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<table><tr><td>Date/s Tested</td><td>: 16-Dec-2023 - 19-Feb-2024</td></tr><tr><td>Report Issue Date</td><td>: 04-April-2024</td></tr><tr><td>Manufacturer/Location</td><td>: MOTOROLA SOLUTIONS INC. (SCHAUMBURG) 1301 E. ALGONQUIN ROAD, BLDG IL02 ROOM 3035, SCHAUMBURG, IL 60196</td></tr><tr><td>Requestor</td><td>: ROLANDO HERNANDEZ</td></tr><tr><td>Product Type</td><td>: Hand-held</td></tr><tr><td>Product Version (PMN)</td><td>: APX NEXT</td></tr><tr><td>Model Number (HVIN)</td><td>: H55TGT9PW8AN</td></tr><tr><td>Frequency Band</td><td>: 2.412-2.462 GHz</td></tr><tr><td>Max RF Output Power</td><td>: 802.11b - 200 mWatts 802.11g - 158 mWatts 802.11n(HT20) - 158 mWatts 802.11n(HT40) - 158 mWatts</td></tr><tr><td>Applicant Name</td><td>: Motorola Solutions Inc</td></tr><tr><td>Applicant Address</td><td>: Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia</td></tr><tr><td>FCC Registrations</td><td>: 461337</td></tr><tr><td>ISED Registrations</td><td>: MY0001</td></tr><tr><td>Firmware Version (FVIN)</td><td>: D05.75.54</td></tr></table> The equipment was tested accordance to the requirement listed below: <table><tr><td>(2.4GHz Wifi) 47CFR Part 15C ISED RSS 247 Issue 2 February 2017</td><td>PASS</td></tr></table>		Date/s Tested	: 16-Dec-2023 - 19-Feb-2024	Report Issue Date	: 04-April-2024	Manufacturer/Location	: MOTOROLA SOLUTIONS INC. (SCHAUMBURG) 1301 E. ALGONQUIN ROAD, BLDG IL02 ROOM 3035, SCHAUMBURG, IL 60196	Requestor	: ROLANDO HERNANDEZ	Product Type	: Hand-held	Product Version (PMN)	: APX NEXT	Model Number (HVIN)	: H55TGT9PW8AN	Frequency Band	: 2.412-2.462 GHz	Max RF Output Power	: 802.11b - 200 mWatts 802.11g - 158 mWatts 802.11n(HT20) - 158 mWatts 802.11n(HT40) - 158 mWatts	Applicant Name	: Motorola Solutions Inc	Applicant Address	: Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia	FCC Registrations	: 461337	ISED Registrations	: MY0001	Firmware Version (FVIN)	: D05.75.54	(2.4GHz Wifi) 47CFR Part 15C ISED RSS 247 Issue 2 February 2017	PASS
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Prepared By:  Siti Nurhidayati Binti Abdul Halim Test Personnel	Approved Signatory:  Maheshvaran A/L Rajagopal Responsible Engineer																														

Table of Contents

1.0. General Information.....	3
1.1. Channel number and frequency information:	3
2.0. Summary of Test Results	4
3.0. Measurement Uncertainty	5
4.0. Equipment List.....	5
5.0. Test Mode Applicability and Test Channel Detail	6
6.0. Transmitter Test Parameters	9
6.1. 6dB Channel Bandwidth	9
6.1.1. Test Setup	9
6.1.2. Test Limits:	9
6.1.3. Test Data:	10
6.2. Conducted RF Output Power	18
6.2.1. Test Setup	18
6.2.2. Test Limits:	19
6.2.3. Test Data:	20
6.3. Duty Cycle of the test signal	24
6.3.1. Test Setup	24
6.3.2. Test Data	25
6.4. Maximum Peak Power Spectral Density	29
6.4.1. Test Setup	29
6.4.2. Test Limits	29
6.4.3. Test Result	29
6.5. Conducted Spurious Emission	30
6.5.1. Test Setup	30
6.5.2. Test Limits:	30
6.5.3. Test Result	30
6.6. Band edge Conducted Spurious Emission	50
6.6.1. Test Setup	50
6.6.2. Test Limits:	50
6.6.3. Test Result	51
6.7. Radiated Emission within restricted Bands	55
6.7.1. Test Setup	55
6.7.2. Test Limits:	56
6.7.3. Test Data:	57
6.8. AC Powerline Conducted Emission.....	64
6.8.1. Test Setup	64
6.8.2. Test Limits:	64
6.8.3. Test Result	66

REVISION HISTORY

Revision History	Description	Date	Originator
Rev. A	Initial Report	20-February-2024	Siti Nurhidayati
Rev. B	Amend RSE from MUC to VPA	11-March-2024	Siti Nurhidayati
Rev. C	Update Antenna Type at EUT Description	04-April-2024	Maheshvaran A/L Rajagopal

1.0. General Information

EUT Description:

Technologies	2.4GHz Wi-Fi
TX Frequency range	2412MHz – 2462MHz
Modulation Type	DSSS, OFDM
Connector type	PROGRAMMING, TEST & ALIGNMENT CABLE
Antenna type	Stamped Metal

1.1. Channel number and frequency information:

There are two bandwidth systems.

For 20MHz Bandwidth systems (802.11b, 802.11g, 802.11n), use channel 1 ~ channel 11

For 40MHz Bandwidth systems (802.11n), use channel 3 ~ channel 9

Channel	Frequency	Channel	Frequency
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

The EUT contains following accessory devices and data cable:

Item	Brand	Model or P/N
STANDARD BATT, IMPRES GEN2, LIION, IP68, 3800T	MOTOROLA	NNTN9087A
HI-CAP BATT, IMPRES GEN2, LIION, IP68, 5650T	MOTOROLA	NNTN9089B
760 - 870 MHz	MOTOROLA	AN000296A01
CHARGER, MULTI-UNIT, IMPRES G2, 6-DISP, BASE w/INSERTS; w/US Line Cord	MOTOROLA	NNTN9115A
US Line Cord	MOTOROLA	3087791G01
CHGR VEHICLE IMPRES 2 EXT NA/AU/NZ KIT	MOTOROLA	PMPN4639B

General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, the EUT is to comply with the requirements of the following standards:

FCC 47 CFR Part 15 Subpart C
KDB 558074 D01 15.247 Meas Guidance v05
ANSI C63.10-2013

Deviation from standard

Not applicable as no deviation from standard test method

Modifications to EUT

For RF conducted measurements a pigtail was soldered out of the board while for radiated measurements there were no modifications to the device

2.0. Summary of Test Results

FCC Clause	IC Clause	Test Item	Result	Remark	Serial number tested	Tested by
15.247 (a)(2)	RSS-247 5.2(a)	DTS & 99% Channel Bandwidth	Pass	Highest 99% OCB: 802.11b: 13.829MHz (13M8G1D) 802.11g: 16.707MHz (16M7D1D) 802.11n(HT20): 17.879MHz (17M9D1D) 802.11n(HT40): 36.226MHz (36M2D1D)	437TZP0812	Hidayati
15.247 (b)(3)	RSS-247 5.4(d)	Conducted RF Output Power (Average)	Pass	Highest output power: 802.11b: 21.664 dBm (146.69 mW) 802.11g: 21.396 dBm (137.91 mW) 802.11n(HT20): 21.245 dBm (133.20 mW) 802.11n(HT40): 21.642 dBm (145.95 mW)	437TZP0812	Hidayati
15.247(e)	RSS-247 5.2(b)	Maximum Power Spectral Density	NA	NA	NA	SEE NOTE1
15.247(d)	RSS-247 5.5	Conducted Spurious Emissions	Pass	Worst case emission: 802.11b: -40.674 dBm 802.11g: -39.514 dBm 802.11n(HT20): -40.142 dBm 802.11n(HT40): -39.713 dBm	437TZP0812	Hidayati
15.247 (d)	RSS-247 5.5	Band edge Conducted Spurious Emission	Pass	Worst case emission: 802.11b: -38.13 dBm 802.11g: -27.58 dBm 802.11n(HT20): -26.07 dBm 802.11n(HT40): -30.94 dBm	437TZP0812	Hidayati
15.205, 15.209, 15.247 (d)	RSS-247 5.5	Radiated Emission within Restricted Bands	Pass	Worst case emission: RBE: 52.9478 dBuV/m (margin: 1.0522 dB) RSE: 33.6056 dBuV/m (margin: 6.3944dB)	437TZP0815 437TZP0835 437TZP0845	Nazrin & Rezza & Aiman
15.207	RSS-Gen 8.8	AC Power Line Conducted Emission	NA	Meet the limit requirement	437TZP0815 437TZP0835 437TZP0845	Shidee
15.203		Antenna requirement	NA	Internal antenna is not accessible to the enduser	NA	NA

NA → Not Available

NOTE1: Selection of test parameters, the report contain a limited number of parameters deemed to be influenced by the relevant design changes, as agreed with the applicant.

3.0. Measurement Uncertainty

Measurement	Frequency	Expended Uncertainty (k=1.96) (±dB)
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.48
Radiated Emissions up to 1 GHz	30MHz ~ 1000MHz	5.88
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.84
	18GHz ~ 40GHz	6.02
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82

4.0. Equipment List

Bluetooth ATE # 1 (SW Version: Ate Main_3.1.12)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
CHAMBER	SH-641	92003820	18-Jul-23	18-Jul-24
POWER SUPPLY (0-20V / 0-25A)	6652A	3541A02371	18-Jul-23	18-Jul-24
SPECTRUM ANALYZER	E4440A	MY48250517	8-Nov-23	8-Nov-24

Radiated Emission Station (SW Version: EMC FCC RE v1.6.5)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
DRG HORN FREQ.	SAS-571	1143	08-Mar-23	08-Mar-25
DRG HORN FREQ.	SAS-571	720	18-Apr-23	18-Apr-25
DC Power Supply	6033A	3211A06649	12-Jun-22	12-Jun-24
SIGNAL GENERATOR	SMB 100A	182511	4-Jun-21	4-Jun-24
EMI TEST RECEIVER	ESW44	101731	11-Aug-23	11-Aug-24
5m SEMI-ANECHOIC CHAMBER	S800-HX	J2308	No Cal. Req'd	No Cal. Req'd
BILOG ANTENNA	CBL6112D	55546	23-Mar-23	23-Mar-24
BILOG ANTENNA	CBL6112B	2964	25-Sep-23	25-Sep-24
DATA LOGGER THERMOHYGROMETER	SDL500	A.016800	21-Jun-23	21-Jun-24
SYSTEM CONTROLLER	SC104V	050806-1	No Cal. Req'd	No Cal. Req'd
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	No Cal. Req'd	No Cal. Req'd
ANTENNA POSITIONING TOWER	TLT2	NA	No Cal. Req'd	No Cal. Req'd
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	28-Aug-23	28-Aug-24
PREAMPLIFIER 18-40GHz	Miteq Hi Gain Sucoflex	002	No Cal. Req'd	No Cal. Req'd
PREAMPLIFIER	PAM-0118P	269	28-Mar-23	28-Mar-24
LOOP ANTENNA	6502	00208416	26-Oct-23	26-Oct-24

AC Power Line Conducted Spurious Emission (SW Version: EMC32 Ver. 10.60.10)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
DATA LOGGER	DSB	16344143	21-Jun-2023	21-Jun-2024
V-NETWORK 2-LINE	ENV216	101268	15-Feb-23	15-Feb-24
EMI TEST RECEIVER	ESCI	100225	9-Feb-2023	9-Feb-2024
PROGRAMMABLE AC SOURCE	61604	ABR000000926	25-Jul-2023	25-Jul-2024

5.0. Test Mode Applicability and Test Channel Detail

The device employs MIMO technology. Below are the possible configurations.

WLAN Configurations		Mode					
		SISO		Spatial Diversity Multiplexing (MIMO)		Cyclic Delay Diversity (MIMO)	
2.4GHz	Antenna	Primary	Secondary	Primary	Secondary	Primary	Secondary
	802.11b	√	√	x	x	x	x
	802.11g	√	√	x	x	x	x
	802.11n (HT20)	√	√	x	x	x	x
	802.11n (HT40)	x	x	x	x	x	x

√ = Support;
 x = NOT Support

Note: This Device supports simultaneous transmission operation, which allows for two SISO or two MIMO channels to operate independent of one another in the 2.4GHz band on each antenna. 802.11n mode is capable of transmitting simultaneously on two antennas using Cyclic Delay Diversity and Spatial Diversity Multiplexing (2x2 MIMO).

The following tables show the worst case configurations determined during testing. The data for these configurations is contained in this test report.

Radiated Emission Test (Above 1GHz)

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Date Rate (Mbps)	Mode	Environmental Conditions
Test Mode	802.11b	1 to 11	1,6,11	DSSS	QPSK	2	SISO	22.8°C, 70.1%RH
Test Mode	802.11g	1 to 11	1,6,11	OFDM	BPSK	6	SISO	22.8°C, 70.1%RH
Test Mode	802.11n (HT20)	1 to 11	1,6,11	OFDM	BPSK	6.5	SISO CDD (MIMO)	22.8°C, 70.1%RH
Test Mode	802.11n (HT40)	3 to 9	3,6,9	OFDM	BPSK	6.5	SISO CDD (MIMO)	NA

Radiated Emission Test (Below 1GHz)

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Date Rate (Mbps)	Mode	Environmental Conditions
Test Mode	802.11b	1 to 11	1,6,11	DSSS	QPSK	2	SISO	22.8°C, 70.1%RH
Test Mode	802.11g	1 to 11	1,6,11	OFDM	BPSK	6	SISO	22.8°C, 70.1%RH
Test Mode	802.11n (HT20)	1 to 11	1,6,11	OFDM	BPSK	6.5	SISO CDD (MIMO)	22.8°C, 70.1%RH
Test Mode	802.11n (HT40)	3 to 9	3,6,9	OFDM	BPSK	6.5	SISO CDD (MIMO)	NA

Power Line Conducted Emission Test

☐ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☐ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Data Rate (Mbps)	Environmental Conditions
Application Mode	802.11bgn mixed	1 to 11	AUTO	DSSS, OFDM	AUTO	AUTO	NA

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Data Rate (Mbps)	Mode	Environmental Conditions
Test Mode	802.11b	1 to 11	1,6,11	DSSS	QPSK	2	SISO	25°C, 54.8%RH
Test Mode	802.11g	1 to 11	1,6,11	OFDM	BPSK	6	SISO	25°C, 54.8%RH
Test Mode	802.11n (HT20)	1 to 11	1,6,11	OFDM	BPSK	6.5	SISO CDD (MIMO)	25°C, 54.8%RH
Test Mode	802.11n (HT40)	1 to 11	3,6,9	OFDM	BPSK	6.5	SISO CDD (MIMO)	NA

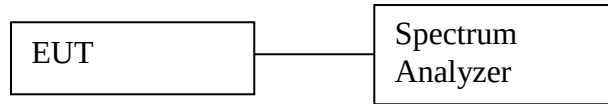
Duty Cycle of Test Signal

802.11b, 802.11g and 802.11n : Duty cycle of test signal is $\geq 98\%$. (Refer to Clause 6.3 for duty cycle test signal)

6.0. Transmitter Test Parameters

6.1. 6dB Channel Bandwidth

6.1.1. Test Setup



- a) Check and ensure the spectrum analyzer well calibrate.
- b) Turn on the DUT and set DUT to transmit maximum power.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
 - a. RBW = 100 kHz
 - b. VBW = 300 kHz
 - c. Detector mode = Peak
 - d. Trace = Max hold
 - e. Sweep = auto
- e) Measure the freq different of two frequencies that were attenuated 6dB from peak of the emission & record the frequency difference as the emission bandwidth.
- f) Measure every antenna port by repeat the step above for MIMO measurement.

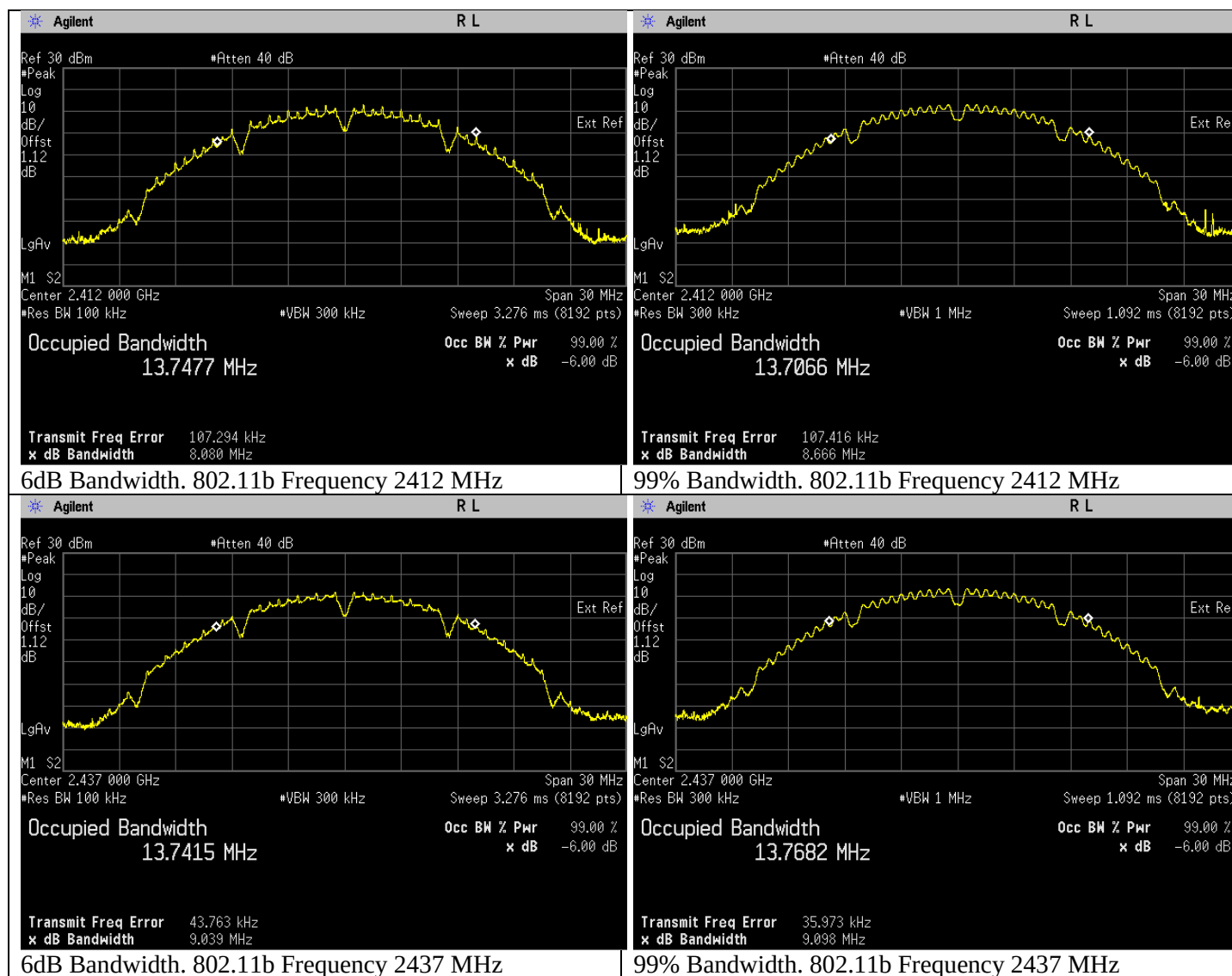
6.1.2. Test Limits:

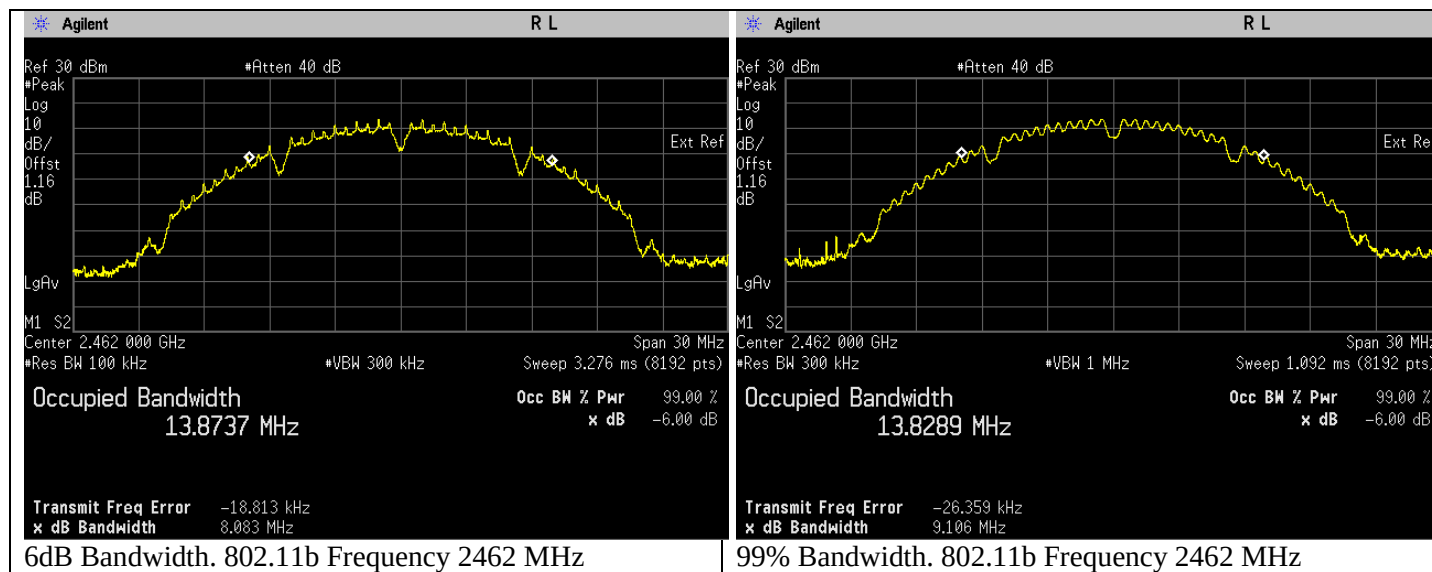
Normal Condition (25 ° C)
≥ 500 kHz

6.1.3. Test Data:

802.11 b

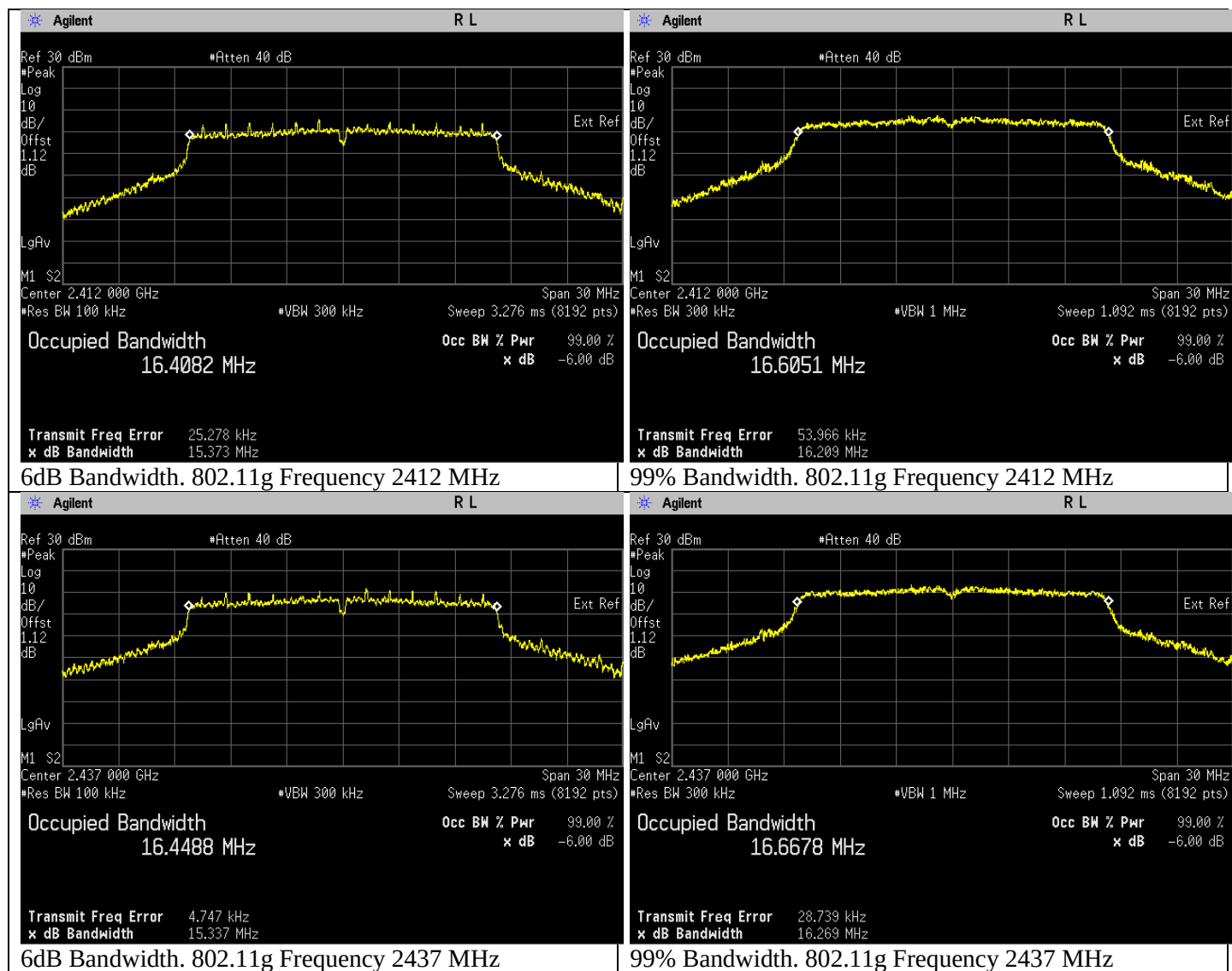
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11b	DSSS	DBPSK	1	2412	8.080	13.707	Pass
802.11b	DSSS	DBPSK	1	2437	9.039	13.768	Pass
802.11b	DSSS	DBPSK	1	2462	8.083	13.829	Pass

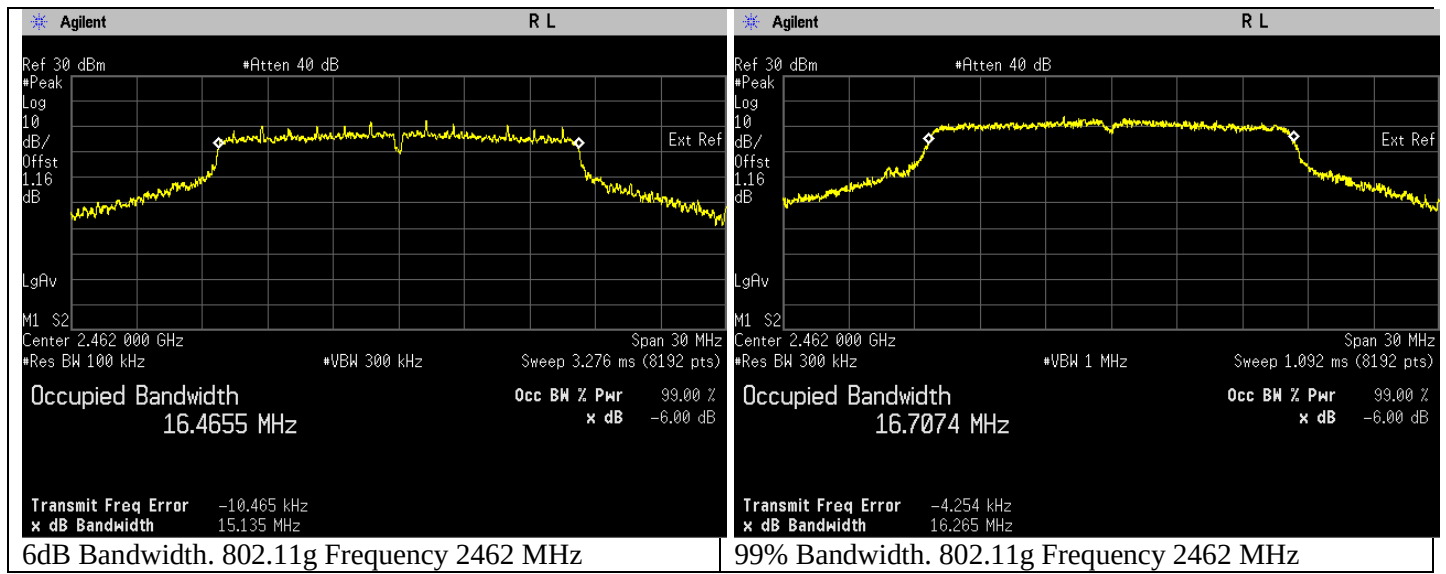




802.11 g

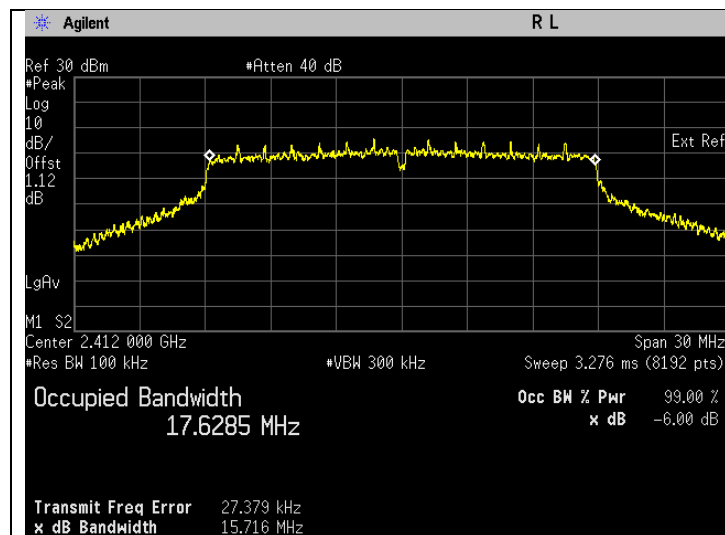
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11g	OFDM	BPSK	6	2412	15.373	16.605	Pass
802.11g	OFDM	BPSK	6	2437	15.337	16.668	Pass
802.11g	OFDM	BPSK	6	2462	15.135	16.707	Pass



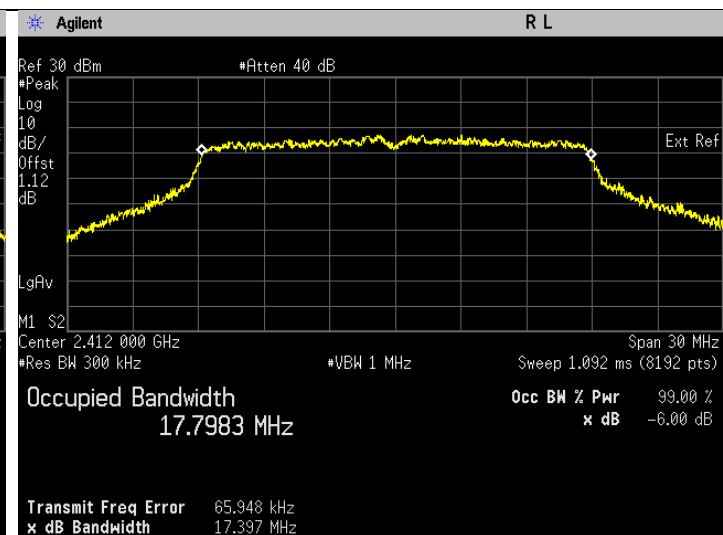


802.11n (HT20)

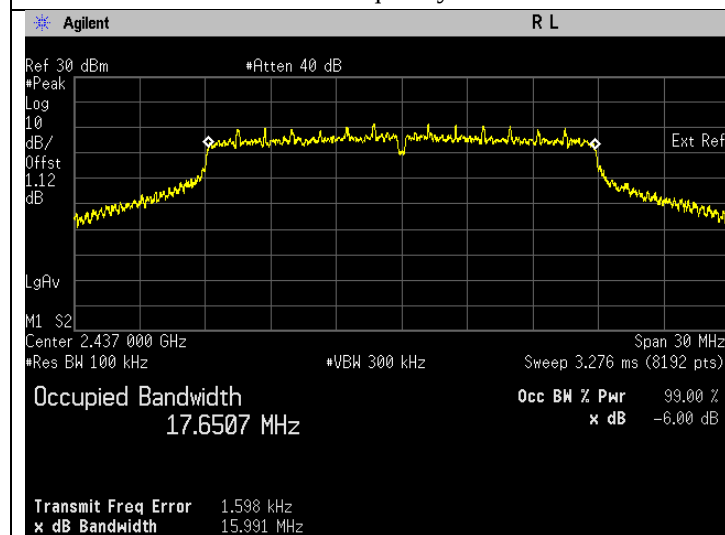
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11n	OFDM	BPSK	6.5	2412	15.716	17.798	Pass
802.11n	OFDM	BPSK	6.5	2437	15.991	17.851	Pass
802.11n	OFDM	BPSK	6.5	2462	15.953	17.879	Pass



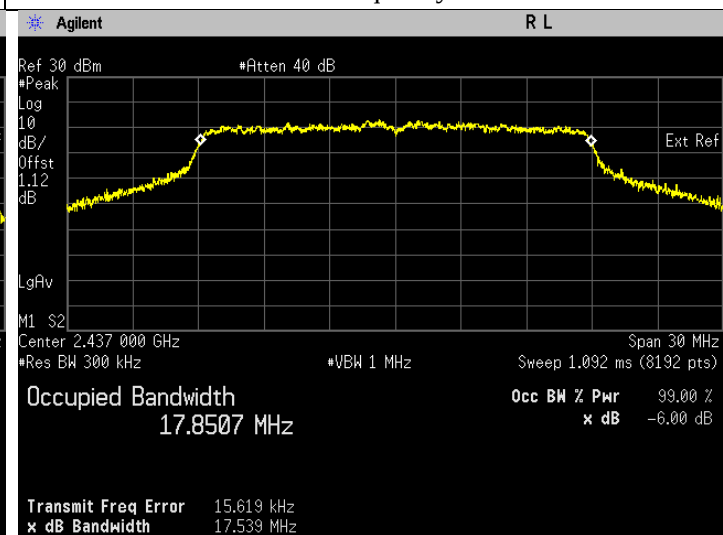
6dB Bandwidth. 802.11n Frequency 2412 MHz



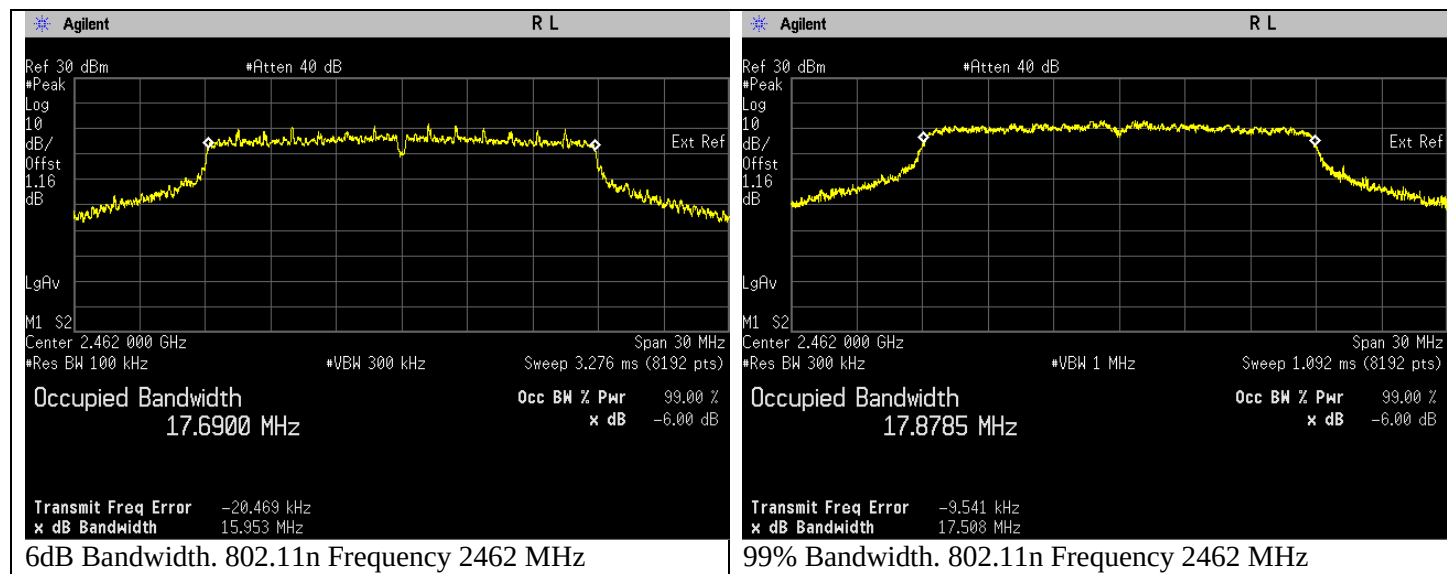
99% Bandwidth. 802.11n Frequency 2412 MHz



6dB Bandwidth. 802.11n Frequency 2437 MHz

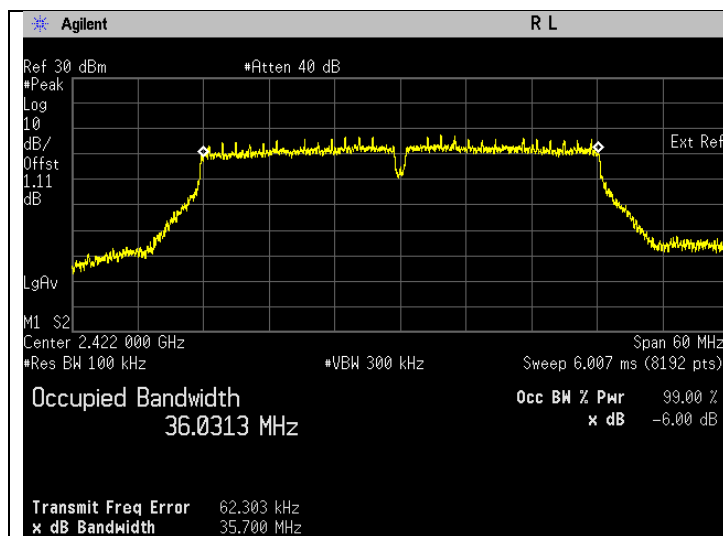


99% Bandwidth. 802.11n Frequency 2437 MHz

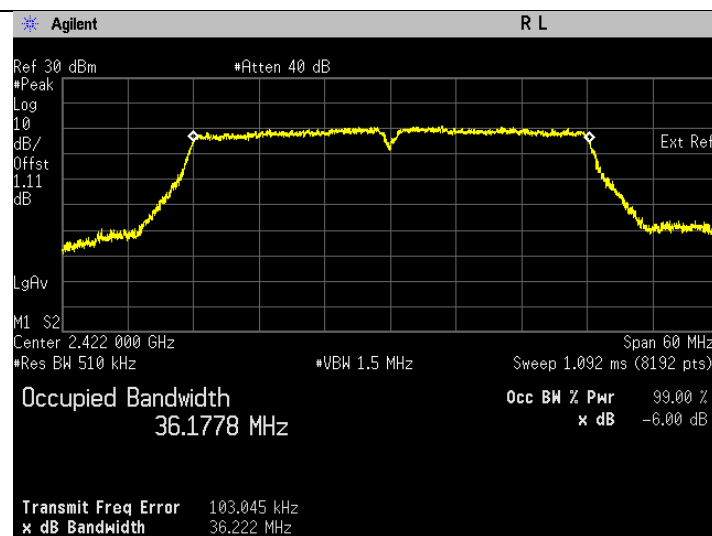


802.11n (HT40)

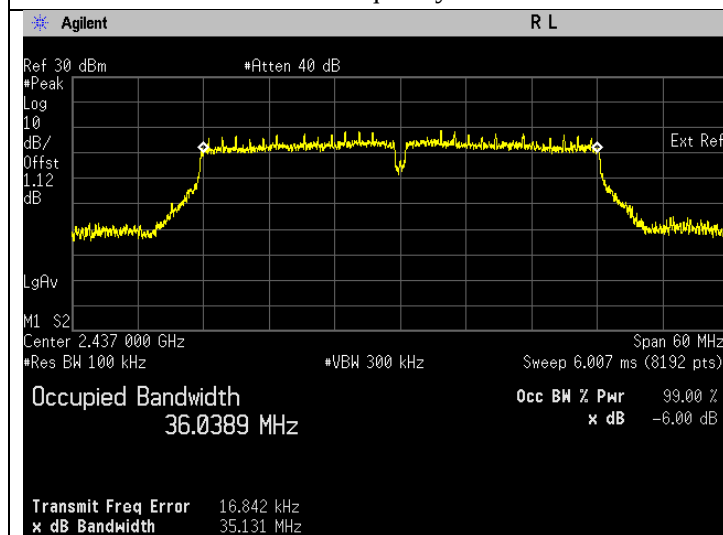
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11n	OFDM	BPSK	13.5	2422	35.700	36.178	Pass
802.11n	OFDM	BPSK	13.5	2437	35.131	36.186	Pass
802.11n	OFDM	BPSK	13.5	2452	35.134	36.226	Pass



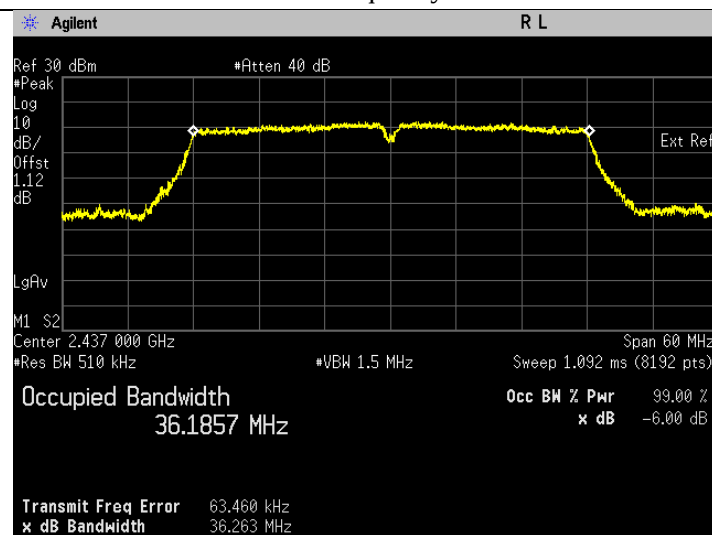
6dB Bandwidth. 802.11n Frequency 2422 MHz



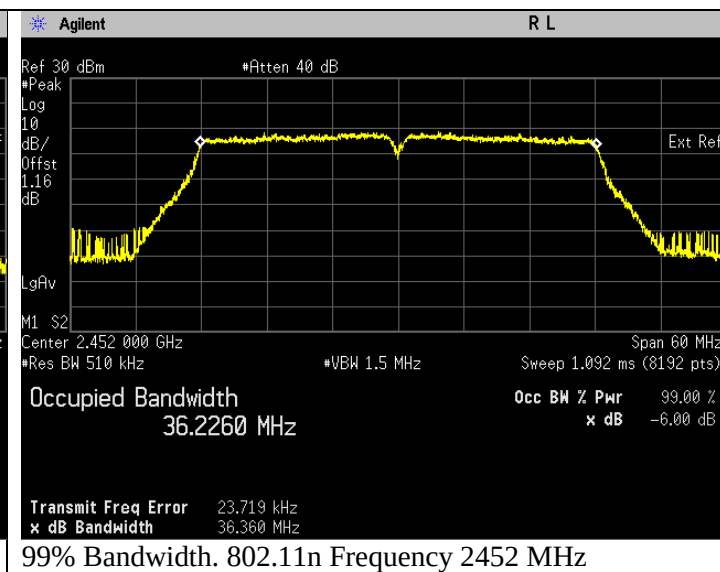
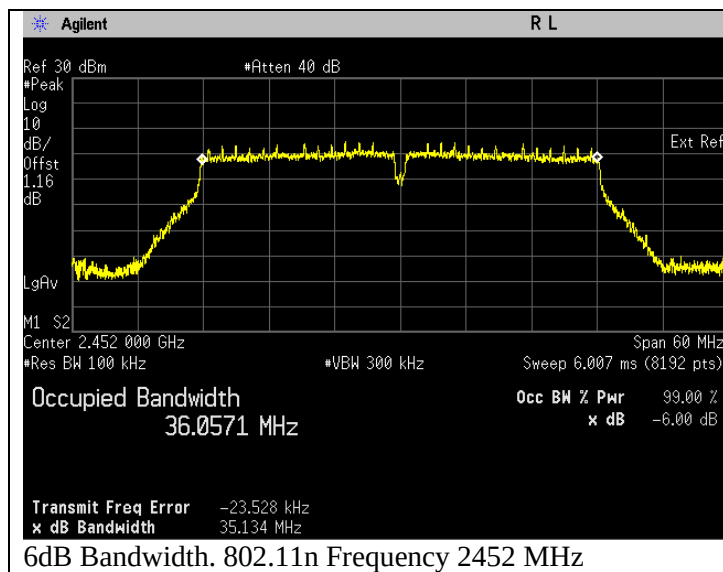
99% Bandwidth. 802.11n Frequency 2422 MHz



6dB Bandwidth. 802.11n Frequency 2437 MHz

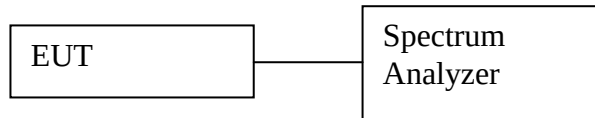


99% Bandwidth. 802.11n Frequency 2437 MHz



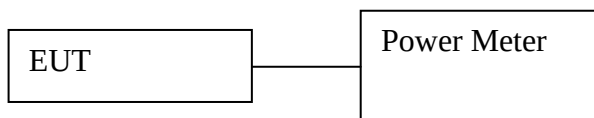
6.2. Conducted RF Output Power

6.2.1. Test Setup



Average

- a) Check and ensure the spectrum analyzer well calibrate.
- b) Turn on the DUT and set DUT to transmit maximum power.
- c) Measure the duty cycle of transmitter output signal.
- d) Setting of Spectrum analyzer :
 - a. Set the RBW = 300 kHz.
 - b. Set the VBW $\geq [3 \times \text{RBW}]$.
 - c. Set the span $\geq [1.5 \times \text{OBW bandwidth}]$.
 - d. Detector = average.
 - e. Sweep time = auto couple.
 - f. Trace mode = free run.
 - g. Allow trace to fully stabilize.
- e) Add in duty cycle correction into final test result.
- f) Duty cycle correction is calculated as below:
 $10 \log (1/x)$
- g) Measure every antenna port by repeat the step above for MIMO measurement.



Peak

- a) Set the following settings on the power meter:
 - a. Preset -> reset
 - b. Cal/Zero -> Zero & Cal
 - c. Preset -> 802.11g
 - d. Sensor -> Cal Factor -> Enter freq
 - e. Channel -> Trigger -> Trigger Source -> Internal, Rising Edge
 - f. Channel -> Trigger -> More -> Arming -> Automatic
 - g. Channel -> Averaging -> Averaging
 - h. Sensor -> offset -> fixed to couple for losses from ancillaries
 - i. Record peak data
- b) Key up DUT
- c) Restart averaging and read data once the numbers stabilize.
- d) Record power by reading peak data
- e) Repeat the steps in (1) (omit first 3 steps if done previously) by setting DUT to transmit at mid frequency and high frequency.

6.2.2. Test Limits:

Normal Condition (25 ° C)
≤ 1 Watt(30 dBm)

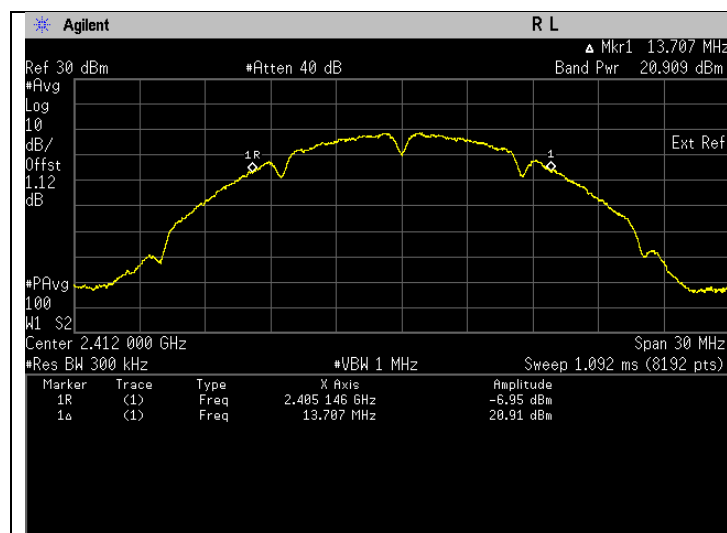
6.2.3. Test Data:

Test was conducted with average power.

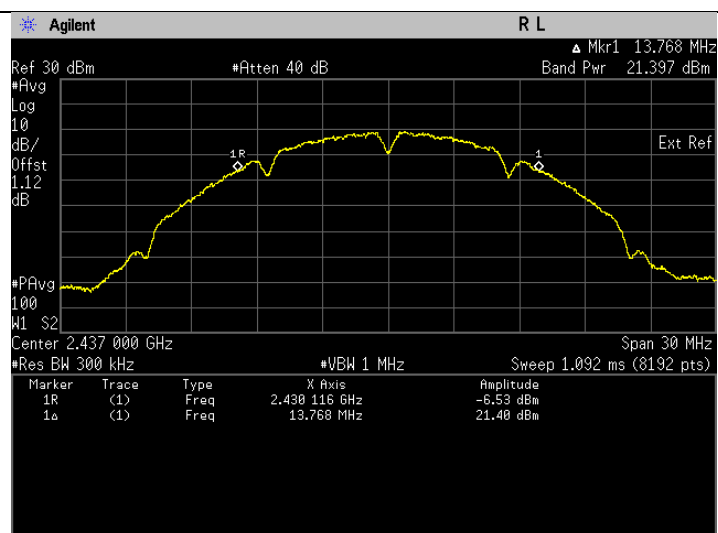
802.11b

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.038dBm

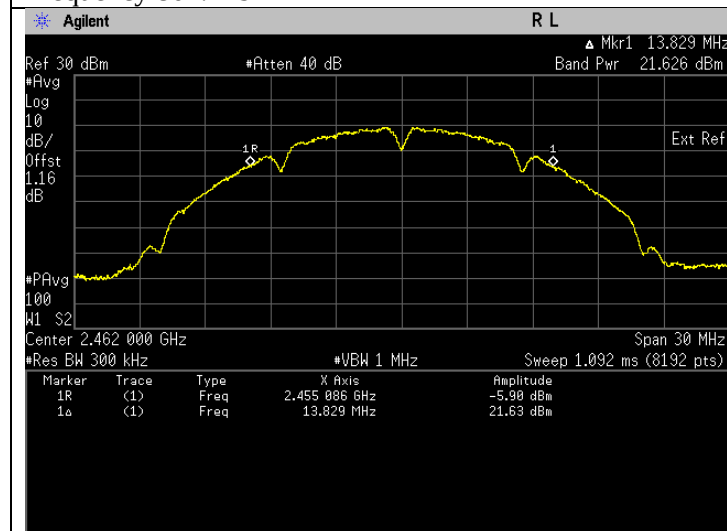
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11b	DSSS	DBPSK	1	2412	20.947	Pass
802.11b	DSSS	DBPSK	1	2437	21.435	Pass
802.11b	DSSS	DBPSK	1	2462	21.664	Pass



Frequency 802.11b MHz



Frequency 802.11b MHz

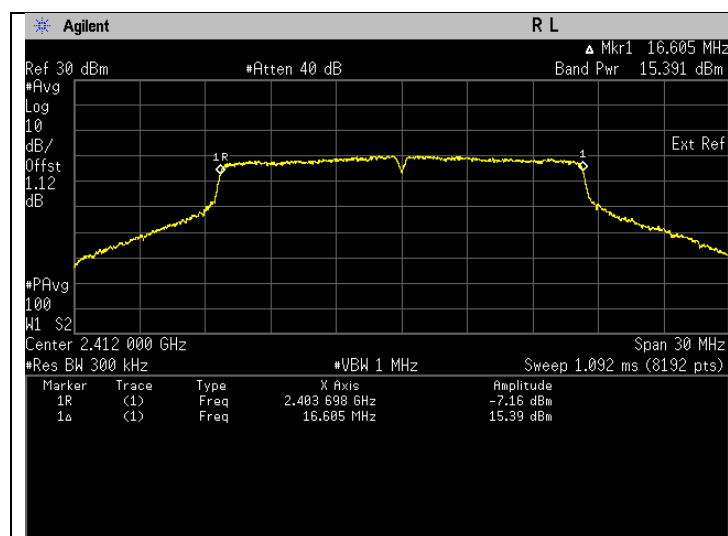


Frequency 802.11b MHz

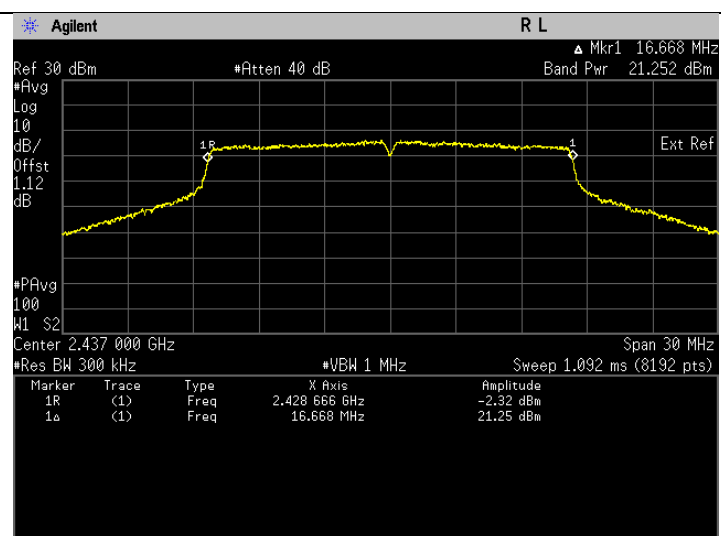
802.11g

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.075dBm

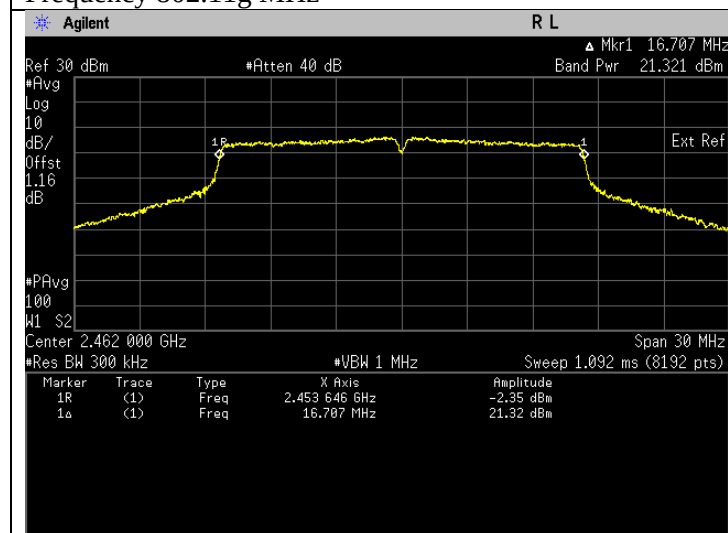
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11g	OFDM	BPSK	6	2412	15.466	Pass
802.11g	OFDM	BPSK	6	2437	21.327	Pass
802.11g	OFDM	BPSK	6	2462	21.396	Pass



Frequency 802.11g MHz



Frequency 802.11g MHz

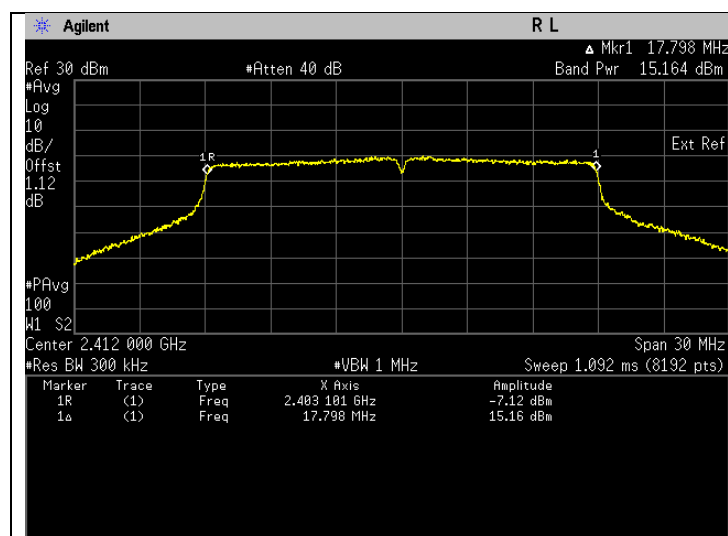


Frequency 802.11g MHz

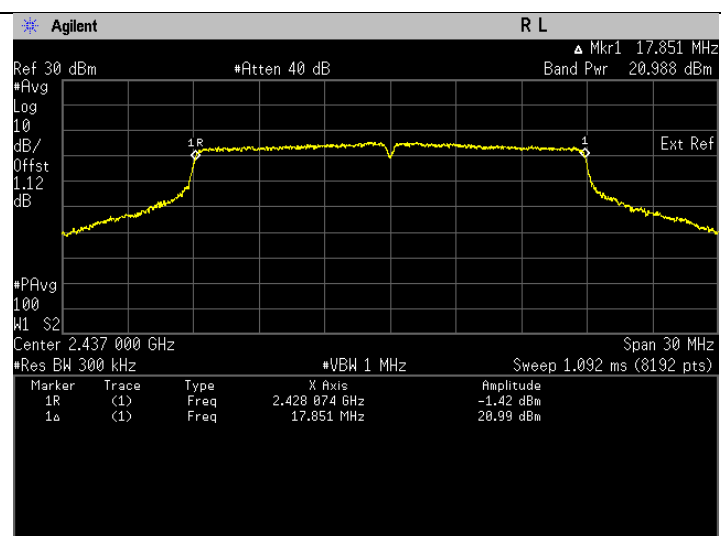
802.11n (HT20)

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.078dBm

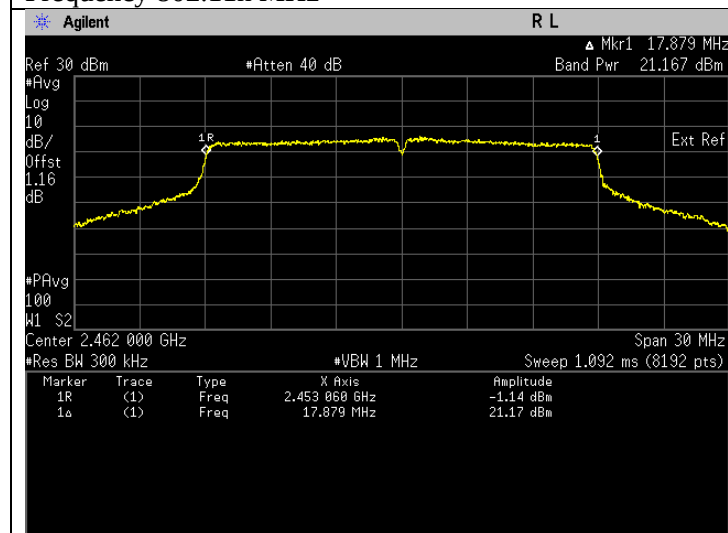
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11n	OFDM	BPSK	6.5	2412	15.242	Pass
802.11n	OFDM	BPSK	6.5	2437	21.066	Pass
802.11n	OFDM	BPSK	6.5	2462	21.245	Pass



Frequency 802.11n MHz



Frequency 802.11n MHz

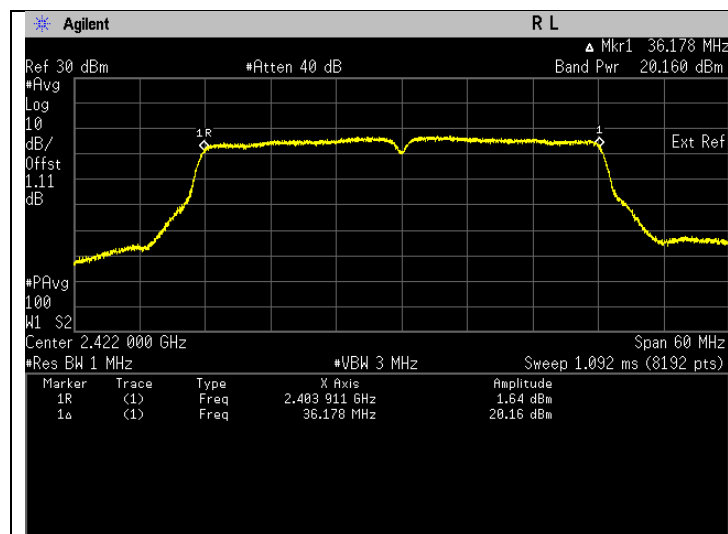


Frequency 802.11n MHz

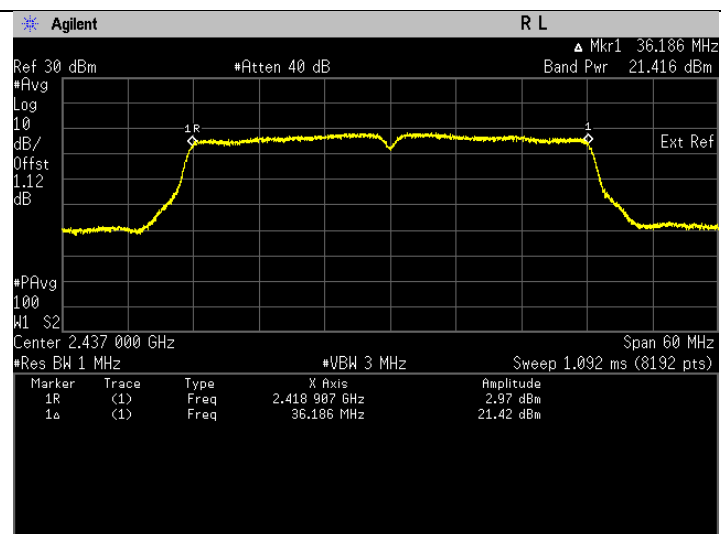
802.11n (HT40)

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.226dBm

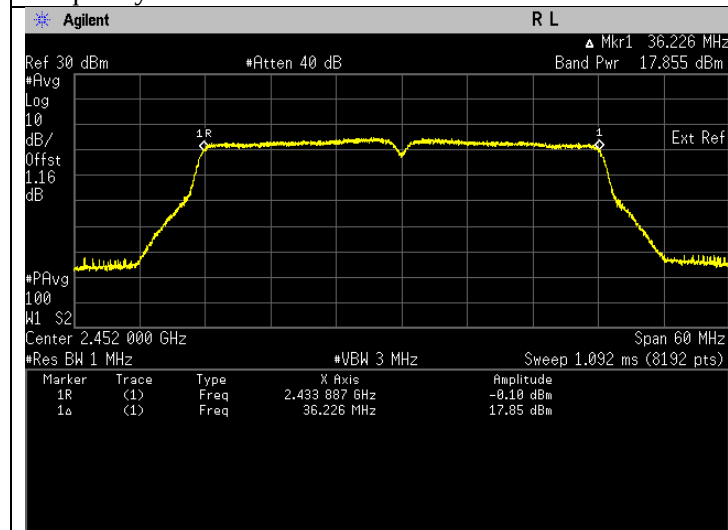
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11n	OFDM	BPSK	13.5	2422	20.386	Pass
802.11n	OFDM	BPSK	13.5	2437	21.642	Pass
802.11n	OFDM	BPSK	13.5	2452	18.081	Pass



Frequency 802.11n MHz



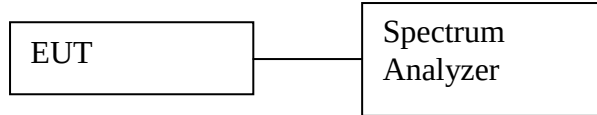
Frequency 802.11n MHz



Frequency 802.11n MHz

6.3.Duty Cycle of the test signal

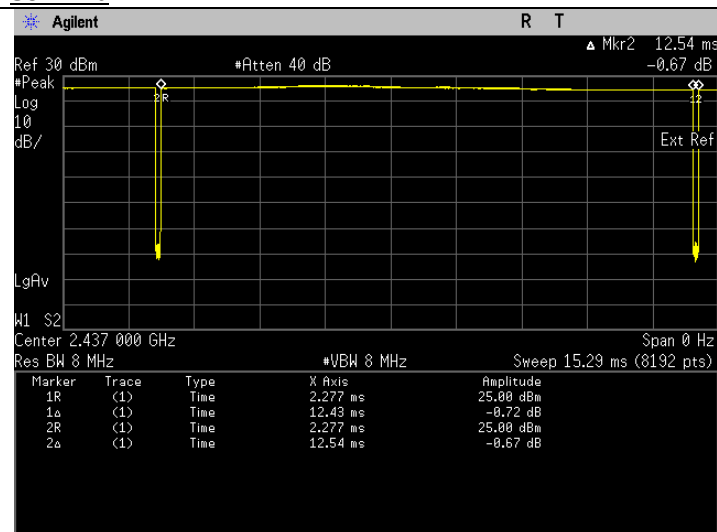
6.3.1. Test Setup



- 1) Check and ensure the spectrum analyzer well calibrate.
- 2) Turn on the DUT and set DUT to transmit maximum power.
- 3) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- 4) Setting of Spectrum analyzer :
 - a. Set the RBW = 10 MHz or the highest RBW available on spectrum analyzer.
 - b. Set the VBW $\geq$ RBW.
 - c. Set the span $\geq [1.5 \times \text{DTS bandwidth}]$.
 - d. Detector = Peak.
 - e. Sweep time = 10ms or others that allow to measure accurate duty cycle.
 - f. Trace mode = max hold.
 - g. Allow trace to fully stabilize.
- 5) Record the duty cycle as X and save the plot.
- 6) Measure every antenna port by repeat the step above for MIMO measurement.

6.3.2. Test Data

802.11b



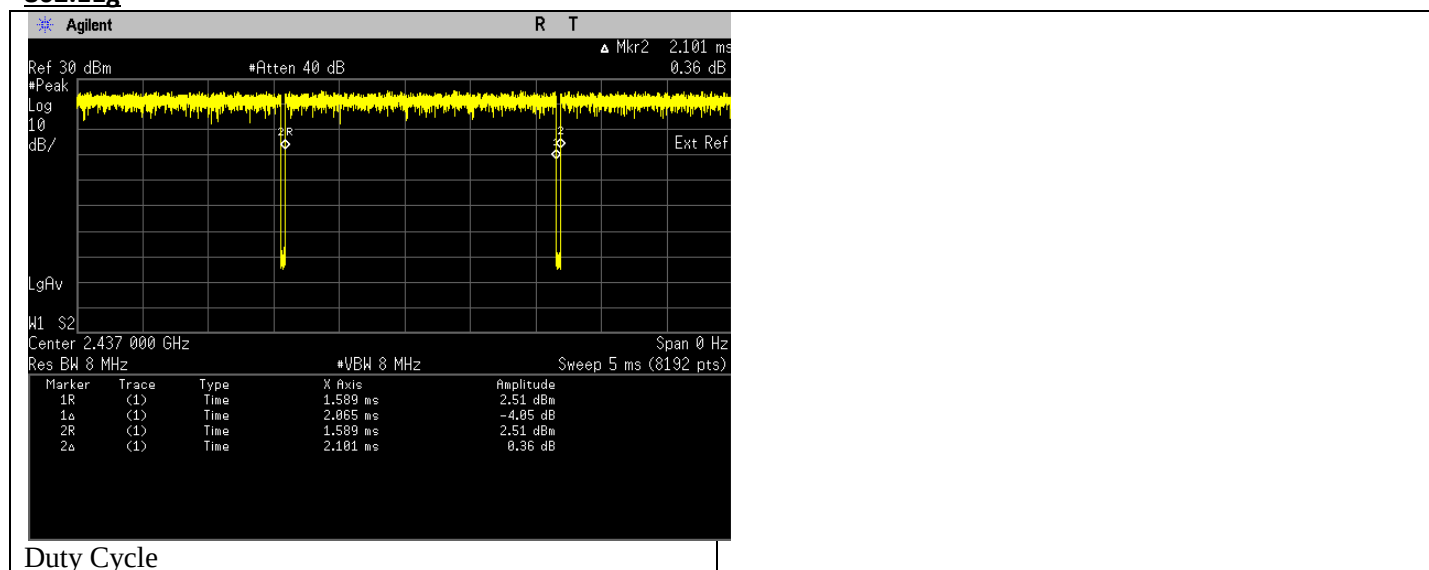
Duty Cycle

On time (ms)	12.43
On + Off Time (ms)	12.54
Duty cycle	0.9912
Duty Cycle factor	0.038

*Duty cycle = On time/ On +off time

*Duty Cycle factor = $10 \cdot \log(1/\text{Duty Cycle})$

802.11g



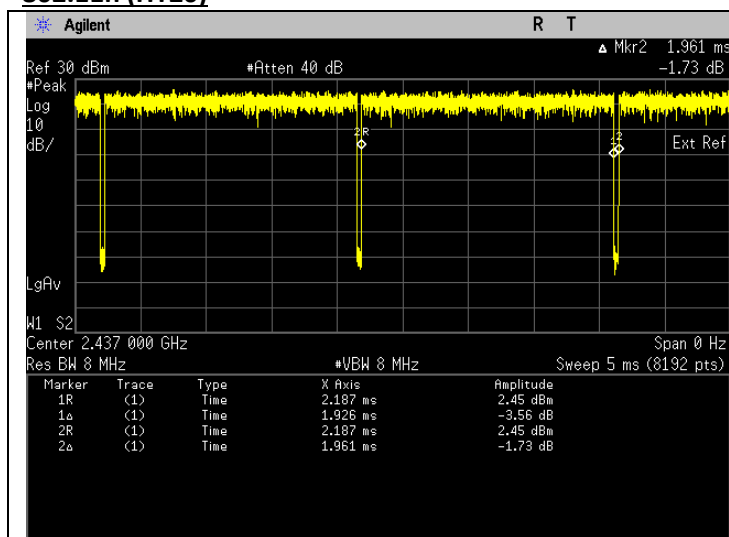
Duty Cycle

On time (ms)	2.065
On + Off Time (ms)	2.101
Duty cycle	0.9829
Duty Cycle factor	0.075

*Duty cycle = On time/ On +off time

*Duty Cycle factor = 10*log(1/Duty Cycle)

802.11n (HT20)



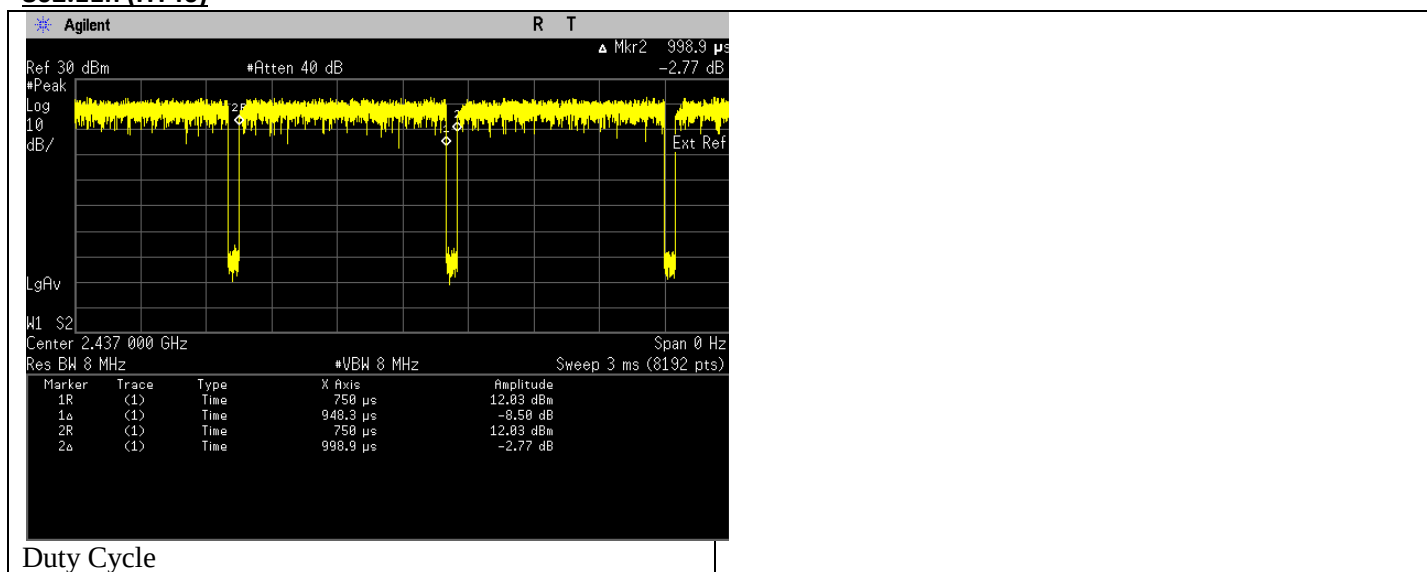
Duty Cycle

On time (ms)	1.926
On + Off Time (ms)	1.961
Duty cycle	0.9822
Duty Cycle factor	0.078

*Duty cycle = On time/ On +off time

*Duty Cycle factor = $10 \cdot \log(1/\text{Duty Cycle})$

802.11n (HT40)



Duty Cycle

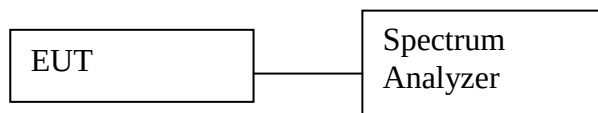
On time (ms)	0.9483
On + Off Time (ms)	0.9989
Duty cycle	0.9493
Duty Cycle factor	0.226

*Duty cycle = On time/ On +off time

*Duty Cycle factor = 10*log(1/Duty Cycle)

6.4. Maximum Peak Power Spectral Density

6.4.1. Test Setup



Maximum Peak

- a) Check and ensure the spectrum analyzer well calibrate.
- b) Turn on the DUT and set DUT to transmit maximum power.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
 - a. Set analyzer center frequency to DTS channel center frequency.
 - b. Set the span to 1.5 times the DTS bandwidth.
 - c. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
 - d. Set the VBW $\geq [3 \times \text{RBW}]$.
 - e. Detector = peak.
 - f. Sweep time = auto couple.
 - g. Trace mode = max hold.
 - h. Allow trace to fully stabilize.
 - i. Use the peak marker function to determine the maximum amplitude level within the RBW.
 - j. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
- e) Measure every antenna port by repeat the step above for MIMO measurement.

6.4.2. Test Limits

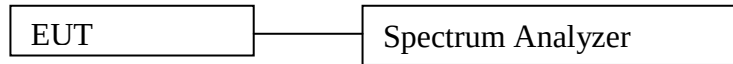
Normal Condition (25 ° C)
$\leq 8 \text{ dBm/3kHz}$

6.4.3. Test Result

Not Applicable

6.5. Conducted Spurious Emission

6.5.1. Test Setup



- a) Check and ensure the spectrum analyzer well calibrate.
- b) Turn on the DUT and set DUT to transmit maximum power.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
 - a. RBW = 100 kHz
 - b. VBW = 300 kHz
 - c. Detector mode = Peak
 - d. Trace = Max Hold
 - e. Sweep = auto
- e) Use the peak marker function to measure highest emission and scan up to 10th harmonic.
- f) Measure every antenna port by repeat the step above for MIMO measurement.

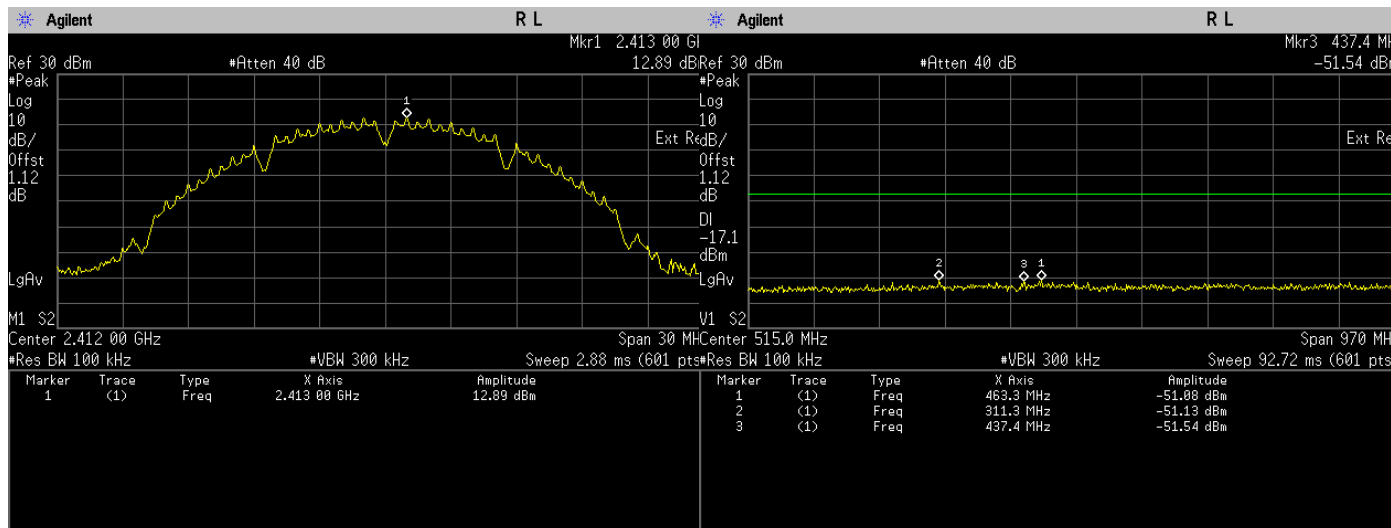
6.5.2. Test Limits:

Normal Condition (25 ° C)
Shall be at least 20 dB below max power. (Peak detector)
Shall be at least 30 dB below max power. (Average detector)

6.5.3. Test Result

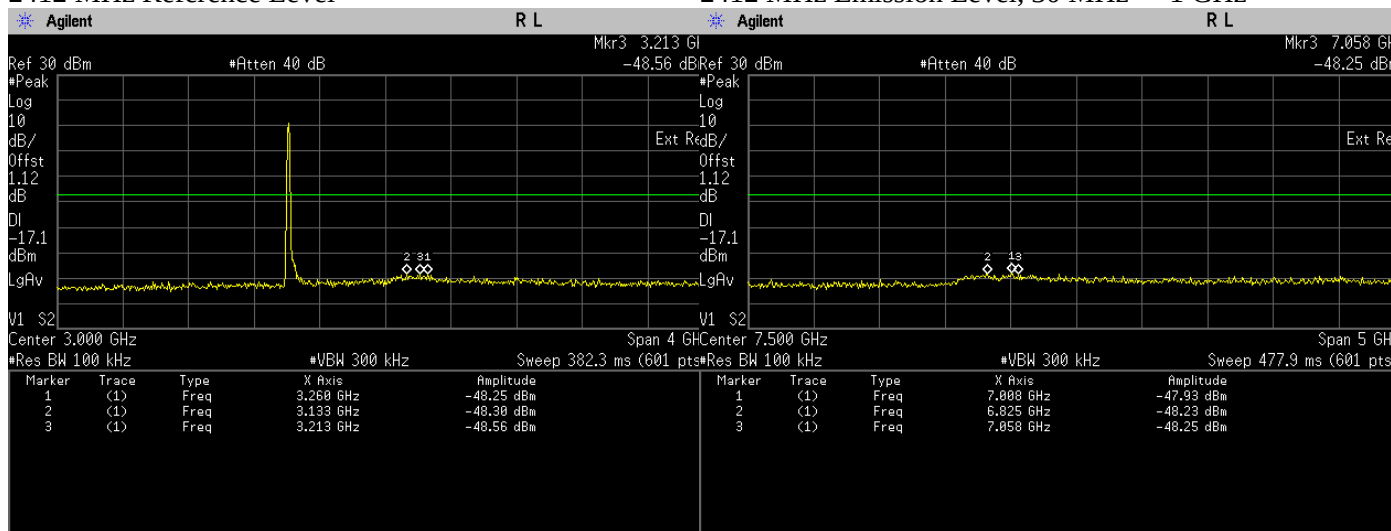
802.11b

Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11b	DSSS	DBPSK	1	2412	24967.000	-40.6740	Pass
					24875.000	-40.9730	Pass
					24983.000	-40.9860	Pass
802.11b	DSSS	DBPSK	1	2437	24883.000	-40.7840	Pass
					24825.000	-40.9390	Pass
					24950.000	-41.0700	Pass
802.11b	DSSS	DBPSK	1	2462	24058.000	-40.8840	Pass
					24900.000	-40.9140	Pass
					24017.000	-41.1970	Pass



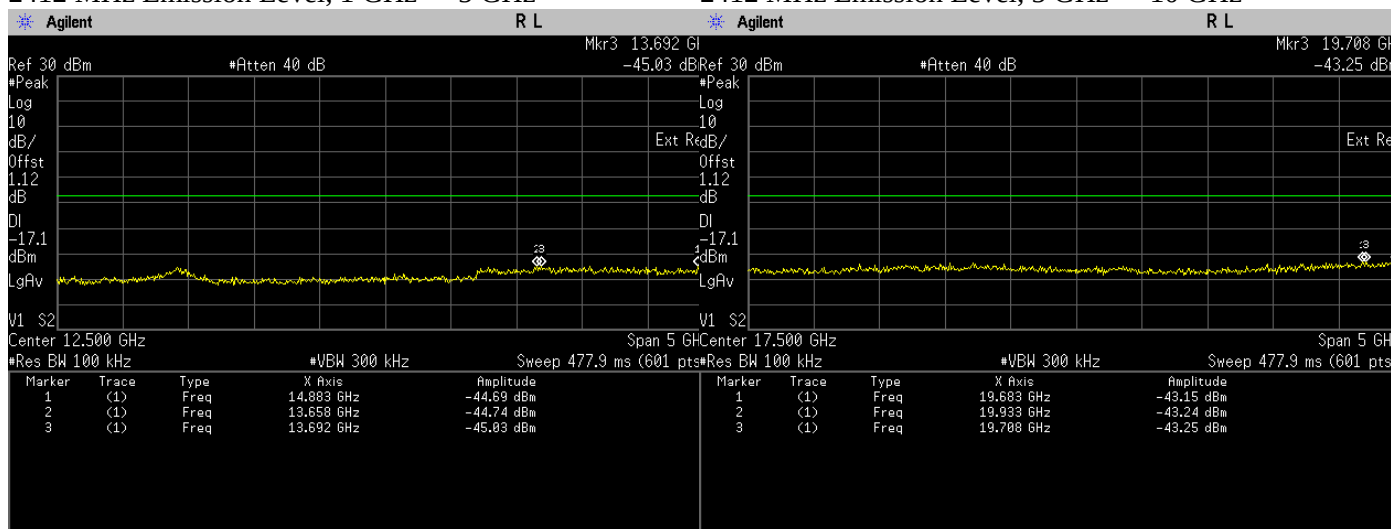
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Reference Level

Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 30 MHz -> 1 GHz



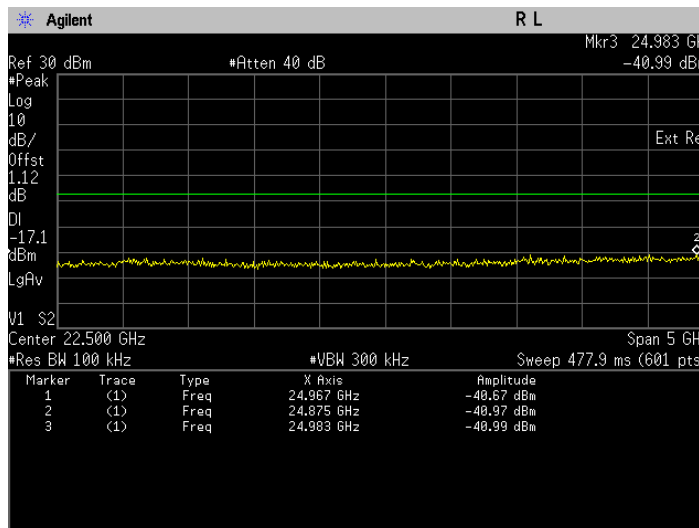
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 5 GHz -> 10 GHz

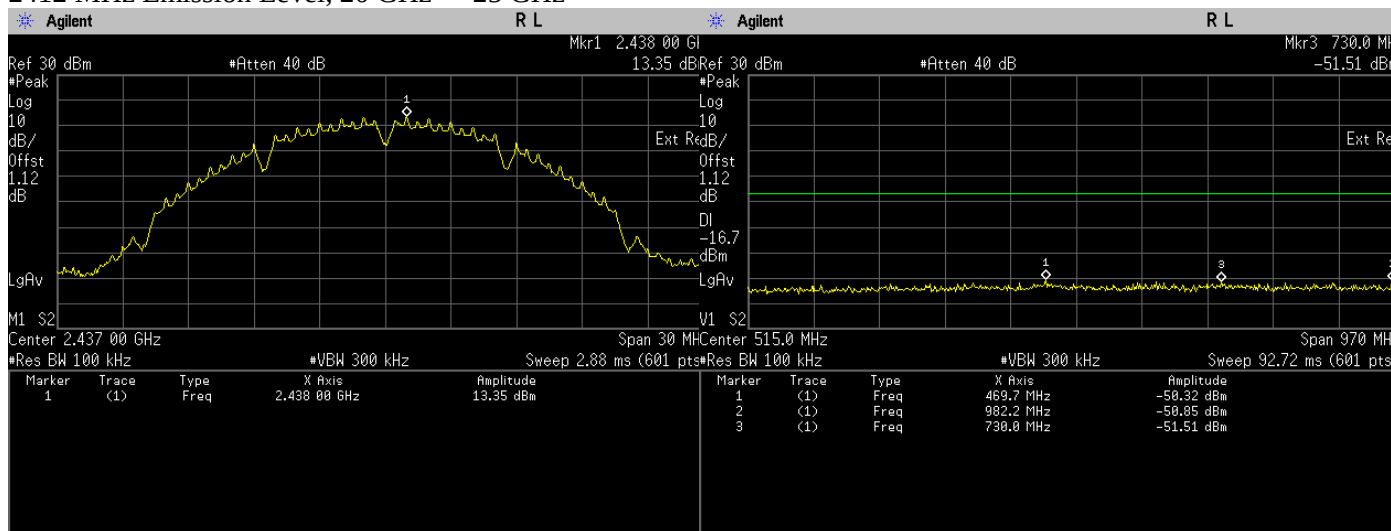


Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 15 GHz -> 20 GHz

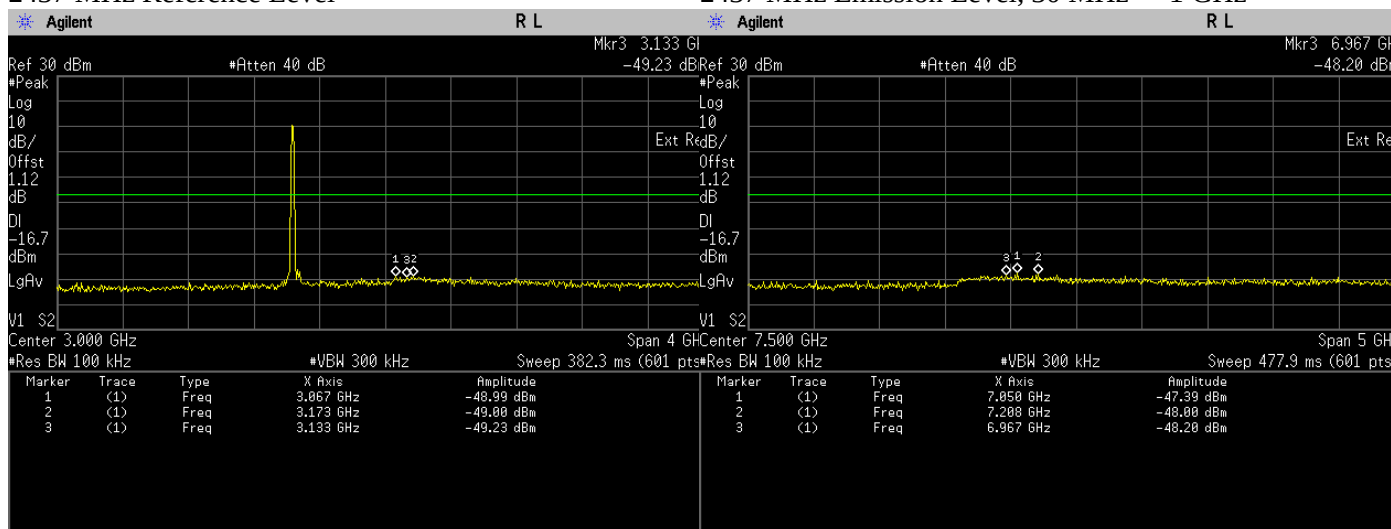


Conducted Emissions(Average). 802.11b, Frequency
2412 MHz Emission Level, 20 GHz -> 25 GHz



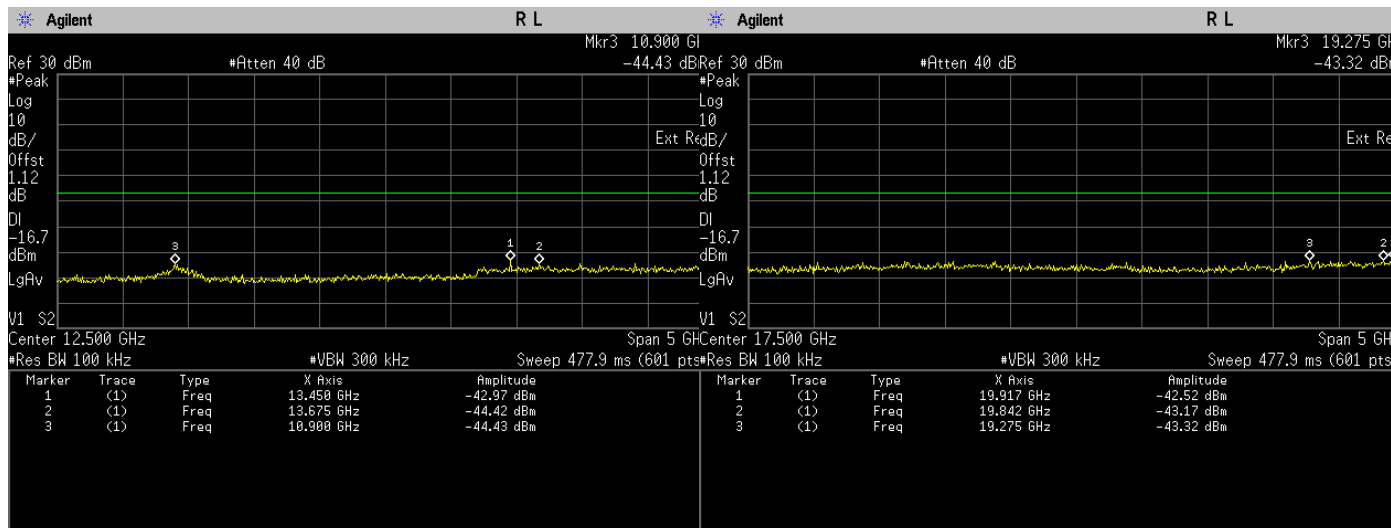
Conducted Emissions(Average). 802.11b, Frequency
2437 MHz Reference Level

Conducted Emissions(Average). 802.11b, Frequency
2437 MHz Emission Level, 30 MHz -> 1 GHz



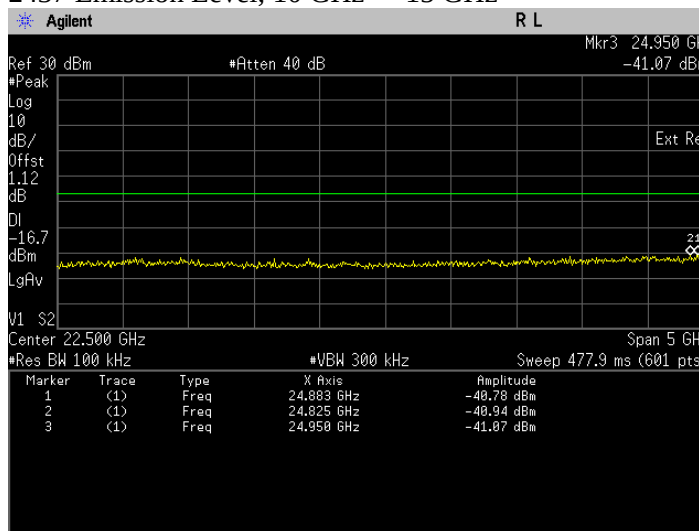
Conducted Emissions(Average). 802.11b, Frequency
2437 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11b, Frequency
2437 MHz Emission Level, 5 GHz -> 10 GHz

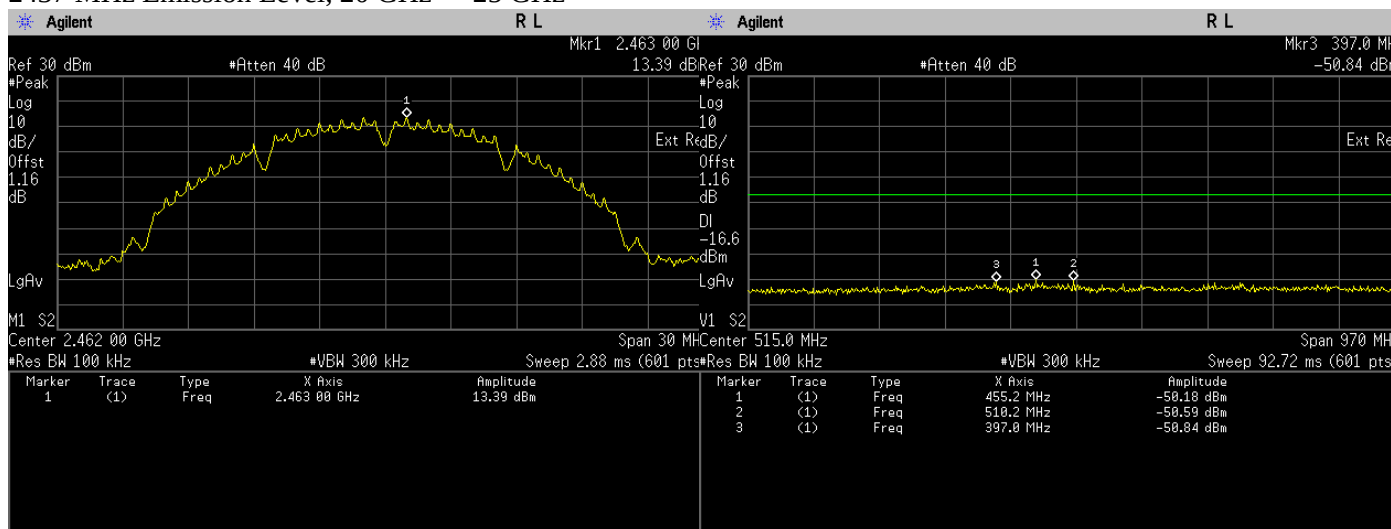


Conducted Emissions(Average). 802.11b, Frequency 2437 Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz

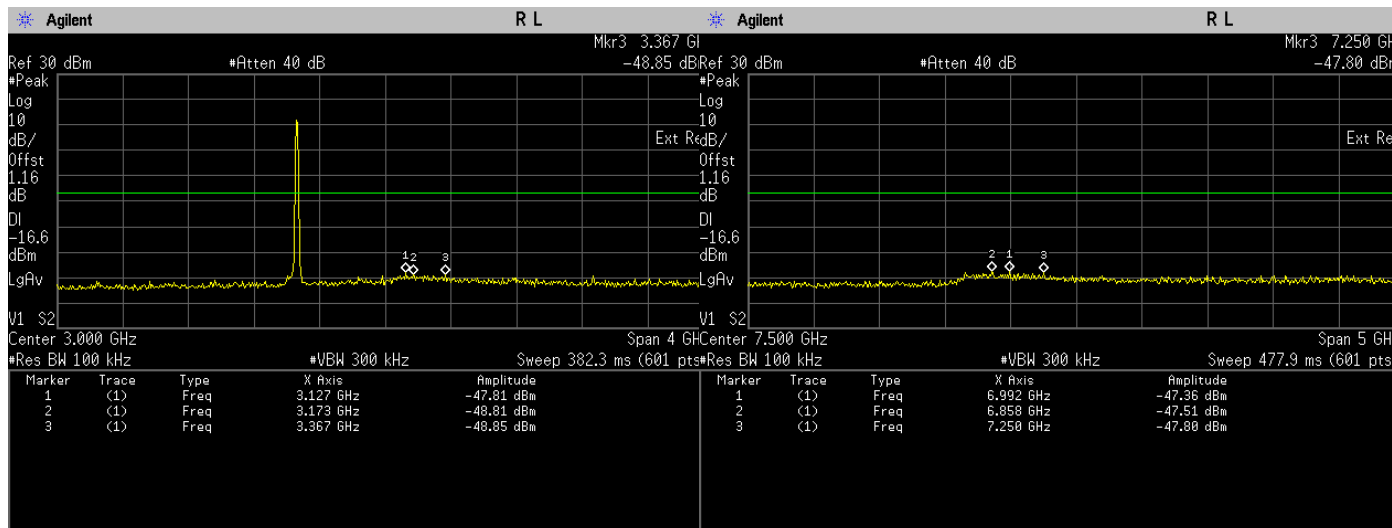


Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



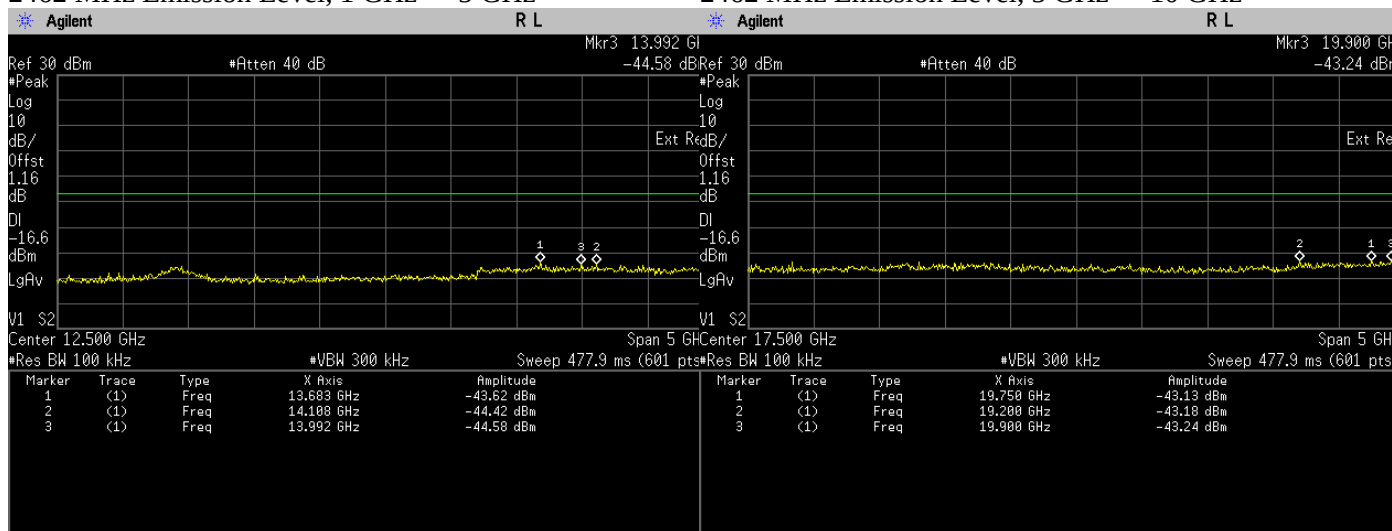
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Reference Level

Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 30 MHz -> 1 GHz



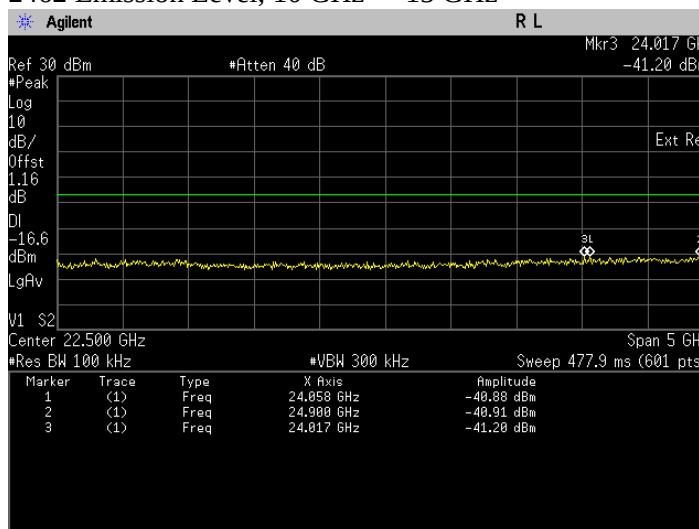
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 10 GHz -> 15 GHz

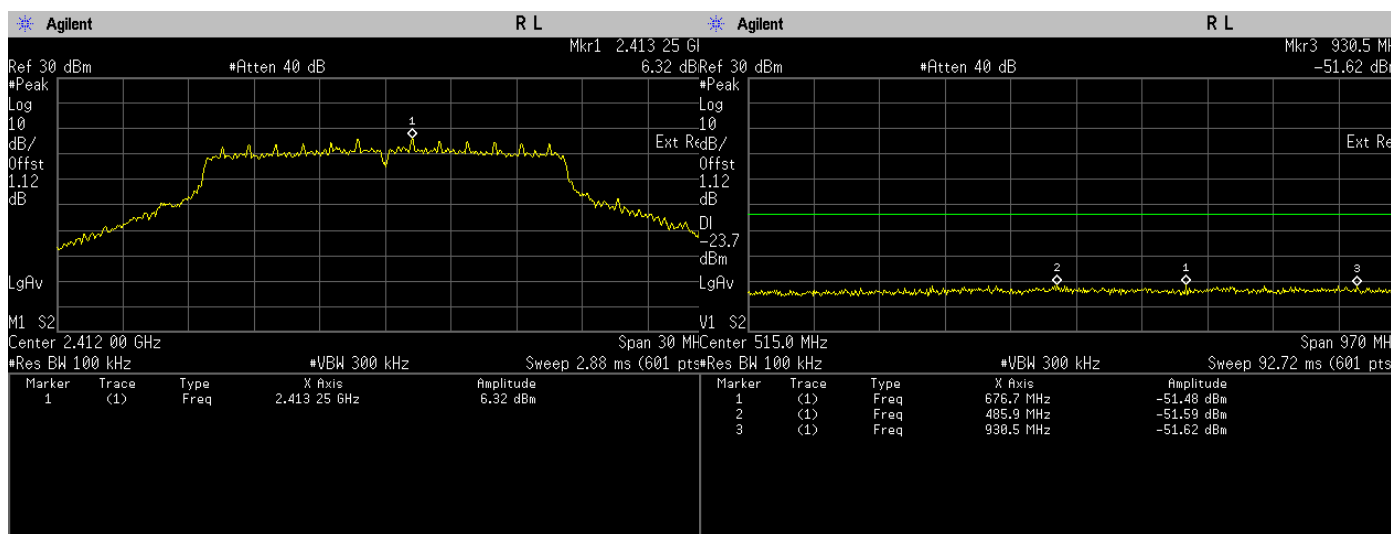
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 15 GHz -> 20 GHz



Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 20 GHz -> 25 GHz

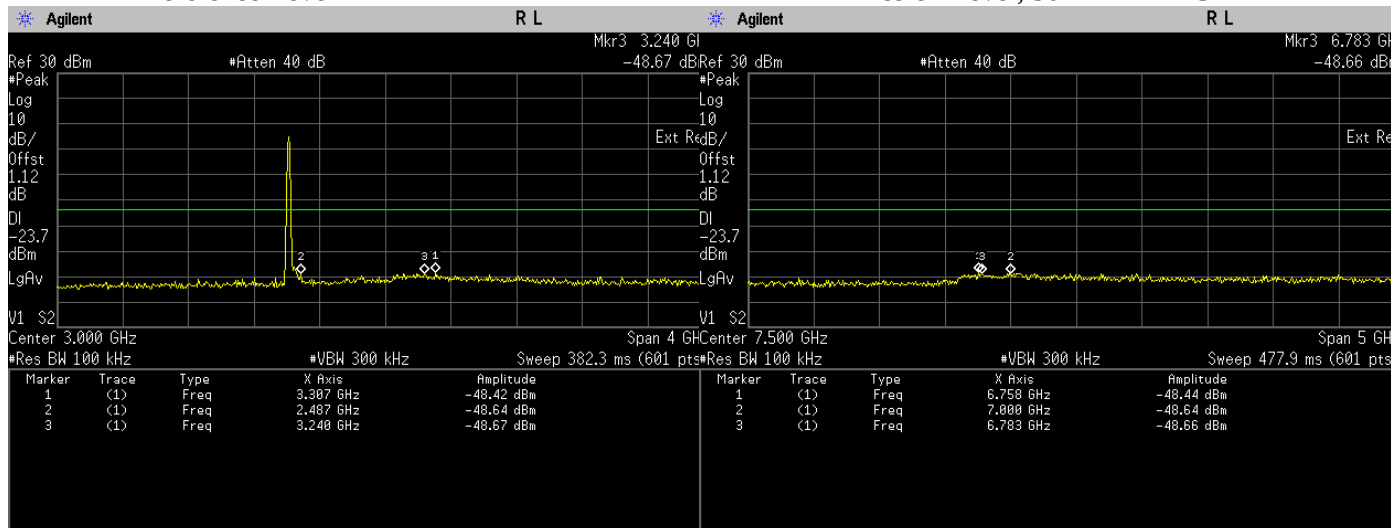
802.11g

Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11g	OFDM	BPSK	6	2412	24883.000	-39.5840	Pass
					24925.000	-40.2350	Pass
					24217.000	-40.4470	Pass
802.11g	OFDM	BPSK	6	2437	24883.000	-40.6430	Pass
					24917.000	-40.7870	Pass
					24942.000	-40.8500	Pass
802.11g	OFDM	BPSK	6	2462	24308.000	-39.5140	Pass
					24750.000	-40.8340	Pass
					24633.000	-40.8580	Pass



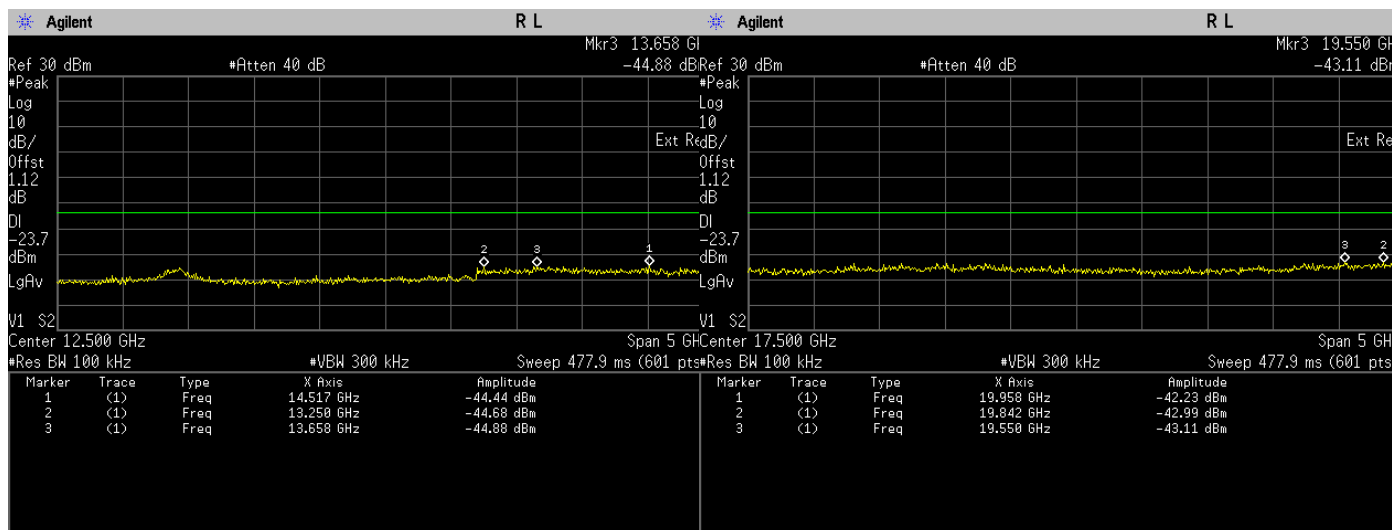
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Reference Level

Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 30 MHz -> 1 GHz



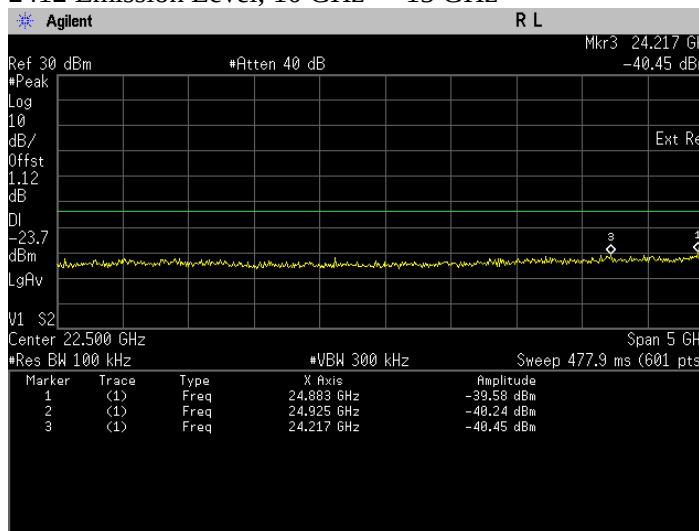
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 5 GHz -> 10 GHz

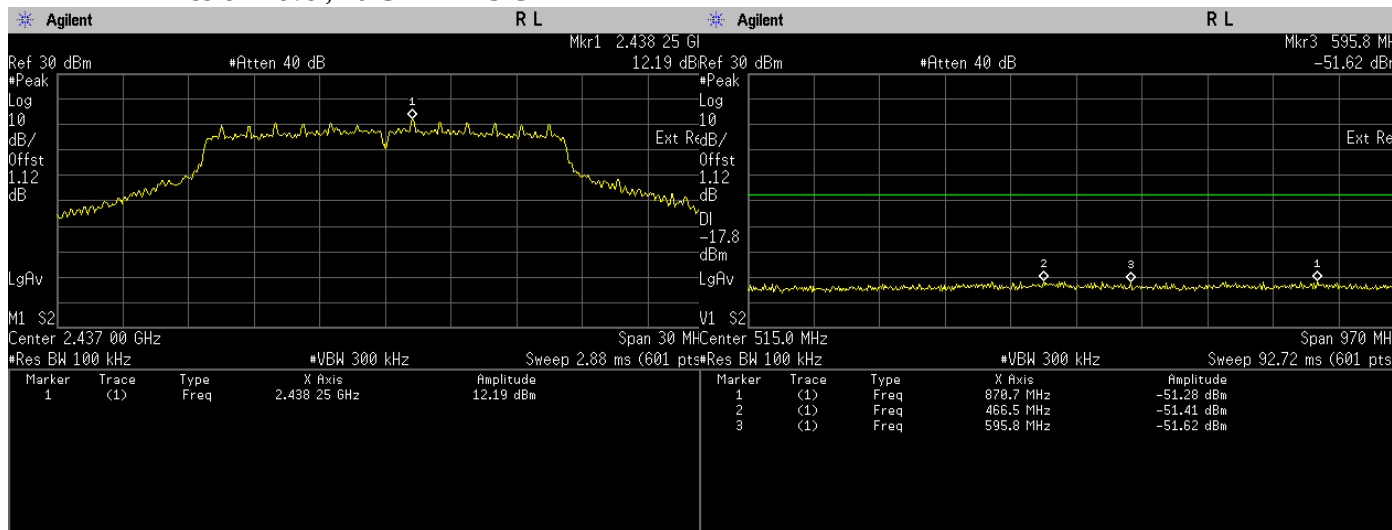


Conducted Emissions(Average). 802.11g, Frequency 2412 Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 15 GHz -> 20 GHz

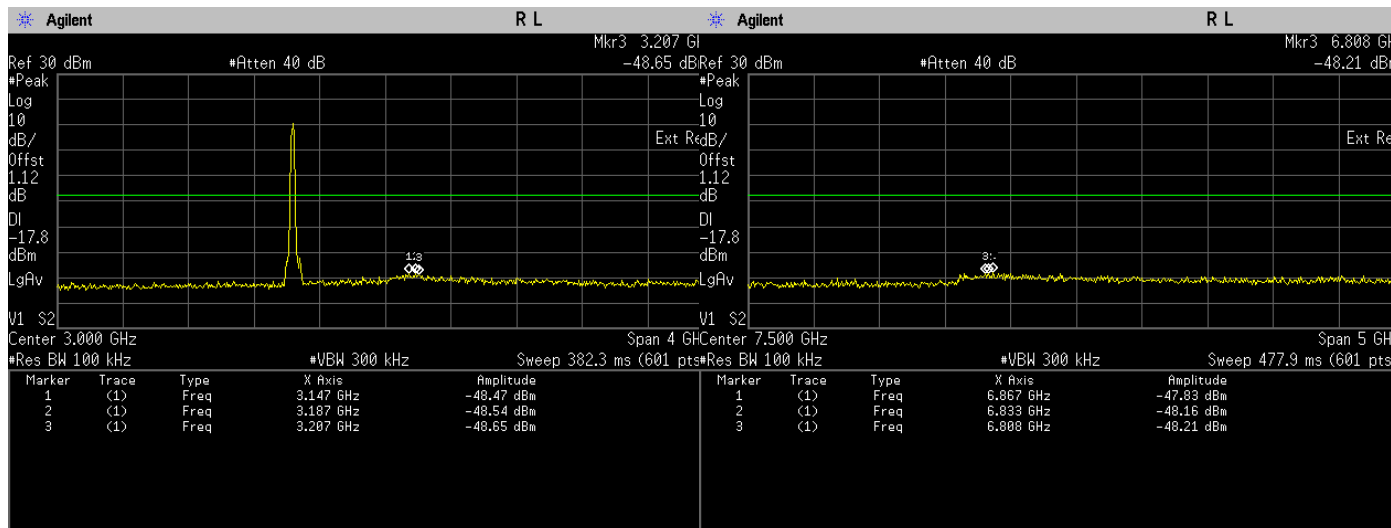


Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 20 GHz -> 25 GHz



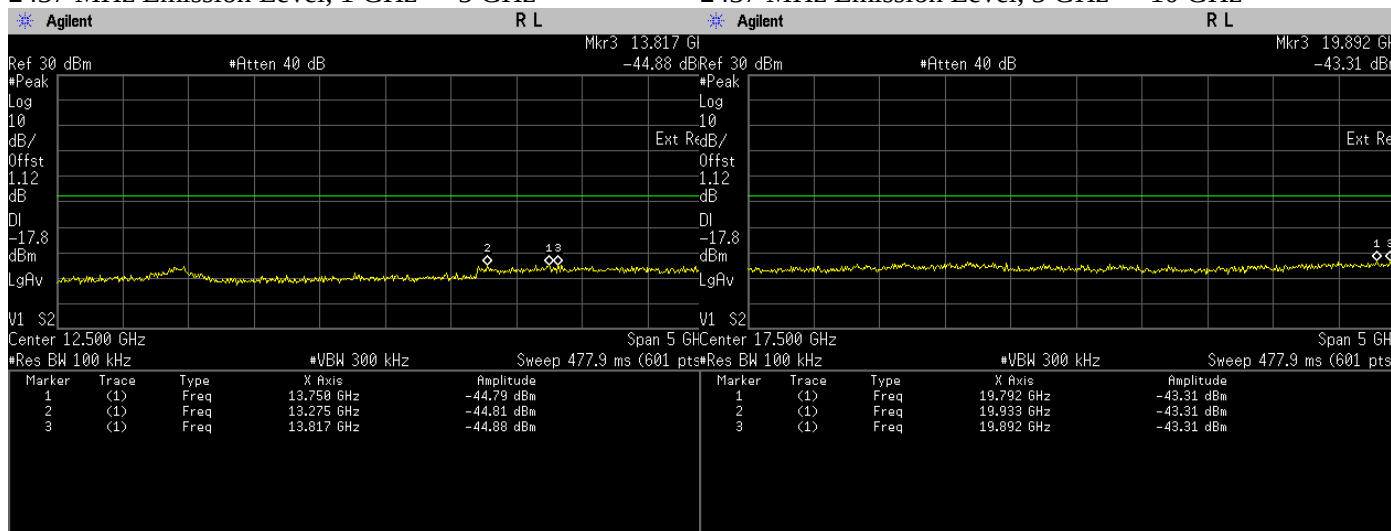
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Reference Level

Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 30 MHz -> 1 GHz



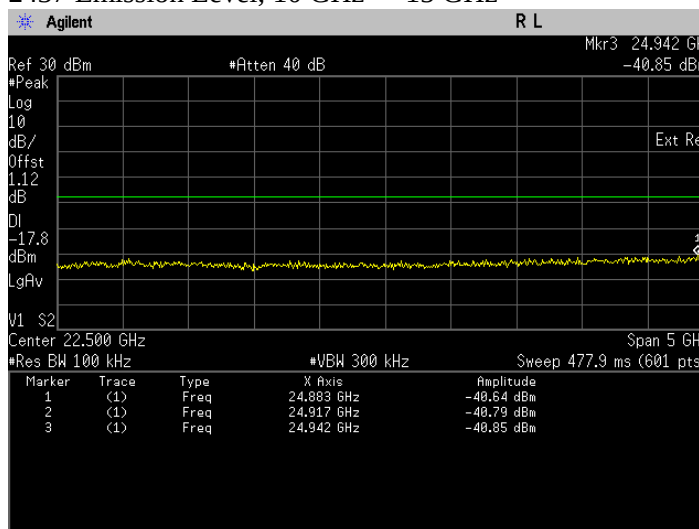
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 5 GHz -> 10 GHz

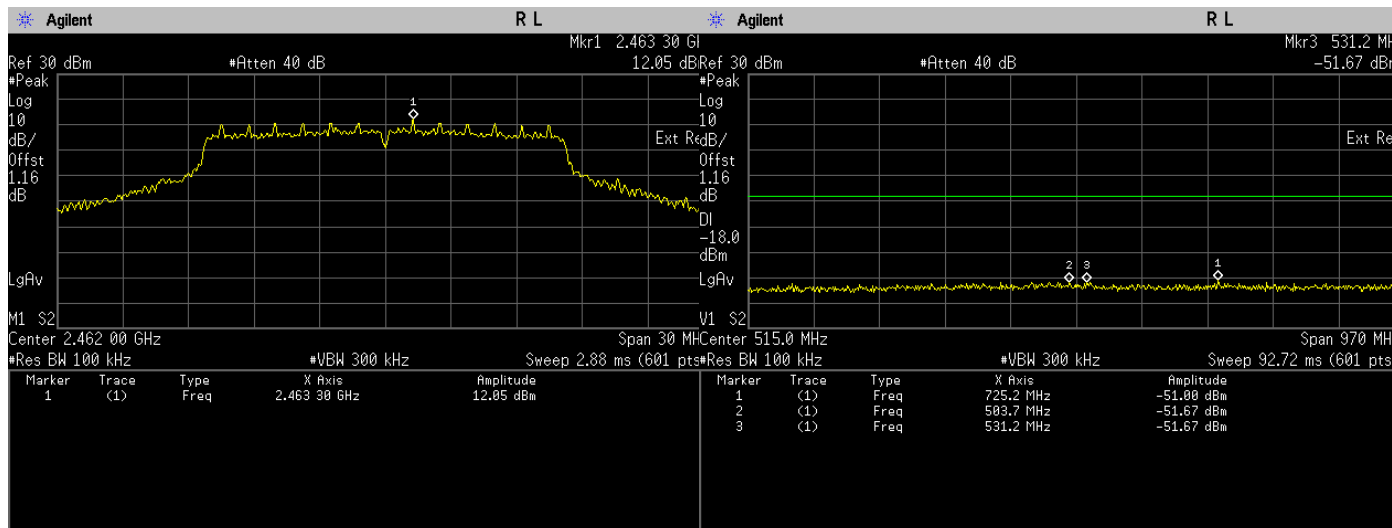


Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz

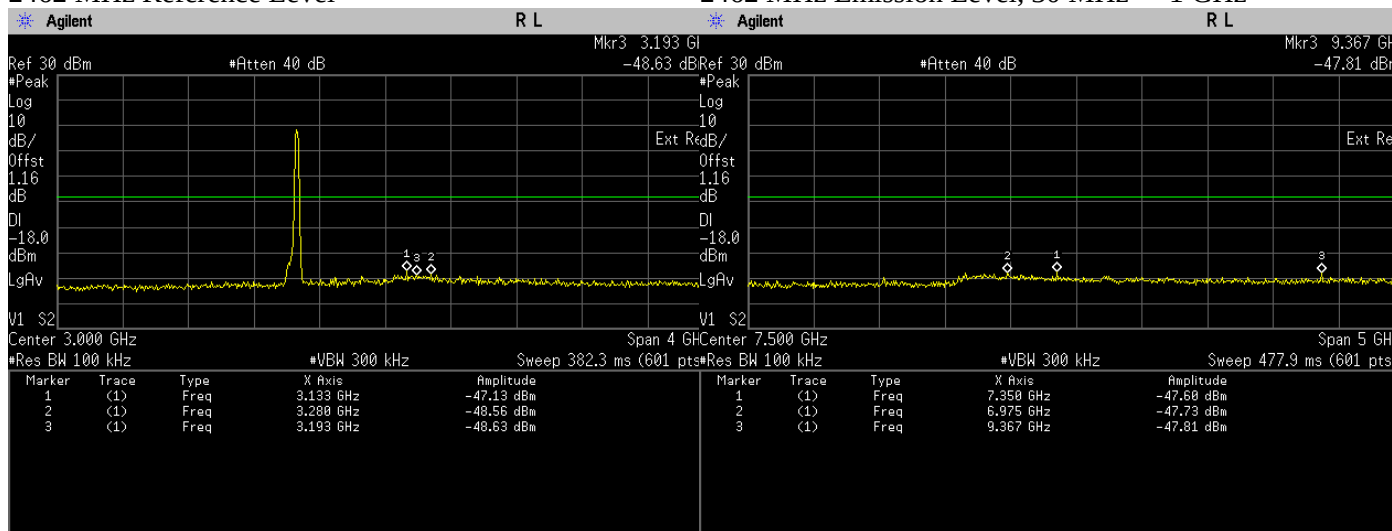


Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



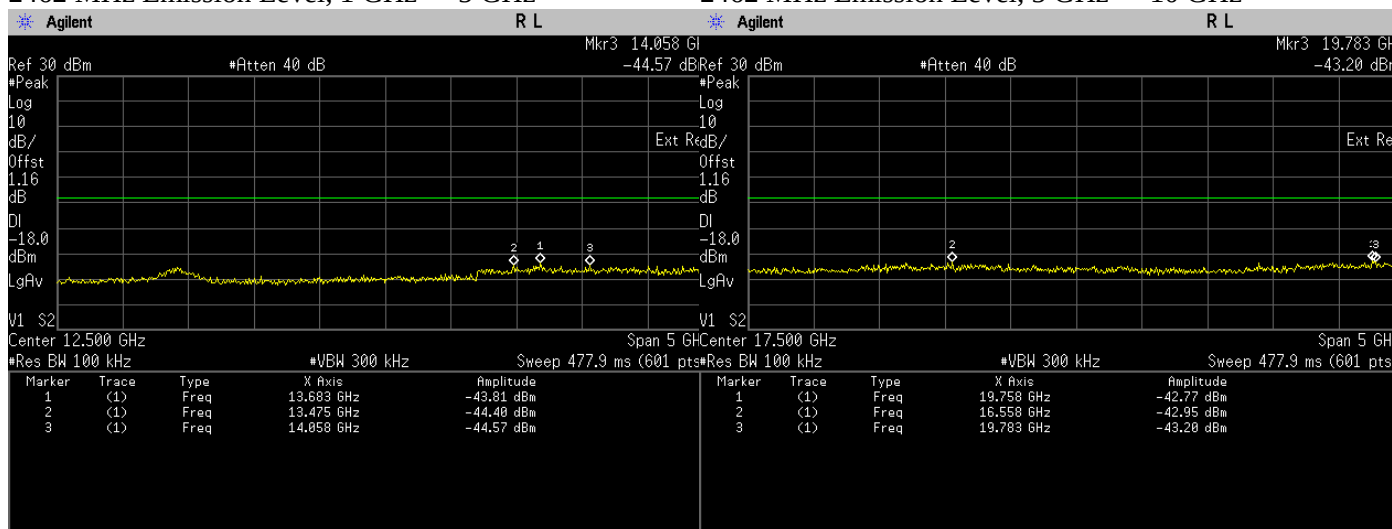
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Reference Level

Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 30 MHz -> 1 GHz



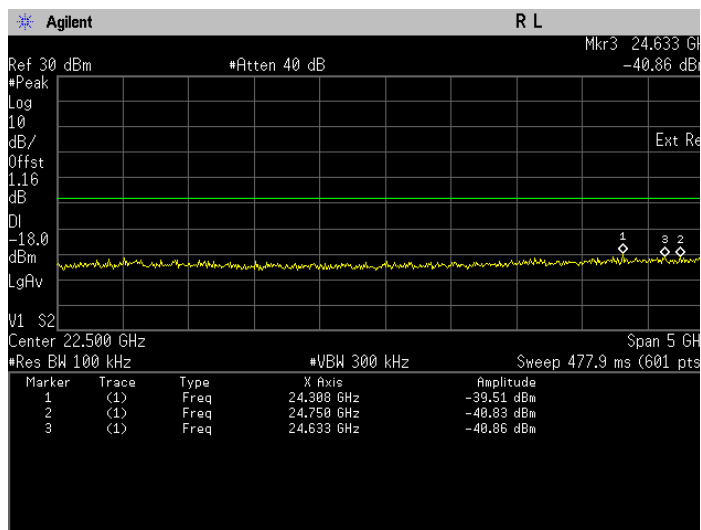
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 10 GHz -> 15 GHz

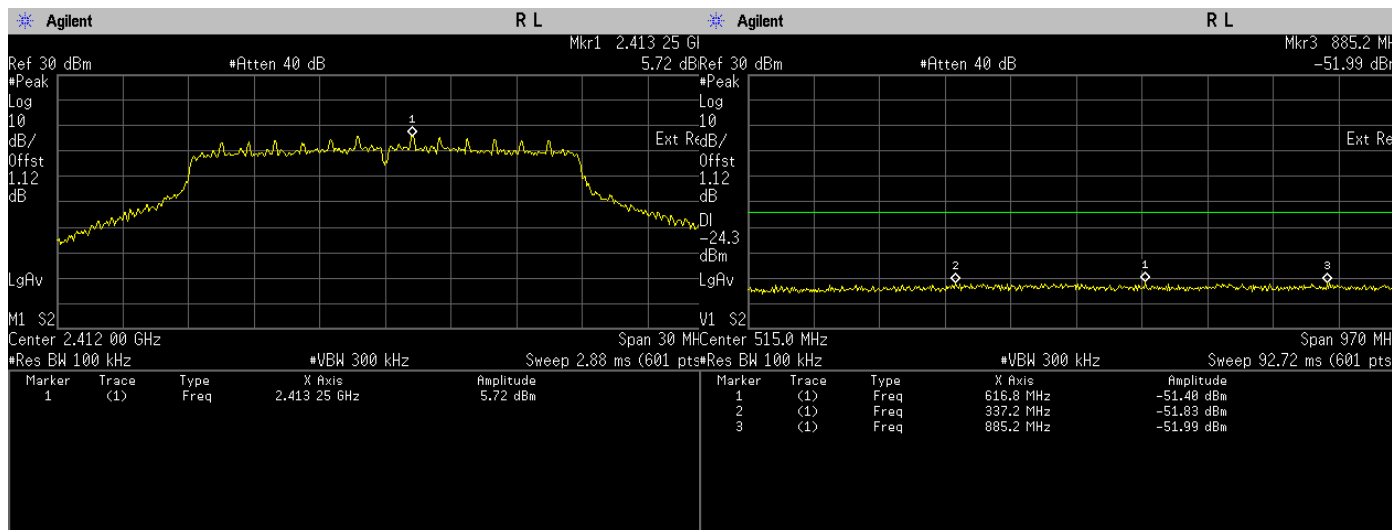
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 15 GHz -> 20 GHz



Conducted Emissions(Average). 802.11g, Frequency
 2462 MHz Emission Level, 20 GHz -> 25 GHz

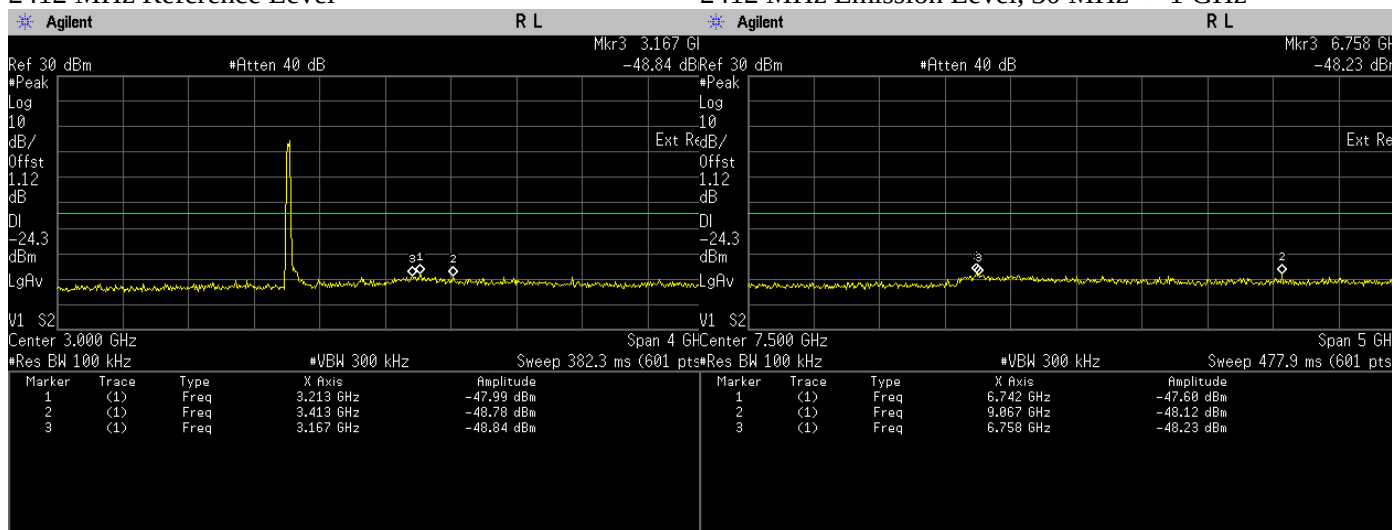
802.11n (HT20)

Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11n	OFDM	BPSK	6.5	2412	24950.000	-40.4370	Pass
					24467.000	-40.5970	Pass
					24842.000	-40.6130	Pass
802.11n	OFDM	BPSK	6.5	2437	24558.000	-40.4550	Pass
					24508.000	-40.8030	Pass
					24842.000	-41.1990	Pass
802.11n	OFDM	BPSK	6.5	2462	24925.000	-40.1420	Pass
					24908.000	-40.3470	Pass
					24183.000	-40.4550	Pass



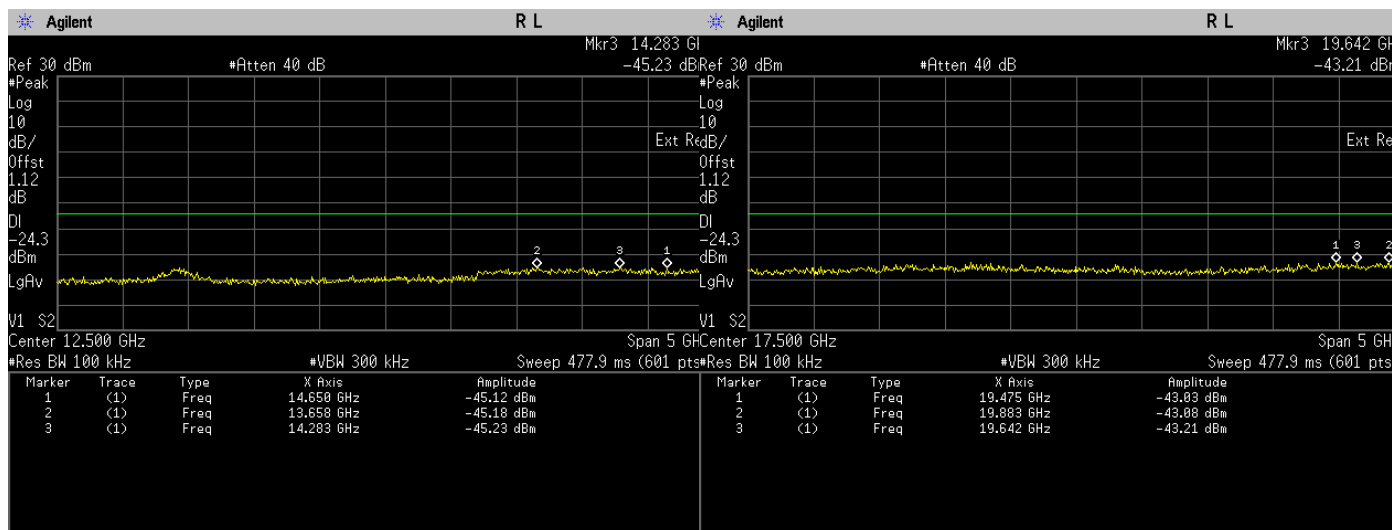
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Reference Level

Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 30 MHz -> 1 GHz



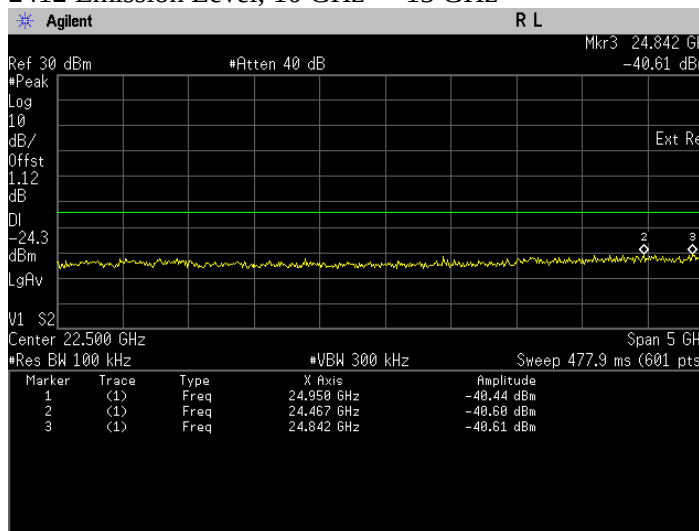
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 5 GHz -> 10 GHz

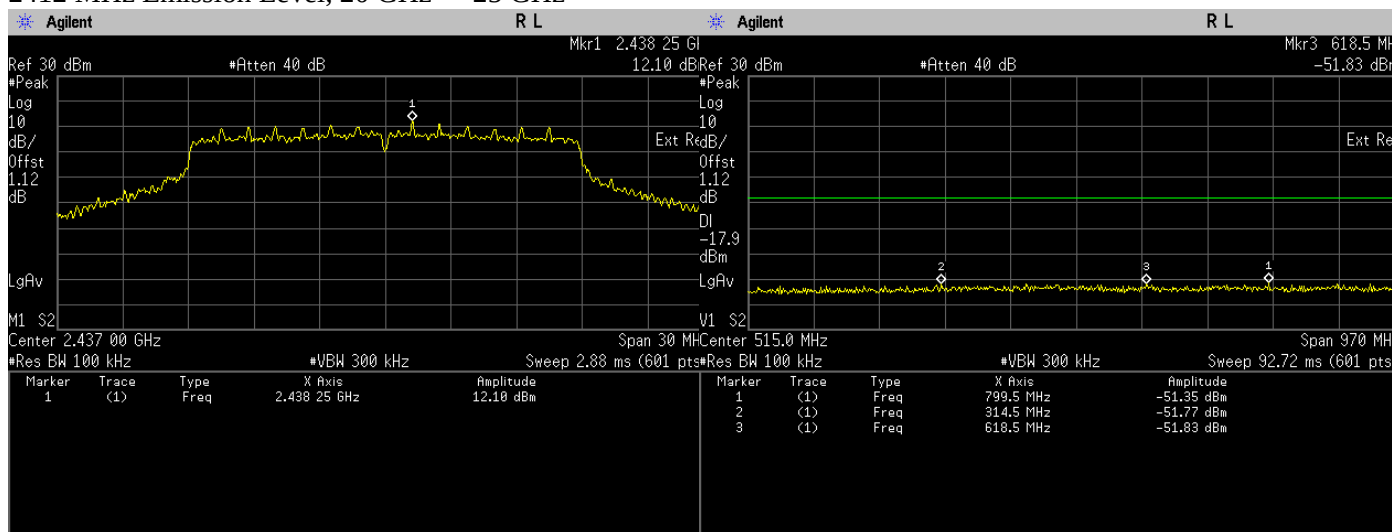


Conducted Emissions(Average). 802.11n, Frequency 2412 Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 15 GHz -> 20 GHz

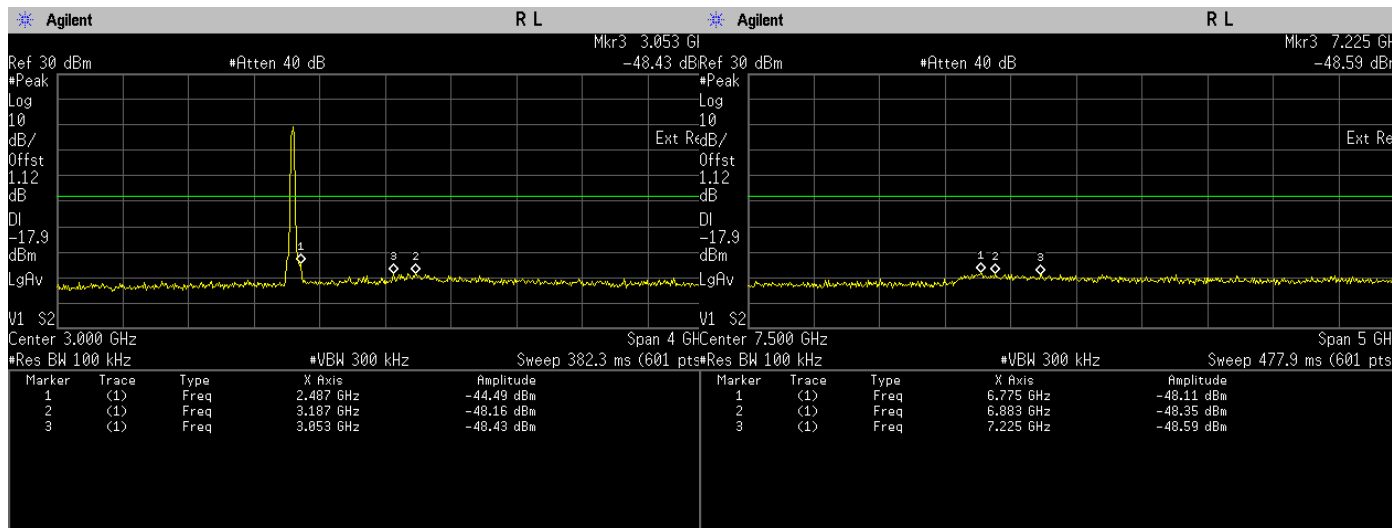


Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 20 GHz -> 25 GHz



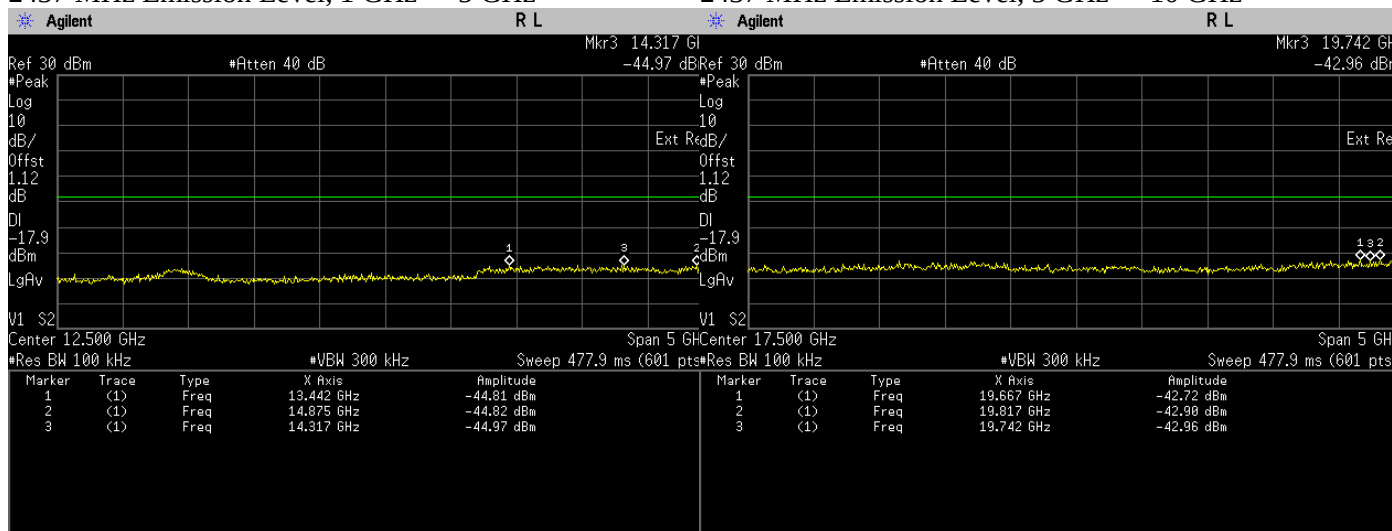
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Reference Level

Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 30 MHz -> 1 GHz



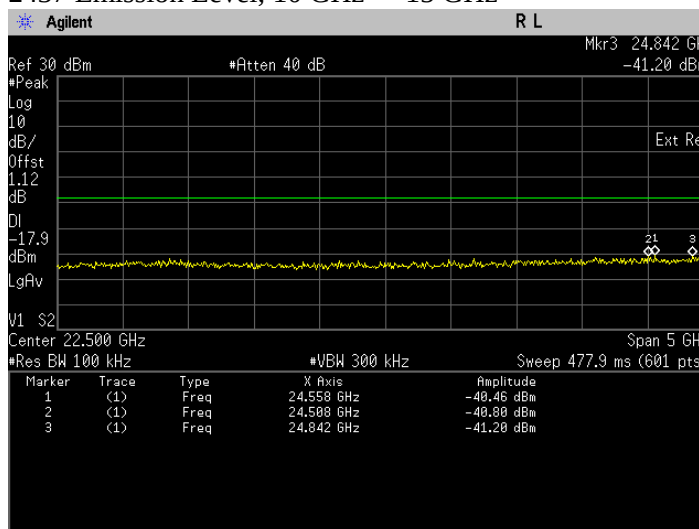
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 5 GHz -> 10 GHz

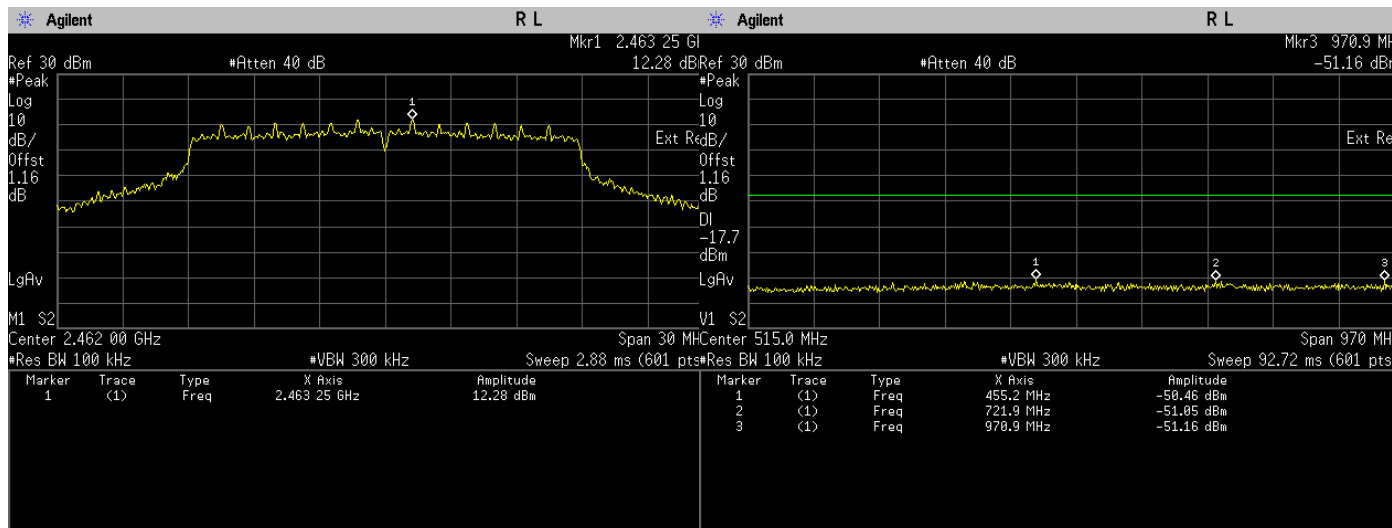


Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz

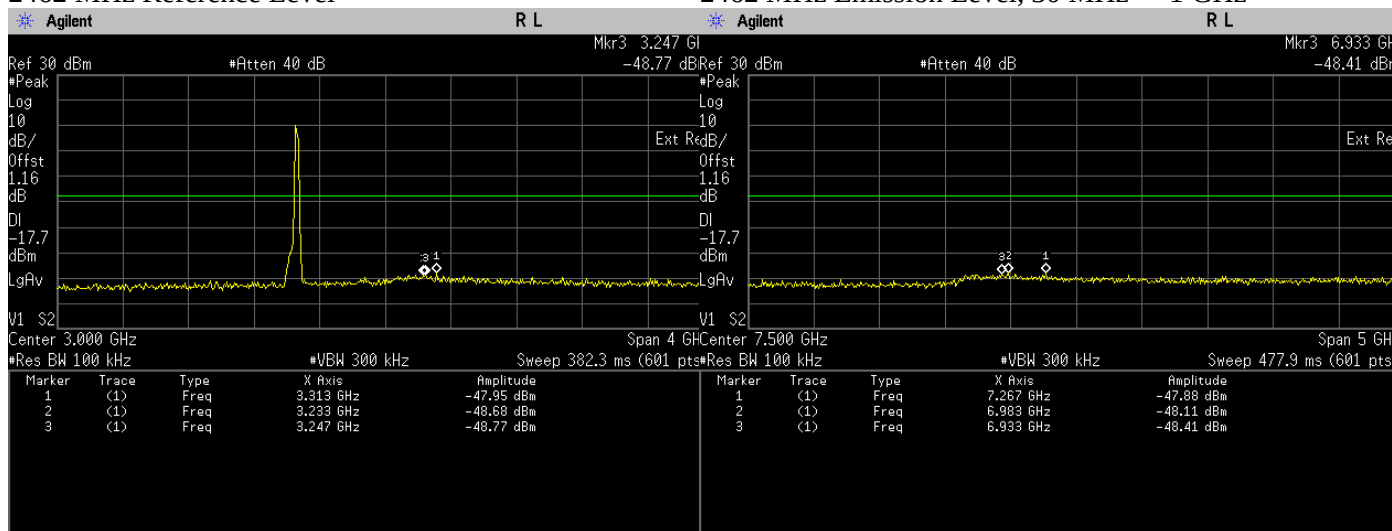


Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



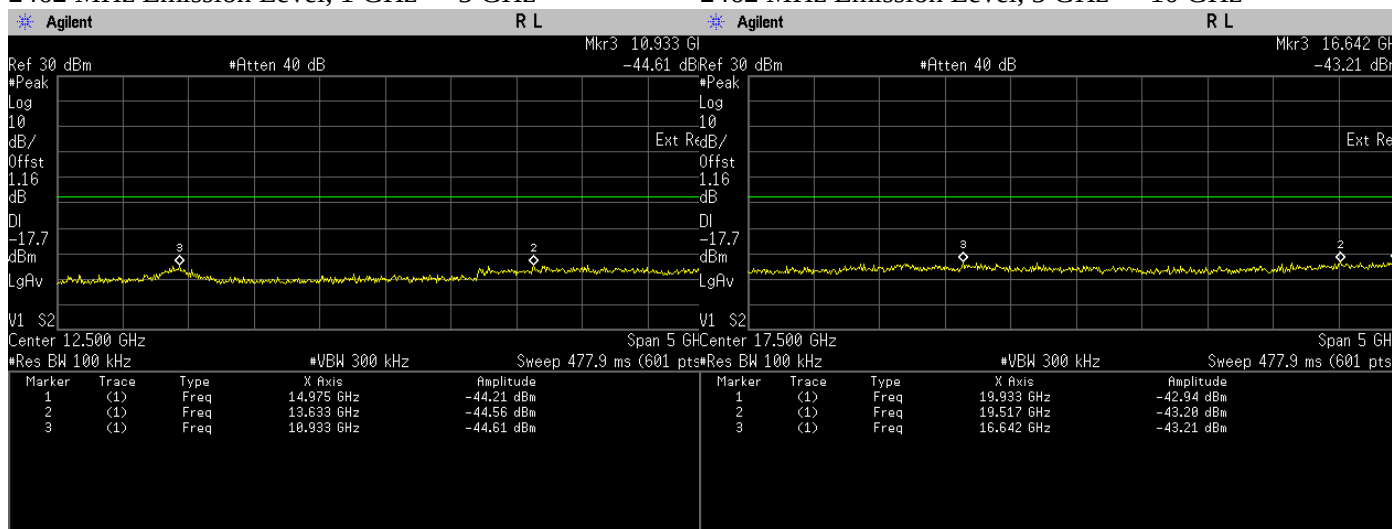
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Reference Level

Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 30 MHz -> 1 GHz



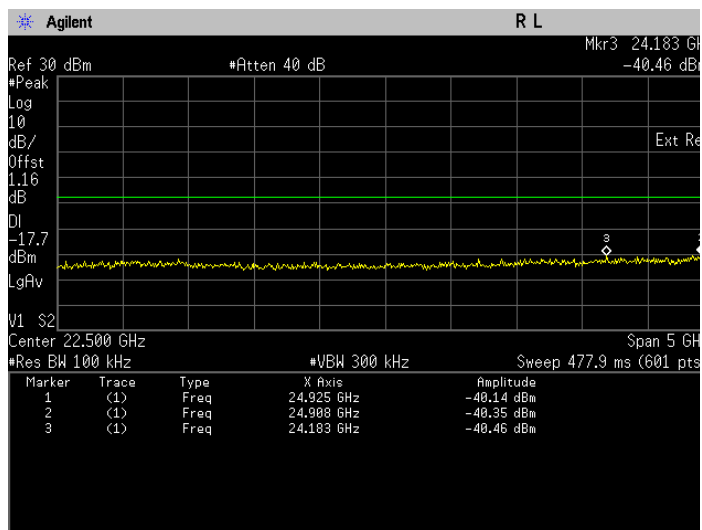
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 10 GHz -> 15 GHz

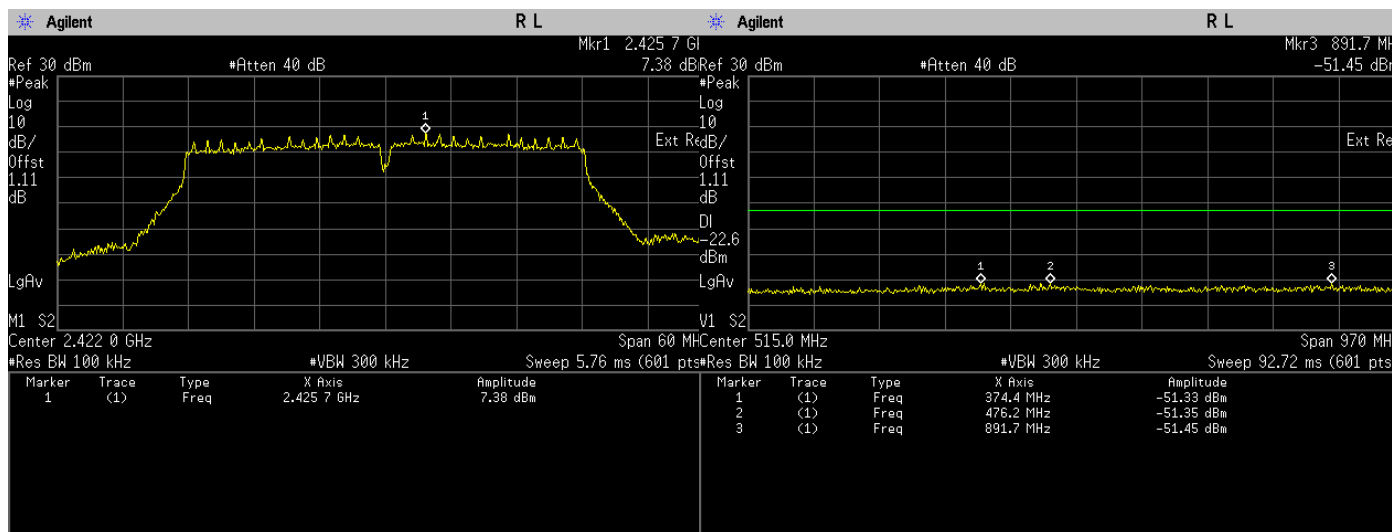
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 15 GHz -> 20 GHz



Conducted Emissions(Average). 802.11n, Frequency
 2462 MHz Emission Level, 20 GHz -> 25 GHz

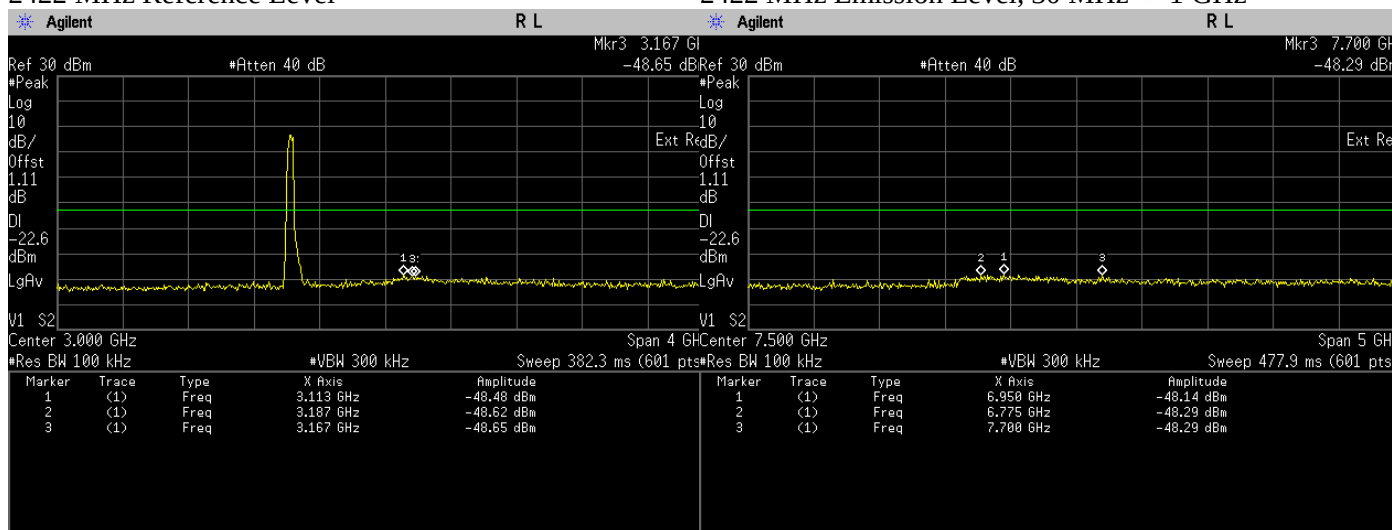
802.11n (HT40)

Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11n	OFDM	BPSK	13.5	2422	24967.000	-39.7130	Pass
					24575.000	-40.9170	Pass
					24525.000	-40.9460	Pass
802.11n	OFDM	BPSK	13.5	2437	24358.000	-40.4180	Pass
					24067.000	-40.6570	Pass
					24925.000	-40.7400	Pass
802.11n	OFDM	BPSK	13.5	2452	24783.000	-40.5370	Pass
					24900.000	-40.7470	Pass
					23617.000	-40.9040	Pass



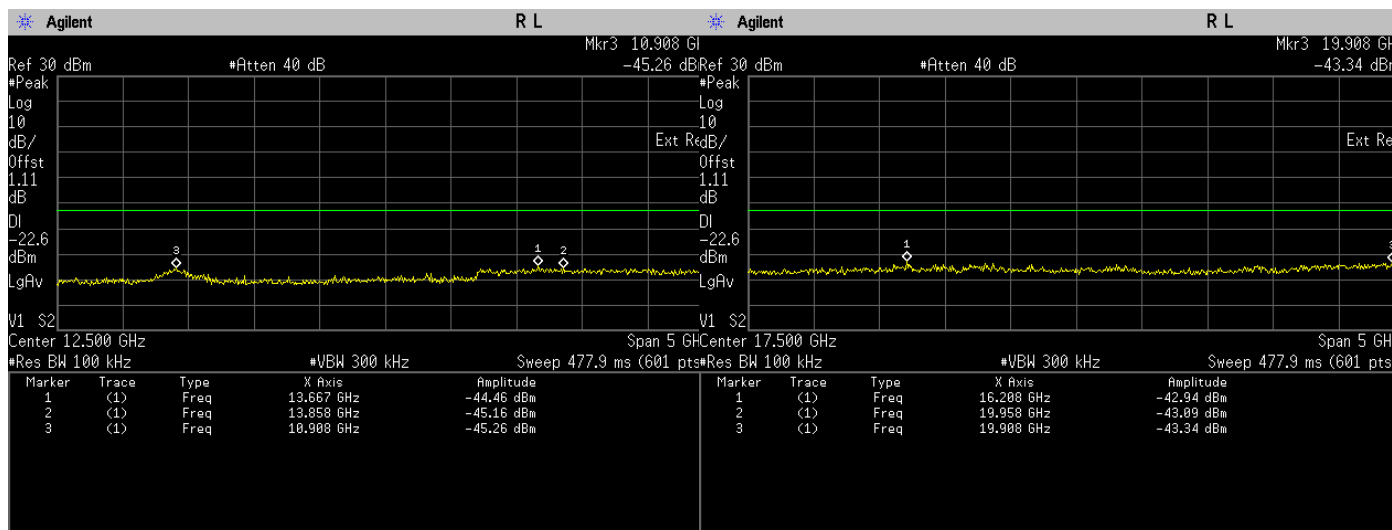
Conducted Emissions(Average). 802.11n, Frequency 2422 MHz Reference Level

Conducted Emissions(Average). 802.11n, Frequency 2422 MHz Emission Level, 30 MHz -> 1 GHz



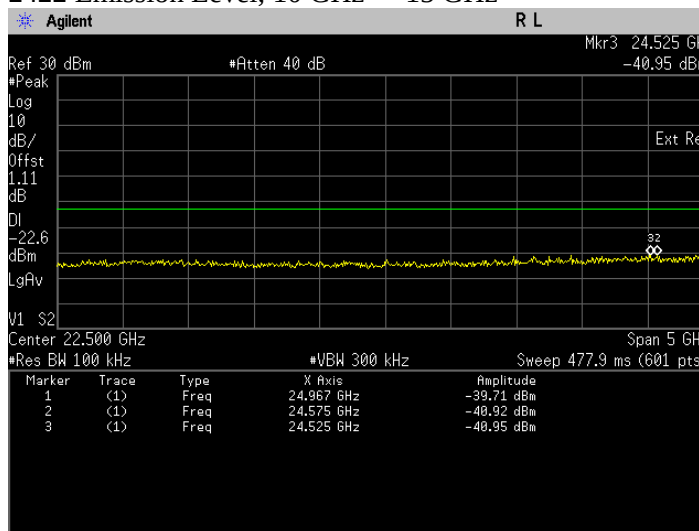
Conducted Emissions(Average). 802.11n, Frequency 2422 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11n, Frequency 2422 MHz Emission Level, 5 GHz -> 10 GHz

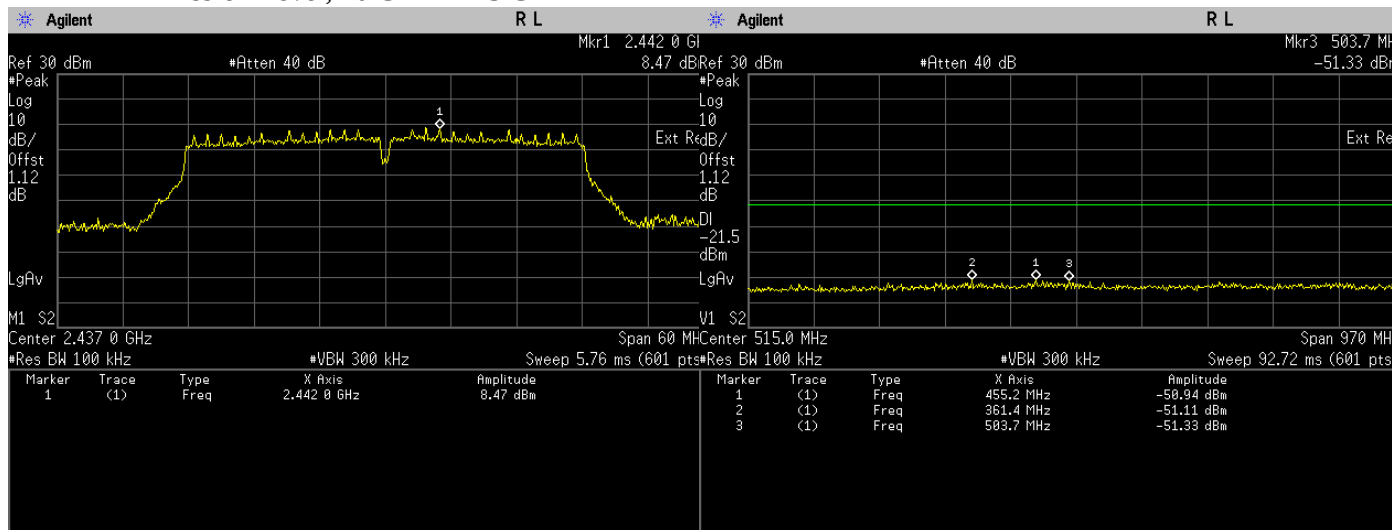


Conducted Emissions(Average). 802.11n, Frequency 2422 Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11n, Frequency 2422 MHz Emission Level, 15 GHz -> 20 GHz

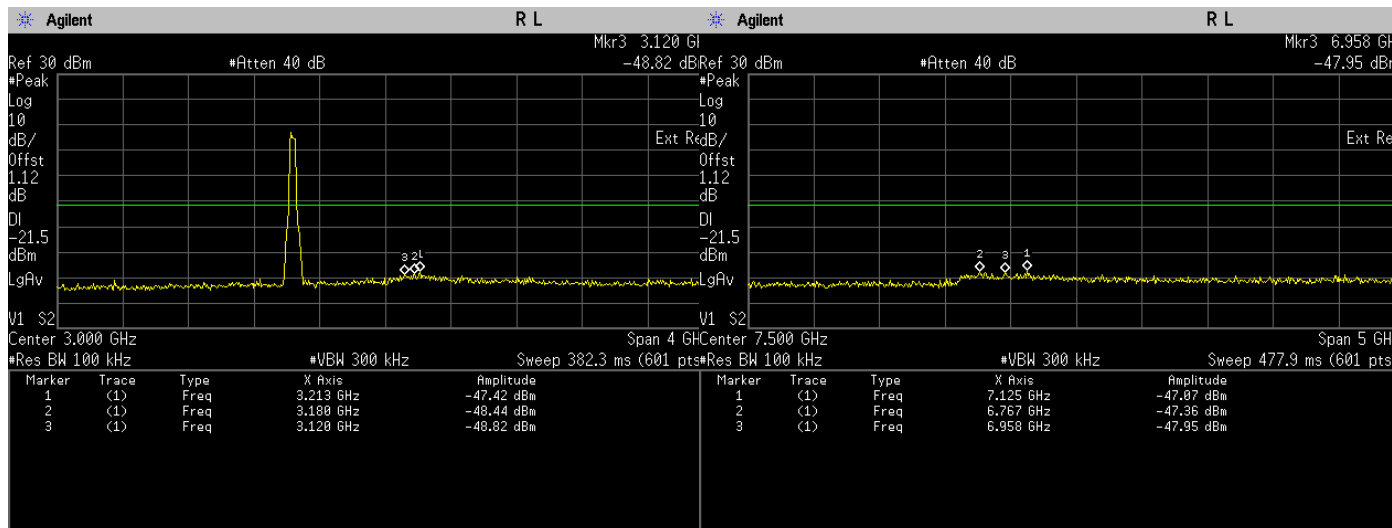


Conducted Emissions(Average). 802.11n, Frequency 2422 MHz Emission Level, 20 GHz -> 25 GHz



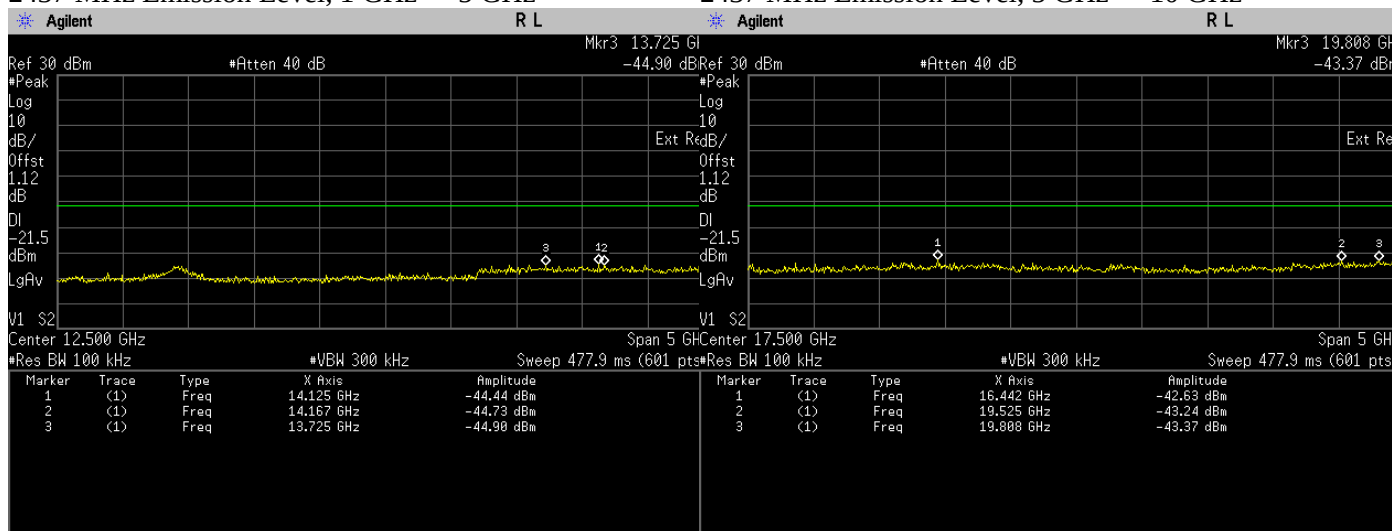
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Reference Level

Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 30 MHz -> 1 GHz



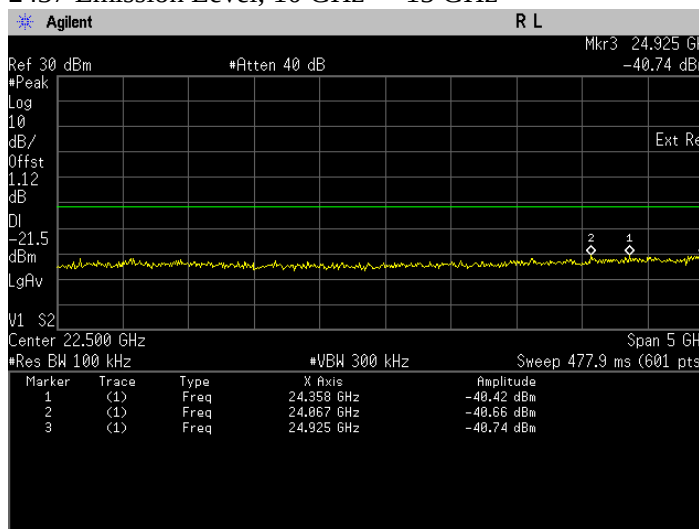
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 5 GHz -> 10 GHz

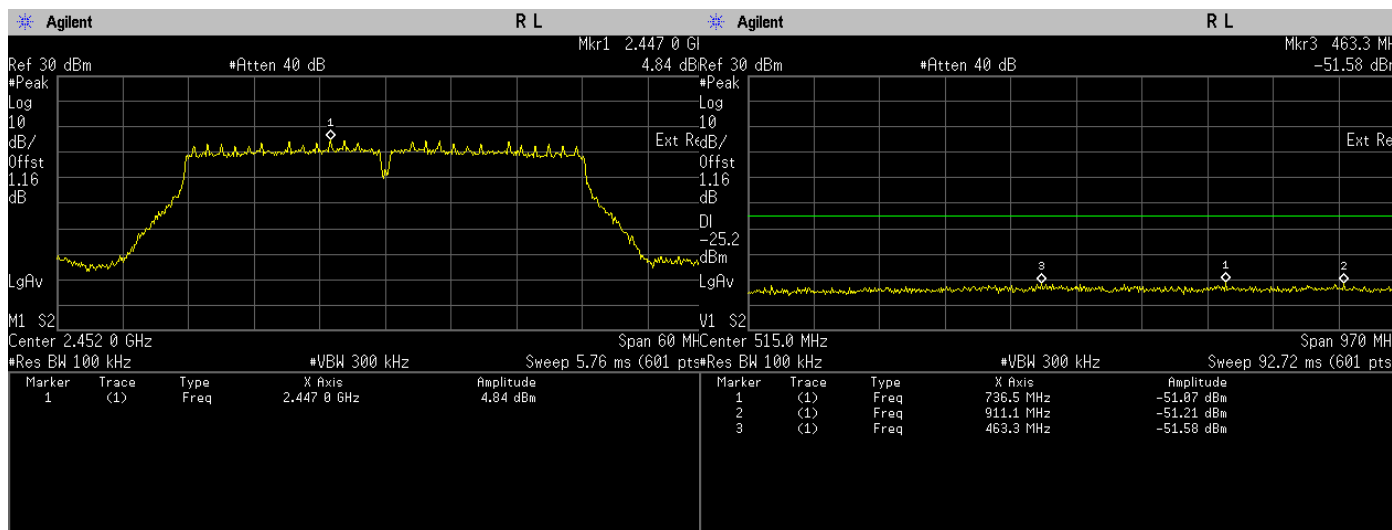


Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 10 GHz -> 15 GHz

Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz

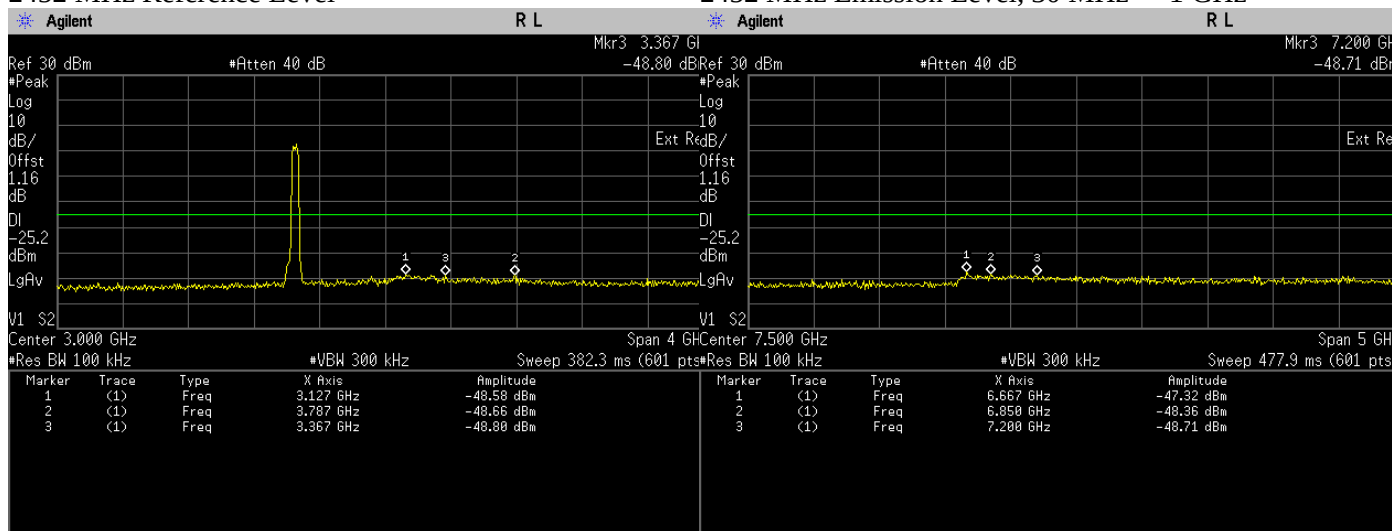


Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



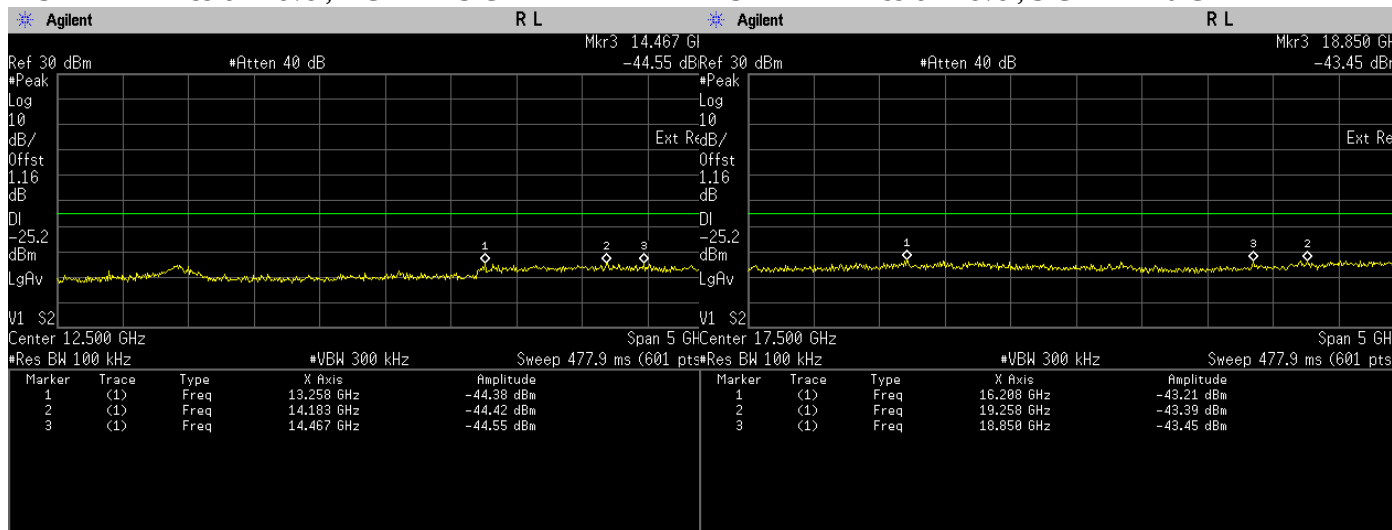
Conducted Emissions(Average). 802.11n, Frequency 2452 MHz Reference Level

Conducted Emissions(Average). 802.11n, Frequency 2452 MHz Emission Level, 30 MHz -> 1 GHz



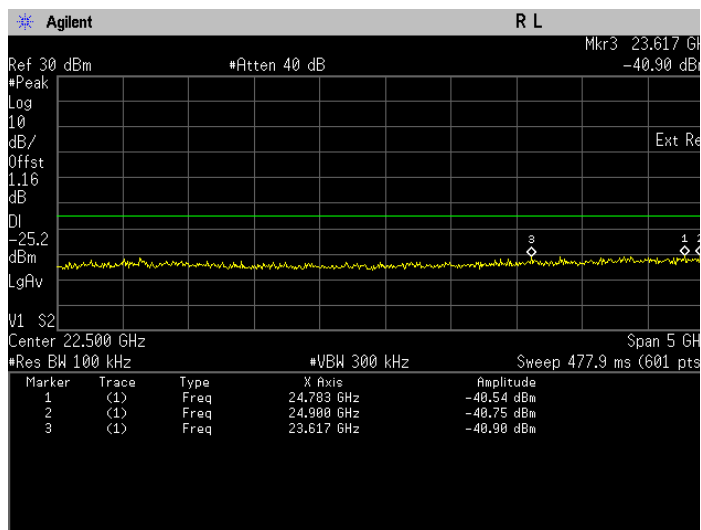
Conducted Emissions(Average). 802.11n, Frequency 2452 MHz Emission Level, 1 GHz -> 5 GHz

Conducted Emissions(Average). 802.11n, Frequency 2452 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11n, Frequency 2452 MHz Emission Level, 10 GHz -> 15 GHz

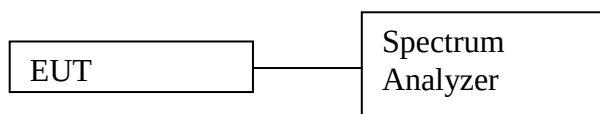
Conducted Emissions(Average). 802.11n, Frequency 2452 MHz Emission Level, 15 GHz -> 20 GHz



Conducted Emissions(Average). 802.11n, Frequency
 2452 MHz Emission Level, 20 GHz -> 25 GHz

6.6. Band edge Conducted Spurious Emission

6.6.1. Test Setup



- a) Check and ensure the spectrum analyzer well calibrate.
- b) Turn on the DUT and set DUT to transmit maximum power.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
 - a. RBW = 100 kHz
 - b. VBW = 300 kHz
 - c. Detector mode = Peak
 - d. Trace = Max Hold
 - e. Sweep = auto
- e) Use the peak marker function to measure highest emission.
- f) Measure every antenna port by repeat the step above for MIMO measurement.

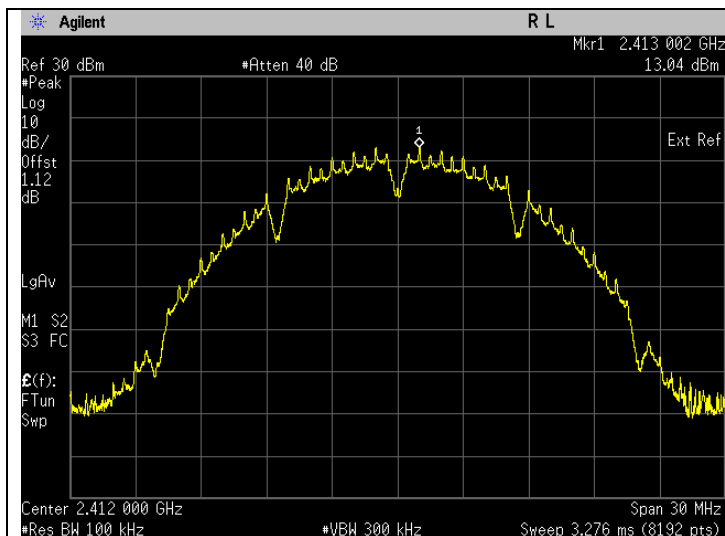
6.6.2. Test Limits:

Normal Condition (25 ° C)
Shall be at least 20 dB below max power. (Peak detector)
Shall be at least 30 dB below max power. (Average detector)

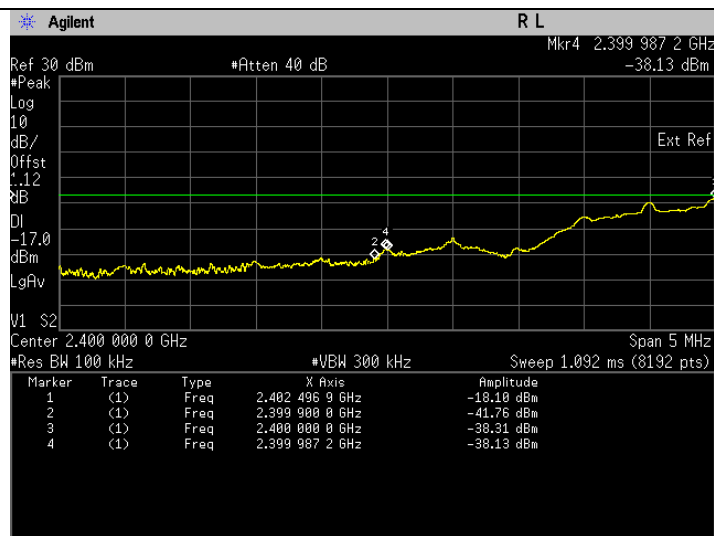
6.6.3. Test Result

802.11b

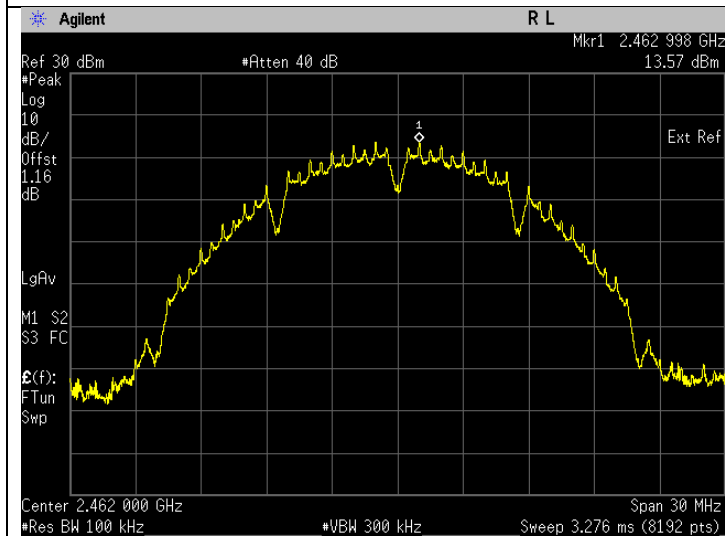
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11b	DSSS	BPSK	1	2412	2399.99	-38.13	Pass
802.11b	DSSS	BPSK	1	2462	2483.58	-48.17	Pass



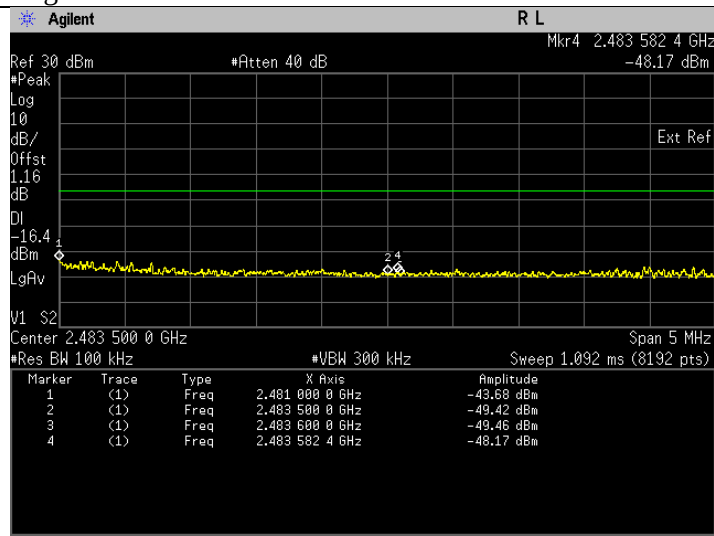
Band Edge(Average). 802.11b Frequency 2412 MHz
Reference Level



Band Edge(Average). 802.11b Frequency 2412 MHz Band
Edge



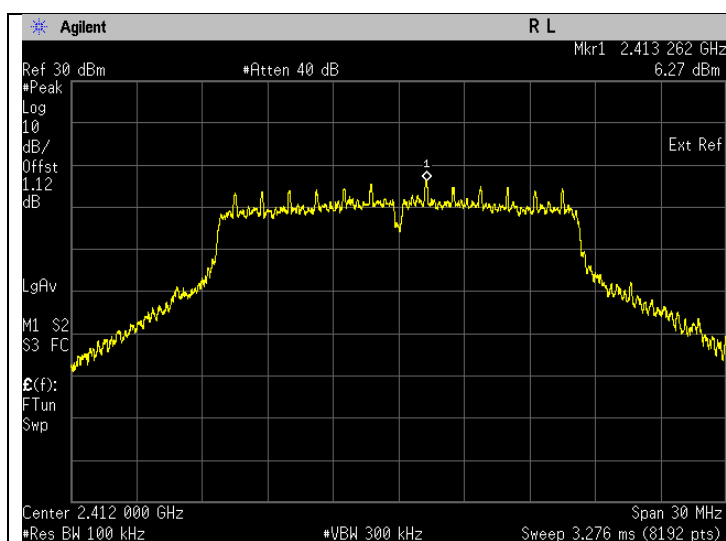
Band Edge(Average). 802.11b Frequency 2462 MHz
Reference Level



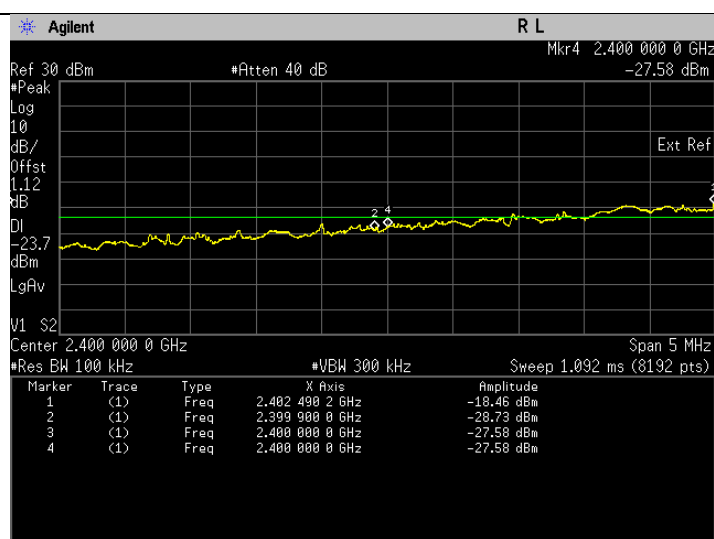
Band Edge(Average). 802.11b Frequency 2462 MHz Band
Edge

802.11g

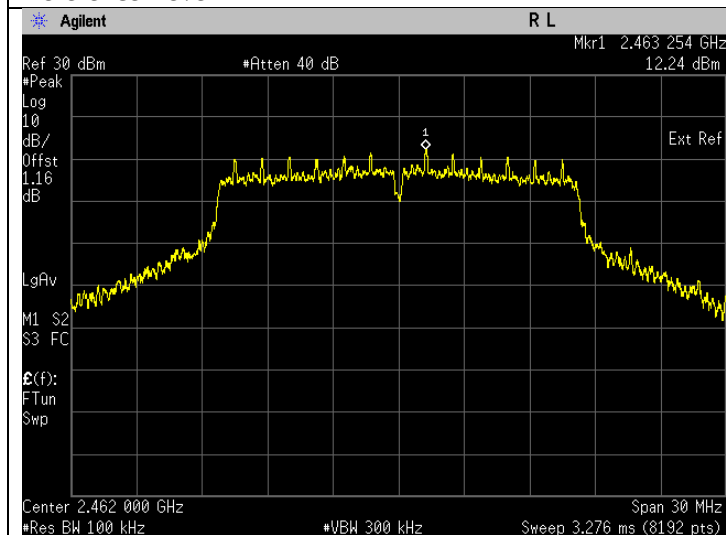
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11g	OFDM	BPSK	6	2412	2400.00	-27.58	Pass
802.11g	OFDM	BPSK	6	2462	2483.58	-39.22	Pass



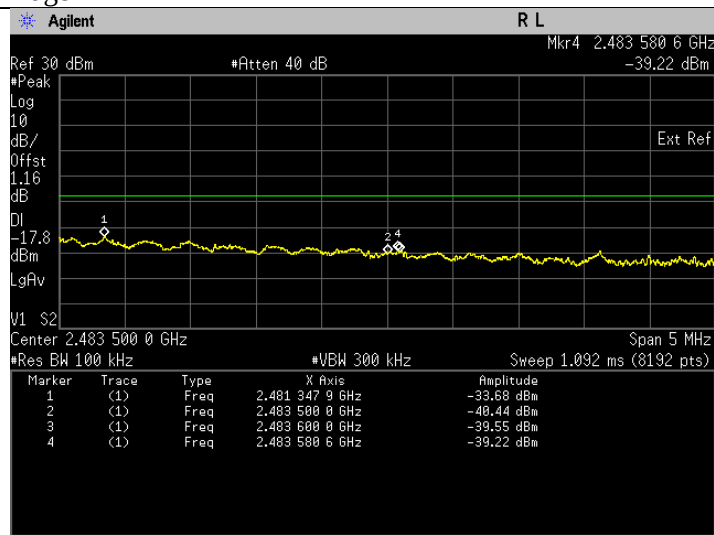
Band Edge(Average). 802.11g Frequency 2412 MHz
Reference Level



Band Edge(Average). 802.11g Frequency 2412 MHz Band
Edge



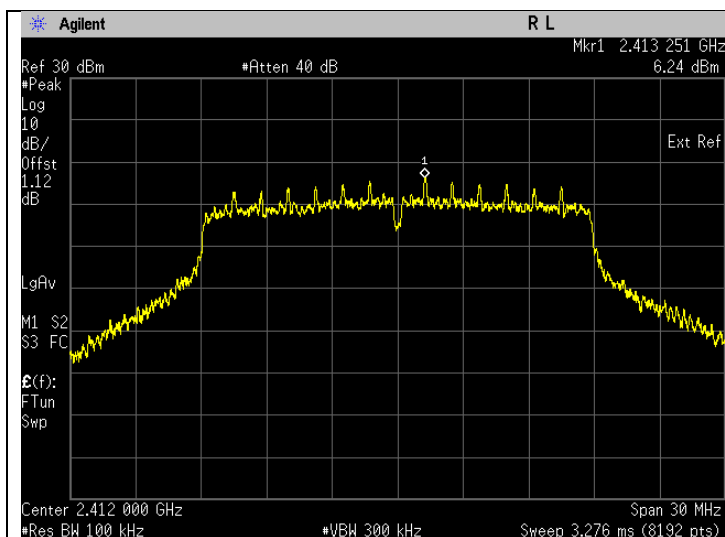
Band Edge(Average). 802.11g Frequency 2462 MHz
Reference Level



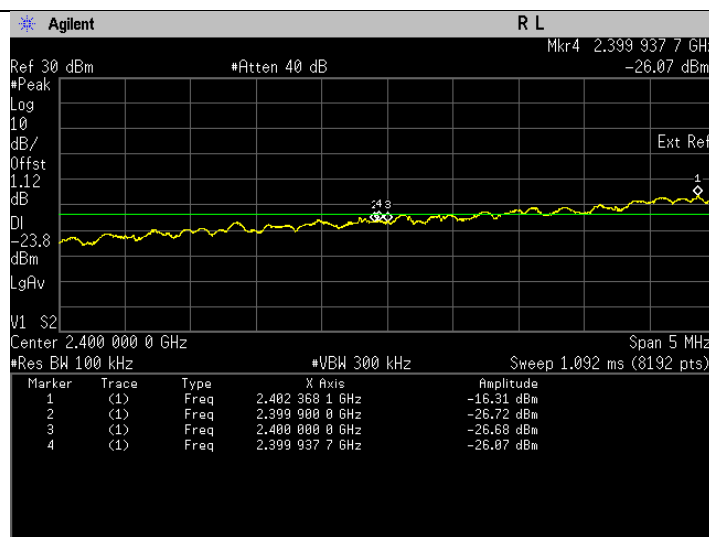
Band Edge(Average). 802.11g Frequency 2462 MHz Band
Edge

802.11n (HT20)

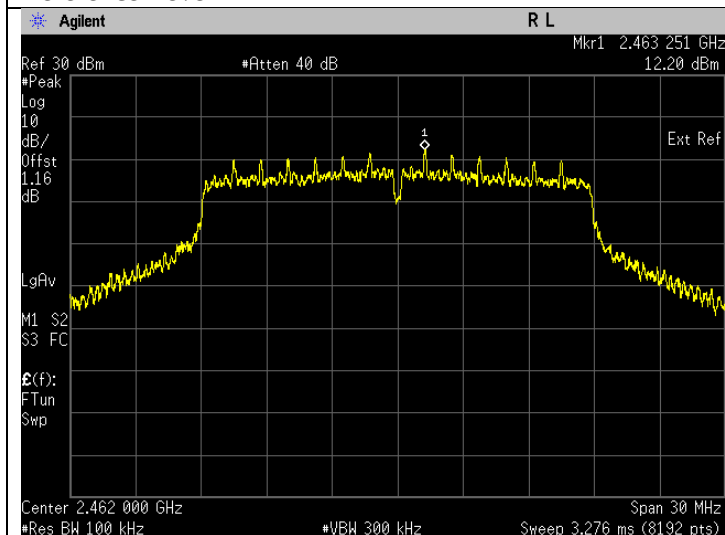
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11n	OFDM	BPSK	6.5	2412	2399.94	-26.07	Pass
802.11n	OFDM	BPSK	6.5	2462	2483.59	-37.65	Pass



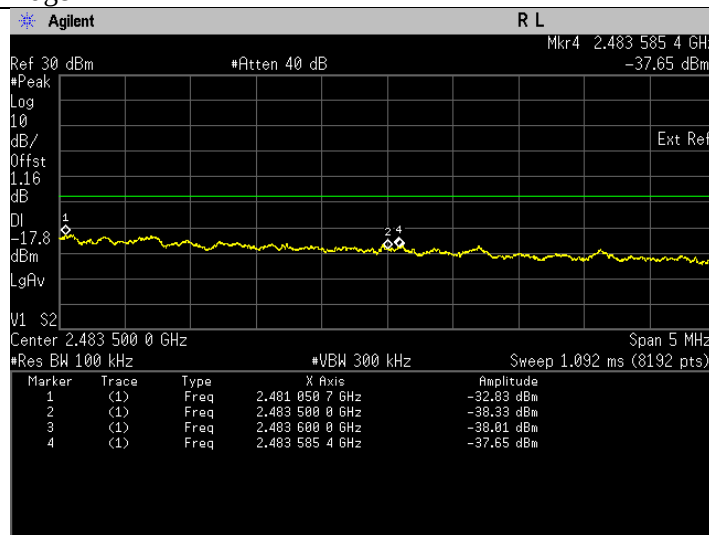
Band Edge(Average). 802.11n Frequency 2412 MHz Reference Level



Band Edge(Average). 802.11n Frequency 2412 MHz Band Edge



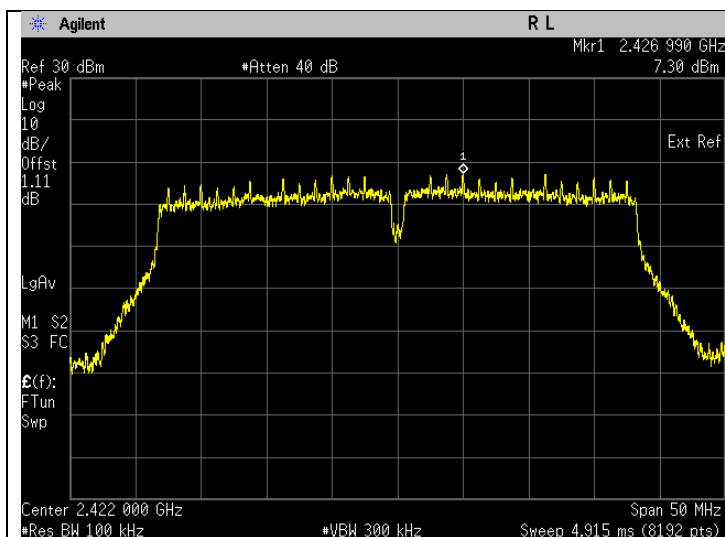
Band Edge(Average). 802.11n Frequency 2462 MHz Reference Level



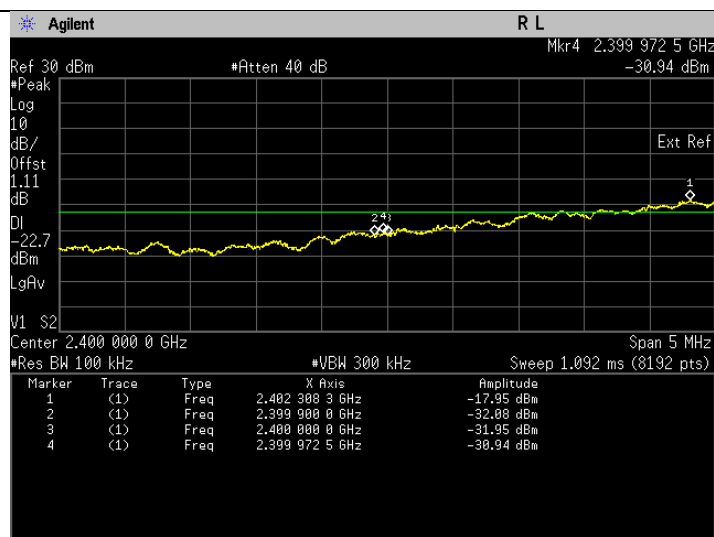
Band Edge(Average). 802.11n Frequency 2462 MHz Band Edge

802.11n (HT40)

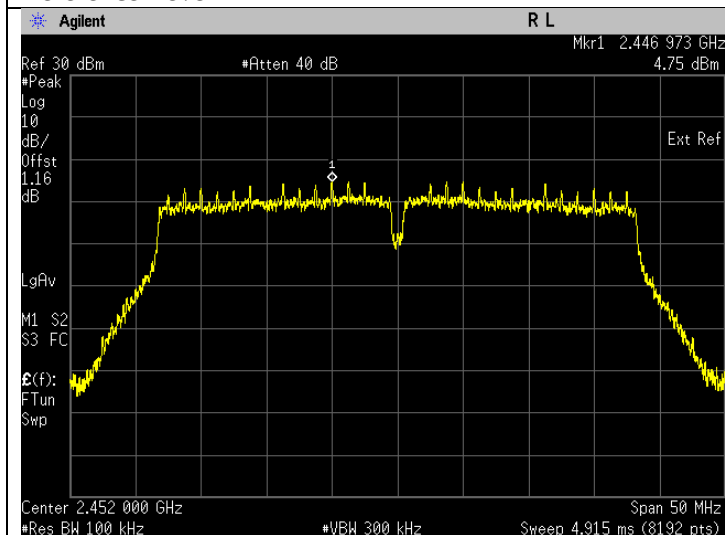
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11n	OFDM	BPSK	13.5	2422	2399.97	-30.94	Pass
802.11n	OFDM	BPSK	13.5	2452	2483.57	-41.69	Pass



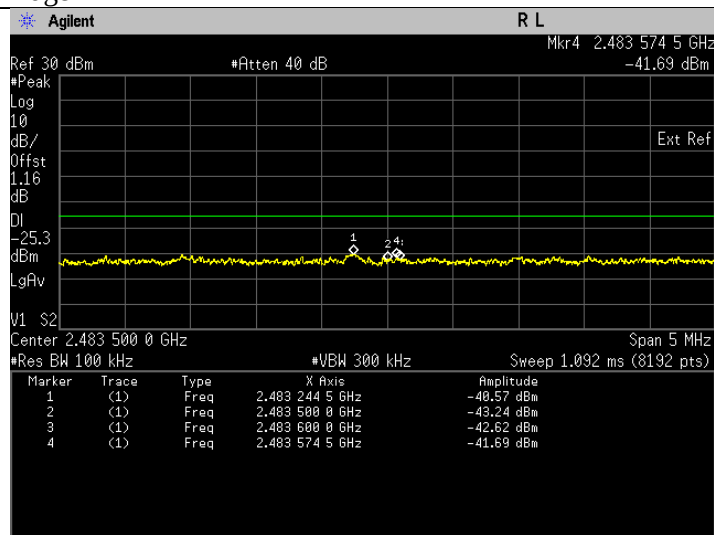
Band Edge(Average). 802.11n Frequency 2422 MHz Reference Level



Band Edge(Average). 802.11n Frequency 2422 MHz Band Edge



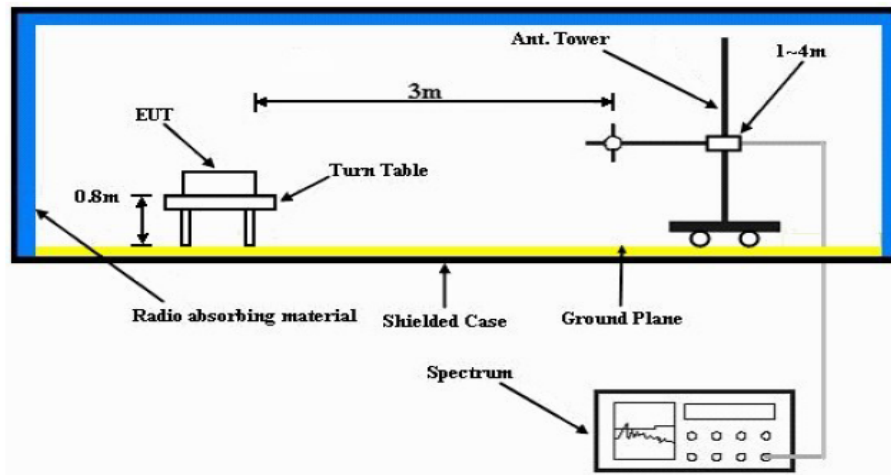
Band Edge(Average). 802.11n Frequency 2452 MHz Reference Level



Band Edge(Average). 802.11n Frequency 2452 MHz Band Edge

6.7. Radiated Emission within restricted Bands

6.7.1. Test Setup



- The EUT is placed on the top of a rotating table 0.8m above the ground (<1GHz) and 1.5m above the ground (>1GHz) at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
- The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
- The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

NOTE:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

6.7.2. Test Limits:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

NOTE:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

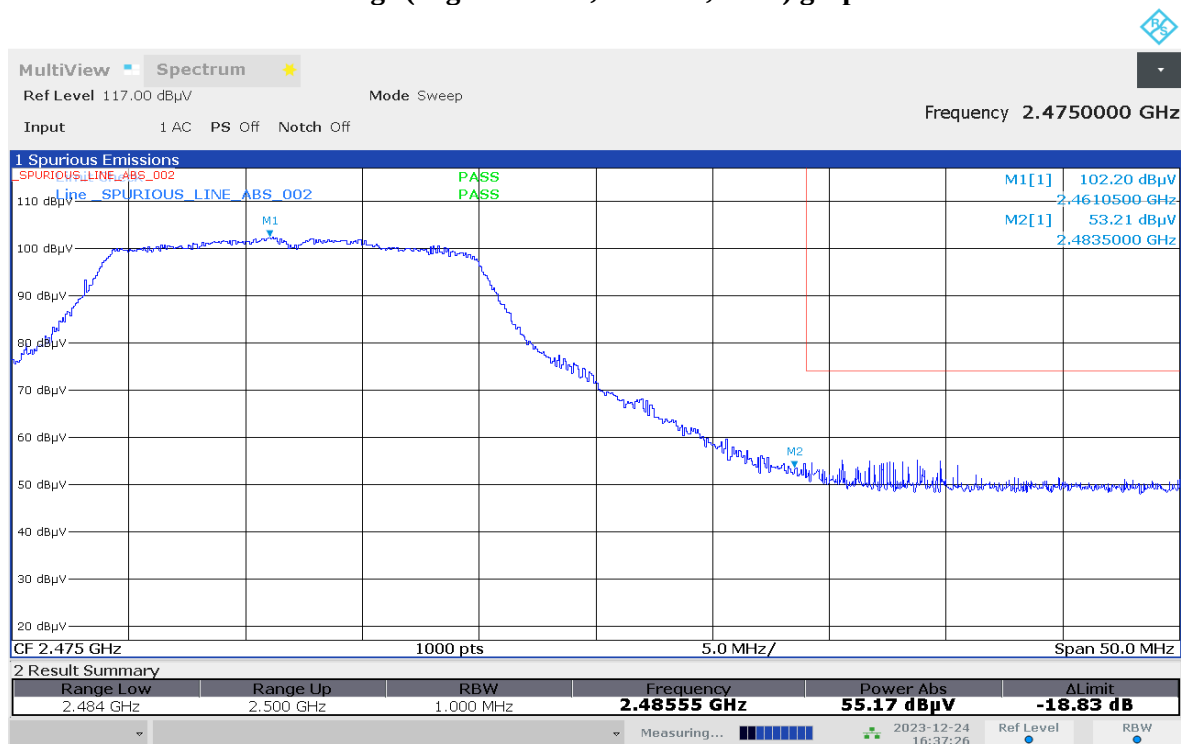
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013 Worst Case Plane: X-Plane (802.11g)

[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
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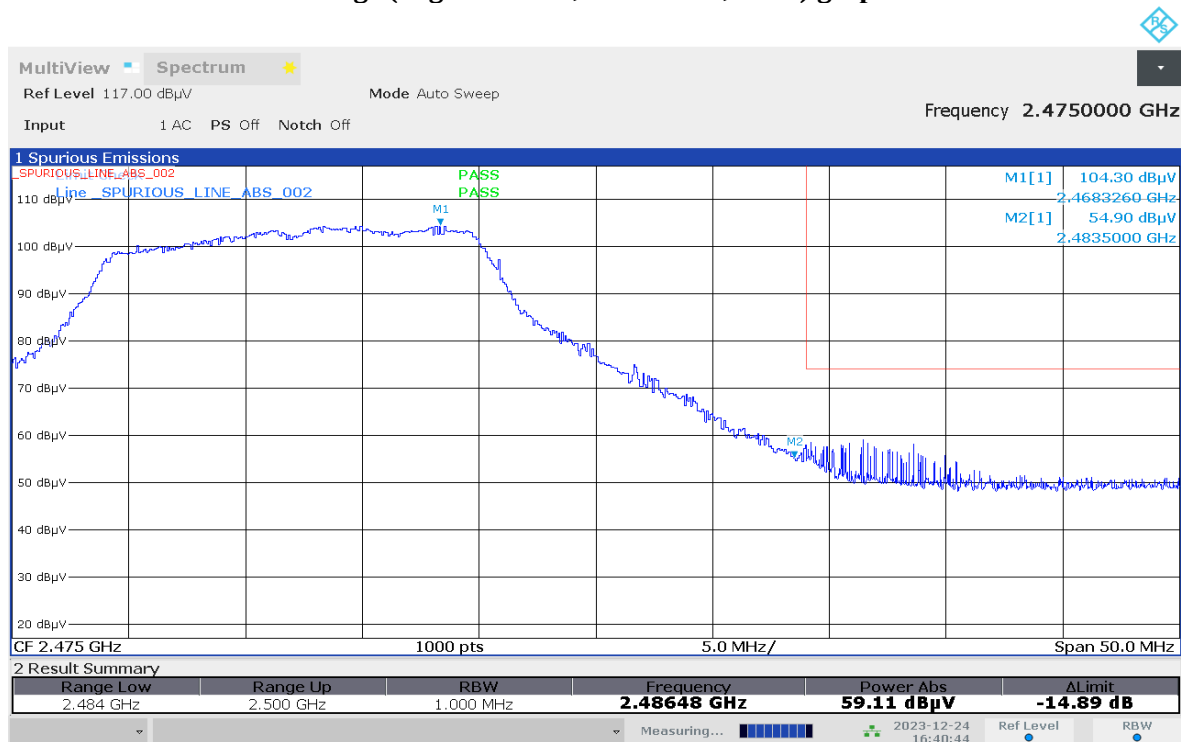
Humidity (%): 72.3
Test Date: Mon, 8 Jan, 2024

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



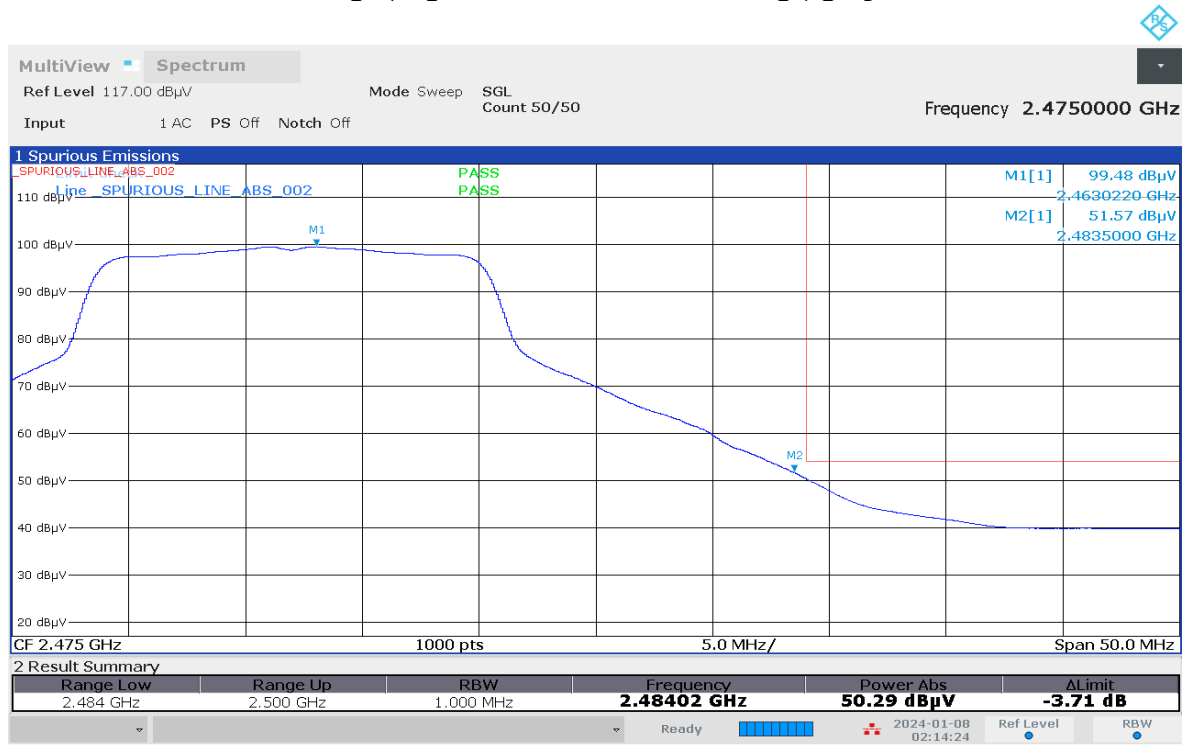
04:37:27 PM 12/24/2023

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



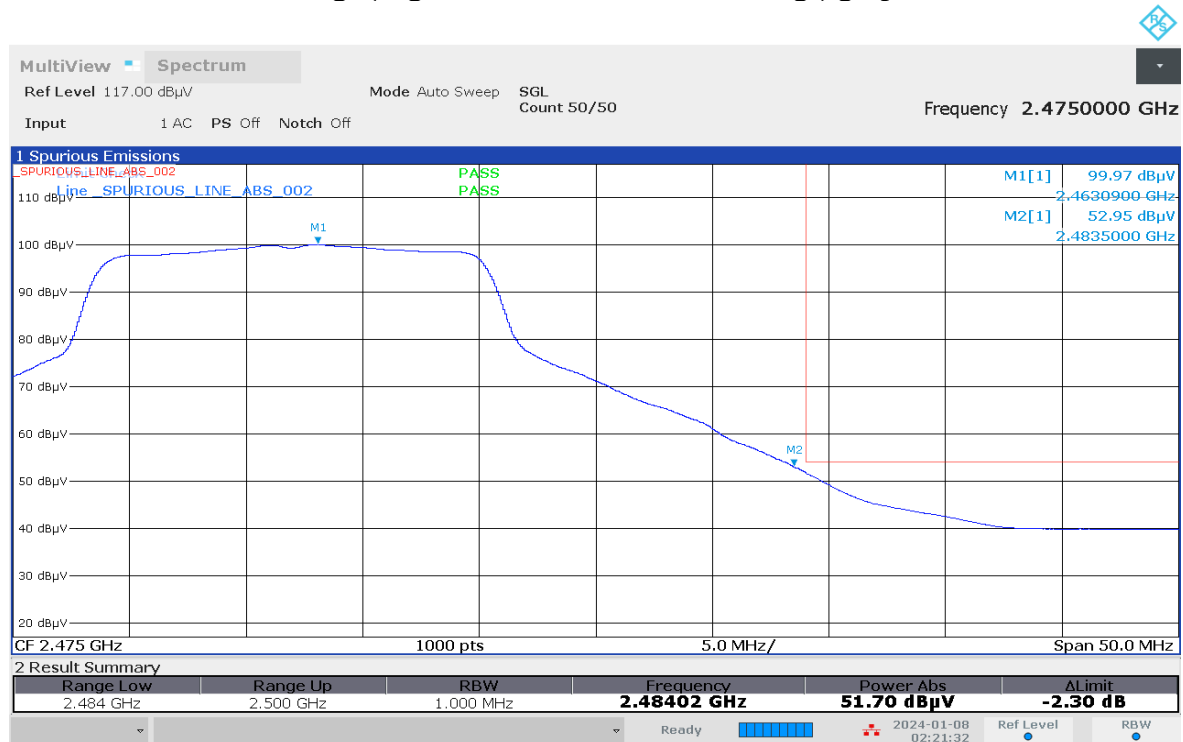
04:40:45 PM 12/24/2023

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



02:14:25 AM 01/08/2024

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



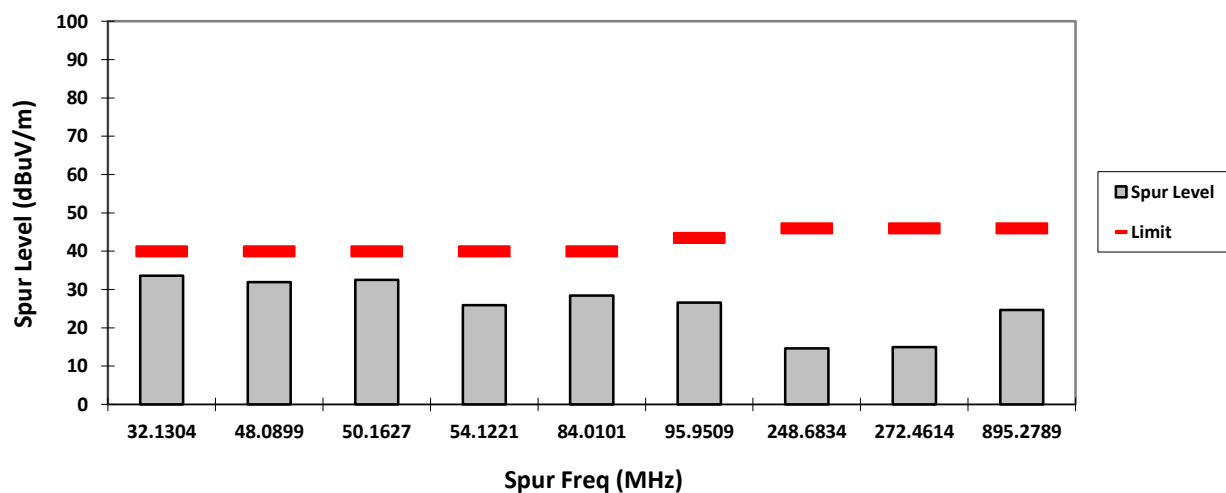
02:21:33 AM 01/08/2024

Radiated Emission (12V) tabular data

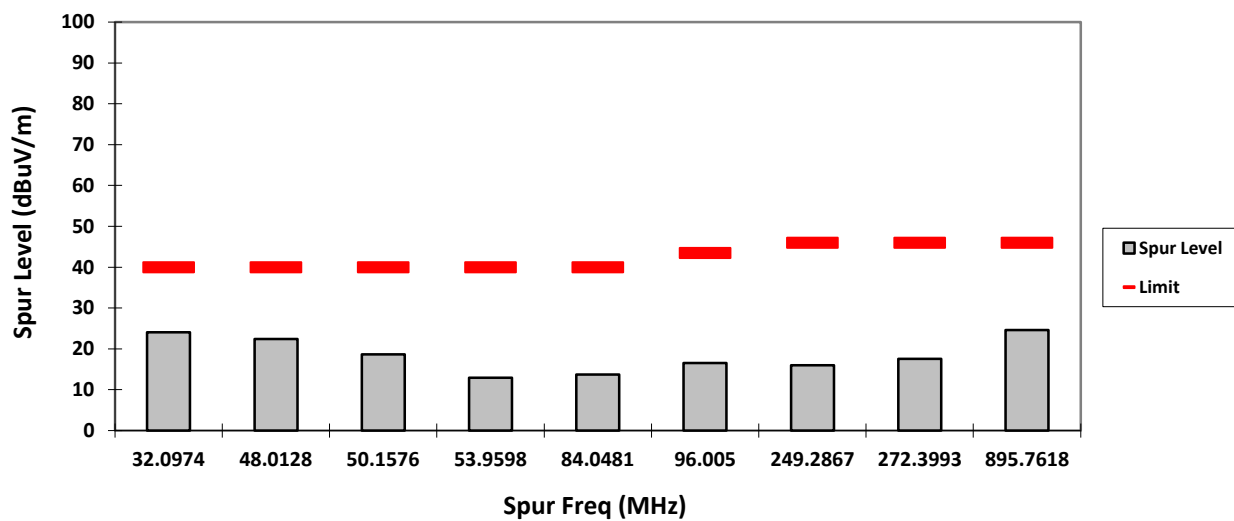
Remarks: Pass Result	Marginal Result	Fail Result
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Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

VERTICAL, QPK



HORIZONTAL, QPK

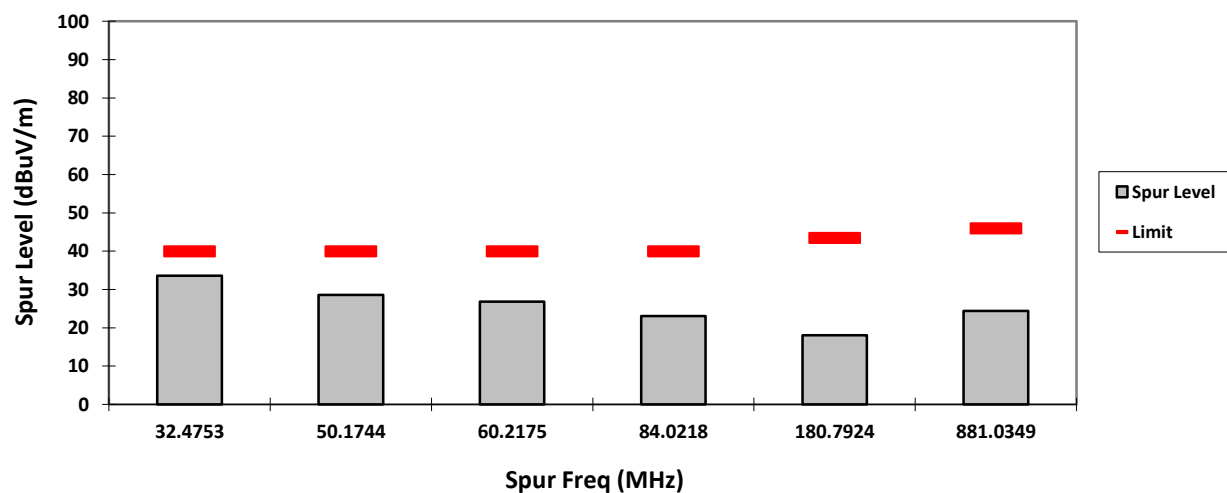


Radiated Emission (24V) tabular data

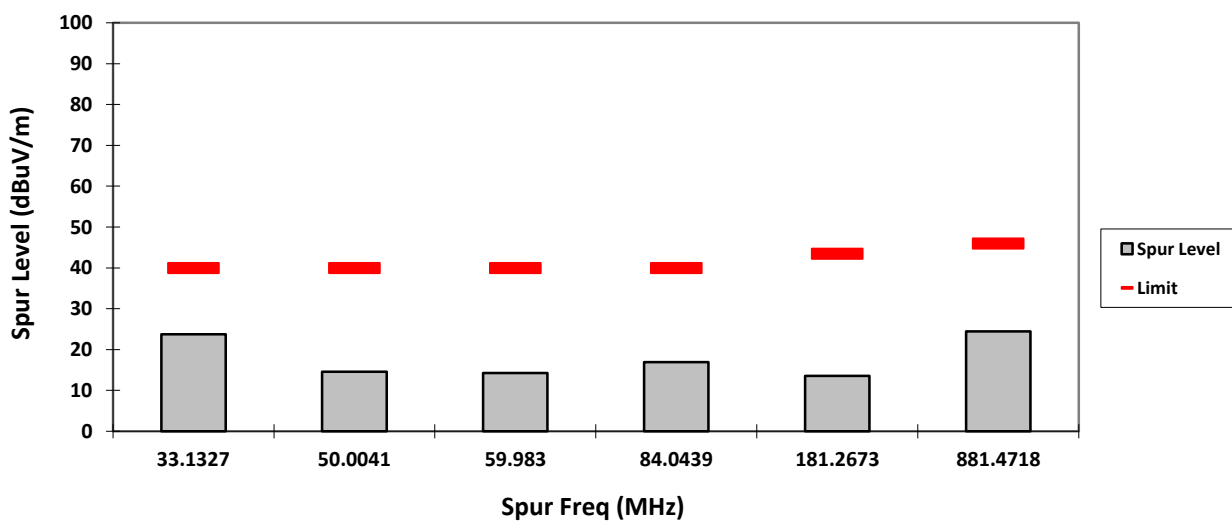
Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

VERTICAL, QPK

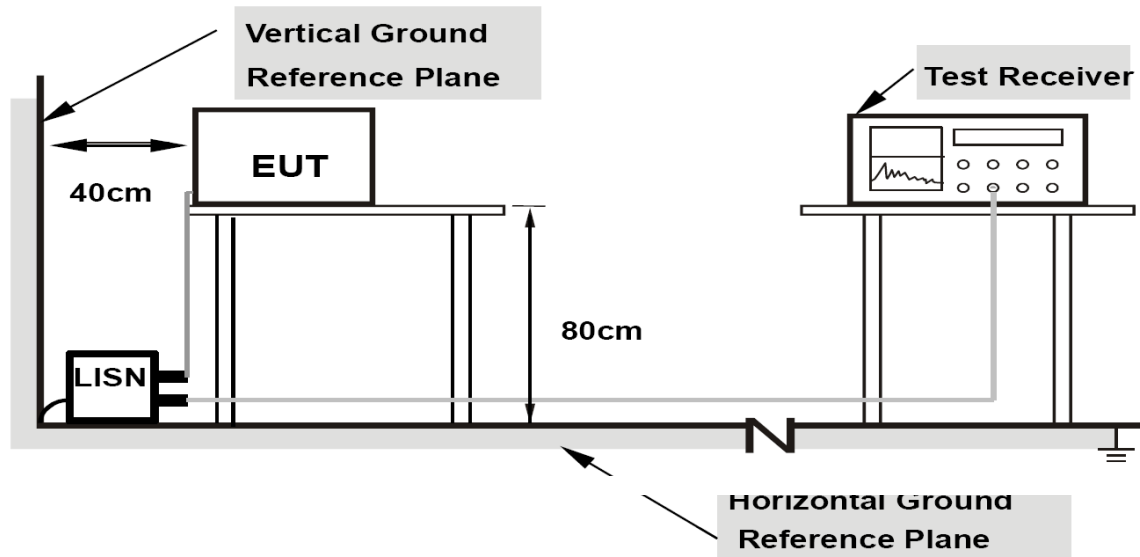


HORIZONTAL, QPK



6.8. AC Powerline Conducted Emission

6.8.1. Test Setup



- 1) Tests were conducted for both Receive and Transmit Mode of the EUT.
- 2) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50uH of coupling impedance for the measuring instrument.
- 3) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 4) The frequency range from 150 kHz to 30MHz was measured.

6.8.2. Test Limits:

For AC Power Line Conducted Test Limit can be Class A or B depends on product classification.

**Limits for conducted disturbance at the mains ports
of class A ITE**

Frequency range MHz	Limits dB(μ V)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	73	60
NOTE The lower limit shall apply at the transition frequency.		

Table 1: Limits for Conducted Disturbance at the Mains Ports of Class A ITE.

**Limits for conducted disturbance at the mains ports
of class B ITE**

Frequency range MHz	Limits dB(μ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50
NOTE 1 The lower limit shall apply at the transition frequencies.		
NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

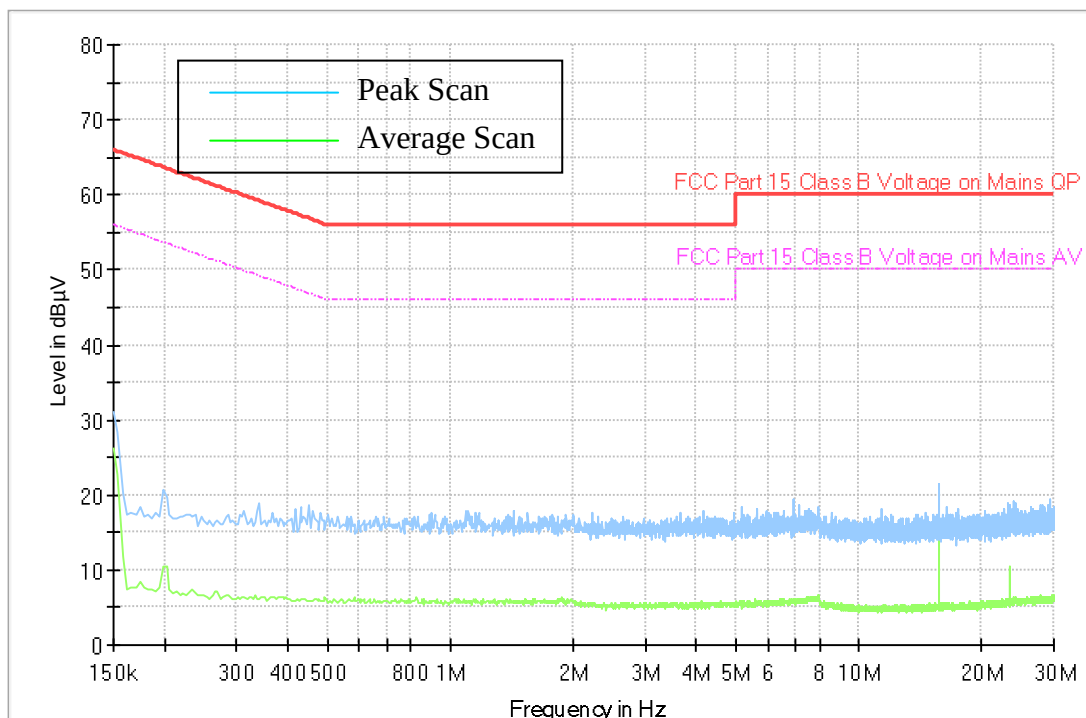
Table 2: Limits for Conducted Disturbance at the Mains Ports of Class B ITE

6.8.3. Test Result

Report ID.:	: 12464-EMC-00262
Ambient Temperature:	: 20.7 °C
Humidity:	: 59.4 %RH
Tester:	: Shidee
Date of test:	: 27 December 2023

1) Ambient

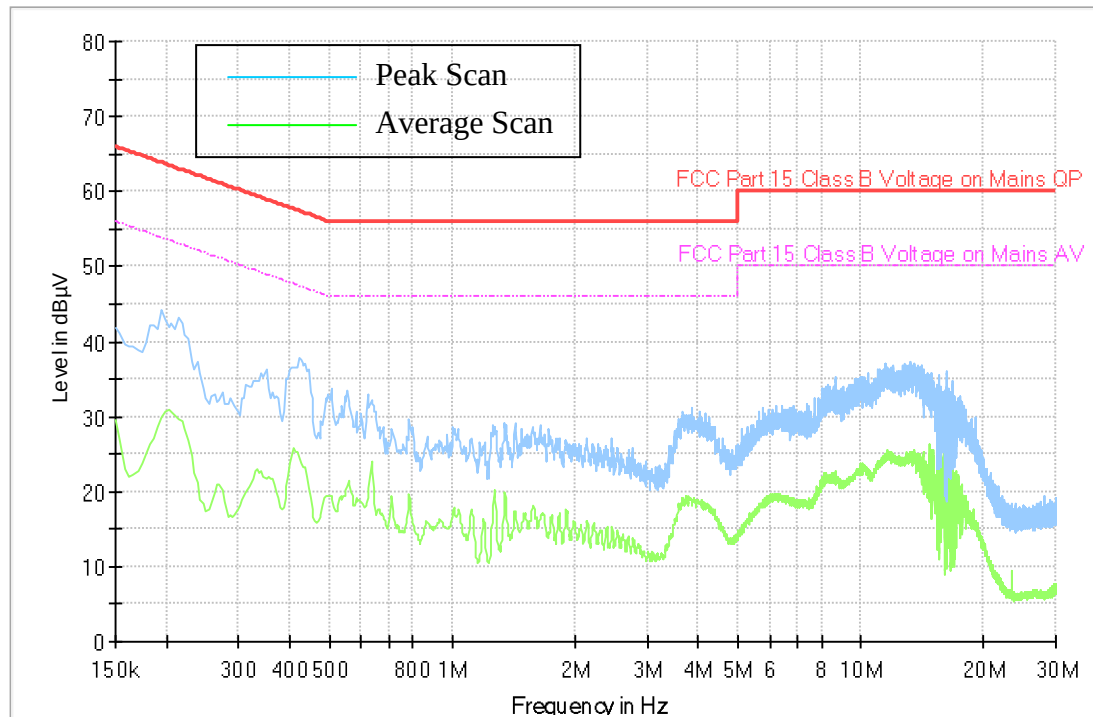
Full Spectrum



120 Vac, 60Hz

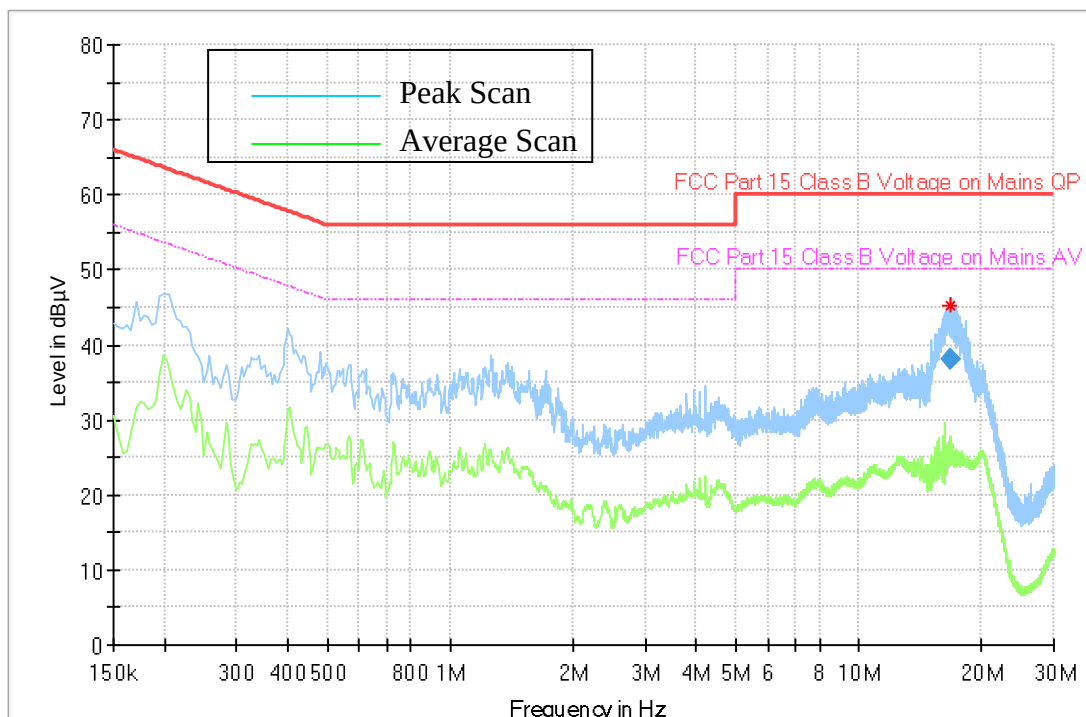
1) Charger Alone

Full Spectrum



2) Charger + Radio Off

Full Spectrum



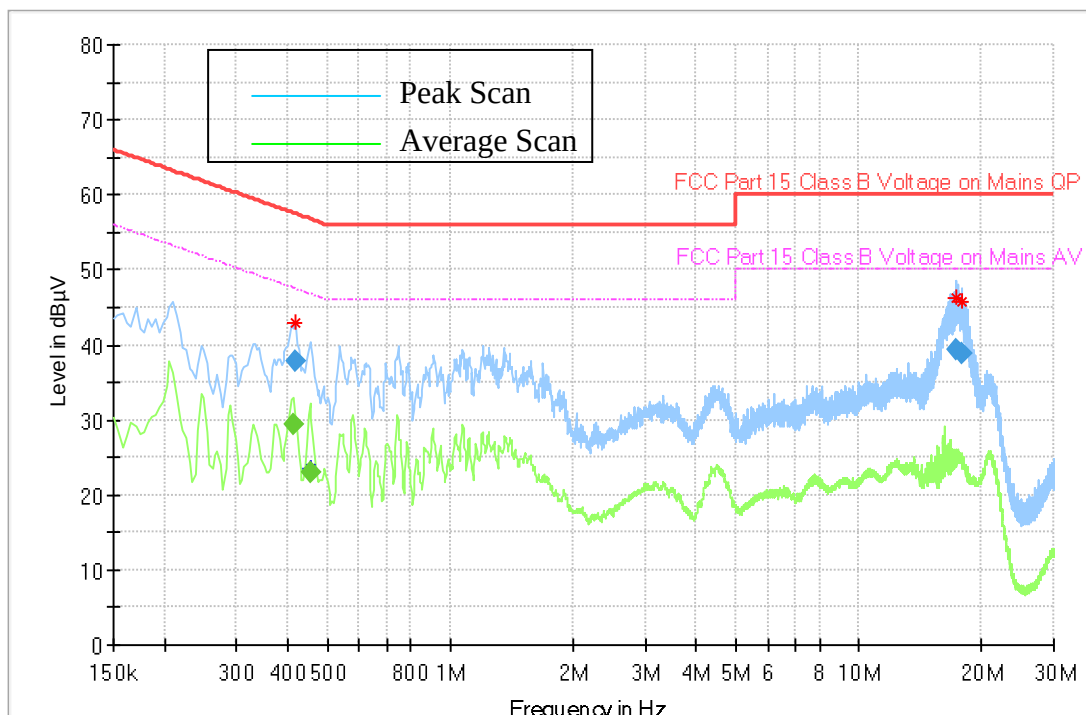
Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
16.678000	38.01	---	60.00	21.99	1000.0	9.000	L1	ON	10.3	Pass

* Expanded Uncertainty (U) = +/- 3.48dB

3) Charger + Radio Standby

Full Spectrum



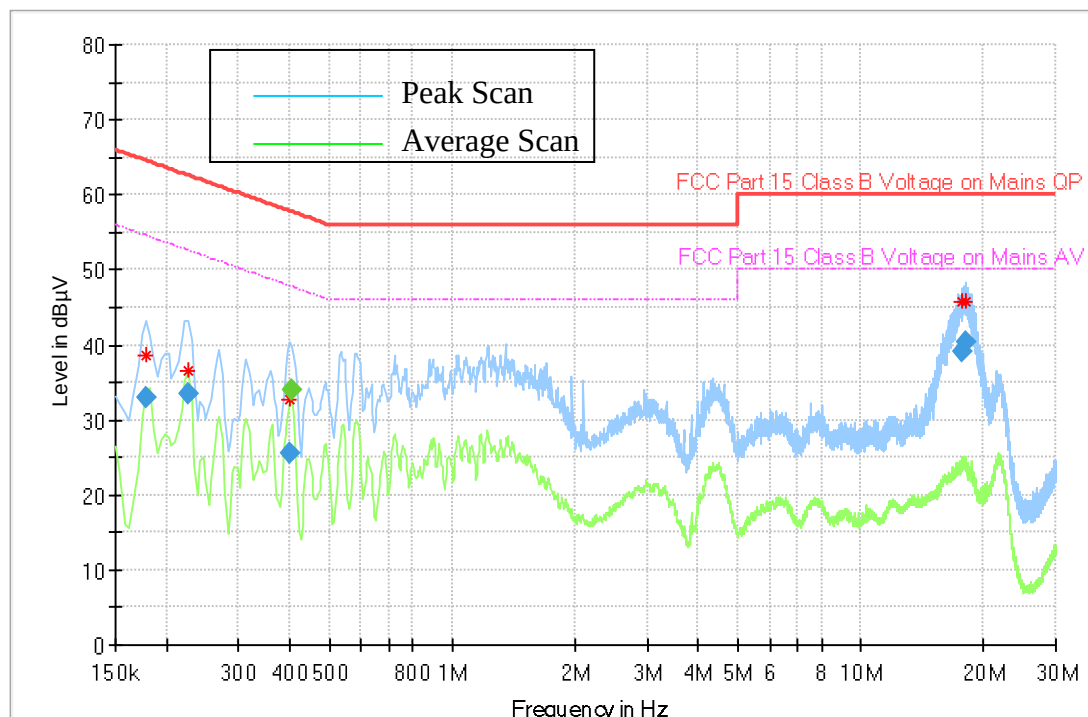
Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.414000	---	29.41	47.57	18.16	1000.0	9.000	N	ON	10.3	Pass
0.418000	37.73	---	57.49	19.76	1000.0	9.000	N	ON	10.3	Pass
0.454000	---	22.99	46.80	23.81	1000.0	9.000	N	ON	10.3	Pass
17.378000	39.39	---	60.00	20.61	1000.0	9.000	L1	ON	10.4	Pass
17.878000	38.96	---	60.00	21.04	1000.0	9.000	L1	ON	10.4	Pass

* Expanded Uncertainty (U) = +/- 3.48dB

4) Charger + Radio Standby with WiFi 2.4GHz

Full Spectrum



Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.178000	33.06	---	64.58	31.52	1000.0	9.000	N	ON	10.6	Pass
0.226000	33.50	---	62.60	29.10	1000.0	9.000	N	ON	10.2	Pass
0.402000	25.47	---	57.81	32.34	1000.0	9.000	N	ON	10.3	Pass
0.406000	---	33.91	47.73	13.81	1000.0	9.000	N	ON	10.3	Pass
17.650000	39.12	---	60.00	20.88	1000.0	9.000	L1	ON	10.4	Pass
18.042000	40.27	---	60.00	19.73	1000.0	9.000	L1	ON	10.4	Pass

* Expanded Uncertainty (U) = +/- 3.48dB

END OF TEST REPORT