



**FCC CFR47 PART 15 SUBPART C
CERTIFICATION TEST REPORT**

FOR

DUAL BAND PHONE CDMA 1XRTT /EVDO WITH BLUETOOTH

MODEL NUMBER: E2000

FCC ID: OVFK60-E2-5G5

REPORT NUMBER: 07U11133-2

ISSUE DATE: JUNE 21, 2007

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

Prepared by
**COMPLIANCE CERTIFICATION SERVICES
47173 BENICIA STREET
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/08/07	Initial Issue	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA WIRELESS CORP.
10300 CAMPUS POINT DRIVE
SAN DIEGO, CA 92121, U.S.A.

EUT DESCRIPTION: DUAL BAND PHONE CDMA, 1XRTT, XEVDO, BLEETOOTH

MODEL: E2000

SERIAL NUMBER: 01979

DATE TESTED: JUNE 18-19, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. 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:

Tested By:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES



THANH NGUYEN
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. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Radiated Emission Above 2000 MHz	+/- 4.3 dB
Power Line Conducted Emission	+/- 2.9 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Dual Band Phone CDMA, 1xRTT, EVDO with Bluetooth transceiver.

The radio module is manufactured by Kyocera Wireless.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna for transmitting and receiving.

5.3. SOFTWARE AND FIRMWARE

The EUT driver software installed in the host support equipment during testing was StargraphitePassThru.exe and BtCLI BlueSuite, rev. 1.19.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case is determined as the position with the highest output power. The highest measured output power was at X Position (Lay down.position).

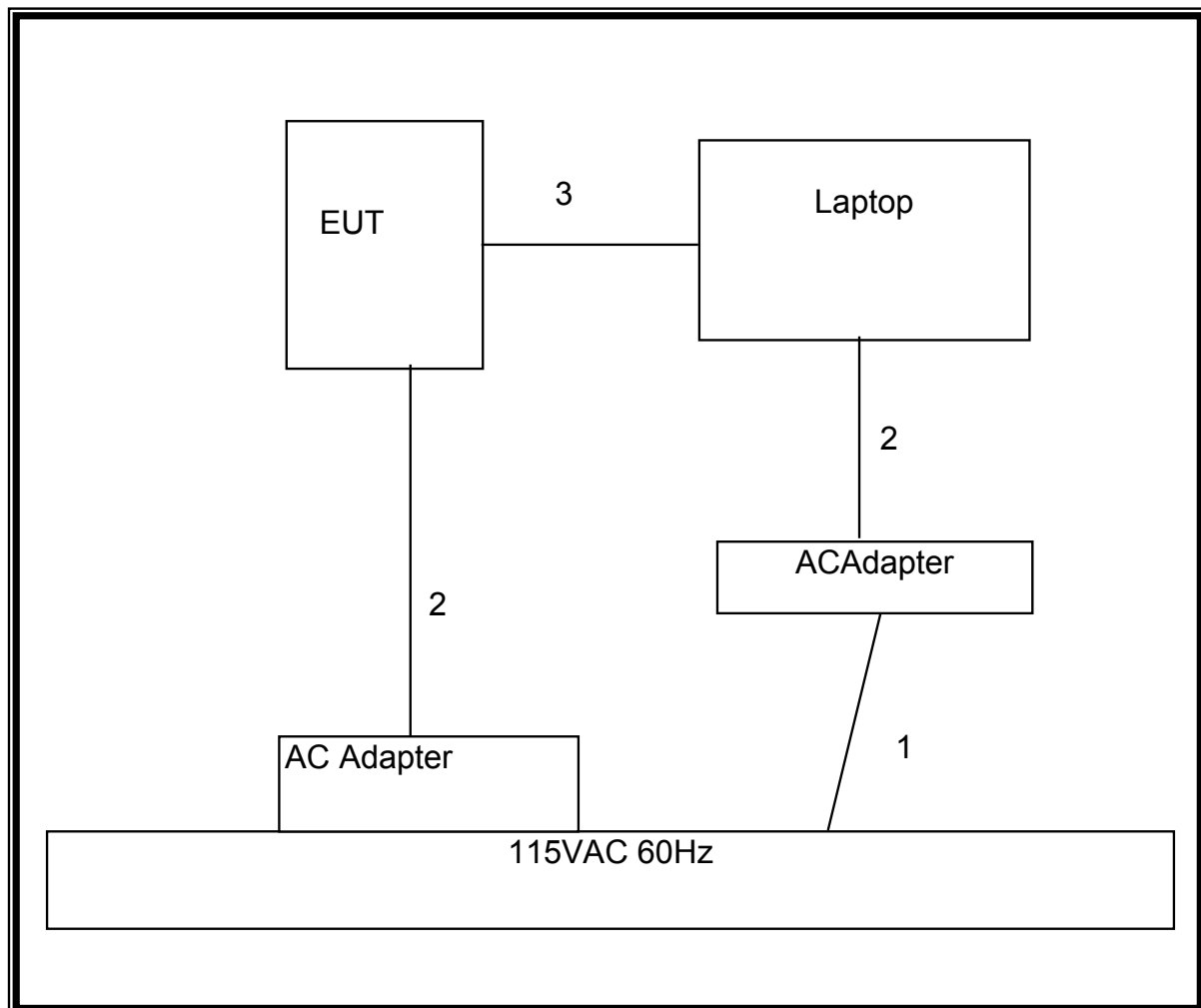
5.5. DESCRIPTION OF TEST SETUP**SUPPORT EQUIPMENT**

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Dell	PP05L	CN-0G5152-48643-457-7191	N/A
AC adapter	Dell	PA-1900-02D2	CN0017809-71615-5C2-170C	NA

I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC Power	1	115V US	Unshielded	2m	N/A
2	DC	2	DC	Unshielded	1m	N/A
3	USB	1	USB	Unshielded	1m	N/A

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	Serial Number	Cal Due
EMI Test Receiver	R & S	ESHS 20	827129/006	6/3/2008
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/2007
Spectrum Analyzer, 1.8 GHz	Agilent / HP	8591A	3009A00791	10/12/2007
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	8/13/2007
Preamplifier, 1300 MHz	Agilent / HP	8447D	1937A02062	1/23/2007
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	US42070220	11/26/2007
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	8/1/2007
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/2008

7. LIMITS AND RESULTS

7.1. RADIATED EMISSIONS

7.1.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS

LIMITS

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

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.

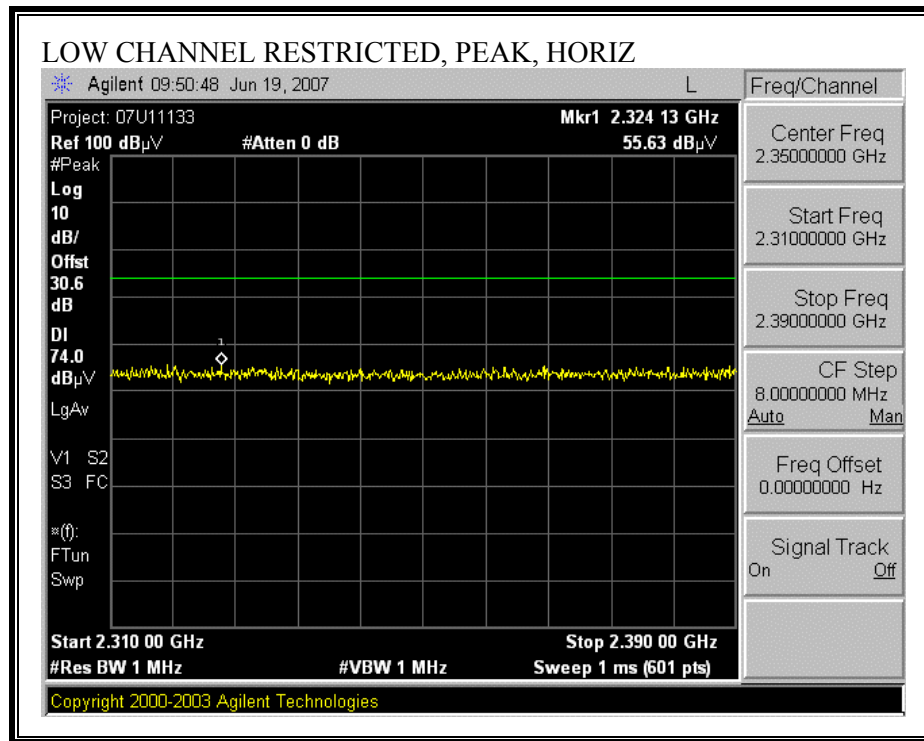
For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

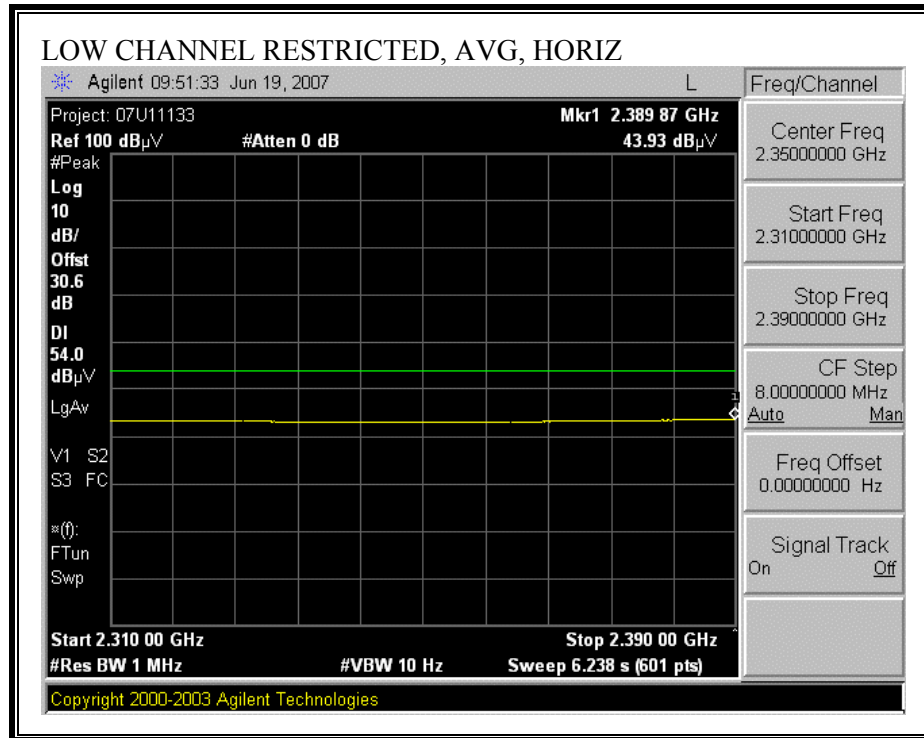
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

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.

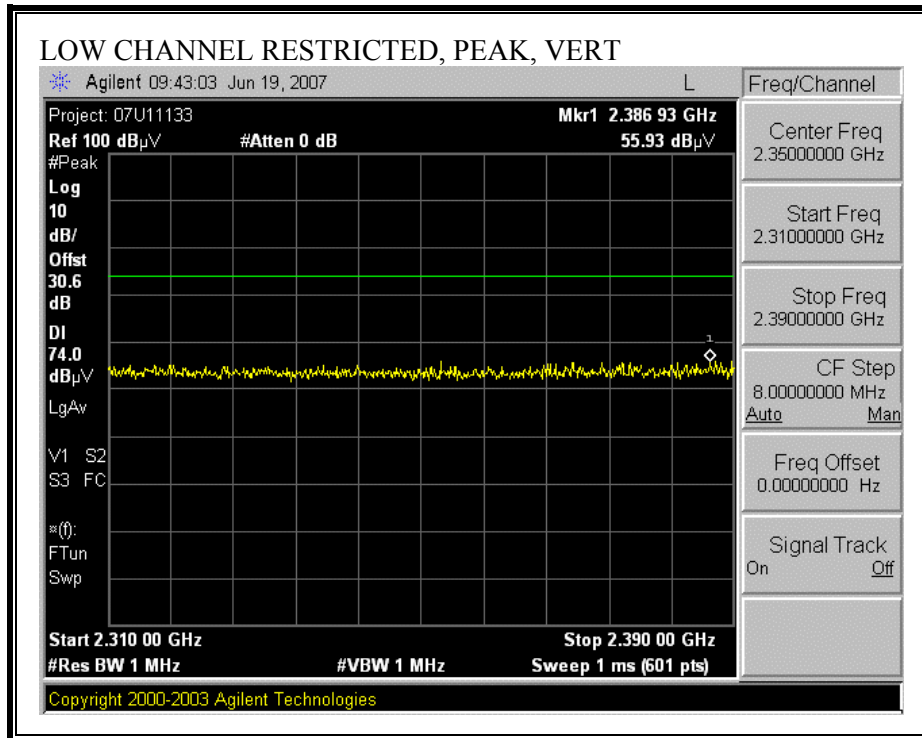
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each 5 GHz band.

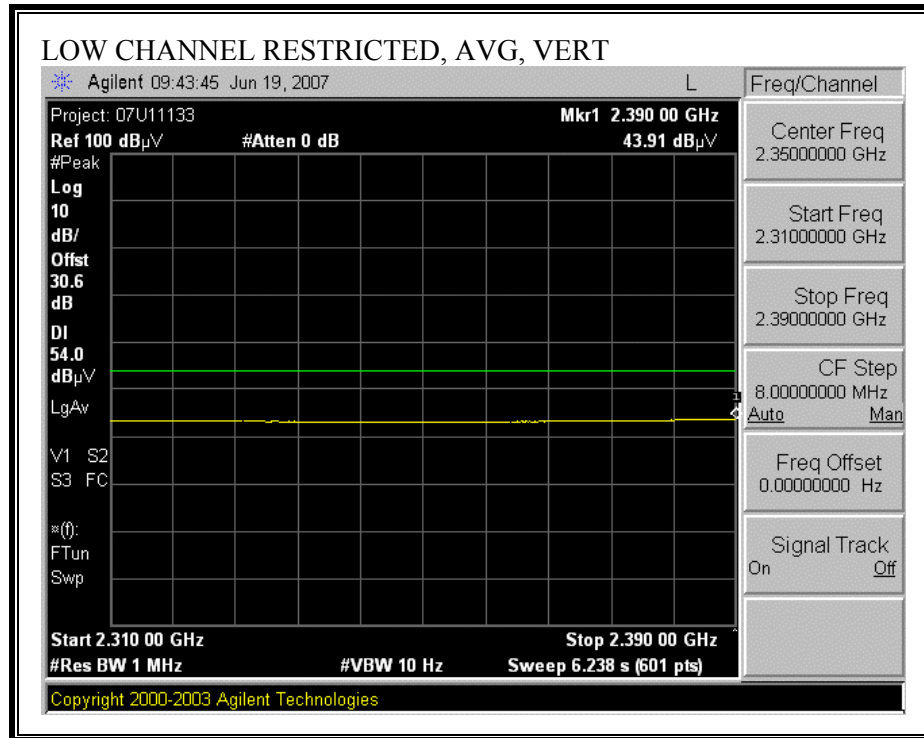
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

7.1.2. TRANSMITTER RADIATED EMISSIONS ABOVE 1 GHZ**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

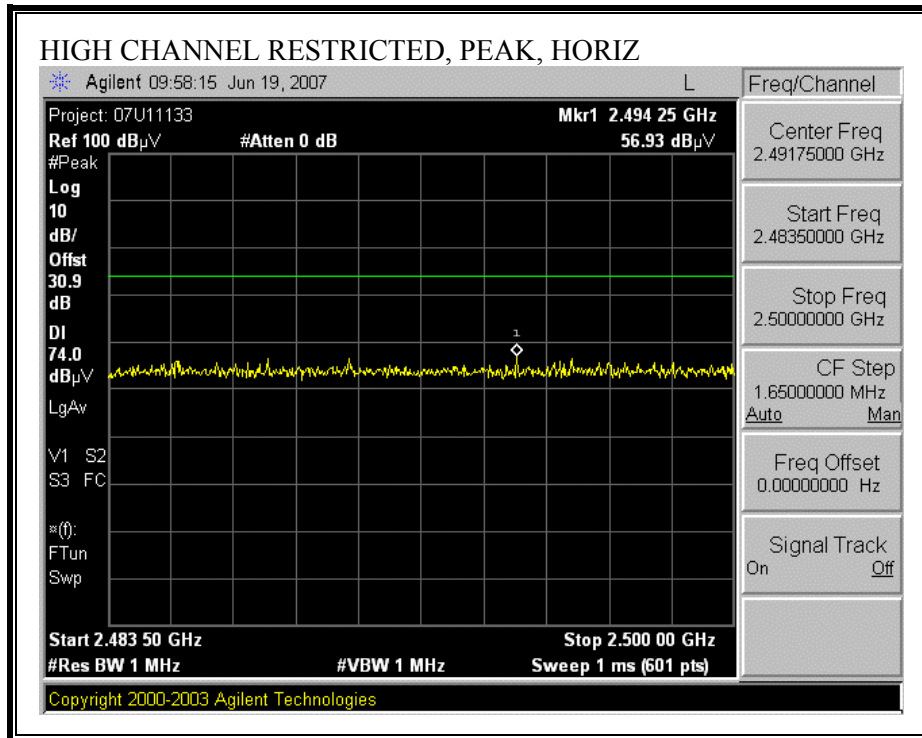


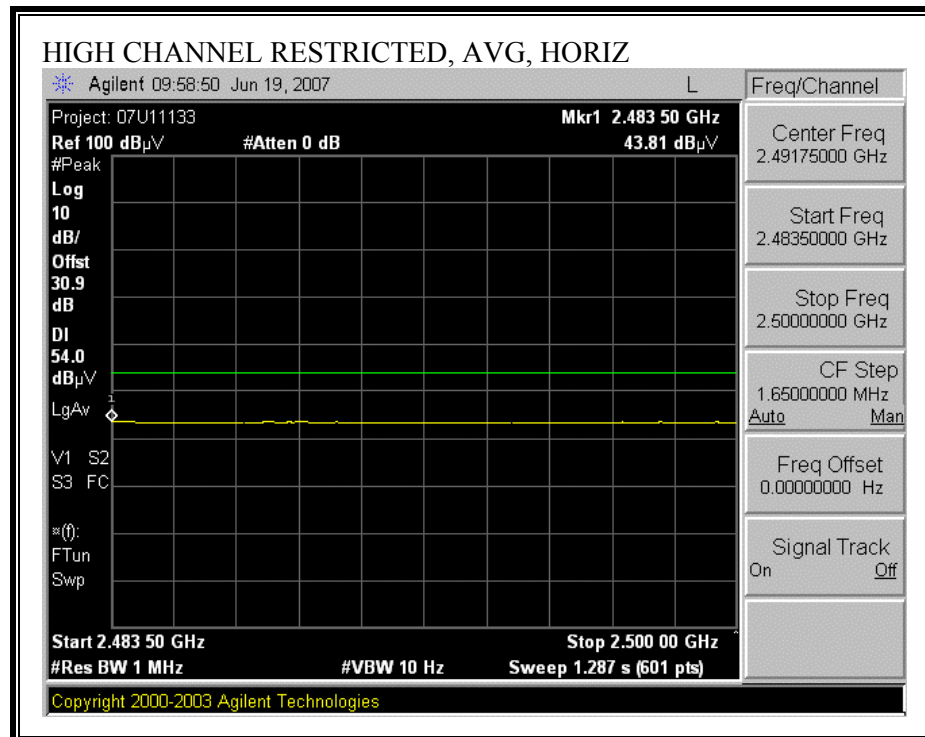
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



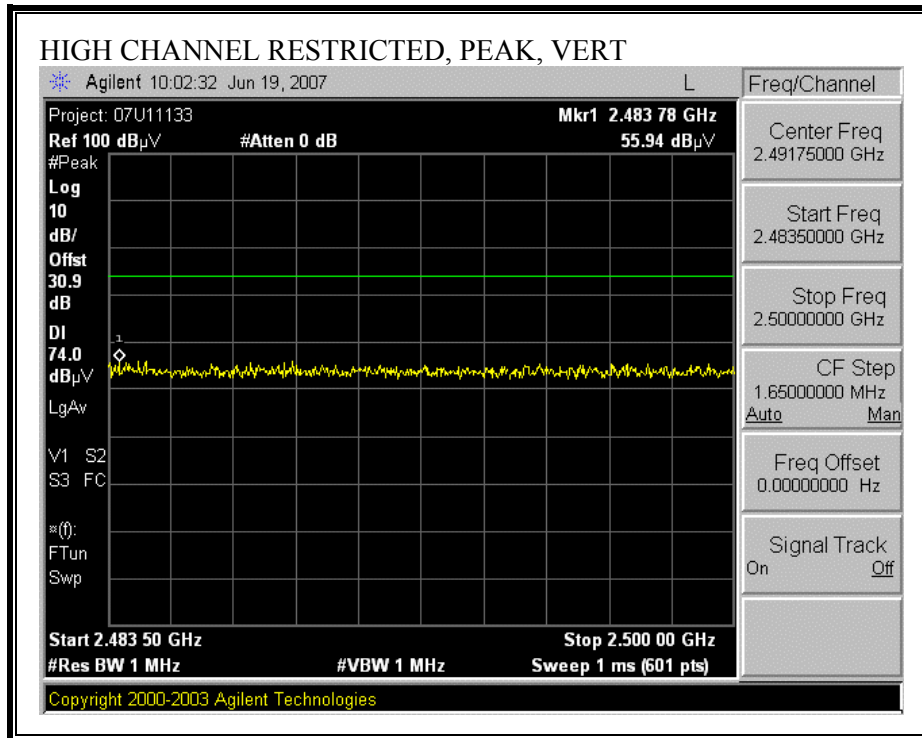


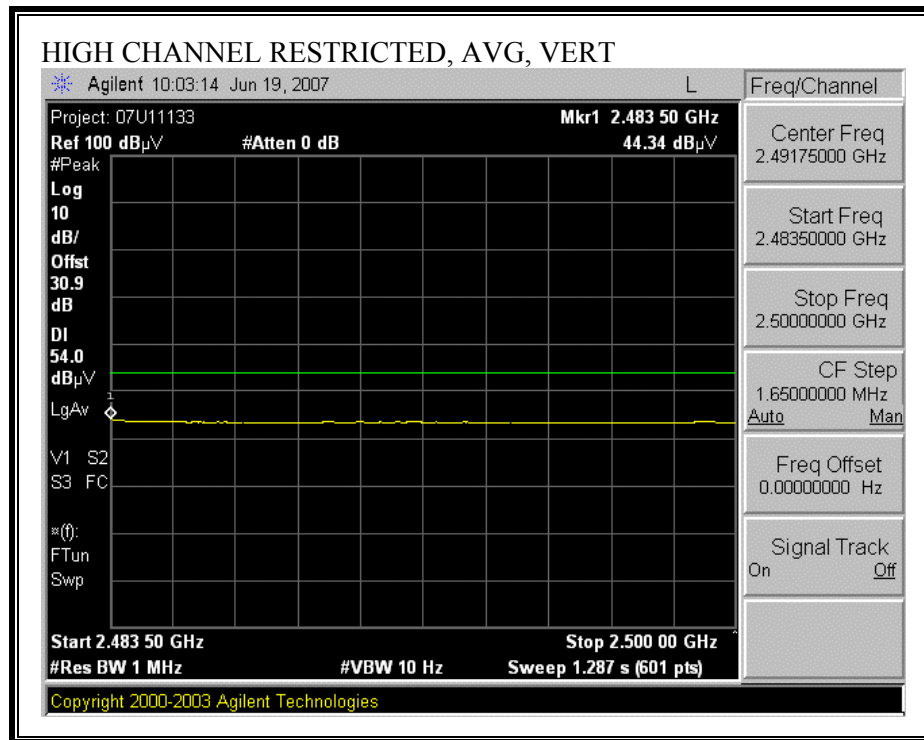
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





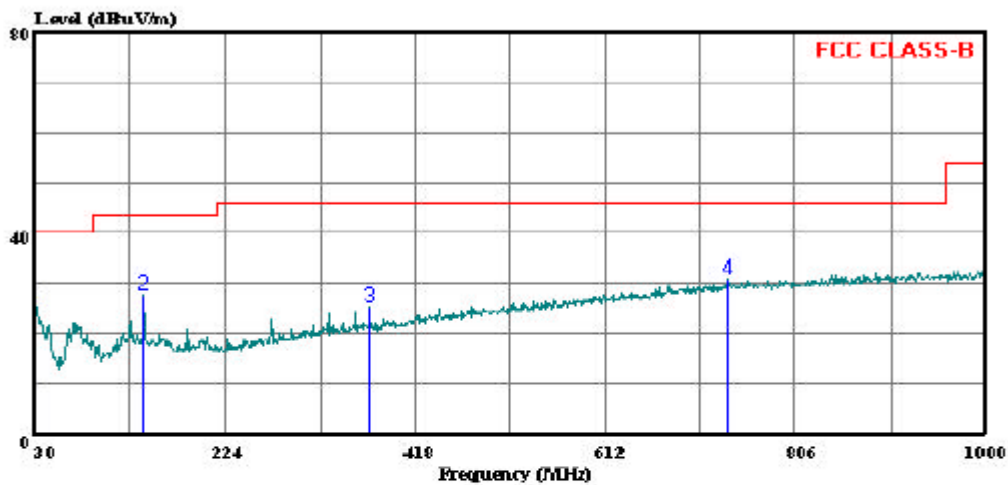
HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement																	
Compliance Certification Services, Fremont 5 meter Chamber A																	
Company: KYOCERA WIRELESS																	
Project #: 07U11133																	
Date: 06/19/2007																	
Test Engineer: Thanh Nguyen																	
Configuration: EUT only																	
Mode: Transmit Bluetooth																	
Test Equipment:																	
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit					
T60; S/N: 2238 @3m			T34 HP 8449B									FCC 15.205					
Hi Frequency Cables																	
2 foot cable			3 foot cable			12 foot cable			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz; VBW=10Hz		
Thanh 177079008						William 187209004											
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filt dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)		
High Ch																	
4.910	3.0	42.5	29.6	33.1	3.3	-34.8	0.0	0.0	44.1	31.2	74	54	-29.9	-22.8	Noise floor/V		
4.910	3.0	42.3	29.5	33.1	3.3	-34.8	0.0	0.0	43.9	31.1	74	54	-30.1	-22.9	Noise floor/H		
Mid Ch																	
4.882	3.0	41.9	29.7	33.1	3.3	-34.8	0.0	0.0	43.5	31.2	74	54	-30.5	-22.8	Noise floor/V		
4.882	3.0	42.3	30.2	33.1	3.3	-34.8	0.0	0.0	43.9	31.8	74	54	-30.1	-22.2	Noise floor/H		
Low Ch																	
4.804	3.0	41.2	29.5	33.0	3.3	-34.8	0.0	0.0	42.6	31.0	74	54	-31.4	-23.0	Noise floor/V		
4.804	3.0	42.6	30.2	33.0	3.3	-34.8	0.0	0.0	44.0	31.7	74	54	-30.0	-22.3	Noise floor/H		
Spurious Emissions																	
1.062	3.0	57.4	39.9	25.6	1.8	-38.2	0.0	0.0	46.6	29.2	74	54	-27.4	-24.8	H		
1.140	3.0	50.7	44.8	25.8	1.9	-38.1	0.0	0.0	40.3	34.4	74	54	-33.7	-19.6	H		
1.100	3.0	49.8	44.3	25.7	1.8	-38.1	0.0	0.0	39.2	33.7	74	54	-34.8	-20.3	V		
No other Emissions were detected above noise floor.																	
Rev. 5.1.6																	
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit				
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit				
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit				
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit				
CL	Cable Loss					HPF	High Pass Filter										

7.1.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)****HORIZONTAL PLOT& DATA**

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 13 File#: 07u11133 1.EMI Date: 06-19-2007 Time: 18:01:23



Trace: 12

Ref Trace:

Condition: FCC CLASS-B 3m B-5M CHAMBER 012007 HORIZONTAL
Engineer : Can Ming Chung
Company : Kyocera Wireless
Project # : 07U11133
EUT Description : Dual Band 1xRTT/EVDO REV0.CDMA
Test Configuration: BUT with power adapter
Test Target : FCC CLASS B
Mode of Operation : Tx Bluetooth worst case

Page: 1

	Read			Limit	Over	
Freq	Level	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.000	32.40	-5.76	26.64	40.00	-13.36 Peak
2	141.550	40.90	-13.35	27.55	43.50	-15.95 Peak
3	371.440	35.80	-10.53	25.27	46.00	-20.73 Peak
4	736.160	33.60	-2.90	30.70	46.00	-15.30 Peak

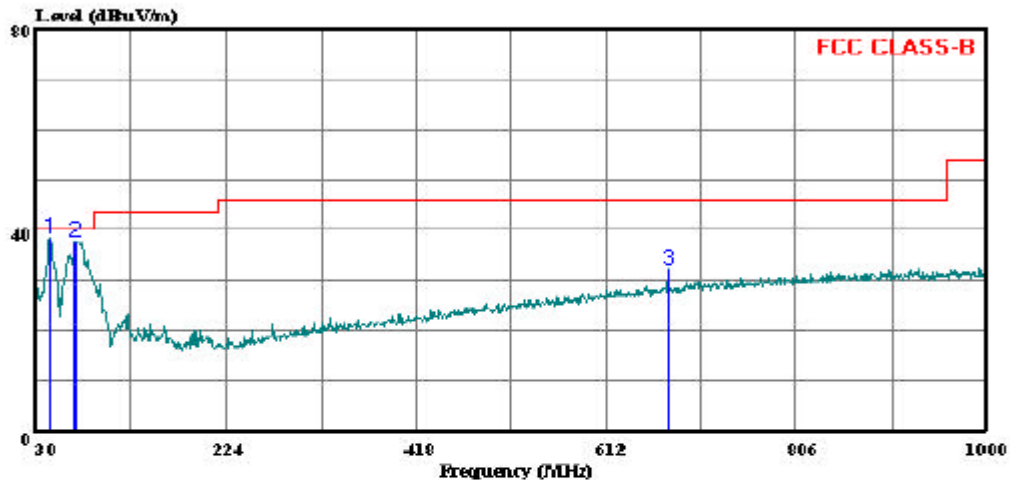
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 11 File#: 07u11133 1.EMI Date: 06-19-2007 Time: 17:57:04



Trace: 1

Ref Trace:

Condition: FCC CLASS-B 3m B-5M CHAMBER 012007 VERTICAL
Engineer : Can Ming Chung
Company : Kyocera Wireless
Project # : 07U11133
EUT Description : Dual Band 1xRTT/EVDO REV0.CDMA
Test Configuration: EUT with power adapter
Test Target : FCC CLASS B
Mode of Operation : Tx Bluetooth Worst case

Page: 1

	Freq	Read	Level	Limit	Over	
	MHz	Level	Factor	Line	Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	44.550	54.10	-15.53	38.57	40.00	-1.43 Peak
2	69.770	57.00	-19.16	37.84	40.00	-2.16 Peak
3	675.050	36.10	-3.93	32.17	46.00	-13.83 Peak

7.2. POWERLINE CONDUCTED EMISSIONS

LIMIT

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

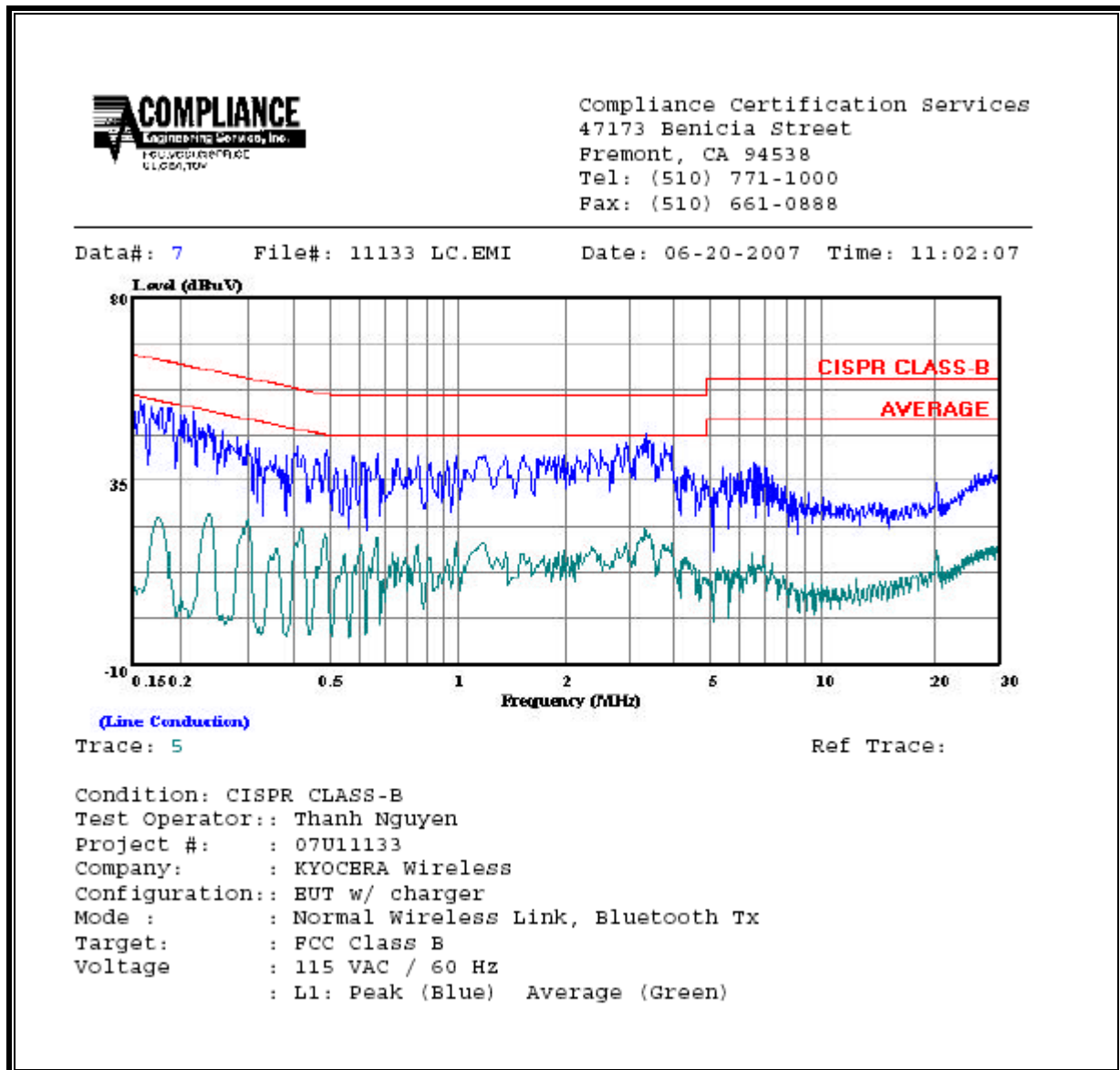
RESULTS

No non-compliance noted:

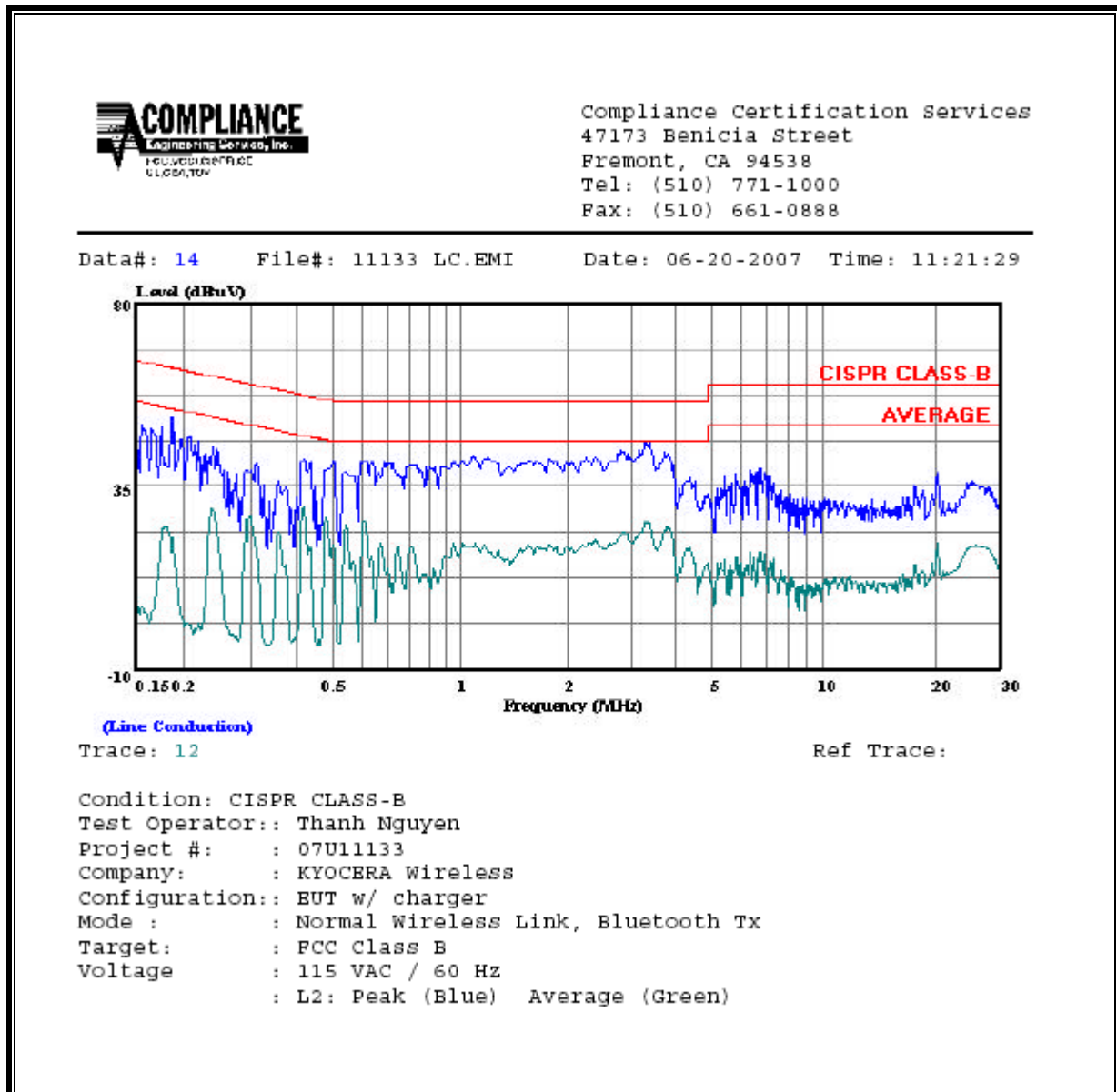
6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.16	54.66	--	25.90	0.00	65.62	55.62	-10.96	-29.72	L1
0.22	51.80	--	26.93	0.00	62.93	52.93	-11.13	-26.00	L1
3.44	46.52	--	23.96	0.00	56.00	46.00	-9.48	-22.04	L1
0.19	51.78	--	25.05	0.00	64.17	54.17	-12.39	-29.12	L2
1.18	42.34	--	20.79	0.00	56.00	46.00	-13.66	-25.21	L2
3.42	45.82	--	26.21	0.00	56.00	46.00	-10.18	-19.79	L2
6 Worst Data									

LINE 1 RESULTS



LINE 2 RESULTS



NOTE: SETUP PHOTOS ARE CONTAINED IN A SEPARATE DOCUMENT