

FCC Report

Applicant: Connected Holdings LLC

Address of Applicant: 4740 Von Karman Avenue Suite 120, Newport Beach, CA
92660

Equipment Under Test (EUT)

Product Name: CDMA GPS Tracker

Model No.: MG-2C

FCC ID: 2AEB4AC11

Applicable standards: FCC CFR Title 47 Part 2:2014
FCC CFR Title 47 Part22 Subpart H:2014
FCC CFR Title 47 Part24 Subpart E:2014

Date of sample receipt: April 22, 2015

Date of Test: April 23 ~ April 30, 2015

Date of report issued: May 08, 2015

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

2 Version

| Version No. | Date | Description |
|-------------|--------------|-------------|
| 00 | May 08, 2015 | Original |
| | | |
| | | |
| | | |
| | | |

Prepared By:

Sam. Gao

Date:

May 08, 2015

Project Engineer

Check By:

hank. yan

Date:

May 08, 2015

Reviewer

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4 Test Summary

| Test Item | Section in CFR 47 | Result |
|--|--|--------|
| RF Output Power | Part 2.1046 Part 22.913 (a)(2) Part 24.232 (c) | Pass |
| Modulation Characteristics | Part 2.1047 | Pass |
| 99% & -26 dB Occupied Bandwidth | Part 2.1049 Part 22.917 Part 24.238 | Pass |
| Spurious Emissions at Antenna Terminal | Part 2.1051 Part 22.917 (a) Part 24.238 (a) | Pass |
| Field Strength of Spurious Radiation | Part 2.1053 Part 22.917 (a) Part 24.238 (a) | Pass |
| Out of band emission, Band Edge | Part 22.917 (a) Part 24.238 (a) | Pass |
| Frequency stability vs. temperature | Part 2.1055(a)(1)(b) | Pass |
| Frequency stability vs. voltage | Part 2.1055(d)(1)(2) | Pass |

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

| | |
|--------------------------|---|
| Applicant: | Connected Holdings LLC |
| Address of Applicant: | 4740 Von Karman Avenue Suite 120, Newport Beach, CA 92660 |
| Manufacturer: | Asiatelco Technologies Co. |
| Address of Manufacturer: | #289 Bisheng Road, Building-8, 3F Zhangjiang Hi-Tech Park, Pudong, Shanghai, 201204 China |

5.2 General Description of EUT

| | |
|-------------------|--|
| Product Name: | CDMA GPS Tracker |
| Model No.: | MG-2C |
| Support Networks: | 1xRTT |
| Support Bands: | CDMA Cellular / CDMA PCS |
| TX Frequency: | CDMA2000 BC0: 824.70MHz ~ 848.31MHz CDMA2000 BC1: 1851.25MHz ~ 1908.75MHz |
| Modulation type: | QPSK |
| Hardware Version: | P2 |
| Software Version: | MC891G_NC_1.0.4T |
| Antenna type: | Spring loaded antenna |
| Antenna gain: | 2dBi(CDMA Cellular) 2dBi(CDMA PCS) |
| Power supply: | DC 12V |

5.3 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

5.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

5.5 Description of Support Units

| Manufacturer | Description | Model | Serial Number | FCC Approval |
|--------------|---------------|----------------|---------------|--------------|
| SWTEC | AC/DC Adapter | SW012S120100C1 | N/A | Verification |

6 Test Instruments list

| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
|------|--------------------------------------|--------------------------------|-----------------------------|---------------|---------------------|-------------------------|
| 1 | 3m Semi- Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS250 | Mar. 27 2015 | Mar. 26 2016 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS251 | N/A | N/A |
| 3 | EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | July 01 2014 | June 30 2015 |
| 4 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9163 | GTS214 | July 01 2014 | June 30 2015 |
| 5 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | 9120D-829 | GTS208 | June 27 2014 | June 26 2015 |
| 6 | Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | Mar. 27 2015 | Mar. 26 2016 |
| 7 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 8 | Coaxial Cable | GTS | N/A | GTS213 | Mar. 28 2015 | Mar. 27 2016 |
| 9 | Coaxial Cable | GTS | N/A | GTS211 | Mar. 28 2015 | Mar. 27 2016 |
| 10 | Coaxial cable | GTS | N/A | GTS210 | Mar. 28 2015 | Mar. 27 2016 |
| 11 | Coaxial Cable | GTS | N/A | GTS212 | Mar. 28 2015 | Mar. 27 2016 |
| 12 | Amplifier(100kHz-3GHz) | HP | 8347A | GTS204 | July 01 2014 | June 30 2015 |
| 13 | Amplifier(2GHz-20GHz) | HP | 8349B | GTS206 | July 01 2014 | June 30 2015 |
| 14 | Amplifier (18-26GHz) | Rohde & Schwarz | AFS33-18002 650-30-8P-44 | GTS218 | June 27 2014 | June 26 2015 |
| 15 | Band filter | Amindeon | 82346 | GTS219 | Mar. 28 2015 | Mar. 27 2016 |
| 16 | Universal radio communication tester | Rohde & Schwarz | CMU200 | GTS235 | May 09 2014 | May 08 2015 |
| 17 | Signal Generator | Rohde & Schwarz | SML03 | GTS236 | May 09 2014 | May 08 2015 |
| 18 | Temp. Humidity/ Barometer | Oregon Scientific | BA-888 | GTS248 | May 09 2014 | May 08 2015 |
| 19 | D.C. Power Supply | Instek | PS-3030 | GTS232 | NA | NA |
| 20 | Splitter | Agilent | 11636B | GTS237 | May 09 2014 | May 08 2015 |
| 21 | Power meter | Rohde & Schwarz | NRVS | GTS238 | May 09 2014 | May 08 2015 |
| 22 | Spectrum Analyzer | Agilent | E4440A | GTS533 | Dec. 4 2014 | Dec. 3 2015 |

7 System test configuration

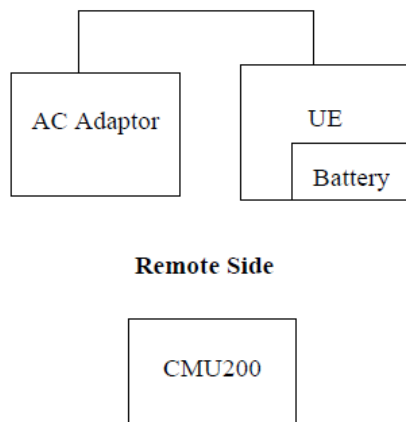
7.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

7.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

7.3 Configuration of Tested System



7.4 Description of Test modes

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Frequency range investigated for radiated emission is as follows:

30 MHz to 10000 MHz for CDMA2000 BC0.

30 MHz to 20000 MHz for CDMA2000 BC1.

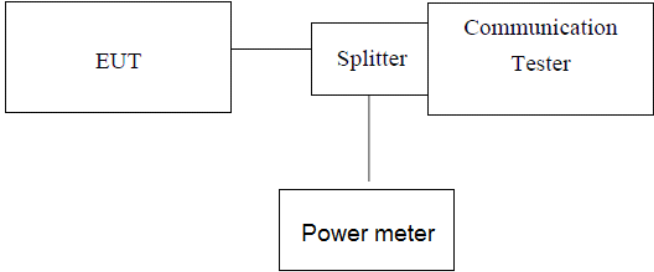
| Test modes | | |
|---------------------|-----------------|-----------------|
| Band | Radiated | Conducted |
| CDMA2000 BC0 | 1XRTT Link Mode | 1XRTT Link Mode |
| CDMA2000 BC1 | 1XRTT Link Mode | 1XRTT Link Mode |

Note: The maximum RF output power levels are 1xRTT RC3 SO32 (+F-SCH) mode for CDMA2000 BC0 and 1xRTT RC1 SO55 mode for CDMA2000 BC1 on QPSK Link; only these modes were used for all tests.

The conducted power tables are as follows:

| Conducted Power (dBm) | | | | | | |
|-------------------------|--------------|--------|--------|--------------|---------|---------|
| Band | CDMA2000 BC0 | | | CDMA2000 BC1 | | |
| Channel | 1013 | 384 | 777 | 25 | 600 | 1175 |
| Frequency (MHz) | 824.70 | 836.52 | 848.31 | 1851.25 | 1880.00 | 1908.75 |
| 1xRTT RC1 SO55 | 24.40 | 23.97 | 23.82 | 23.39 | 23.82 | 23.86 |
| 1xRTT RC3 SO55 | 24.21 | 23.68 | 23.55 | 23.25 | 23.59 | 23.64 |
| 1xRTT RC3 SO32 (+F-SCH) | 24.45 | 23.98 | 23.88 | 23.37 | 23.75 | 23.71 |
| 1xRTT RC3 SO32 (+SCH) | 24.18 | 23.64 | 23.61 | 23.21 | 23.52 | 23.47 |

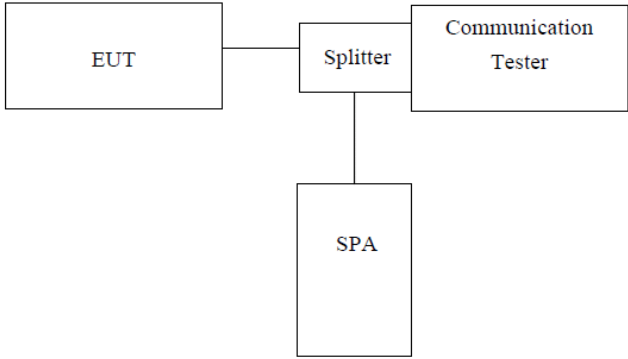
7.5 Conducted Peak Output Power

| | |
|-------------------|--|
| Test Requirement: | FCC part22.913(a) and FCC part24.232(b) |
| Test Method: | FCC part2.1046 |
| Test setup: |  <p><i>Note: Measurement setup for testing on Antenna connector</i></p> |
| Test Procedure: | <ol style="list-style-type: none"> 1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst average power. |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 7.4 for details |
| Test results: | Pass |

Measurement Data

| EUT Mode | Channel | Frequency (MHz) | PK power (dBm) |
|--------------|---------|-----------------|----------------|
| CDMA2000 BC0 | 1013 | 824.70 | 24.45 |
| | 384 | 836.52 | 23.98 |
| | 777 | 848.31 | 23.88 |
| CDMA2000 BC1 | 25 | 1851.25 | 23.39 |
| | 600 | 1880.00 | 23.82 |
| | 1175 | 1908.75 | 23.86 |

7.6 Occupy Bandwidth

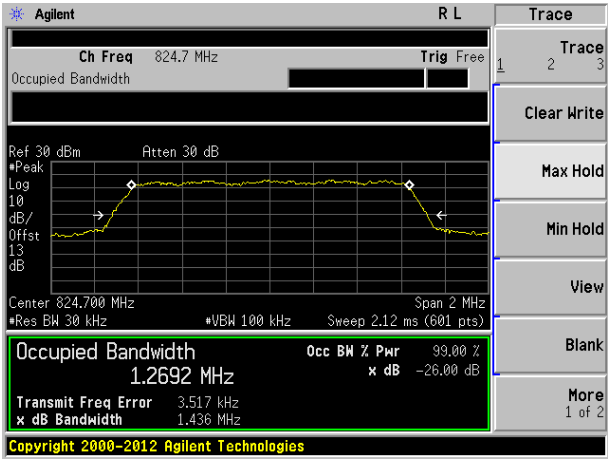
| | |
|-------------------|--|
| Test Requirement: | FCC part22.913(a) and FCC part24.232(b) |
| Test Method: | FCC part2.1049 |
| Test setup: |  <p><i>Note: Measurement setup for testing on Antenna connector</i></p> |
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

Measurement Data

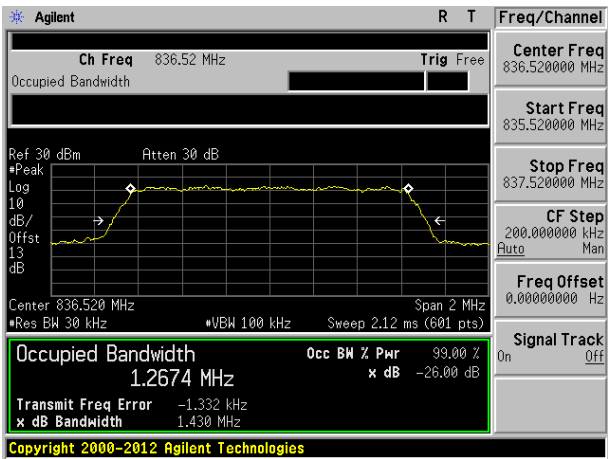
| EUT Mode | Channel | Frequency (MHz) | 99% Occupy bandwidth (MHz) | -26dB bandwidth (MHz) |
|--------------|---------|-----------------|----------------------------|-----------------------|
| CDMA2000 BC0 | 1013 | 824.70 | 1.2692 | 1.436 |
| | 384 | 836.52 | 1.2674 | 1.430 |
| | 777 | 848.31 | 1.2663 | 1.425 |
| CDMA2000 BC1 | 25 | 1851.25 | 1.2754 | 1.451 |
| | 600 | 1880.00 | 1.2690 | 1.457 |
| | 1175 | 1908.75 | 1.2682 | 1.443 |

Test plot as follows:

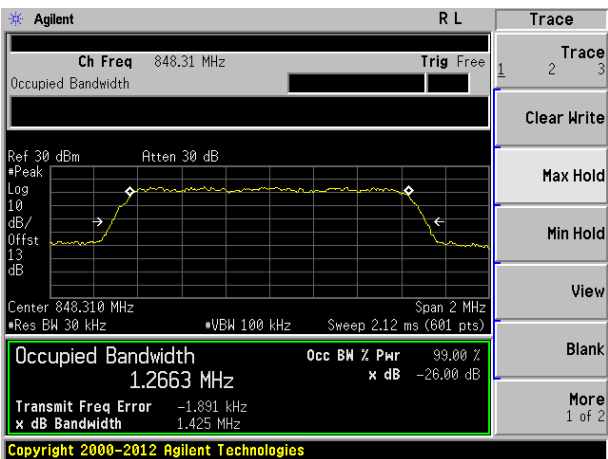
| | |
|------------|--|
| Test band: | CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) |
|------------|--|



Lowest channel

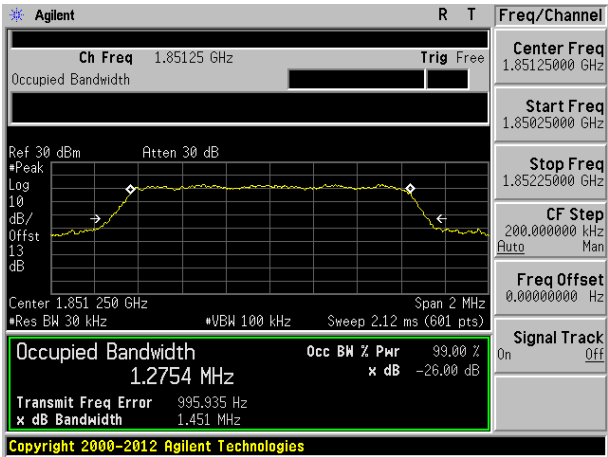


Middle channel

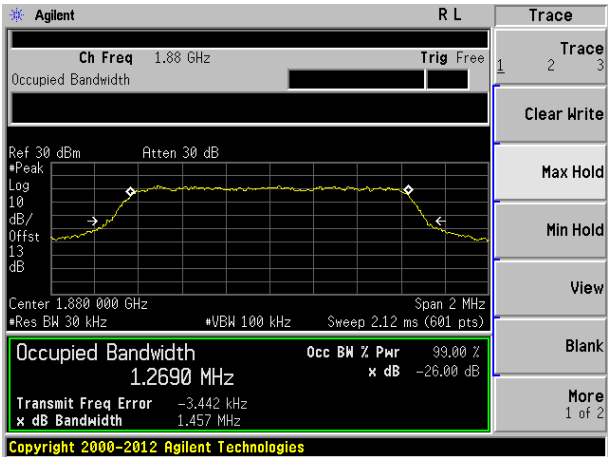


Highest channel

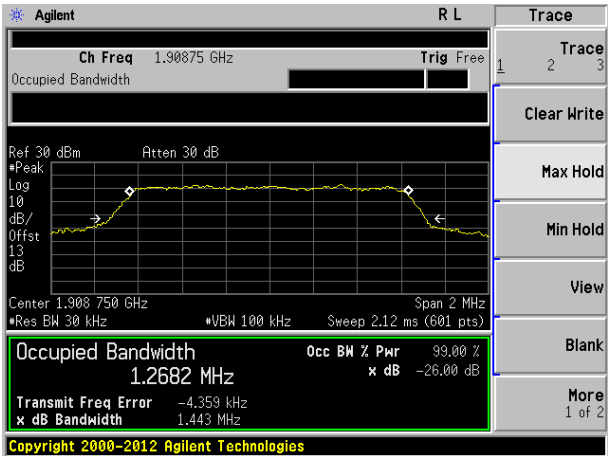
| | |
|------------|-------------------------------|
| Test band: | CDMA2000 BC1 (1xRTT RC1 SO55) |
|------------|-------------------------------|



Lowest channel



Middle channel

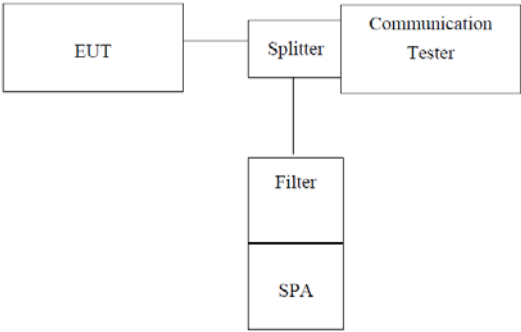


Highest channel

7.7 MODULATION CHARACTERISTIC

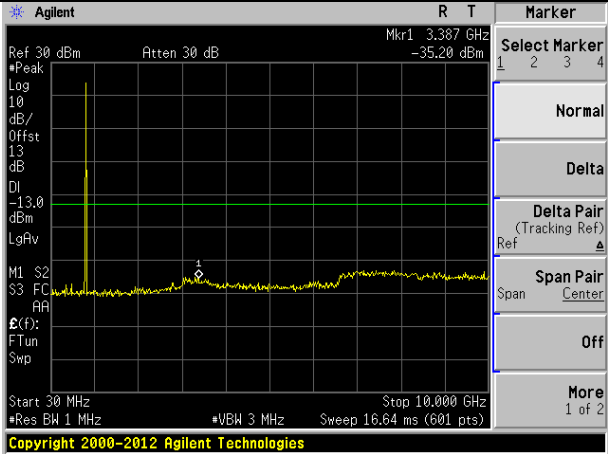
According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

7.8 Out of band emission at antenna terminals

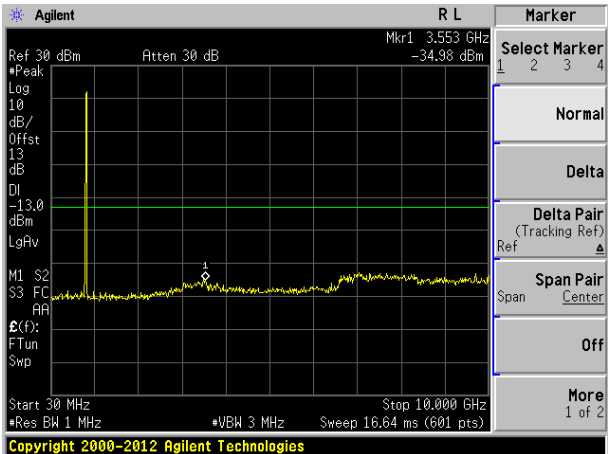
| | |
|-------------------|--|
| Test Requirement: | FCC part22.917(a) and FCC part24.238(a) |
| Test Method: | FCC part2.1051 |
| Limit: | -13dBm |
| Test setup: |  <p><i>Note: Measurement setup for testing on Antenna connector</i></p> |
| Test Procedure: | <ol style="list-style-type: none"> 1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

Test plot as follows:

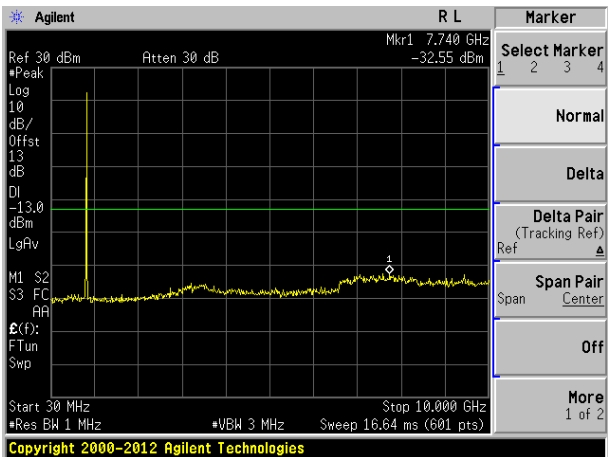
| | |
|------------------------------------|--------------|
| Test Mode: 1xRTT RC3 SO32 (+F-SCH) | CDMA2000 BC0 |
|------------------------------------|--------------|



Lowest channel



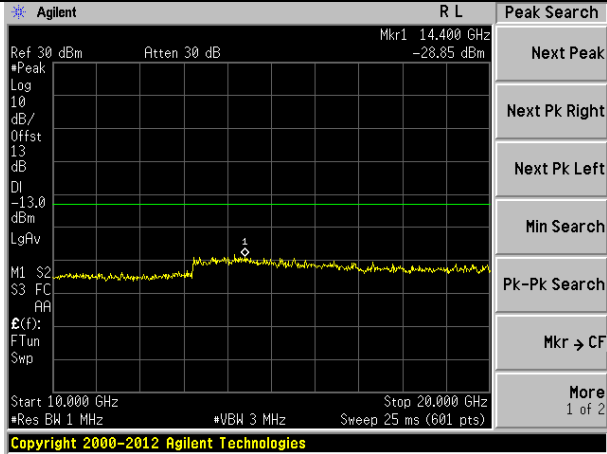
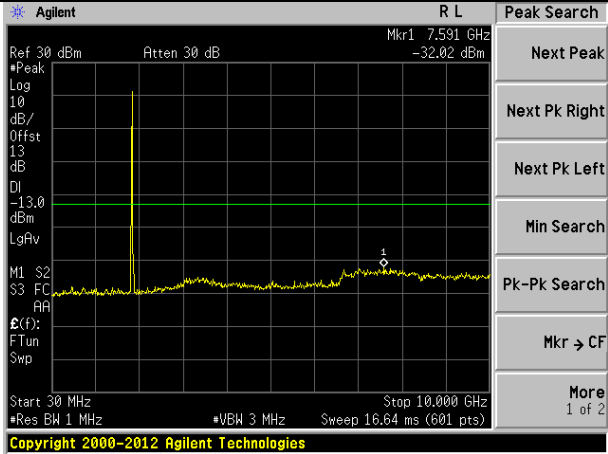
Middle channel



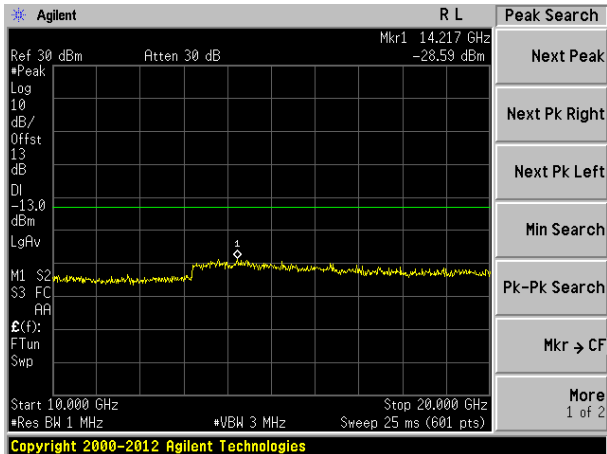
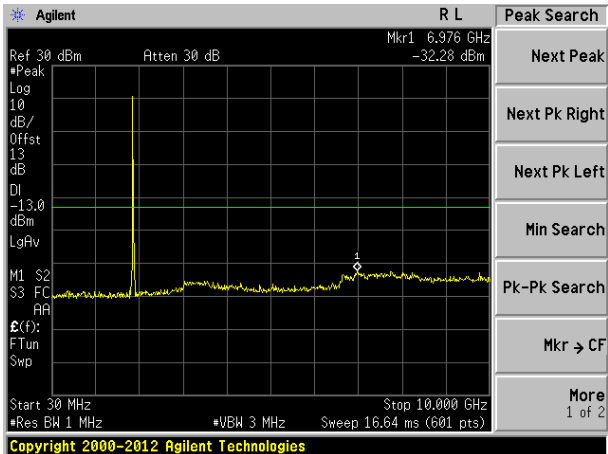
Highest channel

Test Mode: 1xRTT RC1 SO55

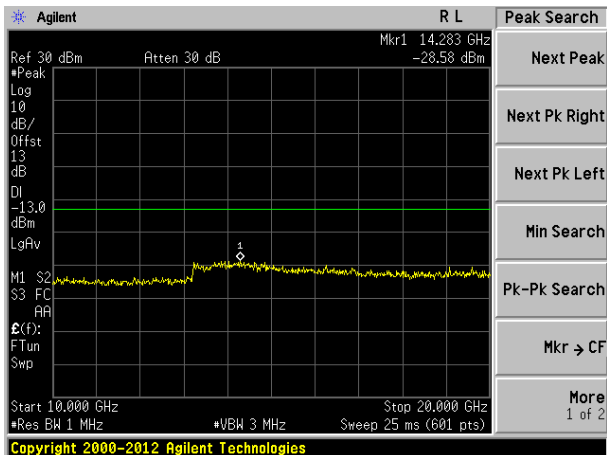
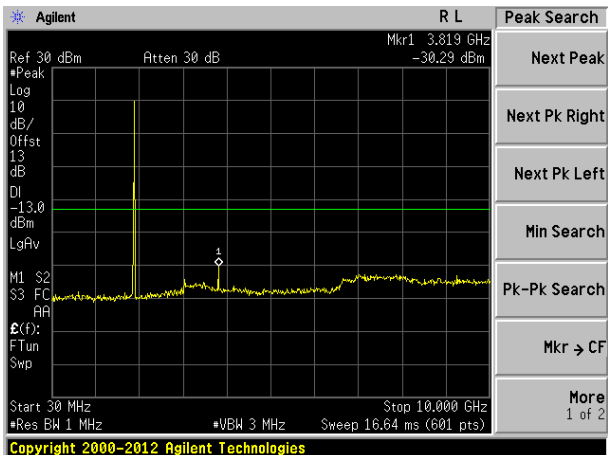
CDMA2000 BC1



Lowest channel

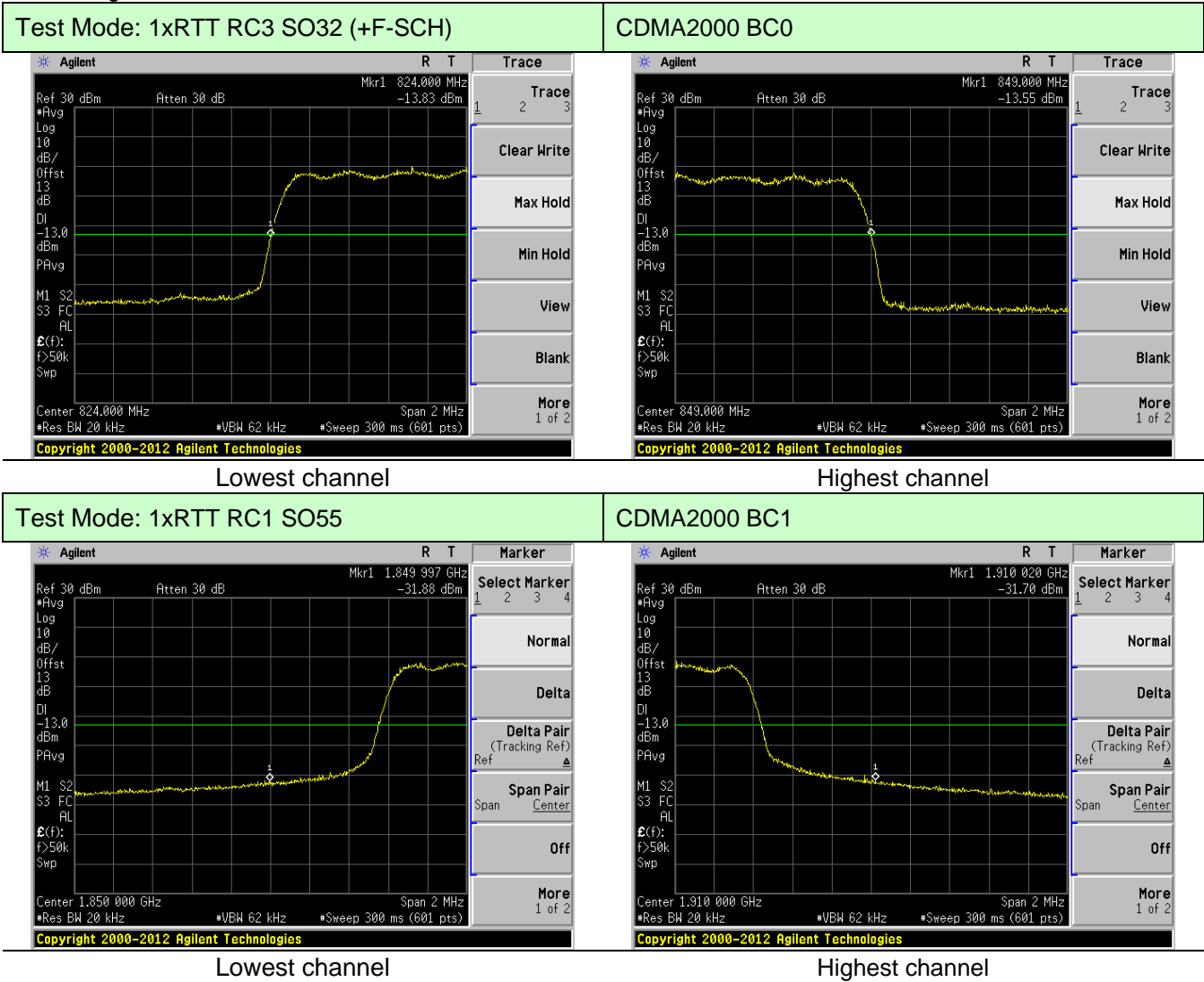


Middle channel

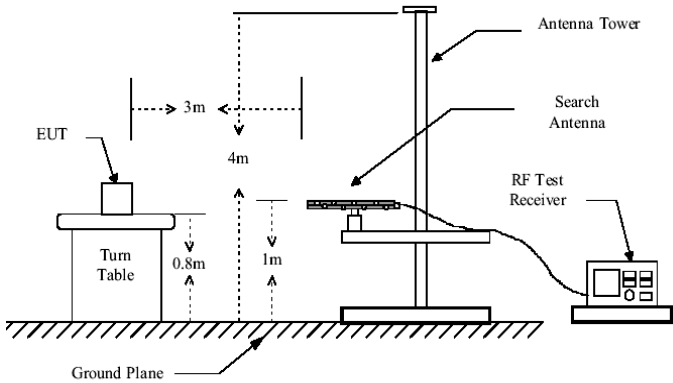
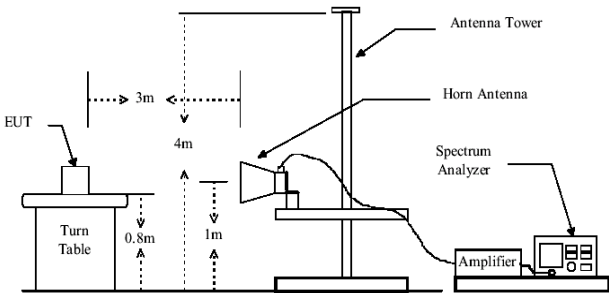
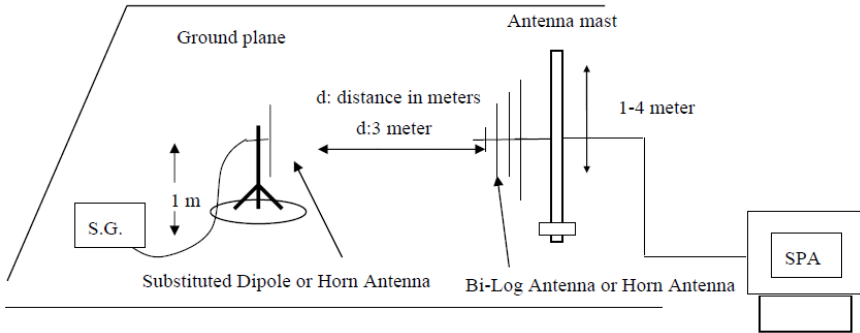


Highest channel

Band Edge:



7.9 ERP, EIRP Measurement

| | |
|-------------------|--|
| Test Requirement: | FCC part22.913(a) and FCC part24.232(b) |
| Test Method: | FCC part2.1046 |
| Limit: | CDMA2000 BC0 7W ERP CDMA2000 BC1 2W EIRP |
| Test setup: | <p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p>  |

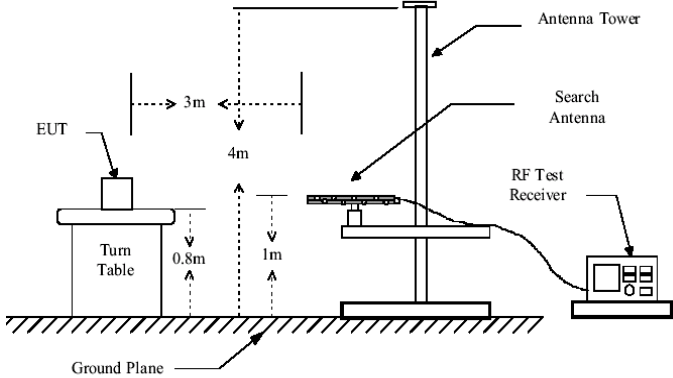
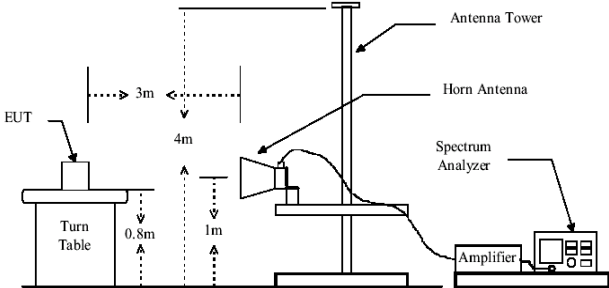
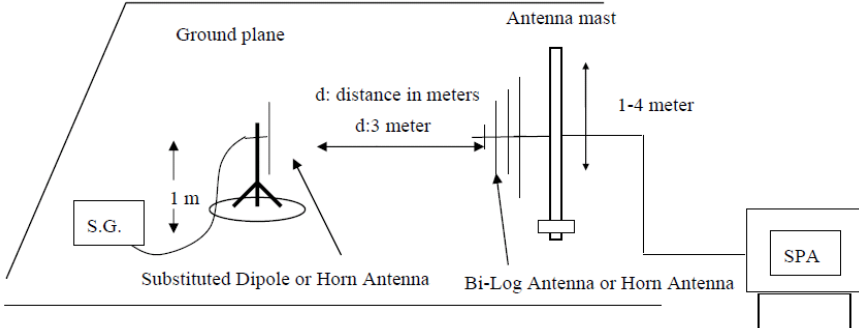
| | |
|-------------------|--|
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated. 3. ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: $\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$ 4. EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows: $\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$ |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

Measurement Data

| EUT mode | Channel | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---------|----------|--------------|----------|-------------|--------|
| CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) | Lowest | H | V | 23.87 | 38.45 | Pass |
| | | | H | 21.79 | | |
| | | E1 | V | 18.27 | | |
| | | | H | 21.72 | | |
| | | E2 | V | 17.49 | | |
| | | | H | 20.02 | | |
| | Middle | H | V | 23.62 | 38.45 | Pass |
| | | | H | 21.40 | | |
| | | E1 | V | 17.92 | | |
| | | | H | 21.39 | | |
| | | E2 | V | 18.53 | | |
| | | | H | 20.36 | | |
| | Highest | H | V | 23.51 | 38.45 | Pass |
| | | | H | 20.03 | | |
| | | E1 | V | 16.70 | | |
| | | | H | 19.51 | | |
| | | E2 | V | 16.38 | | |
| | | | H | 19.73 | | |

| EUT mode | Channel | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-------------------------------------|---------|----------|--------------|-----------|-------------|--------|
| CDMA2000 BC1 (1xRTT RC1 SO55) | Lowest | H | V | 23.45 | 33.00 | Pass |
| | | | H | 21.31 | | |
| | | E1 | V | 17.74 | | |
| | | | H | 21.13 | | |
| | | E2 | V | 16.85 | | |
| | | | H | 19.33 | | |
| | Middle | H | V | 23.01 | 33.00 | Pass |
| | | | H | 20.67 | | |
| | | E1 | V | 17.11 | | |
| | | | H | 20.52 | | |
| | | E2 | V | 17.80 | | |
| | | | H | 19.59 | | |
| | Highest | H | V | 22.93 | 33.00 | Pass |
| | | | H | 19.38 | | |
| | | E1 | V | 15.99 | | |
| | | | H | 18.74 | | |
| | | E2 | V | 15.86 | | |
| | | | H | 19.16 | | |

7.10 Field strength of spurious radiation measurement

| | |
|-------------------|---|
| Test Requirement: | FCC part22.917(a) and FCC part24.238(a) |
| Test Method: | FCC part2.1053 |
| Limit: | -13dBm |
| Test setup: | <p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p>  |

| | |
|-------------------|--|
| Test Procedure: | <ol style="list-style-type: none">1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$ |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

Measurement Data

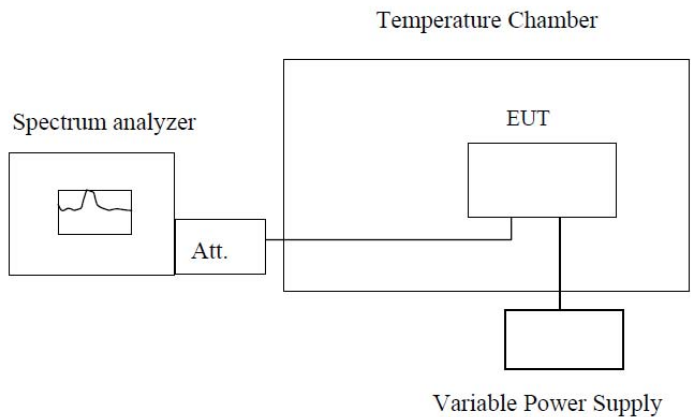
| Test mode: | CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) | | Test channel: | Lowest |
|-----------------|--|-------------|---------------|---------|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| 1649.40 | Vertical | -35.95 | -13.00 | Pass |
| 2474.10 | V | -38.69 | | |
| 3298.80 | V | -40.95 | | |
| 4123.50 | V | -43.11 | | |
| 4948.20 | V | --- | | |
| 1649.40 | Horizontal | -41.19 | -13.00 | Pass |
| 2474.10 | H | -45.06 | | |
| 3298.80 | H | -46.63 | | |
| 4123.50 | H | -49.36 | | |
| 4948.20 | H | --- | | |
| Test mode: | CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) | | Test channel: | Middle |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| 1673.04 | Vertical | -37.32 | -13.00 | Pass |
| 2509.56 | V | -39.59 | | |
| 3346.08 | V | -41.48 | | |
| 4182.60 | V | -43.29 | | |
| 5019.12 | V | --- | | |
| 1673.04 | Horizontal | -41.69 | -13.00 | Pass |
| 2509.56 | H | -44.91 | | |
| 3346.08 | H | -46.22 | | |
| 4182.60 | H | -48.50 | | |
| 5019.12 | H | --- | | |
| Test mode: | CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) | | Test channel: | Highest |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| 1696.62 | Vertical | -37.55 | -13.00 | Pass |
| 2544.93 | V | -39.58 | | |
| 3393.24 | V | -41.25 | | |
| 4241.55 | V | -42.87 | | |
| 5089.86 | V | --- | | |
| 1696.62 | Horizontal | -41.44 | -13.00 | Pass |
| 2544.93 | H | -44.31 | | |
| 3393.24 | H | -45.47 | | |
| 4241.55 | H | -47.50 | | |
| 5089.86 | H | --- | | |

| Test mode: | CDMA2000 BC1 (1xRTT RC1 SO55) | | Test channel: | Lowest |
|-----------------|-------------------------------|-------------|---------------|---------|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| 3702.50 | Vertical | -37.13 | -13.00 | Pass |
| 5553.75 | V | -39.51 | | |
| 7405.00 | V | -41.47 | | |
| 9256.25 | V | -43.37 | | |
| 11107.50 | V | --- | | |
| 3702.50 | Horizontal | -41.70 | -13.00 | Pass |
| 5553.75 | H | -45.07 | | |
| 7405.00 | H | -46.41 | | |
| 9256.25 | H | -48.78 | | |
| 11107.50 | H | --- | | |
| Test mode: | CDMA2000 BC1 (1xRTT RC1 SO55) | | Test channel: | Middle |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| 3760.00 | Vertical | -34.90 | -13.00 | Pass |
| 5640.00 | V | -37.36 | | |
| 7520.00 | V | -39.38 | | |
| 9400.00 | V | -41.35 | | |
| 11280.00 | V | --- | | |
| 3760.00 | Horizontal | -39.62 | -13.00 | Pass |
| 5640.00 | H | -43.09 | | |
| 7520.00 | H | -44.50 | | |
| 9400.00 | H | -46.94 | | |
| 11280.00 | H | --- | | |
| Test mode: | CDMA2000 BC1 (1xRTT RC1 SO55) | | Test channel: | Highest |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| 3817.50 | Vertical | -36.05 | -13.00 | Pass |
| 5726.25 | V | -38.43 | | |
| 7635.00 | V | -40.40 | | |
| 9543.75 | V | -42.30 | | |
| 11452.50 | V | --- | | |
| 3817.50 | Horizontal | -40.62 | -13.00 | Pass |
| 5726.25 | H | -44.00 | | |
| 7635.00 | H | -45.35 | | |
| 9543.75 | H | -47.72 | | |
| 11452.50 | H | --- | | |

Remark:

1. The emission behaviour belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

7.11 Frequency stability V.S. Temperature measurement

| | |
|-------------------|--|
| Test Requirement: | FCC Part2.1055(a)(1)(b) |
| Test Method: | FCC Part2.1055(a)(1)(b) |
| Limit: | 2.5ppm |
| Test setup: |  <p>Note : Measurement setup for testing on Antenna connector</p> |
| Test procedure: | <ol style="list-style-type: none"> 1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached. |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

Measurement Data

| Reference Frequency: CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) Middle channel=384 channel=836.52MHz | | | | | |
|--|------------------|-----------------|--------|-------------|--------|
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 12.0 | -30 | 41 | 0.0492 | 2.5 | Pass |
| | -20 | 46 | 0.0544 | | |
| | -10 | 40 | 0.0474 | | |
| | 0 | 34 | 0.0404 | | |
| | 10 | 38 | 0.0457 | | |
| | 20 | 34 | 0.0404 | | |
| | 30 | 51 | 0.0614 | | |
| | 40 | 47 | 0.0561 | | |
| | 50 | 46 | 0.0544 | | |
| Reference Frequency: CDMA2000 BC1 (1xRTT RC1 SO55) Middle channel=600 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 12.0 | -30 | 65 | 0.0345 | 2.5 | Pass |
| | -20 | 81 | 0.0429 | | |
| | -10 | 65 | 0.0345 | | |
| | 0 | 52 | 0.0275 | | |
| | 10 | 65 | 0.0345 | | |
| | 20 | 54 | 0.0289 | | |
| | 30 | 99 | 0.0526 | | |
| | 40 | 83 | 0.0442 | | |
| | 50 | 78 | 0.0415 | | |

7.12 Frequency stability V.S. Voltage measurement

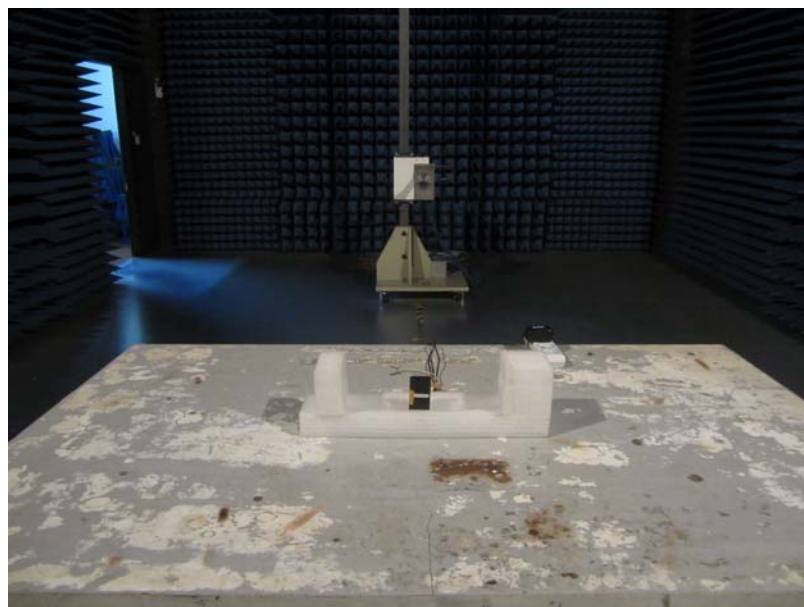
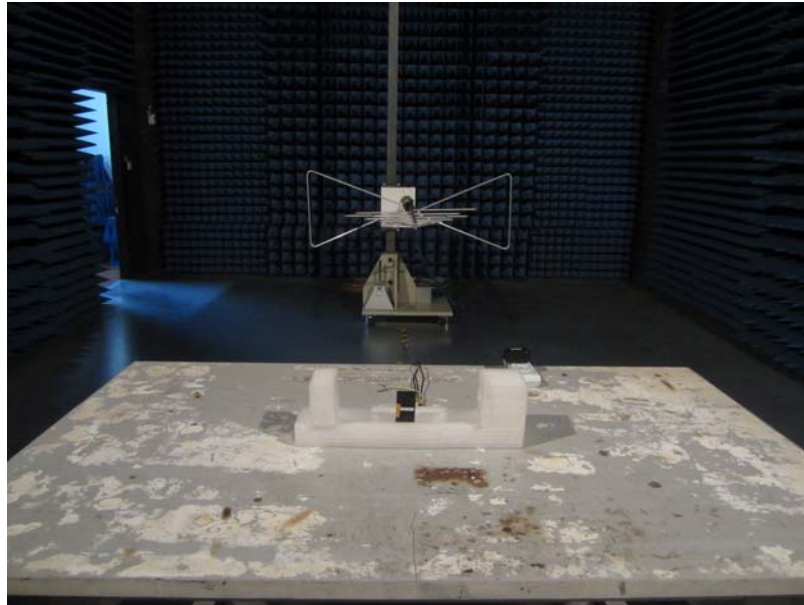
| | |
|-------------------|--|
| Test Requirement: | FCC Part2.1055(d)(1)(2) |
| Test Method: | FCC Part2.1055(d)(1)(2) |
| Limit: | 2.5ppm |
| Test setup: | <p style="text-align: center;"> </p> <p style="text-align: center;">Note : Measurement setup for testing on Antenna connector</p> |
| Test procedure: | <ol style="list-style-type: none"> 1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change. |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

Measurement Data

| Reference Frequency: CDMA2000 BC0 (1xRTT RC3 SO32 (+F-SCH)) Middle channel=384 channel=836.52MHz | | | | | |
|--|----------------------|-----------------|--------|-------------|--------|
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 10 | 46 | 0.0545 | 2.5 | Pass |
| | 12 | 50 | 0.0600 | | |
| | 30 | 55 | 0.0655 | | |
| Reference Frequency: CDMA2000 BC1 (1xRTT RC1 SO55) Middle channel=600 channel=1880MHz | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 10 | 80 | 0.0427 | 2.5 | Pass |
| | 12 | 96 | 0.0509 | | |
| | 30 | 96 | 0.0509 | | |

8 Test Setup Photo

Radiated Emission

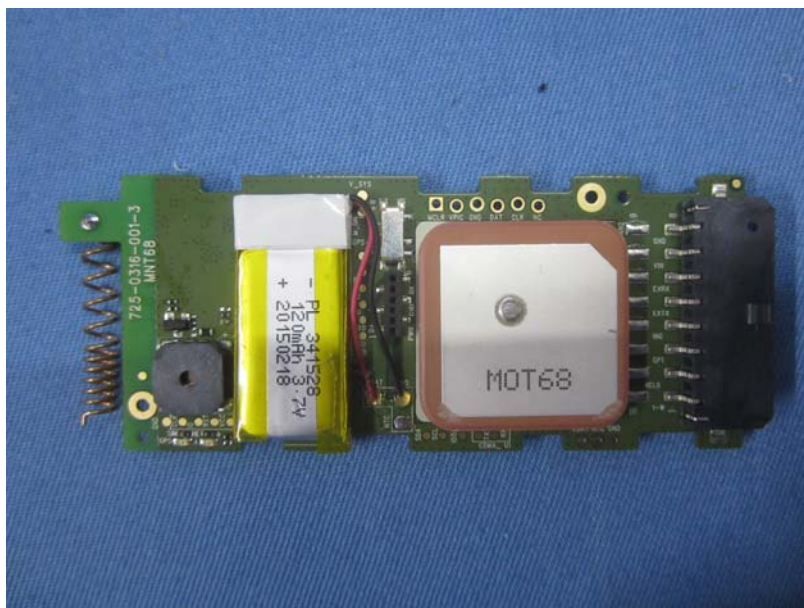


9 EUT Constructional Details

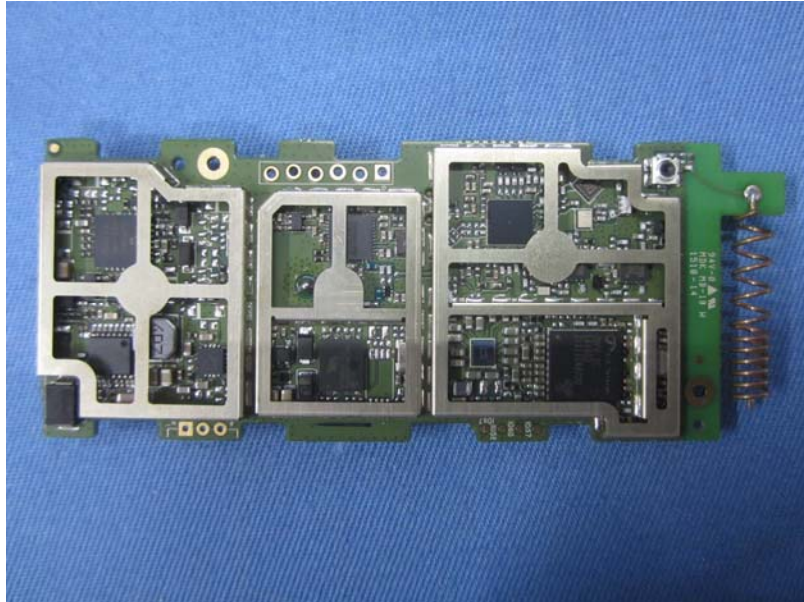












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