



**FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8**

**BLUETOOTH LOW ENERGY
CERTIFICATION TEST REPORT**

FOR

Vital Connect Biosensor Platform

MODEL NUMBER: 600-00001-00

**FCC ID: SPO-VCI-MODULE
IC: 11013A-VCIMODULE**

REPORT NUMBER: 12CA65988A

ISSUE DATE: March 29, 2013

Prepared for
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NVLAP Lab code: 100414-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	03/29/13	Initial Issue	M.Ferrer

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Vital Connect Inc.
Suite 316
2105 S Bascom Ave.
Campbell, CA 95008

EUT DESCRIPTION: Vital Connect Biosensor Platform

MODEL: 600-00001-00

SERIAL NUMBER: Prototype

DATE TESTED: January 28, 2013 – March 29, 2013

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL By:



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Staff ENGINEER
UL

Tested By:



MICHAEL FERRER
SENIOR PROJECT ENGINEER
UL

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, RSS-210 Issue 8, and KDB 558074 DTS Meas Guidance v02

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60193, USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Sample Calculations

Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:

Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)

Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)

Conducted Current (dBuA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test	Range	Equipment	Uncertainty k=2
Radiated Emissions	30-200MHz	Bicon 10m Horz	4.27dB
Radiated Emissions	30-200MHz	Bicon 10m Vert	4.28dB
Radiated Emissions	200-1000MHz	LogP 10m Horz	3.33dB
Radiated Emissions	200-1000MHz	LogP 10m Vert	3.39dB
Radiated Emissions	1-6GHz	Horn	5.02dB
Radiated Emissions	6-18GHz	Horn	5.34dB
Radiated Emissions	18-26GHz	Horn	6.60dB
Conducted Ant Port	30MHz-26GHz	Spectrum Analyzer	2.94
RF Power	dB	Power Meter	0.45dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The VitalConnect Platform sensor consisting of a Patch and Sensor Module (hereinafter referred to as VitalConnect Sensor) is a miniaturized, compact, ambulatory (mobile), battery-operated patch with integrated sensors, two (2) electrodes, a transceiver, an electronic bridge and server software. The sensor is worn on the torso to record heart rate, heart rate variability, breathing rate (respiration rate), skin temperature, electrocardiography (ECG), fall detection, step count and posture. The sensor continuously gathers vital signs and activity measurements, and transmits encrypted data via a bi-directional Relay to a Central Server, where the data is stored and analyzed.

The EUT is an Bluetooth Low Energy 4.0 transceiver

The radio module is manufactured by Vital Connect.

Patch p/n: 545-00006-00

Module p/n: 600-00001-00

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402-2480	BLE 4.0	3.75	2.37

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a chip antenna, with a maximum gain of 0.2 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was rev. 0.7.6.6

The test utility software used during testing was SmartRF Studio 7, rev. 1.10.3.

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that Y-Axis orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y-axis orientation.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Programming Board	Neptune	10-0046	-	-
Serial to USB	Texas Instruments	CC Debugger	-	-
Phone	Apple	A1387	-	BCG-E2430A
PC	Lenovo	T420	-	-

I/O CABLES

None

TEST SETUP

The EUT is a wireless device that is battery powered. The Sensor module was programmed to transmit on Hi, Mid, and Low channels.

Config #1

In this configuration, the EUT was programmed to transmit continuously on a single channel.

Config #2

In this configuration, the EUT was transmitting and receiving data with an iPhone. The iPhone contained an app that displayed data readings

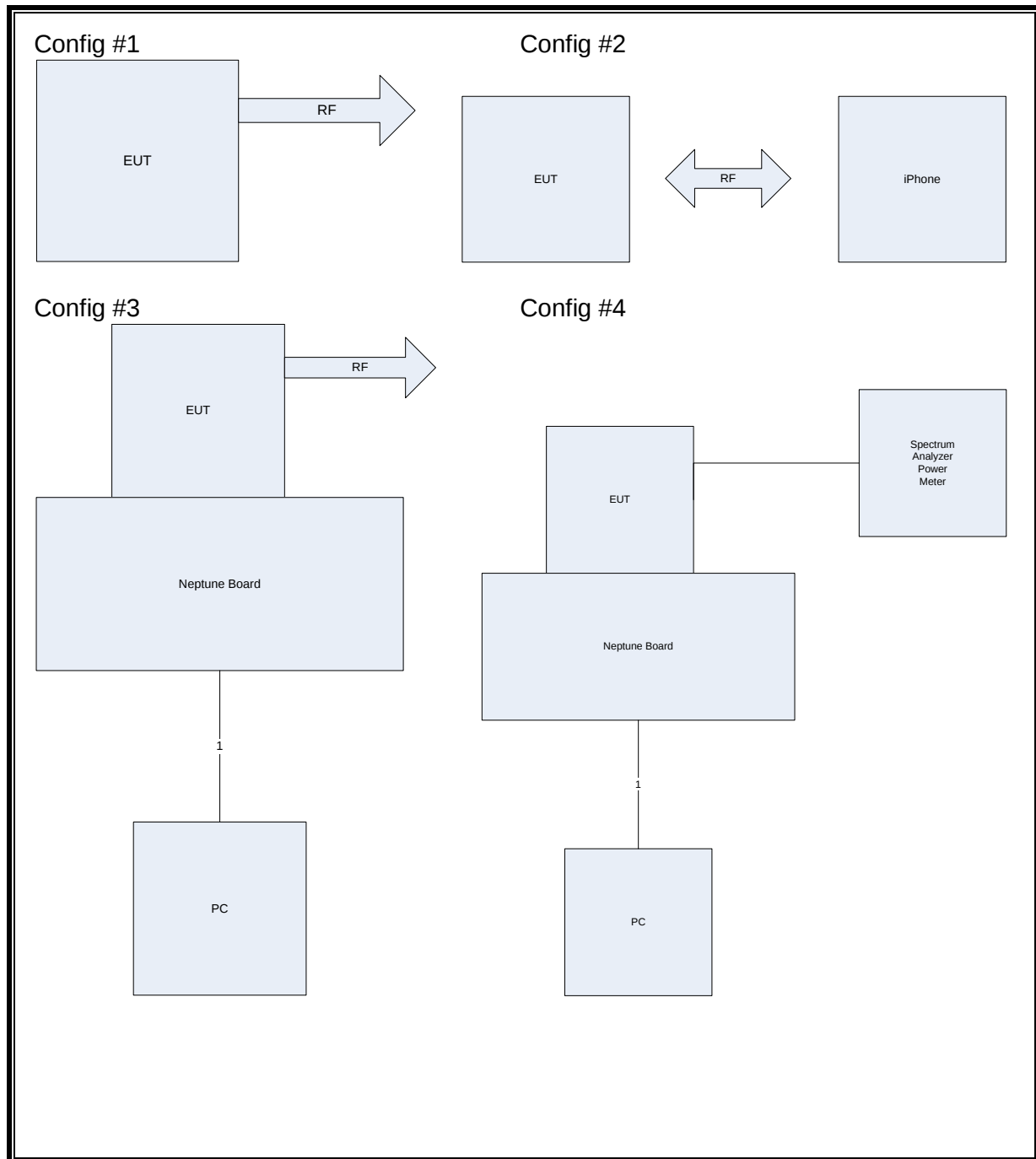
Config# 3

In this configuration, the EUT was placed in the Neptune Programming board. It was programmed to either transmit or receive on single channel.

Config# 4

In this configuration, the EUT was placed in the Neptune Programming board. It was programmed to either transmit or receive on single channel. The EUT contained a SMA antenna port connection for direct measurement.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List						
Description	Manufacturer	Model	Asset	Cal Date	Cal Due	Test
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	20121227	20131231	RE, CP
Bicon Antenna	Chase	VBA6106A	EMC4078	20130213	20170228	RE, CP
Log-P Antenna	Chase	UPA6109	EMC4258	20121015	20131030	RE
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	20121226	20131231	RE
Antenna Array	UL	BOMS	EMC4276	20111227	20131231	RE
EMI Test Receiver	Agilent	N9030A	EMC4360	20121226	20131226	OBW, PSD
Power Meter	Rohde & Schwarz	NRVD	EMC4074	20121027	20131027	AP
Power Sensor	Rohde & Schwarz	NRV-Z555	EMC4265	20121030	20131030	AP

RE: Radiated Emissions
CP: Conducted Antenna Peak Power, Spurious Emissions
CE: Conducted Emissions AC Mains
OBW: Occupied BW
PSD: Power Spectral Density
AP: Average Power

7. ANTENNA PORT TEST RESULTS

7.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

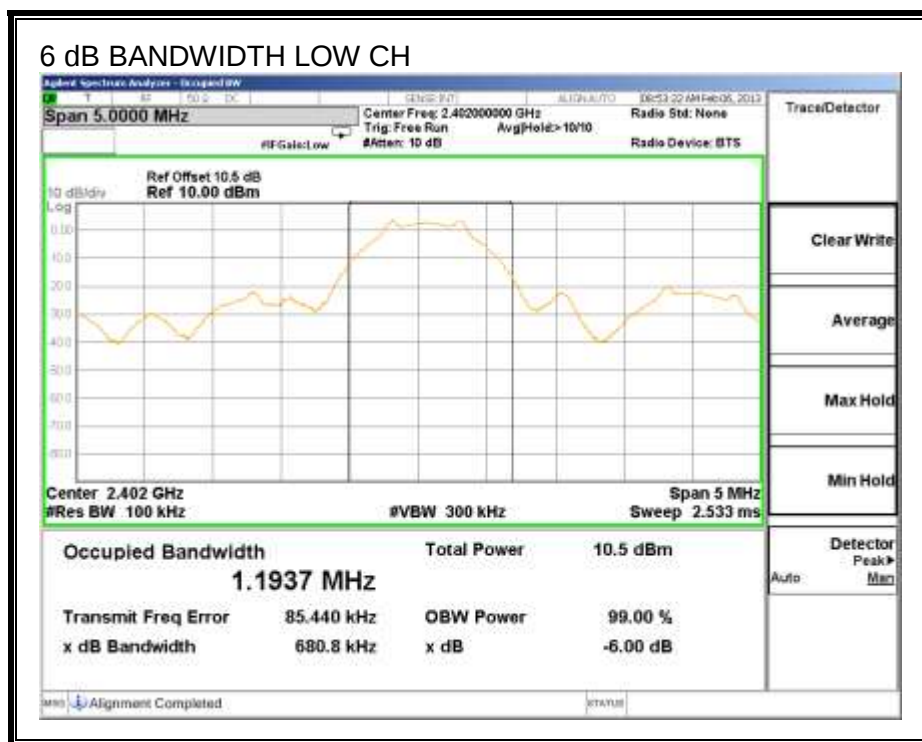
TEST PROCEDURE

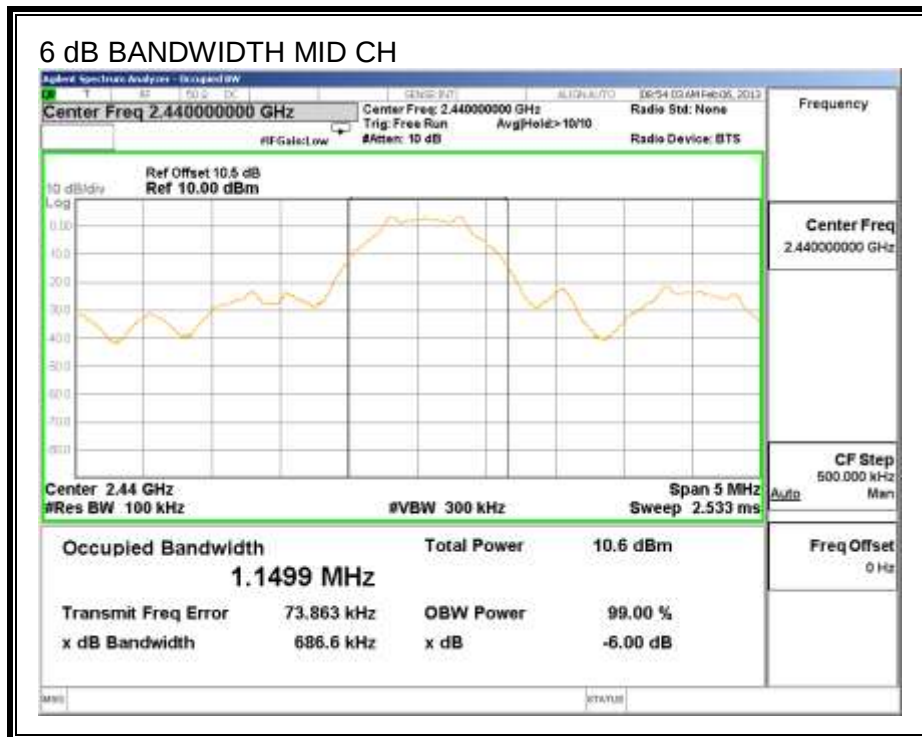
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

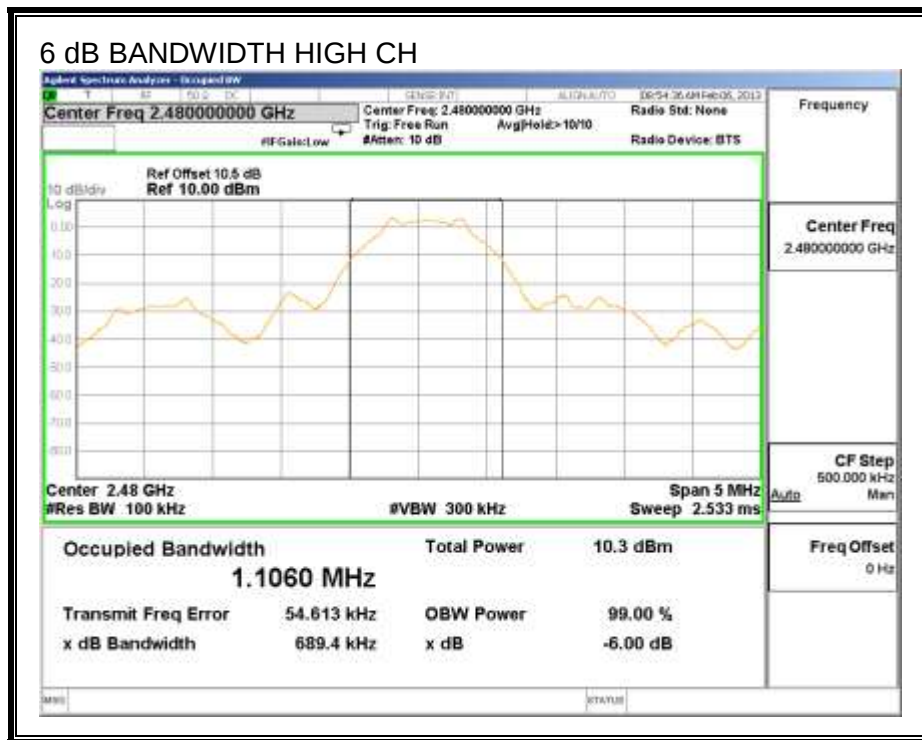
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6808	0.5
Middle	2440	0.6866	0.5
High	2480	0.6894	0.5

6 dB BANDWIDTH







7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

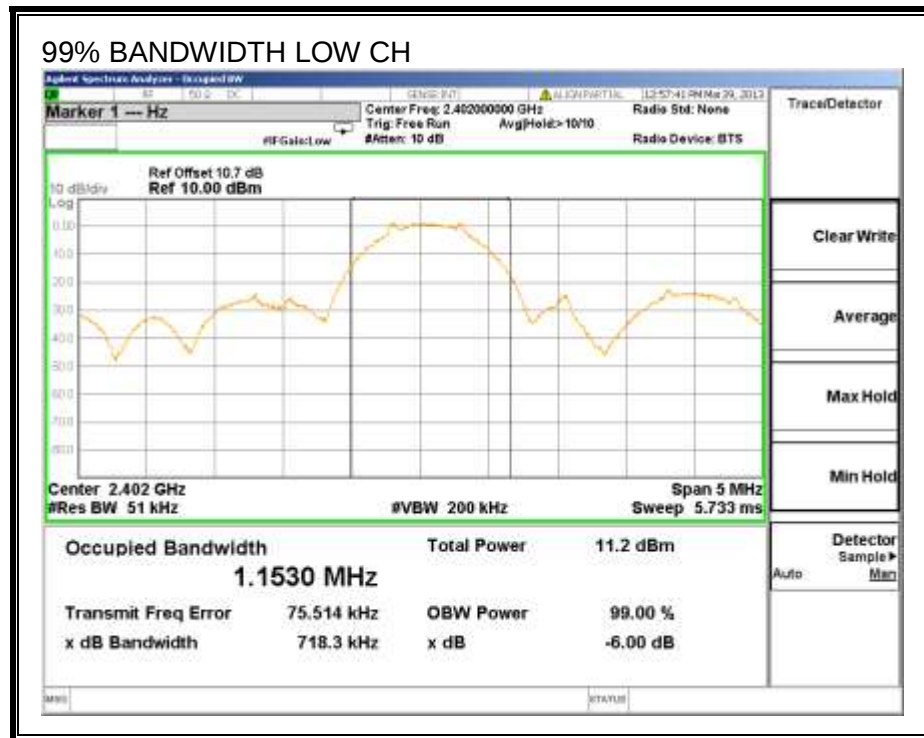
RSS-Gen

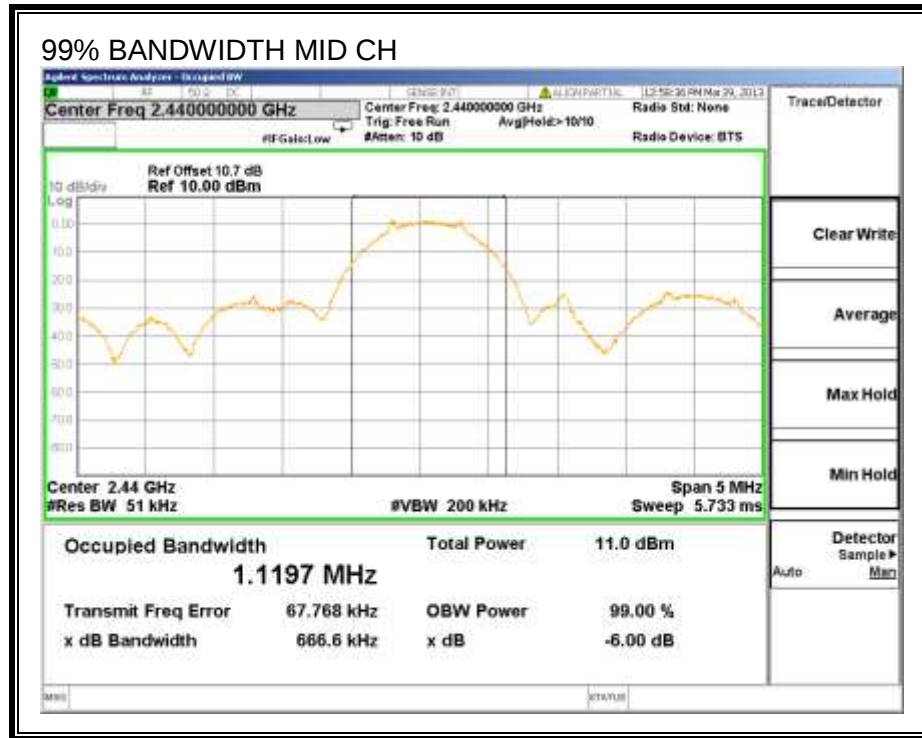
The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual.

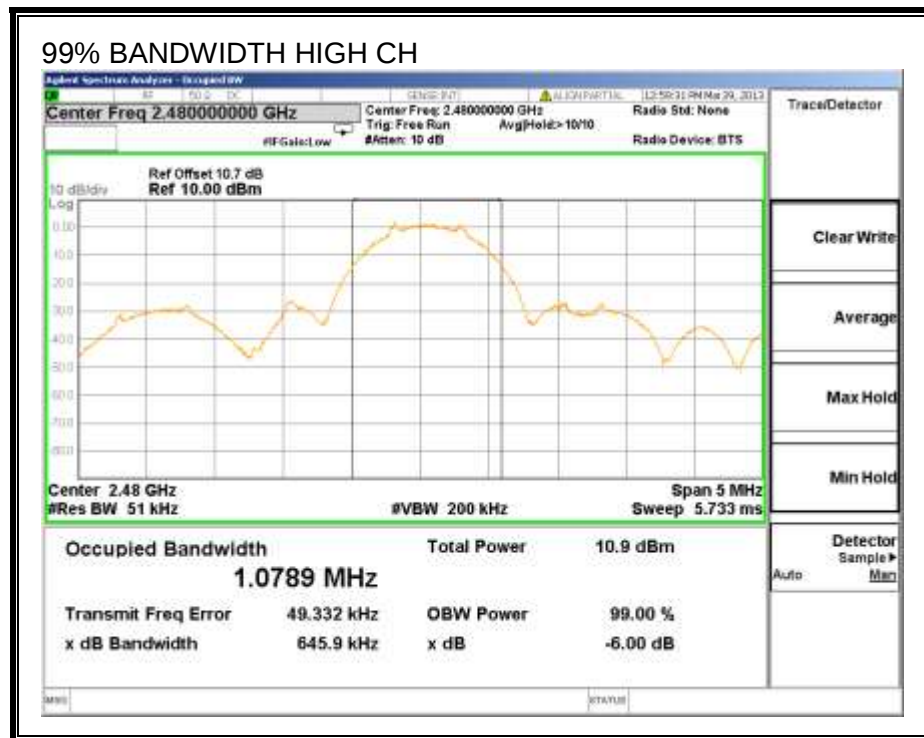
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.1530
Middle	2440	1.1197
High	2480	1.0789

99% BANDWIDTH







7.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

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

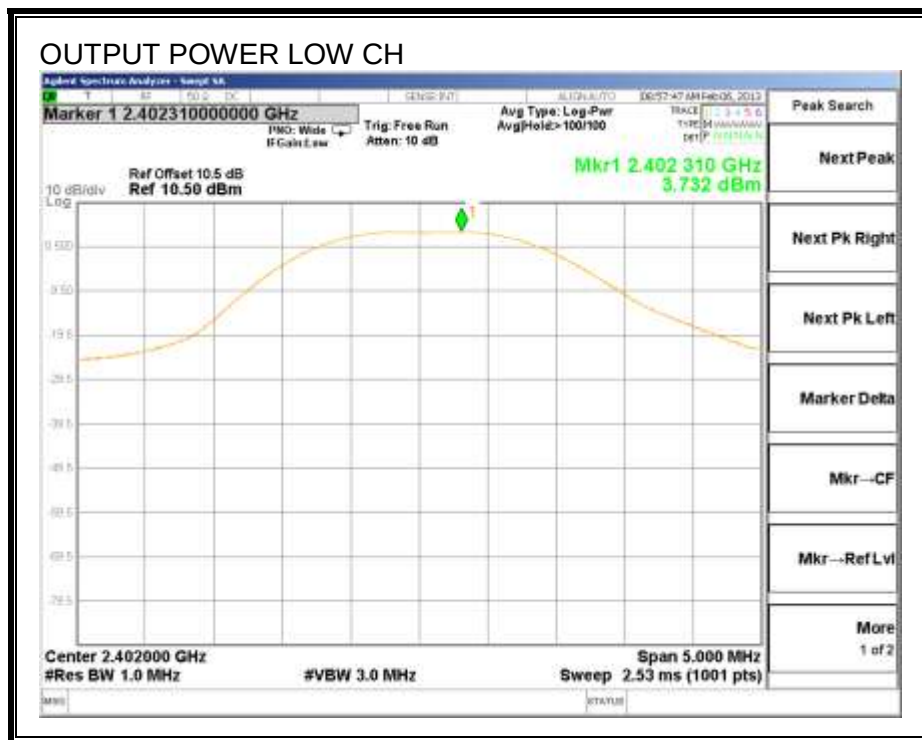
TEST PROCEDURE

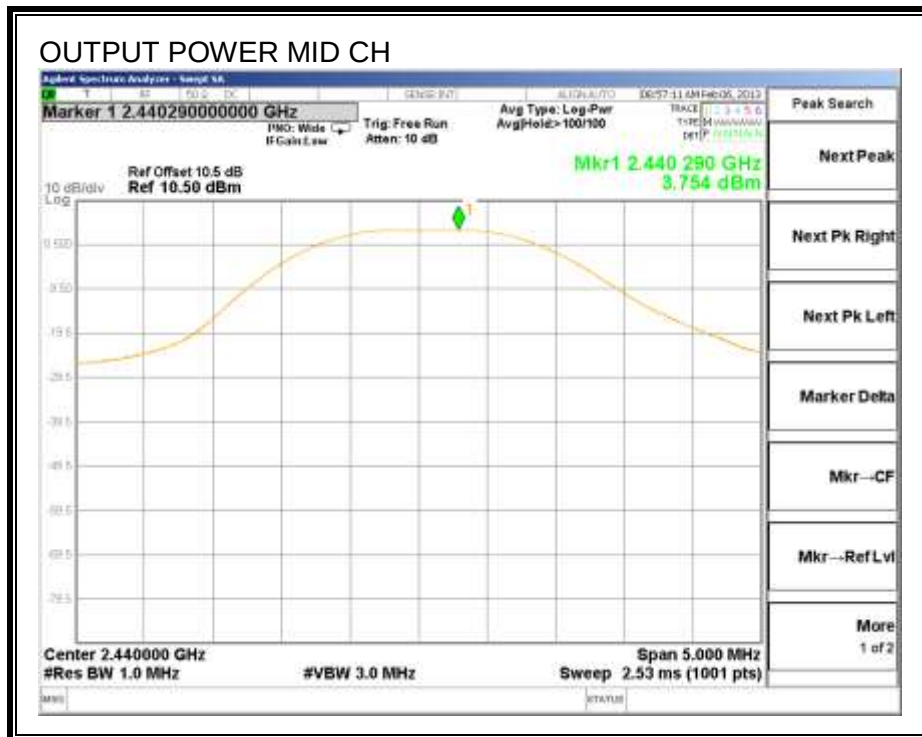
Peak Power is measured using procedure from KDB 558074 DTS Meas Guidance v02
Section 8.1.1 Option 1

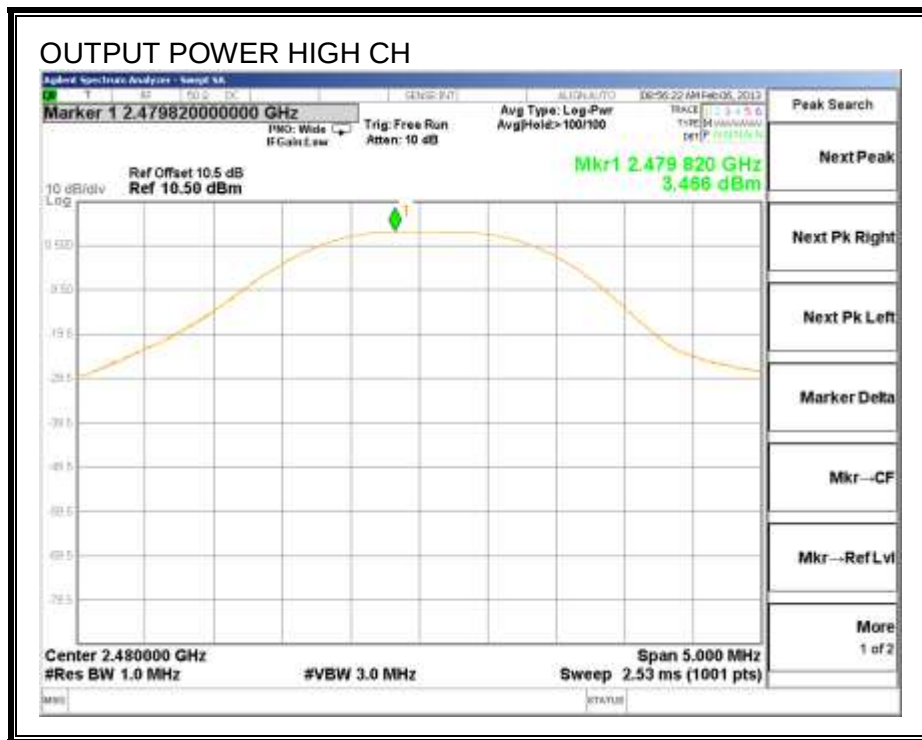
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	3.732	30	-26.268
Middle	2440	3.754	30	-26.246
High	2480	3.466	30	-26.534

OUTPUT POWER







7.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11.80 dB (including 10 dB pad and 1.8 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	3.75
Middle	2440	3.5
High	2480	2.33

7.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

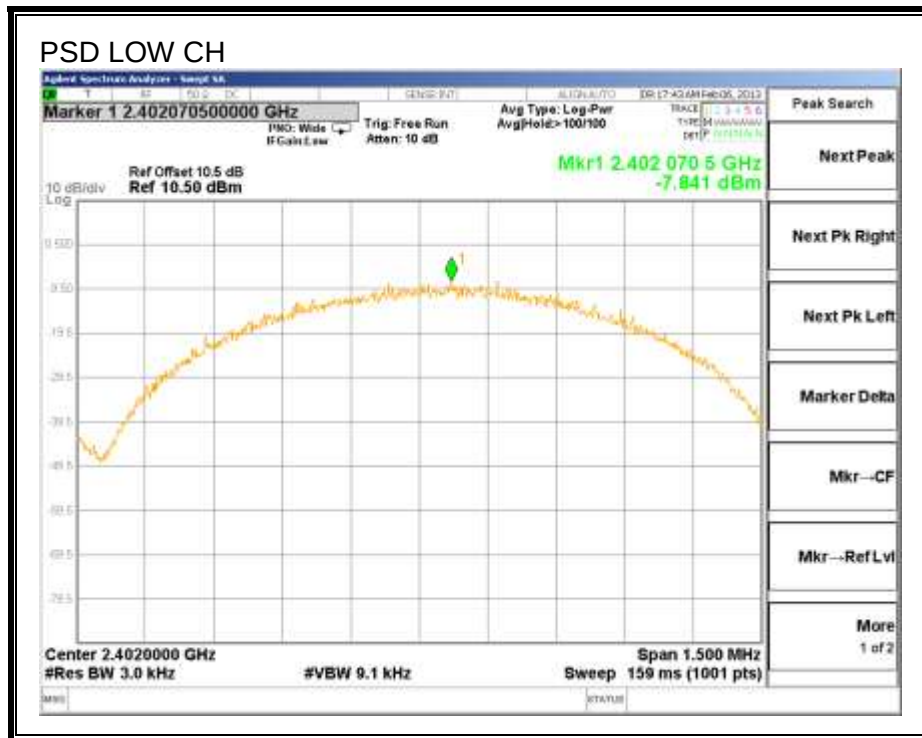
TEST PROCEDURE

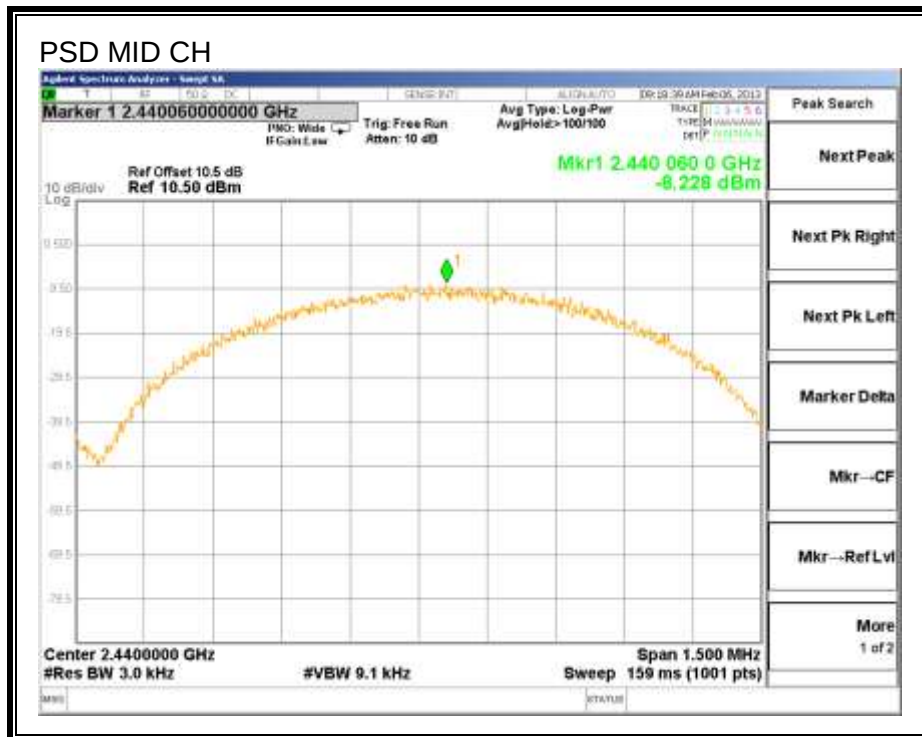
PSD Procedure used from KDB 558074 DTS Meas Guidance v02 Section 9.1 Option 1

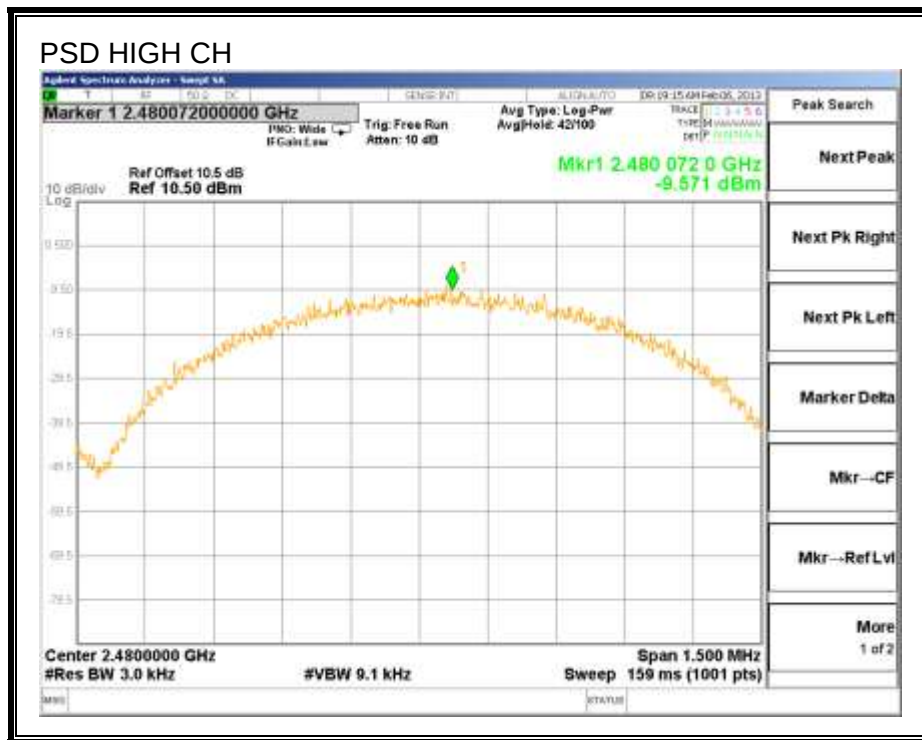
RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-7.84	8	-15.84
Middle	2440	-8.23	8	-16.23
High	2480	-9.57	8	-17.57

POWER SPECTRAL DENSITY







7.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

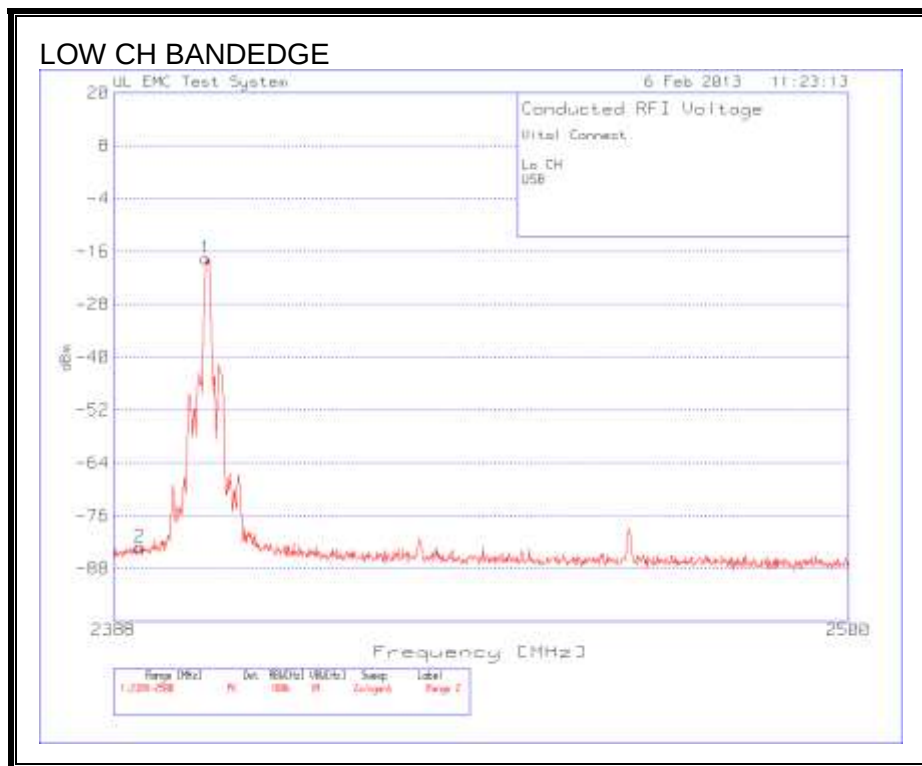
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 1 MHz.

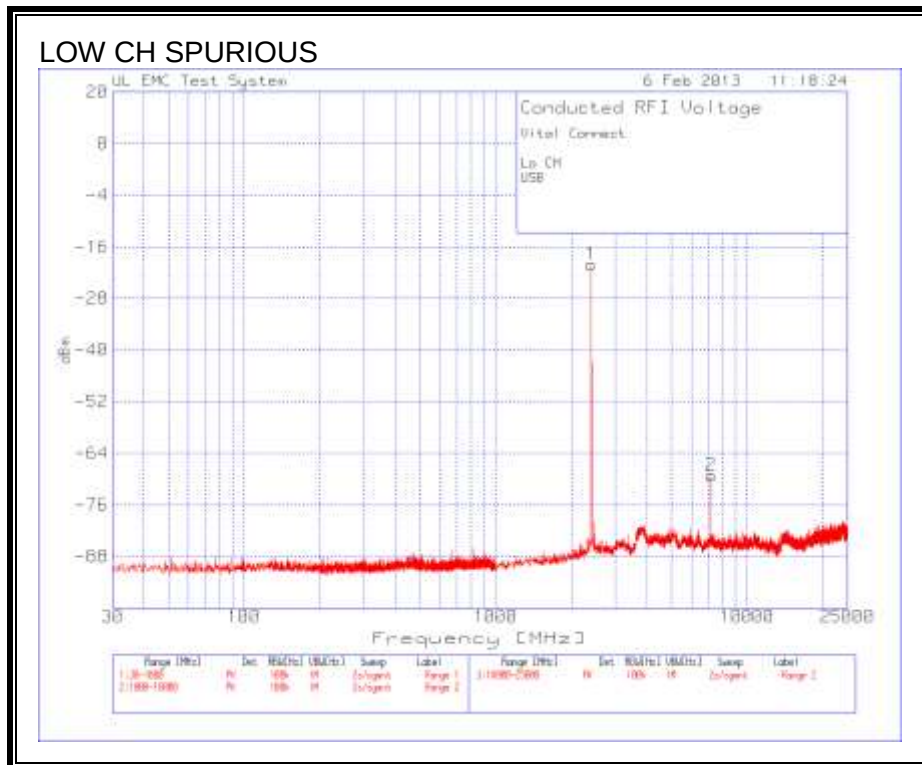
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

RESULTS

SPURIOUS EMISSIONS, LOW CHANNEL

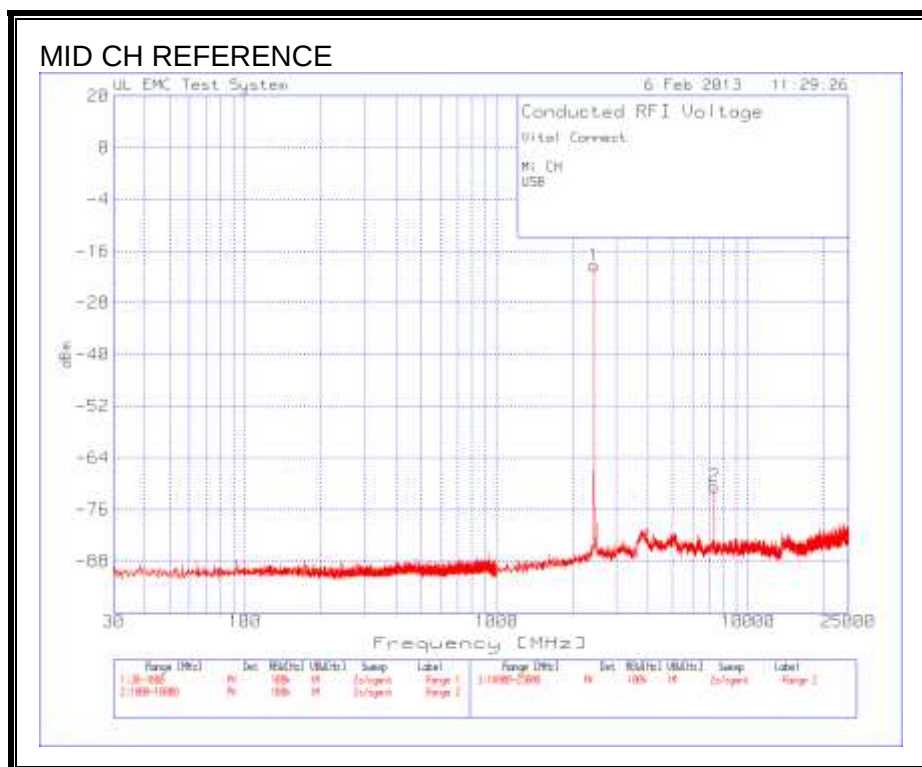


Vital Connect						
Lo CH						
USB						
Range 2 2388 - 2500MHz						
Marker No.	Test Frequency	Meter Reading	Detector	dBuV to dBm (dB)	Cable&P ad_1-18GHz.TX T (dB)	dBm
1	2401.776	99.94	PK	-107	-10.5	-17.56
2	2391.92	34.29	PK	-107	-10.5	-83.21
PK - Peak detector						



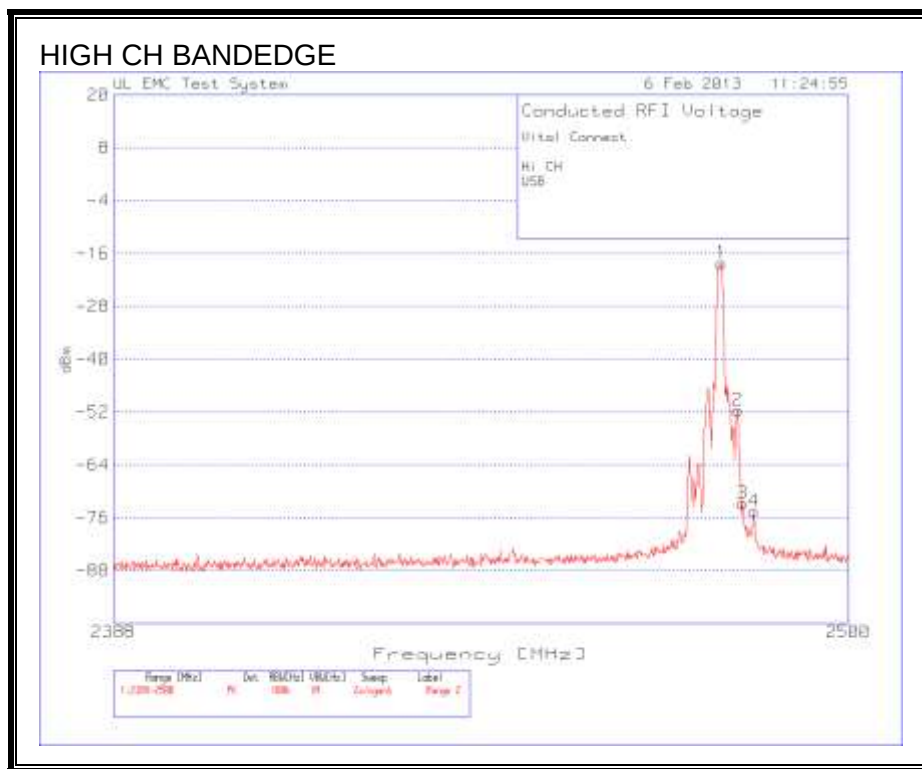
Vital Connect						
Lo CH						
USB						
Range 2 1000 - 18000MHz						
Marker No.	Test Frequency	Meter Reading	Detector	dBuV to dBm (dB)	Cable&Pad_1-18GHz.TX T (dB)	dBm
1	2401.449	97.44	PK	-107	-10.5	-20.06
2	7204.597	48.79	PK	-107	-10.9	-69.11
PK - Peak detector						

SPURIOUS EMISSIONS, MID CHANNEL

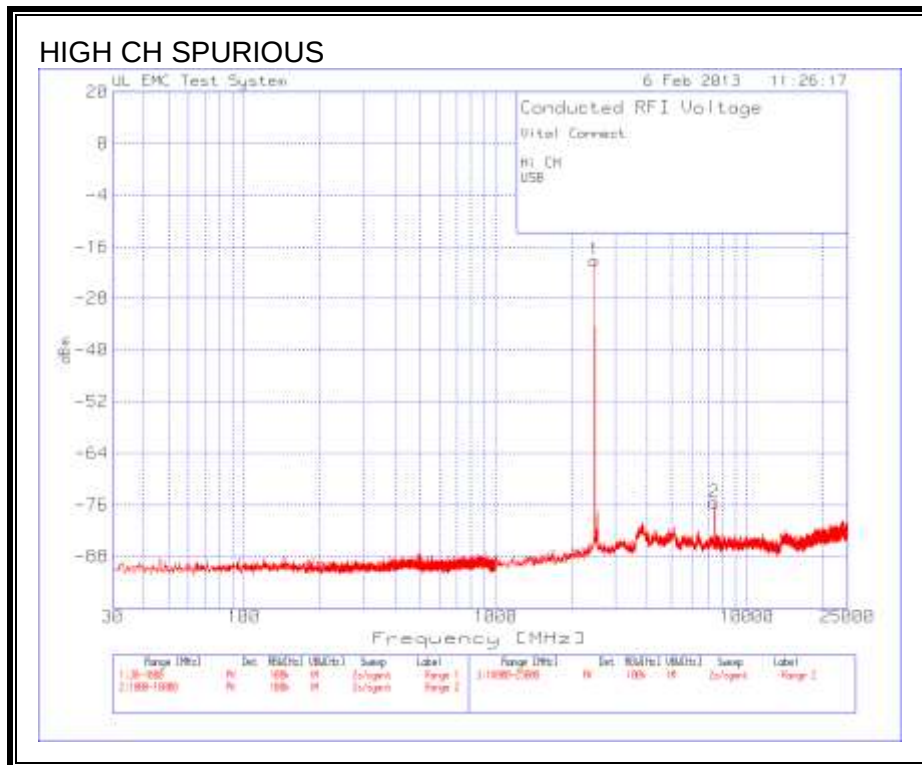


Vital Connect						
Mi CH						
USB						
Range 2 1000 - 18000MHz						
Marker No.	Test Frequency	Meter Reading	Detector	dBuV to dBm (dB)	Cable&P ad_1-18GHz.TX T (dB)	dBm
1	2439.67	98.09	PK	-107	-10.5	-19.41
2	7319.261	47.34	PK	-107	-11	-70.66
PK - Peak detector						

SPURIOUS EMISSIONS, HIGH CHANNEL



Vital Connect						
Hi CH						
USB						
Range 2 2388 - 2500MHz						
Marker No.	Test Frequency	Meter Reading	Detector	dBuV to dBm (dB)	Cable&P ad_1-18GHz.TX T (dB)	dBm
1	2480.288	99.35	PK	-107	-10.5	-18.15
2	2482.864	65.88	PK	-107	-10.5	-51.62
3	2483.536	44.78	PK	-107	-10.5	-72.72
4	2485.328	43.09	PK	-107	-10.6	-74.51
PK - Peak detector						



Vital Connect						
Hi CH						
USB						
Range 2 1000 - 18000MHz						
Marker	Test	Meter			Cable&P	
No.	Frequency	Reading	Detector	dBuV to	ad_1-	
				dBm (dB)	18GHz.TX	
1	2477.892	98.28	PK	-107	T (dB)	dBm
2	7438.171	42.5	PK	-107		
PK - Peak detector						

8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 1 Hz for average measurements.

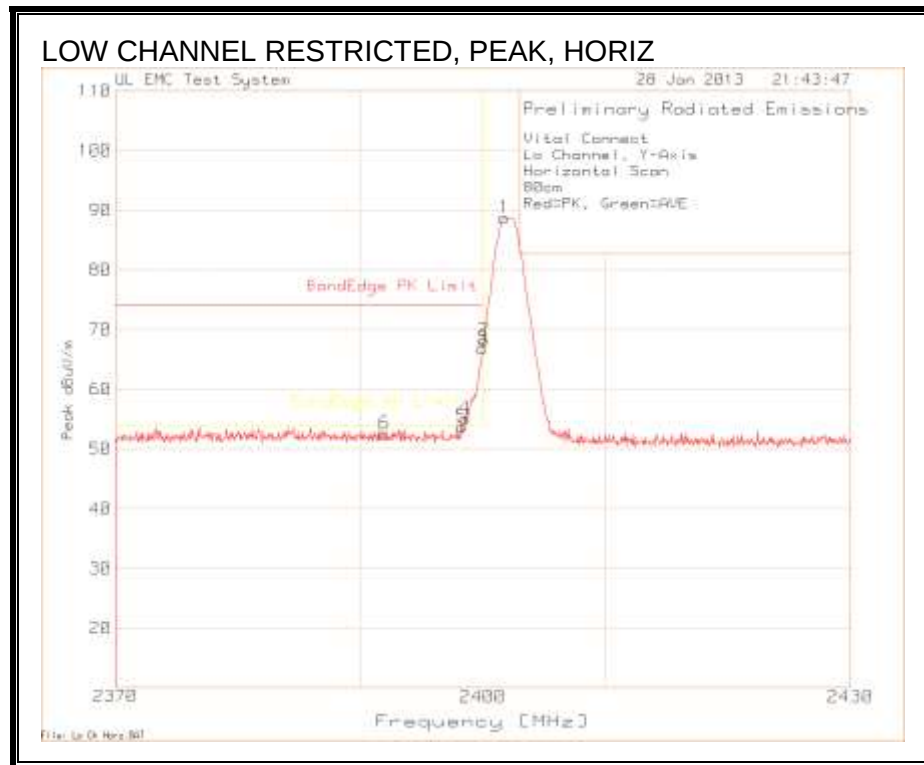
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

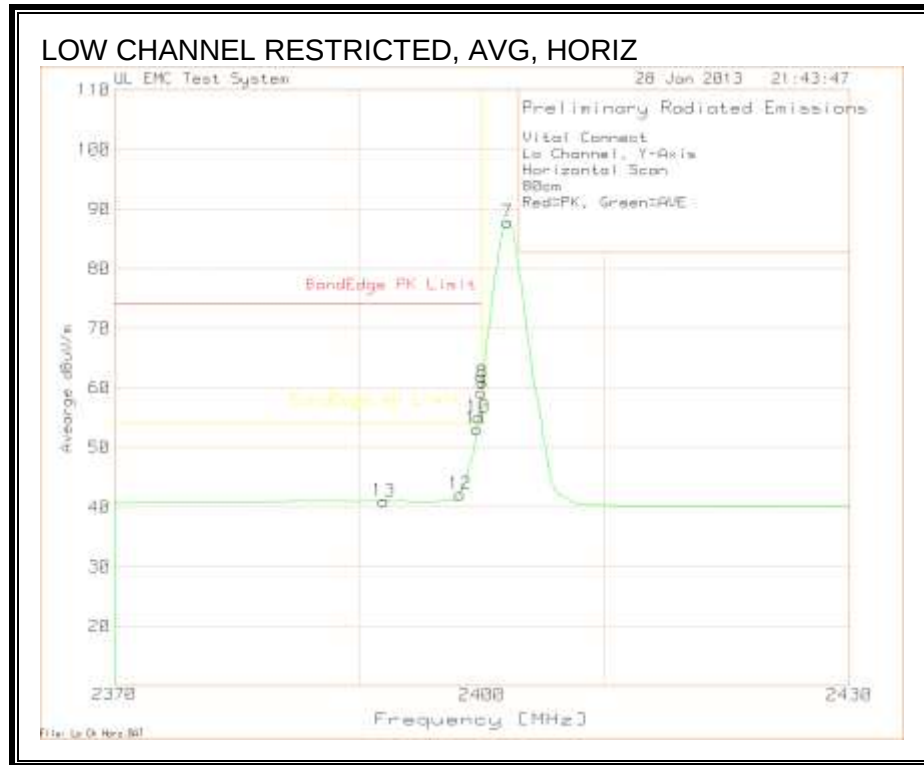
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

8.2. TX ABOVE 1 GHz FOR BLUETOOTH LOW ENERGY MODE IN THE 2.4 GHz BAND

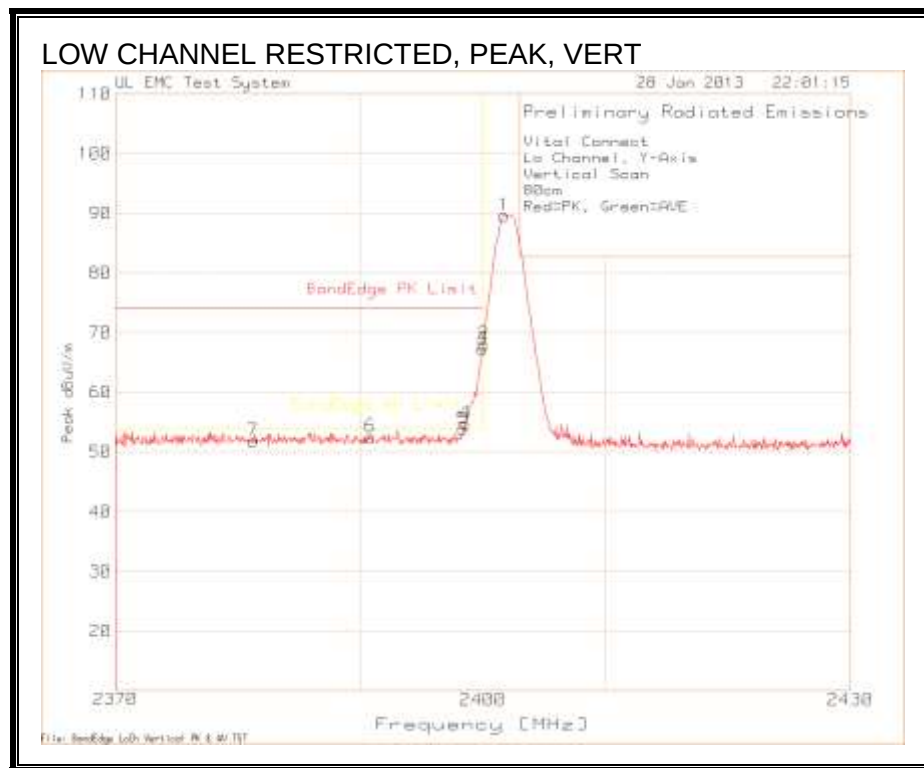
RESTRICTED BANDEGE (LOW CHANNEL, HORIZONTAL)

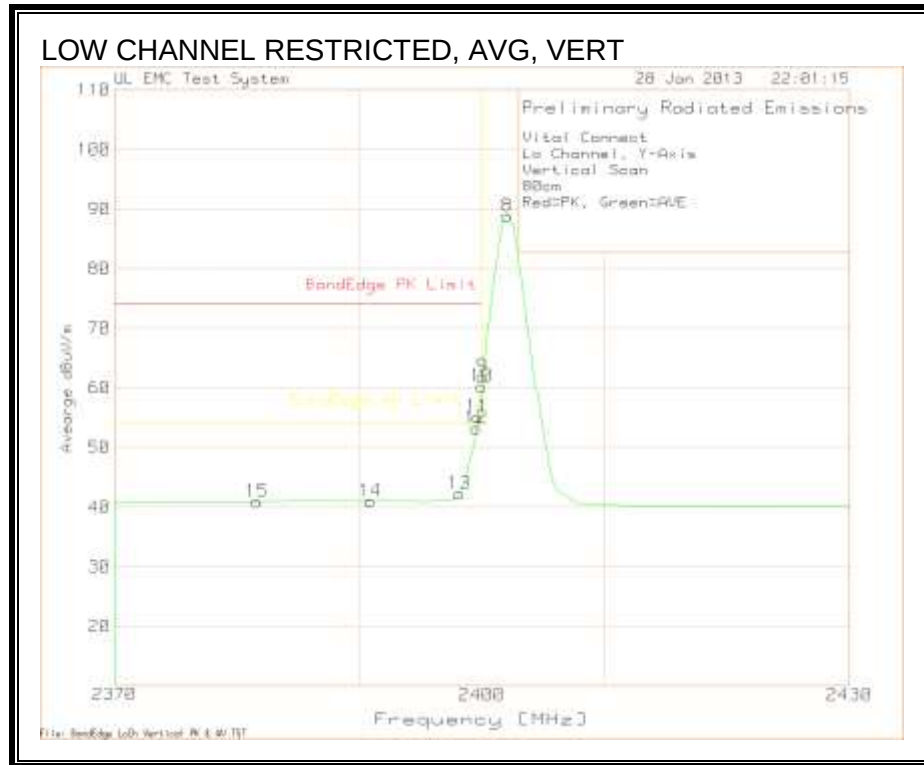




Vital Connect											
Lo Channel, Y-Axis											
Horizontal Scan											
80cm											
Red=PK, Green=AVE											
Peak 2370 - 2430MHz											
Marker No.	Test Frequency	Meter Reading	Detector	EMCO316 1-02 S/N 99061052		BOMS Factor (dB)	dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
				3m UL (dB)							
				21.8	4.27						
				21.8	4.31						
				21.8	4.31						
				21.8	4.35						
				21.8	4.35						
				21.8	4.51						
1	2401.772	62.68	PK	21.8	4.27	88.75	-	-	100	Horz	
2	2400.09	42.11	PK	21.8	4.31	68.22	-	-	100	Horz	
3	2399.97	40.83	PK	21.8	4.31	66.94	74	-7.06	100	Horz	
4	2398.529	29.03	PK	21.8	4.35	55.18	74	-18.82	100	Horz	
5	2398.288	27.61	PK	21.8	4.35	53.76	74	-20.24	100	Horz	
6	2391.982	26.27	PK	21.8	4.51	52.58	74	-21.42	100	Horz	
Avearge 2370 - 2430MHz											
Marker No.	Test Frequency	Meter Reading	Detector	EMCO316 1-02 S/N 99061052		BOMS Factor (dB)	dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
				3m UL (dB)							
				21.8	4.26						
				21.8	4.31						
				21.8	4.31						
				21.8	4.32						
				21.8	4.32						
				21.8	4.36						
21.8	4.51										
7	2402.102	61.82	AV	21.8	4.26	87.88	-	-	100	Horz	
8	2400.03	34.84	AV	21.8	4.31	60.95	-	-	100	Horz	
9	2399.97	33.08	AV	21.8	4.31	59.19	-	-	100	Horz	
10	2399.73	28.94	AV	21.8	4.32	55.06	-	-	100	Horz	
11	2399.61	26.97	AV	21.8	4.32	53.09	-	-	100	Horz	
12	2398.228	15.93	AV	21.8	4.36	42.09	-	-	100	Horz	
13	2391.982	14.71	AV	21.8	4.51	41.02	54	-12.98	100	Horz	

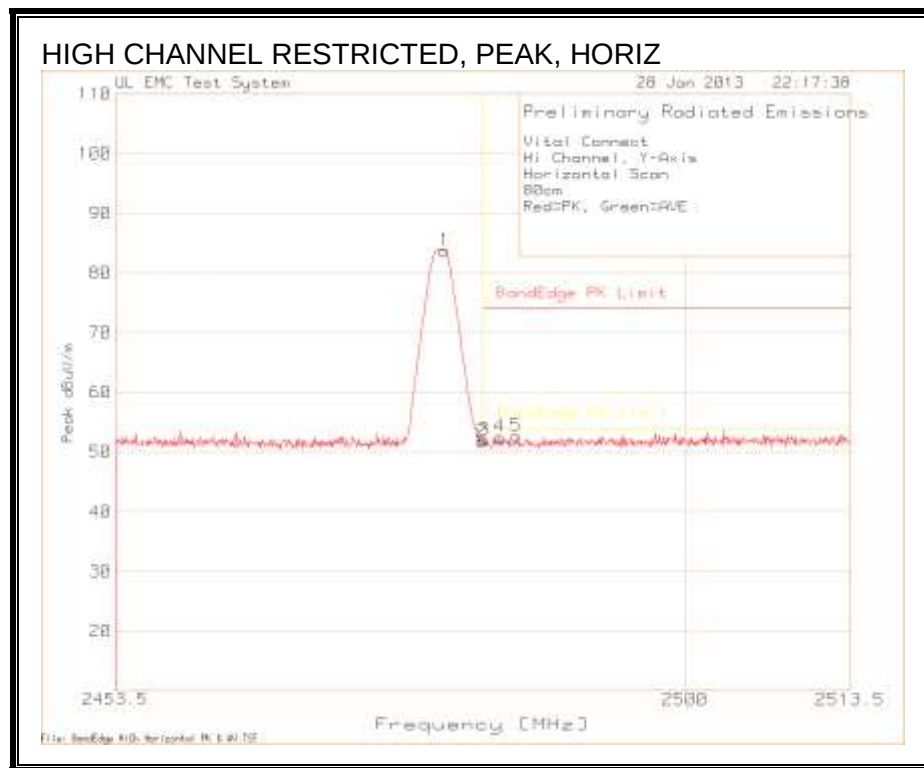
RESTRICTED BANEDGE (LOW CHANNEL, VERTICAL)

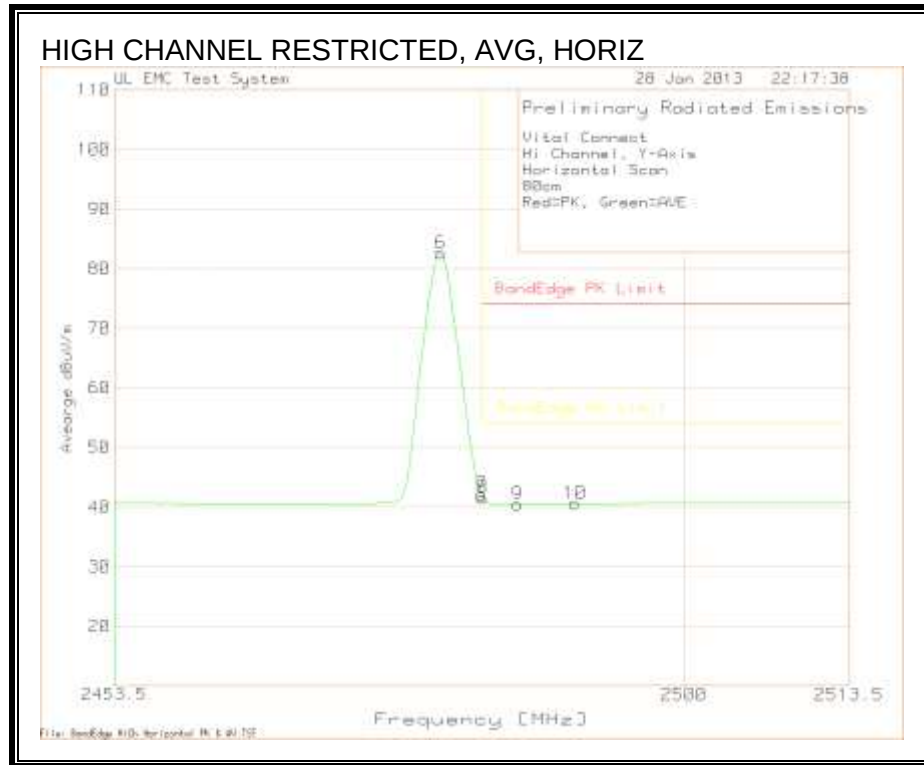




Vital Connect											
Lo Channel, Y-Axis											
Vertical Scan											
80cm											
Red=PK, Green=AVE											
Peak 2370 - 2430MHz											
					EMCO316						
					1-02 S/N						
					99061052	BOMS		BandEdg			
Marker	Test	Meter			3m UL	Factor		e PK		Height	
No.	Frequency	Reading	Detector		(dB)	(dB)	dBuV/m	Limit	Margin	[cm]	Polarity
1	2401.772	63.56	PK		21.8	4.27	89.63	999	-909.37	100	Vert
2	2400.03	41.89	PK		21.8	4.31	68	999	-931	100	Vert
3	2399.97	41.17	PK		21.8	4.31	67.28	74	-6.72	100	Vert
4	2398.529	28.62	PK		21.8	4.35	54.77	74	-19.23	100	Vert
5	2398.408	27.69	PK		21.8	4.35	53.84	74	-20.16	100	Vert
6	2390.841	26.25	PK		21.8	4.5	52.55	74	-21.45	100	Vert
7	2381.231	25.71	PK		21.8	4.33	51.84	74	-22.16	150	Vert
Avearge 2370 - 2430MHz											
					EMCO316						
					1-02 S/N						
					99061052	BOMS		BandEdg			
Marker	Test	Meter			3m UL	Factor		e AV		Height	
No.	Frequency	Reading	Detector		(dB)	(dB)	dBuV/m	Limit	Margin	[cm]	Polarity
8	2402.102	62.81	AV		21.8	4.26	88.87	-	-	100	Vert
9	2400.03	35.81	AV		21.8	4.31	61.92	-	-	100	Vert
10	2399.97	34.15	AV		21.8	4.31	60.26	-	-	100	Vert
11	2399.67	29.07	AV		21.8	4.32	55.19	-	-	100	Vert
12	2399.55	27.07	AV		21.8	4.32	53.19	-	-	100	Vert
13	2398.168	16.05	AV		21.8	4.36	42.21	-	-	100	Vert
14	2390.901	14.71	AV		21.8	4.5	41.01	-	-	100	Vert
15	2381.652	14.8	AV		21.8	4.34	40.94	54	-13.06	100	Vert

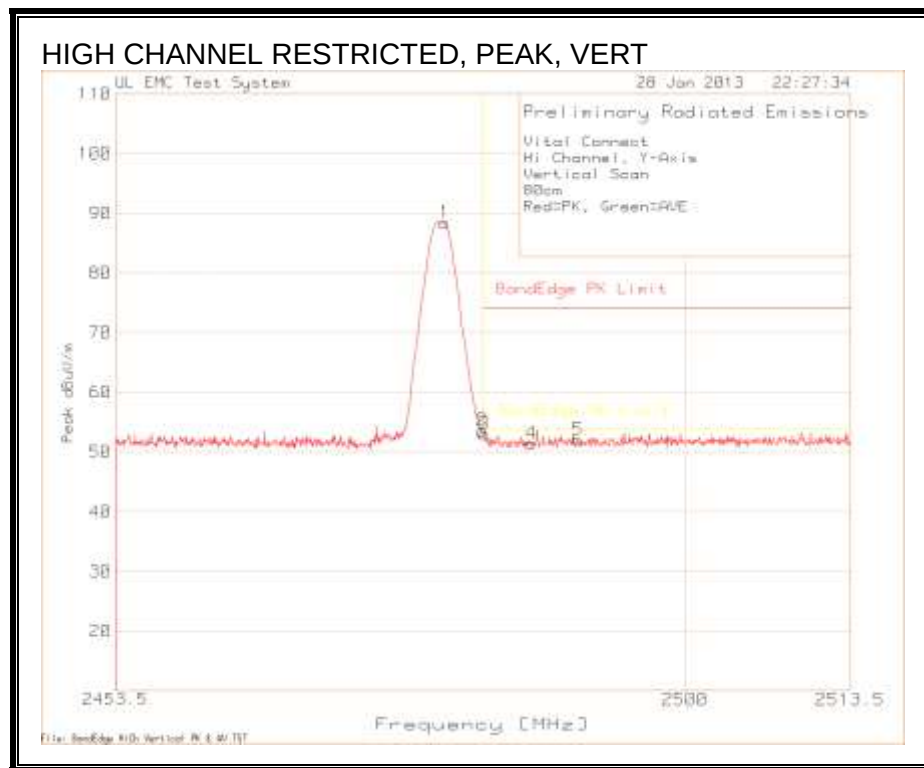
RESTRICTED BANEDGE (HIGH CHANNEL, HORIZONTAL)

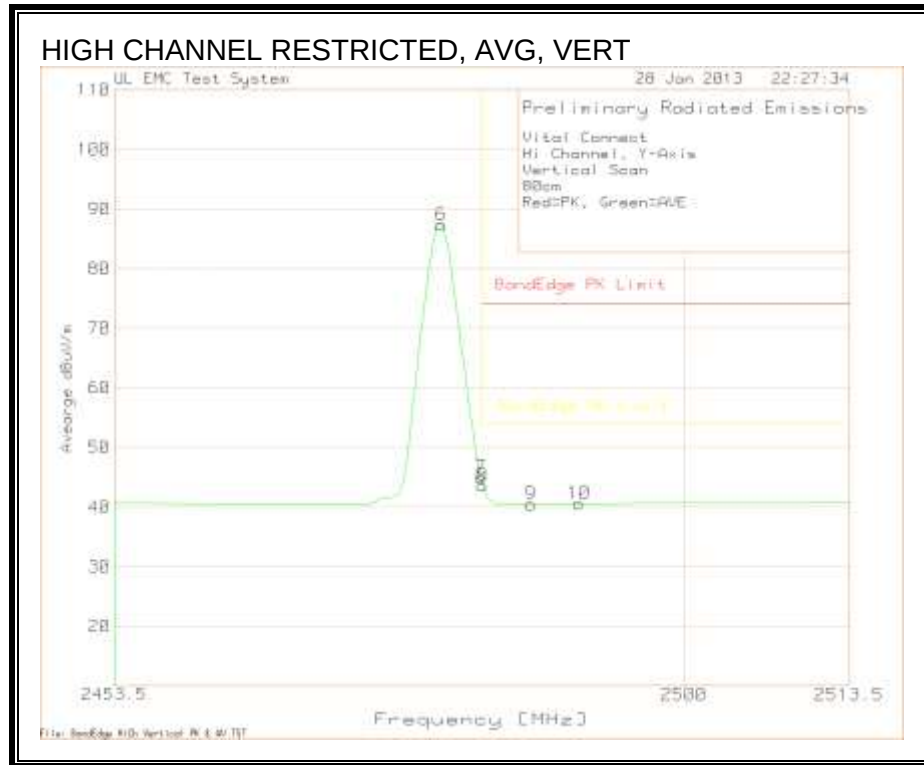




Vital Connect										
Hi Channel, Y-Axis										
Horizontal Scan										
80cm										
Red=PK, Green=AVE										
Peak 2453.5 - 2513.5MHz										
Marker No.	Test Frequency	Meter Reading	Detector	EMCO316	BOMS Factor (dB)	dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
				1-02 S/N 99061052 3m UL (dB)						
1	2480.407	57.99	PK	22	3.77	83.76	-	-	99	Horz
2	2483.41	25.86	PK	22.1	3.77	51.73	-	-	99	Horz
3	2483.59	26.27	PK	22.1	3.77	52.14	74	-21.86	150	Horz
4	2484.851	26.64	PK	22.1	3.77	52.51	74	-21.49	150	Horz
5	2486.233	26.83	PK	22.1	3.77	52.7	74	-21.3	150	Horz
Avearge 2453.5 - 2513.5MHz										
Marker No.	Test Frequency	Meter Reading	Detector	EMCO316	BOMS Factor (dB)	dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
				1-02 S/N 99061052 3m UL (dB)						
6	2480.107	56.83	AV	22	3.77	82.6	-	-	100	Horz
7	2483.47	16.22	AV	22.1	3.77	42.09	-	-	100	Horz
8	2483.53	15.75	AV	22.1	3.77	41.62	54	-12.38	100	Horz
9	2486.413	14.58	AV	22.1	3.77	40.45	54	-13.55	150	Horz
10	2491.068	14.6	AV	22.1	3.82	40.52	54	-13.48	150	Horz

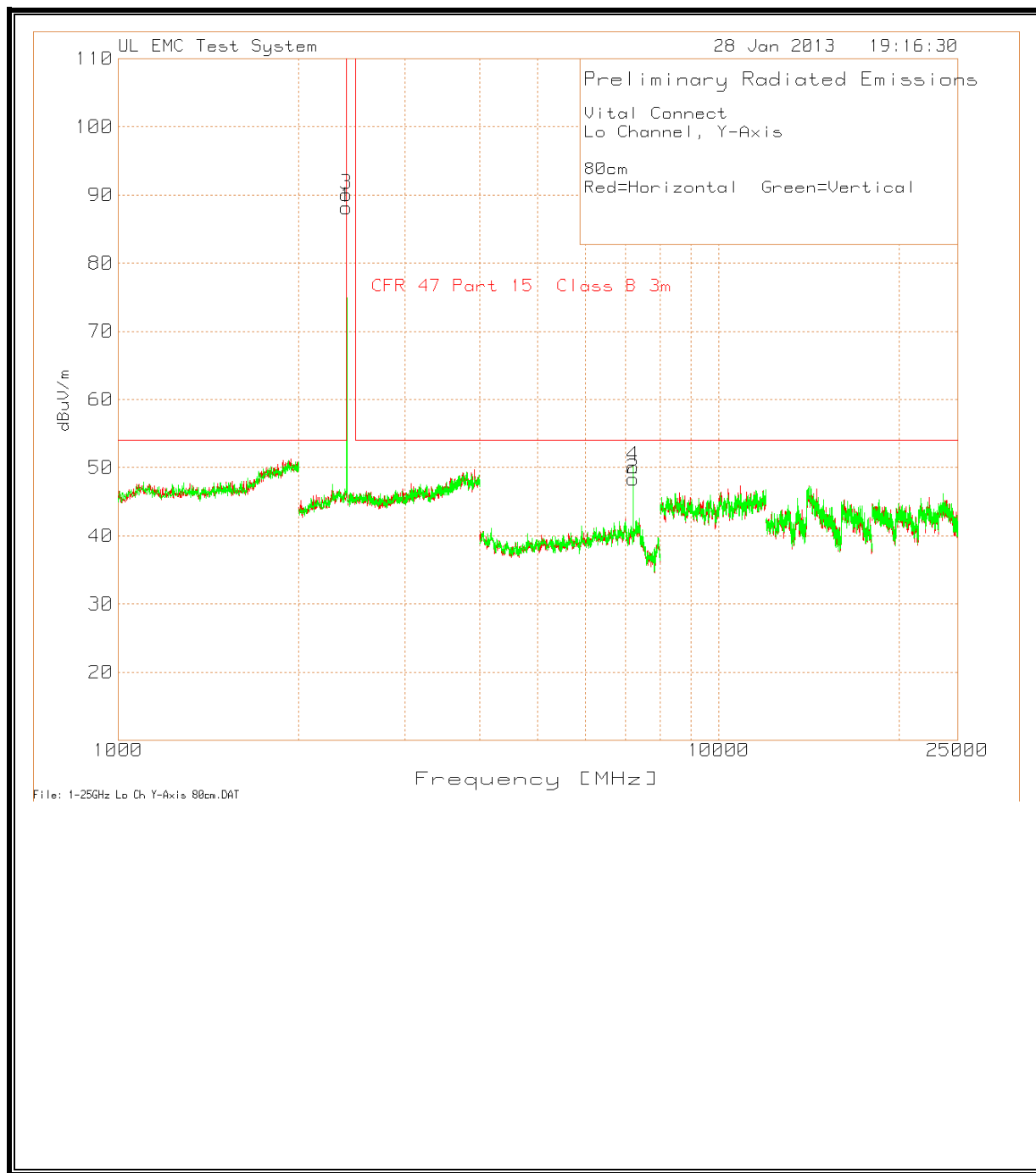
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



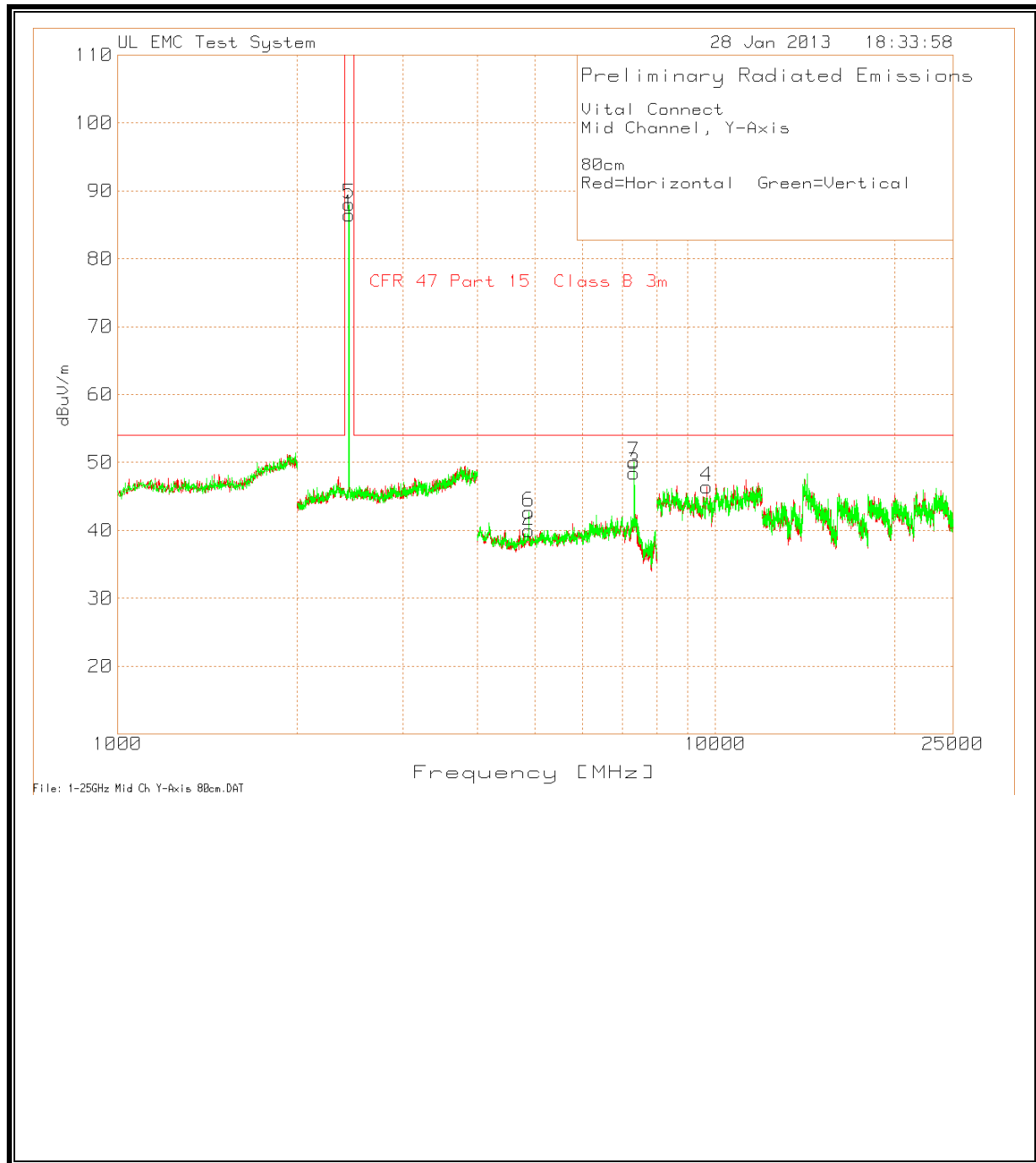


Vital Connect										
Hi Channel, Y-Axis										
Vertical Scan										
80cm										
Red=PK, Green=AVE										
Peak 2453.5 - 2513.5MHz										
Marker No.	Test Frequency	Meter Reading	Detector	EMCO316	BOMS Factor (dB)	dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
				1-02 S/N 99061052 3m UL (dB)						
1	2480.407	62.59	PK	22	3.77	88.36	-	-	100	Vert
2	2483.41	27.64	PK	22.1	3.77	53.51	-	-	150	Vert
3	2483.59	27.1	PK	22.1	3.77	52.97	74	-21.03	150	Vert
4	2487.434	25.51	PK	22.1	3.77	51.38	74	-22.62	100	Vert
5	2491.278	26.09	PK	22.1	3.83	52.02	74	-21.98	100	Vert
Avearge 2453.5 - 2513.5MHz										
Marker No.	Test Frequency	Meter Reading	Detector	EMCO316	BOMS Factor (dB)	dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
				1-02 S/N 99061052 3m UL (dB)						
6	2480.167	61.66	AV	22	3.77	87.43	-	-	100	Vert
7	2483.41	19.13	AV	22.1	3.77	45	-	-	100	Vert
8	2483.53	17.78	AV	22.1	3.77	43.65	54	-10.35	100	Vert
9	2487.494	14.59	AV	22.1	3.77	40.46	54	-13.54	100	Vert
10	2491.398	14.62	AV	22.1	3.83	40.55	54	-13.45	100	Vert

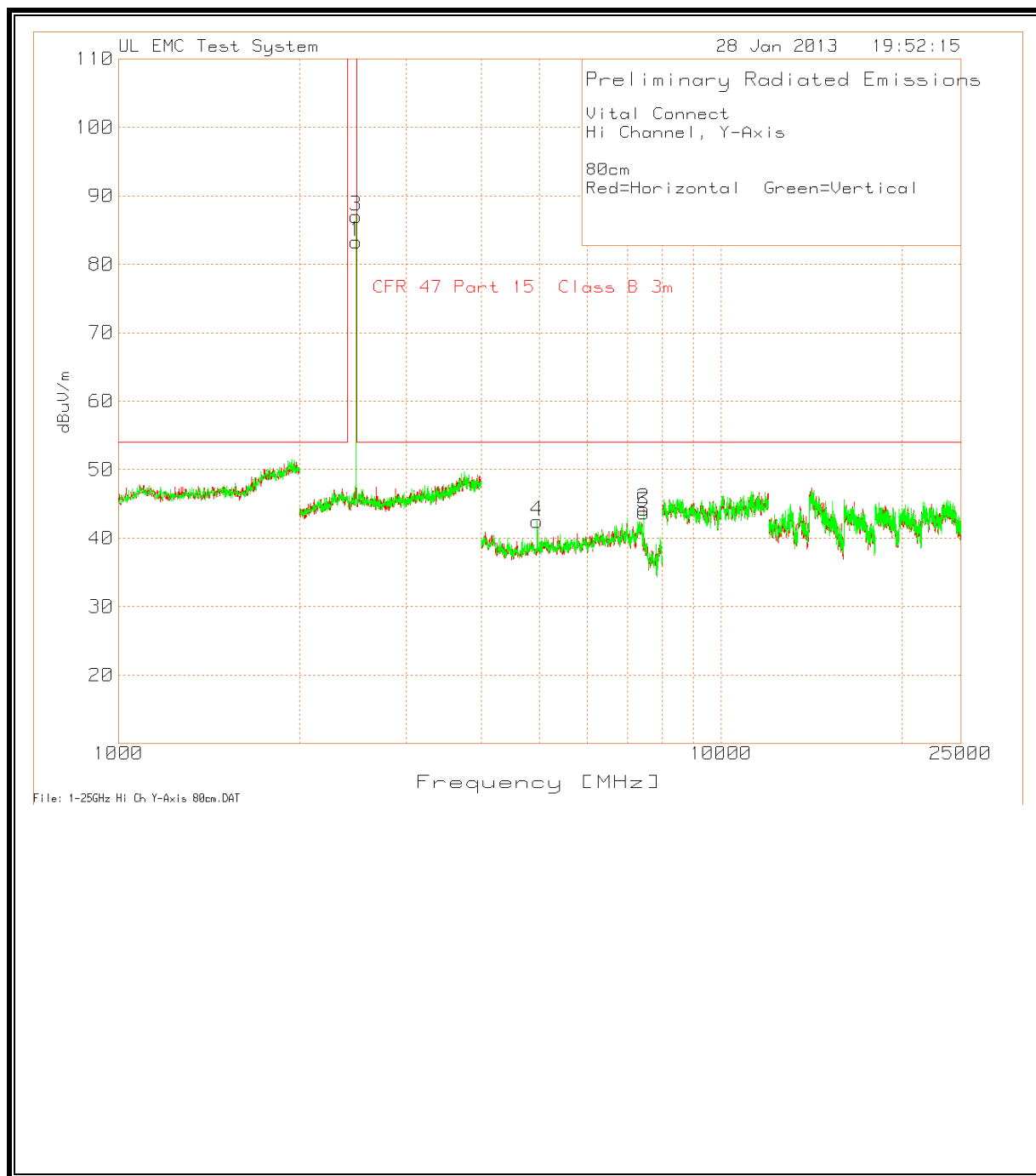
HARMONICS AND SPURIOUS EMISSIONS



Vital Connect										
Lo Channel, Y-Axis										
80cm										
Red=Horizontal Green=Vertical										
Marker No.	Test	Meter	Detector	Antenna	BOMS	dBuV/m	CFR 47	Margin	Height	Polarity
	Frequency	Reading		Factor	Factor (dB)		Part 15 Class B 3m			
1	2402.402	62.08	PK	21.8	4.25	88.13	-	-	100	Horz
2	7207.207	65.95	PK	29.8	-47.45	48.3	54	-5.7	100	Horz
3	2400.4	64	PK	21.8	4.3	90.1	-	-	100	Vert
4	7207.207	67.81	PK	29.8	-47.45	50.16	54	-3.84	100	Vert
Test	Meter	Detector	Antenna	BOMS	dBuV/m	CFR 47	Margin	Azimuth	Height	Polarity
	Frequency		Factor	Factor [dB]		Part 15 Class B 3m				
7205.4499	69.4	PK	29.7	-47.37	51.73	54	-2.27	75	100	Horz
7205.9669	62.97	LnAv	29.7	-47.39	45.28	54	-8.72	75	100	Horz
7206.7665	70.38	PK	29.8	-47.43	52.75	54	-1.25	22	100	Vert
7206.0752	64.48	LnAv	29.7	-47.4	46.78	54	-7.22	22	100	Vert
PK - Peak detector										
LnAv - Linear Average detector										



Vital Connect										
Mid Channel, Y-Axis										
80cm										
Red=Horizontal Green=Vertical										
Marker No.	Test Frequency	Meter Reading	Detector	Antenna Factor	BOMS Factor (dB)	dBuV/m	CFR 47 Part 15 Class B	Margin	Height [cm]	Polarity
							3m			
1	2440.44	60.27	PK	21.9	4.25	86.42	999	-912.58	100	Horz
2	4880.881	63.53	PK	27.7	-51.26	39.97	54	-14.03	100	Horz
3	7319.319	64.1	PK	30.6	-46.25	48.45	54	-5.55	100	Horz
4	9677.678	58.53	PK	36.4	-48.52	46.41	54	-7.59	150	Horz
5	2440.44	61.86	PK	21.9	4.25	88.01	999	-910.99	100	Vert
6	4876.877	66.21	PK	27.7	-51.16	42.75	54	-11.25	100	Vert
7	7323.323	65.63	PK	30.6	-46.23	50	54	-4	100	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor	BOMS Factor [dB]	dBuV/m	CFR 47 Part 15 Class B	Margin	Azimuth [Degs]	Height [cm]	Polarity
7319.4078	66.37	PK	30.6	-46.25	50.72	54	-3.28	80	100	Horz
7319.8587	58.57	LnAv	30.6	-46.24	42.93	54	-11.07	80	100	Horz
7319.4439	66.67	PK	30.6	-46.25	51.02	54	-2.98	126	102	Vert
7320.0271	59.5	LnAv	30.6	-46.24	43.86	54	-10.14	126	102	Vert
PK - Peak detector										
LnAv - Linear Average detector										

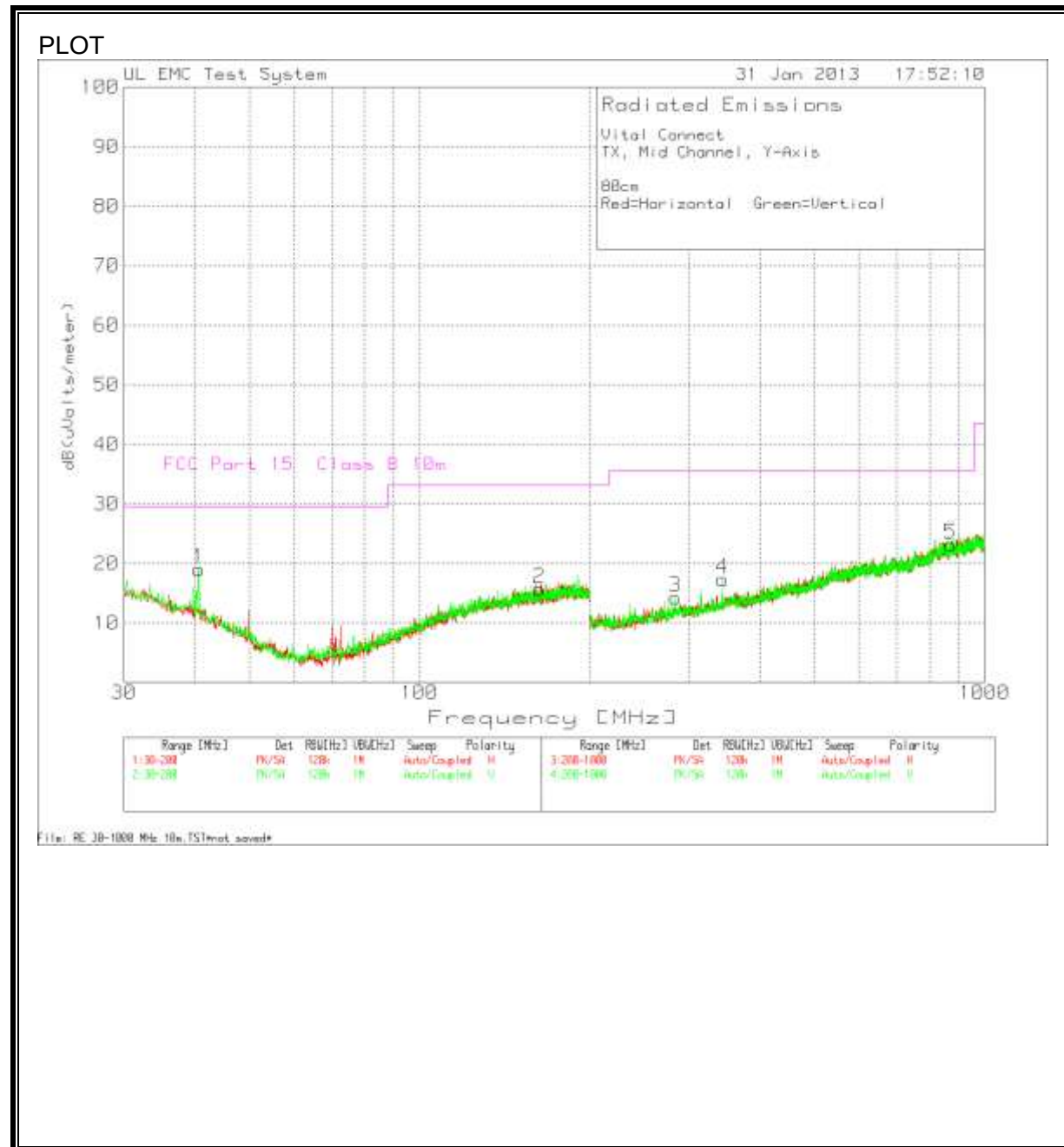


Peak Emissions scan is at least 6dB below the limit

8.3. WORST-CASE BELOW 1 GHz

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

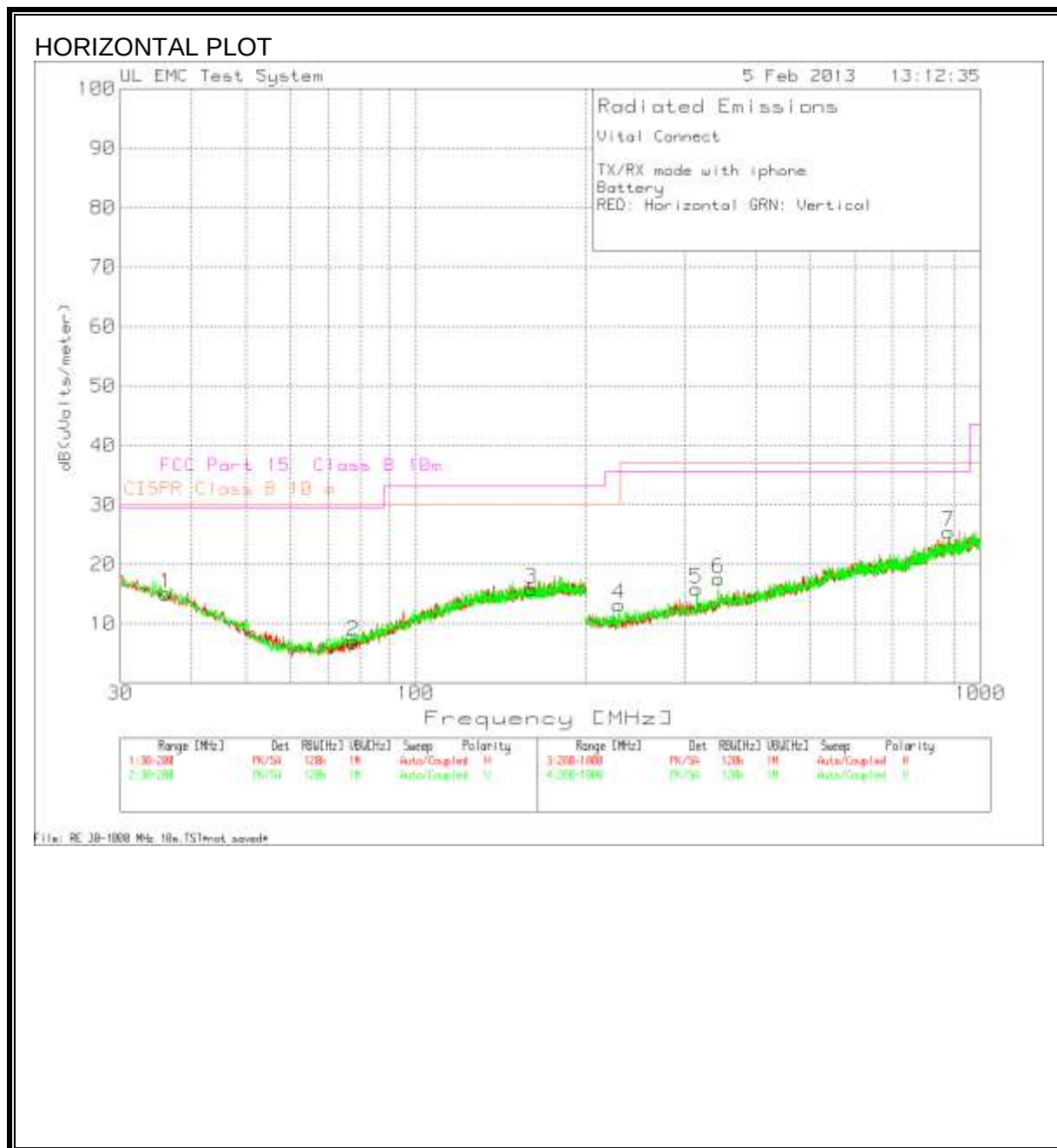
Config#2



Peak Emissions scan is at least 6dB below the limit.

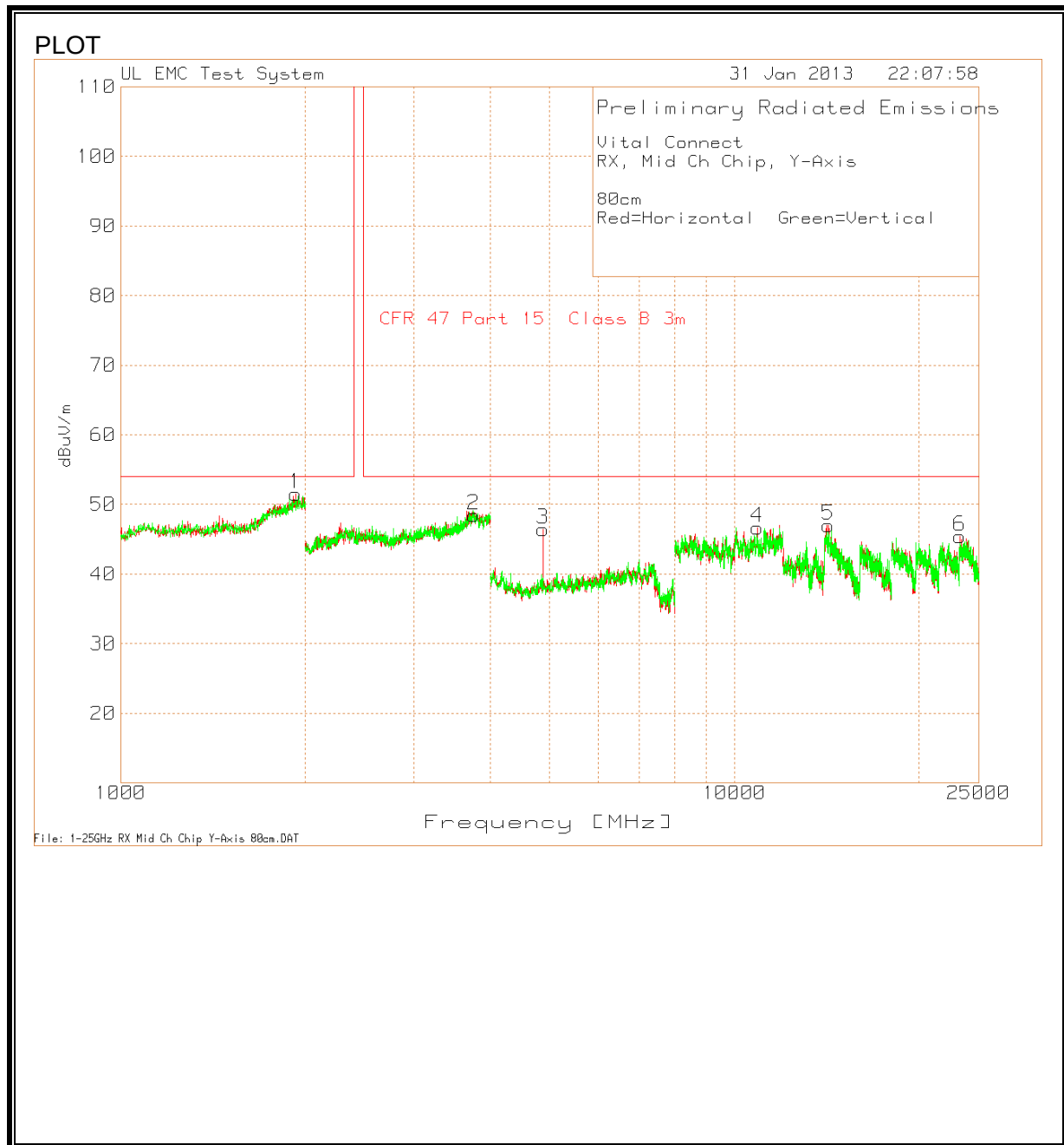
8.4. DIGITAL DEVICE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (DIGITAL DEVICE, HORIZONTAL)



Peak Emissions scan is at least 6dB below the limit.

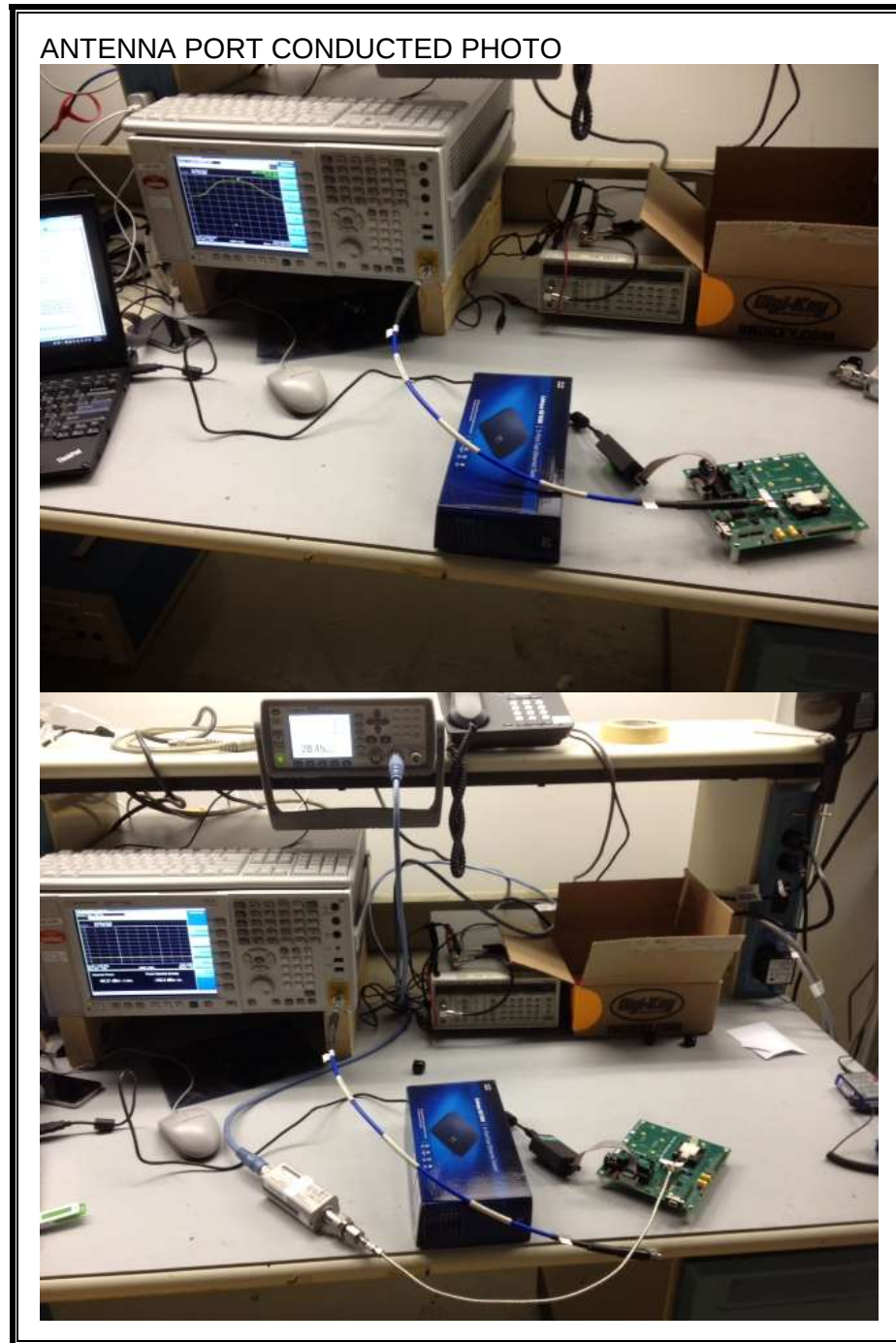
SPURIOUS EMISSIONS 1GHz TO 25GHz (DIGITAL DEVICE)



Peak Emissions scan is at least 6dB below the limit.

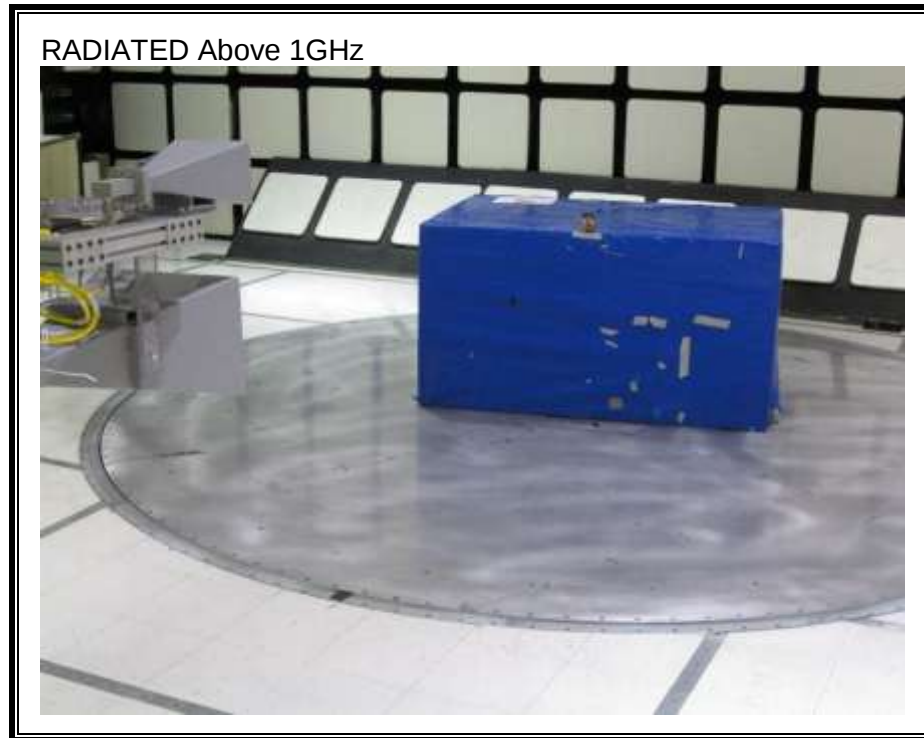
9. SETUP PHOTOS

ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

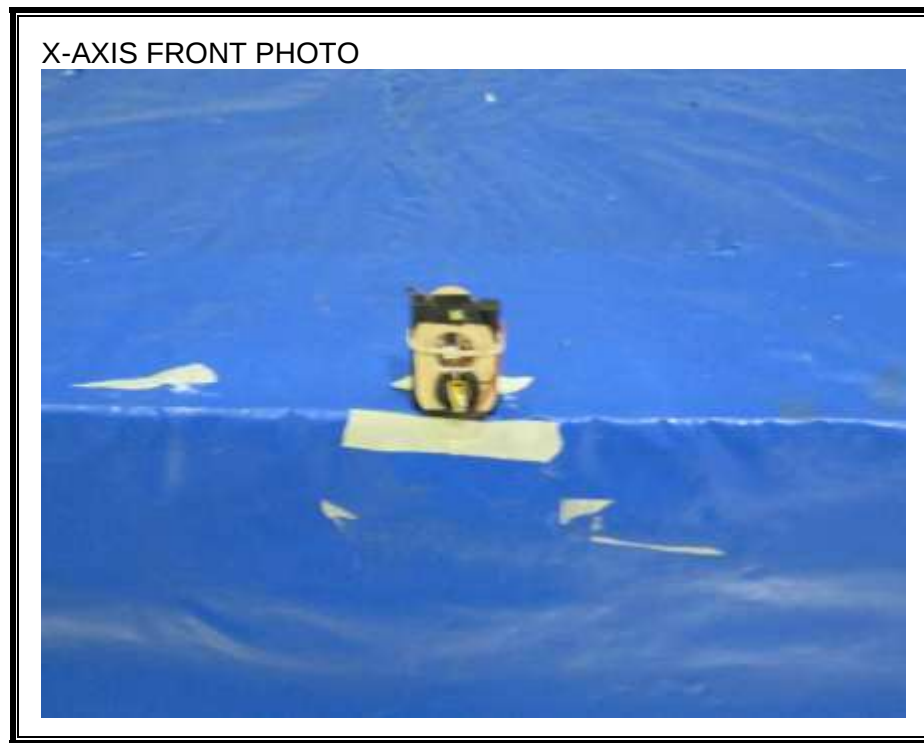


RADIATED RF MEASUREMENT SETUP





RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION



Y-AXIS FRONT PHOTO



Z-AXIS FRONT PHOTO



END OF REPORT