

# Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC141573 Page: 1 of 85

# FCC Radio Test Report FCC ID: XMF-MID1008

# **Original Grant**

Report No. : TB-FCC141573

**Applicant**: Lightcomm Technology Co., Ltd.

**Equipment Under Test (EUT)** 

EUT Name : MID

Model No. : MID1008-L Series Model : DL1010Q

No.

Brand Name : N/A

**Receipt Date** : 2014-08-11

**Test Date** : 2014-08-12 to 2014-08-22

**Issue Date** : 2014-08-26

**Standards**: FCC Part 15, Subpart C (15.247:2012)

Test Method : ANSI C63.4:2003

Conclusions : PASS

In the configuration tested, the EUT complied with the standards specified above,

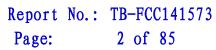
The EUT technically complies with the FCC and IC requirements

Test/Witness Engineer :

Approved& Authorized :

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0





# Contents

CON	NTENTS	2
1.	GENERAL INFORMATION ABOUT EUT	
	1.1 Client Information	
	1.2 General Description of EUT (Equipment Under Test)	
	1.3 Block Diagram Showing the Configuration of System Tested	5
	1.4 Description of Support Units	
	1.5 Description of Test Mode	6
	1.6 Description of Test Software Setting	6
	1.7 Test Facility	
2.	TEST SUMMARY	8
3.	CONDUCTED EMISSION TEST	9
	3.1 Test Standard and Limit	(
	3.2 Test Setup	
	3.3 Test Procedure	9
	3.4 Test Equipment Used	10
	3.5 EUT Operating Mode	10
	3.6 Test Data	10
4.	RADIATED EMISSION TEST	13
	4.1 Test Standard and Limit	
	4.2 Test Setup	
	4.3 Test Procedure	
	4.4 EUT Operating Condition	15
	4.5 Test Equipment	16
	4.6 Test Data	16
5.	RESTRICTED BANDS REQUIREMENT	43
	5.1 Test Standard and Limit	43
	5.2 Test Setup	
	5.3 Test Procedure	43
	5.4 EUT Operating Condition	44
	5.5 Test Equipment	44
	5.6 Test Data	44
6.	BANDWIDTH TEST	65
	6.1 Test Standard and Limit	65
	6.2 Test Setup	65
	6.3 Test Procedure	65
	6.4 EUT Operating Condition	65
	6.5 Test Equipment	65
	6.6 Test Data	66
7.	PEAK OUTPUT POWER TEST	74



Page: 3 of 85

	7.1 Test Standard and Limit	74
	7.2 Test Setup	74
	7.3 Test Procedure	
	7.4 EUT Operating Condition	74
	7.5 Test Equipment	74
	7.6 Test Data	74
8.	POWER SPECTRAL DENSITY TEST	76
	8.1 Test Standard and Limit	76
	8.2 Test Setup	
	8.3 Test Procedure	76
	8.4 EUT Operating Condition	76
	8.5 Test Equipment	77
	8.6 Test Data	77
9.	ANTENNA REQUIREMENT	85
	9.1 Standard Requirement	
	9.2 Antenna Connected Construction	85
	9.3 Result	85



Page: 4 of 85

# 1. General Information about EUT

#### 1.1 Client Information

**Applicant**: Lightcomm Technology Co., Ltd.

Address : RM 1708-10, 17/F, PROSPERITY CENTRE, 25 CHONG YIP

STREET, KWUN TONG, KOWLOON, HONG KONG

**Manufacturer**: Huizhou Hengdu Electronics Co., Ltd.

Address : DIP South Area, Huiao Highway, Huizhou, Guangdong, China

## 1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	MID			
Models No.	:	MID1008-L, DL1010Q			
Model Difference	:	All the other models are identical in the same PCB layout, interior structure and electrical circuits, The only difference is model name for commercial purpose.			
Product		Operation Frequency: 802.11b/g/n(HT20): 2412	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11b/g/n(HT40): 2422MHz~2452MHz		
Description	:	Training of Gridinion	802.11b/g/n(HT40): 7 channels see note(3)		
		RF Output Power:  802.11b: 9.56 dBm 802.11g: 9.46 dBm 802.11n (HT20): 9.45 dBm 802.11n (HT40): 9.56 dBm			
		Antenna Gain:	0 dBi (FPC Antenna)		
		Modulation Type: 802.11b: DSSS (CCK, QPSK, BPSK) 802.11g: OFDM 802.11n: OFDM			
		Bit Rate of Transmitter:	ate of Transmitter: 802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps		
Power Supply	:	DC power supplied by AC DC Voltage supplied from	•		
Power Rating	:				
Connecting I/O Port(S)	:	The equipent have USB port for link with PC, so the equipment is considered as a Computing Device Peripheral.  Please refer to the User's Manual			



Page: 5 of 85

**Note:** The equipment with Bluetooth and Wifi(802.11b/g/n) function, Bluetooth have test comply with FCC Part 15C Rules. More detailed features description, please refer to the manufacturer's specifications or the User's Manual.

#### Note:

- (1) This Test Report is FCC Part 15.247 for 802.11b/g/n, the test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance v03r02.
- (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- (3) Antenna information provided by the applicant.
- (4) Channel List:

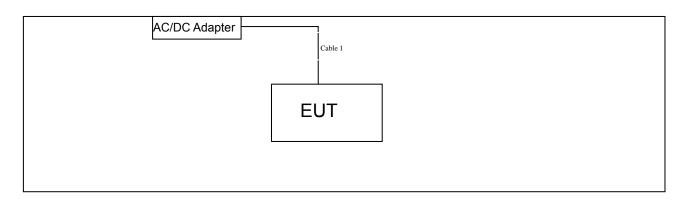
CH 01~CH 11 for 802.11b/g/n(HT20)

CH 03~CH 09 for 802.11b/g/n(HT40)

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

# 1.3 Block Diagram Showing the Configuration of System Tested

#### **TX Mode**



## 1.4 Description of Support Units

Equipment Information							
Name	Name Model S/N Manufacturer Used "√"						
1	1	1	1	/			
	Cable Information						
Number	Number Shielded Type Ferrite Core Length Note						
Cable 1	NO	NO	1.0M	Accessories			



Page: 6 of 85

#### 1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test			
Final Test Mode Description			
Mode 1	AC Charging with TX B Mode		

For Radiated Test			
Final Test Mode	Description		
Mode 3	TX Mode B Mode Channel 01/06/11		
Mode 4	TX Mode G Mode Channel 01/06/11		
Mode 5	TX Mode N(HT20) Mode Channel 01/06/11		
Mode 6 TX Mode N(HT40) Mode Channel 01/06/1			

#### Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.4 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

802.11b Mode: CCK (1 Mbps) 802.11g Mode: OFDM (6 Mbps)

802.11n (HT20) Mode: MCS 0 (6.5 Mbps) 802.11n (HT40) Mode: MCS 0 (13 Mbps)

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a mobile unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

# 1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be



Page: 7 of 85

fixed on the firmware of the final end product power parameters of WLAN.

Test Software Version	Test Program: Test Program: MTK Engineer Mode Open. apk			
Channel	CH 01	CH 06	CH 11	
IEEE 802.11b DSSS	DEF	DEF	DEF	
IEEE 802.11g OFDM	DEF	DEF	DEF	
IEEE 802.11n (HT20)	DEF	DEF	DEF	
Channel	CH 03	CH 06	CH 09	
IEEE 802.11n (HT40)	DEF	DEF	DEF	

## 1.7 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

#### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

#### FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

#### IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



Page: 8 of 85

# 2. Test Summary

FCC Part 15 Subpart C(15.247)/RSS-210: 2010					
Standar	rd Section	Test Item	Judgment	Domonis	
FCC	IC	rest item	Juagment	Remark	
15.203	1	Antenna Requirement	PASS	N/A	
15.207	RSS-GEN 7.2.4	Conducted Emission	PASS	N/A	
15.205	RSS-GEN 7.2.2	Restricted Bands	PASS	N/A	
15.247(a)(2)	RSS-210	6dB Bandwidth	PASS	N/A	
15.247 (a)(2)	A.8.2(a)	odb Bandwidth			
15.247(b)	RSS-210	Peak Output Power	PASS	N/A	
13.247(0)	A.8.4(4)	Feak Output Fower	FAGG	IN/A	
15.247(e)	RSS-210	Power Spectral Density	PASS	N/A	
15.247 (e)	A.8.2(b)	Fower Spectral Delisity			
15 247(d)	RSS-210	Transmitter Radiated Spurious	PASS	N/A	
15.247(d)	Annex 8 (A8.5)	Emission	FASS	IN/A	
15.247(d)	RSS-210	Antenna Conducted	PASS	N/A	
13.247 (u)	Annex 8 (A8.5)	Spurious Emission		IN/A	

Note: "/" for no requirement for this test item.

N/A is an abbreviation for Not Applicable.



Page: 9 of 85

# 3. Conducted Emission Test

#### 3.1 Test Standard and Limit

3.1.1Test Standard FCC Part 15.207

#### 3.1.2 Test Limit

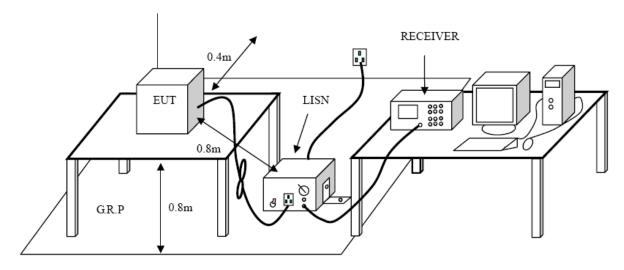
#### **Conducted Emission Test Limit**

Fraguanay	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

#### Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

## 3.2 Test Setup



#### 3.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.



Page: 10 of 85

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

# 3.4 Test Equipment Used

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test	ROHDE&		400004	Aug. 08, 2014	Aug. 07, 2015
Receiver	SCHWARZ	ESCI	100321	Aug. 00, 2014	Aug. 07, 2015
50ΩCoaxial	Anritsu	MP59B	X10321	Aug. 08, 2014	Aug. 07, 2015
Switch	Aiiiisu	MESSE	X10321	Aug. 08, 2014	Aug. 07, 2013
L.I.S.N	Rohde & Schwarz	ENV216	101131	Aug. 08, 2014	Aug. 07, 2015
L.I.S.N	SCHWARZBECK	NNBL 8226-2	8226-2/164	Aug. 08, 2014	Aug. 07, 2015

# 3.5 EUT Operating Mode

Please refer to the description of test mode.

#### 3.6 Test Data

Please see the next page.



EUT: MID **Model Name:** MID1008-L 25 ℃ **Relative Humidity:** 55% Temperature: Test Voltage: AC 120V/60 Hz Terminal: Line **Test Mode:** AC Charging with TX B Mode Remark: Only worse case is reported 90.0 dBuV QP: AVG: 40 -10 0.150 0.5 (MHz) 30.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment dΒ MHz dBuV dBuV dBuV dΒ Detector Comment 0.4540 36.25 10.02 46.27 56.80 -10.53 QΡ 1 0.4540 2 25.10 10.02 35.12 46.80 -11.68 AVG 33.27 10.10 56.00 -12.63 QΡ 3 0.6580 43.37 0.6580 18.74 46.00 -17.16 AVG 4 10.10 28.84 QP 0.9340 32.70 10.07 42.77 56.00 -13.23 5 46.00 -19.27 AVG 6 0.9340 16.66 10.07 26.73 7 1.2220 32.94 43.00 56.00 -13.00 QΡ 10.06 1.2220 19.80 10.06 29.86 46.00 -16.14 AVG 8 2.4900 31.89 10.04 41.93 56.00 -14.07 QΡ 9 10 2.4900 19.98 10.04 30.02 46.00 -15.98 AVG 11 3.4660 29.89 10.01 39.90 56.00 -16.10 QΡ 12 10.01 46.00 -16.91 AVG 3.4660 19.08 29.09 \*:Maximum data x:Over limit !:over margin



Page: 12 of 85

EUT:	MID	Mode	el Name :	MID1008-L							
Temperature:	25 ℃	Relat	tive Humidity:	55%							
Test Voltage:	AC 120V/60 Hz										
Terminal:	Neutral	leutral									
Test Mode:	AC Charging wi	AC Charging with TX B Mode									
Remark:	Only worse cas	e is reported									
90.0 dBuV											
				QP: AVG:							
	-				$\dashv$						
MX	-X	×	X, ,								
40	A The second bearing	Howards and allowable to the	Avaluated Vision								
NW. N. M.	Mr. a. M. W. Maran Million.	think which his in his	" MAN. parriabeling	And the stand of the standard							
- 1 / V/M M.	The same of the same	y M M MMAN	Market Market and a		Mary Mary						
7 7 7 7	J. J. M. J.	74 M 4 "	March Carlotte Mark	more and market property of the filly	Will pe						
γ γ					TTMWAV						
0.150	0.5	(MHz)	5		30.000						
No. Mk. Fred		orrect Measure actor ment	Limit Over								
MHz		dB dBuV	dBuV dB	Detector (	Commen						
1 * 0.194		0.01 50.99	63.86 -12.87	QP	3011111011						
2 0.194		0.01 37.03	53.86 -16.83	AVG							
3 0.230		0.02 40.92	62.45 -21.53	QP							
4 0.230		0.02 46.32	52.45 -26.08	AVG							
5 0.438		0.02 20.37	57.10 -13.37	QP							
6 0.438		0.02 43.73	47.10 -16.11	AVG							
7 0.529		0.03 40.20	56.00 -15.80	QP							
0 0 500	9 18.25 1	0.03 28.28	46.00 -17.72	AVG							
8 0.529	0 01 11	201 01 10									
9 2.602		0.04 34.48	56.00 -21.52	QP							
9 2.602 10 2.602	0 11.68 1	0.04 21.72	46.00 -24.28	AVG							
9 2.602	0 11.68 1 9 26.54										



Page: 13 of 85

# 4. Radiated Emission Test

#### 4.1 Test Standard and Limit

4.1.1 Test Standard FCC Part 15.209

4.1.2 Test Limit

#### Radiated Emission Limits (9kHz~1000MHz)

(0.1.1.2)							
Frequency (MHz	Field Strength (microvolt/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					

## Radiated Emission Limit (Above 1000MHz)

Frequency	Class A (dBuV	/m)(at 3 M)	Class B (dBuV	//m)(at 3 M)
(MHz)	Peak	Average	Peak	Average
Above 1000	Above 1000 80		74	54

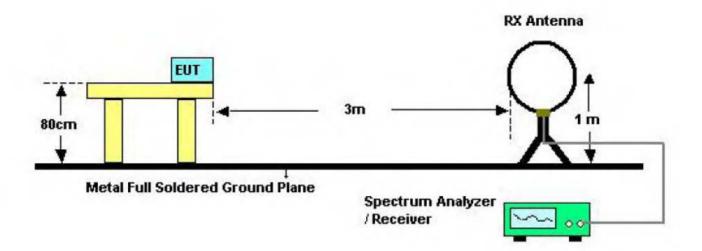
#### Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

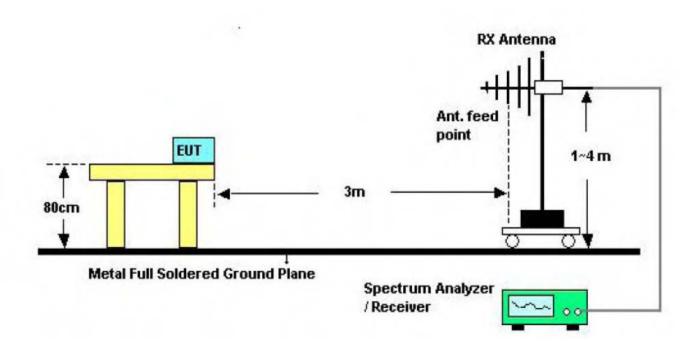


Page: 14 of 85

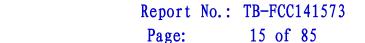
# 4.2 Test Setup



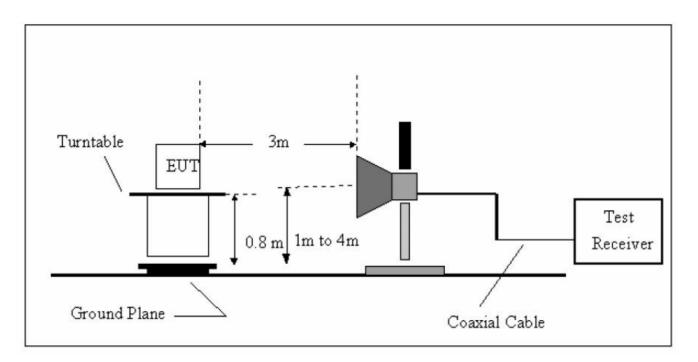
Below 30MHz Test Setup



Below 1000MHz Test Setup







Above 1GHz Test Setup

#### 4.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.

# 4.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.



Page: 16 of 85

# 4.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015
Spectrum Analyzer	Rohde & Schwarz	FSP30	DE25181	Aug. 08, 2014	Aug. 07, 2015
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Aug. 08, 2014	Aug. 07, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 07, 2014	Mar.06, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	11909A	185903	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	8447B	3008A00849	Mar. 07, 2014	Mar.06, 2015
Cable	HUBER+SUHNE R	100	SUCOFLEX	Mar. 07, 2014	Mar.06, 2015
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 11, 2014	Feb.10, 2015
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

## 4.6 Test Data

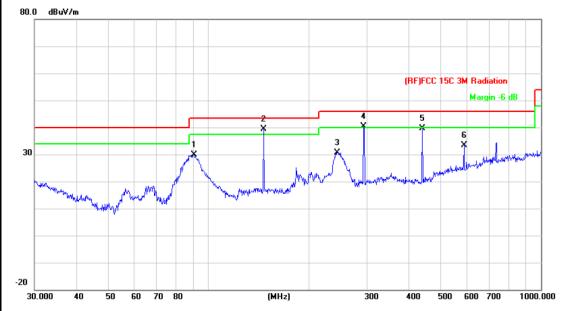
Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Test data please refer the following pages.



Report No.: TB-FCC141573
Page: 17 of 85

EUT:	MID	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Horizontal				
Test Mode:	TX B Mode 2412MHz				
Remark:	Only worse case is repor	ted			
80.0 dBuV/m					



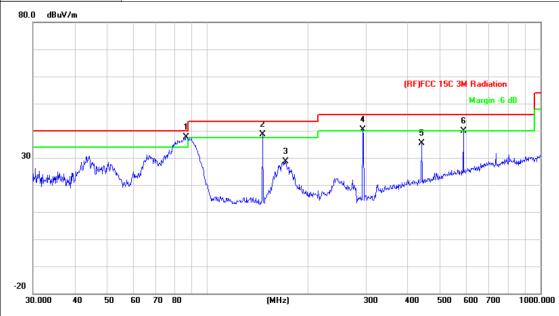
No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		90.5374	52.48	-22.65	29.83	43.50	-13.67	peak
2	*	146.3735	60.97	-21.47	39.50	43.50	-4.00	peak
3		244.2321	49.04	-18.40	30.64	46.00	-15.36	peak
4	ļ	293.0842	57.59	-17.22	40.37	46.00	-5.63	peak
5		440.1963	52.35	-12.64	39.71	46.00	-6.29	peak
6		586.8437	43.17	-9.82	33.35	46.00	-12.65	peak

<sup>\*:</sup>Maximum data x:Over limit !:over margin



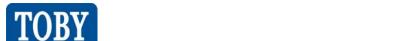
Report No.: TB-FCC141573
Page: 18 of 85

EUT:	MID Model: MID1008-L						
Temperature:	25 ℃	25 ℃ Relative Humidity: 55%					
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Vertical						
Test Mode:	TX B Mode 2412MHz						
Remark:	Only worse case is reported						



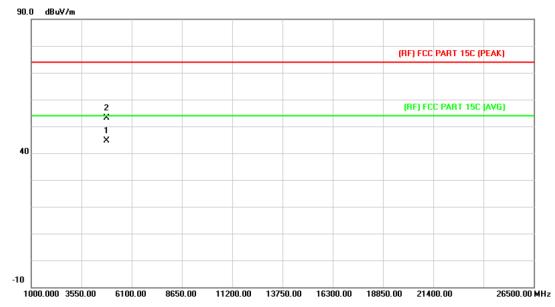
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	86.5027	60.46	-22.89	37.57	40.00	-2.43	peak
2	ļ	146.3735	60.20	-21.47	38.73	43.50	-4.77	peak
3		171.9945	49.61	-21.06	28.55	43.50	-14.95	peak
4	ļ	293.0842	57.51	-17.22	40.29	46.00	-5.71	peak
5		440.1963	48.11	-12.64	35.47	46.00	-10.53	peak
6		586.8437	49.58	-9.82	39.76	46.00	-6.24	peak

<sup>\*:</sup>Maximum data x:Over limit !:over margin



Report No.: TB-FCC141573
Page: 19 of 85

EUT:	MID Model: MID1008-L						
Temperature:	25 ℃	25 °C Relative Humidity: 55%					
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX B Mode 2412MHz						
Remark:	No report for the emission which more than 10 dB below the						
prescribed limit.							

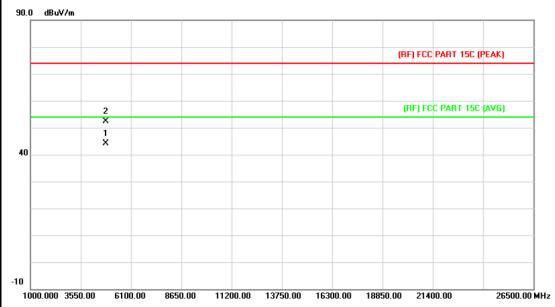


1	No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4824.012	31.11	13.56	44.67	54.00	-9.33	AVG
2			4824.364	39.58	13.56	53.14	74.00	-20.86	peak



Report No.: TB-FCC141573
Page: 20 of 85

EUT:	MID Model: MID1008-L							
Temperature:	25 ℃	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60 Hz	AC 120V/60 Hz						
Ant. Pol.	Vertical							
Test Mode:	TX B Mode 2412MHz							
Remark:	No report for the emission which more than 10 dB below the prescribed limit.							

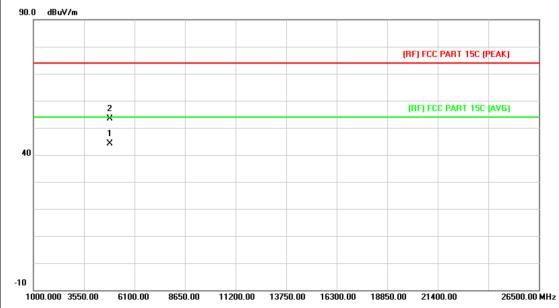


	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	I	*	4824.009	30.67	13.56	44.23	54.00	-9.77	AVG
2	2		4824.159	38.81	13.56	52.37	74.00	-21.63	peak



Page: 21 of 85

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX B Mode 2437MHz						
Remark:	No report for the emissio prescribed limit.	No report for the emission which more than 10 dB below the prescribed limit.					

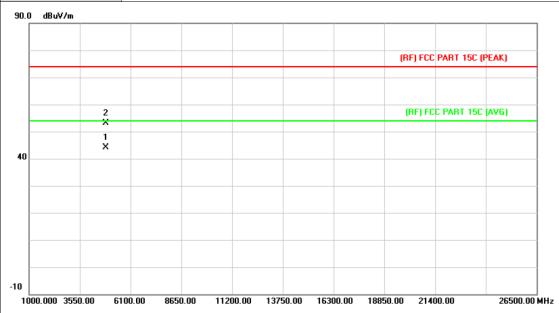


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4873.456	30.26	13.86	44.12	54.00	-9.88	AVG
2		4873.987	39.45	13.86	53.31	74.00	-20.69	peak



Page: 22 of 85

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX B Mode 2437MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

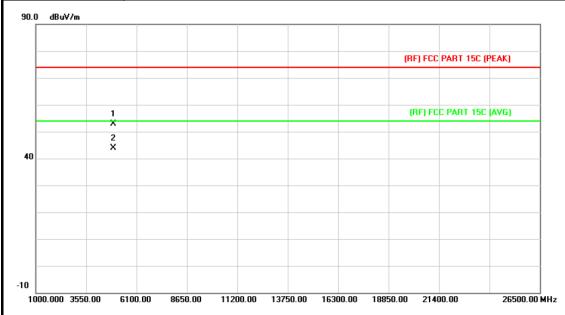


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4874.001	30.31	13.86	44.17	54.00	-9.83	AVG
2		4874.310	39.24	13.86	53.10	74.00	-20.90	peak



Page: 23 of 85

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX B Mode 2462MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

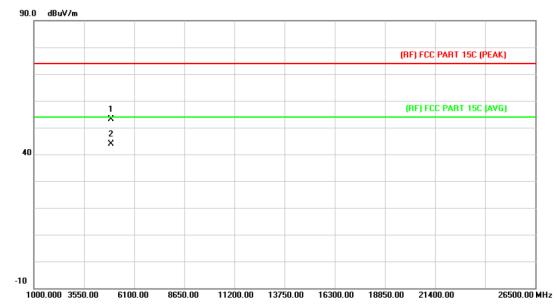


	No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4923.148	38.63	14.15	52.78	74.00	-21.22	peak
2		*	4923.674	29.83	14.15	43.98	54.00	-10.02	AVG



Report No.: TB-FCC141573
Page: 24 of 85

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX B Mode 2462MHz						
Remark:	No report for the emission prescribed limit.	No report for the emission which more than 10 dB below the prescribed limit.					

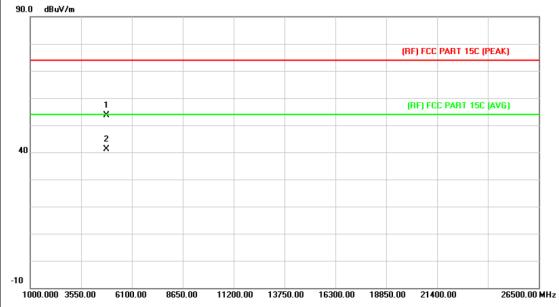


N	lo. N	Иk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4923.147	39.09	14.15	53.24	74.00	-20.76	peak
2	*		4923.611	29.69	14.15	43.84	54.00	-10.16	AVG



Page: 25 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	°C Relative Humidity:				
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal	Horizontal				
Test Mode:	TX G Mode 2412MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

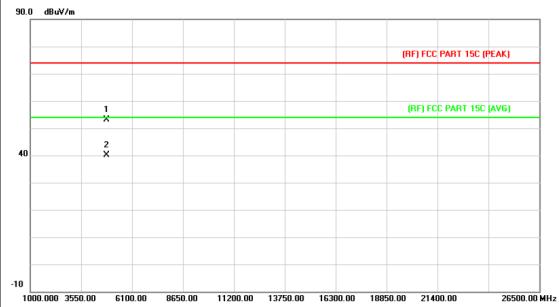


_	No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
	1		4823.271	40.11	13.56	53.67	74.00	-20.33	peak
-	2	*	4823.612	27.46	13.56	41.02	54.00	-12.98	AVG



Report No.: TB-FCC141573
Page: 26 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Vertical	Vertical				
Test Mode:	TX G Mode 2412MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

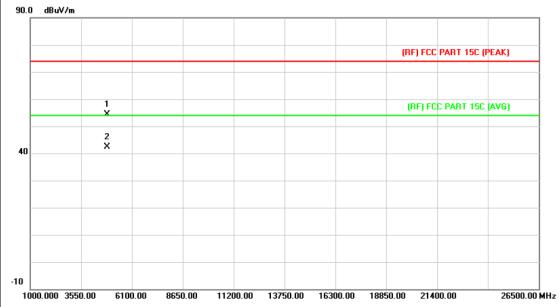


No	. Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.484	39.56	13.56	53.12	74.00	-20.88	peak
2	*	4823.697	26.57	13.56	40.13	54.00	-13.87	AVG



Page: 27 of 85

EUT:	MID	Model:	MID1008-L		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Horizontal				
Test Mode:	TX G Mode 2437MHz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

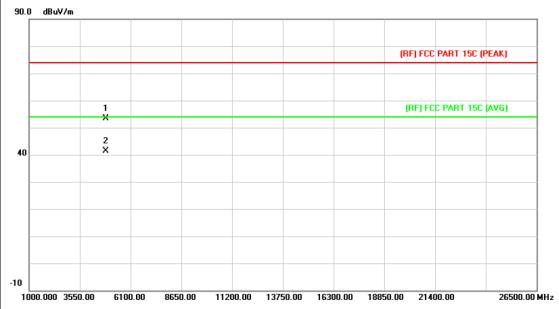


No	o. Mł	c. Freq.	-	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.193	40.45	13.86	54.31	74.00	-19.69	peak
2	*	4873.671	28.56	13.86	42.42	54.00	-11.58	AVG



Page: 28 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Vertical					
Test Mode:	TX G Mode 2437MHz					
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

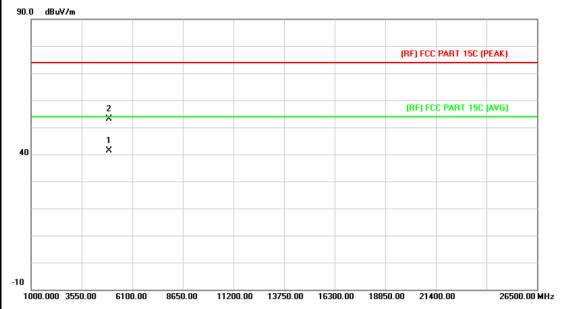


	No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4873.674	39.50	13.86	53.36	74.00	-20.64	peak
2	2	*	4873.687	27.49	13.86	41.35	54.00	-12.65	AVG



Page: 29 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX G Mode 2462MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

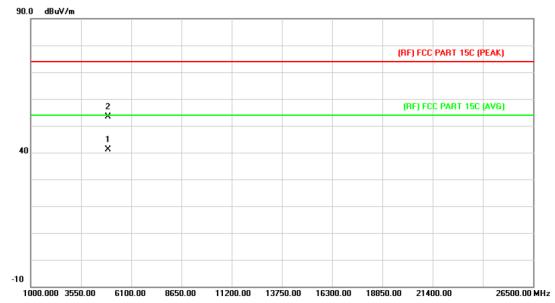


No	. Mk	. Freq.	•		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.126	27.21	14.15	41.36	54.00	-12.64	AVG
2		4923.148	39.09	14.15	53.24	74.00	-20.76	peak



Page: 30 of 85

EUT:	MID	Model:	MID1008-L		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Vertical				
Test Mode:	TX G Mode 2462MHz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

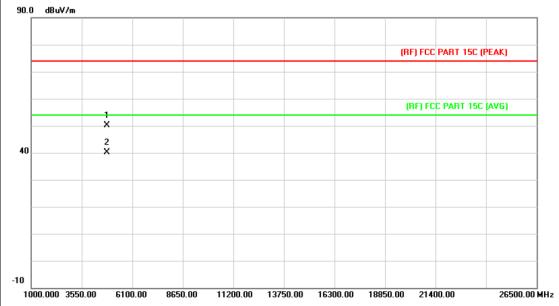


No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.428	26.88	14.15	41.03	54.00	-12.97	AVG
2		4923.670	39.33	14.15	53.48	74.00	-20.52	peak



Page: 31 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT20) Mode 2412N	ИHz				
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.	prescribed limit.				

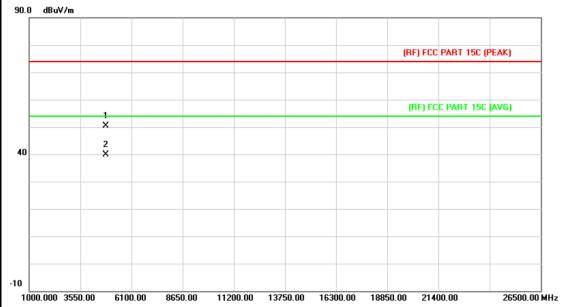


No	o. Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.173	36.56	13.56	50.12	74.00	-23.88	peak
2	*	4823.354	26.58	13.56	40.14	54.00	-13.86	AVG



Page: 32 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Vertical	Vertical				
Test Mode:	TX N(HT20) Mode 2412N	ИНz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

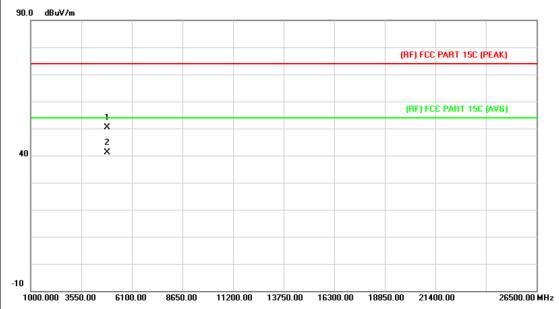


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.764	36.75	13.56	50.31	74.00	-23.69	peak
2	*	4823.831	26.22	13.56	39.78	54.00	-14.22	AVG



Page: 33 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT20) Mode 2437MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

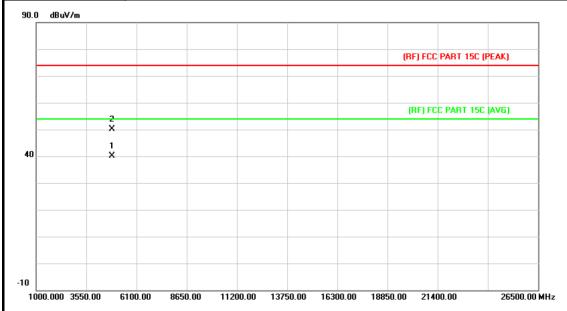


	No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over	
_			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
_	1		4873.128	36.53	13.86	50.39	74.00	-23.61	peak
	2	*	4873.684	27.21	13.86	41.07	54.00	-12.93	AVG



Page: 34 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	<b>25</b> ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Vertical					
Test Mode:	TX N(HT20) Mode 2437MHz					
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

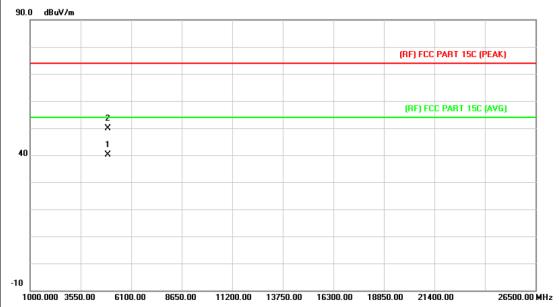


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4873.345	26.17	13.86	40.03	54.00	-13.97	AVG
2		4873.654	36.32	13.86	50.18	74.00	-23.82	peak



Page: 35 of 85

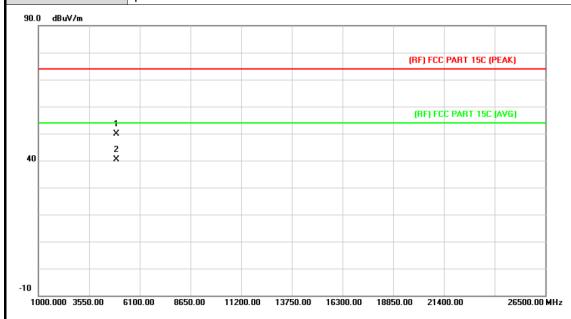
EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT20) Mode 2462MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					



No	o. M	lk. Fred		g Correc Factor	t Measure ment	Limit	Over	
		MHz	z dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.6	346 25.86	14.15	40.01	54.00	-13.99	AVG
2		4923.7	751 35.72	14.15	49.87	74.00	-24.13	peak



EUT: MID Model: MID1008-L Temperature: **25** ℃ **Relative Humidity:** 55% Test Voltage: AC 120V/60 Hz Ant. Pol. Vertical **Test Mode:** TX N(HT20) Mode 2462MHz Remark: No report for the emission which more than 10 dB below the prescribed limit.



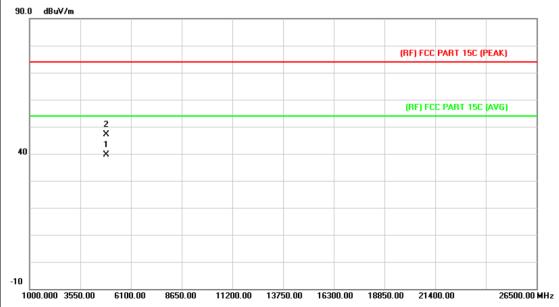
	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4923.501	35.74	14.15	49.89	74.00	-24.11	peak
2	,	k	4923.603	26.22	14.15	40.37	54.00	-13.63	AVG



Report No.: TB-FCC141573

Page: 37 of 85

EUT:	MID Model: MID1008-L				
Temperature:	25 °C Relative Humidity: 55%				
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Horizontal				
Test Mode:	TX N(HT40) Mode 2422N	ИНz			
Remark:	No report for the emission which more than 10 dB below the				
	prescribed limit.				

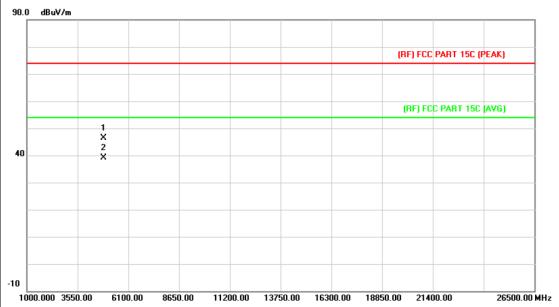


_	No. Mk.		Freq.	Reading Level		Measure- ment	Limit	Over	
_			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
	1	*	4843.654	25.97	13.68	39.65	54.00	-14.35	AVG
_	2		4843.694	33.34	13.68	47.02	74.00	-26.98	peak



Page: 38 of 85

MID Model: MID1008-L				
25 °C Relative Humidity: 55%				
AC 120V/60 Hz				
Vertical				
TX N(HT40) Mode 2422N	ИНz			
No report for the emission which more than 10 dB below the prescribed limit.				
	25 °C  AC 120V/60 Hz  Vertical  TX N(HT40) Mode 2422N  No report for the emission	25 °C Relative Humidity:  AC 120V/60 Hz  Vertical  TX N(HT40) Mode 2422MHz  No report for the emission which more than 10 co		



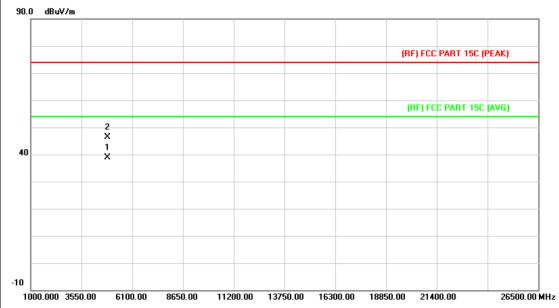
No.	. Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4843.698	32.67	13.68	46.35	74.00	-27.65	peak
2	*	4844.354	25.34	13.68	39.02	54.00	-14.98	AVG



Report No.: TB-FCC141573

Page: 39 of 85

EUT:	MID Model: MID1008-L					
Temperature:	25 °C Relative Humidity: 55%					
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT40) Mode 2437N	ИНz				
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

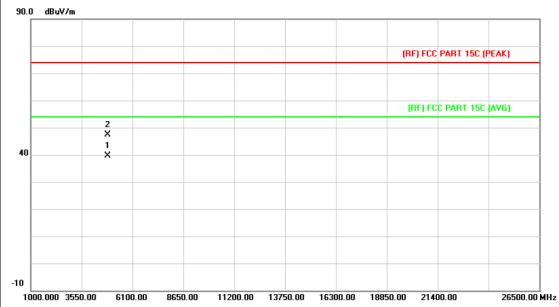


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4873.647	25.13	13.86	38.99	54.00	-15.01	AVG
2		4873.762	32.61	13.86	46.47	74.00	-27.53	peak



Report No.: TB-FCC141573
Page: 40 of 85

EUT:	MID Model: MID1008-L				
Temperature:	25 °C Relative Humidity: 55%				
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Vertical				
Test Mode:	TX N(HT40) Mode 2437N	ИHz			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				



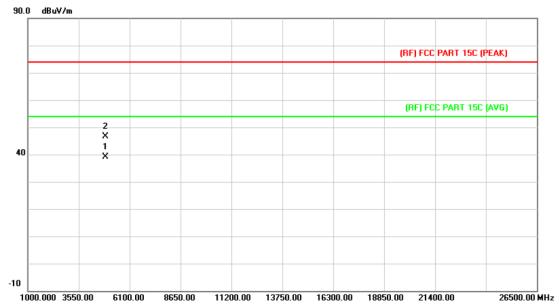
N	o. M	1k.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	48	74.124	25.68	13.86	39.54	54.00	-14.46	AVG
2		48	74.145	33.46	13.86	47.32	74.00	-26.68	peak



Report No.: TB-FCC141573

Page: 41 of 85

EUT:	MID Model: MID1008-L				
Temperature:	25 °C Relative Humidity: 55%				
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Horizontal				
Test Mode:	TX N(HT40) Mode 2452N	ИHz			
Remark:	No report for the emissio	n which more than 10 c	B below the		
	prescribed limit.				

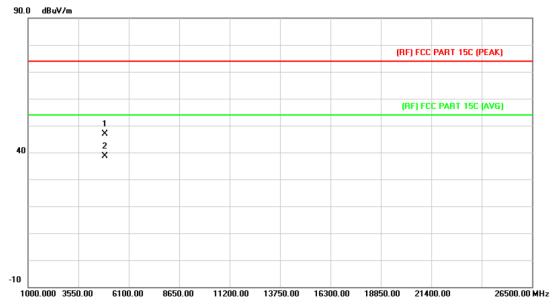


	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4903.124	25.01	14.03	39.04	54.00	-14.96	AVG
2	2		4903.742	32.68	14.03	46.71	74.00	-27.29	peak



Report No.: TB-FCC141573
Page: 42 of 85

EUT:	MID Model: MID1008-L				
Temperature:	25 °C Relative Humidity: 55%				
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Vertical				
Test Mode:	TX N(HT40) Mode 2452N	ИHz			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4903.614	32.84	14.03	46.87	74.00	-27.13	peak
2	*	4903.644	24.53	14.03	38.56	54.00	-15.44	AVG



Report No.: TB-FCC141573

Page: 43 of 85

# 5. Restricted Bands Requirement

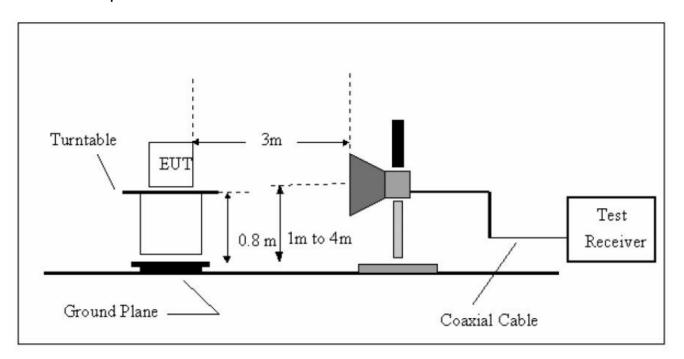
## 5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

5.1.2 Test Limit

Restricted Frequency	Class B (dBuV/m)(at 3 M)					
Band (MHz)	Peak	Average				
2310 ~2390	74	54				
2483.5 ~2500	74	54				

## 5.2 Test Setup



## 5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit



Report No.: TB-FCC141573
Page: 44 of 85

Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

- (5) (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.

## **5.4 EUT Operating Condition**

The Equipment Under Test was set to Continual Transmitting in maximum power.

## 5.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015
Spectrum Analyzer	Rohde & Schwarz	FSP30	DE25181	Aug. 08, 2014	Aug. 07, 2015
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Aug. 08, 2014	Aug. 07, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 07, 2014	Mar.06, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	11909A	185903	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	8447B	3008A00849	Mar. 07, 2014	Mar.06, 2015
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 07, 2014	Mar.06, 2015
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 11, 2014	Feb.10, 2015
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

## 5.6 Test Data

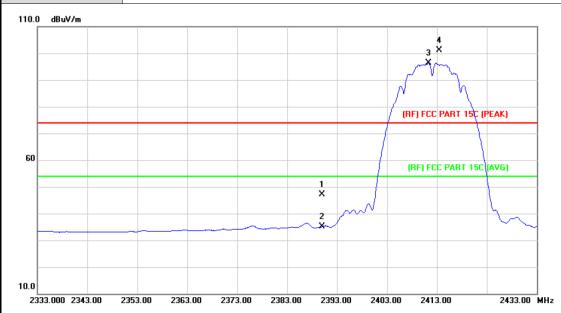
Please see the next page.



Report No.: TB-FCC141573
Page: 45 of 85

## (1) Radiation Test

EUT:	MID	Model:	MID1008-L
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	46.47	0.77	47.24	74.00	-26.76	peak
2		2390.000	34.31	0.77	35.08	54.00	-18.92	AVG
3	*	2411.300	95.49	0.86	96.35	54.00	42.35	AVG
4	Χ	2413.500	100.21	0.86	101.07	74.00	27.07	peak



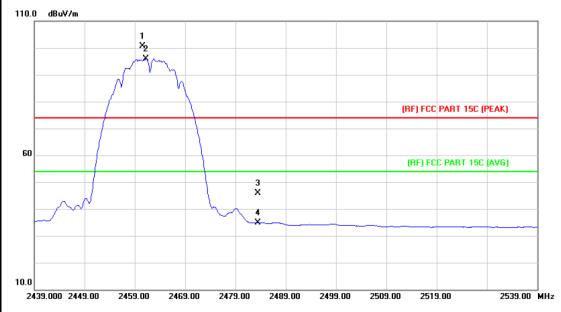
46 of 85 Page:

UT:			MID				Model:			MID1008-I	_
emp	eratu	re:	25 °	C			Relativ	e Humi	idity:	55%	
est \	/oltag	e:	AC 1	20V/60	Hz				,		
nt. F	Pol.		Verti	cal							
est l	Mode:		TX E	Mode 2	2412	MHz					
ema	ırk:		N/A								
110.0_	dBuV/m										
										<b>\$</b>	
										المس	
									(RF) FC	C PART 15C (PE	AK)
60									(BE) E	CC PART 15Q (A	VG1
							1		(,,,,,	CETAIII 130 A	****
							×				
L							2 X	~~~\ 			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
10.0 2333	3.000 234	13.00 2	2353.00	2363.00	237	3.00 2383	.00 239	3.00 24	03.00 241	3.00	2433.00 MH
				Read	ing	Correc	t Mea	asure-			
No	. Mk	. Fr	eq.	Leve	-	Facto	r m	ent	Limit	Over	
		M	Hz	dBu\	<b>V</b>	dB/m	dB	uV/m	dBuV/m	n dB	Detector
1		2390	.000	43.7	6	0.77	44	1.53	74.00	-29.47	peak
		2390	.000	32.4	3	0.77	33	3.20	54.00	-20.80	AVG
2			000	90.9	)5	0.86	91	1.81	54.00	37.81	AVG
2	*	2412	.800	00.0							
	* X	2412 2413		95.7		0.86	96	3.60	74.00	22.60	peak



Page: 47 of 85

EUT:	MID	Model:	MID1008-L
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2462MHz		
Remark:	N/A		
110.0 dRuV/m			

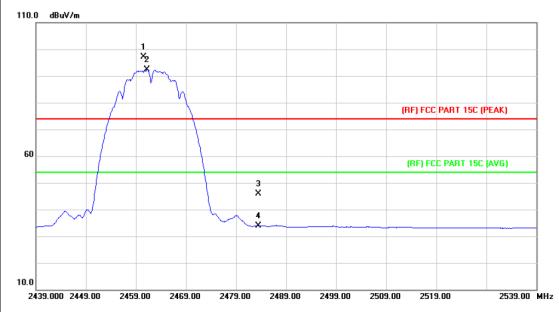


No	o. Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2460.500	99.62	1.06	100.68	74.00	26.68	peak
2	*	2461.200	94.90	1.07	95.97	54.00	41.97	AVG
3		2483.500	44.68	1.17	45.85	74.00	-28.15	peak
4		2483.500	33.71	1.17	34.88	54.00	-19.12	AVG



Page: 48 of 85

EUT:	MID	Model:	MID1008-L
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz		
Remark:	N/A		

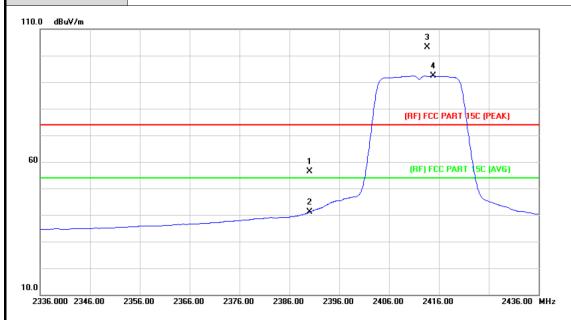


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2460.600	96.01	1.06	97.07	74.00	23.07	peak
2	*	2461.200	91.32	1.07	92.39	54.00	38.39	AVG
3		2483.500	44.60	1.17	45.77	74.00	-28.23	peak
4		2483.500	32.63	1.17	33.80	54.00	-20.20	AVG



Page: 49 of 85

EUT:	MID	Model:	MID1008-L
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2412MHz		
Remark:	N/A		



No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	55.61	0.77	56.38	74.00	-17.62	peak
2		2390.000	40.29	0.77	41.06	54.00	-12.94	AVG
3	Χ	2413.700	102.20	0.86	103.06	74.00	29.06	peak
4	*	2414.900	91.55	0.88	92.43	54.00	38.43	AVG



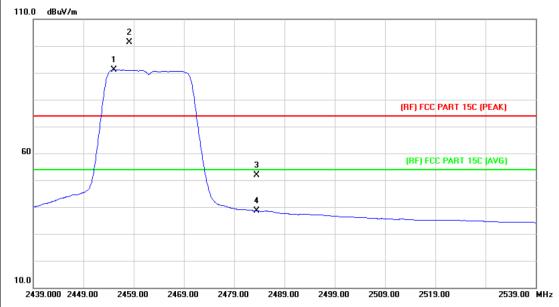
50 of 85 Page:

UT:			MID				Mod	el:			MID1008-L			
[emp	peratu	re:	25	$^{\circ}$ C			Rela	tive H	umi	dity:	55%			
est	Voltag	je:	AC	120V/	60 Hz									
۸nt.	Pol.		Vert	ical										
est	Mode		TX (	G Mod	de 241	2MHz								
Rem	ark:		N/A											
110.0	) dBu∀/n	1												7
											4			
									$\int$	(RF) FO	C PART	15C (PEA	AK)	
60									$\perp$	(RF) I	CC PAR	T 15C (A)	/G)	
							×					$\top$		
							2 X		,					
10.0														
	36.000 23	346.00	2356.00	2366	5.00 23	376.00 238	6.00	2396.00	240	6.00 24	16.00		2436.00	MH:
N	o. Mk	. F	req.		ading evel	Corre Facto		leasu ment		Limit	(	Over		
		N	ИHz	d	BuV	dB/m		dBuV/r	n	dBuV/	m	dB	Dete	ecto
1		2390	0.000	49	9.66	0.77		50.43	3	74.0	) -	23.57	' pe	ak
2		2390	0.000	3	5.33	0.77		36.10	)	54.0	) -	17.90	) A\	/G
3	Х	2413	3.500	9	7.58	0.86		98.44	1	74.0	0 2	24.44	ре	ak
	*	2414	4.900	86	6.98	0.88		87.86	3	54.0	າ :	33.86	Α١	/G



51 of 85 Page:

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX G Mode 2462MHz					
Remark:	N/A					

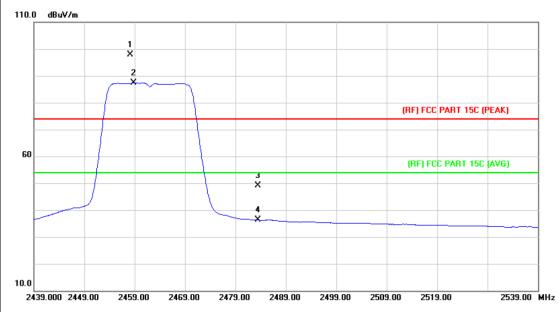


No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2455.100	90.18	1.05	91.23	54.00	37.23	AVG
2	Χ	2458.200	100.40	1.06	101.46	74.00	27.46	peak
3		2483.500	50.64	1.17	51.81	74.00	-22.19	peak
4		2483.500	37.48	1.17	38.65	54.00	-15.35	AVG



Page: 52 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Vertical					
Test Mode:	TX G Mode 2462MHz					
Remark:	N/A					

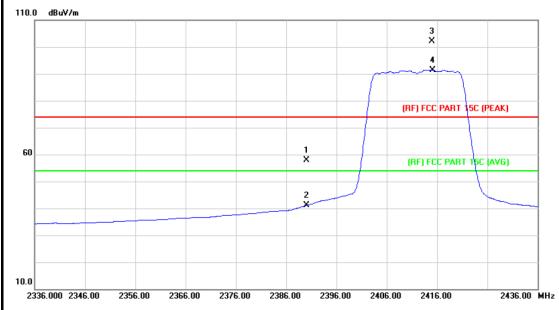


No	o. Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2458.100	96.81	1.06	97.87	74.00	23.87	peak
2	*	2458.800	86.34	1.06	87.40	54.00	33.40	AVG
3		2483.500	47.87	1.17	49.04	74.00	-24.96	peak
4		2483.500	35.12	1.17	36.29	54.00	-17.71	AVG



Page: 53 of 85

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX N(HT20) Mode 2412	MHz					
Remark:	Remark: N/A						
110.0 dBuV/m							

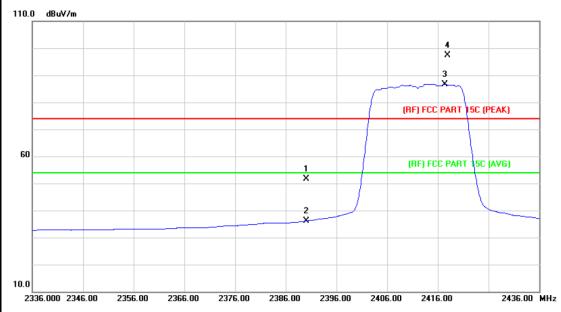


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	57.08	0.77	57.85	74.00	-16.15	peak
2		2390.000	40.37	0.77	41.14	54.00	-12.86	AVG
3	Χ	2415.000	101.33	0.88	102.21	74.00	28.21	peak
4	*	2415.200	90.57	0.88	91.45	54.00	37.45	AVG



Report No.: TB-FCC141573
Page: 54 of 85

EUT:	MID	Model:	MID1008-L			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60 Hz					
Ant. Pol.	Vertical					
Test Mode:	TX N(HT20) Mode 2412N	ИHz				
Remark:	Remark: N/A					
110.0 dBuV/m						

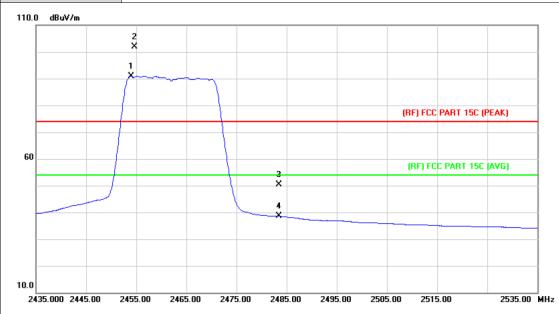


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	50.89	0.77	51.66	74.00	-22.34	peak
2		2390.000	35.38	0.77	36.15	54.00	-17.85	AVG
3	*	2417.400	85.85	0.89	86.74	54.00	32.74	AVG
4	Χ	2417.900	96.59	0.89	97.48	74.00	23.48	peak



Page: 55 of 85

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX N(HT20) Mode 2462N	ИНz					
Remark:							
110.0 dBuV/m	110.0 dBuV/m						



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2454.000	89.89	1.04	90.93	54.00	36.93	AVG
2	Χ	2454.700	100.78	1.05	101.83	74.00	27.83	peak
3		2483.500	49.20	1.17	50.37	74.00	-23.63	peak
4		2483.500	37.35	1.17	38.52	54.00	-15.48	AVG



EUT: MID Model: MID1008-L

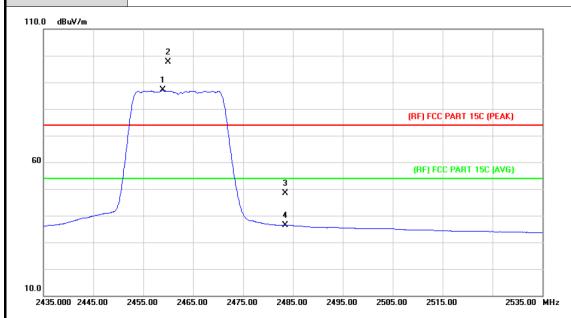
Temperature: 25 °C Relative Humidity: 55%

Test Voltage: AC 120V/60 Hz

Ant. Pol. Vertical

Test Mode: TX N(HT20) Mode 2462MHz

Remark: N/A

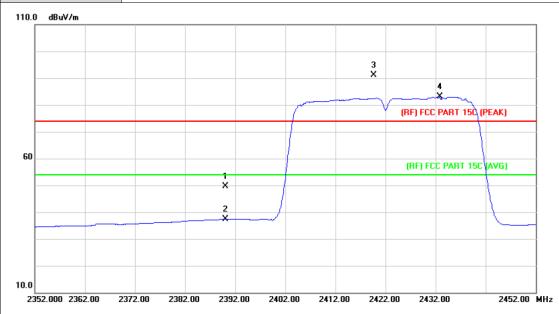


No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2458.900	85.97	1.06	87.03	54.00	33.03	AVG
2	Χ	2460.000	96.65	1.06	97.71	74.00	23.71	peak
3		2483.500	47.29	1.17	48.46	74.00	-25.54	peak
4		2483.500	35.20	1.17	36.37	54.00	-17.63	AVG



57 of 85 Page:

EUT:	MID	Model:	MID1008-L				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60 Hz	AC 120V/60 Hz					
Ant. Pol.	Horizontal						
Test Mode:	TX N(HT40) Mode 2422MHz						
Remark:	N/A						

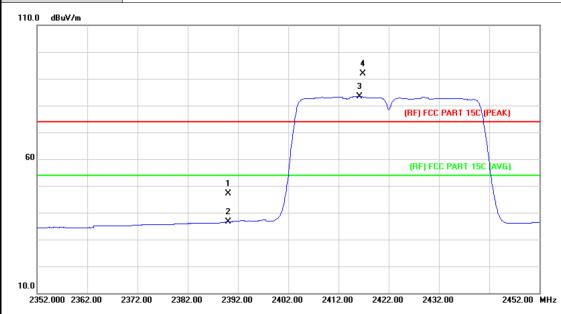


No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	48.77	0.77	49.54	74.00	-24.46	peak
2		2390.000	36.58	0.77	37.35	74.00	-36.65	peak
3	*	2419.682	90.35	0.89	91.24	74.00	17.24	peak
4	Χ	2432.900	82.28	0.95	83.23	74.00	9.23	peak



Page: 58 of 85

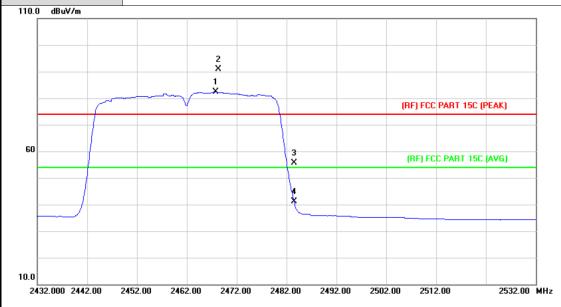
EUT:	MID	Model:	MID1008-L		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	e: AC 120V/60 Hz				
Ant. Pol.	Vertical				
Test Mode:	: TX N(HT40) Mode 2422MHz				
Remark: N/A					
4400 10.44					



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	46.37	0.77	47.14	74.00	-26.86	peak
2		2390.000	35.86	0.77	36.63	54.00	-17.37	AVG
3	*	2416.200	82.50	0.88	83.38	54.00	29.38	AVG
4	Χ	2416.900	91.09	0.88	91.97	74.00	17.97	peak



EUT: MID Model: MID1008-L Temperature: **25** ℃ **Relative Humidity:** 55% Test Voltage: AC 120V/60 Hz Ant. Pol. Horizontal **Test Mode:** TX N(HT40) Mode 2452MHz Remark: N/A 110.0 dBuV/m

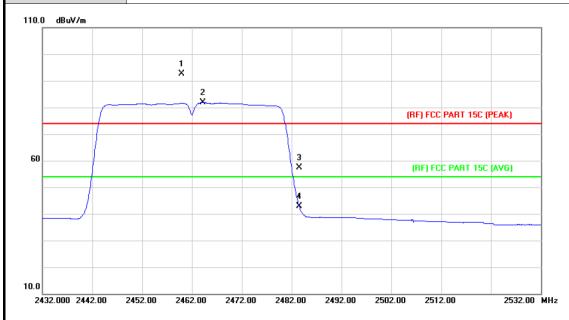


No	o. Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2467.800	81.16	1.10	82.26	54.00	28.26	AVG
2	Χ	2468.370	89.88	1.11	90.99	74.00	16.99	peak
3		2483.500	54.58	1.17	55.75	74.00	-18.25	peak
4		2483.500	39.97	1.17	41.14	54.00	-12.86	AVG

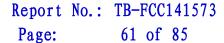


Page: 60 of 85

EUT:	MID	Model:	MID1008-L		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60 Hz				
Ant. Pol.	Vertical				
Test Mode:	TX N(HT40) Mode 2452MHz				
Remark:	N/A				

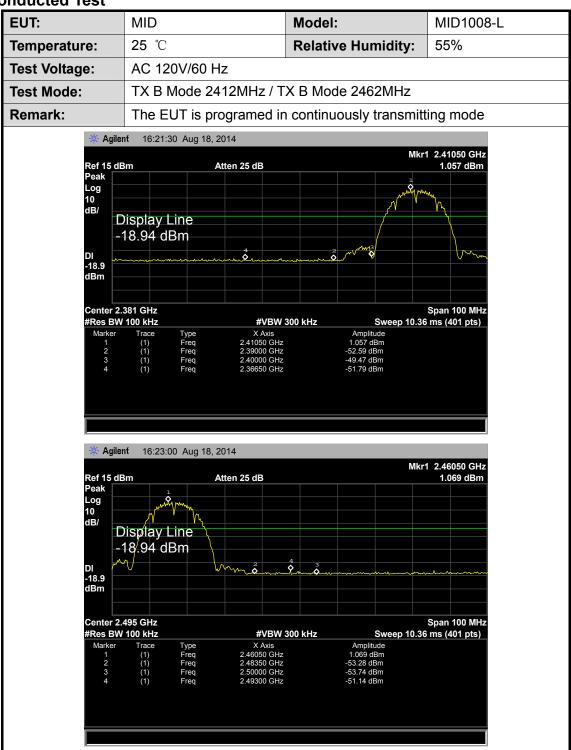


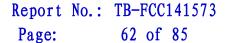
No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2459.940	91.58	1.06	92.64	74.00	18.64	peak
2	*	2464.200	80.71	1.08	81.79	54.00	27.79	AVG
3		2483.500	56.09	1.17	57.26	74.00	-16.74	peak
4		2483.500	41.64	1.17	42.81	54.00	-11.19	AVG





(2) Conducted Test



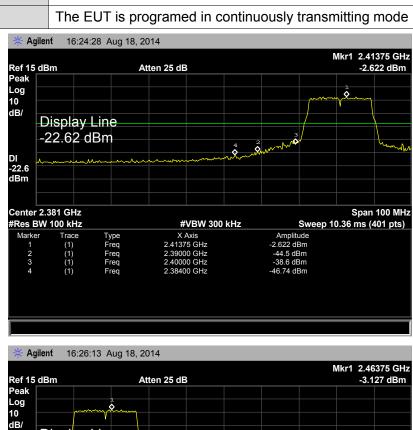


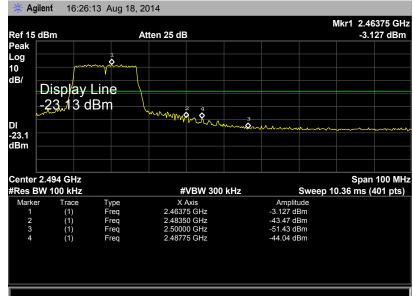


EUT: MID Model: MID1008-L 25 ℃ **Relative Humidity:** 55% Temperature: **Test Voltage:** AC 120V/60 Hz

**Test Mode:** TX G Mode 2412MHz / TX G Mode 2462MHz

Remark:

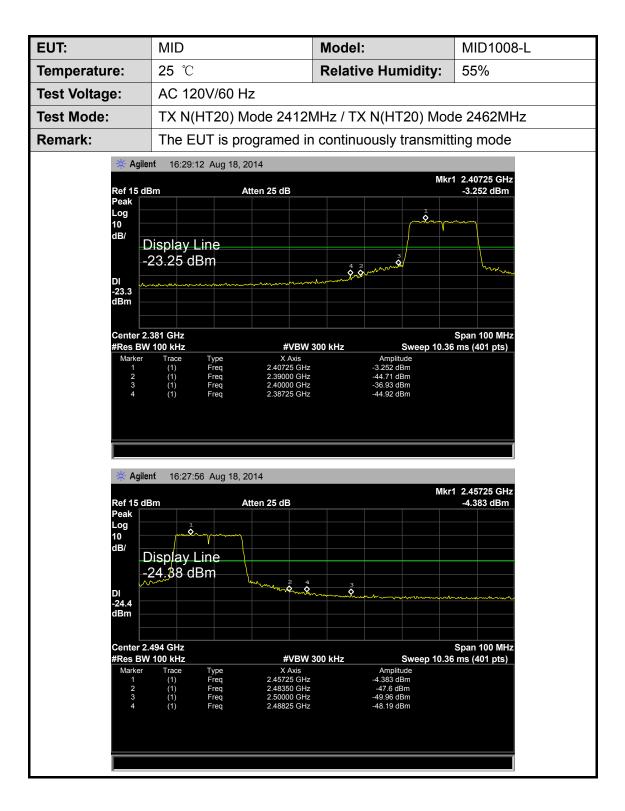








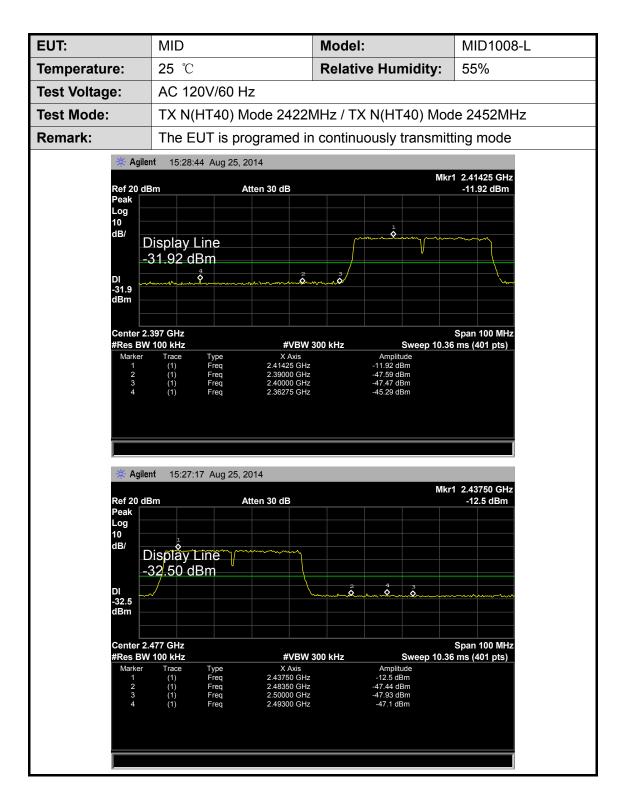
Page: 63 of 85







Page: 64 of 85





Report No.: TB-FCC141573

Page: 65 of 85

## 6. Bandwidth Test

#### 6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.247 (a)(2)

6.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210					
Test Item Limit Frequency Range(MHz					
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5			

## 6.2 Test Setup



## 6.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

## 6.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.

## 6.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015

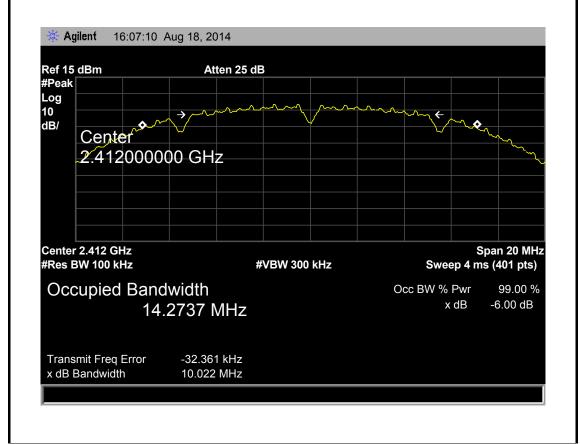




## 6.6 Test Data

EUT:	EUT: MID		MID1008-L		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60 Hz				
Test Mode:	TX 802.11B Mode				
Channel frequence	cy 6dB Bandwidth	99% Bandwidth	Limit		
(MHz)	(MHz)	(MHz)	(MHz)		
2412	10.022	14.2737			
2437	9.995	14.2702	>=0.5		
2462	10.003	14.2896			
802.11B Mode					

## 2412 MHz

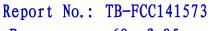


66 of 85





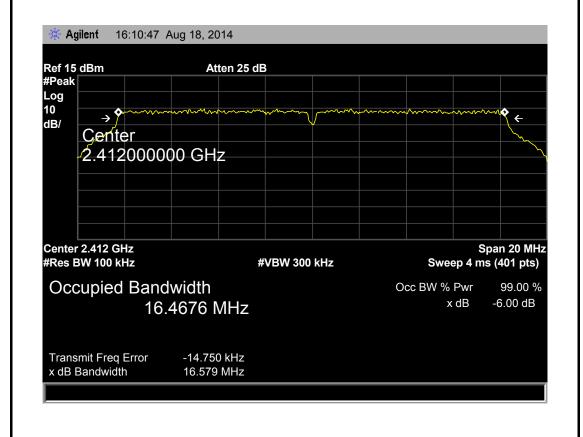
802.11B Mode 2437 MHz Agilent 16:08:03 Aug 18, 2014 Ref 15 dBm Atten 25 dB #Peak Log 10 22 dB/ Center 2.437000000 GHz Center 2.437 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 14.2702 MHz Transmit Freq Error x dB Bandwidth -46.680 kHz 9.995 MHz 802.11B Mode 2462 MHz 16:09:36 Aug 18, 2014 Agilent Ref 15 dBm Atten 25 dB #Peak Log 10 Q<sub>0</sub> dB/ Center

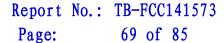




Page: 68 of 85

EUT:	MID	Model:	MID1008-L		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60 Hz				
Test Mode:	TX 802.11G Mode				
Channel frequence	cy 6dB Bandwidth	99% Bandwidth	Limit		
(MHz)	(MHz)	(MHz)	(MHz)		
2412	16.579	16.4676			
2437	16.580	16.5179	>=0.5		
2462	16.594	16.4758			
802.11G Mode					







#Res BW 100 kHz

Transmit Freq Error

x dB Bandwidth

Occupied Bandwidth

16.4758 MHz

-29.770 kHz

16.594 MHz

802.11G Mode 2437 MHz Agilent 16:11:21 Aug 18, 2014 Ref 15 dBm Atten 25 dB #Peak Log 10 → 🕎 **?** ← dB/ Center 2.437000000 GHz Center 2.437 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 16.5179 MHz Transmit Freq Error x dB Bandwidth -31.902 kHz 16.580 MHz 802.11G Mode 2462 MHz Agilent 16:12:00 Aug 18, 2014 Ref 15 dBm Atten 25 dB #Peak Log 10  $\rightarrow$ dB/ Center 2.462000000 GHz Center 2.462 GHz Span 20 MHz

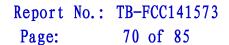
**#VBW 300 kHz** 

Sweep 4 ms (401 pts)

99.00 % -6.00 dB

Occ BW % Pwr

x dB

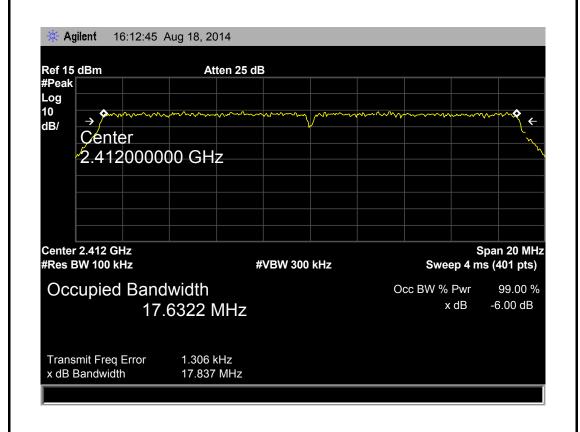


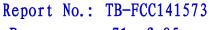


EUT:MIDModel:MID1008-LTemperature:25 °CRelative Humidity:55%Test Voltage:AC 120V/60 HzTest Mode:TX 802.11N(HT20) Mode

rest mode.	17. 002.1114(11120) Wood	•	
Channel frequence	cy 6dB Bandwidth	99% Bandwidth	Limit
(MHz)	(MHz)	(MHz)	(MHz)
2412	17.837	17.6322	
2437	17.818	17.6220	>=0.5
2462	17.837	17.6376	

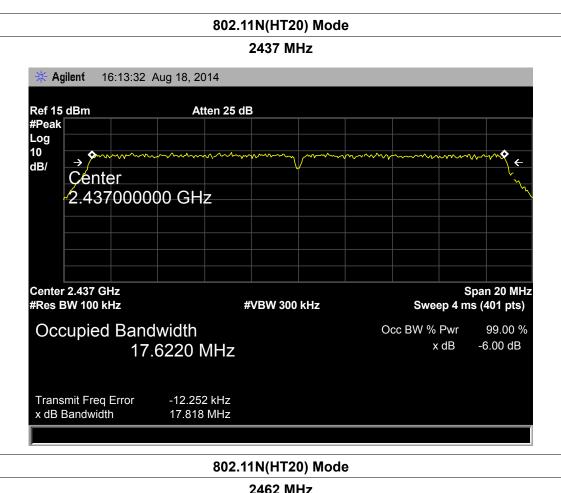
## 802.11N(HT20) Mode

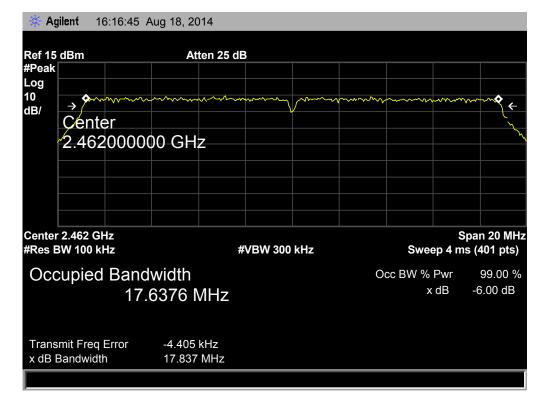


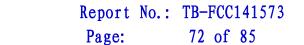




Page: 71 of 85



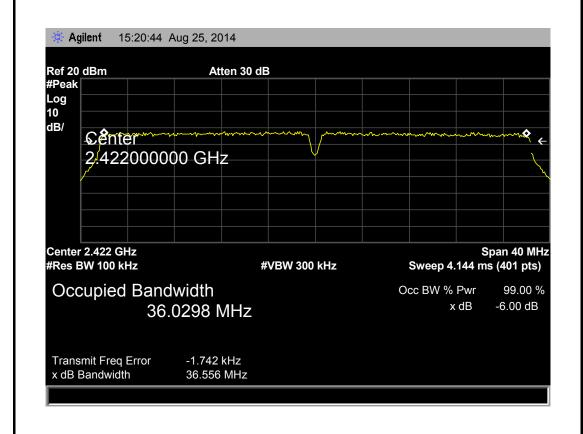


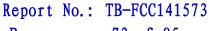




EUT: MID Model: MID1008-L 25 ℃ Temperature: **Relative Humidity:** 55% Test Voltage: AC 120V/60 Hz **Test Mode:** TX 802.11N(HT40) Mode **Channel frequency** 6dB Bandwidth 99% Bandwidth Limit (MHz) (MHz) (MHz) (MHz) 36.556 36.0298 2422 2437 36.524 35.9991 >=0.5 2452 36.511 36.0148

#### 802.11N(HT40) Mode







Center 2.452 GHz

#Res BW 100 kHz

Transmit Freq Error

x dB Bandwidth

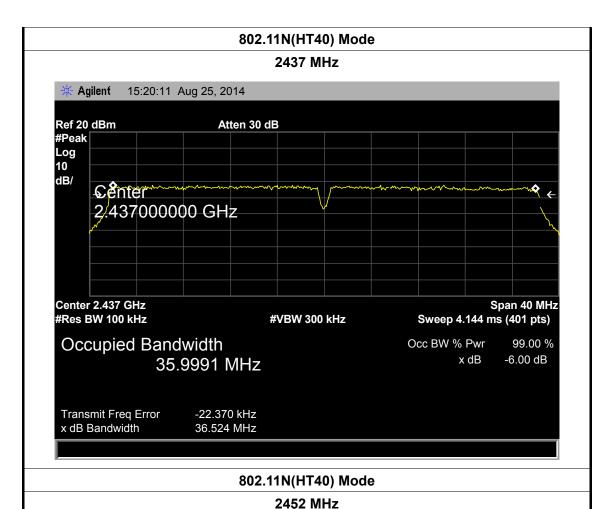
Occupied Bandwidth

36.0148 MHz

-26.290 kHz

36.511 MHz

Page: 73 of 85



### 

**#VBW 300 kHz** 

Span 40 MHz

99.00 % -6.00 dB

Sweep 4.144 ms (401 pts)

x dB

Occ BW % Pwr



Page: 74 of 85

# 7. Peak Output Power Test

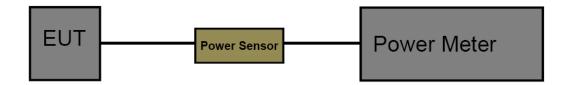
#### 7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.247 (b)

7.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210			
Test Item Limit Frequency R		Frequency Range(MHz)	
Peak Output Power	1 Watt or 30 dBm	2400~2483.5	

### 7.2 Test Setup



### 7.3 Test Procedure

The measurement is according to section 9.1.2 of KDB 558074 D01 DTS Meas Guidance v03r02.

The EUT was connected to RF power meter via a broadband power sensor as show the block above. The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

# 7.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

### 7.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Power Meter	Anritsu	ML2495A	25406005	Dec. 20, 2013	Dec. 19, 2014
Power Sensor	Anritsu	ML2411B	25406005	Dec. 20, 2013	Dec. 19, 2014

#### 7.6 Test Data



Page: 75 of 85

EUT:	MID	Model:	MID1008-L
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60 HZ		
Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
	2412	9.35	
802.11b	2437	9.12	
	2462	9.56	
	2412	9.46	
802.11g	2437	9.25	
	2462	9.26	20
000 44	2412	9.45	30
802.11n (HT20)	2437	9.29	
	2462	9.29	
000 44	2422	9.15	
802.11n	2437	9.56	
(HT40)	2452	9.22	



Page: 76 of 85

# 8. Power Spectral Density Test

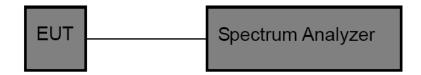
#### 8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (e)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)			
Test Item	Frequency Range(MHz)		
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5	

### 8.2 Test Setup



#### 8.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v03r02.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser center frequency to DTS channel center frequency.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz(5) Set the VBW to: 10 kHz
- (6) Detector: peak (7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

# 8.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.



Page: 77 of 85

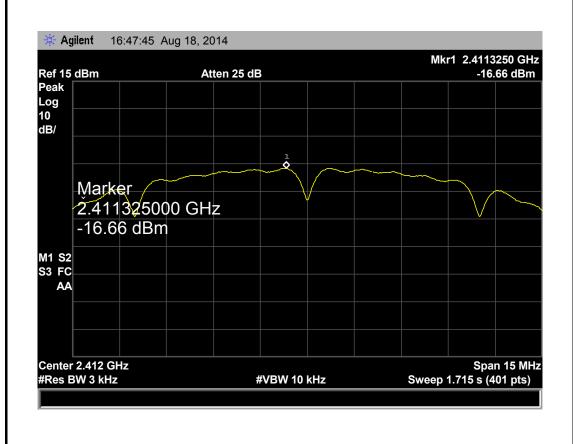
# 8.5 Test Equipment

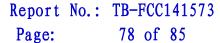
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015

### 8.6 Test Data

EUT:	MID		Model:		MID1008-L
Temperature:	25 ℃		Relative Humidity:		55%
Test Voltage:	AC 120V/	60 HZ			
Test Mode:	TX 802.11B Mode				
Channel Frequency Power D		Density		Limit (dBm)	
(MHz)		(3 kHz/dBm)			
2412	2412		.66		
2437		-16.52			8
2462		-16.39			
802.11B Mode					



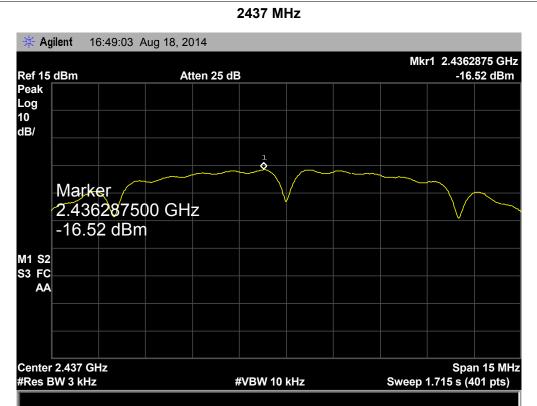






802.11B Mode
2437 MHz

Agilent 16:49:03 Aug 18, 2014



### 802.11B Mode 2462 MHz Agilent 16:49:55 Aug 18, 2014 Mkr1 2.4613250 GHz -16.39 dBm Atten 25 dB Ref 15 dBm Peak Log 10 dB/ Marker 2.461325000 GHz -16.39 dBm M1 S2 S3 FC AA Center 2.462 GHz Span 15 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 1.715 s (401 pts)

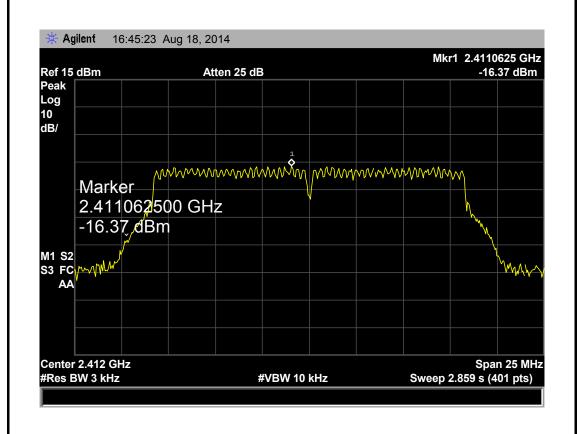


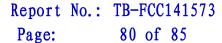
EUT:MIDModel:MID1008-LTemperature:25 °CRelative Humidity:55%Test Voltage:AC 120V/60 HZTest Mode:TX 802.11G Mode

Channel Frequency (MHz)	Power Density (3 kHz/dBm)	Limit (dBm)
2412	-16.37	
2437	-16.40	8
2462	-16.94	

#### 802.11G Mode

#### 2412 MHz







Center 2.462 GHz

#Res BW 3 kHz

802.11G Mode 2437 MHz Agilent 16:46:04 Aug 18, 2014 Mkr1 2.4348125 GHz -16.4 dBm Ref 15 dBm Atten 25 dB Peak Log 10 dB/  $\frac{1}{\sqrt{2}}$ Marker 2.434812500 GHz -16.4 dBm M1 S2 S3 FC AA Center 2.437 GHz Span 25 MHz #Res BW 3 kHz Sweep 2.859 s (401 pts) #VBW 10 kHz 802.11G Mode 2462 MHz 16:46:42 Aug 18, 2014 Agilent Mkr1 2.4629375 GHz -16.94 dBm Ref 15 dBm Atten 25 dB Peak Log 10 dB/ WWW.WWW.WW Marker 2.46293<mark>7</mark>500 GHz -16.94 dBm M1 S2 S3 FC AA

#VBW 10 kHz

Span 25 MHz

Sweep 2.859 s (401 pts)



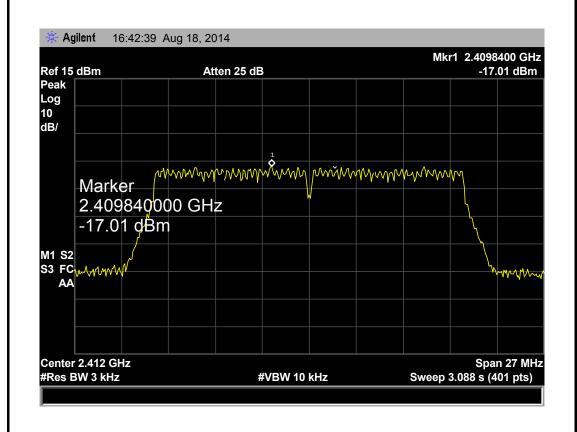
EUT:MIDModel:MID1008-LTemperature:25 °CRelative Humidity:55%Test Voltage:AC 120V/60 HZ

Test Mode: TX 802.11N(HT20) Mode

Channel Frequency	Power Density	Limit (dBm)
(MHz)	(3 kHz/dBm)	
2412	-14.34	
2437	-25.05	8
2462	-24.20	

#### 802.11N(HT20) Mode

#### 2412 MHz







802.11N(HT20) Mode 2437 MHz Agilent 16:43:17 Aug 18, 2014 Mkr1 2.4392275 GHz -16.82 dBm Ref 15 dBm Atten 25 dB Peak Log 10 dB/ MWW.WWW.WWW hpmmhm, minhm Marker 2.439227500 GHz -16.82 dBm M1 S2 S3 FC AA moush Center 2.437 GHz Span 27 MHz #Res BW 3 kHz Sweep 3.088 s (401 pts) #VBW 10 kHz 802.11N(HT20) Mode 2462 MHz Agilent 16:43:53 Aug 18, 2014 Mkr1 2.4553850 GHz -17.15 dBm Ref 15 dBm Atten 25 dB Peak Log 10 dB/ mmymmmmm Marker

#VBW 10 kHz

2.455385000 GHz

-17.15 dBm

WWw

Center 2.462 GHz

#Res BW 3 kHz

M1 S2 S3 FC

AA



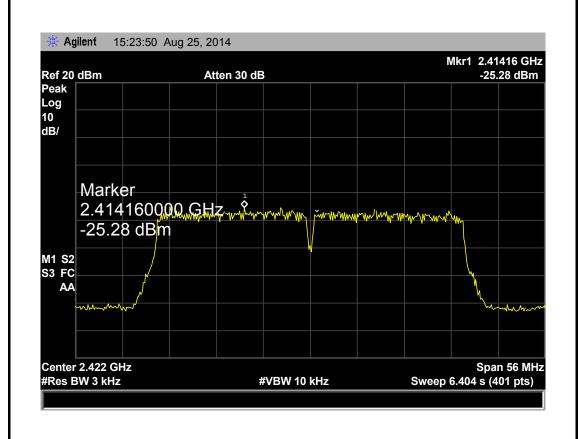
EUT:MIDModel:MID1008-LTemperature:25 °CRelative Humidity:55%Test Voltage:AC 120V/60 HZ

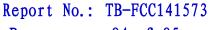
Test Mode: TX 802.11N(HT40) Mode

I	Channel Frequency	Power Density	Limit (dBm)
l	(MHz)	(3 kHz/dBm)	
	2422	-25.28	
	2437	-24.97	8
I	2452	-25.34	

### 802.11N(HT40) Mode

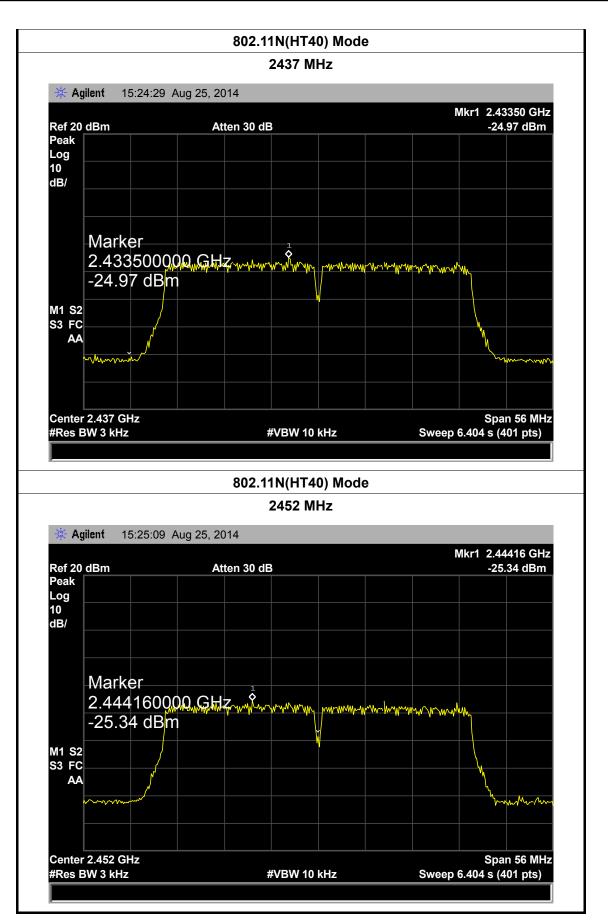
#### 2422 MHz







Page: 84 of 85





Page: 85 of 85

# 9. Antenna Requirement

### 9.1 Standard Requirement

9.1.1 Standard FCC Part 15.203

#### 9.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### 9.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 0dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

#### 9.3 Result

The EUT antenna is a FPC Antenna. It complies with the standard requirement.