



# Compliance Testing, LLC

Previously Flom Test Lab

RF, EMC and Safety Testing Experts Since 1963

toll-free: (866) 311-3268

fax: (480) 926-3598

<http://www.ComplianceTesting.com>

[info@ComplianceTesting.com](mailto:info@ComplianceTesting.com)

**Date:** January 18, 2010

**Applicant:** Vertu  
Beacon Hill Road  
Church Crookham, Hampshire GU52 8DY UK

**Attention of:** Mark Pope, Certification and Compliance Manager  
+44 1252 611135; FAX: -611302  
Mobile: +44 7774 8158594  
mark.pope@vertu.com

**Equipment:** Ascent X, Type: RM-589V  
**FCC ID:** P7QRM-589V  
**FCC Rules:** 22 / 24

Gentlemen:

Enclosed please find your copy of the Engineering Test Report for which you are subject to the restrictions as listed on the attached summary.

Once a Telecommunication Certification Body (TCB) issues a Grant the Federal Communication Commission (FCC) has 30 days to review the application and request added information. It is your decision whether or not to market the equipment subject to a possible recall before the end of the 30 days.

If your equipment is still retained by us, it will be returned to you 30 days after approval is achieved. Our invoice for services has been directed to your Accounts Payable Department.

For any additional information please contact us.

Thank you.

Sincerely yours,

John Erhard: Engineering Manager



## Summary of Restrictions

1. All submissions to the FCC are subject to **their** Examiner's interpretation.
2. Please allow from 60 to 90 days before hearing from the FCC with regard to any submission.
3. The FCC can set aside any action; modify or set aside any action, within 30 days. (FCC Rule 1.108, 1.113).
4. Under Rule 2.803, if device is not type accepted/certified then it must **not** be sold, leased, offered for sale, imported, shipped or distributed or advertised for sale.
5. FCC can revoke its certificates at any time if the equipment does not meet or **continue** to meet their Rules. (Rule Parts 2.927, 2.939).
6. FCC can request a sample at any time (2.936).



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**Date:** January 18, 2010

Federal Communications Commission  
Via: Electronic Filing

**Attention:** Authorization & Evaluation Division

**Applicant:** Vertu

**Equipment:** Ascent X, Type: RM-589V

**FCC ID:** P7QRM-589V

**FCC Rules:** 22 / 24

Dear Gentleman:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Best regards,

John Erhard: Engineering Manager



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## Test Report

for

**Model:** Ascent X **Type:** RM-589V

to

**Federal Communications Commission**

Rule Part(s) 22 / 24

Date of report: January 18, 2010

**On the Behalf of the Applicant:** Vertu

**At the Request of:**  
Vertu  
Beacon Hill Road  
Church Crookham, Hampshire GU52 8DY UK

**Attention of:**  
Mark Pope, Certification and Compliance Manager  
+44 1252 611135; FAX: -611302  
Mobile: +44 7774 8158594  
[mark.pope@vertu.com](mailto:mark.pope@vertu.com)

Reviewed by:

John Erhard: Engineering Manager



## Test Report Revision History

Revision	Date	Revised By	Reason for revision
1.0	January 18, 2010	J. Erhard	Original Document
2.0	February 8, 2010	J. Erhard	Add TIA-603C statement to test report



Compliance Testing, LLC

## List of Exhibits

(FCC **Certification** (Transmitters) - Revised 9/28/98)

**Applicant:** Vertu

**FCC ID:** P7QRM-589V

### **By Applicant:**

1. Letter of Authorization
2. Confidentiality Request: 0.457 And 0.459
3. Identification Drawings, 2.1033(c)(11)
  - Label
  - Location of Label
  - Compliance Statement
  - Location of Compliance Statement
4. Photographs, 2.1033(c)(12)
5. Documentation: 2.1033(c)
  - (3) User Manual
  - (9) Tune Up Info
  - (10) Schematic Diagram
  - (10) Circuit Description
  - Block Diagram
  - Parts List
  - Active Devices
6. MPE/SAR Report

### **By Compliance Testing:**

- A. Testimonial & Statement of Certification



**The Applicant has been cautioned as to the following:**

**15.21                   Information to the User.**

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**15.27(a)               Special Accessories.**

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.



## Testimonial and Statement of Certification

### This is to Certify:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Certifying Engineer:

A handwritten signature in black ink, appearing to read "John Erhard".

John Erhard: Engineering Manager



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Required information per ISO 17025-2005, paragraph 5.10.2:

a)

**Test Report**

b) Laboratory:  
(FCC: 31040/SIT)  
(Canada: IC 2044-A)

Compliance Testing  
3356 N. San Marcos Place, Suite 107  
Chandler, AZ 85225

c) Report Number:

d1010011

d) Client:

Vertu  
Beacon Hill Road  
Church Crookham, Hampshire GU52 8DY UK

e) Identification:  
EUT Description:

Ascent X, Type: RM-589V

Quad Band Phone with GSM and UMTS functionality

\*The Vertu Model: Ascent X, FCC ID: P7QRM-589V is a mobile phone in the Luxury category. It is differentiated from standard models in terms of craftsmanship/materials and quality. The model is available in a number of cosmetic finishes, where substituted on a like for like basis, Metal for Metal, RF Neutral/leather and cover materials for the same in a variety of colors and finishes (Mat/polished/color etc).

All are electrically and performance identical, with the same circuit board and carry the same FCC ID: P7QRM-589V.

f) EUT Condition:

Not required unless specified in individual tests.

g) Report Date:

January 18, 2010

h, j, k):

As indicated in individual tests.

i) Sampling method:

No sampling procedure used.

l) Measurement Uncertainty:

In accordance with Compliance Testing internal quality manual.

m) Reviewed by:

John Erhard: Engineering Manager

n) Results:

The results presented in this report relate only to the item tested.

o) Reproduction:

This report must not be reproduced, except in full, without written permission from this laboratory.

Accessories used during testing:

Type	Quantity	Manufacturer	Model	Serial No.	FCC ID
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Compliance Testing, LLC

Sub-part

2.1033(c)(14):

## Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts: 22 / 24.



### Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI/C63.4-2009 and TIA-603C; unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Measurement results, unless otherwise noted, are worst-case measurements.

### A2LA

“A2LA has accredited Compliance Testing in Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 ‘General Requirements for the Competence of Testing and Calibration Laboratories’ and any additional program requirements in the identified field of testing.”

Please refer to [www.a2la.org](http://www.a2la.org) for current scope of accreditation.

Certificate number: 2152.01



FCC OATS Reg. #933597

IC Reg. # 2044A-1



## List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,  
Volume II, Part 2 and to Parts 22 / 24Sub-part 2.1033

(c)(1):

**Name and Address of Applicant:** Vertu  
Beacon Hill Road  
Church Crookham, Hampshire GU52 8DY UK

**Manufacturer:** Vertu  
Beacon Hill Road  
Church Crookham, Hampshire GU52 8DY UK

(c)(2):**FCC ID:** P7QRM-589V

**Model Number:** Ascent X, Type: RM-589V

(c)(3): **Instruction Manual(s):**

Please see attached exhibits

(c)(4): **Type of Emission:** 824.2 - 848.8 GSM 243KGXW  
824.2 - 848.8 EGPRS 247KG7W  
826.4 - 846.6 WCDMA 4M15F9W  
1850.2 - 1909.8 GSM 242KGXW  
1850.2 - 1909.8 EGPRS 242KG7W  
1852.4 - 1907.6 WCDMA 4M17F9W

(c)(5): **Frequency Range, MHz:** 824.2 - 848.8 GSM 243KGXW  
824.2 - 848.8 EGPRS 247KG7W  
826.4 - 846.6 WCDMA 4M15F9W  
1850.2 - 1909.8 GSM 242KGXW  
1850.2 - 1909.8 EGPRS 242KG7W  
1852.4 - 1907.6 WCDMA 4M17F9W

(c)(6): **Power Rating, Watts:** 0.708; 0.955  
\_\_\_\_ Switchable      \_\_\_\_ Variable       N/A

### FCC Grant Note:

(c)(7): **Maximum Allowable Power, Watts:** 7; 2

**DUT Results:** Passes  Fails \_\_\_\_\_



Subpart 2.1033 (continued)

(c)(8): Voltages & currents in all elements in final RF stage, including final transistor or solid-state device:

Collector Current, A	= 1
Collector Voltage, Vdc	= 3.7
Supply Voltage, Vdc	= 3.7

(c)(9): **Tune-Up Procedure:**

Please see attached exhibits

(c)(10): **Circuit Diagram/Circuit Description:**

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please see attached exhibits

(c)(11): **Label Information:**

Please see attached exhibits

(c)(12): **Photographs:**

Please see attached exhibits

(c)(13): **Digital Modulation Description:**

       Attached Exhibits  
X N/A

(c)(14): **Test and Measurement Data:**

Follows



### Test Results Summary

Specification	Test Name	Pass, Fail, N/A	Comments
2.1053	Field Strength of Spurious Radiation	Pass	



**Name of Test:** Field Strength of Spurious Radiation  
**Specification:** 2.1053  
**Test Equipment Utilized:** i00004, i00028, i00049, i00091, i00103, i00177, i00228, i00344, i00353, i00364

**Engineer:** J. Erhard  
**Test Date:** 1/15/2010

### Test Procedure

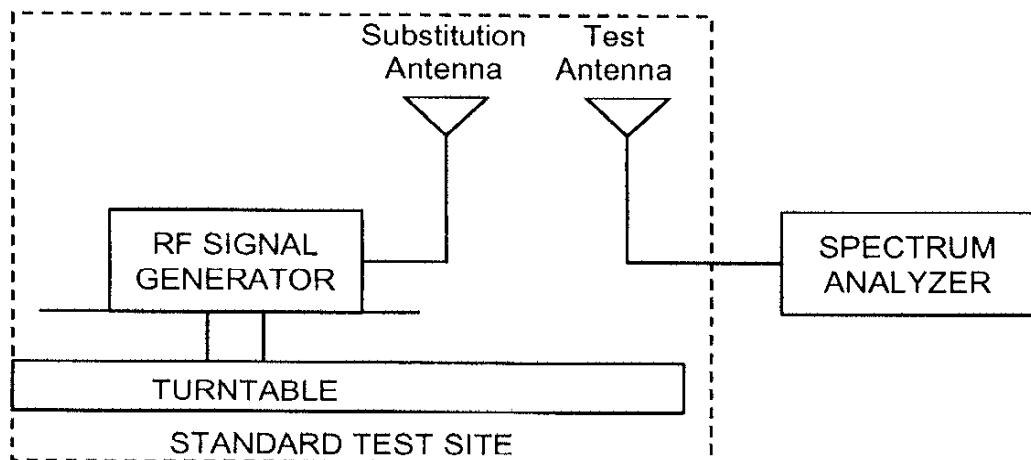
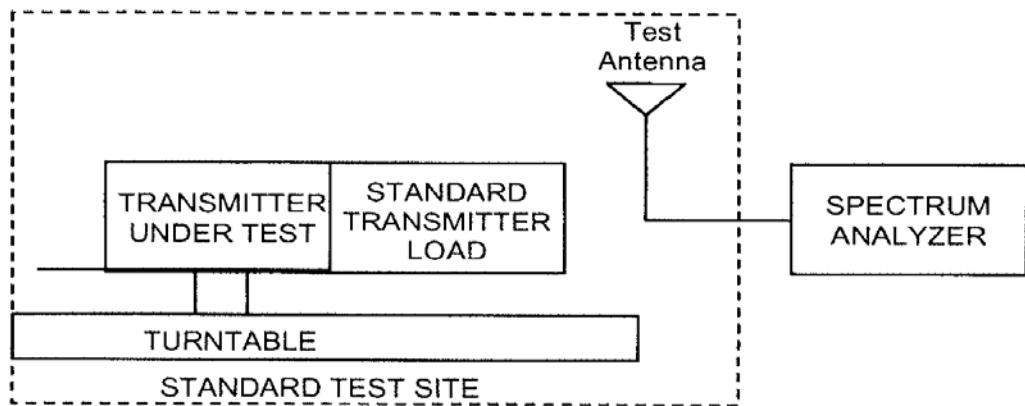
- A) Connect the equipment as illustrated
- B) Adjust the spectrum analyzer for the following settings:
  - 1) Resolution Bandwidth 100 kHz (<1 GHZ), 1 MHZ (> 1GHz).
  - 2) Video Bandwidth  $\geq$  3 times Resolution Bandwidth, or 30 kHz
  - 3) Sweep Speed  $\leq$  2000 Hz/second
  - 4) Detector Mode = Mean or Average Power
- C) Place the transmitter to be tested on the turntable in the standard test site. The transmitter is transmitting into a non-radiating load that is placed on the turntable. The RF cable to this load should be of minimum length.
- D) For each spurious measurement the test antenna should be adjusted to the correct length for the frequency involved. This length may be determined from a calibration ruler supplied with the equipment. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to  $\pm$  the test bandwidth (see section 1.3.4.4).
- E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.
- F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.
- G) Reconnect the equipment as illustrated.
- H) Keep the spectrum analyzer adjusted as in step B).
- I) Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.
- J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- K) Repeat step J) with both antennas vertically polarized for each spurious frequency.
- L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.
- M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =  $10\log_{10}(\text{TX power in watts}/0.001) - \text{the levels in step I}$

*NOTE: It is permissible that other antennas provided can be referenced to a dipole.*



### Test Setup



For all tests on all transmitters with tuned frequencies below 1 GHz a tunable notch filter was utilized to ensure that the fundamental did not put the spectrum analyzer into compression.

For all tests on transmitters with tuned frequencies above 1 GHz an RF amplifier was utilized to ensure that there was enough dynamic range to make accurate measurements at high frequencies. Additionally a high-pass filter was utilized to ensure that the fundamental signal did not put the spectrum analyzer into compression.

**824.2 GSM Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1648.3	-66.3	30.3	-36.0	-13	Pass
2472.5	-64.6	33.1	-31.5	-13	Pass
3296.7	-67.9	36.1	-31.8	-13	Pass

**836.6 GSM Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1660.8	-65.9	30.4	-35.5	-13	Pass
2485.0	-68.2	33.2	-35.0	-13	Pass
3309.2	-68.2	36.2	-32.0	-13	Pass

**848.8 GSM Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1697.6	-64.7	30.5	-34.2	-13	Pass
2546.4	-68.0	33.4	-34.6	-13	Pass
3395.2	-68.1	36.4	-31.7	-13	Pass

**824.2 EGPRS Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1648.4	-66.1	30.3	-35.8	-13	Pass
2472.6	-66.6	33.1	-33.5	-13	Pass
3296.8	-68.5	36.1	-32.4	-13	Pass

**836.6 EGPRS Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1673.2	-66.4	30.4	-36.0	-13	Pass
2509.8	-67.8	33.2	-34.6	-13	Pass
3346.4	-68.4	36.2	-32.2	-13	Pass

**848.8 EGPRS Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1697.6	-66.1	30.5	-35.6	-13	Pass
2546.4	-68.2	33.4	-34.8	-13	Pass
3395.2	-67.2	36.4	-30.8	-13	Pass

**826.4 WCDMA Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1652.8	-66.4	30.3	-36.1	-13	Pass
2497.2	-65.2	33.1	-32.1	-13	Pass
3305.6	-67.9	36.1	-31.8	-13	Pass

**836.6 WCDMA Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1700.2	-66.5	30.4	-36.1	-13	Pass
2563.8	-68.1	33.2	-34.9	-13	Pass
3427.4	-66.9	36.2	-30.7	-13	Pass

**846.6 WCDMA Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
1693.2	-66.9	30.5	-36.4	-13	Pass
2539.8	-68.1	33.4	-34.7	-13	Pass
3386.4	-68.6	36.4	-32.2	-13	Pass

**1850.2 GSM Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3700.4	-52.0	7.4	-44.6	-13	Pass
5550.6	-60.0	11.8	-48.2	-13	Pass
7400.8	-61.2	15.2	-46.0	-13	Pass

**1880 GSM Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3760.0	-52.1	7.7	-44.4	-13	Pass
5640.0	-61.9	11.9	-50.0	-13	Pass
7520.0	-58.9	15.5	-43.4	-13	Pass

**1909.8 GSM Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3819.6	-50.5	7.9	-42.6	-13	Pass
5729.4	-57.2	12.0	-45.2	-13	Pass
7639.2	-58.8	15.7	-43.1	-13	Pass

**1850.2 EGPRS Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3770.4	-53.0	7.4	-45.6	-13	Pass
5550.6	-55.2	11.8	-43.4	-13	Pass
7400.8	-60.4	15.2	-45.2	-13	Pass

**1880 EGPRS Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3760.0	-53.0	7.7	-45.3	-13	Pass
5460.0	-59.1	11.9	-47.2	-13	Pass
7520.0	-59.6	15.5	-44.1	-13	Pass

**1909.8 EGPRS Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3828.6	-54.5	7.9	-46.6	-13	Pass
5727.4	-59.6	12.0	-47.6	-13	Pass
7636.2	-58.1	15.7	-42.4	-13	Pass

**1852.4 WCDMA Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3704.8	-55.2	7.5	-47.7	-13	Pass
5557.2	-57.4	11.9	-45.5	-13	Pass
7409.6	-61.1	15.2	-45.9	-13	Pass

**1880 WCDMA Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3760.0	-53.2	7.7	-45.5	-13	Pass
5640.0	-59.2	11.9	-47.3	-13	Pass
7520.0	-60.2	15.5	-44.7	-13	Pass

**1907.6 WCDMA Test Results**

Emission Frequency (MHz)	Measured Level (dBm)	Correction Factor (dB)	Corrected Value (dBm)	Limit (dBm) ERP/EIRP	Result
3815.6	-54.4	7.9	-46.5	-13	Pass
5723.4	-58.8	11.9	-46.9	-13	Pass
7631.2	-60.2	15.7	-44.5	-13	Pass

No other emissions were detected. All emissions were greater than -13 dBm.

Compliance Testing

3356 N. San Marcos Place, Suite 107

Chandler, Arizona 85225-7176

(866) 311-3268 phone, (480) 926-3598 fax

**Test Equipment Utilized**

Description	MFG	Model Number	CT Asset Number	Last Cal Date	Cal Due Date
RF Amplifier	AR	50W1000A	i00004	NCR	NCR
RF Amplifier	HP	8449A	i00028	6/29/2009	6/29/2010
Spectrum Analyzer	HP	8566B	i00049	10/9/2009	10/9/2010
Horn Antenna	Amprel	AH118	i00091	NCR	NCR
Horn Antenna	EMCO	3115	i00103	11/25/2008	11/25/2010
High-pass Filter	Trilithic	4HX3400-3-KK	i00177	NCR	NCR
Power Meter	HP	E4418B	i00228	8/26/2009	8/26/2010
Power Sensor	HP	8485A	i00344	8/26/2009	8/26/2010
Signal Generator	HP	83650A	i00353	NCR	NCR
Tunable Notch Filter	Eagle	TNF240MFMF	i00364	NCR	NCR

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

END OF TEST REPORT