



**RADIATED SPURIOUS EMISSIONS PORTIONS OF  
FCC CFR47 PART 22H, 24E AND 27L  
CERTIFICATION TEST REPORT  
FOR  
TRI BAND CDMA MOBILE PHONE WITH BLUETOOTH + WiFi  
FCC MODEL NUMBER: C5171  
FCC ID: V65C5171  
REPORT NUMBER: 12U14556-1  
ISSUE DATE: AUGUST 20, 2012**

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
---	08/20/12	Initial Issue	T. Chan

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS.....</b>	<b>4</b>
<b>2. TEST METHODOLOGY .....</b>	<b>5</b>
<b>3. FACILITIES AND ACCREDITATION.....</b>	<b>5</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>5</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION.....</i>	<i>5</i>
4.2. <i>SAMPLE CALCULATION.....</i>	<i>5</i>
4.3. <i>MEASUREMENT UNCERTAINTY.....</i>	<i>5</i>
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>6</b>
5.1. <i>DESCRIPTION OF EUT.....</i>	<i>6</i>
5.2. <i>MAXIMUM OUTPUT POWER.....</i>	<i>6</i>
5.3. <i>SOFTWARE AND FIRMWARE.....</i>	<i>7</i>
5.4. <i>WORST-CASE CONFIGURATION AND MODE .....</i>	<i>7</i>
5.5. <i>DESCRIPTION OF TEST SETUP.....</i>	<i>9</i>
<b>6. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>11</b>
<b>7. LIMITS AND RESULTS .....</b>	<b>12</b>
7.1. <i>RADIATED OUTPUT POWER.....</i>	<i>12</i>
7.2. <i>FIELD STRENGTH OF SPURIOUS RADIATION .....</i>	<i>16</i>
<b>8. SETUP PHOTOS.....</b>	<b>20</b>

## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** KYOCERA COMMUNICATIONS, INC  
8611 BALBOA AVENUE  
SAN DIEGO, CA 92123, U.S.A

**EUT DESCRIPTION:** TRI BAND CDMA MOBILE PHONE WITH BLUETOOTH + WiFi

**MODEL:** C5171

**SERIAL NUMBER:** 268435457816727686

**DATE TESTED:** AUGUST 18, 2011

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, AND 27L	PASS (Radiated Portion)

Compliance Certification Services, Inc. (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

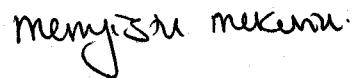
**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:



THU CHAN  
ENGINEERING MANAGER  
UL CCS

Tested By:



MENGISTU MEKURIA  
EMC TECHNICIAN  
UL CCS

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, and FCC Part 27.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\quad \text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is Bluetooth featured Tri Band CDMA Phone that is manufactured by Kyocera Communications, Inc.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak ERP & EIRP output powers as follows:

Part 22 Cellular Band					
Frequency range (MHz)	Modulation	Channe Frequency		ERP	
				dBm	mW
824.70 – 848.31	CDMA2000 1xRTT	1013	824.7	26.12	409.3
		384	836.5	25.76	376.7
		777	848.3	27.65	582.1

Part 24 PCS Band					
Frequency range (MHz)	Modulation	Channe Frequency		EIRP	
				dBm	mW
1851.25 – 1908.75	CDMA2000 1xRTT	25	1851.3	25.44	349.9
		600	1880.0	26.94	494.3
		1175	1908.8	25.60	363.1

Part 27 PCS Band					
Frequency range (MHz)	Modulation	Channe Frequency		EIRP	
				dBm	mW
1711.25 – 1753.75	CDMA2000 1xRTT	25	1711.3	26.31	427.6
		460	1330.0	25.48	353.2
		875	1753.8	26.36	432.5

### 5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

### 5.4. WORST-CASE CONFIGURATION AND MODE

The worst-position is the EUT with highest emissions. To determine the worst-case, the EUT was investigated for X, Y, and Z-Positions, and the worst position among X, Y, or Z with AC/DC adapter and headset, after the investigations, the worst-position was turned out to be Z-Position without AC Adapter and headset for cell band and X-Position without AC Adapter and headset for PCS and AWS bands respectively..

**PROCEDURE USED TO ESTABLISH TEST SIGNAL****3G-CDMA2000 1xRTT**

This procedure assumes the Agilent E5515C Test Set has the following applications installed and with valid license.

<u>Application</u>	<u>Rev, License</u>
CDMA2000 Mobil Test	B.10.11, L

1xRTT

- Call Setup > Shift & Preset
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > RC3 (Fwd3, Rvs3)
- FCH Service Option (SO) Setup > 55
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  - > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Cell Info > Cell Parameters > System ID (SID) > 2
  - > Network ID (NID) > 0
  - > Initial Registration Channel > 25 (PCS)

Once "Active Cell" show "Connected" then change "Rvs Power Ctrl" from "Active bits" to "**All Up bits**" to get the maximum power.

Worst-case Measurement Result @ Low, Middle and High Channel

Worst-case Measurement Result for Low, Middle and High Channel under Radio Configuration RC3 and Service Option 55.

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

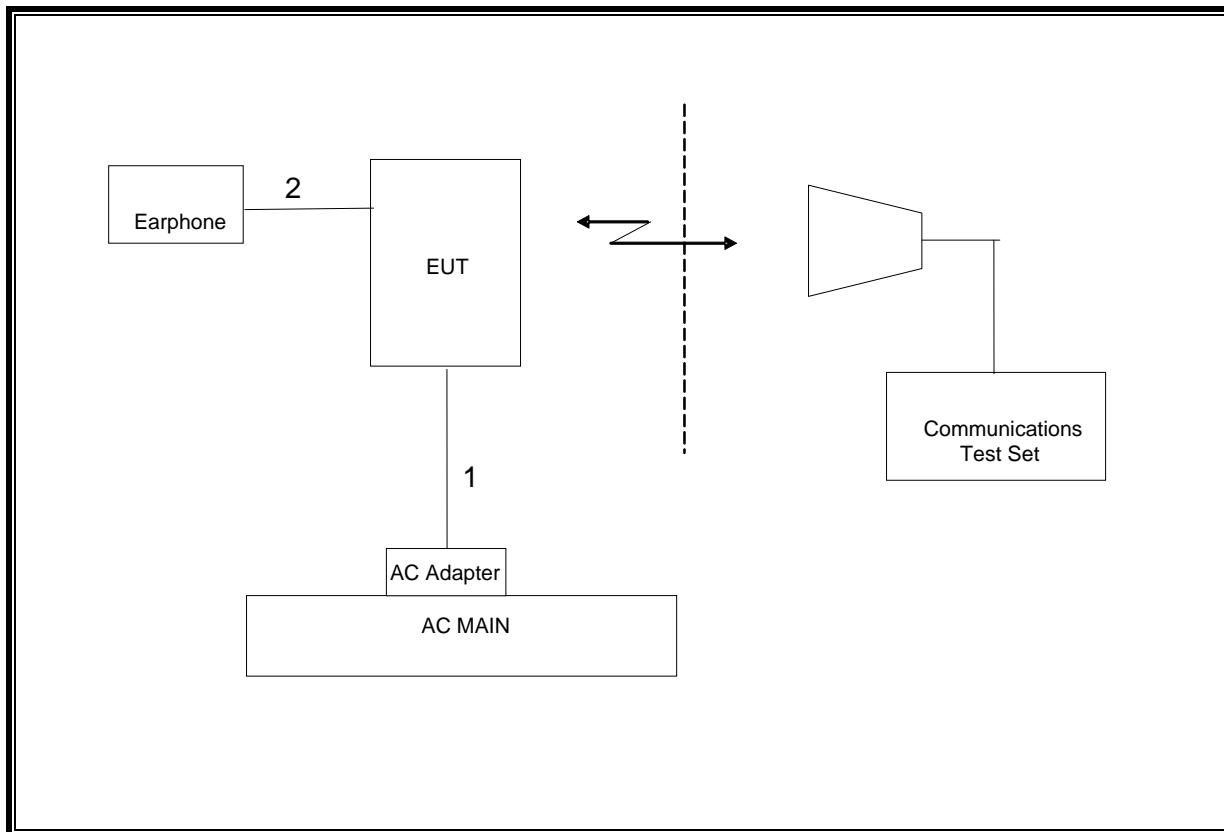
TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01161	12/16/12
Communications Test Set	Agilent / HP	E5515C	1000732	09/27/12
Vector Signal Generator, 22.5 GHz	Agilent / HP	E5515C	C01160	11/01/12
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR
Antenna, Horn, 18 GHz	EMCO	3115	C00783	41200
Antenna, Horn, 18 GHz	EMCO	3115	C01218/1000614	09/01/12
Antenna, Biolog, 30MHz-1 GHz Preamplifier, 26.5 GHz	Sunol Sciences	JB1	C01011	03/23/13
Tuned Dipole 400–1000 MHz	ETS	3121C DB4	C00994	09/16/12
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR

### I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
2	DC	1	USB	Un-shielded	1.0m	N/A
3	Mic	1	Earphone	Un-shielded	1.5m	N/A

### TEST SETUP

The EUT is a CDMA phone and is tested as a standalone configuration. Communications Test Set is used to link the device under test.

**SETUP DIAGRAM FOR TESTS**

## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01161	12/16/12
Communications Test Set	Agilent / HP	E5515C	1000732	09/27/12
Vector signal generator, 20 GHz	Agilent / HP	E8267C	C01066	11/17/12
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR
Antenna, Horn, 18 GHz	EMCO	3115	C00783	41200
Antenna, Horn, 18 GHz	EMCO	3115	C01218/1000614	09/01/12
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	03/23/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	11/07/12
Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00994	09/16/12
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR

## 7. LIMITS AND RESULTS

### 7.1. RADIATED OUTPUT POWER

#### LIMITS

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

24.232(b) 6.4 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 (d) (2) 6.4 Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to a peak EIRP of 1 watt.

RSS-132 § 4.4 The maximum ERP shall be 6.3 Watts for mobile stations.

#### TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17.

#### RESULTS

**CELL OUTPUT POWER (ERP)**

High Frequency Substitution Measurement Compliance Certification Services Chamber B																
Company:	KYOCERA WIRELESS															
Project #:	12U14556															
Date:	08/18/12															
Test Engineer:	MENGISTU MEKURIA															
Configuration:	EUT ALONE															
Mode:	TX, CELL BAND, CDMA 1XRTT MODE															
<b>Test Equipment:</b>																
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)																
Substitution: Dipole S/N: 1629, 4ft SMA Cable (245182002) Warehouse.																
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes								
824.70	26.62	V	0.5	0.0	26.12	38.5	-12.3									
824.70	11.66	H	0.5	0.0	11.16	38.5	-27.3									
836.52	26.26	V	0.5	0.0	25.76	38.5	-12.7									
836.52	11.41	H	0.5	0.0	10.91	38.5	-27.5									
848.31	28.15	V	0.5	0.0	27.65	38.5	-10.8									
848.31	11.50	H	0.5	0.0	11.00	38.5	-27.4									

Rev. 3.17.11

**PCS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement Compliance Certification Services Chamber B																
Company:	KYOCERA WIRELESS															
Project #:	12U14556															
Date:	08/18/12															
Test Engineer:	MENGISTU MEKURIA															
Configuration:	EUT ALONE															
Mode:	TX, PCS BAND, CDMA 1XRTT MODE															
<b><u>Test Equipment:</u></b>																
Receiving: Horn T59, and Camber B SMA Cables																
Substitution: Horn T217 Substitution, 4ft SMA Cable (245182002) Warehouse																
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes								
1.851	10.3	V	0.85	8.62	18.02	33.0	-15.0									
1.851	17.8	H	0.85	8.47	25.44	33.0	-7.6									
1.880	10.7	V	0.85	8.46	18.29	33.0	-14.7									
1.880	19.4	H	0.85	8.36	26.94	33.0	-6.1									
1.909	8.9	V	0.85	8.30	16.31	33.0	-16.7									
1.909	18.2	H	0.85	8.25	25.60	33.0	-7.4									

Rev. 3.17.11

**AWS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement Compliance Certification Services Chamber B																
Company:	KYOCERA WIRELESS															
Project #:	12U14556															
Date:	08/18/12															
Test Engineer:	MENGISTU MEKURIA															
Configuration:	EUT ALONE															
Mode:	TX, AWS BAND, CDMA 1XRTT MODE															
<b>Test Equipment:</b>																
Receiving: Horn T59, and Camber B SMA Cables																
Substitution: Horn T217 Substitution, 4ft SMA Cable (245182002) Warehouse																
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes								
1.711	10.8	V	0.85	8.62	18.57	30.0	-11.4									
1.711	16.7	H	0.85	8.47	26.31	30.0	-3.7									
1.732	10.3	V	0.85	8.46	17.94	30.0	-12.1									
1.732	18.0	H	0.85	8.36	25.48	30.0	-4.5									
1.754	11.3	V	0.85	8.30	18.70	30.0	-11.3									
1.754	19.0	H	0.85	8.25	26.36	30.0	-3.6									
Rev. 3.17.11																

## 7.2. FIELD STRENGTH OF SPURIOUS RADIATION

### LIMIT

§22.917 (e) and §24.238 (a) (i) & (b): 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) 6.5 For operations in the 1710–1755MHz 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

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), FCC 24.238 (b), & FCC 27.53 (g)(1)(2)(3).

### RESULTS

**CELL SPURIOUS & HARMONIC (ERP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>	KYOCERA WIRELESS								
<b>Project #:</b>	12U14556								
<b>Date:</b>	08/18/12								
<b>Test Engineer:</b>	MENGISTU MEKURIA								
<b>Configuration:</b>	EUT ALONE								
<b>Mode:</b>	TX, CELL BAND, CDMA 1XRTT MODE								
Chamber		Pre-amplifier		Filter		Limit			
5m Chamber B		T145 8449B		Filter 1		Part 22			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 824.70MHz</b>									
1.649	-8.2	V	3.0	35.5	1.0	-42.7	-13.0	-29.7	
2.474	-21.4	V	3.0	35.4	1.0	-55.8	-13.0	-42.8	
1.649	-9.2	H	3.0	35.5	1.0	-43.8	-13.0	-30.8	
2.474	-23.1	H	3.0	35.4	1.0	-57.5	-13.0	-44.5	
<b>Mid Ch, 836.52MHz</b>									
1.673	-6.5	V	3.0	35.5	1.0	-41.0	-13.0	-28.0	
2.510	-19.5	V	3.0	35.4	1.0	-54.0	-13.0	-41.0	
1.673	-8.2	H	3.0	35.5	1.0	-42.7	-13.0	-29.7	
2.510	-21.6	H	3.0	35.4	1.0	-56.0	-13.0	-43.0	
<b>High Ch, 848.31MHz</b>									
1.697	-1.8	V	3.0	35.5	1.0	-36.3	-13.0	-23.3	
2.545	-12.3	V	3.0	35.4	1.0	-46.7	-13.0	-33.7	
1.697	-3.9	H	3.0	35.5	1.0	-38.5	-13.0	-25.5	
2.545	-18.8	H	3.0	35.4	1.0	-53.2	-13.0	-40.2	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

**PCS Spurious & Harmonic (EIRP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:	KYOCERA WIRELESS								
Project #:	12U14556								
Date:	08/18/12								
Test Engineer:	MENGISTU MEKURIA								
Configuration:	EUT ALONE								
Mode:	TX, PCS BAND, CDMA 1XRTT MODE								
Chamber		Pre-amplifier		Filter		Limit			
5m Chamber B		T145 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
<b>Low Ch, 1851.25MHz</b>									
3.703	-14.9	V	3.0	35.4	1.0	-49.2	-13.0	-36.2	
5.554	-18.6	V	3.0	35.4	1.0	-53.0	-13.0	-40.0	
3.703	-15.2	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
5.554	-17.3	H	3.0	35.4	1.0	-51.7	-13.0	-38.7	
<b>Mid Ch, 1880.00MHz</b>									
3.760	-15.9	V	3.0	35.3	1.0	-50.2	-13.0	-37.2	
5.640	-17.3	V	3.0	35.4	1.0	-51.8	-13.0	-38.8	
3.760	-14.3	H	3.0	35.3	1.0	-48.6	-13.0	-35.6	
5.640	-17.3	H	3.0	35.4	1.0	-51.7	-13.0	-38.7	
<b>High Ch, 1908.75MHz</b>									
3.818	-14.6	V	3.0	35.3	1.0	-48.9	-13.0	-35.9	
5.726	-12.8	V	3.0	35.4	1.0	-47.3	-13.0	-34.3	
3.818	-14.2	H	3.0	35.3	1.0	-48.6	-13.0	-35.6	
5.726	-10.9	H	3.0	35.4	1.0	-45.4	-13.0	-32.4	

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

AWS Spurious & Harmonic (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Chamber		Pre-amplifier		Filter		Limit			
5m Chamber B	T145 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, 1711.25MHz									
3.423	-17.2	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
5.134	-13.0	V	3.0	35.3	1.0	-47.3	-13.0	-34.3	
6.845	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3.423	-19.7	H	3.0	35.5	1.0	-54.2	-13.0	-41.2	
5.134	-15.5	H	3.0	35.3	1.0	-49.8	-13.0	-36.8	
6.845	-14.1	H	3.0	35.7	1.0	-48.8	-13.0	-35.8	
Mid Ch, 1733.00MHz									
3.466	-13.2	V	3.0	35.5	1.0	-47.7	-13.0	-34.7	
5.199	-17.2	V	3.0	35.3	1.0	-51.6	-13.0	-38.6	
6.932	-15.5	V	3.0	35.7	1.0	-50.3	-13.0	-37.3	
3.466	-14.9	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
5.199	-17.3	H	3.0	35.3	1.0	-51.6	-13.0	-38.6	
6.932	-14.2	H	3.0	35.7	1.0	-48.9	-13.0	-35.9	
High Ch, 1753.75MHz									
3.508	-14.9	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
5.261	-14.3	V	3.0	35.3	1.0	-48.6	-13.0	-35.6	
7.015	-16.7	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3.508	-18.3	H	3.0	35.4	1.0	-52.8	-13.0	-39.8	
5.261	-16.1	H	3.0	35.3	1.0	-50.5	-13.0	-37.5	
7.015	-15.3	H	3.0	35.7	1.0	-50.1	-13.0	-37.1	

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