TESTING
CERT #803.01, 803.02, 803.05, 803.06

ADDENDUM TO FLUKE CORPORATION TEST REPORT FC09-149

FOR THE

WIRELESS MULTIMETER (BASE), FLUKE 233

FCC PART 15 SUBPART C SECTION 15.247 AND RSS-210 ISSUE 7

TESTING

DATE OF ISSUE: NOVEMBER 23, 2009

PREPARED FOR:

Fluke Corporation
6920 Seaway Blvd.
Everett, WA 98203

PREPARED BY:

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Date of test: September 3 – November 17, 2009

Report No.: FC09-149A

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ADMINISTRATIVE INFORMATION

DATE OF TEST:
September 3 - November 17, 2009

DATE OF RECEIPT:
September 3, 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 (Base), 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 (Base), Fluke 233.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

Steve Van Kirk, Senior EMC Engineer / Lab Manager

TEST PERSONNEL:

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 base.
The EUT was operating from 2.405GHz to 2.48GHz.

EQUIPMENT UNDER TEST

Wireless Multimeter (Base)
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°C and + 35°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 dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

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

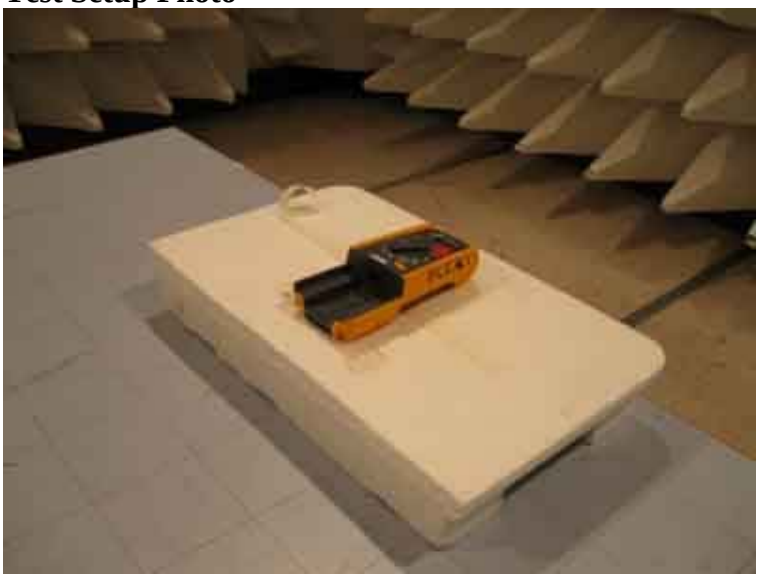
Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliax		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum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

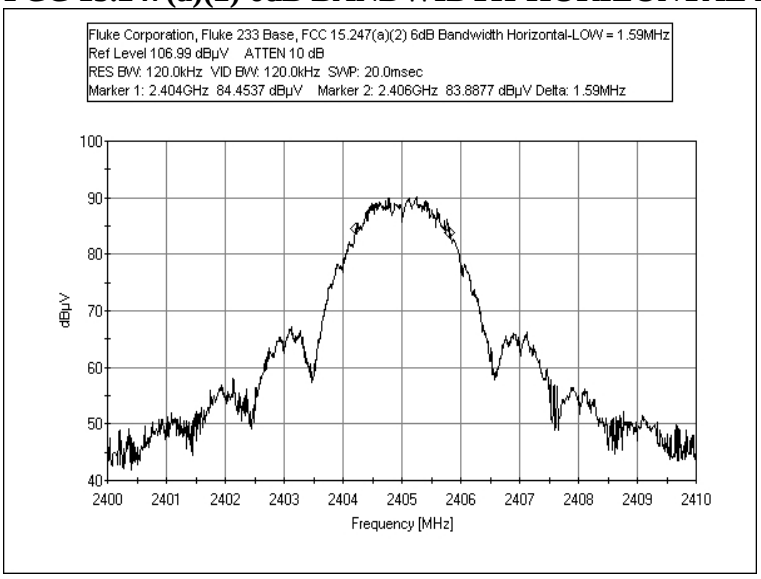


Test Data

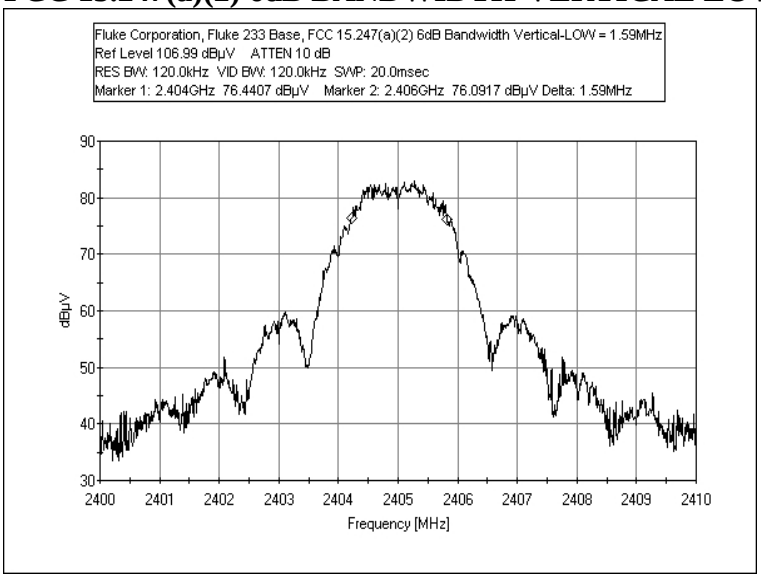
Channel	6dB Bandwidth		Limit
	Vertical	Horizontal	
LOW	1.59MHz	1.59MHz	500kHz
MID	1.58MHz	1.60MHz	500kHz
HIGH	1.60MHz	1.58MHz	500kHz

Test Plots

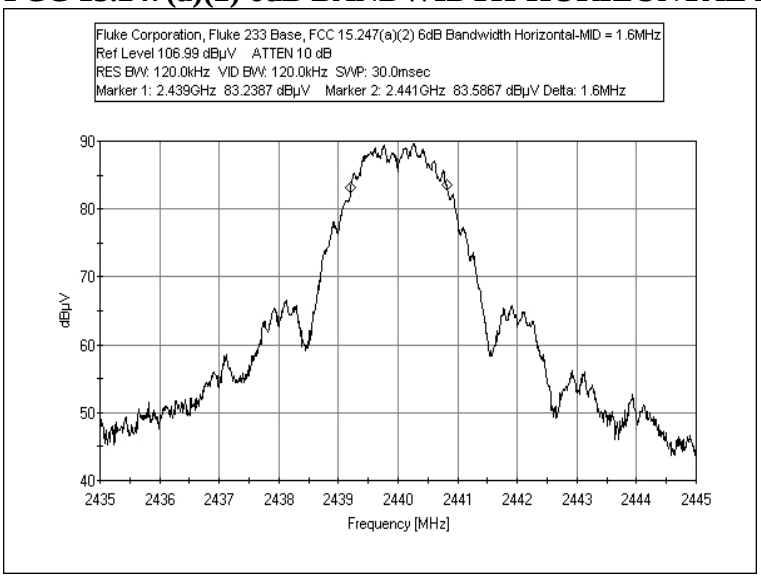
FCC 15.247(a)(2) 6dB BANDWIDTH-HORIZONTAL LOW CHANNEL



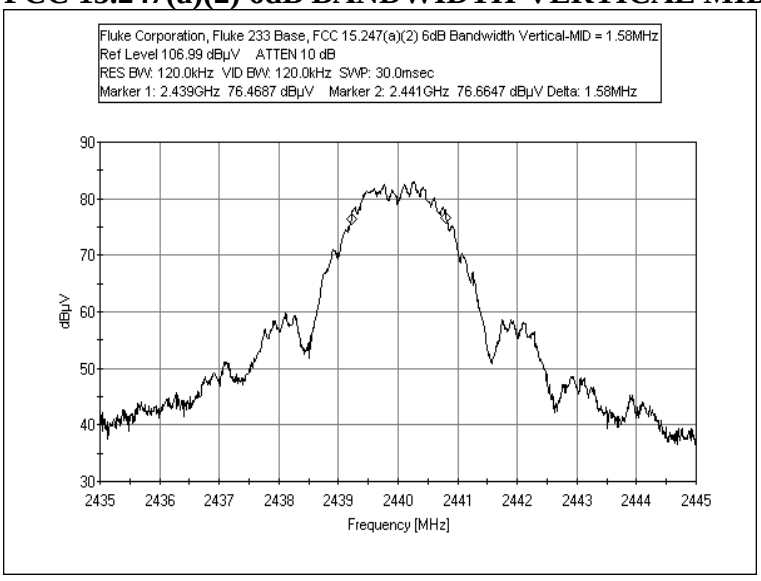
FCC 15.247(a)(2) 6dB BANDWIDTH-VERTICAL LOW CHANNEL



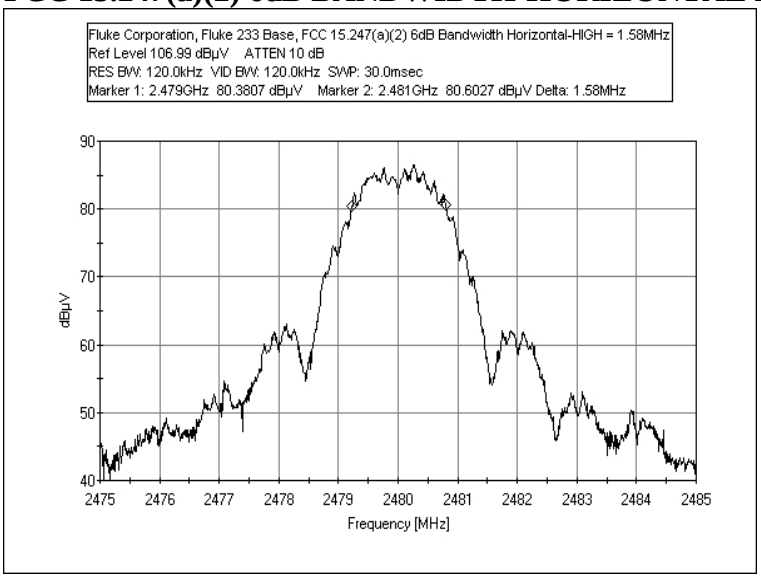
FCC 15.247(a)(2) 6dB BANDWIDTH-HORIZONTAL MID CHANNEL



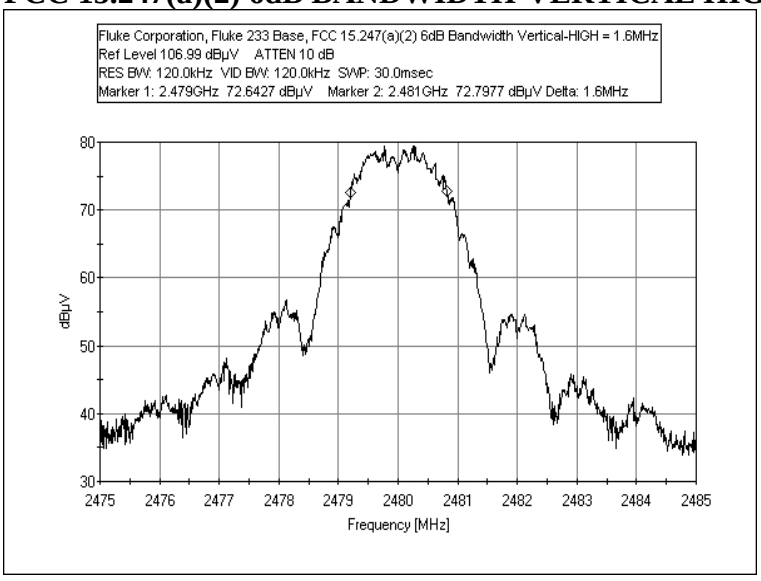
FCC 15.247(a)(2) 6dB BANDWIDTH-VERTICAL MID CHANNEL



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	Heliax		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.

RBW = 1 MHz
VBW = 1 MHz
Span = 5MHz

Test Setup Photo

Test Data

	Vertical		Horizontal		LIMIIT
	F/S	**Power**	**F/S**	**Power**	
LOW	86.6dBuV	-11.64dBm	93.5dBuV	-4.74dBm	30dBm
MID	86.1dBuV	-12.14dBm	92.9dBuV	-5.34dBm	30dBm
HIGH	83.2dBuV	-15.04dBm	89.7dBuV	-8.54dBm	30dBm

FCC 15.247(d) OATS RADIATED SPURIOUS EMISSIONS

Test Setup Photo

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 #: **89609** Date: 11/17/2009
Test Type: **Radiated Scan** Time: 15:50:11
Equipment: **Wireless Multimeter (Base)** 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 (Base)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

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

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is the base 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	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	769.120k	62.2	+0.1 +10.0	+0.1 -29.1	+0.1	+0.0	-40.0 360	3.4	29.9 Noisefloor	-26.5	180de 100
2	999.996k	59.8	+0.1 +10.0	+0.1 -29.1	+0.1	+0.0	-40.0	1.0	27.6 Noisefloor	-26.6	90deg 100
3	26.680M	64.2	+0.2 +6.8	+0.3 -29.2	+0.1	+0.4	-40.0 68	2.8	29.5 Noisefloor	-26.7	90deg 100
4	1.088M	58.3	+0.1 +10.0	+0.1 -29.1	+0.1	+0.0	-40.0 360	-0.5	26.8 Noisefloor	-27.3	180de 100
5	1.540M	53.9	+0.1 +10.2	+0.1 -29.1	+0.1	+0.1	-40.0 360	-4.6	23.8 Noisefloor	-28.4	90deg 100
6	26.595M	58.6	+0.2 +6.8	+0.3 -29.2	+0.1	+0.4	-40.0 360	-2.8	29.5 Noisefloor	-32.3	180de 100
7	7.930M	45.5	+0.1 +9.6	+0.2 -29.2	+0.1	+0.2	-40.0 360	-13.5	29.5 Noisefloor	-43.0	90deg 100
8	17.760M	44.2	+0.2 +8.5	+0.3 -29.2	+0.1	+0.3	-40.0 238	-15.6	29.5 Noisefloor	-45.1	90deg 100
9	8.010M	42.6	+0.1 +9.5	+0.2 -29.2	+0.1	+0.2	-40.0 360	-16.5	29.5 Noisefloor	-46.0	180de 100
10	160.770k	73.7	+0.1 +10.0	+0.0 -27.7	+0.1	+0.2	-80.0 360	-23.6	23.5 Noisefloor	-47.1	180de 100
11	62.789k	63.5	+0.1 +10.1	+0.0 -25.0	+0.1	+0.1	-80.0 360	-31.1	31.6 Noisefloor	-62.7	180de 100
12	113.390k	59.4	+0.1 +10.0	+0.0 -26.9	+0.1	+0.1	-80.0	-37.2	26.5 Noisefloor	-63.7	90deg 100
13	104.030k	59.0	+0.1 +10.0	+0.0 -26.7	+0.1	+0.1	-80.0 360	-37.4	27.3 Noisefloor	-64.7	180de 100
14	46.260k	62.3	+0.1 +10.5	+0.0 -23.6	+0.1	+0.1	-80.0	-30.5	34.3 Noisefloor	-64.8	90deg 100
15	9.276k	43.6	+0.0 +0.0	+0.0 +0.0	+0.0	+0.0	-80.0 84	-36.4	48.2 Noisefloor	-84.6	90deg 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: 9/4/2009
Test Type: **Radiated Scan** Time: 09:25:11
Equipment: **Wireless Multimeter (Base)** 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 Heliax	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 (Base)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

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

Testing Radiated Spurious Emissions per FCC 15.247(d)
The EUT is the base 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 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

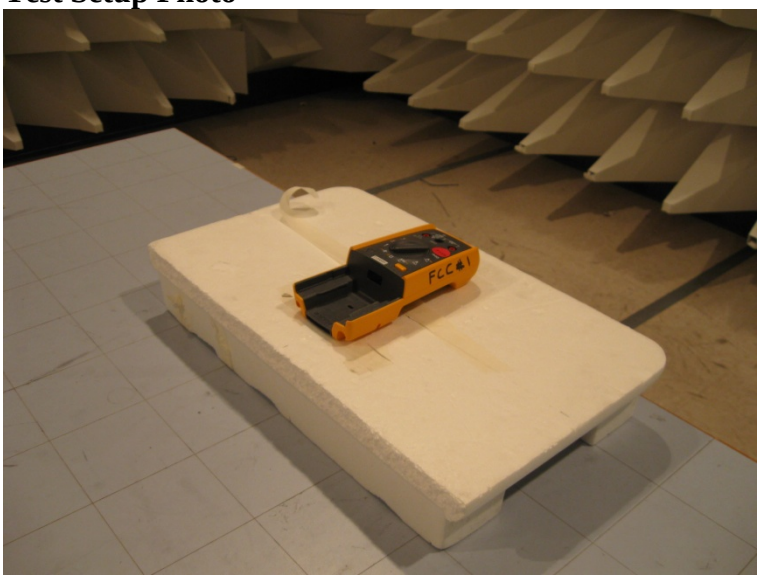
#	Freq	Rdng	T1 T5 T9	T2 T6 T10	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	4959.135M	41.9	+2.0	+0.0	+0.0	+0.0	+0.0	48.8	54.0	-5.2	Horiz
	Ave		+0.0	+0.0	+33.6	+4.2	101		HIGH channel		103
			-32.9	+0.0							
^	4959.135M	55.1	+2.0	+0.0	+0.0	+0.0	+0.0	62.0	54.0	+8.0	Horiz
			+0.0	+0.0	+33.6	+4.2	101		HIGH channel		103
			-32.9	+0.0							
3	4808.985M	42.3	+1.9	+0.0	+0.0	+0.0	+0.0	48.8	54.0	-5.2	Horiz
	Ave		+0.0	+0.0	+33.2	+4.2	27		LOW channel		125
			-32.8	+0.0							
^	4808.985M	55.5	+1.9	+0.0	+0.0	+0.0	+0.0	62.0	54.0	+8.0	Horiz
			+0.0	+0.0	+33.2	+4.2	27		LOW channel		125
			-32.8	+0.0							
5	4958.955M	41.9	+2.0	+0.0	+0.0	+0.0	+0.0	48.8	54.0	-5.2	Verti
	Ave		+0.0	+0.0	+33.6	+4.2	61		HIGH channel		102
			-32.9	+0.0							
^	4958.955M	55.5	+2.0	+0.0	+0.0	+0.0	+0.0	62.4	54.0	+8.4	Verti
			+0.0	+0.0	+33.6	+4.2	61		HIGH channel		102
			-32.9	+0.0							
7	4879.015M	42.0	+1.9	+0.0	+0.0	+0.0	+0.0	48.6	54.0	-5.4	Verti
	Ave		+0.0	+0.0	+33.4	+4.2	233		MID channel		99
			-32.9	+0.0							
^	4879.015M	55.1	+1.9	+0.0	+0.0	+0.0	+0.0	61.7	54.0	+7.7	Verti
			+0.0	+0.0	+33.4	+4.2	233		MID channel		99
			-32.9	+0.0							
9	4808.990M	41.1	+1.9	+0.0	+0.0	+0.0	+0.0	47.6	54.0	-6.4	Verti
	Ave		+0.0	+0.0	+33.2	+4.2	350		LOW channel		105
			-32.8	+0.0							
^	4808.990M	54.6	+1.9	+0.0	+0.0	+0.0	+0.0	61.1	54.0	+7.1	Verti
			+0.0	+0.0	+33.2	+4.2	350		LOW channel		105
			-32.8	+0.0							

11	4881.025M Ave	45.5	+1.9 +0.0 -32.9	+0.0 +0.0 +5.2	+0.0 +33.4	+0.0 +4.2	+0.0 96	46.9	54.0 Mid Channel (Duty Cycle Correction applied)	-7.1	Horiz 126
^	4881.025M	57.2	+1.9 +0.0 -32.9	+0.0 +0.0 +5.2	+0.0 +33.4	+0.0 +4.2	+0.0 96	58.6	54.0 Mid Channel (Duty Cycle Correction applied)	+4.6	Horiz 126
13	17355.360 M	25.4	+3.7 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +41.7	+0.0 +8.1	+0.0	46.0	54.0 Noisefloor readings	-8.0	Horiz 99
14	9920.930M	31.7	+2.4 +0.0 -33.4	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +5.9	+0.0 360	45.2	54.0 Noisefloor readings	-8.8	Verti 99
15	14880.930 M	27.1	+3.0 +0.0 -32.9	+0.0 +0.0 +0.0	+0.0 +40.6	+0.0 +7.2	+0.0 360	45.0	54.0 Noisefloor readings	-9.0	Verti 99
16	7436.610M	32.1	+2.2 +0.0 -34.6	+0.0 +0.0 +0.0	+0.0 +36.5	+0.0 +5.2	+0.0	41.4	54.0 Noisefloor readings	-12.6	Horiz 106
17	7438.405M	31.9	+2.2 +0.0 -34.6	+0.0 +0.0 +0.0	+0.0 +36.5	+0.0 +5.2	+0.0 360	41.2	54.0 Noisefloor readings	-12.8	Verti 125
18	7321.460M	31.8	+2.1 +0.0 -34.7	+0.0 +0.0 +0.0	+0.0 +36.4	+0.0 +5.2	+0.0 360	40.8	54.0 Noisefloor readings	-13.2	Horiz 126
19	9622.200M Ave	24.5	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.7	+0.0 +5.9	+0.0 360	38.3	54.0 LOW channel	-15.7	Horiz 125
^	9622.200M	37.1	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.7	+0.0 +5.9	+0.0 360	50.9	54.0 LOW channel	-3.1	Horiz 125
21	9758.029M Ave	24.4	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +6.0	+0.0	38.2	54.0 MID channel	-15.8	Horiz 125
^	9758.029M	37.4	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +6.0	+0.0	51.2	54.0 MID channel	-2.8	Horiz 125
23	9921.845M Ave	24.6	+2.4 +0.0 -33.4	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +5.9	+0.0 360	38.1	54.0 HIGH channel	-15.9	Horiz 99
^	9921.845M	38.5	+2.4 +0.0 -33.4	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +5.9	+0.0 360	52.0	54.0 HIGH channel	-2.0	Horiz 99
25	9762.000M Ave	24.2	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +6.0	+0.0	38.0	54.0 MID channel	-16.0	Verti 125
^	9762.000M	37.3	+2.5 +0.0 -33.3	+0.0 +0.0 +0.0	+0.0 +38.6	+0.0 +6.0	+0.0	51.1	54.0 MID channel	-2.9	Verti 125
27	903.600M	28.0	+0.9 +23.1 +0.0	+1.9 -29.3 +0.0	+0.5 +0.0	+2.0 +0.0	+0.0 356	27.1	46.0 Noisefloor readings	-18.9	Verti 97

28	908.800M	25.2	+0.9 +23.2 +0.0	+1.9 -29.3 +0.0	+0.5 +0.0	+2.0 +0.0	+0.0 360	24.4	46.0 Noisefloor readings	-21.6	Horiz 250
29	733.200M	27.6	+0.8 +21.2 +0.0	+1.7 -29.6 +0.0	+0.5 +0.0	+1.9 +0.0	+0.0 356	24.1	46.0 Noisefloor readings	-21.9	Verti 97
30	715.200M	24.7	+0.8 +20.8 +0.0	+1.7 -29.6 +0.0	+0.5 +0.0	+1.9 +0.0	+0.0 360	20.8	46.0 Noisefloor readings	-25.2	Horiz 250
31	470.832M	28.1	+0.6 +17.6 +0.0	+1.5 -29.4 +0.0	+0.3 +0.0	+1.6 +0.0	+0.0 356	20.3	46.0 Noisefloor readings	-25.7	Verti 97
32	407.980M	29.0	+0.6 +16.4 +0.0	+1.3 -29.1 +0.0	+0.3 +0.0	+1.5 +0.0	+0.0 356	20.0	46.0 Noisefloor readings	-26.0	Verti 97
33	46.590M	27.6	+0.2 +11.1 +0.0	+0.4 -29.1 +0.0	+0.1 +0.0	+0.4 +0.0	+0.0 360	10.7	40.0 Noisefloor readings	-29.3	Horiz 250
34	145.225M	25.7	+0.4 +11.5 +0.0	+0.7 -28.9 +0.0	+0.2 +0.0	+0.8 +0.0	+0.0 360	10.4	43.5 Noisefloor readings	-33.1	Horiz 250
35	117.150M	25.5	+0.3 +11.5 +0.0	+0.6 -29.0 +0.0	+0.2 +0.0	+0.6 +0.0	+0.0 356	9.7	43.5 Noisefloor readings	-33.8	Verti 97
36	60.030M	29.5	+0.2 +4.6 +0.0	+0.4 -29.1 +0.0	+0.1 +0.0	+0.4 +0.0	+0.0	6.1	40.0 Noisefloor readings	-33.9	Verti 99

FCC 15.247(d) BANDEDGE

Test Setup Photo



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: 9/3/2009
Test Type: **Radiated Scan** Time: 14:33:56
Equipment: **Wireless Multimeter (Base)** 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 Heliax	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 (Base)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

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

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the base 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 dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2479.424M	89.6	+1.2	+29.0	+2.8	-33.3	+0.0 165	89.3	89.3	+0.0	Horiz 104
2	2498.455M	49.3	+1.3	+29.1	+2.8	-33.3	+0.0 165	49.2	54.0	-4.8	Horiz 104
3	2483.523M Ave	40.9	+1.2	+29.1	+2.8	-33.3	+0.0 165	40.7	54.0	-13.3	Horiz 104
^	2483.523M	63.7	+1.2	+29.1	+2.8	-33.3	+0.0 165	63.5	54.0	+9.5	Horiz 104
5	2486.659M Ave	36.9	+1.2	+29.1	+2.8	-33.3	+0.0 165	36.7	54.0	-17.3	Horiz 104
^	2486.659M	58.0	+1.2	+29.1	+2.8	-33.3	+0.0 165	57.8	54.0	+3.8	Horiz 104
7	2503.155M	48.0	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.9	69.3	-21.4	Horiz 104
8	2501.772M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.8	69.3	-21.5	Horiz 104
9	2501.889M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.8	69.3	-21.5	Horiz 104
10	2502.088M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.8	69.3	-21.5	Horiz 104
11	2502.510M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.8	69.3	-21.5	Horiz 104
12	2502.862M	47.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.8	69.3	-21.5	Horiz 104
13	2502.264M	47.6	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.5	69.3	-21.8	Horiz 104
14	2502.416M	47.6	+1.3	+29.1	+2.8	-33.3	+0.0 165	47.5	69.3	-21.8	Horiz 104
15	2506.156M	46.7	+1.3	+29.1	+2.8	-33.3	+0.0 165	46.6	69.3	-22.7	Horiz 104
16	2506.613M	46.5	+1.3	+29.1	+2.8	-33.3	+0.0 165	46.4	69.3	-22.9	Horiz 104
17	2507.550M	46.5	+1.3	+29.1	+2.8	-33.3	+0.0 165	46.4	69.3	-22.9	Horiz 104
18	2505.757M	46.4	+1.3	+29.1	+2.8	-33.3	+0.0 165	46.3	69.3	-23.0	Horiz 104
19	2506.800M	46.4	+1.3	+29.1	+2.8	-33.3	+0.0 165	46.3	69.3	-23.0	Horiz 104
20	2505.991M	46.2	+1.3	+29.1	+2.8	-33.3	+0.0 165	46.1	69.3	-23.2	Horiz 104
21	2508.629M	45.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	45.8	69.3	-23.5	Horiz 104
22	2509.461M	45.9	+1.3	+29.1	+2.8	-33.3	+0.0 165	45.8	69.3	-23.5	Horiz 104

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: 9/3/2009
Test Type: **Radiated Scan** Time: 14:27:33
Equipment: **Wireless Multimeter (Base)** 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 Heliax	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 (Base)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

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

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the base 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 dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2479.508M	83.2	+1.2	+29.0	+2.8	-33.3	+0.0 64	82.9	82.9	+0.0	Verti 153
2	2495.129M	47.0	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.8	54.0	-7.2	Verti 153
3	2496.820M	46.8	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.6	54.0	-7.4	Verti 153
4	2494.020M	46.6	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.4	54.0	-7.6	Verti 153
5	2494.370M	46.6	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.4	54.0	-7.6	Verti 153
6	2493.285M	46.4	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.2	54.0	-7.8	Verti 153
7	2493.040M	46.3	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.1	54.0	-7.9	Verti 153
8	2495.234M	46.3	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.1	54.0	-7.9	Verti 153
9	2495.514M	46.3	+1.2	+29.1	+2.8	-33.3	+0.0 64	46.1	54.0	-7.9	Verti 153
10	2495.700M	45.9	+1.2	+29.1	+2.8	-33.3	+0.0 64	45.7	54.0	-8.3	Verti 153
11	2495.957M	45.7	+1.2	+29.1	+2.8	-33.3	+0.0 64	45.5	54.0	-8.5	Verti 153
12	2496.155M	45.3	+1.2	+29.1	+2.8	-33.3	+0.0 64	45.1	54.0	-8.9	Verti 153
13	2496.575M	45.2	+1.2	+29.1	+2.8	-33.3	+0.0 64	45.0	54.0	-9.0	Verti 153
14	2496.622M	45.1	+1.2	+29.1	+2.8	-33.3	+0.0 64	44.9	54.0	-9.1	Verti 153
15	2496.202M	45.0	+1.2	+29.1	+2.8	-33.3	+0.0 64	44.8	54.0	-9.2	Verti 153
16	2498.092M	44.6	+1.3	+29.1	+2.8	-33.3	+0.0 64	44.5	54.0	-9.5	Verti 153
17	2498.666M	44.6	+1.3	+29.1	+2.8	-33.3	+0.0 64	44.5	54.0	-9.5	Verti 153
18	2498.923M	44.6	+1.3	+29.1	+2.8	-33.3	+0.0 64	44.5	54.0	-9.5	Verti 153
19	2499.849M	44.4	+1.3	+29.1	+2.8	-33.3	+0.0 64	44.3	54.0	-9.7	Verti 153
20	2483.512M Ave	35.3	+1.2	+29.1	+2.8	-33.3	+0.0 64	35.1	54.0	-18.9	Verti 153
^	2483.512M	56.6	+1.2	+29.1	+2.8	-33.3	+0.0 64	56.4	54.0	+2.4	Verti 153
22	2486.799M Ave	32.4	+1.2	+29.1	+2.8	-33.3	+0.0 64	32.2	54.0	-21.8	Verti 153
^	2486.799M	51.6	+1.2	+29.1	+2.8	-33.3	+0.0 64	51.4	54.0	-2.6	Verti 153

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: 9/3/2009
Test Type: **Radiated Scan** Time: 14:05:26
Equipment: **Wireless Multimeter (Base)** 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 Heliax	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 (Base)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

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

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the base 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 dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2404.422M	94.0	+1.2	+28.8	+2.7	-33.3	+0.0 295	93.4	93.4	+0.0	Horiz 153
2	2376.431M	49.8	+1.2	+28.7	+2.7	-33.3	+0.0 295	49.1	54.0	-4.9	Horiz 153
3	2375.993M	49.4	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.7	54.0	-5.3	Horiz 153
4	2375.529M	49.3	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.6	54.0	-5.4	Horiz 153
5	2375.688M	49.3	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.6	54.0	-5.4	Horiz 153
6	2375.065M	49.2	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.5	54.0	-5.5	Horiz 153
7	2374.707M	49.1	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.4	54.0	-5.6	Horiz 153
8	2371.631M	49.0	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.3	54.0	-5.7	Horiz 153
9	2373.394M	48.9	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.2	54.0	-5.8	Horiz 153
10	2371.273M	48.8	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.1	54.0	-5.9	Horiz 153
11	2372.983M	48.7	+1.2	+28.7	+2.7	-33.3	+0.0 295	48.0	54.0	-6.0	Horiz 153
12	2370.053M	48.5	+1.2	+28.7	+2.7	-33.3	+0.0 295	47.8	54.0	-6.2	Horiz 153
13	2371.976M	48.5	+1.2	+28.7	+2.7	-33.3	+0.0 295	47.8	54.0	-6.2	Horiz 153
14	2370.000M	48.2	+1.2	+28.7	+2.7	-33.3	+0.0 295	47.5	54.0	-6.5	Horiz 153
15	2399.958M	65.1	+1.2	+28.8	+2.7	-33.3	+0.0 295	64.5	73.4	-8.9	Horiz 153
16	2396.206M	60.1	+1.2	+28.8	+2.7	-33.3	+0.0 295	59.5	73.4	-13.9	Horiz 153
17	2389.219M Ave	34.1	+1.2	+28.8	+2.7	-33.3	+0.0 295	33.5	54.0	-20.5	Horiz 153
^	2389.219M	54.2	+1.2	+28.8	+2.7	-33.3	+0.0 295	53.6	54.0	-0.4	Horiz 153
19	2386.499M Ave	29.2	+1.2	+28.8	+2.7	-33.3	+0.0 295	28.6	54.0	-25.4	Horiz 153
^	2386.499M	53.5	+1.2	+28.8	+2.7	-33.3	+0.0 295	52.9	54.0	-1.1	Horiz 153
21	2382.875M Ave	28.5	+1.2	+28.8	+2.7	-33.3	+0.0 295	27.9	54.0	-26.1	Horiz 153
^	2382.875M	52.0	+1.2	+28.8	+2.7	-33.3	+0.0 295	51.4	54.0	-2.6	Horiz 153

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: 9/3/2009
Test Type: **Radiated Scan** Time: 2:14:59 PM
Equipment: **Wireless Multimeter (Base)** 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 #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Cable, 23' blue Heliax	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 (Base)*	Fluke Corporation	Fluke 233	0016

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

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

Testing Bandedge Compliance per FCC15.247(d)

The EUT is the Base 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 dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2404.490M	87.1	+1.2	+28.8	+2.7	-33.3	+0.0 64	86.5	86.5	+0.0	Verti 105
2	2389.672M	48.6	+1.2	+28.8	+2.7	-33.3	+0.0 64	48.0	54.0	-6.0	Verti 105
3	2387.046M	48.5	+1.2	+28.8	+2.7	-33.3	+0.0 64	47.9	54.0	-6.1	Verti 105
4	2386.246M	48.2	+1.2	+28.8	+2.7	-33.3	+0.0 64	47.6	54.0	-6.4	Verti 105
5	2387.339M	47.7	+1.2	+28.8	+2.7	-33.3	+0.0 64	47.1	54.0	-6.9	Verti 105
6	2387.086M	47.5	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.9	54.0	-7.1	Verti 105
7	2388.139M	47.5	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.9	54.0	-7.1	Verti 105
8	2387.646M	47.4	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.8	54.0	-7.2	Verti 105
9	2388.392M	47.3	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.7	54.0	-7.3	Verti 105
10	2387.512M	47.1	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.5	54.0	-7.5	Verti 105
11	2382.755M	46.8	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.2	54.0	-7.8	Verti 105
12	2384.419M	46.8	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.2	54.0	-7.8	Verti 105
13	2382.795M	46.7	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.1	54.0	-7.9	Verti 105
14	2384.232M	46.7	+1.2	+28.8	+2.7	-33.3	+0.0 64	46.1	54.0	-7.9	Verti 105
15	2385.046M	46.5	+1.2	+28.8	+2.7	-33.3	+0.0 64	45.9	54.0	-8.1	Verti 105
16	2384.299M	46.4	+1.2	+28.8	+2.7	-33.3	+0.0 64	45.8	54.0	-8.2	Verti 105
17	2382.251M	46.3	+1.2	+28.8	+2.7	-33.3	+0.0 64	45.7	54.0	-8.3	Verti 105
18	2382.662M	46.3	+1.2	+28.8	+2.7	-33.3	+0.0 64	45.7	54.0	-8.3	Verti 105
19	2399.877M	58.3	+1.2	+28.8	+2.7	-33.3	+0.0 64	57.7	66.5	-8.8	Verti 105
20	2396.152M	53.9	+1.2	+28.8	+2.7	-33.3	+0.0 64	53.3	66.5	-13.2	Verti 105

FCC 15.247(e) PEAK POWER SPECTRAL DENSITY

Test Equipment

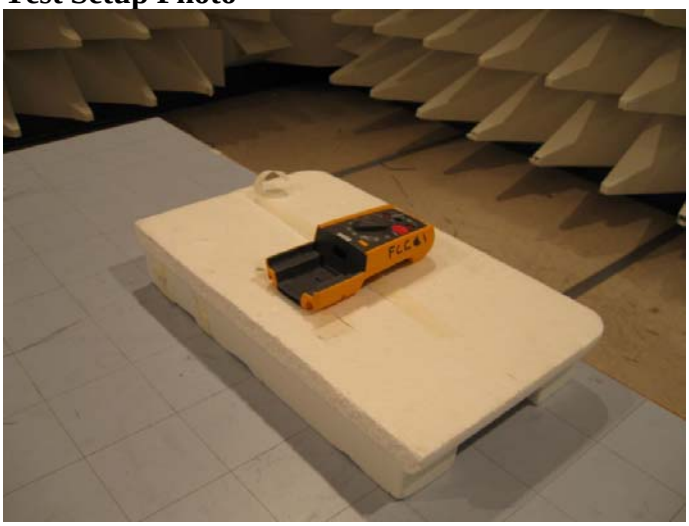
Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliax		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum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



Test Data

	Vertical	Horizontal	Limit
LOW	-25.54dBm/3kHz	-19.44dBm/3kHz	8dBm/3kHz
MID	-26.84dBm/3kHz	-20.34dBm/3kHz	8dBm/3kHz
HIGH	-30.04dBm/3kHz	-23.54dBm/3kHz	8dBm/3kHz

RSS-210 99% BANDWIDTH

Test Equipment

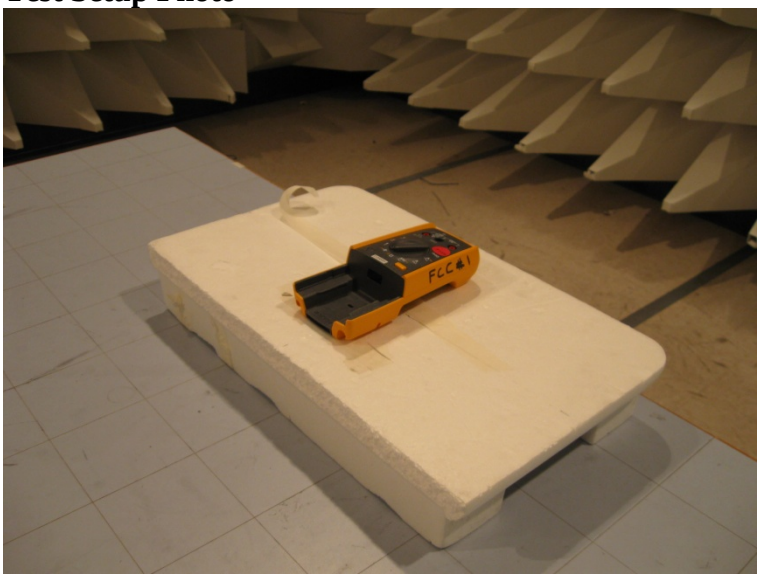
Asset #	Equipment	Manufacturer	Model	Serial	Cal Date	Cal Due
3121	Cable	Astrolab	32026-2-29080-84		4/28/2009	4/28/2011
1412	Antenna, Horn	EMCO	3115	9606-4854	11/12/2007	11/12/2009
P05542	Cable, 23' blue	Andrews	Heliax		4/21/2009	4/21/2011
1271	Preamp	HP	83017A	3123A00464	10/2/2007	10/2/2009
2871	Spectrum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

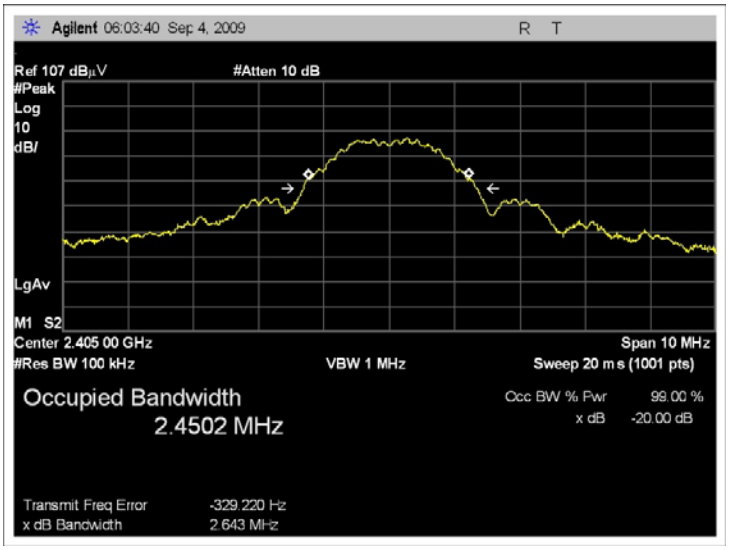
Test Setup Photo



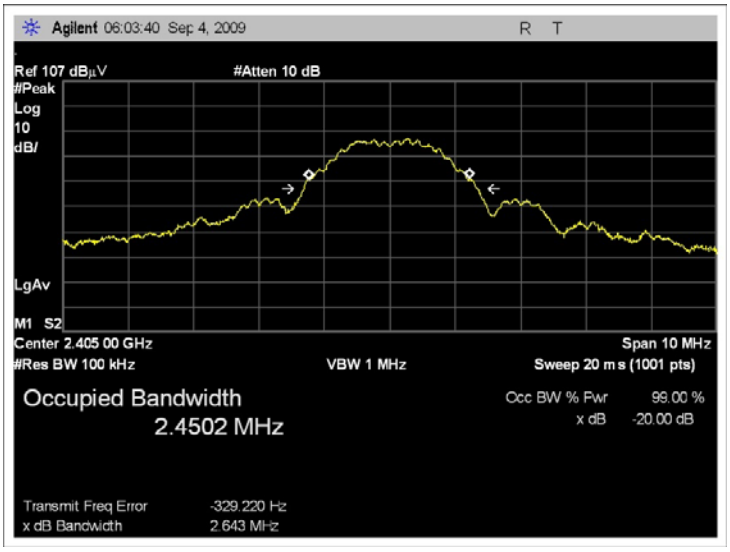
Test Data

Channel	99% Bandwidth	
	Vertical	**Horizontal**
LOW	2.45MHz	2.45MHz
MID	2.44MHz	2.45MHz
HIGH	2.42MHz	2.44MHz

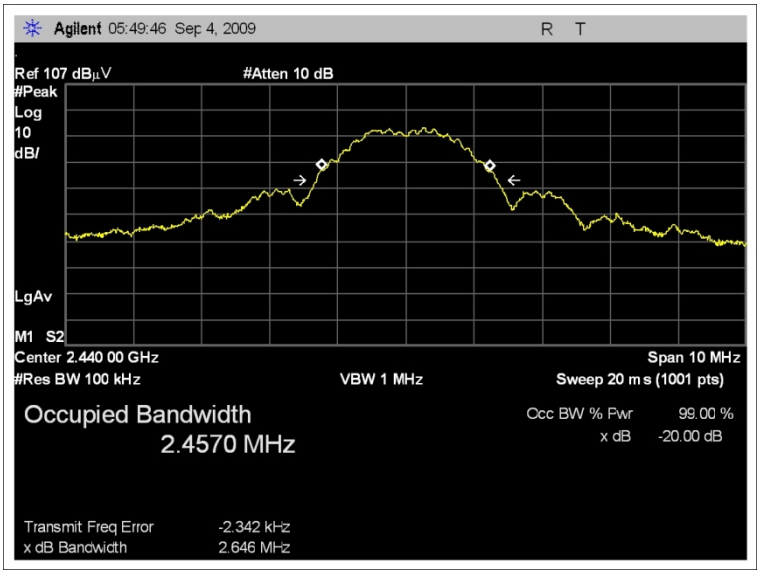
RSS-210 99% BANDWIDTH-HORIZONTAL LOW CHANNEL



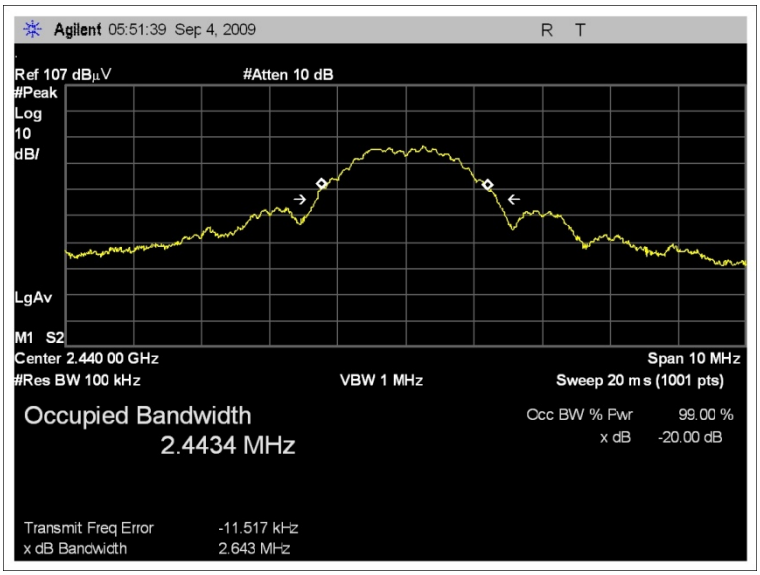
RSS-210 99% BANDWIDTH-VERTICAL LOW CHANNEL



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