



TESTING

CERT #803.01, 803.02, 803.05, 803.06

ADDENDUM TO FLUKE CORPORATION TEST REPORT FC09-147
FOR THE
WIRELESS MULTIMETER (DISPLAY), FLUKE 233
FCC PART 15 SUBPART C SECTION 15.247 AND RSS-210 ISSUE 7
TESTING

DATE OF ISSUE: NOVEMBER 23, 2009

PREPARED FOR:

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Everett, WA 98203

PREPARED BY:

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Date of test: September 1 –
November 17, 2009

Report No.: FC09-147A

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ADMINISTRATIVE INFORMATION

DATE OF TEST: September 1 - November 17, 2009

DATE OF RECEIPT: September 1, 2009

REPRESENTATIVE:

Thomas Smith

MANUFACTURER:

Fluke Corporation
6920 Seaway Blvd.
Everett, WA 98203

TEST LOCATION:

CKC Laboratories, Inc.
22116 23rd Drive S.E., Suite A
Bothell, WA 98021-4413

TEST METHOD: ANSI C63.4 (2003), RSS-210 Issue 7 and RSS GEN Issue 2

PURPOSE OF TEST:

Original Report: To perform the testing of the Wireless Multimeter (Display), Fluke 233 with the requirements for FCC Part 15 Subpart C Section 15.247 and RSS-210 devices.

Addendum A: To add new FCC 15.247(d) OATS radiated emissions testing from 9 kHz – 30 MHz for the Wireless Multimeter (Display), Fluke 233.

APPROVALS

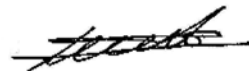
Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

TEST PERSONNEL:



Steve Van Kirk, Senior EMC Engineer / Lab Manager



Armando Del Angel, Test Engineer

SUMMARY OF RESULTS

Test	Specification/Method	Results
6dB Bandwidth	FCC 15.247(a)(2)	Pass
RF Power Output	FCC 15.247(b)(3)	Pass
OATS Spurious Emissions	FCC 15.247(d)	Pass
Bandedge	FCC 15.247(d)	Pass
Peak Power Spectral Density	FCC 15.247(e)	Pass
99% Bandwidth	RSS-210 Issue 7/RSS GEN Issue 2	Pass
Site File No.	FCC 318738 IC 3082C-1	

CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

Wireless Multimeter with removable display for remote monitor.
The EUT was operating from 2.405GHz to 2.48GHz.

EQUIPMENT UNDER TEST

Wireless Multimeter (Display)

Manuf: Fluke Corporation
Model: Fluke 233
Serial: 0016

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

MEASUREMENT UNCERTAINTIES

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k=2$. Compliance is deemed to occur provided measurements are below the specified limits.

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within $+15^{\circ}\text{C}$ and $+35^{\circ}\text{C}$.
The relative humidity was between 20% and 75%.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in $\text{dB}\mu\text{V}/\text{m}$, the spectrum analyzer reading in $\text{dB}\mu\text{V}$ was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dB μ V)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dB μ V/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

FCC 15.247(a)(2) 6 dB BANDWIDTH

Test Equipment

Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliac		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum Analyzer	Agilent	E4440A	MY46186333	4/29/2009	4/29/2011

Test Conditions

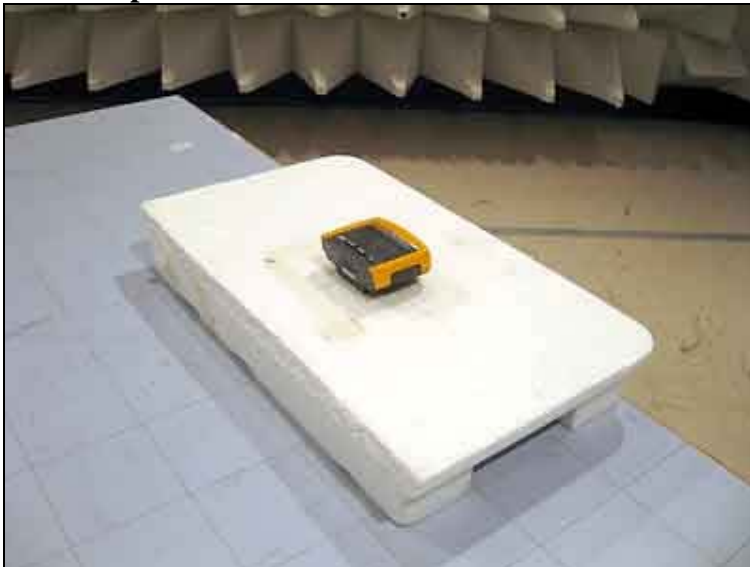
EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located on the center of the test table over 10cm of Styrofoam. PSA is on max hold, marker-to-peak function is set on the peak of each channel, and then the marker will be positioned 6dB below the peak on one side and then on the other side, the separation between those two points is the 6dB bandwidth. EUT will be tested in the LOW (2.405GHz), MID (2.44GHz), and HIGH (2.48GHz), test will be done with a set of new batteries.

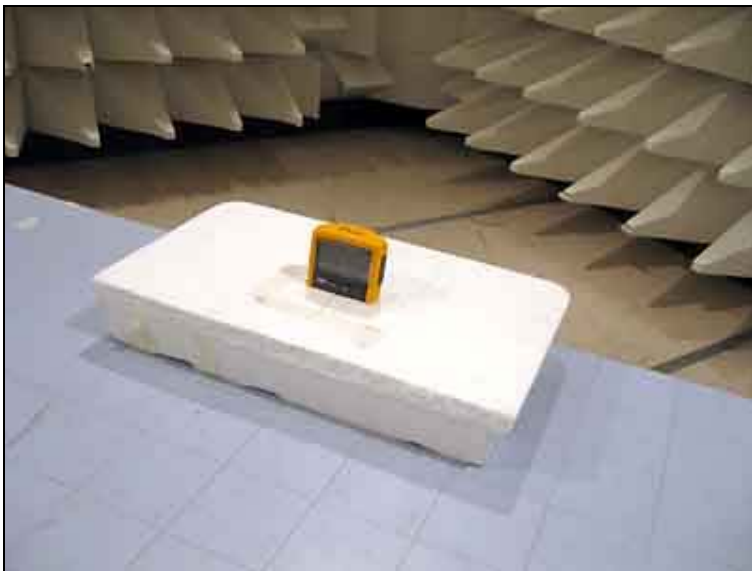
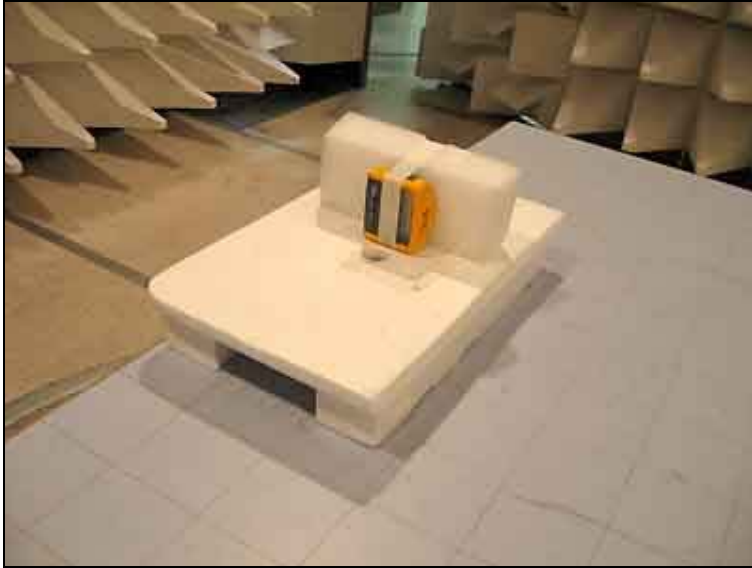
RBW = 100 kHz

VBW = 1 MHz

Span = 10MHz

Test Setup Photos



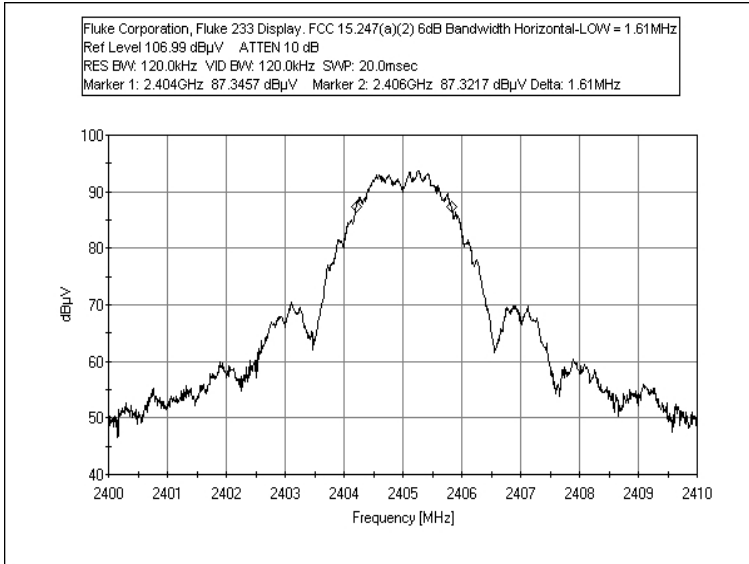


Test Data

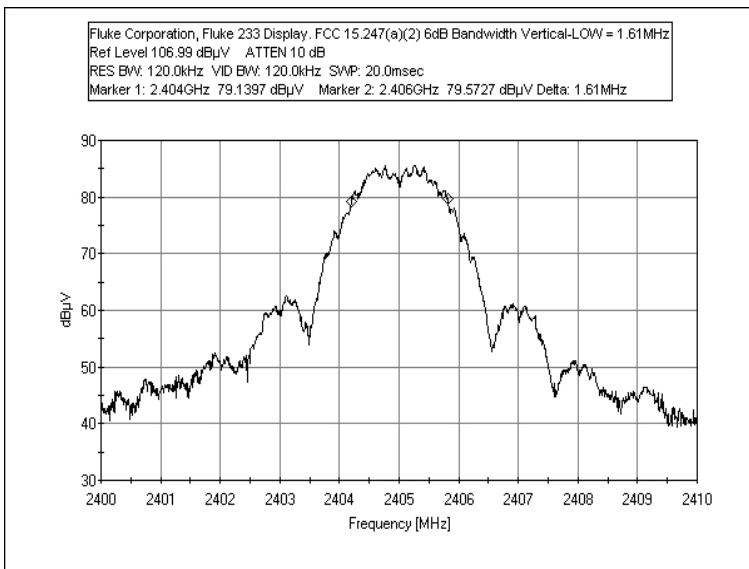
Channel	6dB Bandwidth		Limit
	Vertical	Horizontal	
LOW	1.61MHz	1.61MHz	500kHz
MID	1.62MHz	1.60MHz	500kHz
HIGH	1.60MHz	1.60MHz	500kHz

Test Plots

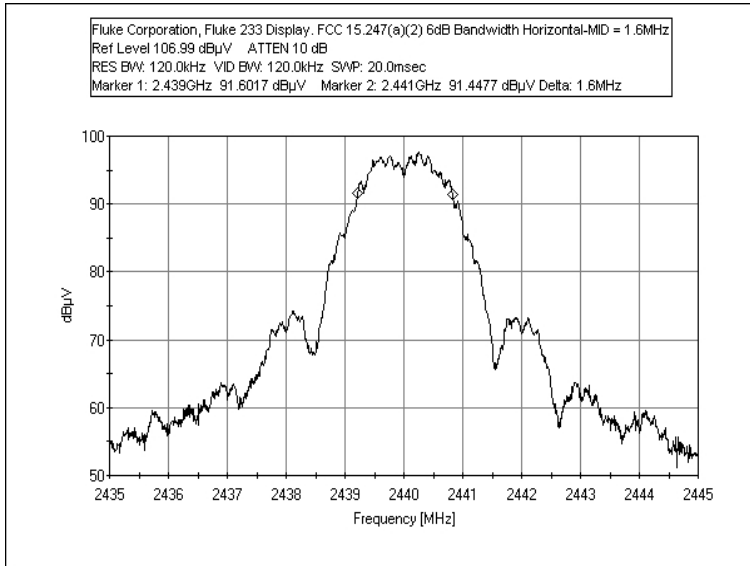
FCC 15.247(a)(2) 6dB BANDWIDTH-HORIZONTAL LOW CHANNEL



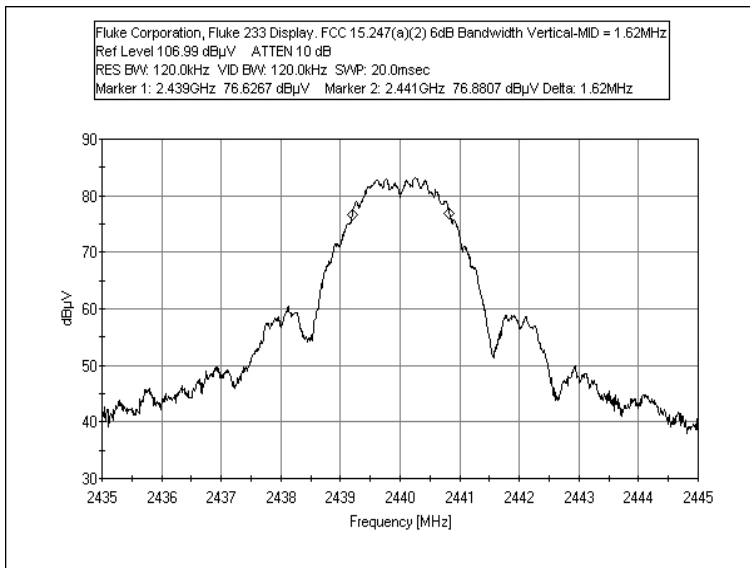
FCC 15.247(a)(2) 6dB BANDWIDTH-VERTICAL LOW CHANNEL



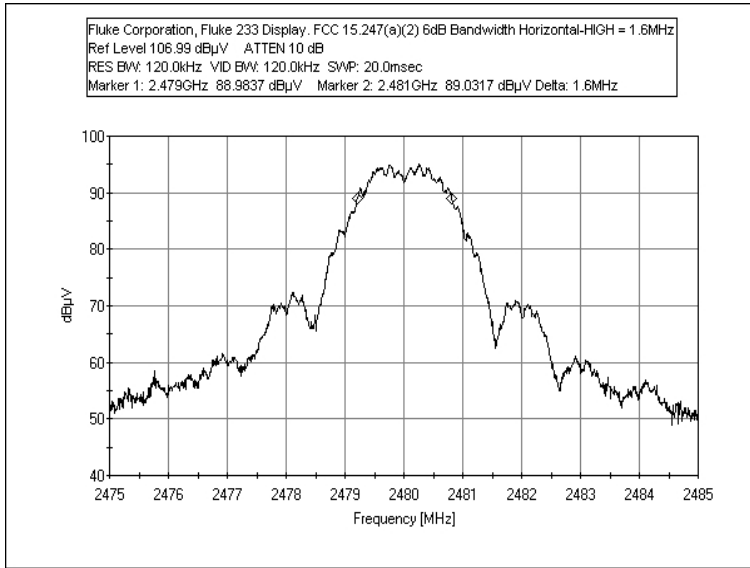
FCC 15.247(a)(2) 6dB BANDWIDTH-HORIZONTAL MID CHANNEL



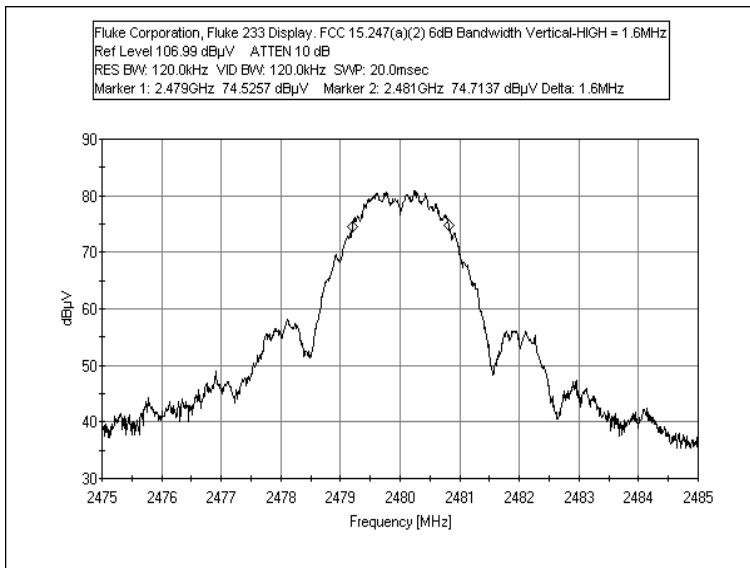
FCC 15.247(a)(2) 6dB BANDWIDTH-VERTICAL MID CHANNEL



FCC 15.247(a)(2) 6dB BANDWIDTH-HORIZONTAL HIGH CHANNEL



FCC 15.247(a)(2) 6dB BANDWIDTH-VERTICAL HIGH CHANNEL



FCC 15.247(b)(3) RF POWER OUTPUT

Test Equipment

Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliac		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum Analyzer	Agilent	E4440A	MY46186333	4/29/2009	4/29/2011

Test Conditions

EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located on the center of the test table over 10cm of Styrofoam. The Fundamental's emission will be maximized per ANSI C63.4 procedures. EMI test will be used with the solely purpose of accurate Field Strength data gathering. EUT will be tested in the LOW (2.405GHz), MID (2.44GHz), and HIGH (2.48GHz), test will be done with a set of new batteries. The gain (G) of the EUT's antenna is 3dBi.

The following calculation will be used per FCC procedures in order to obtain the transmitter peak power:

$$P = (E*d)^2 / (30*G)$$

E: Is the field strength in V/m

G: Is the numeric gain of the transmitting antenna over an isotropic radiator.

d: Is the distance at which the measurement is being executed.

Since the measurements were taken with a RBW of 1MHz, and the 20dB BW of the signal is 2.4MHz; a correction factor of 3.8dB (10 log (2.4/1)) will be added to the measurements taken.

RBW = 1 MHz

VBW = 1 MHz

Span = 5MHz

Test Setup Photos



Test Data

	Vertical		Horizontal		LIMIT
	F/S	Power	F/S	Power	
LOW	90.0dBuV	-4.43dBm	101.1dBuV	6.66dBm	30dBm
MID	86.2dBuV	-8.23dBm	99.9dBuV	5.46dBm	30dBm
HIGH	83.4dBuV	-10.03dBm	97.6dBuV	3.16dBm	30dBm

FCC 15.247(d) OATS RADIATED SPURIOUS EMISSIONS

Test Setup Photos



Test Data Sheets

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Fluke Corporation**

Specification: **FCC 15.247/15.209**

Work Order #: **89608**

Date: 11/17/2009

Test Type: **Radiated Scan**

Time: 15:36:21

Equipment: **Wireless Multimeter (Display)**

Sequence#: 2

Manufacturer: Fluke Corporation

Tested By: Armando Del Angel

Model: Fluke 233

S/N: 0016

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Mag Loop 2156	6/4/2008	06/04/2008	06/04/2010	AN00052
Cable 30'	11	10/20/2009	10/20/2011	ANP05366

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless Multimeter (Display)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

Temp: 24°C

Humidity: 38%

Pressure: 102.1kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is the display of a wireless multimeter

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the LOW, MID, and HIGH channels.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

9kHz - 150kHz RBW= 200Hz, VBW= 200Hz

150kHz - 30MHz RBW= 9kHz, VBW = 9kHz

Transducer Legend:

T1=CAB-ANP03121-042809	T2=CAB-ANP05360
T3=CAB-ANP05361	T4=CAB-ANP05366-102009
T5=ANT- AN00052-06042008	T6=AMP-AN01517-070808

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	510.000k	66.7	+0.1 +9.9	+0.1 -29.0	+0.1	+0.1	-40.0 88	8.0	33.5 Noisefloor	-25.5	180de 100
2	26.675M	64.4	+0.2 +6.8	+0.3 -29.2	+0.1	+0.4	-40.0	3.0	29.5 Noisefloor	-26.5	90deg 100
3	1.076M	58.8	+0.1 +10.0	+0.1 -29.1	+0.1	+0.0	-40.0	0.0	26.9 Noisefloor	-26.9	180de 100
4	26.600M	61.9	+0.2 +6.8	+0.3 -29.2	+0.1	+0.4	-40.0	0.5	29.5 Noisefloor	-29.0	180de 100
5	2.125M	49.1	+0.1 +10.4	+0.1 -29.1	+0.1	+0.1	-40.0 360	-9.2	29.5 Noisefloor	-38.7	90deg 100
6	8.025M	44.6	+0.1 +9.5	+0.2 -29.2	+0.1	+0.2	-40.0	-14.5	29.5 Noisefloor	-44.0	180de 100
7	17.850M	44.6	+0.2 +8.5	+0.3 -29.2	+0.1	+0.3	-40.0	-15.2	29.5 Noisefloor	-44.7	90deg 100
8	165.080k	75.1	+0.1 +10.0	+0.0 -27.8	+0.1	+0.2	-80.0 308	-22.3	23.2 Noisefloor	-45.5	180de 100
9	15.200M	42.9	+0.1 +8.7	+0.2 -29.2	+0.1	+0.3	-40.0	-16.9	29.5 Noisefloor	-46.4	90deg 100
10	140.580k	73.9	+0.1 +9.9	+0.0 -27.5	+0.1	+0.1	-80.0 360	-23.4	24.6 Noisefloor	-48.0	90deg 100
11	82.632k	62.4	+0.1 +10.0	+0.0 -26.0	+0.1	+0.1	-80.0 360	-33.3	29.3 Noisefloor	-62.6	90deg 100
12	55.900k	63.2	+0.1 +10.2	+0.0 -24.6	+0.1	+0.1	-80.0 143	-30.9	32.6 Noisefloor	-63.5	180de 100
13	36.470k	61.2	+0.1 +10.9	+0.0 -21.8	+0.1	+0.1	-80.0	-29.4	36.4 Noisefloor	-65.8	180de 100

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Fluke Corporation**

Specification: **FCC 15.247/15.209**

Work Order #: **89608**

Date: 9/2/2009

Test Type: **Radiated Scan**

Time: 15:27:30

Equipment: **Wireless Multimeter (Display)**

Sequence#: 1

Manufacturer: Fluke Corporation

Tested By: Armando Del Angel

Model: Fluke 233

S/N: 0016

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Antenna	2453	12/22/2008	12/22/2010	AN01994
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Cable, 23' blue Heliac	N/A	04/21/2009	04/21/2011	P05542
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
"Horn Antenna, Active 18-26GHz"	1114018	11/12/2008	11/12/2010	2742

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless Multimeter (Display)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

Temp: 24°C
 Humidity: 38%
 Pressure: 102.1kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)
 The EUT is the display of a wireless multimeter.
 The EUT is located in the center of the test table raised 10cm with styrofoam.
 The EUT will be transmitting in the LOW, MID, and HIGH channels.
 The support equipment is used before each test to set the EUT to the specific channel.
 The Test is being done with fresh batteries.
 Because of the lack of antenna connectors the test will have to be done through radiated scans.
 Where needed, a Duty Cycle Correction Factor (DCCF) will be applied.
 $DCCF = 20 \log (ON \text{ time} / 100ms)$
 Transmitter ON time is 55ms on a 100ms window giving a DCCF of 5.192dB which were added to the spec limit where a harmonic was found to be above the limit.
 30 - 1000MHz RBW=100kHz VBW=1MHz
 1.0 - 24.8GHz RBW=1MHz VBW=3MHz

Transducer Legend:

T1=CAB-ANP03121-042809	T2=CAB-ANP05360
T3=CAB-ANP05361	T4=CAB-ANP05366
T5=ANT AN01994 25-1000MHz	T6=AMP-AN01517-070808
T7=ANT-AN01412-111207	T8=CAB-ANP05542-042109
T9=AN01271 HP PreAmplifier	T10=DCCF

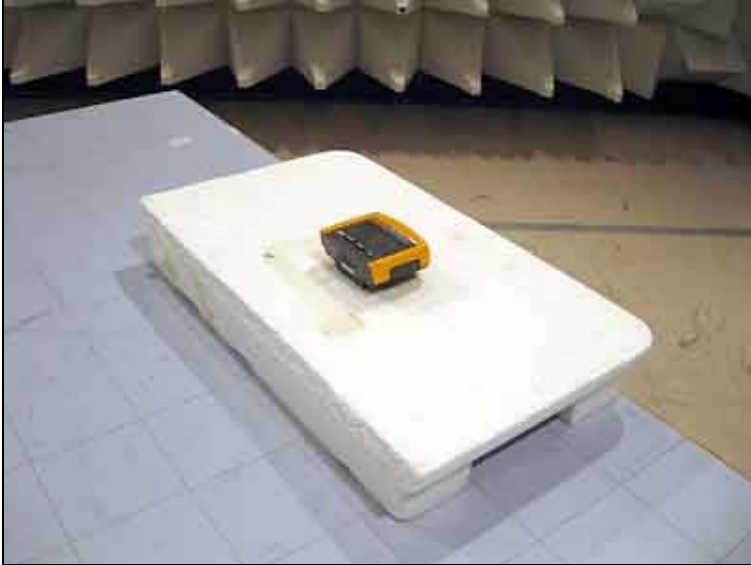
Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6 T10	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	7318.455M	42.9	+2.1 +0.0 -34.7	+0.0 +0.0 +0.0	+0.0 +36.4	+0.0 +5.2	+0.0 300	51.9	54.0 MID Channel	-2.1	Horiz 131
2	4809.090M Ave	50.2	+1.9 +0.0 -32.8	+0.0 +0.0 +5.2	+0.0 +33.2	+0.0 +4.2	+0.0 45	51.5	54.0 LOW Channel (Duty Cycle correction applied)	-2.5	Horiz 134
^	4809.090M	63.2	+1.9 +0.0 -32.8	+0.0 +0.0 +5.2	+0.0 +33.2	+0.0 +4.2	+0.0 45	64.5	54.0 LOW Channel (Duty Cycle correction applied)	+10.5	Horiz 134
4	4879.010M Ave	48.8	+1.9 +0.0 -32.9	+0.0 +0.0 +5.2	+0.0 +33.4	+0.0 +4.2	+0.0 51	50.2	54.0 MID Channel (Duty Cycle correction applied)	-3.8	Horiz 131
^	4879.010M	61.6	+1.9 +0.0 -32.9	+0.0 +0.0 +5.2	+0.0 +33.4	+0.0 +4.2	+0.0 51	63.0	54.0 MID Channel (Duty Cycle correction applied)	+9.0	Horiz 131
6	7441.425M	40.7	+2.2 +0.0 -34.6	+0.0 +0.0 +0.0	+0.0 +36.5	+0.0 +5.2	+0.0 292	50.0	54.0 HIGH Channel	-4.0	Horiz 177
7	7216.600M	40.6	+2.2 +0.0 -34.7	+0.0 +0.0 +0.0	+0.0 +36.3	+0.0 +5.1	+0.0 22	49.5	54.0 LOW Channel	-4.5	Horiz 134
8	4878.970M Ave	42.2	+1.9 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +33.4	+0.0 +4.2	+0.0 48	48.8	54.0 MID Channel	-5.2	Verti 137
^	4878.970M	55.3	+1.9 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +33.4	+0.0 +4.2	+0.0 48	61.9	54.0 MID Channel	+7.9	Verti 137
10	4811.070M Ave	47.5	+1.9 +0.0 -32.8	+0.0 +0.0 +5.2	+0.0 +33.2	+0.0 +4.2	+0.0 57	48.8	54.0 LOW Channel (Duty Cycle correction applied)	-5.2	Verti 130
^	4811.070M	59.2	+1.9 +0.0 -32.8	+0.0 +0.0 +5.2	+0.0 +33.2	+0.0 +4.2	+0.0 57	60.5	54.0 LOW Channel (Duty Cycle correction applied)	+6.5	Verti 130

12	14434.300 M	29.8	+3.0 +0.0 -33.0	+0.0 +0.0 +0.0	+0.0 +41.3	+0.0 +7.1	+0.0 360	48.2	54.0	-5.8	Verti Noisefloor readings 130
13	16836.110 M	29.8	+3.2 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +39.8	+0.0 +7.9	+0.0 360	47.8	54.0	-6.2	Verti Noisefloor readings 130
14	4959.085M Ave	45.6	+2.0 +0.0 -32.9	+0.0 +0.0 +5.2	+0.0 +33.6	+0.0 +4.2	+0.0 5	47.3	54.0	-6.7	Horiz HIGH channel (Duty Cycle correction applied) 147
^	4959.085M	58.7	+2.0 +0.0 -32.9	+0.0 +0.0 +5.2	+0.0 +33.6	+0.0 +4.2	+0.0 5	60.4	54.0	+6.4	Horiz HIGH channel (Duty Cycle correction applied) 147
16	4959.050M Ave	39.8	+2.0 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +33.6	+0.0 +4.2	+0.0 50	46.7	54.0	-7.3	Verti HIGH Channel 135
^	4959.050M	52.8	+2.0 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +33.6	+0.0 +4.2	+0.0 50	59.7	54.0	+5.7	Verti HIGH Channel 135
18	12029.190 M	32.7	+2.8 +0.0 -35.1	+0.0 +0.0 +0.0	+0.0 +39.4	+0.0 +6.6	+0.0	46.4	54.0	-7.6	Verti Noisefloor readings 130
19	9622.170M	31.0	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.7	+0.0 +5.9	+0.0 360	44.8	54.0	-9.2	Verti Noisefloor readings 130
20	7214.990M	35.3	+2.2 +0.0 -34.7	+0.0 +0.0 +0.0	+0.0 +36.3	+0.0 +5.1	+0.0 360	44.2	54.0	-9.8	Verti Noisefloor readings 99
21	4813.640M	35.8	+1.9 +0.0 -32.8	+0.0 +0.0 +0.0	+0.0 +33.2	+0.0 +4.2	+0.0 22	42.3	54.0	-11.7	Horiz Noisefloor reading 134
22	845.200M	26.6	+0.8 +22.8 +0.0	+1.7 -29.3 +0.0	+0.5 +0.0	+2.0 +0.0	+0.0	25.1	46.0	-20.9	Verti Noisefloor readings 125
23	778.664M	24.9	+0.8 +22.1 +0.0	+1.7 -29.5 +0.0	+0.5 +0.0	+1.9 +0.0	+0.0 2	22.4	46.0	-23.6	Horiz Noisefloor readings 125
24	41.508M	28.6	+0.2 +14.2 +0.0	+0.4 -29.1 +0.0	+0.1 +0.0	+0.4 +0.0	+0.0 360	14.8	40.0	-25.2	Horiz Noisefloor readings 250
25	508.000M	26.2	+0.6 +18.3 +0.0	+1.4 -29.7 +0.0	+0.3 +0.0	+1.6 +0.0	+0.0 360	18.7	46.0	-27.3	Verti Noisefloor readings 150
26	351.600M	28.2	+0.5 +14.9 +0.0	+1.2 -28.6 +0.0	+0.3 +0.0	+1.3 +0.0	+0.0 2	17.8	46.0	-28.2	Horiz Noisefloor readings 125
27	104.930M	30.3	+0.3 +10.6 +0.0	+0.6 -29.1 +0.0	+0.1 +0.0	+0.6 +0.0	+0.0	13.4	43.5	-30.1	Verti Noisefloor readings 100
28	128.257M	28.3	+0.4 +11.7 +0.0	+0.7 -29.0 +0.0	+0.2 +0.0	+0.7 +0.0	+0.0 231	13.0	43.5	-30.5	Horiz Noisefloor readings 200

FCC 15.247(d) BANDEDGE

Test Setup Photos



Test Data

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Fluke Corporation**
 Specification: **FCC 15.247(d) Bandedge Compliance**
 Work Order #: **89608** Date: 9/2/2009
 Test Type: **Radiated Scan** Time: 12:40:08
 Equipment: **Wireless Multimeter (Display)** Sequence#: 1
 Manufacturer: Fluke Corporation Tested By: Armando Del Angel
 Model: Fluke 233
 S/N: 0016

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Cable, 23' blue Heliac	N/A	04/21/2009	04/21/2011	P05542
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless Multimeter (Display)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

Temp: 24°C
 Humidity: 38%
 Pressure: 102.1kPa

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the display of a wireless multimeter.
 The EUT is located in the center of the test table raised 10cm with styrofoam.
 The EUT will be transmitting in the LOW and HIGH channels.
 The support equipment is used before each test to set the EUT to the specific channel.
 The Test is being done with fresh batteries.
 Because of the lack of antenna connectors the test will have to be done through radiated scans.
 Plot shows peak values only with 1MHz RBW, tabular data shows both peak and average values.

Limit line includes the 54dBuV/m at the restricted bands and 20dBc with respect to the fundamental on the rest of the frequencies.

RBW = 1MHz
 VBW = 1MHz

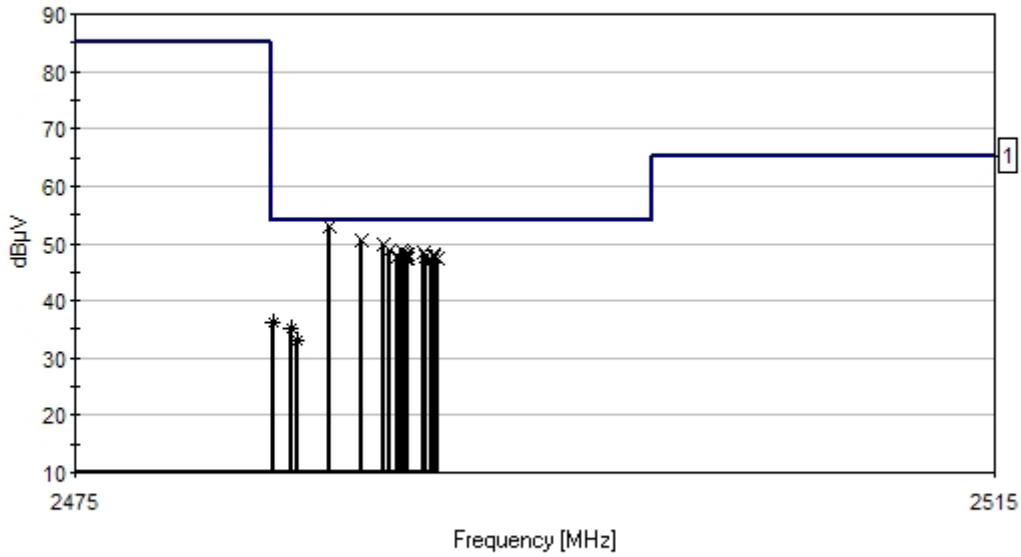
Transducer Legend:

T1=CAB-ANP03121-042809	T2=ANT-AN01412-111207
T3=CAB-ANP05542-042109	T4=AN01271 HP PreAmplifier

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	2485.968M	53.3	+1.2	+29.1	+2.8	-33.3	+0.0 300	53.1	54.0	-0.9	Verti 180
2	2487.400M	50.6	+1.2	+29.1	+2.8	-33.3	+0.0 300	50.4	54.0	-3.6	Verti 180
3	2488.355M	50.0	+1.2	+29.1	+2.8	-33.3	+0.0 300	49.8	54.0	-4.2	Verti 180
4	2488.649M	49.0	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.8	54.0	-5.2	Verti 180
5	2489.129M	49.0	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.8	54.0	-5.2	Verti 180
6	2489.196M	48.7	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.5	54.0	-5.5	Verti 180
7	2490.115M	48.7	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.5	54.0	-5.5	Verti 180
8	2490.489M	48.3	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.1	54.0	-5.9	Verti 180
9	2489.262M	48.2	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.0	54.0	-6.0	Verti 180
10	2489.436M	48.2	+1.2	+29.1	+2.8	-33.3	+0.0 300	48.0	54.0	-6.0	Verti 180
11	2488.929M	48.1	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.9	54.0	-6.1	Verti 180
12	2490.169M	48.1	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.9	54.0	-6.1	Verti 180
13	2490.515M	48.0	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.8	54.0	-6.2	Verti 180
14	2489.315M	47.7	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.5	54.0	-6.5	Verti 180
15	2489.382M	47.7	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.5	54.0	-6.5	Verti 180
16	2490.729M	47.7	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.5	54.0	-6.5	Verti 180
17	2490.409M	47.3	+1.2	+29.1	+2.8	-33.3	+0.0 300	47.1	54.0	-6.9	Verti 180
18	2483.607M Ave	36.3	+1.2	+29.1	+2.8	-33.3	+0.0 300	36.1	54.0	-17.9	Verti 180
^	2483.607M	57.0	+1.2	+29.1	+2.8	-33.3	+0.0 300	56.8	54.0	+2.8	Verti 180
20	2484.337M Ave	35.2	+1.2	+29.1	+2.8	-33.3	+0.0 300	35.0	54.0	-19.0	Verti 180
^	2484.337M	55.3	+1.2	+29.1	+2.8	-33.3	+0.0 300	55.1	54.0	+1.1	Verti 180
22	2484.642M Ave	33.2	+1.2	+29.1	+2.8	-33.3	+0.0 300	33.0	54.0	-21.0	Verti 180
^	2484.642M	54.4	+1.2	+29.1	+2.8	-33.3	+0.0 300	54.2	54.0	+0.2	Verti 180

CKC Laboratories Date: 9/2/2009 Time: 12:40:08 Fluke Corporation WO#: 89608
 FCC 15.247(d) Bandedge Compliance Test Distance: 3 Meters Sequence#: 1 Polarity: Horizontal
 Notes:



— Readings
 × Peak Readings
 — 1 - FCC 15.247(d) Bandedge Compliance
 * Average Readings

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Fluke Corporation**
 Specification: **FCC 15.247(d) Bandedge Compliance**
 Work Order #: **89608** Date: 9/2/2009
 Test Type: **Radiated Scan** Time: 12:47:37
 Equipment: **Wireless Multimeter (Display)** Sequence#: 2
 Manufacturer: Fluke Corporation Tested By: Armando Del Angel
 Model: Fluke 233
 S/N: 0016

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Cable, 23' blue Heliac	N/A	04/21/2009	04/21/2011	P05542
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless Multimeter (Display)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

Temp: 24°C
 Humidity: 38%
 Pressure: 102.1kPa

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the display of a wireless multimeter.
 The EUT is located in the center of the test table raised 10cm with styrofoam.
 The EUT will be transmitting in the LOW and HIGH channels.
 The support equipment is used before each test to set the EUT to the specific channel.
 The Test is being done with fresh batteries.
 Because of the lack of antenna connectors the test will have to be done through radiated scans.
 Plot shows peak values only with 1MHz RBW, tabular data shows both peak and average values.
 Limit line includes the 54dBuV/m at the restricted bands and 20dBc with respect to the fundamental on the rest of the frequencies.

RBW = 1MHz
 VBW = 1MHz

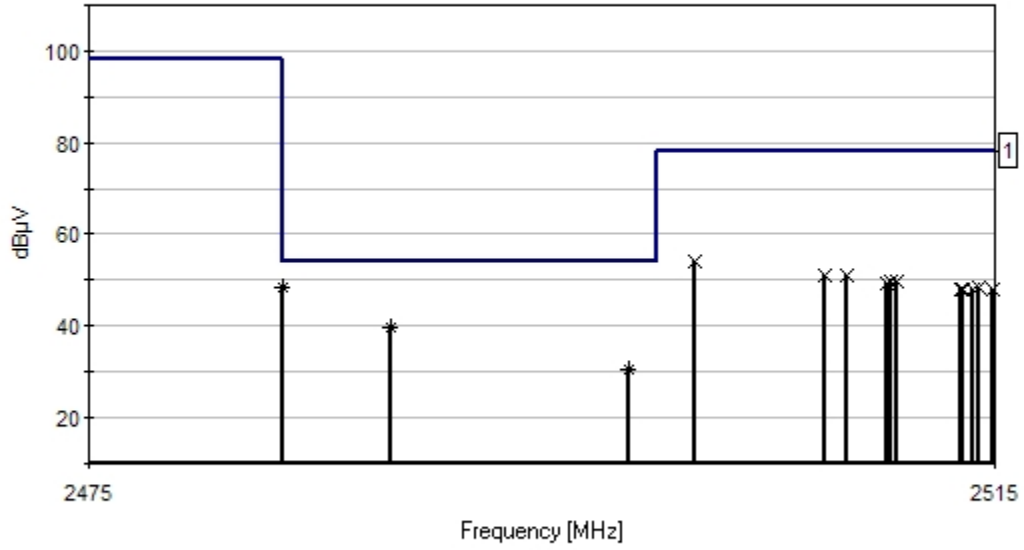
Transducer Legend:

T1=CAB-ANP03121-042809	T2=ANT-AN01412-111207
T3=CAB-ANP05542-042109	T4=AN01271 HP PreAmplifier

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	2483.554M Ave	48.8	+1.2	+29.1	+2.8	-33.3	+0.0 244	48.6	54.0	-5.4	Horiz 153
^	2483.554M	70.1	+1.2	+29.1	+2.8	-33.3	+0.0 244	69.9	54.0	+15.9	Horiz 153
3	2488.289M Ave	39.7	+1.2	+29.1	+2.8	-33.3	+0.0 244	39.5	54.0	-14.5	Horiz 153
^	2488.289M	63.4	+1.2	+29.1	+2.8	-33.3	+0.0 244	63.2	54.0	+9.2	Horiz 153
5	2498.729M Ave	30.8	+1.3	+29.1	+2.8	-33.3	+0.0 244	30.7	54.0	-23.3	Horiz 153
^	2498.729M	56.1	+1.3	+29.1	+2.8	-33.3	+0.0 244	56.0	54.0	+2.0	Horiz 153
7	2501.703M	54.1	+1.3	+29.1	+2.8	-33.3	+0.0 244	54.0	78.2	-24.2	Horiz 153
8	2507.413M	51.3	+1.3	+29.1	+2.8	-33.3	+0.0 244	51.2	78.2	-27.0	Horiz 153
9	2508.392M	51.2	+1.3	+29.1	+2.8	-33.3	+0.0 244	51.1	78.2	-27.1	Horiz 153
10	2510.670M	50.0	+1.3	+29.1	+2.8	-33.3	+0.0 244	49.9	78.2	-28.3	Horiz 153
11	2510.335M	49.8	+1.3	+29.1	+2.8	-33.3	+0.0 244	49.7	78.2	-28.5	Horiz 153
12	2510.188M	49.6	+1.3	+29.1	+2.8	-33.3	+0.0 244	49.5	78.2	-28.7	Horiz 153
13	2514.330M	48.4	+1.3	+29.1	+2.8	-33.3	+0.0 244	48.3	78.2	-29.9	Horiz 153
14	2513.606M	48.1	+1.3	+29.1	+2.8	-33.3	+0.0 244	48.0	78.2	-30.2	Horiz 153
15	2513.458M	48.0	+1.3	+29.1	+2.8	-33.3	+0.0 244	47.9	78.2	-30.3	Horiz 153
16	2514.048M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 244	47.8	78.2	-30.4	Horiz 153
17	2514.933M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 244	47.8	78.2	-30.4	Horiz 153

CKC Laboratories Date: 9/2/2009 Time: 12:47:37 Fluke Corporation WO#: 89608
 FCC 15.247(d) Bandedge Compliance Test Distance: 3 Meters Sequence#: 2 Polarity: Horizontal
 Notes:



Readings
 Peak Readings
 1 - FCC 15.247(d) Bandedge Compliance
 Average Readings

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Fluke Corporation**
 Specification: **FCC 15.247(d) Bandedge Compliance**
 Work Order #: **89608** Date: 9/2/2009
 Test Type: **Radiated Scan** Time: 12:57:46
 Equipment: **Wireless Multimeter (Display)** Sequence#: 3
 Manufacturer: Fluke Corporation Tested By: Armando Del Angel
 Model: Fluke 233
 S/N: 0016

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Cable, 23' blue Heliac	N/A	04/21/2009	04/21/2011	P05542
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless Multimeter (Display)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

Temp: 24°C
 Humidity: 38%
 Pressure: 102.1kPa

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the display of a wireless multimeter.
 The EUT is located in the center of the test table raised 10cm with styrofoam.
 The EUT will be transmitting in the LOW and HIGH channels.
 The support equipment is used before each test to set the EUT to the specific channel.
 The Test is being done with fresh batteries.
 Because of the lack of antenna connectors the test will have to be done through radiated scans.
 Plot shows peak values only with 1MHz RBW, tabular data shows both peak and average values.

Limit line includes the 54dBuV/m at the restricted bands and 20dBc with respect to the fundamental on the rest of the frequencies.

RBW = 1MHz
 VBW = 1MHz

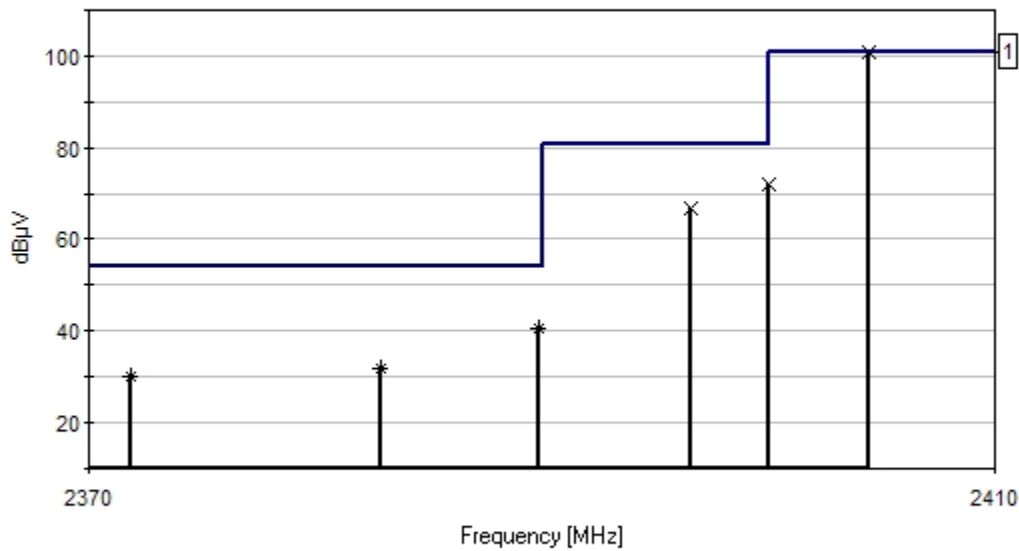
Transducer Legend:

T1=CAB-ANP03121-042809	T2=ANT-AN01412-111207
T3=CAB-ANP05542-042109	T4=AN01271 HP PreAmplifier

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	2404.409M	101.5	+1.2	+28.8	+2.7	-33.3	+0.0 269	100.9	100.9	+0.0	Horiz 182
2	2399.998M	72.8	+1.2	+28.8	+2.7	-33.3	+0.0 269	72.2	80.9	-8.7	Horiz 182
3	2389.766M	41.1	+1.2	+28.8	+2.7	-33.3	+0.0 269	40.5	54.0	-13.5	Horiz 182
^	2389.766M	61.1	+1.2	+28.8	+2.7	-33.3	+0.0 269	60.5	54.0	+6.5	Horiz 182
5	2396.499M	67.5	+1.2	+28.8	+2.7	-33.3	+0.0 269	66.9	80.9	-14.0	Horiz 182
6	2382.848M	32.3	+1.2	+28.8	+2.7	-33.3	+0.0 269	31.7	54.0	-22.3	Horiz 182
^	2382.848M	58.7	+1.2	+28.8	+2.7	-33.3	+0.0 269	58.1	54.0	+4.1	Horiz 182
8	2371.843M	31.0	+1.2	+28.7	+2.7	-33.3	+0.0 269	30.3	54.0	-23.7	Horiz 182
^	2371.843M	54.5	+1.2	+28.7	+2.7	-33.3	+0.0 269	53.8	54.0	-0.2	Horiz 182

CKC Laboratories Date: 9/2/2009 Time: 12:57:46 Fluke Corporation WO#: 89608
 FCC 15.247(d) Bandedge Compliance Test Distance: 3 Meters Sequence#: 3 Polarity: Horizontal
 Notes:



Readings
 Peak Readings
 1 - FCC 15.247(d) Bandedge Compliance
 Average Readings

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Fluke Corporation**
 Specification: **FCC 15.247(d) Bandedge Compliance**
 Work Order #: **89608** Date: 9/2/2009
 Test Type: **Radiated Scan** Time: 13:00:38
 Equipment: **Wireless Multimeter (Display)** Sequence#: 4
 Manufacturer: Fluke Corporation Tested By: Armando Del Angel
 Model: Fluke 233
 S/N: 0016

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Cable, 23' blue Heliac	N/A	04/21/2009	04/21/2011	P05542
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless Multimeter (Display)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

Temp: 24°C
 Humidity: 38%
 Pressure: 102.1kPa

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the display of a wireless multimeter
 The EUT is located in the center of the test table raised 10cm with styrofoam.
 The EUT will be transmitting in the LOW and HIGH channels.
 The support equipment is used before each test to set the EUT to the specific channel.
 The Test is being done with fresh batteries.
 Because of the lack of antenna connectors the test will have to be done through radiated scans.
 Plot shows peak values only with 1MHz RBW, tabular data shows both peak and average values.

Limit line includes the 54dBuV/m at the restricted bands and 20dBc with respect to the fundamental on the rest of the frequencies.

RBW = 1MHz
 VBW = 1MHz

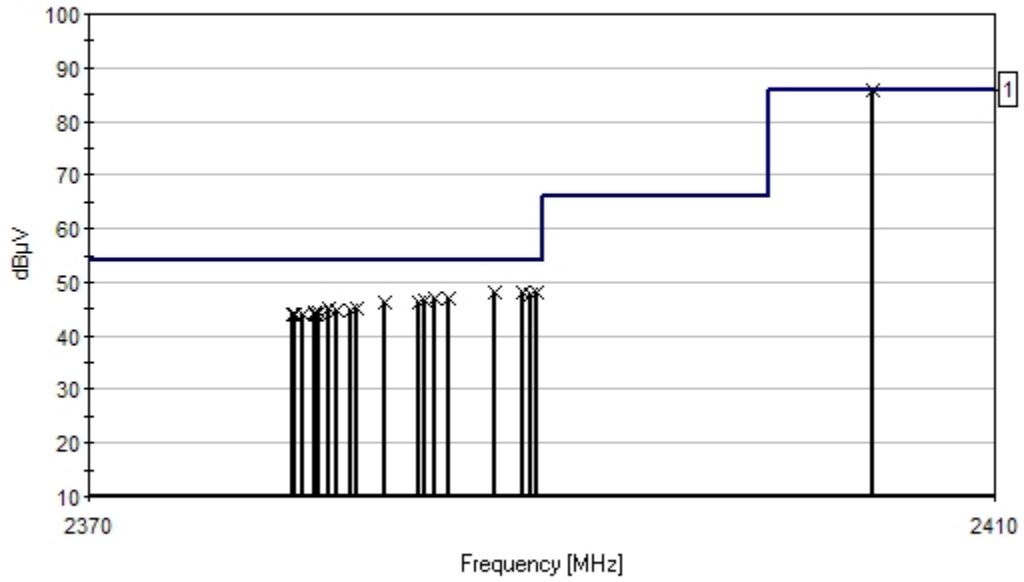
Transducer Legend:

T1=CAB-ANP03121-042809	T2=ANT-AN01412-111207
T3=CAB-ANP05542-042109	T4=AN01271 HP PreAmplifier

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	2404.543M	86.5	+1.2	+28.8	+2.7	-33.3	+0.0 171	85.9	85.9	+0.0	Verti 132
2	2387.846M	48.8	+1.2	+28.8	+2.7	-33.3	+0.0 171	48.2	54.0	-5.8	Verti 132
3	2389.086M	48.7	+1.2	+28.8	+2.7	-33.3	+0.0 171	48.1	54.0	-5.9	Verti 132
4	2389.672M	48.6	+1.2	+28.8	+2.7	-33.3	+0.0 171	48.0	54.0	-6.0	Verti 132
5	2389.446M	48.5	+1.2	+28.8	+2.7	-33.3	+0.0 171	47.9	54.0	-6.1	Verti 132
6	2385.806M	47.5	+1.2	+28.8	+2.7	-33.3	+0.0 171	46.9	54.0	-7.1	Verti 132
7	2385.206M	47.4	+1.2	+28.8	+2.7	-33.3	+0.0 171	46.8	54.0	-7.2	Verti 132
8	2384.752M	47.1	+1.2	+28.8	+2.7	-33.3	+0.0 171	46.5	54.0	-7.5	Verti 132
9	2384.512M	46.9	+1.2	+28.8	+2.7	-33.3	+0.0 171	46.3	54.0	-7.7	Verti 132
10	2382.954M	46.7	+1.2	+28.8	+2.7	-33.3	+0.0 171	46.1	54.0	-7.9	Verti 132
11	2381.774M	45.8	+1.2	+28.8	+2.7	-33.3	+0.0 171	45.2	54.0	-8.8	Verti 132
12	2380.528M	45.7	+1.2	+28.7	+2.7	-33.3	+0.0 171	45.0	54.0	-9.0	Verti 132
13	2380.899M	45.5	+1.2	+28.8	+2.7	-33.3	+0.0 171	44.9	54.0	-9.1	Verti 132
14	2381.469M	45.3	+1.2	+28.8	+2.7	-33.3	+0.0 171	44.7	54.0	-9.3	Verti 132
15	2379.891M	45.2	+1.2	+28.7	+2.7	-33.3	+0.0 171	44.5	54.0	-9.5	Verti 132
16	2380.077M	45.0	+1.2	+28.7	+2.7	-33.3	+0.0 171	44.3	54.0	-9.7	Verti 132
17	2379.984M	44.8	+1.2	+28.7	+2.7	-33.3	+0.0 171	44.1	54.0	-9.9	Verti 132
18	2379.918M	44.7	+1.2	+28.7	+2.7	-33.3	+0.0 171	44.0	54.0	-10.0	Verti 132
19	2378.923M	44.6	+1.2	+28.7	+2.7	-33.3	+0.0 171	43.9	54.0	-10.1	Verti 132
20	2379.016M	44.6	+1.2	+28.7	+2.7	-33.3	+0.0 171	43.9	54.0	-10.1	Verti 132
21	2379.427M	44.6	+1.2	+28.7	+2.7	-33.3	+0.0 171	43.9	54.0	-10.1	Verti 132

CKC Laboratories Date: 9/2/2009 Time: 13:00:38 Fluke Corporation WO#: 89608
 FCC 15.247(d) Bandedge Compliance Test Distance: 3 Meters Sequence#: 4 Polarity: Vertical
 Notes:



— Readings — 1 - FCC 15.247(d) Bandedge Compliance × Peak Readings

FCC 15.247(e) PEAK POWER SPECTRAL DENSITY

Test Equipment

Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliac		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum Analyzer	Agilent	E4440A	MY46186333	4/29/2009	4/29/2011

Test Conditions

The EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located on the center of the test table over 10cm of Styrofoam. The Fundamental's emission will be maximized per ANSI C63.4 procedures. PSA is on max hold centered at the desired channel.

EMI test will be used with the solely purpose of accurate Field Strength data gathering.

Same calculation from the RF power output test will be used in order to convert the field strength to power. EUT will be tested in the LOW (2.405GHz), MID (2.44GHz), and HIGH (2.48GHz), test will be done with a set of new batteries.

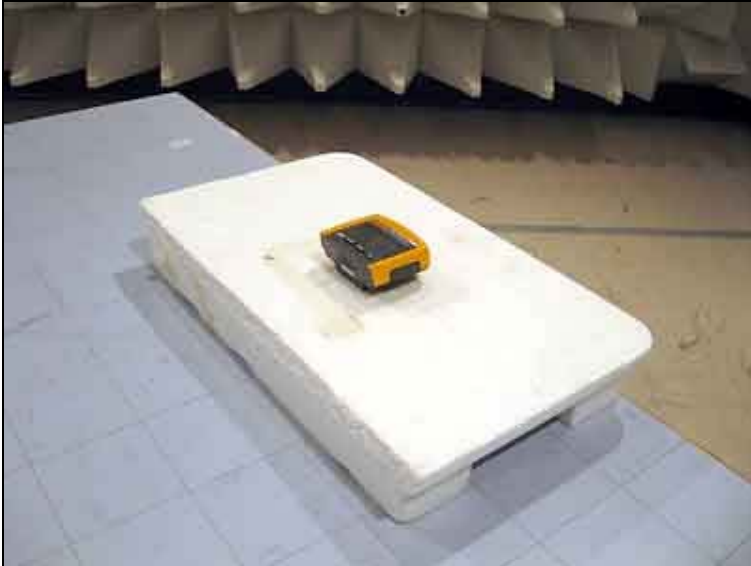
RBW = 3 kHz

VBW = 9 kHz

Span = 1.5 kHz

Sweep Time = 500s

Test Setup Photos



Test Data

	Vertical	Horizontal	Limit
LOW	-26.34dBm/3kHz	-11.84dBm/3kHz	8dBm/3kHz
MID	-27.58dBm/3kHz	-12.24dBm/3kHz	8dBm/3kHz
HIGH	-28.64dBm/3kHz	-14.84dBm/3kHz	8dBm/3kHz

RSS-210 99% BANDWIDTH

Test Equipment

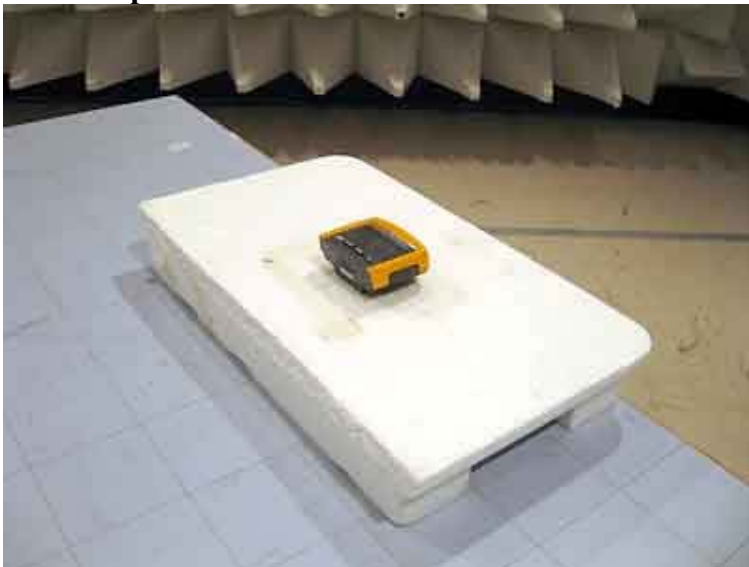
Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliac		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum Analyzer	Agilent	E4440A	MY46186333	4/29/2009	4/29/2011

Test Conditions

EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located on the center of the test table over 10cm of Styrofoam. PSA is on max hold, Agilent procedure used for each channel. EUT will be tested in the LOW (2.405GHz), MID (2.44GHz), and HIGH (2.48GHz), test will be done with a set of new batteries.

RBW = 100 kHz
 VBW = 1 MHz
 Span = 10 MHz

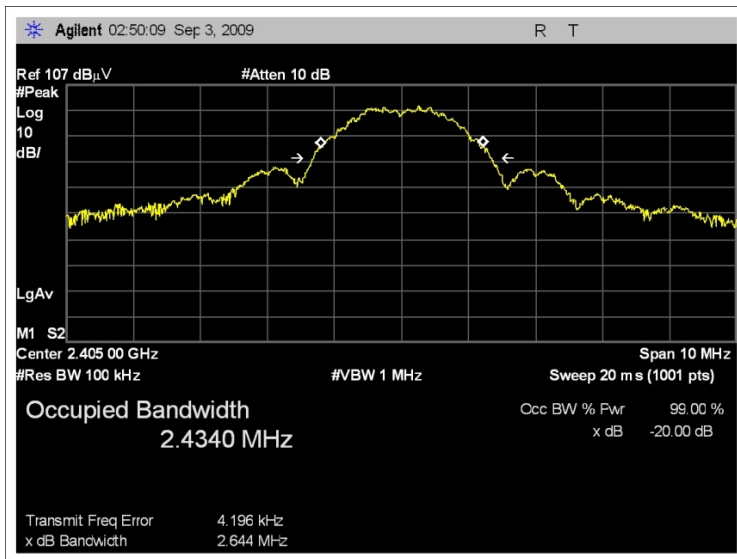
Test Setup Photos



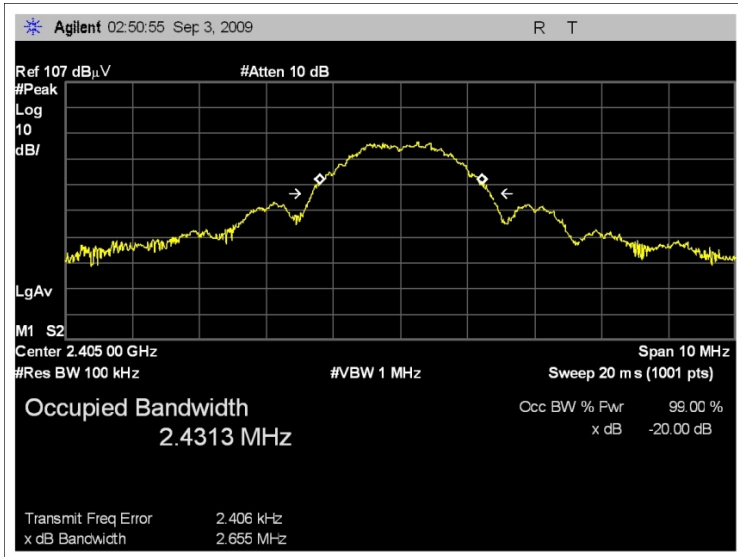
Test Data

Channel	99% Bandwidth	
	Vertical	Horizontal
LOW	2.43MHz	2.43MHz
MID	2.44MHz	2.44MHz
HIGH	2.44MHz	2.45MHz

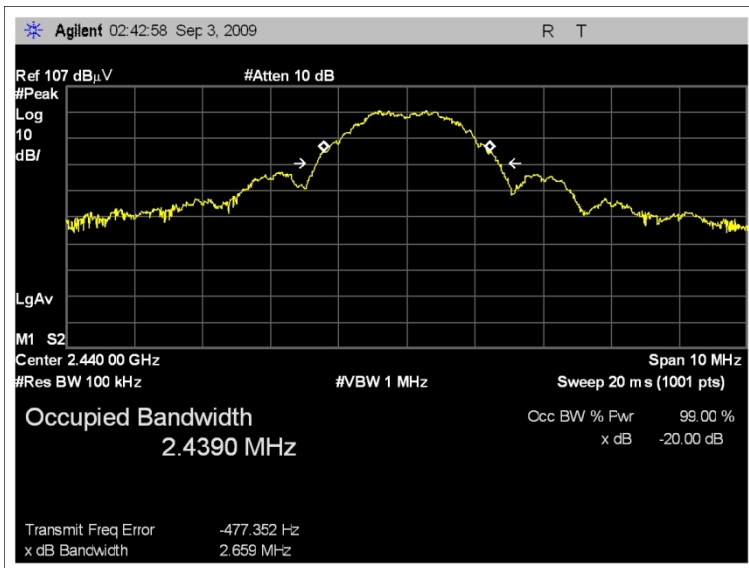
RSS-210 99% BANDWIDTH-HORIZONTAL LOW CHANNEL



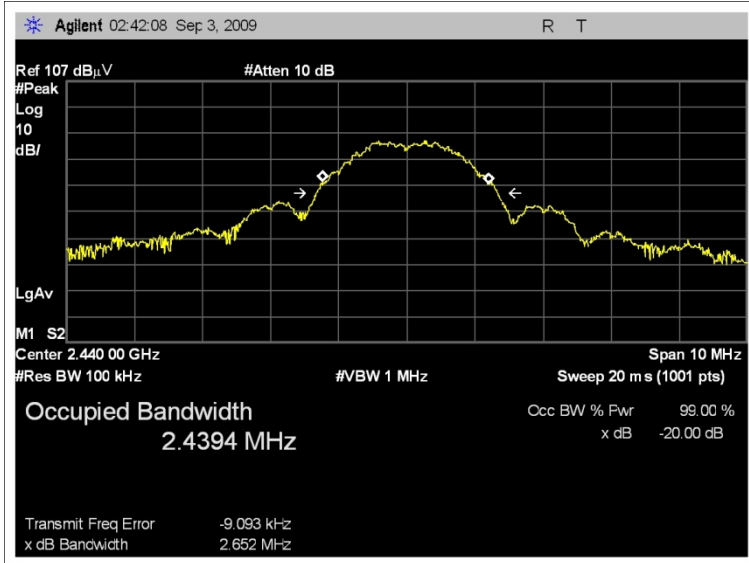
RSS-210 99% BANDWIDTH-VERTICAL LOW CHANNEL



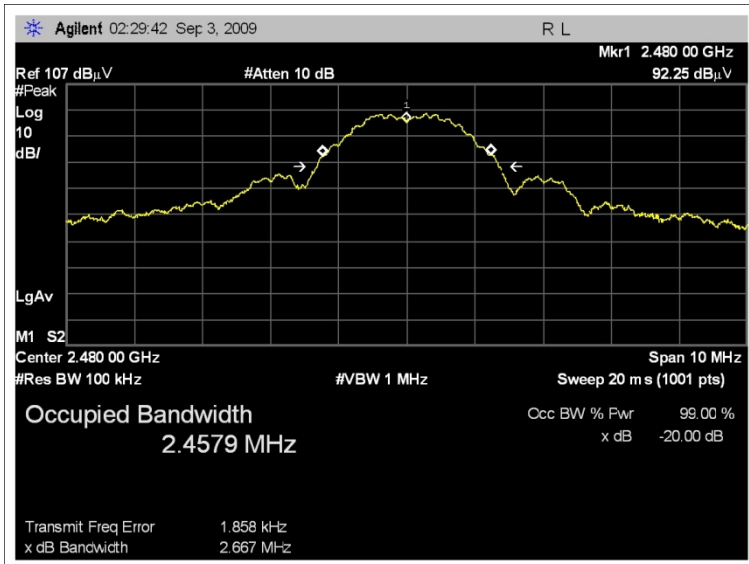
RSS-210 99% BANDWIDTH-HORIZONTAL MID CHANNEL



RSS-210 99% BANDWIDTH-VERTICAL MID CHANNEL



RSS-210 99% BANDWIDTH-HORIZONTAL HIGH CHANNEL



RSS-210 99% BANDWIDTH-VERTICAL HIGH CHANNEL

