



**FCC CFR47 PART 15 SUBPART C
CLASS II PERMISSIVE CHANGE**

CERTIFICATION TEST REPORT

FOR

SINGLE BAND 1XRTT CDMA PHONE WITH BLUETOOTH

FCC MODEL NUMBER: K53-01

FCC ID: OVF-K5301

REPORT NUMBER: 10U13126-2

ISSUE DATE: MARCH 25, 2010

Prepared for
**KYOCERA WIRELESS CORP.
10300 CAMPUS POINT DRIVE
SAN DIEGO, CA 92121, U.S.A.**

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
---	03/25/10	Initial Issue	T. Chan

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY	5
4.1. MEASURING INSTRUMENT CALIBRATION	5
4.2. SAMPLE CALCULATION	5
4.3. MEASUREMENT UNCERTAINTY	5
5. EQUIPMENT UNDER TEST	6
5.1. DESCRIPTION OF EUT	6
5.2. MAXIMUM OUTPUT POWER	6
5.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE	6
5.4. DESCRIPTION OF AVAILABLE ANTENNAS	6
5.5. SOFTWARE AND FIRMWARE	6
5.6. WORST-CASE CONFIGURATION	6
5.7. DESCRIPTION OF TEST SETUP	7
6. TEST AND MEASUREMENT EQUIPMENT	9
7. RADIATED TEST RESULTS	10
7.1. LIMITS AND PROCEDURE	10
7.2. TRANSMITTER ABOVE 1 GHz	11
7.2.1. BASIC DATA RATE GFSK MODULATION	11
7.2.2. ENHANCED DATA RATE 8PSK MODULATION	16
7.3. WORST-CASE BELOW 1 GHz	21
8. SETUP PHOTOS	24

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA WIRELESS CORP.
10300 CAMPUS POINT DRIVE
SAN DIEGO, CA 9212, U.S.A.

EUT DESCRIPTION: SINGLE BAND 1XRTT CDMA PHONE WITH BLUETOOTH

FCC MODEL: K53-01

SERIAL NUMBER: F0000036187877

DATE TESTED: MARCH 24-25, 2010

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	PASS

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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by 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 CCS By:

Tested By:



THU CHAN
EMC MANAGER
COMPLIANCE CERTIFICATION SERVICES

OLIVER SU
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, and FCC CFR 47 Part 15.

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:

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

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 a Bluetooth, and EDR featured Single band CDMA Phone that manufactured by Kyocera Wireless Corporation.

5.2. MAXIMUM OUTPUT POWER

The test measurement passed within $\pm 0.5\text{dBm}$ of the original output power.

5.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The major change filed under this application is adding Mechanical Enclosure.

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna, with a maximum gain of 0.05 dBi.

5.5. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was eng.bicent.20091118.144145.

The EUT driver software installed in the host support equipment during testing was Setup BTCLI, version 2.0.

The test utility software used during testing was FCC_Tools.

5.6. WORST-CASE CONFIGURATION

The EUT has been evaluated at X, Y, Z-axis, and AC/DC adapter. The highest measured output power was at X-Axis with AC/DC adapter.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop PC	DELL	D620	CCS # C01095	E2KWM3945ABG
AC Adapter	DELL	LA65NS0-00	CN-ODF23-71615-72M-2925	N/A
AC Adapter	Kyocera	TXTVL10148	N/A	DOC
Headset	Kyocera	N/A	N/A	N/A

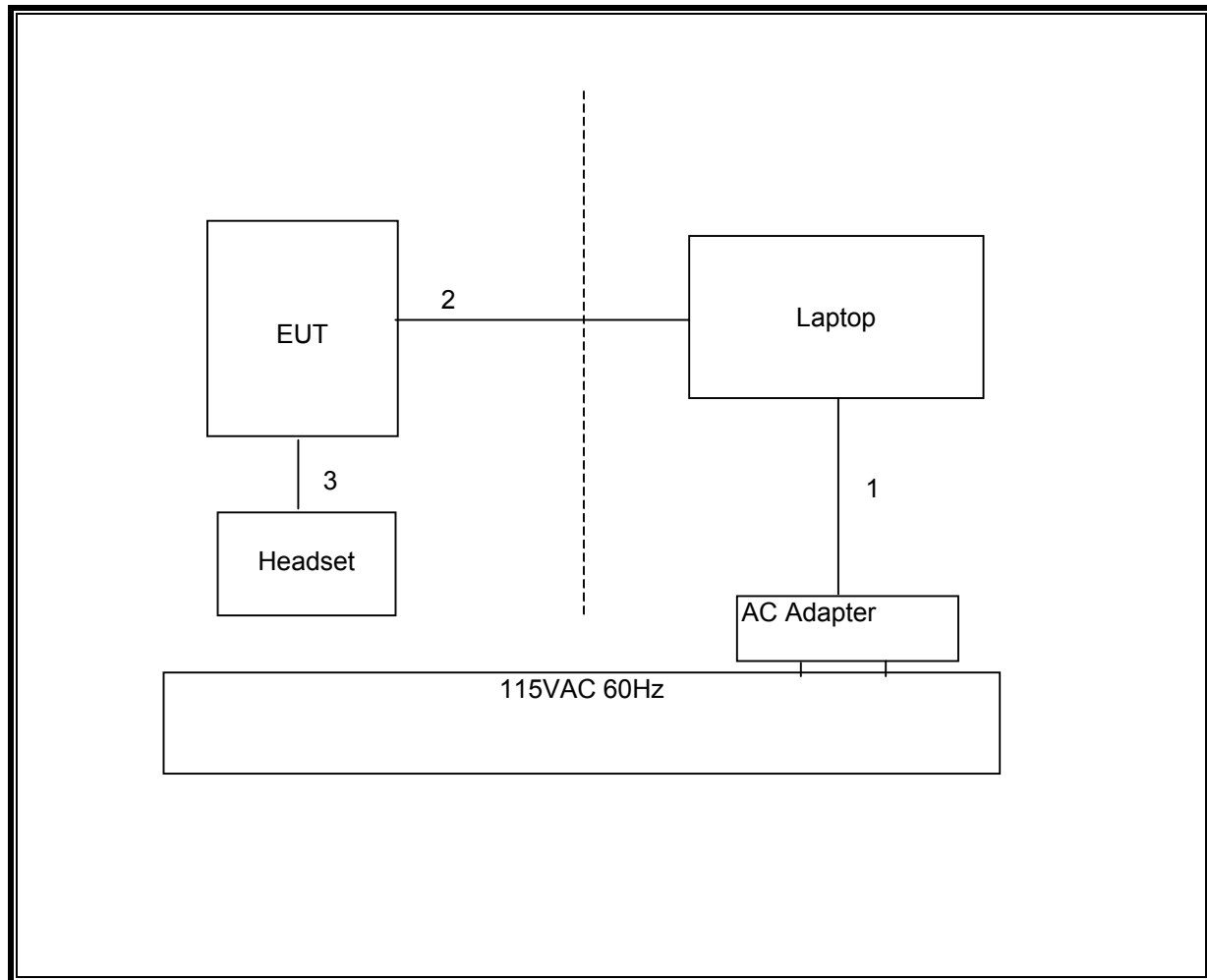
I/O CABLES

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	1.85 m	N/A
2	USB	1	Mini-USB	Un-Shielded	1 m	N/A
3	AUDIO	1	Mini-Jack	Un-Shielded	1.2 m	Volume Control on the Cable

TEST SETUP

The headset attached EUT is tested as stand-alone unit. The support laptop is used only to setup, change channels and modulations for the EUT.

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	C01063	08/04/10
Antenna, Horn, 18 GHz	ETS	3115	C00783	07/29/10
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/06/11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/31/10
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRM50702	N02684	CNR
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/14/10

7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

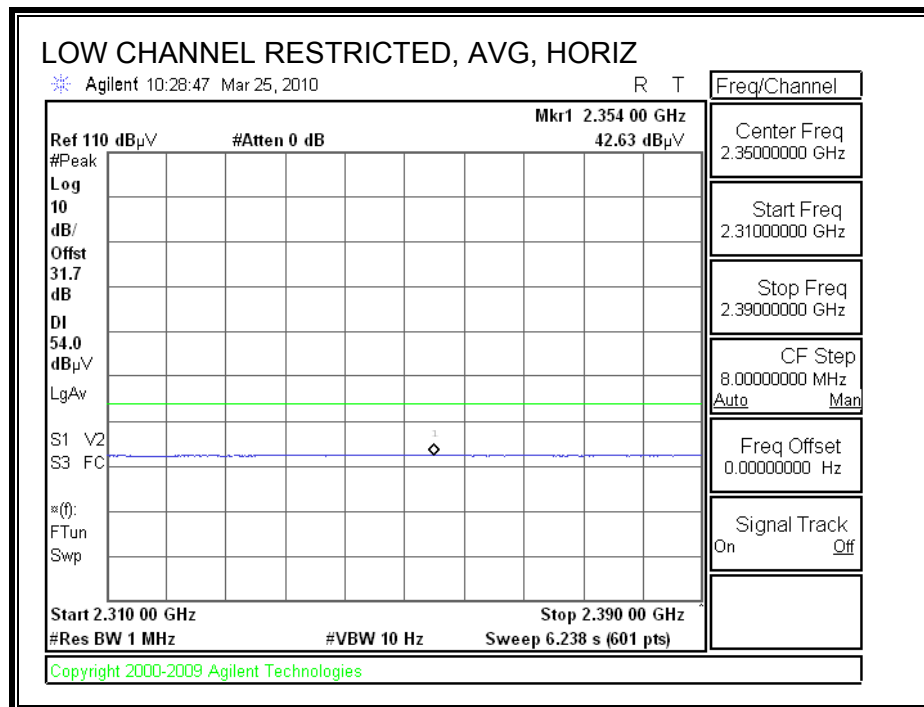
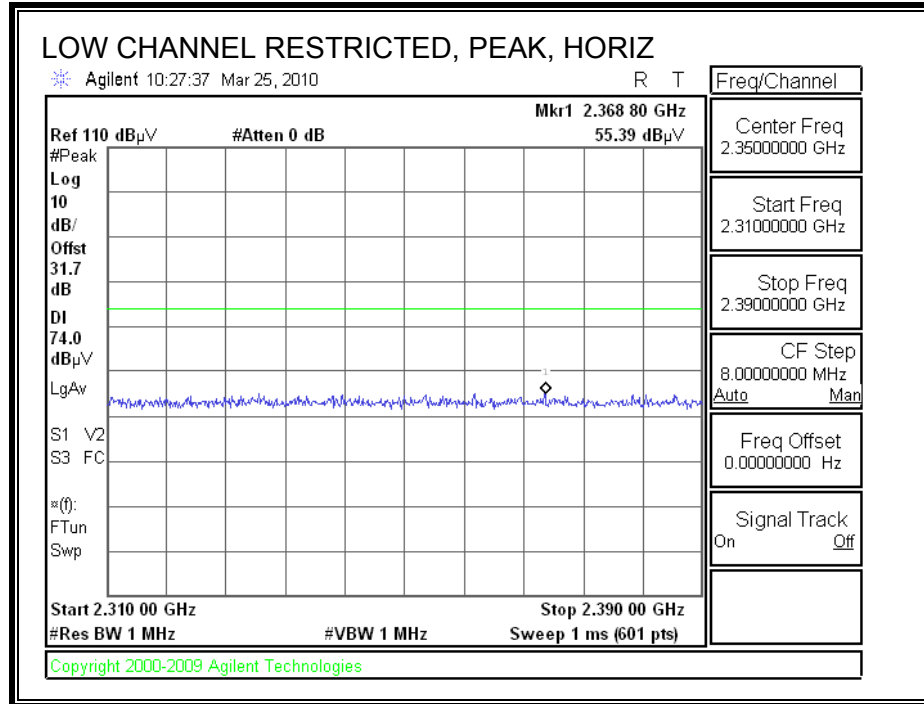
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

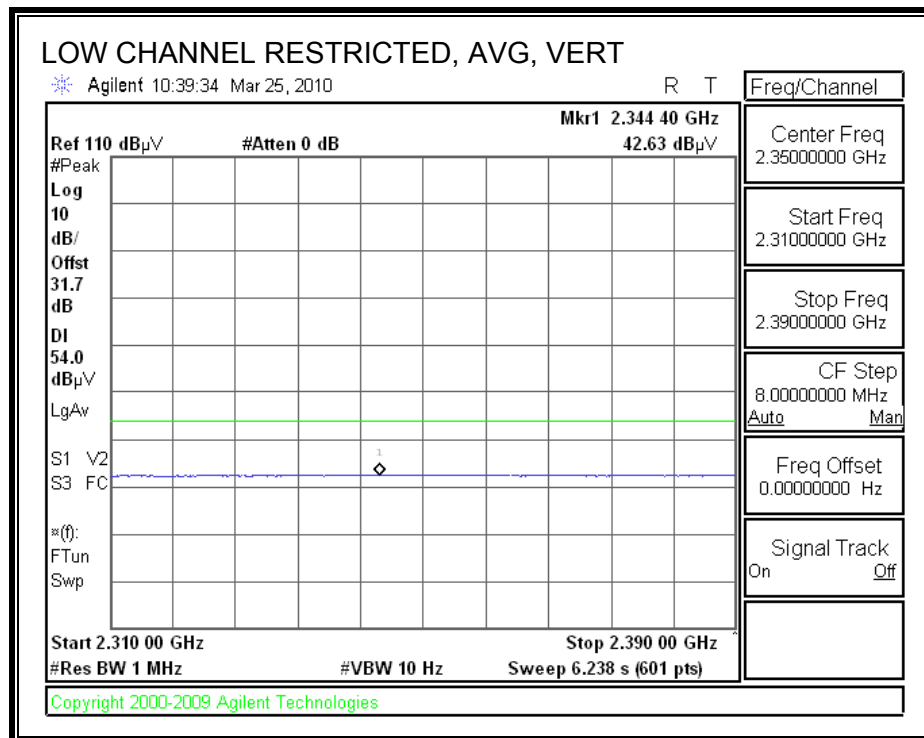
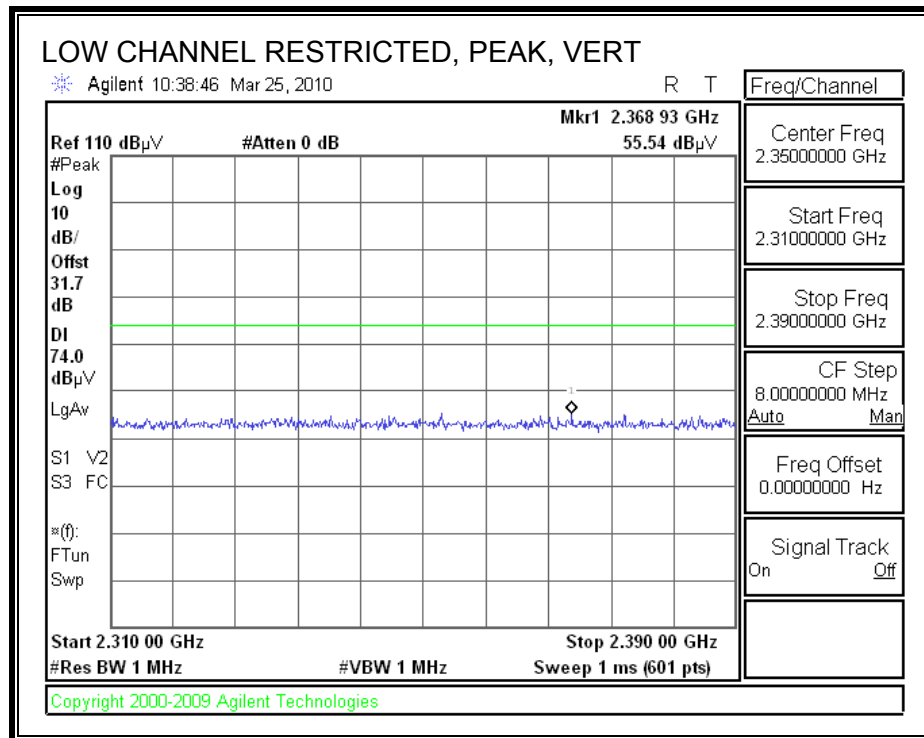
7.2. TRANSMITTER ABOVE 1 GHz

7.2.1. BASIC DATA RATE GFSK MODULATION

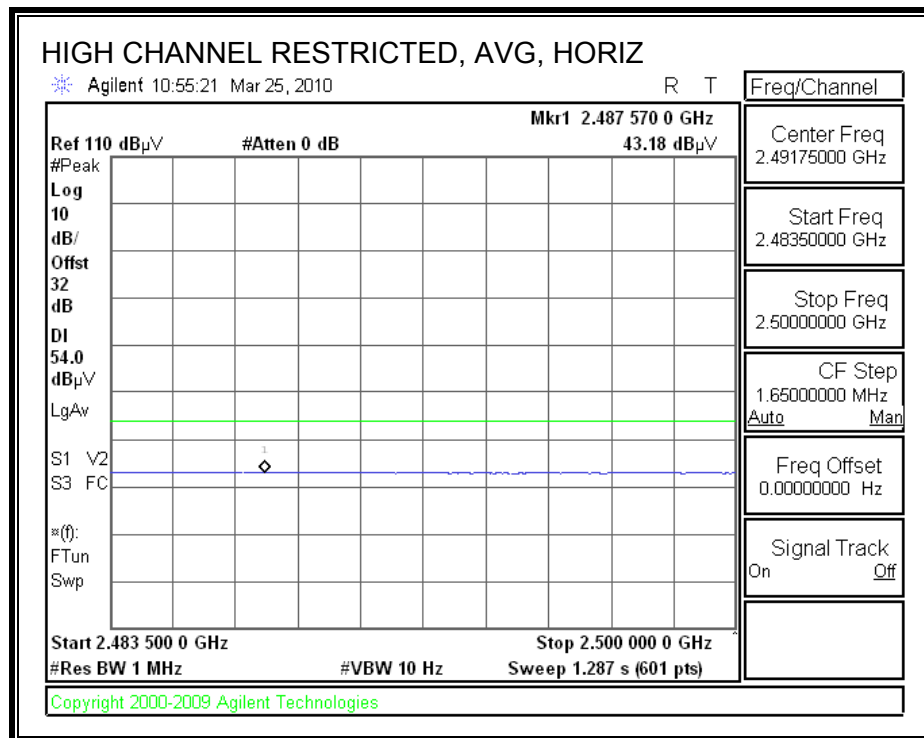
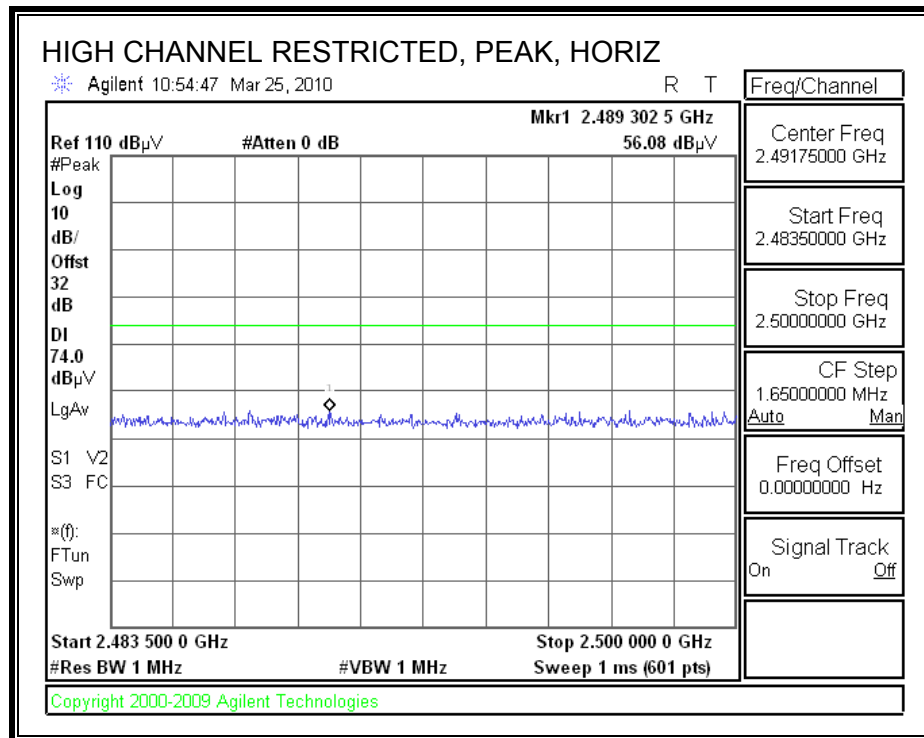
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



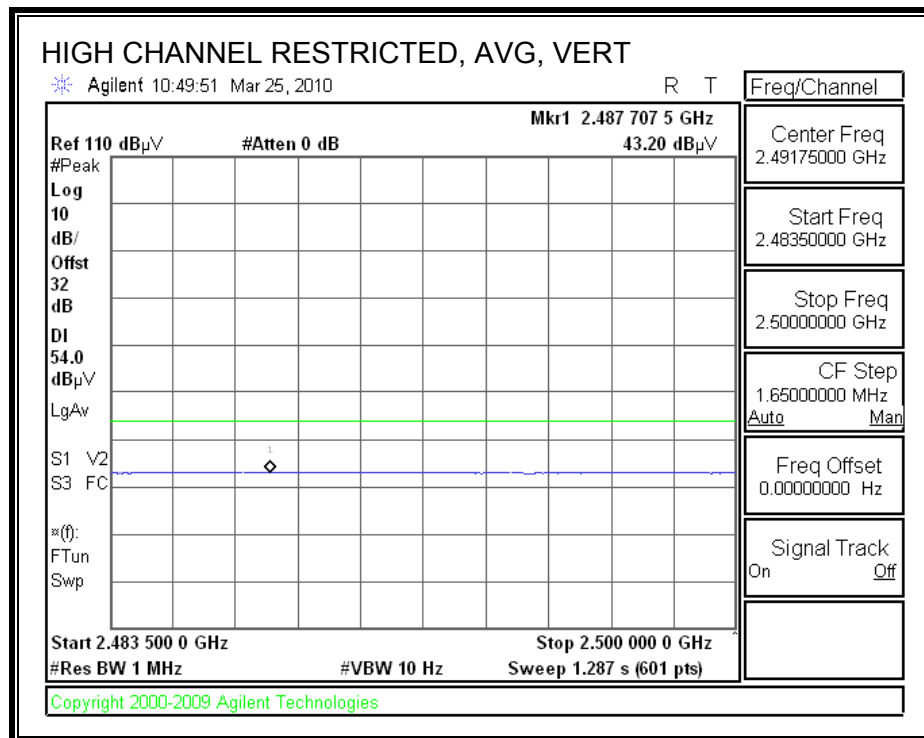
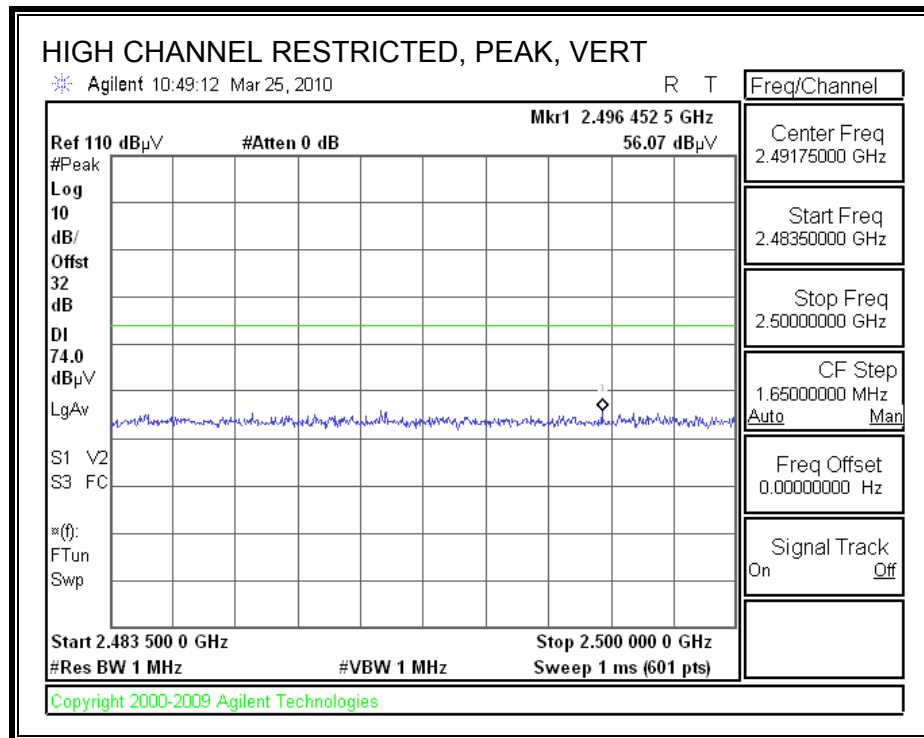
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



RESTRICTED BANEDGE (HIGH CHANNEL, HORIZONTAL)



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: Oliver Su
Date: 03/25/10
Project #: 10U13126
Company: Kyocera Wireless
EUT Description: Single Band 1XR TT CDMA Phone with Bluetooth
EUT M/N: K53-01
Test Target: FCC 15C
Mode Oper: Max Power with Bluetooth on

f Measurement Frequency Amp Preamp Gain Average Field Strength Limit
Dist Distance to Antenna D Corr Distance Correct to 3 meters Peak Field Strength Limit
Read Analyzer Reading Avg Average Field Strength @ 3 m Margin vs. Average Limit
AF Antenna Factor Peak Calculated Peak Field Strength Margin vs. Peak Limit
CL Cable Loss HPF High Pass Filter

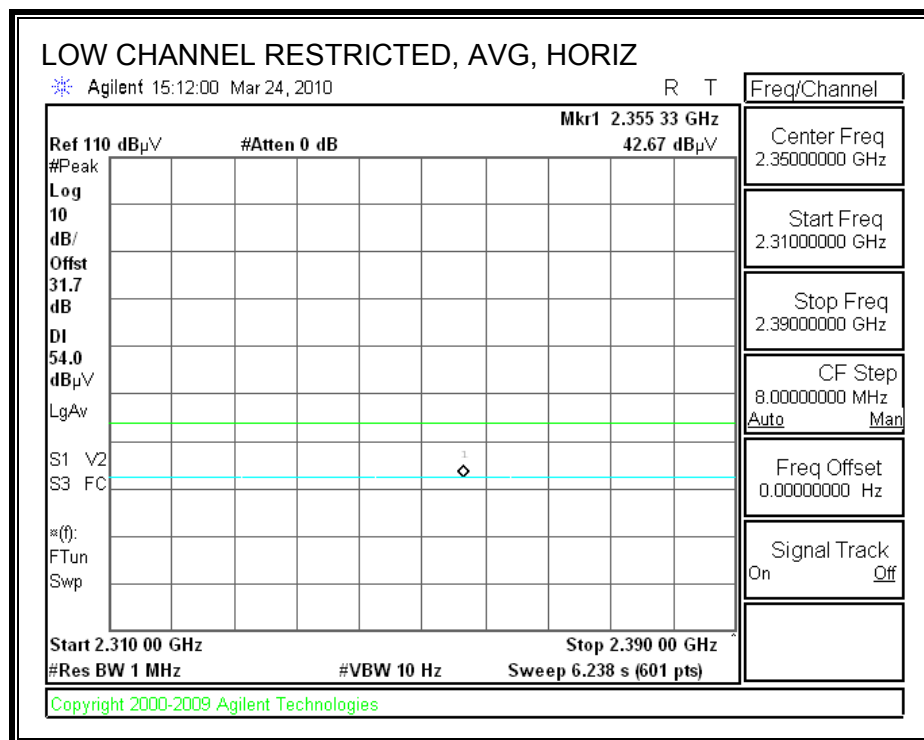
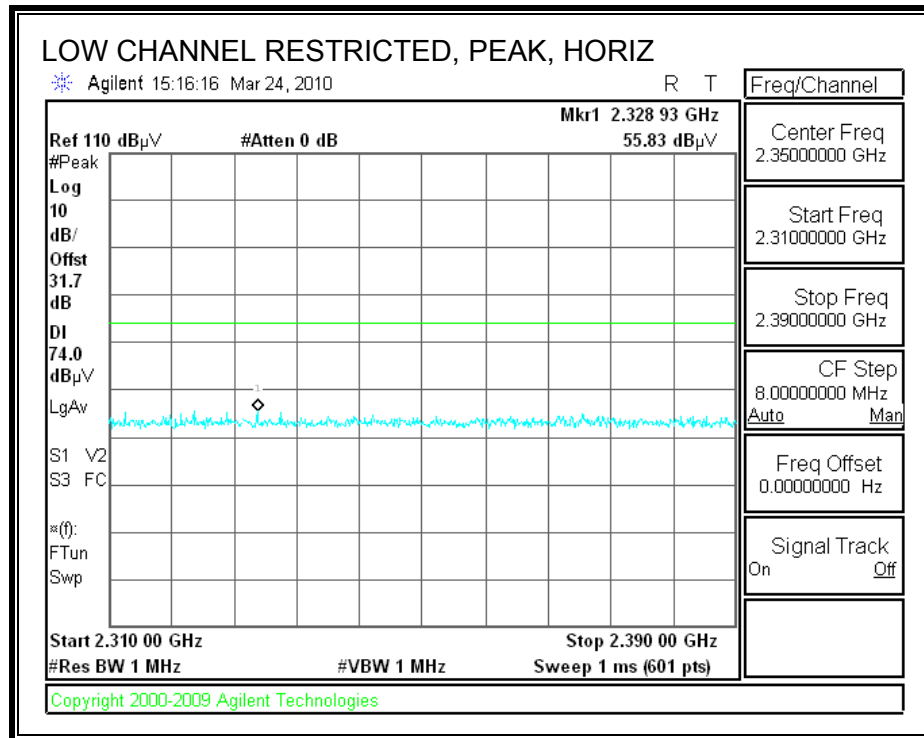
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Ftr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol V/H	Det. P/A/QP	Notes
Low ch, 2402 MHz													
4.804	3.0	38.7	32.8	5.8	-34.8	0.0	0.0	42.4	74.0	-31.6	H	P	
4.804	3.0	26.0	32.8	5.8	-34.8	0.0	0.0	29.7	54.0	-24.3	H	A	
4.804	3.0	38.9	32.8	5.8	-34.8	0.0	0.0	42.6	74.0	-31.4	V	P	
4.804	3.0	27.0	32.8	5.8	-34.8	0.0	0.0	30.7	54.0	-23.3	V	A	
Mid ch, 2441 MHz													
4.882	3.0	38.1	32.8	5.8	-34.9	0.0	0.0	41.9	74.0	-32.1	H	P	
4.882	3.0	25.5	32.8	5.8	-34.9	0.0	0.0	29.3	54.0	-24.7	H	A	
4.882	3.0	38.3	32.8	5.8	-34.9	0.0	0.0	42.1	74.0	-31.9	V	P	
4.882	3.0	25.6	32.8	5.8	-34.9	0.0	0.0	29.4	54.0	-24.6	V	A	
High ch, 2480 MHz													
4.960	3.0	37.9	32.9	5.9	-34.9	0.0	0.0	41.8	74.0	-32.2	H	P	
4.960	3.0	25.3	32.9	5.9	-34.9	0.0	0.0	29.2	54.0	-24.8	H	A	
4.960	3.0	38.9	32.9	5.9	-34.9	0.0	0.0	42.8	74.0	-31.2	V	P	
4.960	3.0	25.3	32.9	5.9	-34.9	0.0	0.0	29.2	54.0	-24.8	V	A	

Rev. 4.1.2.7

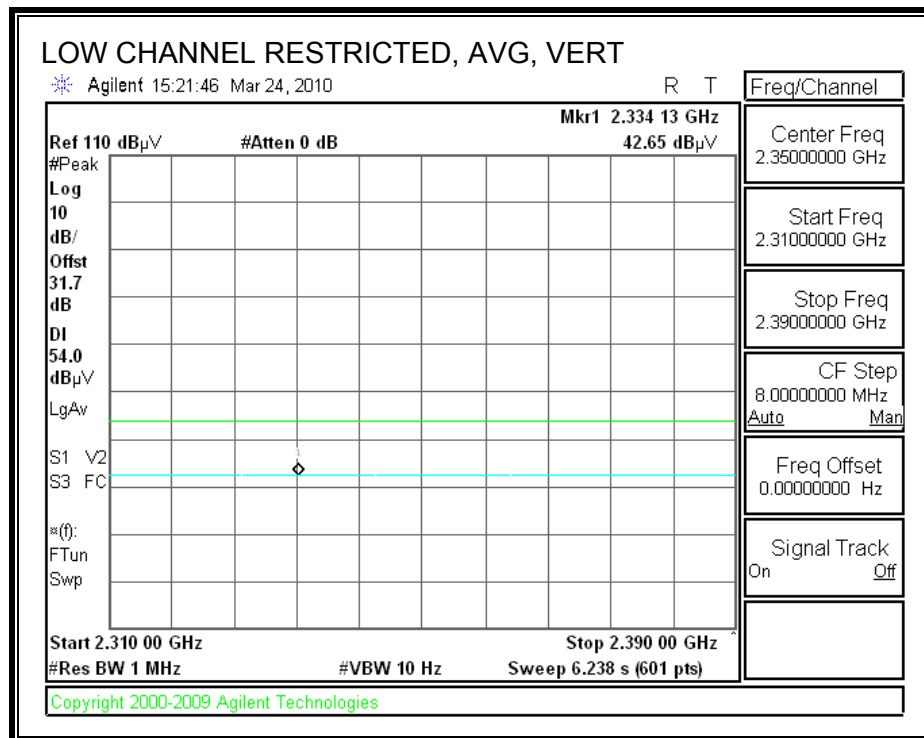
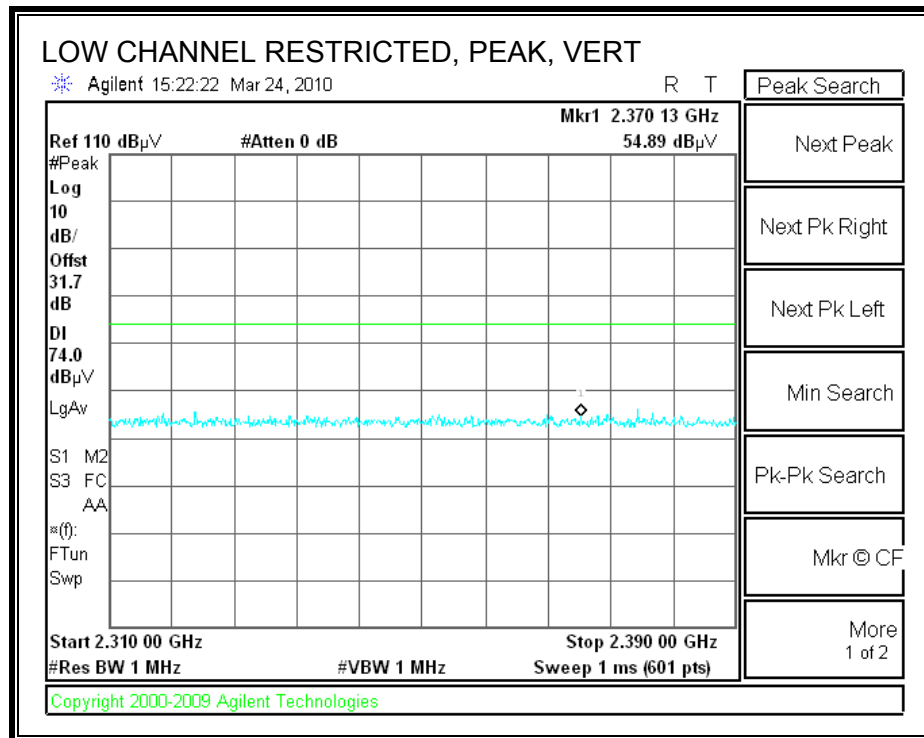
Note: No other emissions were detected above the system noise floor.

7.2.2. ENHANCED DATA RATE 8PSK MODULATION

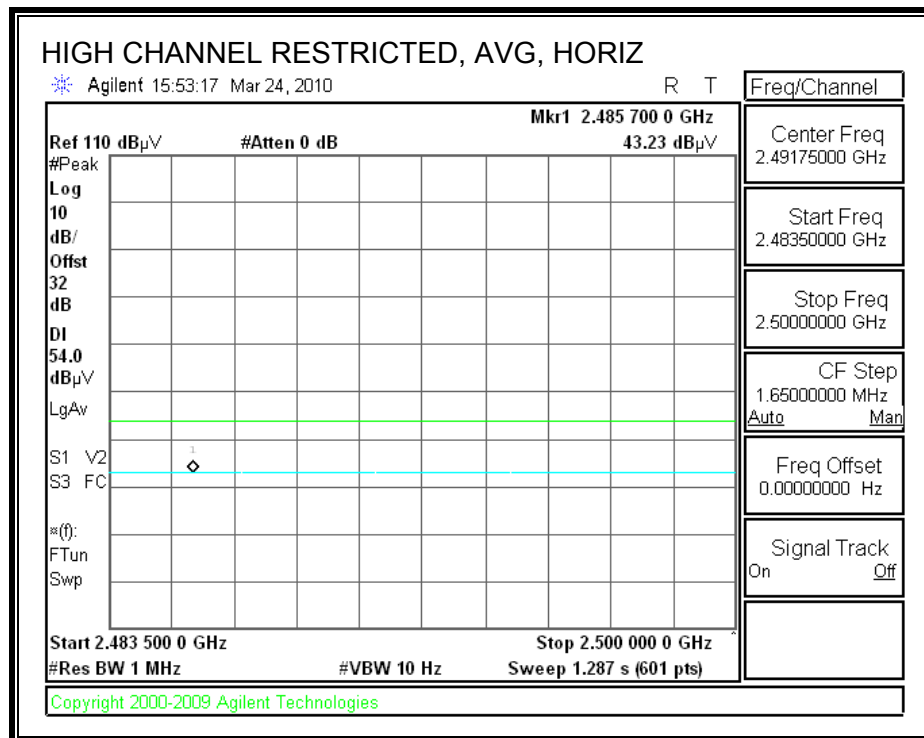
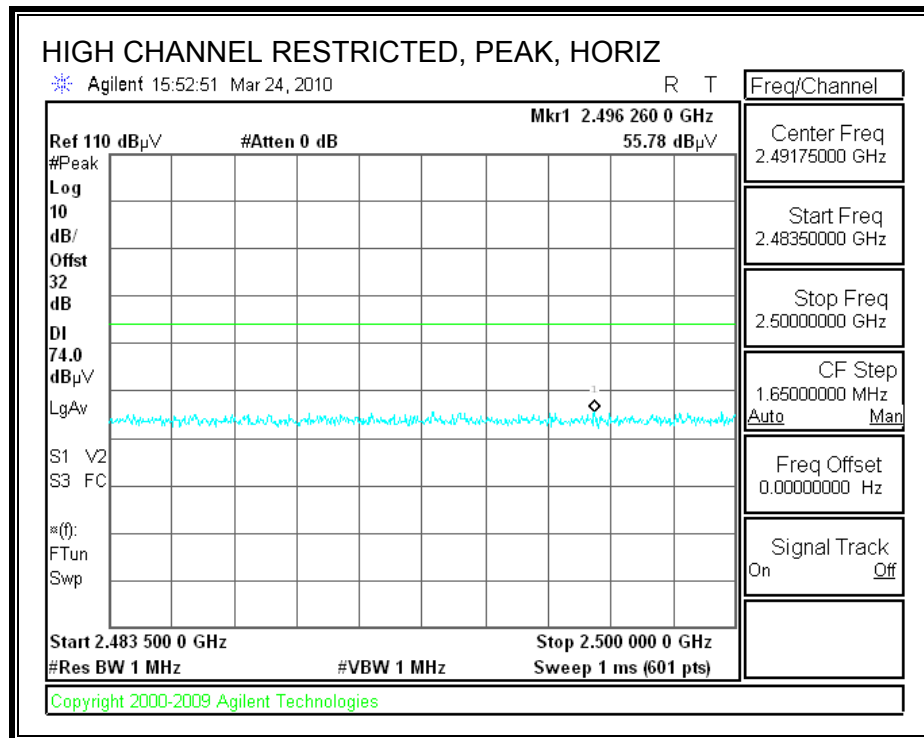
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



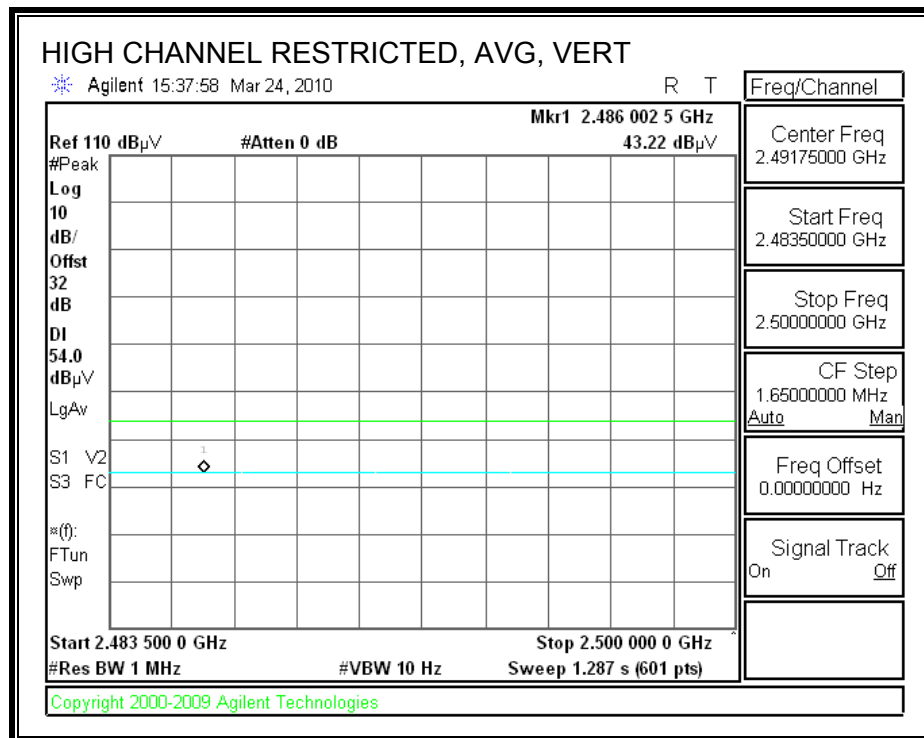
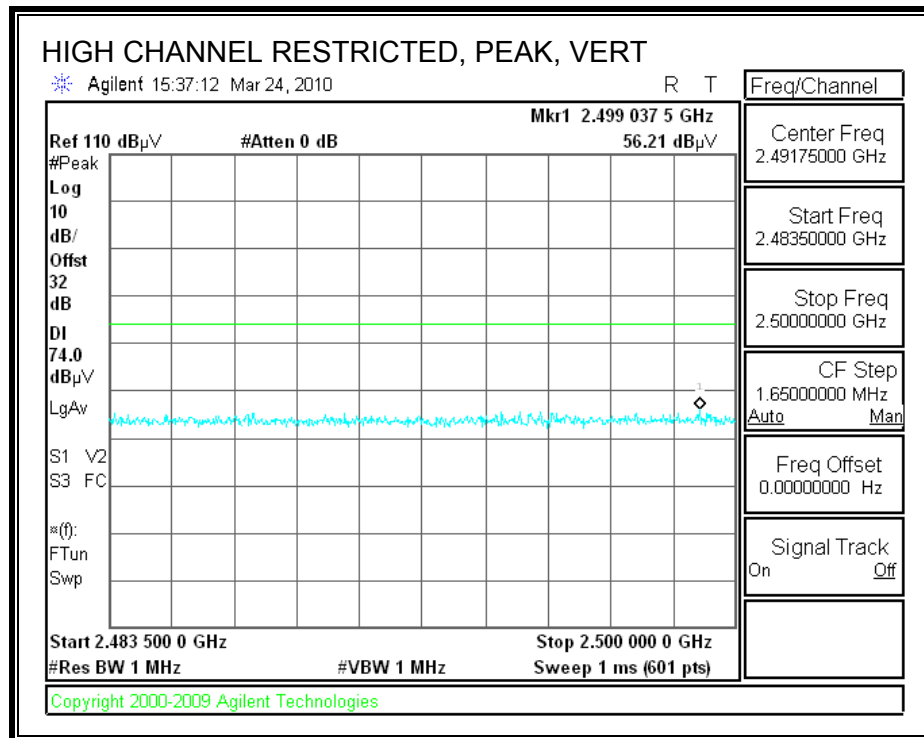
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



RESTRICTED BANEDGE (HIGH CHANNEL, HORIZONTAL)



RESTRICTED BANEDGE (HIGH CHANNEL, VERTICAL)

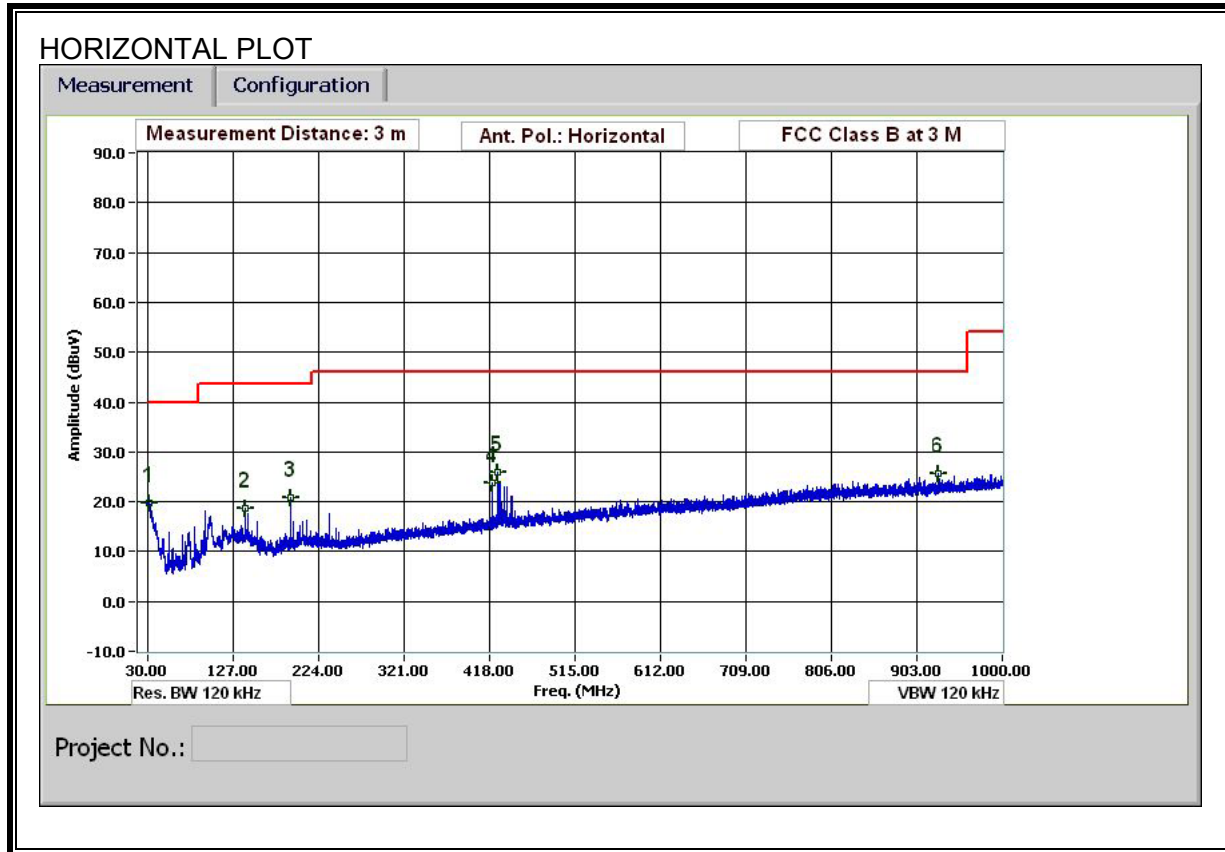


HARMONICS AND SPURIOUS EMISSIONS

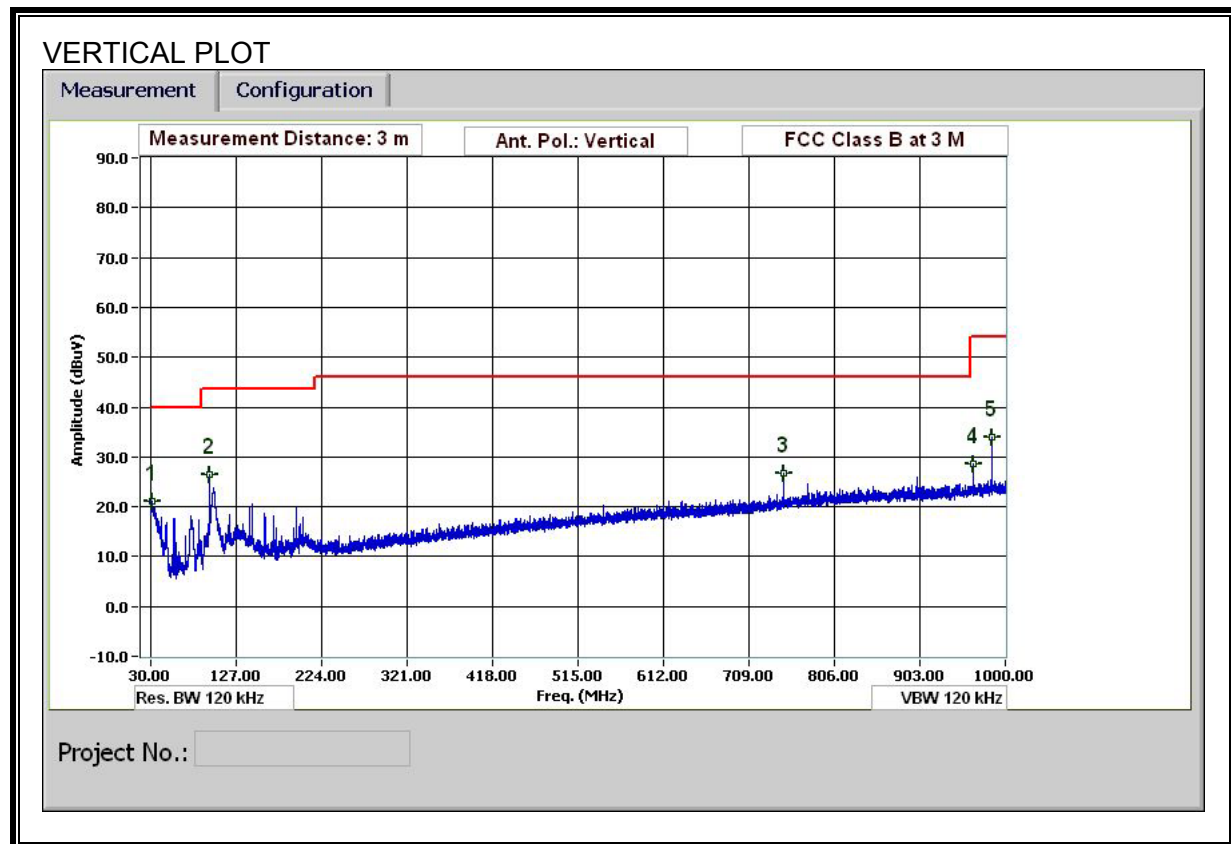
Company: Kyocera Wireless EUT Description: Single Band 1XRIT CDMA Phone with Bluetooth EUT M/N: K53-01 Test Target: FCC 15C Mode Oper: Max Power with EDR on and Bluetooth on													
f	Measurement Frequency	Amp	Preamp Gain	Average Field Strength Limit									
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Peak Field Strength Limit									
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Margin vs. Average Limit									
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Margin vs. Peak Limit									
CL	Cable Loss	HPF	High Pass Filter										
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low ch, 2402MHz													
4.804	3.0	38.2	32.8	5.8	-34.8	0.0	0.0	41.9	74.0	-32.1	H	P	
4.804	3.0	26.2	32.8	5.8	-34.8	0.0	0.0	29.9	54.0	-24.1	H	A	
4.804	3.0	38.8	32.8	5.8	-34.8	0.0	0.0	42.5	74.0	-31.5	V	P	
4.804	3.0	26.2	32.8	5.8	-34.8	0.0	0.0	29.9	54.0	-24.1	V	A	
Mid ch, 2441MHz													
4.882	3.0	38.4	32.8	5.8	-34.9	0.0	0.0	42.2	74.0	-31.8	H	P	
4.882	3.0	25.6	32.8	5.8	-34.9	0.0	0.0	29.4	54.0	-24.6	H	A	
4.882	3.0	38.5	32.8	5.8	-34.9	0.0	0.0	42.3	74.0	-31.7	V	P	
4.882	3.0	25.6	32.8	5.8	-34.9	0.0	0.0	29.4	54.0	-24.6	V	A	
High ch, 2480MHz													
4.960	3.0	38.3	32.9	5.9	-34.9	0.0	0.0	42.2	74.0	-31.8	H	P	
4.960	3.0	25.5	32.9	5.9	-34.9	0.0	0.0	29.4	54.0	-24.6	H	A	
4.960	3.0	38.0	32.9	5.9	-34.9	0.0	0.0	41.9	74.0	-32.1	V	P	
4.960	3.0	25.4	32.9	5.9	-34.9	0.0	0.0	29.3	54.0	-24.7	V	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

7.3. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



HORIZONTAL AND VERTICAL DATA

30-1000MHz Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: Oliver Su
Date: 03/24/10
Project #: 10U13126
Company: Kyocera Wireless
EUT Description: Single Band 1XR TT CDMA Phone with Bluetooth
EUT M/N: K53-01
Test Target: FCC 15C
Mode Oper: Max Power with EDR on & Bluetooth on

f Measurement Frequency Amp Preamp Gain Margin Margin vs. Limit
Dist Distance to Antenna D Corr Distance Correct to 3 meters
Read Analyzer Reading Filter Filter Insert Loss
AF Antenna Factor Corr. Calculated Field Strength
CL Cable Loss Limit Field Strength Limit

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Horizontal													
31.200	3.0	29.1	19.8	0.5	29.7	0.0	0.0	19.7	40.0	-20.3	H	P	
141.365	3.0	33.7	13.1	1.1	29.4	0.0	0.0	18.6	43.5	-24.9	H	P	
192.007	3.0	37.3	11.4	1.2	29.0	0.0	0.0	21.0	43.5	-22.5	H	P	
420.976	3.0	35.9	15.4	2.0	29.4	0.0	0.0	23.9	46.0	-22.1	H	P	
426.616	3.0	38.0	15.5	2.0	29.4	0.0	0.0	26.0	46.0	-20.0	H	P	
927.637	3.0	29.2	21.8	3.1	28.5	0.0	0.0	25.5	46.0	-20.5	H	P	
Vertical													
30.840	3.0	30.3	20.0	0.5	29.7	0.0	0.0	21.1	40.0	-18.9	V	P	
96.723	3.0	45.8	9.2	0.9	29.5	0.0	0.0	26.4	43.5	-17.1	V	P	
748.350	3.0	33.2	20.1	2.7	29.4	0.0	0.0	26.6	46.0	-19.4	V	P	
963.759	3.0	31.8	22.2	3.2	28.5	0.0	0.0	28.7	54.0	-25.3	V	P	
985.119	3.0	36.9	22.4	3.2	28.4	0.0	0.0	34.1	54.0	-19.9	V	P	

Rev. 1.27.09

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