1	36.4	1.0	-45.5	-40.0	-5.5	
9.25	-70.7	H	3.0	-9.1	34.9	1.0	-43.0	-40.0	-3.0	
4.71	-68.2	V	3.0	-14.3	38.0	1.0	-51.3	-40.0	-11.3	
6.90	-67.2	V	3.0	-7.8	36.5	1.0	-43.3	-40.0	-3.3	
9.25	-70.4	V	3.0	-8.6	34.9	1.0	-42.5	-40.0	-2.5	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 30, 10MHz 16QAM

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

Chamber

3m Chamber F

Pre-amplifier

3m Chamber F

Filter

Filter

Limit

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)										
4.62	-67.0	H	3.0	-13.1	38.0	1.0	-50.1	-40.0	-10.1	
6.93	-67.3	H	3.0	-8.6	36.4	1.0	-44.0	-40.0	-4.0	
9.24	-70.4	H	3.0	-8.8	34.9	1.0	-42.7	-40.0	-2.7	
4.62	-68.0	V	3.0	-14.2	38.0	1.0	-51.2	-40.0	-11.2	
6.93	-68.4	V	3.0	-9.0	36.5	1.0	-44.5	-40.0	-4.5	
9.24	-70.5	V	3.0	-8.7	34.9	1.0	-42.6	-40.0	-2.6	

Rev. 05.21.15

Page 1058 of 1065

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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 #: 16U23328
Date: 05/10/16
Test Engineer: 29435
Configuration: EUT Only
Mode: LTE Band 41, 20MHz QPSK

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

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.01	-67.6	H	3.0	-15.0	34.2	1.0	-48.2	-25.0	-23.2	
7.52	-67.4	H	3.0	-10.9	33.5	1.0	-43.5	-25.0	-18.5	
10.02	-68.3	H	3.0	-8.5	31.6	1.0	-39.1	-25.0	-14.1	
5.01	-67.5	V	3.0	-14.7	34.2	1.0	-47.8	-25.0	-22.8	
7.52	-68.5	V	3.0	-12.2	33.5	1.0	-44.8	-25.0	-19.8	
10.02	-69.9	V	3.0	-10.2	31.6	1.0	-40.8	-25.0	-15.8	
Mid Channel (2593MHz)										
5.19	-66.8	H	3.0	-14.0	34.2	1.0	-47.1	-25.0	-22.1	
7.78	-67.8	H	3.0	-11.0	33.3	1.0	-43.3	-25.0	-18.3	
10.37	-68.5	H	3.0	-128.6	31.9	1.0	97.6	-25.0	122.6	
5.19	-67.8	V	3.0	-14.6	34.2	1.0	-47.8	-25.0	-22.8	
7.78	-68.1	V	3.0	-11.5	33.3	1.0	-43.8	-25.0	-18.8	
10.37	-68.7	V	3.0	-8.7	31.9	1.0	-39.6	-25.0	-14.6	
High Channel (2680MHz)										
5.36	-66.7	H	3.0	-13.5	34.2	1.0	-46.7	-25.0	-21.7	
8.04	-67.9	H	3.0	-10.7	33.1	1.0	-42.9	-25.0	-17.9	
10.72	-67.5	H	3.0	-7.2	32.2	1.0	-38.4	-25.0	-13.4	
5.36	-67.3	V	3.0	-13.9	34.2	1.0	-47.1	-25.0	-22.1	
8.04	-68.3	V	3.0	-11.3	33.1	1.0	-43.4	-25.0	-18.4	
10.72	-69.8	V	3.0	-9.4	32.2	1.0	-40.6	-25.0	-15.6	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:

Project #: 16U23328

Date: 05/10/16

Test Engineer: 29435

Configuration: EUT Only

Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber F

Pre-amplifier
 3m Chamber F

Filter
 Filter

Limit
 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)										
5.01	-67.4	H	3.0	-14.9	34.2	1.0	-48.1	-25.0	-23.1	
7.52	-68.4	H	3.0	-11.9	33.5	1.0	-44.5	-25.0	-19.5	
10.02	-68.8	H	3.0	-9.0	31.6	1.0	-39.6	-25.0	-14.6	
5.01	-67.3	V	3.0	-14.5	34.2	1.0	-47.7	-25.0	-22.7	
7.52	-69.7	V	3.0	-13.4	33.5	1.0	-45.9	-25.0	-20.9	
10.02	-70.2	V	3.0	-10.4	31.6	1.0	-41.1	-25.0	-16.1	
Mid Channel (2593MHz)										
5.19	-66.3	H	3.0	-13.5	34.2	1.0	-46.7	-25.0	-21.7	
7.78	-68.1	H	3.0	-11.3	33.3	1.0	-43.6	-25.0	-18.6	
10.37	-68.1	H	3.0	-8.0	31.9	1.0	-38.9	-25.0	-13.9	
5.19	-67.3	V	3.0	-14.1	34.2	1.0	-47.3	-25.0	-22.3	
7.78	-69.5	V	3.0	-12.8	33.3	1.0	-45.2	-25.0	-20.2	
10.37	-69.9	V	3.0	-9.8	31.9	1.0	-40.7	-25.0	-15.7	
High Channel (2680MHz)										
5.36	-67.6	H	3.0	-14.5	34.2	1.0	-47.6	-25.0	-22.6	
8.04	-68.5	H	3.0	-11.4	33.1	1.0	-43.5	-25.0	-18.5	
10.72	-69.3	H	3.0	-9.0	32.2	1.0	-40.3	-25.0	-15.3	
5.36	-67.5	V	3.0	-14.1	34.2	1.0	-47.3	-25.0	-22.3	
8.04	-67.8	V	3.0	-10.8	33.1	1.0	-42.9	-25.0	-17.9	
10.72	-67.9	V	3.0	-7.5	32.2	1.0	-38.7	-25.0	-13.7	

Rev. 05.21.15