

FCC 47 CFR PART 15 SUBPART C INDUSTRY CANADA RSS-210 ISSUE 8 CLASS II PERMISSIVE CHANGE CERTIFICATION TEST REPORT

FOR

802.11b/g RADIO CARD- 4 TYPES OF ANTENNAS (INTEGRAL, DIPOLE, PCBA, AND PIFA)

FCC ID: W70MRF24WG0MAMB
FCC MODEL NUMBER: MRF24WG0MAMB

IC NUMBER: 7693A-24W0MAMB
IC MODEL: MRF24WG0MA, MRF24WG0MB

REPORT NUMBER: 14U18050-1, REVISION A

ISSUE DATE: SEPTEMBER 12, 2014

Prepared for

MICROCHIP TECHNOLOGY, INC. 2355 WEST CANDLER BLVD CHANDLER, AZ, 85224-6199, USA

Prepared by

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REPORT NO: 14U18050-1A FCC ID: W7OMRF24WG0MAMB

Revision History

Rev.	Issue Date	Revisions	Revised By
	08/06/2014	Initial Issue	M. Mekuria
A	09/12/2014	Address TCB's Questions on page 13, 28, 35 and Section 9	C. Pang

DATE: SEPTEMBER 12, 2014

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REPORT NO: 14U18050-1A FCC ID: W7OMRF24WG0MAMB

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: MICROCHIP TECHNOLOGY, INC.

> 2355 WEST CANDLER BLVD CHANDLER, AZ, 85224-6199, USA

802.11b/g RADIO CARD- 4 TYPES OF ANTENNAS (INTEGRAL, **EUT DESCRIPTION:**

DIPOLE, PCBA, AND PIFA)

FCC MODELS: MRF24WG0MAMB

IC MODELS: MRF24WG0MA, MRF24WG0MB

SERIAL NUMBER: INT. ANT. #3 (INTEGRAL ANTENNA) AND EXT ANT #2 (ALL

OTHER ANTENNAS AND ANTENNA PORT)

DATE TESTED: JUNE 11, 2014 to JUNE 27 and SEPTEMBER 12, 2014

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 Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. And all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 Verification Services Inc. Bv:

Tested By:

Mengistu Mekuria Senior Engineer

UL Verification Services Inc.

Joe Vang

EMC ENGINEER

UL Verification Services Inc.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009, 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 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☐ Chamber B	☐ Chamber E
☐ Chamber C	

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.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

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB) 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	±3.52 dB
Radiated Disturbance, 30 to 1000 MHz	±4.94 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11b/g transceiver module.

The radio module is manufactured by Microchip Technology, Inc.

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change that applied for this EUT is complete additional tests on band 12 and 13.

5.3. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range	Mode	Output Power	Output Power
(MHz)		(dBm)	(mW)
2467 - 2472	802.11b	15.985	39.67
2467 - 2472	802.11g	20.28	106.66

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes four antenna types:

Antenna Information						
Type Manufacturer Model Number Peak Gain (dl						
Integral	Microchip Technology, Inc	N/A	0			
Dipole	Aristotle Enterprises, Inc	RFA-02-C2M2-D034	2			
PCBA	Aristotle Enterprises, Inc	RFA-02-P05-D034	2			
PIFA	Aristotle Enterprises, Inc	RFA-02-G03-D034	0			

5.5. SOFTWARE AND FIRMWARE

The EUT firmware and test utility software used during testing was A2Debugger(0428).bin.

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5.6. 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.

For three of the four antenna types the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z. It was determined that the following orientations were the worst-case orientations and all subsequent final radiated testing was performed with the EUT in these orientations:

Integral Antenna Z-Orientation
Dipole Antenna Y-Orientation
PCBA Antenna X-Orientation
PIFA Antenna Z-Orientation

The worst-case orientation for the dipole was assumed to be the Y-orientation, so it was the one antenna type not investigated.

Based on the manufacturer's attestation that the nominal output power is reduced as the data rate increases, the data rates tested represent the highest power and worst-case with respect to EMC performance.

802.11b mode: 1 Mbps 802.11g mode: 6 Mbps DATE: SEPTEMBER 12, 2014

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List							
Description	Serial Number	FCC ID					
Laptop	Hewlett Packard	Compaq 6715b	CNU7311RQ7	DoC			
AC Adapter (PC)	Hewlett Packard	ED494AA#ABA	3892A300	N/A			
AC Adapter (EUT)	CUI, INC.	EPAS-101W-05	DPS050200UPS-P5P-SZ	N/A			
USB to SPI Adapter	Totalphase	Aardvark I2C/SPI	2237-445909	N/A			
3.3V DC	MicroChip	N/A	N/A	N/A			

I/O CABLES

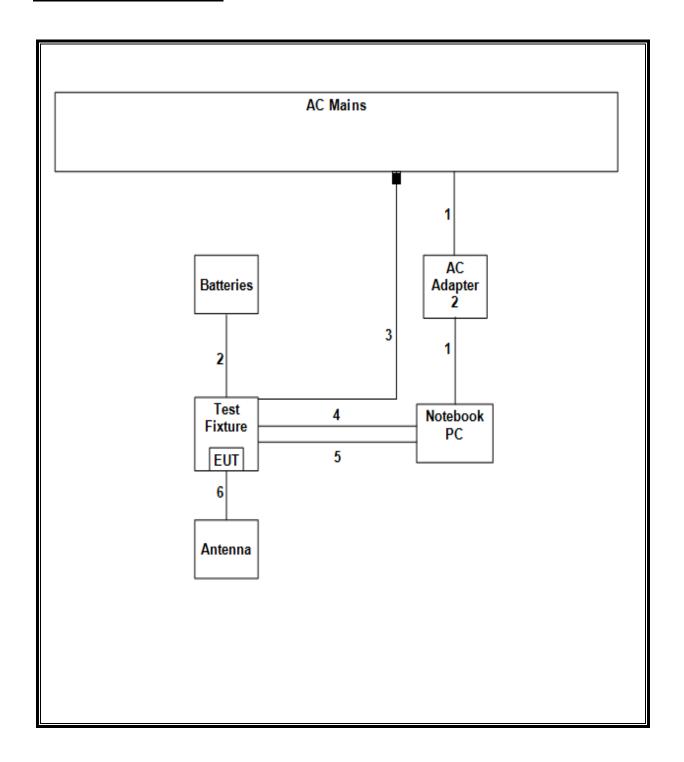
	I/O Cable List								
Cable	Cable Port # of identical		# of identical Connector Cable Type		Cable	Remarks			
No		ports	Туре		Length (m)				
1	AC Power (PC)	1	3-Prong	Un-Shielded	95 cm				
2	DC Power (EUT)	1	Barrel	Un-Shielded	1.6 m				
3	AC Power (EUT)	1	Barrel	Un-Shielded	1.75 m				
4	RS-232	1	DB-9	Shielded	3.8 m				
5	SPI	1	10 Pin DIP	Un-Shielded	1.3 mm				
6	RF In/Out	1	U.FL	Shielded	1.4 mm	PCBA and PIFA / Not Used for Integral Antenna			
6	RF In/Out	1	SMA	Shielded	1.0 mm	Dipole / Not Used for Integral Antenna			

TEST SETUP

The EUT is installed in a test fixture controlled by a host laptop computer during the tests. Test software exercised the radio card.

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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	Manufacture	Model	Asset	Cal Due			
Antenna, Horn, 18 GHz	ETS Lindgren	3117	C01005	3/20/2015			
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	4/22/2015			
High Pass Filter, fc: 3.0GHz, 50 Ohms	Micro-Tronics	HPM17543	F00181	8/24/2014			
RF PreAmplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	F00354	8/24/2014			
Preamp, 1000MHz	Sonoma	310N	N02891	12/30/2014			
Spectrum Analyzer	Agilent	N9030A	F00128	2/12/2015			
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A-544	F00411	3/21/2015			
Single Channel PK Pow er Meter	Agilent	N1911A	F00024	3/7/2015			
Wideband Pow er Sensor, 30MHz video bandwidth	Agilent	N1921A	F00361	10/2/2014			
Peak Pow er Meter	Boonton	4541	C01186	7/9/2014			
Peak Pow er Sensor	Boonton	57006	C01202	9/17/2014			

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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	Period	Duty Cycle	Duty	Duty Cycle	1/B
	В		x	Cycle	Correction Factor	Minimum VBW
	(msec)	(msec)	(linear)	(%)	(dB)	(kHz)
2.4GHz Band						
802.11b 1TX	3.275	3.565	0.919	91.87%	0.37	0.305
802.11g 1TX	1.086	1.374	0.790	79.04%	1.02	0.921

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7.2. **MEASUREMENT METHODS**

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

Output Power: KDB 558074 D01 v03r02, Section 9.1.2.

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

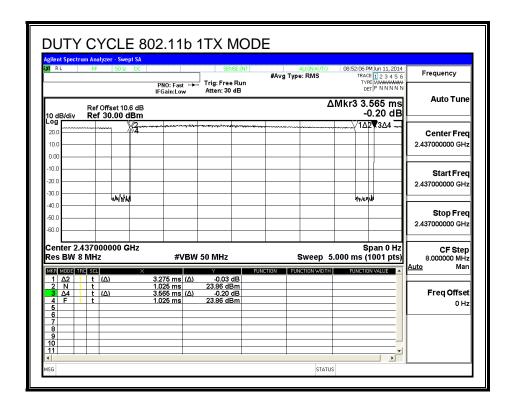
Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r02, Section 11.0.

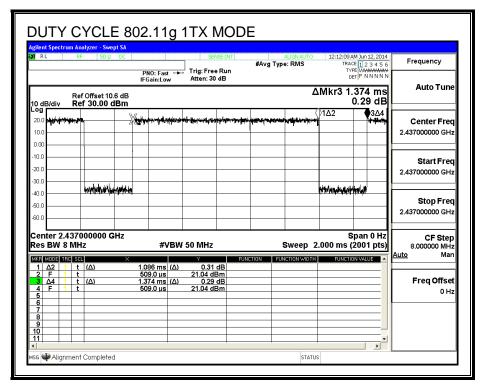
Out-of-band emissions in restricted bands: KDB 558074 D01 v03r02, Section 12.1.

Band-edge: KDB 558074 D01 v03r02, Section 13.2.

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7.3. DUTY CYCLE PLOTS





8. ANTENNA PORT TEST RESULTS

802.11b 1Tx SISO MODE IN THE 2.4 GHz BAND 8.1.

8.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

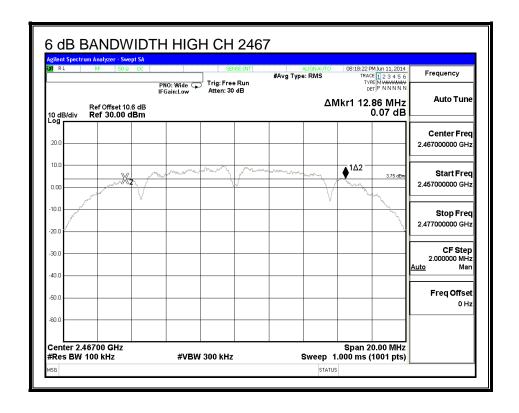
The minimum 6 dB bandwidth shall be at least 500 kHz.

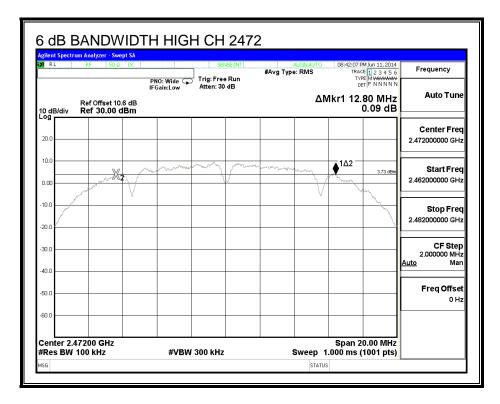
RESULTS

Channel	Frequency	6 dB Bandwidth	Minimum Limit
	(MHz)	(MHz)	(MHz)
High	2467	12.860	0.5
High	2472	12.800	0.5

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6 dB BANDWIDTH





8.1.2. 99% BANDWIDTH

LIMITS

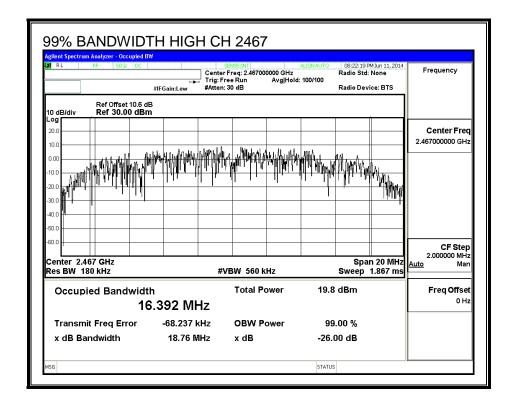
None; for reporting purposes only.

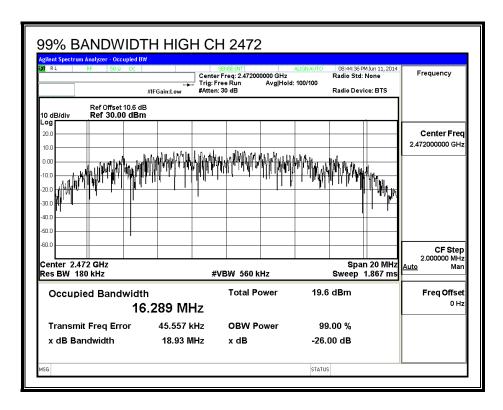
RESULTS

Channel Frequency		99% Bandwidth
	(MHz)	(MHz)
High	2467	16.3920
High	2472	16.2890

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99% BANDWIDTH





8.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	Power
	(MHz) (dBm)	
High	2467	10.22
High	2472	8.88

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8.1.4. OUTPUT POWER

LIMITS

FCC §15.247

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

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RESULTS

Limits

Channel	Frequency	Directional	FCC	IC	IC	Max
		Gain	Power	Power	EIRP	Power
			Limit	Limit	Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
High	2467	0.00	30.00	30	36	30.00

Results

		. 10 00.110					
Channel	Frequency	Chain 0	Total	Power	Margin		
		Meas	Corr'd	Limit			
		Power	Power				
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)		
High	2467	15.985	15.99	30.00	-14.02		
High	2472	14.705	14.71	30.00	-15.30		

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8.1.5. PSD

LIMITS

FCC §15.247

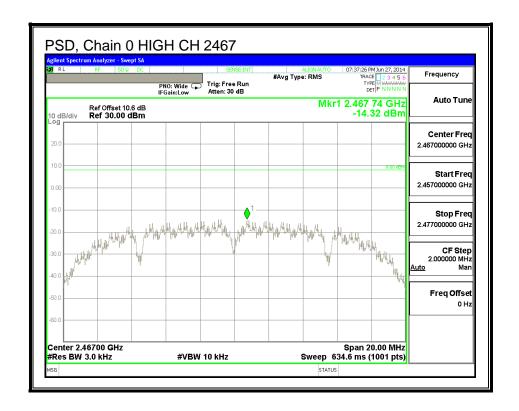
RESULTS

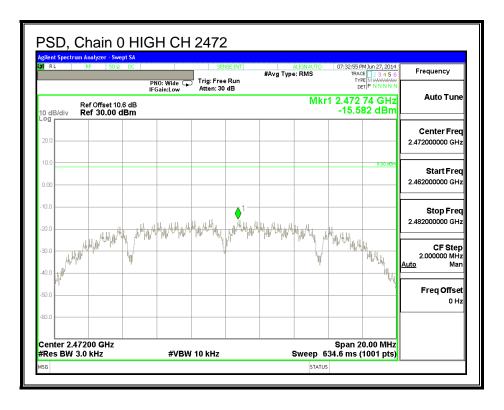
PSD Results

Channel	Frequency	Chain 0 Limit		Margin			
		Meas					
	(MHz)	(dBm)	(dBm)	(dB)			
High	2467	-14.32	8.0	-22.3			
High	2472	-15.58	8.0	-23.6			

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PSD, Chain 0





8.1.6. OUT-OF-BAND EMISSIONS

LIMITS

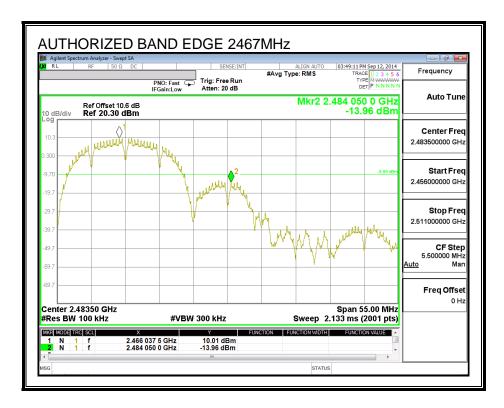
FCC §15.247 (d)

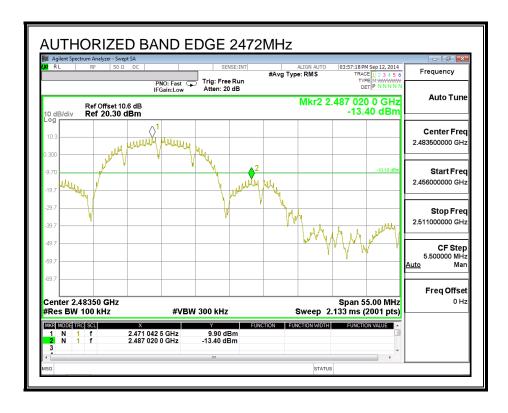
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

DATE: SEPTEMBER 12, 2014

RESULTS

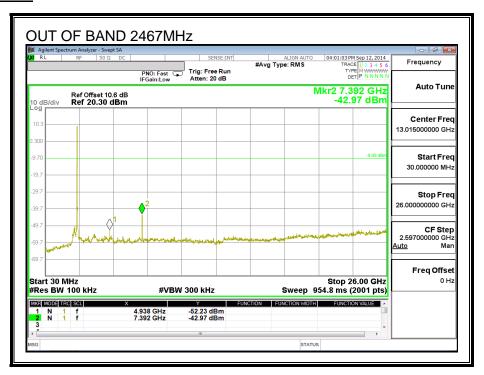
CHANNEL 12 BANDEDGE



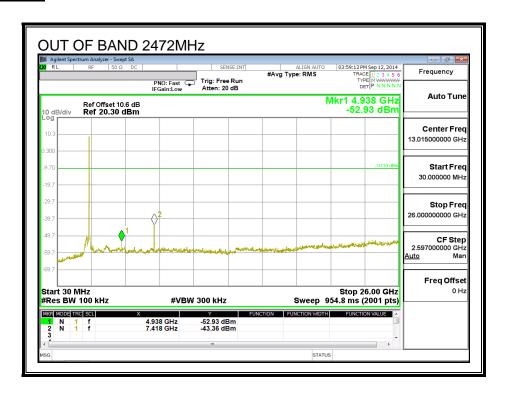


OUT-OF-BAND EMISSIONS

CHANNEL 12



CHANNEL 13



8.2. 802.11g 1Tx SISO MODE IN THE 2.4 GHz BAND

8.2.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

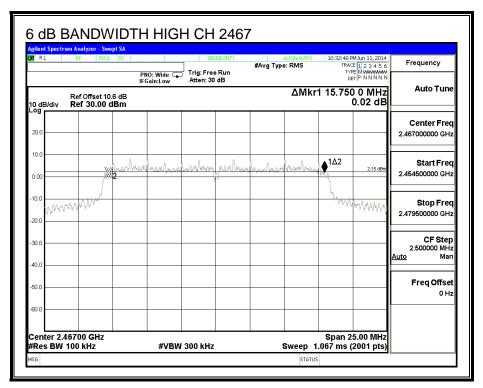
RESULTS

Channel	Frequency	6 dB Bandwidth	Minimum Limit
	(MHz)	(MHz)	(MHz)
HIGH	2467	15.750	0.5
HIGH	2472	15.650	0.5

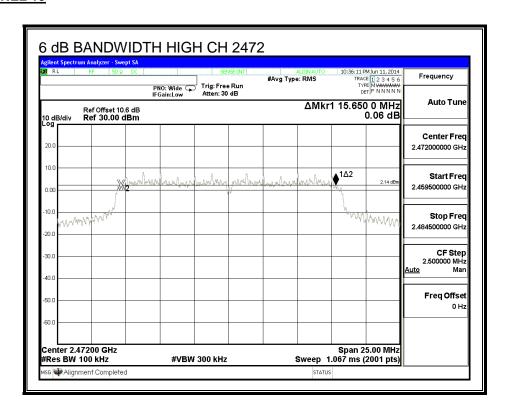
DATE: SEPTEMBER 12, 2014

6 dB BANDWIDTH

CHANNEL 12



CHANNEL 13



8.2.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

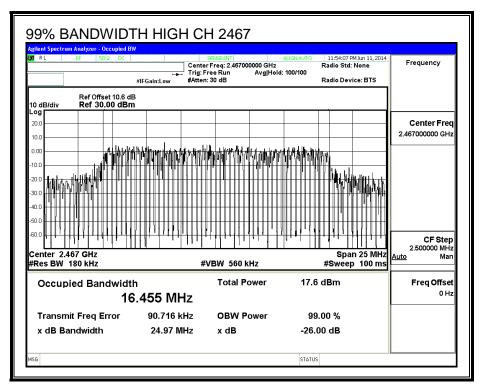
RESULTS

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
HIGH	2467	16.4550
HIGH	2472	16.5260

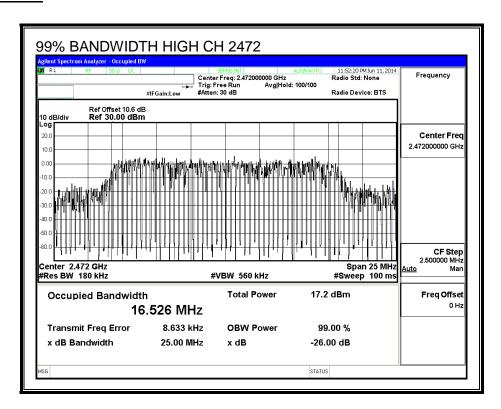
DATE: SEPTEMBER 12, 2014 IC: 7693A-24W0MAMB

8.2.3. 99% BANDWIDTH

CHANNEL 12



CHANNEL 13



8.2.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	Power
	(MHz)	(dBm)
High	2467	4.51
High	2472	-0.57

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8.2.5. OUTPUT POWER

LIMITS

FCC §15.247

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

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RESULTS

Limits

Channel	Frequency	Directional	FCC	IC	IC	Max
		Gain	Power	Power	EIRP	Power
			Limit	Limit	Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
High	2467	0.00	30.00	30	36	30.00
High	2472	0.00	30.00	30	36	30.00

Results

Channel	Frequency	Chain 0	Total	Power	Margin
		Meas	Corr'd	Limit	
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	2467	20.28	20.28	30.00	-9.72
High	2472	16.164	16.16	30.00	-13.84

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8.2.6. PSD

LIMITS

FCC §15.247

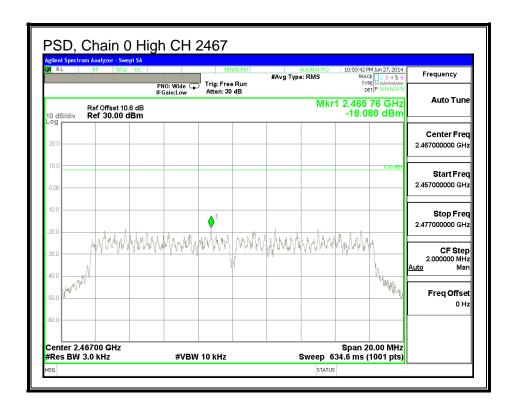
RESULTS

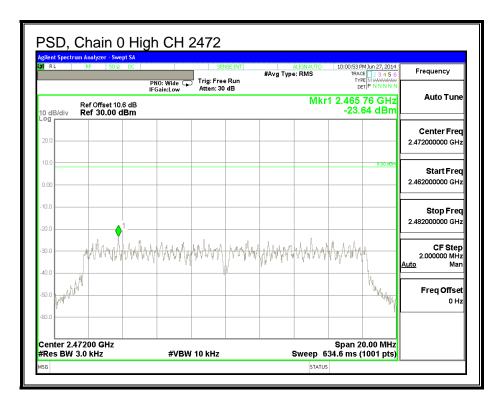
PSD Results

Channel	Frequency	Chain 0	Limit	Margin			
		Meas					
	(MHz)	(dBm)	(dBm)	(dB)			
High	2467	-18.08	8.0	-26.1			
High	2472	-23.64	8.0	-31.6			

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PSD, Chain 0





8.2.7. OUT-OF-BAND EMISSIONS

LIMITS

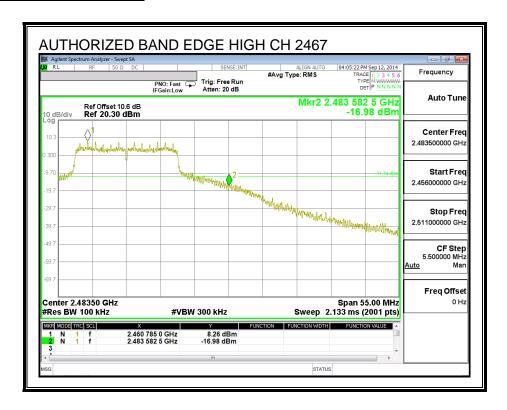
FCC §15.247 (d)

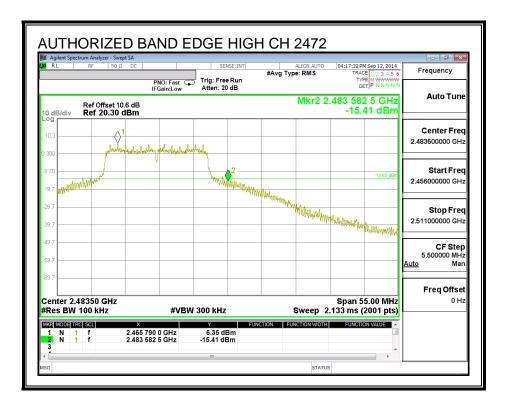
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

DATE: SEPTEMBER 12, 2014

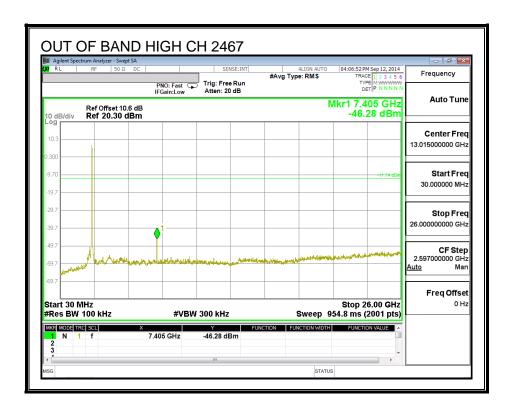
RESULTS

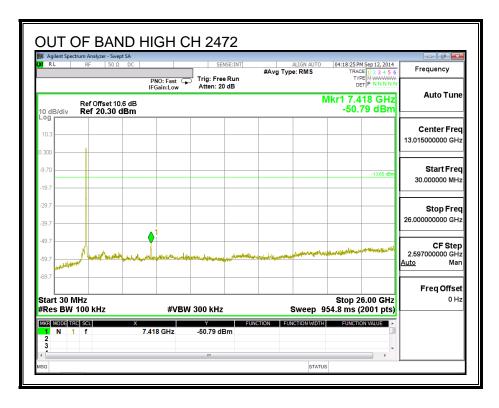
HIGH CHANNEL BANDEDGE





OUT-OF-BAND EMISSIONS





9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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.

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; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

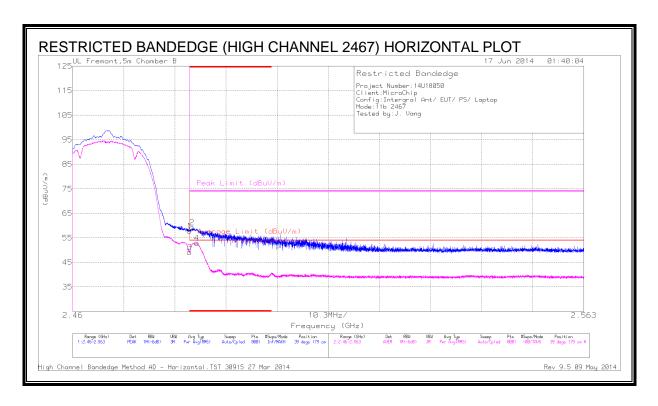
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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.

DATE: SEPTEMBER 12, 2014

9.2. TX ABOVE 1 GHz 802.11b 1Tx SISO MODE WITH AN INTEGRAL ANTENNA

9.2.1. RESTRICTED BANDEDGE IN THE 2.4 GHz BAND



DATA

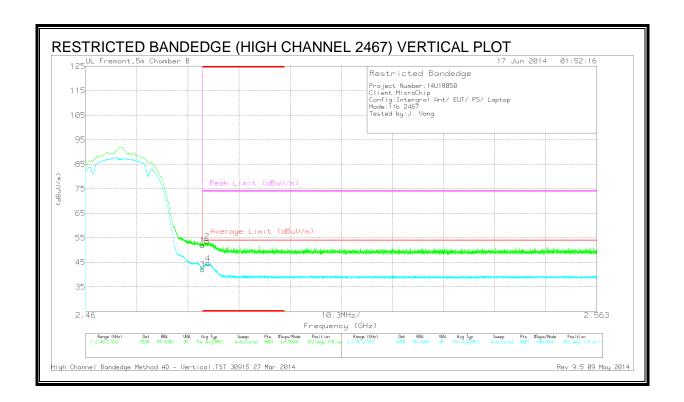
Marker	Frequency (GHz)	Meter Reading	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad	Duty Cycle Factor	Corrected Reading	Average Limit	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
		(dBuV)			(dB)		(dBuV/m)	(dBuV/m)						
1	* 2.484	48.19	PK	32.4	-22.7	0	57.89	-	-	74	-16.11	39	179	Н
2	* 2.484	49.49	PK	32.4	-22.7	0	59.19	-	-	74	-14.81	39	179	Н
3	* 2.484	39.53	RMS	32.4	-22.7	0.37	49.60	54	-4.4	-	-	39	179	Н
4	* 2.485	43.2	RMS	32.4	-22.7	0.37	53.279	54	-0.73	-	-	39	179	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

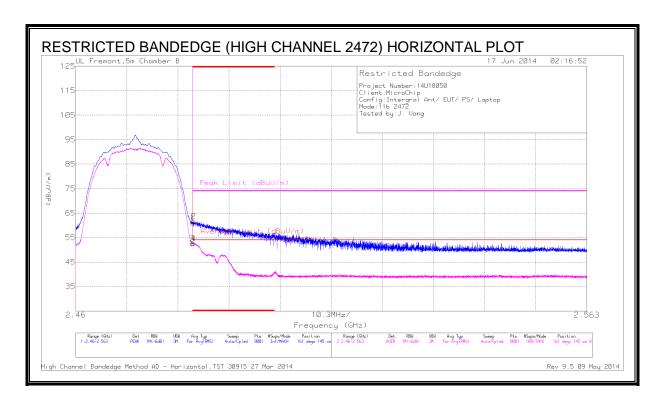
DATE: SEPTEMBER 12, 2014



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/CbI/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.25	PK	32.4	-22.7	0	51.95	-	-	74	-22.05	353	178	V
2	* 2.484	43.91	PK	32.4	-22.7	0	53.61	-	-	74	-20.39	353	178	V
3	* 2.484	32.42	RMS	32.4	-22.7	0.37	42.49	54	-11.51	-	-	353	178	V
4	* 2.485	34.88	RMS	32.4	-22.7	0.37	44.95	54	-9.05	-	-	353	178	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

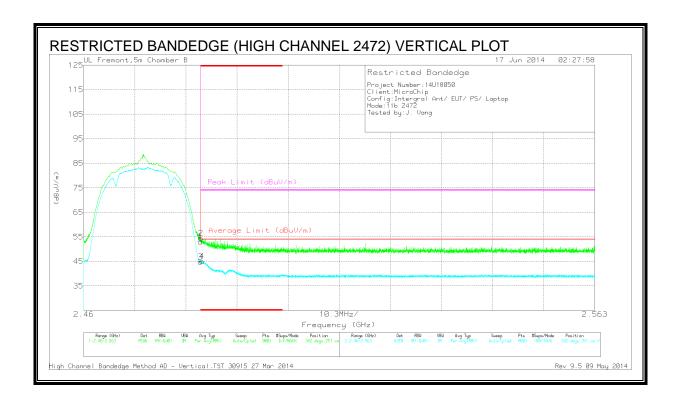
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad	Duty Cycle factor	Corrected Reading	Average Limit	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
		(dBuV)			(dB)		(dBuV/m)	(dBuV/m)						
1	* 2.484	51.42	PK	32.4	-22.7	0	61.12	-	-	74	-12.88	161	145	Н
2	* 2.484	51.87	PK	32.4	-22.7	0	61.57	-	-	74	-12.43	161	145	Н
3	* 2.484	42.78	RMS	32.4	-22.7	0.37	52.85	54	-1.15	-	-	161	145	Н
4	* 2.484	42.98	RMS	32.4	-22.7	0.37	53.058	54	-0.95	-	-	161	145	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

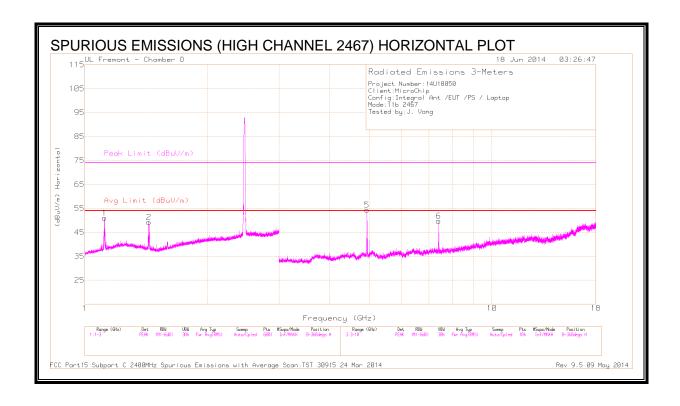


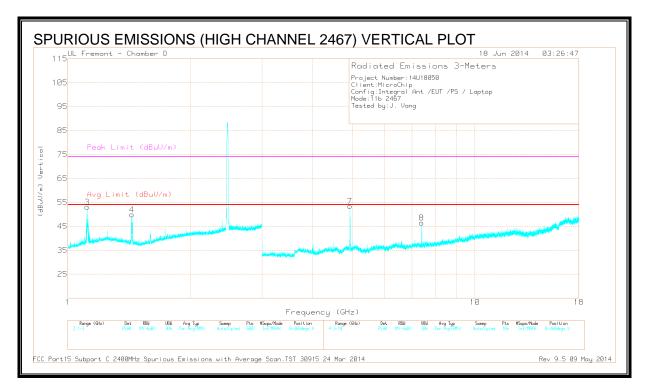
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	43.34	PK	32.4	-22.7	0	53.04	-	-	74	-20.96	342	251	V
2	* 2.484	44.81	PK	32.4	-22.7	0	54.51	-	-	74	-19.49	342	251	V
3	* 2.484	35.09	RMS	32.4	-22.7	0.37	45.16	54	-8.84	-	-	342	251	V
4	* 2.484	35.41	RMS	32.4	-22.7	0.37	45.48	54	-8.52	-	-	342	251	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.2.2. HARMONICS AND SPURIOUS EMISSIONS

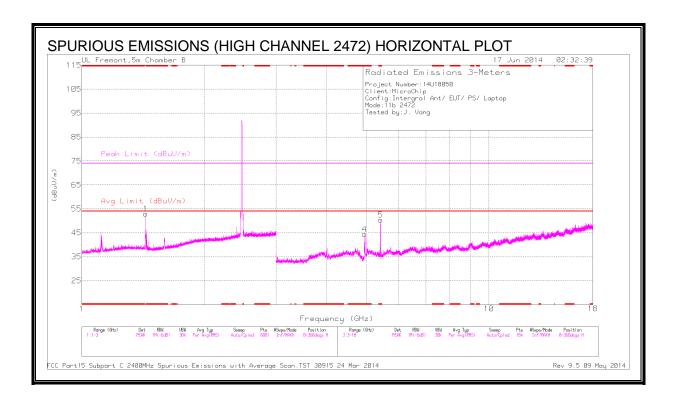


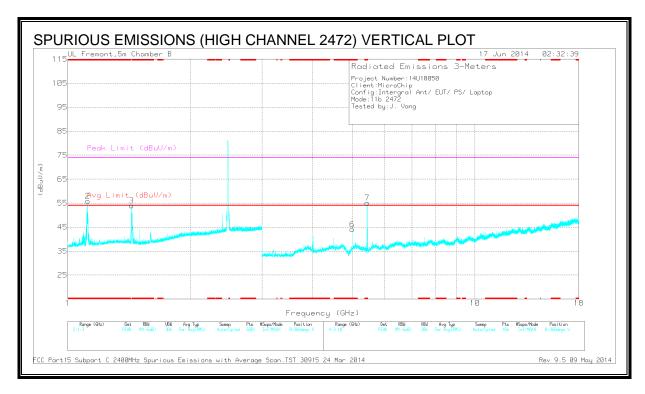


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.118	35.79	PK2	27.8	-22.1	0	41.49	-	-	74	-32.51	148	333	Н
	* 1.118	30.79	MAv1	27.7	-22.1	.4	36.79	54	-17.21	-	-	148	333	Н
2	* 1.437	37.22	PK2	27.6	-21.8	0	43.02	-	-	74	-30.98	298	149	Н
	* 1.436	31.87	MAv1	27.6	-21.8	.4	38.07	54	-15.93	-	-	298	149	Н
3	* 1.118	38.47	PK2	27.7	-22.1	0	44.07	-	-	74	-29.93	220	349	V
	* 1.117	32.52	MAv1	27.7	-22.1	.4	38.52	54	-15.48	-	-	220	349	V
4	* 1.436	36.23	PK2	27.6	-21.8	0	42.03	-	-	74	-31.97	215	121	V
	* 1.438	29.67	MAv1	27.6	-21.8	.4	35.87	54	-18.13	-	-	215	121	V
5	* 4.934	47.57	PK2	33.5	-28	0	53.07	-	-	74	-20.93	264	197	Н
	* 4.934	47.59	MAv1	33.5	-28	.4	53.49	54	51	-	-	264	197	Н
6	* 7.401	39.08	PK2	35.2	-25.1	0	49.18	-	-	74	-24.82	77	101	Н
	* 7.401	38.73	MAv1	35.2	-25.1	.4	49.23	54	-4.77	-	-	77	101	Н
7	* 4.934	46.54	PK2	33.5	-28	0	52.04	-	-	74	-21.96	95	102	V
	* 4.934	45.99	MAv1	33.5	-28	.4	51.89	54	-2.11	-	-	95	102	V
8	* 7.401	37.69	PK2	35.2	-25.1	0	47.79	-	-	74	-26.21	135	271	V
	* 7.401	36.89	MAv1	35.2	-25.1	.4	47.39	54	-6.61	-	-	135	271	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





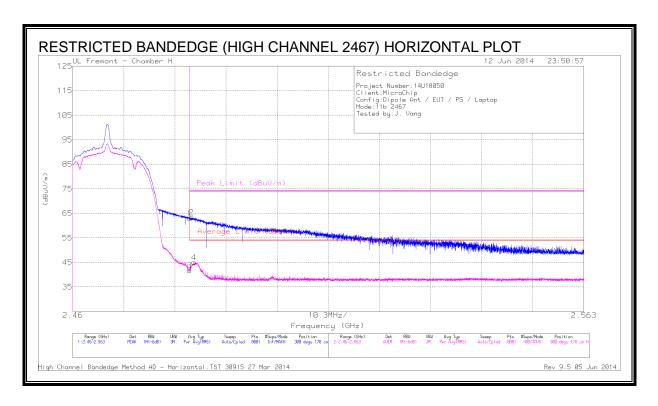
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.435	40.95	PK2	28.3	-24.3	0	44.95	-	-	74	-29.05	185	340	Н
	* 1.435	33.33	MAv1	28.3	-24.3	.4	37.73	54	-16.27	-	-	185	340	Н
2	* 1.119	42.19	PK2	27.5	-24.7	0	44.99	-	-	74	-29.01	115	207	V
	* 1.119	37.55	MAv1	27.5	-24.7	.4	40.75	54	-13.25	-	-	115	207	V
3	* 1.435	42.89	PK2	28.3	-24.3	0	46.89	-	-	74	-27.11	79	240	V
	* 1.435	36.41	MAv1	28.3	-24.3	.4	40.81	54	-13.19	-	-	79	240	V
4	* 4.944	35.76	PK2	34.2	-30.6	0	39.36	-	-	74	-34.64	133	208	Н
	* 4.944	29.23	MAv1	34.2	-30.6	.4	33.23	54	-20.77	-	-	133	208	Н
5	* 5.415	34.14	PK2	34.5	-29.4	0	39.24	-	-	74	-34.76	141	283	Н
	* 5.415	27.52	MAv1	34.5	-29.4	.4	33.02	54	-20.98	-	-	141	283	Н
6	* 5	43	PK2	34.2	-29.6	0	47.6	-	-	74	-26.4	101	200	V
	* 5	39.68	MAv1	34.2	-29.6	.4	44.68	54	-9.32	-	-	101	200	V
7	* 5.439	34.95	PK2	34.5	-29.6	0	39.85	-	-	74	-34.15	46	269	V
	* 5.44	28.44	MAv1	34.5	-29.6	.4	33.74	54	-20.26	-	-	46	269	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

9.3. TX ABOVE 1 GHz 802.11b 1Tx SISO MODE WITH DIPOLE RFA-02-C2M2-D034 ANTENNA

9.3.1. RESTRICTED BANDEDGE IN THE 2.4GHz BAND



DATA

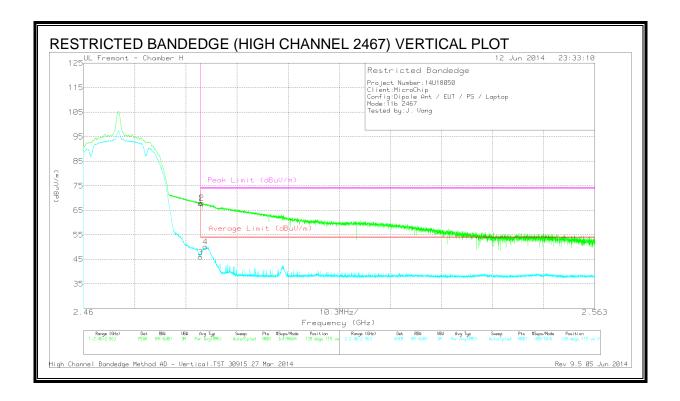
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/CbI/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	55.22	PK	32.2	-24.5	0	63.92	-	-	74	-11.08	300	178	Н
2	* 2.484	55.58	PK	32.2	-24.5	0	63.28	-	-	74	-10.72	300	178	Н
3	* 2.484	34.07	RMS	32.2	-24.5	0.37	42.14	54	-11.86	-	-	300	178	Н
4	* 2.484	37.2	RMS	32.2	-24.5	0.37	45.27	54	-8.73	-	-	300	178	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

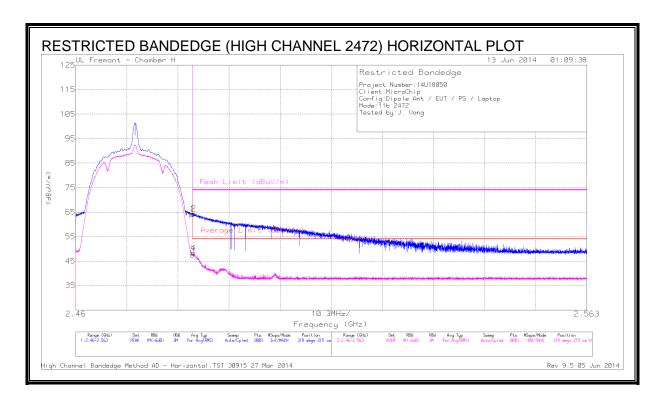
DATE: SEPTEMBER 12, 2014



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/CbI/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	60.05	PK	32.2	-24.5	0.37	68.12	-	-	74	-5.88	139	115	V
2	* 2.484	60.29	PK	32.2	-24.5	0.37	68.36	-	-	74	-5.64	139	115	V
3	* 2.484	38.22	RMS	32.2	-24.5	0.37	46.29	54	-7.71	-	-	139	115	V
4	* 2.485	42.47	RMS	32.2	-24.5	0.37	50.54	54	-3.46	-	-	139	115	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

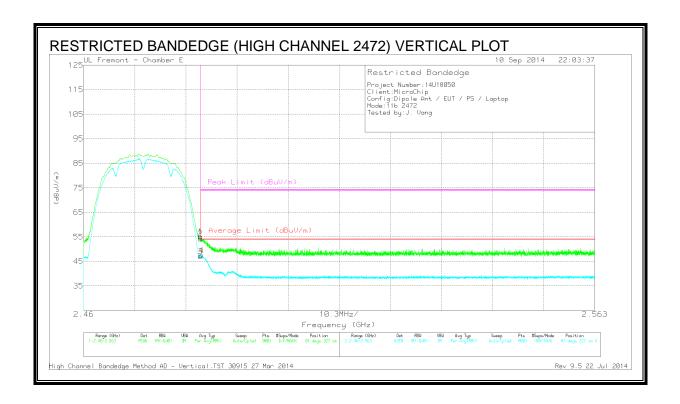
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.56	PK	32.2	-24.5	0	64.26	-	-	74	-9.74	319	215	Н
2	* 2.484	56.62	PK	32.2	-24.5	0	64.32	-	-	74	-9.68	319	215	Н
3	* 2.484	39.87	RMS	32.2	-24.5	0.37	47.94	54	-6.06	-	-	319	215	Н
4	* 2.484	40.55	RMS	32.2	-24.5	0.37	48.62	54	-5.38	-	-	319	215	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

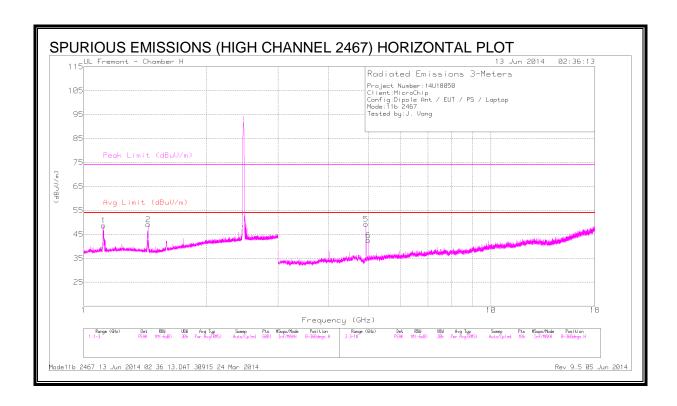


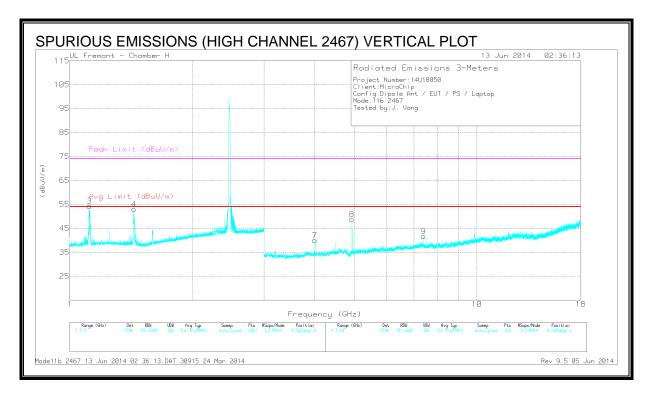
Mark er	Freque ncy (GHz)	Meter Readi ng (dBuV)	Det	AF T346 (dB/m)	Amp/Cb I/Fltr/Pa d (dB)	DC Corr (dB)	Correcte d Reading (dBuV/ m)	Averag e Limit (dBuV/ m)	Marg in (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimu th (Degs)	Heig ht (cm)	Polari ty
1	* 2.484	47.15	PK	32.3	-24.3	0	55.15	-	-	74	-18.85	81	327	V
2	* 2.484	46.32	PK	32.3	-24.3	0	54.32	-	-	74	-19.68	81	327	V
3	* 2.484	38.65	RMS	32.3	-24.3	.37	47.02	54	-6.98	-	-	81	327	V
4	* 2.484	39.03	RMS	32.3	-24.3	.37	47.4	54	-6.6	-	-	81	327	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.3.2. HARMONICS AND SPURIOUS EMISSIONS

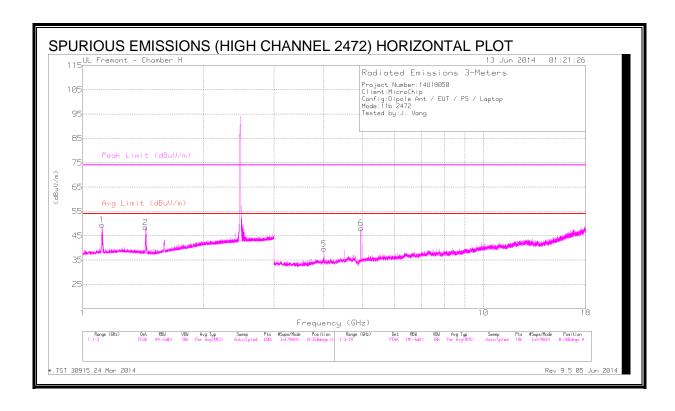


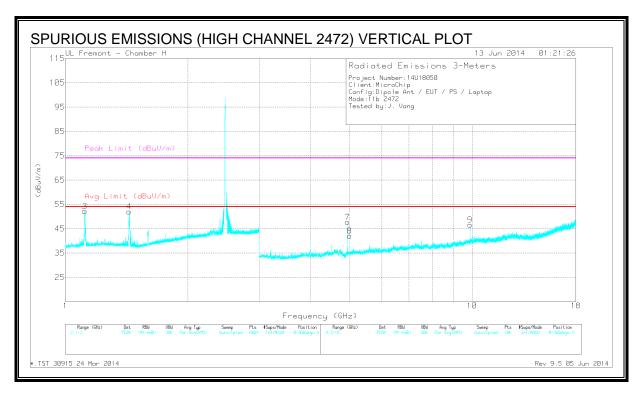


Marke r	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimut h (Degs)	Heigh t (cm)	Polarit Y
1	* 1.118	40.38	PK2	28.3	-25.8	0	42.88	-	-	74	-31.12	246	129	Н
	* 1.118	34.79	MAv1	28.3	-25.8	.4	37.69	54	-16.31	-	-	246	129	Н
2	* 1.439	39.73	PK2	28	-25.5	0	42.23	-	-	74	-31.77	328	241	Н
	* 1.439	33.59	MAv1	28	-25.5	.4	36.49	54	-17.51	-	-	328	241	Н
3	* 1.118	39.38	PK2	28.3	-25.8	0	41.88	-	-	74	-32.12	294	204	V
	* 1.116	33.26	MAv1	28.3	-25.8	.4	36.16	54	-17.84	-	-	294	204	V
4	* 1.437	40.61	PK2	28	-25.5	0	43.11	-	-	74	-30.89	9	263	V
	* 1.436	34.5	MAv1	28	-25.5	.4	37.4	54	-16.6	-	-	9	263	V
5	* 4.934	48.21	PK2	34.3	-32	0	50.51	-	-	74	-23.49	5	241	Н
	* 4.934	46.6	MAv1	34.3	-32	.4	49.3	54	-4.7	-	-	5	241	Н
6	* 5.001	43.04	PK2	34.3	-32.2	0	45.14	-	-	74	-28.86	143	190	Н
	* 5	40.03	MAv1	34.3	-32.2	.4	42.53	54	-11.47	-	-	143	190	Н
7	* 4	43.18	PK2	33.5	-32.8	0	43.88	-	-	74	-30.12	282	131	V
	* 4	39.45	MAv1	33.5	-32.8	.4	40.55	54	-13.45	-	-	282	131	V
8	* 4.934	45.98	PK2	34.3	-32	0	48.28	-	1	74	-25.72	31	202	V
	* 4.934	43.8	MAv1	34.3	-32	.4	46.5	54	-7.5	-	-	31	202	V
9	* 7.401	37.43	PK2	36.1	-29.2	0	44.33	-	-	74	-29.67	186	356	V
	* 7.401	32.6	MAv1	36.1	-29.2	.4	39.9	54	-14.1	-	-	186	356	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.12	40.59	PK2	28.3	-25.8	43.09	-	-	74	-30.91	346	208	Н
	* 1.119	33.56	MAv1	28.3	-25.8	36.06	54	-17.94	-	-	346	208	Н
3	* 1.116	43.5	PK2	28.3	-25.8	46	-	-	74	-28	198	203	V
	* 1.119	36.91	MAv1	28.3	-25.8	39.41	54	-14.59	-	-	198	203	V
4	* 1.436	39.45	PK2	28	-25.5	41.95	-	-	74	-32.05	17	209	V
	* 1.436	33.14	MAv1	28	-25.5	35.64	54	-18.36	-	-	17	209	V
5	* 4	40.91	PK2	33.5	-32.8	41.61	-	-	74	-32.39	284	199	Н
	* 4	36.21	MAv1	33.5	-32.8	36.91	54	-17.09	-	-	284	199	Н
6	* 4.944	46.97	PK2	34.3	-31.9	49.37	-	-	74	-24.63	3	201	Н
	* 4.944	45.04	MAv1	34.3	-31.9	47.44	54	-6.56	-	-	3	201	Н
7	* 4.944	48.37	PK2	34.3	-31.9	50.77	-	-	74	-23.23	138	247	V
	* 4.944	46.83	MAv1	34.3	-31.9	49.23	54	-4.77	-	-	138	247	V
8	* 5	42.28	PK2	34.3	-32.2	44.38	-	-	74	-29.62	174	181	V
	* 5	38.21	MAv1	34.3	-32.2	40.31	54	-13.69	-	-	174	181	V
2	1.433	45.92	PK	28	-25.5	48.42	-	-	-	-	0-360	200	Н
9	9.887	36.07	PK	37.1	-26.6	46.57	-	-	-	-	0-360	201	V

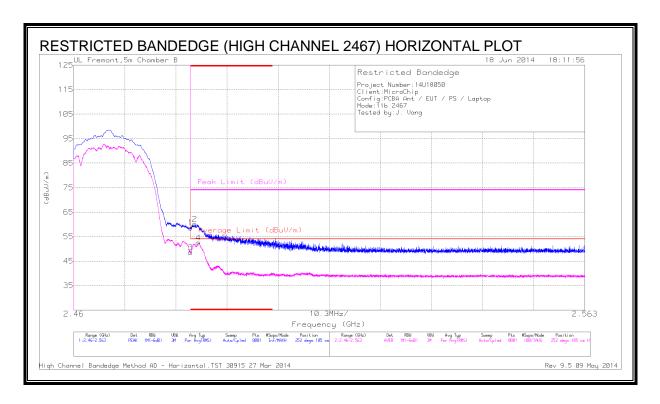
^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.4. TX ABOVE 1 GHz 802.11b 1Tx SISO MODE WITH PCBA RFA-02-P05-D034 ANTENNA

9.4.1. RESTRICTED BANDEDGE IN THE 2.4GHz BAND



DATA

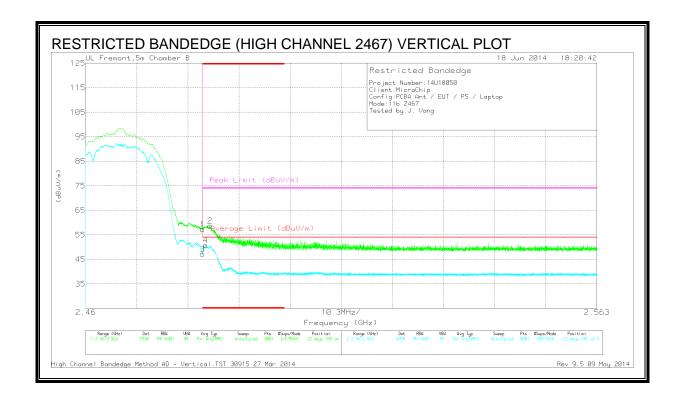
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.97	PK	32.4	-22.7	0	58.67	-	-	74	-15.33	252	185	Н
2	* 2.484	50.43	PK	32.4	-22.7	0	60.13	-	-	74	-13.87	252	185	Н
3	* 2.484	38.83	RMS	32.4	-22.7	0.37	48.90	54	-5.1	-	-	252	185	Н
4	* 2.485	42.78	RMS	32.4	-22.7	0.37	52.85	54	-1.15	-	-	252	185	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

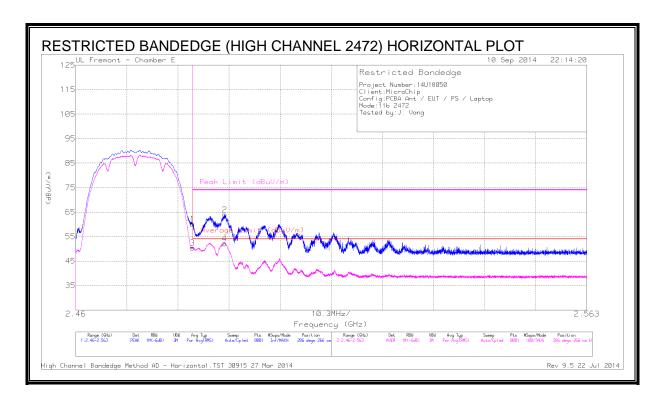
DATE: SEPTEMBER 12, 2014



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/CbI/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	47.54	PK	32.4	-22.7	0	57.24	-	-	74	-16.76	22	345	V
2	* 2.485	49.03	PK	32.4	-22.7	0	58.73	-	-	74	-15.27	22	345	V
3	* 2.484	37.52	RMS	32.4	-22.7	0.37	47.59	54	-6.41	-	-	22	345	V
4	* 2.484	41.03	RMS	32.4	-22.7	0.37	51.1	54	-2.90	-	-	22	345	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

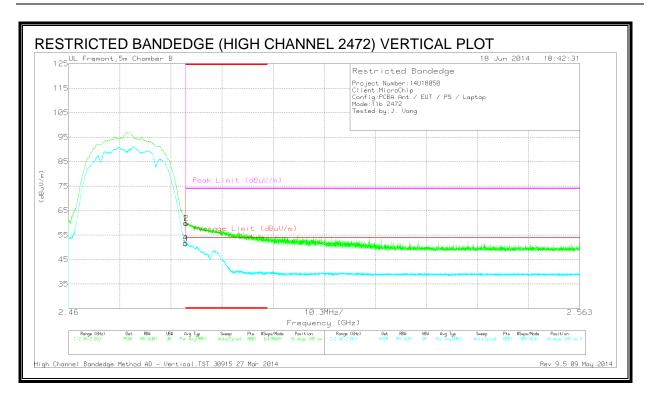
PK - Peak detector



Mark er	Freque ncy (GHz)	Mete r Readi ng (dBuV)	Det	AF T346 (dB/m)	Amp/Cb I/Fitr/P ad (dB)	DC Corr (dB)	Correc ted Readin g (dBuV/ m)	Average Limit (dBuV/ m)	Marg in (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimu th (Degs)	Heig ht (cm)	Polari ty
1	* 2.484	52.18	PK	32.3	-24.3	0	60.18	-	-	74	-13.82	286	266	Н
3	* 2.484	42.36	RMS	32.3	-24.3	.37	50.73	54	-3.27	-	-	286	266	Н
2	* 2.49	55.96	PK	32.3	-24.3	0	63.96	-	-	74	-10.04	286	266	Н
4	* 2.49	44.21	RMS	32.3	-24.3	.37	52.58	54	-1.42	-	-	286	266	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

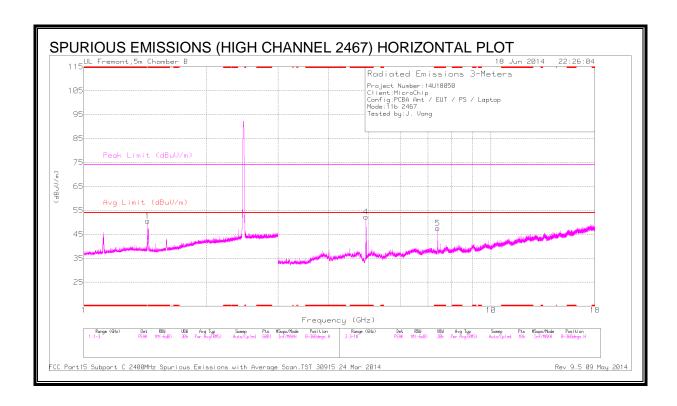


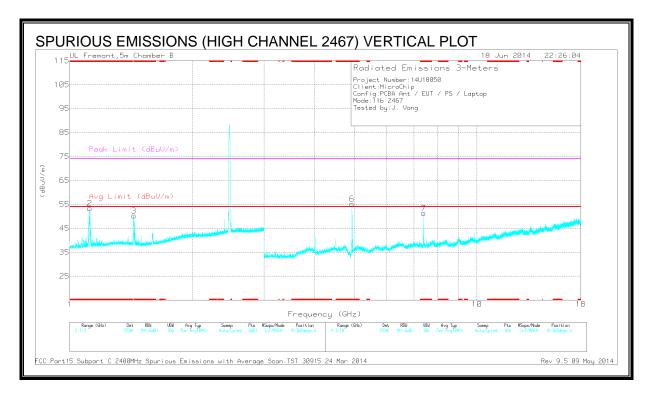
Marker	Frequency	Meter	Det	AF T345	Amp/Cbl/	Duty Cycle	Corrected	Average	Margin	Peak Limit	PK Margin	Azimuth	Height	Polarity
	(GHz)	Reading		(dB/m)	Fltr/Pad	Factor	Reading	Limit	(dB)	(dBuV/m)	(dB)	(Degs)	(cm)	
		(dBuV)			(dB)		(dBuV/m)	(dBuV/m)						
1	* 2.484	50.31	PK	32.4	-22.7	0	60.01	-	-	74	-13.99	16	345	V
2	* 2.484	50.09	PK	32.4	-22.7	0	59.79	-	-	74	-14.21	16	345	V
3	* 2.484	41.82	RMS	32.4	-22.7	0.37	51.89	54	-2.11	-	-	16	345	V
4	* 2.484	42.14	RMS	32.4	-22.7	0.37	52.21	54	-1.79	-	-	16	345	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.4.2. HARMONICS AND SPURIOUS EMISSIONS

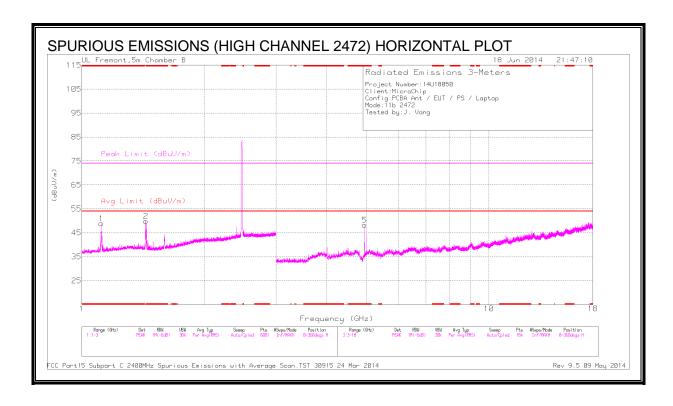


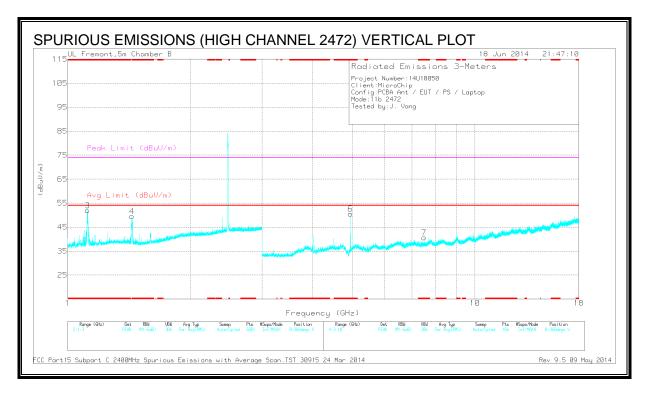


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.435	39.89	PK2	28.3	-24.3	0	43.89	-	-	74	-30.11	187	370	Н
	* 1.435	33.45	MAv1	28.3	-24.3	.4	37.85	54	-16.15	-	-	187	370	Н
2	* 1.118	41.93	PK2	27.5	-24.7	0	44.73	-	-	74	-29.27	118	179	V
	* 1.119	37.04	MAv1	27.5	-24.7	.4	40.24	54	-13.76	-	-	118	179	V
3	* 1.436	40.93	PK2	28.3	-24.3	0	44.93	-	-	74	-29.07	70	202	V
	* 1.436	35.13	MAv1	28.3	-24.3	.4	39.53	54	-14.47	-	-	70	202	V
4	* 4.934	49.96	PK2	34.2	-30.8	0	53.36	-	-	74	-20.64	286	240	Н
	* 4.934	48.91	MAv1	34.2	-30.8	.4	52.71	54	-1.29	-	-	286	240	Н
5	* 7.401	30.49	PK2	35.6	-27	0	39.09	-	-	74	-34.91	278	324	Н
	* 7.401	27.23	MAv1	35.6	-27	.4	36.23	54	-17.77	-	-	278	324	Н
6	* 4.935	37.76	PK2	34.2	-30.7	0	41.26	-	-	74	-32.74	0	318	V
	* 4.935	32.2	MAv1	34.2	-30.7	.4	36.1	54	-17.9	-	-	0	318	V
7	* 7.4	33.63	PK2	35.6	-27	0	42.23	-	-	74	-31.77	57	247	V
	* 7.401	27.15	MAv1	35.6	-27	.4	36.15	54	-17.85	-	-	57	247	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





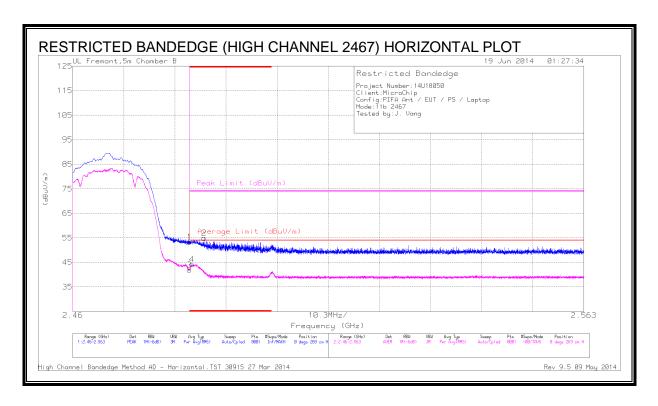
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.117	46.11	PK	27.5	-24.7	0	48.91	-	-	74	-25.09	290	209	Н
	* 1.117	37.83	MAv1	27.5	-24.7	.4	40.03	54	-13.97	-	-	290	209	Н
2	* 1.44	39.73	PK2	28.3	-24.3	0	43.73	-	-	74	-30.27	196	213	Н
	* 1.438	33.98	MAv1	28.3	-24.3	.4	38.38	54	-15.62	-	-	196	213	Н
3	* 1.118	42.73	PK2	27.5	-24.7	0	45.53	-	-	74	-28.47	107	222	V
	* 1.117	37.83	MAv1	27.5	-24.7	.4	41.03	54	-12.97	-	-	107	222	V
4	* 1.438	42.54	PK2	28.3	-24.3	0	46.54	-	-	74	-27.46	266	319	V
	* 1.439	35.8	MAv1	28.3	-24.3	.4	40.2	54	-13.8	-	-	266	319	V
5	* 4.944	48.6	PK2	34.2	-30.6	0	52.2	-	-	74	-21.8	285	240	Н
	* 4.944	47.21	MAv1	34.2	-30.6	.4	51.21	54	-2.79	-	-	285	240	Н
6	* 4.944	50.28	PK2	34.2	-30.6	0	53.88	-	-	74	-20.12	55	308	V
	* 4.944	49.1	MAv1	34.2	-30.6	.4	53.1	54	9	-	-	55	308	V
7	* 7.5	35.46	PK2	35.6	-26.9	0	44.16	-	-	74	-29.84	70	214	V
	* 7.5	29.22	MAv1	35.6	-26.9	.4	38.32	54	-15.68	-	-	70	214	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

9.5. TX ABOVE 1 GHz 802.11b 1Tx SISO MODE WITH PIFA RFA-02-G03-D034 ANTENNA

9.5.1. RESTRICTED BANDEDGE IN THE 2.4 GHZ BAND



DATA

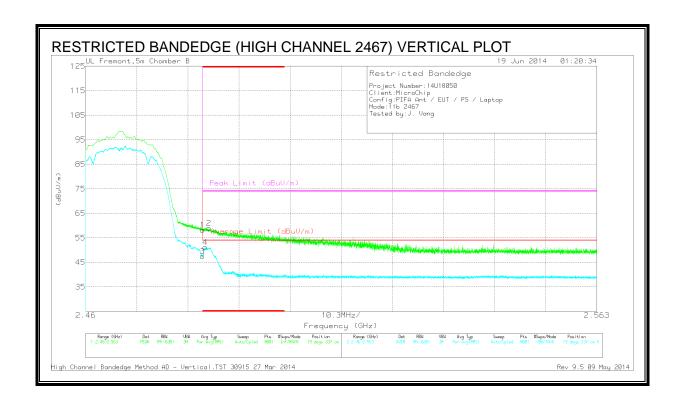
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	43.65	PK	32.4	-22.7	0	53.35	-	-	74	-20.65	0	269	Н
2	* 2.486	45.25	PK	32.4	-22.7	0	54.95	-	-	74	-19.05	0	269	Н
3	* 2.484	32.23	RMS	32.4	-22.7	0.37	42.3	54	-11.70	-	-	0	269	Н
4	* 2.484	34.51	RMS	32.4	-22.7	0.37	44.58	54	-9.42	-	-	0	269	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

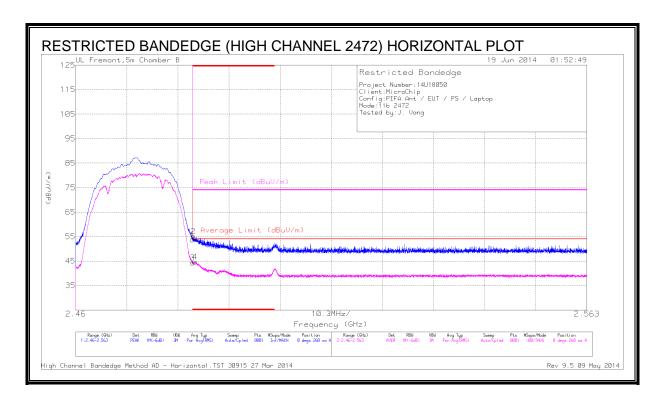
DATE: SEPTEMBER 12, 2014



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.56	PK	32.4	-22.7	0	58.26	-	-	74	-15.74	19	337	V
2	* 2.485	49.33	PK	32.4	-22.7	0	59.23	-	-	74	-14.77	19	337	V
3	* 2.484	37.85	RMS	32.4	-22.7	0.37	47.92	54	-6.08	-	-	19	337	V
4	* 2.484	41.47	RMS	32.4	-22.7	0.37	51.54	54	-2.46	-	-	19	337	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

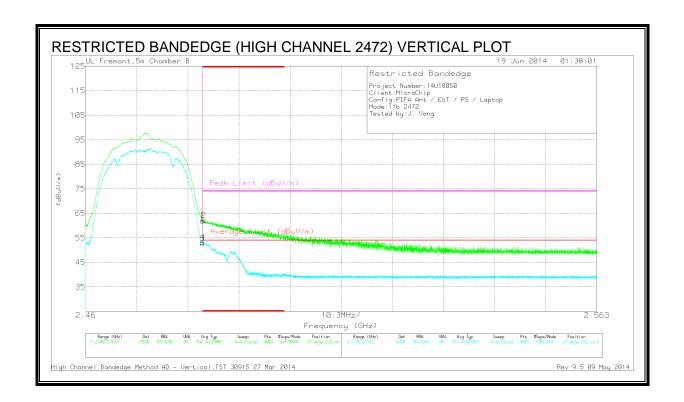
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.05	PK	32.4	-22.7	0	53.75	-	-	74	-20.25	0	260	Н
2	* 2.484	45.42	PK	32.4	-22.7	0	55.12	-	-	74	-18.88	0	260	Н
3	* 2.484	34.6	RMS	32.4	-22.7	0.37	44.67	54	-9.33	-	-	0	260	Н
4	* 2.484	34.95	RMS	32.4	-22.7	0.37	45.02	54	-8.98	-	-	0	260	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

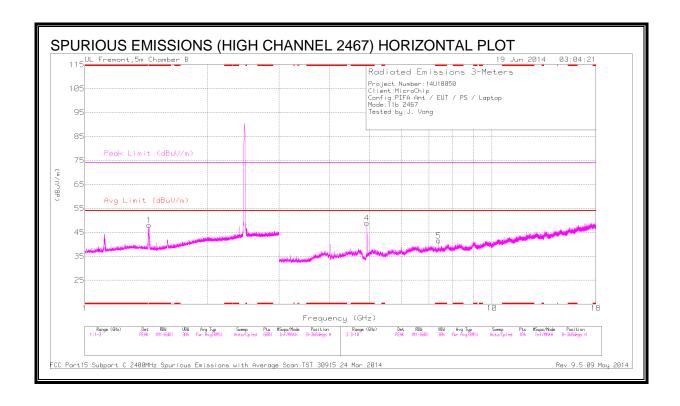


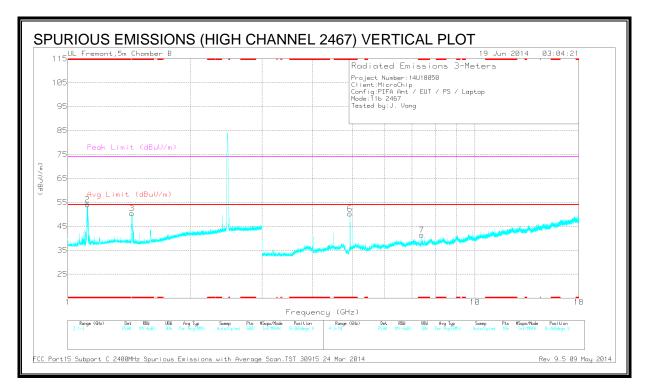
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/CbI/ Fltr/Pad (dB)	Duty Cycle Factor	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	52.22	PK	32.4	-22.7	0	61.92	-	-	74	-11.71	27	332	V
2	* 2.484	52.46	PK	32.4	-22.7	0	62.16	-	-	74	-11.84	27	332	V
3	* 2.484	43.2	RMS	32.4	-22.7	0.37	53.27	54	-0.73	-	-	27	332	V
4	* 2.484	43.55	RMS	32.4	-22.7	0.37	53.62	54	-0.38	-	-	27	332	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.5.2. HARMONICS AND SPURIOUS EMISSIONS

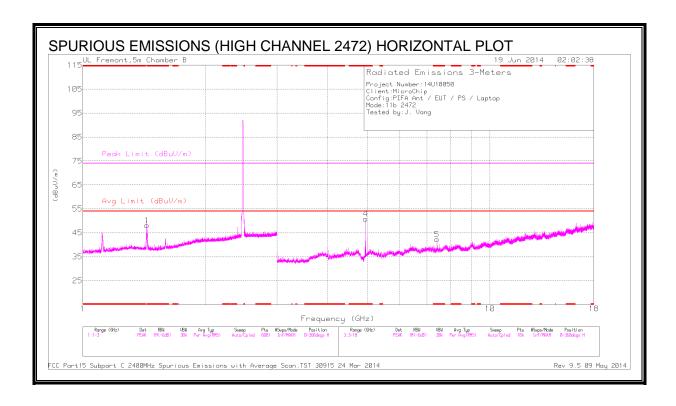


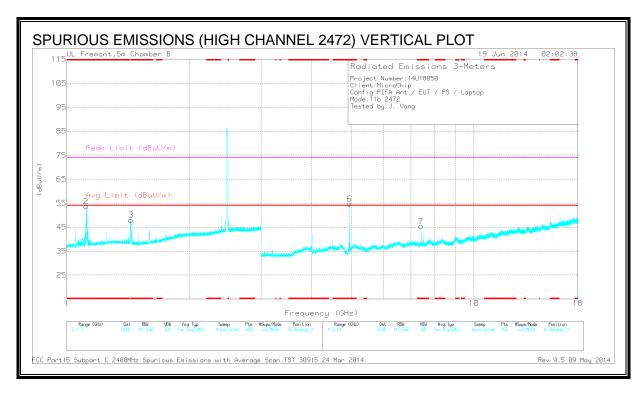


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.438	40.24	PK2	28.3	-24.3	0	44.24	-	-	74	-29.76	201	184	Н
	* 1.438	34.21	MAv1	28.3	-24.3	.4	38.61	54	-15.39	-	-	201	184	Н
2	* 1.118	41.65	PK2	27.5	-24.7	0	44.45	-	-	74	-29.55	111	257	V
	* 1.119	37.14	MAv1	27.5	-24.7	.4	40.34	54	-13.66	-	-	111	257	V
3	* 1.437	41.44	PK2	28.3	-24.3	0	45.44	-	-	74	-28.56	67	195	V
	* 1.438	35.49	MAv1	28.3	-24.3	.4	39.89	54	-14.11	-	-	67	195	V
4	* 4.934	46.92	PK2	34.2	-30.8	0	50.32	-	-	74	-23.68	282	369	Н
	* 4.934	45.52	MAv1	34.2	-30.8	.4	49.32	54	-4.68	-	-	282	369	Н
5	* 7.401	35.03	PK2	35.6	-27	0	43.63	-	-	74	-30.37	278	264	Н
	* 7.401	29.94	MAv1	35.6	-27	.4	38.94	54	-15.06	-	-	278	264	Н
6	* 4.934	50.45	PK2	34.2	-30.8	0	53.85	-	-	74	-20.15	58	253	V
	* 4.934	49.41	MAv1	34.2	-30.8	.4	53.21	54	79	-	-	58	253	V
7	* 7.401	35.54	PK2	35.6	-27	0	44.14	-	-	74	-29.86	314	299	V
	* 7.401	30.7	MAv1	35.6	-27	.4	39.7	54	-14.3	-	-	314	299	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





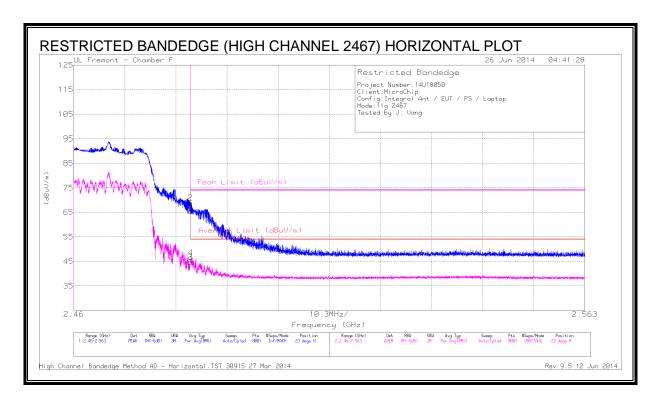
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.437	39.03	PK2	28.3	-24.3	0	43.03	-	-	74	-30.97	0	116	Н
	* 1.437	32.53	MAv1	28.3	-24.3	.4	36.93	54	-17.07	-	-	0	116	Н
2	* 1.116	41.83	PK2	27.5	-24.7	0	44.63	-	-	74	-29.37	115	156	V
	* 1.116	36.66	MAv1	27.5	-24.7	.4	39.86	54	-14.14	-	-	115	156	V
3	* 1.437	40.88	PK2	28.3	-24.3	0	44.88	-	-	74	-29.12	76	215	V
	* 1.438	34.79	MAv1	28.3	-24.3	.4	39.19	54	-14.81	-	-	76	215	V
4	* 4.944	48.18	PK2	34.2	-30.6	0	51.78	-	-	74	-22.22	284	243	Н
	* 4.944	47.13	MAv1	34.2	-30.6	.4	51.13	54	-2.87	-	-	284	243	Н
5	* 7.416	35.79	PK2	35.6	-27	0	44.39	-	-	74	-29.61	284	143	Н
	* 7.416	31.95	MAv1	35.6	-27	.4	40.95	54	-13.05	-	-	284	143	Н
6	* 4.944	51.02	PK2	34.2	-30.6	0	54.62	-	-	74	-19.38	49	278	V
	* 4.944	49.91	MAv1	34.2	-30.6	.4	53.91	54	09	-	-	49	278	V
7	* 7.416	32.53	PK2	35.6	-27	0	41.13	-	-	74	-32.87	243	293	V
	* 7.416	26.01	MAv1	35.6	-27	.4	35.01	54	-18.99	-	-	243	293	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

TX ABOVE 1 GHz 802.11g 1Tx SISO MODE WITH AN INTEGRAL 9.6. **ANTENNA**

9.6.1. RESTRICTED BANDEDGE IN THE 2.4 GHz BAND



DATA

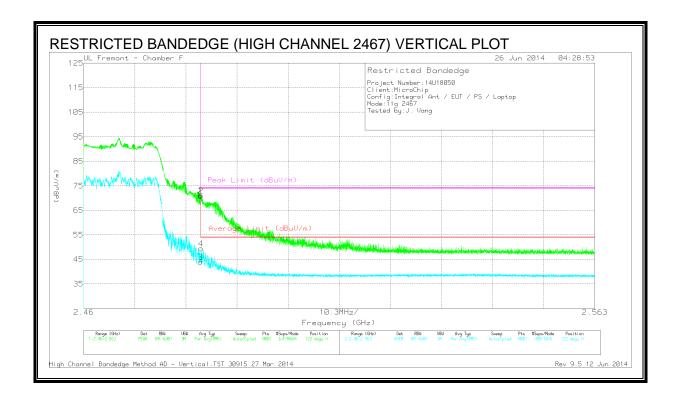
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	55.83	PK	32.6	-23	0	65.43	-	-	74	-8.57	23	320	Н
2	* 2.484	59.33	PK	32.6	-23	0	68.93	-	-	74	-5.07	23	320	Н
3	* 2.484	34.1	RMS	32.6	-23	1.02	44.72	54	-9.28	-	-	23	320	Н
4	* 2.484	35.89	RMS	32.6	-23	1.02	46.51	54	-7.49	-	-	23	320	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

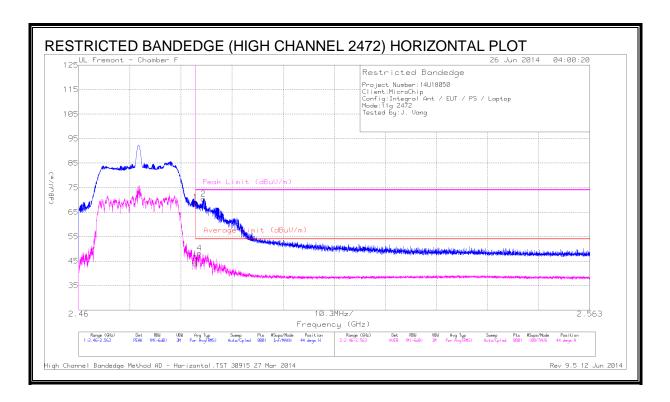
DATE: SEPTEMBER 12, 2014



Marker	Frequency	Meter	Det	AF T120	Amp/Cbl/Flt	DC Corr (dB)	Corrected	Average	Margin	Peak Limit	PK Margin	Azimuth	Height	Polarity
	(GHz)	Reading (dBuV)		(dB/m)	r/Pad (dB)		Reading (dBuV/m)	Limit (dBuV/m)	(dB)	(dBuV/m)	(dB)	(Degs)	(cm)	
1	* 2.484	61.55	PK	32.6	-23	0	71.15	-	-	74	-2.85	122	331	V
2	* 2.484	61.29	PK	32.6	-23	0	70.89	-	-	74	-3.11	122	331	V
3	* 2.484	33.32	RMS	32.6	-23	1.02	43.94	54	-10.06	-	-	122	331	V
4	* 2.484	38.84	RMS	32.6	-23	1.02	49.46	54	-4.54	-	-	122	331	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

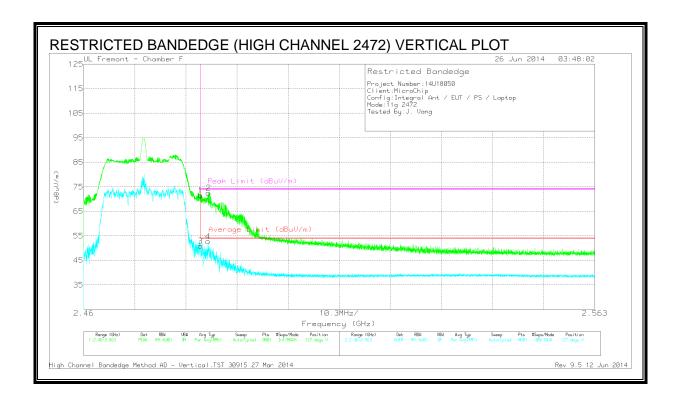
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	59.53	PK	32.6	-23	0	69.13	-	-	74	-4.87	44	316	Н
2	* 2.485	60.7	PK	32.6	-22.9	0	70.4	-	-	74	-3.6	44	316	Н
3	* 2.484	33.33	RMS	32.6	-23	1.02	43.95	54	-10.05	-	-	44	316	Н
4	* 2.484	37.62	RMS	32.6	-22.9	1.02	48.34	54	-5.66	-	-	44	316	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

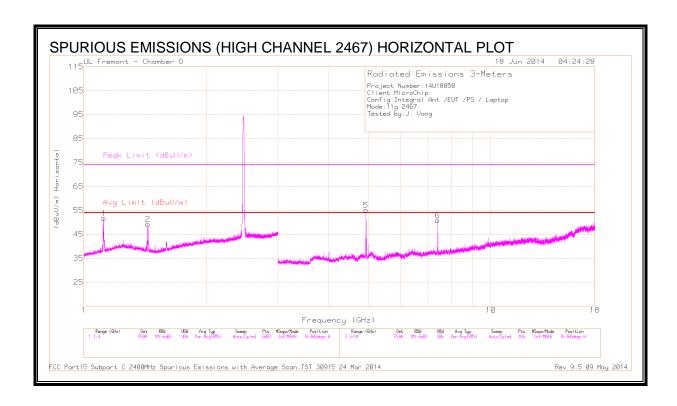


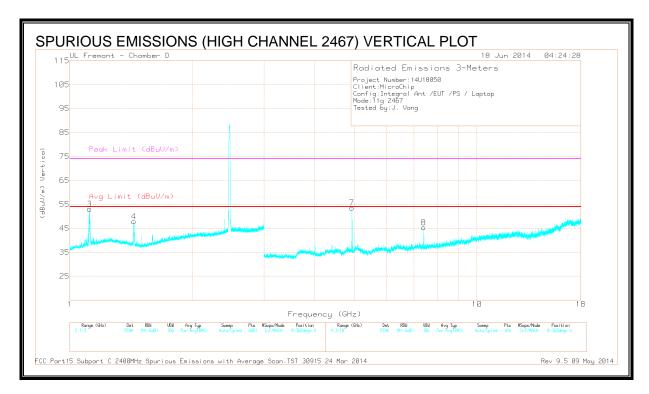
Marker	Frequency	Meter	Det	AF T120	Amp/Cbl/Flt	DC Corr (dB)	Corrected	Average	Margin	Peak Limit	PK Margin	Azimuth	Height	Polarity
	(GHz)	Reading		(dB/m)	r/Pad (dB)		Reading	Limit	(dB)	(dBuV/m)	(dB)	(Degs)	(cm)	
		(dBuV)					(dBuV/m)	(dBuV/m)						
1	* 2.484	61.92	PK	32.6	-23	0	71.52	-	-	74	-2.48	127	399	V
2	* 2.485	62.77	PK	32.6	-22.9	0	72.47	-	-	74	-1.53	127	399	V
3	* 2.484	40.31	RMS	32.6	-23	1.02	50.93	54	-3.07	-	-	127	399	V
4	* 2.485	42	RMS	32.6	-22.9	1.02	52.72	54	-1.28	-	-	127	399	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.6.2. HARMONICS AND SPURIOUS EMISSIONS

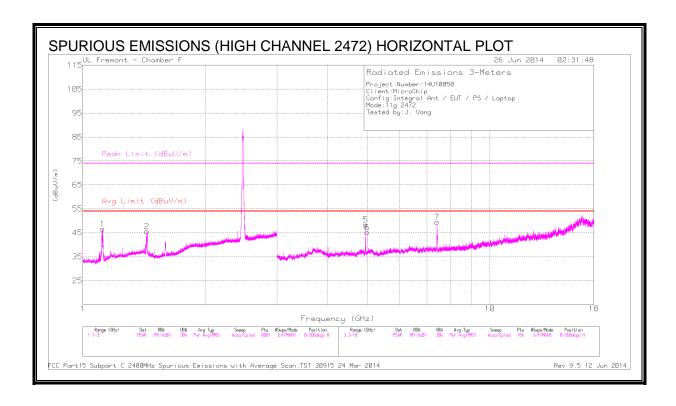


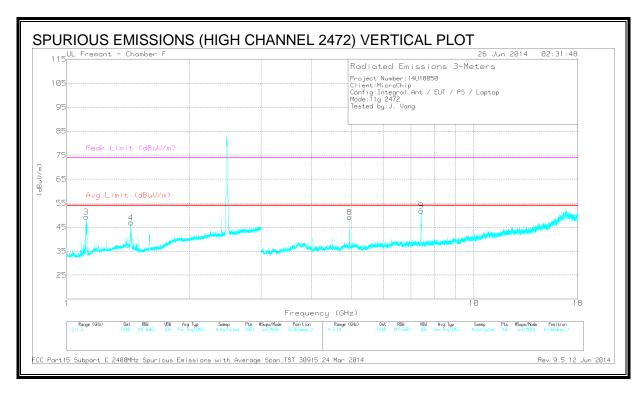


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.118	37.8	PK2	27.8	-22.1	0	43.5	-	-	74	-30.5	293	213	Н
	* 1.119	31.79	MAv1	27.8	-22.1	1	38.49	54	-15.51	-	-	293	213	Н
2	* 1.437	38.47	PK2	27.6	-21.8	0	44.27	-	-	74	-29.73	313	179	Н
	* 1.438	32.83	MAv1	27.6	-21.8	1	39.63	54	-14.37	-	-	313	179	Н
3	* 1.119	39.46	PK2	27.8	-22.1	0	45.16	-	-	74	-28.84	226	187	V
	* 1.119	34.62	MAv1	27.8	-22.1	1	41.32	54	-12.68	-	-	226	187	V
4	* 1.438	38.63	PK2	27.6	-21.8	0	44.43	-	-	74	-29.57	177	219	V
	* 1.438	32.04	MAv1	27.6	-21.8	1	38.84	54	-15.16	-	-	177	219	V
5	* 4.934	47.29	PK2	33.5	-28	0	52.79	-	-	74	-21.21	261	199	Н
	* 4.934	47.06	MAv1	33.5	-28	1	53.56	54	44	-	-	261	199	Н
6	* 7.401	39.24	PK2	35.2	-25.1	0	49.34	-	-	74	-24.66	79	102	Н
	* 7.401	39.29	MAv1	35.2	-25.1	1	50.39	54	-3.61	-	-	79	102	Н
7	* 4.934	46.83	PK2	33.5	-28	0	52.33	-	-	74	-21.67	97	102	V
	* 4.934	46.4	MAv1	33.5	-28	1	52.9	54	-1.1	-	-	97	102	V
8	* 7.401	37.28	PK2	35.2	-25.1	0	47.38	-	-	74	-26.62	131	378	V
	* 7.401	36.46	MAv1	35.2	-25.1	1	47.56	54	-6.44	-	-	131	378	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





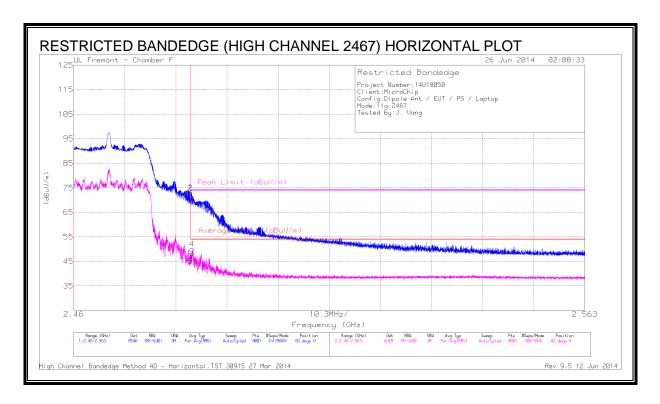
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.118	39.78	PK2	27.8	-27.6	0	39.98	-	-	74	-34.02	184	210	Н
	* 1.117	34.58	MAv1	27.8	-27.6	1.02	35.8	54	-18.2	-	-	184	210	Н
2	* 1.437	38.48	PK2	28.9	-25.7	0	41.68	-	-	74	-32.32	312	230	Н
	* 1.437	33.35	MAv1	28.9	-25.7	1.02	37.57	54	-16.43	-	-	312	230	Н
3	* 1.116	41.14	PK2	27.7	-27.6	0	41.24	-	-	74	-32.76	225	150	V
	* 1.116	36.28	MAv1	27.7	-27.6	1.02	37.4	54	-16.6	-	-	225	150	V
4	* 1.437	41.19	PK2	28.9	-25.7	0	44.39	-	-	74	-29.61	188	175	V
	* 1.438	34.9	MAv1	28.9	-25.7	1.02	39.12	54	-14.88	-	-	188	175	V
5	* 4.944	45.04	PK2	34.2	-29.2	0	50.04	-	-	74	-23.96	49	195	Н
	* 4.944	42.86	MAv1	34.2	-29.2	1.02	48.88	54	-5.12	-	-	49	195	Н
6	* 5	41.95	PK2	34.2	-29.1	0	47.05	-	-	74	-26.95	218	202	Н
	* 5	38.59	MAv1	34.2	-29.1	1.02	44.71	54	-9.29	-	-	218	202	Н
7	* 7.412	34.36	PK2	35.6	-25.5	0	44.46	-	-	74	-29.54	255	187	Н
	* 7.412	30.91	MAv1	35.6	-25.5	1.02	42.03	54	-11.97	-	-	255	187	Н
8	* 4.944	45.5	PK2	34.2	-29.2	0	50.5	-	-	74	-23.5	185	197	V
	* 4.944	43.64	MAv1	34.2	-29.2	1.02	49.66	54	-4.34	-	-	185	197	V
9	* 7.42	35.27	PK2	35.6	-25.6	0	45.27	-	-	74	-28.73	27	162	V
	* 7.419	33.52	MAv1	35.6	-25.6	1.02	44.54	54	-9.46	-	-	27	162	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

9.7. TX ABOVE 1 GHz 802.11g 1Tx SISO MODE WITH DIPOLE RFA-02-C2M2-D034 ANTENNA

9.7.1. RESTRICTED BANDEDGE IN THE 2.4 GHz BAND



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	63.49	PK	32.6	-23	0	73.09	-	-	74	91	82	323	Н
2	* 2.484	63.32	PK	32.6	-23	0	72.92	-	-	74	-1.08	82	323	Н
3	* 2.484	34.48	RMS	32.6	-23	1.02	45.1	54	-8.9	-	-	82	323	Н
4	* 2.484	39.37	RMS	32.6	-23	1.02	49.99	54	-4.01	-	-	82	323	Н

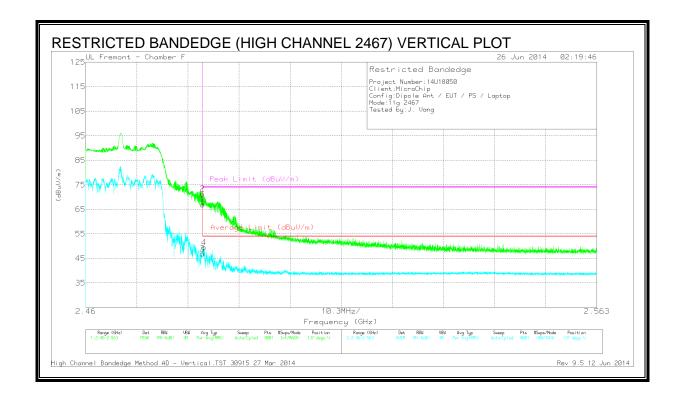
^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

DATE: SEPTEMBER 12, 2014

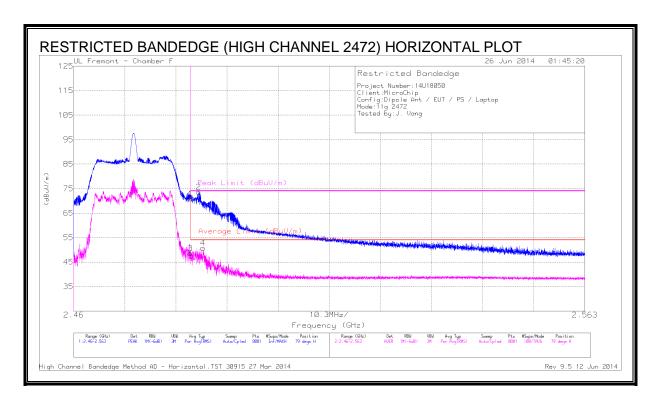
IC: 7693A-24W0MAMB



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	57.33	PK	32.6	-23	0	66.93	-	-	74	-7.07	137	319	V
2	* 2.484	61.76	PK	32.6	-23	0	71.36	-	-	74	-2.64	137	319	V
3	* 2.484	36.38	RMS	32.6	-23	1.02	47	54	-7	-	-	137	319	V
4	* 2.484	38.86	RMS	32.6	-23	1.02	49.48	54	-4.52	-	-	137	319	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

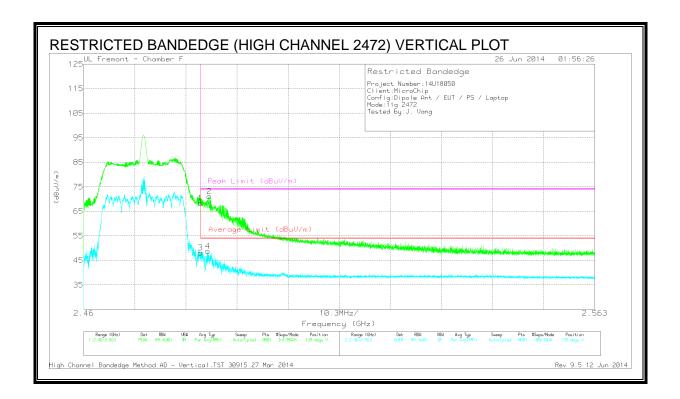
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	61.29	PK	32.6	-23	0	70.89	-	-	74	-3.11	79	316	Н
2	* 2.485	63.93	PK	32.6	-22.9	0	73.63	-	-	74	37	79	316	Н
3	* 2.484	37.94	RMS	32.6	-23	1.02	48.56	54	-5.44	-	-	79	316	Н
4	* 2.486	40.01	RMS	32.6	-22.9	1.02	50.73	54	-3.27	-	-	79	316	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

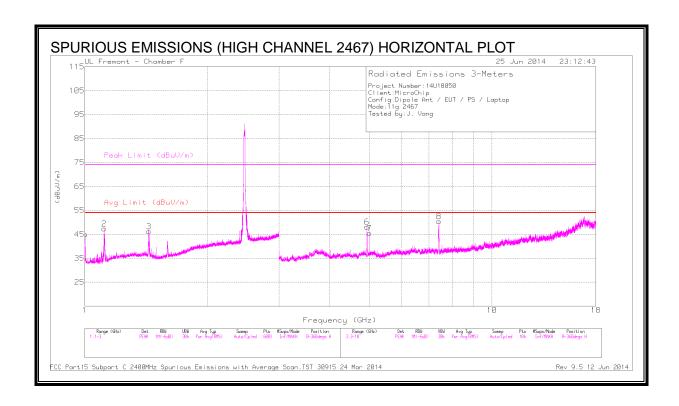


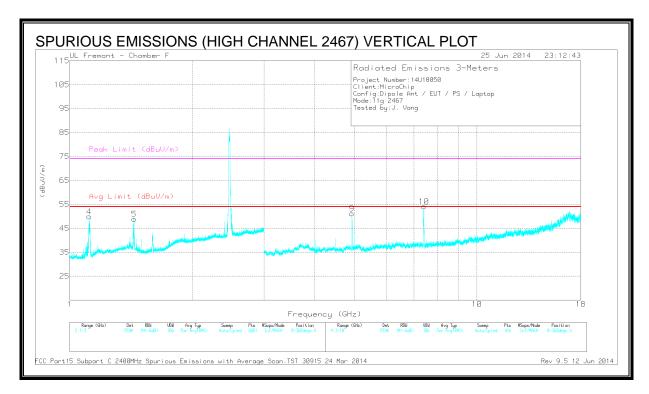
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	58.87	PK	32.6	-23	0	68.47	-	-	74	-5.53	139	320	V
2	* 2.485	61.42	PK	32.6	-22.9	0	71.12	-	-	74	-2.88	139	320	V
3	* 2.484	37.5	RMS	32.6	-23	1.02	48.12	54	-5.88	-	-	139	320	V
4	* 2.485	38.05	RMS	32.6	-22.9	1.02	48.77	54	-5.23	-	-	139	320	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.7.2. HARMONICS AND SPURIOUS EMISSIONS

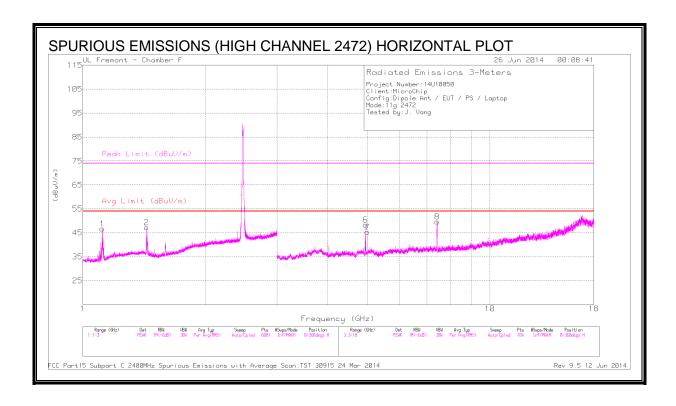


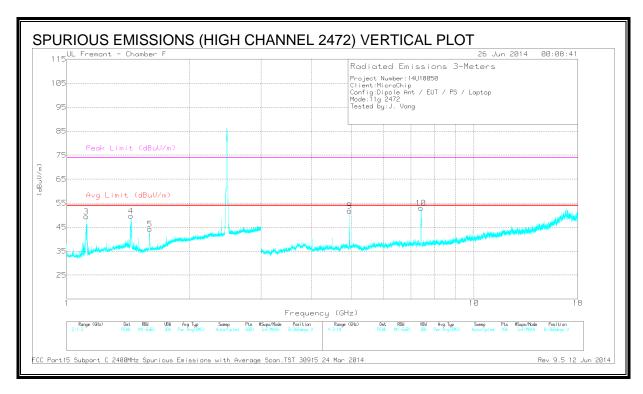


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.003	36.78	PK2	27.6	-27.3	0	37.08	-	-	74	-36.92	72	339	Н
	* 1.004	30.18	MAv1	27.6	-27.3	1.02	31.5	54	-22.5	-	-	72	339	Н
2	* 1.117	40.25	PK2	27.8	-27.6	0	40.45	-	-	74	-33.55	120	227	Н
	* 1.116	34.38	MAv1	27.7	-27.6	1.02	35.5	54	-18.5	-	-	120	227	Н
3	* 1.436	38.88	PK2	28.9	-25.7	0	42.08	-	-	74	-31.92	306	269	Н
	* 1.436	33.42	MAv1	28.9	-25.7	1.02	37.64	54	-16.36	-	-	306	269	Н
4	* 1.117	41.94	PK2	27.8	-27.6	0	42.14	-	-	74	-31.86	214	157	V
	* 1.117	37.54	MAv1	27.8	-27.6	1.02	38.76	54	-15.24	-	-	214	157	V
5	* 1.438	39.85	PK2	28.9	-25.7	0	43.05	-	-	74	-30.95	184	162	V
	* 1.438	34.13	MAv1	28.9	-25.7	1.02	38.35	54	-15.65	-	-	184	162	V
6	* 4.934	45.68	PK2	34.2	-29.1	0	50.78	-	-	74	-23.22	41	209	Н
	* 4.934	43.76	MAv1	34.2	-29.1	1.02	49.88	54	-4.12	-	-	41	209	Н
7	* 5	42.04	PK2	34.2	-29.1	0	47.14	-	-	74	-26.86	216	214	Н
	* 5	38.86	MAv1	34.2	-29.1	1.02	44.98	54	-9.02	-	-	216	214	Н
8	* 7.408	34.53	PK2	35.6	-25.5	0	44.63	-	-	74	-29.37	258	186	Н
	* 7.409	31.57	MAv1	35.6	-25.5	1.02	42.69	54	-11.31	-	-	258	186	Н
9	* 4.934	47.07	PK2	34.2	-29.1	0	52.17	-	-	74	-21.83	23	250	V
	* 4.934	45.55	MAv1	34.2	-29.1	1.02	51.67	54	-2.33	-	-	23	250	V
10	* 7.405	35.34	PK2	35.6	-25.5	0	45.44	-	-	74	-28.56	192	237	V
	* 7.405	34.08	MAv1	35.6	-25.5	1.02	45.2	54	-8.8	-	-	192	237	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.116	40.15	PK2	27.7	-27.6	0	40.25	-	-	74	-33.75	105	169	Н
	* 1.116	34.68	MAv1	27.7	-27.7	1.02	35.7	54	-18.3	-	-	105	169	Н
2	* 1.435	38.65	PK2	28.9	-25.7	0	41.85	-	-	74	-32.15	319	186	Н
	* 1.436	32.14	MAv1	28.9	-25.7	1.02	36.36	54	-17.64	-	-	319	186	Н
3	* 1.117	41.92	PK2	27.8	-27.6	0	42.12	-	-	74	-31.88	210	173	V
	* 1.116	37.1	MAv1	27.8	-27.6	1.02	38.32	54	-15.68	-	-	210	173	V
4	* 1.437	41.95	PK2	28.9	-25.7	0	45.15	-	-	74	-28.85	203	196	V
	* 1.437	34.96	MAv1	28.9	-25.7	1.02	39.18	54	-14.82	-	-	203	196	V
5	* 1.598	42.14	PK2	28.5	-25.4	0	45.24	-	-	74	-28.76	232	366	V
	* 1.599	33.86	MAv1	28.5	-25.4	1.02	37.98	54	-16.02	-	-	232	366	V
6	* 4.944	44.51	PK2	34.2	-29.2	0	49.51	-	-	74	-24.49	61	225	Н
	* 4.944	42.36	MAv1	34.2	-29.2	1.02	48.38	54	-5.62	-	-	61	225	Н
7	* 5	41.88	PK2	34.2	-29.1	0	46.98	-	-	74	-27.02	214	217	Н
	* 5	38.48	MAv1	34.2	-29.1	1.02	44.6	54	-9.4	-	-	214	217	Н
8	* 7.42	34.94	PK2	35.6	-25.6	0	44.94	-	-	74	-29.06	257	202	Н
	* 7.419	32.45	MAv1	35.6	-25.6	1.02	43.47	54	-10.53	-	-	257	202	Н
9	* 4.944	47.14	PK2	34.2	-29.2	0	52.14	-	-	74	-21.86	20	227	V
	* 4.944	45.6	MAv1	34.2	-29.2	1.02	51.62	54	-2.38	-	-	20	227	V
10	* 7.415	32.3	PK2	35.6	-25.5	0	42.4	-	-	74	-31.6	10	215	V
	* 7.416	33.66	MAv1	35.6	-25.5	1.02	44.78	54	-9.22	-	-	10	215	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

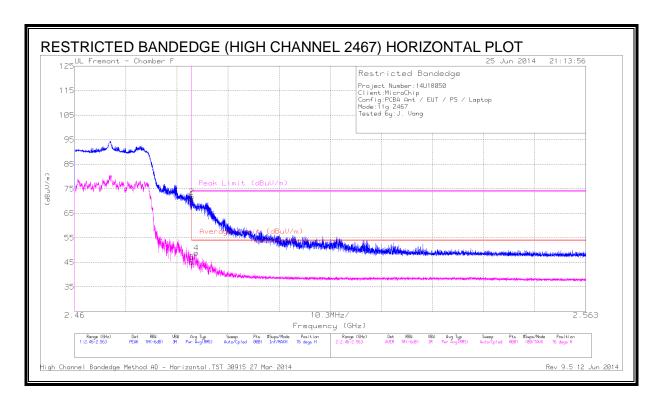
P05-D034 ANTENNA

9.8.

IC: 7693A-24W0MAMB TX ABOVE 1 GHz 802.11g 1Tx SISO MODE WITH PCBA RFA-02-

DATE: SEPTEMBER 12, 2014

9.8.1. RESTRICTED BANDEDGE IN THE 2.4 GHz BAND

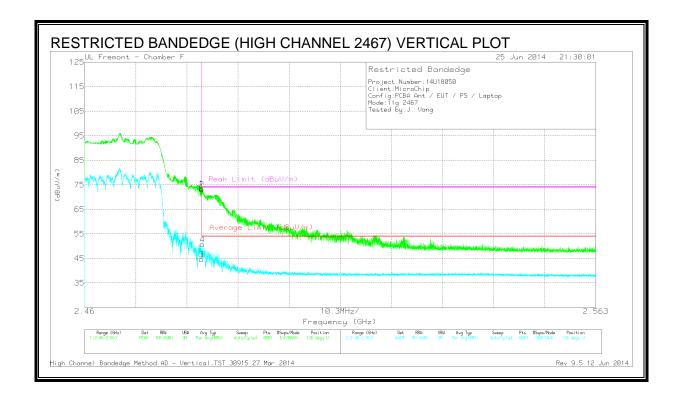


DATA

	Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
Γ	1	* 2.484	61.31	PK	32.6	-23	0	70.91	-	-	74	-3.09	76	324	Н
Γ	2	* 2.484	62.14	PK	32.6	-23	0	71.74	-	-	74	-2.26	76	324	Н
Γ	3	* 2.484	34.48	RMS	32.6	-23	1.02	45.1	54	-8.9	-	-	76	324	Н
	4	* 2.485	38.19	RMS	32.6	-22.9	1.02	48.91	54	-5.09	-	-	76	324	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

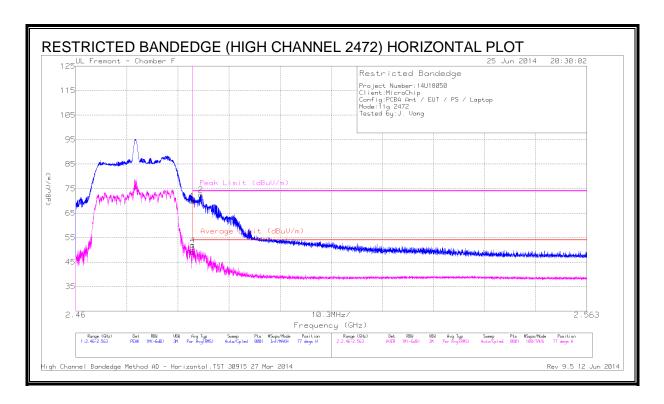
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	63.95	PK	32.6	-23	0	73.55	-	-	74	45	136	326	V
2	* 2.484	63.59	PK	32.6	-23	0	73.19	-	-	74	81	136	326	V
3	* 2.484	33.97	RMS	32.6	-23	1.02	44.59	54	-9.41	-	-	136	326	V
4	* 2.484	40.09	RMS	32.6	-23	1.02	50.71	54	-3.29	-	-	136	326	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

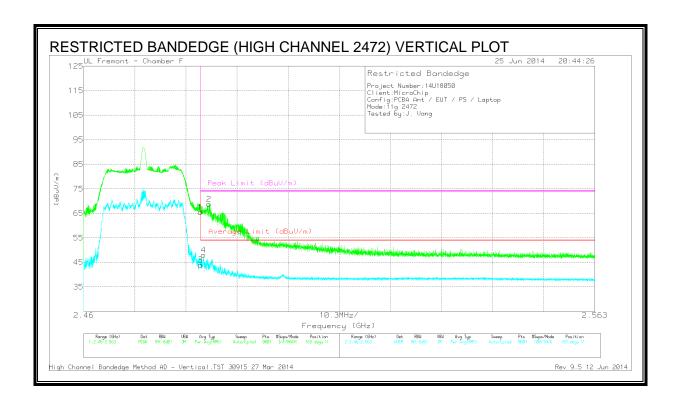
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	60.4	PK	32.6	-23	0	70	-	-	74	-4	77	217	Н
2	* 2.485	62.82	PK	32.6	-22.9	0	72.52	-	-	74	-1.48	77	217	Н
3	* 2.484	38.39	RMS	32.6	-23	1.02	49.01	54	-4.99	-	-	77	217	Н
4	* 2.484	41.31	RMS	32.6	-23	1.02	51.93	54	-2.07	-	-	77	217	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

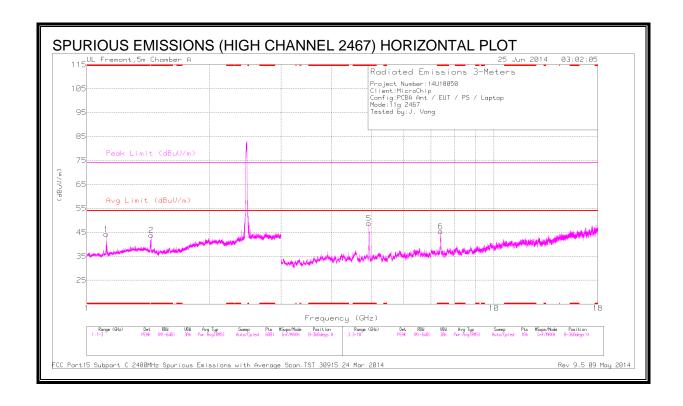


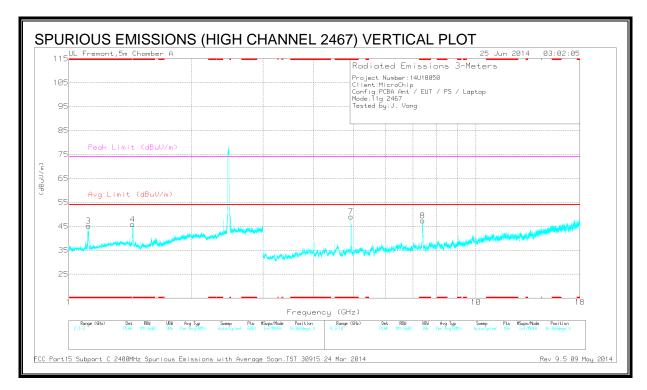
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	55.93	PK	32.6	-23	0	65.53	-	-	74	-8.47	165	204	V
2	* 2.485	59.12	PK	32.6	-22.9	0	68.82	-	-	74	-5.18	165	204	V
3	* 2.484	33.4	RMS	32.6	-23	1.02	44.02	54	-9.98	-	-	165	204	V
4	* 2.484	37.36	RMS	32.6	-22.9	1.02	48.08	54	-5.92	-	-	165	204	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.8.2. HARMONICS AND SPURIOUS EMISSIONS

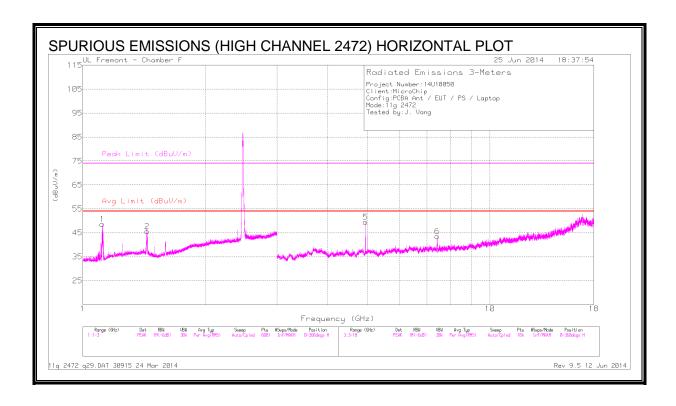


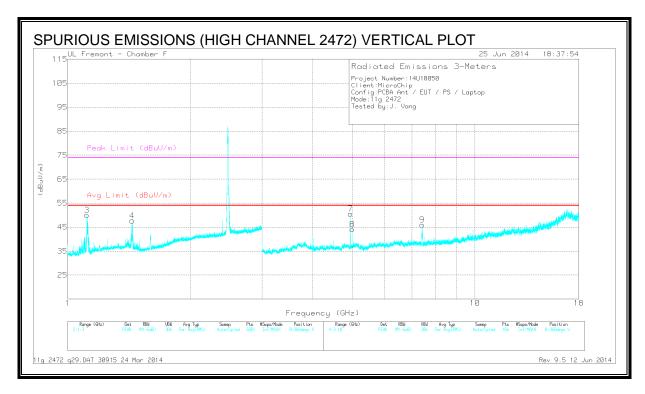


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/CbI/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.117	39.51	PK2	28.5	-27.3	0	40.71	-	-	74	-33.29	100	196	Н
	* 1.116	33.33	MAv1	28.5	-27.3	1	35.53	54	-18.47	-	-	100	196	Н
2	* 1.437	38.6	PK2	29.4	-26.4	0	41.6	-	-	74	-32.4	270	271	Н
	* 1.438	32.08	MAv1	29.4	-26.4	1	36.08	54	-17.92	-	-	270	271	Н
3	* 1.118	40.35	PK2	28.5	-27.3	0	41.55	-	-	74	-32.45	185	187	V
	* 1.119	34.93	MAv1	28.5	-27.3	1	37.13	54	-16.87	-	-	185	187	V
5	* 4.934	47.1	PK2	33.9	-28.9	0	52.1	-	-	74	-21.9	355	270	Н
	* 4.934	45.23	MAv1	33.9	-28.9	1	51.23	54	-2.77	-	-	355	270	Н
6	* 7.401	32.28	PK2	35.3	-25	0	42.58	-	-	74	-31.42	254	201	Н
	* 7.401	26.7	MAv1	35.3	-25	1	38	54	-16	-	-	254	201	Н
7	* 4.934	46.97	PK2	33.9	-28.9	0	51.97	-	-	74	-22.03	118	308	V
	* 4.934	45.07	MAv1	33.9	-28.9	1	51.07	54	-2.93	-	-	118	308	V
8	* 7.401	33.9	PK2	35.3	-25	0	44.2	-	-	74	-29.8	261	266	V
	* 7.401	30.37	MAv1	35.3	-25	1	41.67	54	-12.33	-	-	261	266	V
4	1.434	39.29	PK2	29.4	-26.4	0	42.29	-	-	-	-	62	128	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





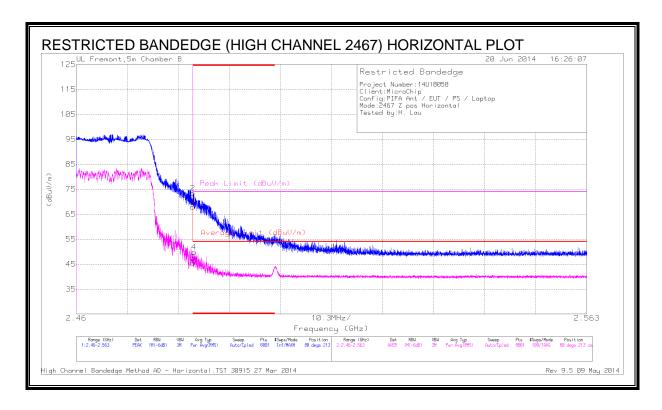
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.115	38.06	PK2	27.7	-27.7	0	38.06	-	-	74	-35.94	276	142	Н
	* 1.116	32.45	MAv1	27.7	-27.7	1.02	33.47	54	-20.53	-	-	276	142	Н
2	* 1.437	38.45	PK2	28.9	-25.7	0	41.65	-	-	74	-32.35	309	316	Н
	* 1.437	32.36	MAv1	28.9	-25.7	1.02	36.58	54	-17.42	-	-	309	316	Н
3	* 1.115	39.86	PK2	27.7	-27.7	0	39.86	-	-	74	-34.14	234	224	V
	* 1.115	35.32	MAv1	27.7	-27.7	1.02	36.34	54	-17.66	-	-	234	224	V
4	* 1.438	39.49	PK2	28.9	-25.7	0	42.69	-	-	74	-31.31	190	136	V
	* 1.439	33.73	MAv1	28.9	-25.7	1.02	37.95	54	-16.05	-	-	190	136	V
5	* 4.944	46.92	PK2	34.2	-29.2	0	51.92	-	-	74	-22.08	99	269	Н
	* 4.944	45.34	MAv1	34.2	-29.2	1.02	51.36	54	-2.64	-	-	99	269	Н
6	* 7.421	35.86	PK2	35.6	-25.6	0	45.86	-	-	74	-28.14	327	339	Н
	* 7.421	35.24	MAv1	35.6	-25.6	1.02	46.26	54	-7.74	-	-	327	339	Н
7	* 4.944	45.97	PK2	34.2	-29.2	0	50.97	-	-	74	-23.03	29	251	V
	* 4.944	44.26	MAv1	34.2	-29.2	1.02	50.28	54	-3.72	-	-	29	251	V
8	* 5	40.95	PK2	34.2	-29.1	0	46.05	-	-	74	-27.95	220	211	V
	* 5	37.32	MAv1	34.2	-29.1	1.02	43.44	54	-10.56	-	-	220	211	V
9	* 7.42	39.68	PK2	35.6	-25.6	0	49.68	-	-	74	-24.32	8	207	V
	* 7.42	33.95	MAv1	35.6	-25.6	1.02	44.97	54	-9.03	-	-	8	207	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

9.9. TX ABOVE 1 GHz 802.11g 1Tx SISO MODE WITH PIFA RFA-02-G03-D034 ANTENNA

9.9.1. RESTRICTED BANDEDGE IN THE 2.4 GHz BAND



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	58.27	PK	32.4	-22.7	0	67.97	-	-	74	-6.03	80	213	Н
2	* 2.484	63.69	PK	32.4	-22.7	0	73.39	-	-	74	61	80	213	Н
3	* 2.484	34.86	RMS	32.4	-22.7	1.02	45.58	54	-8.42	-	-	80	213	Н
4	* 2.484	39.11	RMS	32.4	-22.7	1.02	49.83	54	-4.17	-	ı	80	213	Н

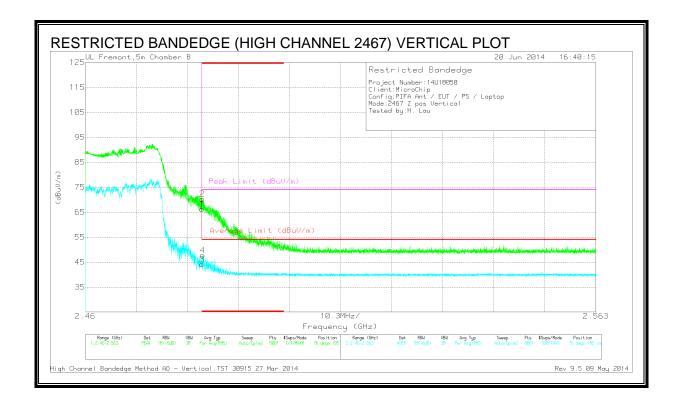
^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

DATE: SEPTEMBER 12, 2014

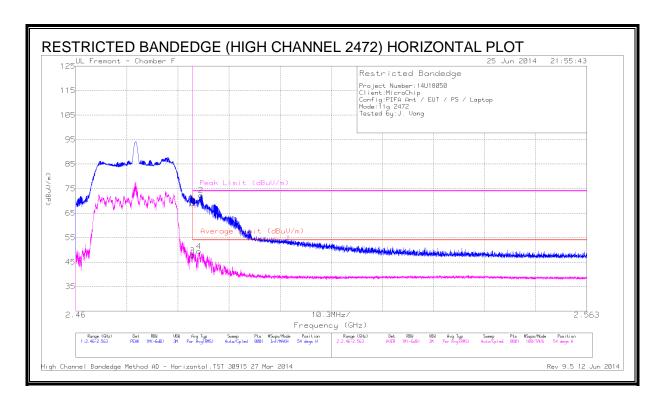
IC: 7693A-24W0MAMB



Marker	Frequency	Meter	Det	AF T345	Amp/Cbl/Flt	DC Corr (dB)	Corrected	Average	Margin	Peak Limit	PK Margin	Azimuth	Height	Polarity
	(GHz)	Reading		(dB/m)	r/Pad (dB)		Reading	Limit	(dB)	(dBuV/m)	(dB)	(Degs)	(cm)	
		(dBuV)					(dBuV/m)	(dBuV/m)						
1	* 2.484	56.57	PK	32.4	-22.7	0	66.27	-	-	74	-7.73	76	195	V
2	* 2.484	60.57	PK	32.4	-22.7	0	70.27	-	-	74	-3.73	76	195	V
3	* 2.484	33.44	RMS	32.4	-22.7	1.02	44.16	54	-9.84	-	-	76	195	V
4	* 2.484	37.02	RMS	32.4	-22.7	1.02	47.74	54	-6.26	-	-	76	195	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

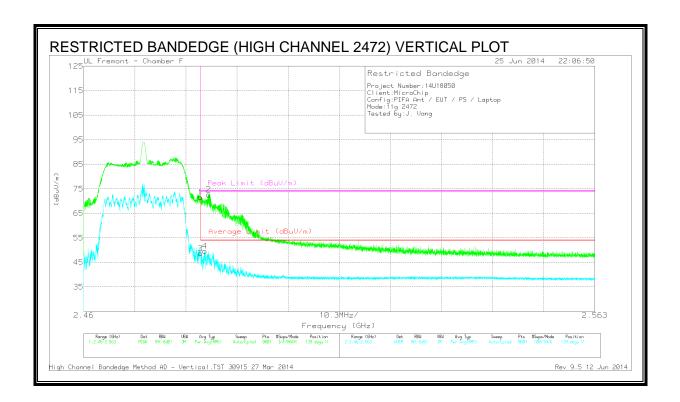
PK - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	59.3	PK	32.6	-23	0	68.9	-	-	74	-5.1	54	320	Н
2	* 2.485	62.61	PK	32.6	-22.9	0	72.31	-	-	74	-1.69	54	320	Н
3	* 2.484	37.08	RMS	32.6	-23	1.02	47.7	54	-6.3	-	-	54	320	Н
4	* 2.485	38.71	RMS	32.6	-22.9	1.02	49.43	54	-4.57	-	-	54	320	Н

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

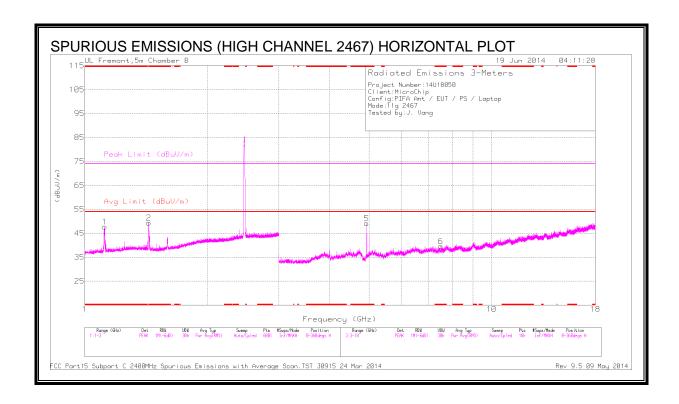


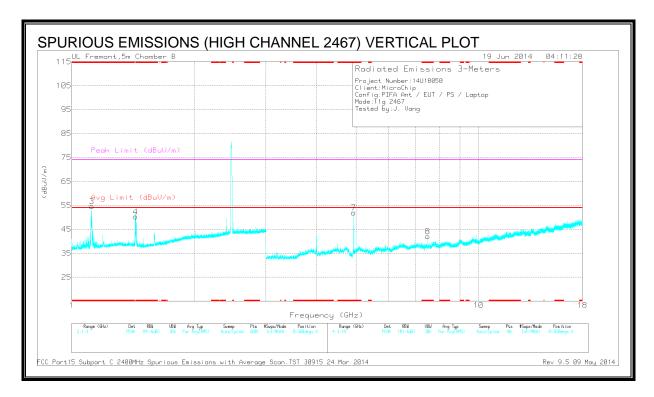
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	61.97	PK	32.6	-23	0	71.57	-	-	74	-2.43	139	311	V
2	* 2.485	63	PK	32.6	-22.9	0	72.7	-	-	74	-1.3	139	311	V
3	* 2.484	38.02	RMS	32.6	-23	1.02	48.64	54	-5.36	-	-	139	311	V
4	* 2.484	38.9	RMS	32.6	-22.9	1.02	49.62	54	-4.38	-	-	139	311	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

9.9.2. HARMONICS AND SPURIOUS EMISSIONS

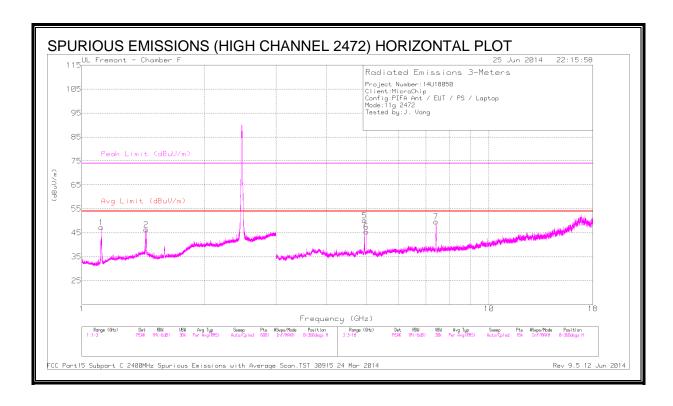


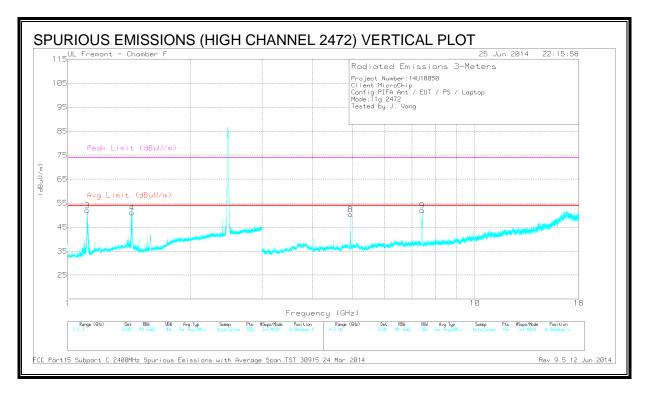


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.118	39.23	PK2	27.5	-24.7	0	42.03	-	-	74	-31.97	26	330	Н
	* 1.119	33.01	MAv1	27.5	-24.7	1	36.81	54	-17.19	-	-	26	330	Н
2	* 1.437	40.21	PK2	28.3	-24.3	0	44.21	-	-	74	-29.79	203	187	Н
	* 1.436	34.55	MAv1	28.3	-24.3	1	39.55	54	-14.45	-	-	203	187	Н
3	* 1.118	39.32	PK2	27.5	-24.7	0	42.12	-	-	74	-31.88	0	136	V
	* 1.119	32.64	MAv1	27.5	-24.7	1	36.44	54	-17.56	-	-	0	136	V
4	* 1.437	40.43	PK2	28.3	-24.3	0	44.43	-	-	74	-29.57	75	179	V
	* 1.435	34.47	MAv1	28.3	-24.3	1	39.47	54	-14.53	-	-	75	179	V
5	* 4.934	46.91	PK2	34.2	-30.8	0	50.31	-	-	74	-23.69	284	197	Н
	* 4.934	45.18	MAv1	34.2	-30.8	1	49.58	54	-4.42	-	-	284	197	Н
6	* 7.5	35.48	PK2	35.6	-26.9	0	44.18	-	-	74	-29.82	21	385	Н
	* 7.5	29.63	MAv1	35.6	-26.9	1	39.33	54	-14.67	-	-	21	385	Н
7	* 4.934	52.74	PK2	34.2	-30.8	0	56.14	-	-	74	-17.86	69	225	V
	* 4.934	48.6	MAv1	34.2	-30.8	1	53	54	-1	-	-	69	225	V
8	* 7.5	44.68	PK2	35.6	-27	0	53.28	-	-	74	-20.72	68	271	V
	* 7.5	31.7	MAv1	35.6	-27	1	41.3	54	-12.7	-	-	68	271	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak





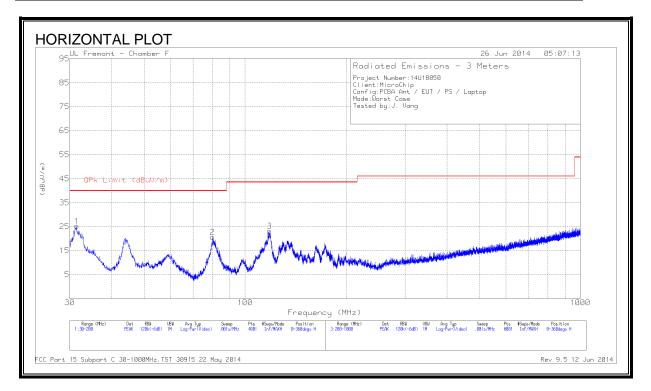
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.116	40.18	PK2	27.8	-27.6	0	40.38	-	-	74	-33.62	107	247	Н
	* 1.116	34.79	MAv1	27.7	-27.7	1.02	35.81	54	-18.19	-	-	107	247	Н
2	* 1.438	38.62	PK2	28.9	-25.7	0	41.82	-	-	74	-32.18	317	216	Н
	* 1.439	33.16	MAv1	28.9	-25.7	1.02	37.38	54	-16.62	-	-	317	216	Н
3	* 1.117	41.23	PK2	27.8	-27.6	0	41.43	-	-	74	-32.57	222	228	V
	* 1.116	36.43	MAv1	27.7	-27.6	1.02	37.55	54	-16.45	-	-	222	228	V
4	* 1.435	41.42	PK2	28.9	-25.7	0	44.62	-	-	74	-29.38	176	203	V
	* 1.435	34.62	MAv1	28.9	-25.7	1.02	38.84	54	-15.16	-	-	176	203	V
5	* 4.944	46.67	PK2	34.2	-29.2	0	51.67	-	-	74	-22.33	171	284	Н
	* 4.944	45.08	MAv1	34.2	-29.2	1.02	51.1	54	-2.9	-	-	171	284	Н
6	* 5	41.58	PK2	34.2	-29.1	0	46.68	-	-	74	-27.32	214	227	Н
	* 5	38.25	MAv1	34.2	-29.1	1.02	44.37	54	-9.63	-	-	214	227	Н
7	* 7.416	34.71	PK2	35.6	-25.5	0	44.81	-	-	74	-29.19	255	200	Н
	* 7.417	32.02	MAv1	35.6	-25.5	1.02	43.14	54	-10.86	-	-	255	200	Н
8	* 4.944	45.33	PK2	34.2	-29.2	0	50.33	-	-	74	-23.67	250	229	V
	* 4.944	43.43	MAv1	34.2	-29.2	1.02	49.45	54	-4.55	-	-	250	229	V
9	* 7.419	36.36	PK2	35.6	-25.5	0	46.46	-	-	74	-27.54	24	175	V
	* 7.419	35.69	MAv1	35.6	-25.5	1.02	46.81	54	-7.19	-	-	24	175	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

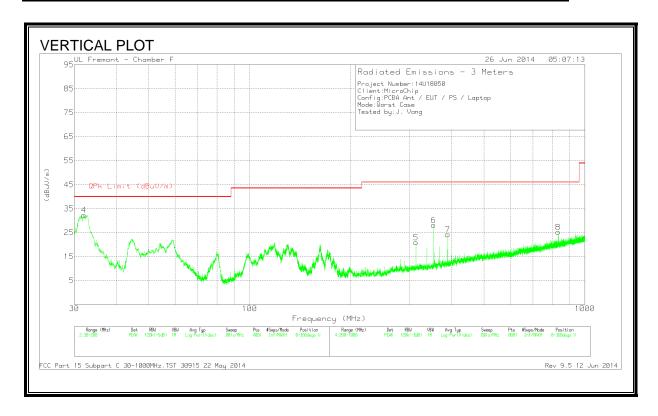
PK2 - KDB558074 Method: Maximum Peak

9.10. **WORST-CASE BELOW 1 GHz**

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



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



HORIZONTAL & VERTICAL DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T122 (dB/m)	Amp/Cbl (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.445	36.94	PK	20.3	-32	0	25.24	40	-14.76	0-360	301	Н
2	80.0225	44.67	PK	7.7	-31.7	0	20.67	40	-19.33	0-360	301	Н
3	* 118.2725	40.73	PK	13.8	-31.4	0	23.13	43.52	-20.39	0-360	201	Н
4	32.04	44.44	PK	19.9	-32	0	32.34	40	-7.66	0-360	100	V
5	313.5	37.71	PK	13.8	-30.6	0	20.91	46.02	-25.11	0-360	103	V
6	353.7	44.24	PK	14.4	-30.5	0	28.14	46.02	-17.88	0-360	103	V
7	389.8	39.34	PK	15.2	-30.3	0	24.24	46.02	-21.78	0-360	103	V
8	832.7	32.55	PK	21.8	-29.1	0	25.25	46.02	-20.77	0-360	301	V

^{* -} indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector