



**RADIATED SPURIOUS EMISSIONS PORTIONS OF**

**FCC CFR47 PART 22 SUBPART H**

**FCC CFR47 PART 24 SUBPART E**

**CERTIFICATION TEST REPORT  
FOR**

**DUAL-BAND 1xRTT CDMA PHONE WITH BLUETOOTH AND WIFI**

**FCC MODEL NUMBER: SCP- 8600**

**FCC ID: V65SCP-8600**

**REPORT NUMBER: 10U13193-1**

**ISSUE DATE: MAY 10, 2010**

*Prepared for*

**KYOCERA COMMUNICATIONS, INC  
10300 CAMPUS POINT DRIVE  
SAN DIEGO, CA 92121, U.S.A.**

*Prepared by*

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**NVLAP LAB CODE 200065-0**

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** KYOCERA COMMUNICATIONS, INC  
10300 CAMPUS POINT DRIVE  
SAN DIEGO, CA 92121, USA

**EUT DESCRIPTION:** DUAL-BAND 1xRTT CDMA PHONE WITH BLUETOOTH AND WIFI

**MODEL:** SCP-8600

**SERIAL NUMBER:** A0000012FEED44

**DATE TESTED:** MAY 04 and 05, 2010

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

Compliance Certification Services, Inc. (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 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.

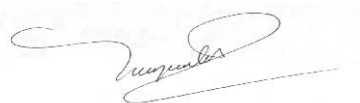
**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:



THU CHAN  
EMC MANAGER  
COMPLIANCE CERTIFICATION SERVICES

Tested By:



MENGISTU MEKURIA  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 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, and FCC CFR Part 24.

## 3. FACILITIES AND ACCREDITATION

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

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:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

### 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 a Bluetooth featured Dual-band CDMA Phone with Bluetooth and WiFi feature that manufactured by KYOCERA Communications, Inc.

### 5.2. MAXIMUM OUTPUT POWER

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

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low CH - 824.70	CDMA2000	29.2	831.8
Mid CH - 836.52		27.8	602.6
High CH - 848.31		26.5	446.7

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low CH - 1851.25	CDMA2000	26.6	457.1
Mid CH - 1880.00		26.1	407.4
High CH - 1908.75		25.4	346.7

### 5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

### 5.4. WORST-CASE CONFIGURATION AND MODE

The worst-position was 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, and Z with AC/DC adapter and Headset. After the investigations, the worst-position was turned out to be a Z-position without AC/DC adapter for Cell band and an X-position without AC/DC for PCS bands.

#### PROCEDURE USED TO ESTABLISH TEST SIGNAL

##### **3G-CDMA2000 1xRTT**

This procedure assumes the Agilent 8960 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) > 65535

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

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC Adapter	Sanyo	SCP-24ADT	0810B	N/A
Headset	N/A	N/A	N/A	N/A

### I/O CABLES

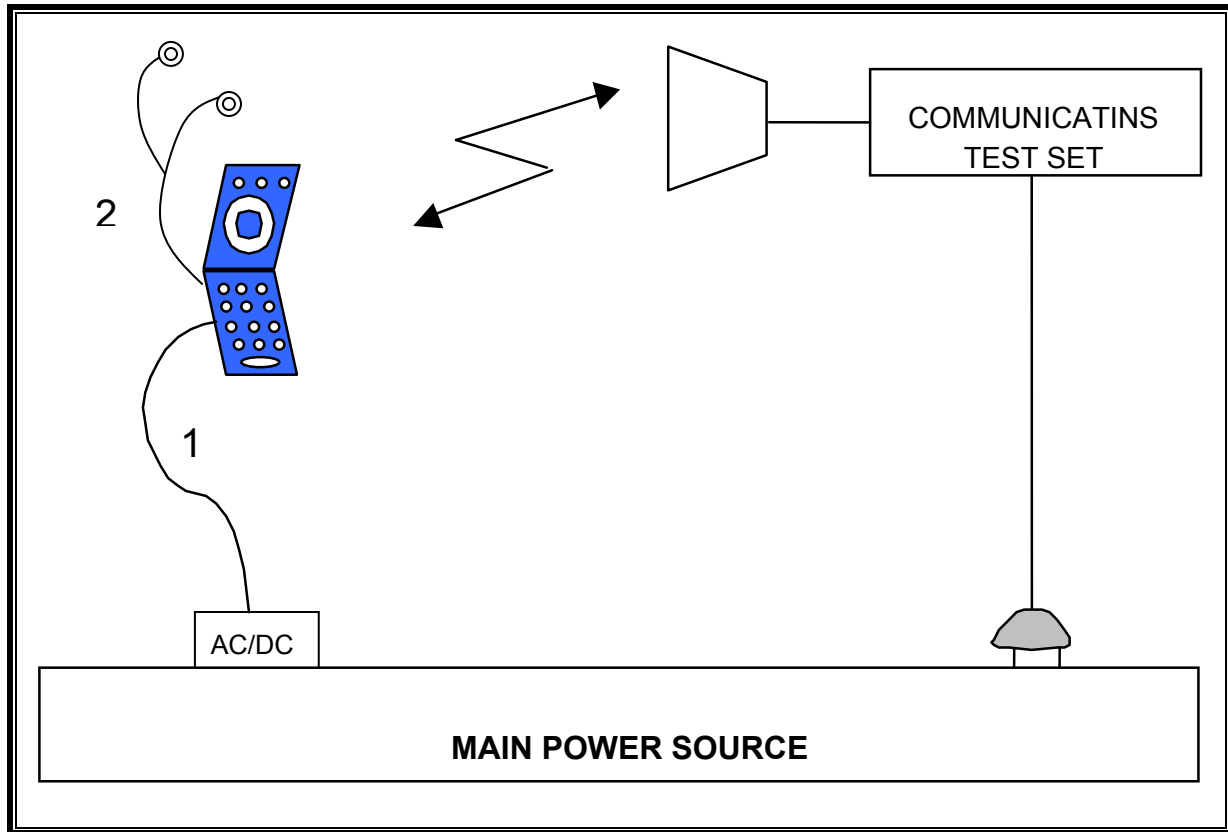
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC Input	1	Mini-USB	Un-Shielded	1.0 m	N/A
2	Audio	1	Mini-Jack	Un-Shielded	1.0 m	Volume Control on the Wire

### 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
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	08/04/10
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/14/10
Antenna, Horn, 18 GHz	ETS	3117	C01022	07/29/10
Antenna, Horn, 18 GHz	EMCO	3115	C00945	07/29/10
Dipole	Speag	D900V2	NA	11/16/11
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Signal Generator	R & S	SMP04	C00953	02/16/11
Communication Test Set	R & S	CMU 200	C01131	02/27/11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	08/24/10

## **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) & RSS133 § 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.

#### **TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 2.2.17.

#### **RESULTS**

**CELL OUTPUT POWER (ERP)**

High Frequency Substitution Measurement Compliance Certification Services Chamber A							
<b>Company:</b>	KYOCERA WIRELESS						
<b>Project #:</b>	10U13193						
<b>Date:</b>	5/5/2010						
<b>Test Engineer:</b>	MENGISTU MEKURIA						
<b>Configuration:</b>	STAND-ALONE EUT						
<b>Mode:</b>	TX, CDMA CELL BAND						
<b>Test Equipment:</b>							
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	-5.6	V	34.8	29.2	38.5	-9.3	
824.70	-18.1	H	30.5	12.5	38.5	-26.0	
836.52	-5.3	V	33.1	27.8	38.5	-10.6	
836.52	-18.2	H	31.2	13.0	38.5	-25.5	
848.31	-5.6	V	32.1	26.5	38.5	-11.9	
848.31	-18.6	H	31.2	12.6	38.5	-25.9	
Rev. 1.24.7							

**PCS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement Compliance Certification Services Chamber A							
<b>Company:</b>		KYOCERA WIRELESS					
<b>Project #:</b>		10U13193					
<b>Date:</b>		5/4/2010					
<b>Test Engineer:</b>		MENGISTU MEKURIA					
<b>Configuration:</b>		STAND-ALONE EUT					
<b>Mode:</b>		TX, CDMA PCS BAND					
<b><u>Test Equipment:</u></b>							
Receiving: Horn T73, and Camber A SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.851	-20.1	V	40.4	20.3	33.0	-12.7	
1.851	-13.1	H	39.7	26.6	33.0	-6.4	
1.880	-23.4	V	39.9	16.5	33.0	-16.5	
1.880	-14.0	H	40.1	26.1	33.0	-6.9	
1.909	-23.1	V	39.8	16.8	33.0	-16.2	
1.909	-14.8	H	40.2	25.4	33.0	-7.6	
Rev. 1.24.7							

## **7.2. FIELD STRENGTH OF SPURIOUS RADIATION**

### **LIMIT**

§22.917 (e) and §24.238 (a), RSS-132 § 4.5.1, & RSS-133 § 6.5.1 (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.

### **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										
Company:		KYOCERA WIRELESS								
Project #:		10U13193								
Date:		5/4/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		STAND-ALONE EUT								
Mode:		TX, CDMA CELL BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber A		T144 8449B			Filter 1			FCC PART 22		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Channel (824.7 MHz)</b>										
1.649	22.4	H	3.0	36.6	38.2	1.0	-23.0	-13.0	-10.0	
2.474	46.3	H	3.0	40.0	37.5	1.0	-42.8	-13.0	-29.8	
3.299	45.0	H	3.0	43.9	37.1	1.0	-37.2	-13.0	-24.2	
4.124	51.6	H	3.0	46.2	36.5	1.0	-40.9	-13.0	-27.9	
4.948	65.0	H	3.0	48.6	36.3	1.0	-51.7	-13.0	-38.7	
1.649	27.4	V	3.0	36.8	38.2	1.0	-27.7	-13.0	-14.7	
2.474	50.3	V	3.0	41.7	37.5	1.0	-45.0	-13.0	-32.0	
3.299	41.3	V	3.0	44.0	37.1	1.0	-33.5	-13.0	-20.5	
4.124	48.8	V	3.0	45.9	36.5	1.0	-38.4	-13.0	-25.4	
4.948	62.9	V	3.0	48.1	36.3	1.0	-50.1	-13.0	-37.1	
<b>Mid Channel (836.52 MHz)</b>										
1.673	21.1	H	3.0	36.8	38.1	1.0	-21.4	-13.0	-8.4	
2.510	40.8	H	3.0	40.1	37.5	1.0	-37.1	-13.0	-24.1	
3.346	41.7	H	3.0	44.0	37.1	1.0	-33.8	-13.0	-20.8	
4.183	44.9	H	3.0	46.4	36.5	1.0	-34.1	-13.0	-21.1	
5.019	53.2	H	3.0	48.8	36.3	1.0	-39.6	-13.0	-26.6	
5.856	58.0	H	3.0	50.5	36.3	1.0	-42.9	-13.0	-29.9	
6.692	65.0	H	3.0	51.9	36.4	1.0	-48.6	-13.0	-35.6	
7.529	65.6	H	3.0	53.1	36.6	1.0	-48.1	-13.0	-35.1	
8.365	62.9	H	3.0	54.1	36.8	1.0	-44.5	-13.0	-31.5	
9.202	58.5	H	3.0	55.2	37.0	1.0	-39.3	-13.0	-26.3	
1.673	24.3	V	3.0	37.1	38.1	1.0	-24.3	-13.0	-11.3	
2.510	45.0	V	3.0	41.8	37.5	1.0	-39.6	-13.0	-26.6	
3.346	38.2	V	3.0	44.1	37.1	1.0	-30.2	-13.0	-17.2	
4.183	43.1	V	3.0	46.1	36.5	1.0	-32.6	-13.0	-19.6	
5.019	48.5	V	3.0	48.3	36.3	1.0	-35.5	-13.0	-22.5	
5.856	54.9	V	3.0	49.7	36.3	1.0	-40.5	-13.0	-27.5	
6.692	64.7	V	3.0	50.9	36.4	1.0	-49.2	-13.0	-36.2	
7.529	62.1	V	3.0	52.0	36.6	1.0	-45.7	-13.0	-32.7	
8.365	60.3	V	3.0	53.1	36.8	1.0	-43.0	-13.0	-30.0	
9.202	57.6	V	3.0	54.2	37.0	1.0	-39.4	-13.0	-26.4	
<b>Hi Channel (848.3 MHz)</b>										
1.697	28.3	H	3.0	37.0	38.1	1.0	-28.4	-13.0	-15.4	
2.545	48.6	H	3.0	40.3	37.5	1.0	-44.7	-13.0	-31.7	
3.393	48.7	H	3.0	44.1	37.1	1.0	-40.6	-13.0	-27.6	
4.242	56.1	H	3.0	46.5	36.5	1.0	-45.0	-13.0	-32.0	
5.090	63.2	H	3.0	49.0	36.3	1.0	-49.5	-13.0	-36.5	
1.697	31.0	V	3.0	37.4	38.1	1.0	-30.8	-13.0	-17.8	
2.545	48.4	V	3.0	42.0	37.5	1.0	-42.9	-13.0	-29.9	
3.393	45.1	V	3.0	44.2	37.1	1.0	-36.9	-13.0	-23.9	
4.242	51.8	V	3.0	46.2	36.5	1.0	-41.0	-13.0	-28.0	
5.090	59.8	V	3.0	48.5	36.3	1.0	-46.6	-13.0	-33.6	
5.938	63.0	V	3.0	49.8	36.3	1.0	-48.5	-13.0	-35.5	
Note: No other emissions were detected greater than -40 dBm to the limit										
Rev. 03.03.09										

**PCS Spurious & Harmonic (EIRP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		KYOCERA WIRELESS								
Project #:		10U13193								
Date:		5/4/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		STAND-ALONE EUT								
Mode:		TX, CDMA PCS BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber A		T144 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Channel (1851.25 MHz)</b>										
3.703	47.1	V	3.0	44.9	36.8	1.0	-38.0	-13.0	-25.0	
5.554	41.2	V	3.0	49.3	36.3	1.0	-27.2	-13.0	-14.2	
7.405	59.8	V	3.0	51.8	36.6	1.0	-43.6	-13.0	-30.6	
9.256	50.0	V	3.0	54.2	37.0	1.0	-31.8	-13.0	-18.8	
11.108	62.5	V	3.0	56.3	36.9	1.0	-42.0	-13.0	-29.0	
12.959	53.2	V	3.0	58.2	36.0	1.0	-30.1	-13.0	-17.1	
14.810	52.1	V	3.0	60.1	34.8	1.0	-25.9	-13.0	-12.9	
3.703	48.9	H	3.0	45.0	36.8	1.0	-39.7	-13.0	-26.7	
5.554	42.9	H	3.0	49.9	36.3	1.0	-28.3	-13.0	-15.3	
7.405	64.6	H	3.0	52.9	36.6	1.0	-47.2	-13.0	-34.2	
9.256	55.7	H	3.0	55.3	37.0	1.0	-36.5	-13.0	-23.5	
11.108	67.8	H	3.0	55.9	36.9	1.0	-47.9	-13.0	-34.9	
12.959	59.6	H	3.0	57.2	36.0	1.0	-37.4	-13.0	-24.4	
14.810	60.4	H	3.0	60.4	34.8	1.0	-33.8	-13.0	-20.8	
<b>Mid Channel (1880.00 MHz)</b>										
3.760	47.6	V	3.0	45.1	36.8	1.0	-38.3	-13.0	-25.3	
5.640	41.0	V	3.0	49.4	36.3	1.0	-26.9	-13.0	-13.9	
7.520	59.1	V	3.0	52.0	36.6	1.0	-42.7	-13.0	-29.7	
9.400	51.2	V	3.0	54.4	37.0	1.0	-32.9	-13.0	-19.9	
11.280	64.2	V	3.0	56.5	36.8	1.0	-43.6	-13.0	-30.6	
13.160	53.4	V	3.0	58.4	35.9	1.0	-29.9	-13.0	-16.9	
15.040	54.3	V	3.0	60.1	34.7	1.0	-27.8	-13.0	-14.8	
3.760	49.5	H	3.0	45.2	36.8	1.0	-40.1	-13.0	-27.1	
5.640	41.5	H	3.0	50.1	36.3	1.0	-26.7	-13.0	-13.7	
7.520	65.9	H	3.0	53.1	36.6	1.0	-48.4	-13.0	-35.4	
9.400	58.4	H	3.0	55.4	37.0	1.0	-39.0	-13.0	-26.0	
11.280	65.8	H	3.0	55.8	36.8	1.0	-45.8	-13.0	-32.8	
13.160	61.9	H	3.0	57.6	35.9	1.0	-39.3	-13.0	-26.3	
15.040	63.2	H	3.0	60.7	34.7	1.0	-36.3	-13.0	-23.3	
<b>Hi Channel (1908.75 MHz)</b>										
3.818	43.6	V	3.0	45.2	36.7	1.0	-34.1	-13.0	-21.1	
5.726	40.6	V	3.0	49.5	36.3	1.0	-26.4	-13.0	-13.4	
7.635	60.7	V	3.0	52.1	36.6	1.0	-44.2	-13.0	-31.2	
9.544	51.3	V	3.0	54.6	37.1	1.0	-32.8	-13.0	-19.8	
11.453	63.5	V	3.0	56.7	36.8	1.0	-42.7	-13.0	-29.7	
13.361	55.8	V	3.0	58.6	35.8	1.0	-32.0	-13.0	-19.0	
15.270	59.4	V	3.0	59.5	34.8	1.0	-33.7	-13.0	-20.7	
3.818	45.6	H	3.0	45.3	36.7	1.0	-36.0	-13.0	-23.0	
5.726	46.7	H	3.0	50.2	36.3	1.0	-31.8	-13.0	-18.8	
7.635	65.0	H	3.0	53.2	36.6	1.0	-47.4	-13.0	-34.4	
9.544	57.4	H	3.0	55.6	37.1	1.0	-37.9	-13.0	-24.9	
11.453	66.5	H	3.0	55.7	36.8	1.0	-46.5	-13.0	-33.5	
13.361	63.2	H	3.0	57.9	35.8	1.0	-40.1	-13.0	-27.1	
15.270	65.8	H	3.0	60.1	34.8	1.0	-39.6	-13.0	-26.6	
Note: No other emissions were detected greater than -40 dBm to the limit										
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