

RADIATED SPURIOUS EMISSIONS PORTIONS OF

FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART L
INDUSTRY CANADA RSS-132 ISSUE 2
INDUSTRY CANADA RSS-133 ISSUE 5
INDUSTRY CANADA RSS-139 ISSUE 2

CERTIFICATION TEST REPORT FOR

TRI-BAND 1xRTT CDMA PHONE WITH BLUETOOTH

FCC MODEL NUMBER: K33BIC-06 IC MODEL NUMBER: S1310

FCC ID: OVF-K33BIC06 IC: 3572A-S1310

REPORT NUMBER: 09U12840-3

ISSUE DATE: OCTOBER 5, 2009

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
	10/05/09	Initial Issue	T. Chan

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REPORT NO: 09U12840-3 DATE: OCTOBER 5, 2009 IC: 3572A-S1310 FCC ID: OVF-K33BIC06

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA WIRELESS

> 10300 CAMPUS POINT DRIVE SAN DIEGO, CA 92121, USA

EUT DESCRIPTION: TRI-BAND 1XRTT CDMA PHONE WITH BLUETOOTH

MODEL: K33BIC-06 (For FCC) and S1310 (For IC)

SERIAL NUMBER: FFS13100001898

DATE TESTED: SEPTEMBER 27 TO OCTOBER 1, 2009

APPLICABLE STANDARDS

STANDARD TEST RESULTS

FCC PART 22H, 24E, AND 27L PASS (Radiated Portion) IC RSS-132 ISSUE 2, RSS-133 ISSUE 5, AND RSS-139 ISSUE 2 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: Tested By:

THU CHAN MENGISTU MEKURIA EMC MANAGER EMC ENGINEER COMPLIANCE CERTIFICATION SERVICES COMPLIANCE CERTIFICATION SERVICES

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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, FCC Part 27, RSS-132 Issue 2, RSS-133 Issue 5 and RSS-139 Issue 2.

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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB - 26.9 dB = 28.9 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 Tri-band CDMA Phone that manufactured by Kyocera Wireless Corporations

5.2. MAXIMUM OUTPUT POWER

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

824 to 849 MHz Authorized Band

Frequency Range	Frequency Range Modulation		ERP	
		Peak Power	Peak Power	
(MHz)		(dBm)	(mW)	
Low CH - 824.70		26.2	416.9	
Mid CH - 836.52	CDMA2000	26.8	478.6	
High CH - 848.31		25.7	371.5	

1850 to 1910 MHz Authorized Band

Frequency Range	Modulation	EIRP	EIRP
		Peak Power	Peak Power
(MHz)		(dBm)	(mW)
Low CH - 1851.25		24.4	275.4
Mid CH - 1880.00	CDMA2000	24.2	263.0
High CH - 1908.75		23.5	223.9

1710 to 1755 MHz Authorized Band

Frequency Range	Modulation	EIRP	EIRP
		Peak Power	Peak Power
(MHz)		(dBm)	(mW)
Low CH - 1711.25		22.6	182.0
MID-Ch- 1733.00	AWS	24.4	275.4
High CH - 1753.75		23.1	204.2

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, after the investigations, the worst-position was turned out to be an Z-position without AC/DC adapter for Cell band and X-position without AC/DC for AWS, and 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.

Application Rev, License
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) > 4395
 - > Network ID (NID) > 0

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 FC							
AC/DC Adapter	Kyocera	TXTVL10148	936S-001Y	DoC			

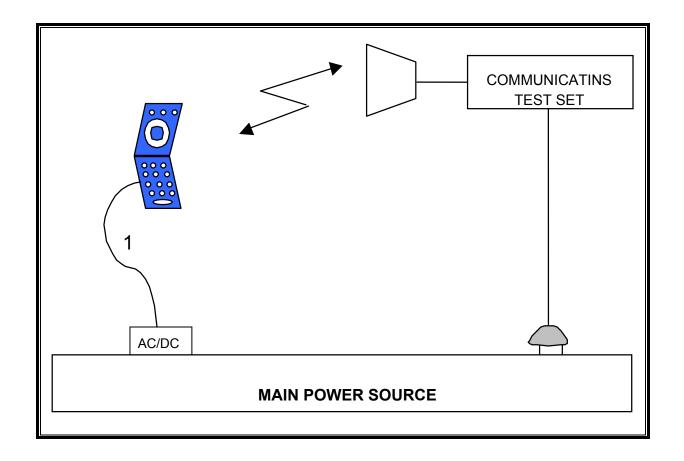
I/O CABLES

	I/O CABLE LIST									
Cable	Port	# of	Connector	Cable	Cable	Remarks				
No.		Identical	Type	Туре	Length					
		Ports								
1	DC Input	1	Mini-USB	Un-Shielded	2.0 m	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				
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	08/05/10				
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	01/14/10				
Antenna, Horn, 18 GHz	EMCO	3115	C00945	01/29/10				
Antenna, Horn, 18 GHz	EMCO	3115	C00943	01/29/10				
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				
Communications Test Set	R&S	CMU200	C001131	04/16/10				
Communications Test Set	Agilent / HP	E5515C	C01086	06/16/10				
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	10/08/10				
EMI Test Receiver, 30 MHz	R&S	ESHS 20	N02396	05/06/11				
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	10/29/09				

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.

27.50 (d) (2) & RSS-139 § 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, RSS-132, RSS-133, & RSS-139

RESULTS

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement

Compliance Certification Services Chamber A

 Company:
 KYOCERA

 Project #:
 09U12840

 Date:
 9/28/2009

Test Engineer: MENGISTU MEKURIA

Configuration: EUT ALONE

Mode: TX, 850 MHz CELL BAND

Test Equipment:

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	SA reading	Ant. Pol.	Path Loss	ERP	Limit	Margin	Notes
MHz	(dBm)	(H/∨)	(dBm)	(dBm)	(dBm)	(dB)	
824.70	-8.6	V	34.8	26.2	38.5	-12.3	
824.70	-19.4	Н	30.5	11.2	38.5	-27.3	
836.52	-6.3	V	33.1	26.8	38.5	-11.6	
836.52	-19.4	Н	31.2	11.8	38.5	-26.6	
848.31	-6.5	V	32.1	25.7	38.5	-12.8	
848.31	-19.6	Н	31.2	11.6	38.5	-26.8	

Rev. 1.24.7

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement

Compliance Certification Services Chamber A

 Company:
 KYOCERA

 Project #:
 09U12840

 Date:
 9/28/2009

Test Engineer: MENGISTU MEKURIA

Configuration: EUT ALONE

Mode: TX, 1900 MHz PCS BAND

Test Equipment:

Receiving: Horn T73, and Camber B SMA Cables

Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse

f	SA reading	Ant. Pol.	Path Loss	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dBm)	(dBm)	(dBm)	(dB)	
4.054	22.4		40.4	40.2	22.0	44.7	
1.851 1.851	-ZZ.1 -15.4	И	40.4 39.7	18.3	33.0 33.0	-14.7 -8.6	
			33.1	24.4		-0.0	
1.880	-22.2	V	39.9	17.8	33.0	-15.2	
1.880	-15.9	Н	40.1	24.2	33.0	-8.8	
1.909	-21.0	V	39.8	18.8	33.0	-14.2	
1.909	-16.7	H	40.2	23.5	33.0	9.5	

Rev. 1.24.7

AWS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement

Compliance Certification Services Chamber A

 Company:
 KYOCERA

 Project #:
 09U12840

 Date:
 9/28/2009

Test Engineer: MENGISTU MEKURIA

Configuration: EUT ALONE

Mode: TX, 1700 MHz AWS BAND

Test Equipment:

Receiving: Horn T73, and Camber B SMA Cables

Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse

f	SA reading	Ant. Pol.	Path Loss	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(dBm)	(dBm)	(dBm)	(dB)	
1.711	-22.6	V	39.8	17.2	30.0	-12.8	
1.711	-16.5	Н	39.1	22.6	30.0	-7.4	
1.733	-21.5	V	40.0	18.5	30.0	-11.6	
1.733	-15.4	Н	39.8	24.4	30.0	-5.6	
1.754	-23.5	V	40.1	16.6	30.0	-13.4	
1.754	-16.9	Н	40.0	23.1	30.0	-7.0	

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.

§27.53 (g) and RSS-139 § 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 log10 (P) dB.

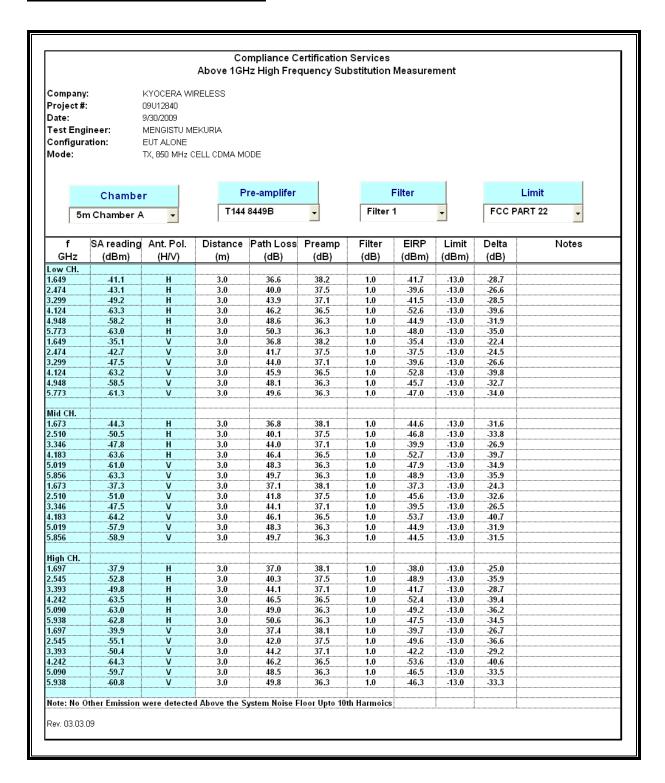
TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), FCC 24.238 (b), & FCC 27.53 (g)(1)(2)(3), RSS-132, RSS-133, & RSS-139

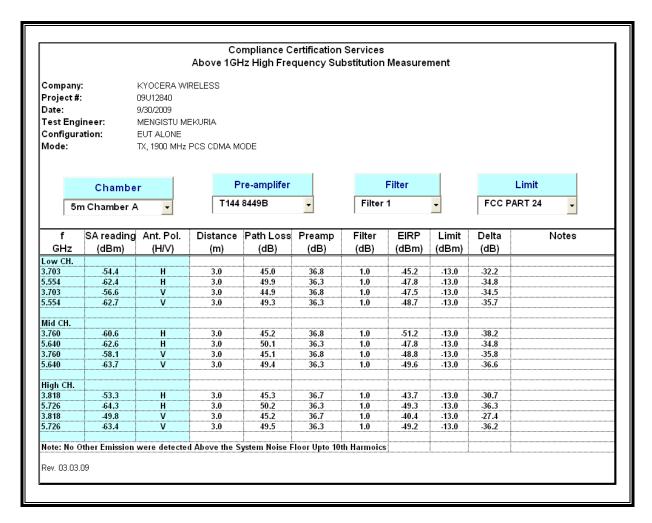
RESULTS

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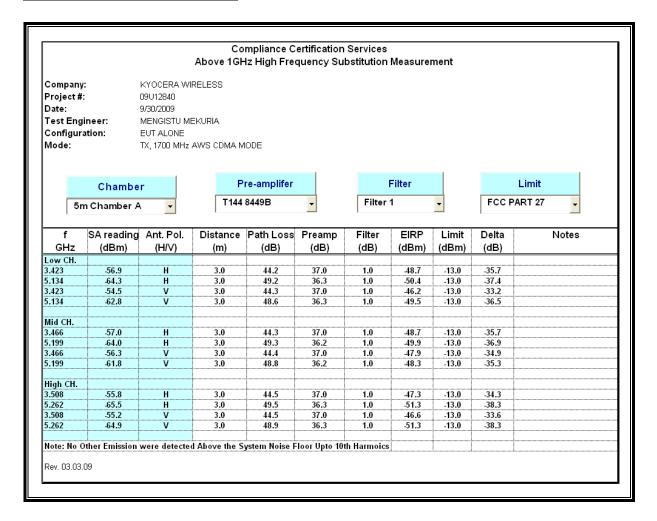
CELL SPURIOUS & HARMONIC (ERP)



PCS Spurious & Harmonic (EIRP)



AWS Spurious & Harmonic (EIRP)



7.3. RECEIVER SPURIOUS EMISSIONS

LIMIT

RSS-Gen 7.2.2

Spurious Emission Limits for Receivers:

Spurious Frequency (MHz)	Field Strength (microvolts/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

TEST PROCEDURE

The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (local oscillator frequency, intermediate frequency or carrier frequency),

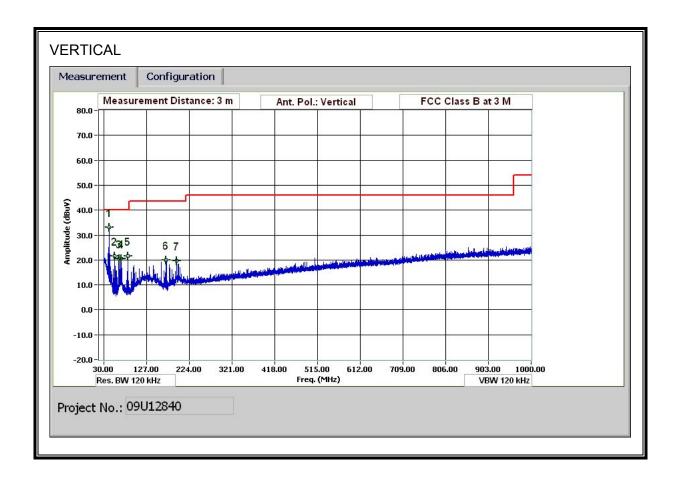
or 30 MHz, whichever is the higher, to at least 3 times the highest tunable and local oscillator frequencies.

RESULTS

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



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



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

30-1000MHz Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: MENGISTU MEKURIA

Date: 10/02/09
Project #: 09U12840
Company: KYOCERA

EUT Description: TRI-BAND CELL PHONE WITH BLUETO OTH CAPACITY

EUT M/N: K33BIC-06
Test Target: FCC/IC CLASS B
Mode Oper: TX WORST-CASE
f Measurement Fragrams

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	Dist	Read	AF	CL	Amp	D Corr	Filter	Corr.	Limit	Margin	Ant Pol	Det	Notes
MHz	(m)	dBuV	dB/m	dВ	dВ	dВ	dВ	dBuV/m	dBuV/m	dВ	V/H	P/A/QP	
41.520	3.0	49.0	13.2	0.6	29.6	0.0	0.0	33.1	40.0	-6.9	V	P	
54.481	3.0	42.5	7.9	0.6	29.6	0.0	0.0	21.4	40.0	-18.6	V	P	
64.441	3.0	41.4	8.0	0.7	29.6	0.0	0.0	20.5	40.0	-19.5	V	P	
68.762	3.0	41.2	8.2	0.7	29.6	0.0	0.0	20.6	40.0	-19.4	V	P	
84.362	3.0	42.7	7.5	0.8	29.6	0.0	0.0	21.5	40.0	-18.5	V	P	
170.646	3.0	37.9	10.1	1.2	29.3	0.0	0.0	20.0	43.5	- 23.5	v	P	
195.367	3.0	35.9	11.6	1.3	28.9	0.0	0.0	19.8	43.5	-23.7	V	P	
41.520	3.0	47.6	13.2	0.6	29.6	0.0	0.0	31.6	40.0	-8.4	H	P	
47.041	3.0	39.4	9.8	0.6	29.6	0.0	0.0	20.2	40.0	-19.8	H	P	
82.562	3.0	37.4	7.6	0.8	29.6	0.0	0.0	16.2	40.0	- 23.8	H	P	
143.165	3.0	33.1	13.0	1.1	29.3	0.0	0.0	17.8	43.5	-25.7	H	P	
186.606	3.0	36.2	11.1	1.2	29.0	0.0	0.0	19.6	43.5	-24.0	H	P	

Rev. 1.27.09

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

SPURIOUS EMISSIONS ABOVE 1000 MHz (WORST-CASE CONFIGURATION)

Note: No emissions were detected above the system noise floor

7.4. POWER LINE CONDUCTED EMISSION

LIMIT

RSS-Gen 7.2.2

Except when the requirements applicable to a given device state otherwise, for any licence-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

Table 2 – AC Power Lines Conducted Emission Limits

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			

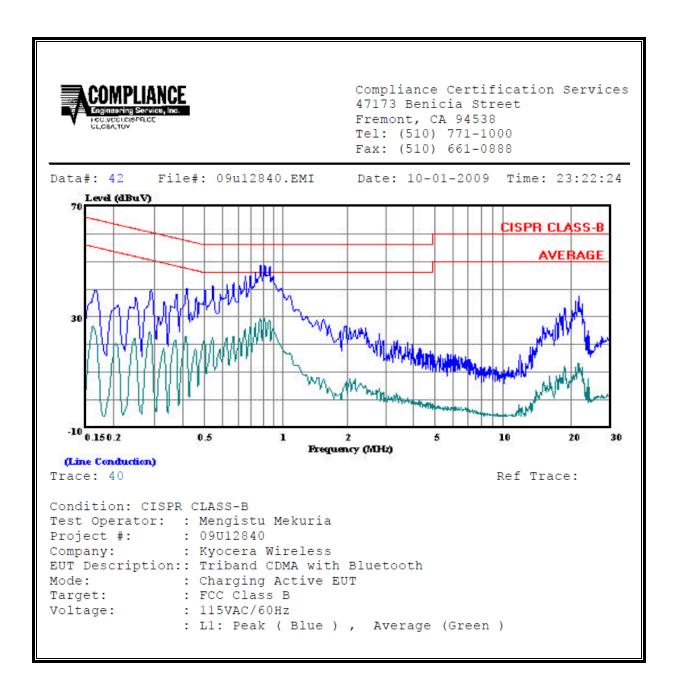
Decreases with the logarithm of the frequency.

RESULTS

6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.		Closs	Limit	EN_B	Marg	Remark			
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV(dB)	L1/L2
0.29	39.74		24.57	0.00	60.50	50.50	-20.76	-25.93	L1
0.54	41.09		22.44	0.00	56.00	46.00	-14.91	-23.56	L1
0.92	48.36		29.31	0.00	56.00	46.00	-7.64	-16.69	L1
0.36	40.04		28.88	0.00	58.71	48.71	-18.67	-19.83	L2
0.60	42.97		28.52	0.00	56.00	46.00	-13.03	-17.48	L2
0.93	50.66		35.33	0.00	56.00	46.00	-5.34	-10.67	L2
6 Worst l	Data								

LINE 1 RESULTS



LINE 2 RESULTS

