

QPSK, LTE BAND 2 – 1880.0 MHz

| Reference Frequency: PCS Mid Channel 1880.000005MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 1880.000007 | -0.001 | 2.5 |
| 3.80 | 40 | 1880.000010 | -0.003 | 2.5 |
| 3.80 | 30 | 1880.000004 | 0.001 | 2.5 |
| 3.80 | 20 | 1880.000005 | 0 | 2.5 |
| 3.80 | 10 | 1880.000006 | -0.001 | 2.5 |
| 3.80 | 0 | 1880.000005 | 0.000 | 2.5 |
| 3.80 | -10 | 1880.000004 | 0.001 | 2.5 |
| 3.80 | -20 | 1880.000007 | -0.001 | 2.5 |
| 3.80 | -30 | 1880.000090 | -0.045 | 2.5 |

| Reference Frequency: PCS Mid Channel 1880.000005MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 1880.000005 | 0 | 2.5 |
| 4.20 | 20 | 1880.000007 | -0.001 | 2.5 |
| 3.30 | 20 | 1880.000004 | 0.001 | 2.5 |
| End Volt(3.1) | 20 | 1880.000002 | 0.002 | 2.5 |

16QAM-LTE BAND 2 – 1880.0 MHz

| Reference Frequency: PCS Mid Channel 1880.000078MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 1880.000078 | 0.000 | 2.5 |
| 3.80 | 40 | 1880.000077 | 0.001 | 2.5 |
| 3.80 | 30 | 1880.000073 | 0.003 | 2.5 |
| 3.80 | 20 | 1880.000078 | 0 | 2.5 |
| 3.80 | 10 | 1880.000077 | 0.001 | 2.5 |
| 3.80 | 0 | 1880.000079 | -0.001 | 2.5 |
| 3.80 | -10 | 1880.000077 | 0.001 | 2.5 |
| 3.80 | -20 | 1880.000072 | 0.003 | 2.5 |
| 3.80 | -30 | 1880.000075 | 0.002 | 2.5 |

| Reference Frequency: PCS Mid Channel 1880.000078MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 1880.000078 | 0 | 2.5 |
| 4.20 | 20 | 1880.000072 | 0.003 | 2.5 |
| 3.30 | 20 | 1880.000064 | 0.007 | 2.5 |
| End Volt(3.1) | 20 | 1880.000050 | 0.015 | 2.5 |

LTE BAND 4 – 1732.5 MHz QPSK

| Reference Frequency: LTE Band 4_Mid Channel 1732.500003MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4331.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (*C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 1732.500003 | 0.000 | 2.5 |
| 3.80 | 40 | 1732.500004 | -0.001 | 2.5 |
| 3.80 | 30 | 1732.500004 | -0.001 | 2.5 |
| 3.80 | 20 | 1732.500003 | 0 | 2.5 |
| 3.80 | 10 | 1732.500005 | -0.001 | 2.5 |
| 3.80 | 0 | 1732.499996 | 0.004 | 2.5 |
| 3.80 | -10 | 1732.499997 | 0.003 | 2.5 |
| 3.80 | -20 | 1732.499997 | 0.003 | 2.5 |
| 3.80 | -30 | 1732.499996 | 0.004 | 2.5 |

| Reference Frequency: LTE Band Mid Channel 1732.500003MHz @ 20°C | | | | |
|---|------------------------------|---|--------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4331.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (*C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 1732.500003 | 0.000 | 2.5 |
| 4.20 | 20 | 1732.500004 | -0.001 | 2.5 |
| 3.30 | 20 | 1732.500002 | 0.001 | 2.5 |
| End Volt(3.1) | 20 | 1732.499997 | 0.003 | 2.5 |

LTE BAND 4 – 1732.5 MHz, 16QAM

| Reference Frequency: LTE Band 4_Mid Channel 1732.500078MHz @ 20°C | | | | |
|---|------------------------------|---|--------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4331.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (*C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 1732.500077 | 0.001 | 2.5 |
| 3.80 | 40 | 1732.500077 | 0.001 | 2.5 |
| 3.80 | 30 | 1732.500079 | -0.001 | 2.5 |
| 3.80 | 20 | 1732.500078 | 0.000 | 2.5 |
| 3.80 | 10 | 1732.500075 | 0.002 | 2.5 |
| 3.80 | 0 | 1732.500074 | 0.002 | 2.5 |
| 3.80 | -10 | 1732.500076 | 0.001 | 2.5 |
| 3.80 | -20 | 1732.500069 | 0.005 | 2.5 |
| 3.80 | -30 | 1732.500072 | 0.003 | 2.5 |

| Reference Frequency: LTE Band Mid Channel 1732.500078MHz @ 20°C | | | | |
|---|------------------------------|---|--------------|-------------|
| Limit: within the authorized block or +/- 2.5 ppm = 4331.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (*C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 1732.500078 | 0.000 | 2.5 |
| 4.20 | 20 | 1732.500075 | 0.002 | 2.5 |
| 3.30 | 20 | 1732.500067 | 0.006 | 2.5 |
| End Volt(3.1) | 20 | 1732.500061 | 0.010 | 2.5 |

LTE BAND 17 – 710 MHz, 5MHz

| Reference Frequency: LTE Band 17_Mid Channe 710.000002MHz @ 20°C Limit: to stay +- 2.5 ppm = 1775.000 Hz | | | | |
|---|------------------------------|---|-------------|-------------|
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 710.000003 | -0.001 | 2.5 |
| 3.80 | 40 | 710.000003 | -0.001 | 2.5 |
| 3.80 | 30 | 710.000004 | -0.003 | 2.5 |
| 3.80 | 20 | 710.000002 | 0 | 2.5 |
| 3.80 | 10 | 710.000002 | 0.000 | 2.5 |
| 3.80 | 0 | 709.999999 | 0.005 | 2.5 |
| 3.80 | -10 | 709.999995 | 0.010 | 2.5 |
| 3.80 | -20 | 709.999996 | 0.008 | 2.5 |
| 3.80 | -30 | 710.000003 | -0.001 | 2.5 |

| Reference Frequency: LTE Band 17_Mid channel 710.000002MHz @ 20°C Limit: to stay +- 2.5 ppm = 1775.000 Hz | | | | |
|--|------------------------------|---|-------------|-------------|
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 710.000002 | 0 | 2.5 |
| 4.20 | 20 | 709.999999 | 0.004 | 2.5 |
| 3.30 | 20 | 709.999996 | 0.008 | 2.5 |
| End Volt(3.1) | 20 | 709.999995 | 0.010 | 2.5 |

LTE BAND 17 – 710 MHz, 10MHz

| Reference Frequency: LTE Band 17_Mid Channel 710.000071MHz @ 20°C Limit: to stay +- 2.5 ppm = 1775.000 Hz | | | | |
|--|------------------------------|---|-------------|-------------|
| Power Supply (Vac) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 710.000073 | -0.003 | 2.5 |
| 3.80 | 40 | 710.000072 | -0.001 | 2.5 |
| 3.80 | 30 | 710.000072 | -0.001 | 2.5 |
| 3.80 | 20 | 710.000071 | 0 | 2.5 |
| 3.80 | 10 | 710.000073 | -0.003 | 2.5 |
| 3.80 | 0 | 710.000071 | 0.000 | 2.5 |
| 3.80 | -10 | 710.000076 | -0.007 | 2.5 |
| 3.80 | -20 | 710.000072 | -0.001 | 2.5 |
| 3.80 | -30 | 710.000073 | -0.003 | 2.5 |

| Reference Frequency: LTE Band 17_Mid Channel 710.000071MHz @ 20°C Limit: to stay +- 2.5 ppm = 1775.000 Hz | | | | |
|--|------------------------------|---|-------------|-------------|
| Power Supply (Vac) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 710.000071 | 0 | 2.5 |
| 4.20 | 20 | 710.000076 | -0.007 | 2.5 |
| 3.30 | 20 | 710.000073 | -0.003 | 2.5 |
| End Volt(3.1) | 20 | 710.000068 | 0.004 | 2.5 |

LTE BAND 5 – 836.5MHz, QPSK

| Reference Frequency: LTE Band 17_Mid Channe 836.499996MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz | | | | |
|--|------------------------------|---|-------------|-------------|
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 836.500004 | -0.010 | 2.5 |
| 3.80 | 40 | 836.500003 | -0.008 | 2.5 |
| 3.80 | 30 | 836.500009 | -0.016 | 2.5 |
| 3.80 | 20 | 836.499996 | 0 | 2.5 |
| 3.80 | 10 | 836.500030 | -0.041 | 2.5 |
| 3.80 | 0 | 836.500004 | -0.010 | 2.5 |
| 3.80 | -10 | 836.500004 | -0.010 | 2.5 |
| 3.80 | -20 | 836.500005 | -0.011 | 2.5 |
| 3.80 | -30 | 836.500004 | -0.010 | 2.5 |

| Reference Frequency: LTE Band 17_Mid channel 836.499996MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz | | | | |
|---|------------------------------|---|-------------|-------------|
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 836.499996 | 0 | 2.5 |
| 4.20 | 20 | 836.500006 | -0.012 | 2.5 |
| 3.30 | 20 | 836.500003 | -0.008 | 2.5 |
| End Volt(3.1) | 20 | 836.499995 | 0.001 | 2.5 |

LTE BAND 5 – 836.5 MHz, 16QAM

| Reference Frequency: LTE Band 17_Mid Channel 836.500076MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz | | | | |
|---|------------------------------|---|-------------|-------------|
| Power Supply (Vac) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 836.500070 | 0.007 | 2.5 |
| 3.80 | 40 | 836.500072 | 0.005 | 2.5 |
| 3.80 | 30 | 836.500070 | 0.007 | 2.5 |
| 3.80 | 20 | 836.500076 | 0 | 2.5 |
| 3.80 | 10 | 836.500072 | 0.005 | 2.5 |
| 3.80 | 0 | 836.500070 | 0.007 | 2.5 |
| 3.80 | -10 | 836.500073 | 0.004 | 2.5 |
| 3.80 | -20 | 836.500069 | 0.008 | 2.5 |
| 3.80 | -30 | 836.500073 | 0.004 | 2.5 |

| Reference Frequency: LTE Band 17_Mid Channel 836.500076MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz | | | | |
|---|------------------------------|---|-------------|-------------|
| Power Supply (Vac) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 836.500076 | 0 | 2.5 |
| 4.20 | 20 | 836.500071 | 0.006 | 2.5 |
| 3.30 | 20 | 836.500068 | 0.010 | 2.5 |
| End Volt(3.1) | 20 | 836.500066 | 0.012 | 2.5 |

QPSK, LTE BAND 25 – 1882.500 MHz

| Reference Frequency: LTE Band 1882.500006MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: to stay +/- 2.5 ppm = 4706.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 1882.500006 | 0.000 | 2.5 |
| 3.80 | 40 | 1882.500008 | -0.001 | 2.5 |
| 3.80 | 30 | 1882.500010 | -0.002 | 2.5 |
| 3.80 | 20 | 1882.500006 | 0 | 2.5 |
| 3.80 | 10 | 1882.500007 | -0.001 | 2.5 |
| 3.80 | 0 | 1882.500007 | -0.001 | 2.5 |
| 3.80 | -10 | 1882.499993 | 0.007 | 2.5 |
| 3.80 | -20 | 1882.500006 | 0.000 | 2.5 |
| 3.80 | -30 | 1882.500010 | -0.002 | 2.5 |

| Reference Frequency: Cellular Mid Channel 1882.500006MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: to stay +/- 2.5 ppm = 4706.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 1882.500006 | 0 | 2.5 |
| 4.26 | 20 | 1882.500003 | 0.002 | 2.5 |
| 3.30 | 20 | 1882.499992 | 0.007 | 2.5 |
| End Volt(3.1) | 20 | 1882.499995 | 0.006 | 2.5 |

16QAM-LTE BAND 25– 836.500 MHz

| Reference Frequency: LTE Band 1882.500032MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: to stay +/- 2.5 ppm = 4706.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 50 | 1882.500033 | -0.001 | 2.5 |
| 3.80 | 40 | 1882.500033 | -0.001 | 2.5 |
| 3.80 | 30 | 1882.500038 | -0.003 | 2.5 |
| 3.80 | 20 | 1882.500032 | 0 | 2.5 |
| 3.80 | 10 | 1882.500034 | -0.001 | 2.5 |
| 3.80 | 0 | 1882.500038 | -0.003 | 2.5 |
| 3.80 | -10 | 1882.500037 | -0.003 | 2.5 |
| 3.80 | -20 | 1882.500038 | -0.003 | 2.5 |
| 3.80 | -30 | 1882.500036 | -0.002 | 2.5 |

| Reference Frequency: Cellular Mid Channel 1882.500032MHz @ 20°C | | | | |
|---|------------------------------|---|-------------|-------------|
| Limit: to stay +/- 2.5 ppm = 4706.250 Hz | | | | |
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measured with Time Elapse | | |
| | | (MHz) | Delta (ppm) | Limit (ppm) |
| 3.80 | 20 | 1882.500032 | 0 | 2.5 |
| 4.20 | 20 | 1882.500037 | -0.003 | 2.5 |
| 3.30 | 20 | 1882.500035 | -0.002 | 2.5 |
| End Volt(3.1) | 20 | 1882.500030 | 0.001 | 2.5 |

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

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

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

27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.

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

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

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

A1428

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 17

A1429

- LTE band 5
- LTE band 13
- LTE band 25

RESULTS

A1428, LAT PORT

EIRP LTE Band 2 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|---------|
| | | | dBm | mW |
| 1.4 MHZ BAND QPSK | 6/0 | 1850.7 | 31.52 | 1419.06 |
| | | 1880.0 | 29.46 | 883.08 |
| | | 1909.3 | 30.10 | 1023.29 |
| 1.4 MHZ BAND 16QAM | 6/0 | 1850.7 | 29.52 | 895.36 |
| | | 1880.0 | 28.56 | 717.79 |
| | | 1909.3 | 29.20 | 831.76 |

EIRP LTE Band 2 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|---------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1851.5 | 31.52 | 1419.06 |
| | | 1880.0 | 30.36 | 1086.43 |
| | | 1908.5 | 30.80 | 1202.26 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1851.5 | 30.42 | 1101.54 |
| | | 1880.0 | 29.36 | 862.98 |
| | | 1908.5 | 29.70 | 933.25 |

EIRP LTE Band 2 (5.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|---------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 25/0 | 1852.5 | 31.92 | 1555.97 |
| | | 1880.0 | 31.16 | 1306.17 |
| | | 1907.5 | 30.90 | 1230.27 |
| 5.0 MHZ BAND 16QAM | 25/0 | 1852.5 | 30.72 | 1180.32 |
| | | 1880.0 | 30.31 | 1073.99 |
| | | 1907.5 | 29.90 | 977.24 |

EIRP LTE Band 2 (10.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|---------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 50/0 | 1855.0 | 31.12 | 1294.20 |
| | | 1880.0 | 30.89 | 1227.44 |
| | | 1905.0 | 29.50 | 891.25 |
| 10.0 MHZ BAND 16QAM | 50/0 | 1855.0 | 30.46 | 1111.73 |
| | | 1880.0 | 30.06 | 1013.91 |
| | | 1905.0 | 28.90 | 776.25 |

EIRP LTE Band 2 (15.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|---------|
| | | | dBm | mW |
| 15.0 MHZ BAND QPSK | 75/0 | 1857.5 | 31.12 | 1294.20 |
| | | 1880.0 | 31.26 | 1336.60 |
| | | 1902.5 | 29.70 | 933.25 |
| 15.0 MHZ BAND 16QAM | 75/0 | 1857.5 | 30.27 | 1064.14 |
| | | 1880.0 | 30.16 | 1037.53 |
| | | 1902.5 | 28.70 | 741.31 |

EIRP LTE Band 2 (20.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(PEAK) | |
|------------------------|------------|---------|------------|---------|
| | | | dBm | mW |
| 20.0 MHZ BAND QPSK | 100/0 | 1860.0 | 30.95 | 1244.51 |
| | | 1880.0 | 31.56 | 1432.19 |
| | | 1900.0 | 30.10 | 1023.29 |
| 20.0 MHZ BAND 16QAM | 100/0 | 1860.0 | 29.72 | 937.56 |
| | | 1880.0 | 30.66 | 1164.13 |
| | | 1900.0 | 29.07 | 807.24 |

EIRP LTE Band 4 (1.4 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 1.4 MHZ BAND QPSK | 6/0 | 1710.7 | 26.66 | 463.45 |
| | | 1732.5 | 27.11 | 514.04 |
| | | 1754.3 | 27.37 | 545.76 |
| 1.4 MHZ BAND 16QAM | 6/0 | 1710.7 | 25.96 | 394.46 |
| | | 1732.5 | 26.11 | 408.32 |
| | | 1754.3 | 26.67 | 464.52 |

EIRP LTE Band 4 (3.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1711.5 | 27.21 | 526.02 |
| | | 1732.5 | 27.61 | 576.77 |
| | | 1753.5 | 28.47 | 703.07 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1711.5 | 26.16 | 413.05 |
| | | 1732.5 | 26.51 | 447.71 |
| | | 1753.5 | 27.47 | 558.47 |

EIRP LTE Band 4 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 25/0 | 1712.5 | 27.86 | 610.94 |
| | | 1732.5 | 27.61 | 576.77 |
| | | 1752.5 | 27.77 | 598.41 |
| 5.0 MHZ BAND 16QAM | 25/0 | 1712.5 | 26.96 | 496.59 |
| | | 1732.5 | 26.71 | 468.81 |
| | | 1752.5 | 26.77 | 475.34 |

EIRP LTE Band 4 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 50/0 | 1715.0 | 28.46 | 701.46 |
| | | 1732.5 | 28.61 | 726.11 |
| | | 1750.0 | 28.97 | 788.86 |
| 10.0 MHZ BAND 16QAM | 50/0 | 1715.0 | 27.46 | 557.19 |
| | | 1732.5 | 27.41 | 550.81 |
| | | 1750.0 | 27.97 | 626.61 |

EIRP LTE Band 4 (15.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 15.0 MHZ BAND QPSK | 75/0 | 1715.0 | 28.96 | 787.05 |
| | | 1732.5 | 28.91 | 778.04 |
| | | 1750.0 | 29.17 | 826.04 |
| 15.0 MHZ BAND 16QAM | 75/0 | 1715.0 | 27.86 | 610.94 |
| | | 1732.5 | 27.81 | 603.95 |
| | | 1750.0 | 28.17 | 656.15 |

EIRP LTE Band 4 (20.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 20.0 MHZ BAND QPSK | 100/0 | 1715.0 | 28.66 | 734.51 |
| | | 1732.5 | 28.61 | 726.11 |
| | | 1750.0 | 28.87 | 770.90 |
| 20.0 MHZ BAND 16QAM | 100/0 | 1715.0 | 27.56 | 570.16 |
| | | 1732.5 | 27.41 | 550.81 |
| | | 1750.0 | 27.67 | 584.79 |

ERP LTE Band 5 (1.4.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 1.4MHz Band QASK | 1/0 | 824.7 | 22.17 | 164.82 |
| | | 836.5 | 22.94 | 196.79 |
| | | 848.3 | 21.91 | 155.24 |
| 1.4MHz Band 16QAM | 1/0 | 824.7 | 21.27 | 133.97 |
| | | 836.5 | 21.94 | 156.31 |
| | | 848.3 | 20.91 | 123.31 |

ERP LTE Band 5 (3.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|--------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 1/0 | 825.5 | 22.37 | 172.58 |
| | | 836.5 | 22.84 | 192.31 |
| | | 847.5 | 21.81 | 151.71 |
| 3.0 MHZ BAND 16QAM | 1/0 | 825.5 | 21.37 | 137.09 |
| | | 836.5 | 22.34 | 171.40 |
| | | 847.5 | 21.11 | 129.12 |

ERP LTE Band 5 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-----------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 5MHz Band QASK | 1/0 | 826.5 | 22.07 | 161.06 |
| | | 836.5 | 22.64 | 183.65 |
| | | 846.5 | 22.21 | 166.34 |
| 5MHz Band 16QAM | 1/0 | 826.5 | 21.67 | 146.89 |
| | | 836.5 | 22.34 | 171.40 |
| | | 846.5 | 21.51 | 141.58 |

ERP LTE Band 5 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|---------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 1/0 | 829.0 | 22.27 | 168.66 |
| | | 836.5 | 22.44 | 175.39 |
| | | 844.0 | 21.96 | 157.04 |
| 10.0 MHZ BAND 16QAM | 1/0 | 829.0 | 21.87 | 153.82 |
| | | 836.5 | 21.71 | 148.25 |
| | | 844.0 | 21.11 | 129.12 |

ERP LTE Band 17 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-----------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 5MHz Band QASK | 1/0 | 706.5 | 23.32 | 214.78 |
| | | 710.0 | 23.62 | 230.14 |
| | | 713.5 | 23.42 | 219.79 |
| 5MHz Band 16QAM | 1/0 | 706.5 | 23.02 | 200.45 |
| | | 710.0 | 23.52 | 224.91 |
| | | 713.5 | 23.17 | 207.49 |

ERP LTE Band 17 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|---------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 1/0 | 709.0 | 23.42 | 219.79 |
| | | 710.0 | 23.37 | 217.27 |
| | | 711.0 | 23.52 | 224.91 |
| 10.0 MHZ BAND 16QAM | 1/0 | 709.0 | 22.92 | 195.88 |
| | | 710.0 | 23.02 | 200.45 |
| | | 711.0 | 22.72 | 187.07 |

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ERP LTE Band 5 (1.4.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP(Average) | |
|-------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 1.4MHz Band QASK | 1/0 | 824.7 | 22.67 | 184.93 |
| | | 836.5 | 22.84 | 192.31 |
| | | 848.3 | 22.71 | 186.64 |
| 1.4MHz Band 16QAM | 1/0 | 824.7 | 21.97 | 157.40 |
| | | 836.5 | 22.24 | 167.49 |
| | | 848.3 | 21.71 | 148.25 |

ERP LTE Band 5 (3.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP | |
|--------------------|------------|---------|--------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 1/0 | 825.5 | 22.67 | 184.93 |
| | | 836.5 | 22.64 | 183.65 |
| | | 847.5 | 22.51 | 178.24 |
| 3.0 MHZ BAND 16QAM | 1/0 | 825.5 | 22.07 | 161.06 |
| | | 836.5 | 21.84 | 152.76 |
| | | 847.5 | 21.91 | 155.24 |

ERP LTE Band 5 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP | |
|-----------------|------------|---------|-------|--------|
| | | | dBm | mW |
| 5MHz Band QASK | 1/0 | 826.5 | 22.87 | 193.64 |
| | | 836.5 | 22.64 | 183.65 |
| | | 846.5 | 22.21 | 166.34 |
| 5MHz Band 16QAM | 1/0 | 826.5 | 22.57 | 180.72 |
| | | 836.5 | 22.14 | 163.68 |
| | | 846.5 | 22.11 | 162.55 |

ERP LTE Band 5 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP | |
|---------------------|------------|---------|-------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 1/0 | 829.0 | 21.67 | 146.89 |
| | | 836.5 | 21.84 | 152.76 |
| | | 844.0 | 21.71 | 148.25 |
| 10.0 MHZ BAND 16QAM | 1/0 | 829.0 | 20.97 | 125.03 |
| | | 836.5 | 21.14 | 130.02 |
| | | 844.0 | 21.11 | 129.12 |

ERP LTE Band 13(5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-----------------------|------------|---------|----------------|--------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 1/0 | 779.5 | 23.12 | 205.12 |
| | | 782.0 | 23.42 | 219.79 |
| | | 784.5 | 23.52 | 224.91 |
| 5.0 MHZ BAND 16QAM | 1/0 | 779.5 | 21.42 | 138.68 |
| | | 782.0 | 21.82 | 152.05 |
| | | 784.5 | 21.82 | 152.05 |

LTE BAND 13 (ERP), 10MHz

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|----------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 10 MHZ BAND QPSK | 1/0 | 782.0 | 23.12 | 205.12 |
| 10 MHZ BAND 16QAM | 1/0 | | 22.12 | 162.93 |

EIRP LTE Band 25 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 1.4 MHZ BAND QPSK | 6/0 | 1850.7 | 26.82 | 480.84 |
| | | 1880.0 | 27.36 | 544.50 |
| | | 1914.3 | 25.50 | 354.81 |
| 1.4 MHZ BAND 16QAM | 6/0 | 1850.7 | 25.82 | 381.94 |
| | | 1880.0 | 26.36 | 432.51 |
| | | 1914.3 | 25.40 | 346.74 |

EIRP LTE Band 25 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1851.5 | 26.52 | 448.75 |
| | | 1880.0 | 26.86 | 485.29 |
| | | 1913.5 | 25.90 | 389.05 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1851.5 | 25.42 | 348.34 |
| | | 1880.0 | 25.36 | 343.56 |
| | | 1913.5 | 24.90 | 309.03 |

EIRP LTE Band 25 (5.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 25/0 | 1852.5 | 28.02 | 633.87 |
| | | 1880.0 | 28.66 | 734.51 |
| | | 1912.5 | 27.70 | 588.84 |
| 5.0 MHZ BAND 16QAM | 25/0 | 1852.5 | 26.92 | 492.04 |
| | | 1880.0 | 27.36 | 544.50 |
| | | 1912.5 | 26.90 | 489.78 |

EIRP LTE Band 25(10.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 50/0 | 1855.0 | 28.52 | 711.21 |
| | | 1880.0 | 28.86 | 769.13 |
| | | 1910.0 | 28.10 | 645.65 |
| 10.0 MHZ BAND 16QAM | 50/0 | 1855.0 | 26.92 | 492.04 |
| | | 1880.0 | 27.36 | 544.50 |
| | | 1910.0 | 27.30 | 537.03 |

EIRP LTE Band 25 (15.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 15.0 MHZ BAND QPSK | 75/0 | 1857.5 | 26.92 | 492.04 |
| | | 1880.0 | 28.16 | 654.64 |
| | | 1907.5 | 28.00 | 630.96 |
| 15.0 MHZ BAND 16QAM | 75/0 | 1857.5 | 26.22 | 418.79 |
| | | 1880.0 | 27.56 | 570.16 |
| | | 1907.5 | 27.30 | 537.03 |

EIRP LTE Band 25 (20.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 20.0 MHZ BAND QPSK | 100/0 | 1860.0 | 27.72 | 591.56 |
| | | 1880.0 | 28.36 | 685.49 |
| | | 1905.0 | 28.40 | 691.83 |
| 20.0 MHZ BAND 16QAM | 100/0 | 1860.0 | 27.52 | 564.94 |
| | | 1880.0 | 27.96 | 625.17 |
| | | 1905.0 | 27.80 | 602.56 |

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EIRP LTE Band 2 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 1.4 MHZ BAND QPSK | 6/0 | 1850.7 | 23.42 | 219.79 |
| | | 1880.0 | 23.86 | 243.22 |
| | | 1909.3 | 23.90 | 245.47 |
| 1.4 MHZ BAND 16QAM | 6/0 | 1850.7 | 22.52 | 178.65 |
| | | 1880.0 | 22.86 | 193.20 |
| | | 1909.3 | 23.00 | 199.53 |

EIRP LTE Band 2 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1851.5 | 23.52 | 224.91 |
| | | 1880.0 | 24.16 | 260.62 |
| | | 1908.5 | 23.80 | 239.88 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1851.5 | 22.52 | 178.65 |
| | | 1880.0 | 23.46 | 221.82 |
| | | 1908.5 | 22.90 | 194.98 |

EIRP LTE Band 2 (5.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 25/0 | 1852.5 | 23.72 | 235.50 |
| | | 1880.0 | 24.36 | 272.90 |
| | | 1907.5 | 23.70 | 234.42 |
| 5.0 MHZ BAND 16QAM | 25/0 | 1852.5 | 22.52 | 178.65 |
| | | 1880.0 | 24.26 | 266.69 |
| | | 1907.5 | 23.70 | 234.42 |

EIRP LTE Band 2 (10.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 50/0 | 1855.0 | 24.22 | 264.24 |
| | | 1880.0 | 25.06 | 320.63 |
| | | 1905.0 | 24.90 | 309.03 |
| 10.0 MHZ BAND 16QAM | 50/0 | 1855.0 | 23.42 | 219.79 |
| | | 1880.0 | 24.16 | 260.62 |
| | | 1905.0 | 24.00 | 251.19 |

EIRP LTE Band 2 (15.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 15.0 MHZ BAND QPSK | 75/0 | 1857.5 | 25.42 | 348.34 |
| | | 1880.0 | 25.66 | 368.13 |
| | | 1902.5 | 26.30 | 426.58 |
| 15.0 MHZ BAND 16QAM | 75/0 | 1857.5 | 24.52 | 283.14 |
| | | 1880.0 | 24.66 | 292.42 |
| | | 1902.5 | 25.40 | 346.74 |

EIRP LTE Band 2 (20.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 20.0 MHZ BAND QPSK | 100/0 | 1860.0 | 25.92 | 390.84 |
| | | 1880.0 | 26.06 | 403.65 |
| | | 1900.0 | 26.65 | 462.38 |
| 20.0 MHZ BAND 16QAM | 100/0 | 1860.0 | 25.02 | 317.69 |
| | | 1880.0 | 25.06 | 320.63 |
| | | 1900.0 | 25.70 | 371.54 |

EIRP LTE Band 4 (1.4 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 1.4 MHZ BAND QPSK | 6/0 | 1710.7 | 21.56 | 143.22 |
| | | 1732.5 | 23.41 | 219.28 |
| | | 1754.3 | 23.17 | 207.49 |
| 1.4 MHZ BAND 16QAM | 6/0 | 1710.7 | 20.66 | 116.41 |
| | | 1732.5 | 22.51 | 178.24 |
| | | 1754.3 | 22.27 | 168.66 |

EIRP LTE Band 4 (3.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1711.5 | 22.36 | 172.19 |
| | | 1732.5 | 22.61 | 182.39 |
| | | 1753.5 | 23.67 | 232.81 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1711.5 | 21.46 | 139.96 |
| | | 1732.5 | 23.81 | 240.44 |
| | | 1753.5 | 22.67 | 184.93 |

EIRP LTE Band 4 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 25/0 | 1712.5 | 22.46 | 176.20 |
| | | 1732.5 | 23.91 | 246.04 |
| | | 1752.5 | 23.97 | 249.46 |
| 5.0 MHZ BAND 16QAM | 25/0 | 1712.5 | 21.56 | 143.22 |
| | | 1732.5 | 23.01 | 199.99 |
| | | 1752.5 | 23.07 | 202.77 |

EIRP LTE Band 4 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 50/0 | 1715.0 | 22.56 | 180.30 |
| | | 1732.5 | 23.01 | 199.99 |
| | | 1750.0 | 23.37 | 217.27 |
| 10.0 MHZ BAND 16QAM | 50/0 | 1715.0 | 21.66 | 146.55 |
| | | 1732.5 | 22.11 | 162.55 |
| | | 1750.0 | 22.47 | 176.60 |

EIRP LTE Band 4 (15.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 15.0 MHZ BAND QPSK | 75/0 | 1715.0 | 22.66 | 184.50 |
| | | 1732.5 | 23.81 | 240.44 |
| | | 1750.0 | 22.87 | 193.64 |
| 15.0 MHZ BAND 16QAM | 75/0 | 1715.0 | 21.76 | 149.97 |
| | | 1732.5 | 22.91 | 195.43 |
| | | 1750.0 | 21.97 | 157.40 |

EIRP LTE Band 4 (20.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 20.0 MHZ BAND QPSK | 100/0 | 1720.0 | 23.16 | 207.01 |
| | | 1732.5 | 23.81 | 240.44 |
| | | 1745.0 | 23.57 | 227.51 |
| 20.0 MHZ BAND 16QAM | 100/0 | 1720.0 | 22.36 | 172.19 |
| | | 1732.5 | 22.91 | 195.43 |
| | | 1745.0 | 22.67 | 184.93 |

ERP LTE Band 17 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-----------------|------------|---------|---------------|-------|
| | | | dBm | mW |
| 5MHz Band QASK | 1/0 | 709.0 | 17.22 | 52.72 |
| | | 710.0 | 17.12 | 51.52 |
| | | 711.0 | 16.92 | 49.20 |
| 5MHz Band 16QAM | 1/0 | 709.0 | 16.42 | 43.85 |
| | | 710.0 | 16.32 | 42.85 |
| | | 711.0 | 16.12 | 40.93 |

ERP LTE Band 17 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|---------------------|------------|---------|---------------|-------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 1/0 | 709.0 | 16.32 | 42.85 |
| | | 710.0 | 16.22 | 41.88 |
| | | 711.0 | 16.12 | 40.93 |
| 10.0 MHZ BAND 16QAM | 1/0 | 709.0 | 15.42 | 34.83 |
| | | 710.0 | 15.22 | 33.27 |
| | | 711.0 | 15.32 | 34.04 |

ERP LTE Band 5 (1.4.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 1.4MHz Band QASK | 1/0 | 824.7 | 21.97 | 157.40 |
| | | 836.5 | 22.54 | 179.47 |
| | | 848.3 | 21.61 | 144.88 |
| 1.4MHz Band 16QAM | 1/0 | 824.7 | 20.97 | 125.03 |
| | | 836.5 | 21.64 | 145.88 |
| | | 848.3 | 20.41 | 109.90 |

ERP LTE Band 5 (3.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|--------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 1/0 | 825.5 | 21.67 | 146.89 |
| | | 836.5 | 22.34 | 171.40 |
| | | 847.5 | 21.41 | 138.36 |
| 3.0 MHZ BAND 16QAM | 1/0 | 825.5 | 20.97 | 125.03 |
| | | 836.5 | 21.34 | 136.14 |
| | | 847.5 | 20.71 | 117.76 |

ERP LTE Band 5 (5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-----------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 5MHz Band QASK | 1/0 | 826.5 | 21.57 | 143.55 |
| | | 836.5 | 22.14 | 163.68 |
| | | 846.5 | 21.31 | 135.21 |
| 5MHz Band 16QAM | 1/0 | 826.5 | 20.87 | 122.18 |
| | | 836.5 | 21.54 | 142.56 |
| | | 846.5 | 20.51 | 112.46 |

ERP LTE Band 5 (10.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|---------------------|------------|---------|---------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 1/0 | 829.0 | 21.67 | 146.89 |
| | | 836.5 | 22.14 | 163.68 |
| | | 844.0 | 21.71 | 148.25 |
| 10.0 MHZ BAND 16QAM | 1/0 | 829.0 | 21.17 | 130.92 |
| | | 836.5 | 21.34 | 136.14 |
| | | 844.0 | 21.11 | 129.12 |

ERP LTE Band 13(5.0 MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|--------------------|------------|---------|----------------|-------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 1/0 | 779.5 | 18.12 | 64.86 |
| | | 782.0 | 18.72 | 74.47 |
| | | 784.5 | 19.22 | 83.56 |
| 5.0 MHZ BAND 16QAM | 1/0 | 779.5 | 17.52 | 56.49 |
| | | 782.0 | 18.42 | 69.50 |
| | | 784.5 | 18.22 | 66.37 |

LTE BAND 13 (ERP), 10MHz

| Mode | RB/RB SIZE | f (MHz) | ERP (Average) | |
|-------------------|------------|---------|---------------|-------|
| | | | dBm | mW |
| 10 MHZ BAND QPSK | 1/0 | 782.0 | 18.02 | 63.39 |
| 10 MHZ BAND 16QAM | 1/0 | | 17.32 | 53.95 |

EIRP LTE Band 25 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|--------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 1.4 MHZ BAND QPSK | 6/0 | 1850.7 | 20.72 | 118.03 |
| | | 1880.0 | 22.06 | 160.69 |
| | | 1914.3 | 20.40 | 109.65 |
| 1.4 MHZ BAND 16QAM | 6/0 | 1850.7 | 19.72 | 93.76 |
| | | 1880.0 | 20.86 | 121.90 |
| | | 1914.3 | 19.60 | 91.20 |

EIRP LTE Band 25 (1.4MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|--------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1851.5 | 23.22 | 209.89 |
| | | 1880.0 | 24.16 | 260.62 |
| | | 1913.5 | 23.60 | 229.09 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1851.5 | 22.22 | 166.72 |
| | | 1880.0 | 23.36 | 216.77 |
| | | 1913.5 | 22.90 | 194.98 |

EIRP LTE Band 25 (3.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 3.0 MHZ BAND QPSK | 15/0 | 1851.5 | 23.22 | 209.89 |
| | | 1880.0 | 24.16 | 260.62 |
| | | 1913.5 | 23.60 | 229.09 |
| 3.0 MHZ BAND 16QAM | 15/0 | 1851.5 | 22.22 | 166.72 |
| | | 1880.0 | 23.36 | 216.77 |
| | | 1913.5 | 22.90 | 194.98 |

EIRP LTE Band 25 (5.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|-----------------------|------------|---------|------------|--------|
| | | | dBm | mW |
| 5.0 MHZ BAND QPSK | 25/0 | 1852.5 | 23.72 | 235.50 |
| | | 1880.0 | 24.86 | 306.20 |
| | | 1912.5 | 24.40 | 275.42 |
| 5.0 MHZ BAND 16QAM | 25/0 | 1852.5 | 23.22 | 209.89 |
| | | 1880.0 | 23.96 | 248.89 |
| | | 1912.5 | 23.60 | 229.09 |

EIRP LTE Band 25(10.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 10.0 MHZ BAND QPSK | 50/0 | 1855.0 | 24.22 | 264.24 |
| | | 1880.0 | 25.16 | 328.10 |
| | | 1910.0 | 25.10 | 323.59 |
| 10.0 MHZ BAND 16QAM | 50/0 | 1855.0 | 23.42 | 219.79 |
| | | 1880.0 | 24.16 | 260.62 |
| | | 1910.0 | 24.20 | 263.03 |

EIRP LTE Band 25 (15.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 15.0 MHZ BAND QPSK | 75/0 | 1857.5 | 24.52 | 283.14 |
| | | 1880.0 | 25.26 | 335.74 |
| | | 1907.5 | 24.70 | 295.12 |
| 15.0 MHZ BAND 16QAM | 75/0 | 1857.5 | 23.32 | 214.78 |
| | | 1880.0 | 24.26 | 266.69 |
| | | 1907.5 | 23.90 | 245.47 |

EIRP LTE Band 25 (20.0MHz BAND WIDTH)

| Mode | RB/RB SIZE | f (MHz) | EIRP(Peak) | |
|------------------------|------------|---------|-------------|--------|
| | | | dBm | mW |
| 20.0 MHZ BAND QPSK | 100/0 | 1860.0 | 24.52 | 283.14 |
| | | 1880.0 | 25.26 | 335.74 |
| | | 1905.0 | 25.13 | 325.84 |
| 20.0 MHZ BAND 16QAM | 100/0 | 1860.0 | 23.72 | 235.50 |
| | | 1880.0 | 24.46 | 279.25 |
| | | 1905.0 | 24.14 | 259.42 |

9.1.1. A1428 LAT PORT LTE BAND 2

EIRP LTE QPSK, Band 2 (1,4MHz Band Width)

PEAK

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|-----------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 1.4MHz BW | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB6-0 | | | | | | | | |
| 1.851 | 17.8 | V | 0.85 | 8.62 | 25.57 | 33.0 | -7.4 | |
| 1.851 | 23.9 | H | 0.85 | 8.47 | 31.52 | 33.0 | -1.5 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.880 | 18.1 | V | 0.85 | 8.46 | 25.71 | 33.0 | -7.3 | |
| 1.880 | 22.0 | H | 0.85 | 8.36 | 29.46 | 33.0 | -3.5 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.909 | 17.7 | V | 0.85 | 8.30 | 25.15 | 33.0 | -7.9 | |
| 1.909 | 22.7 | H | 0.85 | 8.25 | 30.10 | 33.0 | -2.9 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 1.4MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB6-0 | | | | | | | | |
| 1.851 | 17.2 | V | 0.85 | 8.62 | 24.97 | 33.0 | -8.0 | |
| 1.851 | 21.9 | H | 0.85 | 8.47 | 29.52 | 33.0 | -3.5 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.880 | 17.3 | V | 0.85 | 8.46 | 24.91 | 33.0 | -8.1 | |
| 1.880 | 21.1 | H | 0.85 | 8.36 | 28.56 | 33.0 | -4.4 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.909 | 17.1 | V | 0.85 | 8.30 | 24.55 | 33.0 | -8.5 | |
| 1.909 | 21.8 | H | 0.85 | 8.25 | 29.20 | 33.0 | -3.8 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 2 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|------------------|---------------------|-----------------|--------------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 5MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB15-0 | | | | | | | | |
| 1.852 | 18.1 | V | 0.85 | 8.62 | 25.87 | 33.0 | -7.1 | |
| 1.852 | 23.9 | H | 0.85 | 8.47 | 31.52 | 33.0 | -1.5 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.880 | 18.5 | V | 0.85 | 8.46 | 26.11 | 33.0 | -6.9 | |
| 1.880 | 22.9 | H | 0.85 | 8.36 | 30.36 | 33.0 | -2.6 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.909 | 18.1 | V | 0.85 | 8.30 | 25.55 | 33.0 | -7.5 | |
| 1.909 | 23.4 | H | 0.85 | 8.25 | 30.80 | 33.0 | -2.2 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 3MHz BW | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB15-0 | | | | | | | | |
| 1.852 | 17.6 | V | 0.85 | 8.62 | 25.37 | 33.0 | -7.6 | |
| 1.852 | 22.8 | H | 0.85 | 8.47 | 30.42 | 33.0 | -2.6 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.880 | 17.9 | V | 0.85 | 8.46 | 25.51 | 33.0 | -7.5 | |
| 1.880 | 21.9 | H | 0.85 | 8.36 | 29.36 | 33.0 | -3.6 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.909 | 17.6 | V | 0.85 | 8.30 | 25.05 | 33.0 | -8.0 | |
| 1.909 | 22.3 | H | 0.85 | 8.25 | 29.70 | 33.0 | -3.3 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 2 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 5MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB25-0 | | | | | | | | |
| 1.853 | 18.2 | V | 0.85 | 8.62 | 25.97 | 33.0 | -7.0 | |
| 1.853 | 24.3 | H | 0.85 | 8.47 | 31.92 | 33.0 | -1.1 | |
| QPSK, RB25-0 | | | | | | | | |
| 1.880 | 18.5 | V | 0.85 | 8.46 | 26.11 | 33.0 | -6.9 | |
| 1.880 | 23.7 | H | 0.85 | 8.36 | 31.16 | 33.0 | -1.8 | |
| QPSK, RB25-0 | | | | | | | | |
| 1.908 | 18.3 | V | 0.85 | 8.30 | 25.75 | 33.0 | -7.3 | |
| 1.908 | 23.5 | H | 0.85 | 8.25 | 30.90 | 33.0 | -2.1 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 5MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB25-0 | | | | | | | | |
| 1.853 | 18.0 | V | 0.85 | 8.62 | 25.77 | 33.0 | -7.2 | |
| 1.853 | 23.1 | H | 0.85 | 8.47 | 30.72 | 33.0 | -2.3 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.880 | 18.2 | V | 0.85 | 8.46 | 25.81 | 33.0 | -7.2 | |
| 1.880 | 22.8 | H | 0.85 | 8.36 | 30.31 | 33.0 | -2.7 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.908 | 17.8 | V | 0.85 | 8.30 | 25.25 | 33.0 | -7.8 | |
| 1.908 | 22.5 | H | 0.85 | 8.25 | 29.90 | 33.0 | -3.1 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 2 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Applle | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | |
| Mode: | | LTE band 2, 10MHz BW QPSK | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Camber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB50-0 | | | | | | | | |
| 1.855 | 18.4 | V | 0.85 | 8.62 | 26.17 | 33.0 | -6.8 | |
| 1.855 | 23.5 | H | 0.85 | 8.47 | 31.12 | 33.0 | -1.9 | |
| QPSK, RB50-0 | | | | | | | | |
| 1.880 | 19.5 | V | 0.85 | 8.46 | 27.11 | 33.0 | -5.9 | |
| 1.880 | 23.4 | H | 0.85 | 8.36 | 30.89 | 33.0 | -2.1 | |
| QPSK, RB50-0 | | | | | | | | |
| 1.910 | 18.3 | V | 0.85 | 8.30 | 25.75 | 33.0 | -7.3 | |
| 1.910 | 22.1 | H | 0.85 | 8.25 | 29.50 | 33.0 | -3.5 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|-------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE Band 2, 10MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB50-0 | | | | | | | | |
| 1.855 | 18.0 | V | 0.85 | 8.62 | 25.77 | 33.0 | -7.2 | |
| 1.855 | 22.8 | H | 0.85 | 8.47 | 30.46 | 33.0 | -2.5 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.880 | 18.2 | V | 0.85 | 8.46 | 25.81 | 33.0 | -7.2 | |
| 1.880 | 22.6 | H | 0.85 | 8.36 | 30.06 | 33.0 | -2.9 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.910 | 17.8 | V | 0.85 | 8.30 | 25.25 | 33.0 | -7.8 | |
| 1.910 | 21.5 | H | 0.85 | 8.25 | 28.90 | 33.0 | -4.1 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 2 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|------------------|----------------------|-----------------|--------------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 15MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB75-0 | | | | | | | | |
| 1.858 | 18.0 | V | 0.85 | 8.62 | 25.77 | 33.0 | -7.2 | |
| 1.858 | 23.5 | H | 0.85 | 8.47 | 31.12 | 33.0 | -1.9 | |
| QPSK, RB75-0 | | | | | | | | |
| 1.880 | 18.2 | V | 0.85 | 8.46 | 25.81 | 33.0 | -7.2 | |
| 1.880 | 23.8 | H | 0.85 | 8.36 | 31.26 | 33.0 | -1.7 | |
| QPSK, RB75-0 | | | | | | | | |
| 1.908 | 18.0 | V | 0.85 | 8.30 | 25.45 | 33.0 | -7.6 | |
| 1.908 | 22.3 | H | 0.85 | 8.25 | 29.70 | 33.0 | -3.3 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | | |
|---|---------------------|-------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|--|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 06/28/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT only | | | | | | | |
| Mode: | | LTE band 2, 15MHz BW 16QAM, Peak | | | | | | | |
| Test Equipment: | | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes | |
| 16QAM, RB75-0 | | | | | | | | | |
| 1.858 | 18.0 | V | 0.85 | 8.62 | 25.77 | 33.0 | -7.2 | | |
| 1.858 | 22.7 | H | 0.85 | 8.47 | 30.27 | 33.0 | -2.7 | | |
| 16QAM, RB75-0 | | | | | | | | | |
| 1.880 | 18.2 | V | 0.85 | 8.46 | 25.81 | 33.0 | -7.2 | | |
| 1.880 | 22.7 | H | 0.85 | 8.36 | 30.16 | 33.0 | -2.8 | | |
| 16QAM, RB75-0 | | | | | | | | | |
| 1.903 | 17.8 | V | 0.85 | 8.30 | 25.25 | 33.0 | -7.8 | | |
| 1.903 | 21.3 | H | 0.85 | 8.25 | 28.70 | 33.0 | 4.3 | | |
| Rev. 3.17.11 | | | | | | | | | |

EIRP LTE QPSK Band 2 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 20MHz BW QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB100-0 | | | | | | | | |
| 1.860 | 18.3 | V | 0.85 | 8.62 | 26.07 | 33.0 | -6.9 | |
| 1.860 | 23.3 | H | 0.85 | 8.47 | 30.95 | 33.0 | -2.1 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.880 | 18.5 | V | 0.85 | 8.46 | 26.11 | 33.0 | -6.9 | |
| 1.880 | 24.1 | H | 0.85 | 8.36 | 31.56 | 33.0 | -1.4 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.900 | 18.3 | V | 0.85 | 8.30 | 25.75 | 33.0 | -7.3 | |
| 1.900 | 22.7 | H | 0.85 | 8.25 | 30.10 | 33.0 | -2.9 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|-------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 20MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB100-0 | | | | | | | | |
| 1.860 | 18.0 | V | 0.85 | 8.62 | 25.77 | 33.0 | -7.2 | |
| 1.860 | 22.1 | H | 0.85 | 8.47 | 29.72 | 33.0 | -3.3 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.880 | 18.3 | V | 0.85 | 8.46 | 25.91 | 33.0 | -7.1 | |
| 1.880 | 23.2 | H | 0.85 | 8.36 | 30.66 | 33.0 | -2.3 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.900 | 18.0 | V | 0.85 | 8.30 | 25.45 | 33.0 | -7.6 | |
| 1.900 | 21.7 | H | 0.85 | 8.25 | 29.07 | 33.0 | -3.9 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.2. A1428 LAT PORT LTE BAND 4

EIRP LTE QPSK Band 4 (1.4 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|------------------|---------------------------|-----------------|--------------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 1.4MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB6-0, PK | | | | | | | | |
| 1.711 | 14.8 | V | 0.67 | 8.56 | 22.69 | 30.0 | -7.3 | |
| 1.711 | 18.9 | H | 0.67 | 8.43 | 26.66 | 30.0 | -3.3 | |
| QPSK, RB6-0, PK | | | | | | | | |
| 1.733 | 14.4 | V | 0.67 | 8.64 | 22.37 | 30.0 | -7.6 | |
| 1.733 | 19.3 | H | 0.67 | 8.48 | 27.11 | 30.0 | -2.9 | |
| QPSK, RB6-0, PK | | | | | | | | |
| 1.754 | 14.1 | V | 0.67 | 8.73 | 22.16 | 30.0 | -7.8 | |
| 1.754 | 19.5 | H | 0.67 | 8.54 | 27.37 | 30.0 | -2.6 | |
| Rev. 1.24.7 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4_1.4 MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T60 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB6-0 | | | | | | | | |
| 1.711 | 14.2 | V | 0.67 | 8.56 | 22.09 | 30.0 | -7.9 | |
| 1.711 | 18.2 | H | 0.67 | 8.43 | 25.96 | 30.0 | -4.0 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.733 | 13.9 | V | 0.67 | 8.64 | 21.87 | 30.0 | -8.1 | |
| 1.733 | 18.3 | H | 0.67 | 8.48 | 26.11 | 30.0 | -3.9 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.754 | 13.7 | V | 0.67 | 8.73 | 21.76 | 30.0 | -8.2 | |
| 1.754 | 18.8 | H | 0.67 | 8.54 | 26.67 | 30.0 | -3.3 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE QPSK Band 4 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|-------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 3MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB15-0 | | | | | | | | |
| 1.712 | 15.0 | V | 0.67 | 8.56 | 22.89 | 30.0 | -7.1 | |
| 1.712 | 19.5 | H | 0.67 | 8.43 | 27.21 | 30.0 | -2.8 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.733 | 14.7 | V | 0.67 | 8.64 | 22.67 | 30.0 | -7.3 | |
| 1.733 | 19.8 | H | 0.67 | 8.48 | 27.61 | 30.0 | -2.4 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.754 | 14.5 | V | 0.67 | 8.73 | 22.56 | 30.0 | -7.4 | |
| 1.754 | 20.6 | H | 0.67 | 8.54 | 28.47 | 30.0 | -1.5 | |
| Rev. 1.24.7 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4_3 MHz BW_16QAM_RB15-0 MODE Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB15-0 | | | | | | | | |
| 1.712 | 14.3 | V | 0.67 | 8.56 | 22.19 | 30.0 | -7.8 | |
| 1.712 | 18.4 | H | 0.67 | 8.43 | 26.16 | 30.0 | -3.8 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.733 | 14.1 | V | 0.67 | 8.64 | 22.07 | 30.0 | -7.9 | |
| 1.733 | 18.7 | H | 0.67 | 8.48 | 26.51 | 30.0 | -3.5 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.754 | 13.9 | V | 0.67 | 8.73 | 21.96 | 30.0 | -8.0 | |
| 1.754 | 19.6 | H | 0.67 | 8.54 | 27.47 | 30.0 | -2.5 | |
| Rev. 1.24.7 | | | | | | | | |

EIRP LTE QPSK Band 4 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 5 MHz BW_QPSK_RB25-0 Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low CH | | | | | | | | |
| QPSK, RB25-0, PK | | | | | | | | |
| 1.713 | 15.6 | V | 0.67 | 8.56 | 23.49 | 30.0 | -6.5 | |
| 1.713 | 20.1 | H | 0.67 | 8.43 | 27.86 | 30.0 | -2.1 | |
| Mid Ch | | | | | | | | |
| QPSK, RB25-0, PK | | | | | | | | |
| 1.733 | 15.1 | V | 0.67 | 8.64 | 23.07 | 30.0 | -6.9 | |
| 1.733 | 19.8 | H | 0.67 | 8.48 | 27.61 | 30.0 | -2.4 | |
| QPSK, RB25-0, PK | | | | | | | | |
| 1.753 | 15.1 | V | 0.67 | 8.73 | 23.16 | 30.0 | -6.8 | |
| 1.753 | 19.9 | H | 0.67 | 8.54 | 27.77 | 30.0 | -2.2 | |
| Rev. 1.24.7 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber B | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4_5 MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB25-0 | | | | | | | | |
| 1.713 | 15.4 | V | 0.67 | 8.56 | 23.29 | 30.0 | -6.7 | |
| 1.713 | 19.2 | H | 0.67 | 8.43 | 26.96 | 30.0 | -3.0 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.733 | 14.8 | V | 0.67 | 8.64 | 22.77 | 30.0 | -7.2 | |
| 1.733 | 18.9 | H | 0.67 | 8.48 | 26.71 | 30.0 | -3.3 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.753 | 14.7 | V | 0.67 | 8.73 | 22.76 | 30.0 | -7.2 | |
| 1.753 | 18.9 | H | 0.67 | 8.54 | 26.77 | 30.0 | -3.2 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE QPSK Band 4 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 10 MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB50.0 | | | | | | | | |
| 1.715 | 15.2 | V | 0.67 | 8.56 | 23.09 | 30.0 | -6.9 | |
| 1.715 | 20.7 | H | 0.67 | 8.43 | 28.46 | 30.0 | -1.5 | |
| QPSK, RB50.0 | | | | | | | | |
| 1.733 | 15.3 | V | 0.67 | 8.64 | 23.27 | 30.0 | -6.7 | |
| 1.733 | 20.8 | H | 0.67 | 8.48 | 28.61 | 30.0 | -1.4 | |
| QPSK, RB50.0 | | | | | | | | |
| 1.750 | 15.3 | V | 0.67 | 8.73 | 23.36 | 30.0 | -6.6 | |
| 1.750 | 21.1 | H | 0.67 | 8.54 | 28.97 | 30.0 | -1.0 | |
| Rev. 1.24.7 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4_10 MHz BW | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73 and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB50-0 | | | | | | | | |
| 1.715 | 15.4 | V | 0.67 | 8.56 | 23.29 | 30.0 | -6.7 | |
| 1.715 | 19.7 | H | 0.67 | 8.43 | 27.46 | 30.0 | -2.5 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.733 | 14.8 | V | 0.67 | 8.64 | 22.77 | 30.0 | -7.2 | |
| 1.733 | 19.6 | H | 0.67 | 8.48 | 27.41 | 30.0 | -2.6 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.750 | 14.7 | V | 0.67 | 8.73 | 22.76 | 30.0 | -7.2 | |
| 1.750 | 20.1 | H | 0.67 | 8.54 | 27.97 | 30.0 | -2.0 | |
| Rev. 1.24.7 | | | | | | | | |

EIRP LTE QPSK Band 4 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 15MHz BW_QPSK Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB75.0 | | | | | | | | |
| 1.718 | 15.1 | V | 0.67 | 8.56 | 22.99 | 30.0 | -7.0 | |
| 1.718 | 21.2 | H | 0.67 | 8.43 | 28.96 | 30.0 | -1.0 | |
| QPSK, RB75.0 | | | | | | | | |
| 1.733 | 15.1 | V | 0.67 | 8.64 | 23.07 | 30.0 | -6.9 | |
| 1.733 | 21.1 | H | 0.67 | 8.48 | 28.91 | 30.0 | -1.1 | |
| QPSK, RB75.0 | | | | | | | | |
| 1.748 | 15.1 | V | 0.67 | 8.73 | 23.16 | 30.0 | -6.8 | |
| 1.748 | 21.3 | H | 0.67 | 8.54 | 29.17 | 30.0 | -0.8 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band 4 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4_15 MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB75-0 | | | | | | | | |
| 1.718 | 15.2 | V | 0.67 | 8.56 | 23.09 | 30.0 | -6.9 | |
| 1.718 | 20.1 | H | 0.67 | 8.43 | 27.86 | 30.0 | -2.1 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.733 | 14.6 | V | 0.67 | 8.64 | 22.57 | 30.0 | -7.4 | |
| 1.733 | 20.0 | H | 0.67 | 8.48 | 27.81 | 30.0 | -2.2 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.748 | 14.7 | V | 0.67 | 8.73 | 22.76 | 30.0 | -7.2 | |
| 1.748 | 20.3 | H | 0.67 | 8.54 | 28.17 | 30.0 | -1.8 | |
| Rev. 1.24.7 | | | | | | | | |

EIRP LTE QPSK Band 4 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|----------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 20MHz BW Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB100.0 | | | | | | | | |
| 1.720 | 15.0 | V | 0.67 | 8.56 | 22.89 | 30.0 | -7.1 | |
| 1.720 | 20.9 | H | 0.67 | 8.43 | 28.66 | 30.0 | -1.3 | |
| QPSK, RB100.0 | | | | | | | | |
| 1.733 | 14.8 | V | 0.67 | 8.64 | 22.77 | 30.0 | -7.2 | |
| 1.733 | 20.8 | H | 0.67 | 8.48 | 28.61 | 30.0 | -1.4 | |
| QPSK, RB100.0 | | | | | | | | |
| 1.745 | 14.6 | V | 0.67 | 8.73 | 22.66 | 30.0 | -7.3 | |
| 1.745 | 21.0 | H | 0.67 | 8.54 | 28.87 | 30.0 | -1.1 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band4 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/30/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4_20 MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB100-0 | | | | | | | | |
| 1.720 | 14.6 | V | 0.67 | 8.56 | 22.49 | 30.0 | -7.5 | |
| 1.720 | 19.8 | H | 0.67 | 8.43 | 27.56 | 30.0 | -2.4 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.733 | 14.2 | V | 0.67 | 8.64 | 22.17 | 30.0 | -7.8 | |
| 1.733 | 19.6 | H | 0.67 | 8.48 | 27.41 | 30.0 | -2.6 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.745 | 14.1 | V | 0.67 | 8.73 | 22.16 | 30.0 | -7.8 | |
| 1.745 | 19.8 | H | 0.67 | 8.54 | 27.67 | 30.0 | -2.3 | |
| Rev. 1.24.7 | | | | | | | | |

9.1.3. A1428 LAT PORT LTE BAND 5

ERP LTE QPSK Band 5 (1.4 MHz BAND WIDTH)

AVERAGE

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 1.4MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1.0 | | | | | | | | |
| 824.70 | 22.67 | V | 0.5 | 0.0 | 22.17 | 38.5 | -16.3 | |
| 824.70 | 5.50 | H | 0.5 | 0.0 | 5.00 | 38.5 | -33.4 | |
| Mid Ch, RB1.0 | | | | | | | | |
| 836.50 | 23.44 | V | 0.5 | 0.0 | 22.94 | 38.5 | -15.5 | |
| 836.50 | 4.20 | H | 0.5 | 0.0 | 3.70 | 38.5 | -34.8 | |
| High Ch, RB1.0 | | | | | | | | |
| 848.30 | 22.41 | V | 0.5 | 0.0 | 21.91 | 38.5 | -16.5 | |
| 848.30 | 5.10 | H | 0.5 | 0.0 | 4.60 | 38.5 | -33.8 | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---|--------------------|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | Apple | | | | | | | |
| Project #: | 11U14136 | | | | | | | |
| Date: | 07/09/12 | | | | | | | |
| Test Engineer: | Chin Pang | | | | | | | |
| Configuration: | EUT only | | | | | | | |
| Mode: | TX, LTE band 5, 1.4MHz BW 16QAM, Average | | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunoi T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 825.50 | 21.77 | V | 0.5 | 0.0 | 21.27 | 38.5 | -17.2 | |
| 825.50 | 4.40 | H | 0.5 | 0.0 | 3.90 | 38.5 | -34.5 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 22.44 | V | 0.5 | 0.0 | 21.94 | 38.5 | -16.5 | |
| 836.50 | 3.70 | H | 0.5 | 0.0 | 3.20 | 38.5 | -35.3 | |
| High Ch, RB1-0 | | | | | | | | |
| 847.50 | 21.41 | V | 0.5 | 0.0 | 20.91 | 38.5 | -17.5 | |
| 847.50 | 4.10 | H | 0.5 | 0.0 | 3.60 | 38.5 | -34.8 | |

ERP LTE QPSK Band 5 (3.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|-------------------------|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 3MHz BW | | | | | | |
| | | QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 825.50 | 22.87 | V | 0.5 | 0.0 | 22.37 | 38.5 | -16.1 | |
| 825.50 | 5.10 | H | 0.5 | 0.0 | 4.60 | 38.5 | -33.8 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 23.34 | V | 0.5 | 0.0 | 22.84 | 38.5 | -15.6 | |
| 836.50 | 4.50 | H | 0.5 | 0.0 | 4.00 | 38.5 | -34.5 | |
| High Ch, RB1-0 | | | | | | | | |
| 847.50 | 22.31 | V | 0.5 | 0.0 | 21.81 | 38.5 | -16.6 | |
| 847.50 | 4.80 | H | 0.5 | 0.0 | 4.30 | 38.5 | -34.1 | |

A19, ERP LTE 16QAM Band 5 (3.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | | |
|--|------------------|---|-----------------|--------------------|-----------|-------------|-------------|-------|--|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT only | | | | | | | |
| Mode: | | TX, LTE band 5, 3MHz BW 16QAM, Aversge | | | | | | | |
| Test Equipment: | | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes | |
| Low Ch, RB1-0 | | | | | | | | | |
| 825.50 | 21.87 | V | 0.5 | 0.0 | 21.37 | 38.5 | -17.1 | | |
| 825.50 | 4.40 | H | 0.5 | 0.0 | 3.90 | 38.5 | -34.5 | | |
| Mid Ch, RB1-0 | | | | | | | | | |
| 836.50 | 22.84 | V | 0.5 | 0.0 | 22.34 | 38.5 | -16.1 | | |
| 836.50 | 3.80 | H | 0.5 | 0.0 | 3.30 | 38.5 | -35.2 | | |
| High Ch, RB1-0 | | | | | | | | | |
| 847.50 | 21.61 | V | 0.5 | 0.0 | 21.11 | 38.5 | -17.3 | | |
| 847.50 | 4.20 | H | 0.5 | 0.0 | 3.70 | 38.5 | -34.7 | | |

ERP LTE QPSK Band 5 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | | |
|--|------------------|--|-----------------|--------------------|-----------|-------------|-------------|-------|--|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT only | | | | | | | |
| Mode: | | TX, LTE band 5, 5MHz BW QPSK, Average | | | | | | | |
| Test Equipment: | | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes | |
| Low Ch, RB1-0 | | | | | | | | | |
| 826.50 | 22.57 | V | 0.5 | 0.0 | 22.07 | 38.5 | -16.4 | | |
| 826.50 | 4.90 | H | 0.5 | 0.0 | 4.40 | 38.5 | -34.0 | | |
| Mid Ch, RB1-0 | | | | | | | | | |
| 836.50 | 23.14 | V | 0.5 | 0.0 | 22.64 | 38.5 | -15.8 | | |
| 836.50 | 4.00 | H | 0.5 | 0.0 | 3.50 | 38.5 | -35.0 | | |
| High Ch, RB1-0 | | | | | | | | | |
| 846.50 | 22.71 | V | 0.5 | 0.0 | 22.21 | 38.5 | -16.2 | | |
| 846.50 | 5.00 | H | 0.5 | 0.0 | 4.50 | 38.5 | -33.9 | | |

A19, ERP LTE 16QAM Band 5 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|------------------|---|-----------------|--------------------|-----------|-------------|-------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 5MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 826.50 | 22.17 | V | 0.5 | 0.0 | 21.67 | 38.5 | -16.8 | |
| 826.50 | 4.30 | H | 0.5 | 0.0 | 3.80 | 38.5 | -34.6 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 22.84 | V | 0.5 | 0.0 | 22.34 | 38.5 | -16.1 | |
| 836.50 | 3.40 | H | 0.5 | 0.0 | 2.90 | 38.5 | -35.6 | |
| High Ch, RB1-0 | | | | | | | | |
| 846.50 | 22.01 | V | 0.5 | 0.0 | 21.51 | 38.5 | -16.9 | |
| 846.50 | 4.20 | H | 0.5 | 0.0 | 3.70 | 38.5 | -34.7 | |

ERP LTE QPSK Band 5 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 10MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 829.00 | 22.77 | V | 0.5 | 0.0 | 22.27 | 38.5 | -16.2 | |
| 829.00 | 5.10 | H | 0.5 | 0.0 | 4.60 | 38.5 | -33.8 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 22.94 | V | 0.5 | 0.0 | 22.44 | 38.5 | -16.0 | |
| 836.50 | 4.00 | H | 0.5 | 0.0 | 3.50 | 38.5 | -35.0 | |
| High Ch, RB1-0 | | | | | | | | |
| 844.00 | 22.46 | V | 0.5 | 0.0 | 21.96 | 38.5 | -16.5 | |
| 844.00 | 4.50 | H | 0.5 | 0.0 | 4.00 | 38.5 | -34.4 | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 10MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunoi T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 829.00 | 22.37 | V | 0.5 | 0.0 | 21.87 | 38.5 | -16.6 | |
| 829.00 | 4.30 | H | 0.5 | 0.0 | 3.80 | 38.5 | -34.6 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 22.21 | V | 0.5 | 0.0 | 21.71 | 38.5 | -16.7 | |
| 836.50 | 3.00 | H | 0.5 | 0.0 | 2.50 | 38.5 | -36.0 | |
| High Ch, RB1-0 | | | | | | | | |
| 844.00 | 21.61 | V | 0.5 | 0.0 | 21.11 | 38.5 | -17.3 | |
| 844.00 | 3.50 | H | 0.5 | 0.0 | 3.00 | 38.5 | -35.4 | |

9.1.4. A1428 LAT PORT LTE BAND 17

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

AVERAGE

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 5MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 706.50 | 23.82 | V | 0.5 | 0.0 | 23.32 | 34.8 | -11.5 | |
| 706.50 | 4.85 | H | 0.5 | 0.0 | 4.35 | 34.8 | -30.5 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 710.00 | 24.12 | V | 0.5 | 0.0 | 23.62 | 34.8 | -11.2 | |
| 710.00 | 4.65 | H | 0.5 | 0.0 | 4.15 | 34.8 | -30.7 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 713.50 | 23.92 | V | 0.5 | 0.0 | 23.42 | 34.8 | -11.4 | |
| 713.50 | 4.45 | H | 0.5 | 0.0 | 3.95 | 34.8 | -30.9 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 5MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 706.50 | 23.52 | V | 0.5 | 0.0 | 23.02 | 34.8 | -11.8 | |
| 706.50 | 3.75 | H | 0.5 | 0.0 | 3.25 | 34.8 | -31.6 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 710.00 | 24.02 | V | 0.5 | 0.0 | 23.52 | 34.8 | -11.3 | |
| 710.00 | 3.65 | H | 0.5 | 0.0 | 3.15 | 34.8 | -31.7 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 713.50 | 23.67 | V | 0.5 | 0.0 | 23.17 | 34.8 | -11.6 | |
| 713.50 | 3.55 | H | 0.5 | 0.0 | 3.05 | 34.8 | -31.8 | |
| Rev. 3.17.11 | | | | | | | | |

ERP LTE QPSK Band 17 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 10MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 709.00 | 23.92 | V | 0.5 | 0.0 | 23.42 | 34.8 | -11.4 | |
| 709.00 | 4.35 | H | 0.5 | 0.0 | 3.85 | 34.8 | -31.0 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 710.00 | 23.87 | V | 0.5 | 0.0 | 23.37 | 34.8 | -11.4 | |
| 710.00 | 4.45 | H | 0.5 | 0.0 | 3.95 | 34.8 | -30.9 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 711.00 | 24.02 | V | 0.5 | 0.0 | 23.52 | 34.8 | -11.3 | |
| 711.00 | 58.35 | H | 0.5 | 0.0 | 57.85 | 34.8 | 23.1 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 10MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunoi T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 709.00 | 23.42 | V | 0.5 | 0.0 | 22.92 | 34.8 | -11.9 | |
| 709.00 | 3.85 | H | 0.5 | 0.0 | 3.35 | 34.8 | -31.5 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 710.00 | 23.52 | V | 0.5 | 0.0 | 23.02 | 34.8 | -11.8 | |
| 710.00 | 3.75 | H | 0.5 | 0.0 | 3.25 | 34.8 | -31.6 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 711.00 | 23.22 | V | 0.5 | 0.0 | 22.72 | 34.8 | -12.1 | |
| 711.00 | 3.65 | H | 0.5 | 0.0 | 3.15 | 34.8 | -31.7 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.5. A1429 LAT PORT LTE BAND 5

ERP LTE QPSK Band 5 (1.4 MHz BAND WIDTH)

AVERAGE

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 1.4MHz QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 824.70 | 23.17 | V | 0.5 | 0.0 | 22.67 | 38.5 | -15.8 | |
| 824.70 | 7.50 | H | 0.5 | 0.0 | 7.00 | 38.5 | -31.4 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 23.34 | V | 0.5 | 0.0 | 22.84 | 38.5 | -15.6 | |
| 836.50 | 7.00 | H | 0.5 | 0.0 | 6.50 | 38.5 | -32.0 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 848.30 | 23.21 | V | 0.5 | 0.0 | 22.71 | 38.5 | -15.7 | |
| 848.30 | 7.50 | H | 0.5 | 0.0 | 7.00 | 38.5 | -31.4 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 1.4MHz 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, 16QAM | | | | | | | | |
| 824.70 | 22.47 | V | 0.5 | 0.0 | 21.97 | 38.5 | -16.5 | |
| 824.70 | 7.60 | H | 0.5 | 0.0 | 7.10 | 38.5 | -31.3 | |
| Mid Ch, RB1-0, 16QAM | | | | | | | | |
| 836.50 | 22.74 | V | 0.5 | 0.0 | 22.24 | 38.5 | -16.2 | |
| 836.50 | 6.50 | H | 0.5 | 0.0 | 6.00 | 38.5 | -32.5 | |
| High Ch, RB1-0, 16QAM | | | | | | | | |
| 848.30 | 22.21 | V | 0.5 | 0.0 | 21.71 | 38.5 | -16.7 | |
| 848.30 | 7.00 | H | 0.5 | 0.0 | 6.50 | 38.5 | -31.9 | |
| Rev. 3.17.11 | | | | | | | | |

A21, ERP LTE QPSK Band 5 (3.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---------------------------------------|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 3MHz QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 825.50 | 23.17 | V | 0.5 | 0.0 | 22.67 | 38.5 | -15.8 | |
| 825.50 | 8.10 | H | 0.5 | 0.0 | 7.60 | 38.5 | -30.8 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 23.14 | V | 0.5 | 0.0 | 22.64 | 38.5 | -15.8 | |
| 836.50 | 7.00 | H | 0.5 | 0.0 | 6.50 | 38.5 | -32.0 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 847.50 | 23.01 | V | 0.5 | 0.0 | 22.51 | 38.5 | -15.9 | |
| 847.50 | 7.90 | H | 0.5 | 0.0 | 7.40 | 38.5 | -31.0 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 3MHz 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, 16QAM | | | | | | | | |
| 825.50 | 22.57 | V | 0.5 | 0.0 | 22.07 | 38.5 | -16.4 | |
| 825.50 | 7.50 | H | 0.5 | 0.0 | 7.00 | 38.5 | -31.4 | |
| Mid Ch, RB1-0, 16QAM | | | | | | | | |
| 836.50 | 22.34 | V | 0.5 | 0.0 | 21.84 | 38.5 | -16.6 | |
| 836.50 | 6.60 | H | 0.5 | 0.0 | 6.10 | 38.5 | -32.4 | |
| High Ch, RB1-0, 16QAM | | | | | | | | |
| 847.50 | 22.41 | V | 0.5 | 0.0 | 21.91 | 38.5 | -16.5 | |
| 847.50 | 7.20 | H | 0.5 | 0.0 | 6.70 | 38.5 | -31.7 | |
| Rev. 3.17.11 | | | | | | | | |

ERP LTE QPSK Band 5 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---------------------------------------|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 5MHz QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 826.50 | 23.37 | V | 0.5 | 0.0 | 22.87 | 38.5 | -15.6 | |
| 826.50 | 7.90 | H | 0.5 | 0.0 | 7.40 | 38.5 | -31.0 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 23.14 | V | 0.5 | 0.0 | 22.64 | 38.5 | -15.8 | |
| 836.50 | 7.30 | H | 0.5 | 0.0 | 6.80 | 38.5 | -31.7 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 846.50 | 22.71 | V | 0.5 | 0.0 | 22.21 | 38.5 | -16.2 | |
| 846.50 | 7.90 | H | 0.5 | 0.0 | 7.40 | 38.5 | -31.0 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 5MHz 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunoi T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, 16QAM | | | | | | | | |
| 826.50 | 23.07 | V | 0.5 | 0.0 | 22.57 | 38.5 | -15.9 | |
| 826.50 | 7.90 | H | 0.5 | 0.0 | 7.40 | 38.5 | -31.0 | |
| Mid Ch, RB1-0, 16QAM | | | | | | | | |
| 836.50 | 22.64 | V | 0.5 | 0.0 | 22.14 | 38.5 | -16.3 | |
| 836.50 | 7.00 | H | 0.5 | 0.0 | 6.50 | 38.5 | -32.0 | |
| High Ch, RB1-0, 16QAM | | | | | | | | |
| 846.50 | 22.61 | V | 0.5 | 0.0 | 22.11 | 38.5 | -16.3 | |
| 846.50 | 7.50 | H | 0.5 | 0.0 | 7.00 | 38.5 | -31.4 | |
| Rev. 3.17.11 | | | | | | | | |

ERP LTE QPSK Band 5 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|------------------|--|-----------------|--------------------|-----------|-------------|-------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 10MHz QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 829.00 | 22.97 | V | 0.5 | 0.0 | 22.47 | 38.5 | -16.0 | |
| 829.00 | 7.30 | H | 0.5 | 0.0 | 6.80 | 38.5 | -31.6 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 22.64 | V | 0.5 | 0.0 | 22.14 | 38.5 | -16.3 | |
| 836.50 | 6.50 | H | 0.5 | 0.0 | 6.00 | 38.5 | -32.5 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 844.00 | 22.81 | V | 0.5 | 0.0 | 22.31 | 38.5 | -16.1 | |
| 844.00 | 6.90 | H | 0.5 | 0.0 | 6.40 | 38.5 | -32.0 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 10MHz 16QAM, average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243 and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, 16QAM | | | | | | | | |
| 829.00 | 21.47 | V | 0.5 | 0.0 | 20.97 | 38.5 | -17.5 | |
| 829.00 | 7.90 | H | 0.5 | 0.0 | 7.40 | 38.5 | -31.0 | |
| Mid Ch., RB1-0, 16QAM | | | | | | | | |
| 836.50 | 21.64 | V | 0.5 | 0.0 | 21.14 | 38.5 | -17.3 | |
| 836.50 | 7.00 | H | 0.5 | 0.0 | 6.50 | 38.5 | -32.0 | |
| High Ch, RB1-0, 16QAM | | | | | | | | |
| 844.00 | 21.61 | V | 0.5 | 0.0 | 21.11 | 38.5 | -17.3 | |
| 844.00 | 7.50 | H | 0.5 | 0.0 | 7.00 | 38.5 | -31.4 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.6. A1429 LAT PORT LTE BAND 13

AVERAGE

ERP LTE QPSK Band 13 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|------------------------|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/27/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 13 | | | | | | |
| | | QPSK, 5MHz BW, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243 and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1-0, QPSK | | | | | | | | |
| 779.50 | 23.62 | V | 0.5 | 0.0 | 23.12 | 38.5 | -15.3 | |
| 779.50 | 7.35 | H | 0.5 | 0.0 | 6.85 | 38.5 | -31.6 | |
| RB=1-0, QPSK | | | | | | | | |
| 782.00 | 23.92 | V | 0.5 | 0.0 | 23.42 | 38.5 | -15.0 | |
| 782.00 | 7.35 | H | 0.5 | 0.0 | 6.85 | 38.5 | -31.6 | |
| RB=1-0, QPSK | | | | | | | | |
| 784.50 | 24.02 | V | 0.5 | 0.0 | 23.52 | 38.5 | -14.9 | |
| 784.50 | 7.35 | H | 0.5 | 0.0 | 6.85 | 38.5 | -31.6 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/27/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 13, 5MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=25-0, 16QAM | | | | | | | | |
| 779.50 | 21.92 | V | 0.5 | 0.0 | 21.42 | 38.5 | -17.0 | |
| 779.50 | 6.15 | H | 0.5 | 0.0 | 5.65 | 38.5 | -32.8 | |
| RB=25-0, 16QAM | | | | | | | | |
| 782.00 | 22.22 | V | 0.5 | 0.0 | 21.72 | 38.5 | -16.7 | |
| 782.00 | 6.35 | H | 0.5 | 0.0 | 5.85 | 38.5 | -32.6 | |
| RB=25-0, 16QAM | | | | | | | | |
| 784.50 | 22.32 | V | 0.5 | 0.0 | 21.82 | 38.5 | -16.6 | |
| 784.50 | 6.35 | H | 0.5 | 0.0 | 5.85 | 38.5 | -32.6 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---|--------------------|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | Apple | | | | | | | |
| Project #: | 11U14136 | | | | | | | |
| Date: | 06/28/12 | | | | | | | |
| Test Engineer: | Chin Pang | | | | | | | |
| Configuration: | EUT only | | | | | | | |
| Mode: | TX, LTE BAND 13, QPSK QPSK and 16QAM, 10MHz, Average | | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1-0, QPSK | | | | | | | | |
| 782.00 | 23.62 | V | 0.5 | 0.0 | 23.12 | 38.5 | -15.3 | |
| 782.00 | 6.35 | H | 0.5 | 0.0 | 5.85 | 38.5 | -32.6 | |
| RB=1-0, 16QAM | | | | | | | | |
| 782.00 | 22.62 | V | 0.5 | 0.0 | 22.12 | 38.5 | -16.3 | |
| 782.00 | 6.15 | H | 0.5 | 0.0 | 5.65 | 38.5 | -32.8 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.7. A1429 LAT PORT LTE BAND 25

EIRP LTE QPSK Band 25 (1.4 MHz BAND WIDTH)

PEAK

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 1.4MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB6-0 | | | | | | | | |
| 1.851 | 16.2 | V | 0.85 | 8.62 | 23.97 | 33.0 | -9.0 | |
| 1.851 | 19.2 | H | 0.85 | 8.47 | 26.82 | 33.0 | -6.2 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.883 | 16.6 | V | 0.85 | 8.46 | 24.21 | 33.0 | -8.8 | |
| 1.883 | 19.9 | H | 0.85 | 8.36 | 27.36 | 33.0 | -5.6 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.914 | 16.3 | V | 0.85 | 8.30 | 23.75 | 33.0 | -9.3 | |
| 1.914 | 18.1 | H | 0.85 | 8.25 | 25.50 | 33.0 | -7.5 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 1.4MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB6-0 | | | | | | | | |
| 1.851 | 15.2 | V | 0.85 | 8.62 | 22.97 | 33.0 | -10.0 | |
| 1.851 | 18.2 | H | 0.85 | 8.47 | 25.82 | 33.0 | -7.2 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.883 | 15.3 | V | 0.85 | 8.46 | 22.91 | 33.0 | -10.1 | |
| 1.883 | 18.9 | H | 0.85 | 8.36 | 26.36 | 33.0 | -6.6 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.914 | 15.0 | V | 0.85 | 8.30 | 22.45 | 33.0 | -10.6 | |
| 1.914 | 18.0 | H | 0.85 | 8.25 | 25.40 | 33.0 | -7.6 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 25 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|----------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 3MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB15-0 | | | | | | | | |
| 1.852 | 15.1 | V | 0.85 | 8.62 | 22.87 | 33.0 | -10.1 | |
| 1.852 | 18.9 | H | 0.85 | 8.47 | 26.52 | 33.0 | -6.5 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.883 | 15.5 | V | 0.85 | 8.46 | 23.11 | 33.0 | -9.9 | |
| 1.883 | 19.4 | H | 0.85 | 8.36 | 26.86 | 33.0 | -6.1 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.914 | 14.3 | V | 0.85 | 8.30 | 21.75 | 33.0 | -11.3 | |
| 1.914 | 18.5 | H | 0.85 | 8.25 | 25.90 | 33.0 | -7.1 | |
| Rev. 3.17.11 | | | | | | | | |

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

PEAK

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|----------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 3MHz BW | | | | | | |
| | | 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73 and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB15-0 | | | | | | | | |
| 1.852 | 13.9 | V | 0.85 | 8.62 | 21.67 | 33.0 | -11.3 | |
| 1.852 | 17.8 | H | 0.85 | 8.47 | 25.42 | 33.0 | -7.6 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.883 | 14.0 | V | 0.85 | 8.46 | 21.61 | 33.0 | -11.4 | |
| 1.883 | 17.9 | H | 0.85 | 8.36 | 25.36 | 33.0 | -7.6 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.914 | 13.7 | V | 0.85 | 8.30 | 21.15 | 33.0 | -11.9 | |
| 1.914 | 17.5 | H | 0.85 | 8.25 | 24.90 | 33.0 | -8.1 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 25 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|----------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 5MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB25.0 | | | | | | | | |
| 1.853 | 10.2 | V | 0.85 | 8.62 | 17.97 | 33.0 | -15.0 | |
| 1.853 | 20.4 | H | 0.85 | 8.47 | 28.02 | 33.0 | -5.0 | |
| QPSK, RB25.0 | | | | | | | | |
| 1882.5 | 18.5 | V | 0.85 | 8.46 | 26.11 | 33.0 | -6.9 | |
| 1882.5 | 21.2 | H | 0.85 | 8.36 | 28.66 | 33.0 | -4.3 | |
| QPSK, RB25.0 | | | | | | | | |
| 1.913 | 18.3 | V | 0.85 | 8.30 | 25.75 | 33.0 | -7.3 | |
| 1.913 | 20.3 | H | 0.85 | 8.25 | 27.70 | 33.0 | -5.3 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|----------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 5MHz BW | | | | | | |
| | | 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB25-0 | | | | | | | | |
| 1.853 | 10.2 | V | 0.85 | 8.62 | 17.97 | 33.0 | -15.0 | |
| 1.853 | 19.3 | H | 0.85 | 8.47 | 26.92 | 33.0 | -6.1 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.883 | 11.5 | V | 0.85 | 8.46 | 19.11 | 33.0 | -13.9 | |
| 1.883 | 19.9 | H | 0.85 | 8.36 | 27.36 | 33.0 | -5.6 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.913 | 10.3 | V | 0.85 | 8.30 | 17.75 | 33.0 | -15.3 | |
| 1.913 | 19.5 | H | 0.85 | 8.25 | 26.90 | 33.0 | -6.1 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 25 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | |
|---|---------------------|-------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|
| Company: | | Apple | | | | | |
| Project #: | | 11U14136 | | | | | |
| Date: | | 07/06/12 | | | | | |
| Test Engineer: | | Chin Pang | | | | | |
| Configuration: | | EUT only | | | | | |
| Mode: | | LTE band 25, 10MHz BW QPSK, Peak | | | | | |
| Test Equipment: | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) |
| QPSK, RB50-0 | | | | | | | |
| 1.855 | 18.2 | V | 0.85 | 8.62 | 25.97 | 33.0 | -7.0 |
| 1.855 | 20.9 | H | 0.85 | 8.47 | 28.52 | 33.0 | -4.5 |
| QPSK, RB50-0 | | | | | | | |
| 1882.5 | 18.5 | V | 0.85 | 8.46 | 26.11 | 33.0 | -6.9 |
| 1882.5 | 21.4 | H | 0.85 | 8.36 | 28.86 | 33.0 | -4.1 |
| QPSK, RB50-0 | | | | | | | |
| 1.910 | 18.3 | V | 0.85 | 8.30 | 25.75 | 33.0 | -7.3 |
| 1.910 | 20.7 | H | 0.85 | 8.25 | 28.10 | 33.0 | -4.9 |
| Rev. 3.17.11 | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 10MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| RB50-0, 16QAM | | | | | | | | |
| 1.855 | 17.2 | V | 0.85 | 8.62 | 24.97 | 33.0 | -8.0 | |
| 1.855 | 19.3 | H | 0.85 | 8.47 | 26.92 | 33.0 | -6.1 | |
| RB50-0, 16QAM | | | | | | | | |
| 1.883 | 17.9 | V | 0.85 | 8.46 | 25.51 | 33.0 | -7.5 | |
| 1.883 | 19.9 | H | 0.85 | 8.36 | 27.36 | 33.0 | -5.6 | |
| RB50-0, 16QAM | | | | | | | | |
| 1.910 | 17.7 | V | 0.85 | 8.30 | 25.15 | 33.0 | -7.9 | |
| 1.910 | 19.9 | H | 0.85 | 8.25 | 27.30 | 33.0 | -5.7 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 25 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | | |
|---|---------------------|-------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|--|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 06/28/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT only | | | | | | | |
| Mode: | | LTE band 25, 15MHz BW QPSK, Peak | | | | | | | |
| Test Equipment: | | | | | | | | | |
| Receiving: Horn T73 and Chamber A SMA Cables | | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes | |
| QPSK, RB75-0 | | | | | | | | | |
| 1.858 | 15.6 | V | 0.85 | 8.62 | 23.37 | 33.0 | -9.6 | | |
| 1.858 | 19.3 | H | 0.85 | 8.47 | 26.92 | 33.0 | -6.1 | | |
| QPSK, RB75-0 | | | | | | | | | |
| 1.883 | 15.8 | V | 0.85 | 8.46 | 23.41 | 33.0 | -9.6 | | |
| 1.883 | 20.7 | H | 0.85 | 8.36 | 28.16 | 33.0 | -4.8 | | |
| QPSK, RB75-0 | | | | | | | | | |
| 1.908 | 15.6 | V | 0.85 | 8.30 | 23.05 | 33.0 | -10.0 | | |
| 1.908 | 20.6 | H | 0.85 | 8.25 | 28.00 | 33.0 | -5.0 | | |
| Rev. 3.17.11 | | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/28/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 15MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB75-0 | | | | | | | | |
| 1.858 | 14.6 | V | 0.85 | 8.62 | 22.37 | 33.0 | -10.6 | |
| 1.858 | 18.6 | H | 0.85 | 8.47 | 26.22 | 33.0 | -6.8 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.883 | 14.9 | V | 0.85 | 8.46 | 22.51 | 33.0 | -10.5 | |
| 1.883 | 20.1 | H | 0.85 | 8.36 | 27.56 | 33.0 | -5.4 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.908 | 14.6 | V | 0.85 | 8.30 | 22.05 | 33.0 | -11.0 | |
| 1.908 | 19.9 | H | 0.85 | 8.25 | 27.30 | 33.0 | -5.7 | |
| Rev. 3.17.11 | | | | | | | | |

EIRP LTE QPSK Band 25 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|-----------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 20MHz BW | | | | | | |
| | | QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB100-0 | | | | | | | | |
| 1.860 | 16.7 | V | 0.85 | 8.62 | 24.47 | 33.0 | -8.5 | |
| 1.860 | 20.1 | H | 0.85 | 8.47 | 27.72 | 33.0 | -5.3 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.883 | 16.9 | V | 0.85 | 8.46 | 24.51 | 33.0 | -8.5 | |
| 1.883 | 20.9 | H | 0.85 | 8.36 | 28.36 | 33.0 | -4.6 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.905 | 16.8 | V | 0.85 | 8.30 | 24.25 | 33.0 | -8.8 | |
| 1.905 | 21.0 | H | 0.85 | 8.25 | 28.40 | 33.0 | -4.6 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/07/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 20MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB100.0 | | | | | | | | |
| 1.860 | 15.8 | V | 0.85 | 8.62 | 23.57 | 33.0 | -9.4 | |
| 1.860 | 19.9 | H | 0.85 | 8.47 | 27.52 | 33.0 | -5.5 | |
| 16QAM, RB100.0 | | | | | | | | |
| 1.883 | 16.0 | V | 0.85 | 8.46 | 23.61 | 33.0 | -9.4 | |
| 1.883 | 20.5 | H | 0.85 | 8.36 | 27.96 | 33.0 | -5.0 | |
| 16QAM, RB100.0 | | | | | | | | |
| 1.905 | 15.7 | V | 0.85 | 8.30 | 23.15 | 33.0 | -9.9 | |
| 1.905 | 20.4 | H | 0.85 | 8.25 | 27.80 | 33.0 | -5.2 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.8. A1428 UAT PORT LTE BAND 2

(1.4 MHz BAND WIDTH), QPSK, PEAK

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|------------------|---|-----------------|--------------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/23/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 2, 1.4MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB6-0 | | | | | | | | |
| 1.855 | 12.2 | V | 0.85 | 8.62 | 19.97 | 33.0 | -13.0 | |
| 1.855 | 15.8 | H | 0.85 | 8.47 | 23.42 | 33.0 | -9.6 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.880 | 11.6 | V | 0.85 | 8.46 | 19.21 | 33.0 | -13.8 | |
| 1.880 | 16.4 | H | 0.85 | 8.36 | 23.86 | 33.0 | -9.1 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.9093 | 11.9 | V | 0.85 | 8.30 | 19.35 | 33.0 | -13.7 | |
| 1.9093 | 16.5 | H | 0.85 | 8.25 | 23.90 | 33.0 | -9.1 | |
| Rev. 3.17.11 | | | | | | | | |

A1428, EIRP LTE 16QAM Band 2 (1.4 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|------------------|---|-----------------|--------------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/23/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A1428, LTE band 2, 1.4MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB6-0 | | | | | | | | |
| 1.855 | 11.2 | V | 0.85 | 8.62 | 18.97 | 33.0 | -14.0 | |
| 1.855 | 14.9 | H | 0.85 | 8.47 | 22.52 | 33.0 | -10.5 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.880 | 11.0 | V | 0.85 | 8.46 | 18.61 | 33.0 | -14.4 | |
| 1.880 | 15.4 | H | 0.85 | 8.36 | 22.86 | 33.0 | -10.1 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.9093 | 10.8 | V | 0.85 | 8.30 | 18.25 | 33.0 | -14.8 | |
| 1.9093 | 15.6 | H | 0.85 | 8.25 | 23.00 | 33.0 | -10.0 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE QPSK Band 2 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE Band 2, 3MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB15-0 | | | | | | | | |
| 1.852 | 9.9 | V | 0.85 | 8.62 | 17.67 | 33.0 | -15.3 | |
| 1.852 | 15.9 | H | 0.85 | 8.47 | 23.52 | 33.0 | -9.5 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.880 | 10.2 | V | 0.85 | 8.46 | 17.81 | 33.0 | -15.2 | |
| 1.880 | 16.7 | H | 0.85 | 8.36 | 24.16 | 33.0 | -8.8 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.909 | 10.1 | V | 0.85 | 8.30 | 17.55 | 33.0 | -15.5 | |
| 1.909 | 16.4 | H | 0.85 | 8.25 | 23.80 | 33.0 | -9.2 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE 16QAM Band 2 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 3MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB15-0 | | | | | | | | |
| 1.852 | 9.0 | V | 0.85 | 8.62 | 16.77 | 33.0 | -16.2 | |
| 1.852 | 14.9 | H | 0.85 | 8.47 | 22.52 | 33.0 | -10.5 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.880 | 9.3 | V | 0.85 | 8.46 | 16.91 | 33.0 | -16.1 | |
| 1.880 | 16.0 | H | 0.85 | 8.36 | 23.46 | 33.0 | -9.5 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.909 | 9.2 | V | 0.85 | 8.30 | 16.65 | 33.0 | -16.4 | |
| 1.909 | 15.5 | H | 0.85 | 8.25 | 22.90 | 33.0 | -10.1 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE QPSK Band 2 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 5MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB25.0 | | | | | | | | |
| 1.853 | 10.2 | V | 0.85 | 8.62 | 17.97 | 33.0 | -15.0 | |
| 1.853 | 16.1 | H | 0.85 | 8.47 | 23.72 | 33.0 | -9.3 | |
| QPSK, RB25.0 | | | | | | | | |
| 1.880 | 10.5 | V | 0.85 | 8.46 | 18.11 | 33.0 | -14.9 | |
| 1.880 | 16.9 | H | 0.85 | 8.36 | 24.36 | 33.0 | -8.6 | |
| 16QAM, RB25.0 | | | | | | | | |
| 1.908 | 9.3 | V | 0.85 | 8.30 | 16.75 | 33.0 | -16.3 | |
| 1.908 | 16.3 | H | 0.85 | 8.25 | 23.70 | 33.0 | -9.3 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE 16QAM Band 2 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 5MHz BW 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB25-0 | | | | | | | | |
| 1.853 | 9.2 | V | 0.85 | 8.62 | 16.97 | 33.0 | -16.0 | |
| 1.853 | 14.9 | H | 0.85 | 8.47 | 22.52 | 33.0 | -10.5 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.880 | 9.5 | V | 0.85 | 8.46 | 17.11 | 33.0 | -15.9 | |
| 1.880 | 16.8 | H | 0.85 | 8.36 | 24.26 | 33.0 | -8.7 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.908 | 9.3 | V | 0.85 | 8.30 | 16.75 | 33.0 | -16.3 | |
| 1.908 | 16.3 | H | 0.85 | 8.25 | 23.70 | 33.0 | -9.3 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE QPSK Band 2 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 10MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB50.0 | | | | | | | | |
| 1.855 | 9.9 | V | 0.85 | 8.62 | 17.67 | 33.0 | -15.3 | |
| 1.855 | 16.6 | H | 0.85 | 8.47 | 24.22 | 33.0 | -8.8 | |
| QPSK, RB50.0 | | | | | | | | |
| 1.880 | 10.2 | V | 0.85 | 8.46 | 17.81 | 33.0 | -15.2 | |
| 1.880 | 17.6 | H | 0.85 | 8.36 | 25.06 | 33.0 | -7.9 | |
| QPSK, RB50.0 | | | | | | | | |
| 1.905 | 10.1 | V | 0.85 | 8.30 | 17.55 | 33.0 | -15.5 | |
| 1.905 | 17.5 | H | 0.85 | 8.25 | 24.90 | 33.0 | -8.1 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE 16QAM Band 2 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 10MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB50-0 | | | | | | | | |
| 1.855 | 9.0 | V | 0.85 | 8.62 | 16.77 | 33.0 | -16.2 | |
| 1.855 | 15.8 | H | 0.85 | 8.47 | 23.42 | 33.0 | -9.6 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.880 | 9.3 | V | 0.85 | 8.46 | 16.91 | 33.0 | -16.1 | |
| 1.880 | 16.7 | H | 0.85 | 8.36 | 24.16 | 33.0 | -8.8 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.905 | 9.2 | V | 0.85 | 8.30 | 16.65 | 33.0 | -16.4 | |
| 1.905 | 16.6 | H | 0.85 | 8.25 | 24.00 | 33.0 | -9.0 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE QPSK Band 2 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 15MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB75-0 | | | | | | | | |
| 1.8575 | 9.6 | V | 0.85 | 8.62 | 17.37 | 33.0 | -15.6 | |
| 1.8575 | 17.8 | H | 0.85 | 8.47 | 25.42 | 33.0 | -7.6 | |
| QPSK, RB75-0 | | | | | | | | |
| 1.880 | 10.2 | V | 0.85 | 8.46 | 17.81 | 33.0 | -15.2 | |
| 1.880 | 18.2 | H | 0.85 | 8.36 | 25.66 | 33.0 | -7.3 | |
| QPSK, RB75-0 | | | | | | | | |
| 1.9025 | 10.3 | V | 0.85 | 8.30 | 17.75 | 33.0 | -15.3 | |
| 1.9025 | 18.9 | H | 0.85 | 8.25 | 26.30 | 33.0 | -6.7 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE 16QAM Band 2 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/10/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A19 , LTE band 2, 15MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB75-0 | | | | | | | | |
| 1.8575 | 8.7 | V | 0.85 | 8.62 | 16.47 | 33.0 | -16.5 | |
| 1.8575 | 16.9 | H | 0.85 | 8.47 | 24.52 | 33.0 | -8.5 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.880 | 9.5 | V | 0.85 | 8.46 | 17.11 | 33.0 | -15.9 | |
| 1.880 | 17.2 | H | 0.85 | 8.36 | 24.66 | 33.0 | -8.3 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.9025 | 9.3 | V | 0.85 | 8.30 | 16.75 | 33.0 | -16.3 | |
| 1.9025 | 18.0 | H | 0.85 | 8.25 | 25.40 | 33.0 | -7.6 | |
| Rev. 3.17.11 | | | | | | | | |

A19, EIRP LTE QPSK Band 2 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|--|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/23/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT only | | | | | | | |
| Mode: | | A1428, LTE band 2, 20MHz BW Port B, Peak | | | | | | | |
| Test Equipment: | | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes | |
| QPSK, RB100-0 | | | | | | | | | |
| 1.860 | 14.2 | V | 0.85 | 8.62 | 21.97 | 33.0 | -11.0 | | |
| 1.860 | 18.3 | H | 0.85 | 8.47 | 25.92 | 33.0 | -7.1 | | |
| QPSK, RB100-0 | | | | | | | | | |
| 1.880 | 14.7 | V | 0.85 | 8.46 | 22.31 | 33.0 | -10.7 | | |
| 1.880 | 18.6 | H | 0.85 | 8.36 | 26.06 | 33.0 | -6.9 | | |
| QPSK, RB100-0 | | | | | | | | | |
| 1.900 | 14.3 | V | 0.85 | 8.30 | 21.75 | 33.0 | -11.3 | | |
| 1.900 | 19.3 | H | 0.85 | 8.25 | 26.65 | 33.0 | -6.4 | | |
| Rev. 3.17.11 | | | | | | | | | |

A19, EIRP LTE 16QAM Band 2 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/23/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | A1428, LTE band 2, 20MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB100-0 | | | | | | | | |
| 1.860 | 13.2 | V | 0.85 | 8.62 | 20.97 | 33.0 | -12.0 | |
| 1.860 | 17.4 | H | 0.85 | 8.47 | 25.02 | 33.0 | -8.0 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.880 | 13.6 | V | 0.85 | 8.46 | 21.21 | 33.0 | -11.8 | |
| 1.880 | 17.6 | H | 0.85 | 8.36 | 25.06 | 33.0 | -7.9 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.900 | 13.3 | V | 0.85 | 8.30 | 20.75 | 33.0 | -12.3 | |
| 1.900 | 18.3 | H | 0.85 | 8.25 | 25.70 | 33.0 | -7.3 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.9. A1428 UAT PORT LTE BAND 4

A19, EIRP LTE QPSK Band 4 (1.4 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/23/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 1.4MHz BW QPSK, Port B | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB6-0 | | | | | | | | |
| 1.7115 | 11.4 | V | 0.67 | 8.56 | 19.29 | 30.0 | -10.7 | |
| 1.7115 | 13.8 | H | 0.67 | 8.43 | 21.56 | 30.0 | -8.4 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.733 | 11.6 | V | 0.67 | 8.64 | 19.57 | 30.0 | -10.4 | |
| 1.733 | 15.6 | H | 0.67 | 8.48 | 23.41 | 30.0 | -6.6 | |
| QPSK, RB6-0 | | | | | | | | |
| 1753.5 | 11.1 | V | 0.67 | 8.73 | 19.16 | 30.0 | -10.8 | |
| 1753.5 | 15.3 | H | 0.67 | 8.54 | 23.17 | 30.0 | -6.8 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band 4 (1.4 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/23/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 1.4MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB6-0 | | | | | | | | |
| 1.712 | 10.4 | V | 0.67 | 8.56 | 18.29 | 30.0 | -11.7 | |
| 1.712 | 12.9 | H | 0.67 | 8.43 | 20.66 | 30.0 | -9.3 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.733 | 10.6 | V | 0.67 | 8.64 | 18.57 | 30.0 | -11.4 | |
| 1.733 | 14.7 | H | 0.67 | 8.48 | 22.51 | 30.0 | -7.5 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1753.5 | 10.3 | V | 0.67 | 8.73 | 18.36 | 30.0 | -11.6 | |
| 1753.5 | 14.4 | H | 0.67 | 8.54 | 22.27 | 30.0 | -7.7 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE QPSK Band 4 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 3MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB15-0 | | | | | | | | |
| 1.7115 | 8.6 | V | 0.67 | 8.56 | 16.49 | 30.0 | -13.5 | |
| 1.7115 | 14.6 | H | 0.67 | 8.43 | 22.36 | 30.0 | -7.6 | |
| QPSK, RB15-0 | | | | | | | | |
| 1.7325 | 8.1 | V | 0.67 | 8.64 | 16.07 | 30.0 | -13.9 | |
| 1.7325 | 14.8 | H | 0.67 | 8.48 | 22.61 | 30.0 | -7.4 | |
| QPSK, RB15-0 | | | | | | | | |
| 1753.5 | 8.4 | V | 0.67 | 8.73 | 16.46 | 30.0 | -13.5 | |
| 1753.5 | 15.8 | H | 0.67 | 8.54 | 23.67 | 30.0 | -6.3 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band 4 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 3MHz BW A19, Port B | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB15-0 | | | | | | | | |
| 1.7115 | 7.9 | V | 0.67 | 8.56 | 15.79 | 30.0 | -14.2 | |
| 1.7115 | 13.7 | H | 0.67 | 8.43 | 21.46 | 30.0 | -8.5 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.7325 | 7.5 | V | 0.67 | 8.64 | 15.47 | 30.0 | -14.5 | |
| 1.7325 | 16.0 | H | 0.67 | 8.48 | 23.81 | 30.0 | -6.2 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1753.5 | 7.7 | V | 0.67 | 8.73 | 15.76 | 30.0 | -14.2 | |
| 1753.5 | 14.8 | H | 0.67 | 8.54 | 22.67 | 30.0 | -7.3 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE QPSK Band 4 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/14/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 5MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low CH | | | | | | | | |
| QPSK, RB25-0 | | | | | | | | |
| 1.7125 | 9.4 | V | 0.67 | 8.56 | 17.29 | 30.0 | -12.7 | |
| 1.7125 | 14.7 | H | 0.67 | 8.43 | 22.46 | 30.0 | -7.5 | |
| Mid Ch | | | | | | | | |
| QPSK, RB25-0 | | | | | | | | |
| 1.7325 | 9.1 | V | 0.67 | 8.64 | 17.07 | 30.0 | -12.9 | |
| 1.7325 | 16.1 | H | 0.67 | 8.48 | 23.91 | 30.0 | -6.1 | |
| QPSK, RB25-0 | | | | | | | | |
| 1752.5 | 9.1 | V | 0.67 | 8.73 | 17.16 | 30.0 | -12.8 | |
| 1752.5 | 16.1 | H | 0.67 | 8.54 | 23.97 | 30.0 | -6.0 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band 4 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/14/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 5MHz BW A19, Port B, 16QAM | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB25-0 | | | | | | | | |
| 1.7125 | 8.4 | V | 0.67 | 8.56 | 16.29 | 30.0 | -13.7 | |
| 1.7125 | 13.8 | H | 0.67 | 8.43 | 21.56 | 30.0 | -8.4 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.7325 | 8.1 | V | 0.67 | 8.64 | 16.07 | 30.0 | -13.9 | |
| 1.7325 | 15.2 | H | 0.67 | 8.48 | 23.01 | 30.0 | -7.0 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1752.5 | 8.1 | V | 0.67 | 8.73 | 16.16 | 30.0 | -13.8 | |
| 1752.5 | 15.2 | H | 0.67 | 8.54 | 23.07 | 30.0 | -6.9 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE QPSK Band 4 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/14/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 10MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB50.0 | | | | | | | | |
| 1.715 | 9.2 | V | 0.67 | 8.56 | 17.09 | 30.0 | -12.9 | |
| 1.715 | 14.8 | H | 0.67 | 8.43 | 22.56 | 30.0 | -7.4 | |
| QPSK, RB50.0 | | | | | | | | |
| 1.7325 | 9.1 | V | 0.67 | 8.64 | 17.07 | 30.0 | -12.9 | |
| 1.7325 | 15.2 | H | 0.67 | 8.48 | 23.01 | 30.0 | -7.0 | |
| QPSK, RB50.0 | | | | | | | | |
| 1750.0 | 9.1 | V | 0.67 | 8.73 | 17.16 | 30.0 | -12.8 | |
| 1750.0 | 15.5 | H | 0.67 | 8.54 | 23.37 | 30.0 | -6.6 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band 4 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/14/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 10MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB50-0 | | | | | | | | |
| 1.715 | 8.1 | V | 0.67 | 8.56 | 15.99 | 30.0 | -14.0 | |
| 1.715 | 13.9 | H | 0.67 | 8.43 | 21.66 | 30.0 | -8.3 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.7325 | 8.1 | V | 0.67 | 8.64 | 16.07 | 30.0 | -13.9 | |
| 1.7325 | 14.3 | H | 0.67 | 8.48 | 22.11 | 30.0 | -7.9 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1750.0 | 8.1 | V | 0.67 | 8.73 | 16.16 | 30.0 | -13.8 | |
| 1750.0 | 14.6 | H | 0.67 | 8.54 | 22.47 | 30.0 | -7.5 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE QPSK Band 4 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 15MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB75-0 | | | | | | | | |
| 1.7175 | 8.6 | V | 0.67 | 8.56 | 16.49 | 30.0 | -13.5 | |
| 1.7175 | 14.9 | H | 0.67 | 8.43 | 22.66 | 30.0 | -7.3 | |
| QPSK, RB25-0 | | | | | | | | |
| 1.7325 | 8.1 | V | 0.67 | 8.64 | 16.07 | 30.0 | -13.9 | |
| 1.7325 | 16.0 | H | 0.67 | 8.48 | 23.81 | 30.0 | -6.2 | |
| QPSK, RB25-0 | | | | | | | | |
| 1.7475 | 8.4 | V | 0.67 | 8.73 | 16.46 | 30.0 | -13.5 | |
| 1.7475 | 15.0 | H | 0.67 | 8.54 | 22.87 | 30.0 | -7.1 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band 4 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 15MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB75-0 | | | | | | | | |
| 1.7175 | 7.9 | V | 0.67 | 8.56 | 15.79 | 30.0 | -14.2 | |
| 1.7175 | 14.0 | H | 0.67 | 8.43 | 21.76 | 30.0 | -8.2 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.7325 | 7.5 | V | 0.67 | 8.64 | 15.47 | 30.0 | -14.5 | |
| 1.7325 | 15.1 | H | 0.67 | 8.48 | 22.91 | 30.0 | -7.1 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.7475 | 7.7 | V | 0.67 | 8.73 | 15.76 | 30.0 | -14.2 | |
| 1.7475 | 14.1 | H | 0.67 | 8.54 | 21.97 | 30.0 | -8.0 | |
| Rev. 1.24.7 | | | | | | | | |

EIRP LTE QPSK Band 4 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/14/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 20MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB100-0 | | | | | | | | |
| 1.720 | 8.9 | V | 0.67 | 8.56 | 16.79 | 30.0 | -13.2 | |
| 1.720 | 15.4 | H | 0.67 | 8.43 | 23.16 | 30.0 | -6.8 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.7325 | 8.1 | V | 0.67 | 8.64 | 16.07 | 30.0 | -13.9 | |
| 1.7325 | 16.0 | H | 0.67 | 8.48 | 23.81 | 30.0 | -6.2 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.745 | 8.4 | V | 0.67 | 8.73 | 16.46 | 30.0 | -13.5 | |
| 1.745 | 15.7 | H | 0.67 | 8.54 | 23.57 | 30.0 | -6.4 | |
| Rev. 1.24.7 | | | | | | | | |

A19, EIRP LTE 16QAM Band4 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/14/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 4, 20MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 6ft SMA Cable (244640002) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB100-0 | | | | | | | | |
| 1.720 | 7.9 | V | 0.67 | 8.56 | 15.79 | 30.0 | -14.2 | |
| 1.720 | 14.6 | H | 0.67 | 8.43 | 22.36 | 30.0 | -7.6 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.733 | 7.5 | V | 0.67 | 8.64 | 15.47 | 30.0 | -14.5 | |
| 1.733 | 15.1 | H | 0.67 | 8.48 | 22.91 | 30.0 | -7.1 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.745 | 7.7 | V | 0.67 | 8.73 | 15.76 | 30.0 | -14.2 | |
| 1.745 | 14.8 | H | 0.67 | 8.54 | 22.67 | 30.0 | -7.3 | |
| Rev. 1.24.7 | | | | | | | | |

9.1.10. A1428 UAT PORT LTE BAND 17

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

AVERAGE

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 5MHz BW Port B, QPSK, average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 709.00 | 17.72 | V | 0.5 | 0.0 | 17.22 | 34.8 | -17.6 | |
| 709.00 | 4.75 | H | 0.5 | 0.0 | 4.25 | 34.8 | -30.6 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 710.00 | 17.62 | V | 0.5 | 0.0 | 17.12 | 34.8 | -17.7 | |
| 710.00 | 4.55 | H | 0.5 | 0.0 | 4.05 | 34.8 | -30.8 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 711.00 | 17.42 | V | 0.5 | 0.0 | 16.92 | 34.8 | -17.9 | |
| 711.00 | 4.35 | H | 0.5 | 0.0 | 3.85 | 34.8 | -31.0 | |
| Rev. 3.17.11 | | | | | | | | |

A19, ERP LTE 16QAM Band 17 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 5MHz BW Port B, 16QAM, average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 709.00 | 16.92 | V | 0.5 | 0.0 | 16.42 | 34.8 | -18.4 | |
| 709.00 | 3.35 | H | 0.5 | 0.0 | 2.85 | 34.8 | -32.0 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 710.00 | 16.82 | V | 0.5 | 0.0 | 16.32 | 34.8 | -18.5 | |
| 710.00 | 3.25 | H | 0.5 | 0.0 | 2.75 | 34.8 | -32.1 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 711.00 | 16.62 | V | 0.5 | 0.0 | 16.12 | 34.8 | -18.7 | |
| 711.00 | 3.55 | H | 0.5 | 0.0 | 3.05 | 34.8 | -31.8 | |
| Rev. 3.17.11 | | | | | | | | |

A19, ERP LTE QPSK Band 17 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 10MHz BW Port B, QPSK, average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 709.00 | 16.82 | V | 0.5 | 0.0 | 16.32 | 34.8 | -18.5 | |
| 709.00 | 4.35 | H | 0.5 | 0.0 | 3.85 | 34.8 | -31.0 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 710.00 | 16.72 | V | 0.5 | 0.0 | 16.22 | 34.8 | -18.6 | |
| 710.00 | 4.25 | H | 0.5 | 0.0 | 3.75 | 34.8 | -31.1 | |
| RB=1 & SRB=0, QPSK | | | | | | | | |
| 711.00 | 16.62 | V | 0.5 | 0.0 | 16.12 | 34.8 | -18.7 | |
| 711.00 | 4.35 | H | 0.5 | 0.0 | 3.85 | 34.8 | -31.0 | |
| Rev. 3.17.11 | | | | | | | | |

A19, ERP LTE 16QAM Band 17 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/11/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 17 , 10MHz BW Port B, 16QAM, average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 709.00 | 15.92 | V | 0.5 | 0.0 | 15.42 | 34.8 | -19.4 | |
| 709.00 | 2.35 | H | 0.5 | 0.0 | 1.85 | 34.8 | -33.0 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 710.00 | 15.72 | V | 0.5 | 0.0 | 15.22 | 34.8 | -19.6 | |
| 710.00 | 2.35 | H | 0.5 | 0.0 | 1.85 | 34.8 | -33.0 | |
| RB=1 & SRB=0, 16QAM | | | | | | | | |
| 711.00 | 15.82 | V | 0.5 | 0.0 | 15.32 | 34.8 | -19.5 | |
| 711.00 | 2.35 | H | 0.5 | 0.0 | 1.85 | 34.8 | -33.0 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.11. A1428 UAT PORT LTE BAND 5

A21, ERP LTE QPSK Band 5 (1.4 MHz BAND WIDTH)

AVERAGE

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 1.4MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 824.70 | 22.47 | V | 0.5 | 0.0 | 21.97 | 38.5 | -16.5 | |
| 824.70 | 5.40 | H | 0.5 | 0.0 | 4.90 | 38.5 | -33.5 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 23.04 | V | 0.5 | 0.0 | 22.54 | 38.5 | -15.9 | |
| 836.50 | 6.00 | H | 0.5 | 0.0 | 5.50 | 38.5 | -33.0 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 848.30 | 22.11 | V | 0.5 | 0.0 | 21.61 | 38.5 | -16.8 | |
| 848.30 | 5.00 | H | 0.5 | 0.0 | 4.50 | 38.5 | -33.9 | |

A21, ERP LTE 16QAM Band 5 (1.4 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 1.4MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, 16QAM | | | | | | | | |
| 824.70 | 21.47 | V | 0.5 | 0.0 | 20.97 | 38.5 | -17.5 | |
| 824.70 | 4.40 | H | 0.5 | 0.0 | 3.90 | 38.5 | -34.5 | |
| Mid Ch, RB1-0, 16QAM | | | | | | | | |
| 836.50 | 22.14 | V | 0.5 | 0.0 | 21.64 | 38.5 | -16.8 | |
| 836.50 | 4.50 | H | 0.5 | 0.0 | 4.00 | 38.5 | -34.5 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 848.30 | 20.91 | V | 0.5 | 0.0 | 20.41 | 38.5 | -18.0 | |
| 848.30 | 3.90 | H | 0.5 | 0.0 | 3.40 | 38.5 | -35.0 | |

A21, ERP LTE QPSK Band 5 (3.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 3MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 825.50 | 22.17 | V | 0.5 | 0.0 | 21.67 | 38.5 | -16.8 | |
| 825.50 | 4.90 | H | 0.5 | 0.0 | 4.40 | 38.5 | -34.0 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 22.84 | V | 0.5 | 0.0 | 22.34 | 38.5 | -16.1 | |
| 836.50 | 5.20 | H | 0.5 | 0.0 | 4.70 | 38.5 | -33.8 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 847.50 | 21.91 | V | 0.5 | 0.0 | 21.41 | 38.5 | -17.0 | |
| 847.50 | 4.70 | H | 0.5 | 0.0 | 4.20 | 38.5 | -34.2 | |

A21, ERP LTE 16QAM Band 5 (3.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 3MHz BW Port B, 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 825.50 | 21.47 | V | 0.5 | 0.0 | 20.97 | 38.5 | -17.5 | |
| 825.50 | 4.30 | H | 0.5 | 0.0 | 3.80 | 38.5 | -34.6 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 21.84 | V | 0.5 | 0.0 | 21.34 | 38.5 | -17.1 | |
| 836.50 | 4.50 | H | 0.5 | 0.0 | 4.00 | 38.5 | -34.5 | |
| High Ch, RB1-0 | | | | | | | | |
| 847.50 | 21.21 | V | 0.5 | 0.0 | 20.71 | 38.5 | -17.7 | |
| 847.50 | 4.00 | H | 0.5 | 0.0 | 3.50 | 38.5 | -34.9 | |

A21, ERP LTE QPSK Band 5 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 5MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 826.50 | 22.07 | V | 0.5 | 0.0 | 21.57 | 38.5 | -16.9 | |
| 826.50 | 4.70 | H | 0.5 | 0.0 | 4.20 | 38.5 | -34.2 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 22.64 | V | 0.5 | 0.0 | 22.14 | 38.5 | -16.3 | |
| 836.50 | 5.00 | H | 0.5 | 0.0 | 4.50 | 38.5 | -34.0 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 846.50 | 21.81 | V | 0.5 | 0.0 | 21.31 | 38.5 | -17.1 | |
| 846.50 | 4.90 | H | 0.5 | 0.0 | 4.40 | 38.5 | -34.0 | |

A21, ERP LTE 16QAM Band 5 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 5MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 826.50 | 21.37 | V | 0.5 | 0.0 | 20.87 | 38.5 | -17.6 | |
| 826.50 | 4.10 | H | 0.5 | 0.0 | 3.60 | 38.5 | -34.8 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 22.04 | V | 0.5 | 0.0 | 21.54 | 38.5 | -16.9 | |
| 836.50 | 4.70 | H | 0.5 | 0.0 | 4.20 | 38.5 | -34.3 | |
| High Ch, RB1-0 | | | | | | | | |
| 846.50 | 21.01 | V | 0.5 | 0.0 | 20.51 | 38.5 | -17.9 | |
| 846.50 | 4.10 | H | 0.5 | 0.0 | 3.60 | 38.5 | -34.8 | |

A21, ERP LTE QPSK Band 5 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 10MHz BW QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunoi T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0, QPSK | | | | | | | | |
| 829.00 | 22.17 | V | 0.5 | 0.0 | 21.67 | 38.5 | -16.8 | |
| 829.00 | 4.90 | H | 0.5 | 0.0 | 4.40 | 38.5 | -34.0 | |
| Mid Ch, RB1-0, QPSK | | | | | | | | |
| 836.50 | 22.64 | V | 0.5 | 0.0 | 22.14 | 38.5 | -16.3 | |
| 836.50 | 5.00 | H | 0.5 | 0.0 | 4.50 | 38.5 | -34.0 | |
| High Ch, RB1-0, QPSK | | | | | | | | |
| 844.00 | 22.21 | V | 0.5 | 0.0 | 21.71 | 38.5 | -16.7 | |
| 844.00 | 4.50 | H | 0.5 | 0.0 | 4.00 | 38.5 | -34.4 | |

A21, ERP LTE 16QAM Band 5 (10.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/09/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE band 5, 10MHz BW 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch, RB1-0 | | | | | | | | |
| 829.00 | 21.67 | V | 0.5 | 0.0 | 21.17 | 38.5 | -17.3 | |
| 829.00 | 4.30 | H | 0.5 | 0.0 | 3.80 | 38.5 | -34.6 | |
| Mid Ch, RB1-0 | | | | | | | | |
| 836.50 | 21.84 | V | 0.5 | 0.0 | 21.34 | 38.5 | -17.1 | |
| 836.50 | 4.60 | H | 0.5 | 0.0 | 4.10 | 38.5 | -34.4 | |
| High Ch, RB1-0 | | | | | | | | |
| 844.00 | 21.61 | V | 0.5 | 0.0 | 21.11 | 38.5 | -17.3 | |
| 844.00 | 3.50 | H | 0.5 | 0.0 | 3.00 | 38.5 | -35.4 | |

9.1.12. A1429 UAT PORT LTE BAND 13

ERP LTE QPSK Band 13 (5.0 MHz BAND WIDTH)

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/27/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 13, 5MHz BW Port B, QPSK, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243 and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1-0, QPSK | | | | | | | | |
| 779.50 | 18.62 | V | 0.5 | 0.0 | 18.12 | 38.5 | -20.3 | |
| 779.50 | 4.35 | H | 0.5 | 0.0 | 3.85 | 38.5 | -34.6 | |
| RB=1-0, QPSK | | | | | | | | |
| 782.00 | 19.22 | V | 0.5 | 0.0 | 18.72 | 38.5 | -19.7 | |
| 782.00 | 4.55 | H | 0.5 | 0.0 | 4.05 | 38.5 | -34.4 | |
| RB=1-0, QPSK | | | | | | | | |
| 784.50 | 19.72 | V | 0.5 | 0.0 | 19.22 | 38.5 | -19.2 | |
| 784.50 | 3.95 | H | 0.5 | 0.0 | 3.45 | 38.5 | -35.0 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|--|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 06/27/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 13, 5MHz BW Port B, 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243 and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1-0, 16QAM | | | | | | | | |
| 779.50 | 18.02 | V | 0.5 | 0.0 | 17.52 | 38.5 | -20.9 | |
| 779.50 | 4.05 | H | 0.5 | 0.0 | 3.55 | 38.5 | -34.9 | |
| RB=1-0, 16QAM | | | | | | | | |
| 782.00 | 18.92 | V | 0.5 | 0.0 | 18.42 | 38.5 | -20.0 | |
| 782.00 | 4.35 | H | 0.5 | 0.0 | 3.85 | 38.5 | -34.6 | |
| RB=1-0, 16QAM | | | | | | | | |
| 784.50 | 18.72 | V | 0.5 | 0.0 | 18.22 | 38.5 | -20.2 | |
| 784.50 | 3.55 | H | 0.5 | 0.0 | 3.05 | 38.5 | -35.4 | |
| Rev. 3.17.11 | | | | | | | | |

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

| High Frequency Substitution Measurement Compliance Certification Services Chamber A | | | | | | | | |
|--|---------------------|---|--------------------|-----------------------|--------------|----------------|----------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/03/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | TX, LTE BAND 13,10MHz BW Port B, QPSK and 16QAM, Average | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Sunol T243, and Chamber A N-type Cable (Setup this one for testing EUT) | | | | | | | | |
| Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. | | | | | | | | |
| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| RB=1 & SRB=0, QPSK, Average | | | | | | | | |
| 782.00 | 18.52 | V | 0.5 | 0.0 | 18.02 | 38.5 | -20.4 | |
| 782.00 | 6.35 | H | 0.5 | 0.0 | 5.85 | 38.5 | -32.6 | |
| RB=1 & SRB=0, 16QAM, Average | | | | | | | | |
| 782.00 | 17.82 | V | 0.5 | 0.0 | 17.32 | 38.5 | -21.1 | |
| 782.00 | 7.35 | H | 0.5 | 0.0 | 6.85 | 38.5 | -31.6 | |
| Rev. 3.17.11 | | | | | | | | |

9.1.13. A1429 UAT PORT LTE BAND 25

A21, EIRP LTE QPSK Band 25 (1.4 MHz BAND WIDTH)

PEAK

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|------------------|--|-----------------|--------------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | |
| Mode: | | LTE band 25, 1.4MHz BW Port B, A21, | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB6-0 | | | | | | | | |
| 1.8507 | 10.8 | V | 0.85 | 8.62 | 18.57 | 33.0 | -14.4 | |
| 1.8507 | 13.1 | H | 0.85 | 8.47 | 20.72 | 33.0 | -12.3 | |
| QPSK, RB6-0 | | | | | | | | |
| 1882.5 | 11.2 | V | 0.85 | 8.46 | 18.81 | 33.0 | -14.2 | |
| 1882.5 | 14.6 | H | 0.85 | 8.36 | 22.06 | 33.0 | -10.9 | |
| QPSK, RB6-0 | | | | | | | | |
| 1.9143 | 6.2 | V | 0.85 | 8.30 | 13.65 | 33.0 | -19.4 | |
| 1.9143 | 13.0 | H | 0.85 | 8.25 | 20.40 | 33.0 | -12.6 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE 16QAM Band 25 (1.4 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 1.4MHz BW Port B, A21, | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB6-0 | | | | | | | | |
| 1.8507 | 9.9 | V | 0.85 | 8.62 | 17.67 | 33.0 | -15.3 | |
| 1.8507 | 12.1 | H | 0.85 | 8.47 | 19.72 | 33.0 | -13.3 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1882.5 | 10.4 | V | 0.85 | 8.46 | 18.01 | 33.0 | -15.0 | |
| 1882.5 | 13.4 | H | 0.85 | 8.36 | 20.86 | 33.0 | -12.1 | |
| 16QAM, RB6-0 | | | | | | | | |
| 1.9145 | 10.3 | V | 0.85 | 8.30 | 17.75 | 33.0 | -15.3 | |
| 1.9145 | 12.2 | H | 0.85 | 8.25 | 19.60 | 33.0 | -13.4 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE QPSK Band 25 (3.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | |
| Mode: | | LTE band 25, 3MHz BW Port B, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB15-0 | | | | | | | | |
| 1.8515 | 11.2 | V | 0.85 | 8.62 | 18.97 | 33.0 | -14.0 | |
| 1.8515 | 15.6 | H | 0.85 | 8.47 | 23.22 | 33.0 | -9.8 | |
| QPSK, RB15-0 | | | | | | | | |
| 1882.5 | 12.1 | V | 0.85 | 8.46 | 19.71 | 33.0 | -13.3 | |
| 1882.5 | 16.7 | H | 0.85 | 8.36 | 24.16 | 33.0 | -8.8 | |
| QPSK, RB50-0 | | | | | | | | |
| 1.9135 | 11.7 | V | 0.85 | 8.30 | 19.15 | 33.0 | -13.9 | |
| 1.9135 | 16.2 | H | 0.85 | 8.25 | 23.60 | 33.0 | -9.4 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE 16QAM Band 25 (3.0 MHz BAND WIDTH)

PEAK

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 3MHz BW Port B, Port A | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB15-0 | | | | | | | | |
| 1.8515 | 10.6 | V | 0.85 | 8.62 | 18.37 | 33.0 | -14.6 | |
| 1.8515 | 14.6 | H | 0.85 | 8.47 | 22.22 | 33.0 | -10.8 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1882.5 | 11.2 | V | 0.85 | 8.46 | 18.81 | 33.0 | -14.2 | |
| 1882.5 | 15.9 | H | 0.85 | 8.36 | 23.36 | 33.0 | -9.6 | |
| 16QAM, RB15-0 | | | | | | | | |
| 1.9135 | 10.7 | V | 0.85 | 8.30 | 18.15 | 33.0 | -14.9 | |
| 1.9135 | 15.5 | H | 0.85 | 8.25 | 22.90 | 33.0 | -10.1 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE QPSK Band 25 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 5MHz BW Port B, QPSK | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB25-0 | | | | | | | | |
| 1.853 | 12.2 | V | 0.85 | 8.62 | 19.97 | 33.0 | -13.0 | |
| 1.853 | 16.1 | H | 0.85 | 8.47 | 23.72 | 33.0 | -9.3 | |
| QPSK, RB25-0 | | | | | | | | |
| 1882.5 | 12.5 | V | 0.85 | 8.46 | 20.11 | 33.0 | -12.9 | |
| 1882.5 | 17.4 | H | 0.85 | 8.36 | 24.86 | 33.0 | -8.1 | |
| QPSK, RB25-0 | | | | | | | | |
| 1.9125 | 12.3 | V | 0.85 | 8.30 | 19.75 | 33.0 | -13.3 | |
| 1.9125 | 17.0 | H | 0.85 | 8.25 | 24.40 | 33.0 | -8.6 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE 16QAM Band 25 (5.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---------------------------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 5MHz BW Port B, 16QAM | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB25-0 | | | | | | | | |
| 1.853 | 11.2 | V | 0.85 | 8.62 | 18.97 | 33.0 | -14.0 | |
| 1.853 | 15.6 | H | 0.85 | 8.47 | 23.22 | 33.0 | -9.8 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1882.5 | 11.5 | V | 0.85 | 8.46 | 19.11 | 33.0 | -13.9 | |
| 1882.5 | 16.5 | H | 0.85 | 8.36 | 23.96 | 33.0 | -9.0 | |
| 16QAM, RB25-0 | | | | | | | | |
| 1.9125 | 11.3 | V | 0.85 | 8.30 | 18.75 | 33.0 | -14.3 | |
| 1.9125 | 16.2 | H | 0.85 | 8.25 | 23.60 | 33.0 | -9.4 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE QPSK Band 25 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 10MHz BW Port B, Peak, QPSK | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB50.0 | | | | | | | | |
| 1.855 | 12.2 | V | 0.85 | 8.62 | 19.97 | 33.0 | -13.0 | |
| 1.855 | 16.6 | H | 0.85 | 8.47 | 24.22 | 33.0 | -8.8 | |
| QPSK, RB50.0 | | | | | | | | |
| 1882.5 | 12.5 | V | 0.85 | 8.46 | 20.11 | 33.0 | -12.9 | |
| 1882.5 | 17.7 | H | 0.85 | 8.36 | 25.16 | 33.0 | -7.8 | |
| QPSK, RB50.0 | | | | | | | | |
| 1.910 | 12.3 | V | 0.85 | 8.30 | 19.75 | 33.0 | -13.3 | |
| 1.910 | 17.7 | H | 0.85 | 8.25 | 25.10 | 33.0 | -7.9 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE 16QAM Band 25 (10.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 10MHz BW Port B, 16QAM,Peak, | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB50-0 | | | | | | | | |
| 1.855 | 11.2 | V | 0.85 | 8.62 | 18.97 | 33.0 | -14.0 | |
| 1.855 | 15.8 | H | 0.85 | 8.47 | 23.42 | 33.0 | -9.6 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1882.5 | 11.5 | V | 0.85 | 8.46 | 19.11 | 33.0 | -13.9 | |
| 1882.5 | 16.7 | H | 0.85 | 8.36 | 24.16 | 33.0 | -8.8 | |
| 16QAM, RB50-0 | | | | | | | | |
| 1.910 | 11.3 | V | 0.85 | 8.30 | 18.75 | 33.0 | -14.3 | |
| 1.910 | 16.8 | H | 0.85 | 8.25 | 24.20 | 33.0 | -8.8 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE QPSK Band 25 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT o0nly | | | | | | |
| Mode: | | LTE band 25, 15MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB75-0 | | | | | | | | |
| 1.8575 | 11.1 | V | 0.85 | 8.62 | 18.87 | 33.0 | -14.1 | |
| 1.8575 | 16.9 | H | 0.85 | 8.47 | 24.52 | 33.0 | -8.5 | |
| QPSK, RB75-0 | | | | | | | | |
| 1882.5 | 11.5 | V | 0.85 | 8.46 | 19.11 | 33.0 | -13.9 | |
| 1882.5 | 17.8 | H | 0.85 | 8.36 | 25.26 | 33.0 | -7.7 | |
| QPSK, RB50-0 | | | | | | | | |
| 1.9075 | 11.3 | V | 0.85 | 8.30 | 18.75 | 33.0 | -14.3 | |
| 1.9075 | 17.3 | H | 0.85 | 8.25 | 24.70 | 33.0 | -8.3 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE 16QAM Band 25 (15.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT o0nly | | | | | | |
| Mode: | | LTE band 25, 15MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB75-0 | | | | | | | | |
| 1.8575 | 10.7 | V | 0.85 | 8.62 | 18.47 | 33.0 | -14.5 | |
| 1.8575 | 15.7 | H | 0.85 | 8.47 | 23.32 | 33.0 | -9.7 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1882.5 | 10.7 | V | 0.85 | 8.46 | 18.31 | 33.0 | -14.7 | |
| 1882.5 | 16.8 | H | 0.85 | 8.36 | 24.26 | 33.0 | -8.7 | |
| 16QAM, RB75-0 | | | | | | | | |
| 1.9075 | 10.8 | V | 0.85 | 8.30 | 18.25 | 33.0 | -14.8 | |
| 1.9075 | 16.5 | H | 0.85 | 8.25 | 23.90 | 33.0 | -9.1 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE QPSK Band 25 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|---|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 20MHz BW Port B, QPSK, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| QPSK, RB100-0 | | | | | | | | |
| 1.860 | 11.2 | V | 0.85 | 8.62 | 18.97 | 33.0 | -14.0 | |
| 1.860 | 16.9 | H | 0.85 | 8.47 | 24.52 | 33.0 | -8.5 | |
| QPSK, RB100-0 | | | | | | | | |
| 1882.5 | 11.5 | V | 0.85 | 8.46 | 19.11 | 33.0 | -13.9 | |
| 1882.5 | 17.8 | H | 0.85 | 8.36 | 25.26 | 33.0 | -7.7 | |
| QPSK, RB100-0 | | | | | | | | |
| 1.905 | 11.3 | V | 0.85 | 8.30 | 18.75 | 33.0 | -14.3 | |
| 1.905 | 17.7 | H | 0.85 | 8.25 | 25.13 | 33.0 | -7.9 | |
| Rev. 3.17.11 | | | | | | | | |

A21, EIRP LTE 16QAM Band 25 (20.0 MHz BAND WIDTH)

| High Frequency Fundamental Measurement Compliance Certification Services Chamber A | | | | | | | | |
|---|---------------------|--|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | |
| Project #: | | 11U14136 | | | | | | |
| Date: | | 07/06/12 | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | |
| Configuration: | | EUT only | | | | | | |
| Mode: | | LTE band 25, 20MHz BW Port B, 16QAM, Peak | | | | | | |
| Test Equipment: | | | | | | | | |
| Receiving: Horn T73, and Chamber A SMA Cables | | | | | | | | |
| Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse | | | | | | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 16QAM, RB100-0 | | | | | | | | |
| 1.860 | 10.2 | V | 0.85 | 8.62 | 17.97 | 33.0 | -15.0 | |
| 1.860 | 16.1 | H | 0.85 | 8.47 | 23.72 | 33.0 | -9.3 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1882.5 | 10.5 | V | 0.85 | 8.46 | 18.11 | 33.0 | -14.9 | |
| 1882.5 | 17.0 | H | 0.85 | 8.36 | 24.46 | 33.0 | -8.5 | |
| 16QAM, RB100-0 | | | | | | | | |
| 1.905 | 10.3 | V | 0.85 | 8.30 | 17.75 | 33.0 | -15.3 | |
| 1.905 | 16.7 | H | 0.85 | 8.25 | 24.14 | 33.0 | -8.9 | |
| Rev. 3.17.11 | | | | | | | | |

9.2. PEAK-TO-AVERAGE RATIO

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

9.2.1. A1428 LAT PORT LTE BAND 2

LTE BAND 2

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 1.4 | RB1 0 | 1880 | 27.37 | 22.5 | 4.87 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 1.4 | RB1 0 | 1880 | 27.37 | 21.5 | 5.87 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 3 | RB1 0 | 1880 | 28.79 | 24.08 | 4.71 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 3 | RB1 0 | 1880 | 29.02 | 23.32 | 5.7 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 5 | RB1 0 | 1880 | 28.71 | 24.01 | 4.7 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 5 | RB1 0 | 1880 | 29.07 | 23.48 | 5.59 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Conducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 10 | RB1 0 | 1880 | 28.88 | 24.21 | 4.67 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Conducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 10 | RB1 0 | 1880 | 29.1 | 23.19 | 5.91 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Conducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 15 | RB1 0 | 1880 | 28.54 | 23.83 | 4.71 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Conducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 15 | RB1 0 | 1880 | 28.92 | 23.1 | 5.82 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Conducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 20 | RB1 0 | 1880 | 28.56 | 23.84 | 4.72 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Conducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 20 | RB1 0 | 1880 | 29.17 | 22.95 | 6.22 |

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

9.2.2. A1428 LAT PORT LTE BAND 4

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 1.4 | RB1-0 | 1732.5 | 29.59 | 23.9 | 5.69 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 1.4 | RB1-0 | 1732.5 | 29.48 | 23.27 | 6.21 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 3 | RB1-0 | 1732.5 | 28.86 | 23.31 | 5.55 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 3 | RB1-0 | 1732.5 | 29.29 | 22.94 | 6.35 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 5 | RB1-0 | 1732.5 | 28.1 | 22.45 | 5.65 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 5 | RB1-0 | 1732.5 | 28.55 | 22.46 | 6.09 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 10 | RB1-0 | 1732.5 | 29.33 | 23.59 | 5.74 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 10 | RB1-0 | 1732.5 | 29.73 | 23.22 | 6.51 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 15 | RB1-0 | 1732.5 | 29.53 | 23.61 | 5.92 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 15 | RB1-0 | 1732.5 | 29.9 | 23.26 | 6.64 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 20 | RB1-0 | 1732.5 | 29.5 | 23.75 | 5.75 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 20 | RB1-0 | 1732.5 | 29.93 | 23.58 | 6.35 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

9.2.3. A1428 LAT PORT LTE BAND 17

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 5 | RB1-0 | 710 | 27.91 | 24.23 | 3.68 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 5 | RB1-0 | 710 | 28.16 | 23.76 | 4.4 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 10 | RB1-0 | 710 | 28.56 | 24.16 | 4.4 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 10 | RB1-0 | 710 | 28.87 | 23.67 | 5.2 |

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

9.2.4. A1428 LAT PORT LTE BAND 5

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 1.4 | RB1-0 | 836.5 | 29.01 | 24 | 5.01 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 1.4 | RB1-0 | 836.5 | 29.09 | 23.08 | 6.01 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 3 | RB1-0 | 836.5 | 29.32 | 23.9 | 5.42 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 3 | RB1-0 | 836.5 | 29.86 | 23.06 | 6.8 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 5 | RB1-0 | 836.5 | 29.32 | 23.91 | 5.41 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 5 | RB1-0 | 836.5 | 29.96 | 23.38 | 6.58 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 10 | RB1-0 | 836.5 | 29.36 | 23.89 | 5.47 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 10 | RB1-0 | 836.5 | 29.58 | 22.99 | 6.59 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

9.2.5. A1429 LAT PORT LTE BAND 13

LTE BAND 13

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 5 | RB1-0 | 782 | 28.49 | 23.89 | 4.6 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 5 | RB1-0 | 782 | 28.67 | 23.43 | 5.24 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 10 | RB1-0 | 782 | 28.24 | 23.88 | 4.36 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 10 | RB1-0 | 782 | 28.26 | 22.87 | 5.39 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

9.2.6. A1429 LAT PORT LTE BAND 25

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 1.4 | RB1-0 | 1882.5 | 27.27 | 22.5 | 4.77 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 1.4 | RB1-0 | 1882.5 | 27.17 | 21.05 | 6.12 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 3 | RB1-0 | 1882.5 | 29.19 | 24.23 | 4.96 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 3 | RB1-0 | 1882.5 | 29.45 | 23.67 | 5.78 |

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

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|------|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 5 | RB1-0 | 1882.5 | 29.22 | 24.3 | 4.92 |

| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
|-------|--------------------|---------|---------|-----------------------|---------|-----------------------|
| | | | | *Peak | Average | |
| 16QAM | 5 | RB1-0 | 1882.5 | 29.63 | 23.78 | 5.85 |

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

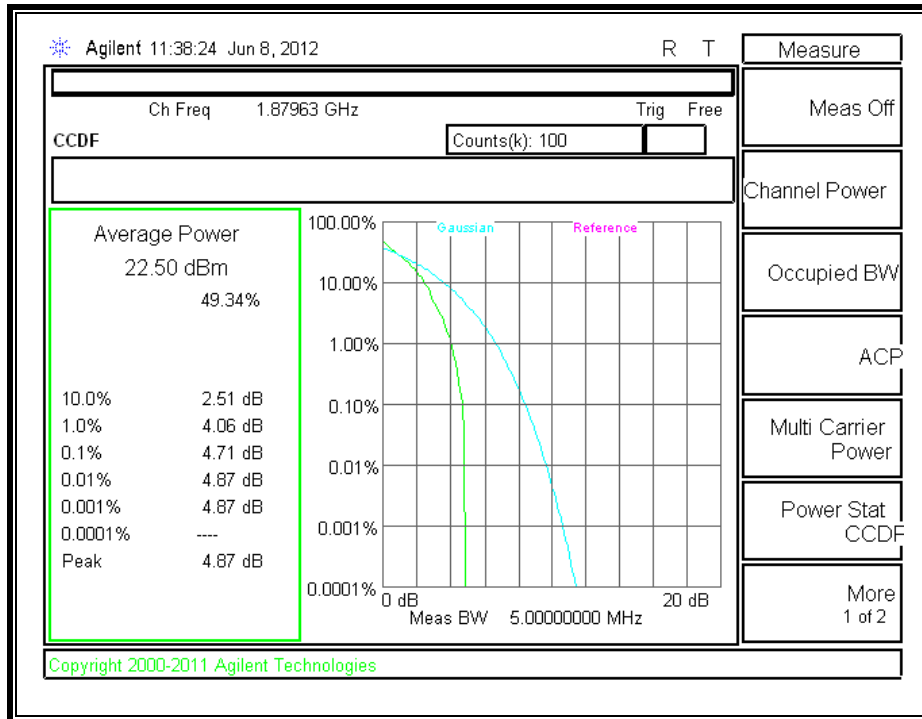
| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 10 | RB1-0 | 1882.5 | 29.51 | 24.6 | 4.91 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 10 | RB1-0 | 1882.5 | 29.73 | 23.48 | 6.25 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 15 | RB1-0 | 1882.5 | 29.62 | 24.65 | 4.97 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 15 | RB1-0 | 1882.5 | 29.78 | 23.82 | 5.96 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

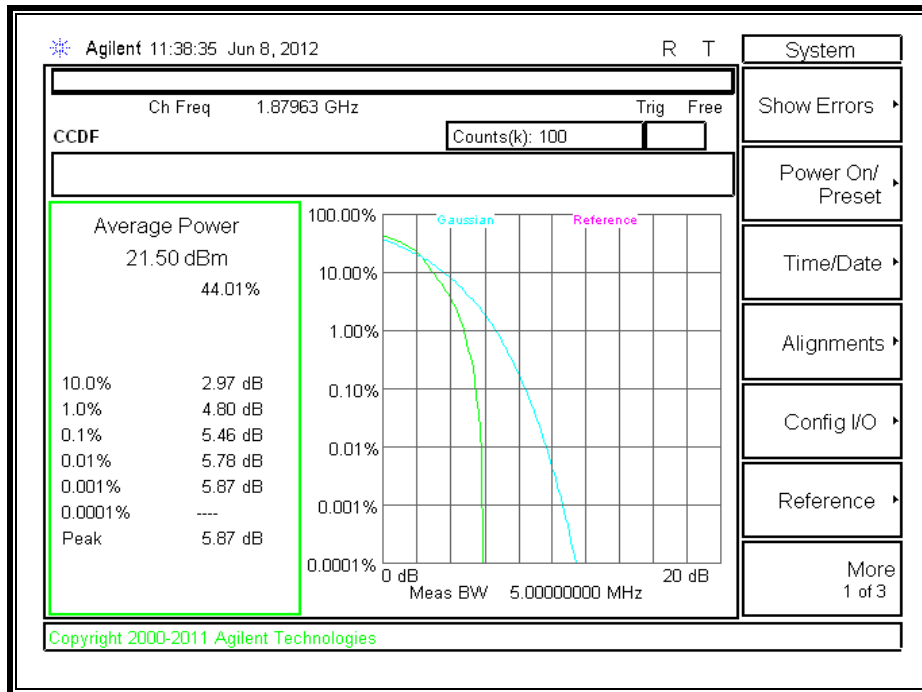
| Mode | Channel Band-width (MHZ) | Modulation | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio (PAR) |
|---|--------------------------|------------|---------|-----------------------|---------|-----------------------------|
| | | | | *Peak | Average | |
| QPSK | 20 | RB1-0 | 1882.5 | 29.05 | 23.96 | 5.09 |
| | | | | | | |
| Mode | Channel Band-width | Ch. No. | f (MHz) | Couducted Power (dBm) | | Peak-to-Average Ratio |
| | | | | *Peak | Average | |
| 16QAM | 20 | RB1-0 | 1882.5 | 29.22 | 23.02 | 6.2 |
| *Peak Reading = Average Reading + Peak-to-Average Ratio | | | | | | |

LTE BAND 2

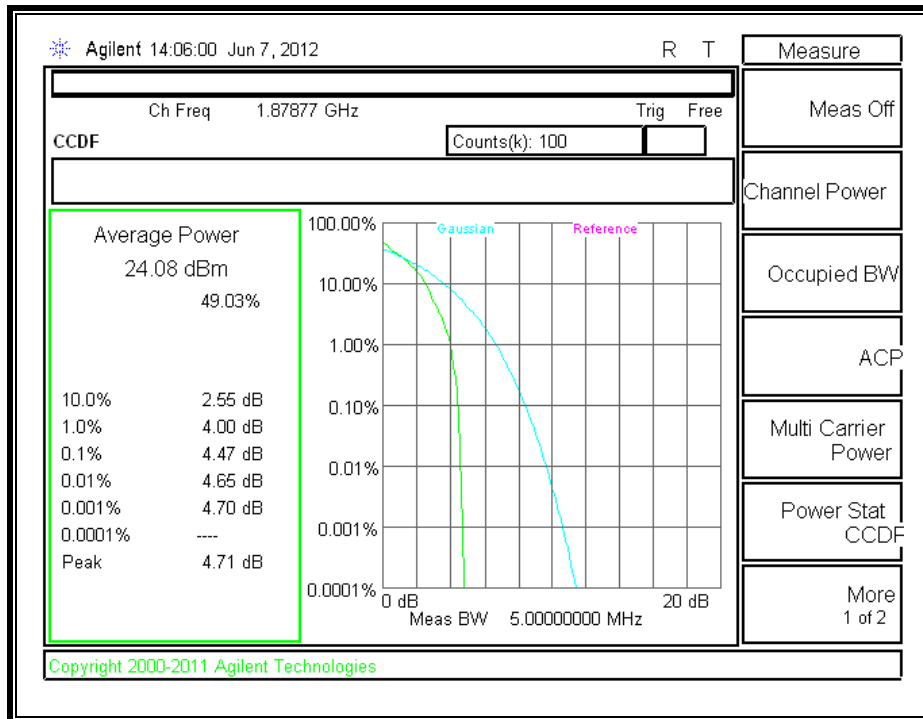
1.4MHz QPSK



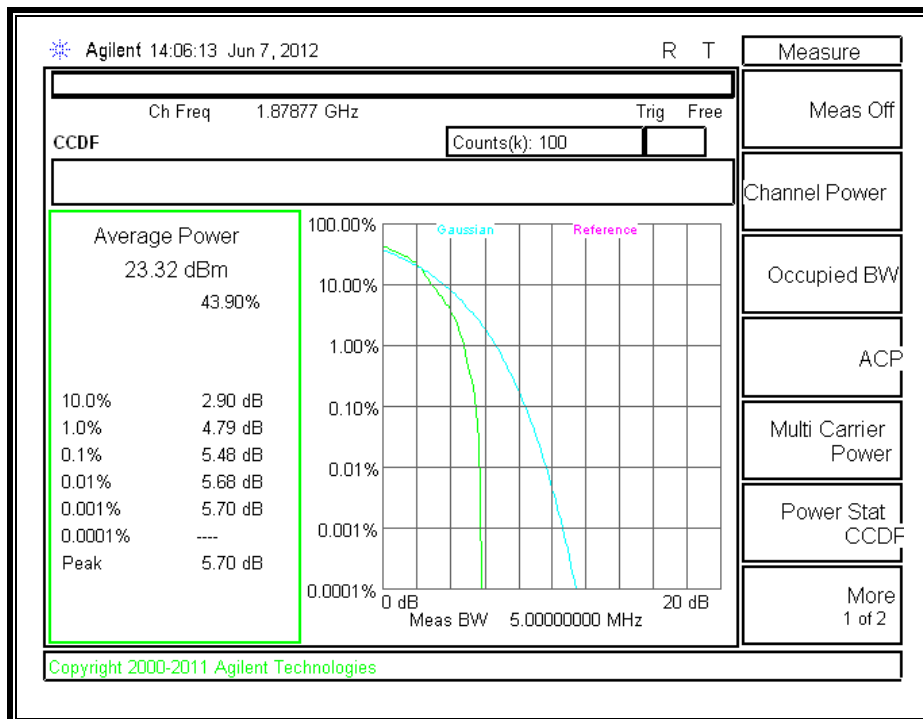
1.4MHz 16QAM



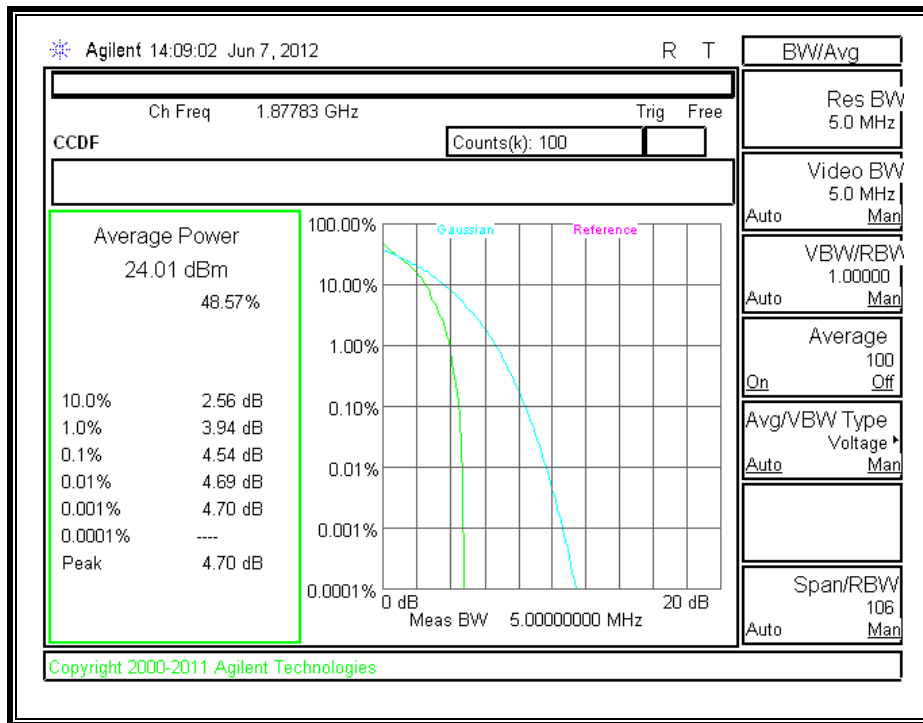
3.0MHz QPSK, RB1-0



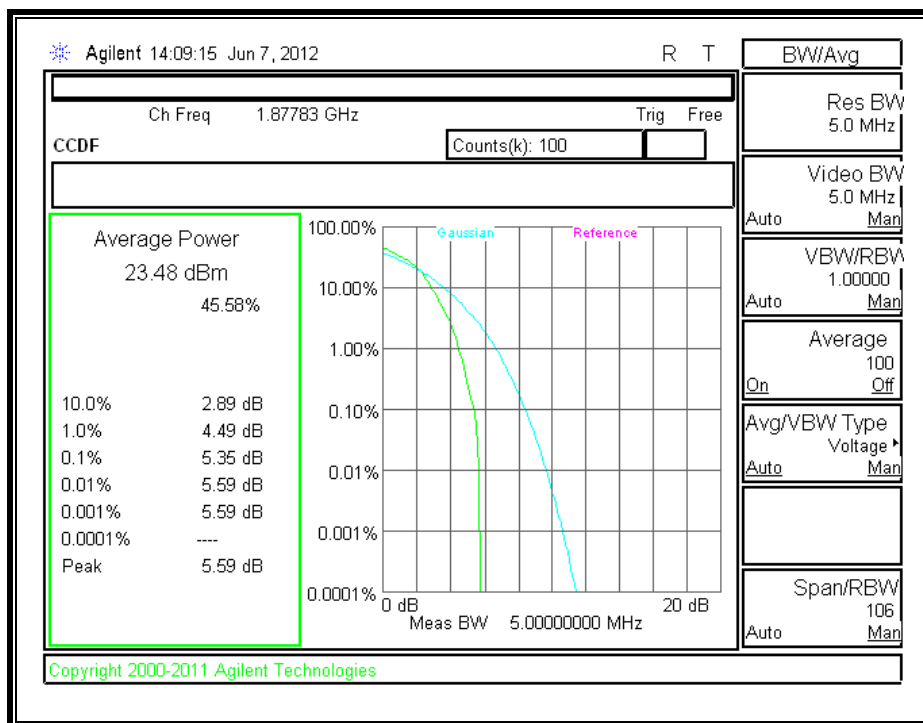
3.0MHz 16QAM



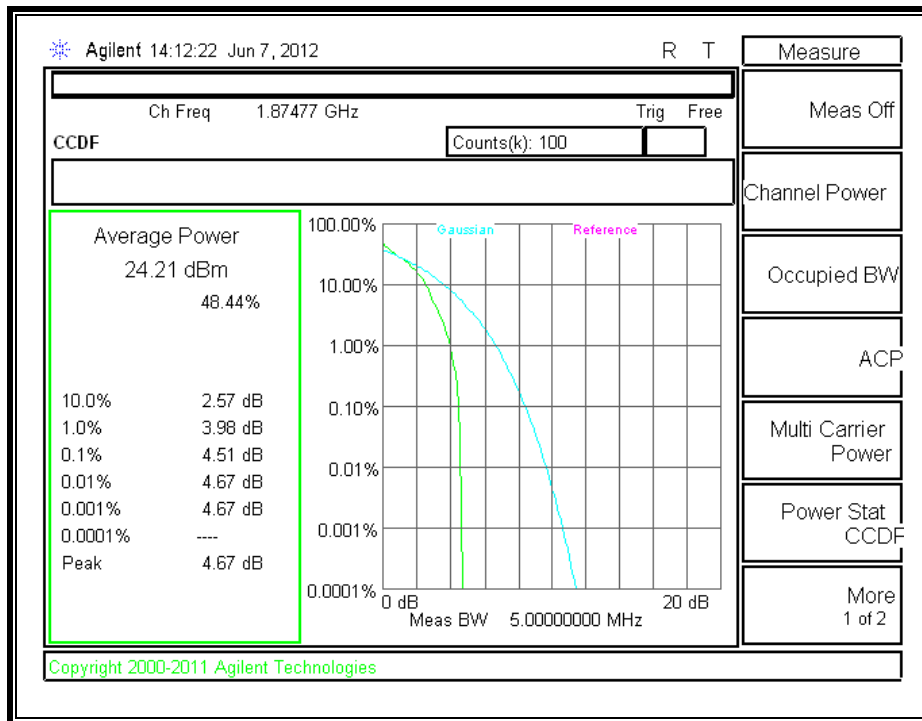
5.0MHz QPSK



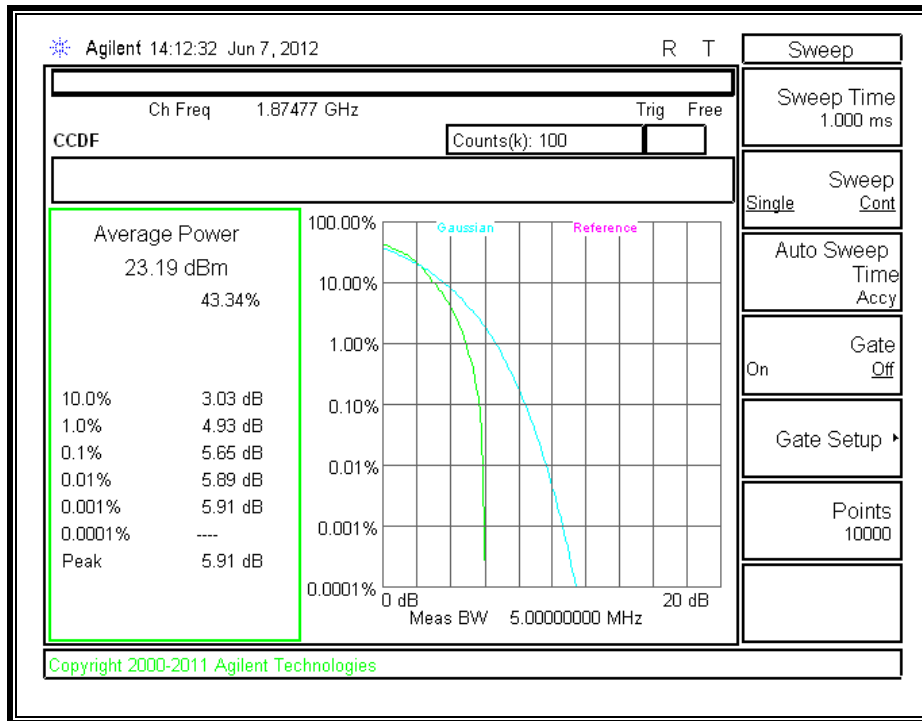
5.0MHz 16QAM



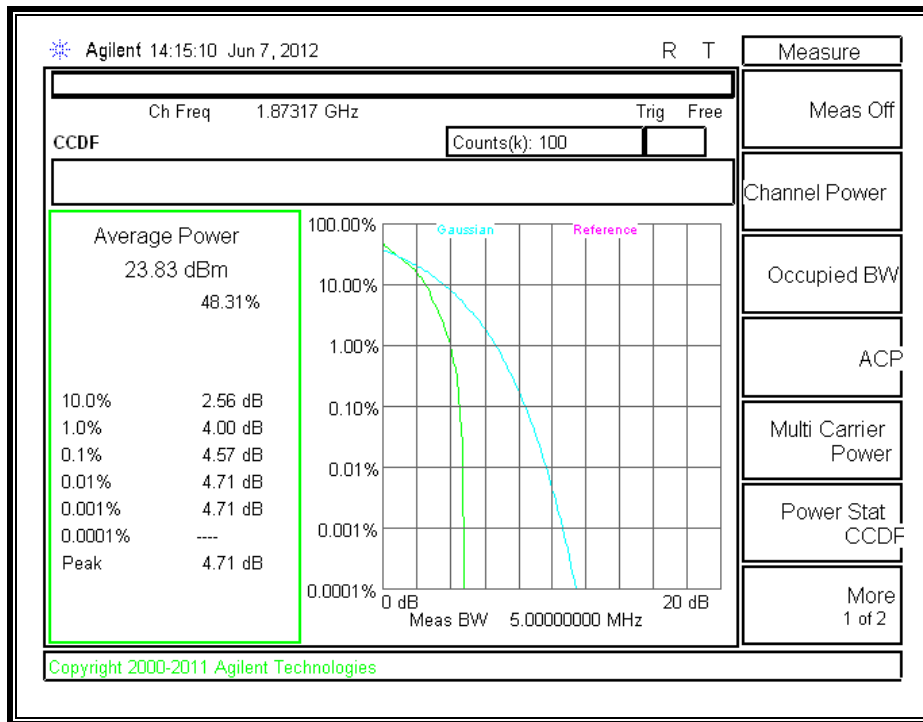
10MHz QPSK



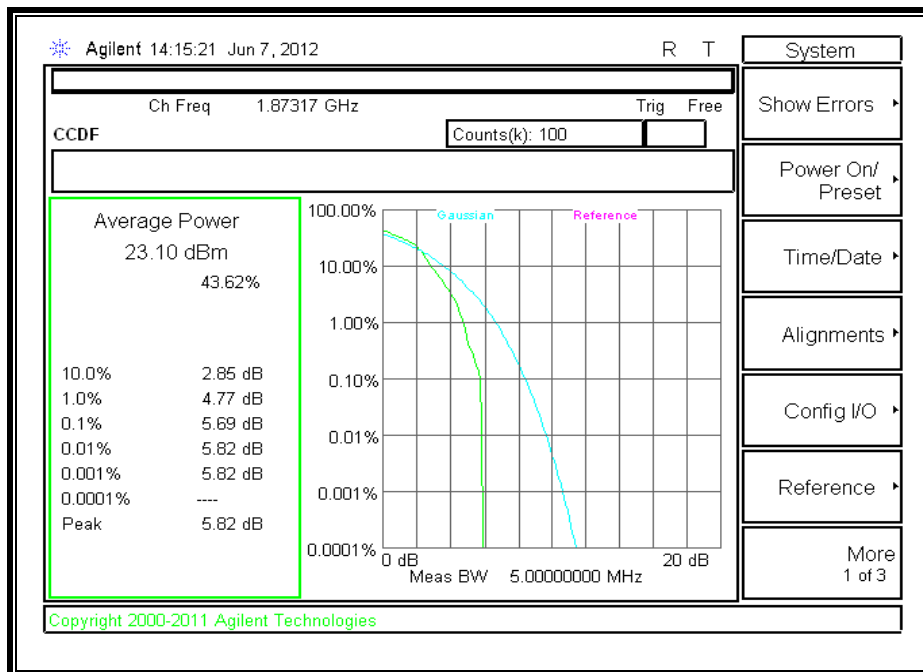
10MHz 16QAM



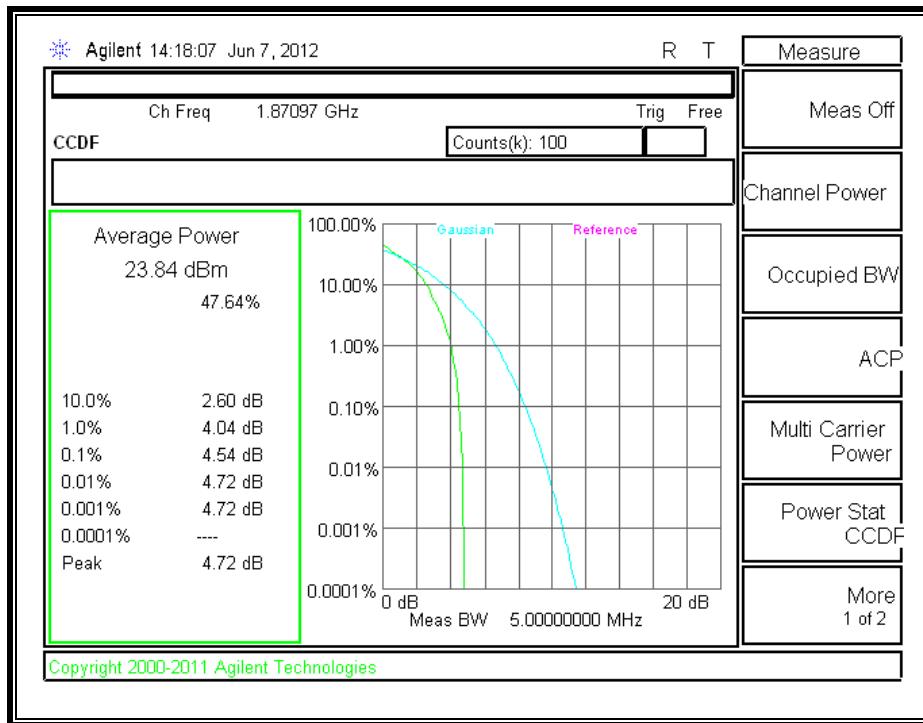
15MHz QPSK



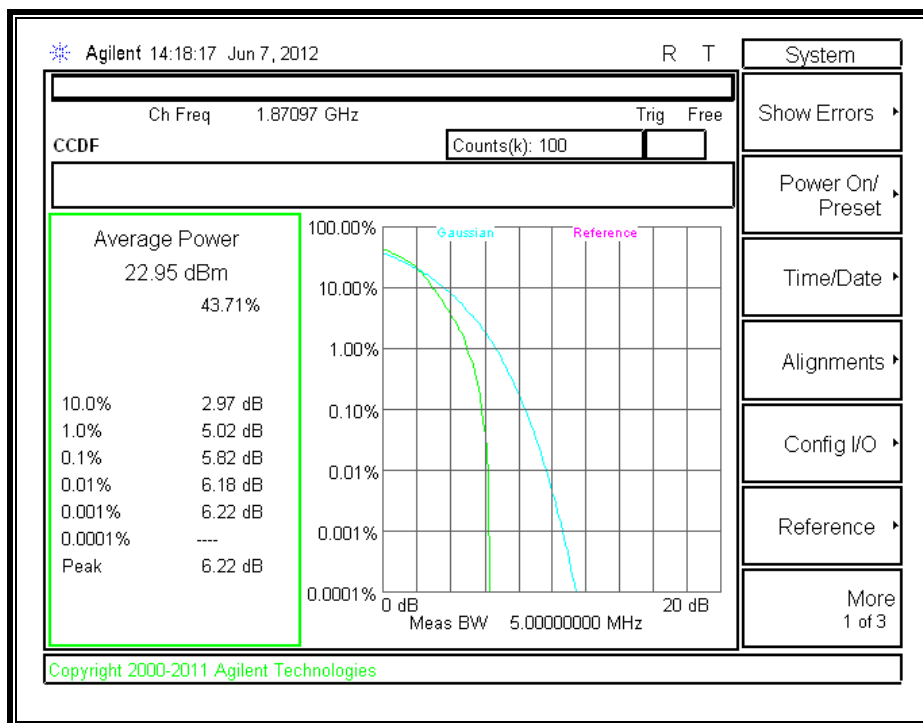
15MHz 16QAM



20.0MHz QPSK

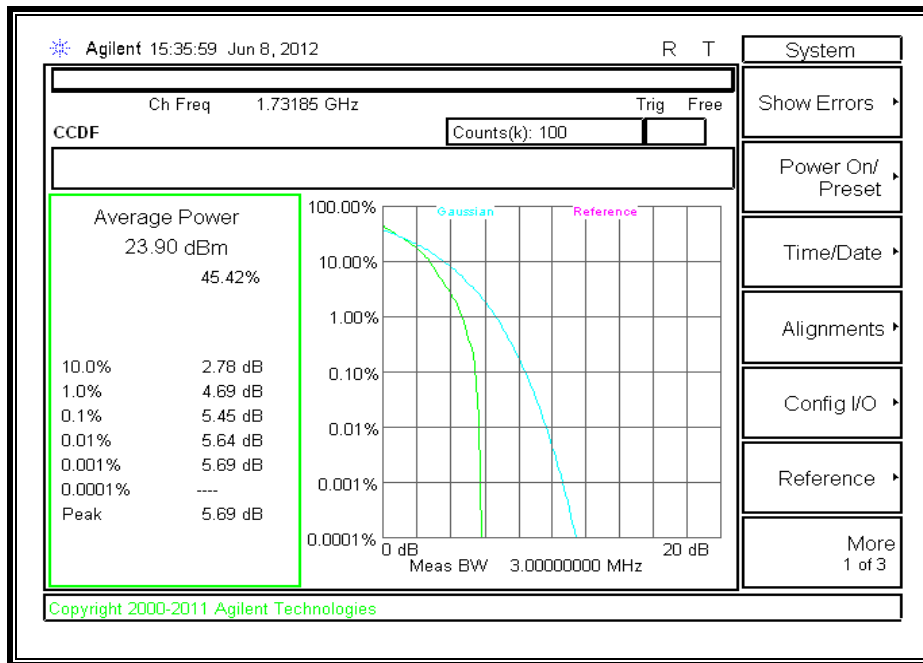


20.0MHz 16QAM

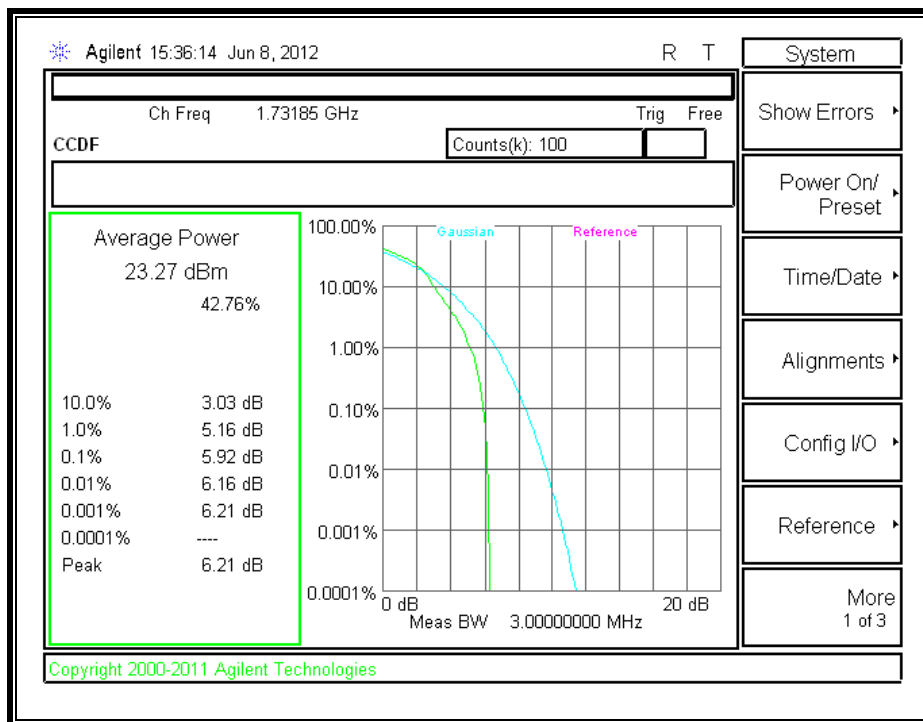


LTE BAND 4

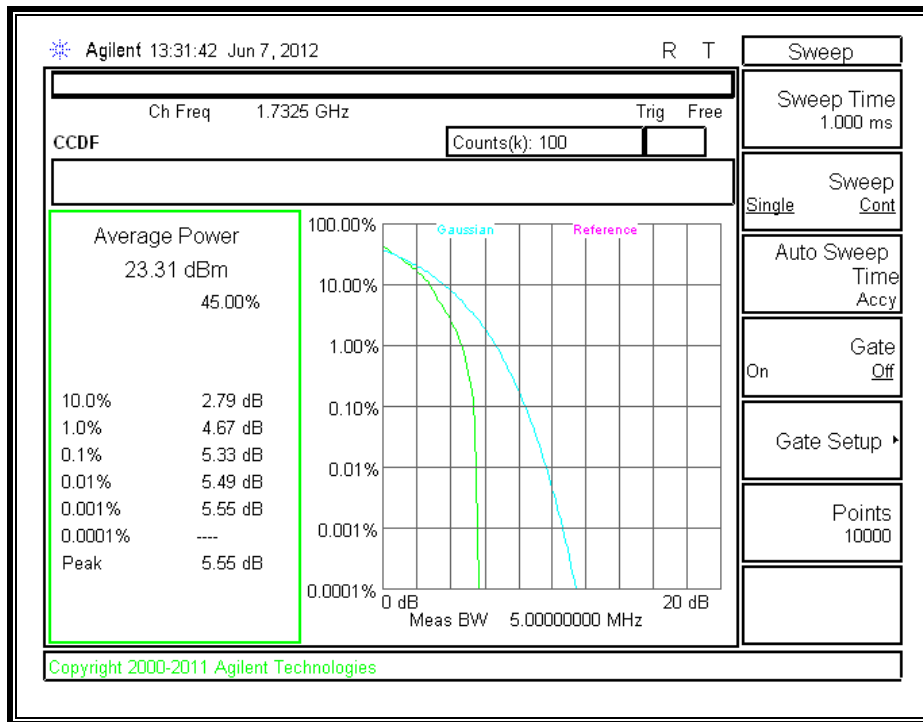
1.4MHz QPSK



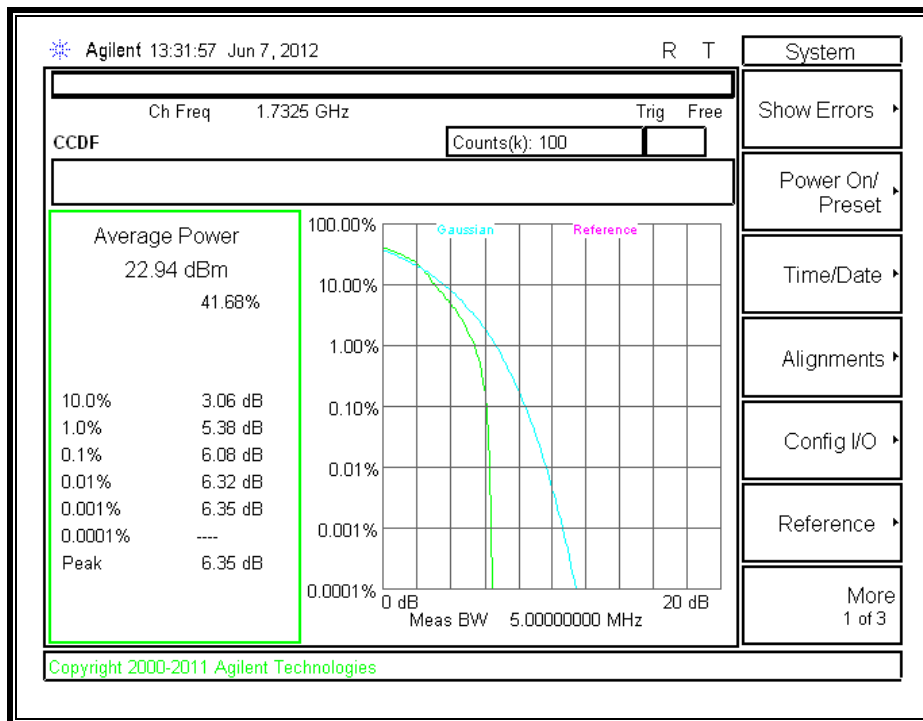
1.4MHz 16QAM



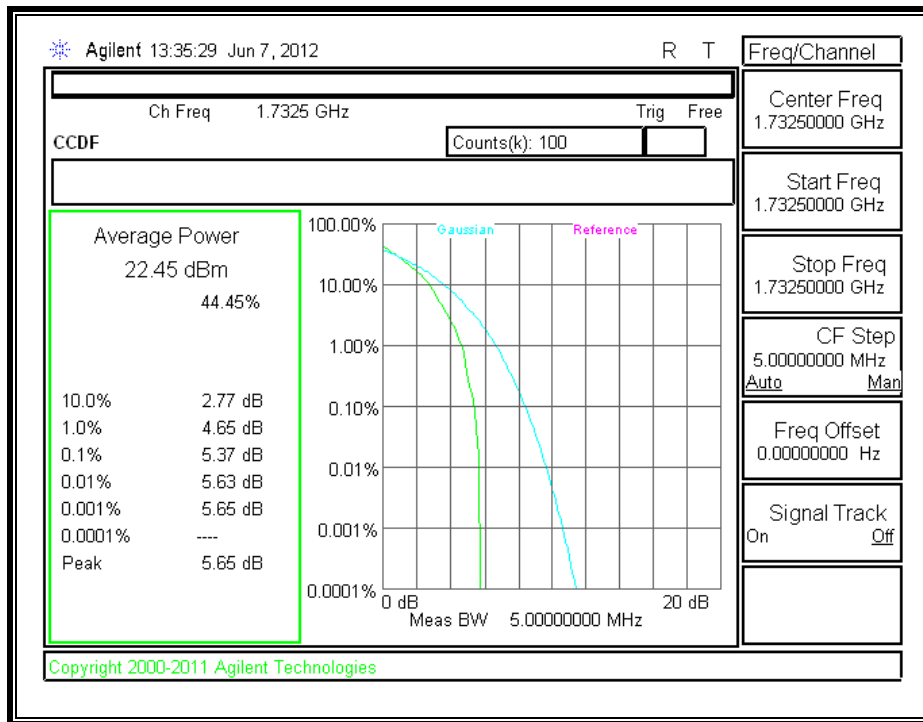
3.0MHz QPSK



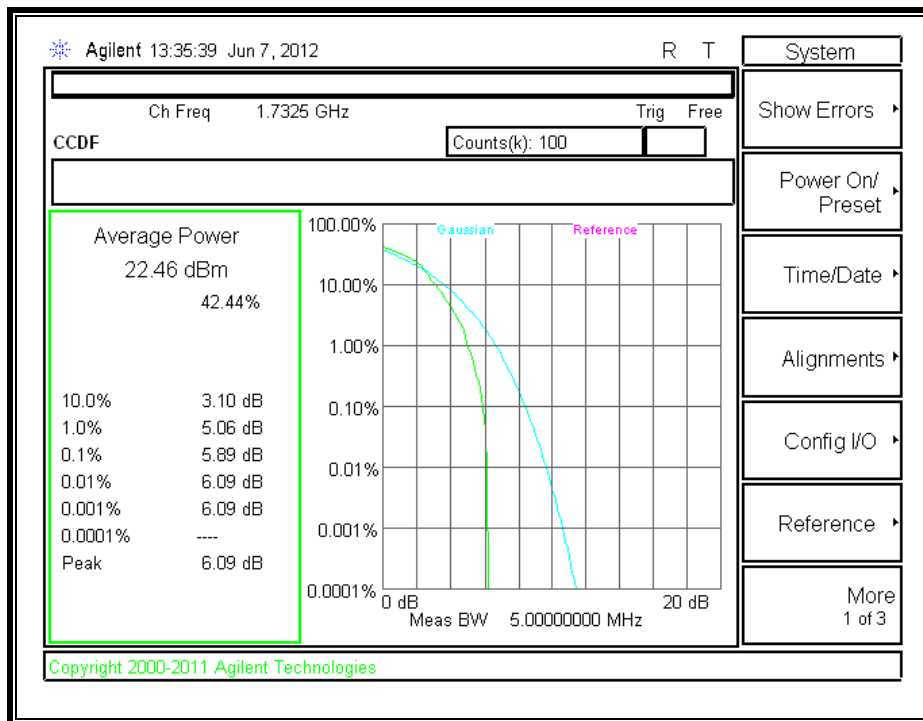
3.0MHz 16QAM



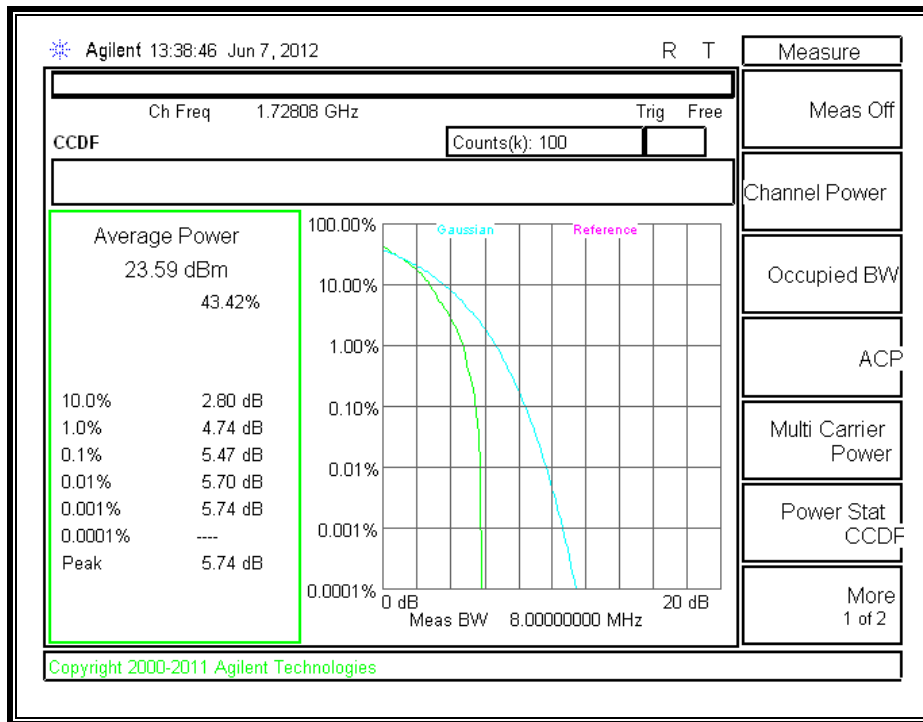
5.0MHz QPSK



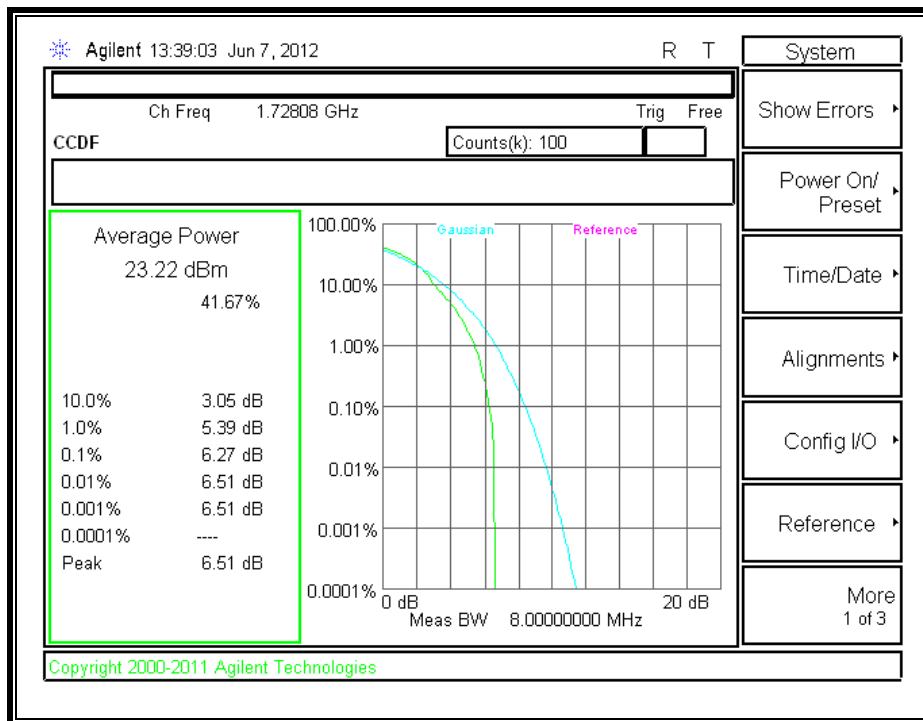
5.0MHz 16QAM



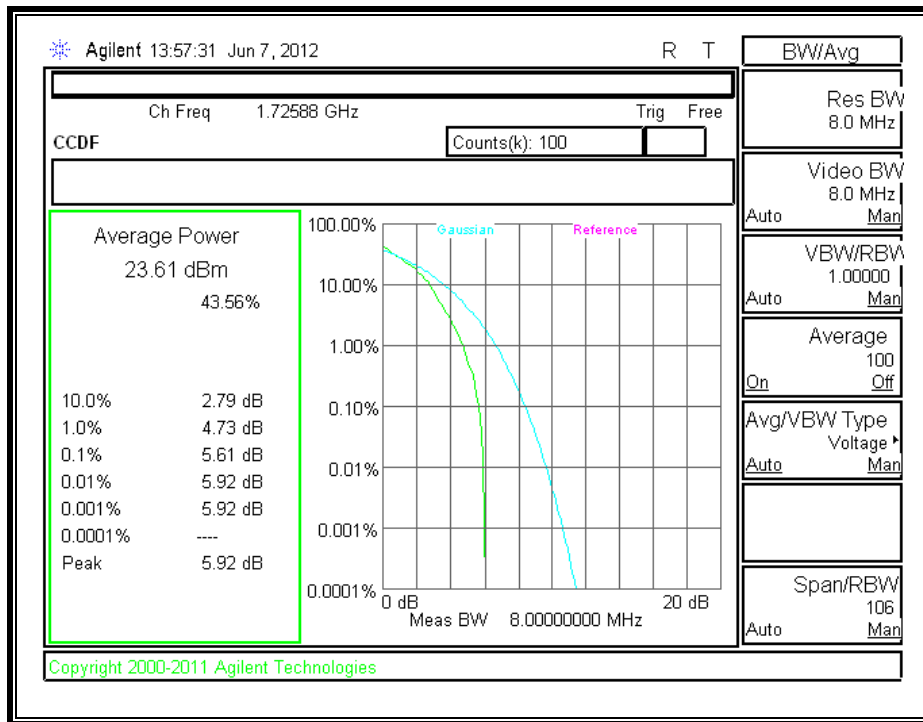
10MHz QPSK



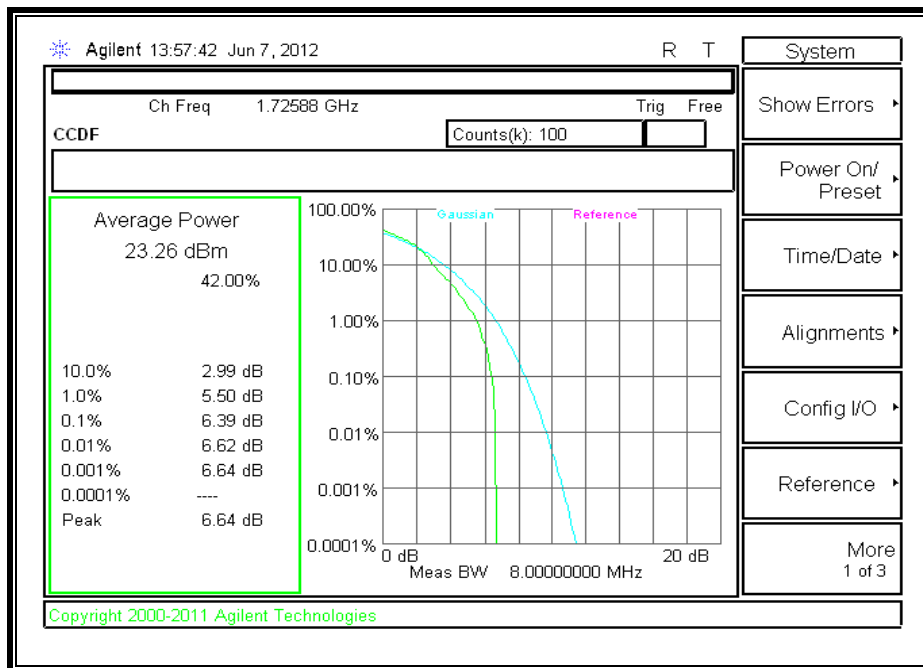
10MHz 16QAM



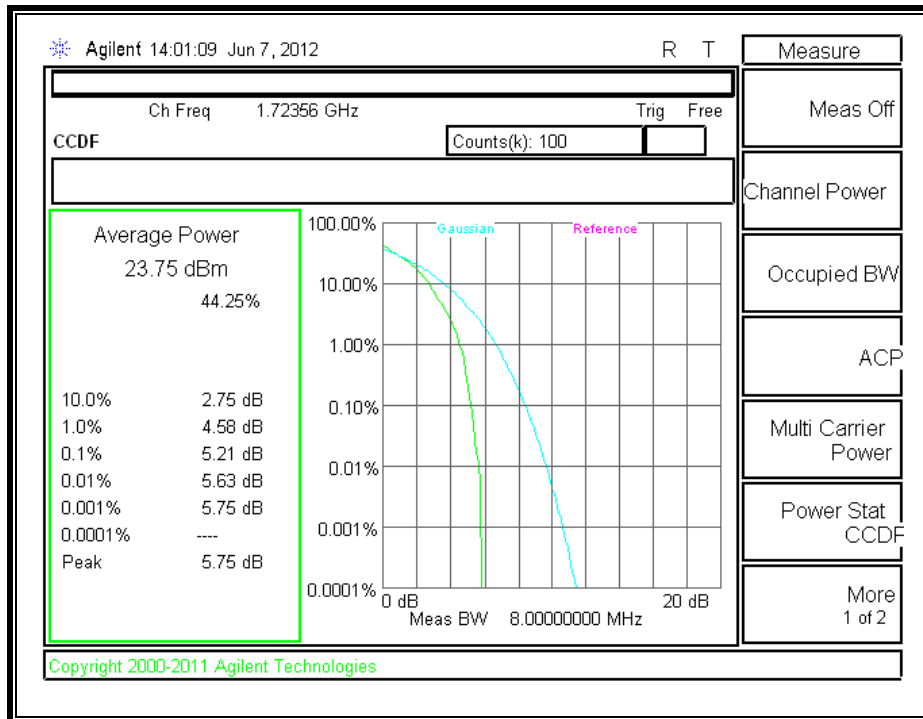
15MHz QPSK



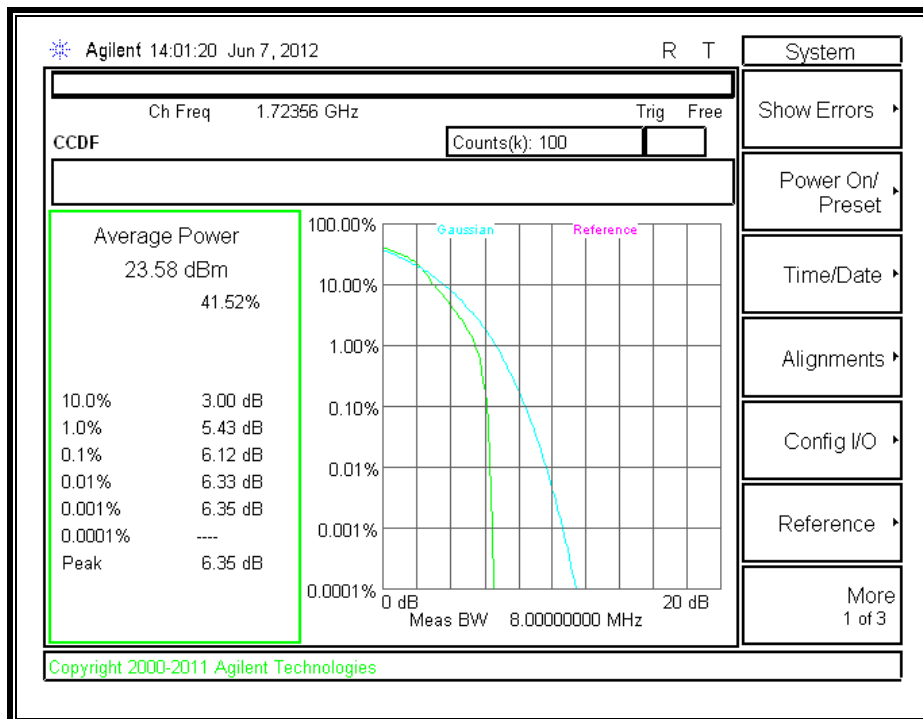
15MHz 16QAM



20.0MHz QPSK

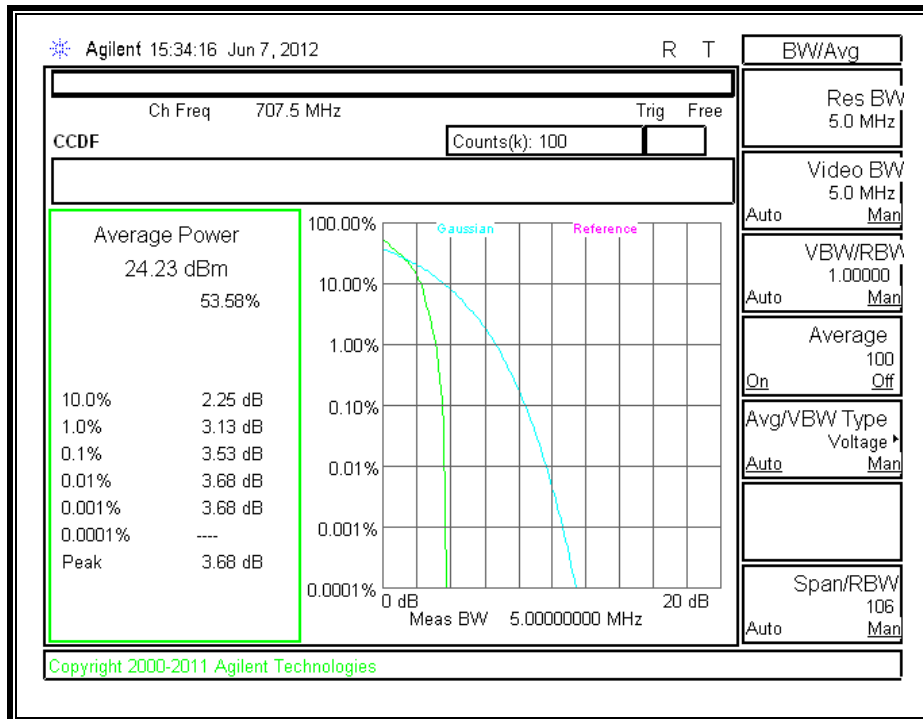


20.0MHz 16QAM

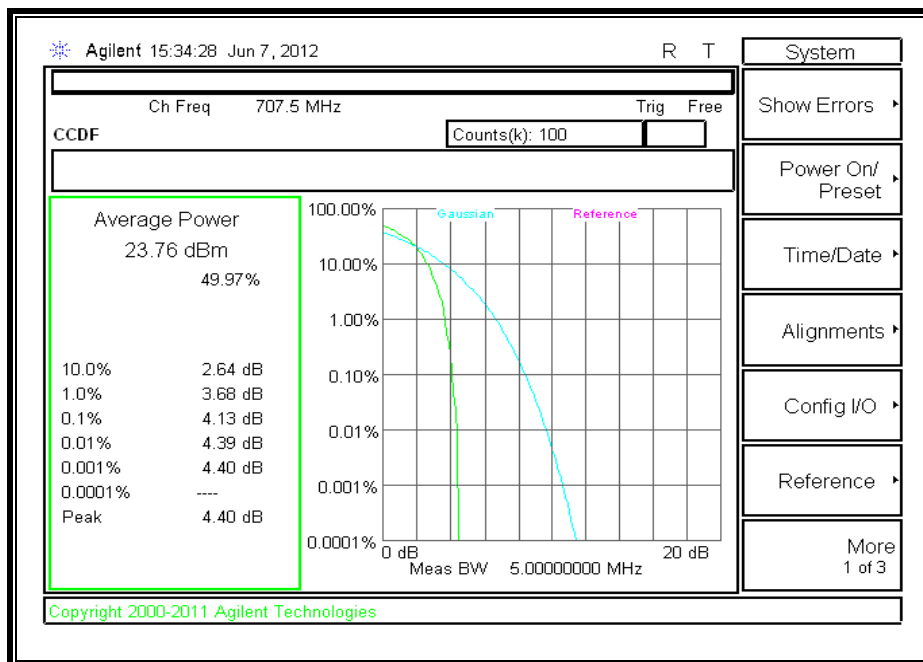


BAND 17

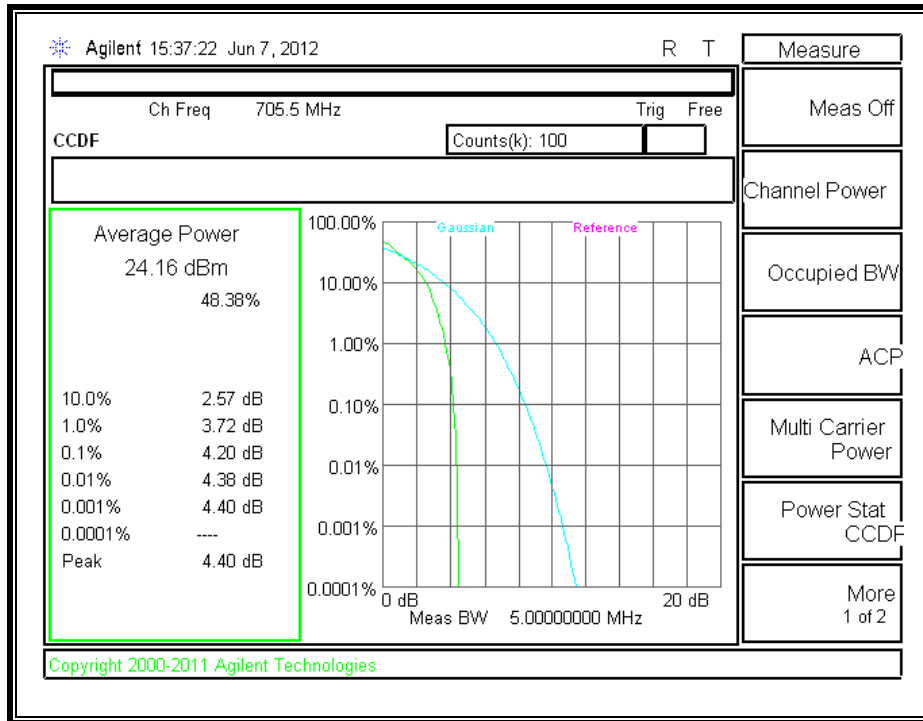
5.0MHz QPSK



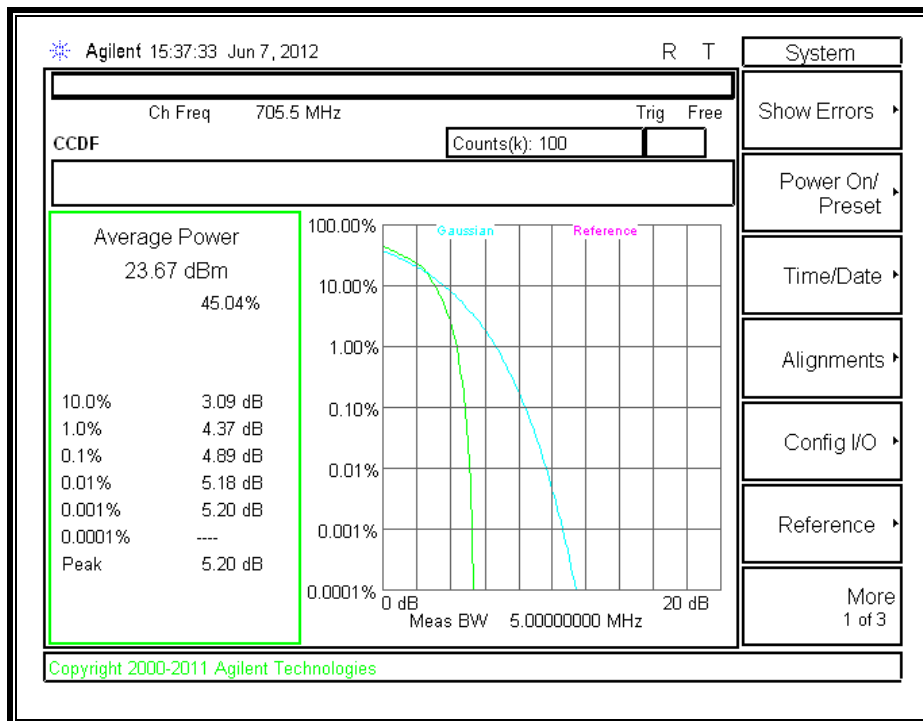
5.0MHz 16QAM



10MHz QPSK

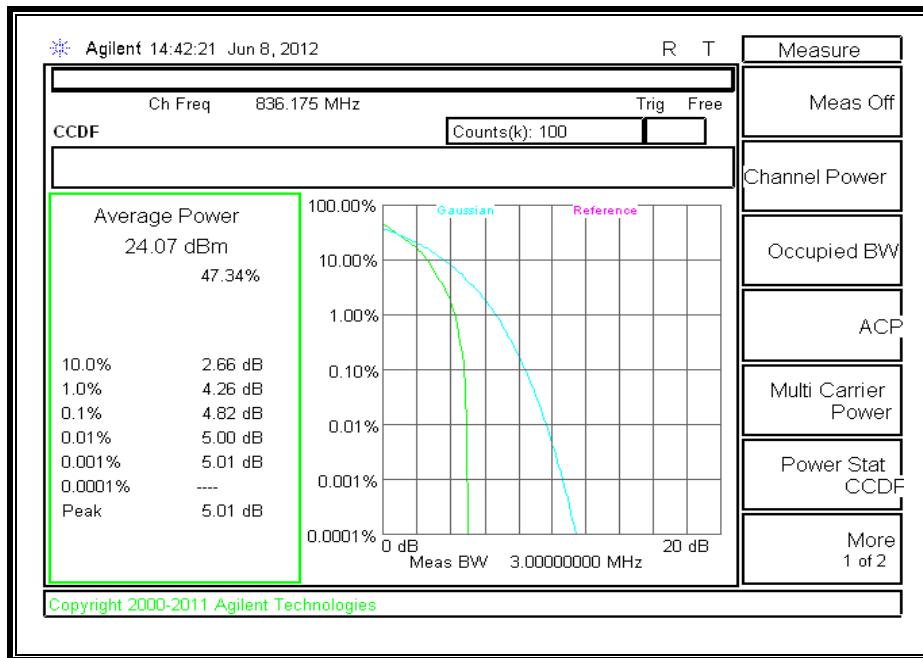


10MHz 16QAM

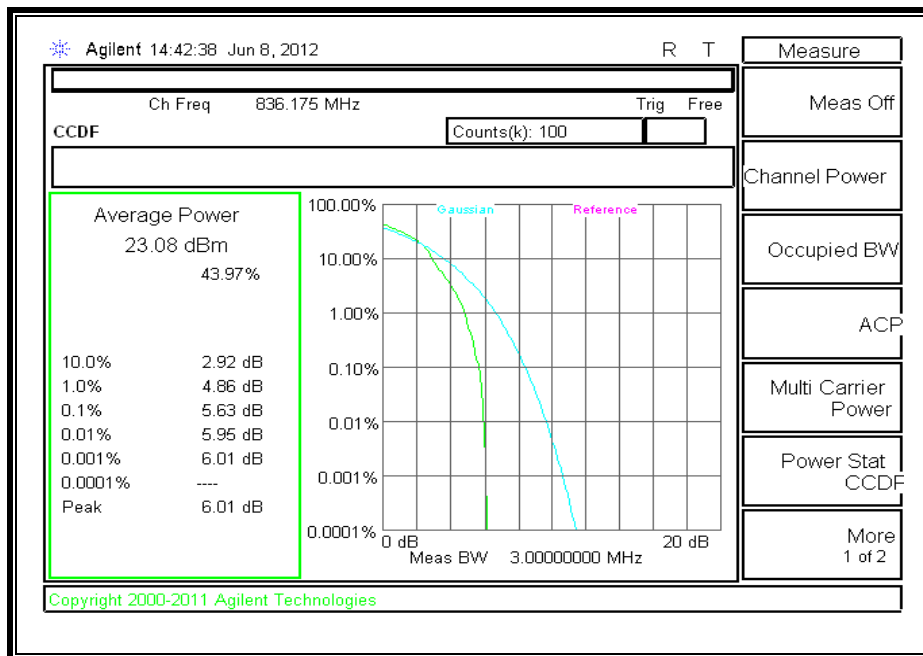


LTE BAND 5

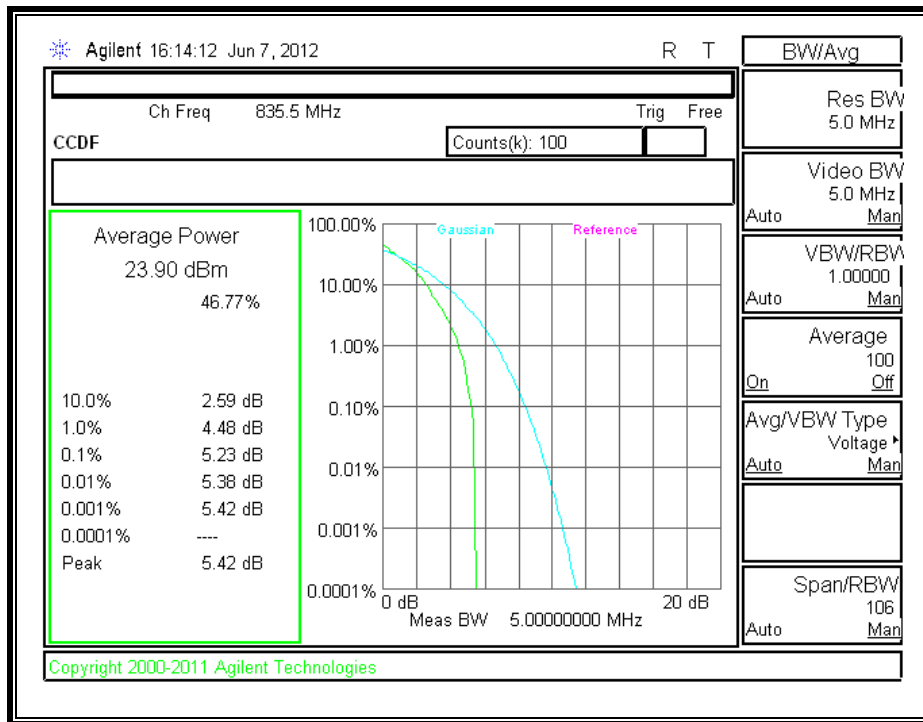
1.4MHz QPSK



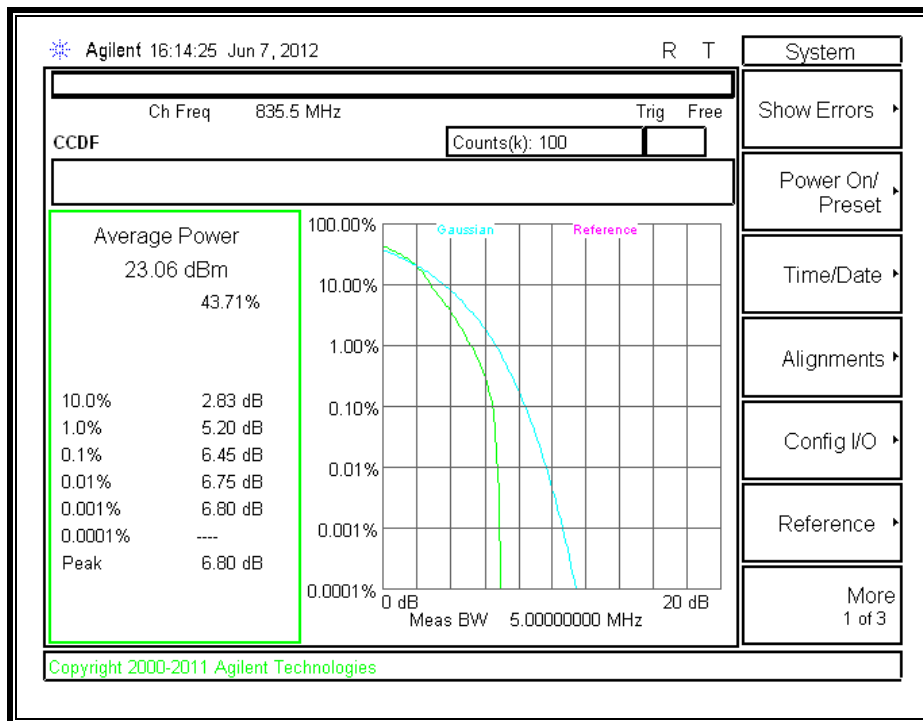
1.4MHz 16QAM



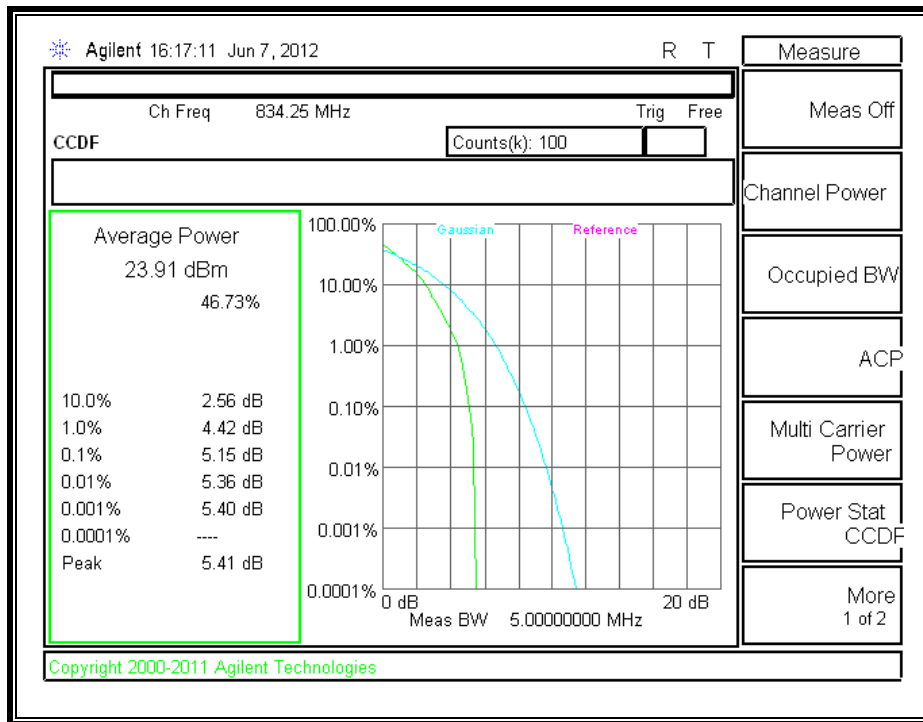
3.0MHz QPSK



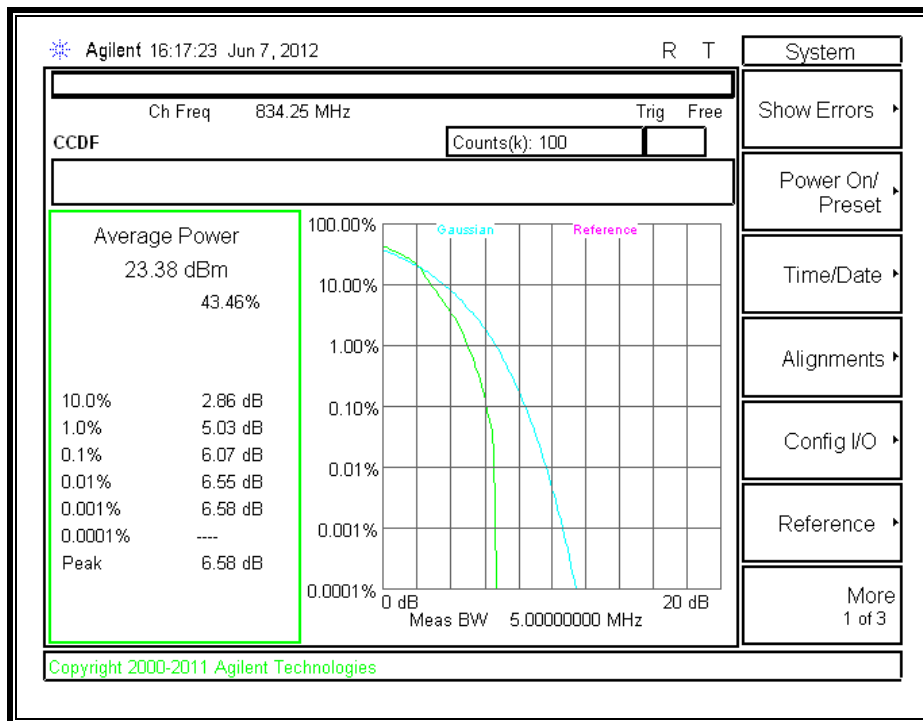
3.0MHz 16QAM



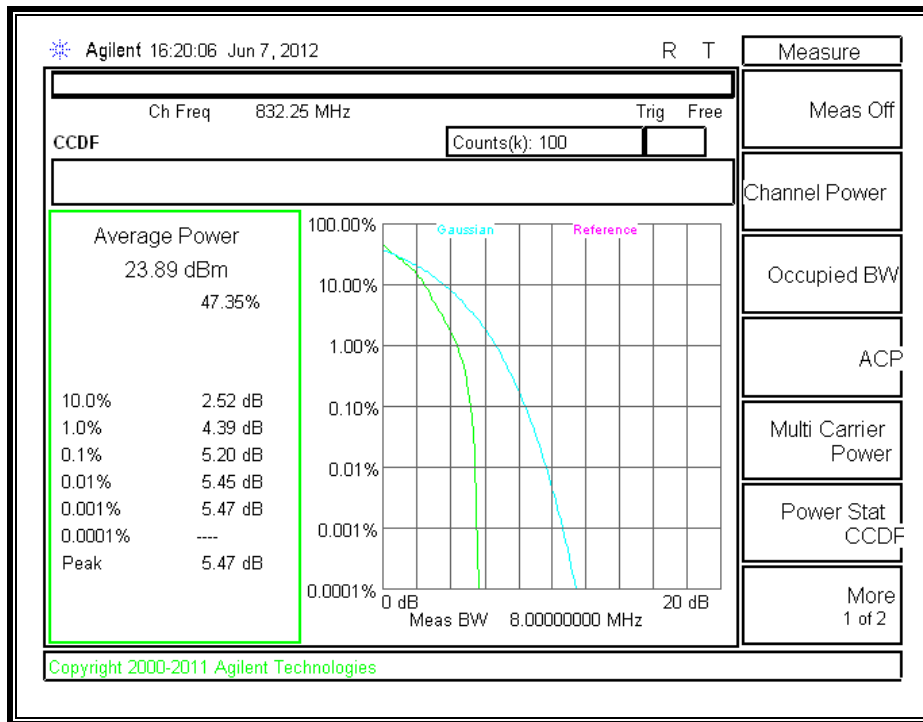
5.0MHz QPSK



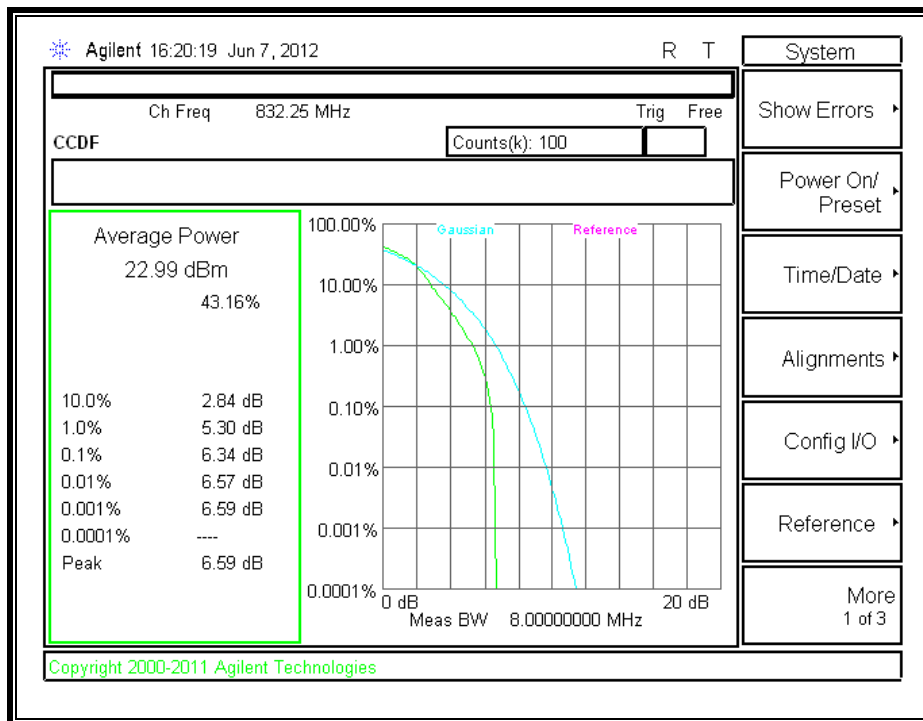
5.0MHz 16QAM



10MHz QPSK

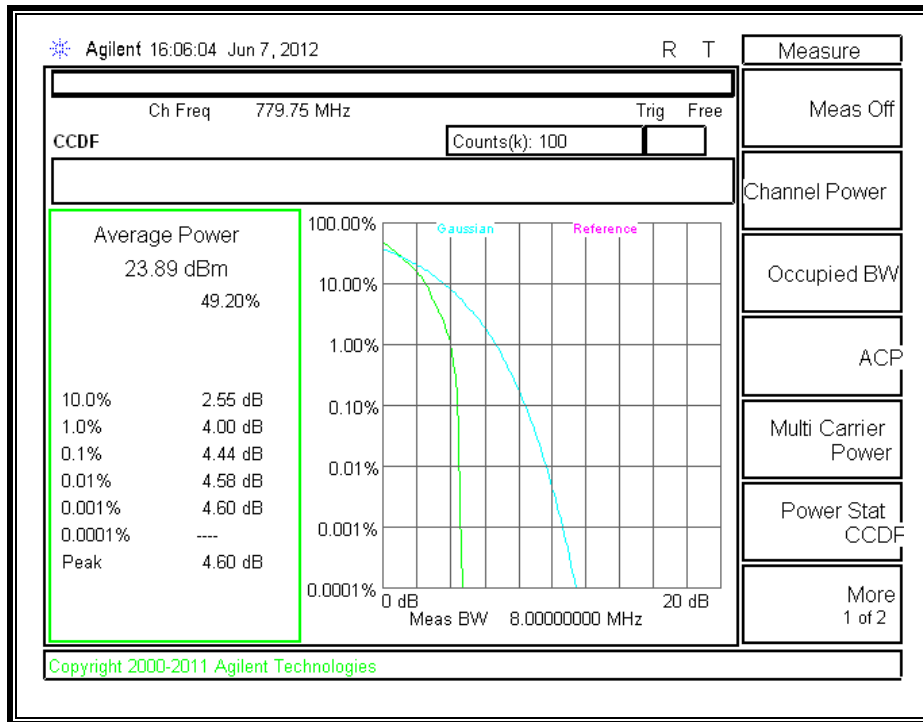


10MHz 16QAM

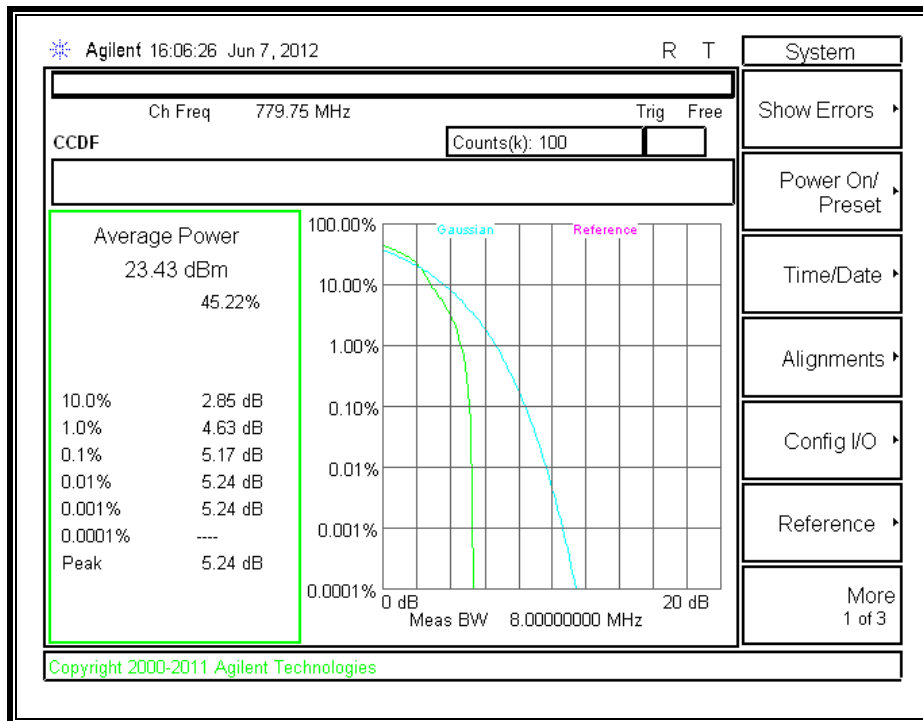


BAND 13

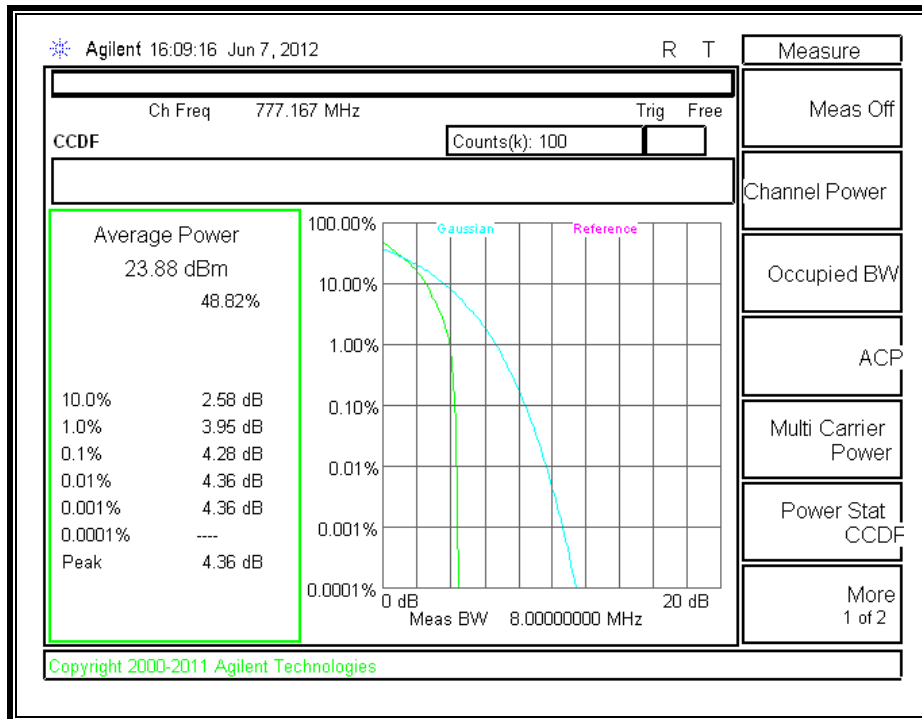
5.0MHz QPSK



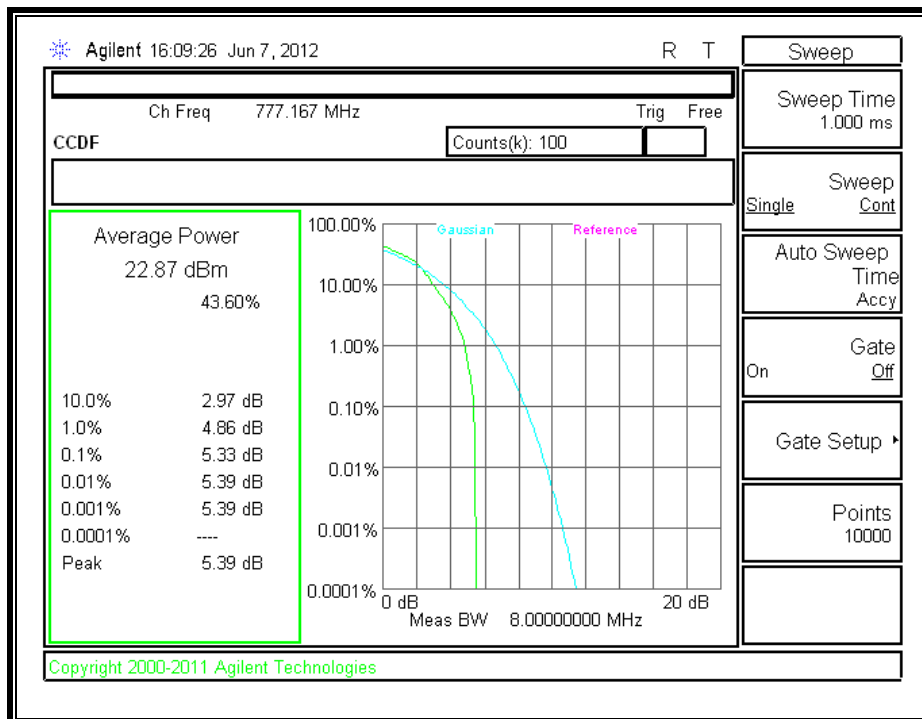
5.0MHz 16QAM



10MHz QPSK

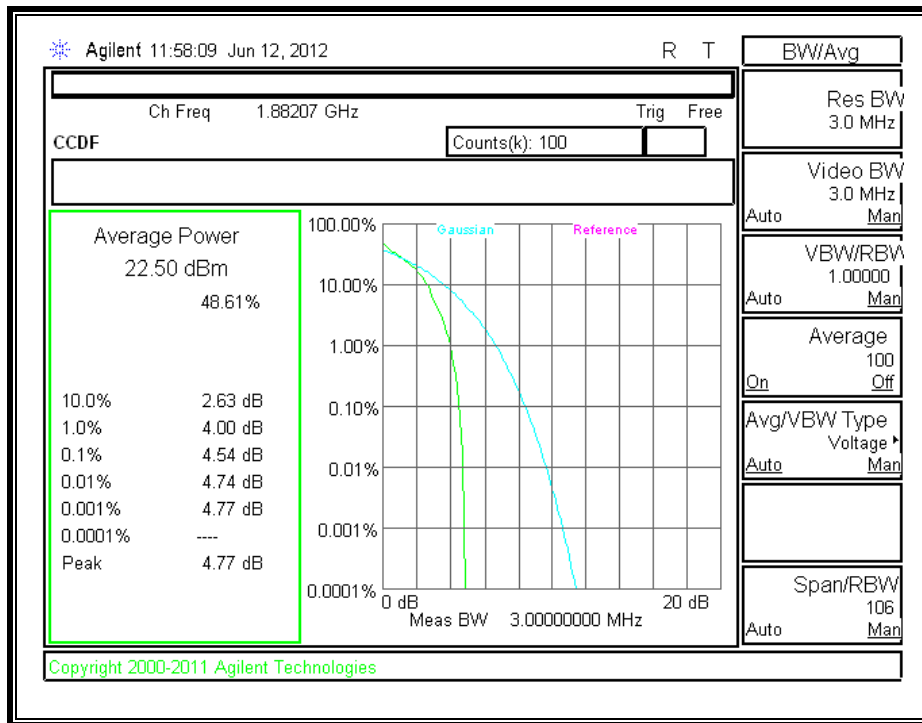


10MHz 16QAM

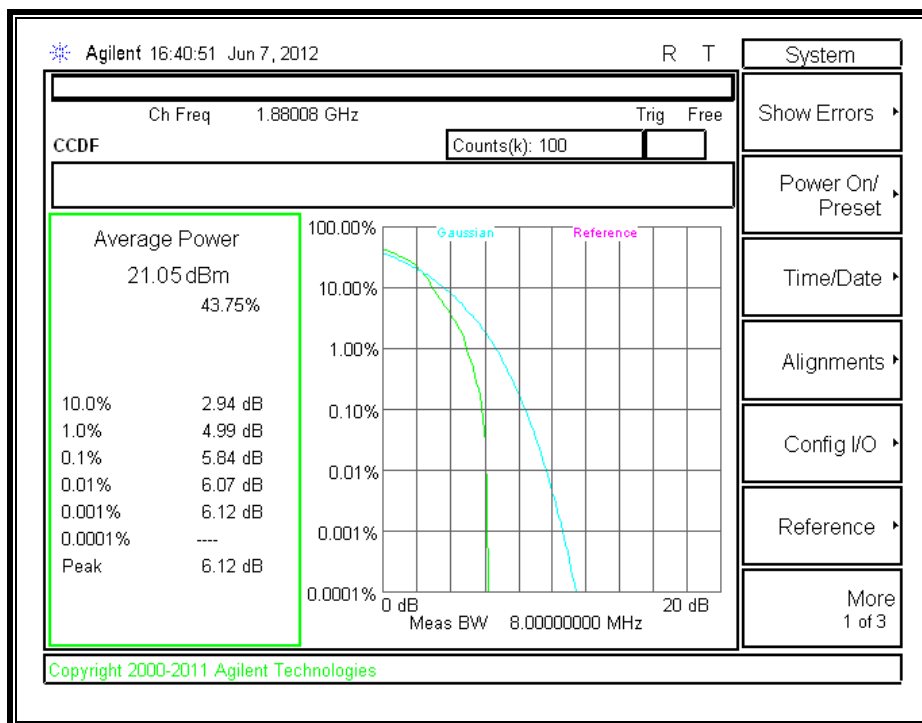


LTE BAND 25

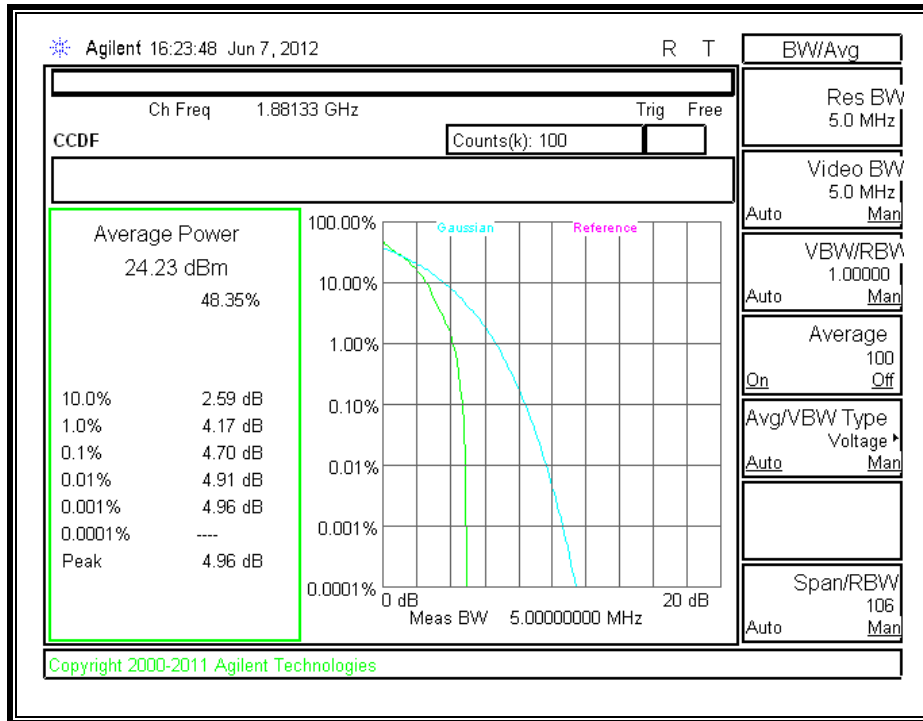
1.4MHz QPSK



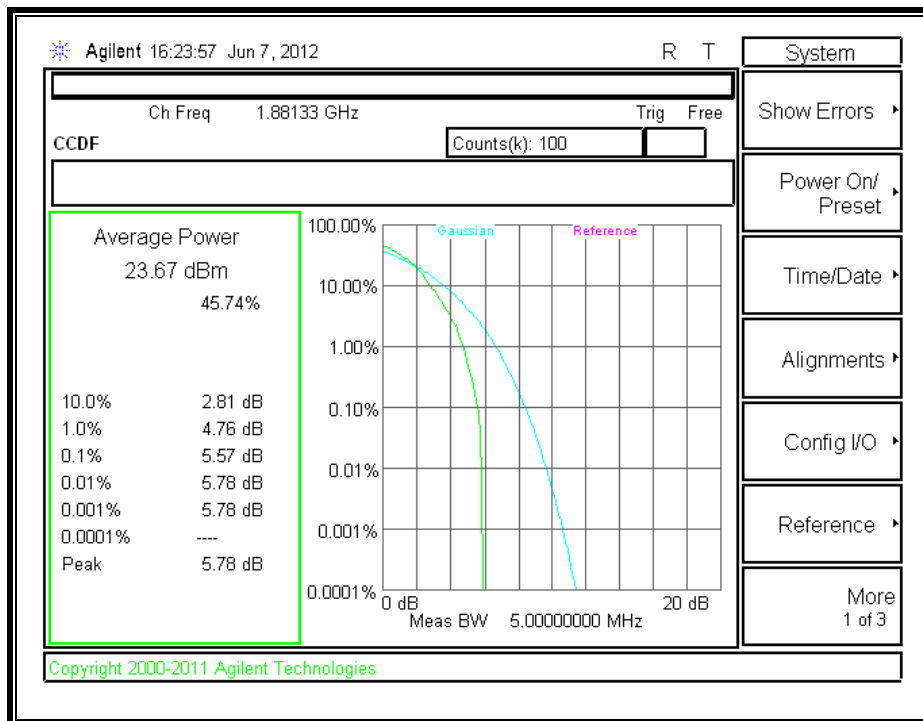
1.4MHz 16QAM



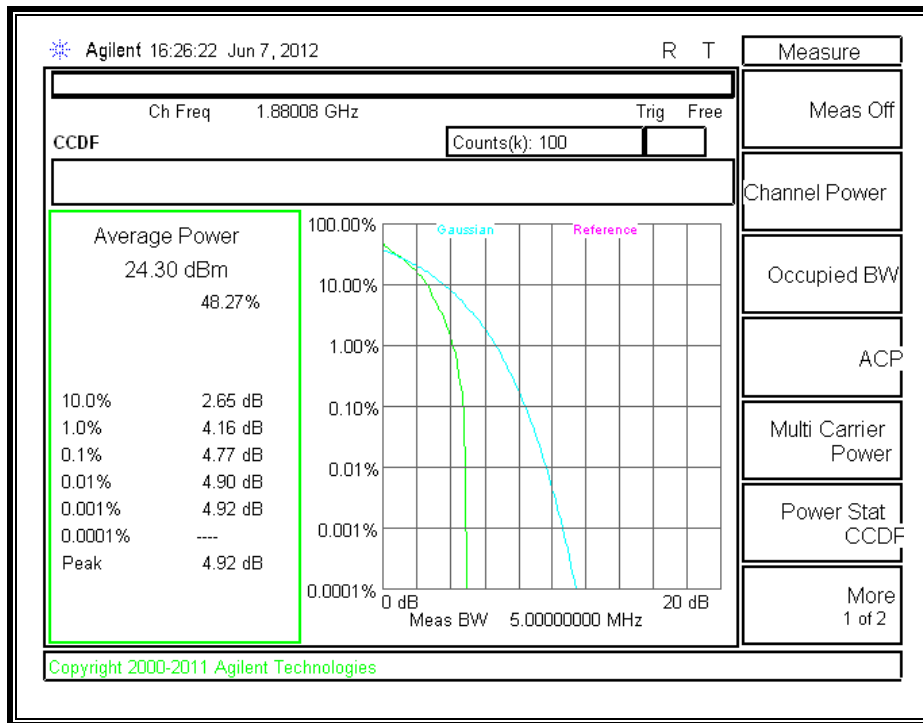
3.0MHz QPSK, RB1-0



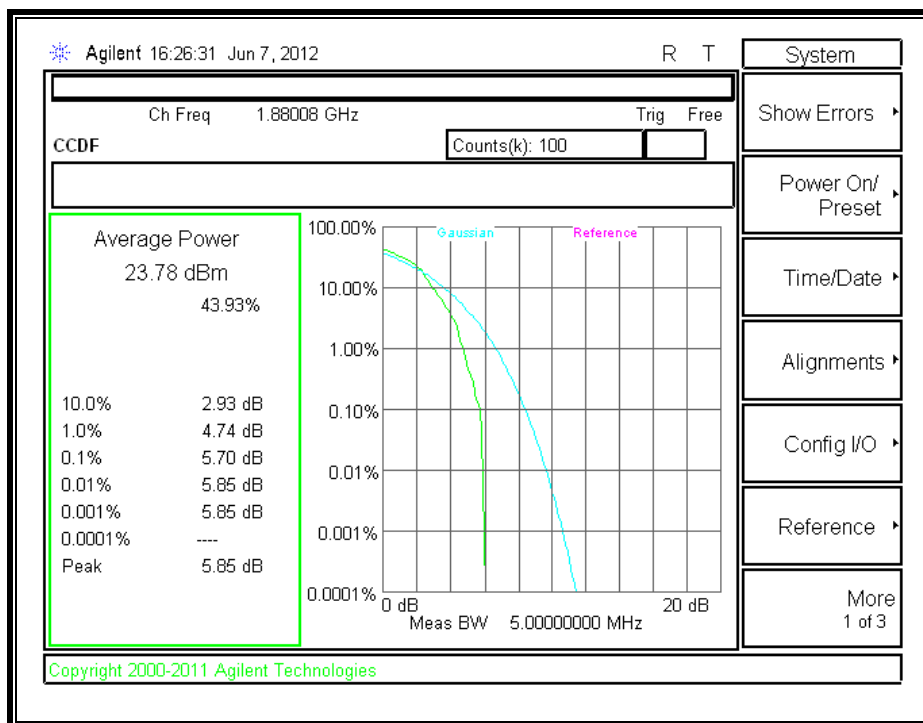
3.0MHz 16QAM



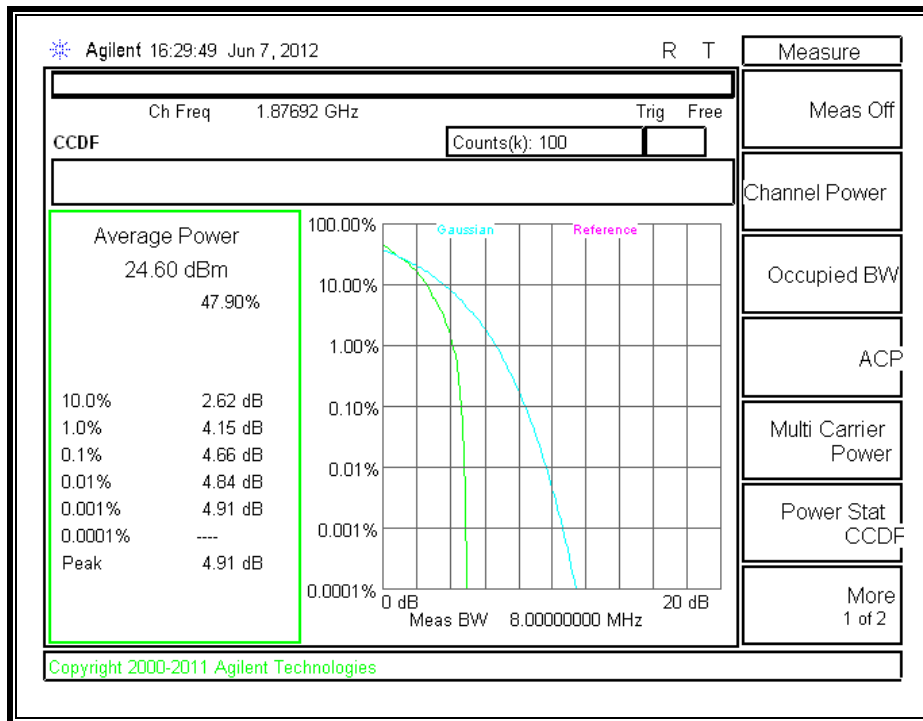
5.0MHz QPSK



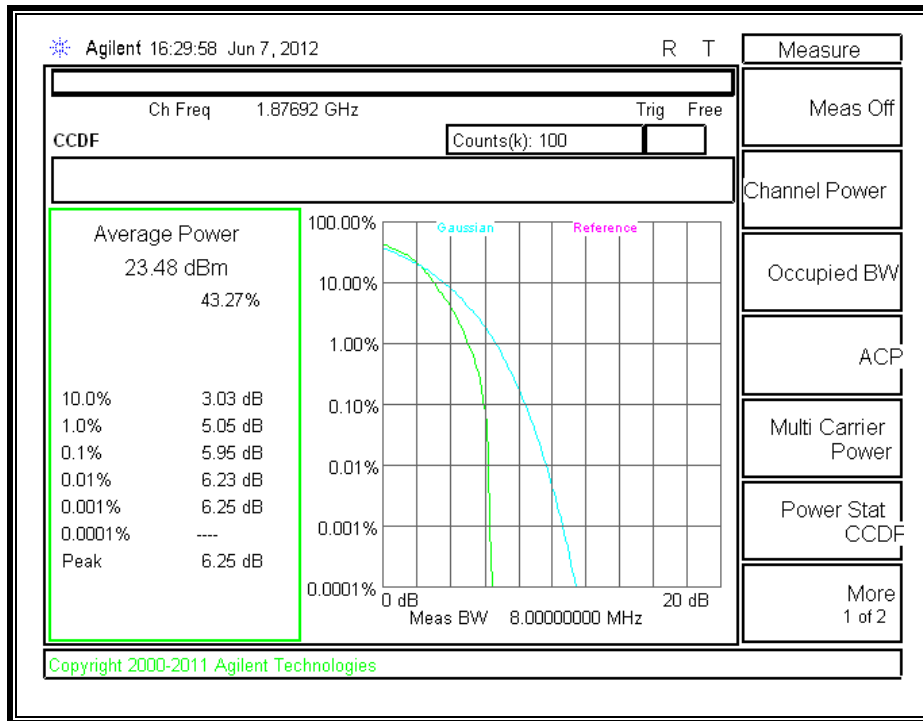
5.0MHz 16QAM



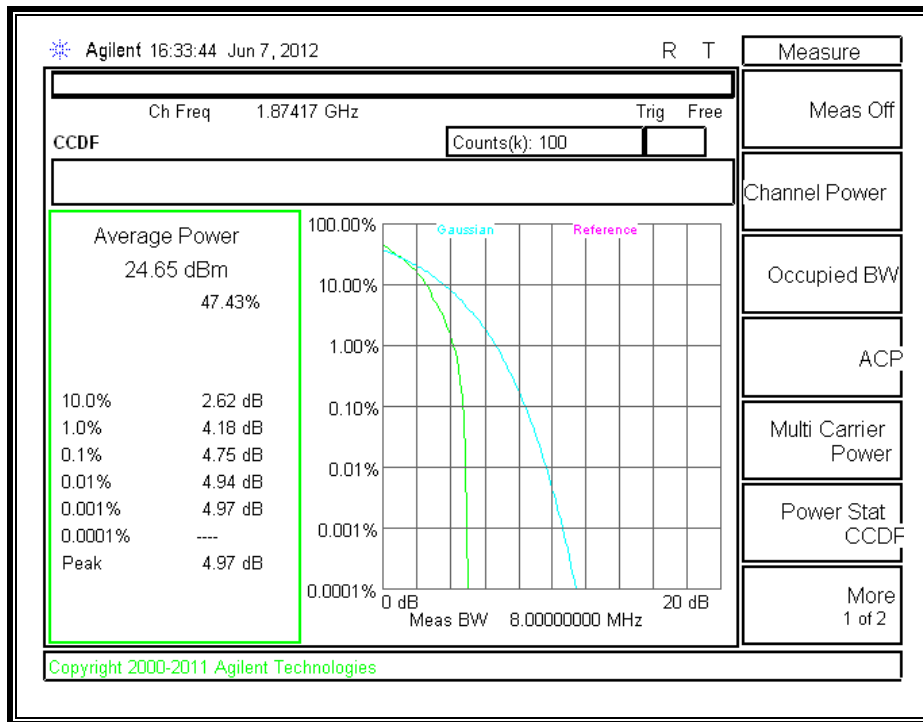
10MHz QPSK



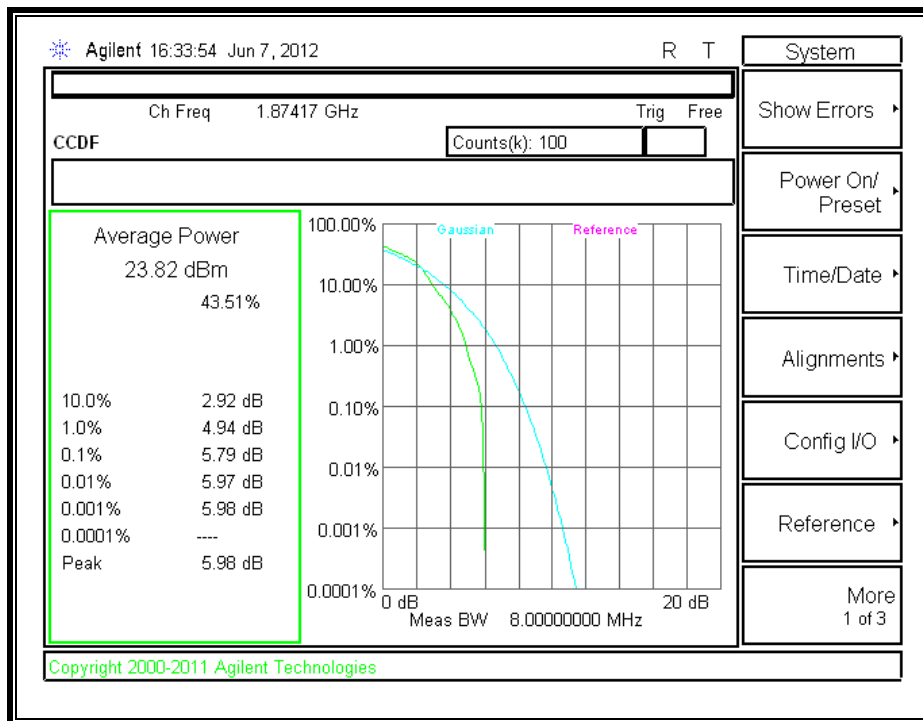
10MHz 16QAM



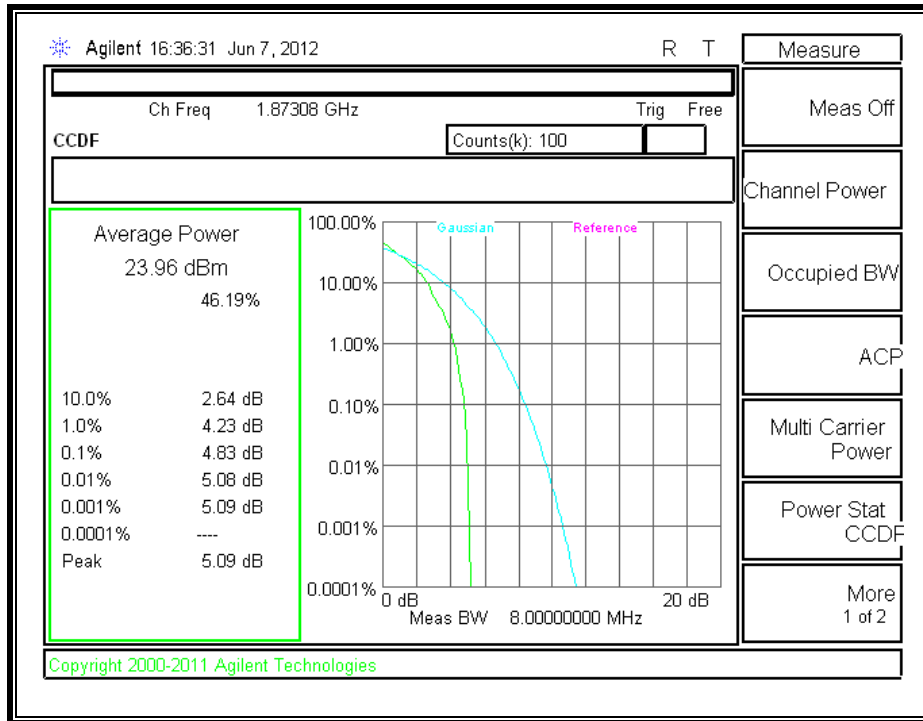
15MHz QPSK



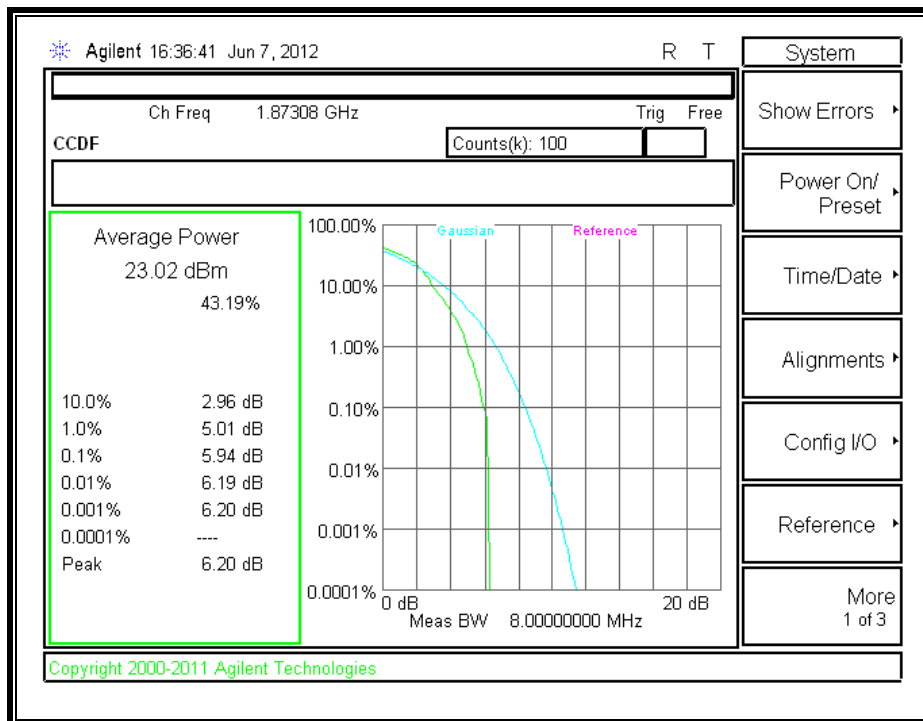
15MHz 16QAM



20.0MHz QPSK



20.0MHz 16QAM



9.3. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

- LTE BAND 2, 4 and 17
- LTE BAND 5, 13 and 25

RESULTS

A1428, ERP LTE QPSK Band 2 (1.4.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-----------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 2, 1.4MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1850.7MHz | | | | | | | | | |
| 3.701 | -17.1 | V | 3.0 | 36.8 | 1.0 | -52.9 | -13.0 | -39.9 | |
| 5.552 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 3.701 | -16.0 | H | 3.0 | 36.8 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 5.552 | -13.1 | H | 3.0 | 36.3 | 1.0 | -48.4 | -13.0 | -35.4 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -15.9 | V | 3.0 | 36.8 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.640 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.760 | -15.8 | H | 3.0 | 36.8 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.640 | -11.9 | H | 3.0 | 36.3 | 1.0 | -47.2 | -13.0 | -34.2 | |
| High Ch, 1909.3MHz | | | | | | | | | |
| 3.819 | -17.8 | V | 3.0 | 36.7 | 1.0 | -53.5 | -13.0 | -40.5 | |
| 5.728 | -14.5 | V | 3.0 | 36.3 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 3.819 | -15.7 | H | 3.0 | 36.7 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 5.728 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 2 (1.4.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 1.4MHz BW
 16QAM

Chamber
5m Chamber A

Pre-amplifier
T144 8449B

Filter
Filter 1

Limit
Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1850.7MHz | | | | | | | | | |
| 3.701 | -19.1 | V | 3.0 | 36.8 | 1.0 | -54.9 | -13.0 | -41.9 | |
| 5.552 | -15.7 | V | 3.0 | 36.3 | 1.0 | -51.0 | -13.0 | -38.0 | |
| 3.701 | -17.0 | H | 3.0 | 36.8 | 1.0 | -52.8 | -13.0 | -39.8 | |
| 5.552 | -14.1 | H | 3.0 | 36.3 | 1.0 | -49.4 | -13.0 | -36.4 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.640 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.760 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.640 | -14.9 | H | 3.0 | 36.3 | 1.0 | -50.2 | -13.0 | -37.2 | |
| High Ch, 1909.3MHz | | | | | | | | | |
| 3.819 | -18.8 | V | 3.0 | 36.7 | 1.0 | -54.5 | -13.0 | -41.5 | |
| 5.728 | -14.5 | V | 3.0 | 36.3 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 3.819 | -16.7 | H | 3.0 | 36.7 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 5.728 | -13.8 | H | 3.0 | 36.3 | 1.0 | -49.1 | -13.0 | -36.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 2 (3.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 3MHz BW
 QPSK

Chamber

5m Chamber A

Pre-amplifer

T144 8449B

Filter

Filter 1

Limit

Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1851.5MHz | | | | | | | | | |
| 3.704 | -15.1 | V | 3.0 | 36.8 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 5.555 | -12.7 | V | 3.0 | 36.3 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 3.704 | -15.0 | H | 3.0 | 36.8 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.555 | -12.1 | H | 3.0 | 36.3 | 1.0 | -47.3 | -13.0 | -34.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -15.9 | V | 3.0 | 36.8 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.640 | -12.6 | V | 3.0 | 36.3 | 1.0 | -47.9 | -13.0 | -34.9 | |
| 3.760 | -14.8 | H | 3.0 | 36.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.640 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, 1908.5MHz | | | | | | | | | |
| 3.805 | -16.8 | V | 3.0 | 36.7 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.708 | -13.5 | V | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| 3.805 | -15.7 | H | 3.0 | 36.7 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 5.708 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 2 (3.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|----------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 2, 3MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1851.5MHz | | | | | | | | | |
| 3.704 | -17.1 | V | 3.0 | 36.8 | 1.0 | -52.9 | -13.0 | -39.9 | |
| 5.555 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 3.704 | -16.0 | H | 3.0 | 36.8 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 5.555 | -13.1 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.640 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.760 | -15.8 | H | 3.0 | 36.8 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.640 | -11.9 | H | 3.0 | 36.3 | 1.0 | -47.2 | -13.0 | -34.2 | |
| High Ch, 1908.5MHz | | | | | | | | | |
| 3.805 | -17.8 | V | 3.0 | 36.7 | 1.0 | -53.6 | -13.0 | -40.6 | |
| 5.708 | -14.5 | V | 3.0 | 36.3 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 3.805 | -16.7 | H | 3.0 | 36.7 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 5.708 | -13.8 | H | 3.0 | 36.3 | 1.0 | -49.1 | -13.0 | -36.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 2 (5 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 5MHz BW
 QPSK

Chamber
 5m Chamber A

Pre-amplifier
 T144 8449B

Filter
 Filter 1

Limit
 Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1852.5MHz | | | | | | | | | |
| 3.705 | -16.1 | V | 3.0 | 36.8 | 1.0 | -51.9 | -13.0 | -38.9 | |
| 5.557 | -13.7 | V | 3.0 | 36.3 | 1.0 | -49.0 | -13.0 | -36.0 | |
| 3.705 | -15.0 | H | 3.0 | 36.8 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.557 | -12.0 | H | 3.0 | 36.3 | 1.0 | -47.3 | -13.0 | -34.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -14.9 | V | 3.0 | 36.8 | 1.0 | -50.7 | -13.0 | -37.7 | |
| 5.640 | -10.6 | V | 3.0 | 36.3 | 1.0 | -45.9 | -13.0 | -32.9 | |
| 3.760 | -13.8 | H | 3.0 | 36.8 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 5.640 | -9.9 | H | 3.0 | 36.3 | 1.0 | -45.2 | -13.0 | -32.2 | |
| High Ch, 1907.5MHz | | | | | | | | | |
| 3.815 | -16.8 | V | 3.0 | 36.7 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.722 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.815 | -14.7 | H | 3.0 | 36.7 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 5.722 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.1 | -13.0 | -33.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 2 (10 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 10MHz BW
 QPSK

Chamber

Pre-amplifier

Filter

Limit

5m Chamber A

T144 8449B

Filter 1

Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1855MHz | | | | | | | | | |
| 3.710 | -15.1 | V | 3.0 | 36.8 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 5.565 | -11.7 | V | 3.0 | 36.3 | 1.0 | -47.0 | -13.0 | -34.0 | |
| 3.710 | -16.0 | H | 3.0 | 36.8 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 5.565 | -11.0 | H | 3.0 | 36.3 | 1.0 | -46.3 | -13.0 | -33.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -14.9 | V | 3.0 | 36.8 | 1.0 | -50.7 | -13.0 | -37.7 | |
| 5.640 | -12.6 | V | 3.0 | 36.3 | 1.0 | -47.9 | -13.0 | -34.9 | |
| 3.760 | -13.8 | H | 3.0 | 36.8 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 5.640 | -10.9 | H | 3.0 | 36.3 | 1.0 | -46.2 | -13.0 | -33.2 | |
| High Ch, 1905MHz | | | | | | | | | |
| 3.810 | -14.8 | V | 3.0 | 36.7 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.715 | -11.5 | V | 3.0 | 36.3 | 1.0 | -46.8 | -13.0 | -33.8 | |
| 3.810 | -14.7 | H | 3.0 | 36.7 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 5.715 | -11.8 | H | 3.0 | 36.3 | 1.0 | -47.1 | -13.0 | -34.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 2 (10 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-----------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 2, 10MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1855MHz | | | | | | | | | |
| 3.710 | -17.1 | V | 3.0 | 36.8 | 1.0 | -52.9 | -13.0 | -39.9 | |
| 5.565 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 3.710 | -15.0 | H | 3.0 | 36.8 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.565 | -12.0 | H | 3.0 | 36.3 | 1.0 | -47.3 | -13.0 | -34.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.640 | -12.1 | V | 3.0 | 36.3 | 1.0 | -47.4 | -13.0 | -34.4 | |
| 3.760 | -14.8 | H | 3.0 | 36.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.640 | -11.9 | H | 3.0 | 36.3 | 1.0 | -47.2 | -13.0 | -34.2 | |
| High Ch, 1905MHz | | | | | | | | | |
| 3.810 | -16.8 | V | 3.0 | 36.7 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.715 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.810 | -15.7 | H | 3.0 | 36.7 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 5.715 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 2 (15MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 15MHz BW
 QPSK

Chamber
 5m Chamber A

Pre-amplifer
 T144 8449B

Filter
 Filter 1

Limit
 Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1857.5MHz | | | | | | | | | |
| 3.715 | -17.1 | V | 3.0 | 36.8 | 1.0 | -52.9 | -13.0 | -39.9 | |
| 5.573 | -13.7 | V | 3.0 | 36.3 | 1.0 | -49.0 | -13.0 | -36.0 | |
| 3.715 | -15.0 | H | 3.0 | 36.8 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.573 | -12.0 | H | 3.0 | 36.3 | 1.0 | -47.3 | -13.0 | -34.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.640 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.760 | -14.8 | H | 3.0 | 36.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.640 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, 1902.5MHz | | | | | | | | | |
| 3.805 | -16.8 | V | 3.0 | 36.7 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.708 | -13.5 | V | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| 3.805 | -14.7 | H | 3.0 | 36.7 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 5.708 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 2 (15MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 15MHz BW
 16QAM

| | | | |
|----------------|----------------------|---------------|--------------|
| Chamber | Pre-amplifier | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 24 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1857.5MHz | | | | | | | | | |
| 3.715 | -18.1 | V | 3.0 | 36.8 | 1.0 | -53.9 | -13.0 | -40.9 | |
| 5.573 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 3.715 | -16.0 | H | 3.0 | 36.8 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 5.573 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -17.9 | V | 3.0 | 36.8 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 5.640 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.760 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.640 | -13.9 | H | 3.0 | 36.3 | 1.0 | -49.2 | -13.0 | -36.2 | |
| High Ch, 1902.5MHz | | | | | | | | | |
| 3.805 | -15.8 | V | 3.0 | 36.7 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.708 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.805 | -14.7 | H | 3.0 | 36.7 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 5.708 | -11.8 | H | 3.0 | 36.3 | 1.0 | -47.1 | -13.0 | -34.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 2 (20 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|----------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 2, 20MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (1860MHz) | | | | | | | | | |
| 3.720 | -15.0 | V | 3.0 | 36.8 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.580 | -12.7 | V | 3.0 | 36.3 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 3.720 | -16.9 | H | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.580 | -12.0 | H | 3.0 | 36.3 | 1.0 | -47.3 | -13.0 | -34.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -13.9 | V | 3.0 | 36.8 | 1.0 | -49.7 | -13.0 | -36.7 | |
| 5.640 | -11.6 | V | 3.0 | 36.3 | 1.0 | -46.9 | -13.0 | -33.9 | |
| 3.760 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.640 | -11.9 | H | 3.0 | 36.3 | 1.0 | -47.2 | -13.0 | -34.2 | |
| High Ch, (1900MHz) | | | | | | | | | |
| 3.800 | -14.9 | V | 3.0 | 36.7 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.700 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.800 | -14.7 | H | 3.0 | 36.7 | 1.0 | -50.5 | -13.0 | -37.5 | |
| 5.700 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.1 | -13.0 | -33.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 2 (20MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 2, 20MHz BW
 16QAM

Chamber
5m Chamber A

Pre-amplifier
T144 8449B

Filter
Filter 1

Limit
Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1860MHz | | | | | | | | | |
| 3.720 | -17.0 | V | 3.0 | 36.8 | 1.0 | -52.8 | -13.0 | -39.8 | |
| 5.580 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 3.720 | -15.9 | H | 3.0 | 36.8 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.580 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1880.0MHz) | | | | | | | | | |
| 3.760 | -14.9 | V | 3.0 | 36.8 | 1.0 | -50.7 | -13.0 | -37.7 | |
| 5.640 | -12.6 | V | 3.0 | 36.3 | 1.0 | -47.9 | -13.0 | -34.9 | |
| 3.760 | -14.8 | H | 3.0 | 36.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.640 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, 1900MHz | | | | | | | | | |
| 3.800 | -14.9 | V | 3.0 | 36.7 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.700 | -13.5 | V | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| 3.800 | -13.7 | H | 3.0 | 36.7 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.700 | -11.8 | H | 3.0 | 36.3 | 1.0 | -47.1 | -13.0 | -34.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 4 (1.4.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 1.4MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1710.7MHz | | | | | | | | | |
| 3.421 | -6.7 | V | 3.0 | 37.0 | 1.0 | -42.7 | -13.0 | -29.7 | |
| 5.132 | -9.4 | V | 3.0 | 36.3 | 1.0 | -44.7 | -13.0 | -31.7 | |
| 3.421 | -7.8 | H | 3.0 | 37.0 | 1.0 | -43.8 | -13.0 | -30.8 | |
| 5.132 | -9.9 | H | 3.0 | 36.3 | 1.0 | -45.1 | -13.0 | -32.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -9.6 | V | 3.0 | 37.0 | 1.0 | -45.6 | -13.0 | -32.6 | |
| 5.160 | -9.3 | V | 3.0 | 36.3 | 1.0 | -44.6 | -13.0 | -31.6 | |
| 3.465 | -12.7 | H | 3.0 | 37.0 | 1.0 | -48.7 | -13.0 | -35.7 | |
| 5.160 | -9.8 | H | 3.0 | 36.3 | 1.0 | -45.0 | -13.0 | -32.0 | |
| High Ch, 1754.3MHz | | | | | | | | | |
| 3.509 | -9.5 | V | 3.0 | 37.0 | 1.0 | -45.5 | -13.0 | -32.5 | |
| 5.263 | -11.1 | V | 3.0 | 36.3 | 1.0 | -46.4 | -13.0 | -33.4 | |
| 3.509 | -10.5 | H | 3.0 | 37.0 | 1.0 | -46.5 | -13.0 | -33.5 | |
| 5.263 | -11.5 | H | 3.0 | 36.3 | 1.0 | -46.8 | -13.0 | -33.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 4 (1.4.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|---------------------|--------------------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 1.4MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1710.7MHz | | | | | | | | | |
| 3.421 | -6.1 | V | 3.0 | 37.0 | 1.0 | -42.1 | -13.0 | -29.1 | |
| 5.132 | -10.3 | V | 3.0 | 36.3 | 1.0 | -45.6 | -13.0 | -32.6 | |
| 3.421 | -8.8 | H | 3.0 | 37.0 | 1.0 | -44.8 | -13.0 | -31.8 | |
| 5.132 | -10.7 | H | 3.0 | 36.3 | 1.0 | -45.9 | -13.0 | -32.9 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -10.6 | V | 3.0 | 37.0 | 1.0 | -46.6 | -13.0 | -33.6 | |
| 5.160 | -8.8 | V | 3.0 | 36.3 | 1.0 | -44.1 | -13.0 | -31.1 | |
| 3.465 | -11.7 | H | 3.0 | 37.0 | 1.0 | -47.7 | -13.0 | -34.7 | |
| 5.160 | -10.3 | H | 3.0 | 36.3 | 1.0 | -45.5 | -13.0 | -32.5 | |
| High Ch, 1754.3MHz | | | | | | | | | |
| 3.509 | -10.5 | V | 3.0 | 37.0 | 1.0 | -46.5 | -13.0 | -33.5 | |
| 5.263 | -11.6 | V | 3.0 | 36.3 | 1.0 | -46.9 | -13.0 | -33.9 | |
| 3.509 | -12.0 | H | 3.0 | 37.0 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 5.263 | -11.5 | H | 3.0 | 36.3 | 1.0 | -46.8 | -13.0 | -33.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 4 (3.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: LTE Band 4, 3MHz BW
 QPSK

| | | | |
|----------------|----------------------|---------------|--------------|
| Chamber | Pre-amplifier | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 27 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Low Ch, 1711.5MHz | | | | | | | | | |
| 3.423 | -6.7 | V | 3.0 | 37.0 | 1.0 | -42.7 | -13.0 | -29.7 | |
| 5.135 | -10.4 | V | 3.0 | 36.3 | 1.0 | -45.7 | -13.0 | -32.7 | |
| 3.423 | -8.8 | H | 3.0 | 37.0 | 1.0 | -44.8 | -13.0 | -31.8 | |
| 5.135 | -8.8 | H | 3.0 | 36.3 | 1.0 | -44.1 | -13.0 | -31.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -15.6 | V | 3.0 | 37.0 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.160 | -13.3 | V | 3.0 | 36.3 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 3.465 | -14.7 | H | 3.0 | 37.0 | 1.0 | -50.7 | -13.0 | -37.7 | |
| 5.160 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.0 | -13.0 | -35.0 | |
| High Ch, 1753.5MHz | | | | | | | | | |
| 3.507 | -12.5 | V | 3.0 | 37.0 | 1.0 | -48.5 | -13.0 | -35.5 | |
| 5.235 | -11.2 | V | 3.0 | 36.3 | 1.0 | -46.4 | -13.0 | -33.4 | |
| 3.490 | -12.6 | H | 3.0 | 37.0 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 5.235 | -10.6 | H | 3.0 | 36.3 | 1.0 | -45.8 | -13.0 | -32.8 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 4 (3.0 MHz BANDWIDTH)

| Compliance Certification Services | | | | | | | | | |
|--|------------------|------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 3MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1711.5MHz | | | | | | | | | |
| 3.423 | -8.7 | V | 3.0 | 37.0 | 1.0 | -44.7 | -13.0 | -31.7 | |
| 5.135 | -11.4 | V | 3.0 | 36.3 | 1.0 | -46.7 | -13.0 | -33.7 | |
| 3.423 | -9.8 | H | 3.0 | 37.0 | 1.0 | -45.8 | -13.0 | -32.8 | |
| 5.135 | -9.8 | H | 3.0 | 36.3 | 1.0 | -45.1 | -13.0 | -32.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -15.3 | V | 3.0 | 37.0 | 1.0 | -51.3 | -13.0 | -38.3 | |
| 5.160 | -11.3 | V | 3.0 | 36.3 | 1.0 | -46.6 | -13.0 | -33.6 | |
| 3.465 | -15.7 | H | 3.0 | 37.0 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.160 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.0 | -13.0 | -33.0 | |
| High Ch, 1753.5MHz | | | | | | | | | |
| 3.507 | -13.5 | V | 3.0 | 37.0 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.235 | -11.1 | V | 3.0 | 36.3 | 1.0 | -46.3 | -13.0 | -33.3 | |
| 3.507 | -13.5 | H | 3.0 | 37.0 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.235 | -10.6 | H | 3.0 | 36.3 | 1.0 | -45.8 | -13.0 | -32.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 4 (5 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-----------------------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 5MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1712.5MHz | | | | | | | | | |
| 3.425 | -8.7 | V | 3.0 | 37.0 | 1.0 | -44.7 | -13.0 | -31.7 | |
| 5.138 | -11.4 | V | 3.0 | 36.3 | 1.0 | -46.6 | -13.0 | -33.6 | |
| 3.425 | -8.8 | H | 3.0 | 37.0 | 1.0 | -44.8 | -13.0 | -31.8 | |
| 5.138 | 107.2 | H | 3.0 | 36.3 | 1.0 | 71.9 | -13.0 | 84.9 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -12.6 | V | 3.0 | 37.0 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 5.198 | -12.2 | V | 3.0 | 36.2 | 1.0 | -47.5 | -13.0 | -34.5 | |
| 3.465 | -11.7 | H | 3.0 | 37.0 | 1.0 | -47.7 | -13.0 | -34.7 | |
| 5.198 | -10.7 | H | 3.0 | 36.2 | 1.0 | -45.9 | -13.0 | -32.9 | |
| High Ch, 1752.5MHz | | | | | | | | | |
| 3.505 | -14.5 | V | 3.0 | 37.0 | 1.0 | -50.5 | -13.0 | -37.5 | |
| 5.258 | -13.1 | V | 3.0 | 36.3 | 1.0 | -48.4 | -13.0 | -35.4 | |
| 3.505 | -13.6 | H | 3.0 | 37.0 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.258 | -12.6 | H | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 4 (5 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 5MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1712.5MHz | | | | | | | | | |
| 3.425 | -10.2 | V | 3.0 | 37.0 | 1.0 | -46.2 | -13.0 | -33.2 | |
| 5.138 | -12.4 | V | 3.0 | 36.3 | 1.0 | -47.6 | -13.0 | -34.6 | |
| 3.425 | -8.8 | H | 3.0 | 37.0 | 1.0 | -44.8 | -13.0 | -31.8 | |
| 5.138 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.1 | -13.0 | -33.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -13.6 | V | 3.0 | 37.0 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 5.198 | -13.2 | V | 3.0 | 36.2 | 1.0 | -48.5 | -13.0 | -35.5 | |
| 3.465 | -12.7 | H | 3.0 | 37.0 | 1.0 | -48.7 | -13.0 | -35.7 | |
| 5.198 | -12.7 | H | 3.0 | 36.2 | 1.0 | -47.9 | -13.0 | -34.9 | |
| High Ch, 1752.5MHz | | | | | | | | | |
| 3.505 | -15.0 | V | 3.0 | 37.0 | 1.0 | -51.0 | -13.0 | -38.0 | |
| 5.258 | -14.1 | V | 3.0 | 36.3 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 3.505 | -14.0 | H | 3.0 | 37.0 | 1.0 | -49.9 | -13.0 | -36.9 | |
| 5.258 | -12.6 | H | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 4 (10 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 10MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifer | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1715MHz | | | | | | | | | |
| 3.430 | -10.7 | V | 3.0 | 37.0 | 1.0 | -46.7 | -13.0 | -33.7 | |
| 5.145 | -11.4 | V | 3.0 | 36.3 | 1.0 | -46.6 | -13.0 | -33.6 | |
| 3.430 | -9.8 | H | 3.0 | 37.0 | 1.0 | -45.8 | -13.0 | -32.8 | |
| 5.145 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.1 | -13.0 | -33.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -15.6 | V | 3.0 | 37.0 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.198 | -12.2 | V | 3.0 | 36.2 | 1.0 | -47.5 | -13.0 | -34.5 | |
| 3.465 | -13.7 | H | 3.0 | 37.0 | 1.0 | -49.7 | -13.0 | -36.7 | |
| 5.198 | -12.7 | H | 3.0 | 36.2 | 1.0 | -47.9 | -13.0 | -34.9 | |
| High Ch, 1750MHz | | | | | | | | | |
| 3.500 | -12.5 | V | 3.0 | 37.0 | 1.0 | -48.5 | -13.0 | -35.5 | |
| 5.250 | -11.1 | V | 3.0 | 36.3 | 1.0 | -46.4 | -13.0 | -33.4 | |
| 3.500 | -13.6 | H | 3.0 | 37.0 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.250 | -10.6 | H | 3.0 | 36.3 | 1.0 | -45.8 | -13.0 | -32.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 4 (10 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 10MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1715MHz | | | | | | | | | |
| 3.430 | -12.7 | V | 3.0 | 37.0 | 1.0 | -48.7 | -13.0 | -35.7 | |
| 5.145 | -12.4 | V | 3.0 | 36.3 | 1.0 | -47.6 | -13.0 | -34.6 | |
| 3.430 | -11.8 | H | 3.0 | 37.0 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 5.145 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -16.0 | V | 3.0 | 37.0 | 1.0 | -52.0 | -13.0 | -39.0 | |
| 5.198 | -13.2 | V | 3.0 | 36.2 | 1.0 | -48.5 | -13.0 | -35.5 | |
| 3.465 | -13.5 | H | 3.0 | 37.0 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.198 | -11.7 | H | 3.0 | 36.2 | 1.0 | -46.9 | -13.0 | -33.9 | |
| High Ch, 1750MHz | | | | | | | | | |
| 3.500 | -13.5 | V | 3.0 | 37.0 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 5.250 | -13.1 | V | 3.0 | 36.3 | 1.0 | -48.4 | -13.0 | -35.4 | |
| 3.500 | -12.6 | H | 3.0 | 37.0 | 1.0 | -48.5 | -13.0 | -35.5 | |
| 5.250 | -12.6 | H | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 4 (15MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 15MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1717.5MHz | | | | | | | | | |
| 3.435 | -10.2 | V | 3.0 | 37.0 | 1.0 | -46.2 | -13.0 | -33.2 | |
| 5.152 | -14.3 | V | 3.0 | 36.3 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 3.435 | -13.8 | H | 3.0 | 37.0 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 5.152 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -15.6 | V | 3.0 | 37.0 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.198 | -14.2 | V | 3.0 | 36.2 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 3.465 | -13.7 | H | 3.0 | 37.0 | 1.0 | -49.7 | -13.0 | -36.7 | |
| 5.198 | -12.7 | H | 3.0 | 36.2 | 1.0 | -47.9 | -13.0 | -34.9 | |
| High Ch, 1747.5MHz | | | | | | | | | |
| 3.495 | -15.6 | V | 3.0 | 37.0 | 1.0 | -51.5 | -13.0 | -38.5 | |
| 5.243 | -15.2 | V | 3.0 | 36.3 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 3.495 | -14.6 | H | 3.0 | 37.0 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.243 | -13.6 | H | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 4 (15MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 15MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifer | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1717.5MHz | | | | | | | | | |
| 3.435 | -11.7 | V | 3.0 | 37.0 | 1.0 | -47.7 | -13.0 | -34.7 | |
| 5.152 | -13.3 | V | 3.0 | 36.3 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 3.435 | -14.8 | H | 3.0 | 37.0 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.152 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -16.6 | V | 3.0 | 37.0 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.198 | -13.2 | V | 3.0 | 36.2 | 1.0 | -48.5 | -13.0 | -35.5 | |
| 3.465 | -14.7 | H | 3.0 | 37.0 | 1.0 | -50.7 | -13.0 | -37.7 | |
| 5.198 | -13.7 | H | 3.0 | 36.2 | 1.0 | -48.9 | -13.0 | -35.9 | |
| High Ch, 1747.5MHz | | | | | | | | | |
| 3.495 | -16.3 | V | 3.0 | 37.0 | 1.0 | -52.2 | -13.0 | -39.2 | |
| 5.243 | -14.2 | V | 3.0 | 36.3 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 3.495 | -15.6 | H | 3.0 | 37.0 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.243 | -12.6 | H | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| Rev. 03.03.09 Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 4 (20 MHz BANDWIDTH)

**Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement**

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: LTE Band 4, 20MHz BW
 QPSK

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 27

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, 1720MHz | | | | | | | | | |
| 3.440 | -15.2 | V | 3.0 | 37.0 | 1.0 | -51.2 | -13.0 | -38.2 | |
| 5.145 | -13.4 | V | 3.0 | 36.3 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 3.430 | -13.8 | H | 3.0 | 37.0 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 5.145 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.1 | -13.0 | -33.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -13.6 | V | 3.0 | 37.0 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 5.160 | -13.3 | V | 3.0 | 36.3 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 3.465 | -15.7 | H | 3.0 | 37.0 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.160 | -11.8 | H | 3.0 | 36.3 | 1.0 | -47.0 | -13.0 | -34.0 | |
| High Ch, 1745MHz | | | | | | | | | |
| 3.490 | -15.6 | V | 3.0 | 37.0 | 1.0 | -51.5 | -13.0 | -38.5 | |
| 5.235 | -14.2 | V | 3.0 | 36.3 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 3.490 | -15.6 | H | 3.0 | 37.0 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.235 | -12.6 | H | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 4 (20MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | LTE Band 4, 20MHz BW 16QAM | | | | | | | |
| Chamber | | Pre-amplifer | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 1720MHz | | | | | | | | | |
| 3.440 | -15.7 | V | 3.0 | 37.0 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.145 | -14.4 | V | 3.0 | 36.3 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 3.430 | -14.9 | H | 3.0 | 37.0 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 5.145 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.1 | -13.0 | -33.1 | |
| Mid Ch, 1732.50MHz | | | | | | | | | |
| 3.465 | -14.6 | V | 3.0 | 37.0 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.160 | -13.0 | V | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| 3.465 | -16.7 | H | 3.0 | 37.0 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.160 | -10.8 | H | 3.0 | 36.3 | 1.0 | -46.0 | -13.0 | -33.0 | |
| High Ch, 1745MHz | | | | | | | | | |
| 3.490 | -16.6 | V | 3.0 | 37.0 | 1.0 | -52.5 | -13.0 | -39.5 | |
| 5.235 | -13.2 | V | 3.0 | 36.3 | 1.0 | -48.4 | -13.0 | -35.4 | |
| 3.490 | -13.6 | H | 3.0 | 37.0 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 5.235 | -10.6 | H | 3.0 | 36.3 | 1.0 | -45.8 | -13.0 | -32.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 17 (5.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|----------------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/09/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and earphone | | | | | | | |
| Mode: | | TX, LTE band 17, 5MHz BW QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch (706.5 MHz) | | | | | | | | | |
| 1.413 | -19.6 | V | 3.0 | 38.6 | 1.0 | -57.2 | -13.0 | -44.2 | |
| 2.120 | -18.1 | V | 3.0 | 37.6 | 1.0 | -54.7 | -13.0 | -41.7 | |
| 2.826 | -17.2 | V | 3.0 | 37.4 | 1.0 | -53.6 | -13.0 | -40.6 | |
| 1.413 | -8.5 | H | 3.0 | 38.6 | 1.0 | -46.1 | -13.0 | -33.1 | |
| 2.120 | -17.1 | H | 3.0 | 37.6 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 2.826 | -18.0 | H | 3.0 | 37.4 | 1.0 | -54.4 | -13.0 | -41.4 | |
| Mid Ch (710.0 MHz) | | | | | | | | | |
| 1.420 | -17.5 | V | 3.0 | 38.5 | 1.0 | -55.1 | -13.0 | -42.1 | |
| 2.130 | -19.0 | V | 3.0 | 37.6 | 1.0 | -55.7 | -13.0 | -42.7 | |
| 2.840 | -19.2 | V | 3.0 | 37.4 | 1.0 | -55.5 | -13.0 | -42.5 | |
| 1.420 | -5.4 | H | 3.0 | 38.5 | 1.0 | -43.0 | -13.0 | -30.0 | |
| 2.130 | -19.1 | H | 3.0 | 37.6 | 1.0 | -55.7 | -13.0 | -42.7 | |
| 2.840 | -17.9 | H | 3.0 | 37.4 | 1.0 | -54.3 | -13.0 | -41.3 | |
| High Ch, 713. | | | | | | | | | |
| 1.427 | -17.5 | V | 3.0 | 38.5 | 1.0 | -55.0 | -13.0 | -42.0 | |
| 2.140 | -19.0 | V | 3.0 | 37.6 | 1.0 | -55.6 | -13.0 | -42.6 | |
| 2.854 | -19.1 | V | 3.0 | 37.4 | 1.0 | -55.5 | -13.0 | -42.5 | |
| 1.427 | -4.4 | H | 3.0 | 38.5 | 1.0 | -41.9 | -13.0 | -28.9 | |
| 2.140 | -18.1 | H | 3.0 | 37.6 | 1.0 | -54.7 | -13.0 | -41.7 | |
| 2.854 | -17.8 | H | 3.0 | 37.4 | 1.0 | -54.2 | -13.0 | -41.2 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 17 (5.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and earphone
Mode: TX, LTE band 17, 5MHz BW
 16QAM

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 27

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------------------------|------------------|-----------------|--------------|-------------|-------------|-----------|-------------|------------|-------|
| Low Ch (706.5 MHz) | | | | | | | | | |
| 1.413 | -20.6 | V | 3.0 | 38.6 | 1.0 | -58.2 | -13.0 | -45.2 | |
| 2.120 | -19.1 | V | 3.0 | 37.6 | 1.0 | -55.7 | -13.0 | -42.7 | |
| 2.826 | -17.2 | V | 3.0 | 37.4 | 1.0 | -53.6 | -13.0 | -40.6 | |
| 1.413 | -9.0 | H | 3.0 | 38.6 | 1.0 | -46.6 | -13.0 | -33.6 | |
| 2.120 | -18.1 | H | 3.0 | 37.6 | 1.0 | -54.7 | -13.0 | -41.7 | |
| 2.826 | -19.0 | H | 3.0 | 37.4 | 1.0 | -55.4 | -13.0 | -42.4 | |
| Mid Ch (710.0 MHz) | | | | | | | | | |
| 1.420 | -18.3 | V | 3.0 | 38.5 | 1.0 | -55.9 | -13.0 | -42.9 | |
| 2.130 | -20.0 | V | 3.0 | 37.6 | 1.0 | -56.7 | -13.0 | -43.7 | |
| 2.840 | -18.2 | V | 3.0 | 37.4 | 1.0 | -54.5 | -13.0 | -41.5 | |
| 1.420 | -7.4 | H | 3.0 | 38.5 | 1.0 | -45.0 | -13.0 | -32.0 | |
| 2.130 | -18.1 | H | 3.0 | 37.6 | 1.0 | -54.7 | -13.0 | -41.7 | |
| 2.840 | -17.9 | H | 3.0 | 37.4 | 1.0 | -54.3 | -13.0 | -41.3 | |
| High Ch, 713. | | | | | | | | | |
| 1.427 | -18.5 | V | 3.0 | 38.5 | 1.0 | -56.0 | -13.0 | -43.0 | |
| 2.140 | -18.2 | V | 3.0 | 37.6 | 1.0 | -54.8 | -13.0 | -41.8 | |
| 2.854 | -17.1 | V | 3.0 | 37.4 | 1.0 | -53.5 | -13.0 | -40.5 | |
| 1.427 | -5.4 | H | 3.0 | 38.5 | 1.0 | -42.9 | -13.0 | -29.9 | |
| 2.140 | -20.1 | H | 3.0 | 37.6 | 1.0 | -56.7 | -13.0 | -43.7 | |
| 2.854 | -19.8 | H | 3.0 | 37.4 | 1.0 | -56.2 | -13.0 | -43.2 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 17 (10.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and earphone
Mode: TX, LTE band 17, 10MHz BW
 QPSK

Chamber

Pre-amplifier

Filter

Limit

5m Chamber A

T144 8449B

Filter 1

Part 27

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|--------------------|------------------|-----------------|--------------|-------------|-------------|-----------|-------------|------------|-------|
| Mid Ch (710.0 MHz) | | | | | | | | | |
| 1.420 | -18.5 | V | 3.0 | 38.5 | 1.0 | -56.1 | -13.0 | -43.1 | |
| 2.130 | -21.0 | V | 3.0 | 37.6 | 1.0 | -57.7 | -13.0 | -44.7 | |
| 2.840 | -20.2 | V | 3.0 | 37.4 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 1.420 | -9.4 | H | 3.0 | 38.5 | 1.0 | -47.0 | -13.0 | -34.0 | |
| 2.130 | -20.1 | H | 3.0 | 37.6 | 1.0 | -56.7 | -13.0 | -43.7 | |
| 2.840 | -19.9 | H | 3.0 | 37.4 | 1.0 | -56.3 | -13.0 | -43.3 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 17 (10.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/09/12
Test Engineer: Chin Pang
Configuration: EUT and earphone
Mode: TX, LTE band 17, 10MHz BW
 16QAM

Chamber

Pre-amplifier

Filter

Limit

5m Chamber A

T144 8449B

Filter 1

Part 27

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------------------------|---------------------|--------------------|-----------------|----------------|----------------|--------------|----------------|---------------|-------|
| Mid Ch (710.0 MHz) | | | | | | | | | |
| 1.420 | -20.5 | V | 3.0 | 38.5 | 1.0 | -58.1 | -13.0 | -45.1 | |
| 2.130 | -21.0 | V | 3.0 | 37.6 | 1.0 | -57.7 | -13.0 | -44.7 | |
| 2.840 | -20.2 | V | 3.0 | 37.4 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 1.420 | -12.4 | H | 3.0 | 38.5 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 2.130 | -20.1 | H | 3.0 | 37.6 | 1.0 | -56.7 | -13.0 | -43.7 | |
| 2.840 | -19.9 | H | 3.0 | 37.4 | 1.0 | -56.3 | -13.0 | -43.3 | |
| | | | | | | | | | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

A21, ERP LTE QPSK Band 5 (1.4.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/06/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 5, 1.4MHz QPSK

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 22

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|-----------|-------------|------------|-------|
| Low Ch, (824.7MHz) | | | | | | | | | |
| 1.649 | -14.2 | V | 3.0 | 38.2 | 1.0 | -51.3 | -13.0 | -38.3 | |
| 2.474 | -20.3 | V | 3.0 | 37.5 | 1.0 | -56.8 | -13.0 | -43.8 | |
| 1.649 | -12.4 | H | 3.0 | 38.2 | 1.0 | -49.6 | -13.0 | -36.6 | |
| 2.474 | -22.0 | H | 3.0 | 37.5 | 1.0 | -58.5 | -13.0 | -45.5 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -7.9 | V | 3.0 | 38.1 | 1.0 | -45.0 | -13.0 | -32.0 | |
| 2.510 | -18.1 | V | 3.0 | 37.5 | 1.0 | -54.6 | -13.0 | -41.6 | |
| 1.673 | -7.2 | H | 3.0 | 38.1 | 1.0 | -44.3 | -13.0 | -31.3 | |
| 2.510 | -22.9 | H | 3.0 | 37.5 | 1.0 | -59.3 | -13.0 | -46.3 | |
| High Ch, (848.3MHz) | | | | | | | | | |
| 1.697 | -8.6 | V | 3.0 | 38.1 | 1.0 | -45.7 | -13.0 | -32.7 | |
| 2.545 | -20.0 | V | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 1.695 | -6.0 | H | 3.0 | 38.1 | 1.0 | -43.1 | -13.0 | -30.1 | |
| 2.545 | -19.7 | H | 3.0 | 37.5 | 1.0 | -56.1 | -13.0 | -43.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

A21, LTE 16QAM Band 5 (1.4.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|------------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 5, 1.4MHz 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (824.7MHz) | | | | | | | | | |
| 1.649 | -14.2 | V | 3.0 | 38.2 | 1.0 | -51.3 | -13.0 | -38.3 | |
| 2.474 | -20.3 | V | 3.0 | 37.5 | 1.0 | -56.8 | -13.0 | -43.8 | |
| 1.649 | -10.4 | H | 3.0 | 38.2 | 1.0 | -47.6 | -13.0 | -34.6 | |
| 2.474 | -20.0 | H | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -8.9 | V | 3.0 | 38.1 | 1.0 | -46.0 | -13.0 | -33.0 | |
| 2.510 | -19.1 | V | 3.0 | 37.5 | 1.0 | -55.6 | -13.0 | -42.6 | |
| 1.673 | -5.2 | H | 3.0 | 38.1 | 1.0 | -42.3 | -13.0 | -29.3 | |
| 2.510 | -18.9 | H | 3.0 | 37.5 | 1.0 | -55.3 | -13.0 | -42.3 | |
| High Ch, (848.3MHz) | | | | | | | | | |
| 1.697 | -7.6 | V | 3.0 | 38.1 | 1.0 | -44.7 | -13.0 | -31.7 | |
| 2.545 | -18.0 | V | 3.0 | 37.5 | 1.0 | -54.5 | -13.0 | -41.5 | |
| 1.695 | -3.0 | H | 3.0 | 38.1 | 1.0 | -40.1 | -13.0 | -27.1 | |
| 2.545 | -18.7 | H | 3.0 | 37.5 | 1.0 | -55.1 | -13.0 | -42.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

LTE QPSK Band 4 (3.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|---------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 5, 3MHz QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (825.5MHz) | | | | | | | | | |
| 1.651 | -14.1 | V | 3.0 | 38.2 | 1.0 | -51.3 | -13.0 | -38.3 | |
| 2.477 | -18.3 | V | 3.0 | 37.5 | 1.0 | -54.8 | -13.0 | -41.8 | |
| 1.651 | -11.4 | H | 3.0 | 38.2 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 2.477 | -20.0 | H | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -10.9 | V | 3.0 | 38.1 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 2.510 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 1.673 | -5.2 | H | 3.0 | 38.1 | 1.0 | -42.3 | -13.0 | -29.3 | |
| 2.510 | -20.9 | H | 3.0 | 37.5 | 1.0 | -57.3 | -13.0 | -44.3 | |
| High Ch, (847.5MHz) | | | | | | | | | |
| 1.695 | -12.7 | V | 3.0 | 38.1 | 1.0 | -49.7 | -13.0 | -36.7 | |
| 2.543 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 1.695 | -6.0 | H | 3.0 | 38.1 | 1.0 | -43.1 | -13.0 | -30.1 | |
| 2.543 | -19.7 | H | 3.0 | 37.5 | 1.0 | -56.1 | -13.0 | -43.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

LTE 16QAM Band 5 (3.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/06/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 5, 3MHz 16QAM

| | | | |
|----------------|---------------------|---------------|--------------|
| Chamber | Pre-amplifer | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 22 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|---------------------|--------------------|-----------------|----------------|----------------|--------------|----------------|---------------|-------|
| Low Ch, (825.5MHz) | | | | | | | | | |
| 1.651 | -15.1 | V | 3.0 | 38.2 | 1.0 | -52.3 | -13.0 | -39.3 | |
| 2.477 | -20.3 | V | 3.0 | 37.5 | 1.0 | -56.8 | -13.0 | -43.8 | |
| 1.651 | -9.4 | H | 3.0 | 38.2 | 1.0 | -46.6 | -13.0 | -33.6 | |
| 2.477 | -21.0 | H | 3.0 | 37.5 | 1.0 | -57.5 | -13.0 | -44.5 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -9.9 | V | 3.0 | 38.1 | 1.0 | -47.0 | -13.0 | -34.0 | |
| 2.510 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 1.673 | -5.7 | H | 3.0 | 38.1 | 1.0 | -42.8 | -13.0 | -29.8 | |
| 2.510 | -21.9 | H | 3.0 | 37.5 | 1.0 | -58.3 | -13.0 | -45.3 | |
| High Ch, (847.5MHz) | | | | | | | | | |
| 1.695 | -10.7 | V | 3.0 | 38.1 | 1.0 | -47.7 | -13.0 | -34.7 | |
| 2.543 | -21.1 | V | 3.0 | 37.5 | 1.0 | -57.5 | -13.0 | -44.5 | |
| 1.695 | -7.0 | H | 3.0 | 38.1 | 1.0 | -44.1 | -13.0 | -31.1 | |
| 2.543 | -21.7 | H | 3.0 | 37.5 | 1.0 | -58.1 | -13.0 | -45.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

LTE QPSK Band 5 (5 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/06/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 5, 5MHz QPSK

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 22

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|-----------|-------------|------------|-------|
| Low Ch, (826.5MHz) | | | | | | | | | |
| 1.653 | -13.1 | V | 3.0 | 38.1 | 1.0 | -50.3 | -13.0 | -37.3 | |
| 2.480 | -12.3 | V | 3.0 | 37.5 | 1.0 | -48.7 | -13.0 | -35.7 | |
| 1.653 | -8.4 | H | 3.0 | 38.1 | 1.0 | -45.6 | -13.0 | -32.6 | |
| 2.480 | -19.0 | H | 3.0 | 37.5 | 1.0 | -55.5 | -13.0 | -42.5 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -12.9 | V | 3.0 | 38.1 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 2.510 | -17.1 | V | 3.0 | 37.5 | 1.0 | -53.6 | -13.0 | -40.6 | |
| 1.673 | -8.2 | H | 3.0 | 38.1 | 1.0 | -45.3 | -13.0 | -32.3 | |
| 2.510 | -15.9 | H | 3.0 | 37.5 | 1.0 | -52.3 | -13.0 | -39.3 | |
| High Ch, (846.5MHz) | | | | | | | | | |
| 1.693 | -10.2 | V | 3.0 | 38.1 | 1.0 | -47.3 | -13.0 | -34.3 | |
| 2.532 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 1.693 | -7.0 | H | 3.0 | 38.1 | 1.0 | -44.1 | -13.0 | -31.1 | |
| 2.540 | -19.7 | H | 3.0 | 37.5 | 1.0 | -56.1 | -13.0 | -43.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

LTE 16QAM Band 5 (5 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/06/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 5, 5MHz 16QAM

LTE Band 5, 5MHz 16QAM

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 22

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|-----------|-------------|------------|-------|
| Low Ch, (826.5MHz) | | | | | | | | | |
| 1.653 | -13.6 | V | 3.0 | 38.1 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 2.480 | -17.3 | V | 3.0 | 37.5 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 1.653 | -10.4 | H | 3.0 | 38.1 | 1.0 | -47.6 | -13.0 | -34.6 | |
| 2.480 | -20.0 | H | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -10.9 | V | 3.0 | 38.1 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 2.510 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 1.673 | -6.7 | H | 3.0 | 38.1 | 1.0 | -43.8 | -13.0 | -30.8 | |
| 2.510 | -20.9 | H | 3.0 | 37.5 | 1.0 | -57.3 | -13.0 | -44.3 | |
| High Ch, (846.5MHz) | | | | | | | | | |
| 1.693 | -12.7 | V | 3.0 | 38.1 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 2.532 | -21.1 | V | 3.0 | 37.5 | 1.0 | -57.5 | -13.0 | -44.5 | |
| 1.693 | -8.0 | H | 3.0 | 38.1 | 1.0 | -45.1 | -13.0 | -32.1 | |
| 2.540 | -20.7 | H | 3.0 | 37.5 | 1.0 | -57.1 | -13.0 | -44.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 5 (10 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|----------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 5, 10MHz QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (829MHz) | | | | | | | | | |
| 1.658 | -16.1 | V | 3.0 | 38.1 | 1.0 | -53.2 | -13.0 | -40.2 | |
| 2.487 | -19.2 | V | 3.0 | 37.5 | 1.0 | -55.7 | -13.0 | -42.7 | |
| 1.658 | -13.4 | H | 3.0 | 38.1 | 1.0 | -50.5 | -13.0 | -37.5 | |
| 2.487 | -22.0 | H | 3.0 | 37.5 | 1.0 | -58.4 | -13.0 | -45.4 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -12.9 | V | 3.0 | 38.1 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 2.510 | -19.1 | V | 3.0 | 37.5 | 1.0 | -55.6 | -13.0 | -42.6 | |
| 1.673 | -11.2 | H | 3.0 | 38.1 | 1.0 | -48.3 | -13.0 | -35.3 | |
| 2.510 | -19.9 | H | 3.0 | 37.5 | 1.0 | -56.3 | -13.0 | -43.3 | |
| High Ch, (844MHz) | | | | | | | | | |
| 1.688 | -14.7 | V | 3.0 | 38.1 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 2.532 | -18.1 | V | 3.0 | 37.5 | 1.0 | -54.5 | -13.0 | -41.5 | |
| 1.688 | -12.1 | H | 3.0 | 38.1 | 1.0 | -49.2 | -13.0 | -36.2 | |
| 2.532 | -19.7 | H | 3.0 | 37.5 | 1.0 | -56.2 | -13.0 | -43.2 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 5 (10 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|-----------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 5, 10MHz 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (829MHz) | | | | | | | | | |
| 1.658 | -15.1 | V | 3.0 | 38.1 | 1.0 | -52.2 | -13.0 | -39.2 | |
| 2.487 | -20.2 | V | 3.0 | 37.5 | 1.0 | -56.7 | -13.0 | -43.7 | |
| 1.658 | -12.4 | H | 3.0 | 38.1 | 1.0 | -49.5 | -13.0 | -36.5 | |
| 2.487 | -20.0 | H | 3.0 | 37.5 | 1.0 | -56.4 | -13.0 | -43.4 | |
| Mid Ch, (836.5MHz) | | | | | | | | | |
| 1.673 | -13.9 | V | 3.0 | 38.1 | 1.0 | -51.0 | -13.0 | -38.0 | |
| 2.510 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 1.673 | -12.3 | H | 3.0 | 38.1 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 2.510 | -20.9 | H | 3.0 | 37.5 | 1.0 | -57.3 | -13.0 | -44.3 | |
| High Ch, (844MHz) | | | | | | | | | |
| 1.688 | -15.2 | V | 3.0 | 38.1 | 1.0 | -52.3 | -13.0 | -39.3 | |
| 2.532 | -20.1 | V | 3.0 | 37.5 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 1.688 | -13.1 | H | 3.0 | 38.1 | 1.0 | -50.2 | -13.0 | -37.2 | |
| 2.532 | -21.7 | H | 3.0 | 37.5 | 1.0 | -58.2 | -13.0 | -45.2 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 13 (5.0MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|----------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 13, 5MHz QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 779.5 | | | | | | | | | |
| 1.559 | -13.2 | V | 3.0 | 38.3 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 2.339 | -20.7 | V | 3.0 | 37.5 | 1.0 | -57.3 | -13.0 | -44.3 | |
| 1.559 | -17.3 | H | 3.0 | 38.3 | 1.0 | -54.6 | -13.0 | -41.6 | |
| 2.339 | -20.3 | H | 3.0 | 37.5 | 1.0 | -56.8 | -13.0 | -43.8 | |
| Mid Ch, 782MHz | | | | | | | | | |
| 1.564 | -14.1 | V | 3.0 | 38.3 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 2.346 | -20.7 | V | 3.0 | 37.5 | 1.0 | -57.2 | -13.0 | -44.2 | |
| 1.564 | -14.2 | H | 3.0 | 38.3 | 1.0 | -51.5 | -13.0 | -38.5 | |
| 2.346 | -20.3 | H | 3.0 | 37.5 | 1.0 | -56.8 | -13.0 | -43.8 | |
| High Ch, 784.5MHz | | | | | | | | | |
| 1.693 | -12.0 | V | 3.0 | 38.1 | 1.0 | -49.1 | -13.0 | -36.1 | |
| 2.532 | -18.1 | V | 3.0 | 37.5 | 1.0 | -54.5 | -13.0 | -41.5 | |
| 1.693 | -12.0 | H | 3.0 | 38.1 | 1.0 | -49.1 | -13.0 | -36.1 | |
| 2.540 | -19.7 | H | 3.0 | 37.5 | 1.0 | -56.1 | -13.0 | -43.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 13 (5.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|---------------------|-----------------------------|-----------------|----------------|----------------|--------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 13, 5MHz 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 779.5 | | | | | | | | | |
| 1.559 | -17.2 | V | 3.0 | 38.3 | 1.0 | -54.4 | -13.0 | -41.4 | |
| 2.339 | -21.7 | V | 3.0 | 37.5 | 1.0 | -58.3 | -13.0 | -45.3 | |
| 1.559 | -15.3 | H | 3.0 | 38.3 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 2.339 | -22.3 | H | 3.0 | 37.5 | 1.0 | -58.8 | -13.0 | -45.8 | |
| Mid Ch, 782MHz | | | | | | | | | |
| 1.564 | -19.1 | V | 3.0 | 38.3 | 1.0 | -56.4 | -13.0 | -43.4 | |
| 2.346 | -20.7 | V | 3.0 | 37.5 | 1.0 | -57.2 | -13.0 | -44.2 | |
| 1.564 | -14.3 | H | 3.0 | 38.3 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 2.346 | -21.3 | H | 3.0 | 37.5 | 1.0 | -57.8 | -13.0 | -44.8 | |
| High Ch, 784.5MHz | | | | | | | | | |
| 1.693 | -14.7 | V | 3.0 | 38.1 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 2.532 | -19.1 | V | 3.0 | 37.5 | 1.0 | -55.5 | -13.0 | -42.5 | |
| 1.693 | -14.0 | H | 3.0 | 38.1 | 1.0 | -51.1 | -13.0 | -38.1 | |
| 2.532 | -20.7 | H | 3.0 | 37.5 | 1.0 | -57.2 | -13.0 | -44.2 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

LTE QPSK Radiated Measurement in 1559-1610MHz Band

| Compliance Certification Services | | | | | | | | | |
|--|------------------|--------------------------------------|--------------|-------------|-------------|-----------|-------------|------------|-------|
| Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 13, 5MHz QPSK RB25-0 | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 779.5 | | | | | | | | | |
| 1.558 | -13.2 | V | 3.0 | 38.3 | 1.0 | -50.5 | -40.0 | -10.5 | |
| 1.558 | -17.3 | H | 3.0 | 38.3 | 1.0 | -54.6 | -40.0 | -14.6 | |
| Mid Ch, 782MHz | | | | | | | | | |
| 1.564 | -14.1 | V | 3.0 | 38.3 | 1.0 | -51.4 | -40.0 | -11.4 | |
| 1.564 | -14.2 | H | 3.0 | 38.3 | 1.0 | -51.5 | -40.0 | -11.5 | |
| High Ch, 784.5MHz | | | | | | | | | |
| 1.569 | -13.4 | V | 3.0 | 38.3 | 1.0 | -50.6 | -40.0 | -10.6 | |
| 1.569 | -13.2 | H | 3.0 | 38.3 | 1.0 | -50.5 | -40.0 | -10.5 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

LTE QPSK Radiated Measurement in 1559-1610MHz Band

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|---------------------------------------|--------------|-------------|---------------|-----------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 13, 5MHz 16QAM RB25-0 | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, 779.5MHz | | | | | | | | | |
| 1.558 | -17.5 | V | 3.0 | 38.3 | 1.0 | -54.8 | -40.0 | -14.8 | |
| 1.558 | -16.3 | H | 3.0 | 38.3 | 1.0 | -53.6 | -40.0 | -13.6 | |
| Mid Ch, 782MHz | | | | | | | | | |
| 1.564 | -18.4 | V | 3.0 | 38.3 | 1.0 | -55.7 | -40.0 | -15.7 | |
| 1.564 | -14.1 | H | 3.0 | 38.3 | 1.0 | -51.4 | -40.0 | -11.4 | |
| High Ch, 784.5MHz | | | | | | | | | |
| 1.569 | -15.6 | V | 3.0 | 38.3 | 1.0 | -52.8 | -40.0 | -12.8 | |
| 1.569 | -14.9 | H | 3.0 | 38.3 | 1.0 | -52.2 | -40.0 | -12.2 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 13 (10.0MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|---------------------|-----------------------------|-----------------|----------------|----------------|--------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 13, 10MHz QPSK | | | | | | | |
| Chamber | | Pre-amplifer | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 22 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Mid Ch, 782MHz | | | | | | | | | |
| 1.564 | -20.1 | V | 3.0 | 38.3 | 1.0 | -57.4 | -13.0 | -44.4 | |
| 2.346 | -21.7 | V | 3.0 | 37.5 | 1.0 | -58.2 | -13.0 | -45.2 | |
| 1.564 | -14.3 | H | 3.0 | 38.3 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 2.346 | -22.3 | H | 3.0 | 37.5 | 1.0 | -58.8 | -13.0 | -45.8 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 13 (10.0MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 07/06/12
Test Engineer: Chin Pang
Configuration: EUT and Earphone
Mode: TX, LTE Band 13, 10MHz 16QAM

Chamber
 5m Chamber A

Pre-amplifier
 T144 8449B

Filter
 Filter 1

Limit
 Part 22

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|-----------------------|---------------------|--------------------|-----------------|----------------|----------------|--------------|----------------|---------------|-------|
| Mid Ch, 782MHz | | | | | | | | | |
| 1.564 | -22.1 | V | 3.0 | 38.3 | 1.0 | -59.4 | -13.0 | -46.4 | |
| 2.346 | -21.7 | V | 3.0 | 37.5 | 1.0 | -58.2 | -13.0 | -45.2 | |
| 1.564 | -16.3 | H | 3.0 | 38.3 | 1.0 | -53.6 | -13.0 | -40.6 | |
| 2.346 | -23.3 | H | 3.0 | 37.5 | 1.0 | -59.8 | -13.0 | -46.8 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

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

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|---------------------|--|-----------------|----------------|----------------|--------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 07/06/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUT and Earphone | | | | | | | |
| Mode: | | TX, LTE Band 13, 10MHz, QPSK and 16QAM RB50-0 | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 27 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| 782MHz, QPSK | | | | | | | | | |
| 1.564 | -19.8 | V | 3.0 | 38.3 | 1.0 | -57.1 | -40.0 | -17.1 | |
| 1.564 | -14.1 | H | 3.0 | 38.3 | 1.0 | -51.4 | -40.0 | -11.4 | |
| 782MHz, 16QAM | | | | | | | | | |
| 1.564 | -21.1 | V | 3.0 | 38.3 | 1.0 | -58.4 | -40.0 | -18.4 | |
| 1.564 | -15.9 | H | 3.0 | 38.3 | 1.0 | -53.2 | -40.0 | -13.2 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 25 (1.4.0 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|---------------------------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 06/29/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUTand Earphone | | | | | | | |
| Mode: | | TX, LTE Band 25 1.4MHz BW, QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | Filter | | Limit | | | |
| 5m Chamber A | | T144 8449B | | Filter 1 | | Part 24 | | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (1850.7MHz) | | | | | | | | | |
| 3.701 | -18.1 | V | 3.0 | 36.8 | 1.0 | -53.9 | -13.0 | 40.9 | |
| 5.552 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | 37.0 | |
| 11.104 | -7.7 | V | 3.0 | 36.9 | 1.0 | -43.6 | -13.0 | 30.6 | |
| 3.701 | -20.0 | H | 3.0 | 36.8 | 1.0 | -55.8 | -13.0 | 42.8 | |
| 5.552 | -16.1 | H | 3.0 | 36.3 | 1.0 | -51.4 | -13.0 | 38.4 | |
| 11.104 | -9.1 | H | 3.0 | 36.9 | 1.0 | -45.0 | -13.0 | 32.0 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -19.9 | V | 3.0 | 36.8 | 1.0 | -55.7 | -13.0 | 42.7 | |
| 5.648 | -16.6 | V | 3.0 | 36.3 | 1.0 | -51.9 | -13.0 | 38.9 | |
| 11.295 | -8.5 | V | 3.0 | 36.8 | 1.0 | -44.3 | -13.0 | 31.3 | |
| 3.765 | -20.8 | H | 3.0 | 36.8 | 1.0 | -56.6 | -13.0 | 43.6 | |
| 5.648 | -14.9 | H | 3.0 | 36.3 | 1.0 | -50.2 | -13.0 | 37.2 | |
| 11.295 | -10.2 | H | 3.0 | 36.8 | 1.0 | -46.0 | -13.0 | 33.0 | |
| High Ch, (1914.3MHz) | | | | | | | | | |
| 3.829 | -18.8 | V | 3.0 | 36.7 | 1.0 | -54.5 | -13.0 | 41.5 | |
| 5.743 | -16.5 | V | 3.0 | 36.3 | 1.0 | -51.8 | -13.0 | 38.8 | |
| 11.486 | -6.3 | V | 3.0 | 36.8 | 1.0 | -42.1 | -13.0 | 29.1 | |
| 3.829 | -19.6 | H | 3.0 | 36.7 | 1.0 | -55.4 | -13.0 | 42.4 | |
| 5.743 | -15.7 | H | 3.0 | 36.3 | 1.0 | -51.1 | -13.0 | 38.1 | |
| 11.486 | -8.3 | H | 3.0 | 36.8 | 1.0 | -44.0 | -13.0 | 31.0 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 25 (1.4.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 1.4MHz BW, 16QAM

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|-----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, (1850.7MHz) | | | | | | | | | |
| 3.701 | -18.1 | V | 3.0 | 36.8 | 1.0 | -53.9 | -13.0 | -40.9 | |
| 5.552 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 11.104 | -7.7 | V | 3.0 | 36.9 | 1.0 | -43.6 | -13.0 | -30.6 | |
| 3.701 | -20.0 | H | 3.0 | 36.8 | 1.0 | -55.8 | -13.0 | -42.8 | |
| 5.552 | -16.1 | H | 3.0 | 36.3 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 11.104 | -9.1 | H | 3.0 | 36.9 | 1.0 | -45.0 | -13.0 | -32.0 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -20.9 | V | 3.0 | 36.8 | 1.0 | -56.7 | -13.0 | -43.7 | |
| 5.648 | -15.6 | V | 3.0 | 36.3 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 11.295 | -4.5 | V | 3.0 | 36.8 | 1.0 | -40.3 | -13.0 | -27.3 | |
| 3.765 | -20.8 | H | 3.0 | 36.8 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 5.648 | -14.9 | H | 3.0 | 36.3 | 1.0 | -50.2 | -13.0 | -37.2 | |
| 11.295 | -9.2 | H | 3.0 | 36.8 | 1.0 | -45.0 | -13.0 | -32.0 | |
| High Ch, (1914.3MHz) | | | | | | | | | |
| 3.829 | -19.8 | V | 3.0 | 36.7 | 1.0 | -55.5 | -13.0 | -42.5 | |
| 7.657 | -5.8 | V | 3.0 | 36.6 | 1.0 | -41.5 | -13.0 | -28.5 | |
| 11.486 | 3.7 | V | 3.0 | 36.8 | 1.0 | -32.1 | -13.0 | -19.1 | |
| 3.829 | -20.6 | H | 3.0 | 36.7 | 1.0 | -56.4 | -13.0 | -43.4 | |
| 5.743 | -16.7 | H | 3.0 | 36.3 | 1.0 | -52.1 | -13.0 | -39.1 | |
| 11.486 | -8.8 | H | 3.0 | 36.8 | 1.0 | -44.5 | -13.0 | -31.5 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 25 (3.0 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 3.0MHz BW, QPSK

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|-----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, (1851.5MHz) | | | | | | | | | |
| 3.703 | -18.1 | V | 3.0 | 36.8 | 1.0 | -53.9 | -13.0 | -40.9 | |
| 5.555 | -14.9 | V | 3.0 | 36.3 | 1.0 | -50.2 | -13.0 | -37.2 | |
| 3.703 | -18.0 | H | 3.0 | 36.8 | 1.0 | -53.8 | -13.0 | -40.8 | |
| 5.555 | -15.1 | H | 3.0 | 36.3 | 1.0 | -50.3 | -13.0 | -37.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -17.9 | V | 3.0 | 36.8 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 5.648 | -14.6 | V | 3.0 | 36.3 | 1.0 | -49.9 | -13.0 | -36.9 | |
| 3.765 | -18.8 | H | 3.0 | 36.8 | 1.0 | -54.6 | -13.0 | -41.6 | |
| 5.648 | -15.9 | H | 3.0 | 36.3 | 1.0 | -51.2 | -13.0 | -38.2 | |
| High Ch, (1913.5MHz) | | | | | | | | | |
| 3.827 | -17.8 | V | 3.0 | 36.7 | 1.0 | -53.5 | -13.0 | -40.5 | |
| 5.741 | -13.5 | V | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| 3.827 | -18.6 | H | 3.0 | 36.7 | 1.0 | -54.4 | -13.0 | -41.4 | |
| 5.741 | -13.2 | H | 3.0 | 36.3 | 1.0 | -48.6 | -13.0 | -35.6 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 25 (3.0 MHz BANDWIDTH)

| Compliance Certification Services | | | | | | | | | |
|--|------------------|----------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 06/29/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUTand Earphone | | | | | | | |
| Mode: | | TX, LTE Band 25 3.0MHz BW, 16QAM | | | | | | | |
| Chamber | | Pre-amplifer | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (1851.5MHz) | | | | | | | | | |
| 3.703 | -19.1 | V | 3.0 | 36.8 | 1.0 | -54.9 | -13.0 | -41.9 | |
| 5.555 | -14.5 | V | 3.0 | 36.3 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 3.703 | -18.5 | H | 3.0 | 36.8 | 1.0 | -54.3 | -13.0 | -41.3 | |
| 5.555 | -13.8 | H | 3.0 | 36.3 | 1.0 | -49.0 | -13.0 | -36.0 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.648 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.765 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.648 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, (1913.5MHz) | | | | | | | | | |
| 3.827 | -17.6 | V | 3.0 | 36.7 | 1.0 | -53.3 | -13.0 | -40.3 | |
| 5.741 | -14.0 | V | 3.0 | 36.3 | 1.0 | -49.3 | -13.0 | -36.3 | |
| 3.827 | -17.7 | H | 3.0 | 36.7 | 1.0 | -53.5 | -13.0 | -40.5 | |
| 5.741 | -13.7 | H | 3.0 | 36.3 | 1.0 | -49.1 | -13.0 | -36.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 25 (5 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 5.0MHz BW, QPSK

| | | | |
|----------------|---------------------|---------------|--------------|
| Chamber | Pre-amplifer | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 24 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|-----------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Low Ch, (1852.50MHz) | | | | | | | | | |
| 3.705 | -15.1 | V | 3.0 | 36.8 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 5.558 | -12.7 | V | 3.0 | 36.3 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 3.705 | -17.0 | H | 3.0 | 36.8 | 1.0 | -52.8 | -13.0 | -39.8 | |
| 5.558 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -17.9 | V | 3.0 | 36.8 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 5.648 | -14.1 | V | 3.0 | 36.3 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 3.765 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.648 | -13.9 | H | 3.0 | 36.3 | 1.0 | -49.2 | -13.0 | -36.2 | |
| High Ch, (1912.5MHz) | | | | | | | | | |
| 3.825 | -14.8 | V | 3.0 | 36.7 | 1.0 | -50.5 | -13.0 | -37.5 | |
| 5.738 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.825 | -15.7 | H | 3.0 | 36.7 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 5.738 | -12.7 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 25 (10 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 10MHz BW, QPSK

| | | | |
|----------------|---------------------|---------------|--------------|
| Chamber | Pre-amplifer | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 24 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|-----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, (1855.0MHz) | | | | | | | | | |
| 3.710 | -15.1 | V | 3.0 | 36.8 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 5.565 | -12.7 | V | 3.0 | 36.3 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 3.710 | -18.0 | H | 3.0 | 36.8 | 1.0 | -53.8 | -13.0 | -40.8 | |
| 5.565 | -15.0 | H | 3.0 | 36.3 | 1.0 | -50.3 | -13.0 | -37.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -17.9 | V | 3.0 | 36.8 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 5.648 | -12.6 | V | 3.0 | 36.3 | 1.0 | -47.9 | -13.0 | -34.9 | |
| 3.765 | -14.8 | H | 3.0 | 36.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.648 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, (1910.0MHz) | | | | | | | | | |
| 3.820 | -17.8 | V | 3.0 | 36.7 | 1.0 | -53.5 | -13.0 | -40.5 | |
| 5.730 | -13.5 | V | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| 3.820 | -15.7 | H | 3.0 | 36.7 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 5.730 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 25(10 MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|------------------|---------------------------------|--------------|-------------|---------------|------------|--------------|------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 06/29/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUTand Earphone | | | | | | | |
| Mode: | | TX, LTE Band 25 10MHz BW, 16QAM | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (1855.0MHz) | | | | | | | | | |
| 3.710 | -17.1 | V | 3.0 | 36.8 | 1.0 | -52.9 | -13.0 | -39.9 | |
| 5.565 | -13.7 | V | 3.0 | 36.3 | 1.0 | -49.0 | -13.0 | -36.0 | |
| 3.710 | -19.6 | H | 3.0 | 36.8 | 1.0 | -55.4 | -13.0 | -42.4 | |
| 5.565 | -15.0 | H | 3.0 | 36.3 | 1.0 | -50.3 | -13.0 | -37.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -17.6 | V | 3.0 | 36.8 | 1.0 | -53.4 | -13.0 | -40.4 | |
| 5.648 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.765 | -16.3 | H | 3.0 | 36.8 | 1.0 | -52.1 | -13.0 | -39.1 | |
| 5.648 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, (1910.0MHz) | | | | | | | | | |
| 3.820 | -17.3 | V | 3.0 | 36.7 | 1.0 | -53.0 | -13.0 | -40.0 | |
| 5.730 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.820 | -17.7 | H | 3.0 | 36.7 | 1.0 | -53.4 | -13.0 | -40.4 | |
| 5.730 | -13.8 | H | 3.0 | 36.3 | 1.0 | -49.1 | -13.0 | -36.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE QPSK Band 25 (15MHz BANDWIDTH)

| Compliance Certification Services Above 1GHz High Frequency Substitution Measurement | | | | | | | | | |
|---|---------------------|----------------------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Company: | | Apple | | | | | | | |
| Project #: | | 11U14136 | | | | | | | |
| Date: | | 06/29/12 | | | | | | | |
| Test Engineer: | | Chin Pang | | | | | | | |
| Configuration: | | EUTand Earphone | | | | | | | |
| Mode: | | TX, LTE Band 25 15.0MHz BW, QPSK | | | | | | | |
| Chamber | | Pre-amplifier | | | Filter | | Limit | | |
| 5m Chamber A | | T144 8449B | | | Filter 1 | | Part 24 | | |
| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
| Low Ch, (1857.5MHz) | | | | | | | | | |
| 3.715 | -16.1 | V | 3.0 | 36.8 | 1.0 | -51.9 | -13.0 | -38.9 | |
| 5.573 | -12.7 | V | 3.0 | 36.3 | 1.0 | -48.0 | -13.0 | -35.0 | |
| 3.715 | -16.0 | H | 3.0 | 36.8 | 1.0 | -51.8 | -13.0 | -38.8 | |
| 5.573 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -15.9 | V | 3.0 | 36.8 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.648 | -12.6 | V | 3.0 | 36.3 | 1.0 | -47.9 | -13.0 | -34.9 | |
| 3.765 | -14.8 | H | 3.0 | 36.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.648 | -11.9 | H | 3.0 | 36.3 | 1.0 | -47.2 | -13.0 | -34.2 | |
| High Ch, (1907.5MHz) | | | | | | | | | |
| 3.815 | -14.8 | V | 3.0 | 36.7 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.723 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.815 | -16.7 | H | 3.0 | 36.7 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 5.723 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |
| Rev. 03.03.09 | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor. | | | | | | | | | |

ERP LTE 16QAM Band 25 (15MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 15.0MHz BW, 16QAM

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 24

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|-----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, (1857.5MHz) | | | | | | | | | |
| 3.715 | -17.1 | V | 3.0 | 36.8 | 1.0 | -52.9 | -13.0 | -39.9 | |
| 5.573 | -14.7 | V | 3.0 | 36.3 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 3.715 | -15.7 | H | 3.0 | 36.8 | 1.0 | -51.5 | -13.0 | -38.5 | |
| 5.573 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.648 | -12.6 | V | 3.0 | 36.3 | 1.0 | -47.9 | -13.0 | -34.9 | |
| 3.765 | -15.4 | H | 3.0 | 36.8 | 1.0 | -51.2 | -13.0 | -38.2 | |
| 5.648 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, (1907.5MHz) | | | | | | | | | |
| 3.815 | -16.8 | V | 3.0 | 36.7 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.723 | -13.5 | V | 3.0 | 36.3 | 1.0 | -48.8 | -13.0 | -35.8 | |
| 3.815 | -16.7 | H | 3.0 | 36.7 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 5.723 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE QPSK Band 25 (20 MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 20.0MHz BW, QPSK

| | | | |
|----------------|---------------------|---------------|--------------|
| Chamber | Pre-amplifer | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 24 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, (1860.0MHz) | | | | | | | | | |
| 3.720 | -15.0 | V | 3.0 | 36.8 | 1.0 | -50.8 | -13.0 | -37.8 | |
| 5.580 | -11.7 | V | 3.0 | 36.3 | 1.0 | -47.0 | -13.0 | -34.0 | |
| 3.720 | -16.9 | H | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.580 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -15.9 | V | 3.0 | 36.8 | 1.0 | -51.7 | -13.0 | -38.7 | |
| 5.648 | -13.6 | V | 3.0 | 36.3 | 1.0 | -48.9 | -13.0 | -35.9 | |
| 3.765 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.648 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, (1905MHz) | | | | | | | | | |
| 3.810 | -14.8 | V | 3.0 | 36.7 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 5.715 | -11.5 | V | 3.0 | 36.3 | 1.0 | -46.8 | -13.0 | -33.8 | |
| 3.810 | -15.7 | H | 3.0 | 36.7 | 1.0 | -51.4 | -13.0 | -38.4 | |
| 5.715 | -11.8 | H | 3.0 | 36.3 | 1.0 | -47.1 | -13.0 | -34.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERP LTE 16QAM Band 25 (20MHz BANDWIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Apple
Project #: 11U14136
Date: 06/29/12
Test Engineer: Chin Pang
Configuration: EUTand Earphone
Mode: TX, LTE Band 25 20.0MHz BW, 16QAM

| | | | |
|----------------|----------------------|---------------|--------------|
| Chamber | Pre-amplifier | Filter | Limit |
| 5m Chamber A | T144 8449B | Filter 1 | Part 24 |

| f GHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|----------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|
| Low Ch, (1860.0MHz) | | | | | | | | | |
| 3.720 | -17.0 | V | 3.0 | 36.8 | 1.0 | -52.8 | -13.0 | -39.8 | |
| 5.580 | -13.7 | V | 3.0 | 36.3 | 1.0 | -49.0 | -13.0 | -36.0 | |
| 3.720 | -18.9 | H | 3.0 | 36.8 | 1.0 | -54.7 | -13.0 | -41.7 | |
| 5.580 | -13.0 | H | 3.0 | 36.3 | 1.0 | -48.3 | -13.0 | -35.3 | |
| Mid Ch, (1882.5MHz) | | | | | | | | | |
| 3.765 | -16.9 | V | 3.0 | 36.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 5.648 | -13.1 | V | 3.0 | 36.3 | 1.0 | -48.4 | -13.0 | -35.4 | |
| 3.765 | -16.8 | H | 3.0 | 36.8 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 5.648 | -12.9 | H | 3.0 | 36.3 | 1.0 | -48.2 | -13.0 | -35.2 | |
| High Ch, (1905MHz) | | | | | | | | | |
| 3.810 | -15.8 | V | 3.0 | 36.7 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 5.715 | -12.5 | V | 3.0 | 36.3 | 1.0 | -47.8 | -13.0 | -34.8 | |
| 3.810 | -14.7 | H | 3.0 | 36.7 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 5.715 | -12.8 | H | 3.0 | 36.3 | 1.0 | -48.1 | -13.0 | -35.1 | |

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

9.4. RECEIVER SPURIOUS EMISSIONS

RULE PART(S)

FCC: N/A

LIMIT

Spurious Emission Limits for Receivers:

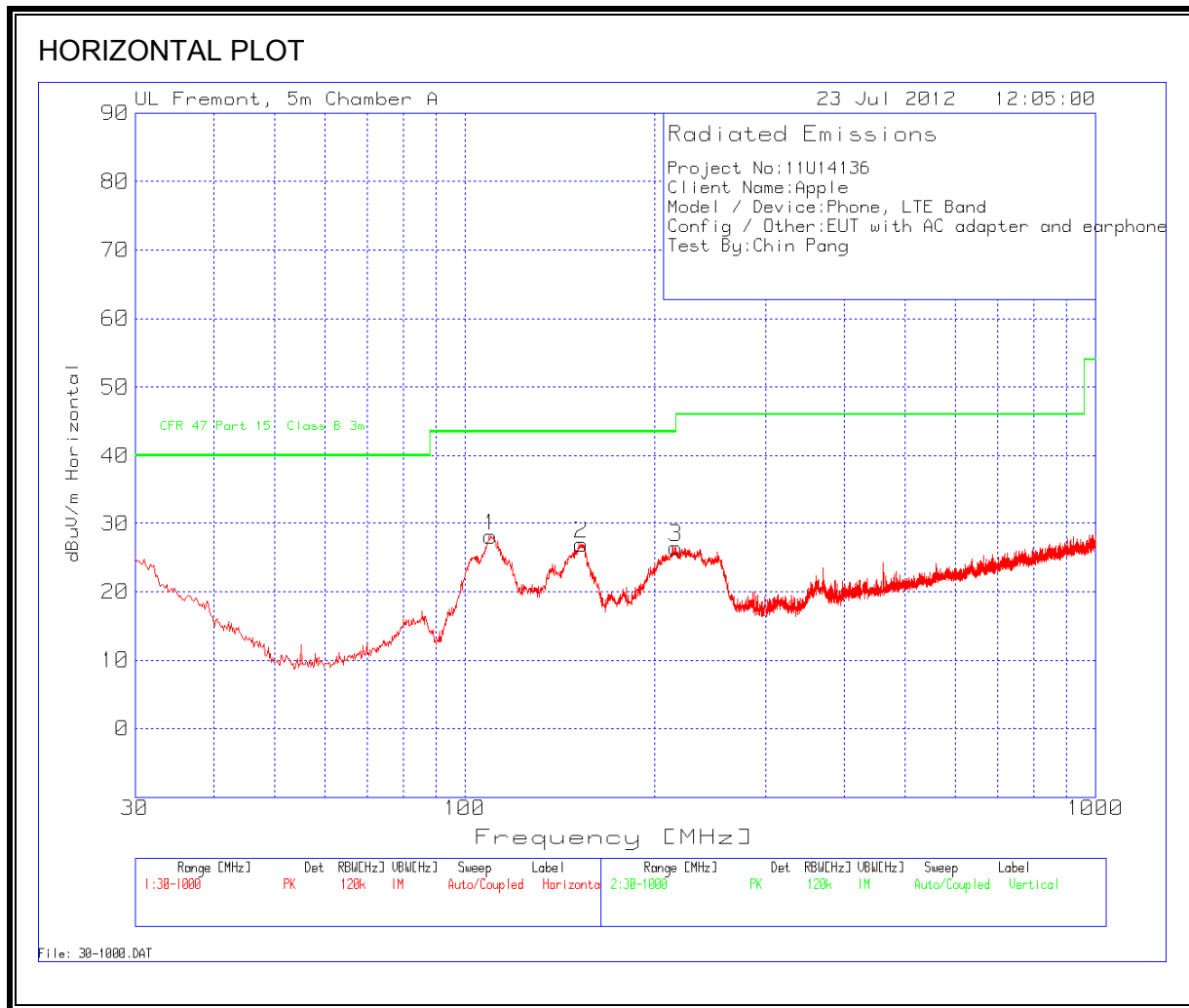
| Spurious Frequency (MHz) | Field Strength (microvolts/m at 3 metres) |
|-----------------------------|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above 960 | 500 |

TEST PROCEDURE

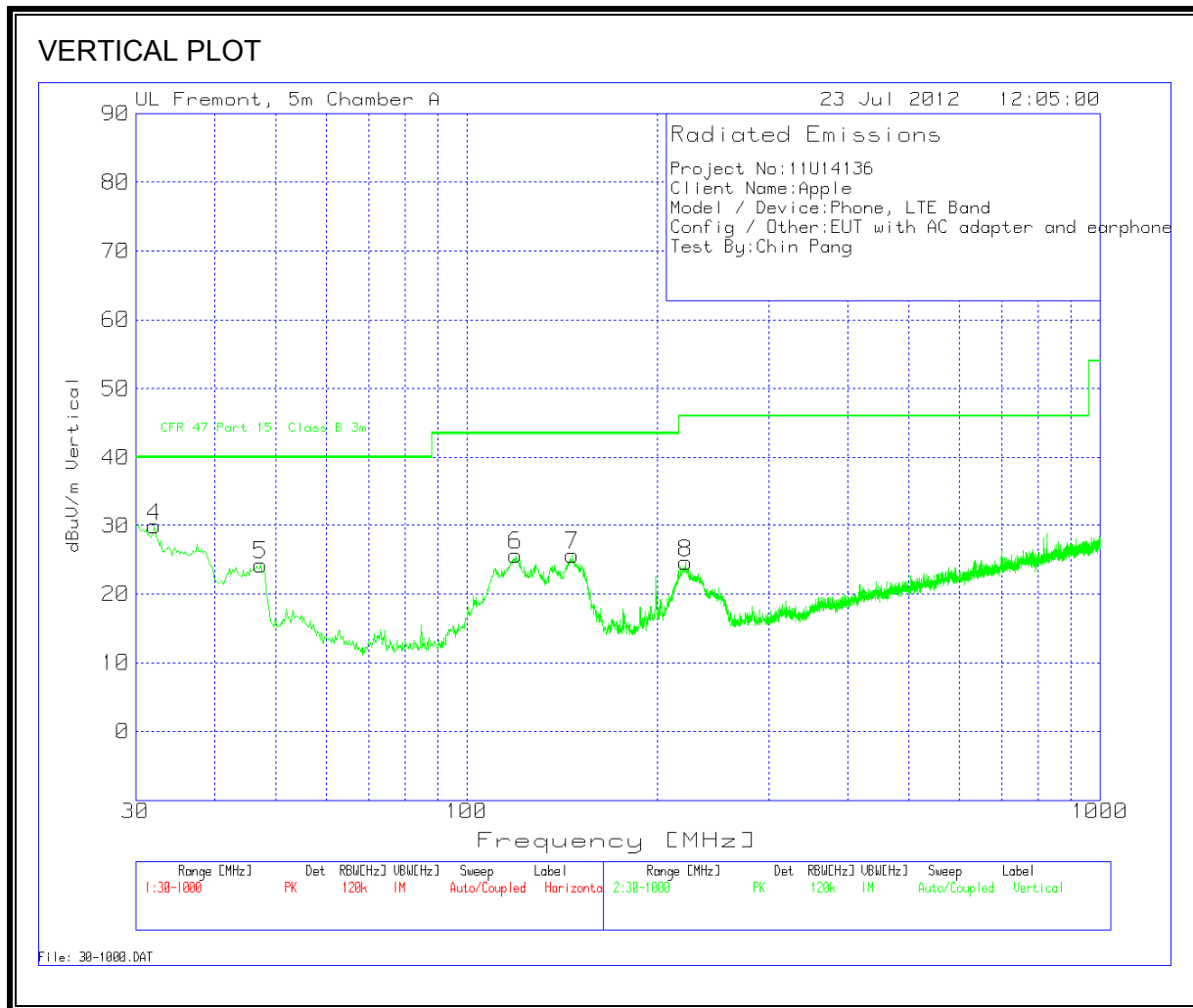
The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (local oscillator frequency, intermediate frequency or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable and local oscillator frequencies.

RESULTS

RECEIVER SPURIOUS EMISSIONS FOR 30 TO 1000 MHz, HORIZONTAL



RECEIVER SPURIOUS EMISSIONS FOR 30 TO 1000 MHz, VERTICAL



HORIZONTAL AND VERTICAL DATA

| Project No:11U14136 | | | | | | | | | |
|---|---------|----------|------------------------------|--------|----------------|--------|--------|----------|------|
| Client Name:Apple | | | | | | | | | |
| Model / Device: Mobile Phone | | | | | | | | | |
| Config / Other:EUT with AC adapter and earphone | | | | | | | | | |
| Test By:Chin Pang | | | | | | | | | |
| Horizontal 30 - 1000MHz | | | | | | | | | |
| Frequency | Reading | Detector | 25MHz-1GHz CT243 Sunol Bilog | dBuV/m | CFR 47 Part 15 | Margin | Height | Polarity | |
| 110.058 | 42.06 | PK | -26.7 | 12.7 | 28.06 | 43.5 | -15.44 | 300 | Horz |
| 153.0915 | 41.54 | PK | -26.6 | 12 | 26.94 | 43.5 | -16.56 | 200 | Horz |
| 215.8973 | 42.15 | PK | -26.2 | 10.5 | 26.45 | 43.5 | -17.05 | 200 | Horz |
| Vertical 30 - 1000MHz | | | | | | | | | |
| Frequency | Reading | Detector | 25MHz-1GHz CT243 Sunol Bilog | dBuV/m | CFR 47 Part 15 | Margin | Height | Polarity | |
| 32.1323 | 37.69 | PK | -27.5 | 19.7 | 29.89 | 40 | -10.11 | 100 | Vert |
| 47.2522 | 42.35 | PK | -27.4 | 9.3 | 24.25 | 40 | -15.75 | 100 | Vert |
| 119.5564 | 38.52 | PK | -26.7 | 13.8 | 25.62 | 43.5 | -17.88 | 100 | Vert |
| 147.0823 | 40.04 | PK | -26.6 | 12.2 | 25.64 | 43.5 | -17.86 | 100 | Vert |
| 221.9065 | 40.07 | PK | -26.1 | 10.6 | 24.57 | 46 | -21.43 | 100 | Vert |

RECEIVER SPURIOUS EMISSIONS ABOVE 1000 MHz

Note: No emissions were detected above the system noise floor.

END OF REPORT