FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

TRI BAND 1xRTT CDMA with BLUETOOTH

MODEL NUMBER: K38-02

FCC ID: OVFKWC-K3802

REPORT NUMBER: 08U11978-3A

ISSUE DATE: AUGUST 27, 2008

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

Prepared by
COMPLIANCE CERTIFICATION SERVICES
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/21/08	Initial Issue	T. Chan
A	08/27/08	Revised model FCC IC in header and model number	A. Zaffar

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: TRI BAND 1xRTT CDMA with BLUETOOTH

MODEL: K38-02

SERIAL NUMBER: FFLM0000003277

DATE TESTED: AUGUST 15-20, 2008

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. 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. 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 SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

VIEN TRAN
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. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is tri band 1xRTT CDMA with Bluetooth.

The radio module is manufactured by Kyocera Wireless Corp.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna, with a maximum gain of -2.5 dBi.

5.3. SOFTWARE AND FIRMWARE

The EUT driver software installed in the host support equipment during testing was Kyocera Wireless Corp., rev. 2.0.11.0.

The test utility software used during testing was StarGraphitePassThru, rev. 1.0.0.1 and CSR Blue Suite, rev. 1.19.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-mode is determined to be with the highest output power at GFSK and widest bandwidth at 8PSK modulations.

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 battery charger. After the investigations, the worst-position was turned out to be a Y-position with AC/DC adapter.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	HP	Conpaq nx5000	CNU4180X4R	DoC
AC Adapter	HP	PPP009H	F3-0404082195D	N/A
AC Adapter	Kyocera	TXTVL10128	N/A	N/A

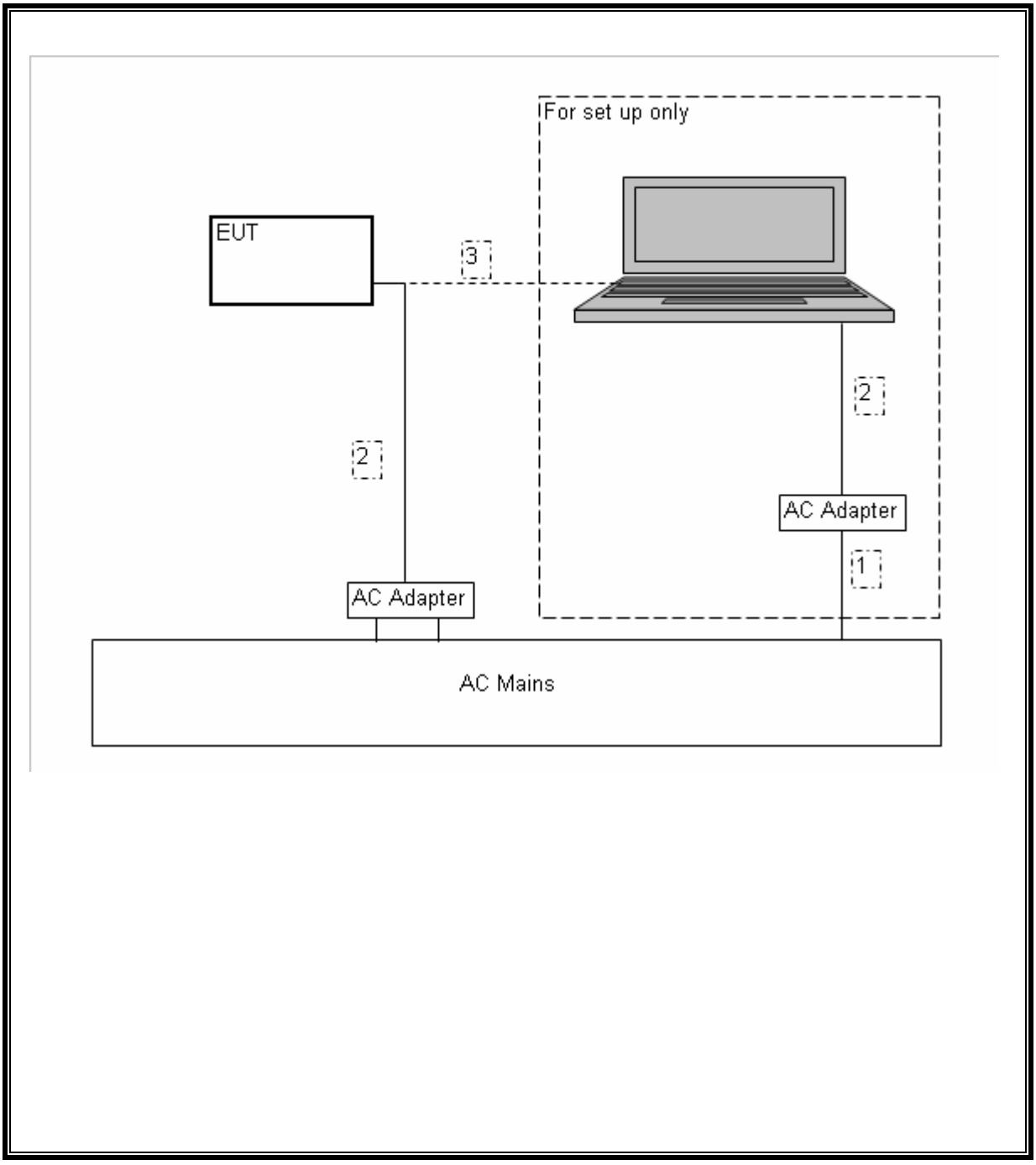
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identica Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	US115	Un-shielded	1.5m	No
2	DC	2	DC	Shielded	1	No
3	USB	1	USB	Shielded	.5m	Yes

TEST SETUP

The EUT is installed in a host laptop computer via USB cable during the tests. Test software exercised the radio card.

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**
Antenna, Horn, 18 GHz	ETS	3117	C01022	04/15/09
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	10/13/09
Preamplifier, 1300 MHz	Agilent / HP	8447D	0	05/09/09
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	09/27/08
RF Filter Section, 2.9 GHz	Agilent / HP	85420E	C00958	06/12/09
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	01/27/09
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	09/15/09
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00996	09/11/08

7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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.

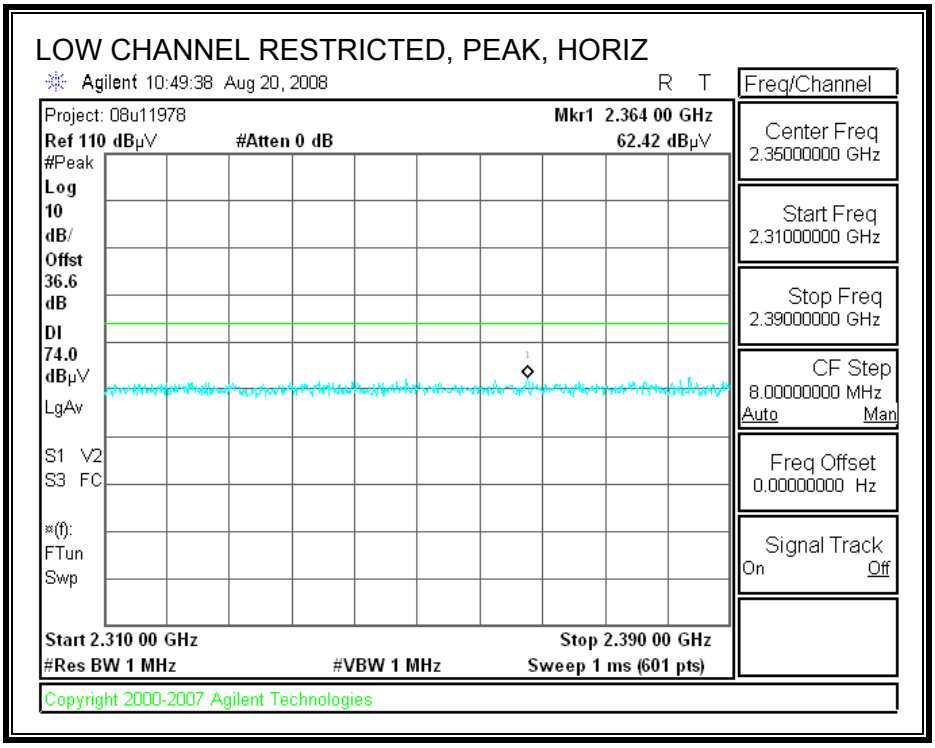
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

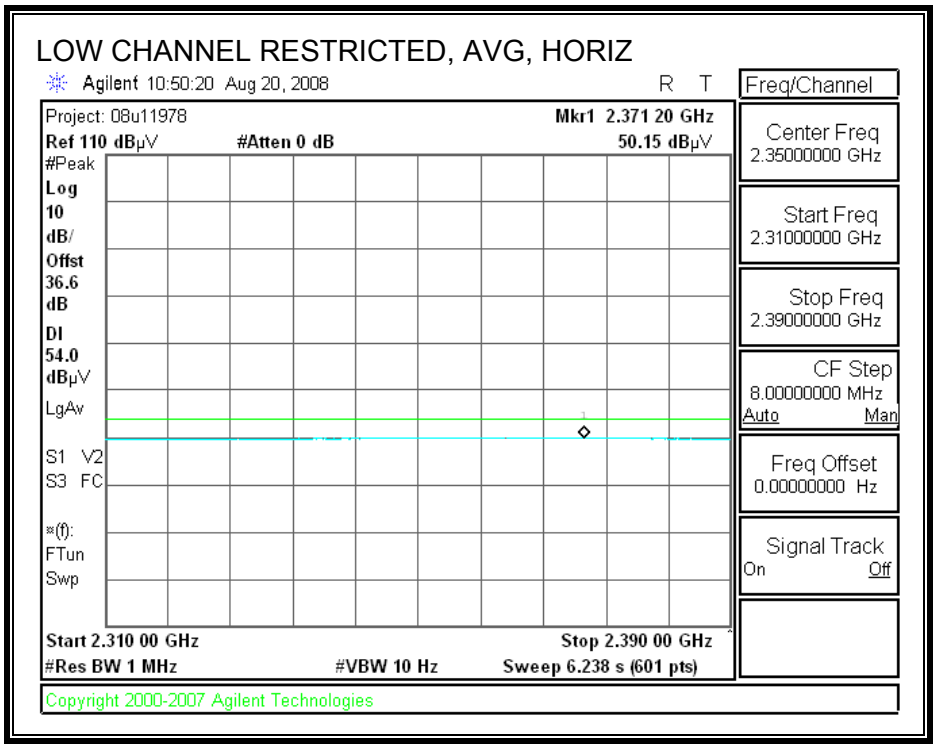
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

7.2. TRANSMITTER ABOVE 1 GHz

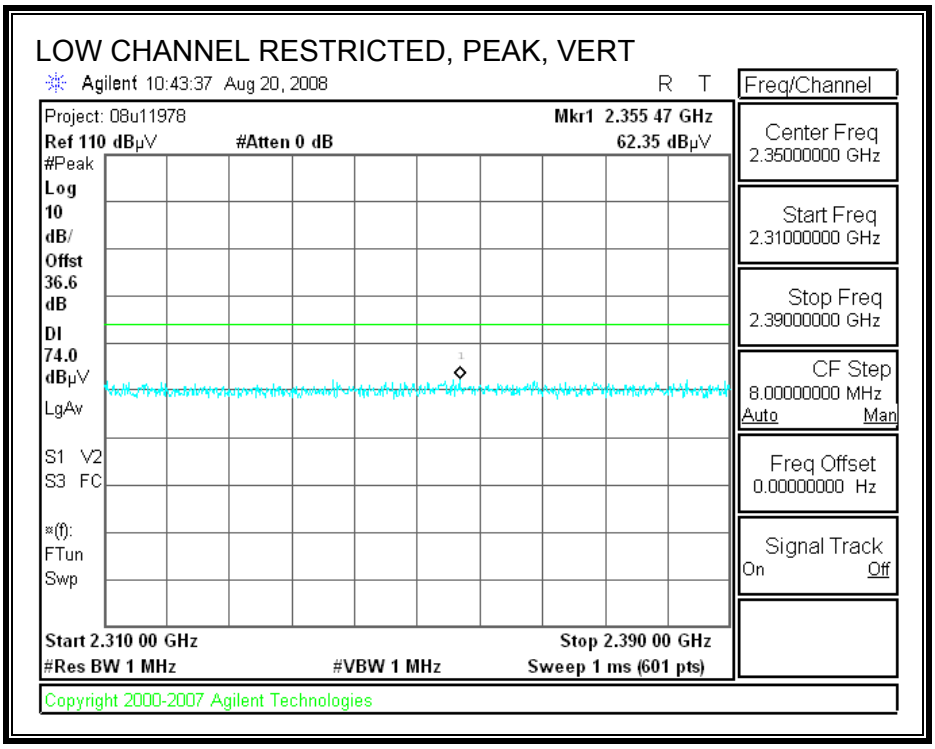
7.2.1. BASIC DATA RATE GFSK MODULATION

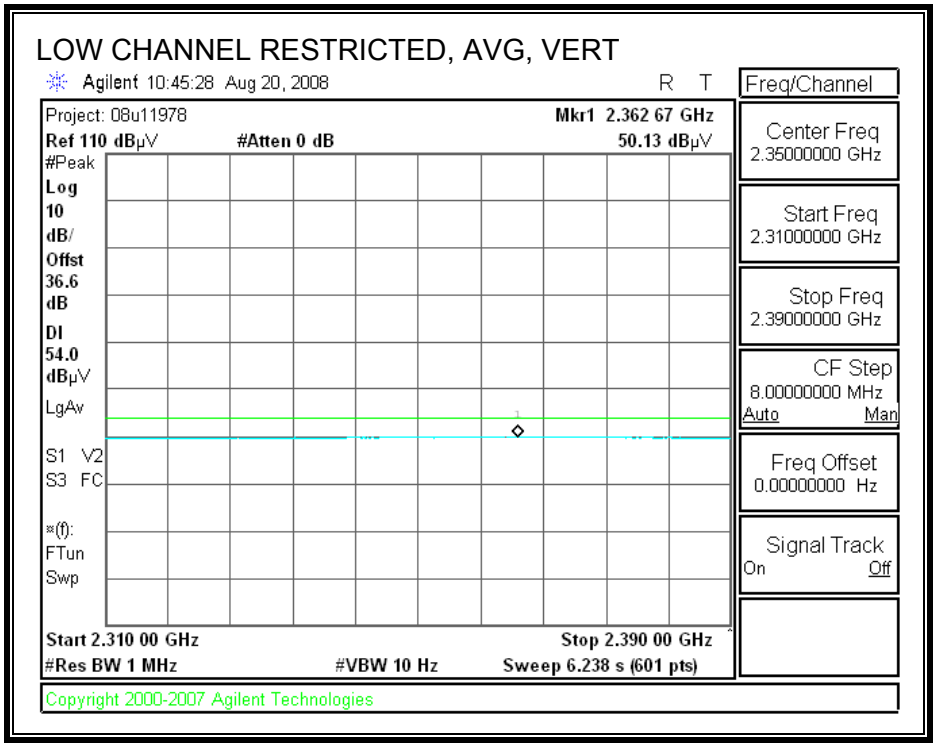
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



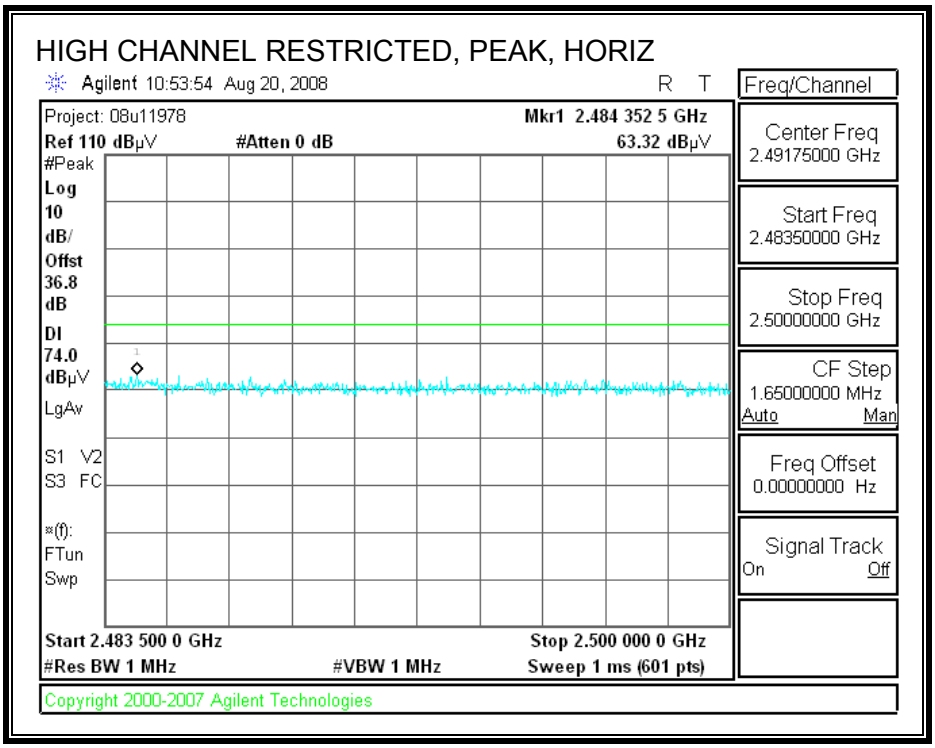


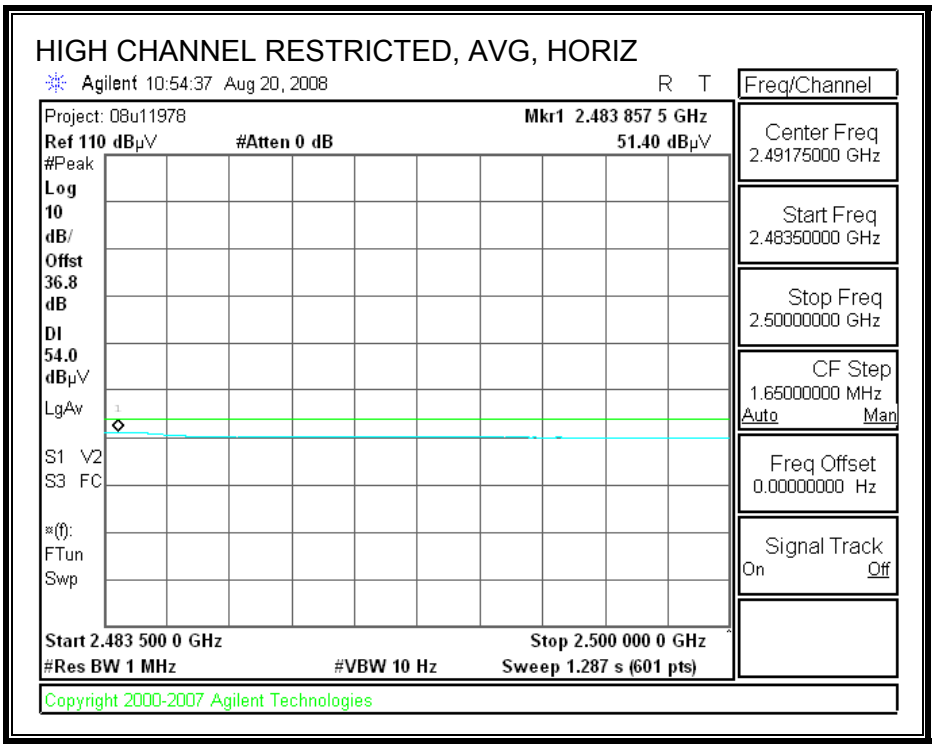
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



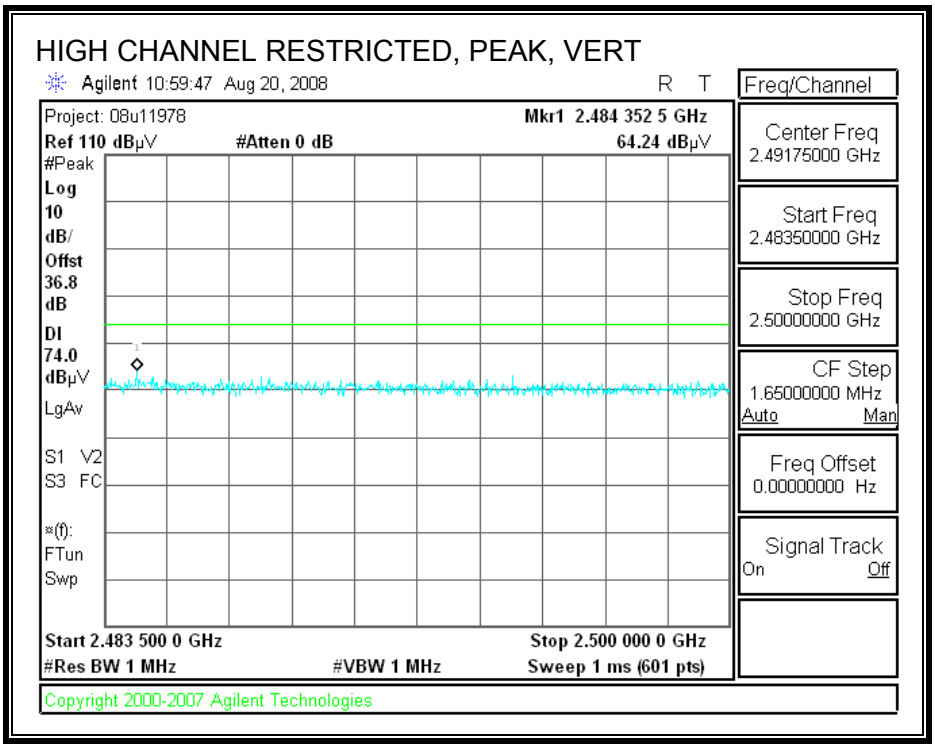


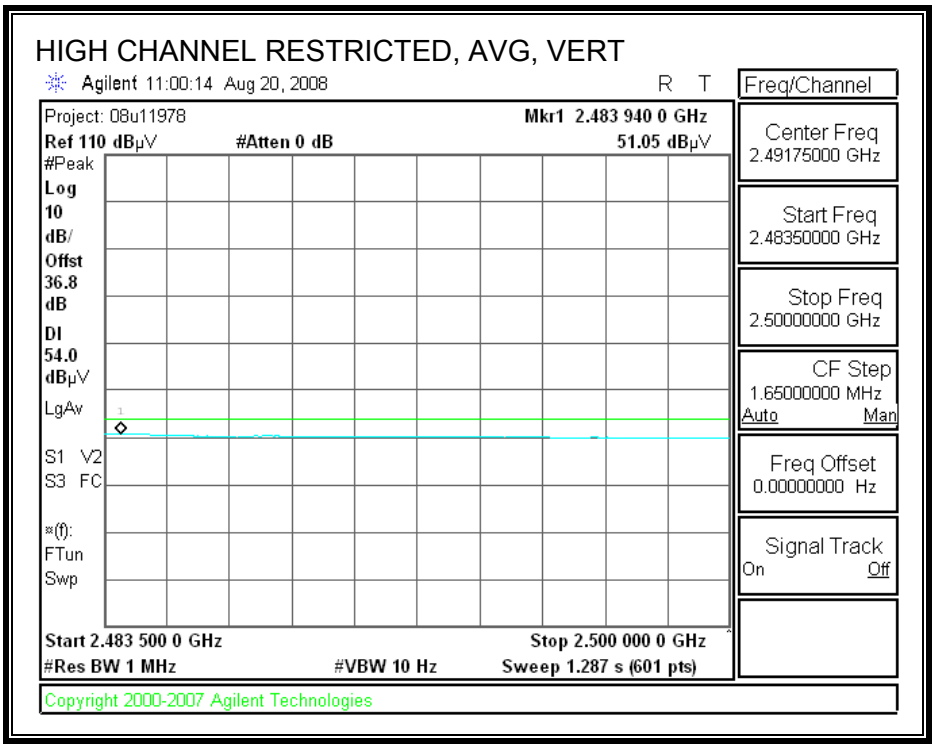
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Kyocera
Project #: 08U11978
Date: 8/20/2008
Test Engineer: Thanh Nguyen
Configuration: EUT (Tri-band) connected to laptop via USB cable
Mode: Tx GFSK Mode

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T136; M/N: 3117 @3m	T144 Miteq 3008A00931			FCC 15.209

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
		A-5m Chamber		R_001

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

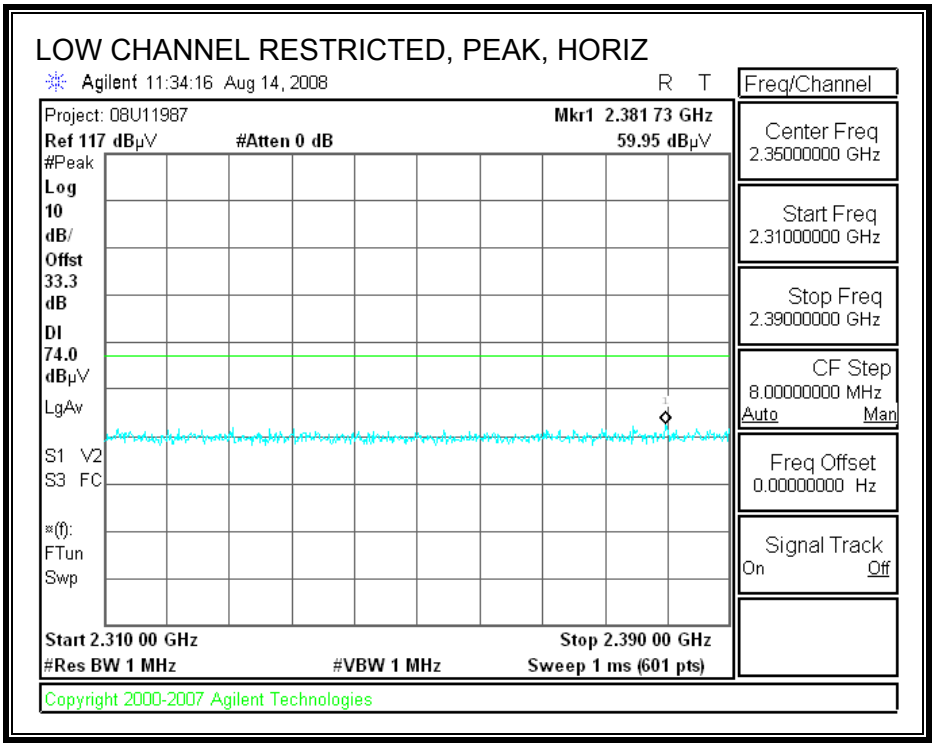
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
LOW CHANNEL, 2402 MHz															
4.804	3.0	38.73	24.98	32.6	6.9	-36.5	0.0	0.0	41.7	28.0	74	54	-32.3	-26.0	Noise floor/ V
4.804	3.0	37.85	24.99	32.6	6.9	-36.5	0.0	0.0	40.9	28.0	74	54	-33.1	-26.0	Noise floor/ H
MID CHANNEL, 2441 MHz															
4.882	3.0	38.50	24.47	32.6	6.9	-36.5	0.0	0.0	41.6	27.6	74	54	-32.4	-26.4	Noise floor/ V
4.882	3.0	37.82	24.70	32.6	6.9	-36.5	0.0	0.0	40.9	27.8	74	54	-33.1	-26.2	Noise floor/ H
HIGH CHANNEL, 2480 MHz															
4.960	3.0	37.91	24.52	32.6	7.0	-36.5	0.0	0.0	41.1	27.7	74	54	-32.9	-26.3	Noise floor/ V
4.960	3.0	38.62	24.69	32.6	7.0	-36.5	0.0	0.0	41.8	27.9	74	54	-32.2	-26.1	Noise floor/ H
No other emissions were detected above system noise floor															

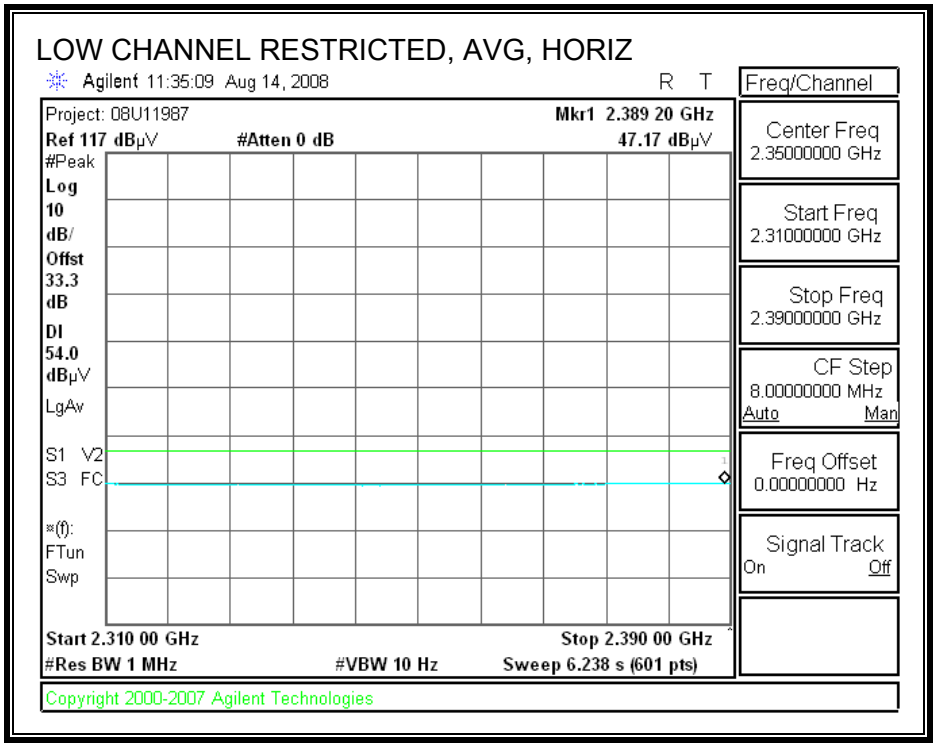
Rev. 4.12.7

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		

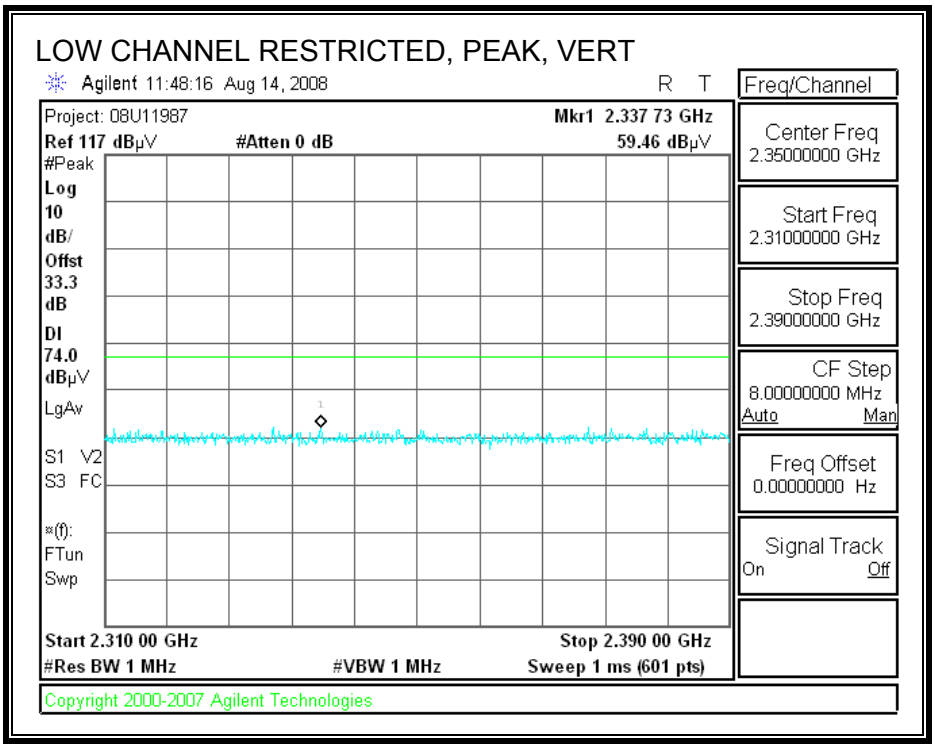
7.2.2. ENHANCED DATA RATE 8PSK MODULATION

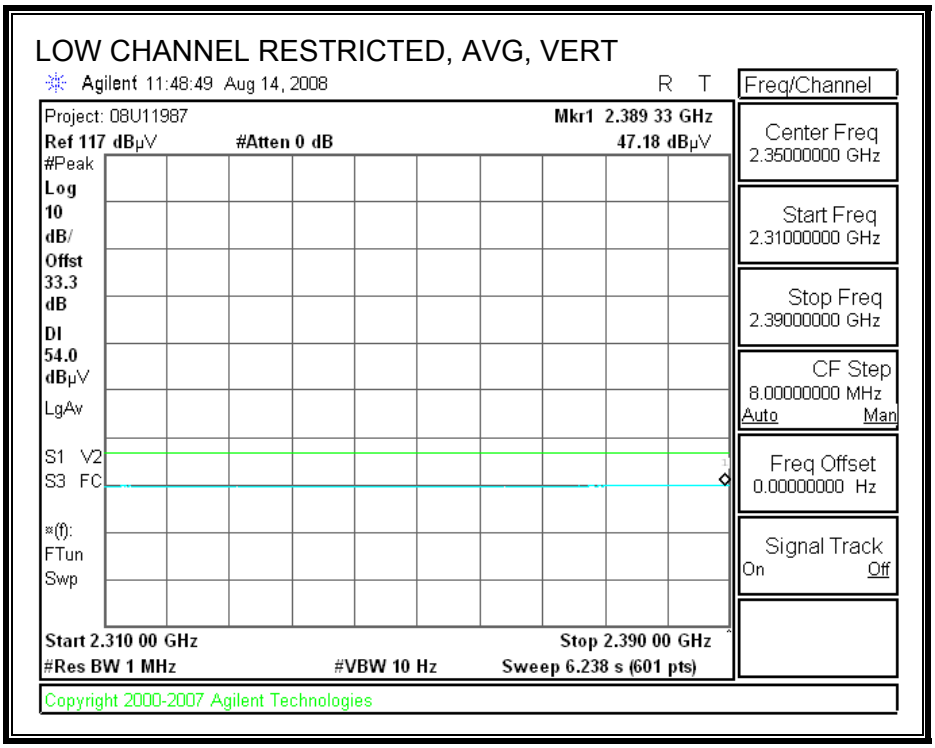
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



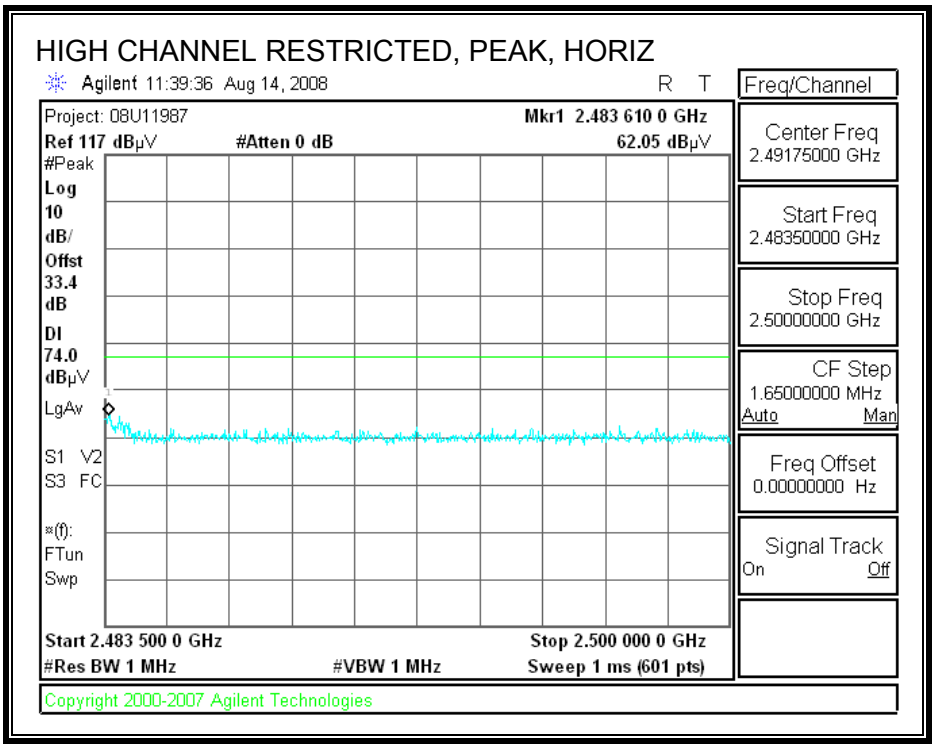


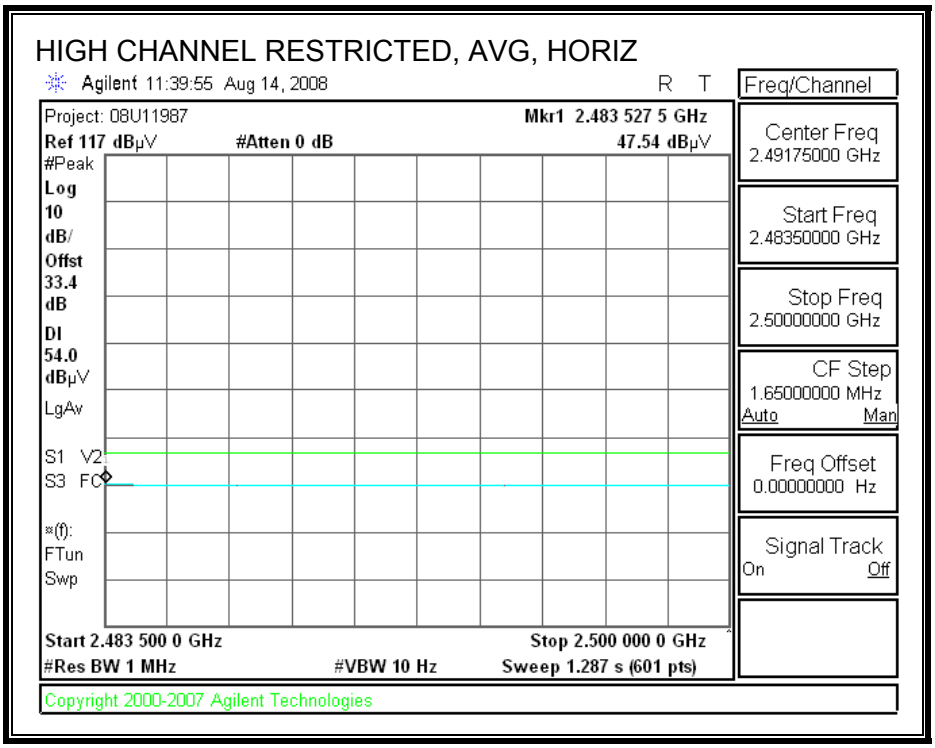
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



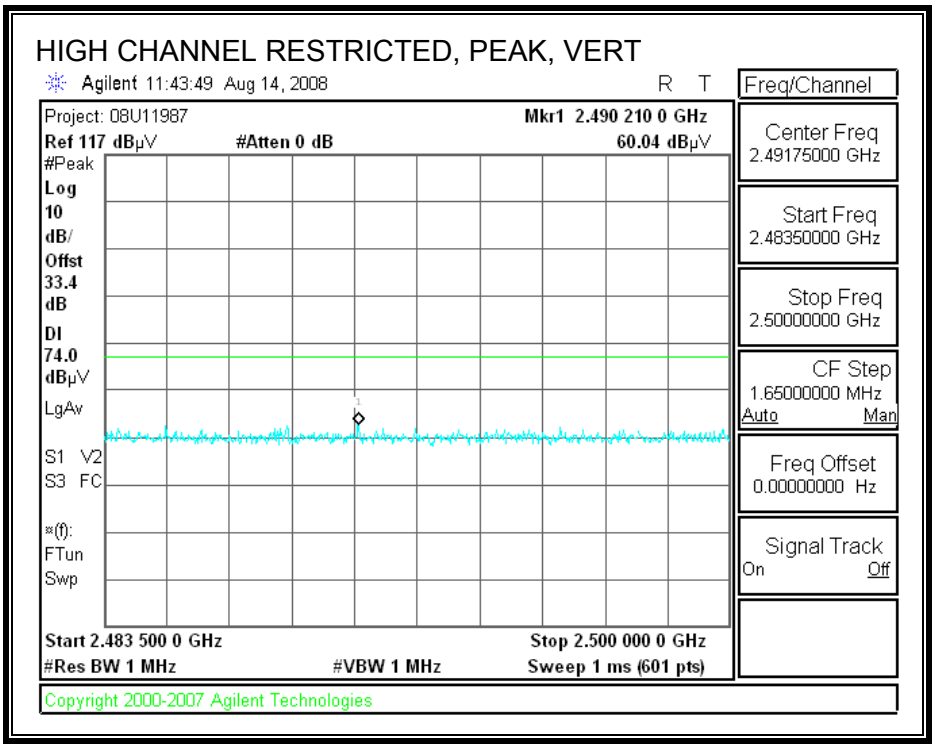


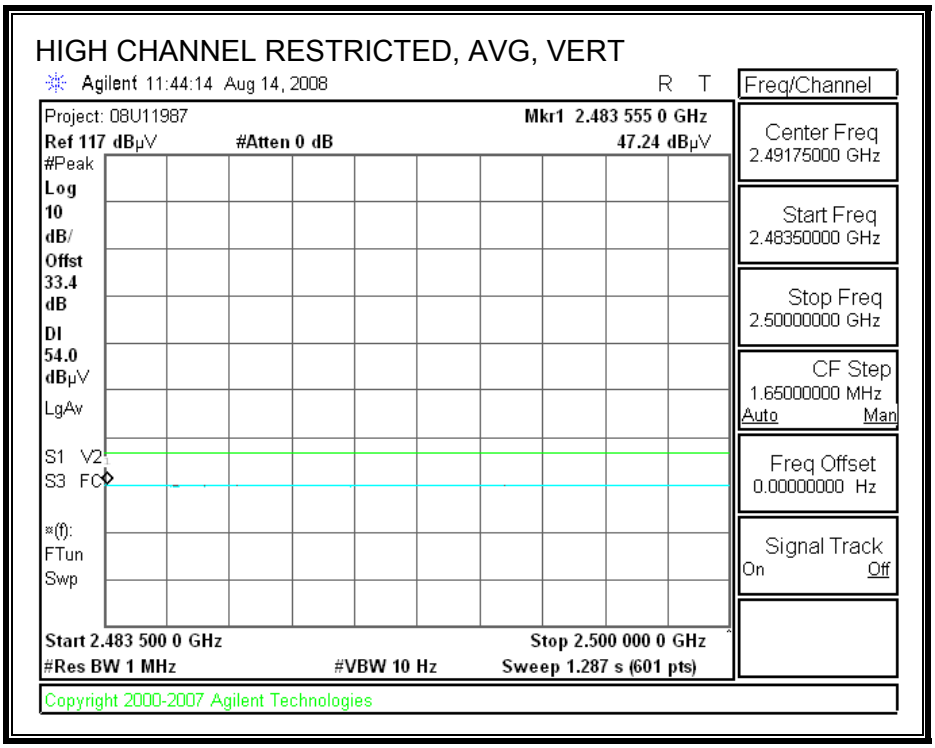
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, 3 Meters_C Chamber

Company:	Vien Tran
Project #:	08U11978
Date:	8/14/2008
Test Engineer:	Vien Tran
Configuration:	EUT (Tri-band) connected to laptop via USB cable
Mode:	Tx 8PSK_EDR 3Mb/s

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T136; M/N: 3117 @3m	T34 HP 8449B			FCC 15.205

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
	Thanh 187215003	Ninous 208946002		R_001

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
LOW CHANNEL, 2402 MHz															
4.804	3.0	43.4	31.7	33.7	2.5	-34.8	0.0	0.0	44.7	33.0	74	54	-29.3	-21.0	V
4.804	3.0	42.9	31.2	33.7	2.5	-34.8	0.0	0.0	44.2	32.5	74	54	-29.8	-21.5	H
MID CHANNEL, 2441 MHz															
4.882	3.0	44.0	33.4	33.7	2.6	-34.8	0.0	0.0	45.5	34.9	74	54	-28.5	-19.1	V
4.882	3.0	43.2	31.5	33.7	2.6	-34.8	0.0	0.0	44.7	33.0	74	54	-29.3	-21.0	H
HIGH CHANNEL, 2480 MHz															
4.960	3.0	43.7	33.1	33.8	2.7	-34.8	0.0	0.0	45.3	34.7	74	54	-28.7	-19.3	V
4.960	3.0	42.6	31.8	33.8	2.7	-34.8	0.0	0.0	44.2	33.4	74	54	-29.8	-20.6	H

No other emissions were detected above system noise floor

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		

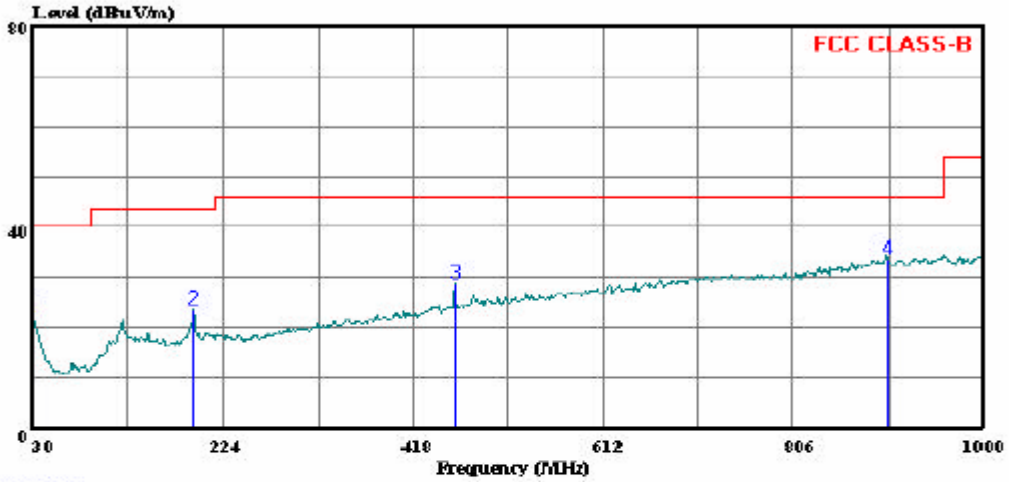
7.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL

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

Data#: 4 File#: 08U11978.EMI Date: 08-14-2008 Time: 16:39:44



(Fremont)

Trace: 3 Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator:: Vien Tran
Project #: : 08U11978
Company: : Kyocera
Configuration:: EUT and AC Adapter
Mode : : Tx
Target: : FCC Class B

Page: 1

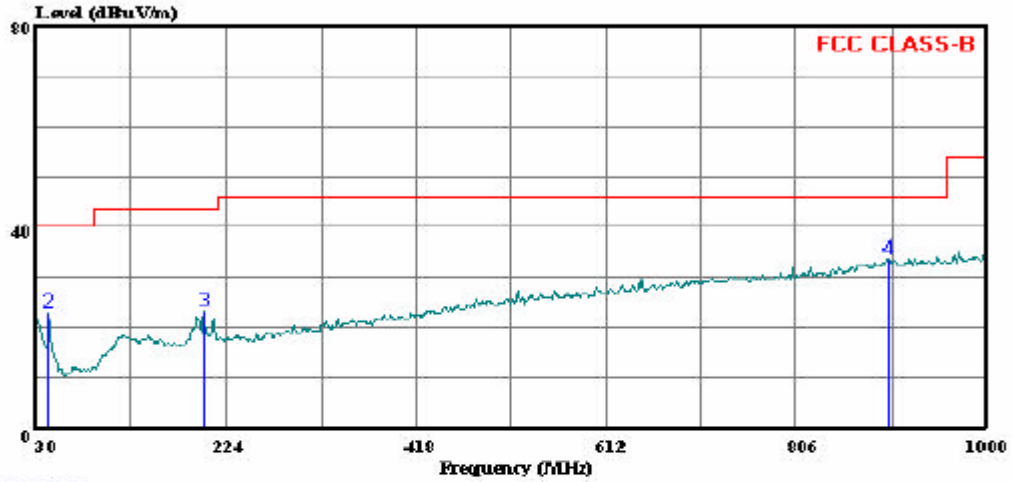
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.000	30.47	-7.41	23.06	40.00	-16.94	Peak
2	193.930	36.09	-12.68	23.41	43.50	-20.09	Peak
3	460.680	34.86	-6.09	28.77	46.00	-17.23	Peak
4	901.060	30.70	3.00	33.70	46.00	-12.30	Peak

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

VERTICAL

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

Data#: 2 File#: 08U11978.EMI Date: 08-14-2008 Time: 16:30:55



Trace: 1 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator:: Vien Tran
Project #: : 08U11978
Company: : Kyocera
Configuration:: EUT and AC Adapter
Mode : : Tx
Target: : FCC Class B

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.000	30.75	-7.41	23.34	40.00	-16.66	Peak
2	43.580	39.89	-17.13	22.76	40.00	-17.24	Peak
3	201.690	35.99	-12.78	23.21	43.50	-20.29	Peak
4	899.120	30.73	2.95	33.68	46.00	-12.32	Peak

8. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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 receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

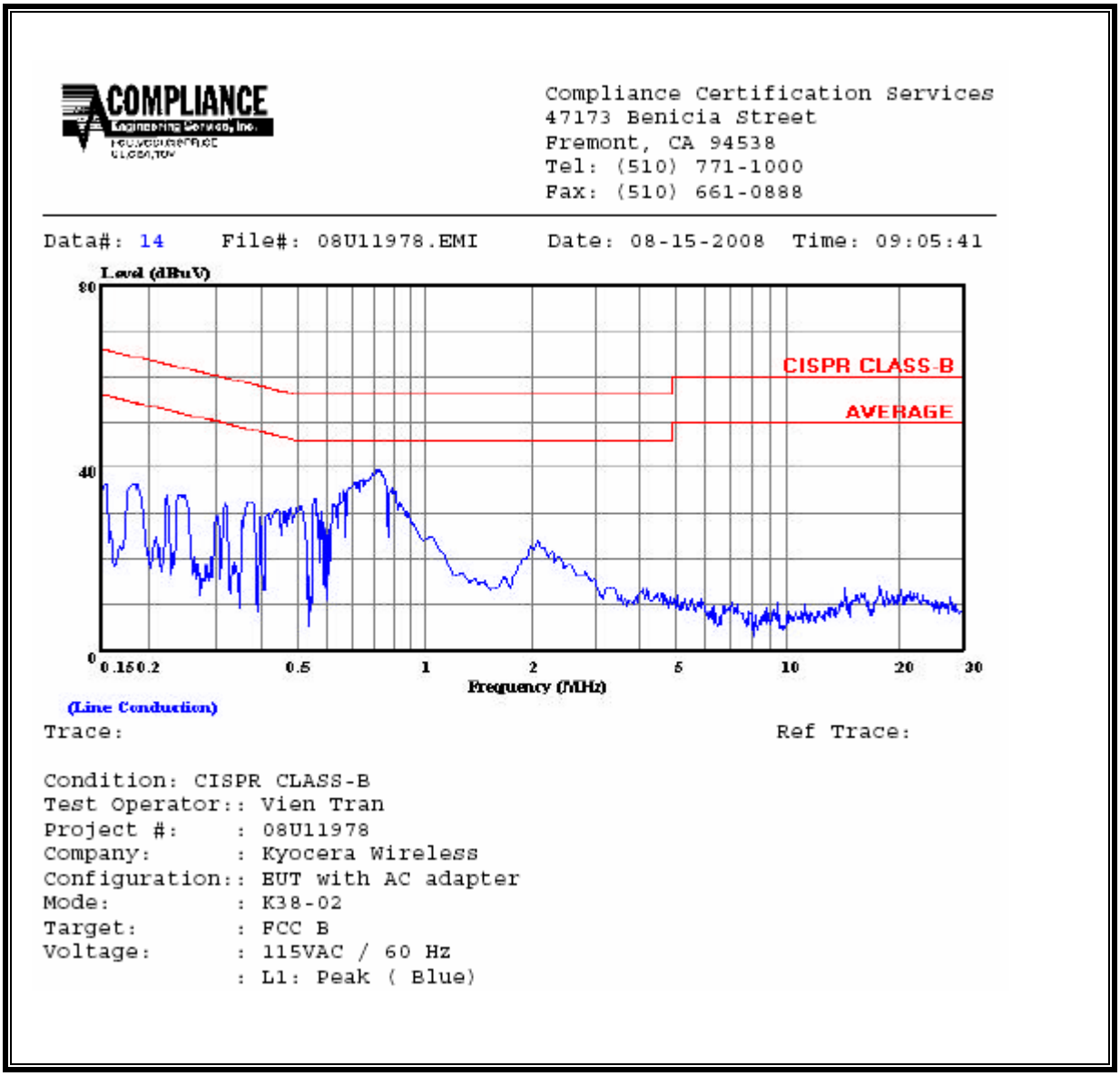
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.18	36.28	--	--	0.00	64.30	54.30	-28.02	-18.02	L1
0.86	39.34	--	--	0.00	56.00	46.00	-16.66	-6.66	L1
17.75	14.30	--	--	0.00	60.00	50.00	-45.70	-35.70	L1
0.18	38.62	--	--	0.00	64.30	54.30	-25.68	-15.68	L2
0.86	36.10	--	--	0.00	56.00	46.00	-19.90	-9.90	L2
15.65	18.89	--	--	0.00	60.00	50.00	-41.11	-31.11	L2
6 Worst Data									

LINE 1 RESULTS



LINE 2 RESULTS