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## **FCC PART 15.249 TEST REPORT**

### **UNLICENSED INTENTIONAL RADIATOR**

Applicant	GOLF IMPACT LLC	
Address	3111 N.E. 51ST STREET SUITE 202	
	FT. LAUDERDALE FL 33308 USA	
FCC ID	XSCDYNUSB	
Product Description	USB MODULE	
Date Sample Received	10/27/2009	
Date Tested	11/3/2009	
Tested By	Richard Block	
Approved By	Mario de Aranzeta	
Report Number	2587AUT9TestReport.doc	
Test Results	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



Certificate # 0955-01



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## **GENERAL REMARKS**

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

### **Summary**

The device under test does:

fulfill the general approval requirements as identified in this test report  
 not fulfill the general approval requirements as identified in this test report

### **Attestations**

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.



Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

Timco Engineering Inc.  
849 NW State Road 45  
Newberry, FL 32669



### **Authorized Signatory Name:**

Mario de Aranzeta C.E.T.  
Compliance Engineer / Lab. Supervisor

Date: 11/4/2009

APPLICANT: GOLF IMPACT LLC  
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## GENERAL INFORMATION

### DUT Specification

The test results relate only to the items tested.			
Applicable Standard	Part 15.249		
DUT Description	USB MODULE		
FCC ID	XSCDYNUSB		
Operating Frequency	TX: 2.405-2.480 GHz	RX: Same	
DUT Power Source	<input checked="" type="checkbox"/> 110-120Vac/50- 60Hz		
	<input type="checkbox"/> DC Power		
	<input type="checkbox"/> Battery Operated Exclusively		
Test Item	<input checked="" type="checkbox"/> Prototype	<input type="checkbox"/> Pre-Production	<input type="checkbox"/> Production
Type of Equipment	<input checked="" type="checkbox"/> Fixed	<input type="checkbox"/> Mobile	<input type="checkbox"/> Portable
Antenna Connector	FCC Rules require that the antenna connector be unique.		
Test Facility	Timco Engineering Inc. located at 849 NW State Road 45 Newberry, FL 32669 USA.		
Test Conditions	Temperature: 26°C Relative humidity: 50%		
Test Exercise	The DUT was placed in continuous transmit mode of operation.		
Modifications	none		

### Test Supporting Equipment

Supporting Device	Manufacturer	Model / FCC ID	Serial Number
N/A			

The DUT was tested for FCC Part 15.109 Class B under the DoC (Declaration of Conformity) process and has been found to comply with the requirements.

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**EMC EQUIPMENT LIST**

<b>Device</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial Number</b>	<b>Cal/Char Date</b>	<b>Due Date</b>
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 2/5/09	2/5/12
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/10/10
Analyzer Silver Tower Quasi-Peak Adapter	HP	85650A	3303A01844	CAL 9/24/08	9/24/10
Analyzer Silver Tower RF Preselector	HP	85685A	2620A00294	CAL 9/24/08	9/24/10
Analyzer Silver Tower Spectrum Analyzer	HP	8566B Opt 462	3552A22064 3638A08608	CAL 9/24/08	9/24/10
Antenna: Biconnical	Eaton	94455-1	1057	CAL 1/15/08	1/15/10
Antenna: Log-Periodic	Eaton	96005	1243	CAL 12/13/07	12/13/09

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## TEST PROCEDURES

**Radiation Interference:** ANSI C63.4-2003 using a spectrum analyzer, a preselector, a quasi-peak adapter, and an appropriate antenna. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100 kHz with an appropriate sweep speed and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

**Formula Of Conversion Factors:** The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

Example:

$$\begin{array}{llll}
 \text{Freq (MHz)} & \text{Meter Reading} & + \text{ACF} & + \text{CL} = \text{FS} \\
 33 & 20 \text{ dBuV} & + 10.36 \text{ dB} & + 0.5 = 30.86 \text{ dBuV/m @ 3m}
 \end{array}$$

**Power Line Conducted Interference:** The procedure used was ANSI C63.4-2003 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The spectrum was scanned from 0.15 to 30 MHz.

**Occupied Bandwidth:** A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to -10 dBm per division.

**ANSI C63.4-2003 10.1 Measurement Procedures:** The DUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The DUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. Emissions attenuated more than 20 dB below the permissible value are not reported.

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## RADIATION INTERFERENCE

**Rules Part No.:** 15.249, 15.209

**Requirements:**

Frequency	Limits
Part 15.209	
9 to 490 kHz	2400/F (kHz) $\mu$ V/m @ 300 meters
490 to 1705 kHz	24000/F (kHz) $\mu$ V/m @ 30 meters
1705 kHz to 30 MHz	29.54 dB $\mu$ V/m @ 30 meters
30 – 88	40.0 dB $\mu$ V/m @ 3 meters
80 – 216	43.5 dB $\mu$ V/m @ 3 meters
216 – 960	46.0 dB $\mu$ V/m @ 3 meters
Above 960	54.0 dB $\mu$ V/m @ 3 meters
Part 15.249	
Fundamental 902 – 928 MHz	94.0 dB $\mu$ V/m @ 3 meters
Fundamental 2.4 – 2.4835 MHz	94.0 dB $\mu$ V/m @ 3 meters
Harmonics	54.0 dB $\mu$ V/m @ 3 meters

**Test Data:**

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB	Peak Average
2,405.0	2,405.00	49.8	V	3.18	32.25	85.23	8.77	
2,405.0	2,405.00	53.7	H	3.18	32.25	89.13	4.87	
2,405.0	4,810.00	-0.5	H	4.91	34.10	38.51	15.50	Average
2,405.0	4,810.00	0.6	V	4.91	34.10	39.61	14.40	Average
2,405.0	4,810.00	22.5	H	4.91	34.10	61.51	12.50	Peak
2,405.0	4,810.00	25.3	V	4.91	34.10	64.30	9.70	Peak
2,405.0	7,215.00	-2.0	V	5.73	36.04	39.77	14.23	Average
2,405.0	7,215.00	-1.5	H	5.73	36.04	40.27	13.73	Average
2,405.0	7,215.00	17.3	V	5.73	36.04	59.07	14.93	Peak
2,405.0	7,215.00	17.7	H	5.73	36.04	59.47	14.53	Peak
2,405.0	9,620.00	9.7	V	6.79	36.72	53.21	0.79	
2,405.0	9,620.00	9.8	H	6.79	36.72	53.31	0.69	
2,405.0	12,025.00	5.7	V	7.82	38.72	52.24	1.76	
2,405.0	12,025.00	5.9	H	7.82	38.72	52.44	1.56	
2,440.0	2,440.00	47.8	V	3.21	32.34	83.35	10.65	
2,440.0	2,440.00	53.3	H	3.21	32.34	88.85	5.15	
2,440.0	4,880.00	0.3	H	4.94	34.10	39.34	14.66	Average
2,440.0	4,880.00	1.6	V	4.94	34.10	40.64	13.36	Average
2,440.0	4,880.00	22.9	H	4.94	34.10	61.94	12.06	Peak
2,440.0	4,880.00	26.8	V	4.94	34.10	65.84	8.16	Peak

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**TEST DATA CONTD.**

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m	Margin dB	Peak Average
2,440.0	7,320.00	-3.0	H	5.79	36.06	38.85	15.15	Average
2,440.0	7,320.00	-2.9	V	5.79	36.06	38.95	15.05	Average
2,440.0	7,320.00	13.7	H	5.79	36.06	55.55	18.45	Peak
2,440.0	7,320.00	14.6	V	5.79	36.06	56.45	17.55	Peak
2,440.0	9,760.00	7.5	H	6.83	36.86	51.19	2.81	
2,440.0	9,760.00	10.3	V	6.83	36.86	53.99	0.01	
2,440.0	12,200.00	6.2	V	7.94	38.86	53.00	1.00	
2,440.0	12,200.00	6.7	H	7.94	38.86	53.50	0.50	
2,480.0	2,480.00	50.0	V	3.24	32.45	85.69	8.31	
2,480.0	2,480.00	54.8	H	3.24	32.45	90.49	3.51	
2,480.0	4,960.00	-0.7	H	4.98	34.10	38.38	15.62	Average
2,480.0	4,960.00	0.3	V	4.98	34.10	39.38	14.62	Average
2,480.0	4,960.00	23.7	H	4.98	34.10	62.78	11.22	Peak
2,480.0	4,960.00	24.7	V	4.98	34.10	63.78	10.22	Peak
2,480.0	7,440.00	-2.2	V	5.86	36.09	39.75	14.25	Average
2,480.0	7,440.00	-1.7	H	5.86	36.09	40.25	13.75	Average
2,480.0	7,440.00	14.8	V	5.86	36.09	56.75	17.25	Peak
2,480.0	7,440.00	15.4	H	5.86	36.09	57.35	16.65	Peak
2,480.0	9,920.00	8.1	V	6.88	37.02	52.00	2.00	
2,480.0	9,920.00	9.2	H	6.88	37.02	53.10	0.90	
2,480.0	12,400.00	6.3	V	8.08	39.02	53.40	0.60	
2,480.0	12,400.00	6.4	H	8.08	39.02	53.50	0.50	

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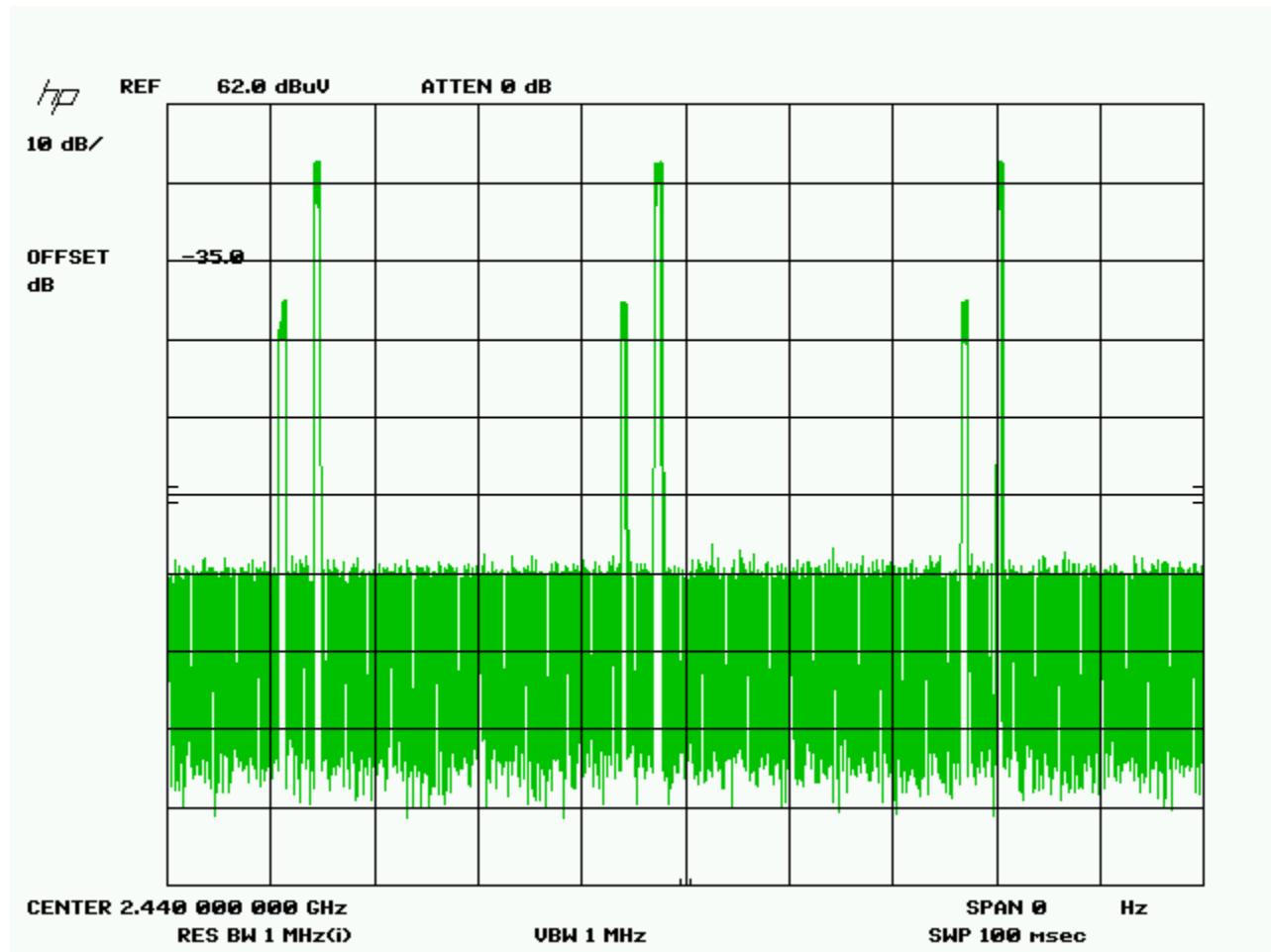
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## DUTY CYCLE

3 pulses of 0.6 msec for a total of 1.8 msec in a 100 msec time frame

20 dB duty cycle



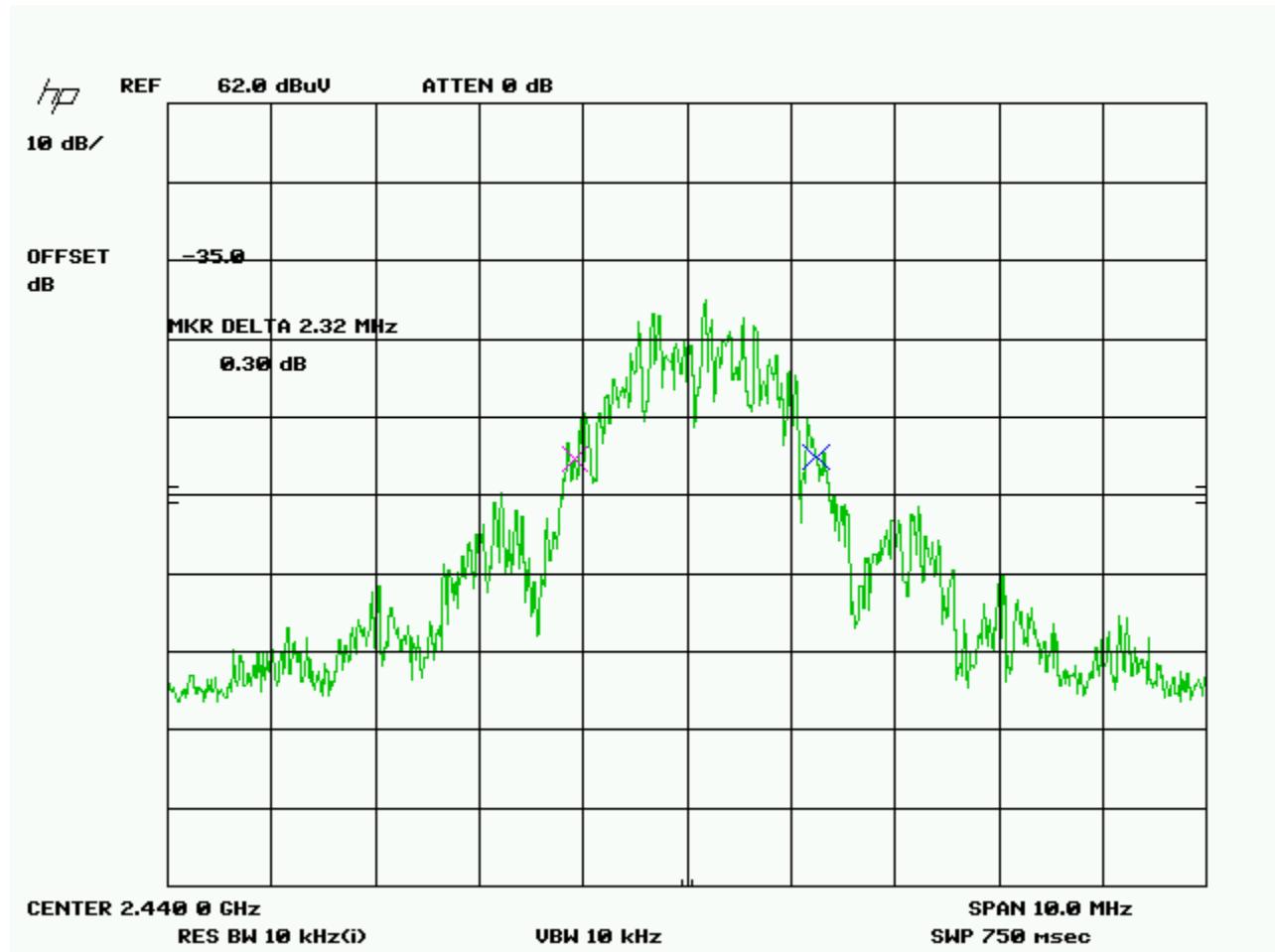
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## OCCUPIED BANDWIDTH

**Rules Part No.:** 15.249 (d)

**Requirements:** The field strength of any emissions appearing outside the bandedges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

### Test Data:



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## BAND EDGE COMPLIANCE

**Rules Part No.:** 15.249 (d)

**Requirements:** 40 dBc or in the case of restricted bands 54 dBuV/m.

### Test Data:

Lower bandedge



Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m	Margin dB
2,405.0	2,399.45	13.6	V	3.18	32.24	49.02	4.98

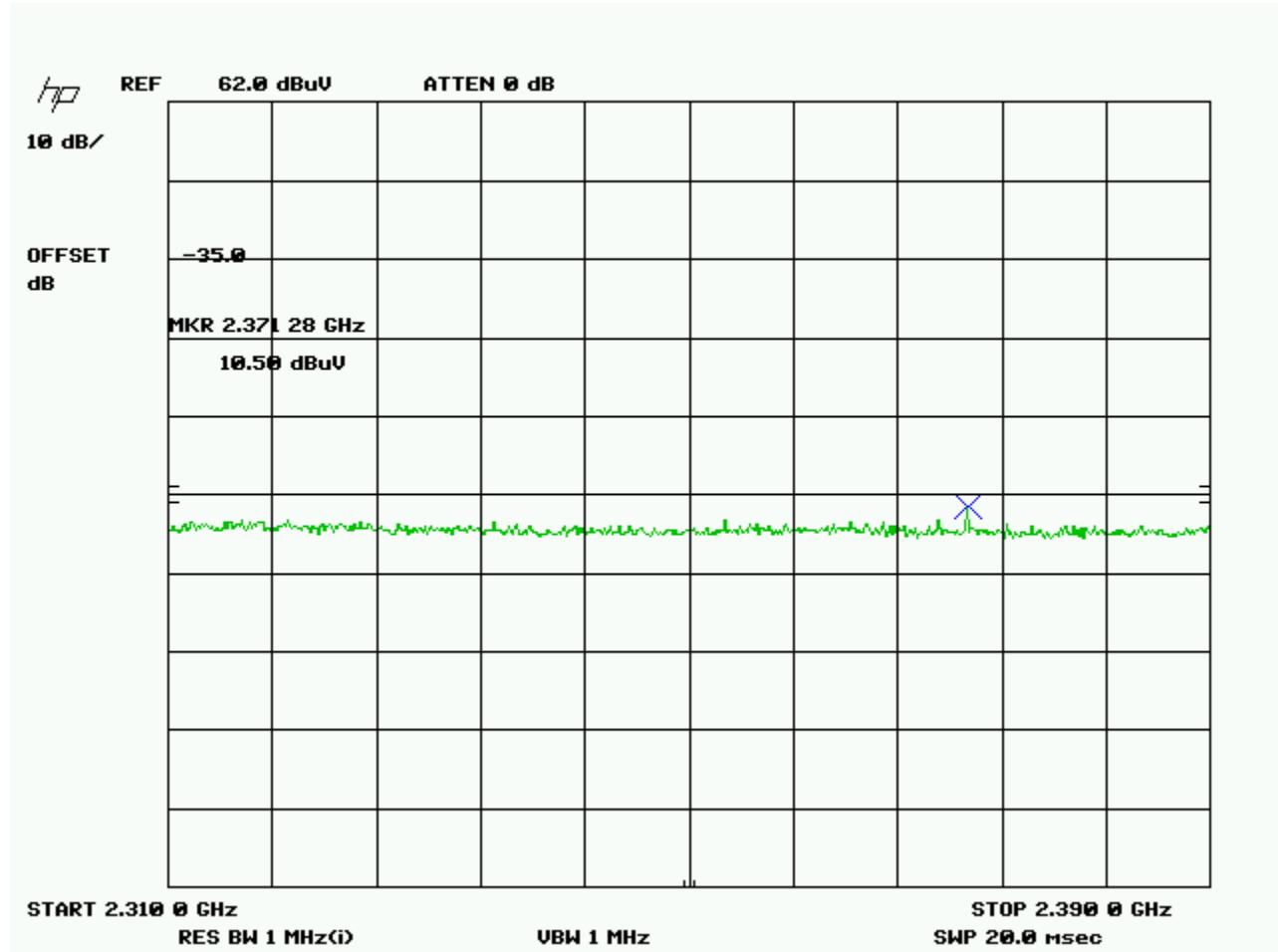
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Lower non-adjacent restricted band

Peak Plot

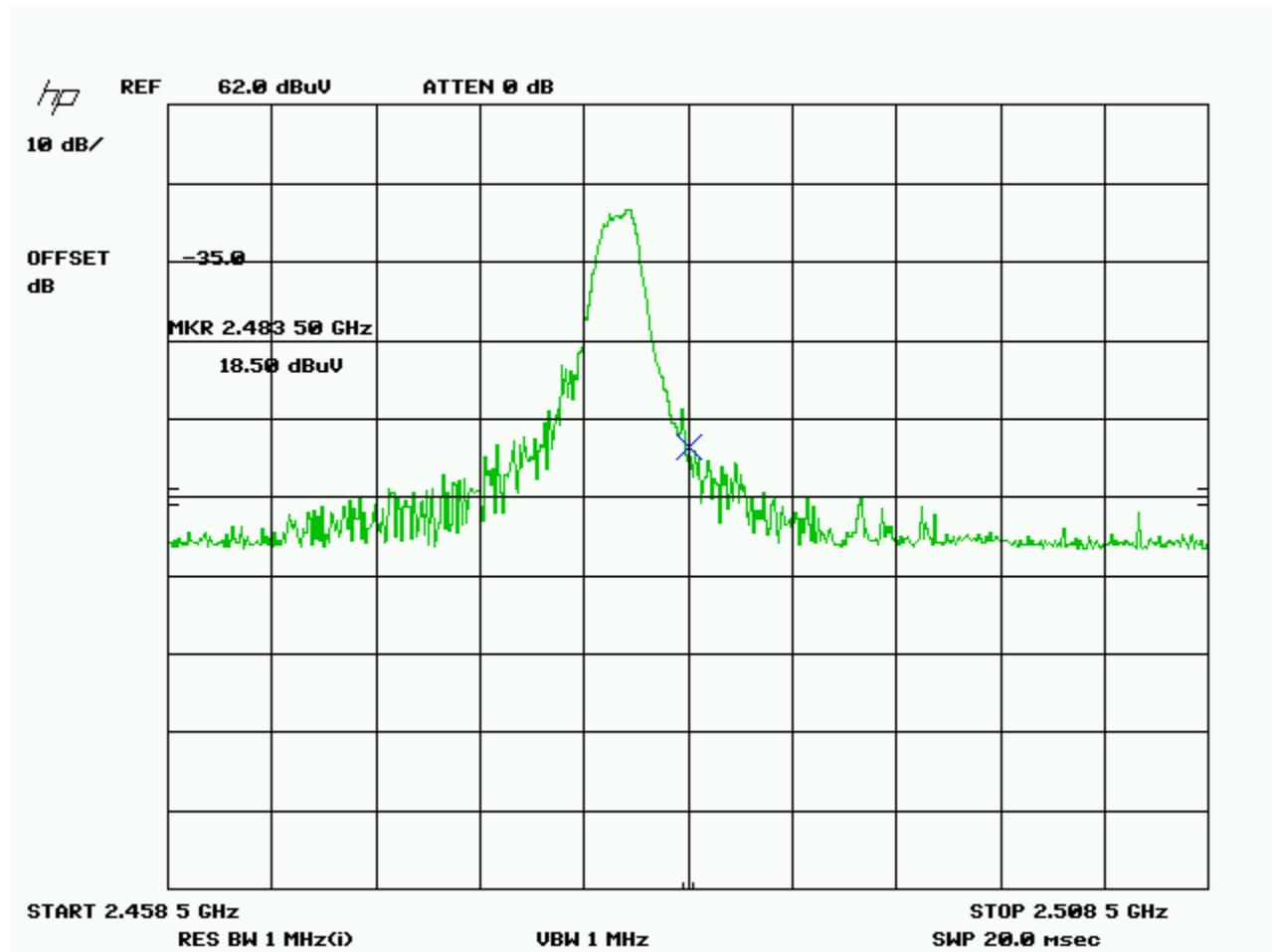


Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m	Margin dB
2,405.0	2,371.28	10.5	V	3.16	32.17	45.83	8.17

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Upper bandedge

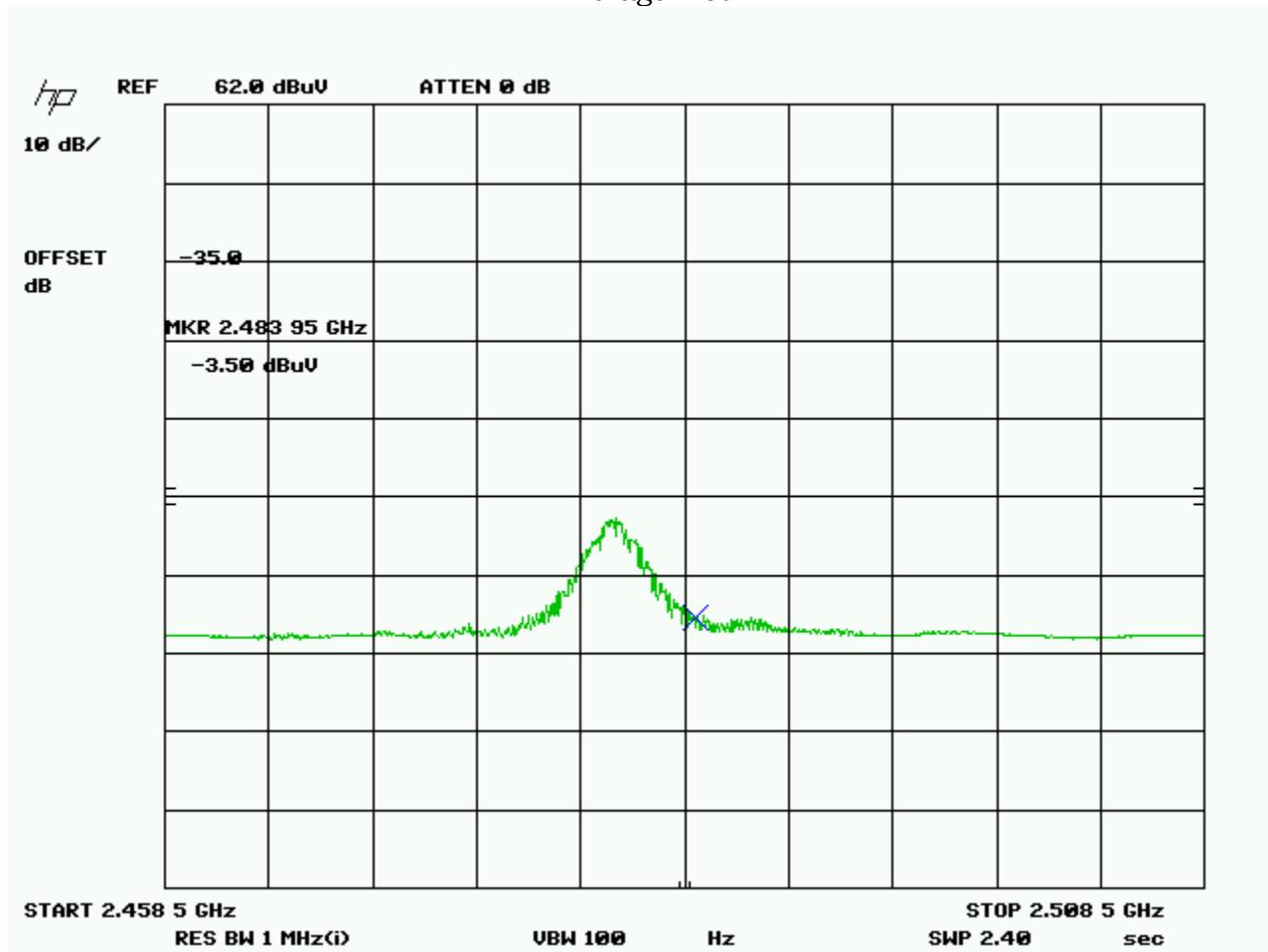
Peak Plot



Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m	Margin dB
2,480.0	2,483.50	18.5	V	3.24	32.46	54.20	19.80

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## Average Plot



Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m	Margin dB
2,480.0	2,483.95	-3.5	V	3.24	32.46	32.20	21.80

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## **POWER LINE CONDUCTED INTERFERENCE**

**Rules Part No.:** 15.207

**Requirements:**

Frequency (MHz)	Quasi Peak Limits (dB $\mu$ V)	Average Limits (dB $\mu$ V)
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5.0	56	46
5.0 – 30	60	50

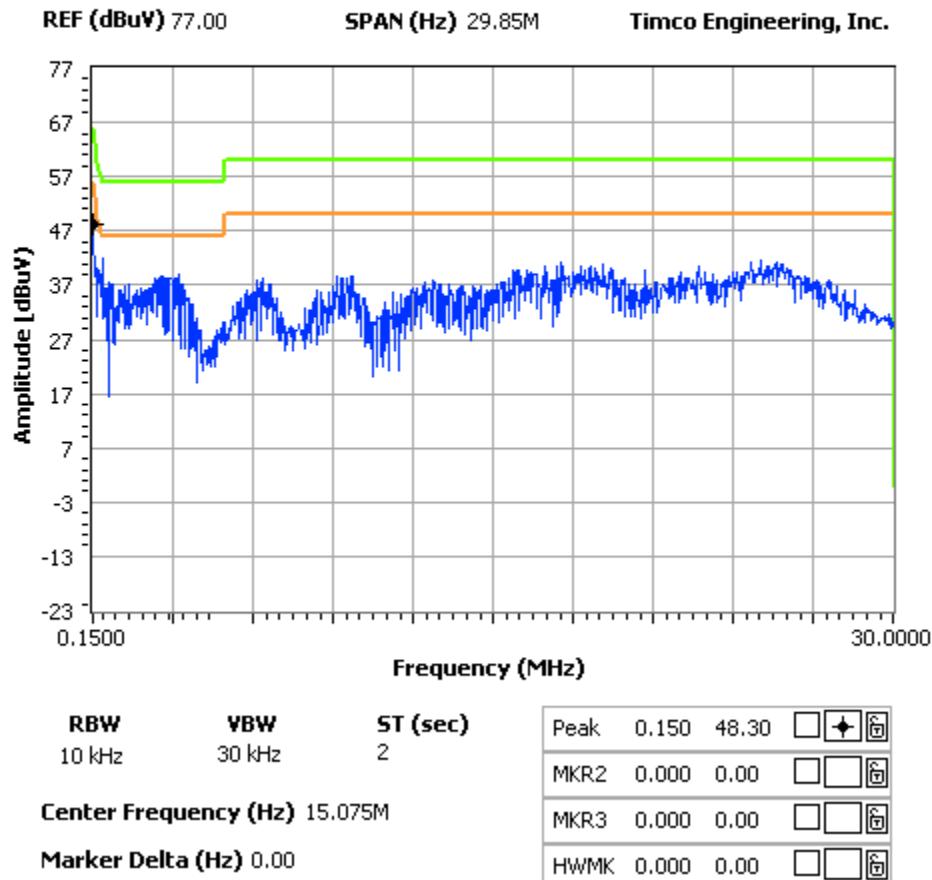
**Test Data:** The attached graphs represent the emissions read for power line conducted for this device. Both lines were observed.

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## POWERLINE CONDUCTED EMISSIONS – LINE 1

**NOTES:**

 POWERLINE CONDUCTED -- LINE 1  
 GOLF IMPACT LLC -- FCC ID: XSC DYNUSB

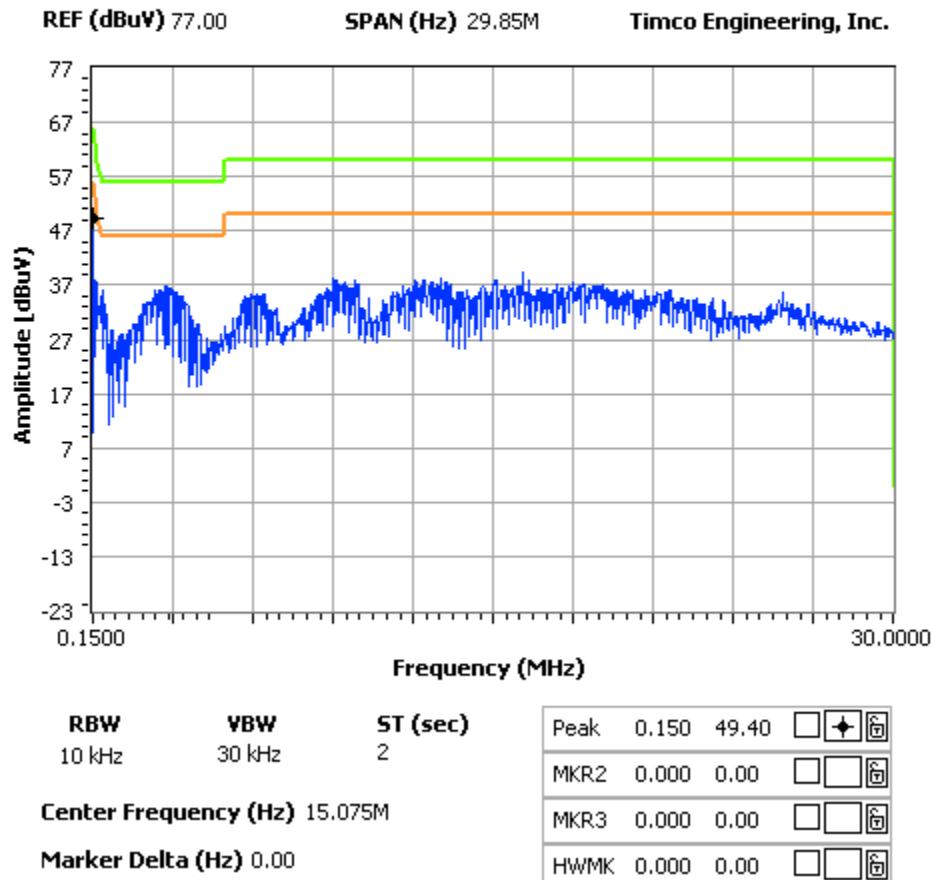
**FCC 15.107 Mask Class B**


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## POWERLINE CONDUCTED EMISSIONS – LINE 2

**NOTES:**

 POWERLINE CONDUCTED -- LINE 2  
 GOLF IMPACT LLC -- FCC ID: XSC DYNUSB

**FCC 15.107 Mask Class B**


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**RADIATED EMISSIONS TEST SETUP PHOTO**



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**POWERLINE CONDUCTED EMISSIONS TEST SETUP PHOTO**



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