

CFR 47 FCC PART 15 SUBPART C ISED RSS-247 ISSUE 2

TEST REPORT

For

WIFI+BT Module

MODEL NUMBER: WCT5HM2511

FCC ID: 2AC23-WCT5H

IC: 12290A-WCT5H

REPORT NUMBER: 4789290585.1-11

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Prepared for

Hui Zhou Gaoshengda Technology Co.,LTD NO.75 Zhongkai Development Area Huizhou, Guangdong China

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, People's Republic of China Tel: +86 769 22038881 Fax: +86 769 33244054 Website: www.ul.com



Revision History

Rev.	Issue Date	Revisions	Revised By
V0	3/18/2020	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC/ISED Rules	Test Results
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
2	Peak Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)	Pass
		FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	4 Conducted Bandedge and Spurious Emission FCC Part 15.247 (d) RSS-247 Clause 5.5		Pass
5 Radiated Bandedge and Spurious Emission		FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	Pass
Note: This test report is only published to and used by the applicant, and it is not for evidence purpose in China.			



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Hui Zhou Gaoshengda Technology Co.,LTD
Address:	NO.75 Zhongkai Development Area Huizhou, Guangdong China

Manufacturer Information

Company Name:	Hui Zhou Gaoshengda Technology Co.,LTD
Address:	NO.75 Zhongkai Development Area Huizhou, Guangdong China

EUT Description

EUT Name:	WIFI+BT Module
Model:	WCT5HM2511
Brand:	GSD
Sample Status:	Normal
Sample ID:	2755848
Sample Received Date:	January 3, 2020
Date of Tested:	January 3, 2020~March 18, 2020

APPLICABLE STANDARDS			
STANDARD TEST RESULTS			
CFR 47 FCC PART 15 SUBPART C	PASS		
ISED RSS-247 Issue 2	PASS		
ISED RSS-GEN Issue 5	PASS		

Prepared By:

Kebo. zhung.

Checked By:

Sherry lies

Kebo Zhang Project Engineer

Approved By:

Apphendus

Stephen Guo Laboratory Manager Shawn Wen Laboratory Leader



2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	 A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules ISED(Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320. VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name:

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty	
Conduction emission	3.62dB	
Radiation Emission test(include Fundamental emission) (9kHz-30MHz)	2.2dB	
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB	
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.78dB (1GHz-18Gz)	
	5.23dB (18GHz-26Gz)	
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	WIFI+BT Module		
Model WCT5HM2511			
Radio Technology IEEE802.11b/g/n HT20/n HT40			
Operation frequency IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz			
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)		
Power Supply	DC 5V		

5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max AVG Conducted Power (dBm)
1	IEEE 802.11b	2412-2462	1-11[11]	18.01
1	IEEE 802.11g	2412-2462	1-11[11]	15.40
1	IEEE 802.11nHT20	2412-2462	1-11[11]	14.55
1	IEEE 802.11nHT40	2422-2452	3-9[7]	14.32

5.3. CHANNEL LIST

	Channel List for 802.11b/g/n									
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)			
1	2412	4	2427	7	2442	10	2457			
2	2417	5	2432	8	2447	11	2462			
3	2422	6	2437	9	2452	/	/			

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH1,CH6,CH11/	2412MHz, 2437MHz, 2462MHz
VVII 1 1×(802.11b)	Low, Middle, High	241210112, 243710112, 240210112
WiFi TX(802.11g)	CH1,CH6,CH11/	2412MHz, 2437MHz, 2462MHz
WIFT TX(802.11g)	Low, Middle, High	241210112, 243710112, 240210112
WiFi TX(802.11n HT20)	CH1,CH6,CH11/	2412MHz, 2437MHz, 2462MHz
WIFT TX(802.11111120)	Low, Middle, High	241210112, 243710112, 240210112
WiFi TX(802.11n HT40)	CH3,CH6,CH9/	2422MHz, 2437MHz, 2452MHz
WIFT TX(802.1111H140)	Low, Middle, High	



5.5. THE WORSE CASE POWER SETTING PARAMETER

The W	The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band									
Test Software		QATool_Dbg								
Madulation	Transmit		Test Software Setting Value							
Modulation Mode	Antenna	1	NCB: 20MH	lz	NCB: 40MHz					
Wode	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9			
802.11b	1	1D	1D	1E						
802.11g	1	1C	1D	1B	/					
802.11n HT20	1	1D	1D	1B						
802.11n HT40	1		/		13	1D	16			

5.6. THE WORSE CASE CONFIGURATIONS

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps 802.11g mode: 6 Mbps 802.11n HT20 mode: MCS0 802.11n HT40 mode: MCS0

5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna model	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
WCT5H-20	2402-2480	PIFA Antenna	2.77
WCT5H-40	2402-2480	PIFA Antenna	2.60
WCT5H-60	2402-2480	PIFA Antenna	2.71

Note: The Antenna WCT5H-20/ WCT5H-40/ WCT5H-60 are the same type antenna, they differ only in line length, we use the worst kind WCT5H-20 to test.

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	⊠1TX, 1RX	Chain 0 can be used as transmitting/receiving antenna.
IEEE 802.11g	⊠1TX, 1RX	Chain 0 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	⊠1TX, 1RX	Chain 0 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	⊠1TX, 1RX	Chain 0 can be used as transmitting/receiving antenna.



5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	PC	Dell	Vostro 3902	8KNDDB2
2	USB TO UART	/	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0	/

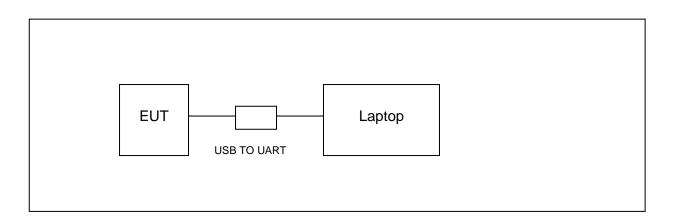
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
1	/	/	/	/

TEST SETUP

The EUT can work in engineering mode with a software.

SETUP DIAGRAM FOR TESTS





6. MEASURING INSTRUMENT AND SOFTWARE USED

			Cond	ducte	d Emis	sion	s			
				Inst	rument					
Used	Equipment	Manufacturer		Mode	el No.		Seria	l No.	Last Cal.	Next Cal.
\checkmark	EMI Test Receiver	R&S		ES	R3		101	961	Dec.05,2019	Dec.05,2020
V	Two-Line V- Network	R&S	ENV216				101983		Dec.05,2019	Dec.05,2020
V	Artificial Mains Networks	Schwarzbeck		NSLK	8126		8126	6465	Dec.05,2019	Dec.05,2020
										1
Used		Description	1				Manufa	acturer	Name	Version
	☑ Test Software for Conducte				nce		Fa	rad	EZ-EMC	Ver. UL-3A1
			Rad	liated	Emiss	ions				
				Inst	rument					
Used	Equipment	Manufacturer		Mode	el No.		Seria	l No.	Last Cal.	Next Cal.
	MXE EMI Receiver	KESIGHT		N90	38A		MY564	00036	Dec.06,2019	Dec.05,2020
	Hybrid Log Periodic Antenna	TDK	ок ні		HLP-3003C		130960		Sep.17,2018	Sep.17,2021
	Preamplifier	HP	HP		8447D		2944A09099		Dec.05,2019	Dec.05,2020
V	EMI Measurement Receiver	R&S		ESR26		101377		Dec.05,2019	Dec.05,2020	
	Horn Antenna	TDK		HRN-0118		130939		Sep.17,2018	Sep.17,2021	
V	High Gain Horn Antenna	Schwarzbeck	I	BBHA-9170		691		Aug.11,2018	Aug.11,2021	
V	Preamplifier	TDK		PA-02-0118		TRS-305- 00067		Dec.05,2019	Dec.05,2020	
V	Preamplifier	TDK		PA-	02-2		TRS-307- 00003		Dec.05,2019	Dec.05,2020
	Loop antenna	Schwarzbeck			19B		000	800	Jan.07,2019	Jan.07,2022
V	Band Reject Filter	Wainwright	2483	8.5-25	2350-24 33.5-40	SS	2	1	Dec.05,2019	Dec.05,2020
V	High Pass Filter	Wi			2700-30)-40SS	00-	2	3	Dec.05,2019	Dec.05,2020
				So	ftware					
Used	De	scription			Man	ufact	turer		Name	Version
	Test Software for	r Radiated dist	diated disturbanc		F	arac	k		EZ-EMC	Ver. UL-3A1
			Oth	ner ir	strume	ents				
Used	Equipment	Manufac	turer	Moc	lel No.	S	erial No	D.	Last Cal.	Next Cal.
\checkmark	Spectrum Analyz	er Keysig	ght	N9	030A	MY	′554105	12 [Dec.06,2019	Dec.05,2020
\checkmark	Power Meter	Keysi	ght	N1	911A	MY	554160)24 D	ec.06,2019	Dec.05,2020
\checkmark	Power Sensor	r Keysią	ght	U20	21XA	MY	581000)22 D	ec.06,2019	Dec.05,2020



7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

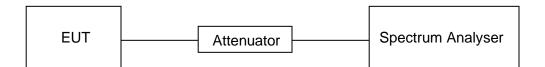
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



TEST ENVIRONMENT

Temperature	25.7°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V

RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (KHz)	Final setting For VBW (KHz)
11b	8.380	8.420	0.995	99.5%	0.02	0.12	0.01
11g	1.390	1.425	0.975	97.5%	0.11	0.72	1.0
11n20	1.302	1.340	0.972	97.2%	0.12	0.77	1.0
11n40	0.648	0.682	0.950	95.0%	0.22	1.54	2.0

Note:

Duty Cycle Correction Factor=10log (1/x).

Where: x is Duty Cycle (Linear)

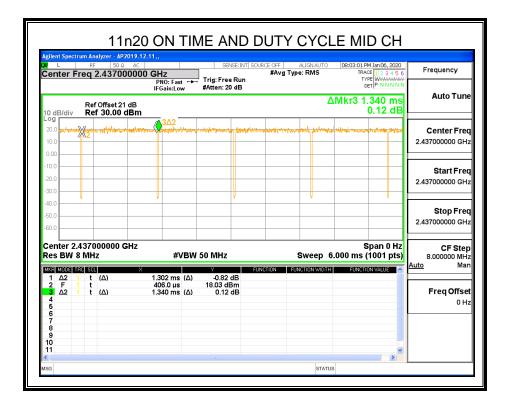
Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used. For mode 11b, the duty cycle is greater than 98%, so it can set VBW to 10Hz.

U L	um Analyzer - A RF 50 reg 2.437(Ω AC			SEN	5E:INT SO		ALIGN Type: Log			M Jan 06, 2020 CE 1 2 3 4 5	
	req 2.437	00000	PNO: Fast IFGain:Lov		Trig: Free Atten: 20		018	Type. Log	-1 941	D	PE WWWWWWWWWWWWWWW	Ň.
10 dB/div	Ref 10.00	dBm							Δ		.420 ms 0.08 dE	
og							3∆2					
0.00		×2					-					Center Free
-10.0												2.437000000 GH
30.0							_					Start Free
50.0												2.437000000 GH
60.0		·					_					Stop Free
70.0												2.437000000 GH
80.0												2.437000000 GH
Center 2. Res BW 8	437000000 8 MHz	GHz	#\	BW	50 MHz			Swe	ep 20		Span 0 Hz (1001 pts	8.000000 MH
MKR MODE T		×	8.380 ms	(4)	Y 0.57 (UNCTION	FUNCTION	WIDTH	FUNCT	ON VALUE	Auto Mar
1 <u>A2</u> 1 2 F 1	t (Δ) t		3.640 ms		0.57 dE							
3 ∆2 1 4	t (Δ)		8.420 ms	(Δ)	-0.08 (B						Freq Offse
5												0 H
6 7												
8 9												
10												
11												



L	n Analyzer - AP20 RF 50 Ω eq 2.437000	AC 0000 GH PN	Z 0:Fast ↔		in Š	ALIGN AUTO J Type: Log-Pwr	TR	PM Jan 06, 2020 ACE 1 2 3 4 5 6 FYPE WWWWWWWW DET P N N N N N	Frequency
) dB/div	Ref 10.00 d		ain:Low	Atten: 20 db			<u>Mkr3</u>	1.425 ms -0.16 dB	Auto Tur
og ""	สโรคสารณ์สูงการสาร	(i	`3∆2 ∽	to all and an an	drupping powers	สหารใหญ่มาสุขสมสรรรไ	Pealling #47,1844/84	un u	Center Fre 2.437000000 GH
D.0 D.0 D.0									Start Fre 2.437000000 GH
0.0			<u> </u>		γ 				Stop Fre 2.437000000 GH
enter 2.43 es BW 8 I	37000000 GI MHz	Hz	#VBW	50 MHz		Sweep		Span 0 Hz (1001 pts)	CF Ste 8.000000 MH
32 MODDE HTEC 1 ∆2 1 2 F 1 3 ∆2 1 4 5 6 7 8 9	t (Δ) t (Δ) t (Δ)	120	00 ms (Δ)).0 μs 55 ms (Δ)	Y 0.45 dB -2.31 dBm -0.16 dB	FUNCTION	FUNCTION WIDTH	FUNC	TION VALUE	Auto Ma Freq Offs 0 H
0								~	





Agilent Spectrum Analyzer - AP20		ME AND	DUTY CYCI	E MID CH	
Center Freq 2.43700			BOURCE OFF ALIGN AUTO #Avg Type: RMS	08:01:45 PM Jan 06, 2020 TRACE 1 2 3 4 5 6 TYPE WWWWWWW	Frequency
Ref Offset 21	IFGain:Low	#Atten: 20 dB		۵ <mark>۳ ۹ ۵۵۲.۵ ΔMkr3 ۵82.0 µs</mark> -36.56 dB	Auto Tune
20.0 10.0 0.00	Nuthermonal And Junior Market	numerin production for	Harvellauraniersmallerithein and	war programme with the state	Center Freq 2.437000000 GHz
-10.0 -20.0 -30.0	3∆2				Start Freq 2.437000000 GHz
40.0 50.0 60.0					Stop Freq 2.437000000 GHz
Center 2.437000000 G Res BW 8 MHz		50 MHz	Sweep 3	Span 0 Hz 3.000 ms (1001 pts)	CF Step 8.000000 MHz <u>Auto</u> Man
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	648.0 μs (Δ) 227.0 μs 682.0 μs (Δ)	5.25 dB 10.87 dBm -36.56 dB			Freq Offset 0 Hz
8 9 10 11		m		×	
MSG			STATU	S	



7.2. 6 dB DTS BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2						
Section	Frequency Range (MHz)					
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500KHz	2400-2483.5			
ISED RSS-Gen Clause 6.7	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5			

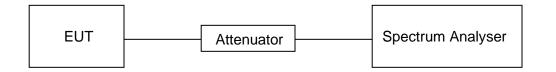
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6dB Bandwidth :100kHz For 99% Occupied Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Occupied Bandwidth : ≥3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99% relative to the maximum level measured in the fundamental emission.

TEST SETUP





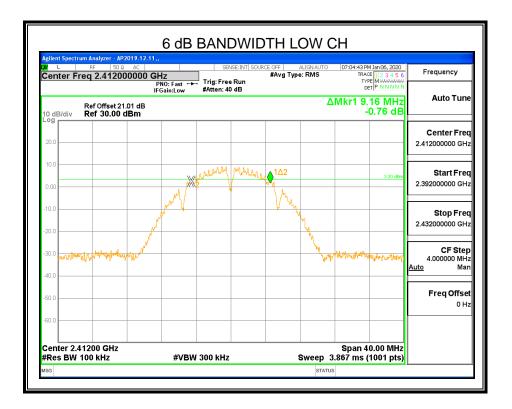
TEST ENVIRONMENT

Temperature	25.7°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V

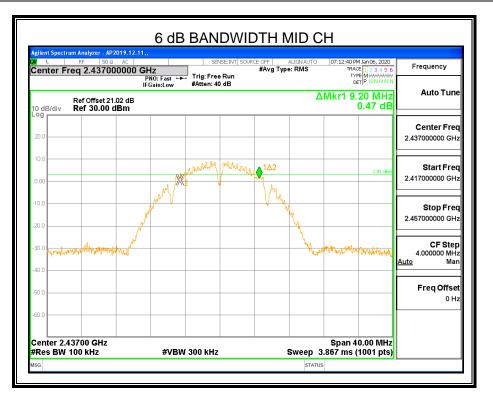
RESULTS

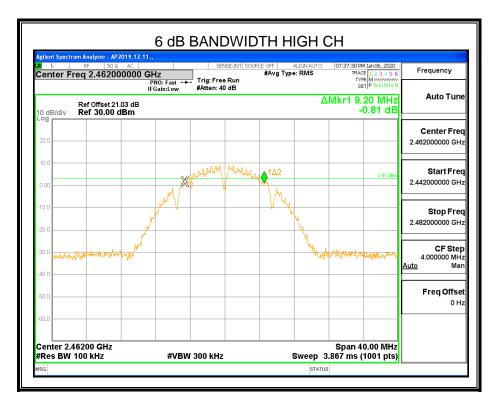
7.2.1. 802.11b MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	9.16	14.019	≥500	Pass
Middle	9.20	13.932	≥500	Pass
High	9.20	13.964	≥500	Pass

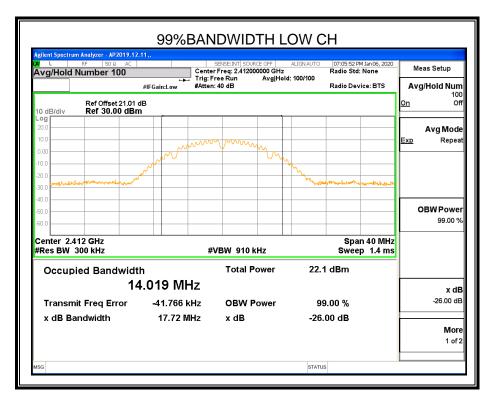


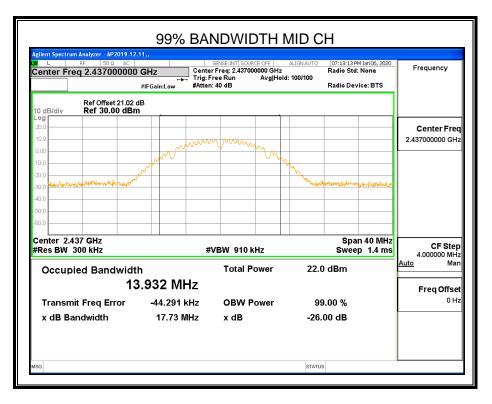




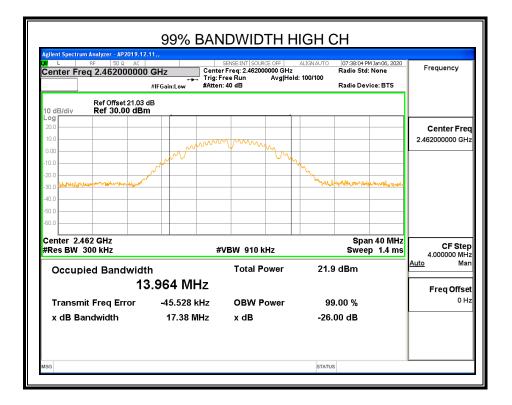






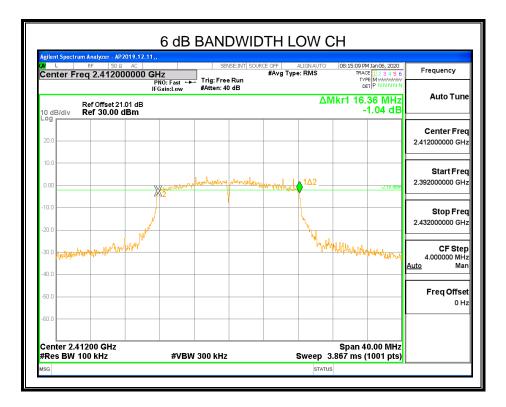




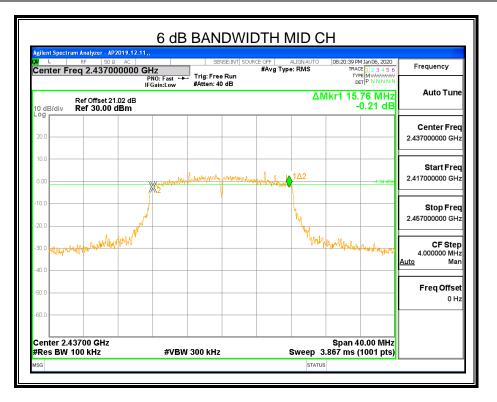


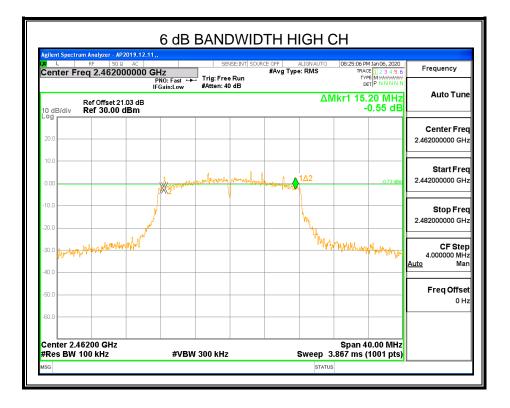
7.2.2. 802.11g MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	16.36	16.598	≥500	Pass
Middle	15.76	16.643	≥500	Pass
High	15.20	16.616	≥500	Pass

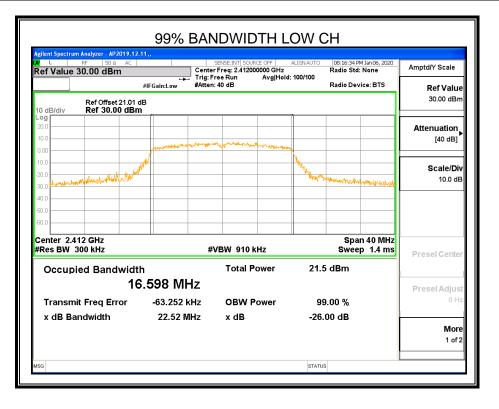


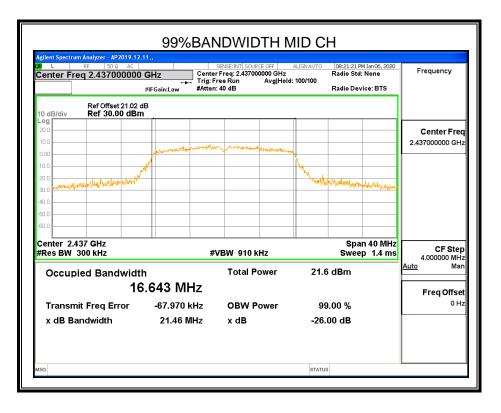




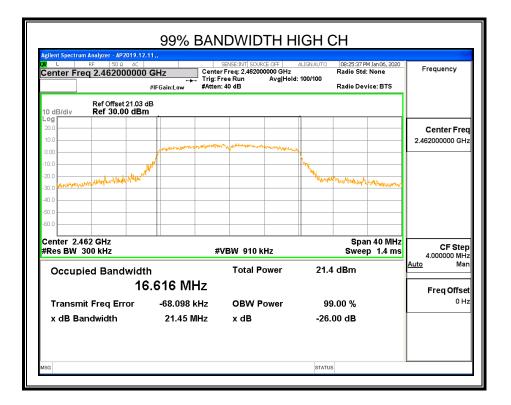






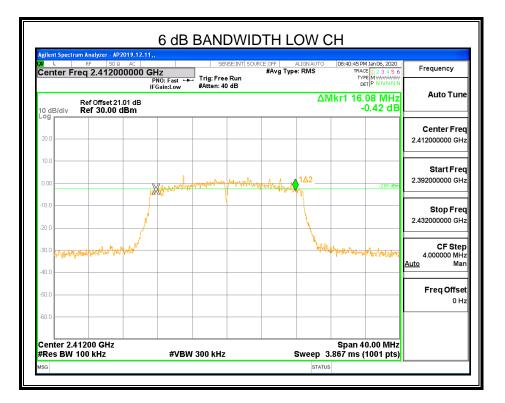


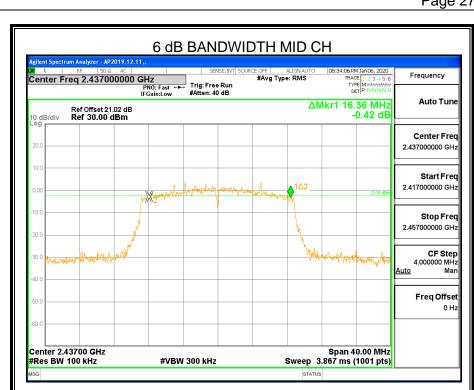


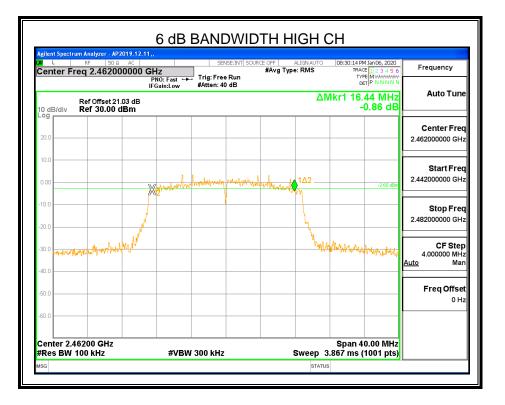


7.2.3. 802.11n HT20 MODE

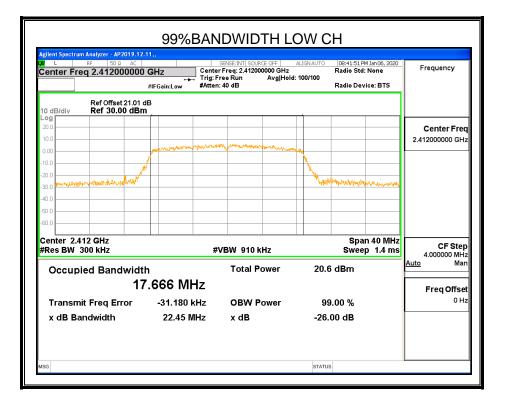
Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	16.08	17.666	≥500	Pass
Middle	16.36	17.667	≥500	Pass
High	16.44	17.707	≥500	Pass

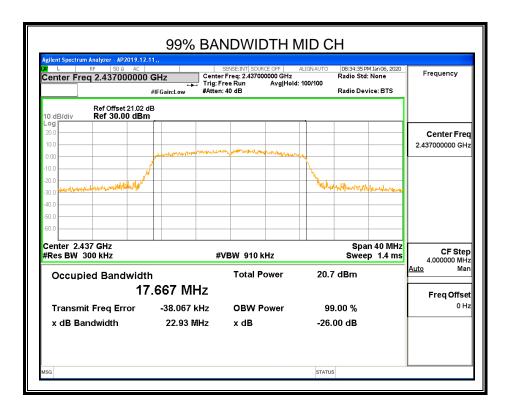








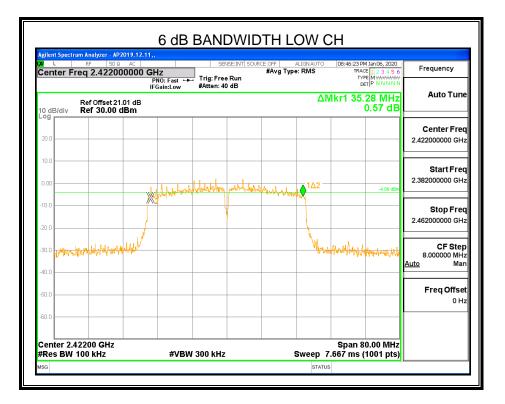




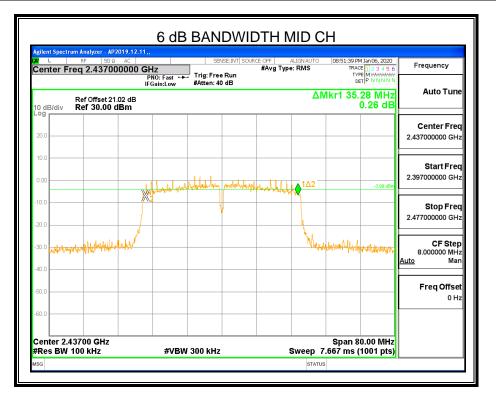
	99% BA		HIGH C	Н	
Agilent Spectrum Analyzer - AP2019.12.	И.,				
Center Freg 2.462000000	CH- Cen	SENSE:INT SOURCE OFF		08:30:43 PM Jan 06, 2020 Radio Std: None	Frequency
Center Fred 2.482000000	Trig	Free Run Avg Ho	ld: 100/100		
	#IFGain:Low #Atto	en: 40 dB	ŀ	Radio Device: BTS	
Ref Offset 21.03 d 10 dB/div Ref 30.00 dBm					
10 dB/div Ref 30.00 dBm Log					
20.0					Center Freq
10.0		many and water and an and and			2.462000000 GHz
0.00	Art all the second second	A State of the second s	~~~		
-10.0			- h		
-20.0 -30.0 Number of the state			William	Under Many winapating	
				and a set of the late of the late of the	
-40.0					
-50.0					
-60.0					
Center 2.462 GHz #Res BW 300 kHz		#VBW 910 kHz	<u> </u>	Span 40 MHz Sweep 1.4 ms	CF Step 4.000000 MHz
Occupied Bandwidth		Total Power	20.5 c	dBm	<u>Auto</u> Man
	.707 MHz				Freq Offset
Transmit Freq Error	-29.602 kHz	OBW Power	99.0	00 %	0 Hz
x dB Bandwidth	22.75 MHz	x dB	-26.00	dB	
MSG			STATUS		

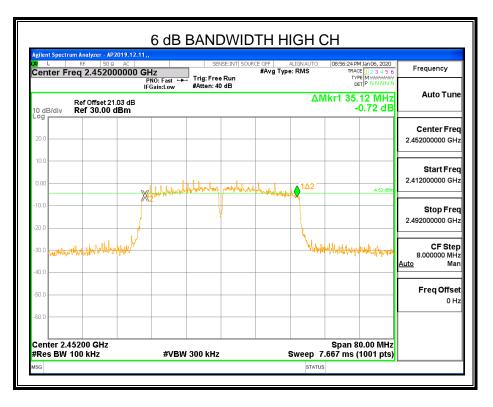
7.2.4. 802.11n HT40 MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	35.28	36.276	≥500	Pass
Middle	35.28	36.296	≥500	Pass
High	35.12	36.216	≥500	Pass

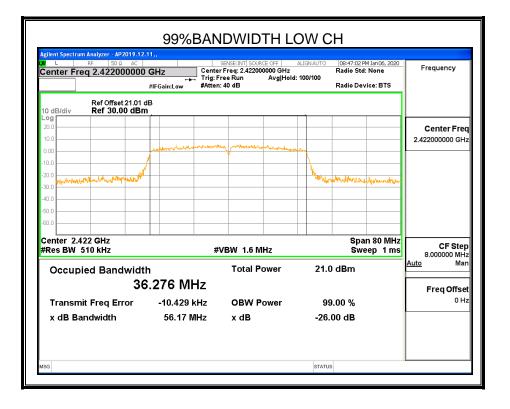


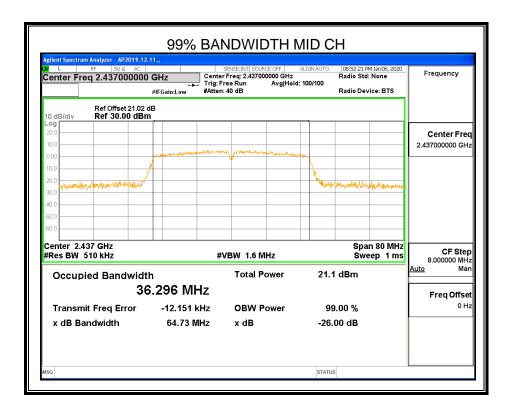














Agient Spectrum Analyzer _ AP2019.12.11., VX L RF S0 \propto _ AC Center Freq 2.452000000 GHz #//FGain:Low Image: Ref Offset 21.03 dB L og	Center Freq: 2.452000000 GHz Trig: Free Run Avg Hold: 10	1GNAUTO 08:56:59 PM Jan 06, 2020 Radio Std: None 00/100 Radio Device: BTS	Frequency Center Freq 2.45200000 GHz
10 dB/div Ref 30.00 dBm Log 200 10.0 0.00	and a state of the		
0.00	auguante and and the second second		2.452000000 GHz
-20.0 -30.0 -40.0 -50.0		hand a start and a start and a start and a start and a start a	
-80.0 Center 2.452 GHz #Res BW 510 kHz	#VBW 1.6 MHz	Span 80 MHz Sweep 1 ms	CF Step 8.000000 MHz
Occupied Bandwidth 36.216	Total Power MHZ	21.0 dBm	Auto Man Freq Offset
	42 kHz OBW Power 57 MHz x dB	99.00 % -26.00 dB	0 Hz
MSG		STATUS	



7.3. CONDUCTED OUTPUT POWER

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2						
Section Test Item Limit Frequency Range (MHz)						
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Output Power	1 watt or 30dBm	2400-2483.5			

Note: For b/g/n HT20 mode the average data is for reference only.

TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.

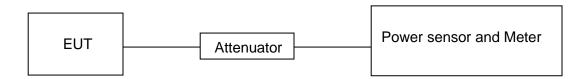
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

Measure the power of each channel.

Peak Detector use for Peak result.

AVG Detector use for AVG result.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.7°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V



7.3.1. 802.11b MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	20.50	18.01	30
Middle	20.61	17.69	30
High	20.15	17.73	30

7.3.2. 802.11g MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	21.96	15.09	30
Middle	22.46	15.40	30
High	21.09	14.02	30

7.3.3. 802.11n HT20 MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	21.74	14.55	30
Middle	21.31	14.23	30
High	19.92	12.95	30

7.3.4. 802.11n HT40 MODE

Test Channel	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	dBm
Low	12.91	30
Middle	14.07	30
High	14.32	30



7.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

TEST PROCEDURE

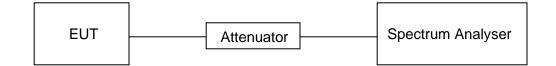
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test	
Detector	Peak	
RBW	3 kHz ≤ RBW ≤100 kHz	
VBW	≥3 × RBW	
Span	1.5 x DTS bandwidth	
Trace	Max hold	
Sweep time	Auto couple.	

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

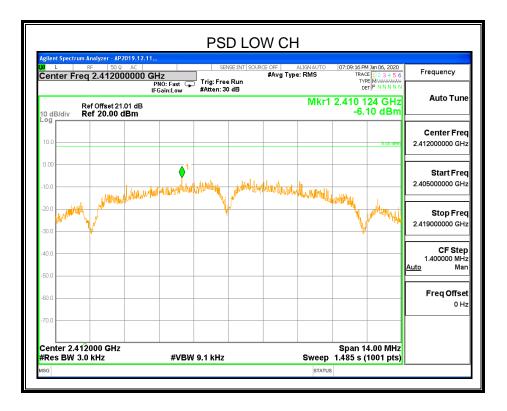
Temperature	25.7°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V

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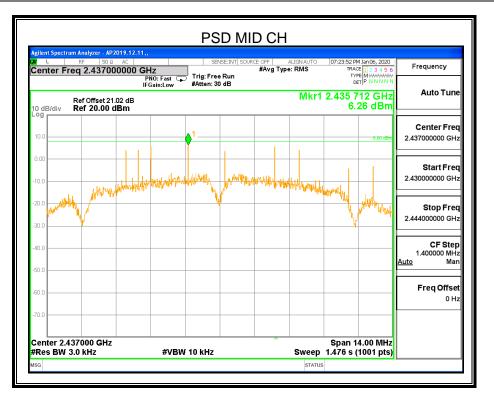


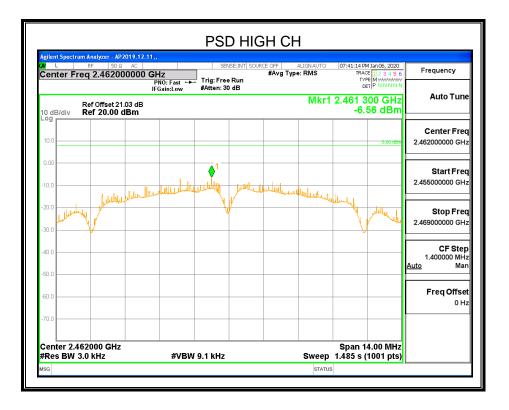
7.4.1. 802.11b MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-6.10	8	PASS
Middle	6.26	8	PASS
High	-6.56	8	PASS





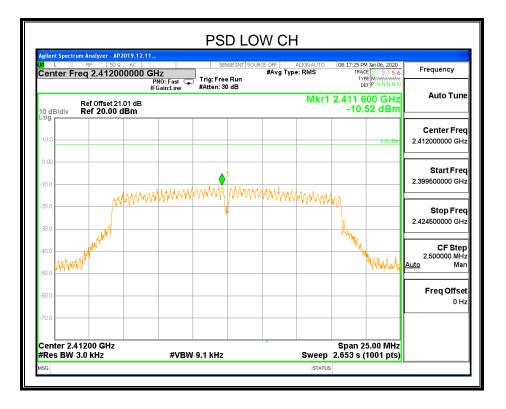




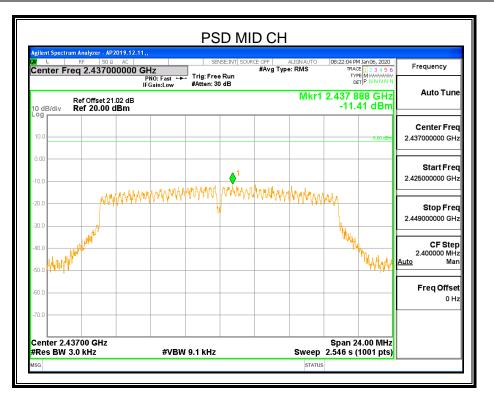


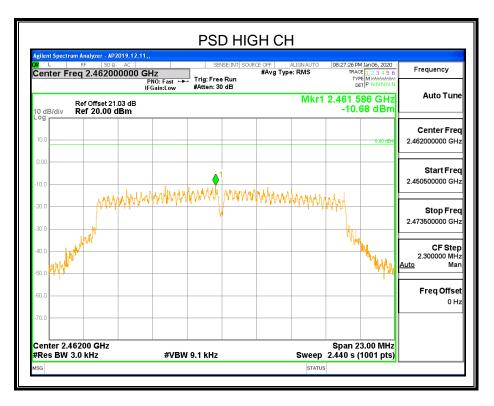
7.4.2. 802.11g MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-10.52	8	PASS
Middle	-11.41	8	PASS
High	-10.68	8	PASS

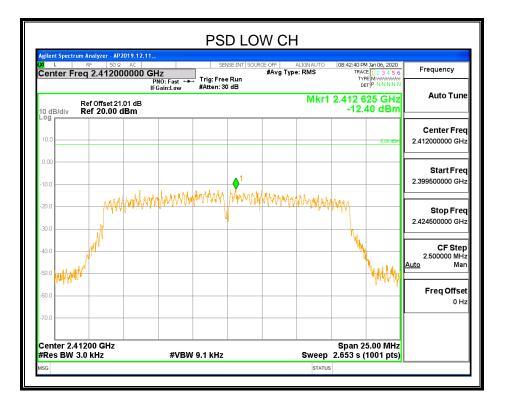




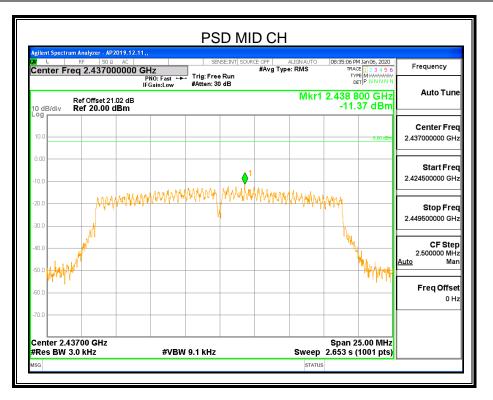


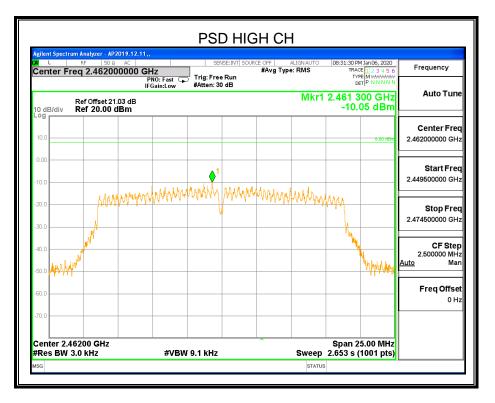


Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-12.40	8	PASS
Middle	-11.37	8	PASS
High	-10.05	8	PASS



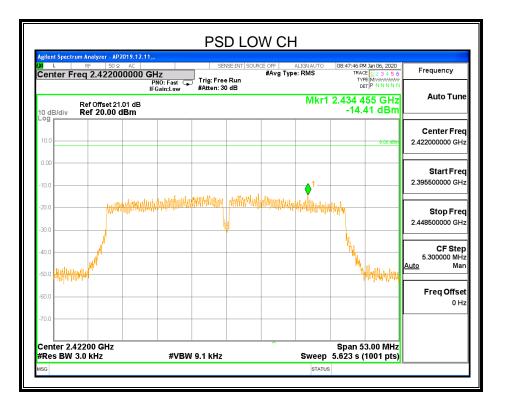




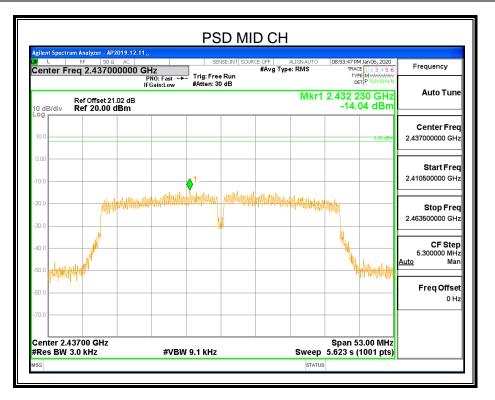


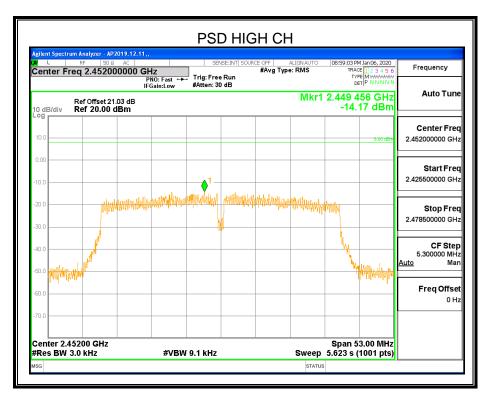
7.4.4. 802.11n HT40 MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-14.41	8	PASS
Middle	-14.04	8	PASS
High	-14.17	8	PASS











7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2						
Section Test Item Limit						
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power				

TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

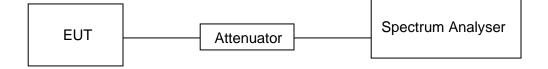
Use the peak marker function to determine the maximum PSD level.

12090	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level.



TEST SETUP

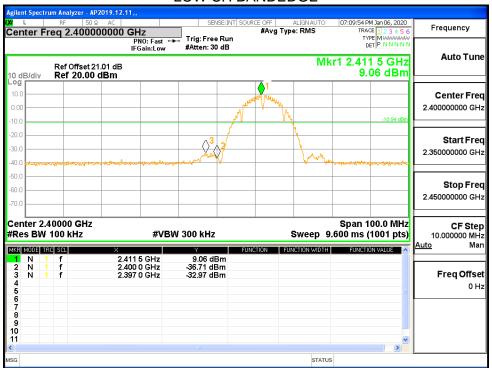


TEST ENVIRONMENT

Temperature	25.7°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V

RESULTS

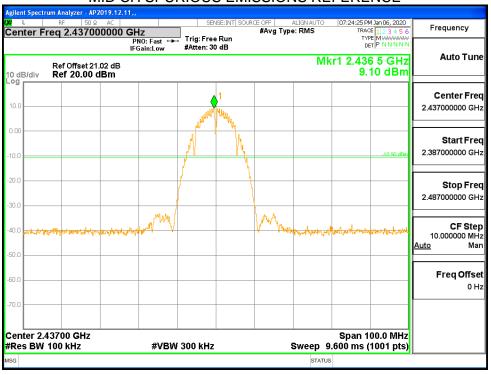
7.5.1. 802.11b MODE



LOW CH BANDEDGE

LOW CH SPURIOUS EMISSIONS 30M-26G





MID CH SPURIOUS EMISSIONS REFERENCE

MID CH SPURIOUS EMISSIONS 30M-26G

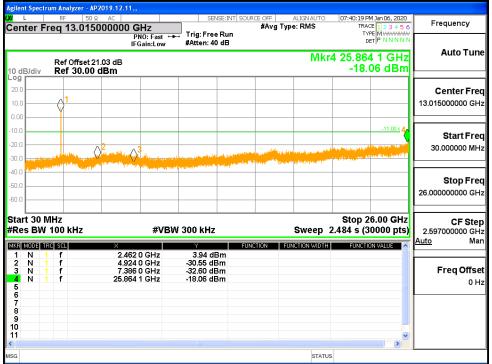




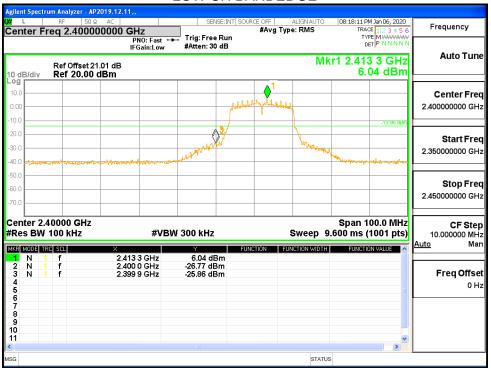
HIGH CH BANDEDGE

Agilent Spect		- AP2019.12.11							
LXI L	RF	50 Ω AC		SENSE:IN	T SOURCE OFF	ALIGN AUTO		M Jan 06, 2020	Frequency
Center F	req 2.48	3500000 G		Trig: Free Run		pe: RMS		CE 1 2 3 4 5 6	riequency
			PNO: Fast ↔ IFGain:Low	#Atten: 30 dB			D	ETPNNNN	
			Guineow						Auto Tune
		et 21.03 dB				IVI	(r1 2.46		
10 dB/div	Ref 20.	.00 dBm					9.	00 dBm	
Log			1						
10.0		When a	Mana.						Center Freq
0.00			1 W						2.483500000 GHz
-10.0		لأكفي	Y\					-11.00 dBm	
-20.0		5	- Y						
			1						Start Freq
-30.0	A	. /	`	lum.					2.433500000 GHz
-40.0	month	~~v		Wind have and have	a sugar and a local strength			mant merel	
-50.0									
									Stop Freq
-60.0									2.533500000 GHz
-70.0									2.000000000000
	.48350 GI							00.0 MHz	CF Step
#Res BW	/ 100 kHz		#VB۱	V 300 kHz		Sweep 9).600 ms (1001 pts)	10.000000 MHz
MKR MODE	RCI SCL	×		Y I	FUNCTION F	UNCTION WIDTH	FUNCTI	IN VALUE	<u>Auto</u> Man
1 N	1 f	2.46	15 GHz	9.00 dBm					
2 N	1 f		4 3 GHz	-38.07 dBm					Ener Offers
3 N	1 f	2.48	35 GHz	-40.04 dBm					Freq Offset
2 N 3 N 4 5 6 7 8 9									0 Hz
6									
7									
9									
10									
11								~	
								/	
MSG						STATU	s		

HIGH CH SPURIOUS EMISSIONS 30M-26G



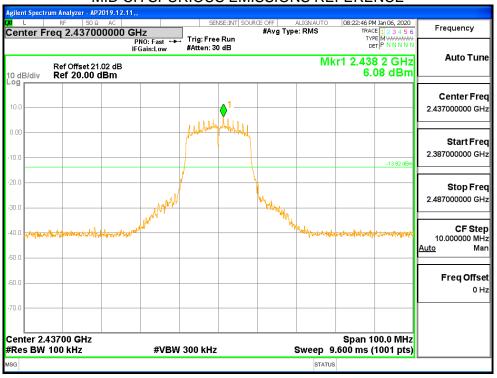
7.5.2. 802.11g MODE



LOW CH BANDEDGE

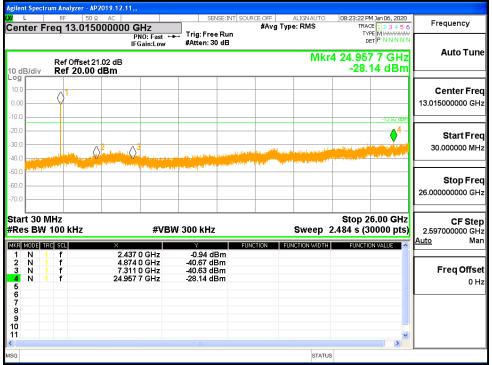
LOW CH SPURIOUS EMISSIONS 30M-26G





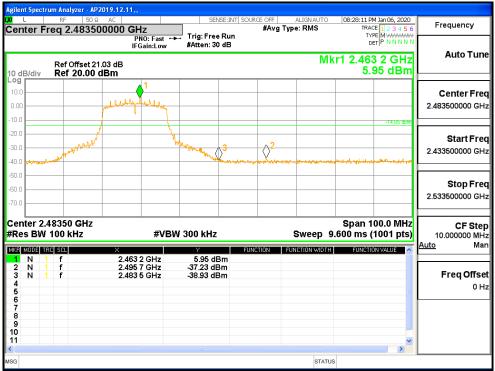
MID CH SPURIOUS EMISSIONS REFERENCE

MID CH SPURIOUS EMISSIONS 30M-26G

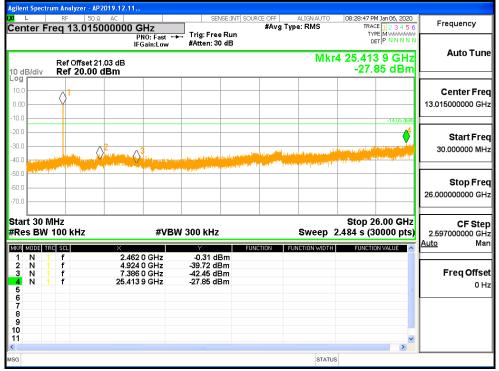




HIGH CH BANDEDGE

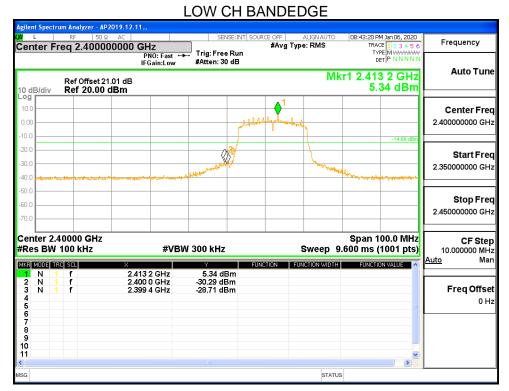


HIGH CH SPURIOUS EMISSIONS 30M-26G



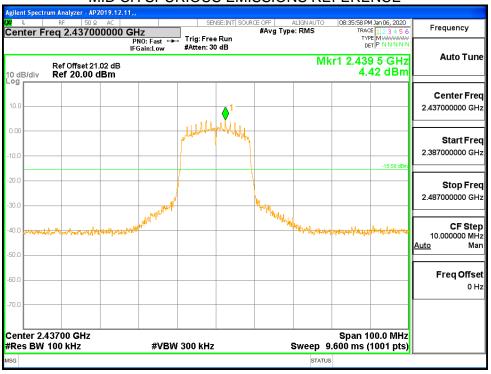


7.5.3. 802.11n HT20 MODE



LOW CH SPURIOUS EMISSIONS 30M-26G





MID CH SPURIOUS EMISSIONS REFERENCE

MID CH SPURIOUS EMISSIONS 30M-26G





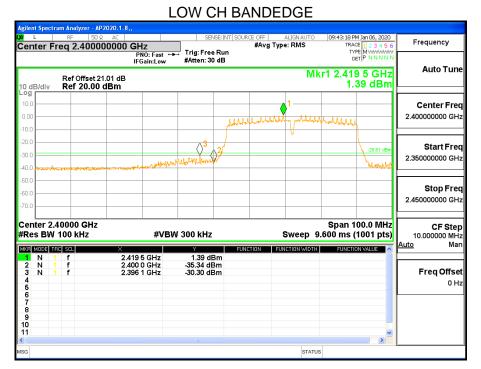
HIGH CH BANDEDGE

Agilent Spect		- AP2019.12.11,							
<mark>lXI</mark> L		50 Ω AC		SENSE:IN	IT SOURCE OFF	ALIGN AUTO		4 Jan 06, 2020	Frequency
Center F	req 2.48	3500000 G		Trig: Free Ru		Type: RMS	TRAC	E 1 2 3 4 5 6 E M WWWWW	Trequency
			PNO: Fast ↔ Gain:Low	#Atten: 30 dB	•		DI	PNNNNN	
	D-408	404 00 JB				M	kr1 2.459	5 GHz	Auto Tune
10 dB/div	Ref Offse	t 21.03 dB 00 dBm						07 dBm	
Log		. 1							
10.0									Center Freq
0.00		- Allahat Inter	and hat have						2.483500000 GHz
-10.0		`						15.00 /0-	
-20.0								-15.93 dBm	
		sel la			. 2				Start Freq
-30.0	and the work			and have a start of the start o					2.433500000 GHz
-40.0					ter and the second second	al dr. and a start of the start of the	inter hearing	- and the second	
-50.0									01
-60.0									Stop Freq
-70.0									2.533500000 GHz
	.48350 GH	z						00.0 MHz	CF Step
#Res BW	/ 100 kHz		#VBW	300 kHz		Sweep 9	9.600 ms (1001 pts)	10.000000 MHz
MKR MODE	TRC SCL	×		Y	FUNCTION	FUNCTION WIDTH	FUNCTIO	IN VALUE	<u>Auto</u> Man
1 N	1 f	2.459	5 GHz	4.07 dBm					
2 N 3 N	1 f 1 f		4 GHz 5 GHz	-37.61 dBm -38.11 dBm					Freq Offset
4		2.400	0.0112	CO.TT GEIN					0 Hz
2 N 3 N 4 5 6 7 8 9 10									
7									
8									
10									
11								~	
								>	
MSG						STATU	15		

HIGH CH SPURIOUS EMISSIONS 30M-26G







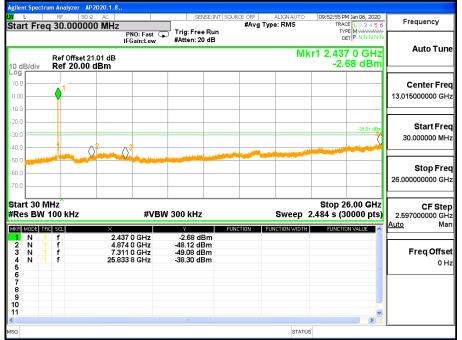
LOW CH SPURIOUS EMISSIONS 30M-26G



Ngilent Spectrum Analyzer - AP21 XI L RF 50 Q	AC	SENSE:INT SOU			Frequency
Center Freq 2.43700	PNO: Fast 🕶	, Trig: Free Run #Atten: 30 dB	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE M MMMMM DET P NNNN	
Ref Offset 21.0 0 dB/div Ref 20.00 d		#Atten: 50 dB	l	Mkr1 2.439 5 GHz 1.99 dBm	Auto Tune
og 10.0					Center Free 2.437000000 GH
0.0	politik	and a second and a second s	hillylill		Start Fre 2.387000000 GH
0.0				-28.01 dBr	Stop Fre 2.487000000 GH
0.0 0.0 young have have have have have have have have	WARAWAN .		Law ()	Not MANA MANA MANA MANA MANA MANA MANA MAN	CF Ste 10.000000 MH <u>Auto</u> Ma
0.0					Freq Offse
enter 2.43700 GHz				Span 100.0 MHz	
Res BW 100 kHz	#VBV	V 300 kHz		9.600 ms (1001 pts)	

MID CH SPURIOUS EMISSIONS REFERENCE

MID CH SPURIOUS EMISSIONS 30M-26G

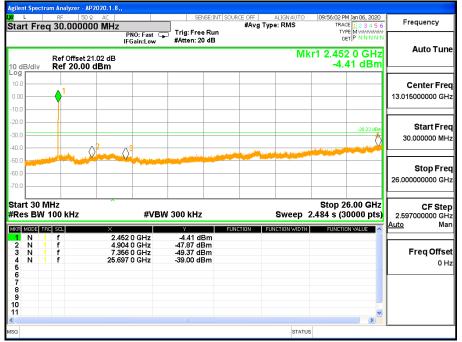




HIGH CH BANDEDGE

Agilent Spectrum Analyzer - AP 2020.1.8,,				
Center Freq 2.483500000 GHz	SENSE:INT SOURCE	OFF ALIGNAUTO I #Avg Type: RMS	09:54:14 PM Jan 06, 2020 TRACE 1 2 3 4 5 6	Frequency
PN0: Fast → IFGain:Low Ref Offset 21.02 dB 10 dB/div Ref 20.00 dBm	, ⊤rig: Free Run #Atten: 30 dB	 Mkr1	2.449 5 GHz 1.78 dBm	Auto Tune
Log 10.0 1				Center Freq 2.483500000 GHz
-20.0	Janondon Markan pro		-28.22 dBm	Start Freq 2.433500000 GHz
-50.0 -60.0 -70.0				Stop Freq 2.533500000 GHz
Center 2.48350 GHz #Res BW 100 kHz #VBN	V 300 kHz	Sweep 9.60	Span 100.0 MHz)0 ms (1001 pts)	CF Step 10.000000 MHz <u>Auto</u> Man
N 1 f 2.449 5 GHz 2 N 1 f 2.449 5 GHz 3 N 1 f 2.483 5 GHz 5 6 6 7 7 8 9 9 10 11	1.78 dBm -35.46 dBm -39.81 dBm		~	Freq Offset 0 Hz
MSG		STATUS		

HIGH CH SPURIOUS EMISSIONS 30M-26G





7.6. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209

Please refer to ISED RSS-GEN Clause 8.9 (Transmitter)

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.



Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)		
Frequency (Miriz)	Peak	Average	
Above 1000	74	54	

IC Restricted bands please refer to ISED RSS-GEN Clause 8.10 FCC Restricted bands of operation:

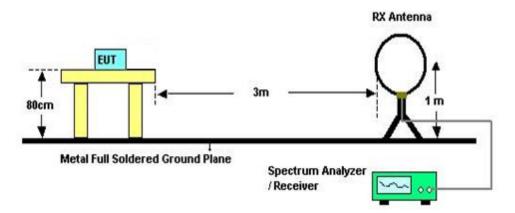
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

Note: ¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. ²Above 38.6c



TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna are set to make the measurement.

3. The EUT was placed on a turntable with 0.8 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, 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. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

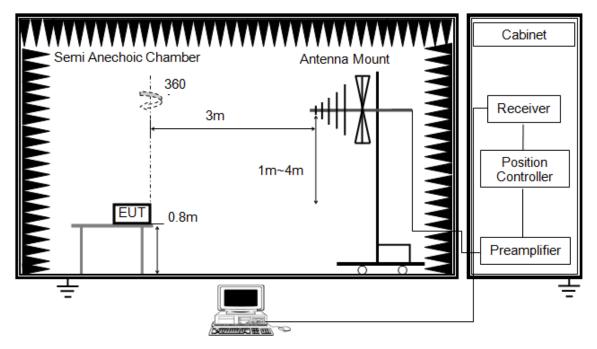
6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

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Below 1G



The setting of the spectrum analyser

RBW	120kHz
VBW	300kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

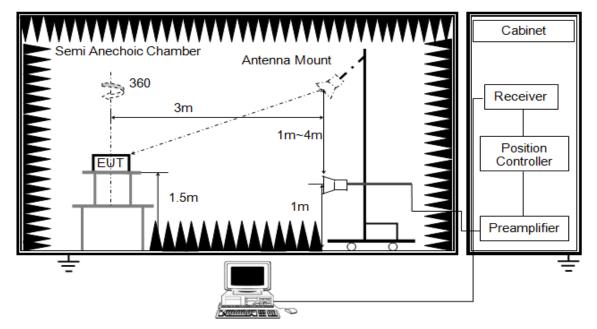
3. The EUT was placed on a turntable with 0.8 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, 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. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.



ABOVE 1G



The setting of the spectrum analyser

RBW	1MHz
IV BVV	PEAK: 3MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

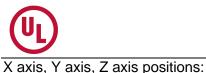
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

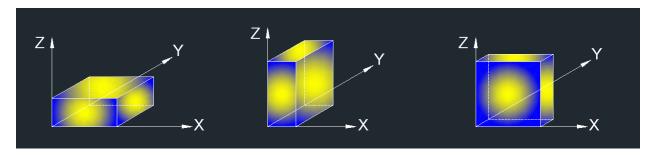
3. The EUT was placed on a turntable with 1.5m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.





Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

Note 3: The EUT does not support simultaneous transmission.

TEST ENVIRONMENT

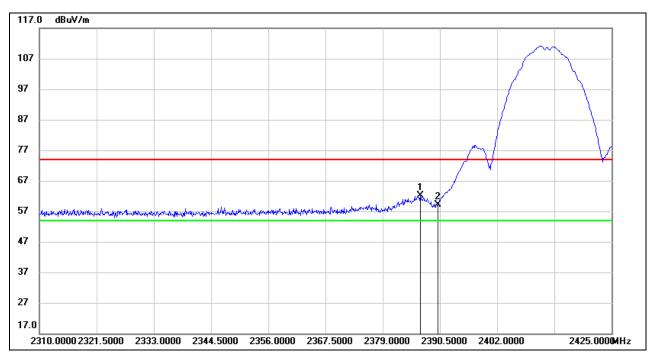
Temperature	23.4°C	Relative Humidity	54%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V



7.7. RESTRICTED BANDEDGE

7.7.1. 802.11b MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



<u>PEAK</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.590	29.18	32.94	62.12	74.00	-11.88	peak
2	2390.000	26.10	32.94	59.04	74.00	-14.96	peak

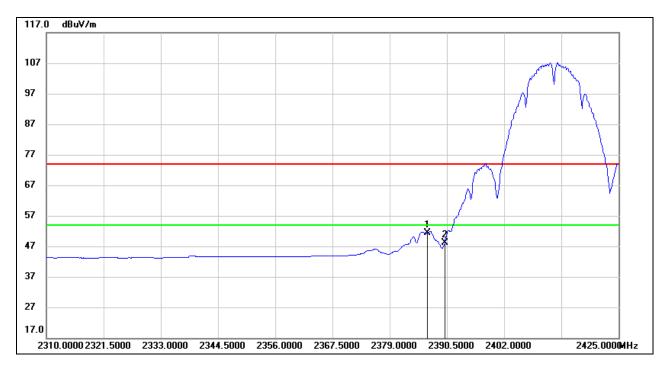
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.590	18.36	32.94	51.30	54.00	-2.70	AVG
2	2390.000	15.15	32.94	48.09	54.00	-5.91	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

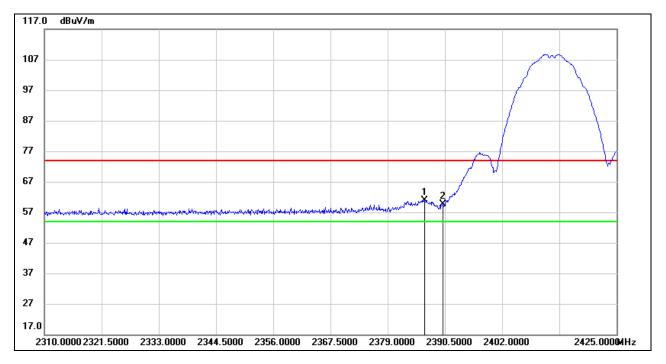
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.360	28.00	32.94	60.94	74.00	-13.06	peak
2	2390.000	26.60	32.94	59.54	74.00	-14.46	peak

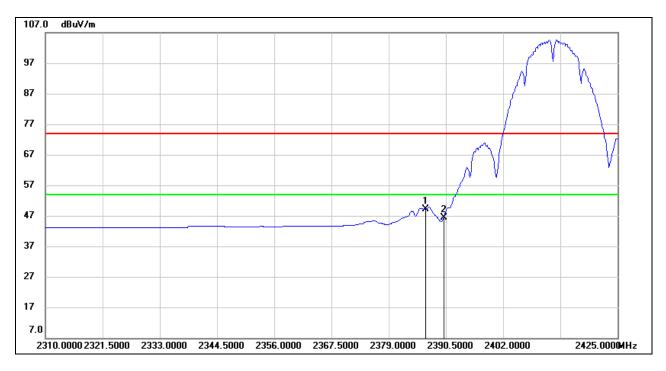
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.360	16.10	32.94	49.04	54.00	-4.96	AVG
2	2390.000	13.36	32.94	46.30	54.00	-7.70	AVG

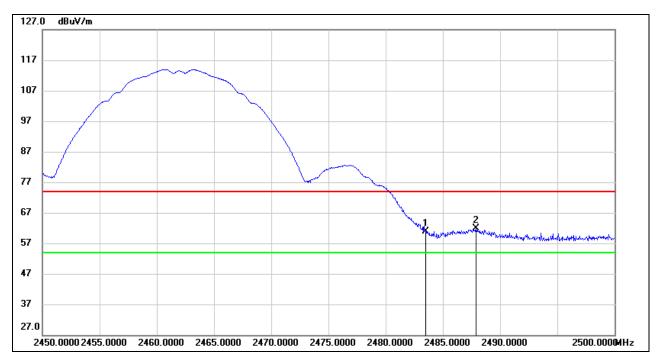
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	27.42	33.58	61.00	74.00	-13.00	peak
2	2487.900	28.25	33.61	61.86	74.00	-12.14	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

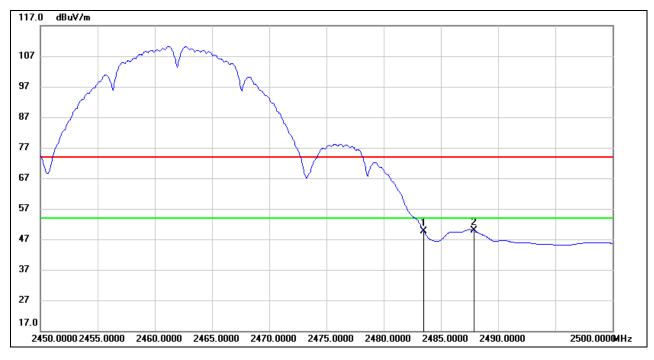
3. Peak: Peak detector.

4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

<u>PEAK</u>



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB / m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.14	33.58	49.72	54.00	-4.28	AVG
2	2487.900	16.37	33.61	49.98	54.00	-4.02	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

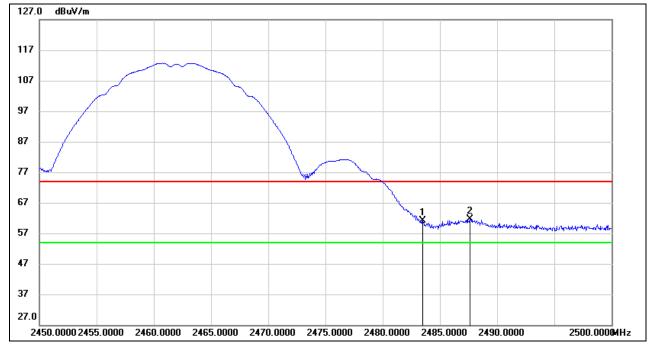
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	27.47	33.58	61.05	74.00	-12.95	peak
2	2487.600	27.91	33.61	61.52	74.00	-12.48	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit. 3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.10	33.58	48.68	54.00	-5.32	AVG
2	2487.600	16.05	33.61	49.66	54.00	-4.34	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

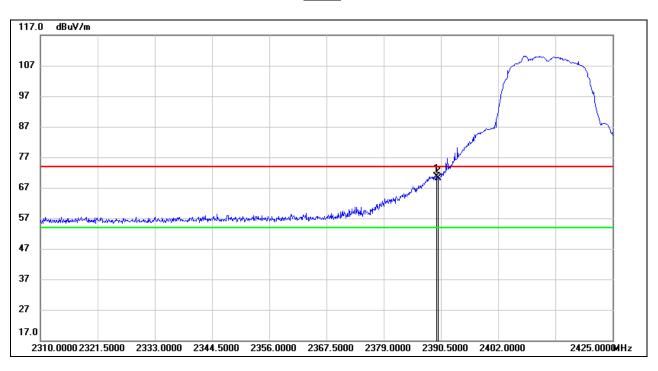
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



7.7.2. 802.11g MODE



RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.580	37.78	32.94	70.72	74.00	-3.28	peak
2	2390.000	37.07	32.94	70.01	74.00	-3.99	peak

PEAK

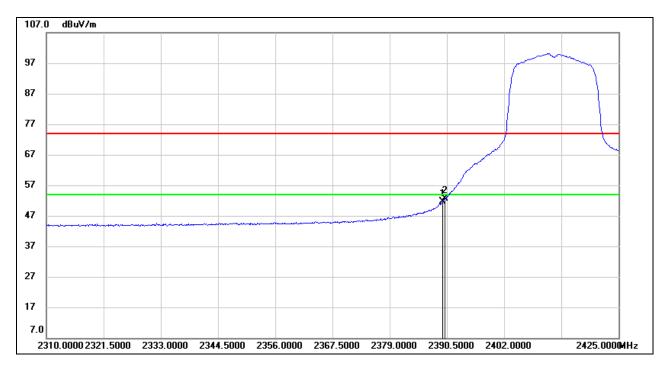
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.580	18.77	32.94	51.71	54.00	-2.29	AVG
2	2390.000	19.58	32.94	52.52	54.00	-1.48	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

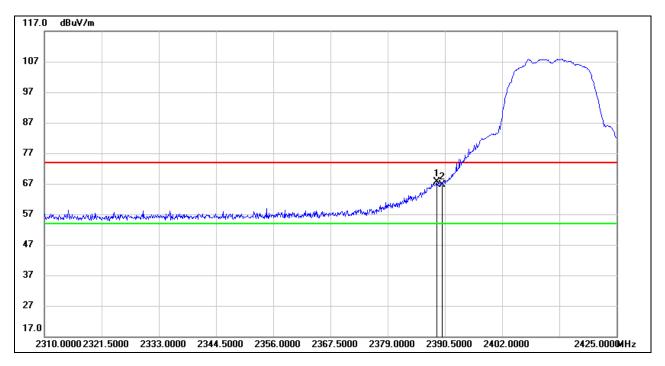
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.890	34.62	32.94	67.56	74.00	-6.44	peak
2	2390.000	33.69	32.94	66.63	74.00	-7.37	peak

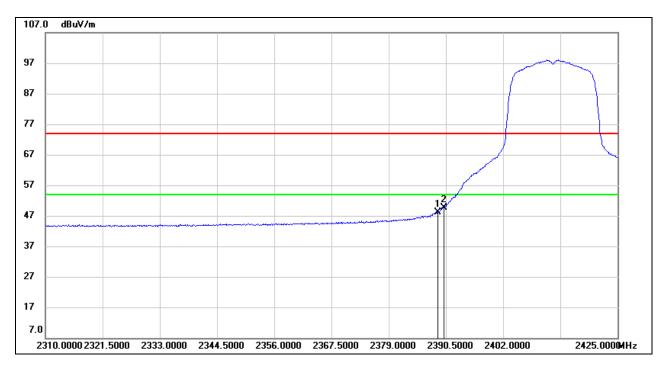
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.890	15.24	32.94	48.18	54.00	-5.82	AVG
2	2390.000	16.79	32.94	49.73	54.00	-4.27	AVG

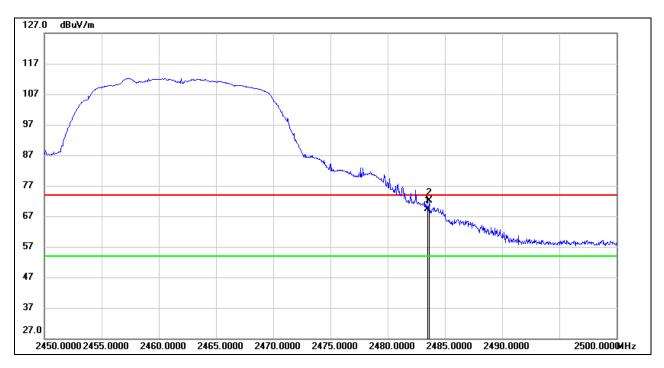
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



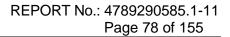
F	PF	A	κ

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	35.75	33.58	69.33	74.00	-4.67	peak
2	2483.600	38.51	33.58	72.09	74.00	-1.91	peak

Note: 1. Measurement = Reading Level + Correct Factor.

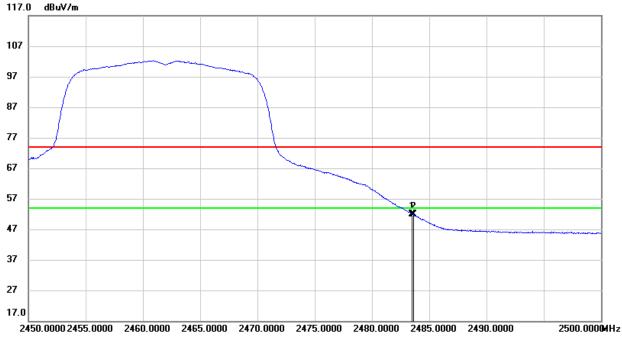
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.





<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	18.37	33.58	51.95	54.00	-2.05	AVG
2	2483.600	18.27	33.58	51.85	54.00	-2.15	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

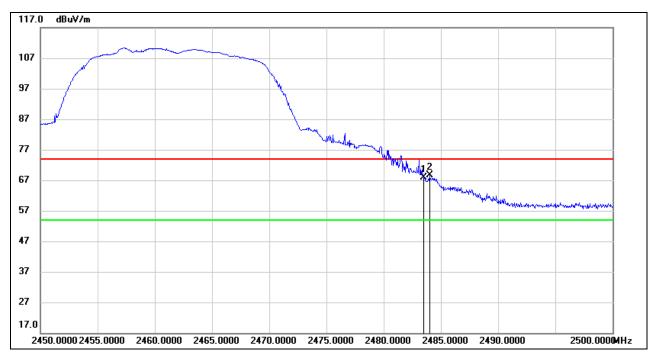
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





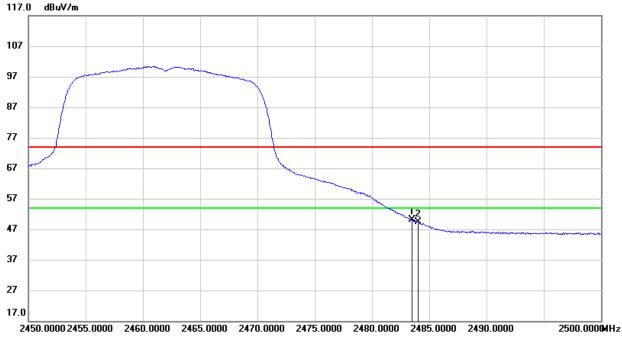
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	34.40	33.58	67.98	74.00	-6.02	peak
2	2484.000	34.97	33.58	68.55	74.00	-5.45	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.44	33.58	50.02	54.00	-3.98	AVG
2	2484.000	15.86	33.58	49.44	54.00	-4.56	AVG

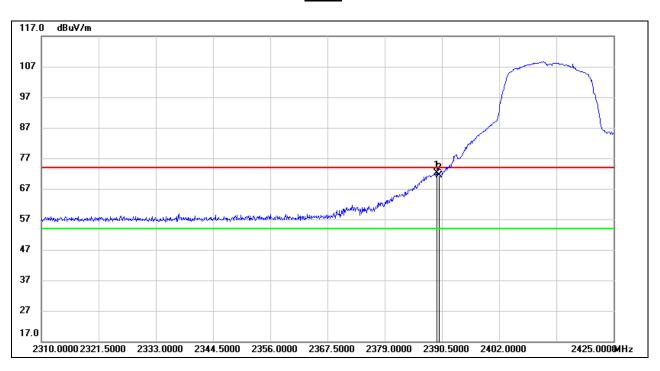
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



7.7.3. 802.11n HT20 MODE



RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.465	39.11	32.94	72.05	74.00	-1.95	peak
2	2390.000	38.54	32.94	71.48	74.00	-2.52	peak

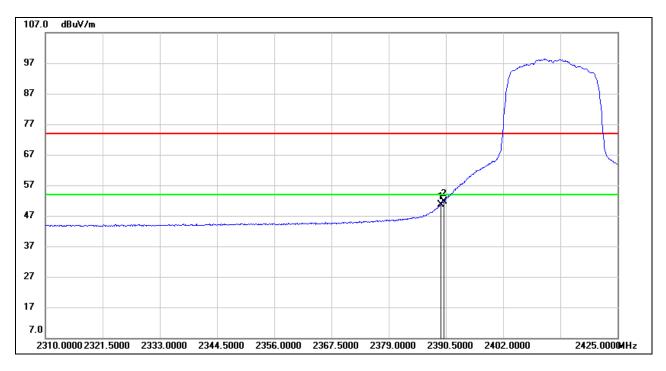
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.465	17.80	32.94	50.74	54.00	-3.26	AVG
2	2390.000	18.70	32.94	51.64	54.00	-2.36	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

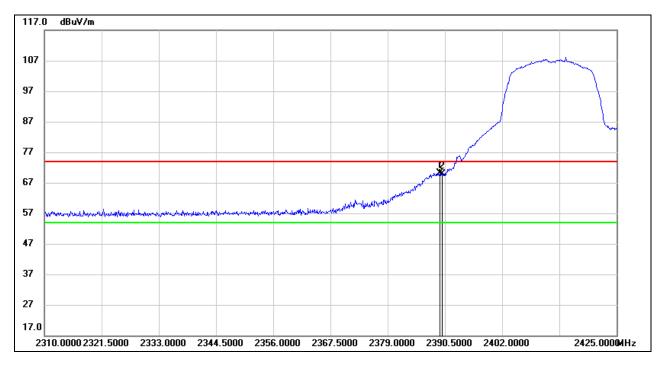
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.465	37.19	32.94	70.13	74.00	-3.87	peak
2	2390.000	36.82	32.94	69.76	74.00	-4.24	peak

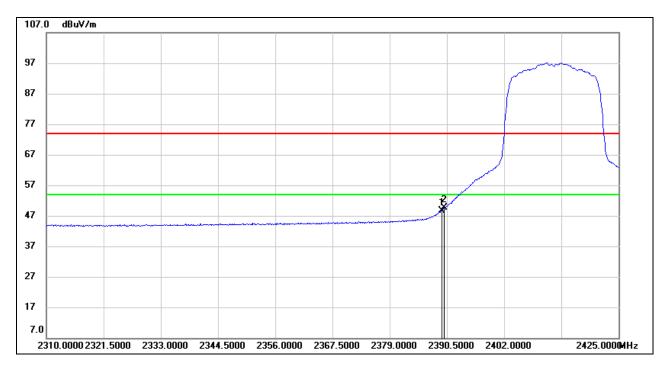
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.465	15.75	32.94	48.69	54.00	-5.31	AVG
2	2390.000	16.60	32.94	49.54	54.00	-4.46	AVG

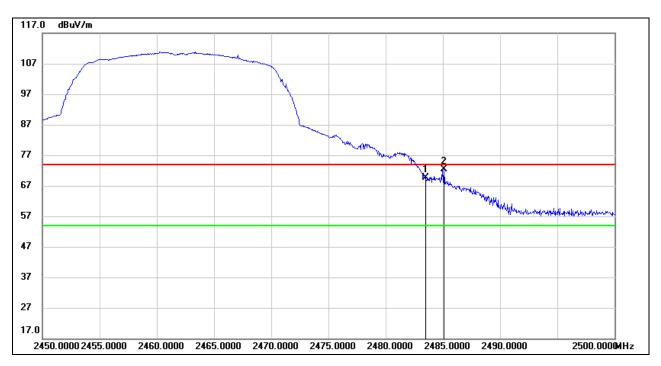
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	35.94	33.58	69.52	74.00	-4.48	peak
2	2485.100	38.72	33.59	72.31	74.00	-1.69	peak

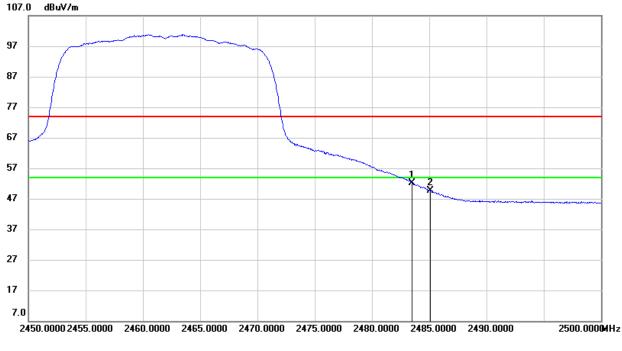
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	18.58	33.58	52.16	54.00	-1.84	AVG
2	2485.100	16.09	33.59	49.68	54.00	-4.32	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

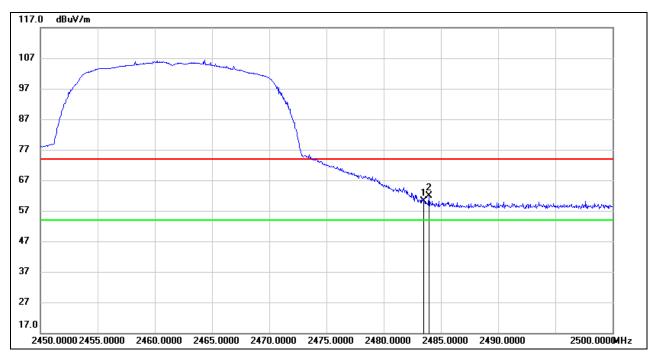
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	26.67	33.58	60.25	74.00	-13.75	peak
2	2483.950	28.25	33.58	61.83	74.00	-12.17	peak

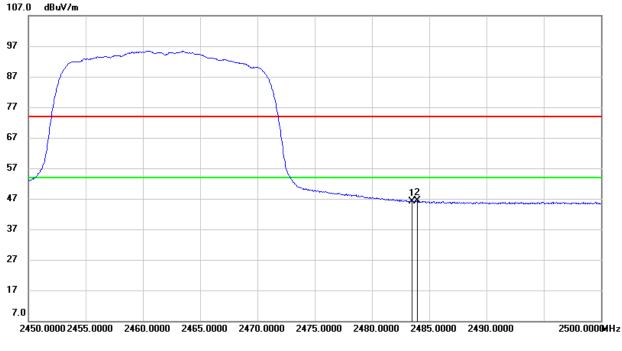
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	12.48	33.58	46.06	54.00	-7.94	AVG
2	2483.950	12.77	33.58	46.35	54.00	-7.65	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

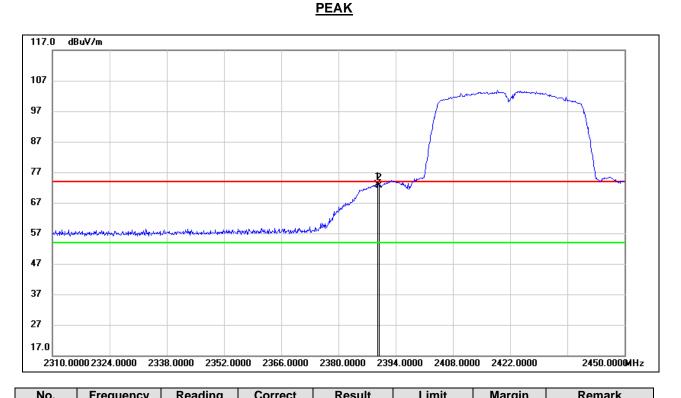
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



7.7.4. 802.11n HT40 MODE



RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

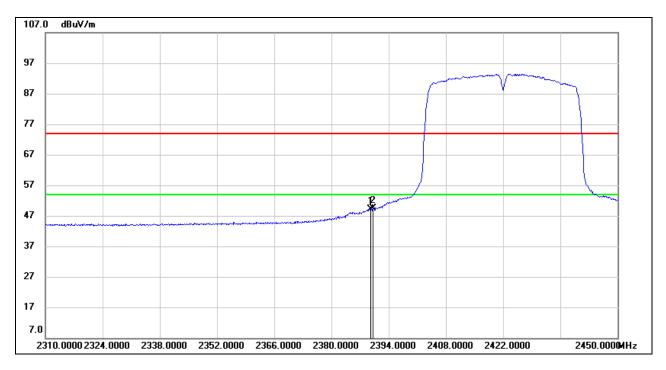
1	110.	Trequency	Reduing	OULCOL	Result	Ennit	margin	Kellark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
	1	2389.520	40.01	32.94	72.95	74.00	-1.05	peak
	2	2390.000	39.62	32.94	72.56	74.00	-1.44	peak

Note: 1. Measurement = Reading Level + Correct Factor.

If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
 Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.520	16.25	32.94	49.19	54.00	-4.81	AVG
2	2390.000	16.36	32.94	49.30	54.00	-4.70	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

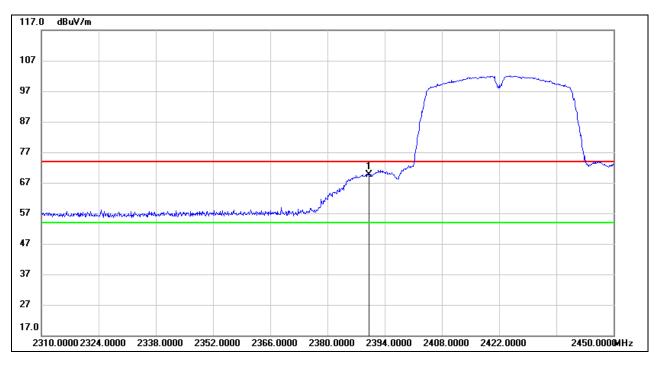
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	36.80	32.94	69.74	74.00	-4.26	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

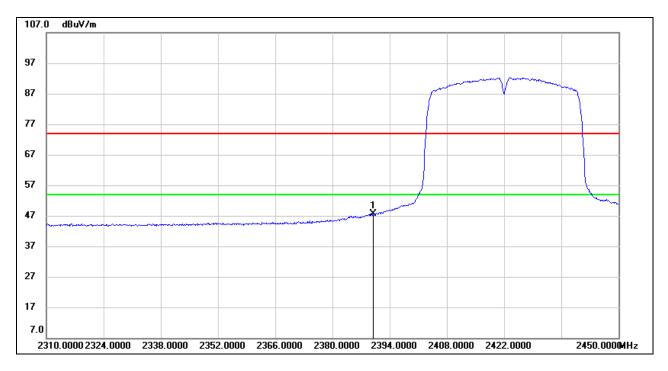
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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<u>PEAK</u>



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	14.57	32.94	47.51	54.00	-6.49	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

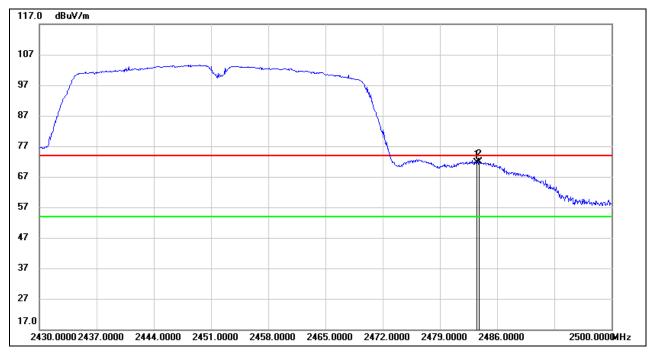
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	37.99	33.58	71.57	74.00	-2.43	peak
2	2483.830	38.22	33.58	71.80	74.00	-2.20	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.45	33.58	50.03	54.00	-3.97	AVG
2	2483.830	16.46	33.58	50.04	54.00	-3.96	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

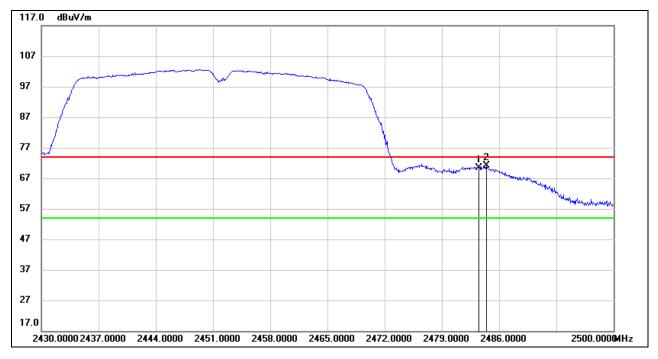
3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	36.81	33.58	70.39	74.00	-3.61	peak
2	2484.460	37.53	33.59	71.12	74.00	-2.88	peak

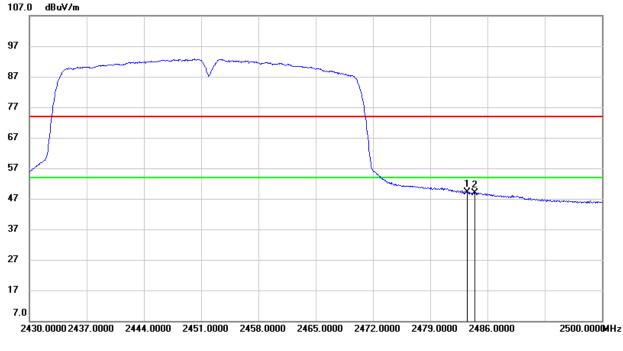
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.53	33.58	49.11	54.00	-4.89	AVG
2	2484.460	15.31	33.59	48.90	54.00	-5.10	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. AVG: VBW=1/Ton where: ton is transmit duration.

4. For transmit duration, please refer to clause 7.1.



7.8. SPURIOUS EMISSIONS (1~3GHz)

7.8.1. 802.11b MODE

87.0 dBuV/m 77 67 57 47 Ş 37 27 17 7.0 1800.0000 2000.0000 2200.0000 2400.0000 3000.000MHz 1000.00001200.0000 1400.0000 1600.0000 2600.0000 No. Frequency Reading Correct Result Limit Margin Remark (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) 1 1060.000 50.73 -13.54 37.19 74.00 -36.81 peak 2 1198.000 53.54 -12.69 40.85 74.00 -33.15 peak 74.00 3 2124.000 52.31 -9.04 43.27 -30.73 peak 4 2232.000 55.58 -8.51 47.07 74.00 -26.93 peak 5 2414.000 57.79 -7.76 50.03 74.00 -23.97 peak

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Measurement = Reading Level + Correct Factor.

-7.50

54.21

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

46.71

74.00

-27.29

peak

3. Peak: Peak detector.

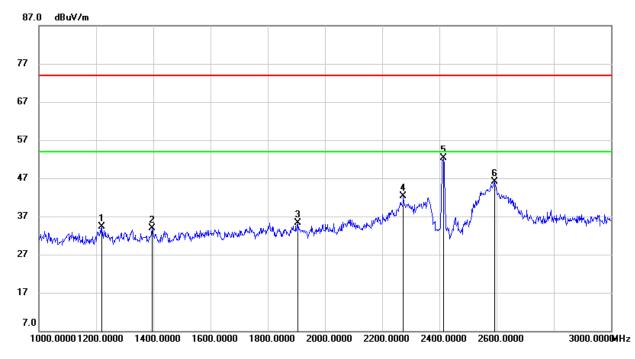
2562.000

6

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1220.000	46.84	-12.61	34.23	74.00	-39.77	peak
2	1396.000	46.29	-12.38	33.91	74.00	-40.09	peak
3	1904.000	45.28	-9.94	35.34	74.00	-38.66	peak
4	2274.000	50.63	-8.31	42.32	74.00	-31.68	peak
5	2414.000	60.09	-7.76	52.33	74.00	-21.67	peak
6	2592.000	53.73	-7.66	46.07	74.00	-27.93	peak

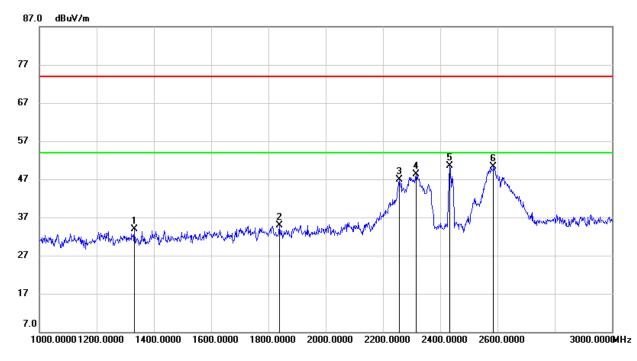
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	46.21	-12.35	33.86	74.00	-40.14	peak
2	1838.000	44.77	-9.93	34.84	74.00	-39.16	peak
3	2256.000	55.39	-8.40	46.99	74.00	-27.01	peak
4	2316.000	56.38	-8.13	48.25	74.00	-25.75	peak
5	2434.000	58.07	-7.62	50.45	74.00	-23.55	peak
6	2586.000	57.91	-7.63	50.28	74.00	-23.72	peak

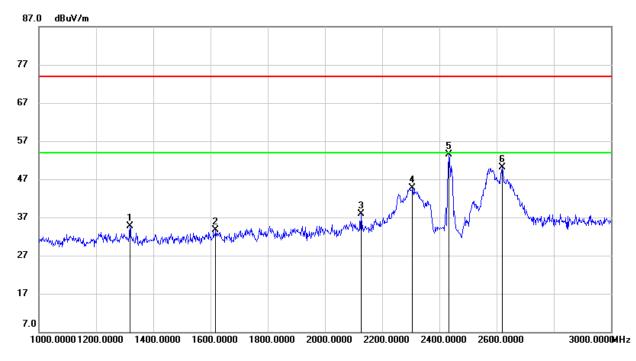
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1318.000	47.16	-12.36	34.80	74.00	-39.20	peak
2	1618.000	44.98	-11.31	33.67	74.00	-40.33	peak
3	2126.000	46.98	-9.02	37.96	74.00	-36.04	peak
4	2306.000	52.79	-8.17	44.62	74.00	-29.38	peak
5	2434.000	61.09	-7.62	53.47	74.00	-20.53	peak
6	2620.000	57.61	-7.59	50.02	74.00	-23.98	peak

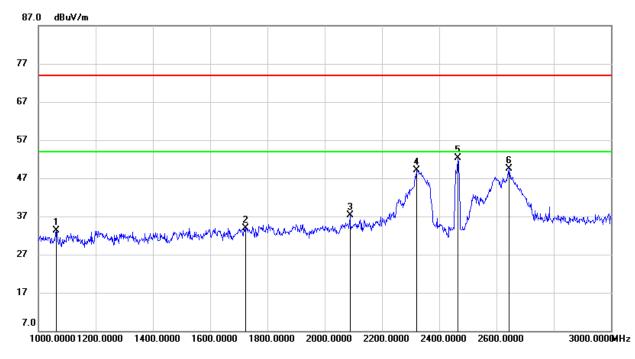
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1062.000	46.77	-13.55	33.22	74.00	-40.78	peak
2	1724.000	44.58	-10.67	33.91	74.00	-40.09	peak
3	2088.000	46.55	-9.23	37.32	74.00	-36.68	peak
4	2320.000	57.22	-8.12	49.10	74.00	-24.90	peak
5	2464.000	59.80	-7.41	52.39	74.00	-21.61	peak
6	2644.000	57.00	-7.45	49.55	74.00	-24.45	peak

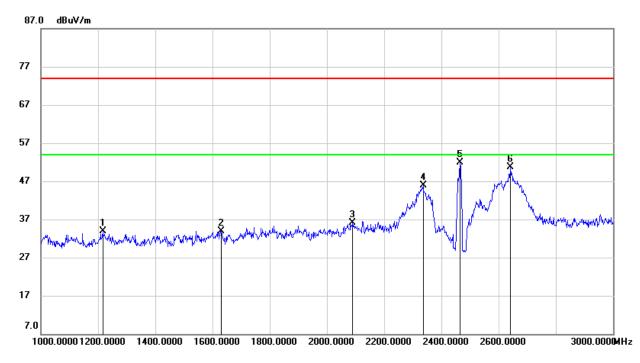
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1216.000	46.51	-12.62	33.89	74.00	-40.11	peak
2	1630.000	45.10	-11.25	33.85	74.00	-40.15	peak
3	2090.000	45.38	-9.22	36.16	74.00	-37.84	peak
4	2336.000	54.06	-8.07	45.99	74.00	-28.01	peak
5	2466.000	59.36	-7.40	51.96	74.00	-22.04	peak
6	2642.000	58.24	-7.46	50.78	74.00	-23.22	peak

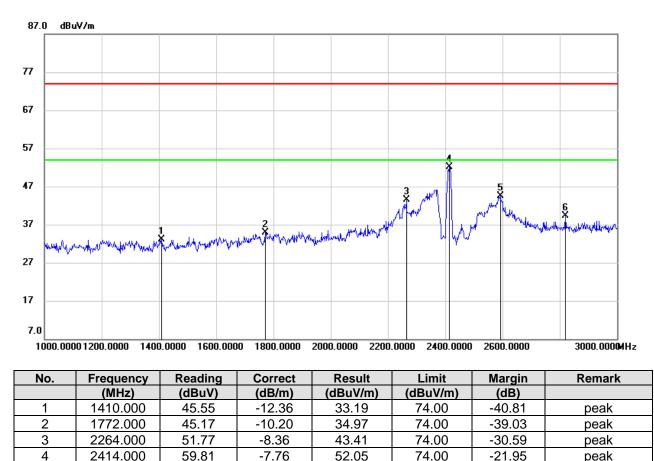
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



7.8.2. 802.11g MODE



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Measurement = Reading Level + Correct Factor.

-7.66

-5.96

52.10

45.29

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

44.44

39.33

74.00

74.00

-29.56

-34.67

peak

peak

3. Peak: Peak detector.

2592.000

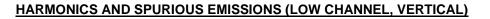
2820.000

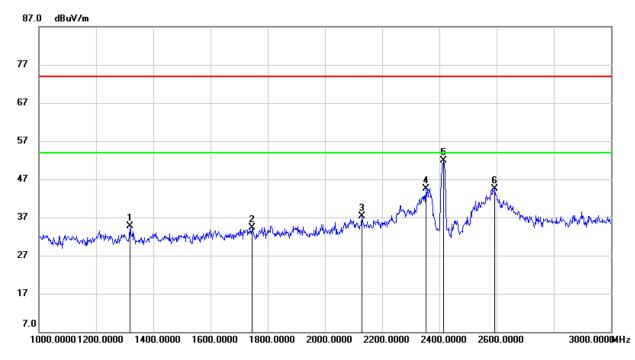
5

6

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1318.000	46.97	-12.36	34.61	74.00	-39.39	peak
2	1746.000	44.76	-10.45	34.31	74.00	-39.69	peak
3	2128.000	46.41	-9.02	37.39	74.00	-36.61	peak
4	2352.000	52.60	-8.02	44.58	74.00	-29.42	peak
5	2414.000	59.65	-7.76	51.89	74.00	-22.11	peak
6	2594.000	52.12	-7.67	44.45	74.00	-29.55	peak

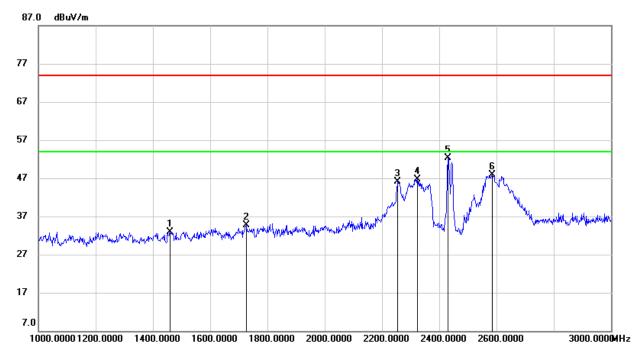
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1460.000	45.15	-12.27	32.88	74.00	-41.12	peak
2	1726.000	45.43	-10.65	34.78	74.00	-39.22	peak
3	2254.000	54.47	-8.41	46.06	74.00	-27.94	peak
4	2324.000	54.92	-8.12	46.80	74.00	-27.20	peak
5	2430.000	60.04	-7.65	52.39	74.00	-21.61	peak
6	2586.000	55.60	-7.63	47.97	74.00	-26.03	peak

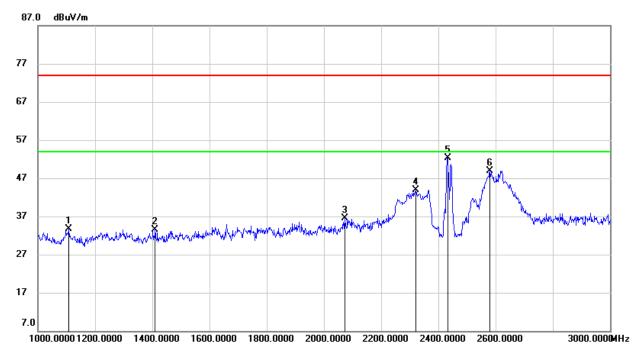
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1108.000	47.16	-13.46	33.70	74.00	-40.30	peak
2	1410.000	45.96	-12.36	33.60	74.00	-40.40	peak
3	2072.000	45.87	-9.34	36.53	74.00	-37.47	peak
4	2322.000	52.05	-8.12	43.93	74.00	-30.07	peak
5	2432.000	59.98	-7.63	52.35	74.00	-21.65	peak
6	2580.000	56.48	-7.59	48.89	74.00	-25.11	peak

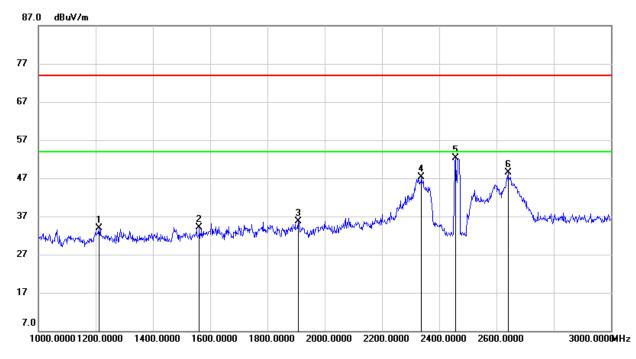
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1212.000	46.58	-12.64	33.94	74.00	-40.06	peak
2	1562.000	45.72	-11.70	34.02	74.00	-39.98	peak
3	1908.000	45.67	-9.94	35.73	74.00	-38.27	peak
4	2338.000	55.40	-8.06	47.34	74.00	-26.66	peak
5	2456.000	59.72	-7.47	52.25	74.00	-21.75	peak
6	2640.000	56.01	-7.48	48.53	74.00	-25.47	peak

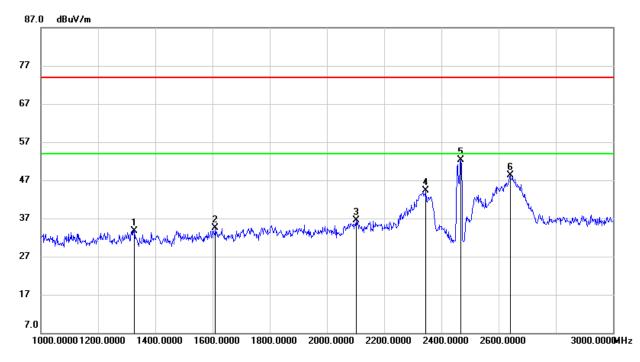
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1326.000	46.15	-12.35	33.80	74.00	-40.20	peak
2	1610.000	45.78	-11.35	34.43	74.00	-39.57	peak
3	2102.000	45.60	-9.15	36.45	74.00	-37.55	peak
4	2346.000	52.28	-8.04	44.24	74.00	-29.76	peak
5	2468.000	59.63	-7.39	52.24	74.00	-21.76	peak
6	2640.000	55.72	-7.48	48.24	74.00	-25.76	peak

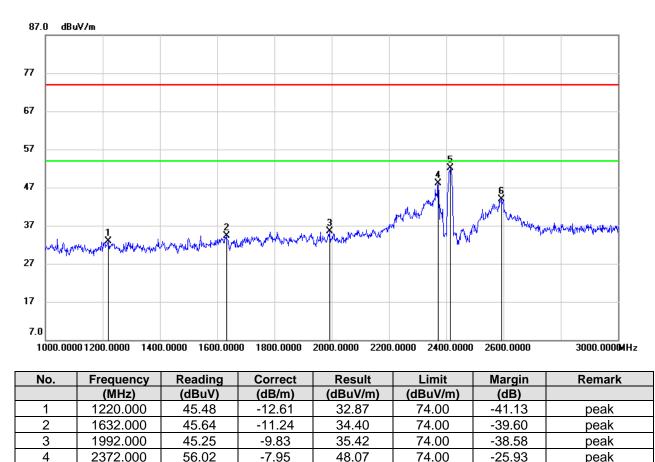
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



7.8.3. 802.11n HT20 MODE



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Measurement = Reading Level + Correct Factor.

59.80

51.48

-7.76

-7.66

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

52.04

43.82

74.00

74.00

-21.96

-30.18

peak

peak

3. Peak: Peak detector.

2414.000

2592.000

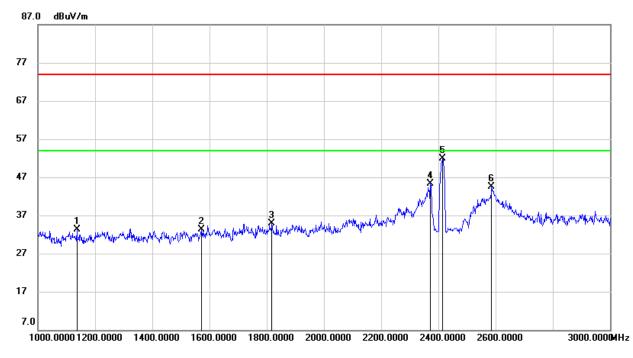
5

6

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1136.000	46.56	-13.22	33.34	74.00	-40.66	peak
2	1572.000	44.87	-11.63	33.24	74.00	-40.76	peak
3	1818.000	44.90	-9.92	34.98	74.00	-39.02	peak
4	2372.000	53.35	-7.95	45.40	74.00	-28.60	peak
5	2414.000	59.58	-7.76	51.82	74.00	-22.18	peak
6	2586.000	52.06	-7.63	44.43	74.00	-29.57	peak

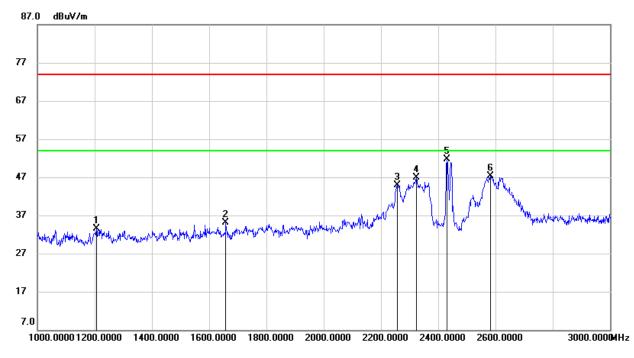
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1206.000	46.23	-12.66	33.57	74.00	-40.43	peak
2	1658.000	46.24	-11.11	35.13	74.00	-38.87	peak
3	2256.000	53.21	-8.40	44.81	74.00	-29.19	peak
4	2324.000	55.11	-8.12	46.99	74.00	-27.01	peak
5	2430.000	59.43	-7.65	51.78	74.00	-22.22	peak
6	2582.000	54.87	-7.60	47.27	74.00	-26.73	peak

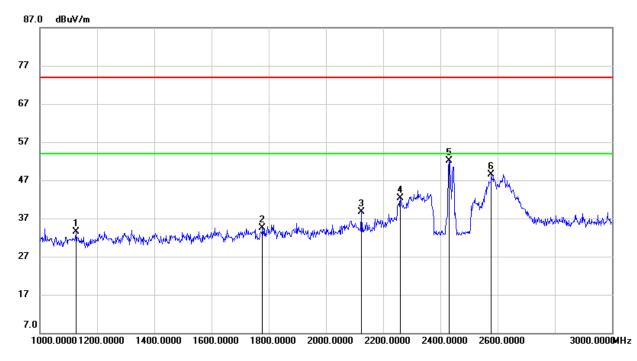
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1126.000	46.81	-13.29	33.52	74.00	-40.48	peak
2	1778.000	44.68	-10.13	34.55	74.00	-39.45	peak
3	2124.000	47.74	-9.04	38.70	74.00	-35.30	peak
4	2260.000	50.78	-8.38	42.40	74.00	-31.60	peak
5	2430.000	59.71	-7.65	52.06	74.00	-21.94	peak
6	2578.000	56.18	-7.58	48.60	74.00	-25.40	peak

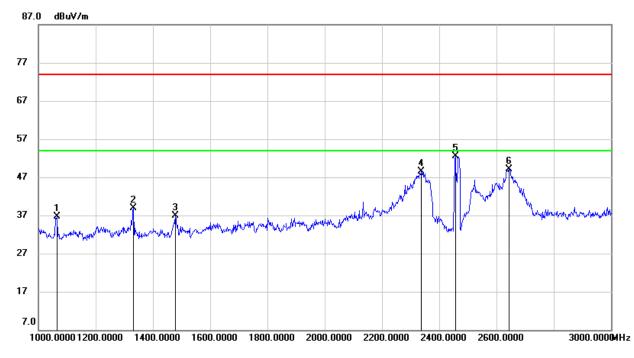
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1066.000	50.31	-13.54	36.77	74.00	-37.23	peak
2	1332.000	51.27	-12.35	38.92	74.00	-35.08	peak
3	1478.000	49.09	-12.25	36.84	74.00	-37.16	peak
4	2338.000	56.63	-8.06	48.57	74.00	-25.43	peak
5	2456.000	59.88	-7.47	52.41	74.00	-21.59	peak
6	2644.000	56.64	-7.45	49.19	74.00	-24.81	peak

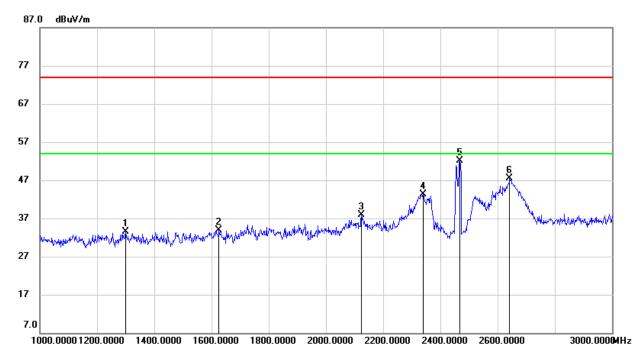
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1300.000	45.77	-12.34	33.43	74.00	-40.57	peak
2	1626.000	45.13	-11.27	33.86	74.00	-40.14	peak
3	2124.000	46.93	-9.04	37.89	74.00	-36.11	peak
4	2340.000	51.40	-8.06	43.34	74.00	-30.66	peak
5	2468.000	59.41	-7.39	52.02	74.00	-21.98	peak
6	2642.000	55.01	-7.46	47.55	74.00	-26.45	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

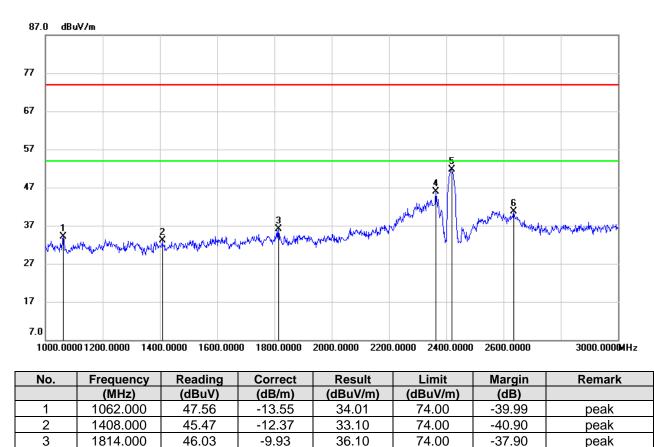


4

5

6

7.8.4. 802.11n HT40 MODE



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Measurement = Reading Level + Correct Factor.

53.82

59.41

48.26

-7.98

-7.72

-7.49

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

45.84

51.69

40.77

74.00

74.00

74.00

-28.16

-22.31

-33.23

peak

peak

peak

3. Peak: Peak detector.

2364.000

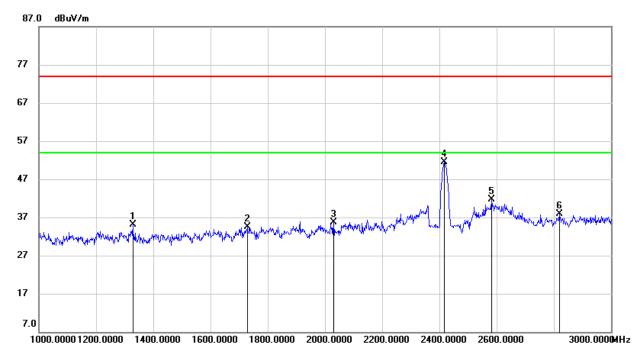
2420.000

2636.000

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1328.000	47.45	-12.36	35.09	74.00	-38.91	peak
2	1728.000	45.19	-10.62	34.57	74.00	-39.43	peak
3	2030.000	45.42	-9.62	35.80	74.00	-38.20	peak
4	2418.000	59.18	-7.74	51.44	74.00	-22.56	peak
5	2582.000	49.39	-7.60	41.79	74.00	-32.21	peak
6	2820.000	43.83	-5.96	37.87	74.00	-36.13	peak

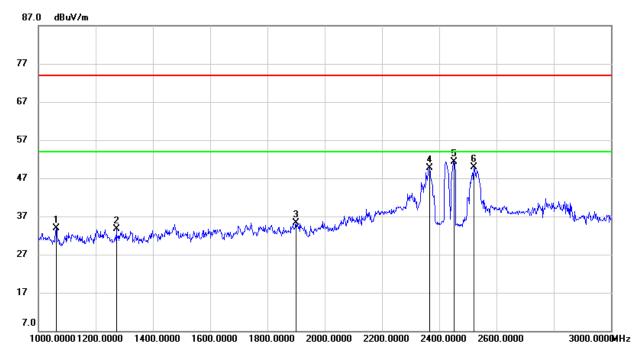
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1062.000	47.53	-13.55	33.98	74.00	-40.02	peak
2	1272.000	46.05	-12.44	33.61	74.00	-40.39	peak
3	1900.000	45.35	-9.95	35.40	74.00	-38.60	peak
4	2366.000	57.60	-7.97	49.63	74.00	-24.37	peak
5	2452.000	58.84	-7.50	51.34	74.00	-22.66	peak
6	2520.000	57.15	-7.27	49.88	74.00	-24.12	peak

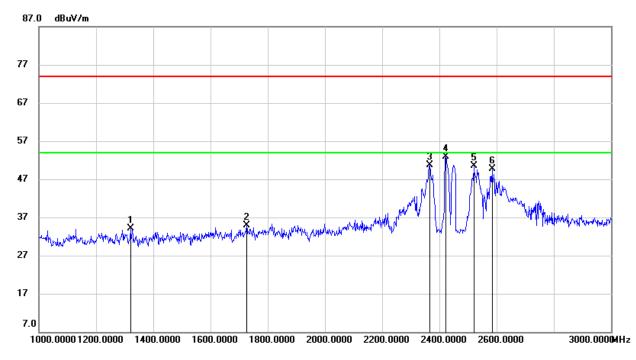
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1320.000	46.51	-12.35	34.16	74.00	-39.84	peak
2	1726.000	45.65	-10.65	35.00	74.00	-39.00	peak
3	2366.000	58.62	-7.97	50.65	74.00	-23.35	peak
4	2422.000	60.56	-7.71	52.85	74.00	-21.15	peak
5	2520.000	57.84	-7.27	50.57	74.00	-23.43	peak
6	2584.000	57.31	-7.62	49.69	74.00	-24.31	peak

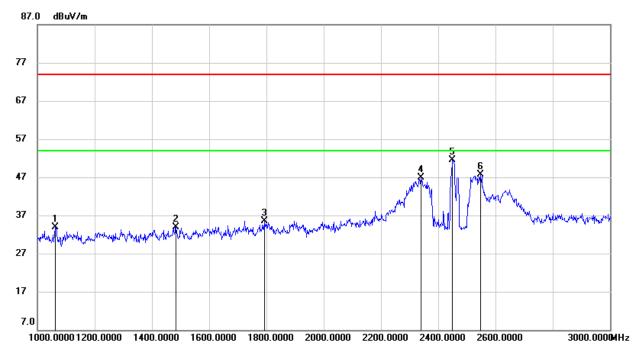
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1062.000	47.37	-13.55	33.82	74.00	-40.18	peak
2	1484.000	46.13	-12.24	33.89	74.00	-40.11	peak
3	1792.000	45.57	-9.99	35.58	74.00	-38.42	peak
4	2340.000	54.91	-8.06	46.85	74.00	-27.15	peak
5	2450.000	59.10	-7.51	51.59	74.00	-22.41	peak
6	2548.000	55.11	-7.43	47.68	74.00	-26.32	peak

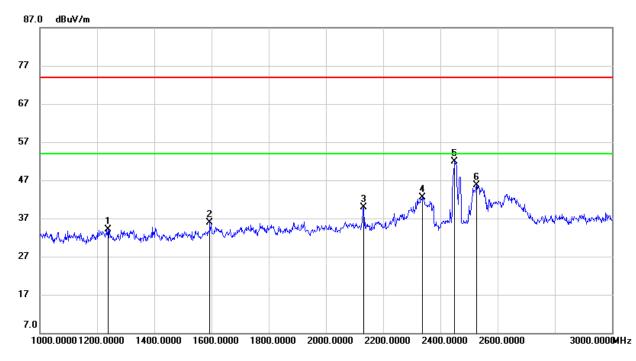
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	46.71	-12.55	34.16	74.00	-39.84	peak
2	1594.000	47.33	-11.45	35.88	74.00	-38.12	peak
3	2132.000	48.95	-9.00	39.95	74.00	-34.05	peak
4	2336.000	50.64	-8.07	42.57	74.00	-31.43	peak
5	2450.000	59.39	-7.51	51.88	74.00	-22.12	peak
6	2526.000	53.05	-7.31	45.74	74.00	-28.26	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

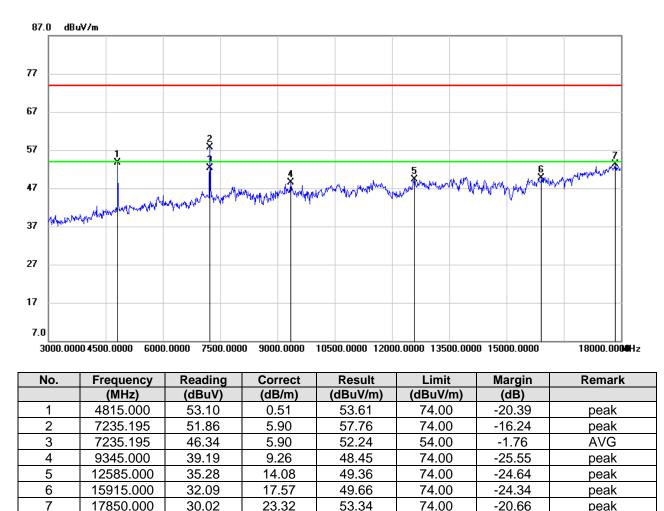
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



7.9. SPURIOUS EMISSIONS (3~18GHz)

7.9.1. 802.11b MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



Note: 1. Measurement = Reading Level + Correct Factor.

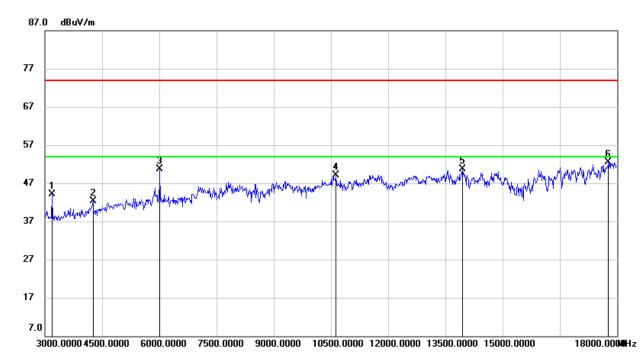
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







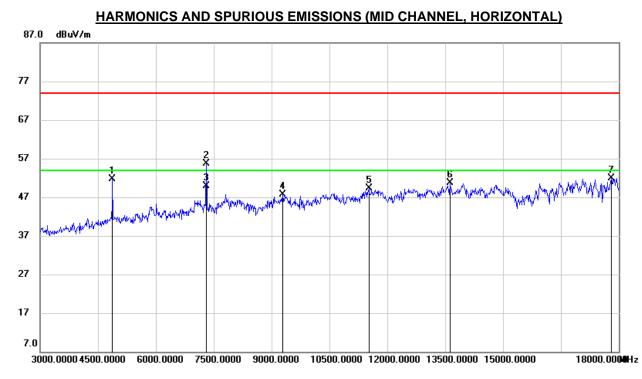
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	48.52	-4.33	44.19	74.00	-29.81	peak
2	4260.000	43.93	-1.71	42.22	74.00	-31.78	peak
3	6015.000	47.31	3.31	50.62	74.00	-23.38	peak
4	10635.000	37.22	11.84	49.06	74.00	-24.94	peak
5	13950.000	34.64	16.11	50.75	74.00	-23.25	peak
6	17775.000	29.51	23.09	52.60	74.00	-21.40	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	50.85	0.76	51.61	74.00	-22.39	peak
2	7310.245	49.61	6.11	55.72	74.00	-18.28	peak
3	7310.245	43.76	6.11	49.87	54.00	-4.13	AVG
4	9285.000	38.76	8.94	47.70	74.00	-26.30	peak
5	11520.000	35.90	13.38	49.28	74.00	-24.72	peak
6	13620.000	34.79	15.99	50.78	74.00	-23.22	peak
7	17805.000	28.69	23.31	52.00	74.00	-22.00	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

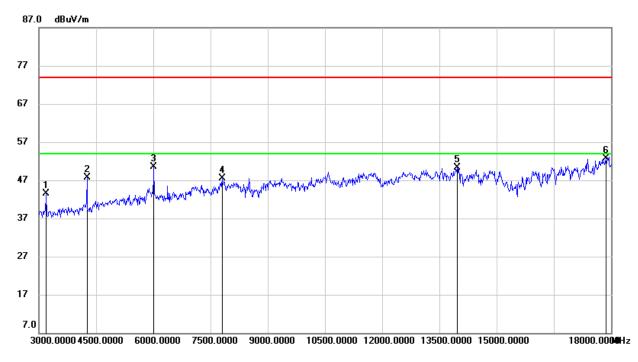
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	47.92	-4.42	43.50	74.00	-30.50	peak
2	4260.000	49.37	-1.71	47.66	74.00	-26.34	peak
3	6015.000	47.17	3.31	50.48	74.00	-23.52	peak
4	7800.000	39.67	7.93	47.60	74.00	-26.40	peak
5	13965.000	34.27	16.09	50.36	74.00	-23.64	peak
6	17865.000	29.31	23.33	52.64	74.00	-21.36	peak

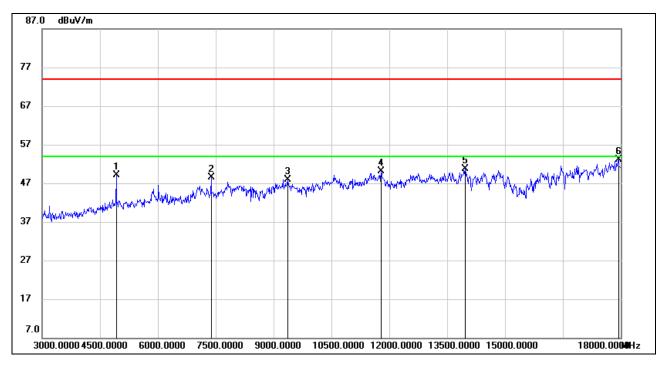
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	48.05	0.96	49.01	74.00	-24.99	peak
2	7380.000	42.10	6.41	48.51	74.00	-25.49	peak
3	9360.000	38.63	9.36	47.99	74.00	-26.01	peak
4	11790.000	36.98	13.17	50.15	74.00	-23.85	peak
5	13965.000	34.53	16.09	50.62	74.00	-23.38	peak
6	17940.000	29.69	23.39	53.08	74.00	-20.92	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

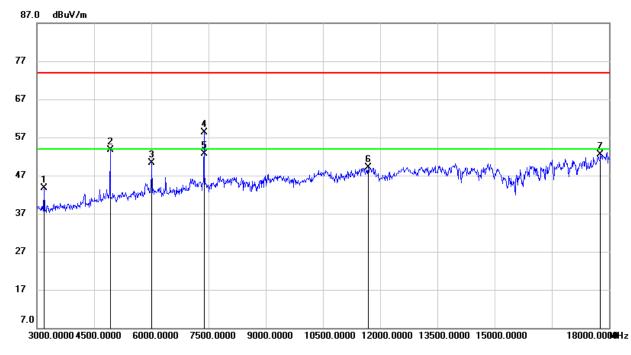
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	48.03	-4.42	43.61	74.00	-30.39	peak
2	4920.000	52.84	0.96	53.80	74.00	-20.20	peak
3	6015.000	47.09	3.31	50.40	74.00	-23.60	peak
4	7385.265	51.90	6.43	58.33	74.00	-15.67	peak
5	7385.265	46.37	6.43	52.80	54.00	-1.20	AVG
6	11685.000	36.08	12.98	49.06	74.00	-24.94	peak
7	17775.000	29.33	23.09	52.42	74.00	-21.58	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.



3

4

5

6

-25.91

-25.56

-23.97

-20.91

74.00

74.00

74.00

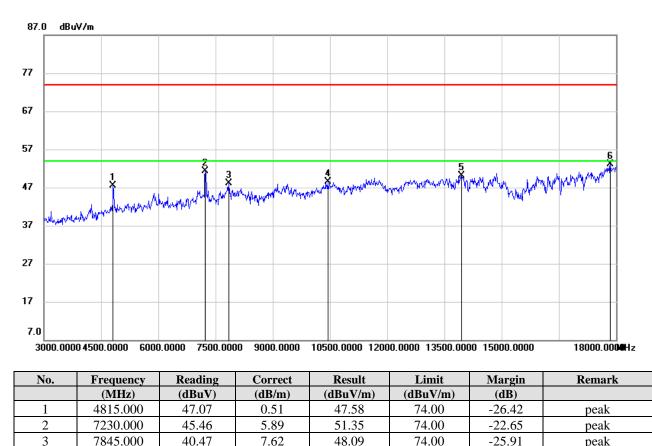
peak

peak

peak

peak

7.9.2. 802.11g MODE



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Peak Result = Reading Level + Correct Factor.

37.31

33.92

29.77

11.13

16.11

23.32

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

48.44

50.03

53.09

3. Peak: Peak detector.

10440.000

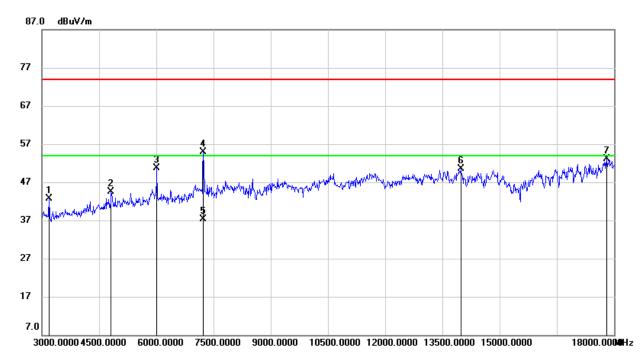
13950.000

17850.000

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	47.13	-4.33	42.80	74.00	-31.20	peak
2	4815.000	44.07	0.51	44.58	74.00	-29.42	peak
3	6015.000	47.49	3.31	50.80	74.00	-23.20	peak
4	7232.610	49.08	5.90	54.98	74.00	-19.02	peak
5	7232.610	31.37	5.90	37.27	54.00	-16.73	AVG
6	13980.000	34.40	16.07	50.47	74.00	-23.53	peak
7	17805.000	29.75	23.31	53.06	74.00	-20.94	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

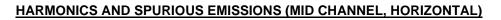
3. Peak: Peak detector.

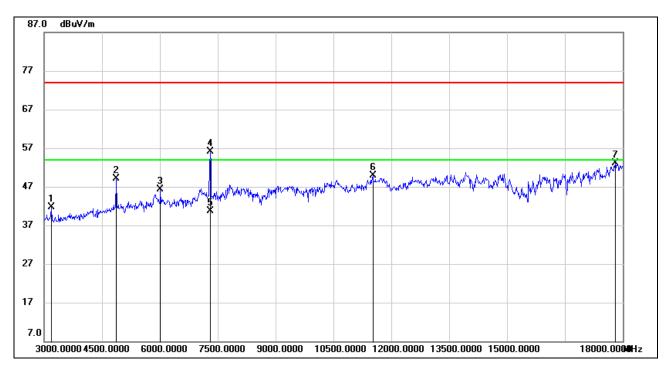
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	45.99	-4.33	41.66	74.00	-32.34	peak
2	4875.000	48.37	0.76	49.13	74.00	-24.87	peak
3	6015.000	42.98	3.31	46.29	74.00	-27.71	peak
4	7310.790	50.09	6.11	56.20	74.00	-17.80	peak
5	7310.790	34.52	6.11	40.63	54.00	-13.37	AVG
6	11520.000	36.54	13.38	49.92	74.00	-24.08	peak
7	17805.000	29.71	23.31	53.02	74.00	-20.98	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

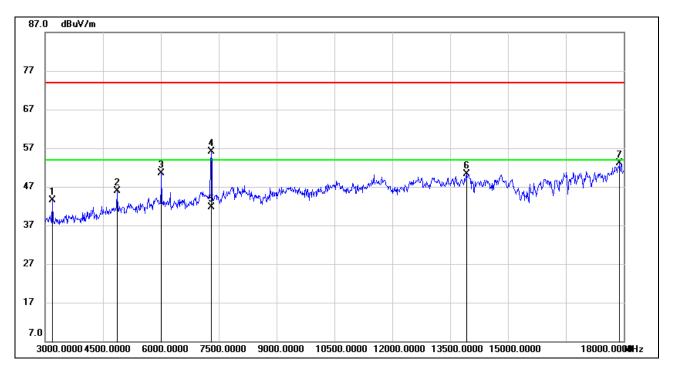
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	47.85	-4.33	43.52	74.00	-30.48	peak
2	4860.000	45.24	0.70	45.94	74.00	-28.06	peak
3	6015.000	47.16	3.31	50.47	74.00	-23.53	peak
4	7311.030	49.93	6.11	56.04	74.00	-17.96	peak
5	7311.030	35.50	6.11	41.61	54.00	-12.39	AVG
6	13920.000	34.19	16.17	50.36	74.00	-23.64	peak
7	17895.000	29.75	23.34	53.09	74.00	-20.91	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

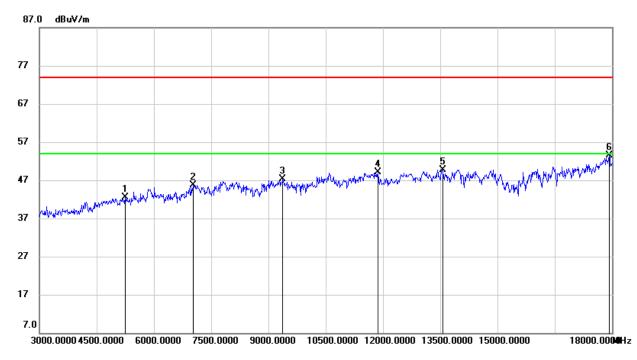
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5250.000	40.24	2.17	42.41	74.00	-31.59	peak
2	7035.000	39.93	5.81	45.74	74.00	-28.26	peak
3	9375.000	37.80	9.45	47.25	74.00	-26.75	peak
4	11865.000	35.81	13.21	49.02	74.00	-24.98	peak
5	13575.000	33.83	15.97	49.80	74.00	-24.20	peak
6	17925.000	30.21	23.37	53.58	74.00	-20.42	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

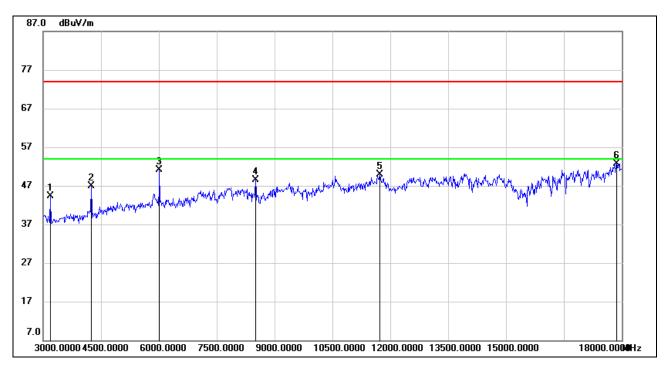
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	48.60	-4.33	44.27	74.00	-29.73	peak
2	4245.000	48.55	-1.59	46.96	74.00	-27.04	peak
3	6015.000	47.81	3.31	51.12	74.00	-22.88	peak
4	8505.000	41.03	7.41	48.44	74.00	-25.56	peak
5	11730.000	36.98	13.02	50.00	74.00	-24.00	peak
6	17865.000	29.38	23.33	52.71	74.00	-21.29	peak

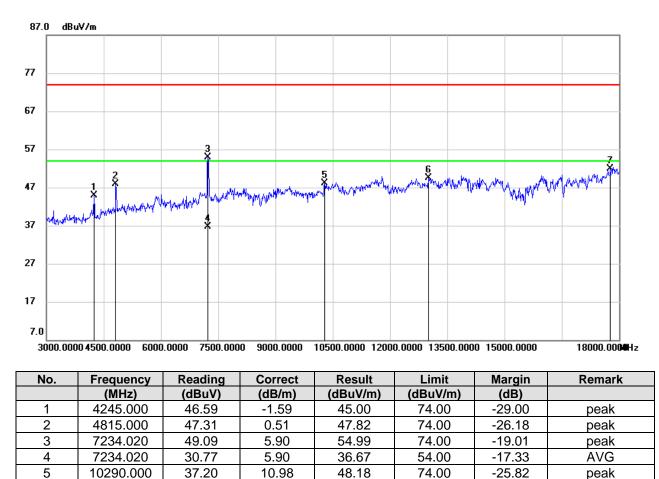
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



7.9.3. 802.11n HT20 MODE



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Measurement = Reading Level + Correct Factor.

34.53

28.80

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

49.48

51.89

74.00

74.00

-24.52

-22.11

peak

peak

3. Peak: Peak detector.

13005.000

17775.000

6

7

4. AVG: VBW=1/Ton where: ton is transmit duration.

14.95

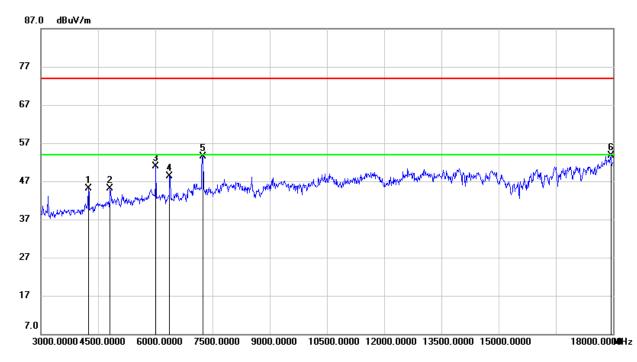
23.09

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4245.000	46.62	-1.59	45.03	74.00	-28.97	peak
2	4815.000	44.54	0.51	45.05	74.00	-28.95	peak
3	6015.000	47.51	3.31	50.82	74.00	-23.18	peak
4	6375.000	44.16	4.22	48.38	74.00	-25.62	peak
5	7245.000	47.67	5.92	53.59	74.00	-20.41	peak
6	17940.000	30.36	23.39	53.75	74.00	-20.25	peak

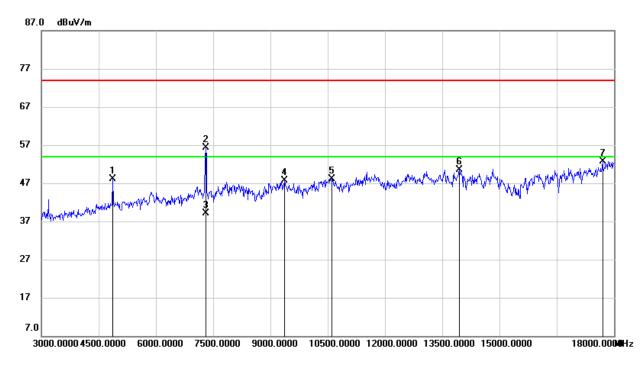
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4860.000	47.43	0.70	48.13	74.00	-25.87	peak
2	7305.000	50.29	6.08	56.37	74.00	-17.63	peak
3	7305.000	33.05	6.08	39.13	54.00	-14.87	AVG
4	9360.000	38.39	9.36	47.75	74.00	-26.25	peak
5	10605.000	36.17	11.93	48.10	74.00	-25.90	peak
6	13950.000	34.39	16.11	50.50	74.00	-23.50	peak
7	17700.000	30.34	22.43	52.77	74.00	-21.23	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

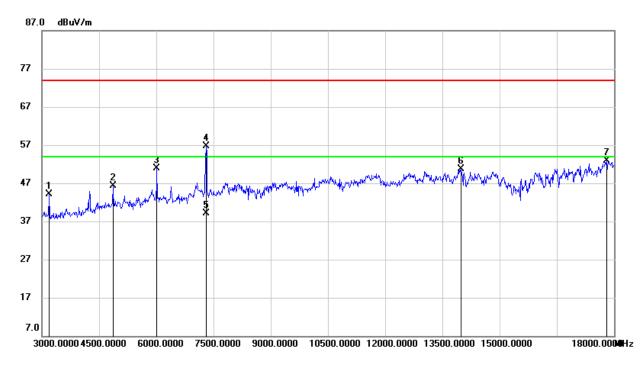
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	48.45	-4.42	44.03	74.00	-29.97	peak
2	4860.000	45.65	0.70	46.35	74.00	-27.65	peak
3	6015.000	47.60	3.31	50.91	74.00	-23.09	peak
4	7309.220	50.68	6.11	56.79	74.00	-17.21	peak
5	7309.220	33.03	6.11	39.14	54.00	-14.86	AVG
6	13995.000	34.59	16.03	50.62	74.00	-23.38	peak
7	17805.000	29.65	23.31	52.96	74.00	-21.04	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

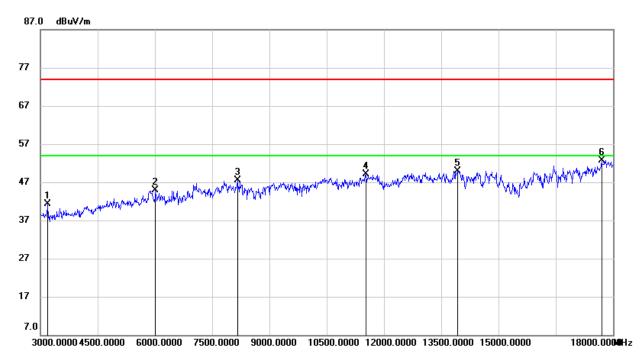
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	45.70	-4.42	41.28	74.00	-32.72	peak
2	6015.000	41.61	3.31	44.92	74.00	-29.08	peak
3	8160.000	39.34	8.18	47.52	74.00	-26.48	peak
4	11520.000	35.66	13.38	49.04	74.00	-24.96	peak
5	13920.000	33.81	16.17	49.98	74.00	-24.02	peak
6	17700.000	30.31	22.43	52.74	74.00	-21.26	peak

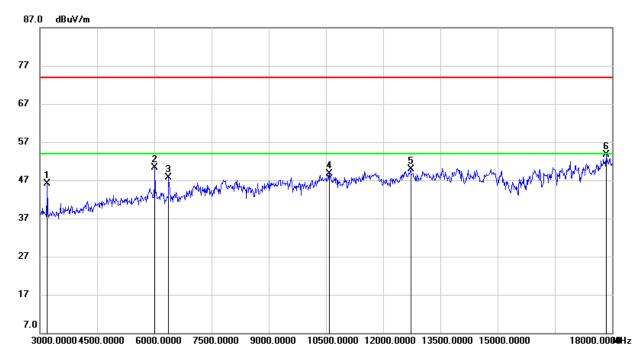
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	50.57	-4.42	46.15	74.00	-27.85	peak
2	6015.000	46.93	3.31	50.24	74.00	-23.76	peak
3	6375.000	43.39	4.22	47.61	74.00	-26.39	peak
4	10590.000	36.82	11.88	48.70	74.00	-25.30	peak
5	12720.000	35.33	14.57	49.90	74.00	-24.10	peak
6	17850.000	30.36	23.32	53.68	74.00	-20.32	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

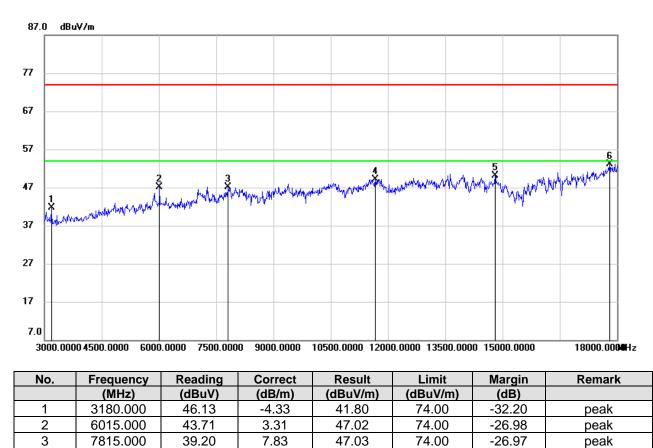


4

5

6

7.9.4. 802.11n HT40 MODE



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

Note: 1. Peak Result = Reading Level + Correct Factor.

36.16

34.09

29.88

13.01

15.92

23.31

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

49.17

50.01

53.19

74.00

74.00

74.00

-24.83

-23.99

-20.81

peak

peak

peak

3. Peak: Peak detector.

11670.000

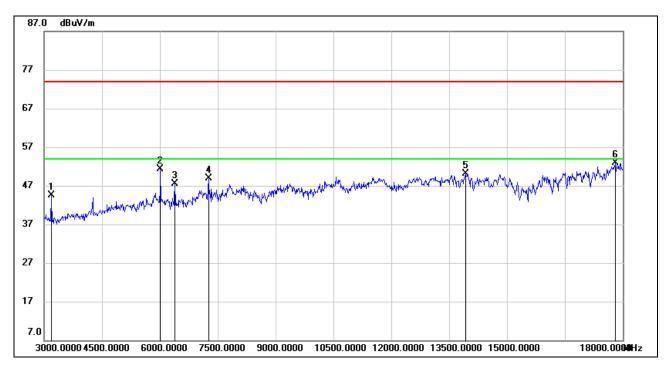
14805.000

17805.000

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	48.87	-4.33	44.54	74.00	-29.46	peak
2	6015.000	48.07	3.31	51.38	74.00	-22.62	peak
3	6390.000	43.22	4.28	47.50	74.00	-26.50	peak
4	7260.000	43.00	5.97	48.97	74.00	-25.03	peak
5	13920.000	34.02	16.17	50.19	74.00	-23.81	peak
6	17805.000	29.67	23.31	52.98	74.00	-21.02	peak

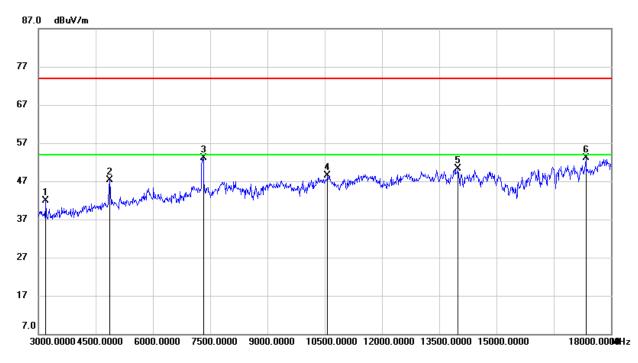
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	46.36	-4.42	41.94	74.00	-32.06	peak
2	4875.000	46.49	0.76	47.25	74.00	-26.75	peak
3	7320.000	47.03	6.14	53.17	74.00	-20.83	peak
4	10575.000	36.64	11.81	48.45	74.00	-25.55	peak
5	13995.000	34.35	16.03	50.38	74.00	-23.62	peak
6	17340.000	31.43	21.61	53.04	74.00	-20.96	peak

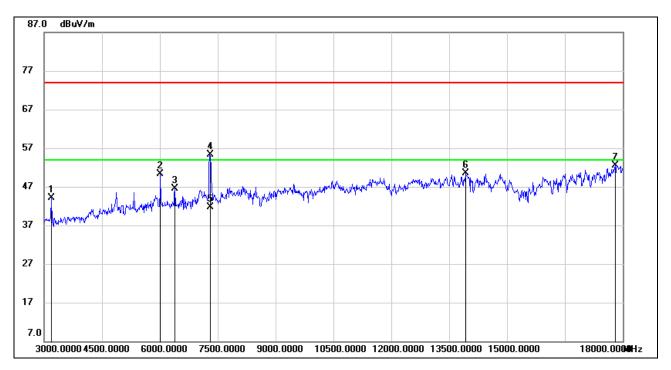
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3195.000	48.44	-4.42	44.02	74.00	-29.98	peak
2	6015.000	46.90	3.31	50.21	74.00	-23.79	peak
3	6390.000	42.22	4.28	46.50	74.00	-27.50	peak
4	7308.900	49.10	6.11	55.21	74.00	-18.79	peak
5	7308.900	35.56	6.11	41.67	54.00	-12.33	AVG
6	13920.000	34.39	16.17	50.56	74.00	-23.44	peak
7	17805.000	29.29	23.31	52.60	74.00	-21.40	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

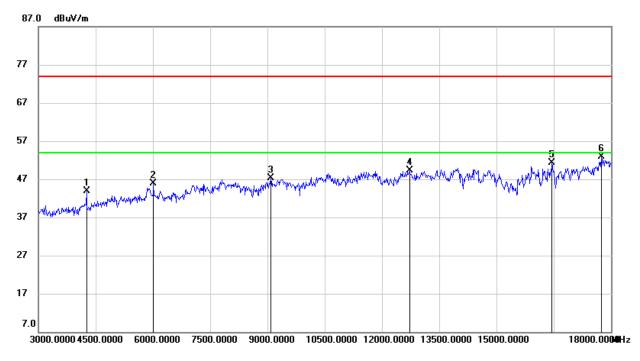
4. AVG: VBW=1/Ton where: ton is transmit duration.

5. For transmit duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4260.000	45.58	-1.71	43.87	74.00	-30.13	peak
2	6015.000	42.63	3.31	45.94	74.00	-28.06	peak
3	9090.000	37.98	9.28	47.26	74.00	-26.74	peak
4	12720.000	34.73	14.57	49.30	74.00	-24.70	peak
5	16455.000	32.40	19.00	51.40	74.00	-22.60	peak
6	17745.000	30.06	22.82	52.88	74.00	-21.12	peak

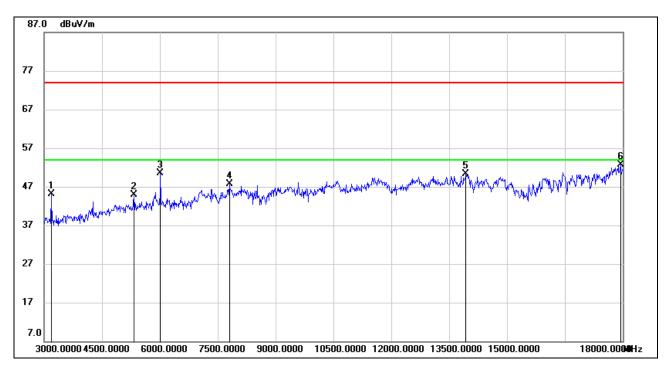
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3180.000	49.34	-4.33	45.01	74.00	-28.99	peak
2	5325.000	42.84	1.99	44.83	74.00	-29.17	peak
3	6015.000	47.24	3.31	50.55	74.00	-23.45	peak
4	7800.000	39.81	7.93	47.74	74.00	-26.26	peak
5	13935.000	34.08	16.15	50.23	74.00	-23.77	peak
6	17940.000	29.40	23.39	52.79	74.00	-21.21	peak

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

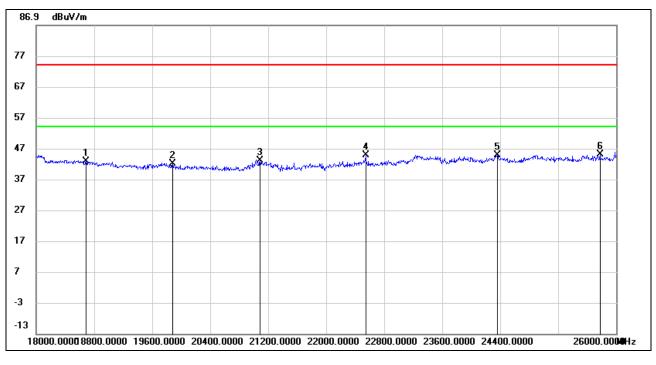
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



7.11. SPURIOUS EMISSIONS (18~26GHz)

7.11.1. 802.11g MODE

SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18688.000	47.62	-4.72	42.90	74.00	-31.10	peak
2	19880.000	46.35	-4.36	41.99	74.00	-32.01	peak
3	21088.000	48.42	-5.37	43.05	74.00	-30.95	peak
4	22544.000	50.48	-5.79	44.69	74.00	-29.31	peak
5	24360.000	48.04	-3.16	44.88	74.00	-29.12	peak
6	25776.000	46.42	-1.45	44.97	74.00	-29.03	peak

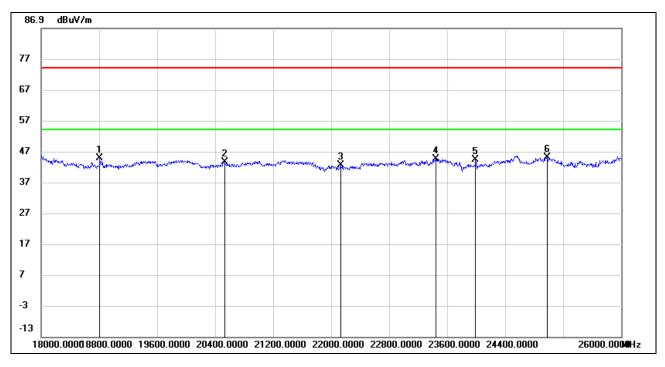
Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18808.000	49.55	-4.85	44.70	74.00	-29.30	peak
2	20528.000	48.55	-4.98	43.57	74.00	-30.43	peak
3	22128.000	48.74	-6.15	42.59	74.00	-31.41	peak
4	23440.000	49.44	-4.88	44.56	74.00	-29.44	peak
5	23992.000	48.22	-4.03	44.19	74.00	-29.81	peak
6	24976.000	46.22	-1.16	45.06	74.00	-28.94	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
 Peak: Peak detector.

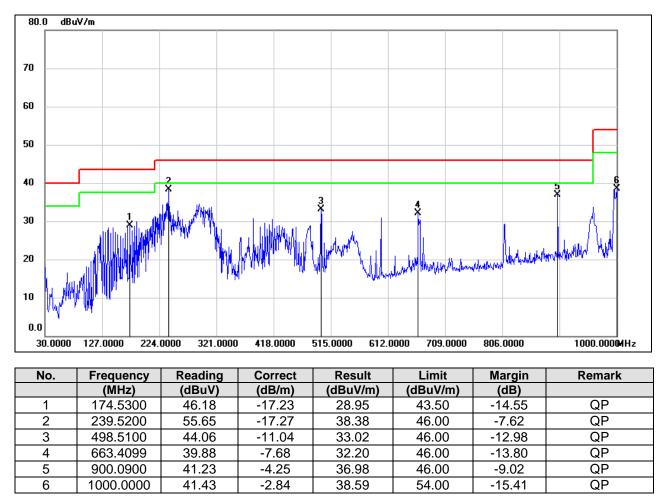
Note: All the test modes have been tested, only the worst data record in the report.



7.12. SPURIOUS EMISSIONS (0.03 ~ 1 GHz)

7.12.1. 802.11g MODE



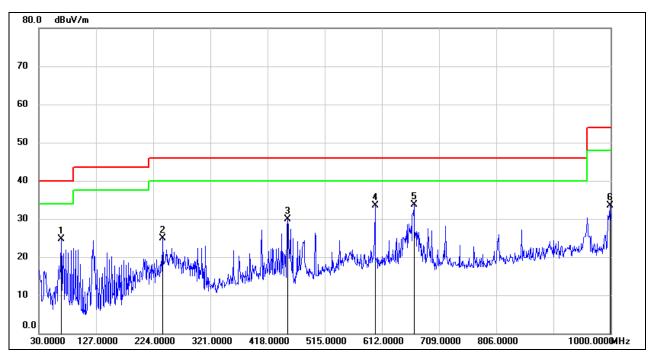


Note: 1. Result Level = Read Level + Correct Factor.

- 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	67.8300	44.52	-19.91	24.61	40.00	-15.39	QP
2	240.4900	42.01	-17.17	24.84	46.00	-21.16	QP
3	451.9500	41.72	-11.82	29.90	46.00	-16.10	QP
4	600.3600	42.40	-8.90	33.50	46.00	-12.50	QP
5	666.3200	41.31	-7.65	33.66	46.00	-12.34	QP
6	999.0300	36.39	-2.86	33.53	54.00	-20.47	QP

Note: 1. Result Level = Read Level + Correct Factor.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

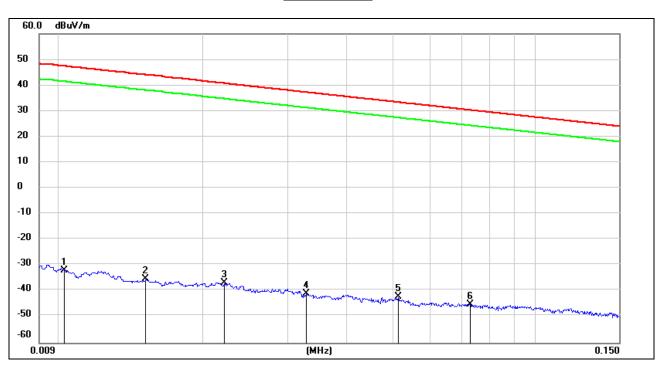
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Note: All the test modes have been tested, only the worst data record in the report.

7.13. SPURIOUS EMISSIONS BELOW 30M

7.13.1. 802.11g MODE

SPURIOUS EMISSIONS (LOW CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)



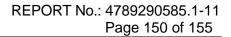
<u>9kHz~ 150kHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0102	69.55	-101.40	-31.85	47.43	-79.28	peak
2	0.0151	66.11	-101.37	-35.26	44.02	-79.28	peak
3	0.0221	64.63	-101.35	-36.72	40.71	-77.43	peak
4	0.0328	60.48	-101.40	-40.92	37.28	-78.20	peak
5	0.0514	59.18	-101.48	-42.30	33.38	-75.68	peak
6	0.0728	56.49	-101.58	-45.09	30.36	-75.45	peak

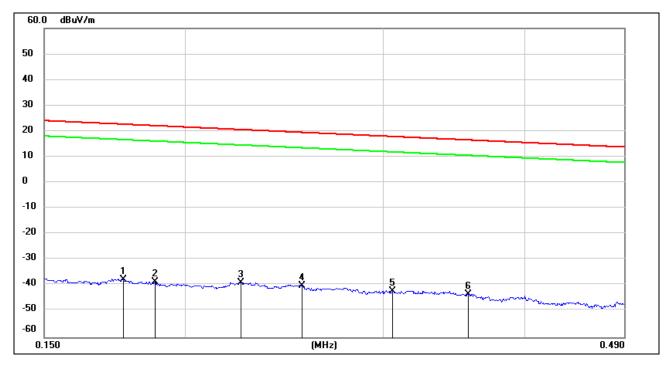
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.



<u>150kHz ~ 490kHz</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1764	63.97	-101.68	-37.71	22.68	-60.39	peak
2	0.1880	63.25	-101.70	-38.45	22.12	-60.57	peak
3	0.2240	62.98	-101.75	-38.77	20.60	-59.37	peak
4	0.2535	61.64	-101.80	-40.16	19.52	-59.68	peak
5	0.3057	59.76	-101.86	-42.10	17.90	-60.00	peak
6	0.3563	58.70	-101.91	-43.21	16.57	-59.78	peak

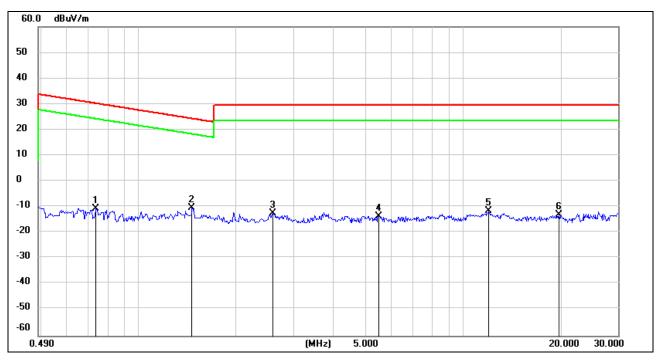
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.



<u>490kHz ~ 30MHz</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.7364	51.37	-62.11	-10.74	30.26	-41.00	peak
2	1.4637	51.78	-62.06	-10.28	24.29	-34.57	peak
3	2.5935	49.11	-61.68	-12.57	29.54	-42.11	peak
4	5.5066	47.89	-61.42	-13.53	29.54	-43.07	peak
5	12.0282	49.33	-60.89	-11.56	29.54	-41.10	peak
6	19.7895	47.92	-60.84	-12.92	29.54	-42.46	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All the test modes have been tested, only the worst data record in the report.



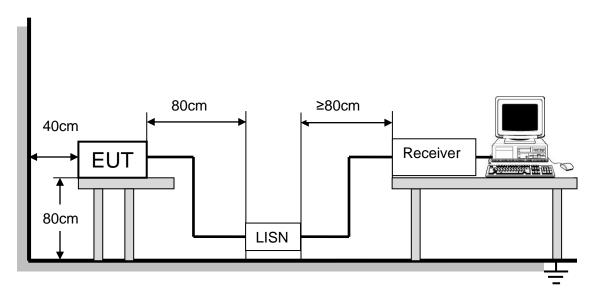
8. AC POWER LINE CONDUCTED EMISSIONS

<u>LIMITS</u>

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

FREQUENCY (MHz)	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	
0.50 -5.0	56.00	46.00	
5.0 -30.0	60.00	50.00	

TEST SETUP AND PROCEDURE



The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

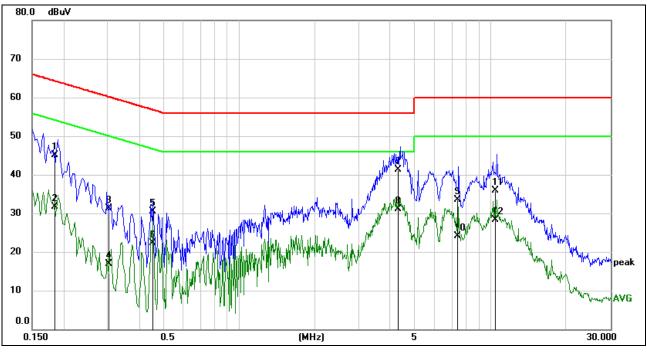
TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	58%
Atmosphere Pressure	101kPa	Test Voltage	DC 5V

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8.1. 802.11g MODE



LINE N RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)

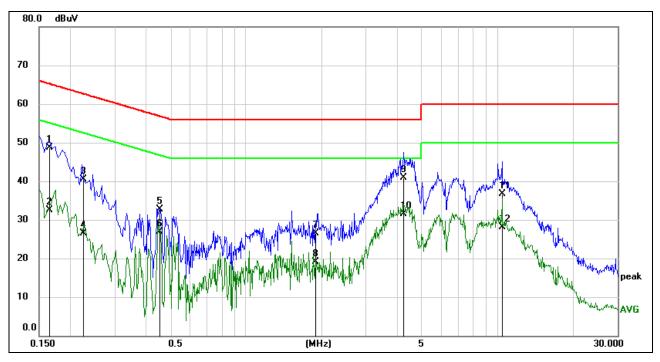
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1852	35.57	9.60	45.17	64.25	-19.08	QP
2	0.1852	22.19	9.60	31.79	54.25	-22.46	AVG
3	0.3021	21.68	9.60	31.28	60.18	-28.90	QP
4	0.3021	7.25	9.60	16.85	50.18	-33.33	AVG
5	0.4534	20.81	9.60	30.41	56.81	-26.40	QP
6	0.4534	12.75	9.60	22.35	46.81	-24.46	AVG
7	4.3105	31.60	9.66	41.26	56.00	-14.74	QP
8	4.3105	21.46	9.66	31.12	46.00	-14.88	AVG
9	7.4090	23.77	9.72	33.49	60.00	-26.51	QP
10	7.4090	14.37	9.72	24.09	50.00	-25.91	AVG
11	10.4837	26.20	9.77	35.97	60.00	-24.03	QP
12	10.4837	18.53	9.77	28.30	50.00	-21.70	AVG

Note: 1. Result = Reading +Correct Factor.

- 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
- 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1649	39.00	9.61	48.61	65.21	-16.60	QP
2	0.1649	22.81	9.61	32.42	55.21	-22.79	AVG
3	0.2262	30.82	9.60	40.42	62.59	-22.17	QP
4	0.2262	16.81	9.60	26.41	52.59	-26.18	AVG
5	0.4538	23.12	9.60	32.72	56.81	-24.09	QP
6	0.4538	17.22	9.60	26.82	46.81	-19.99	AVG
7	1.8931	16.94	9.62	26.56	56.00	-29.44	QP
8	1.8931	9.54	9.62	19.16	46.00	-26.84	AVG
9	4.2476	31.32	9.66	40.98	56.00	-15.02	QP
10	4.2476	21.89	9.66	31.55	46.00	-14.45	AVG
11	10.4472	26.94	9.75	36.69	60.00	-23.31	QP
12	10.4472	18.43	9.75	28.18	50.00	-21.82	AVG

Note: 1. Result = Reading +Correct Factor.

- 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
- 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

Note: All test modes have been tested, only the worst data record in the report.



9. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

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.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

END OF REPORT