Velvetwire LLC

TEST REPORT FOR

Powerslayer
Model: 100101

Tested To The Following Standards:

FCC Part 15 Subpart C Section(s)
15.207 & 15.249

Report No.: 96014-7

Date of issue: September 12, 2014

ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

Testing the Future
CKC LABORATORIES, INC.

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Velvetwire LLC
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Santa Cruz, CA 95018

Representative: Chris Kilgus

REPORT PREPARED BY:

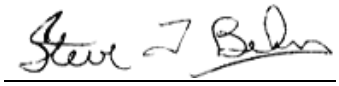
Morgan Tramontin
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 96014

DATE OF EQUIPMENT RECEIPT: August 28, 2014
DATE(S) OF TESTING: August 28 – September 2, 2014

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
1120 Fulton Place
Fremont, CA 94539

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Fremont	US0082	SL2-IN-E-1148R	3082B-1	958979	A-0149

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C

Test Procedure/Method	Description	Modifications*	Results
15.207 / ANSI C63.4	Conducted Emissions	NA	Pass
15.249 (a)(b) / ANSI C63.4	RF Power Output	NA	Pass
15.31(e) / ANSI C63.4	Voltage Variation	NA	Pass
15.215(c) / ANSI C63.4	Occupied Bandwidth	NA	Pass
15.249(a)(d) / ANSI C63.4	Radiated Spurious Emissions and Band Edge	NA	Pass

NA=Not Applicable

Modifications*/Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

***Modifications listed above must be incorporated into all production units.**

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

Powerslayer
Manuf: Velvetwire LLC
Model: 100101
Serial: RF 1

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) CFR 47 Section 15 Subpart C requirements for Intentional Radiators.

15.207 AC Conducted Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.207 AC Mains - Average**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Conducted Emissions** Time: 8:58:07 AM
Equipment: **Powerslayer** Sequence#: 3
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101 120V 60Hz
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP01211	Attenuator	PE7002-10	4/2/2013	4/2/2015
T2	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
T3	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
T4	AN00493	50uH LISN-L1 (L) Loss W/O European Adapter	3816/NM	3/4/2013	3/4/2015
	AN00493	50uH LISN-L(2) N Loss W/O European Adapter	3816/NM	3/4/2013	3/4/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T5	ANP05258	High Pass Filter	HE9615-150K-50-720B	12/6/2012	12/6/2014

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Conducted Emission
Frequency Range: 150kHz to 30MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=dBi

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Transmitting Mode

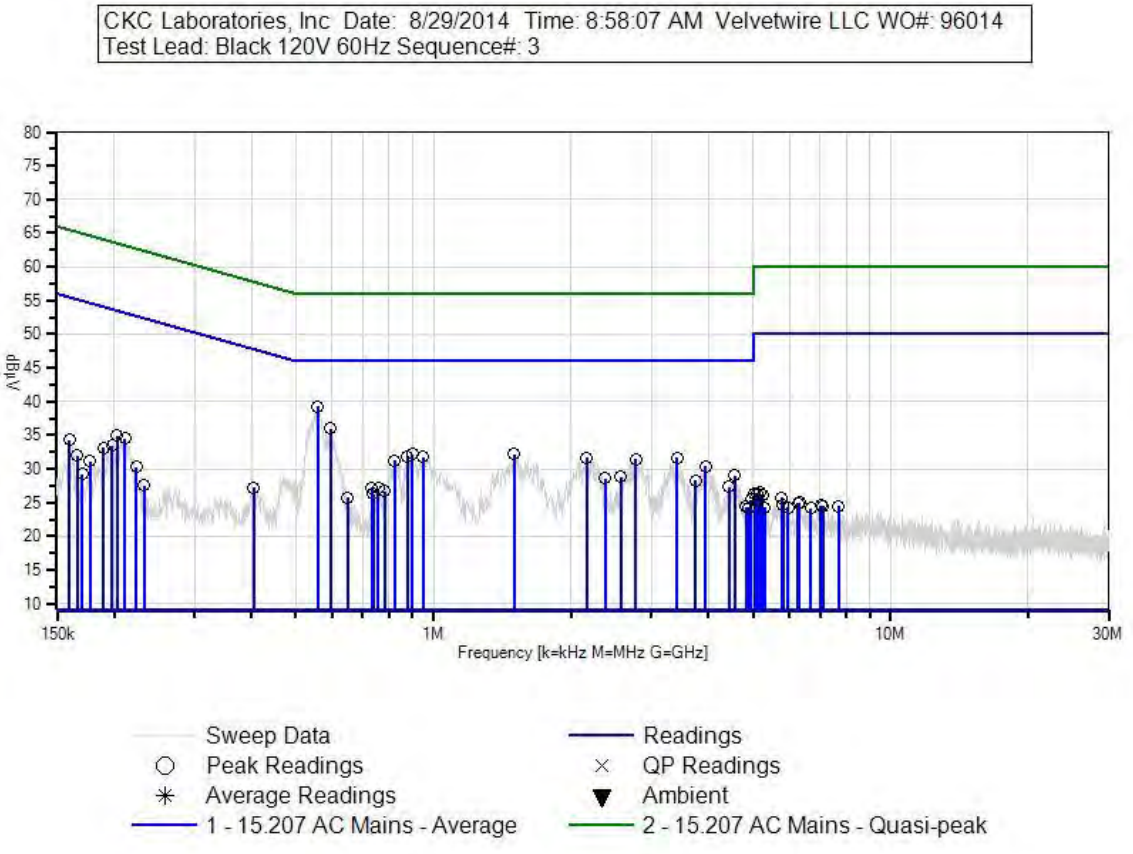
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	558.690k	29.5	+9.6 +0.1	+0.0	+0.0	+0.1	+0.0	39.3	46.0	-6.7	Black
2	595.050k	26.1	+9.7 +0.1	+0.0	+0.0	+0.1	+0.0	36.0	46.0	-10.0	Black
3	898.469k	22.2	+9.6 +0.2	+0.1	+0.0	+0.1	+0.0	32.2	46.0	-13.8	Black
4	1.502M	22.3	+9.6 +0.1	+0.1	+0.0	+0.1	+0.0	32.2	46.0	-13.8	Black
5	875.752k	21.9	+9.6 +0.2	+0.1	+0.0	+0.1	+0.0	31.9	46.0	-14.1	Black
6	949.501k	21.9	+9.6 +0.1	+0.1	+0.0	+0.1	+0.0	31.8	46.0	-14.2	Black
7	2.166M	21.8	+9.6 +0.1	+0.1	+0.0	+0.1	+0.0	31.7	46.0	-14.3	Black
8	3.412M	21.8	+9.5 +0.1	+0.1	+0.1	+0.1	+0.0	31.7	46.0	-14.3	Black
9	2.774M	21.6	+9.6 +0.1	+0.1	+0.0	+0.1	+0.0	31.5	46.0	-14.5	Black
10	821.938k	21.3	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	31.2	46.0	-14.8	Black
11	3.943M	20.4	+9.6 +0.1	+0.1	+0.1	+0.1	+0.0	30.4	46.0	-15.6	Black
12	4.564M	18.8	+9.7 +0.2	+0.1	+0.1	+0.1	+0.0	29.0	46.0	-17.0	Black
13	2.566M	18.9	+9.6 +0.1	+0.1	+0.0	+0.1	+0.0	28.8	46.0	-17.2	Black
14	2.374M	18.6	+9.7 +0.1	+0.1	+0.0	+0.1	+0.0	28.6	46.0	-17.4	Black

15	3.748M	18.3	+9.6 +0.1	+0.1	+0.1	+0.1	+0.0	28.3	46.0	-17.7	Black
16	203.086k	25.0	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	34.9	53.5	-18.6	Black
17	211.085k	24.6	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	34.5	53.2	-18.7	Black
18	4.437M	17.3	+9.6 +0.1	+0.1	+0.1	+0.1	+0.0	27.3	46.0	-18.7	Black
19	732.492k	17.5	+9.5 +0.1	+0.0	+0.0	+0.1	+0.0	27.2	46.0	-18.8	Black
20	757.944k	17.2	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	27.1	46.0	-18.9	Black
21	781.215k	16.8	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	26.7	46.0	-19.3	Black
22	737.582k	16.6	+9.5 +0.1	+0.0	+0.0	+0.1	+0.0	26.3	46.0	-19.7	Black
23	197.996k	23.6	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	33.5	53.7	-20.2	Black
24	649.591k	15.8	+9.7 +0.1	+0.0	+0.0	+0.1	+0.0	25.7	46.0	-20.3	Black
25	4.956M	15.3	+9.5 +0.2	+0.2	+0.1	+0.1	+0.0	25.4	46.0	-20.6	Black
26	404.522k	17.5	+9.6 +0.0	+0.0	+0.0	+0.1	+0.0	27.2	47.8	-20.6	Black
27	189.996k	23.2	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	33.1	54.0	-20.9	Black
28	159.454k	24.2	+9.6 +0.4	+0.0	+0.0	+0.1	+0.0	34.3	55.5	-21.2	Black
29	4.836M	14.3	+9.5 +0.2	+0.2	+0.1	+0.1	+0.0	24.4	46.0	-21.6	Black
30	4.883M	14.2	+9.5 +0.2	+0.2	+0.1	+0.1	+0.0	24.3	46.0	-21.7	Black
31	223.448k	20.4	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	30.3	52.7	-22.4	Black
32	165.999k	21.9	+9.6 +0.4	+0.0	+0.0	+0.1	+0.0	32.0	55.2	-23.2	Black
33	5.175M	16.4	+9.6 +0.2	+0.2	+0.1	+0.1	+0.0	26.6	50.0	-23.4	Black
34	176.907k	21.1	+9.6 +0.3	+0.0	+0.0	+0.1	+0.0	31.1	54.6	-23.5	Black
35	5.045M	16.2	+9.6 +0.2	+0.2	+0.1	+0.1	+0.0	26.4	50.0	-23.6	Black
36	5.117M	16.2	+9.6 +0.2	+0.2	+0.1	+0.1	+0.0	26.4	50.0	-23.6	Black
37	5.238M	16.0	+9.6 +0.2	+0.2	+0.1	+0.1	+0.0	26.2	50.0	-23.8	Black
38	5.788M	15.5	+9.7 +0.1	+0.2	+0.1	+0.1	+0.0	25.7	50.0	-24.3	Black
39	5.130M	15.1	+9.6 +0.2	+0.2	+0.1	+0.1	+0.0	25.3	50.0	-24.7	Black
40	232.901k	17.6	+9.6 +0.2	+0.0	+0.0	+0.1	+0.0	27.5	52.3	-24.8	Black

41	6.328M	14.9	+9.6 +0.1	+0.2	+0.1	+0.1	+0.0	25.0	50.0	-25.0	Black
42	6.283M	14.8	+9.6 +0.1	+0.2	+0.1	+0.1	+0.0	24.9	50.0	-25.1	Black
43	5.815M	14.5	+9.7 +0.1	+0.2	+0.1	+0.1	+0.0	24.7	50.0	-25.3	Black
44	7.049M	14.4	+9.6 +0.1	+0.2	+0.1	+0.2	+0.0	24.6	50.0	-25.4	Black
45	7.103M	14.3	+9.6 +0.1	+0.2	+0.1	+0.2	+0.0	24.5	50.0	-25.5	Black
46	7.688M	14.3	+9.6 +0.1	+0.2	+0.1	+0.2	+0.0	24.5	50.0	-25.5	Black
47	170.362k	19.1	+9.6 +0.4	+0.0	+0.0	+0.1	+0.0	29.2	54.9	-25.7	Black
48	5.301M	14.1	+9.6 +0.2	+0.2	+0.1	+0.1	+0.0	24.3	50.0	-25.7	Black
49	5.959M	14.1	+9.7 +0.1	+0.2	+0.1	+0.1	+0.0	24.3	50.0	-25.7	Black
50	6.688M	14.1	+9.6 +0.1	+0.2	+0.1	+0.1	+0.0	24.2	50.0	-25.8	Black



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.207 AC Mains - Average**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Conducted Emissions** Time: 9:03:00 AM
Equipment: **Powerslayer** Sequence#: 4
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101 120V 60Hz
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP01211	Attenuator	PE7002-10	4/2/2013	4/2/2015
T2	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
T3	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN00493	50uH LISN-L1 (L) Loss W/O European Adapter	3816/NM	3/4/2013	3/4/2015
T4	AN00493	50uH LISN-L(2) N Loss W/O European Adapter	3816/NM	3/4/2013	3/4/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T5	ANP05258	High Pass Filter	HE9615-150K-50-720B	12/6/2012	12/6/2014

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Conducted Emission
Frequency Range: 150kHz to 30MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=dBi

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Transmitting Mode

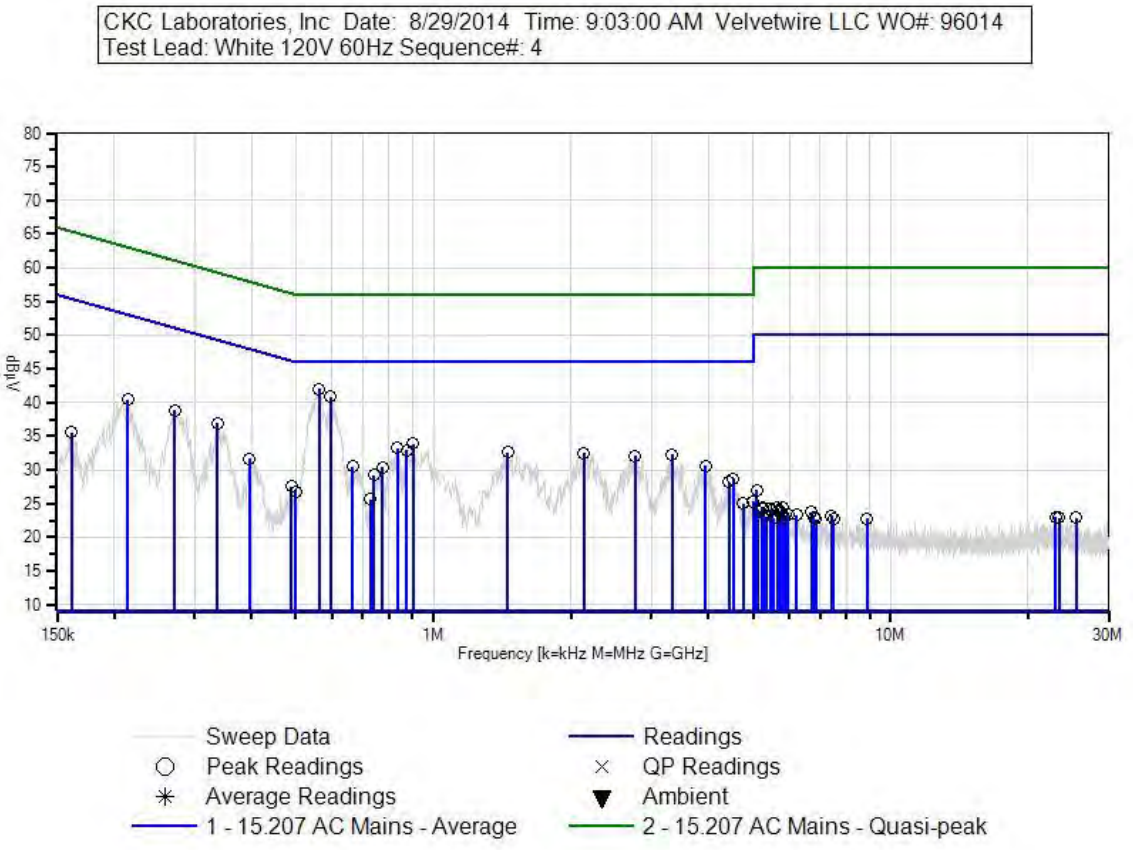
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: White

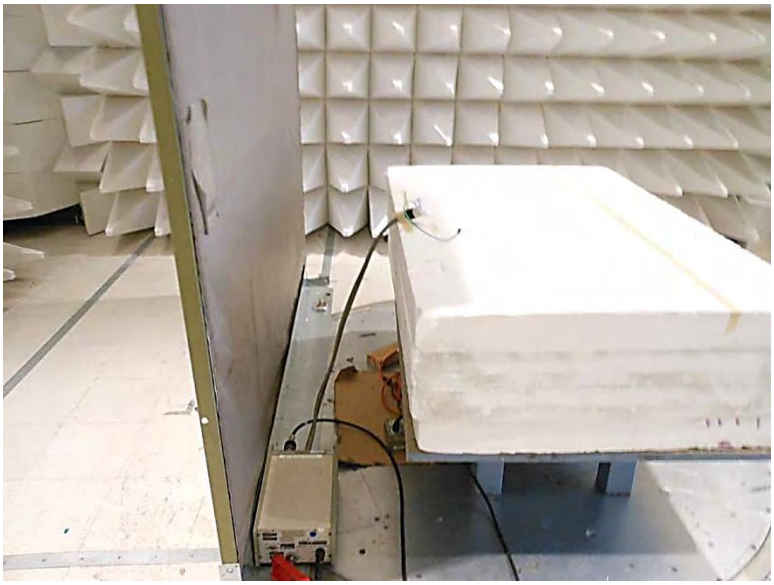
#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	561.599k	31.7	+9.6 +0.1	+0.0	+0.0	+0.6	+0.0	42.0	46.0	-4.0	White
2	595.050k	30.5	+9.7 +0.1	+0.0	+0.0	+0.6	+0.0	40.9	46.0	-5.1	White
3	902.721k	23.4	+9.6 +0.2	+0.1	+0.0	+0.6	+0.0	33.9	46.0	-12.1	White
4	271.443k	28.5	+9.6 +0.2	+0.0	+0.0	+0.6	+0.0	38.9	51.1	-12.2	White
5	336.892k	26.6	+9.6 +0.1	+0.0	+0.0	+0.6	+0.0	36.9	49.3	-12.4	White
6	213.994k	30.0	+9.6 +0.2	+0.0	+0.0	+0.6	+0.0	40.4	53.0	-12.6	White
7	835.028k	22.8	+9.6 +0.2	+0.0	+0.0	+0.6	+0.0	33.2	46.0	-12.8	White
8	874.297k	22.4	+9.6 +0.2	+0.1	+0.0	+0.6	+0.0	32.9	46.0	-13.1	White
9	1.456M	22.2	+9.6 +0.1	+0.1	+0.0	+0.6	+0.0	32.6	46.0	-13.4	White
10	2.136M	22.1	+9.6 +0.1	+0.1	+0.0	+0.6	+0.0	32.5	46.0	-13.5	White
11	3.327M	21.8	+9.6 +0.1	+0.1	+0.1	+0.6	+0.0	32.3	46.0	-13.7	White
12	2.757M	21.7	+9.6 +0.1	+0.1	+0.0	+0.6	+0.0	32.1	46.0	-13.9	White
13	3.939M	20.1	+9.6 +0.1	+0.1	+0.1	+0.6	+0.0	30.6	46.0	-15.4	White
14	664.135k	20.1	+9.7 +0.1	+0.0	+0.0	+0.6	+0.0	30.5	46.0	-15.5	White
15	773.216k	20.0	+9.6 +0.2	+0.0	+0.0	+0.6	+0.0	30.4	46.0	-15.6	White
16	395.796k	21.5	+9.6 +0.0	+0.0	+0.0	+0.6	+0.0	31.7	47.9	-16.2	White
17	740.491k	19.0	+9.5 +0.1	+0.0	+0.0	+0.6	+0.0	29.2	46.0	-16.8	White
18	4.530M	17.9	+9.7 +0.2	+0.1	+0.1	+0.7	+0.0	28.7	46.0	-17.3	White
19	4.428M	17.7	+9.6 +0.1	+0.1	+0.1	+0.6	+0.0	28.2	46.0	-17.8	White
20	488.151k	17.2	+9.6 +0.1	+0.0	+0.0	+0.6	+0.0	27.5	46.2	-18.7	White
21	499.786k	16.4	+9.7 +0.1	+0.0	+0.0	+0.6	+0.0	26.8	46.0	-19.2	White
22	161.635k	25.0	+9.6 +0.4	+0.0	+0.0	+0.6	+0.0	35.6	55.4	-19.8	White
23	727.402k	15.4	+9.5 +0.1	+0.0	+0.0	+0.6	+0.0	25.6	46.0	-20.4	White

24	4.998M	14.6	+9.5 +0.2	+0.2	+0.1	+0.7	+0.0	25.3	46.0	-20.7	White
25	4.756M	14.2	+9.6 +0.2	+0.2	+0.1	+0.7	+0.0	25.0	46.0	-21.0	White
26	5.092M	16.2	+9.6 +0.2	+0.2	+0.1	+0.7	+0.0	27.0	50.0	-23.0	White
27	5.238M	13.7	+9.6 +0.2	+0.2	+0.1	+0.7	+0.0	24.5	50.0	-25.5	White
28	5.661M	13.6	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	24.4	50.0	-25.6	White
29	5.797M	13.6	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	24.4	50.0	-25.6	White
30	5.265M	13.4	+9.6 +0.2	+0.2	+0.1	+0.7	+0.0	24.2	50.0	-25.8	White
31	5.454M	13.3	+9.7 +0.2	+0.2	+0.1	+0.7	+0.0	24.2	50.0	-25.8	White
32	5.499M	13.3	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	24.1	50.0	-25.9	White
33	5.697M	13.1	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	23.9	50.0	-26.1	White
34	5.130M	13.0	+9.6 +0.2	+0.2	+0.1	+0.7	+0.0	23.8	50.0	-26.2	White
35	5.734M	13.0	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	23.8	50.0	-26.2	White
36	6.707M	13.0	+9.6 +0.1	+0.2	+0.1	+0.7	+0.0	23.7	50.0	-26.3	White
37	5.761M	12.7	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	23.5	50.0	-26.5	White
38	5.959M	12.5	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	23.3	50.0	-26.7	White
39	6.238M	12.6	+9.6 +0.1	+0.2	+0.1	+0.7	+0.0	23.3	50.0	-26.7	White
40	7.436M	12.5	+9.6 +0.1	+0.2	+0.1	+0.7	+0.0	23.2	50.0	-26.8	White
41	5.337M	12.2	+9.7 +0.2	+0.2	+0.1	+0.7	+0.0	23.1	50.0	-26.9	White
42	5.851M	12.2	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	23.0	50.0	-27.0	White
43	6.797M	12.3	+9.6 +0.1	+0.2	+0.1	+0.7	+0.0	23.0	50.0	-27.0	White
44	22.959M	11.4	+9.7 +0.2	+0.4	+0.1	+1.2	+0.0	23.0	50.0	-27.0	White
45	5.544M	12.1	+9.7 +0.1	+0.2	+0.1	+0.7	+0.0	22.9	50.0	-27.1	White
46	23.408M	11.4	+9.7 +0.2	+0.4	+0.1	+1.1	+0.0	22.9	50.0	-27.1	White
47	25.464M	11.5	+9.7 +0.2	+0.4	+0.1	+1.0	+0.0	22.9	50.0	-27.1	White

48	8.878M	11.9	+9.7 +0.1	+0.2	+0.1	+0.8	+0.0	22.8	50.0	-27.2	White
49	6.851M	12.0	+9.6 +0.1	+0.2	+0.1	+0.7	+0.0	22.7	50.0	-27.3	White
50	7.508M	12.0	+9.6 +0.1	+0.2	+0.1	+0.7	+0.0	22.7	50.0	-27.3	White



Test Setup Photo(s)



15.249(a)(b) RF Power Output

Test Data

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 9/2/2014
Test Type: **Radiated Scan** Time: 15:59:35
Equipment: **Powerslayer** Sequence#: 5
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Fundamental of the EUT
Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware
Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=dBi

RBW=3MHz
VBW=8MHz

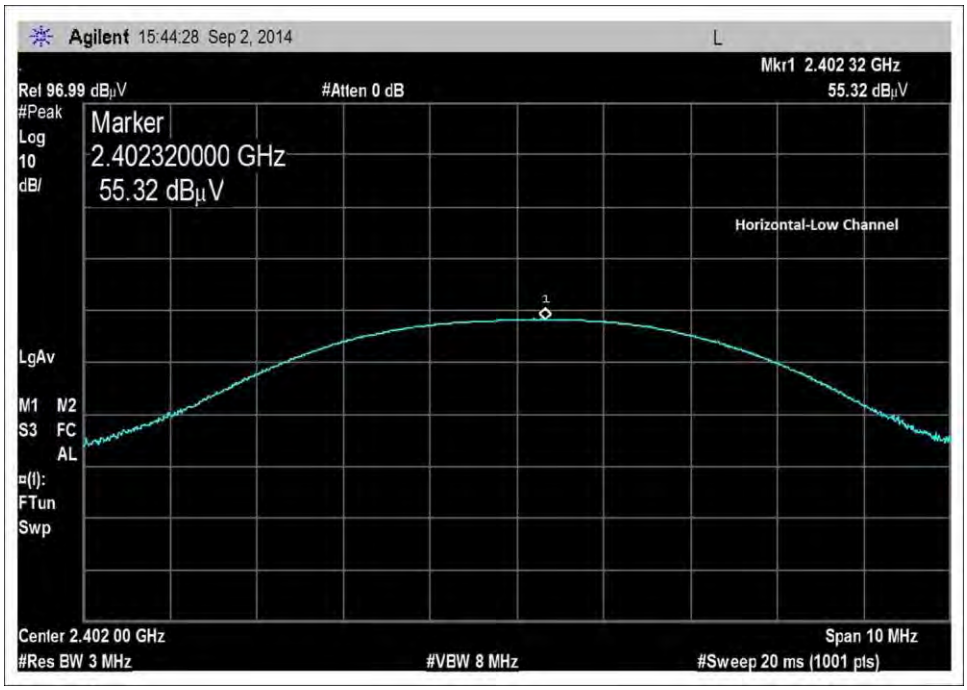
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Ext Attn: 0 dB

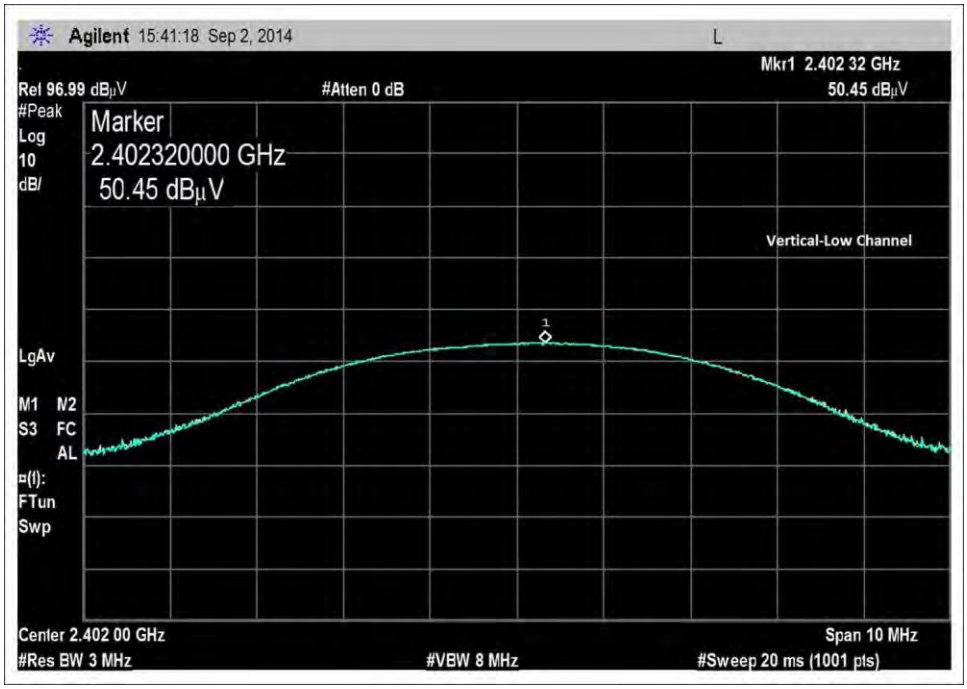
Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2402.320M	55.3	+28.6	+1.2	+2.7		+0.0	87.8	94.0	-6.2	Horiz
									Low Channel		
2	2440.070M	53.9	+28.7	+1.2	+2.7		+0.0	86.5	94.0	-7.5	Horiz
									Middle Channel		
3	2479.550M	52.9	+28.9	+1.2	+2.7		+0.0	85.7	94.0	-8.3	Horiz
									High Channel		
4	2402.320M	51.9	+28.6	+1.2	+2.7		+0.0	84.4	94.0	-9.6	Vert
									Low Channel		
5	2479.550M	49.1	+28.9	+1.2	+2.7		+0.0	81.9	94.0	-12.1	Vert
									High Channel		
6	2440.070M	47.9	+28.7	+1.2	+2.7		+0.0	80.5	94.0	-13.5	Vert
									Middle Channel		

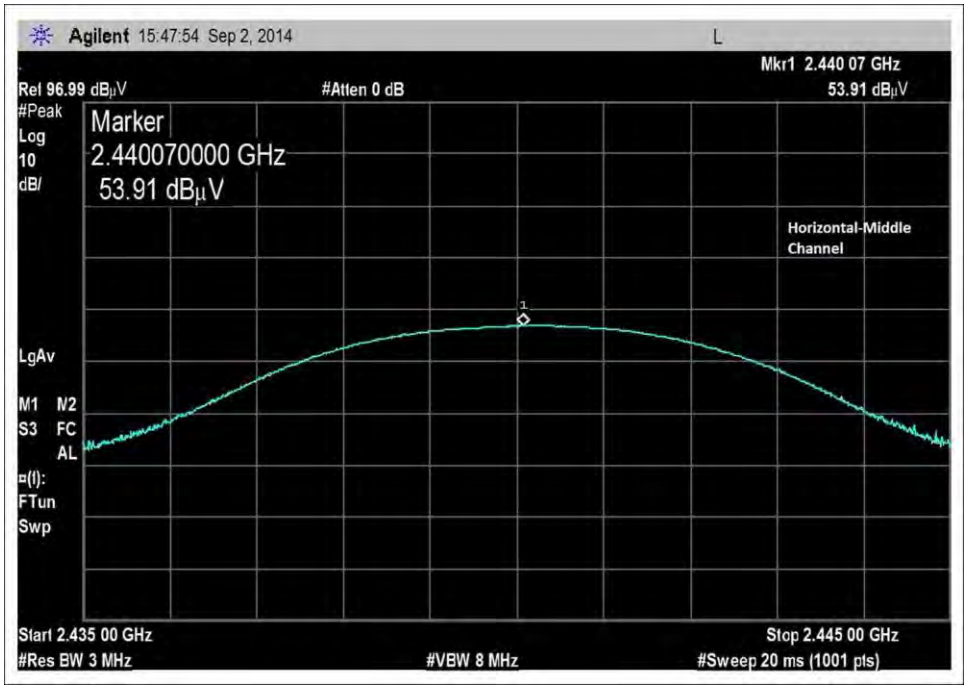
Test Plots



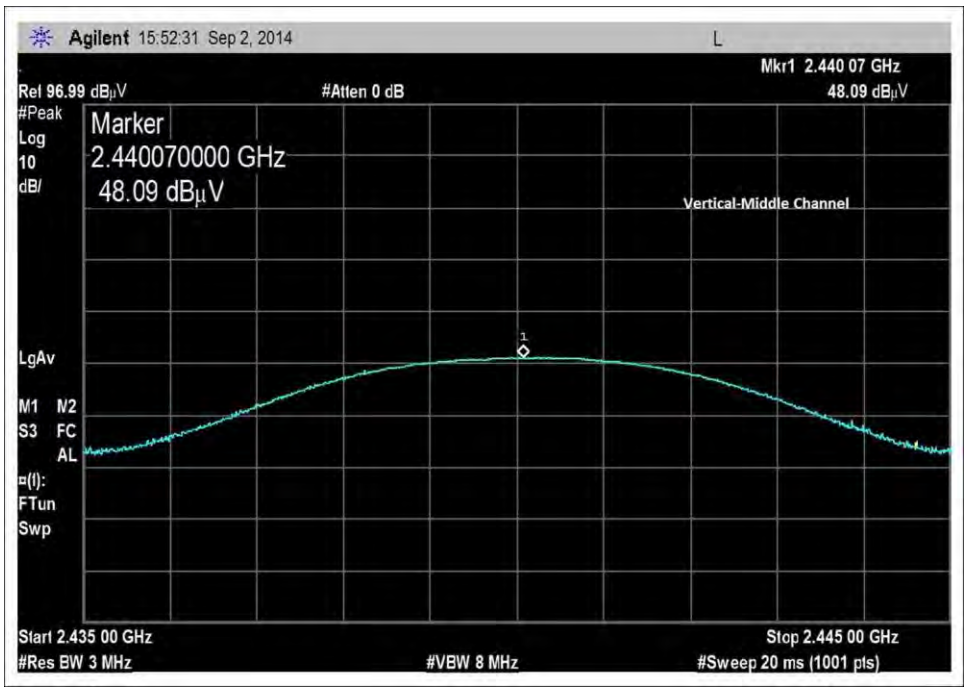
Low Channel, Horizontal



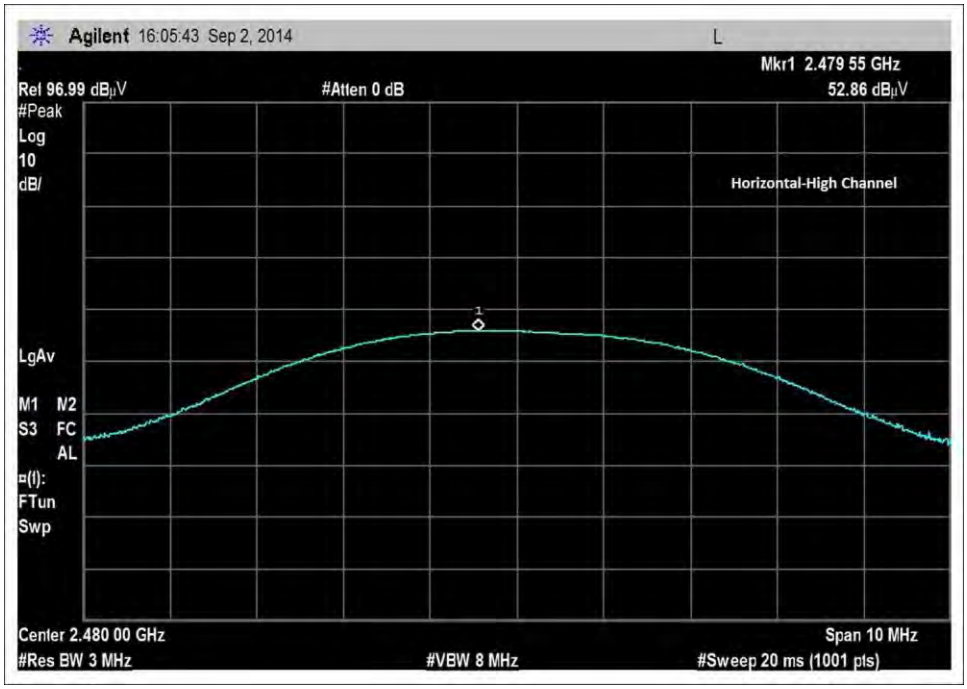
Low Channel, Vertical



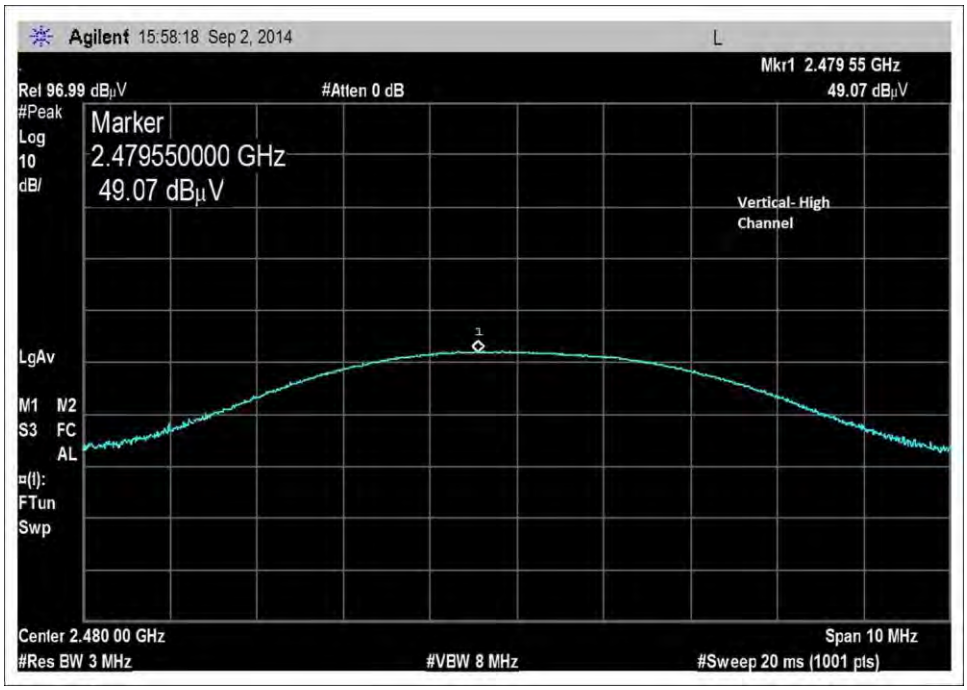
Middle Channel, Horizontal



Middle Channel, Vertical

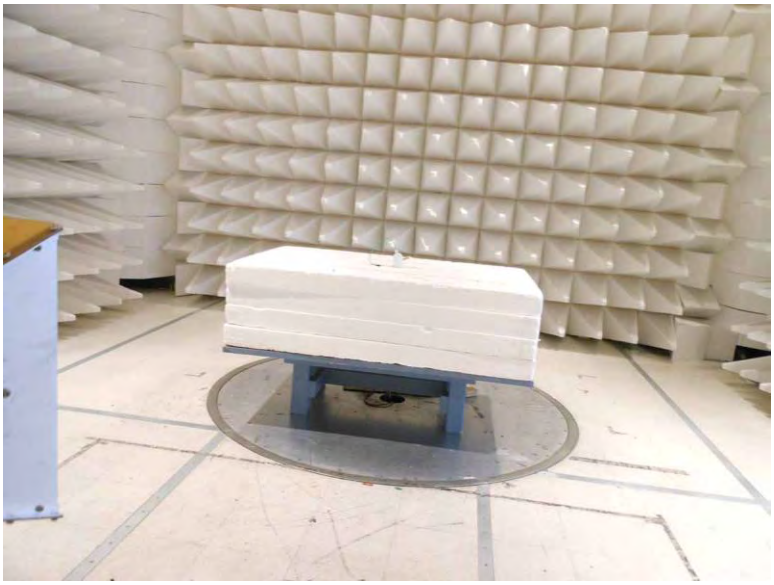


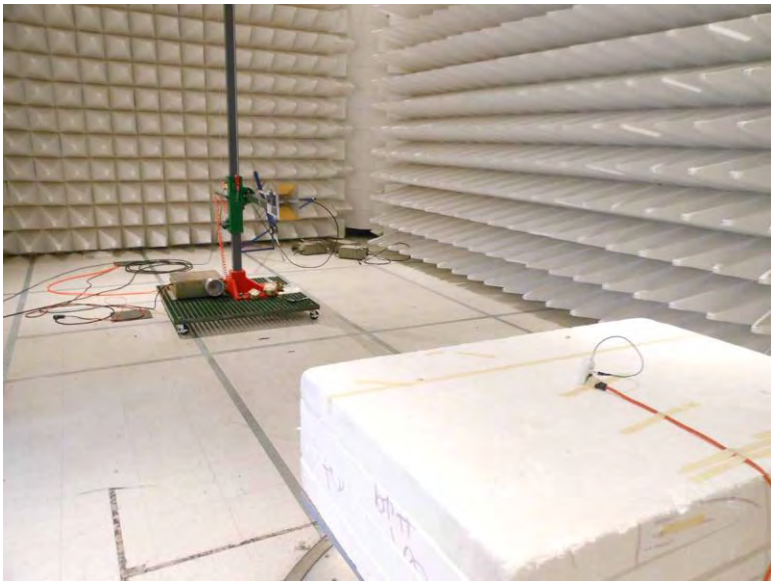
High Channel, Horizontal



High Channel, Vertical

Test Setup Photo(s)





15.31(e) Voltage Variations

Test Data

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.31e**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Radiated Scan** Time: 10:21:04
Equipment: **Powerslayer** Sequence#: 5
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

15.31e

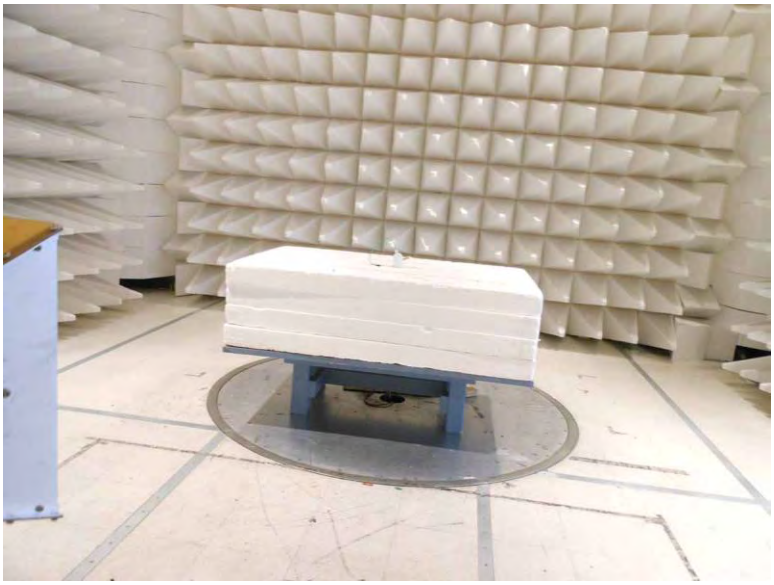
Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

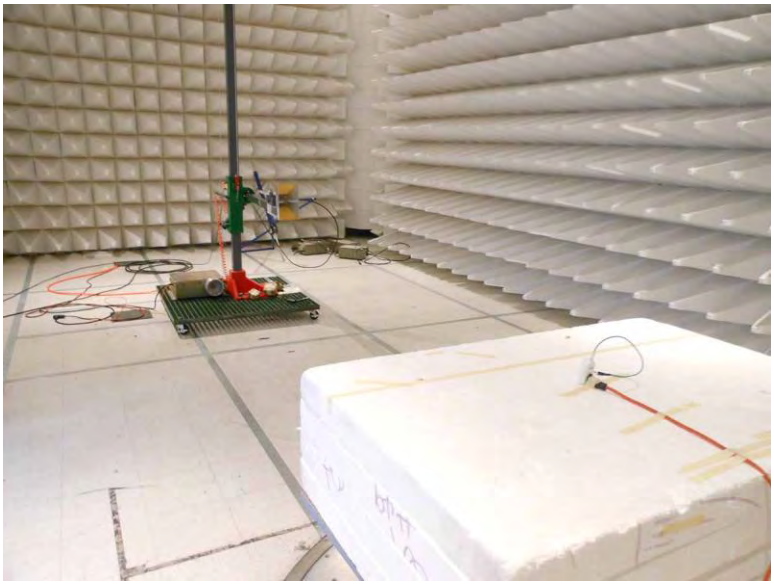
Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=dBi

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

15.31e: Adjust the voltage +/ 15% (102V, 138V), the fundamental of the EUT is not changing.

Test Setup Photo(s)





15.215(c) Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **OBW**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Radiated Scan** Time: 10:21:04
Equipment: **Powerslayer** Sequence#: 5
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

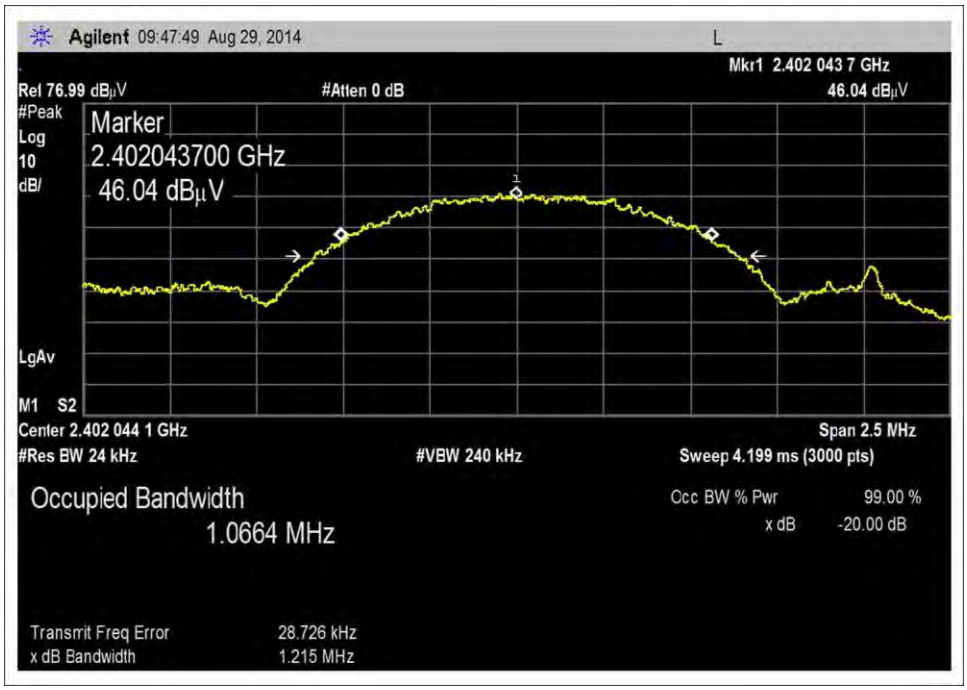
OBW Set up

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

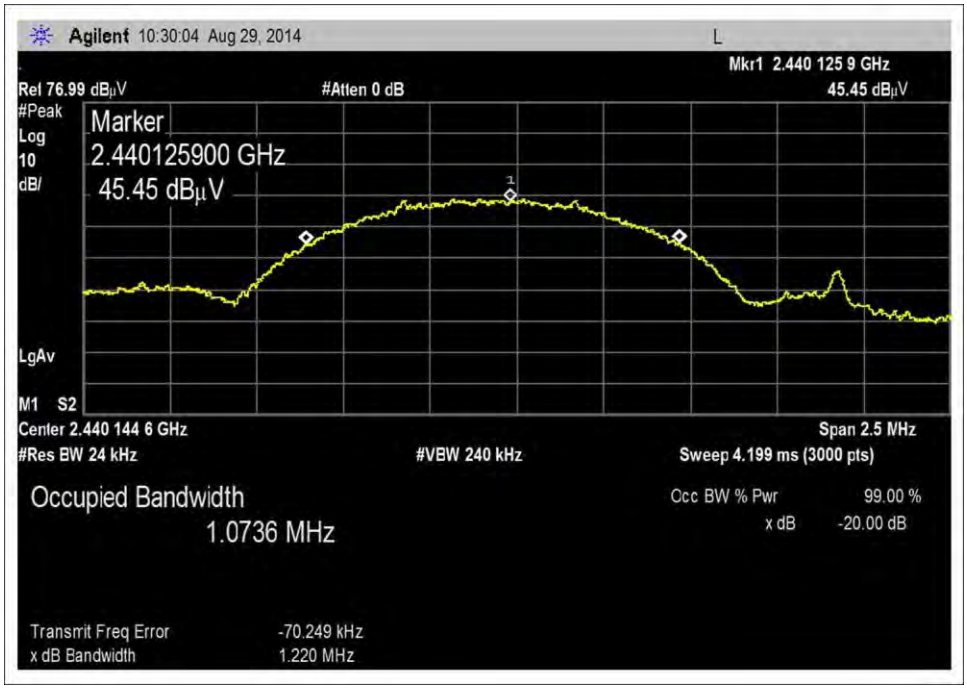
Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=dBi

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

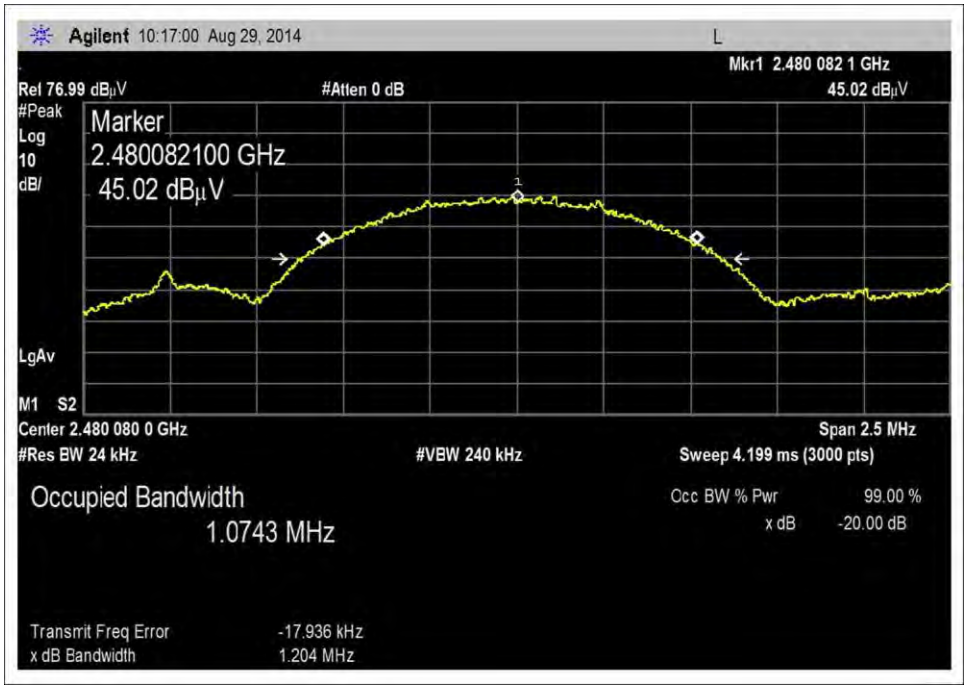
Test Data



Low Channel

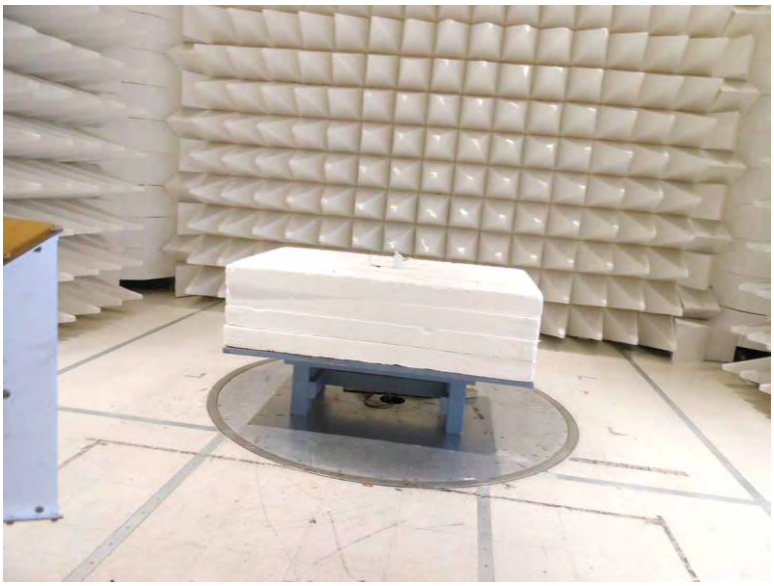


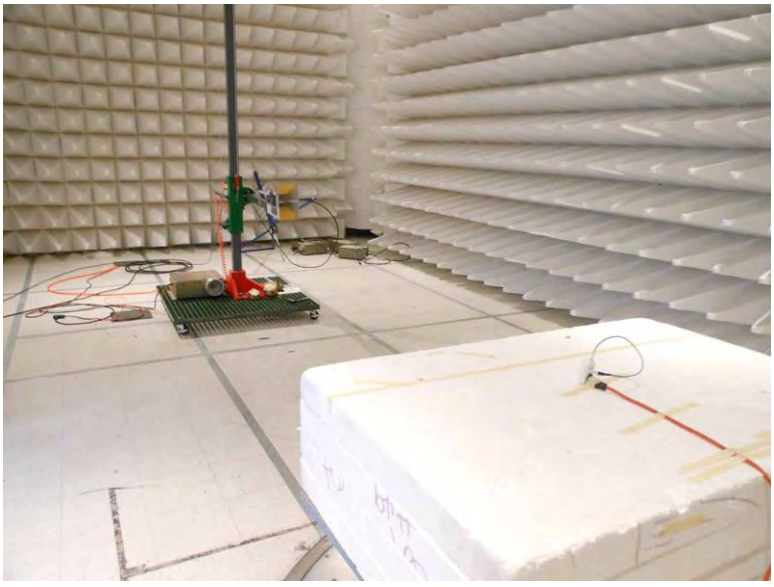
Middle Channel



High Channel

Test Setup Photo(s)





15.249(a)(d) Radiated Spurious Emissions and Band Edge

Test Data

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 13:50:42
Equipment: **Powerslayer** Sequence#: 49
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
	AN00432	Loop Antenna	6502	4/2/2013	4/2/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 9kHz – 30MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=200Hz from 9kHz to 150kHz
RBW=VBW=9kHz from 150kHz to 30MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Low Channel
No EUT emissions detected within 20dB of the limit.

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 12:24:32
Equipment: **Powerslayer** Sequence#: 37
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00686	Preamp	8447D Opt 010	5/27/2014	5/27/2016
T2	AN00852	Biconilog Antenna	CBL 6111C	11/28/2012	11/28/2014
T3	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
T4	ANP01183	Cable	CNT-195	9/3/2013	9/3/2015
T5	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 30MHz to 1000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=120kHz

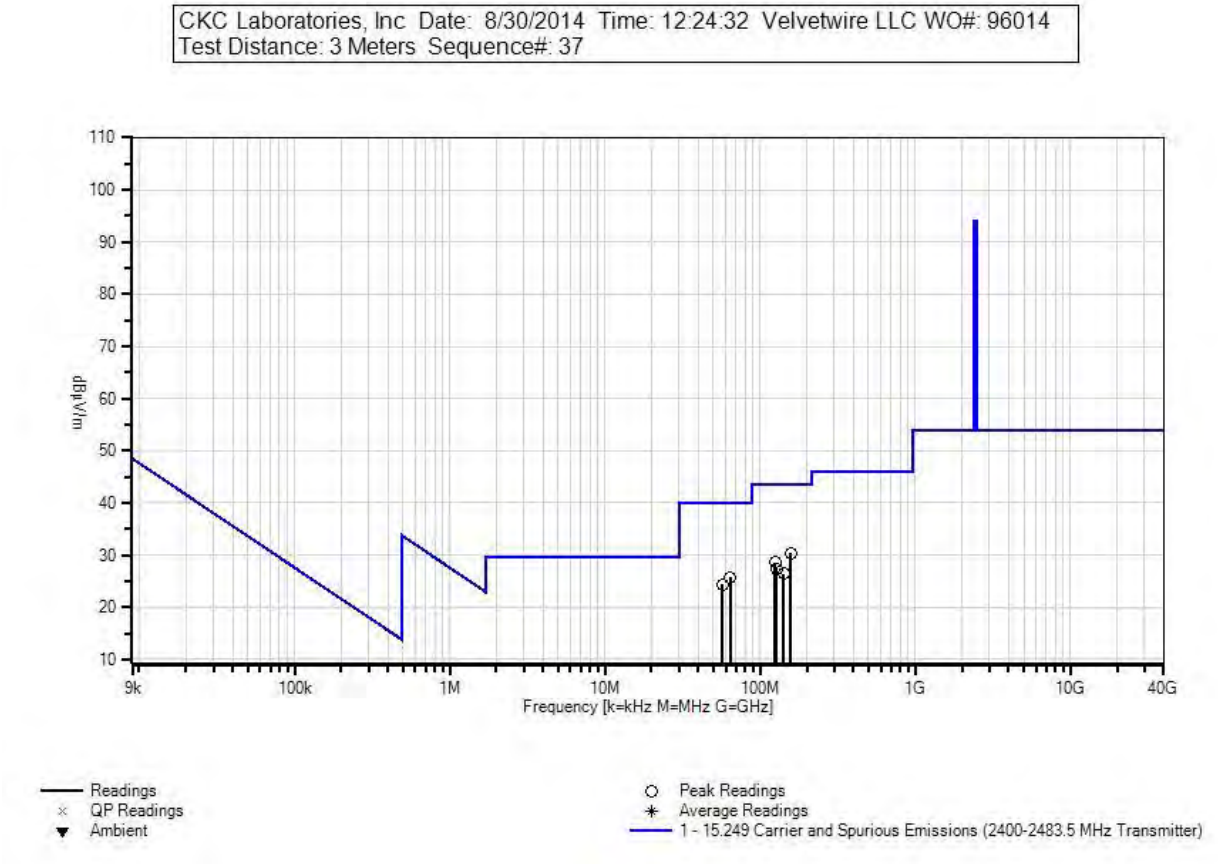
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Low Channel

Ext Attn: 0 dB

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	157.450M	46.9	-29.0 +0.4	+10.5	+1.1	+0.5	+0.0	30.4	43.5	-13.1	Vert
2	64.007M	47.7	-29.2 +0.2	+6.0	+0.7	+0.3	+0.0	25.7	40.0	-14.3	Vert
3	125.498M	44.4	-29.1 +0.3	+11.6	+1.0	+0.4	+0.0	28.6	43.5	-14.9	Horiz
4	57.352M	46.1	-29.3 +0.2	+6.5	+0.6	+0.3	+0.0	24.4	40.0	-15.6	Vert
5	128.020M	43.3	-29.1 +0.3	+11.4	+1.0	+0.4	+0.0	27.3	43.5	-16.2	Horiz
6	141.234M	42.4	-29.0 +0.3	+11.2	+1.1	+0.4	+0.0	26.4	43.5	-17.1	Horiz



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Radiated Scan** Time: 11:49:06
Equipment: **Powerslayer** Sequence#: 8
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T4	AN03114	Preamp	AMF-7D-00101800-30-10P	4/11/2013	4/11/2015
T5	AN03015	Cable	32022-2-29094K-24TC	5/6/2013	5/6/2015
T6	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	4/2/2014	4/2/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 1000MHz to 12000MHz
Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

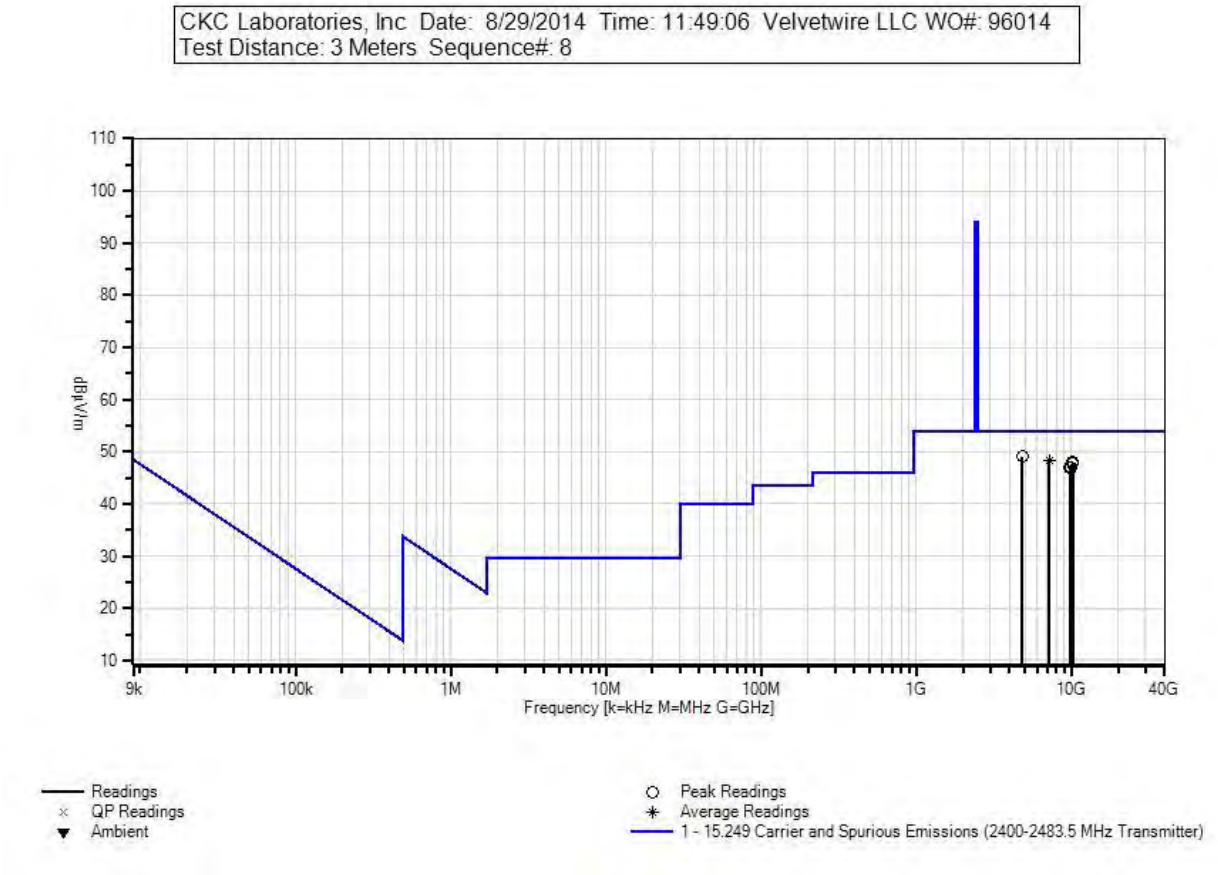
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Low Channel

Ext Attn: 0 dB

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	4805.804M	67.8	+33.2 +0.7	+1.7 +0.2	+3.8	-58.3	+0.0	49.1	54.0	-4.9	Vert
2	7206.890M Ave	63.0	+36.1 +1.0	+2.0 +0.2	+5.3	-59.3	+0.0	48.3	54.0	-5.7	Vert
^	7206.890M	70.4	+36.1 +1.0	+2.0 +0.2	+5.3	-59.3	+0.0	55.7	54.0	+1.7	Vert
4	10186.179 M	56.2	+39.7 +1.3	+2.5 +0.2	+6.3	-58.2	+0.0	48.0	54.0	-6.0	Vert
5	10042.035 M	56.0	+39.7 +1.3	+2.4 +0.2	+6.3	-58.2	+0.0	47.7	54.0	-6.3	Horiz
6	9909.903M	55.3	+39.6 +1.3	+2.4 +0.2	+6.3	-58.1	+0.0	47.0	54.0	-7.0	Vert
7	9744.738M	55.2	+39.0 +1.3	+2.4 +0.2	+6.3	-57.5	+0.0	46.9	54.0	-7.1	Horiz



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 10:25:25
Equipment: **Powerslayer** Sequence#: 19
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN2693	Active Horn Antenna	AMFW-5F-18002650-20-10P	2/21/2013	2/21/2015
T2	ANP00928	Cable	various	1/23/2014	1/23/2016
T3	ANP06126	Cable	32022-29094K-29094K-168TC	7/12/2013	7/12/2015
T4	ANP06138	Cable	32022-29094K-29094K-72TC	8/2/2013	8/2/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 12000MHz to 18000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

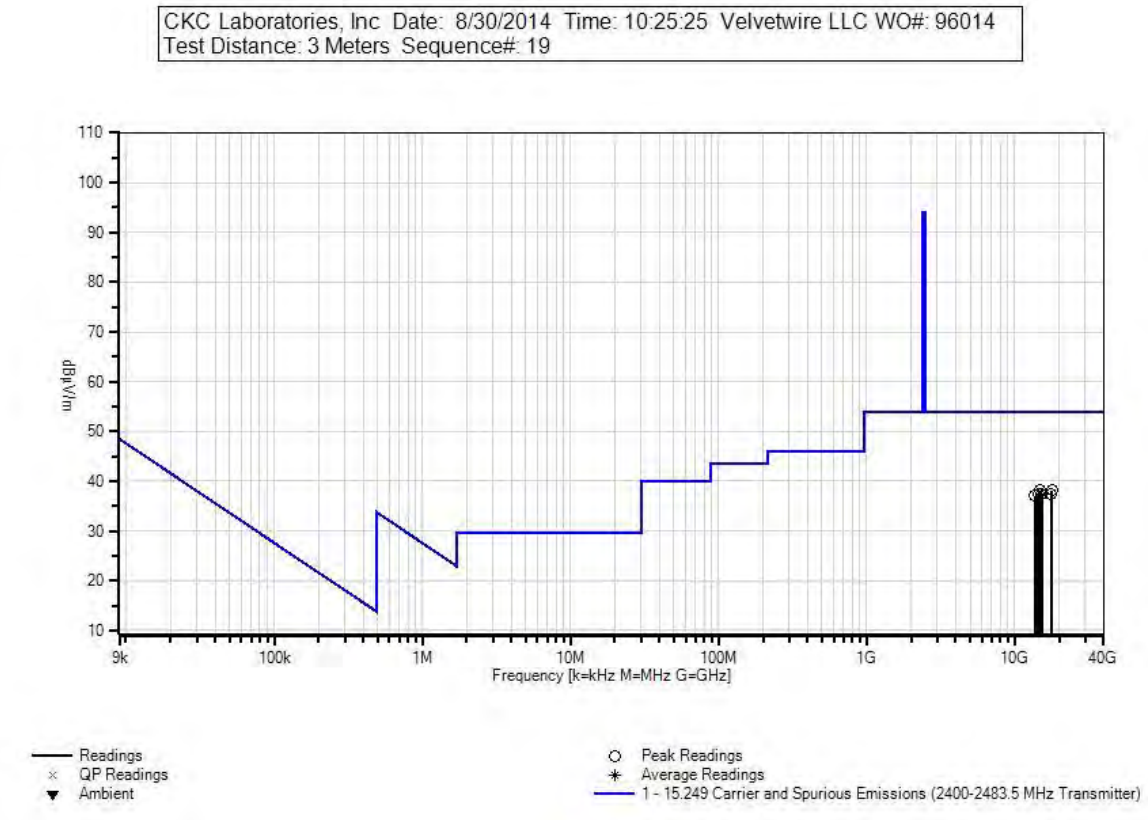
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Low Channel

Ext Attn: 0 dB

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/m	Spec dBµV/m	Margin dB	Polar Ant
1	14969.753 M	43.2	-15.4	+0.8	+6.8	+2.8	+0.0	38.2	54.0	-15.8	Horiz
2	17809.132 M	40.4	-13.4	+0.7	+7.3	+3.1	+0.0	38.1	54.0	-15.9	Horiz
3	17590.501 M	40.3	-13.9	+0.7	+7.3	+3.1	+0.0	37.5	54.0	-16.5	Vert
4	14407.920 M	42.8	-15.5	+0.8	+6.5	+2.8	+0.0	37.4	54.0	-16.6	Vert
5	15201.801 M	42.3	-15.5	+0.8	+6.9	+2.8	+0.0	37.3	54.0	-16.7	Vert
6	13681.125 M	43.2	-16.2	+0.8	+6.5	+2.7	+0.0	37.0	54.0	-17.0	Horiz



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 11:22:26
Equipment: **Powerslayer** Sequence#: 28
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06126	Cable	32022-29094K-29094K-168TC	7/12/2013	7/12/2015
T2	ANP06138	Cable	32022-29094K-29094K-72TC	8/2/2013	8/2/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T3	ANP00929	Cable	various	1/23/2014	1/23/2016
T4	AN02694	Horn Antenna-ANSI C63.5 Antenna Factors (dB)	AMFW-5F-18002650-20-10P	2/4/2013	2/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 18000MHz to 25000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

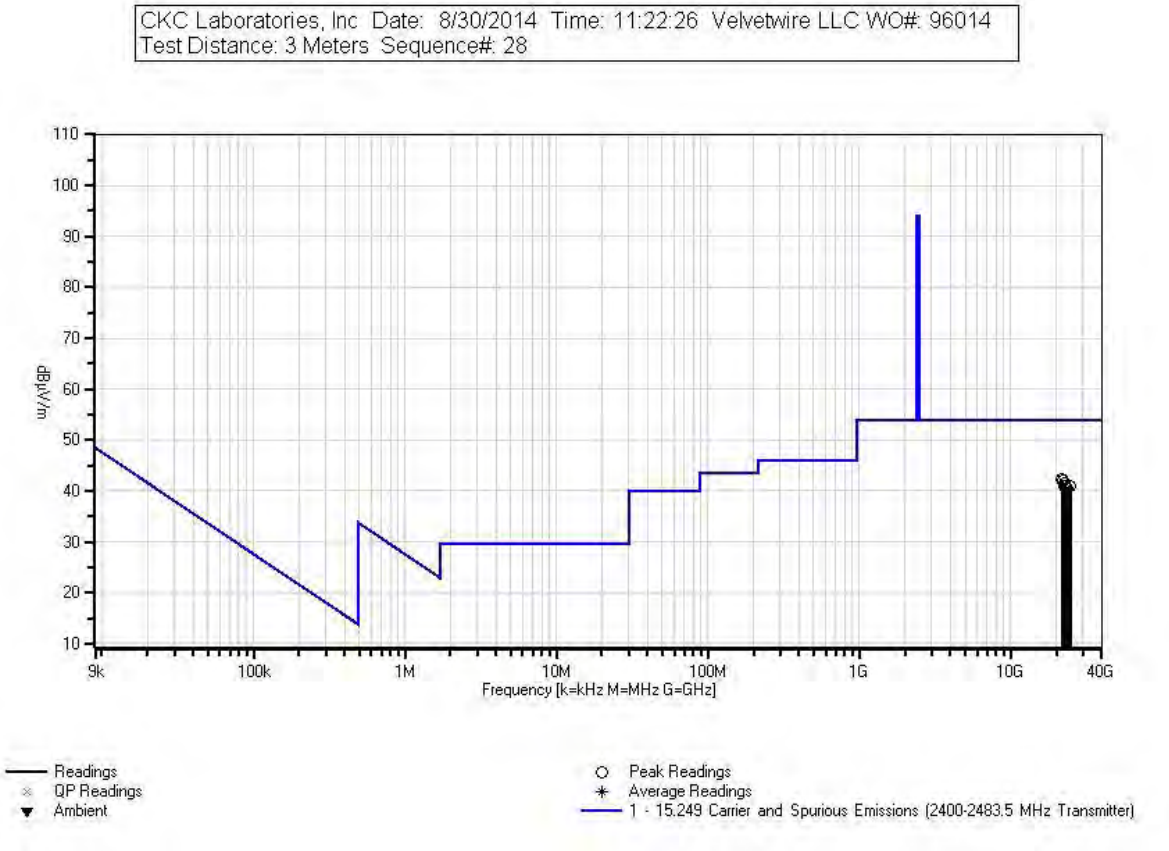
RBW=VBW=1MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.
Note: Low Channel

Ext Attn: 0 dB

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/m	Spec dBµV/m	Margin dB	Polar Ant
1	21861.406 M	44.9	+8.2	+3.5	+3.0	-17.3	+0.0	42.3	54.0	-11.7	Horiz
2	21970.348 M	44.6	+8.2	+3.5	+3.0	-17.3	+0.0	42.0	54.0	-12.0	Vert
3	22796.488 M	44.2	+8.4	+3.7	+3.0	-17.8	+0.0	41.5	54.0	-12.5	Horiz
4	22642.154 M	43.7	+8.3	+3.6	+3.0	-17.7	+0.0	40.9	54.0	-13.1	Vert
5	24655.057 M	42.3	+8.9	+3.8	+3.0	-17.1	+0.0	40.9	54.0	-13.1	Vert
6	23634.025 M	43.1	+8.5	+3.6	+3.0	-17.7	+0.0	40.5	54.0	-13.5	Horiz



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 13:51:17
Equipment: **Powerslayer** Sequence#: 50
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
	AN00432	Loop Antenna	6502	4/2/2013	4/2/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 9kHz – 30MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=200Hz from 9kHz to 150kHz
RBW=VBW=9kHz from 150kHz to 30MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Middle Channel

No EUT emissions detected within 20dB of the limit.

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 12:54:56
Equipment: **Powerslayer** Sequence#: 40
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00686	Preamp	8447D Opt 010	5/27/2014	5/27/2016
T2	AN00852	Biconilog Antenna	CBL 6111C	11/28/2012	11/28/2014
T3	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
T4	ANP01183	Cable	CNT-195	9/3/2013	9/3/2015
T5	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 30MHz to 1000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=120kHz

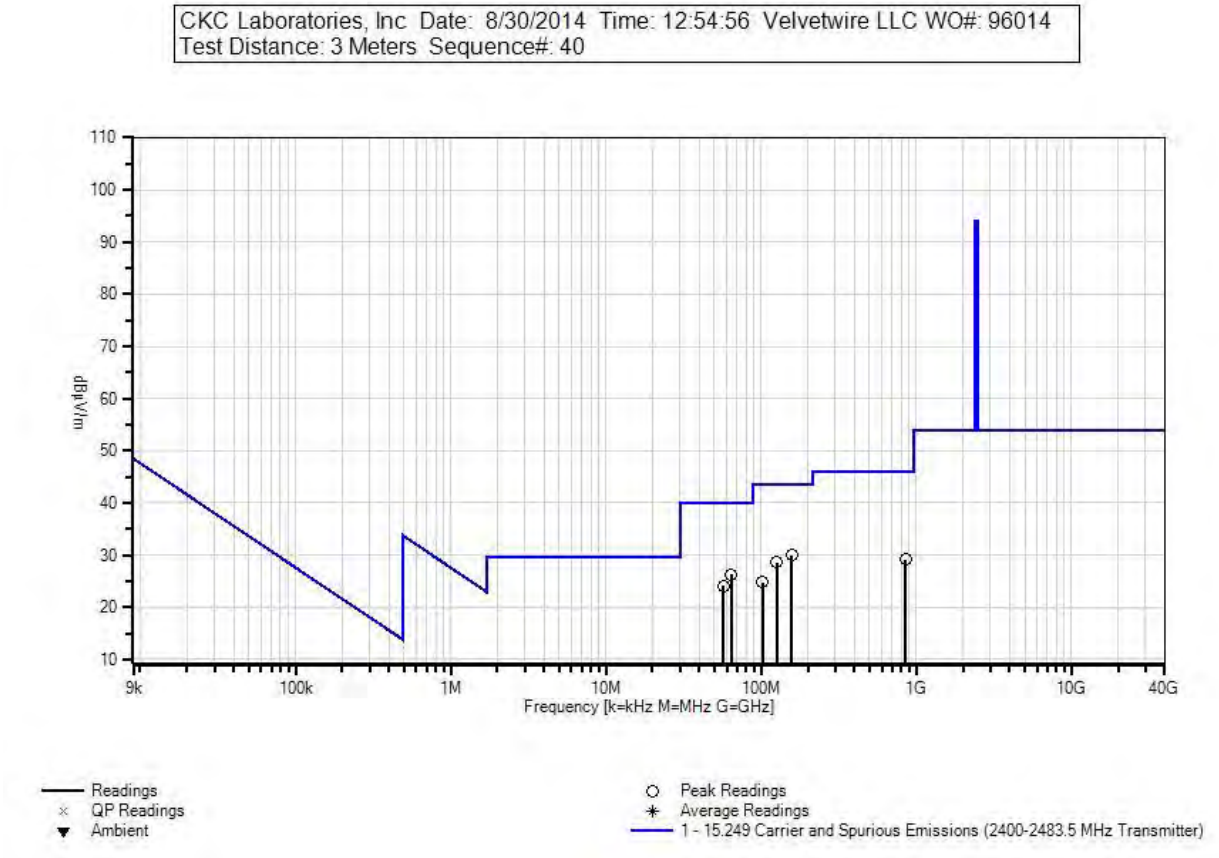
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Middle Channel

Ext Attn: 0 dB

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	158.170M	46.4	-29.0 +0.4	+10.5	+1.1	+0.5	+0.0	29.9	43.5	-13.6	Horiz
2	64.007M	48.3	-29.2 +0.2	+6.0	+0.7	+0.3	+0.0	26.3	40.0	-13.7	Vert
3	125.978M	44.5	-29.1 +0.3	+11.5	+1.0	+0.4	+0.0	28.6	43.5	-14.9	Horiz
4	56.952M	45.8	-29.3 +0.2	+6.6	+0.6	+0.2	+0.0	24.1	40.0	-15.9	Vert
5	851.023M	31.2	-29.3 +0.9	+22.2	+3.1	+1.0	+0.0	29.1	46.0	-16.9	Vert
6	102.675M	42.1	-29.1 +0.3	+10.3	+0.9	+0.2	+0.0	24.7	43.5	-18.8	Horiz



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Radiated Scan** Time: 19:43:57
Equipment: **Powerslayer** Sequence#: 11
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T4	AN03114	Preamp	AMF-7D-00101800-30-10P	4/11/2013	4/11/2015
T5	AN03015	Cable	32022-2-29094K-24TC	5/6/2013	5/6/2015
T6	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	4/2/2014	4/2/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 1000MHz to 12000MHz
Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware
Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

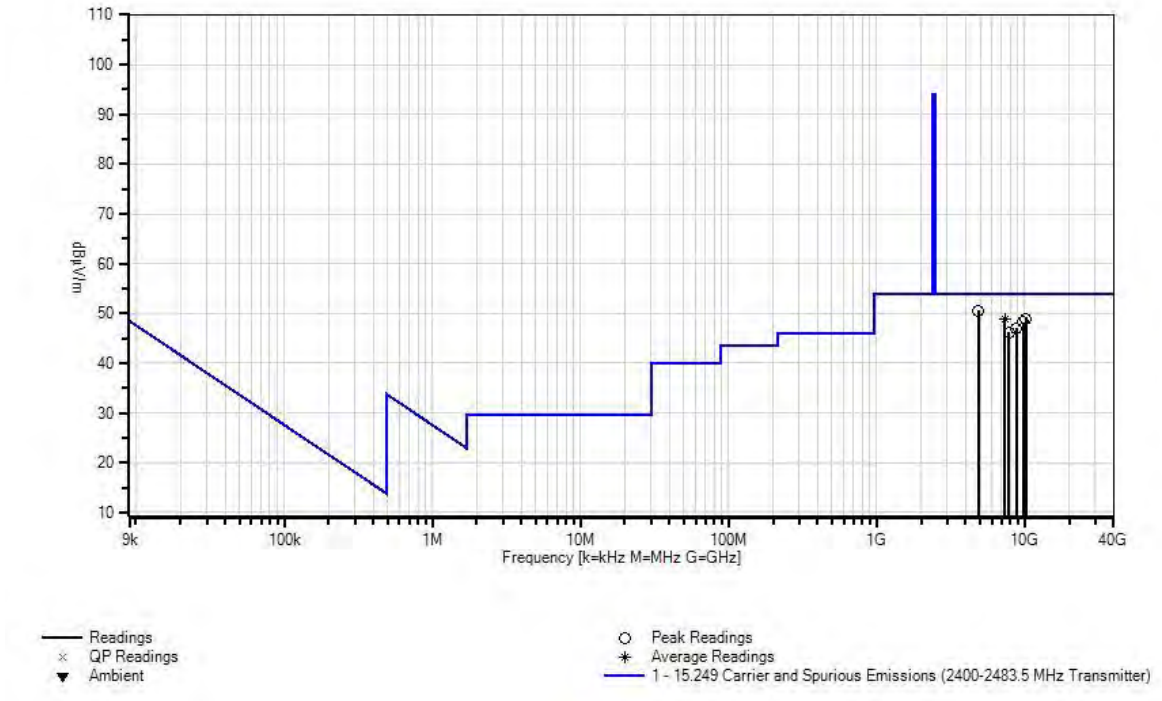
Note: Middle Channel

Ext Attn: 0 dB

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	4881.880M	68.9	+33.4 +0.7	+1.7 +0.2	+3.8	-58.2	+0.0	50.5	54.0	-3.5	Vert
2	10171.164 M	57.1	+39.7 +1.3	+2.5 +0.2	+6.3	-58.2	+0.0	48.9	54.0	-5.1	Horiz
3	7320.947M Ave	62.8	+36.6 +1.0	+2.1 +0.2	+5.4	-59.3	+0.0	48.8	54.0	-5.2	Vert
^	7320.947M	70.7	+36.6 +1.0	+2.1 +0.2	+5.4	-59.3	+0.0	56.7	54.0	+2.7	Vert
^	7320.947M	69.8	+36.6 +1.0	+2.1 +0.2	+5.4	-59.3	+0.0	55.8	54.0	+1.8	Vert
6	9741.735M	56.5	+39.0 +1.3	+2.4 +0.2	+6.3	-57.5	+0.0	48.2	54.0	-5.8	Vert
7	8803.798M	55.4	+38.0 +1.4	+2.3 +0.3	+5.9	-56.3	+0.0	47.0	54.0	-7.0	Horiz
8	7818.814M	59.1	+36.6 +1.2	+2.1 +0.2	+5.5	-58.5	+0.0	46.2	54.0	-7.8	Horiz

CKC Laboratories, Inc Date: 8/29/2014 Time: 19:43:57 Velvetwire LLC WO#: 96014
Test Distance: 3 Meters Sequence#: 11



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 10:38:09
Equipment: **Powerslayer** Sequence#: 22
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN2693	Active Horn Antenna	AMFW-5F-18002650-20-10P	2/21/2013	2/21/2015
T2	ANP00928	Cable	various	1/23/2014	1/23/2016
T3	ANP06126	Cable	32022-29094K-29094K-168TC	7/12/2013	7/12/2015
T4	ANP06138	Cable	32022-29094K-29094K-72TC	8/2/2013	8/2/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 12000MHz to 18000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

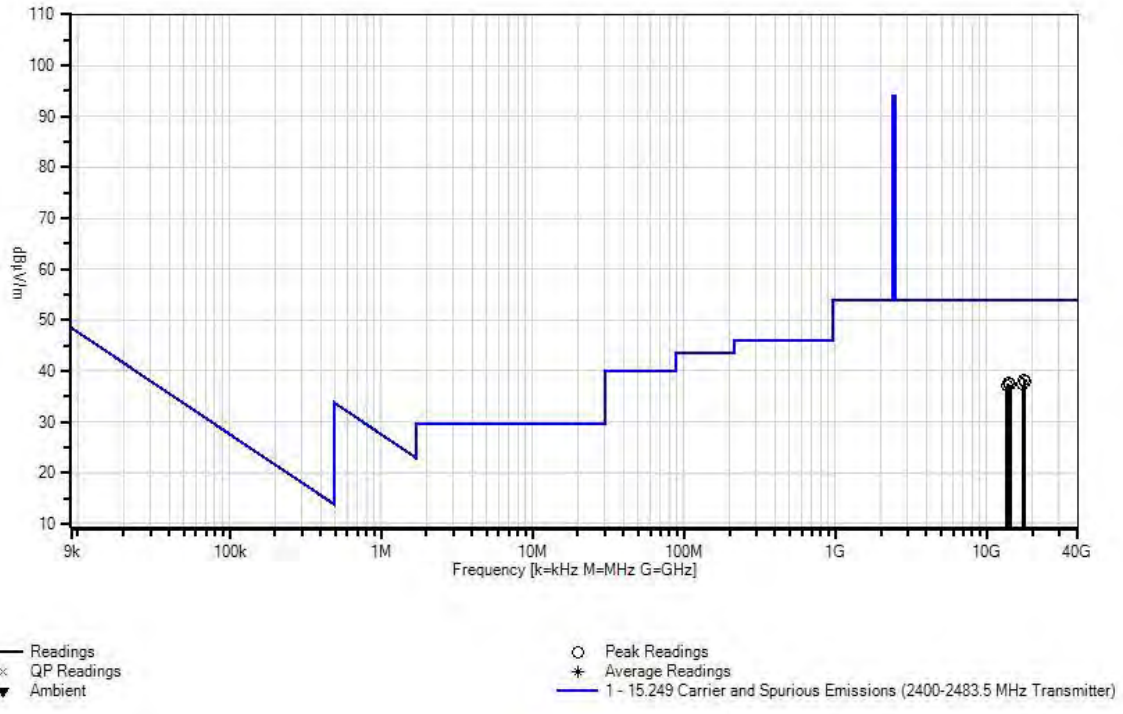
Note: Middle Channel

Ext Attn: 0 dB

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/m	Spec dBµV/m	Margin dB	Polar Ant
1	17703.287 M	40.9	-13.7	+0.7	+7.3	+3.1	+0.0	38.3	54.0	-15.7	Horiz
2	17916.712 M	40.3	-13.5	+0.7	+7.3	+3.2	+0.0	38.0	54.0	-16.0	Vert
3	13822.800 M	43.6	-16.0	+0.8	+6.5	+2.7	+0.0	37.6	54.0	-16.4	Horiz
4	17312.875 M	40.9	-14.6	+0.7	+7.3	+3.0	+0.0	37.3	54.0	-16.7	Horiz
5	14274.745 M	42.8	-15.6	+0.8	+6.5	+2.8	+0.0	37.3	54.0	-16.7	Vert
6	13560.701 M	43.4	-16.2	+0.8	+6.4	+2.7	+0.0	37.1	54.0	-16.9	Vert

CKC Laboratories, Inc Date: 8/30/2014 Time: 10:38:09 Velvetwire LLC WO#: 96014
Test Distance: 3 Meters Sequence#: 22



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 11:40:19
Equipment: **Powerslayer** Sequence#: 31
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06126	Cable	32022-29094K-29094K-168TC	7/12/2013	7/12/2015
T2	ANP06138	Cable	32022-29094K-29094K-72TC	8/2/2013	8/2/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T3	ANP00929	Cable	various	1/23/2014	1/23/2016
T4	AN02694	Horn Antenna-ANSI C63.5 Antenna Factors (dB)	AMFW-5F-18002650-20-10P	2/4/2013	2/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 18000MHz to 25000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

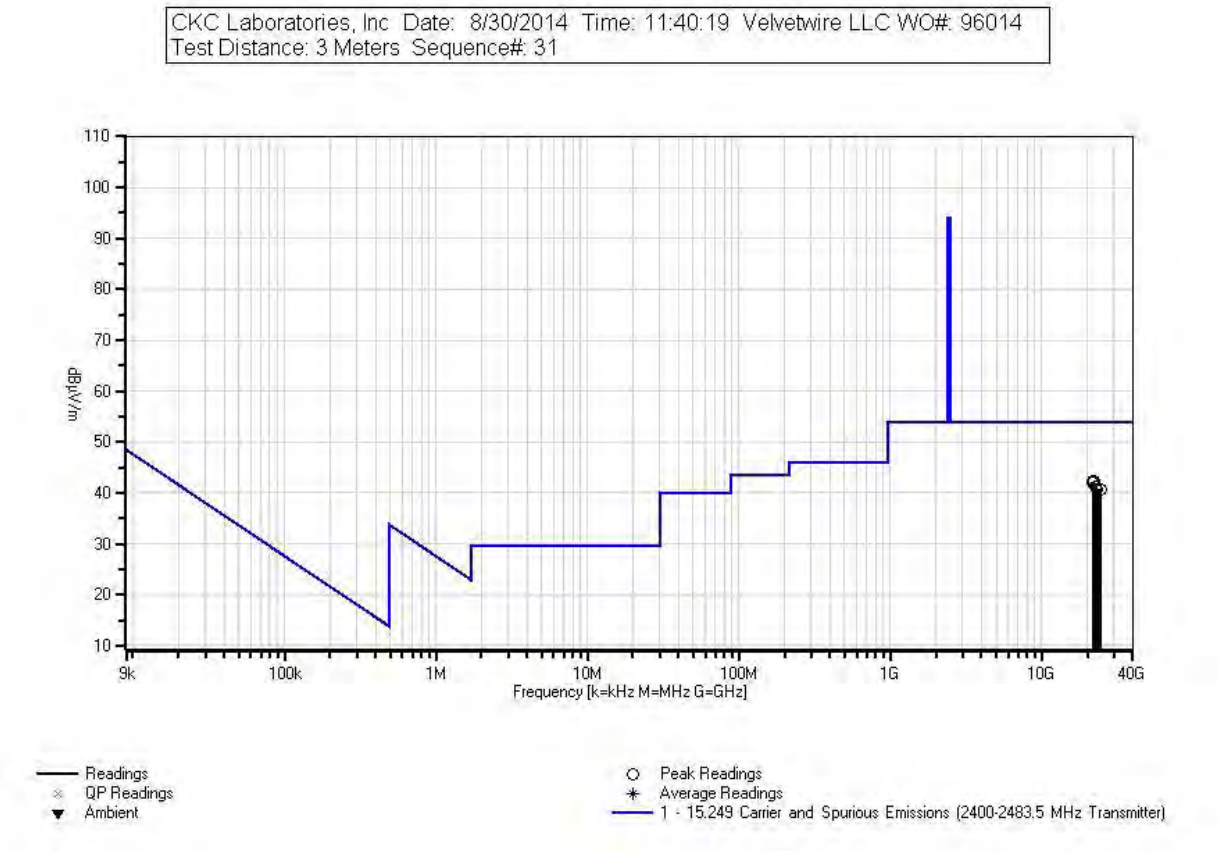
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: Middle Channel

Ext Attn: 0 dB

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/m	Spec dBµV/m	Margin dB	Polar Ant
1	21783.331 M	44.9	+8.2	+3.5	+3.0	-17.3	+0.0	42.3	54.0	-11.7	Vert
2	22077.073 M	44.9	+8.2	+3.5	+3.0	-17.4	+0.0	42.2	54.0	-11.8	Horiz
3	21704.701 M	44.7	+8.2	+3.5	+3.0	-17.3	+0.0	42.1	54.0	-11.9	Horiz
4	22680.676 M	43.9	+8.4	+3.6	+3.0	-17.7	+0.0	41.2	54.0	-12.8	Horiz
5	23166.874 M	43.4	+8.5	+3.7	+2.9	-17.8	+0.0	40.7	54.0	-13.3	Vert
6	24613.664 M	42.2	+8.8	+3.8	+3.0	-17.1	+0.0	40.7	54.0	-13.3	Vert



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 13:51:42
Equipment: **Powerslayer** Sequence#: 51
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
	AN00432	Loop Antenna	6502	4/2/2013	4/2/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 9kHz – 30MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=200Hz from 9kHz to 150kHz
RBW=VBW=9kHz from 150kHz to 30MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: High Channel

No EUT emissions detected within 20dB of the limit.

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 13:12:11
Equipment: **Powerslayer** Sequence#: 43
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00686	Preamp	8447D Opt 010	5/27/2014	5/27/2016
T2	AN00852	Biconilog Antenna	CBL 6111C	11/28/2012	11/28/2014
T3	ANP00880	Cable	RG214U	6/13/2014	6/13/2016
T4	ANP01183	Cable	CNT-195	9/3/2013	9/3/2015
T5	ANP05300	Cable	RG214/U	3/25/2013	3/25/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 30MHz to 1000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=120kHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

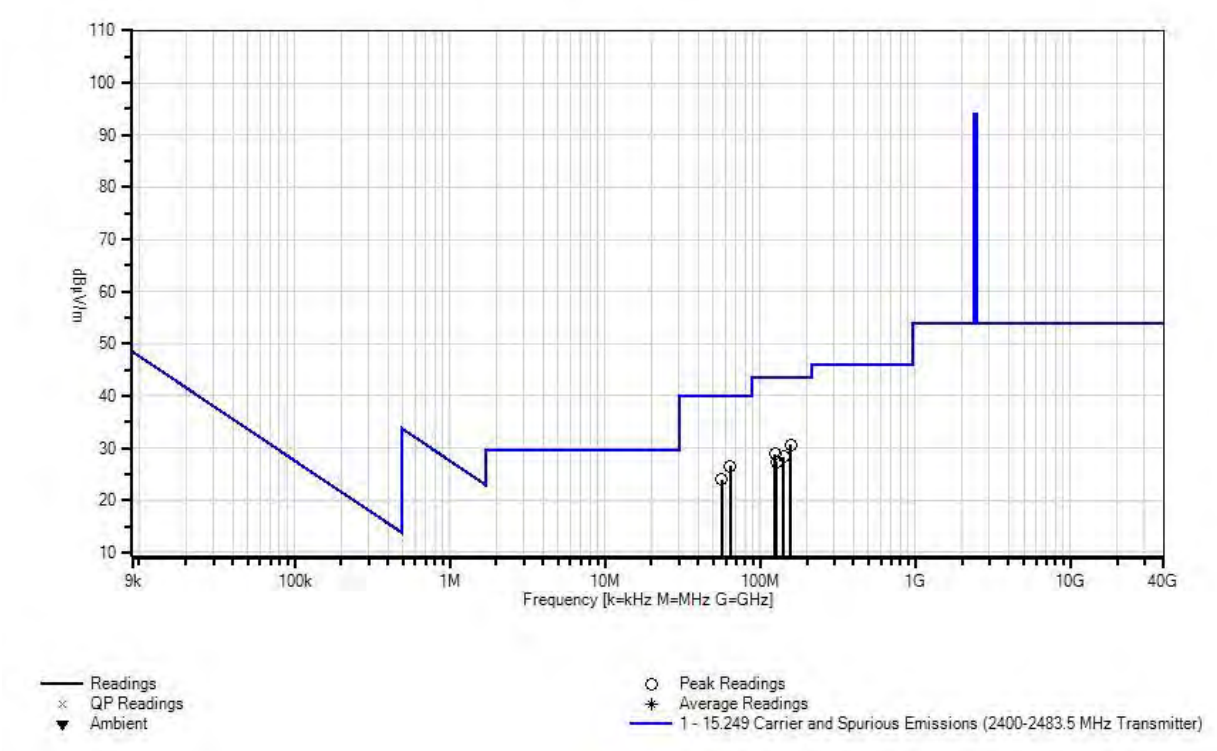
Note: High Channel

Ext Attn: 0 dB

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	157.089M	47.2	-29.0 +0.4	+10.5	+1.1	+0.5	+0.0	30.7	43.5	-12.8	Vert
2	64.007M	48.5	-29.2 +0.2	+6.0	+0.7	+0.3	+0.0	26.5	40.0	-13.5	Vert
3	125.476M	44.6	-29.1 +0.3	+11.6	+1.0	+0.4	+0.0	28.8	43.5	-14.7	Horiz
4	142.060M	44.3	-29.0 +0.3	+11.2	+1.1	+0.4	+0.0	28.3	43.5	-15.2	Horiz
5	56.686M	45.6	-29.3 +0.2	+6.7	+0.6	+0.2	+0.0	24.0	40.0	-16.0	Vert
6	128.004M	43.4	-29.1 +0.3	+11.4	+1.0	+0.4	+0.0	27.4	43.5	-16.1	Horiz

CKC Laboratories, Inc Date: 8/30/2014 Time: 13:12:11 Velvetwire LLC WO#: 96014
Test Distance: 3 Meters Sequence#: 43



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/29/2014
Test Type: **Radiated Scan** Time: 20:06:21
Equipment: **Powerslayer** Sequence#: 14
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T4	AN03114	Preamp	AMF-7D-00101800-30-10P	4/11/2013	4/11/2015
T5	AN03015	Cable	32022-2-29094K-24TC	5/6/2013	5/6/2015
T6	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	4/2/2014	4/2/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 1000MHz to 12000MHz
Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware
Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

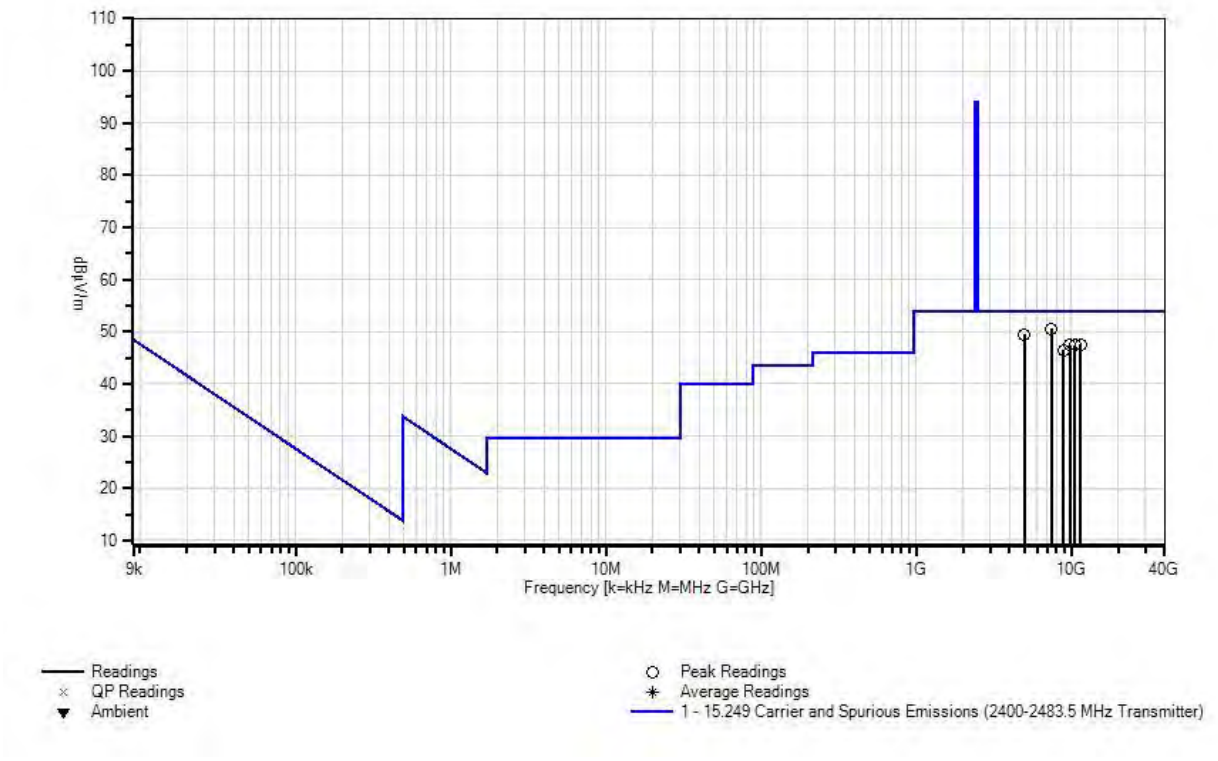
Note: High Channel

Ext Attn: 0 dB

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	7439.435M	64.4	+36.8 +1.0	+2.1 +0.2	+5.4	-59.3	+0.0	50.6	54.0	-3.4	Horiz
2	4957.956M	67.2	+33.6 +0.7	+1.7 +0.2	+3.9	-57.9	+0.0	49.4	54.0	-4.6	Horiz
3	11471.264 M	54.7	+39.0 +1.3	+2.6 +0.2	+6.2	-56.4	+0.0	47.6	54.0	-6.4	Horiz
4	10493.486 M	56.4	+39.2 +1.3	+2.5 +0.2	+6.1	-58.3	+0.0	47.4	54.0	-6.6	Vert
5	9750.744M	55.6	+39.1 +1.3	+2.4 +0.2	+6.3	-57.5	+0.0	47.4	54.0	-6.6	Vert
6	8874.869M	54.6	+38.2 +1.4	+2.3 +0.3	+6.0	-56.3	+0.0	46.5	54.0	-7.5	Vert

CKC Laboratories, Inc Date: 8/29/2014 Time: 20:06:21 Velvetwire LLC WO#: 96014
Test Distance: 3 Meters Sequence#: 14



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 11:51:46
Equipment: **Powerslayer** Sequence#: 34
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06126	Cable	32022-29094K-29094K-168TC	7/12/2013	7/12/2015
T2	ANP06138	Cable	32022-29094K-29094K-72TC	8/2/2013	8/2/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T3	ANP00929	Cable	various	1/23/2014	1/23/2016
T4	AN02694	Horn Antenna-ANSI C63.5 Antenna Factors (dB)	AMFW-5F-18002650-20-10P	2/4/2013	2/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 18000MHz to 25000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

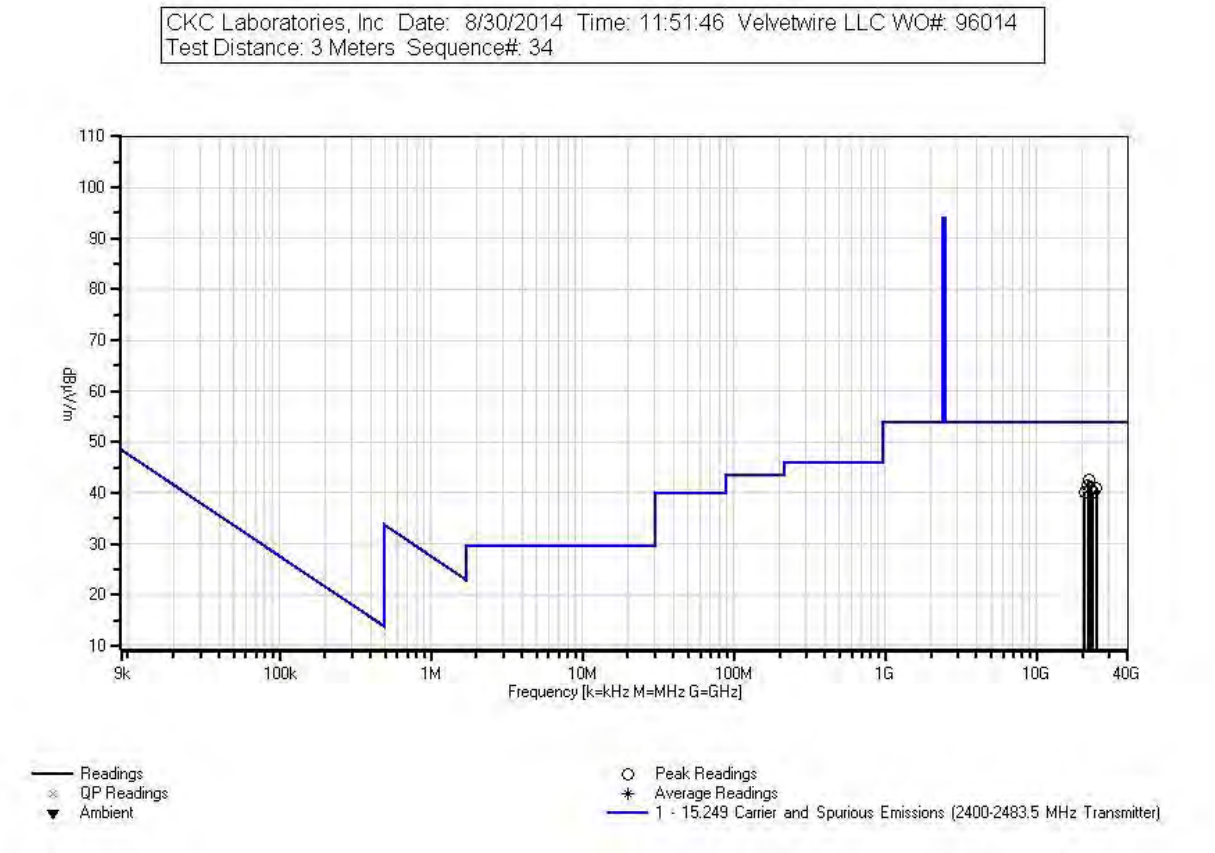
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: High Channel

Ext Attn: 0 dB

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/m	Spec dBµV/m	Margin dB	Polar Ant
1	21999.399 M	45.1	+8.2	+3.5	+3.0	-17.3	+0.0	42.5	54.0	-11.5	Vert
2	21752.464 M	44.0	+8.2	+3.5	+3.0	-17.3	+0.0	41.4	54.0	-12.6	Horiz
3	22767.437 M	43.7	+8.4	+3.6	+3.0	-17.8	+0.0	40.9	54.0	-13.1	Vert
4	24757.554 M	42.2	+8.9	+3.8	+3.0	-17.0	+0.0	40.9	54.0	-13.1	Vert
5	20733.185 M	42.7	+7.9	+3.4	+3.2	-17.0	+0.0	40.2	54.0	-13.8	Horiz
6	23549.268 M	42.7	+8.5	+3.6	+3.0	-17.7	+0.0	40.1	54.0	-13.9	Horiz



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96014** Date: 8/30/2014
Test Type: **Radiated Scan** Time: 11:51:46
Equipment: **Powerslayer** Sequence#: 34
Manufacturer: Velvetwire LLC Tested By: Hieu Song Nguyenpham
Model: 100101
S/N: RF 1

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06126	Cable	32022-29094K-29094K-168TC	7/12/2013	7/12/2015
T2	ANP06138	Cable	32022-29094K-29094K-72TC	8/2/2013	8/2/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015
T3	AN02694	Horn Antenna-1 Meter Antenna Factors (dB) - SAE ARP 958	AMFW-5F-18002650-20-10P	2/4/2013	2/4/2015
T4	ANP00929	Cable	various	1/23/2014	1/23/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Radiated Spurious Emission
Frequency Range: 18000MHz to 25000MHz

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=0dBi

RBW=VBW=1MHz

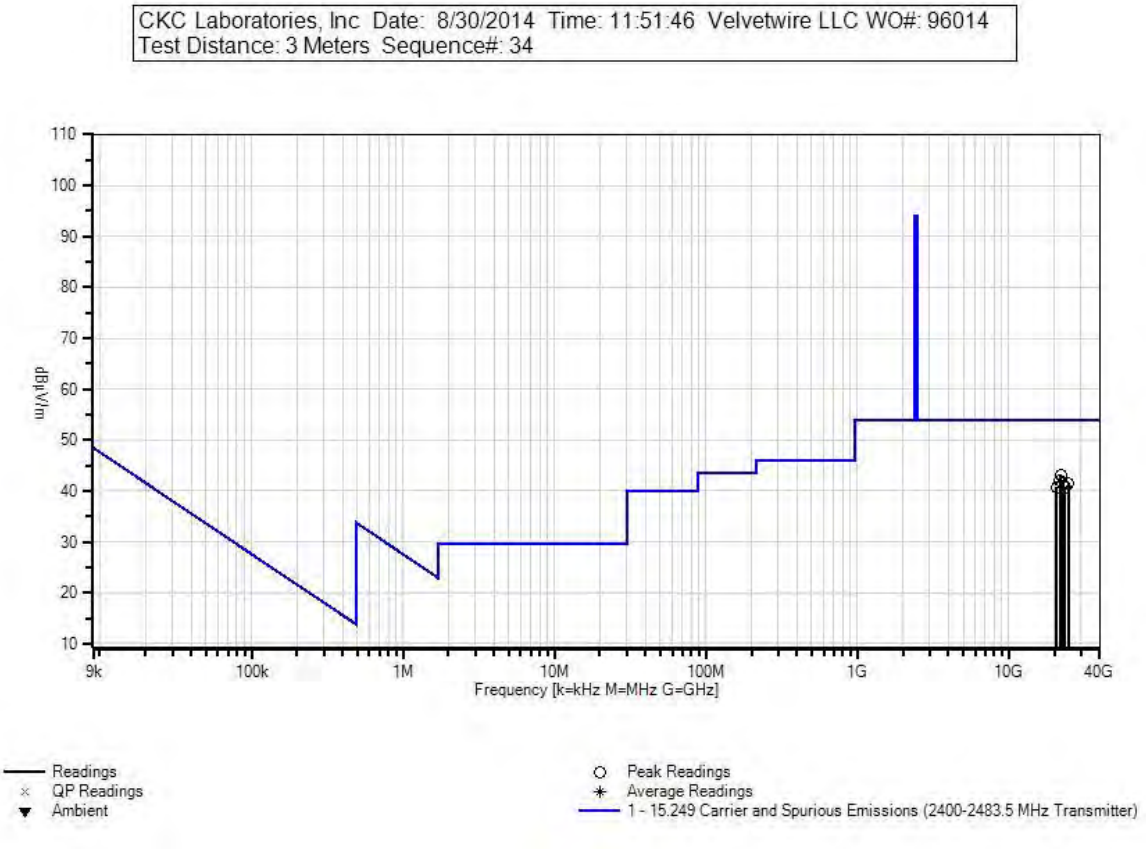
The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

Note: High Channel

Ext Attn: 0 dB

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/m	Spec dBµV/m	Margin dB	Polar Ant
1	21999.399 M	45.1	+8.2	+3.5	-16.8	+3.0	+0.0	43.0	54.0	-11.0	Vert
2	21752.464 M	44.0	+8.2	+3.5	-16.7	+3.0	+0.0	42.0	54.0	-12.0	Horiz
3	22767.437 M	43.7	+8.4	+3.6	-17.1	+3.0	+0.0	41.6	54.0	-12.4	Vert
4	24757.554 M	42.2	+8.9	+3.8	-16.3	+3.0	+0.0	41.6	54.0	-12.4	Vert
5	20733.185 M	42.7	+7.9	+3.4	-16.4	+3.2	+0.0	40.8	54.0	-13.2	Horiz
6	23549.268 M	42.7	+8.5	+3.6	-17.1	+3.0	+0.0	40.7	54.0	-13.3	Horiz



Band Edge Test Setup / Conditions

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Velvetwire LLC**
Specification: **OBW**
Work Order #: **96014**
Test Type: **Radiated Scan**
Equipment: **Powerslayer**
Manufacturer: Velvetwire LLC
Model: 100101
S/N: RF 1

Date: 8/29/2014
Time: 10:21:04
Sequence#: 5
Tested By: Hieu Song Nguyenpham

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T2	AN03302	Cable	32026-29094K-29094K-72TC	3/24/2014	3/24/2016
T3	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
	AN03471	RF Characteristics Analyzer	E4440A	12/19/2013	12/19/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Powerslayer*	Velvetwire LLC	100101	RF 1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

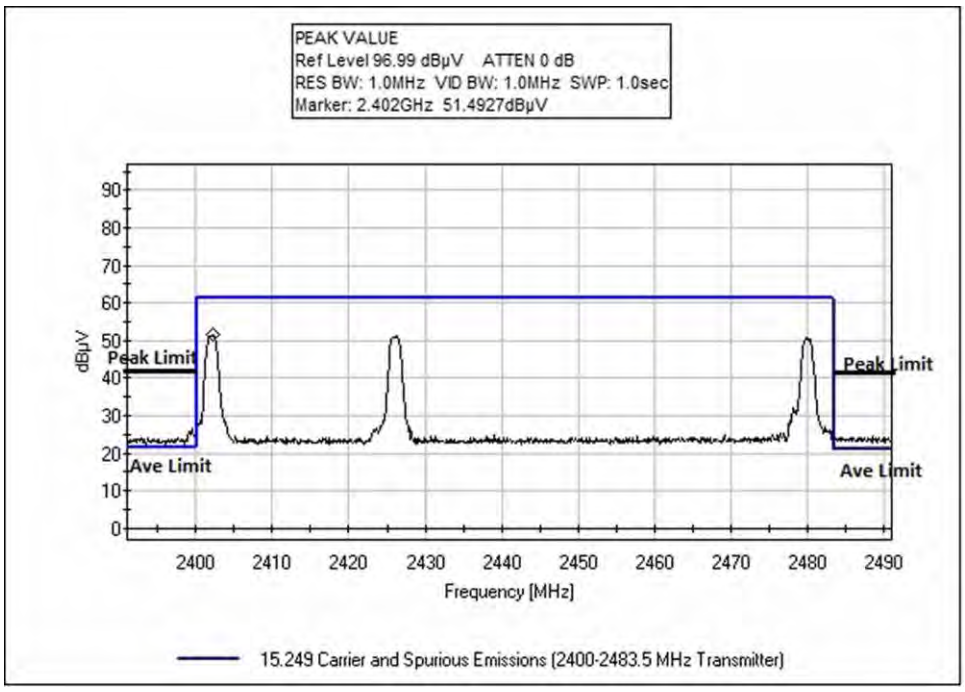
Band Edge Test Setup

Temperature: 22.5°C
Humidity: 45 %
Atmospheric Pressure: 101.1 kPa
Highest Generation Frequency=2480MHz
Firmware: TI test firmware

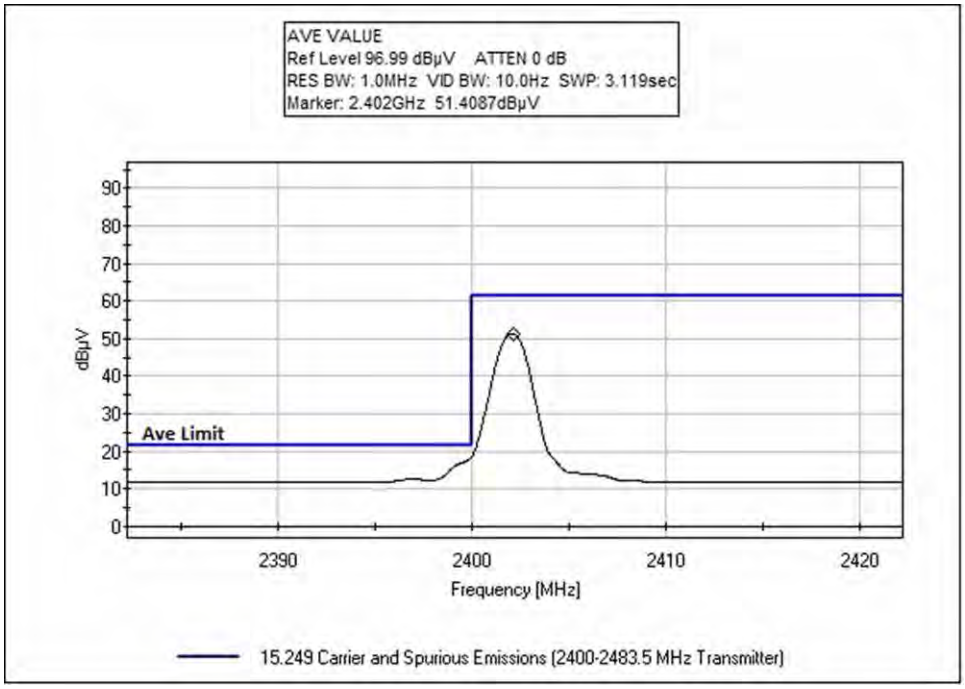
Transmitting operating frequency= 2.4GHz
RF Output= 0dBm
Gain of antenna=dBi

The EUT is a mobile device, and it is a USB charger. It is placed on an 80 cm table. The USB Port is connected to the switch through the USB cable which is used to control the EUT for testing purpose. The switch is always on, and it is represented for the load. The EUT is operated in continuously transmitting mode.

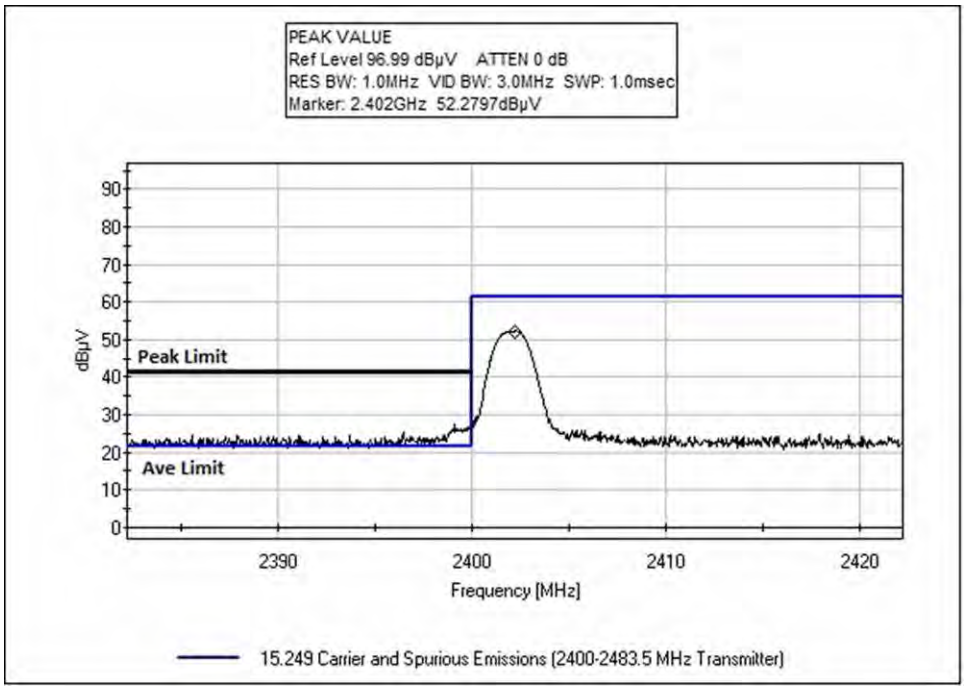
Test Data



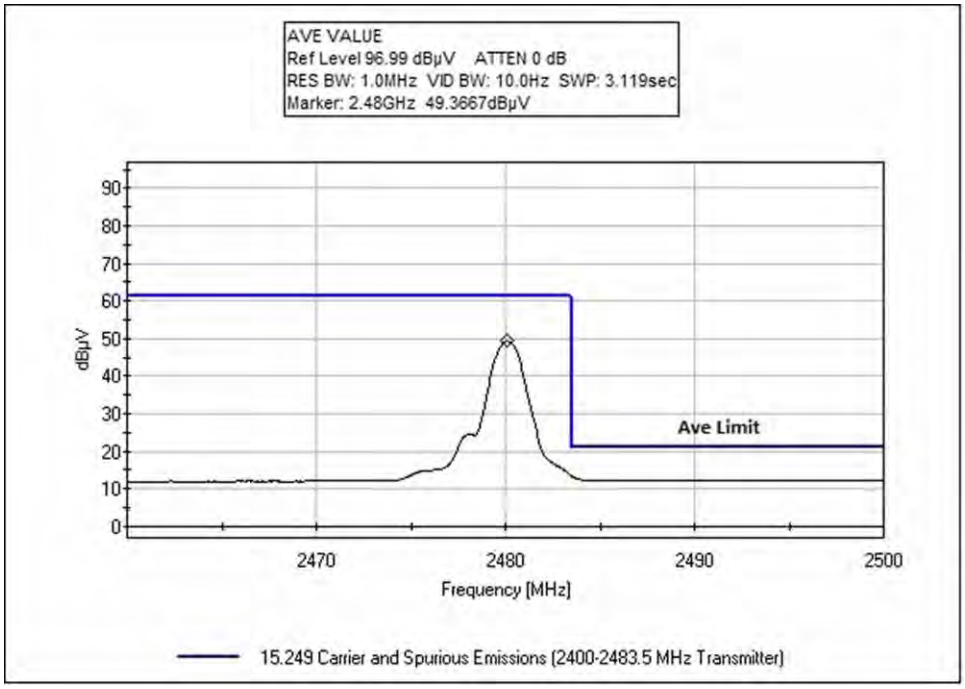
Band Edge - FHSS



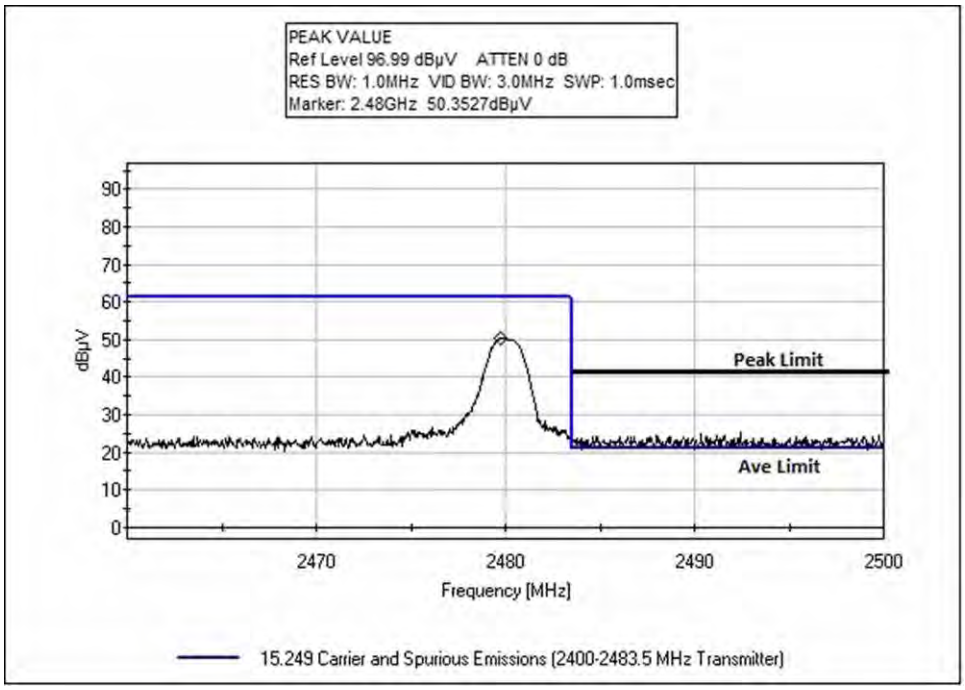
Low Channel



Low Channel

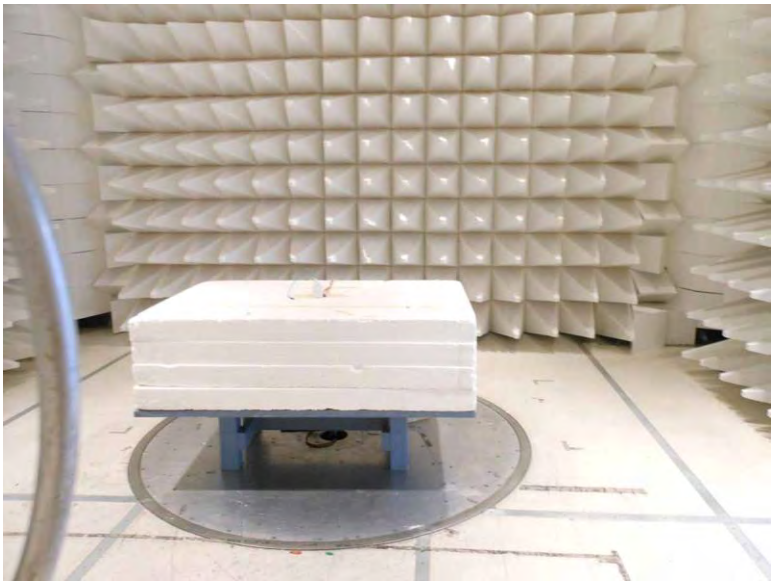


High Channel

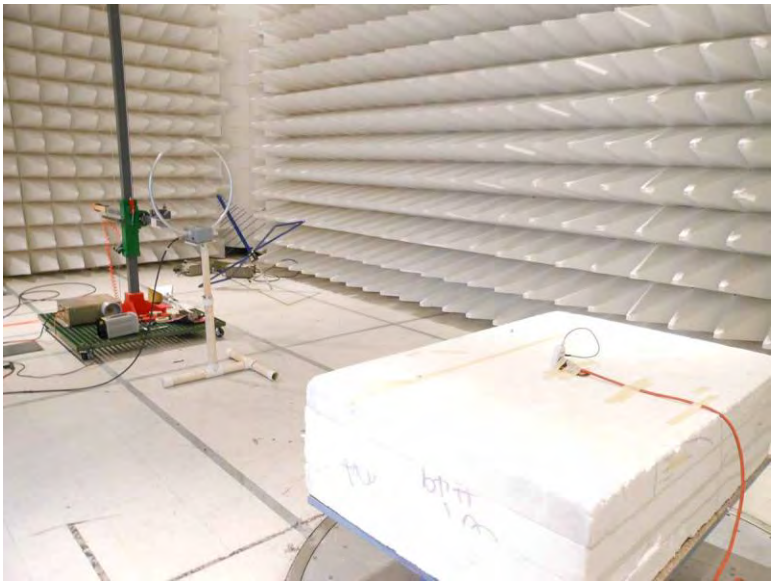


High Channel

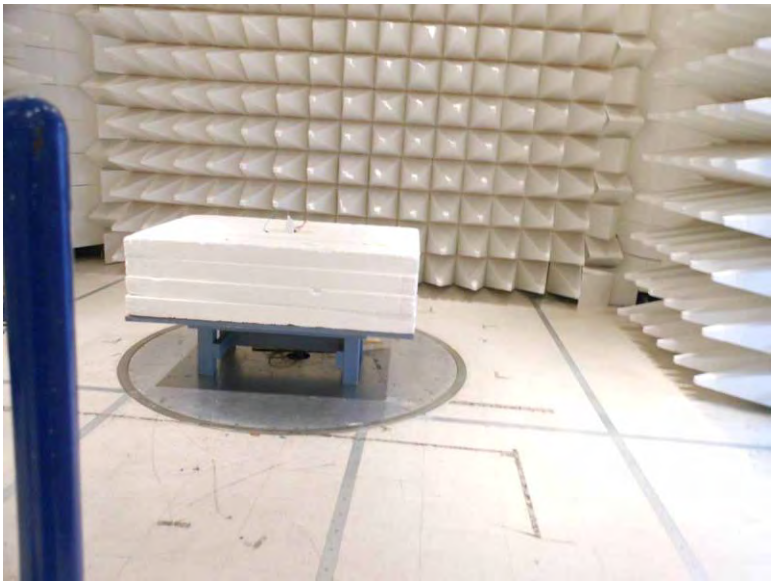
Test Setup Photo(s)



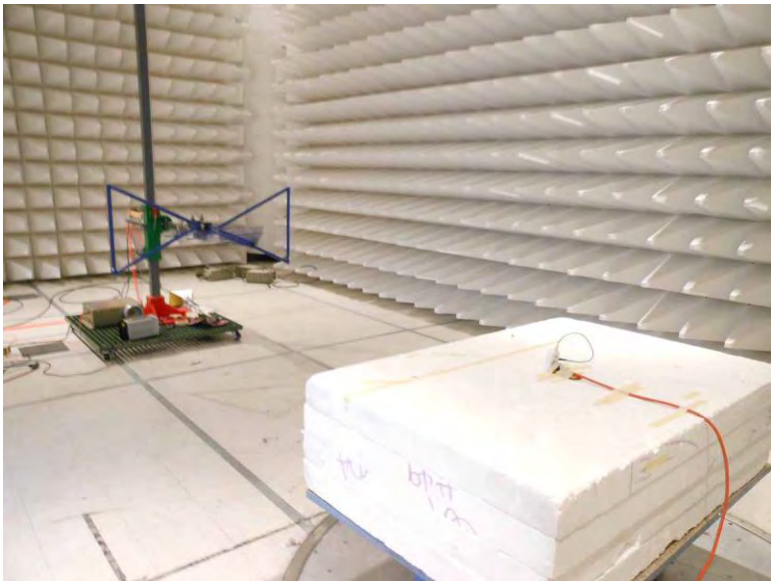
9kHz – 30MHz



9kHz – 30MHz

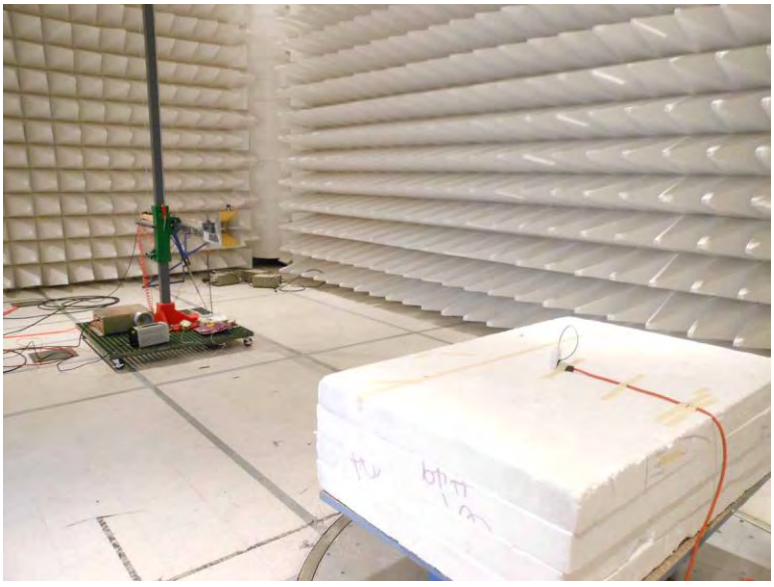


30MHz – 1GHz

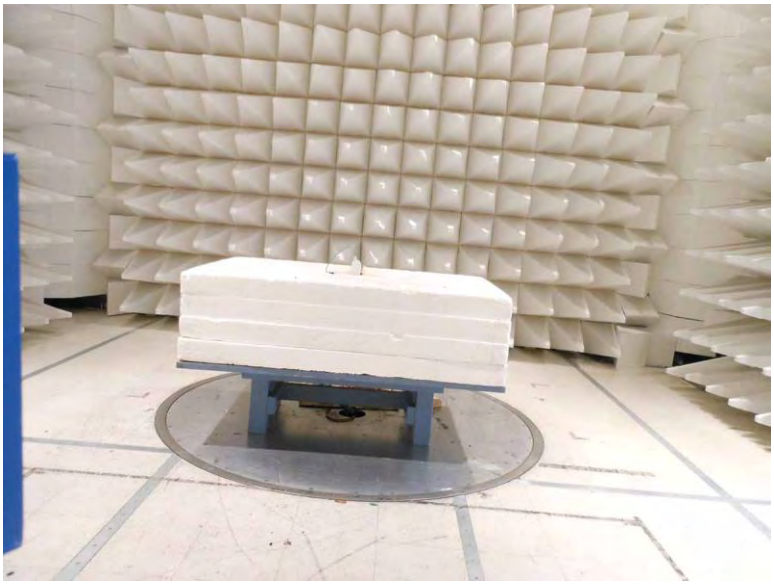


30MHz – 1GHz

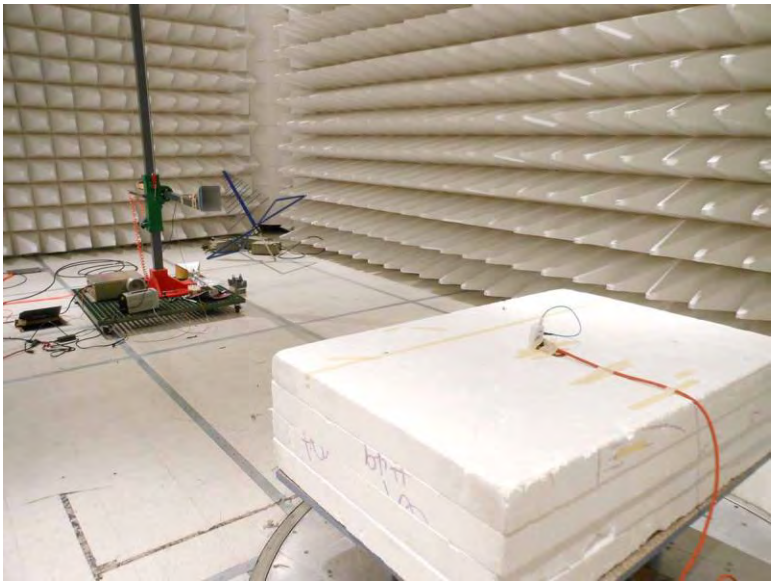
1GHz – 12GHz



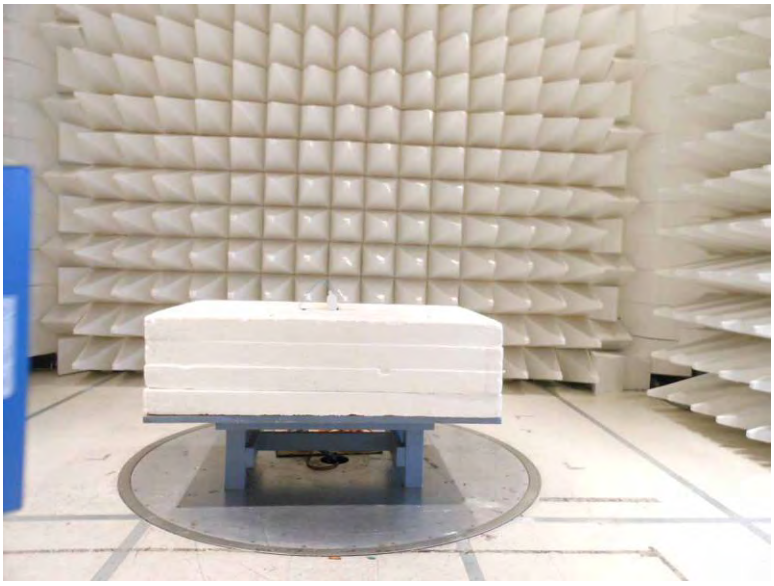
1GHz – 12GHz



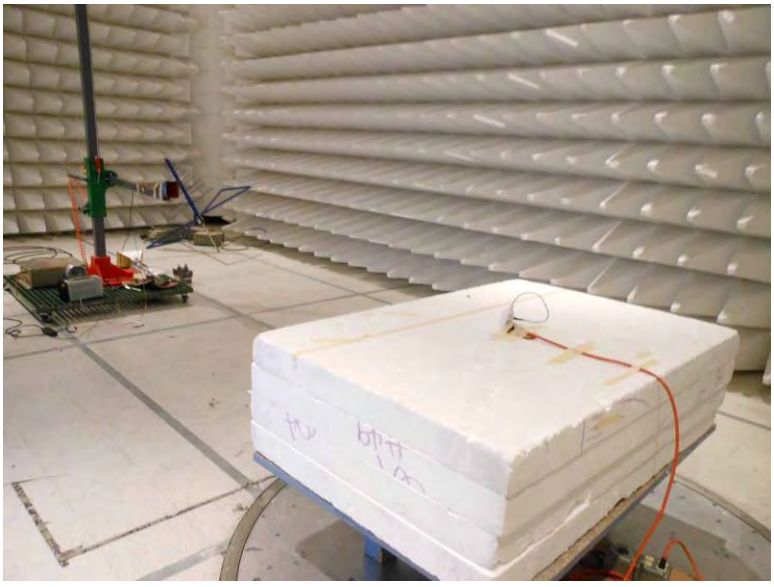
12GHz – 18GHz



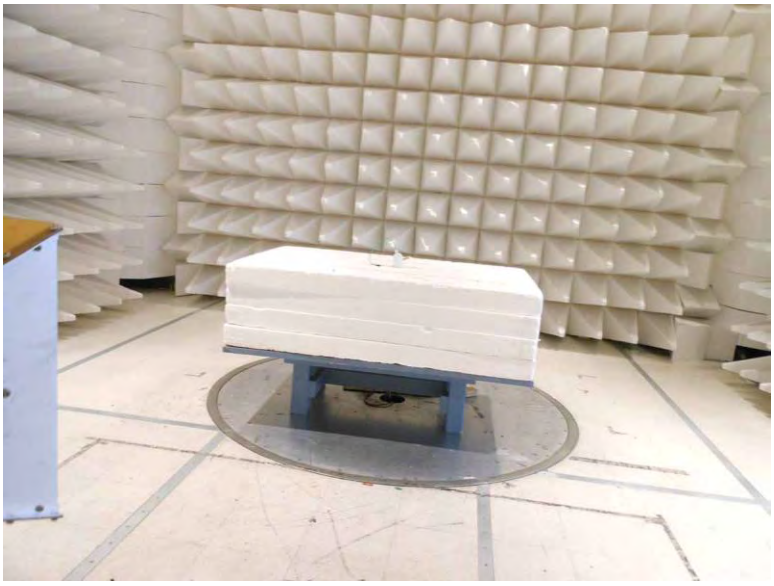
12GHz – 18GHz



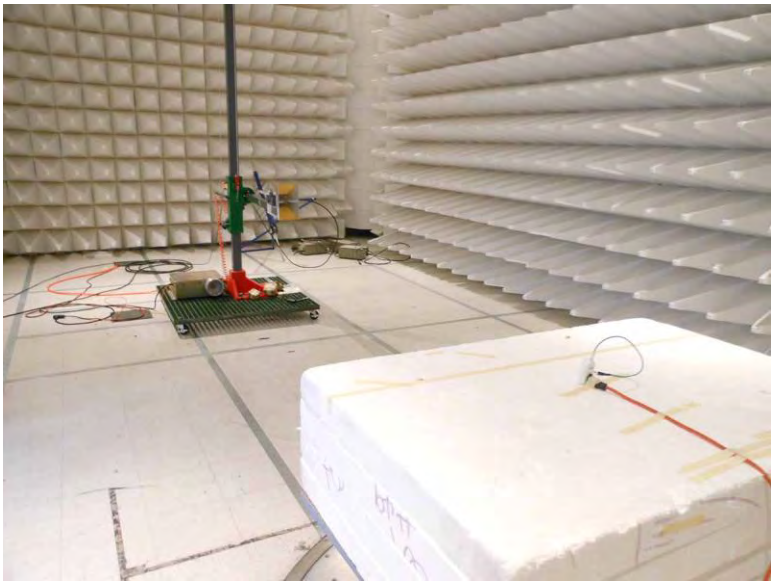
18GHz – 25GHz



18GHz – 25GHz



Band Edge



Band Edge

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

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.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: 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. Unless otherwise specified, 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.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

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 "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. 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 or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent 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

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. 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.