



**FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8**

**BLUETOOTH LOW ENERGY
CERTIFICATION TEST REPORT**

FOR

USB Beacon

MODEL NUMBER: 900-0004-000

**FCC ID: R6CGUS5
IC: 10756A-GUS5**

REPORT NUMBER: 10648794A, Revision A

**ISSUE DATE: April 16, 2015
Revision DATE: April 22, 2015**

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	02/17/15	Initial Issue	M.Ferrer
A	04/16/15	Revision to Model Number	G.Rincand
B	04/22/15	Added Duty Cycle comment Sect 7.1	M.Ferrer

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION	6
4.2. SAMPLE CALCULATION	6
4.3. MEASUREMENT UNCERTAINTY	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM OUTPUT POWER	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4. WORST-CASE CONFIGURATION AND MODE	9
5.5. DESCRIPTION OF TEST SETUP	10
6. TEST AND MEASUREMENT EQUIPMENT	12
7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS	13
7.1. ON TIME AND DUTY CYCLE RESULTS	13
7.2. DUTY CYCLE PLOTS	14
8. ANTENNA PORT TEST RESULTS	15
8.1. MEASUREMENT METHODS	15
8.2. 6 dB BANDWIDTH	16
8.3. 99% BANDWIDTH	20
8.4. OUTPUT POWER	24
8.5. AVERAGE POWER	28
8.6. POWER SPECTRAL DENSITY	29
8.7. CONDUCTED SPURIOUS EMISSIONS	33
9. RADIATED TEST RESULTS	40
9.1. LIMITS AND PROCEDURE	40
9.2. TRANSMITTER ABOVE 1 GHz	41
9.3. TX ABOVE 1 GHz FOR BLUETOOTH LOW ENERGY MODE IN THE 2.4 GHz BAND 41	
9.4. WORST-CASE BELOW 1 GHz	52
9.5. DIGITAL DEVICE BELOW 1 GHz	53

10. AC POWER LINE CONDUCTED EMISSIONS54

11. SETUP PHOTOS58

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Gimbal Inc
12526 High Bluff Dr.
San Diego, CA 92130

EUT DESCRIPTION: USB Beacon

MODEL: 900-0004-000

SERIAL NUMBER: Prototype

DATE TESTED: January 22, 2015 – February 11, 2015

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 LLC By:



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UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60062 USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/Standards/scopes/1004140.htm>

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an BTLE device.

The radio module is manufactured by Texas Instruments.

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	-1.305	0.74

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PCB trace antenna, with a maximum gain of -3.6 dBi.

5.4. 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 Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
EUT	Gimbal	900-0004-000 A	-	R6CGUS5
5VDC Power supply	I.T.E Power Supply	FW7712	-	-
USB Extension Cable	Generic	-	-	-
Laptop	Lenovo	T410	-	-
Power Supply	Lenovo	-	-	-
Headphones	Sony	-	-	-
Switch	Netgear	-	-	-

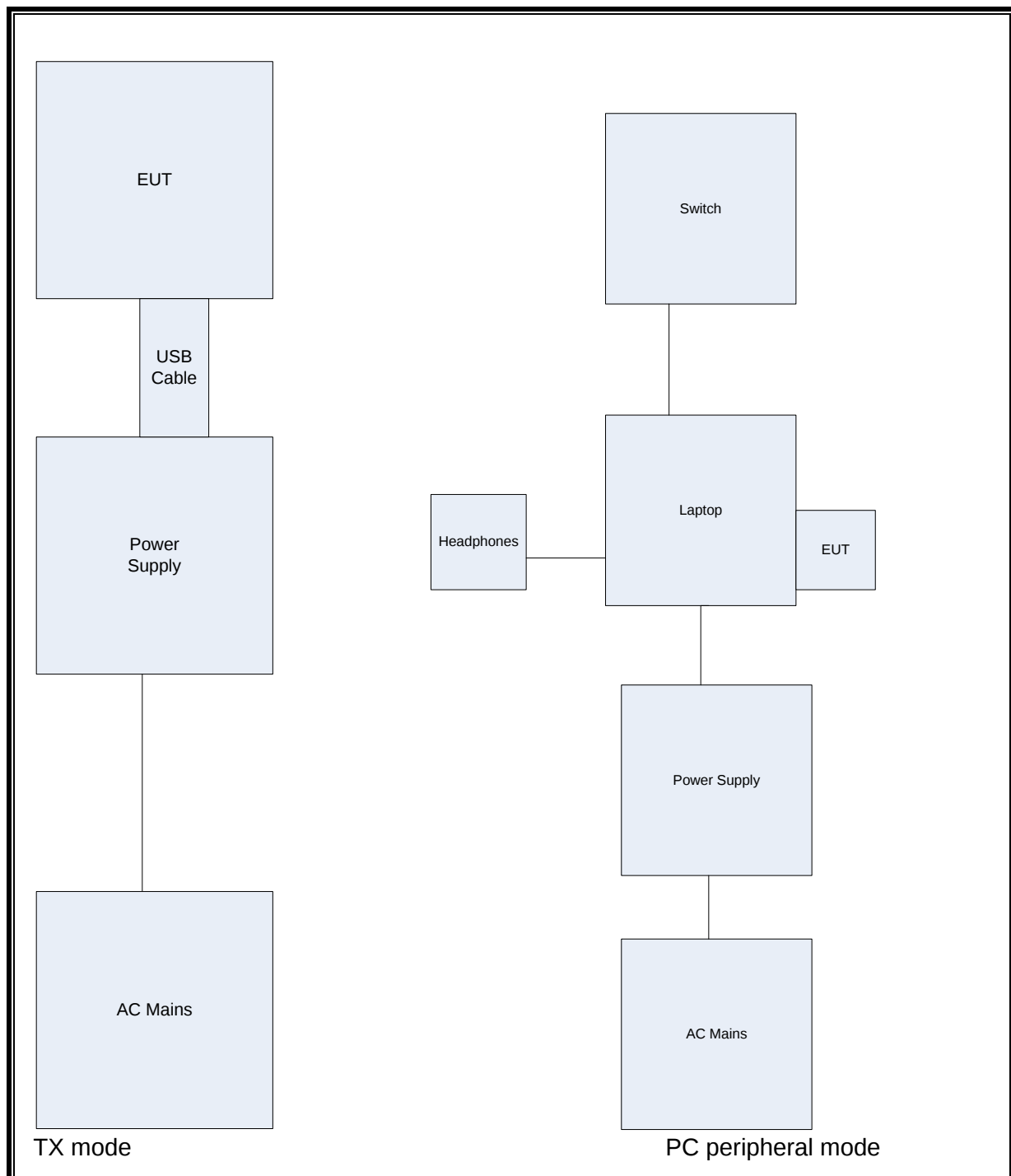
I/O CABLES

EUT contains no IO cables

TEST SETUP

The EUT is powered by a USB power supply or DC power supply. Each sample was programmed to transmit 100% duty cycle during most tests, with the exception of samples programmed with normal duty cycle time for the purpose of measuring dwell time. Three samples were each programmed to transmit a single channel. One sample was programmed was used to demonstrate switching between channels.

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	T No.	Cal Date	Cal Due	Test
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	20141830	20151231	RE
Bicon Antenna	Chase	VBA6106A	EMC4078	20140401	20150401	RE
Log-P Antenna	Chase	UPA6109	EMC4313	24141119	20151130	RE
Spectrum Analyzer	Rohde & Schwarz	ESU	EMC4323	20141216	20151231	RE
Antenna Array	UL	BOMS	EMC4276	20141201	20151231	RE
EMI Test Receiver	Agilent	N9030A	EMC4360	20141219	20151219	OBW, Dwell, Power
Power Meter	Agilent	N1912A	EMC4362	20141218	20151218	AP
Power Sensor	Agilent	85481A	EMC4363	20141219	20151219	AP

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

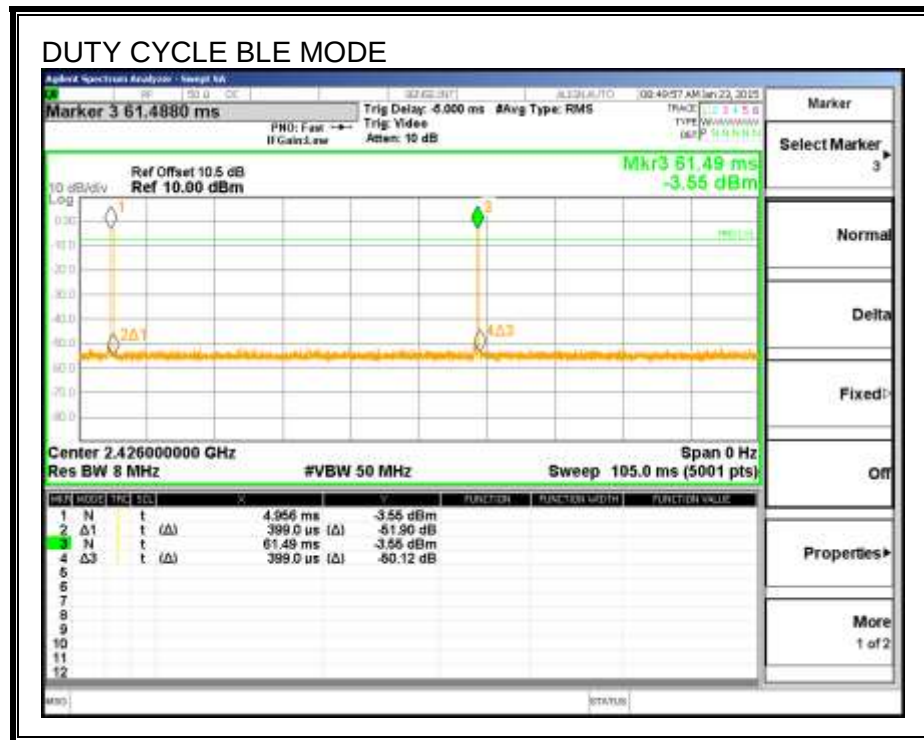
KDB 558074 Zero-Span Spectrum Analyzer Method.

7.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
BLE	0.798	100.000	0.008	0.80%	20.98

While KDB 558074 requires the measurement of spurious emissions to be over the on-time of the transmission we have confirmed via KDB inquiry that the peak value may be corrected by the worst-case transmission duty factor in 100ms period when the duty factor is source-based and limited via the device firmware.

7.2. DUTY CYCLE PLOTS



*Note: Duty Cycle was not constant. The worst case observation was recorded as 2 ON Time pulses within a 100ms period

8. ANTENNA PORT TEST RESULTS

8.1. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r02, Section 8.1.

Output Power: KDB 558074 D01 v03r02, Section 9.1.1.

Power Spectral Density: KDB 558074 D01 v03r02, Section 10.2.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r02, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r02, Section 12.1.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r02, Section 12.2.

Band-edge: KDB 558074 D01 v03r02, Section 13.3.2.

8.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

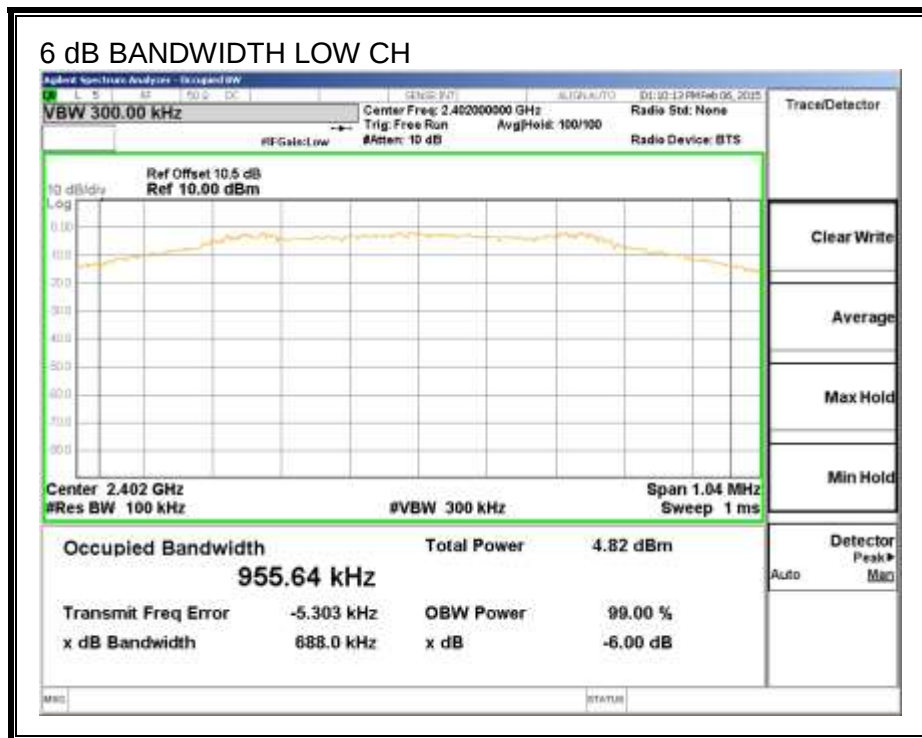
IC RSS-210 A8.2 (a)

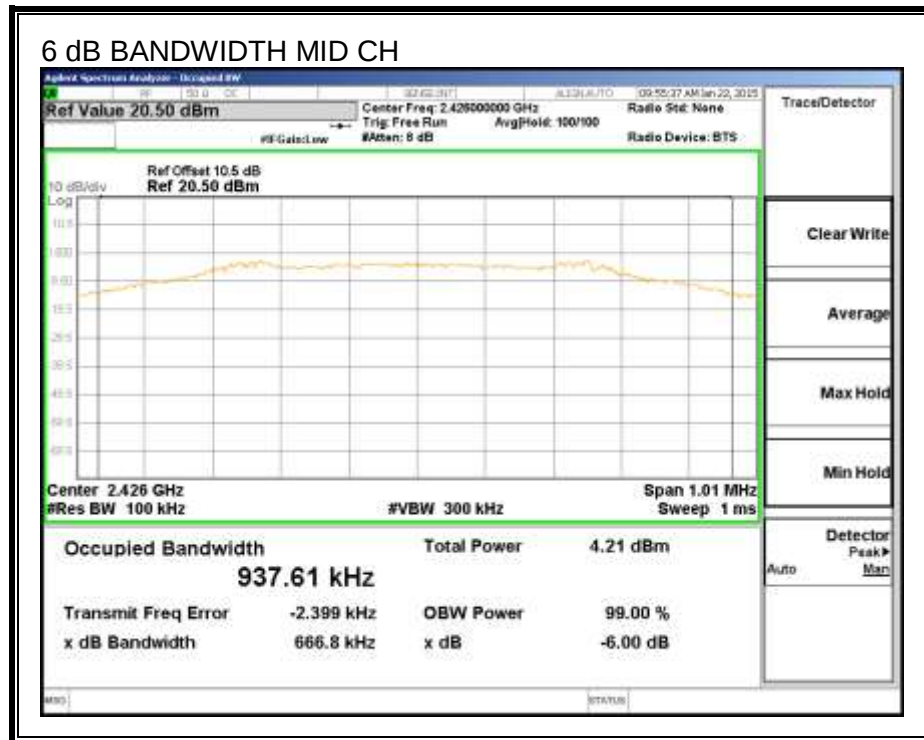
The minimum 6 dB bandwidth shall be at least 500 kHz.

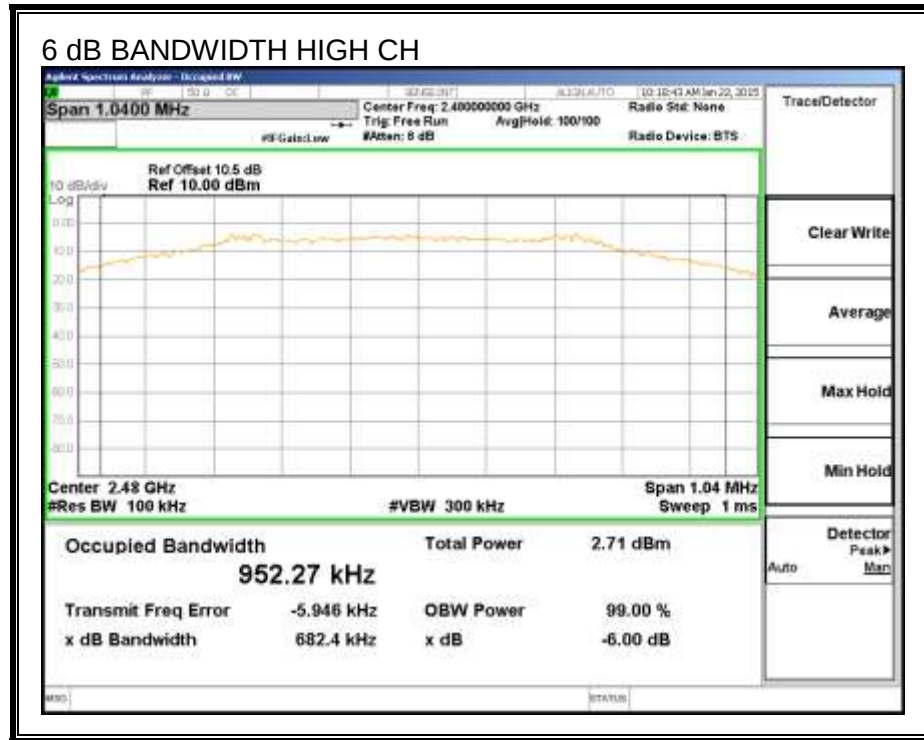
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6880	0.5
Middle	2440	0.6668	0.5
High	2480	0.6824	0.5

6 dB BANDWIDTH







8.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

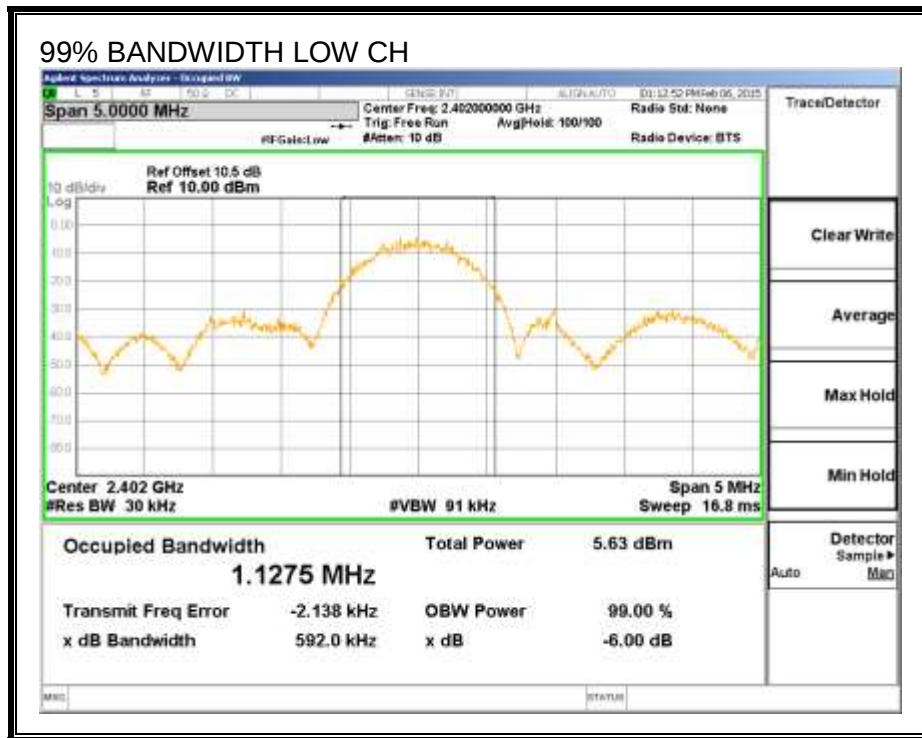
TEST PROCEDURE

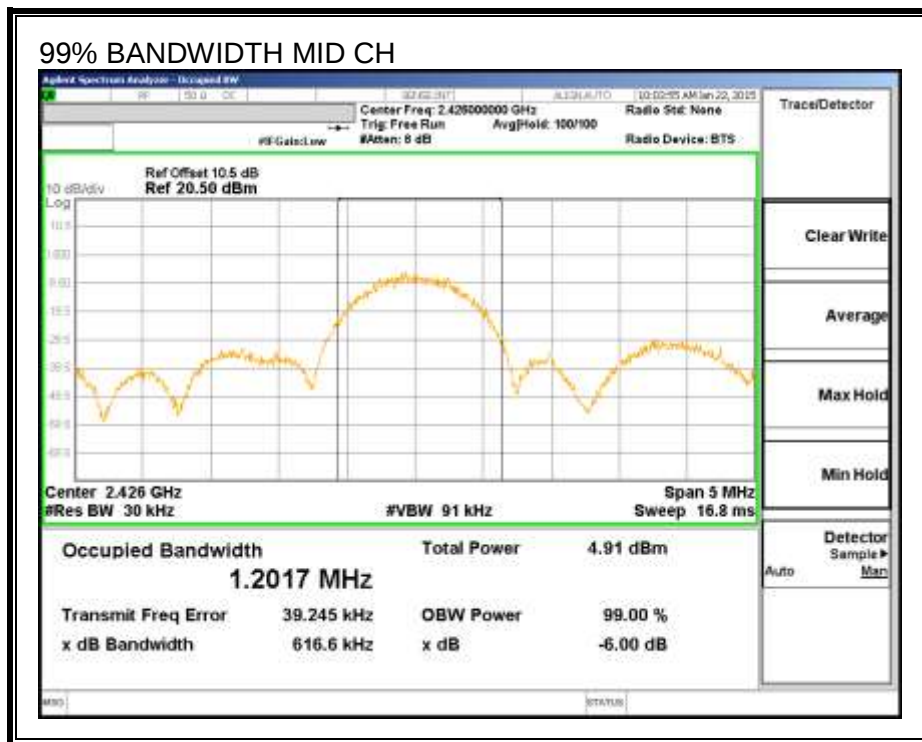
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

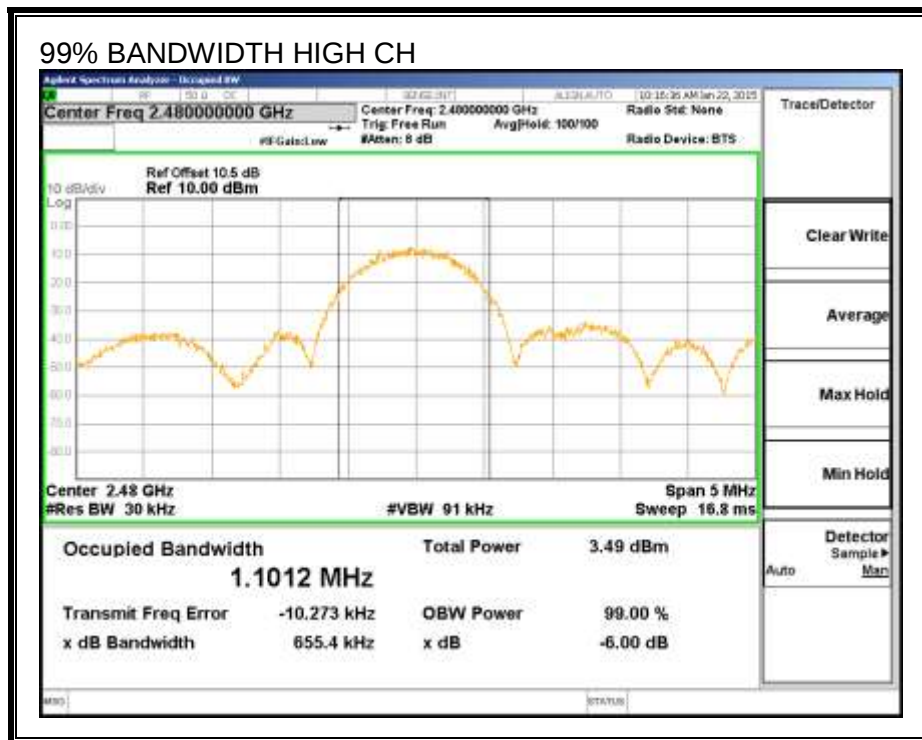
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.1275
Middle	2440	1.2017
High	2480	1.1012

99% BANDWIDTH







8.4. OUTPUT POWER

LIMITS

FCC §15.247 (b)

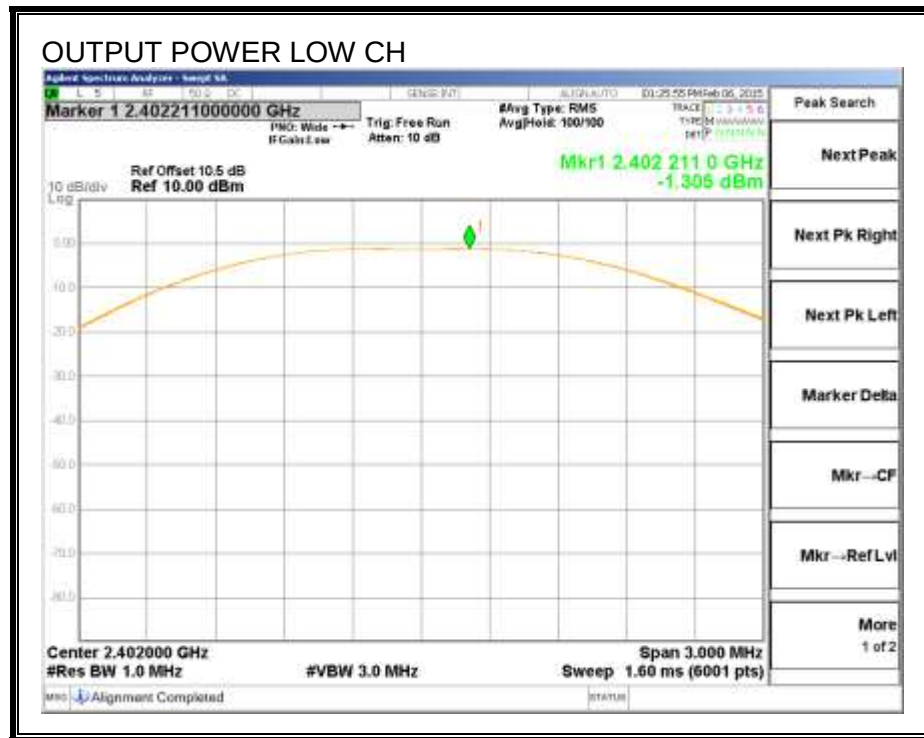
IC RSS-210 A8.4

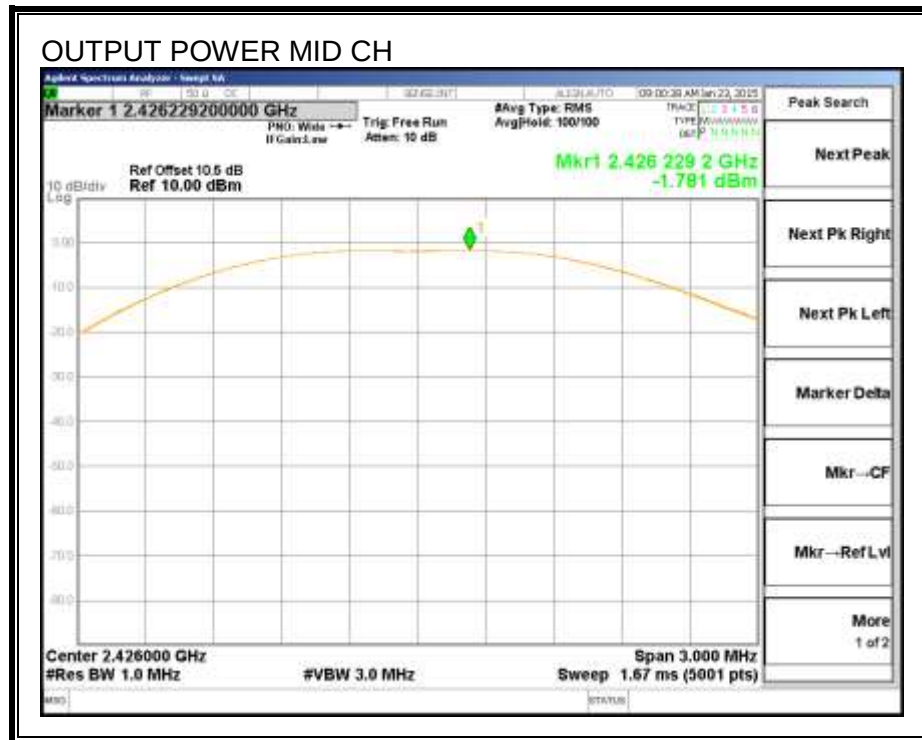
The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

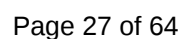
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-1.305	30	-31.305
Middle	2440	-1.781	30	-31.781
High	2480	-3.219	30	-33.219

OUTPUT POWER







8.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 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	-1.46
Middle	2440	-1.78
High	2480	-3.52

8.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

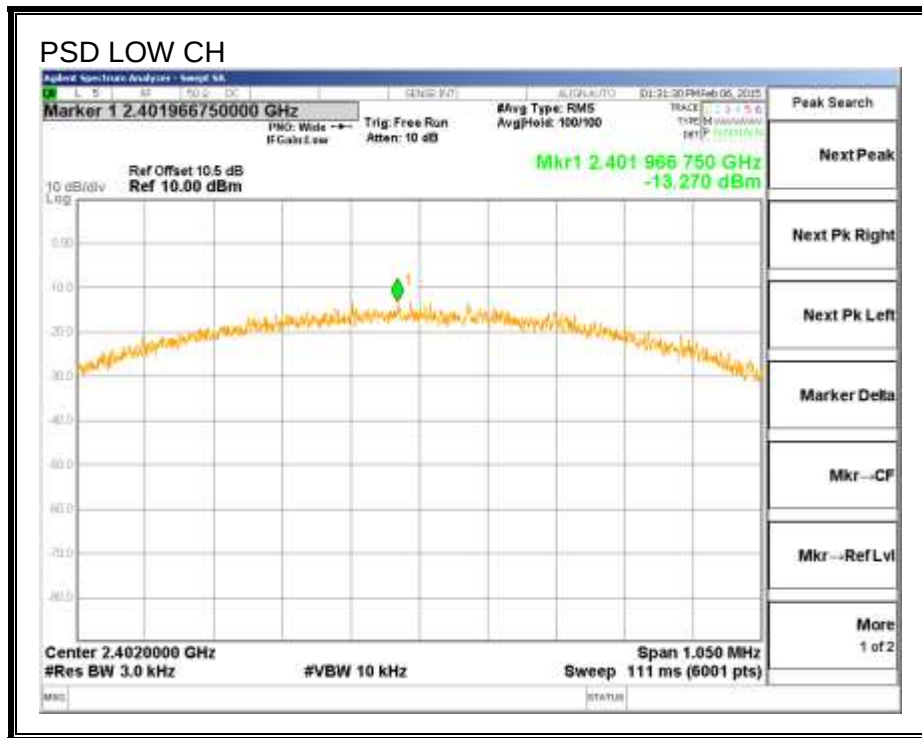
IC RSS-210 A8.2 (b)

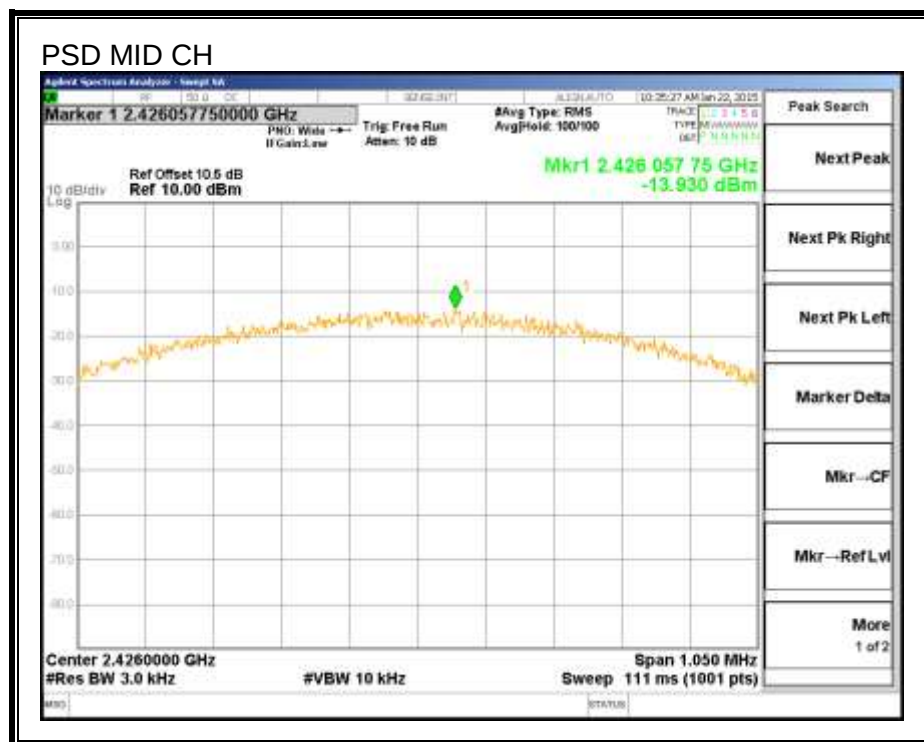
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

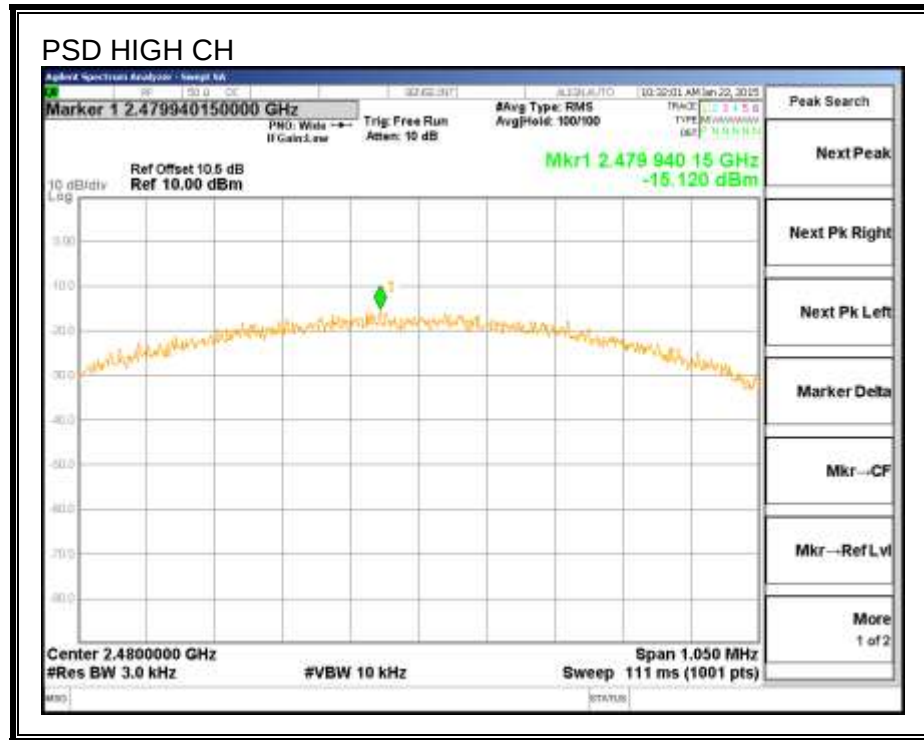
RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-13.27	8	-21.27
Middle	2440	-13.93	8	-21.93
High	2480	-15.12	8	-23.12

POWER SPECTRAL DENSITY







8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

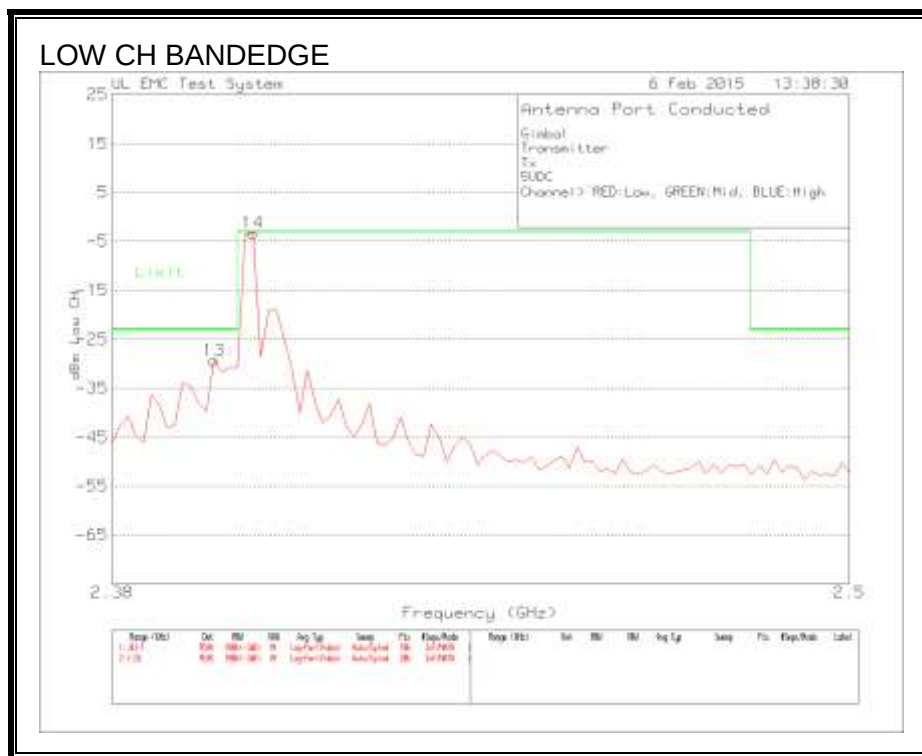
FCC §15.247 (d)

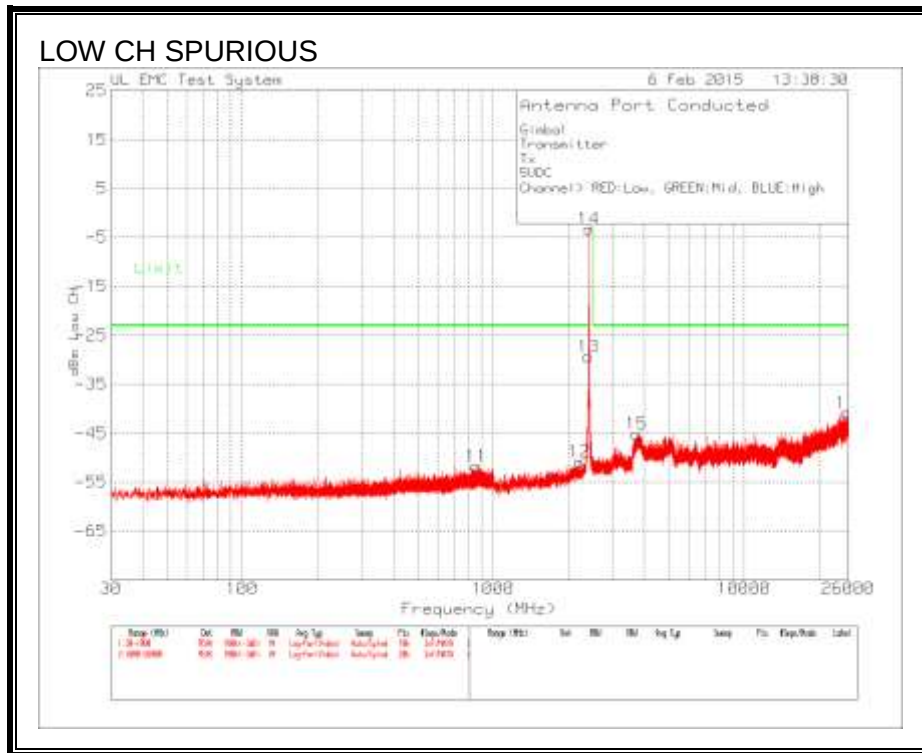
IC RSS-210 A8.5

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

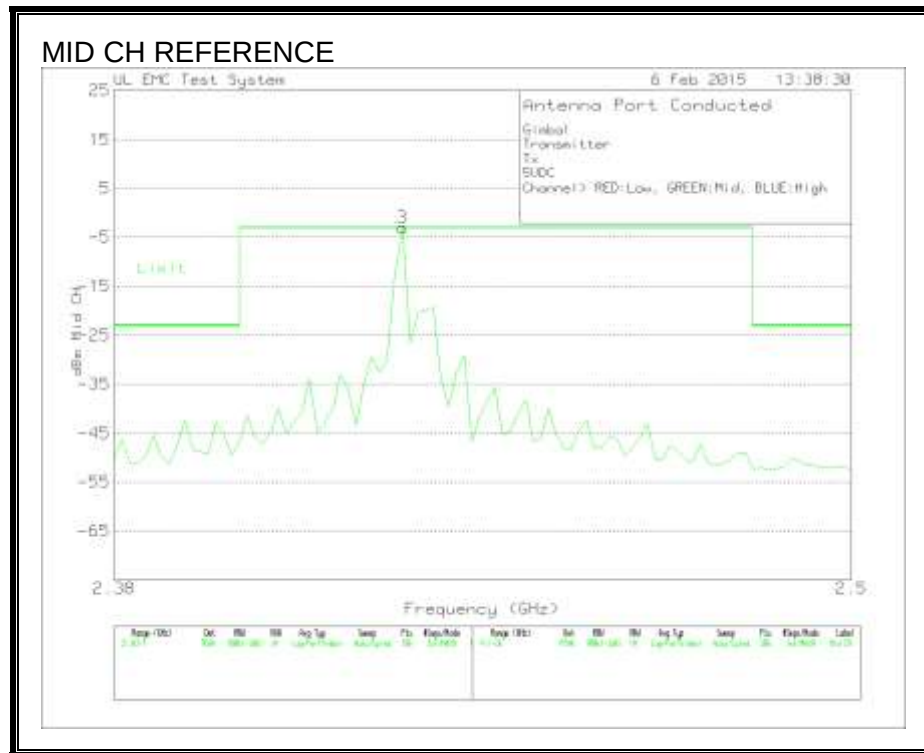
RESULTS

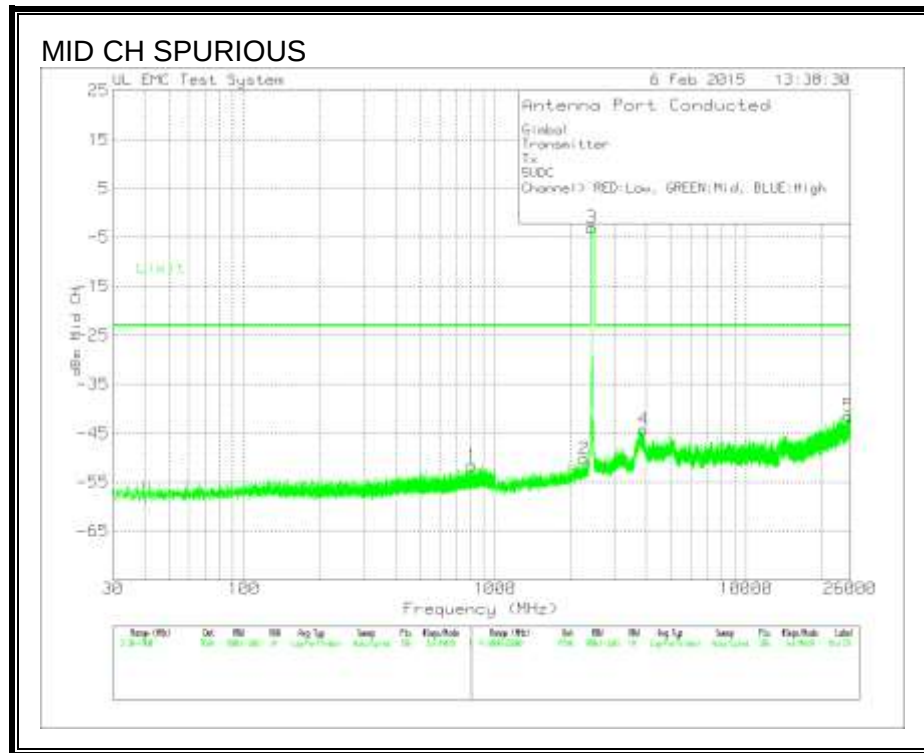
SPURIOUS EMISSIONS, LOW CHANNEL



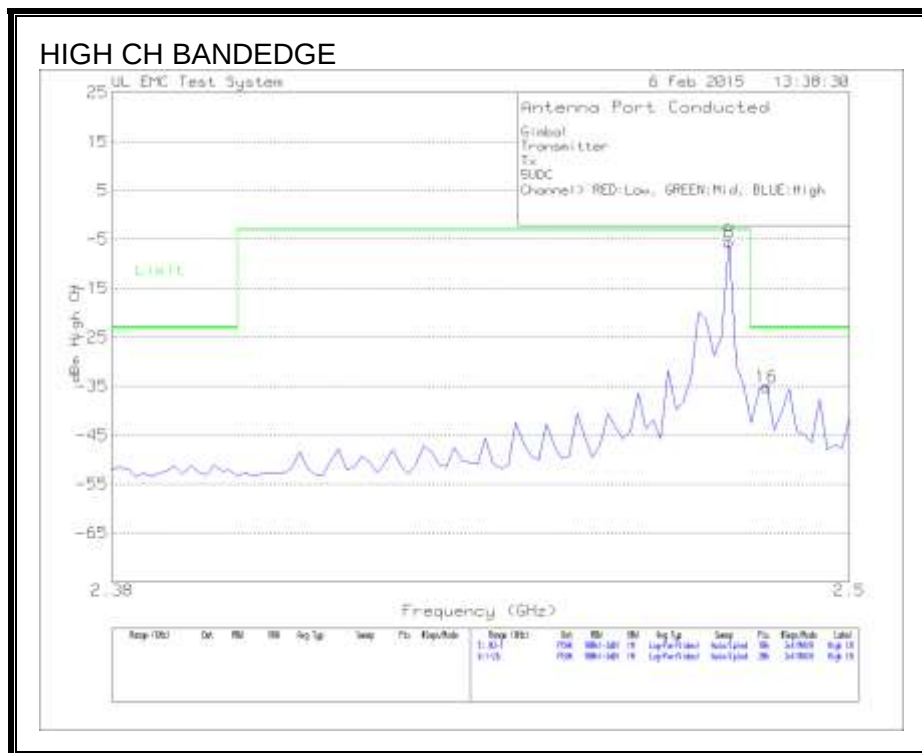


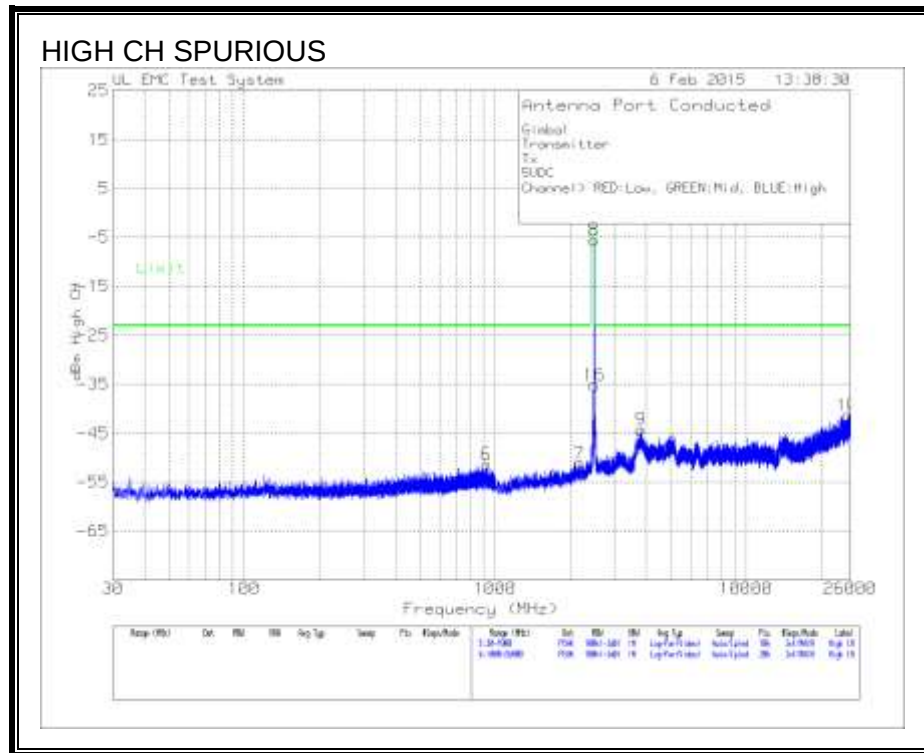
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

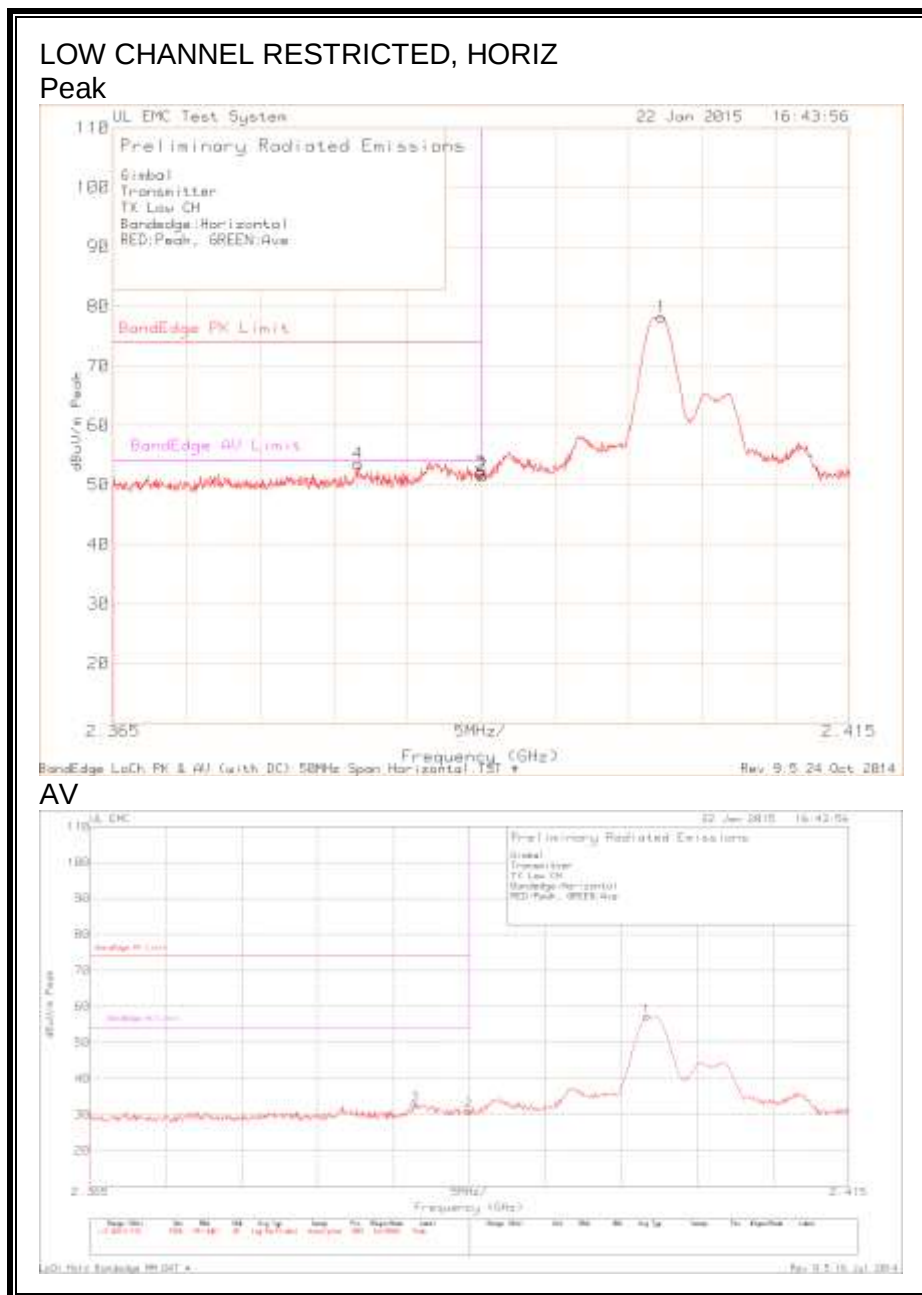
IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V/m}$) at 3 m	Field Strength Limit (dB $\mu\text{V/m}$) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

9.2. TRANSMITTER ABOVE 1 GHz

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

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

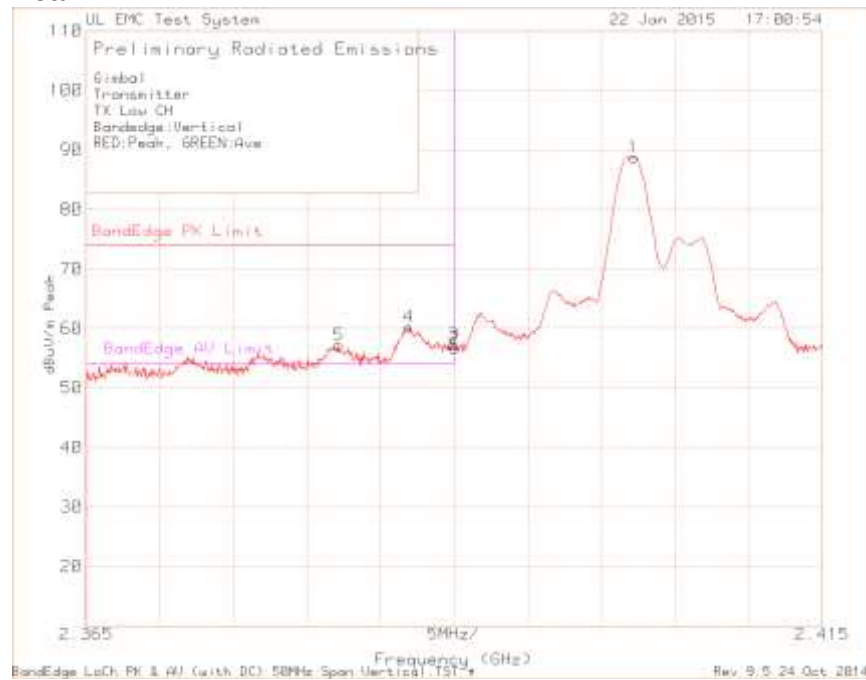


Gimbal
Transmitter
TX Low CH
Bandedge:Horizontal
RED:Peak, GREEN:Ave

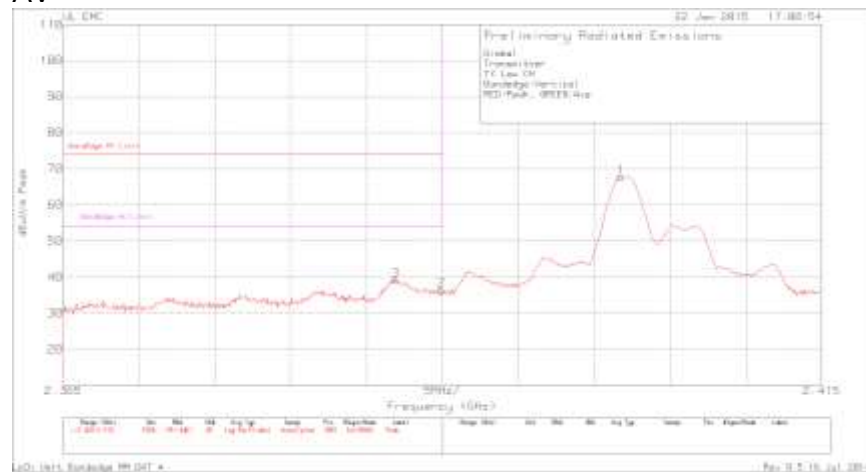
Marker No.	Test		Meter		Antenna		Corrected		BandEdge	Margin	BandEdge	Margin	Azimuth [Degs]	Height [cm]	Polarity
	Frequency (GHz)	Reading (dBuV)	Detector	Factor dB/m	Duty Cycle	Reading dBuV/m	PK Limit	(dB)							
1	2.4023	51.78 Pk		21.8	-	73.58	-	-	-	-	-	-	252	137	H
2	2.3901	25.06 Pk		21.8	-	46.86	-	-	-	-	-	-	252	137	H
3	2.39	25.49 Pk		21.8	-	47.29	74	-26.71	-	-	-	-	252	137	H
4	2.3817	27.08 Pk		21.8	-	48.88	74	-25.12	-	-	-	-	252	137	H
Marker No.	Test		Meter		Antenna		Corrected		BandEdge	Margin	BandEdge	Margin	Azimuth [Degs]	Height [cm]	Polarity
	Frequency (GHz)	Reading (dBuV)	Detector	Factor dB/m	Duty Cycle	Reading dBuV/m	PK Limit	(dB)							
1	2.4017	56.38 PK		21.8	-21	57.18	-	-	-	-	-	-	252	137	H
2	2.39	30.23 PK		21.8	-21	31.03	74	-42.97	54	-22.97	54	-22.97	252	137	H
3	2.3864	32.2 PK		21.8	-21	33	74	-41	54	-21	54	-21	252	137	H

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

**LOW CHANNEL RESTRICTED, VERT
Peak**



AV

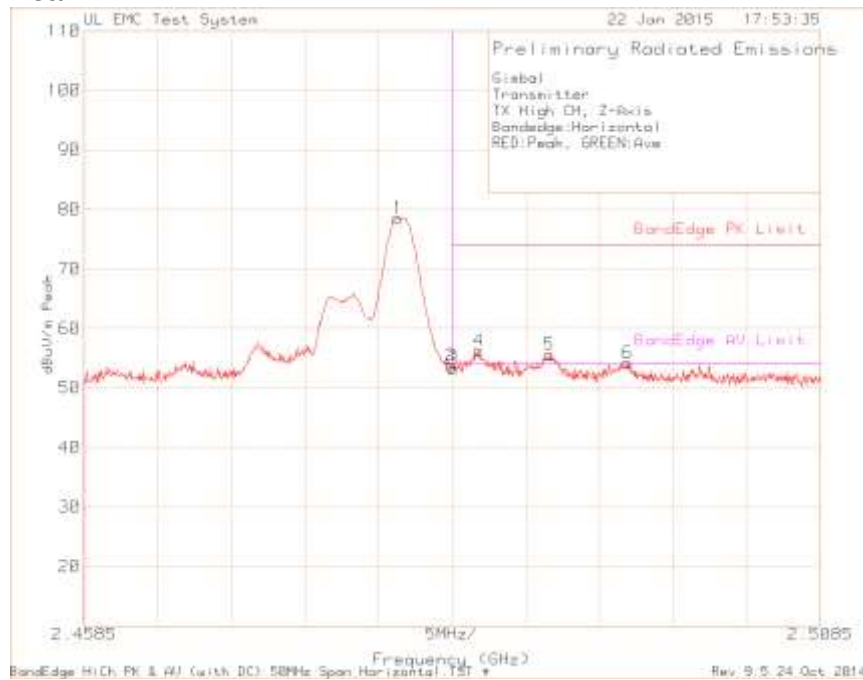


Gimbal
Transmitter
TX Low CH
Bandedge:Vertical
RED:Peak, GREEN:Ave

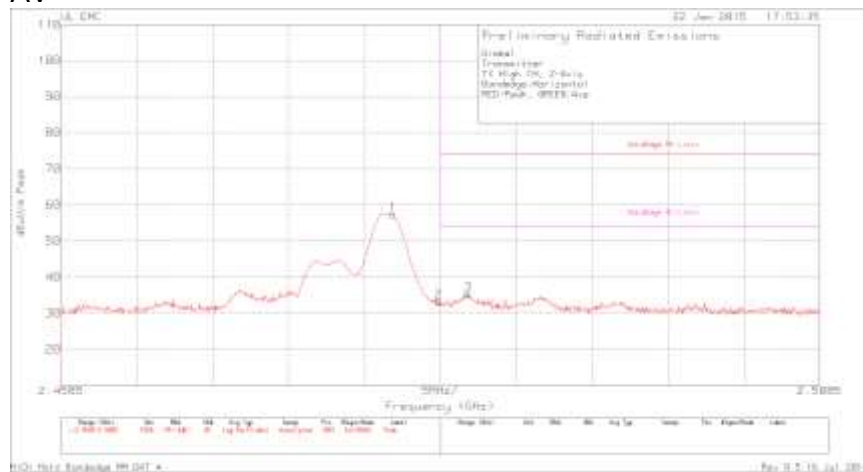
Test	Meter	Antenna	Corrected									
Marker	Frequency	Reading	Factor	Duty	Reading	BandEdge	Margin	BandEdge	Margin	Azimuth	Height	
No.	(GHz)	(dBuV) Detector	dB/m	Cycle	dBuV/m	PK Limit	(dB)	AV Limit	(dB)	[Degs]	[cm]	Polarity
1	2.4022	62.36 Pk	21.8	-	84.16	-	-	-	-	117	113	V
2	2.3901	30.21 Pk	21.8	-	52.01	-	-	-	-	117	113	V
3	2.39	30.71 Pk	21.8	-	52.51	74	-21.49	-	-	117	113	V
4	2.3869	33.68 Pk	21.8	-	55.48	74	-18.52	-	-	117	113	V
5	2.3822	30.73 Pk	21.8	-	52.53	74	-21.47	-	-	117	113	V
Test	Meter	Antenna	Corrected									
Marker	Frequency	Reading	Factor	Duty	Reading	BandEdge	Margin	BandEdge	Margin	Azimuth	Height	
No.	(GHz)	(dBuV) Detector	dB/m	Cycle	dBuV/m	PK Limit	(dB)	AV Limit	(dB)	[Degs]	[cm]	Polarity
1	2.4018	66.92 PK	21.8	-21	67.72	-	-	-	-	117	113	V
2	2.39	35.45 PK	21.8	-21	36.25	74	-37.75	54	-17.75	117	113	V
3	2.3869	38.39 PK	21.8	-21	39.19	74	-34.81	54	-14.81	117	113	V

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

**HIGH CHANNEL RESTRICTED, HORIZ
Peak**



AV



Gimbal

Transmitter

TX High CH, Z-Axis

Bandedge:Horizontal

RED:Peak, GREEN:Ave

Marker	Test	Frequency	Meter	Antenna	Corrected	BandEdge	Margin	BandEdge	Margin	Azimuth	Height	
No.		(GHz)	(dBuV) Detector	Factor dB/m	Duty Cycle	Reading dBuV/m	PK Limit	(dB)	AV Limit (dB)	(Degs)	[cm]	Polarity
1		2.4798	52.16 Pk		22 -	74.16 -	-	-	-	347	204	H
2		2.4835	27.3 Pk		22.1 -	49.4 -	-	-	-	347	204	H
3		2.4836	26.68 Pk		22.1 -	48.78	74	-25.22		347	204	H
4		2.4853	29.78 Pk		22.1 -	51.88	74	-22.12		347	204	H
5		2.4901	29.12 Pk		22.1 -	51.22	74	-22.78		347	204	H
6		2.4954	27.73 Pk		22.1 -	49.83	74	-24.17		347	204	H

Marker	Test	Frequency	Meter	Antenna	Corrected	BandEdge	Margin	BandEdge	Margin	Azimuth	Height	
No.		(GHz)	(dBuV) Detector	Factor dB/m	Duty Cycle	Reading dBuV/m	PK Limit	(dB)	AV Limit (dB)	(Degs)	[cm]	Polarity
1		2.4804	56.44 PK		22 -21	57.44 -	-	-	-	347	204	H
2		2.4834	32.01 PK		22.1 -21	33.11 -	-	-	-	347	204	H
3		2.4853	34.17 PK		22.1 -21	35.27	74	-38.73	54 -18.73	347	204	H

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

**HIGH CHANNEL RESTRICTED, VERT
Peak**



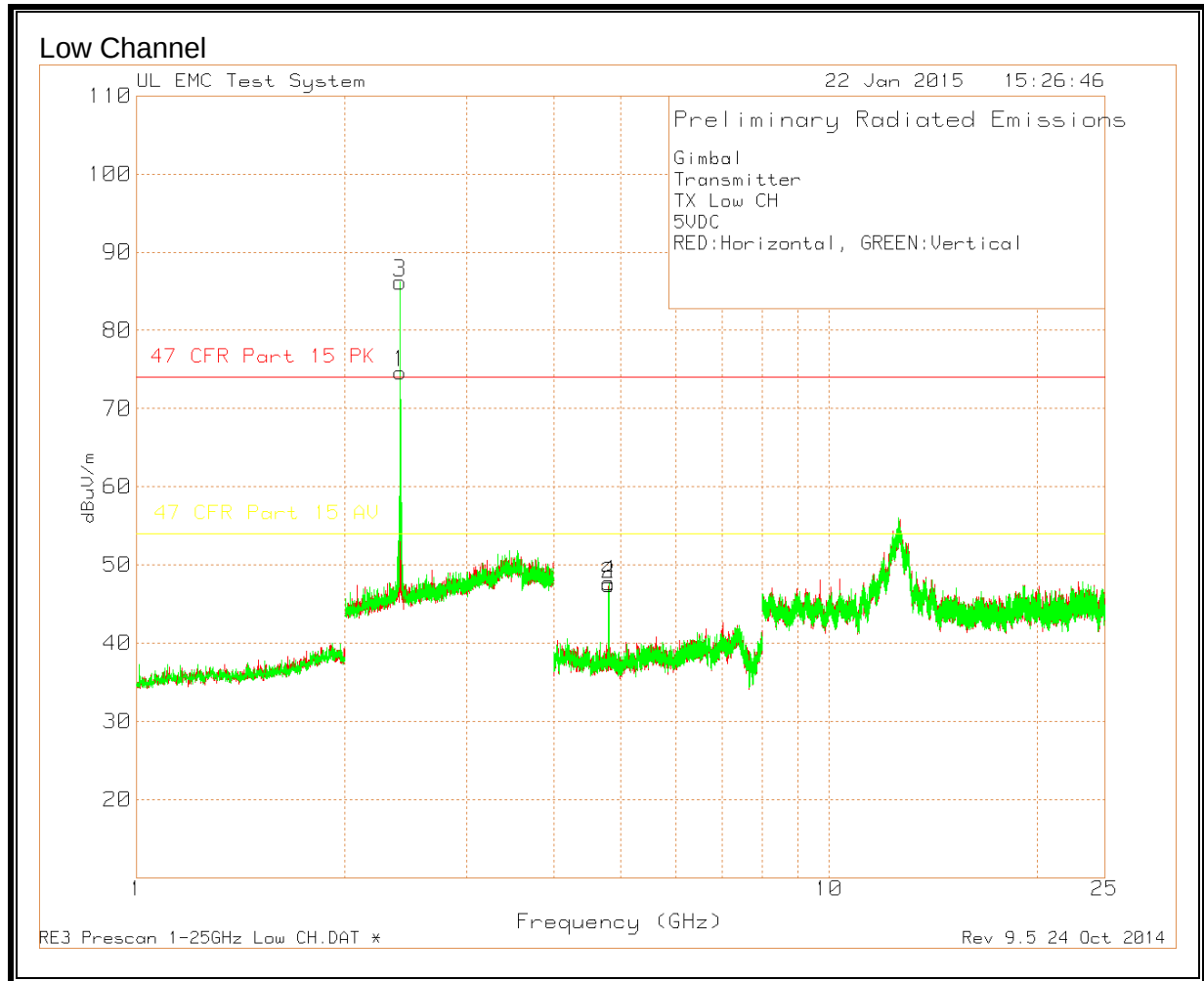
AV



Gimbal
Transmitter
TX High CH, Z-Axis
Bandedge:Vertical
RED:Peak, GREEN:Ave

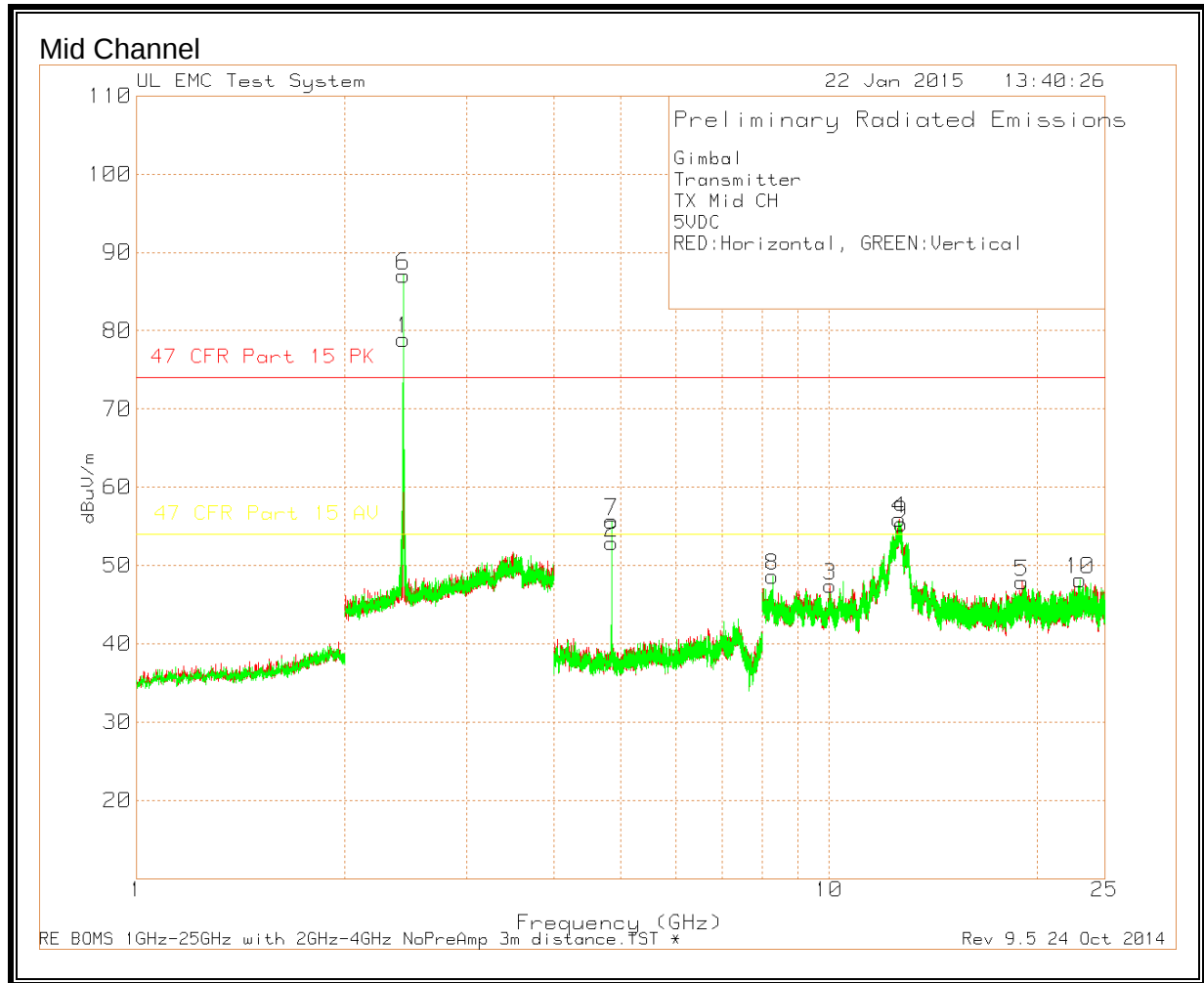
Marker	Test	Meter	Antenna	Corrected									
No.	Frequency (GHz)	Reading (dBuV)	Detector	Factor dB/m	Duty Cycle	Reading dBuV/m	BandEdge PK Limit	Margin (dB)	BandEdge AV Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.4797	63.2 Pk		22		85.2	-	-	-	-	131	99	V
2	2.4835	33.7 Pk		22.1		55.8	-	-	-	-	131	99	V
3	2.4836	34.03 Pk		22.1		56.13	74	-17.87	-	-	131	99	V
4	2.4852	36.46 Pk		22.1		58.56	74	-15.44	-	-	131	99	V
5	2.4902	36 Pk		22.1		58.1	74	-15.9	-	-	131	99	V
6	2.4953	33.66 Pk		22.1		55.76	74	-18.24	-	-	131	99	V
Marker	Test	Meter	Antenna	Corrected									
No.	Frequency (GHz)	Reading(dBuV)	Detector	Factor dB/m	Duty Cycle	Reading dBuV/m	BandEdge PK Limit	Margin (dB)	BandEdge AV Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.4804	67.44 PK		22	-21	68.44	-	-	-	-	131	99	V
2	2.4836	38.42 PK		22.1	-21	39.52	74	-34.48	54	-14.48	131	99	V
3	2.4852	40.85 PK		22.1	-21	41.95	74	-32.05	54	-12.05	131	99	V

HARMONICS AND SPURIOUS EMISSIONS



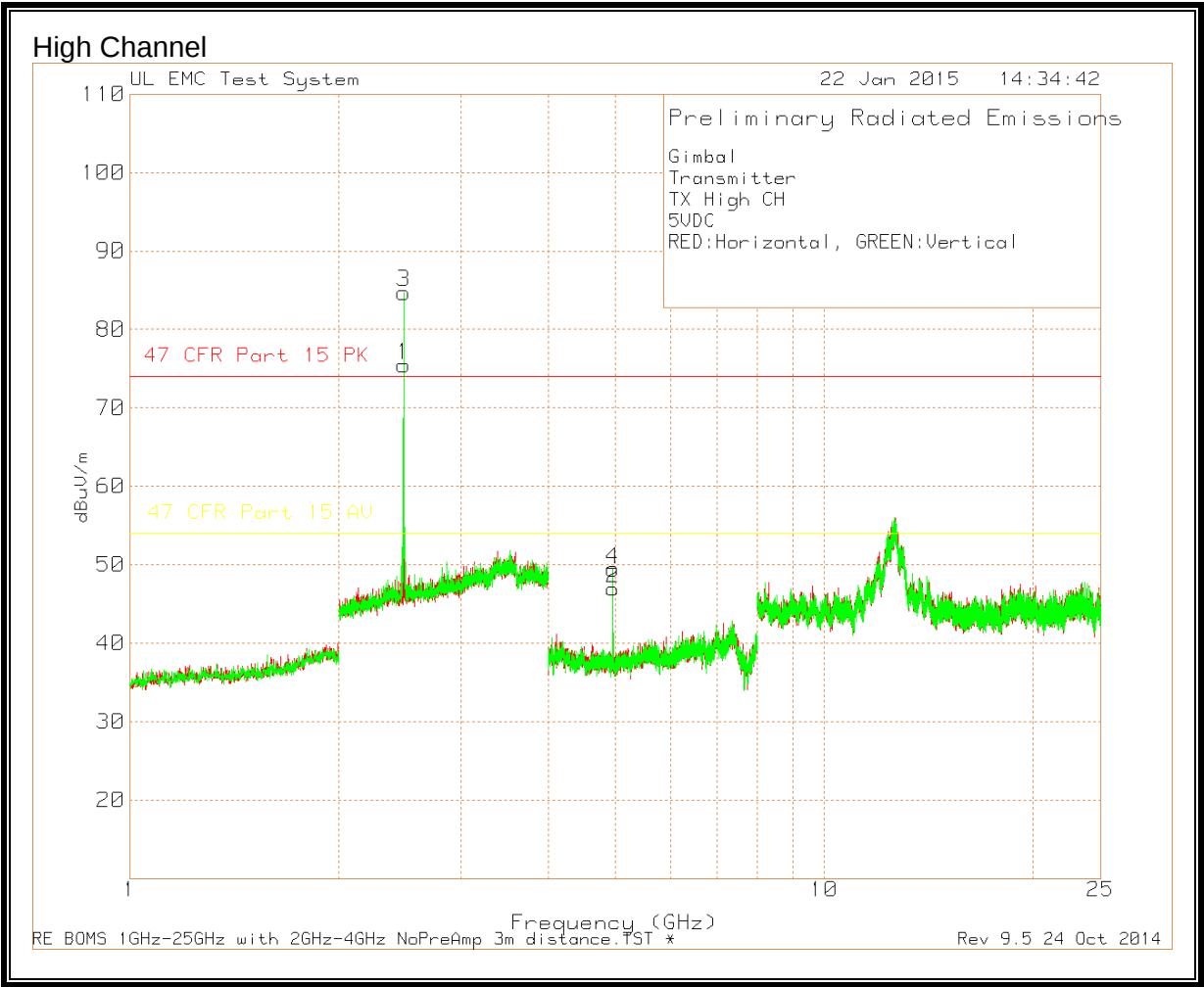
Gimbal
Transmitter
TX Low CH
5VDC
RED:Horizontal, GREEN:Vertical

Test	Meter	Antenna	Corrected	47 CFR	47 CFR									
Frequency	Reading	Factor	Gain/Loss	Reading	Part 15	Margin	Duty	AV	Part 15	Margin	Azimuth	Height		
(GHz)	(dBuV)	Detector	dB/m	(dB)	dBuV/m	PK Limit	(dB)	Cycle	Value	AV Limit	(dB)	[Degs]	[cm]	Polarity
4.8045	73.95 Pk		27.7	-50.64	51.01	74	-22.99	-20.98	30.03	54	-23.97	67	100	H
4.804	69.7 Av		27.7	-50.65	46.75	74	-27.25	-20.98	25.77	54	-28.23	67	100	H
4.8044	72.94 Pk		27.7	-50.64	50	74	-24	-20.98	29.02	54	-24.98	168	106	V
4.804	68.41 Av		27.7	-50.65	45.46	74	-28.54	-20.98	24.48	54	-29.52	168	106	V



Gimbal
Transmitter
TX Mid CH
5VDC
RED:Horizontal, GREEN:Vertical

Test Frequency (GHz)	Meter Reading (dBuV)	Antenna Factor (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	47 CFR Part 15 PK Limit (dB)	Margin (dB)	Duty Cycle	47 CFR AV Value (dB)	47 CFR AV Limit (dB)	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
4.8524	74.49 Pk	27.7	-50.28	51.91	74	-22.09	-20.98	30.93	54	-23.07	60	100	H
4.8524	76.9 Pk	27.7	-50.28	54.32	74	-19.68	-20.98	33.34	54	-20.66	320	100	V
8.2827	61.26 Pk	36.4	-47.62	50.04	74	-23.96	-20.98	29.06	54	-24.94	147	100	V
12.6196	57.02 Pk	39.5	-34.27	62.25	74	-11.75	-20.98	41.27	54	-12.73	249	117	H
12.6173	57.33 Pk	39.5	-34.28	62.55	74	-11.45	-20.98	41.57	54	-12.43	57	100	V
23.0376	58.29 Pk	40.3	-44.75	53.84	74	-20.16	-20.98	32.86	54	-21.14	241	100	V



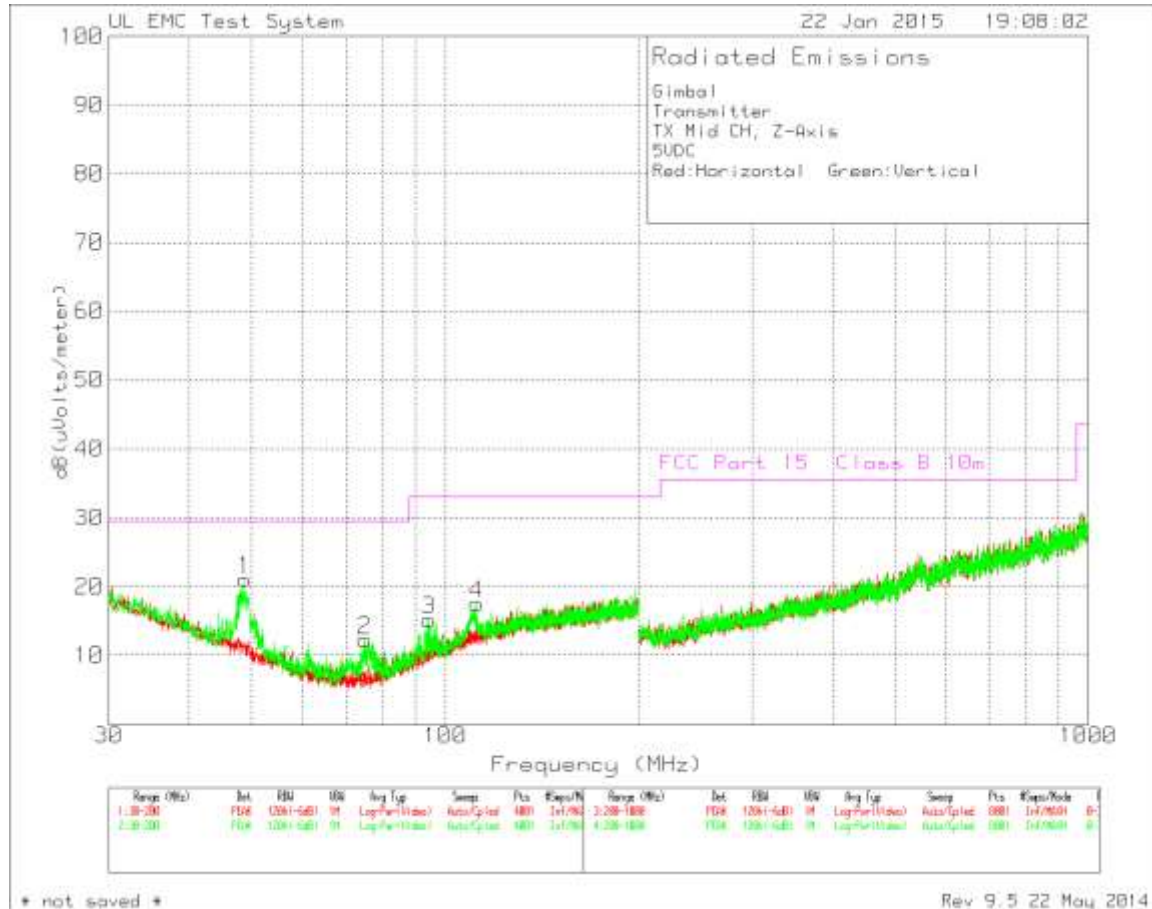
Gimbal
Transmitter
TX High CH
5VDC
RED:Horizontal, GREEN:Vertical

Test	Meter	Antenna	Corrected	47 CFR	47 CFR								
Frequency	Reading	Factor	Gain/Loss	Reading	Part 15	Margin	Duty	AV	Part 15	Margin	Azimuth	Height	
(GHz)	(dBuV) Detector	dB/m	(dB)	dBuV/m	PK Limit	(dB)	Cycle	Value	AV Limit	(dB)	[Degs]	[cm]	Polarity
4.9594	72.57 Pk	27.8	-50.74	49.63	74	-24.37	-20.98	28.65	54	-25.35	240	100 V	
4.96	68.43 Av	27.8	-50.74	45.49	74	-28.51	-20.98	24.51	54	-29.49	240	100 V	
4.9604	71.03 Pk	27.8	-50.74	48.09	74	-25.91	-20.98	27.11	54	-26.89	104	100 H	
4.96	66.13 Av	27.8	-50.74	43.19	74	-30.81	-20.98	22.21	54	-31.79	104	100 H	

9.4. WORST-CASE BELOW 1 GHz

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

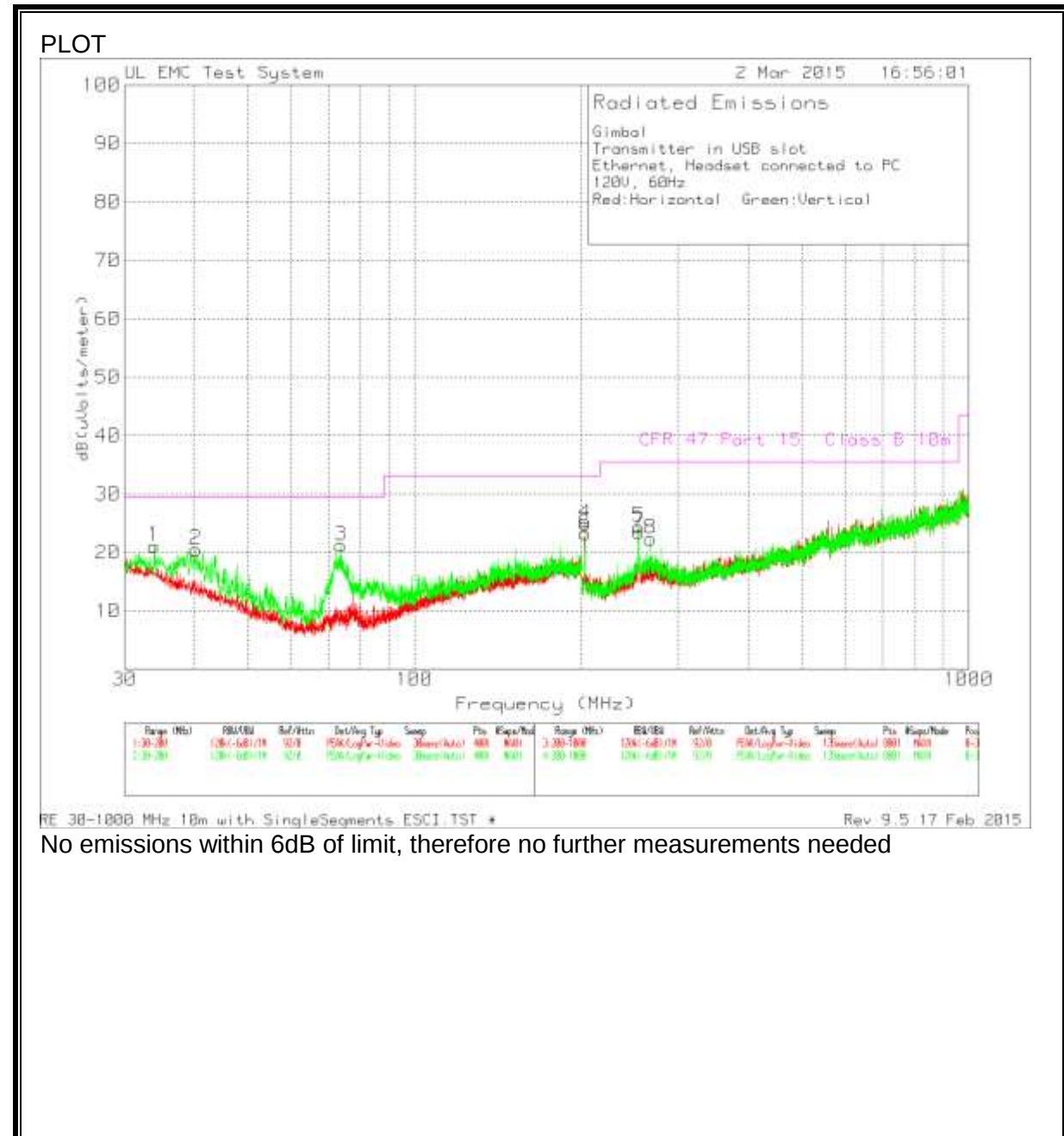
PLOT



All Emissions at least 6dB below the limit, therefore no further measurement needed.

9.5. DIGITAL DEVICE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (DIGITAL DEVICE)



10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

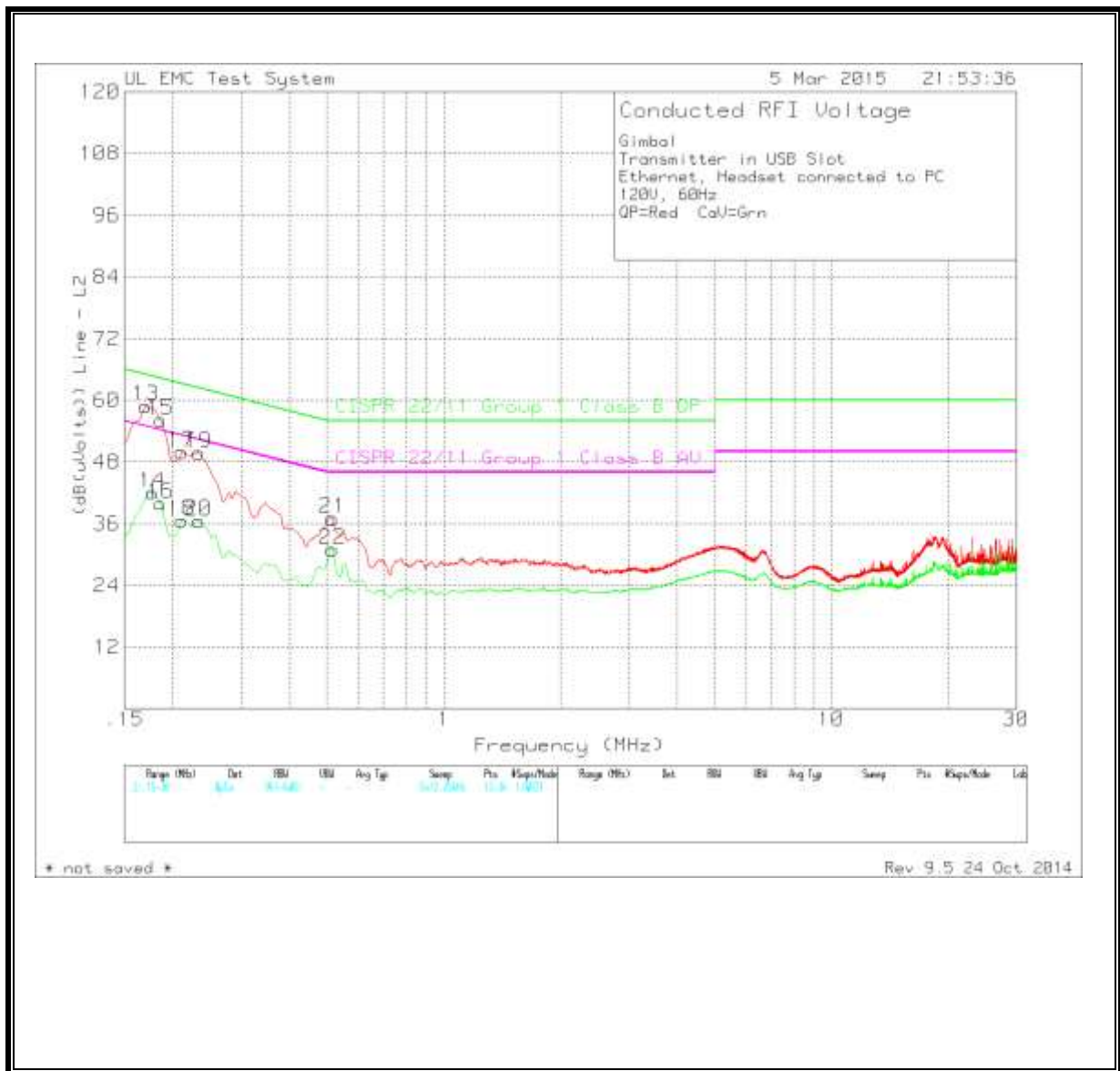
ANSI C63.4

RESULTS

LINE 1 RESULTS



LINE 2 RESULTS



Gimbal
Transmitter in USB Slot
Ethernet, Headset connected to PC
120V, 60Hz
QP=Red CaV=Grn

Trace Markers										
No.	Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading (dB(uVolts))	Limit:1	2	3	4	5
=====										
Line - L1 .15 - 30MHz -----										
1	.15225	42.33dBuV Qp	.1	12.7	55.13	-	-	65.88	-	-
					Margin (dB)	-	-	-10.75	-	-
2	.15225	23.77dBuV Ca	.1	12.7	36.57	-	-	-	55.88	-
					Margin (dB)	-	-	-	-19.31	-
3	.168	43.68dBuV Qp	.1	12.3	56.08	-	-	65.06	-	-
					Margin (dB)	-	-	-8.98	-	-
4	.168	26.65dBuV Ca	.1	12.3	39.05	-	-	-	55.06	-
					Margin (dB)	-	-	-	-16.01	-
5	.177	43.49dBuV Qp	.1	12	55.59	-	-	64.63	-	-
					Margin (dB)	-	-	-9.04	-	-
6	.18375	27.17dBuV Ca	.1	11.8	39.07	-	-	-	54.31	-
					Margin (dB)	-	-	-	-15.24	-
7	.20175	39.1dBuV Qp	.1	11.4	50.6	-	-	63.54	-	-
					Margin (dB)	-	-	-12.94	-	-
8	.20175	23.5dBuV Ca	.1	11.4	35	-	-	-	53.54	-
					Margin (dB)	-	-	-	-18.54	-
9	.2265	37.95dBuV Qp	.1	11.4	49.45	-	-	62.58	-	-
					Margin (dB)	-	-	-13.13	-	-
10	.2265	24.6dBuV Ca	.1	11.4	36.1	-	-	-	52.58	-
					Margin (dB)	-	-	-	-16.48	-
11	.51225	26.39dBuV Qp	.1	10.6	37.09	-	-	56	-	-
					Margin (dB)	-	-	-18.91	-	-
12	.51225	20.61dBuV Ca	.1	10.6	31.31	-	-	-	46	-
					Margin (dB)	-	-	-	-14.69	-
Line - L2 .15 - 30MHz -----										
13	.17025	46.49dBuV Qp	.1	12.3	58.89	-	-	64.95	-	-
					Margin (dB)	-	-	-6.06	-	-
14	.177	29.82dBuV Ca	.1	12.1	42.02	-	-	-	54.63	-
					Margin (dB)	-	-	-	-12.61	-
15	.186	44.23dBuV Qp	.1	11.8	56.13	-	-	64.21	-	-
					Margin (dB)	-	-	-8.08	-	-
16	.186	28.05dBuV Ca	.1	11.8	39.95	-	-	-	54.21	-
					Margin (dB)	-	-	-	-14.26	-
17	.21075	38.31dBuV Qp	.1	11.5	49.91	-	-	63.18	-	-
					Margin (dB)	-	-	-13.27	-	-
18	.21075	25.04dBuV Ca	.1	11.5	36.64	-	-	-	53.18	-
					Margin (dB)	-	-	-	-16.54	-
19	.23325	38.16dBuV Qp	.1	11.5	49.76	-	-	62.33	-	-
					Margin (dB)	-	-	-12.57	-	-
20	.23325	24.93dBuV Ca	.1	11.5	36.53	-	-	-	52.33	-
					Margin (dB)	-	-	-	-15.8	-
21	.51675	26.25dBuV Qp	.1	10.7	37.05	-	-	56	-	-
					Margin (dB)	-	-	-18.95	-	-
22	.51675	20.18dBuV Ca	.1	10.7	30.98	-	-	-	46	-
					Margin (dB)	-	-	-	-15.02	-

LIMIT 3: CISPR 22/11 Group 1 Class B QP
LIMIT 4: CISPR 22/11 Group 1 Class B AV

Qp - Quasi-Peak detector
Ca - CISPR Average detection