



**FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 7**

CERTIFICATION TEST REPORT*

FOR

**HEAVY DUTY HANDHELD PDA-TYPE DEVICE WITH DUAL BAND
WCDMA/HSDPA/HSUPA, GSM, GPRS, EDGE, 802.11 b/g & BT**

MODEL NUMBER: CN50

**FCC ID: EHA-01CN50
IC: 1223A-01CN50**

REPORT NUMBER: 09U12487-1, Revision A

ISSUE DATE: JUNE 05, 2009

Prepared for
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* This report covers the radiated emissions portion, PK and AV powers. For other RF conducted test items refer to previous report number 08U12127-1 FCC IC DTS WLAN Report



NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/18/09	Initial Issue	F. Ibrahim
A	06/05/09	Revised antenna type and maximum gain	A. Zaffar

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: INTERMEC TECHNOLOGIES CORP
550 SECOND STREET SE
CEDAR RAPIDS, IOWA, 52401, U.S.A

EUT DESCRIPTION: HEAVY-DUTY HANDHELD PDA-TYPE DEVICE w/ DUAL BAND
WCDMA/HSDPA, HSUPA, GSM, GPRS, EDGE, 802.11 b/g & BT

MODEL: CN50

SERIAL NUMBER: 326V0800070

DATE TESTED: MARCH 30 - APRIL 3, 2009

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C*	Pass
INDUSTRY CANADA RSS-210 Issue 7 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 2	Pass

* This report covers the radiated emissions portion, PK and AV powers. For other RF conducted test items refer to previous report number 08U12127-1 FCC IC DTS WLAN Report

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:



FRANK IBRAHIM
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



TOM CHEN
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, FCC CFR 47 Part 15, RSS-GEN Issue 2, and RSS-210 Issue 7.

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 a HEAVY-duty handheld PDA-type device w/ dual band WCDMA/HSDPA, HSUPA, GSM, GPRS, EDGE, 802.11 B/G & BT

The radio module is manufactured by Qualcomm.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	19.16	82.41
2412 - 2462	802.11g	22.72	187.07

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna with a maximum gain of 0 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was FWU.00.20.17.

The test utility software used during testing was QTM V2.4

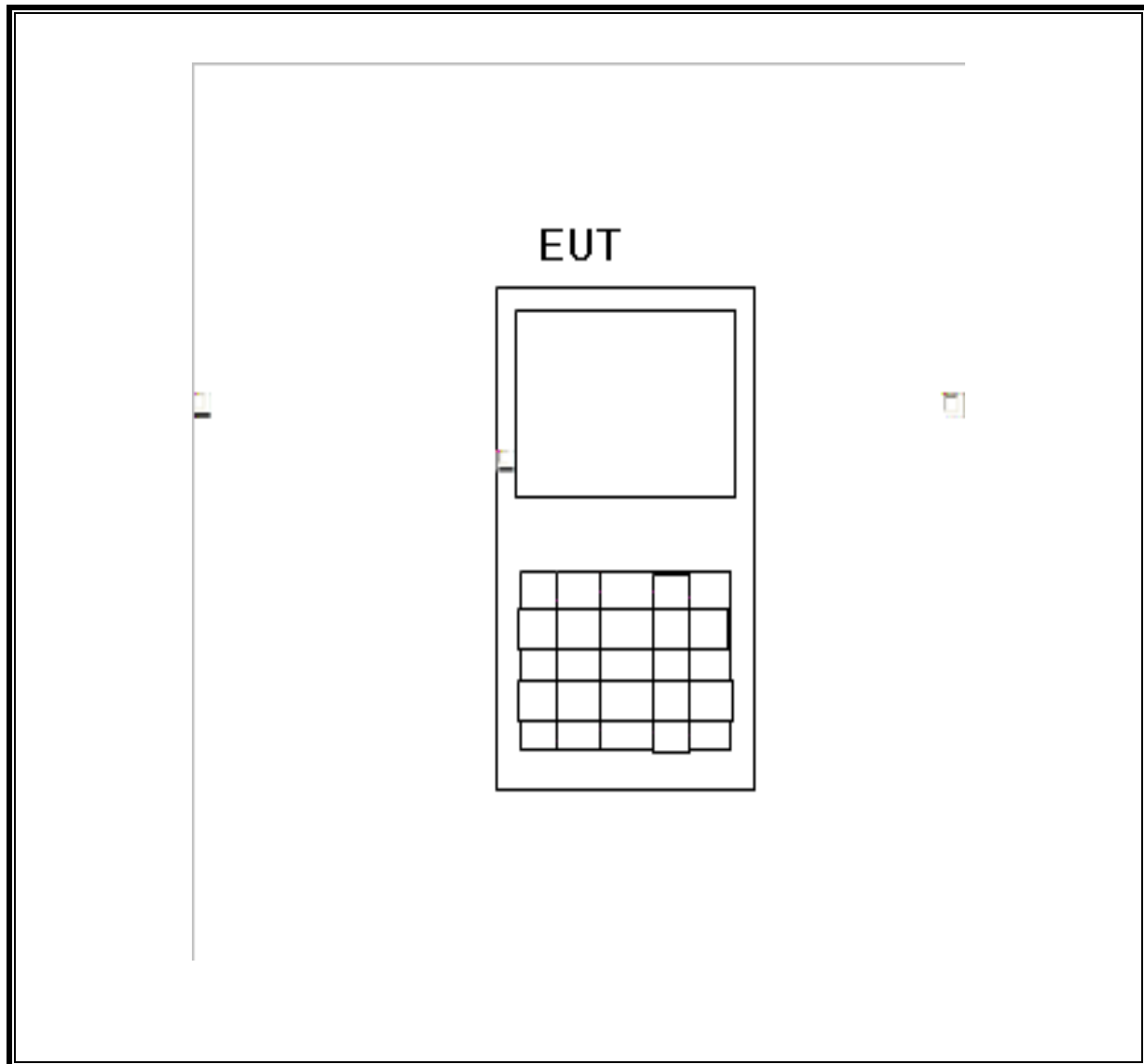
5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power.

5.6. DESCRIPTION OF TEST SETUP

TEST SETUP

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 Date	Cal Due
<i>Spectrum Analyzer, 44 GHz</i>	<i>Agilent / HP</i>	<i>E4446A</i>	<i>C01159</i>	<i>39759</i>	<i>02/07/10</i>
<i>Antenna, Bilog, 2 GHz</i>	<i>Sunol Sciences</i>	<i>JB1</i>	<i>C01011</i>	<i>39827</i>	<i>01/14/10</i>
<i>Preamplifier, 1300 MHz</i>	<i>Agilent / HP</i>	<i>8447D</i>	<i>C00885</i>	<i>39798</i>	<i>12/16/09</i>
<i>Preamplifier, 26.5 GHz</i>	<i>Agilent / HP</i>	<i>8449B</i>	<i>C01052</i>	<i>39848</i>	<i>02/04/10</i>
<i>Antenna, Horn, 18 GHz</i>	<i>EMCO</i>	<i>3115</i>	<i>C00945</i>	<i>39560</i>	<i>04/22/09</i>
<i>EMI Test Receiver, 30 MHz</i>	<i>R & S</i>	<i>ESHS 20</i>	<i>N02396</i>	<i>39484</i>	<i>08/06/09</i>
<i>LISN, 30 MHz</i>	<i>FCC</i>	<i>LISN-50/250-25-2</i>	<i>N02625</i>	<i>39750</i>	<i>10/29/09</i>

7. ANTENNA PORT TEST RESULTS

7.1. 802.11b MODE IN THE 2.4 GHz BAND

7.1.1. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 10.7 dB (including 10 dB pad and 0.7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Power (dBm)
Low	2412	14.67
Middle	2437	14.61
High	2462	13.42

7.1.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

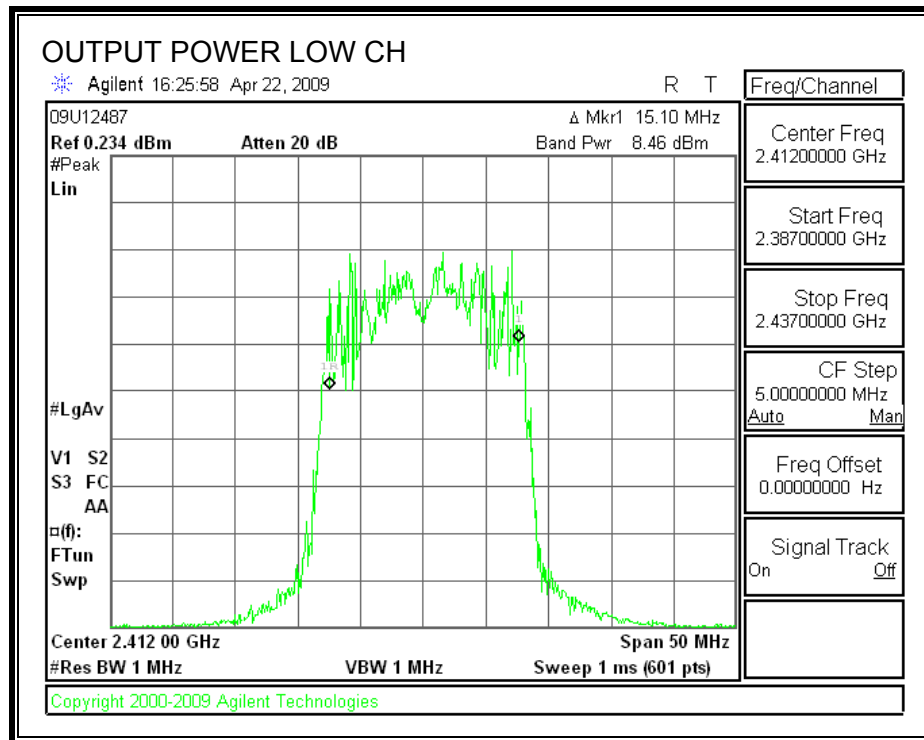
TEST PROCEDURE

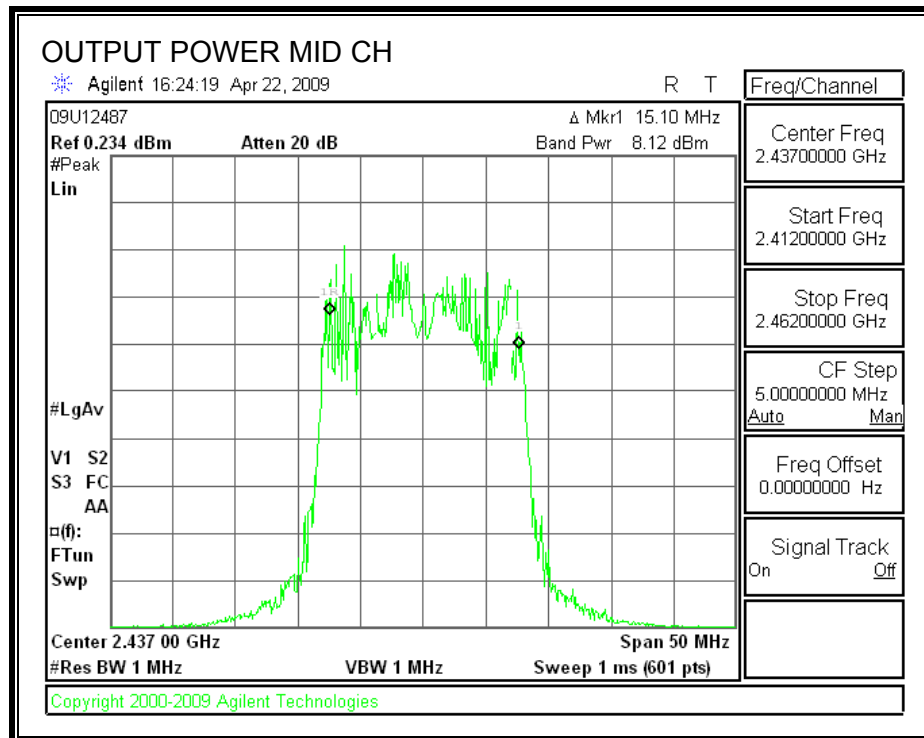
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

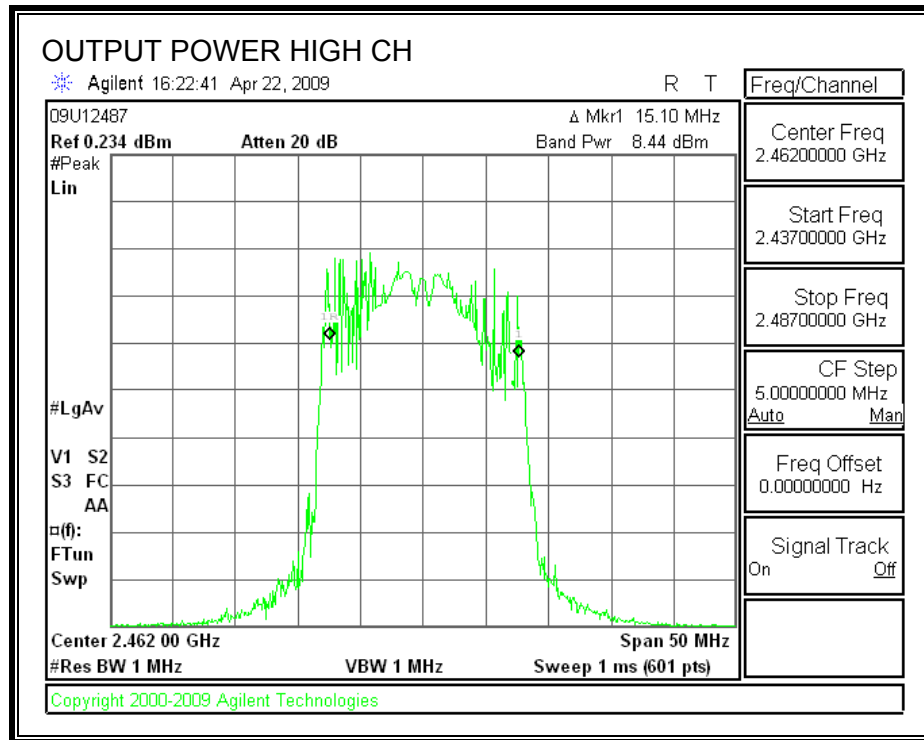
RESULTS

Channel	Frequency (MHz)	Spectrum Analyzer Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	8.46	10.7	19.16	30	-10.84
Middle	2437	8.12	10.7	18.82	30	-11.18
High	2462	8.44	10.7	19.14	30	-10.86

OUTPUT POWER







7.2. 802.11g MODE IN THE 2.4 GHz BAND

7.2.1. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 10.7 dB (including 10 dB pad and 0.7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Power (dBm)
Low	2412	14.60
Middle	2437	14.32
High	2462	13.24

7.2.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

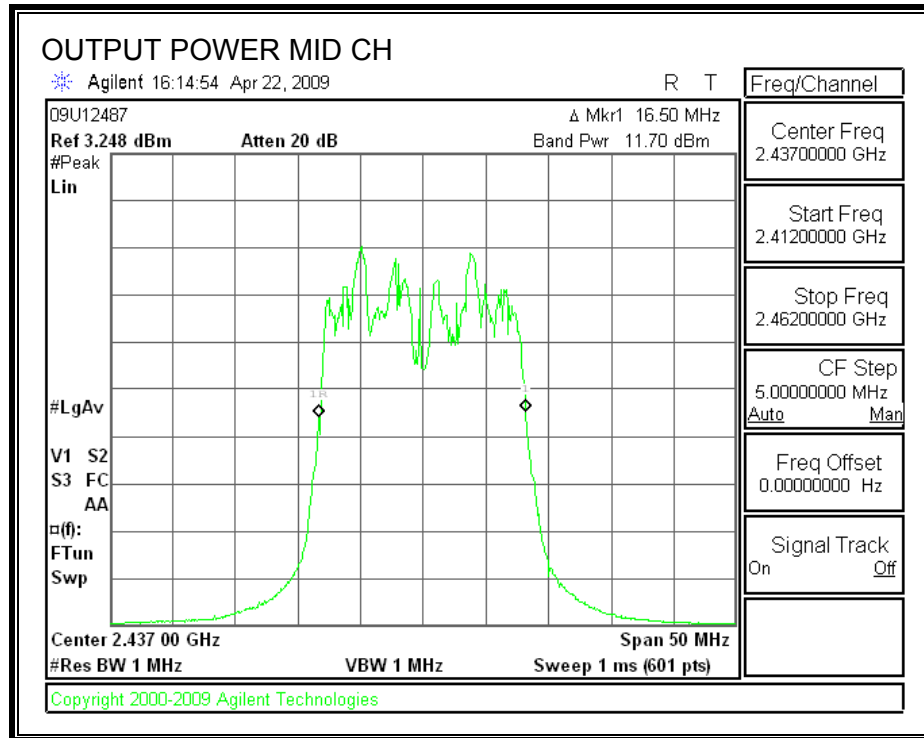
The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

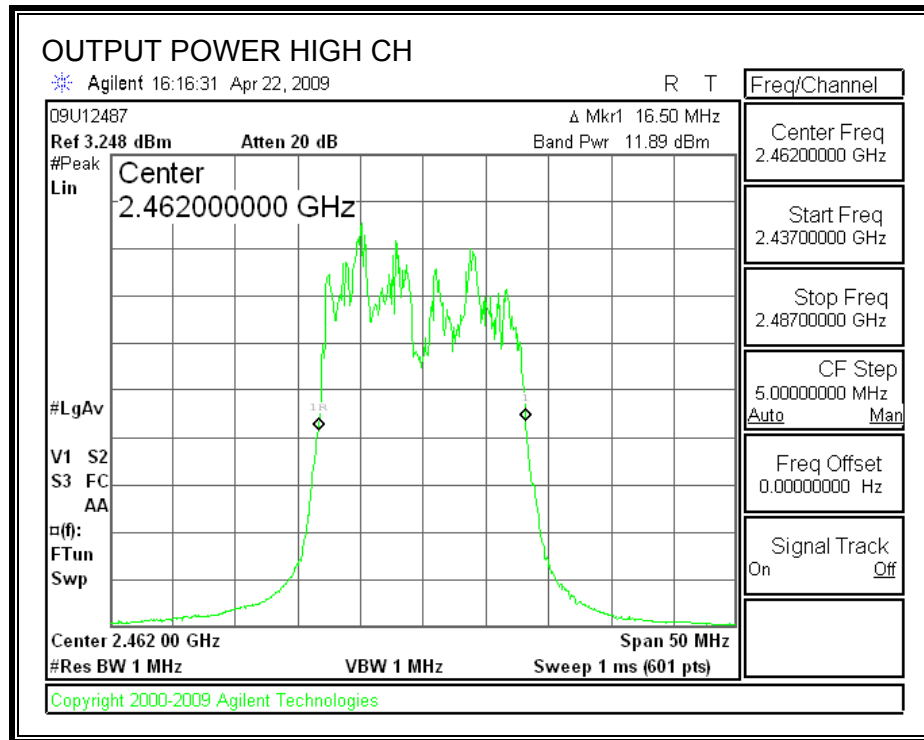
TEST PROCEDURE

Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

RESULTS

Channel	Frequency (MHz)	Spectrum Analyzer Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	12.02	10.7	22.72	30	-7.28
Middle	2437	11.7	10.7	22.40	30	-7.60
High	2462	11.89	10.7	22.59	30	-7.41





8. RADIATED TEST RESULTS

8.1. 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.

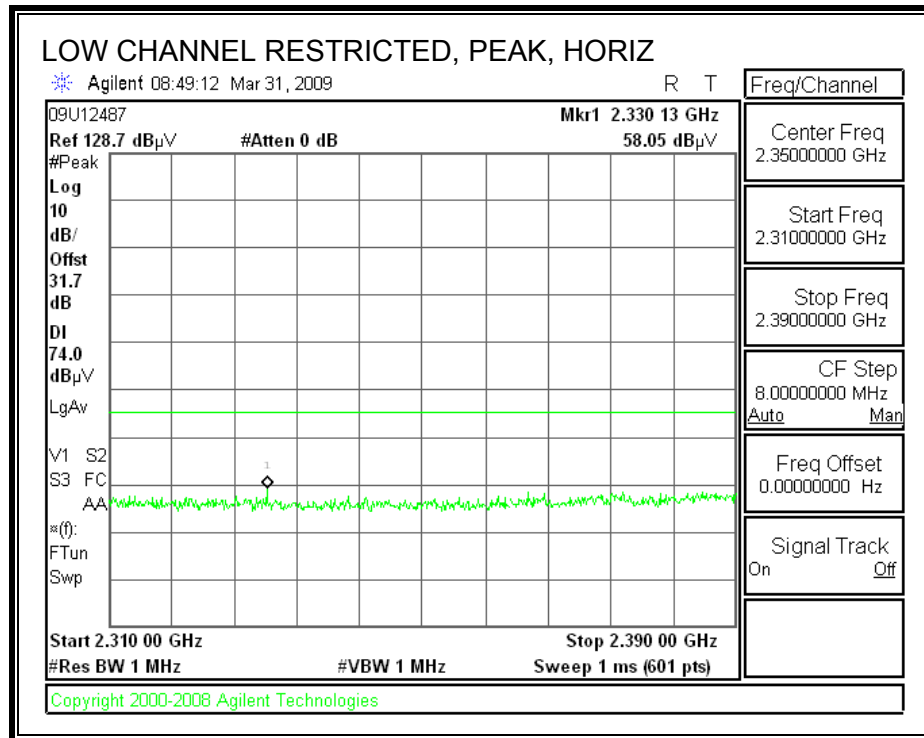
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

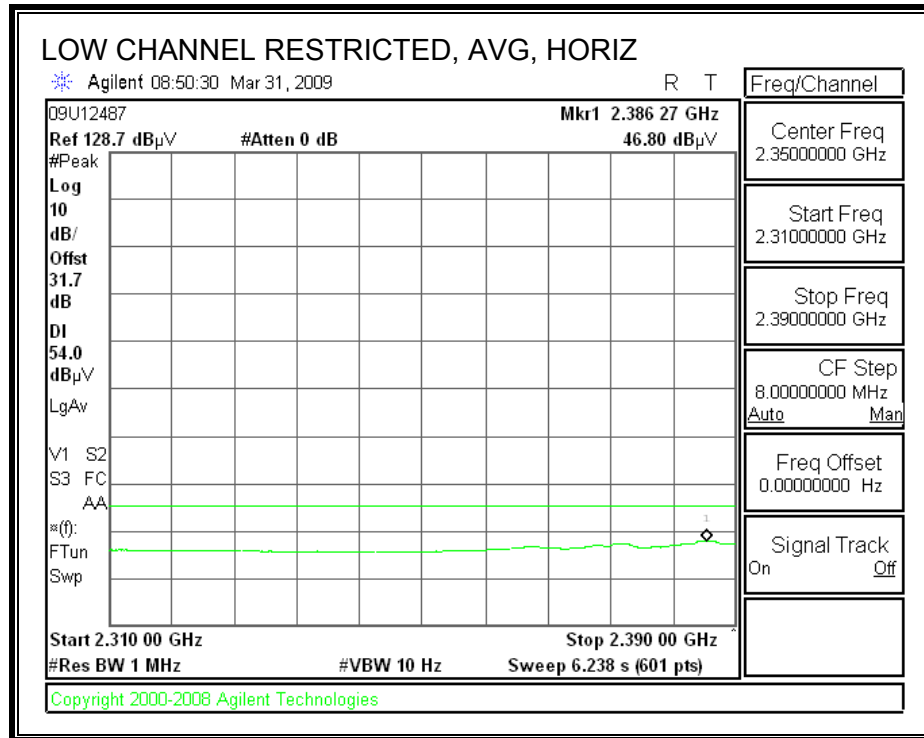
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

8.2. TRANSMITTER ABOVE 1 GHz

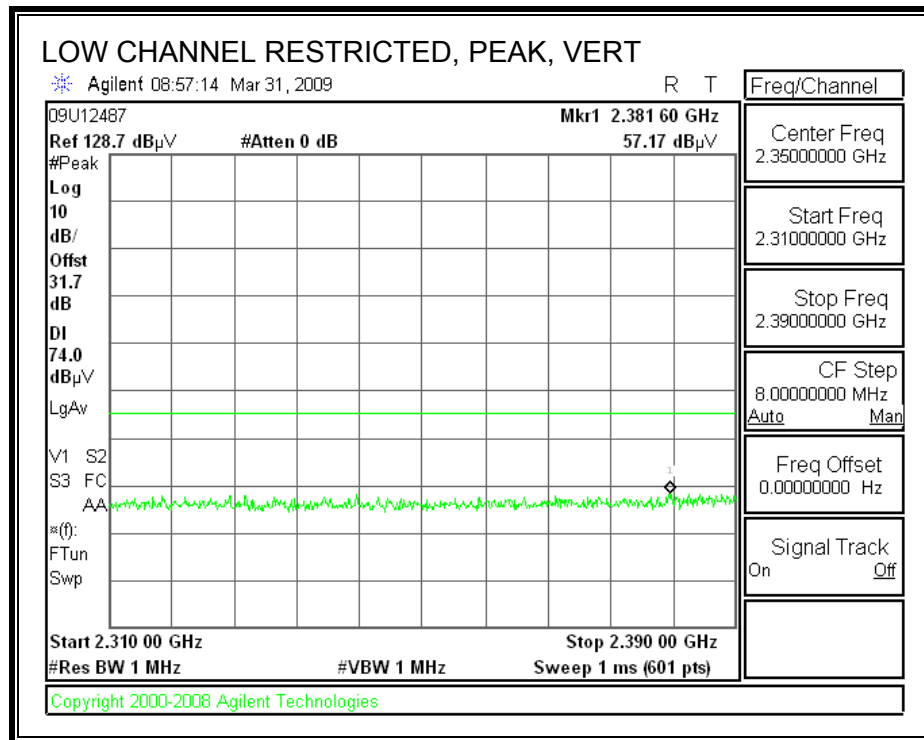
8.2.1. TX ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND

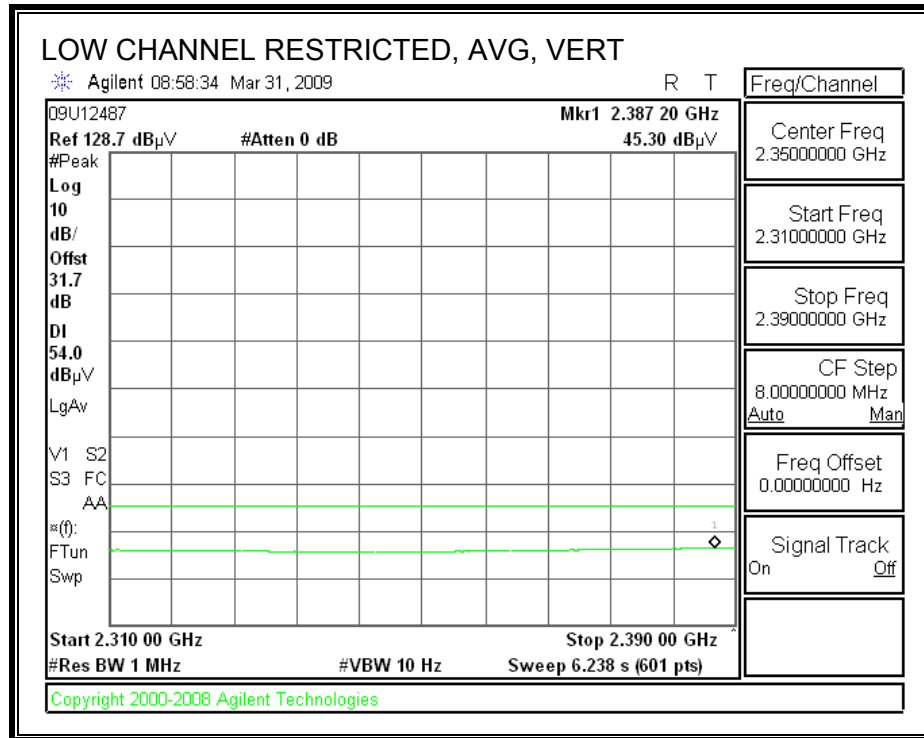
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



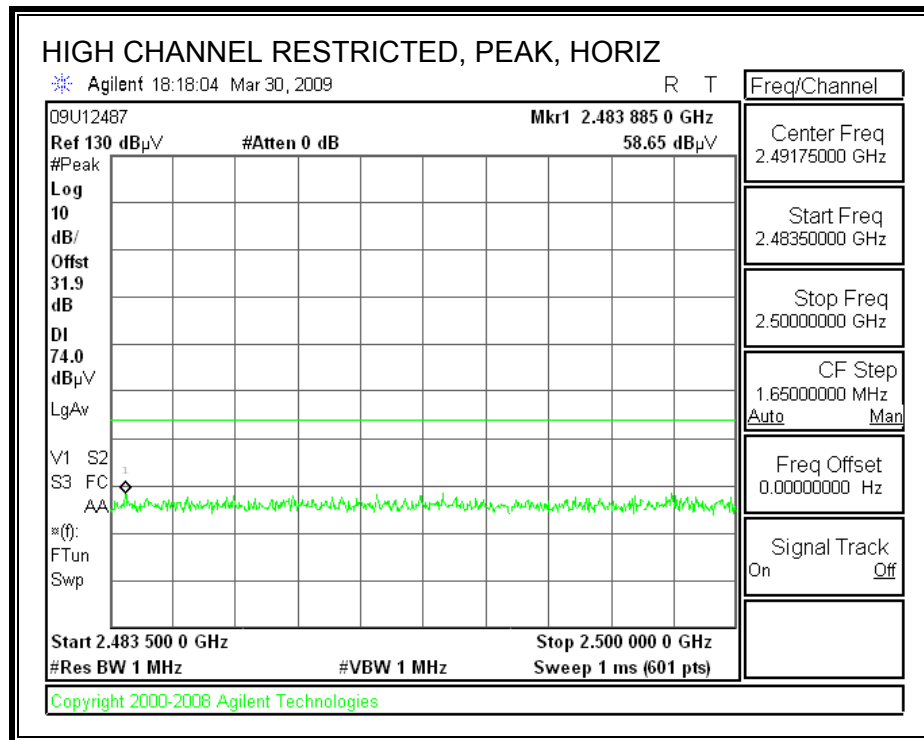


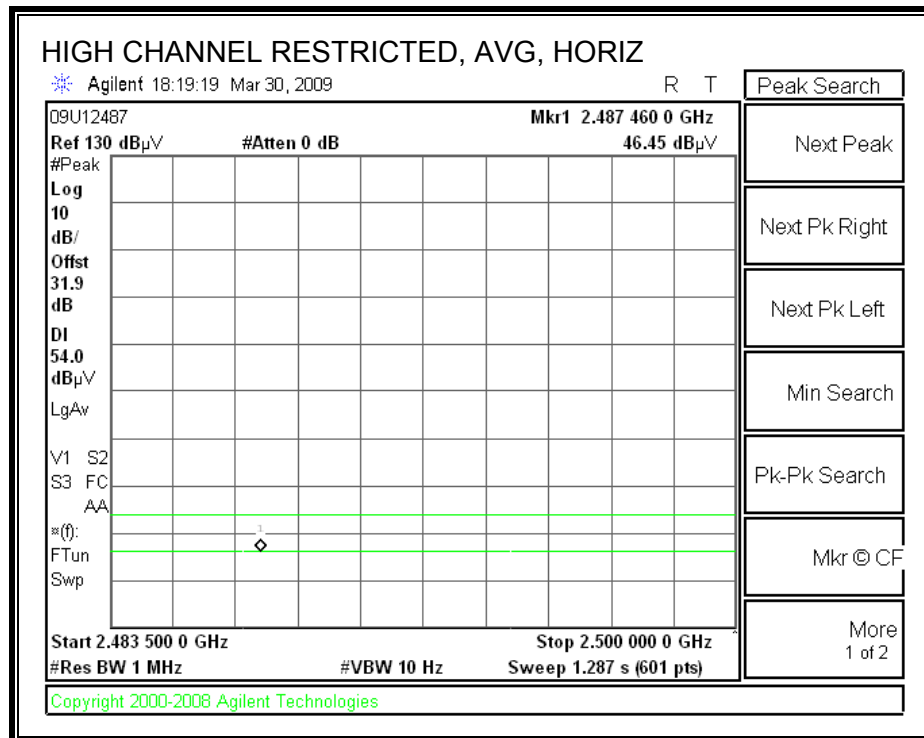
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



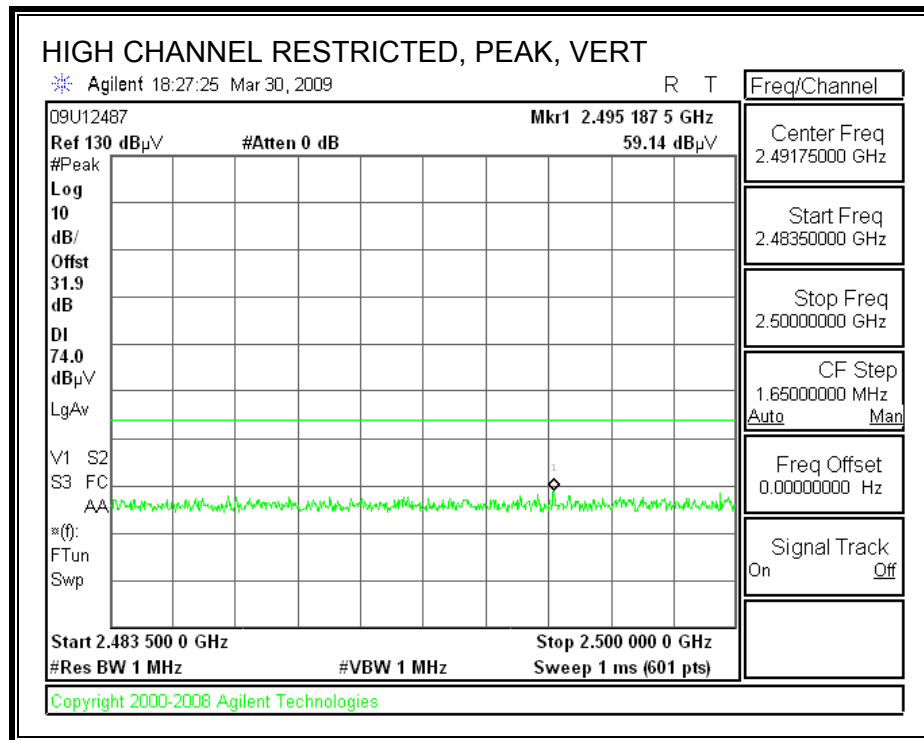


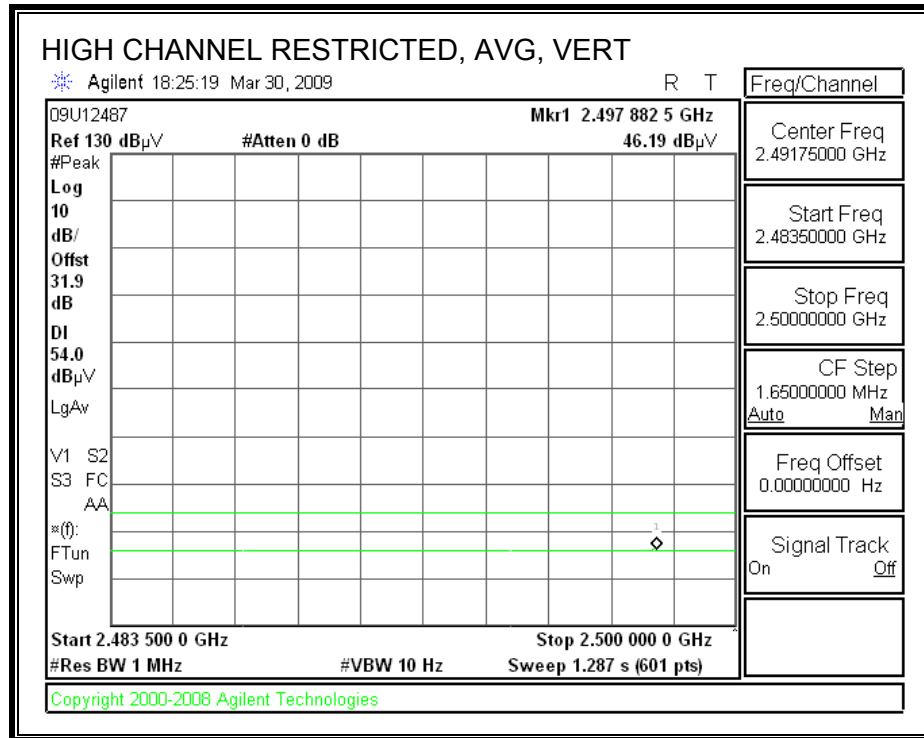
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEGE (HIGH CHANNEL, VERTICAL)



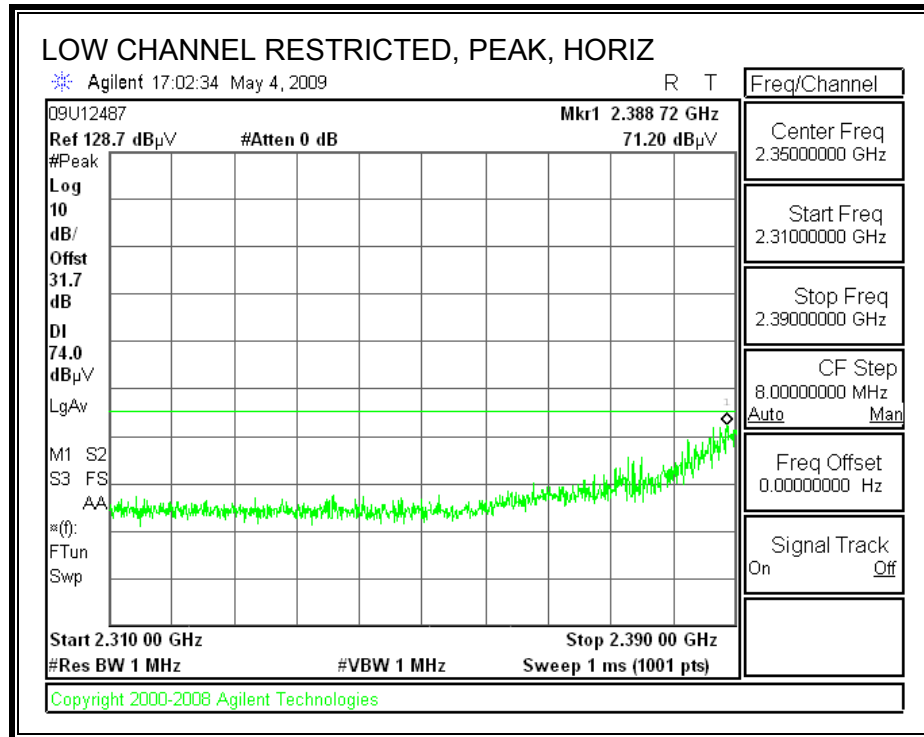


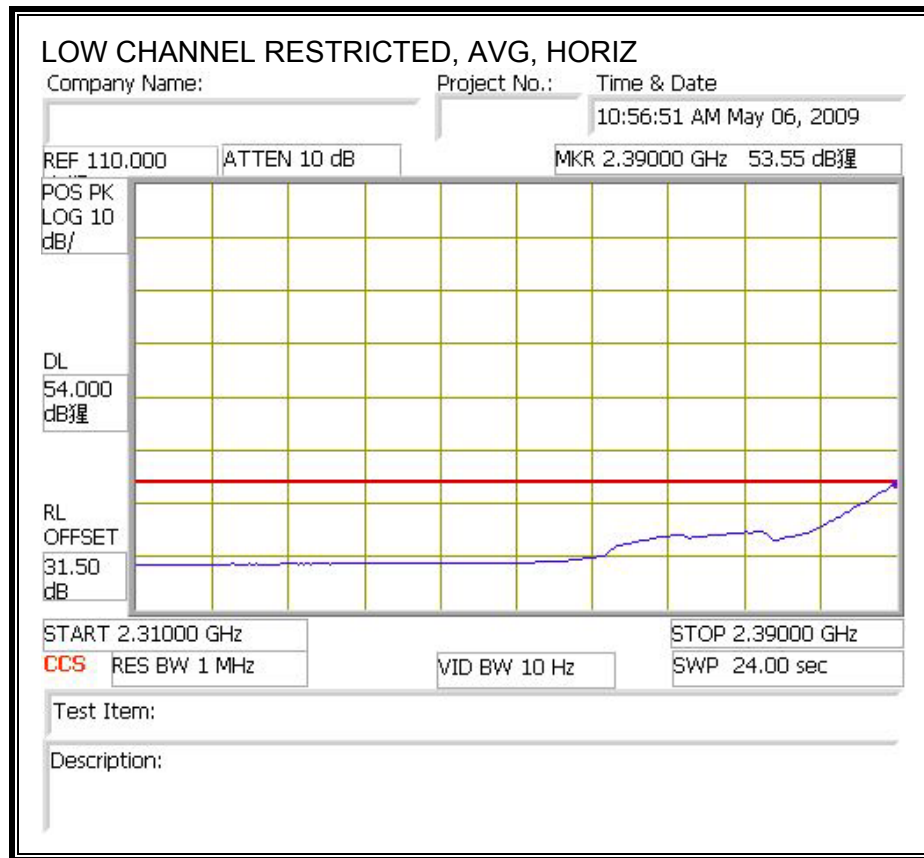
HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement																
Compliance Certification Services, Fremont 5m Chamber																
Company:		Intermec														
Project #:		09U12487														
Date:		3/31/2009														
Test Engineer:		Tom Chen														
Configuration:		EUT only														
Mode:		b mode TX, Low, Mid, Hi CH														
Test Equipment:																
Horn 1-18GHz			Pre-amplifer 1-26GHz			Pre-amplifer 26-40GHz			Horn > 18GHz			Limit				
T73; S/N: 6717 @3m			T144 Miteq 3008A00931									FCC 15.209				
Hi Frequency Cables																
3' cable 22807700			12' cable 22807600			20' cable 22807500			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz	
3' cable 22807700			12' cable 22807600			20' cable 22807500						R_001			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	Fitr 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 CH 2412 MHz																
4.824	3.0	48.3	34.7	33.0	5.8	-36.5	0.0	0.0	50.7	37.1	74	54	-23.3	-16.9	H	
7.236	3.0	49.2	37.4	35.2	7.2	-36.2	0.0	0.0	55.4	43.6	74	54	-18.6	-10.4	H	
9.648	3.0	47.4	35.3	37.4	8.5	-37.0	0.0	0.0	56.3	44.3	74	54	-17.7	-9.7	H	
4.824	3.0	48.1	34.5	33.0	5.8	-36.5	0.0	0.0	50.5	36.9	74	54	-23.5	-17.1	V	
7.236	3.0	49.7	37.1	35.2	7.2	-36.2	0.0	0.0	55.9	43.3	74	54	-18.1	-10.7	V	
9.648	3.0	47.5	35.6	37.4	8.5	-37.0	0.0	0.0	56.5	44.6	74	54	-17.5	-9.4	V	
Mid CH 2437 MHz																
4.874	3.0	47.9	34.5	33.1	5.8	-36.5	0.0	0.0	50.4	37.0	74	54	-23.6	-17.0	H	
7.311	3.0	49.3	37.4	35.3	7.3	-36.2	0.0	0.0	55.6	43.7	74	54	-18.4	-10.3	H	
9.748	3.0	47.4	35.5	37.4	8.6	-37.0	0.0	0.0	56.4	44.5	74	54	-17.6	-9.5	H	
4.874	3.0	48.0	34.7	33.1	5.8	-36.5	0.0	0.0	50.5	37.2	74	54	-23.5	-16.8	V	
7.311	3.0	49.1	37.1	35.3	7.3	-36.2	0.0	0.0	55.4	43.4	74	54	-18.6	-10.6	V	
9.748	3.0	47.7	35.3	37.4	8.6	-37.0	0.0	0.0	56.7	44.3	74	54	-17.3	-9.7	V	
Hi CH 2462 MHz																
4.924	3.0	48.7	34.7	33.1	5.9	-36.5	0.0	0.0	51.3	37.2	74	54	-22.7	-16.8	H	
7.386	3.0	48.9	37.1	35.4	7.3	-36.2	0.0	0.0	55.4	43.6	74	54	-18.6	-10.4	H	
9.848	3.0	46.8	35.4	37.5	8.7	-37.0	0.0	0.0	55.9	44.5	74	54	-18.1	-9.5	H	
4.924	3.0	48.5	34.5	33.1	5.9	-36.5	0.0	0.0	51.1	37.1	74	54	-22.9	-16.9	V	
7.386	3.0	48.4	37.3	35.4	7.3	-36.2	0.0	0.0	54.9	43.8	74	54	-19.1	-10.2	V	
9.848	3.0	46.7	35.1	37.5	8.7	-37.0	0.0	0.0	55.8	44.2	74	54	-18.2	-9.8	V	
Rev. 11.10.08																
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									

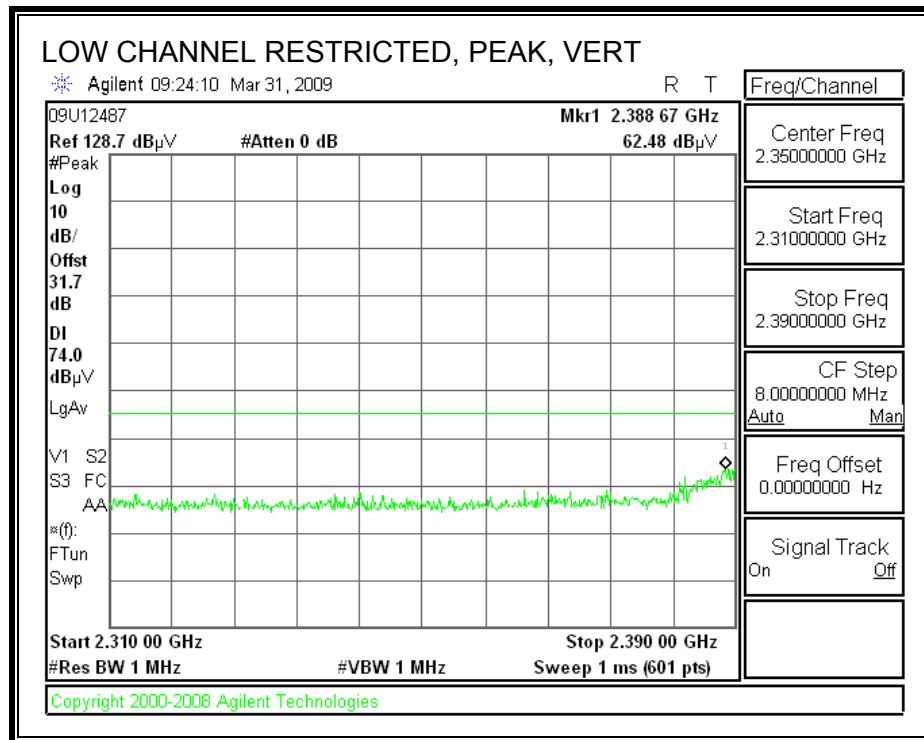
8.2.2. TX ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND

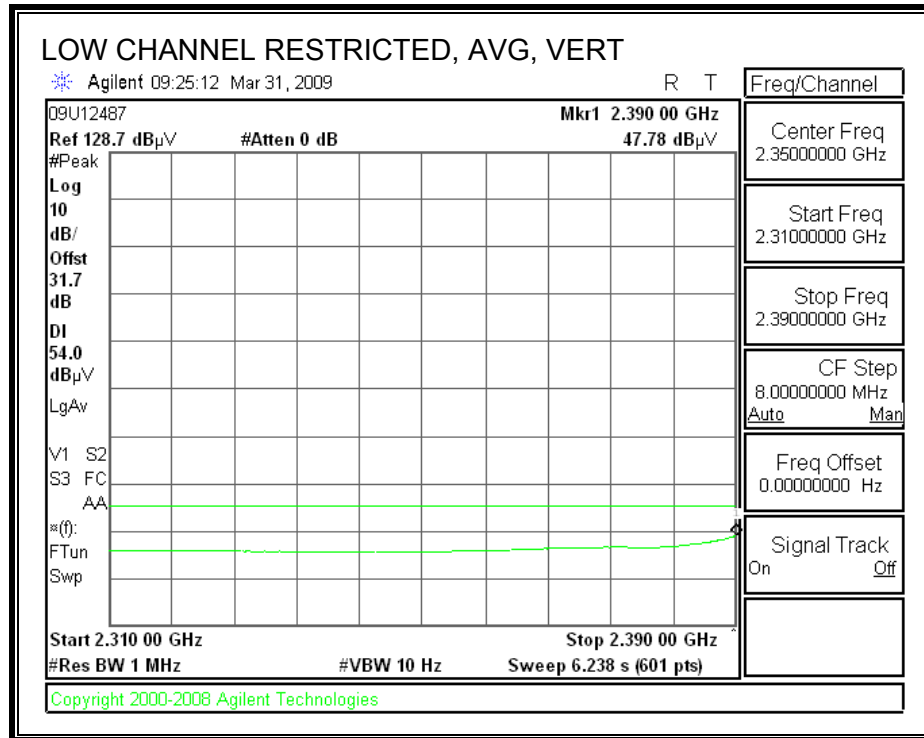
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



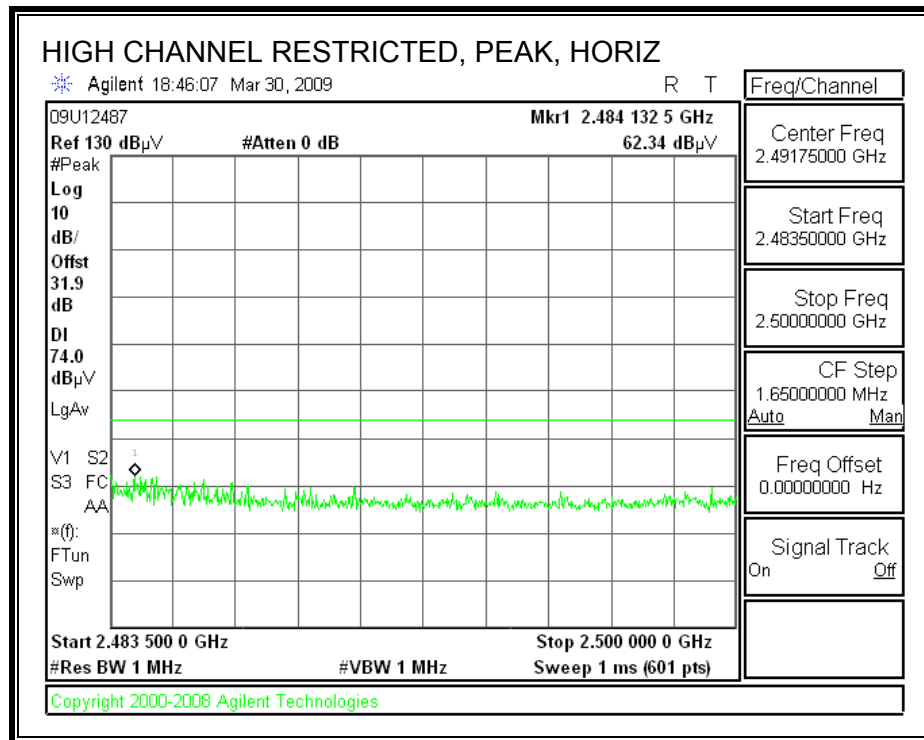


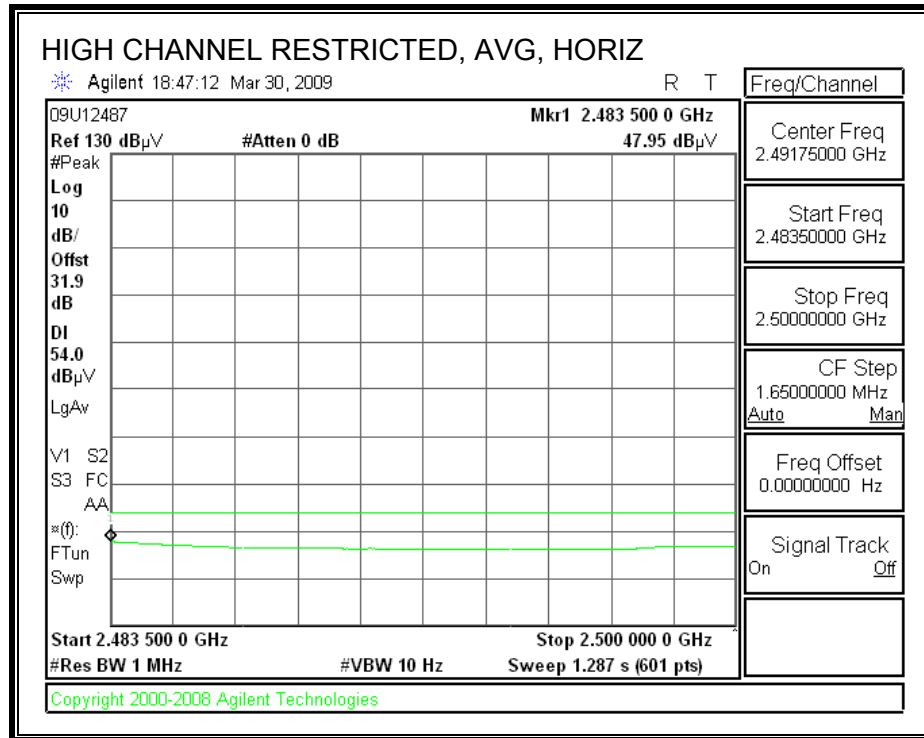
RESTRICTED BANEDGE (LOW CHANNEL, VERTICAL)



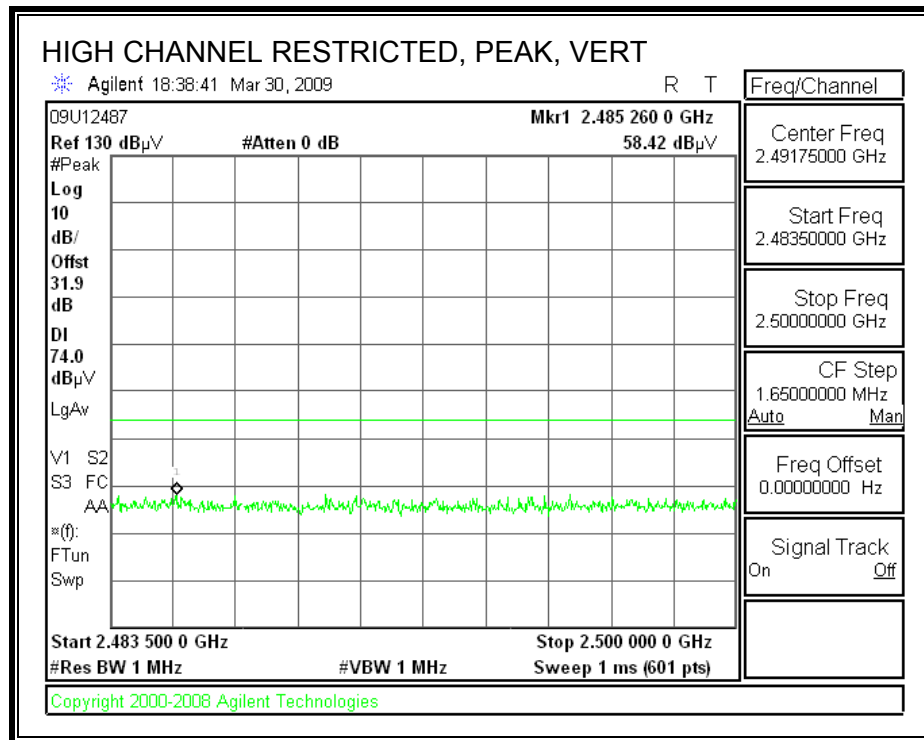


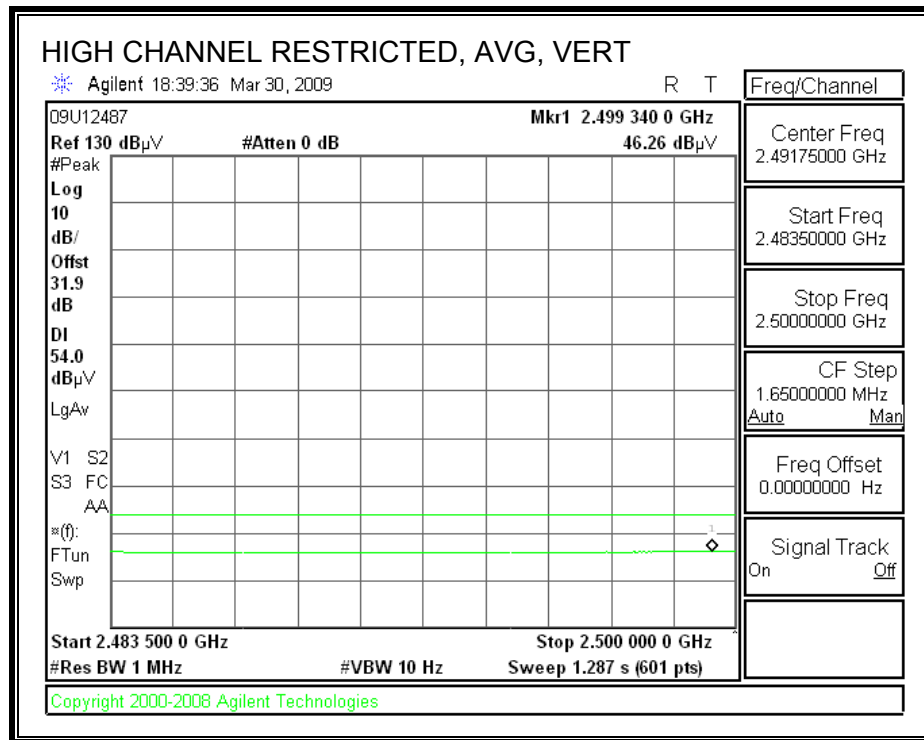
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement															
Compliance Certification Services, Fremont 5m Chamber															
Company: Intermec Project #: 09U12487 Date: 3/31/2009 Test Engineer: Tom Chen Configuration: EUT only Mode: g mode TX, Low, Mid, Hi CH															
Test Equipment:															
Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit							
T73; S/N: 6717 @3m		T144 Miteq 3008A00931						FCC 15.209							
Hi Frequency Cables															
3' cable 22807700		12' cable 22807600		20' cable 22807500		HPF		Reject Filter		Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz, VBW=10Hz					
3' cable 22807700		12' cable 22807600		20' cable 22807500				R_001							
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)
Low CH 2412 MHz															
4.824	3.0	46.4	34.6	33.0	5.8	-36.5	0.0	0.0	48.8	37.0	74	54	-25.2	-17.0	H
7.236	3.0	49.7	37.2	35.2	7.2	-36.2	0.0	0.0	55.9	43.4	74	54	-18.1	-10.6	H
9.648	3.0	47.1	35.4	37.4	8.5	-37.0	0.0	0.0	56.1	44.4	74	54	-17.9	-9.6	H
4.824	3.0	46.1	34.3	33.0	5.8	-36.5	0.0	0.0	48.5	36.7	74	54	-25.5	-17.3	V
7.236	3.0	49.6	37.3	35.2	7.2	-36.2	0.0	0.0	55.8	43.5	74	54	-18.2	-10.5	V
9.648	3.0	47.5	35.2	37.4	8.5	-37.0	0.0	0.0	56.5	44.2	74	54	-17.5	-9.8	V
Mid CH 2437 MHz															
4.874	3.0	46.9	34.4	33.1	5.8	-36.5	0.0	0.0	49.4	36.8	74	54	-24.6	-17.2	H
7.311	3.0	49.1	37.2	35.3	7.3	-36.2	0.0	0.0	55.4	43.5	74	54	-18.6	-10.5	H
9.748	3.0	47.2	35.3	37.4	8.6	-37.0	0.0	0.0	56.2	44.3	74	54	-17.8	-9.7	H
4.874	3.0	46.7	34.2	33.1	5.8	-36.5	0.0	0.0	49.2	36.7	74	54	-24.8	-17.3	V
7.311	3.0	49.3	37.5	35.3	7.3	-36.2	0.0	0.0	55.6	43.8	74	54	-18.4	-10.2	V
9.748	3.0	47.4	35.2	37.4	8.6	-37.0	0.0	0.0	56.4	44.2	74	54	-17.6	-9.8	V
Hi CH 2462 MHz															
4.924	3.0	47.6	34.4	33.1	5.9	-36.5	0.0	0.0	50.2	37.0	74	54	-23.8	-17.0	H
7.386	3.0	48.6	37.2	35.4	7.3	-36.2	0.0	0.0	55.1	43.7	74	54	-18.9	-10.3	H
9.848	3.0	46.9	35.1	37.5	8.7	-37.0	0.0	0.0	56.0	44.2	74	54	-18.0	-9.8	H
4.924	3.0	47.3	34.6	33.1	5.9	-36.5	0.0	0.0	49.9	37.2	74	54	-24.1	-16.8	V
7.386	3.0	48.3	37.0	35.4	7.3	-36.2	0.0	0.0	54.8	43.5	74	54	-19.2	-10.5	V
9.848	3.0	46.7	35.2	37.5	8.7	-37.0	0.0	0.0	55.8	44.3	74	54	-18.2	-9.7	V
Rev. 11.10.08															
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										

8.3. RECEIVER ABOVE 1 GHz

8.3.1. RX ABOVE 1 GHz FOR 20 MHz BANDWIDTH IN THE 2.4 GHz BAND

High Frequency Measurement																
Compliance Certification Services, Fremont 5m Chamber																
Company:		Intermec														
Project #:		09U12487														
Date:		3/31/2009														
Test Engineer:		Tom Chen														
Configuration:		EUT only														
Mode:		RX mode														
Test Equipment:																
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit				
T73; S/N: 6717 @3m			T144 Miteq 3008A00931									RX RSS 210				
Hi Frequency Cables																
3' cable 22807700			12' cable 22807600			20' cable 22807500			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz	
3' cable 22807700			12' cable 22807600			20' cable 22807500									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	Ftr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
1.447	3.0	45.5	37.3	25.4	2.9	-38.9	0.0	0.0	34.9	26.7	74	54	-39.1	-27.3	H	
1.727	3.0	45.3	37.1	26.3	3.2	-38.5	0.0	0.0	36.4	28.1	74	54	-37.6	-25.9	H	
3.907	3.0	41.4	36.5	32.0	5.1	-36.7	0.0	0.0	41.8	37.0	74	54	-32.2	-17.0	H	
1.447	3.0	45.1	37.1	25.4	2.9	-38.9	0.0	0.0	34.5	26.5	74	54	-39.5	-27.5	V	
1.727	3.0	45.8	37.6	26.3	3.2	-38.5	0.0	0.0	36.8	28.6	74	54	-37.2	-25.4	V	
3.907	3.0	41.4	36.3	32.0	5.1	-36.7	0.0	0.0	41.9	36.8	74	54	-32.1	-17.2	V	
Rev. 11.10.08																
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									

8.4. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT

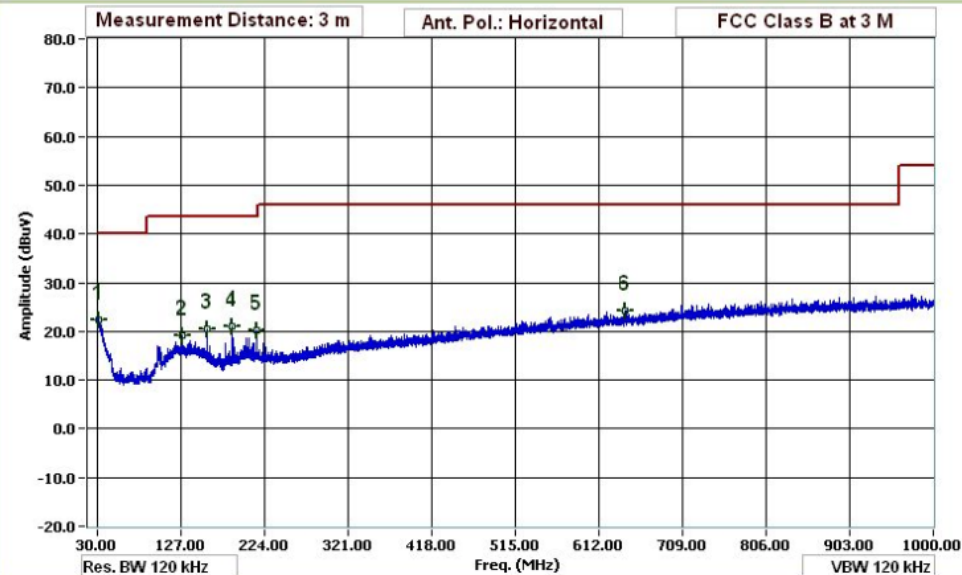
30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tom Chen
Date: 04/01/09
Project #: 09U12487
Company: Intermec Technologies Corp
EUT Description: Heavy Duty Handheld PDA-type device with dual band WCDMA/HSDPA, 802.11b/g & BT
EUT M/N: EUT only
Test Target: FCC Class B
Mode Oper: TX

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	Ant. High cm	Table Angle Degree	Notes
Battery Power															
31.320	3.0	30.7	19.5	0.5	28.4	0.0	0.0	22.3	40.0	-17.7	H	P	100.0	0 - 360	Prescan
128.884	3.0	32.7	13.6	1.1	28.3	0.0	0.0	19.1	43.5	-24.4	H	P	100.0	0 - 360	Prescan
157.565	3.0	35.8	11.9	1.1	28.3	0.0	0.0	20.5	43.5	-23.0	H	P	100.0	0 - 360	Prescan
186.126	3.0	36.8	11.3	1.2	28.2	0.0	0.0	21.0	43.5	-22.5	H	P	100.0	0 - 360	Prescan
214.808	3.0	35.2	11.9	1.3	28.2	0.0	0.0	20.2	43.5	-23.3	H	P	100.0	0 - 360	Prescan
642.985	3.0	30.3	18.9	2.3	27.4	0.0	0.0	24.2	46.0	-21.8	H	P	100.0	0 - 360	Prescan
										0.0					
										0.0					

Measurement Configuration



Project No.: 09U12487

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

VERTICAL PLOT

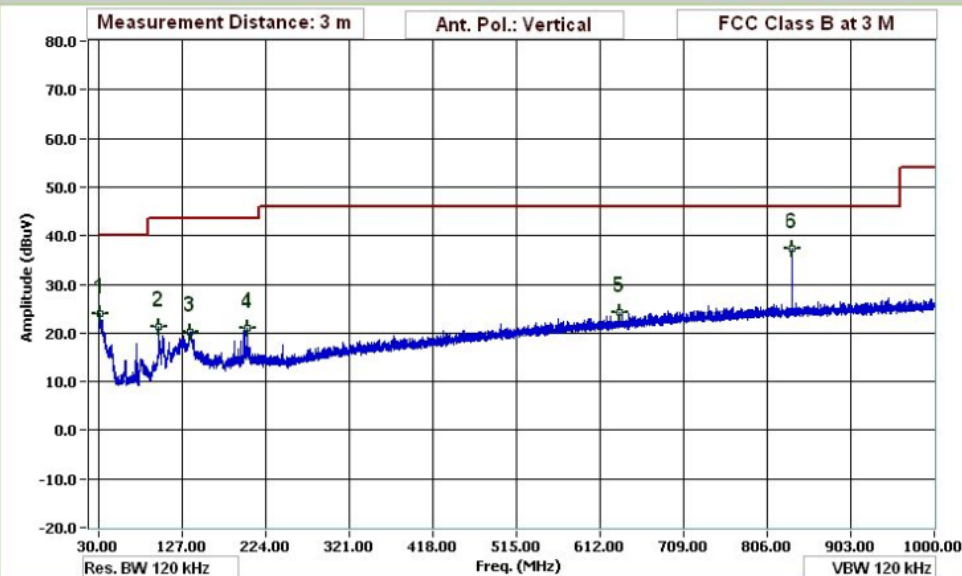
30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tom Chen
Date: 04/01/09
Project #: 09U12487
Company: Intermec Technologies Corp
EUT Description: Heavy Duty Handheld PDA-type device with dual band WCDMA/HSDPA, 802.11b/g & BT
EUT M/N: EUT only
Test Target: FCC Class B
Mode Oper: TX

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	Ant. High cm	Table Angle Degree	Notes
Battery Power															
31.200	3.0	32.2	19.6	0.5	28.4	0.0	0.0	23.9	40.0	-16.1	V	P	100.0	0 - 360	Prescan
100.203	3.0	38.8	10.0	0.9	28.3	0.0	0.0	21.4	43.5	-22.1	V	P	100.0	0 - 360	Prescan
136.564	3.0	34.2	13.3	1.1	28.3	0.0	0.0	20.3	43.5	-23.2	V	P	100.0	0 - 360	Prescan
202.687	3.0	35.9	12.0	1.3	28.2	0.0	0.0	20.9	43.5	-22.6	V	P	100.0	0 - 360	Prescan
634.825	3.0	30.4	18.8	2.3	27.4	0.0	0.0	24.2	46.0	-21.8	V	P	100.0	0 - 360	Prescan
834.753	3.0	41.1	21.3	2.7	27.6	0.0	0.0	37.5	46.0	-8.5	V	P	100.0	0 - 360	Prescan
										0.0					
										0.0					

Measurement Configuration



Project No.: 09U12487

0.0

9. 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

ANSI C63.4

RESULTS

6 WORST EMISSIONS

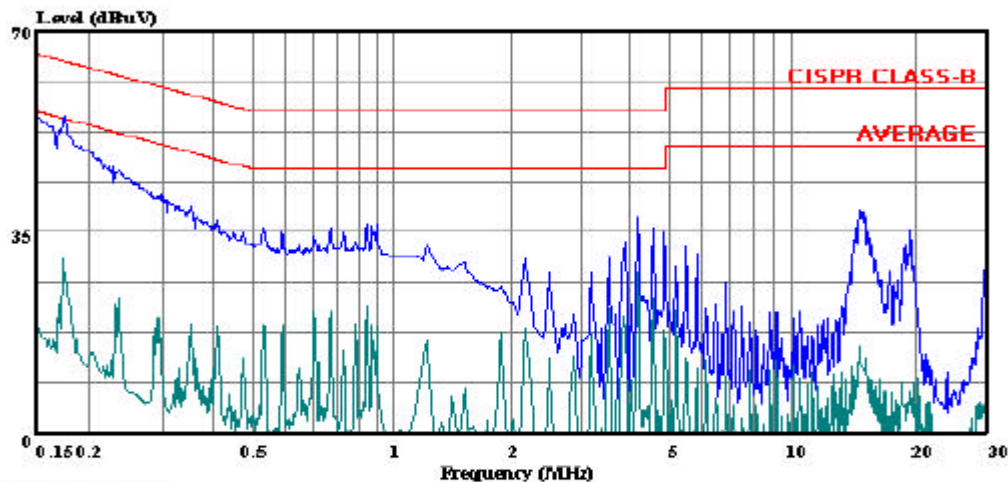
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.18	55.06	--	27.15	0.00	64.67	54.67	-9.61	-27.52	L1
4.29	37.72	--	27.73	0.00	56.00	46.00	-18.28	-18.27	L1
14.83	38.72	--	12.04	0.00	60.00	50.00	-21.28	-37.96	L1
0.18	54.12	--	26.66	0.00	64.63	54.63	-10.51	-27.97	L2
0.77	36.18	--	18.46	0.00	56.00	46.00	-19.82	-27.54	L2
18.72	33.42	--	10.62	0.00	60.00	50.00	-26.58	-39.38	L2
6 Worst Data									

LINE 1 RESULTS



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

Data#: 7 File#: 09U12487 LC.EMI Date: 04-01-2009 Time: 14:47:47



(Line Conduction)

Trace: 5

Ref Trace:

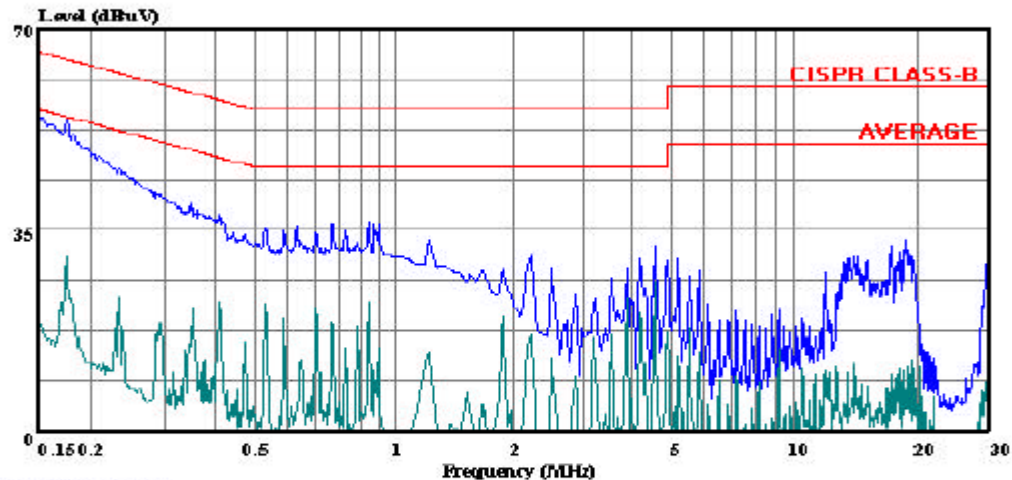
Condition: CISPR CLASS-B
Test Operator:: Tom Chen
Project #: : 09U12487
Company: : Intermec Technologies Corp.
Configuration:: BUT with Charger
Mode: : TX
Target: : FCC Class B
Voltage: : 115VAC / 60Hz
: L1: Peak (Blue), Average (Green)

LINE 2 RESULTS



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

Data#: 14 File#: 09U12487 LC.EMI Date: 04-01-2009 Time: 15:02:05



(Line Conduction)

Trace: 12

Ref Trace:

Condition: CISPR CLASS-B
Test Operator:: Tom Chen
Project #: : 09U12487
Company: : Intermec Technologies Corp.
Configuration:: EUT with Charger
Mode: : TX
Target: : FCC Class B
Voltage: : 115VAC / 60Hz
: L2: Peak (Blue), Average (Green)