# FCC PART 15 SUBPART C TEST REPORT

for

Wireless Audio Link

Model No.: SA-5117

# FCC ID: SZY-SA5117

of

Applicant: Dexatek Technology Ltd. Address: 15F.,NO.81,Sec.1,Sintai 5th Rd., Sijhih Dist., New Taipei City 221, Taiwan

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1

A2LA Accredited No.: 2732.01



# Report No.: W6M21310-13607-C-1

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C. TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: <u>wts@wts-lab.com</u>



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### 1 General Information

### 1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

The test report may only be reproduced or published in full.

Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

Specific Conditions:

Usage of the hereunder tested device in combination with other integrated or external antennas requires at least additional output power measurements, spurious emission measurements, conducted emission measurements (AC supply lines) and radio frequency exposure evaluations for each individual configuration performed, for certification by FCC.

The test sample is able to work according IEEE 802.11 b/g/n.

This report is related to FCC Part 15 C (DSSS and OFDM device).

# **Tester:**

November 27, 2013

\_\_\_\_\_

Robert Ren

Date

WTS-Lab. Name

Signature

#### Technical responsibility for area of testing:

November 27, 2013		Kevin Wang	Kevin Wong
Date	WTS	Name	Signature



# 1.2 Testing laboratory

### 1.2.1 Location

OATS No.5-1, Lishui, Shuang Sing Village, Wanli Dist., New Taipei City 207, Taiwan (R.O.C.) 3 meter semi-anechoic chamber No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.) TEL:886-2-6613-0228 FAX:886-2-2791-5046

Company Worldwide Testing Services(Taiwan) Co., Ltd. 6F, NO. 58, LANE 188, RUEY-KUANG RD. NEIHU, TAIPEI 114, TAIWAN R.O.C. Tel : 886-2-66068877 Fax : 886-2-66068879

1.2.2 Details of accreditation status
Accredited testing laboratory
A2LA accredited number: 2732.01
FCC filed test laboratory Reg. No. 930600
Industry Canada filed test laboratory Reg. No. IC 5679A-1



# Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name:	./.
Accredited number:	./.
Street:	./.
Town:	./.
Country:	./.
Telephone:	./.
Fax:	./.

# 1.3 Details of approval holder

Name:	Dexatek Technology Ltd.
Street:	15F.,NO.81,Sec.1,Sintai 5th Rd., Sijhih Dist.,
Town:	New Taipei City 221,
Country:	Taiwan
Telephone:	+886-2-8698-4245
Fax:	+886-2-8698-4108



# 1.4 Application details

Date of receipt of test item:	October 29, 2013
Date of test:	from October 30, 2013 to November 27, 2013

# 1.5 General information of Test item

Type of test item:	Wireless Audio Link
Model Number:	SA-5117
Brand Name:	OEO Design Ltd
Multi-listing model number:	without
Photos:	see Appendix

### **Technical data**

Frequency band:	2.4 GHz – 2.4835 GHz
11b, 11g, 11n 20MHz	
Frequency ( ch 1 or A):	2.412 GHz
Frequency ( ch 6 or B):	2.437 GHz
Frequency ( ch 11 or C):	2.462 GHz
11n 40MHz	
Frequency ( ch 1 or A):	2.422 GHz
Frequency ( ch 4 or B):	2.437 GHz
Frequency ( ch 7 or C):	2.452 GHz
Number of Channels:	11b, 11g, 11n 20MHz: 11
	11n 40MHz: 7
Operation modes:	duplex
Modulation Type:	DSSS / OFDM
Fixed point-to-point operation:	$\Box$ Yes / $\boxtimes$ No
Type of Antenna:	PCB Antenna
Antenna gain:	3.0 dBi
Power supply:	Adaptor (I/P: 100~240 VAC, 50/60Hz, 0.18A,
	O/P: 5 Vdc / 1.0A)
Emission designator:	11b: DSSS: 16M7G1D
	11g: OFDM: 17M8D1D
	11n 20MHz: OFDM: 19M0D1D
	11n 40MHz: OFDM: 37M3D1D



Registration number: W6M21310-13607-C-1 FCC ID: SZY-SA5117 Host device: none

#### Classification

<u> </u>	
Fixed Device	
Mobile Device (Human Body distance $> 20$ cm)	$\boxtimes$
Portable Device (Human Body distance $< 20$ cm)	
Modular Radio Device	

Conducted: 20.03 dBm

Conducted: 20.53 dBm Conducted: 20.77 dBm

Conducted: 21.50 dBm

Conducted: 21.75 dBm

Conducted: 21.99 dBm

Conducted: 20.99 dBm Conducted: 21.41 dBm

Conducted: 21.97 dBm

#### **Transmitter**

#### <u>Unom</u>

#### Mode A (DSSS)

Power ( ch 1 or A): Power ( ch 6 or B): Power ( ch 11 or C):

#### Mode B (OFDM)

Power ( ch 1 or A): Power ( ch 6 or B): Power ( ch 11 or C):

#### Mode C (OFDM)

Power ( ch 1 or A): Power ( ch 6 or B): Power ( ch 11 or C):

#### Mode D (OFDM)

Power ( ch 1 or A): Power ( ch 4 or B): Power ( ch 7 or C): Conducted: 20.35 dBm Conducted: 21.08 dBm Conducted: 21.31 dBm

#### Manufacturer: (if applicable)

Name:	./.
Street:	./.
Town:	./.
Country:	./.

# 1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.247 (2011-10)



# 2 Technical test

# 2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.	×
or	
The deviations as specified in 2.5 were ascertained in the course of the tests	

# 2.2 Test environment

performed.

Temperature:	23 °C
Relative humidity content:	20 75 %
Air pressure:	86 103 kPa
Power supply:	Adaptor (I/P: 100~240 VAC, 50/60Hz, 0.18A, O/P: 5 Vdc / 1.0A)

Extreme conditions parameters: ./.



Registration number: W6M21310-13607-C-1 FCC ID: SZY-SA5117

#### **Test Equipment List** 2.3

No.	Test equipment	Туре	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2013/9/2	2014/9/1
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Functi	on Test
ETSTW-CE 004	ZWEILEITER-V- NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2012/12/21	2013/12/20
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2013/3/4	2014/3/3
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Functi	on Test
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2013/7/10	2014/7/9
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2013/9/2	2014/9/1
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2013/9/2	2014/9/1
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Functi	on Test
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Functi	on Test
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2013/10/15	2014/10/14
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2013/7/3	2014/7/2
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2013/3/4	2014/3/3
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2013/3/21	2014/3/20
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2013/5/31	2014/5/30
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2013/3/4	2014/3/3
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2013/11/27	2014/11/26
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Functi	on Test
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	EMCO	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2013/10/7	2014/10/6
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2013/10/11	2014/10/10
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2013/11/27	2014/11/26
ETSTW-RE 111	TRILOG Super Broadband test Antenna	VULB 9160	9160-3309	Schwarz beck	2012/12/13	2013/12/12
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	None	T-Power	Functi	on test
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2013/1/11	2014/1/10
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2013/6/28	2014/6/27



# Registration number: W6M21310-13607-C-1

Registration number. Wolviz	
FCC ID: SZY-SA5117	

FCC ID: SZY	-SA311/					
ETSTW-RE 125	5GHz Notch filter	5NSL11- 5200/E221.3-O/O	1	K&L Microwave	2013/8/16	2014/8/15
ETSTW-RE 126	5GHz Notch filter	5NSL11- 5800/E221.3-O/O	1	K&L Microwave	2013/8/16	2014/8/15
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2013/3/4	2014/3/3
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circits	2013/8/13	2014/8/12
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circits	2013/8/13	2014/8/12
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-te	st Use
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2013/10/7	2014/10/6
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849- 822/851-40 /12+9SS	3	WI	2013/1/11	2014/1/10
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748- 1743/1752-32/5SS	1	WI	2013/1/11	2014/1/10
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5 -1875.5/1884.5- 32/58S	3	WI	2013/1/11	2014/1/10
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1- 904.25-50/8SS	1	WI	2013/1/11	2014/1/10
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2013/9/18	2014/9/17
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2013/3/4	2014/3/3
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	Pre-test	Use NCR
ETSTW-Cable 012	N TYPE To SMA Cable	Cable 012	None	JYE BAO CO.,LTD.	2013/3/4	2014/3/3
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2013/3/26	2014/3/25
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2013/3/4	2014/3/3
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2013/3/4	2014/3/3
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2013/10/11	2014/10/10
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2013/10/11	2014/10/10
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2013/3/4	2014/3/3
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S_Cable 10)	238092	HUBER+SUHNER	2013/11/27	2014/11/26
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2013/11/27	2014/11/26
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2013/11/27	2014/11/26
ETSTW-Cable 053	N TYPE To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2013/3/26	2014/3/25
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2013/6/20	2014/6/19
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version I	CTS-03A1



# 2.4 General Test Procedure

**POWER LINE CONDUCTED INTERFERENCE:** The procedure used was ANSI STANDARD C63.4-2009 5.2 using a 50µH LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

**RADIATION INTERFERENCE:** The test procedure used was according to ANSI STANDARD C63.4-2009 6.4 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of  $dB\mu V$ ) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example: Freq (MHz) METER READING + ACF + CABLE LOSS (to the receiver) = FS 33  $20 \text{ dB}\mu\text{V} + 10.36 \text{ dB} + 6 \text{ dB} = 36.36 \text{ dB}\mu\text{V/m}@3\text{m}$ 

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2009 6.3.1. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by Worldwide Testing Services(Taiwan) Co., Ltd. at the registered open field test site located at No.5-1, Lishui, Shuang Sing Village, Wanli Dist., New Taipei City 207, Taiwan (R.O.C.). The Registration Number: 930600.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.



When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows: Average = Peak + Duty Factor Duty Factor = 20 log (dwell time/T) T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

ANSI STANDARD C63.4-2009 10.2.7: Any measurements that utilize special test software shall be indicated and referenced in the test report. During testing, test software 'EZ EMC' was used for setting up different operation modes.



Registration number: W6M21310-13607-C-1

FCC ID: SZY-SA5117

# 3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)	X	×	
Equivalent isotropically radiated Power	15.247(b)	×	X	
Spurious Emissions radiated – Transmitter	15.247(c):	X	×	
operating	15.209			
Band Edge Measurement	15.247(d)	×	×	
Minimum 6 dB Bandwidth	15.247(a)(2)	×	×	
Peak Power Spectral Density	15.247(e)	×	X	
Radiated Emission from Digital Part	15.109			
Power Line Conducted Emission	15.207	×	×	

(The following is intentionally left blank.)

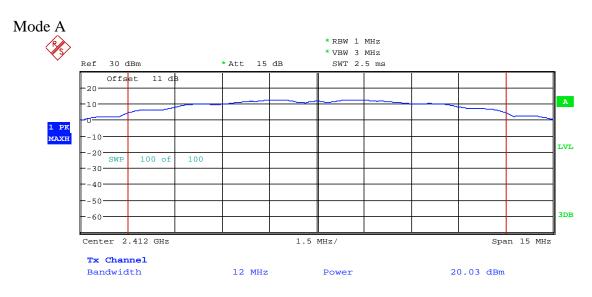


# 3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).



MAX OUTPUT POWER 802.11B CH01 Date: 20.NOV.2013 05:13:14



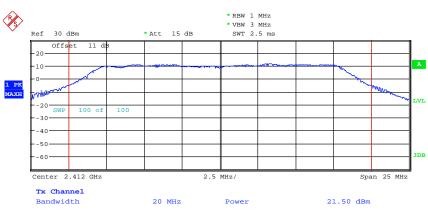


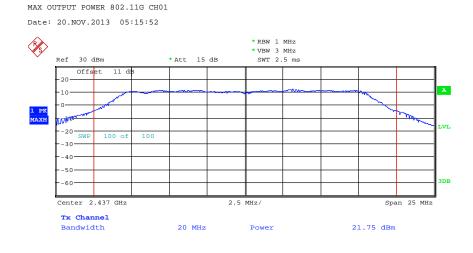
Date: 20.NOV.2013 05:14:18 \* RBW 1 MHz \* VBW 3 MHz SWT 2.5 ms Ś Ref 30 dBm \* Att 15 dB Offset 11 d 20 А 10 6 1 PK MAXH -10 -20 100 100 -30 -40 50 DE -60-Center 2.462 GHz 1.5 MHz/ Span 15 MHz Tx Channel Bandwidth 12 MHz Power 20.77 dBm

MAX OUTPUT POWER 802.11B CH11 Date: 20.NOV.2013 05:14:56

MAX OUTPUT POWER 802.11B CH06

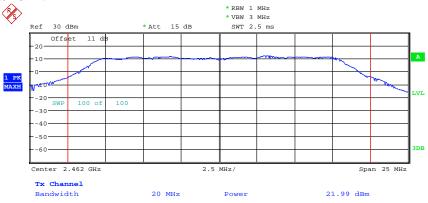






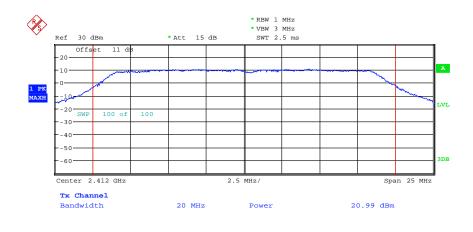
MAX OUTPUT POWER 802.11G CH06 Date: 20.NOV.2013 05:16:42





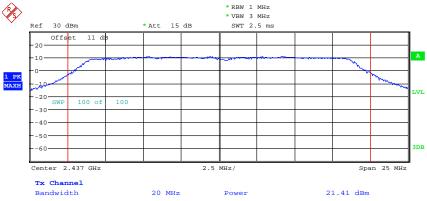
MAX OUTPUT POWER 802.11G CH11 Date: 20.NOV.2013 05:17:29



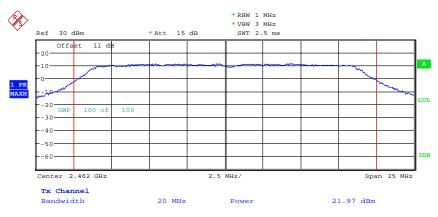


MAX OUTPUT POWER 802.11N 20MHZ CH01 Date: 20.NOV.2013 05:18:41



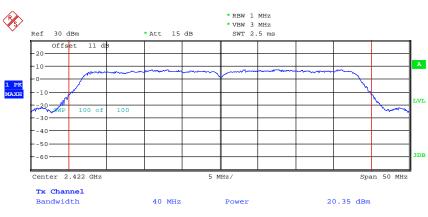


MAX OUTPUT POWER 802.11N 20MHZ CH06 Date: 20.NOV.2013 05:20:10



MAX OUTPUT POWER 802.11N 20MHZ CH11 Date: 20.NOV.2013 05:21:01



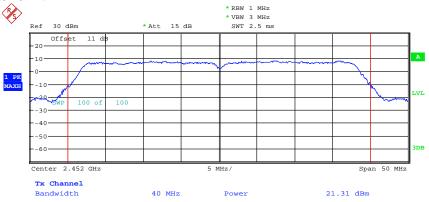


Date: 20.NOV.2013 05:23:18 \* RBW 1 MHz Ś \* VBW 3 MHz 30 dBm 15 dB SWT 2.5 ms Ref Att Offset 11 d 20-10 1 PK MAXH 10 vi 720 ver 100 of 100 -30 -40 -50 DF 60 Center 2.437 GHz 5 MHz/ Span 50 MHz **Tx Channel** Bandwidth 40 MHz Power 21.08 dBm

MAX OUTPUT POWER 802.11N 40MHZ CH01

MAX OUTPUT POWER 802.11N 40MHZ CH04 Date: 20.NOV.2013 05:24:27





MAX OUTPUT POWER 802.11N 40MHZ CH07 Date: 20.NOV.2013 05:25:18

Limits:

Frequency MHz	Power dBm
902 - 928	30
2400 - 2483.5	30
5725 - 5850	30

In case of employing transmitter antennas having antenna gain > 6 dBi and using fixed point-to point operation consider §15.247 (b)(4)

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

Explanation: ./.



### 3.2 Equivalent isotropic radiated power

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain EIRP = 21.99 dBm + 3.0 dBi = 24.99 dBm Limit: EIRP = +36 dBm for Antenna gain <6dBi

Test equipment used: ETSTW-RE 055

# 3.3 RF Exposure Compliance Requirements

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.

The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a "worst case" or conservative prediction.

$$\mathbf{S} = \frac{\mathbf{PG}}{4 \pi \mathbf{R}^2}$$

S – Power Density

P – Output power ERP

R – Distance

D – Cable Loss

AG – Antenna Gain

Item	Unit	Value	Remarks
Р	mW	158.1248	Peak value
D	dB		
AG	dBi	3.0	
G		1.9953	Calculated Value
R	cm	20	Assumed value
S	mW/cm <sup>2</sup>	0.0628	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure							
Frequency (MHz)	Power Density (mW/cm <sup>2</sup> )						
1500 - 100.000	1.0						



# 3.4 Transmitter Radiated Emissions in Restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 26500 MHz. For radiated emission tests, the analyzer setting was as followings:

Frequency  $\leq 1$  GHz, RBW:100 kHz, VBW: 100 kHz (Peak measurements) Frequency > 1 GHz, RBW: 1 MHz, VBW: 1 MHz (Peak measurements) Frequency > 1 GHz, RBW:1 MHz, VBW: 10 Hz (Average measurements)

Limits.

For frequencies below 1GHz:

Frequency of Emission	Field strength	Field Strength
(MHz)	(microvolts/meter)	(dB microvolts/meter)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above	500	54.0

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of Digit Transmission Systems:

"If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation."

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

Duty cycle correction = 20 log (dwell time/ 100ms)

Note: No duty cycle correction was added to the reading of this EUT.

Explanation: see attached diagrams in Appendix.



# 3.5 Spurious Emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

#### FCC Rule: 15.247(c), 15.35

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Limits:

For frequencies above 1GHz (Peak measurements). Modified Limit for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

For frequencies above 1GHz (Average measurements). Max. reading – 20dB

Max. reading – 20 dB

Guidance on Measurement of Digit Transmission Systems:

"If the emission is pulsed, modify the unit for continuous operation, use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation."

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

Duty Cycle correction = 20 log (dwell time/100ms)

Note: No duty cycle correction was added to the reading of EUT.



SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance with point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits. In the Table being listed the critical peak and average value and exhibit the compliance with the above calculated Limits.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Correction Factor".

#### Summary table with radiated data of the test plots

Model: Mode: Polarization:		SA-5117 2.11b CH1		Date: Temperature: Humidity:	2013/1 24 60	1/26 °C %	Engineer:	Roy
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6692	25.26	peak	12.92	38.18	43.50	-5.32	265	100
294.3686	28.33	peak	15.85	44.18	46.00	-1.82	45	100

Frequency (MHz)	Reading (dBuV) Peak Ave.		Factor (dB) Corr.	(dBuV/m)		Limit @3m (dBuV/m) Peak Ave.		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4824.0000	45.69		0.50	46.19		74.00	54.00	-27.81	95	100
7236.0000	40.61		4.06	44.67		74.00	54.00	-29.33	185	100
9648.0000	35.54		9.16	44.70		74.00	54.00	-29.30	235	100
12060.0000	34.01		13.89	47.90		74.00	54.00	-26.10	120	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
298.2565	21.76	peak	15.89	37.65	46.00	-8.35	335	100
961.1222	15.40	peak	28.25	43.65	54.00	-10.35	60	100

Frequency (MHz)	Read (dBi Peak	Factor (dB) Corr.	3) (dBuV/m) rr. Peak Ave.					Table Degree (Deg.)	Ant. High (cm)
4824.0000	49.53	 0.50	50.03		74.00	54.00	-23.97	70	100
7236.0000	40.36	 4.06	44.42		74.00	54.00	-29.58	250	100
9648.0000	34.67	 9.16	43.83		74.00	54.00	-30.17	55	100
12060.0000	33.61	 13.89	47.50		74.00	54.00	-26.50	310	100



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TCC ID. 521	I-SAJII/										
Mode: Polarization:	80 Horizontal	02.11b CH	6								
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)		esult	(dBuV/m)	Lin (dBu\		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	24.83	peak	13.10	5	3	7.99	46.	)O	-8.01	80	100
298.2565	28.04	peak	15.89	9	4	3.93	46.	00	-2.07	335	100
Frequency	Read (dBi		Factor (dB)	r F		lt @3m uV/m)		@3m µV/m)	Marg		Ant.
(MHz)	Peak	Ave.	Corr.	F	lubi Peak		Peak		e. (dE	B) (Degree	High (cm)
4873.7480	46.45		0.61		'.06		74.00	54.0	· ·	/ / //	100
7311.0000	40.47		4.20		.67		74.00	54.0			100
9748.0000	34.89		9.51		.40		74.00	54.0			100
12185.0000	32.58		14.83		'.41		74.00	54.0			100
Polarization:	Vertical										
Frequency (MHz)	Reading (dBuV)	Detecto	r Fac (dE			Result BuV/m)	Lim (dBuV		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6693	22.42	peak	12.9	92	3	5.34	43.5	i0	-8.16	40	100
296.3126	22.63	peak	15.8	37	3	8.50	46.0	)0	-7.50	260	100
Frequency	Read (dBu	V)	Factor (dB)	(0	dBuV		Limit ( (dBu)	//m)	Margi	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.		eak	Ave.	Peak	Ave.	(dB)	· · · · · · · · · · · · · · · · · · ·	(cm)
4873.7480	47.42		0.61	48.0			74.00	54.00			100
7311.0000	40.54		4.20	44.7			74.00	54.00			100
9748.0000	34.30		9.51	43.8			74.00	54.00			100
12185.0000	32.60		14.83	47.4	3		74.00	54.00	-26.5	7 245	100
Mode: Polarization:	80 Horizontal	2.11b CH1	1				1				
Frequency (MHz)	Reading (dBuV)	Detector	r Facto (dB)		esult	(dBuV/m)	Lin (dBu\		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6692	26.29	peak	12.92	2	3	9.21	43.	50	-4.29	215	100
300.2004	28.25	peak	15.9	1	4	4.16	46.	00	-1.84	70	100
Frequency	Read (dBi	uV)	Factor (dB)		(dBu	lt @3m uV/m)	(dBi	@3m µV/m)	Març	Degree	
(MHz)	Peak	Ave.	Corr.		Peak		Peak	1	,	/ /	(cm)
4921.8440	46.08		0.83		0.91		74.00	54.0			100
7386.0000	39.76		4.43		.19		74.00	54.0			100
9848.0000	35.74		9.76		5.50		74.00	54.0	0 -28.		100
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1	1	1 1 1 1 1 1	1 10	11/	1					1 10

34.02

12310.0000

14.12

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48.14

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74.00

54.00

-25.86

100

200



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Polarization:	Vertical	T									
Frequency (MHz)	Reading (dBuV)	Detecto	r Faci (dE			Result BuV/m)	Lin (dBu)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
294.3687	21.58	peak	15.8	35		37.43	46.	00	-8.57	330	100
961.1222	15.36	peak	28.2	25	4	43.61	54.	00	-10.39	155	100
	•									1	
Frequency (MHz)	Read (dBu Peak		Factor (dB) Corr.	((	esult dBu\ eak	@3m V/m) Ave.	Limit (dBu Peak		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4921.8440	50.00		0.83	50.8			74.00	54.00	· · /	60	100
7386.0000	40.39		4.43	44.8			74.00	54.00	-29.18	195	100
9848.0000	35.08		9.76	44.8			74.00	54.00	-29.16	110	100
12310.0000	34.96		14.12	49.0			74.00	54.00	-24.92	205	100
Polarization: Frequency (MHz)	Horizontal Reading (dBuV)	Detector	Facto		esult	t (dBuV/m)	Lir (dBu	-	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6692	24.01	peak	12.92	)		36.93	43	50	-6.57	160	100
298.2565	24.01	QP	15.89			40.19	46		-5.81	330	100
270.2303	24.00		15.0	/	_	10.17	101	00	5.01	550	100
Frequency (MHz) 4824.0000	Read (dBu Peak 41,42	JV) Ave.	Factor (dB) Corr.				(dB Pea	t @3m uV/m) k Ave 54.0		Degree (Deg.)	Ant. High (cm)
7236.0000			0.50				74.00				100
	40.61		4.06		.67		74.00	54.0 54.0			100
9648.0000	36.18		9.16		5.34		74.00				100
12060.0000	34.61		13.89	48	8.50		74.00	54.0	0 -25.50	J 40	100
Polarization:	Vertical										
Frequency (MHz)	Reading (dBuV)	Detecto	r Faci (dE			Result BuV/m)	Lin (dBu)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6693	23.66	peak	12.9	92		36.58	43.	50	-6.92	190	100
298.2565	21.86	peak	15.8	39		37.75	46.	00	-8.25	70	100
		·	·								
Frequency	Read (dBu		Factor (dB)	((	dBu∖	@3m V/m)		@3m V/m)	Margin (dB)	Degree	Ant. High (cm)
(MHz) 4824.0000	Peak 42.13	AVC.	Corr. 0.50	42.6	eak	Ave.	74.00	Ave. 54.00		(Deg.) 115	(cm) 100
7236.0000							74.00	54.00	-31.37	320	
9648.0000	40.70 34.89		4.06 9.16	44.7 44.0			74.00	54.00		50	100 100
12060.0000	34.89		<u>9.16</u> 13.89	44.0			74.00	54.00		210	100
12000.0000	55.00		13.07	47.0	11		74.00	54.00	-20.43	210	100



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Mode: Polarization:	80 Horizontal	)2.11g CH6	6						1			
Frequency (MHz)	Reading (dBuV)	Detector	Facto (dB)		Result	(dBuV/m)	Lin (dBu <sup>v</sup>		Mai (d	rgin IB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	25.51	peak	13.16	5	3	8.67	46.	00	-7.	33	340	100
296.3125	24.33	QP	15.87	7	4	0.20	46.	00	-5.	80	220	100
Frequency (MHz)	Read (dBu Peak		Factor (dB) Corr.	r		t @3m ıV/m) Ave.		:@3m uV/m) < Av		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4874.0000	41.77		0.61	4	2.38		74.00	54.0	)0	-31.62	90	100
7311.0000	40.80		4.20	4	5.00		74.00	54.0	)0	-29.00	300	100
9748.0000	34.49		9.51	4	4.00		74.00	54.0	)0	-30.00	165	100
12185.0000	31.97		14.83	4	6.80		74.00	54.0	)0	-27.20	25	100
Polarization:	Vertical	T			1							
Frequency (MHz)	Reading (dBuV)	Detecto	r Fac (dE			esult BuV/m)	Lim (dBu\			irgin dB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	22.18	peak	13.1	16	3	5.34	46.0	)0	-1(	).66	200	100
298.2565	20.81	peak	15.8	39	3	6.70	46.0	)0	-9	.30	175	100
Frequency (MHz)	Read (dBu Peak		Factor (dB) Corr.		esult ( (dBuV) Peak		Limit ( (dBu) Peak	-		/largin (dB)	Table Degree (Deg.)	Ant. High (cm)
4874.0000	42.00		0.61	42.	61		74.00	54.00	) -	31.39	30	100
7311.0000	39.92		4.20	44.	12		74.00	54.00		29.88	255	100
9748.0000	34.23		9.51	43.	74		74.00	54.00	) -	30.26	240	100
12185.0000	32.19		14.83	47.	02		74.00	54.00	) -	26.98	75	100
Mode: Polarization:	80 Horizontal	2.11g CH1	1				1		1			
Frequency (MHz)	Reading (dBuV)	Detector	r Facto (dB)		Result	(dBuV/m)	Lin (dBu\			rgin IB)	Table Degree (Deg.)	Ant. High (cm)
218.5570	24.16	peak	13.4		3	7.57	46.	00	-8.	43	270	100
296.3125	24.31	QP	15.87	7	4	0.18	46.	00	-5.	82	115	100
Frequency (MHz)	Read (dBu Peak		Factor (dB) Corr.	r		t @3m JV/m) Ave.		:@3m uV/m) c Av		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4924.0000	40.77		0.84	Λ	1.61		74.00	54.0		-32.39	230	100
7386.0000	40.52		4.43		4.95		74.00	54.0		-29.05	315	100
9848.0000	34.99		9.76		4.75		74.00	54.0		-29.25	35	100
,	51.77		7.70	'			,			- / . 20	00	+

34.29

12310.0000

14.12

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48.41

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74.00

54.00

-25.59

100

180



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Polarization:	Vertical										
Frequency (MHz)	Reading (dBuV)	Detector	. Faci (dE			Result BuV/m)	Lin (dBu)	-	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6693	22.80	peak	12.9	92		35.72	43.	50	-7.78	155	100
296.3126	22.27	peak	15.8	37		38.14	46.	00	-7.86	320	100
		•									
Frequency (MHz)	Read (dBu Peak		Factor (dB) Corr.		lBu∖	@3m //m) Ave.		@3m V/m) Ave.	Margir (dB)	n Table Degree (Deg.)	Ant. High (cm)
4924.0000	41.27		0.84	42.1			74.00	54.00	· · ·		100
7386.0000	40.18		4.43	44.6			74.00	54.00	-29.39		100
9848.0000	34.79		9.76	44.5			74.00	54.00	-29.45		100
12310.0000	34.68		14.12	48.80			74.00	54.00	-25.20		100
Mode: Polarization: Frequency (MHz)	Horizontal Reading (dBuV)	1n 20MHz	Facto		esult	: (dBuV/m)		nit V/m)	Margin (dB)	Table Degree	Ant. High
· · ·	. ,		. ,					,	· · /	(Deg.)	(cm)
216.6132	25.93	peak	13.16			39.09	46		-6.91	255	100
296.3125	24.32	QP	15.87	7	4	0.19	46	.00	-5.81	135	100
Frequency (MHz)	Read (dBi Peak		Factor (dB) Corr.	F	(dB Peak	lt @3m uV/m) < Ave.	(dB Pea			Degree (Deg.)	Ant. High (cm)
4824.0000	41.56		0.50	42.			74.00	54.0			100
7236.0000	40.29		4.06	44.			74.00	54.0			100
9648.0000	34.23		9.16	43.			74.00	54.0			100
12060.0000	32.89		13.89	46.	.78		74.00	54.0	0 -27.2	2 75	100
Polarization:	Vertical										
Frequency (MHz)	Reading (dBuV)	Detector	. Fac (dE			Result BuV/m)	Lin (dBu <sup>v</sup>	-	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
212.7255	21.39	peak	12.0	67	3	34.06	43.	50	-9.44	110	100
298.2565	22.27	peak	15.8	39	3	38.16	46.	00	-7.84	45	100
Frequency	Read (dBu	V)	Factor (dB)	(d	lBu∖	@3m //m)	(dBu	@3m V/m)	Margir	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Pe		Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4824.0000	42.01		0.50	42.5			74.00	54.00	-31.49		100
7236.0000	40.97		4.06	45.03			74.00	54.00	-28.97		100
9648.0000	34.87		9.16	44.03			74.00	54.00			100
12060.0000	33.15		13.89	47.04	/		74.00	54.00	-26.96	65	100



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FCC ID: SZ	Y-SA511/										
Mode: Polarization:	802.1 <sup>°</sup> Horizontal	In 20MHz (	CH6							T	
Frequency (MHz)	Reading (dBuV)	Detector	Facto (dB)	<sup>r</sup> I	Result	(dBuV/m)	Lin (dBu\		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	24.64	peak	13.16	Ď	3	7.80	46.0	00	-8.20	305	100
298.2565	24.32	QP	15.89			0.21	46.0		-5.79	195	100
	1										
Frequency	Read (dBu		Factor (dB)			lt @3m JV/m)	-	@3m µV/m)	Margi	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.		Peak	Ave.	Peak	1	. ,	·	(cm)
4874.0000	41.52		0.61	4	2.13		74.00	54.00			100
7311.0000	40.17		4.20		4.37		74.00	54.00			100
9748.0000	34.74		9.51		4.25		74.00	54.00			100
12185.0000	32.31		14.83	4	7.14		74.00	54.00	) -26.8	6 100	100
Polarization:	Vertical				1					1 1	
Frequency (MHz)	Reading (dBuV)	Detector	Fact (dB			Result BuV/m)	Lim (dBuV		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
296.3126	22.03	peak	15.8	37	3	37.90	46.0	)0	-8.10	285	100
961.1222	14.88	peak	28.2	25	4	3.13	54.0	0	-10.87	150	100
Frequency	Readi (dBu)	V)	Factor (dB)		Result ( (dBuV	//m)	Limit ( (dBu)	//m)	Margin	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.		Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4874.0000	41.94		0.61	42.			74.00	54.00	-31.45		100
7311.0000	40.68		4.20	44.			74.00	54.00	-29.12		100
9748.0000	34.60		9.51	44.			74.00	54.00	-29.89		100
12185.0000	32.34		14.83	47.	.17		74.00	54.00	-26.83	50	100
Mode: Polarization:	802.11 Horizontal	n 20MHz C	CH11								
Frequency (MHz)	Reading (dBuV)	Detector	Facto (dB)		Result	(dBuV/m)	Lim (dBu\		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6692	26.65	peak	12.92	2	3	9.57	43.	50	-3.93	340	100
300.2004	24.34	QP	15.91		4	0.25	46.0	00	-5.75	30	100
Frequency	Read	ina	Factor	-	Resu	lt @3m	l imit	@3m	Margi	n Table	Ant.
	(dBu		(dB)			uV/m)		uV/m)	linargi	Degree	High
(MHz)	Peak	Áve.	Corr.		Peak		Peak			(Deg.)	(cm)
4924.0000	40.78		0.84	4	1.62		74.00	54.00	-32.3		100
7386.0000	39.67		4.43	4	4.10		74.00	54.00	) -29.9	0 65	100
0040 0000	01.01		07/				74.00	E 4 6	0000	0 475	100

36.01

34.42

9.76

14.12

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45.77

48.54

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74.00

74.00

54.00

54.00

-28.23

-25.46

9848.0000

12310.0000

175

285

100

100



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Polarization:	Vertical										
Frequency (MHz)	Reading (dBuV)	Detector	r Fac (dE			Result BuV/m)	Lin (dBu\	-	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6692	21.99	peak	12.9	92	3	34.91	43.50		-8.59	215	100
296.3125	23.29	peak	15.8	87		39.16	46.	00	-6.84	40	100
Frequency (MHz)	Reac (dBu Peak		Factor (dB) Corr.	(0	esult dBu\ eak	@3m //m) Ave.	Limit (dBu Peak	-	Margir (dB)	n Table Degree (Deg.)	Ant. High (cm)
4924.0000	41.02		0.84	41.8			74.00	54.00	-32.14	, , ,	100
7386.0000	39.70		4.43	44.1			74.00	54.00	-29.87		100
9848.0000	34.52		9.76	44.2			74.00	54.00			100
12310.0000	34.67		14.12	48.7			74.00	54.00	-25.21	265	100
Mode: Polarization: Frequency (MHz)	802.1 <u>Horizontal</u> Reading (dBuV)	Detector	Facto		esult	t (dBuV/m)	Lir (dBu	-	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	24.97	peak	13.10	5	3	38.13	46.	00	-7.87	230	100
300.2004	24.31	QP	15.9			10.22	46		-5.78	100	100
Frequency (MHz) 4844.0000	Rea (dB Peak 40.78	ding uV) Ave.	Factor (dB) Corr. 0.54			It @3m uV/m) < Ave. 		t @3m uV/m) <u>k Ave</u> 54.0		Degree (Deg.)	Ant. High (cm) 100
7266.0000	41.02		4.11		6.13		74.00	54.0			100
9688.0000	35.24		9.19		.43		74.00	54.0			100
12110.0000	33.72		14.34	48	8.06		74.00	54.0	0 -25.9	4 300	100
Polarization:	Vertical										
Frequency (MHz)	Reading (dBuV)	Detector	r Fac (dE			Result BuV/m)	Lin (dBu)	-	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	21.06	peak	13.1			34.22	46.		-11.78	315	100
296.3125	22.65	peak	15.8	87		38.52	46.	00	-7.48	65	100
Frequency (MHz)	Reac (dBu Peak		Factor (dB) Corr.	(0	esult dBu\ eak	@3m //m) Ave.	Limit (dBu Peak	-	Margir (dB)	Degree (Deg.)	Ant. High (cm)
4844.0000	41.16		0.54	41.7	0		74.00	54.00	-32.30	155	100
7266.0000	40.61		4.11	44.7	2		74.00	54.00	-29.28		100
			0.10	10.0			74.00	54.00	-30.06	40	100
9688.0000	34.75 34.30		9.19	43.9	4		74.00	04.00	-30.00	40	100



Registration number: W6M21310-13607-C-1 FCC ID: SZY-SA5117

Node: Polarization:	802.1 Horizontal	1n 40MHz (	CH4							
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Resu	lt (dBuV/m)	Lir (dBu		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
296.3125	27.76	peak	15.87		43.63	46.	00	-2.37	305	100
961.1222	11.84	peak	28.25		40.09	54.	00	-13.91	70	100
Frequency	Rea (dB	uV)	Factor (dB)	(dl	ult @3m 3uV/m)	(dB	t @3m uV/m)	Margi	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Pea		Pea	-	· · ·	(Deg.)	(cm)
4874.0000	41.66		0.61	42.27		74.00	54.0			100
7311.0000	40.62		4.20	44.82		74.00	54.0			100
9748.0000	35.04		9.51	44.55		74.00	54.0			100
12185.0000	32.29		14.83	47.12		74.00	54.0	0 -26.8	8 205	100
olarization:	Vertical									
Frequency (MHz)	Reading (dBuV)	Detector	Facto (dB)		Result dBuV/m)	Lim (dBu\		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
214.6692	21.17	peak	12.9	2	34.09	43.	50	-9.41	95	100
296.3125	22.26	peak	15.8	7	38.13	46.0	00	-7.87	145	100
Frequency (MHz) 4874.0000	Read (dBu Peak 41.45		Factor (dB) Corr. 0.61	(dBu Peak 42.06	t @3m ıV/m) Ave. 	Limit (dBu Peak 74.00	V/m) Ave. 54.00	Margin (dB) -31.94	Degree (Deg.) 150	Ant. High (cm) 100
7311.0000	40.86		4.20	45.06		74.00	54.00	-28.94		100
9748.0000	34.18		9.51	43.69		74.00	54.00	-30.31	30	100
12185.0000	32.14		14.83	46.97		74.00	54.00	-27.03	200	100
lode: olarization:	802.1 Horizontal	1n 40MHz (	CH7			1				
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Resu	lt (dBuV/m)	Lir (dBu		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
294.3686	28.05	peak	15.85		43.90	46.	00	-2.10	260	100
961.1222	14.72	peak	28.25		42.97	54.	00	-11.03	120	100
Frequency (MHz)	Rea (dB Peak		Factor (dB) Corr.		ult @3m 3uV/m) ak Ave.		t @3m uV/m) k Ave	Margi e. (dB)	Degree	Ant High (cm)
4904.0000	41.07		0.70	41.77		74.00	54.0			100
7356.0000	41.74		4.34	46.08		74.00	54.0			100
	-									
9808.0000	36.41		9.83	46.24		74.00	54.0	0 -27.70	6 95	100



Registration number: W6M21310-13607-C-1 FCC ID: SZY-SA5117

Polarization:	Vertical							
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
216.6132	21.11	peak	13.16	34.27	46.00	-11.73	165	100
296.3125	21.63	peak	15.87	37.50	46.00	-8.50	50	100
		I				1	1	<del></del>

Frequency	Read (dBi		Factor (dB)		t @3m ıV/m)		@3m V/m)	Margin	Table Degree	Ant. High
(MHz)	Peak	Áve.	Ċorr.	Peak	Ave.	Peak	Áve.	(dB)	(Deg.)	(cm̃)
4904.0000	41.17		0.70	41.87		74.00	54.00	-32.13	145	100
7356.0000	40.95		4.34	45.29		74.00	54.00	-28.71	310	100
9808.0000	34.49		9.83	44.32		74.00	54.00	-29.68	220	100
12260.0000	32.92		14.37	47.29		74.00	54.00	-26.71	55	100

Note

- 1. Correction Factor = Antenna factor + Cable loss Preamplifier
- 2. The formula of measured value as: Test Result = Reading + Correction Factor
- 3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
- 4. All not in the table noted test results are more than 20 dB below the relevant limits.
- 5. Measurement uncertainty for 3m measurement: 30-1000 MHz =  $\pm$  3.72 dB, 1-18 GHz =  $\pm$  5.33 dB, 18-40 GHz=  $\pm$  3.43 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.
- 6. See attached diagrams in appendix.

**TEST RESULT** (**Transmitter**): The unit DOES meet the FCC requirements.

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111, ETSTW-RE 088, ETSTW-RE 018



Registration number: W6M21310-13607-C-1

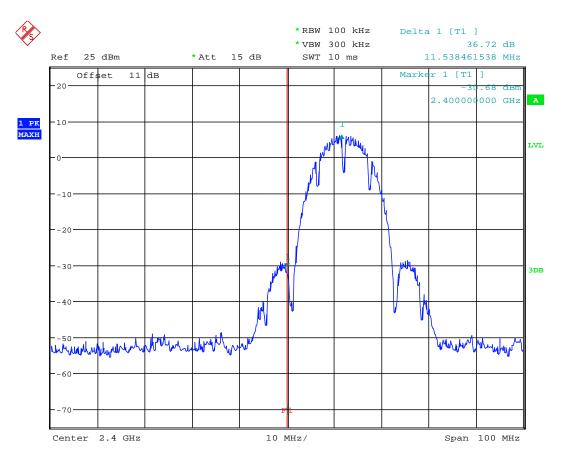
FCC ID: SZY-SA5117

### 3.6 Radiated Emission on the band edge

According to FCC rules part 15 subpart C §15.247(d) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required.

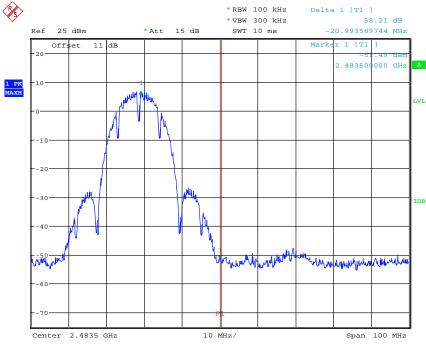
In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

Mode A



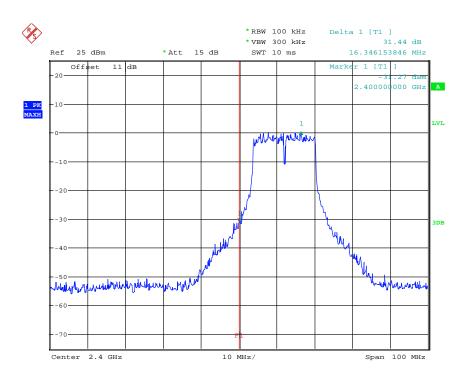
BANDEDGE 802.11B CH01 Date: 20.NOV.2013 05:13:34





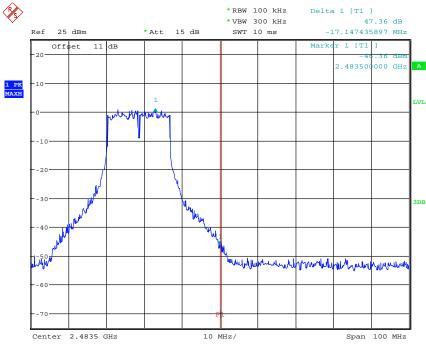






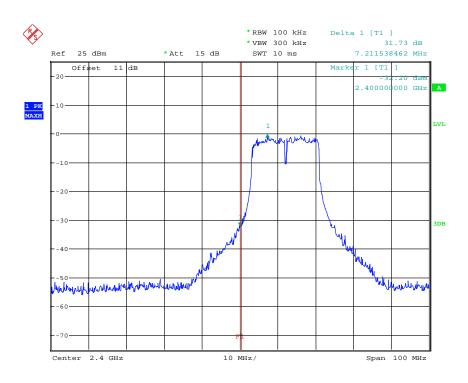
BANDEDGE 802.11G CH01 Date: 20.NOV.2013 05:16:12





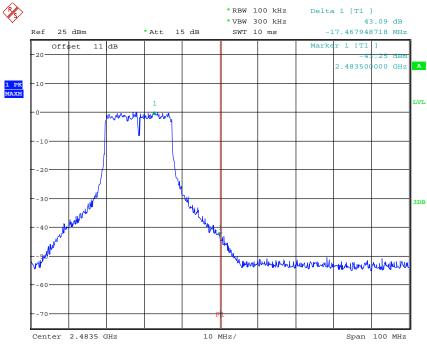






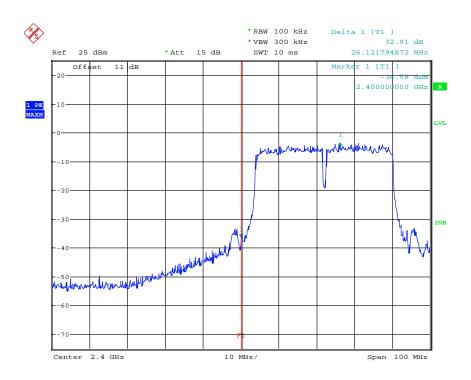
BANDEDGE 802.11N 20MHZ CH01 Date: 20.NOV.2013 05:19:00





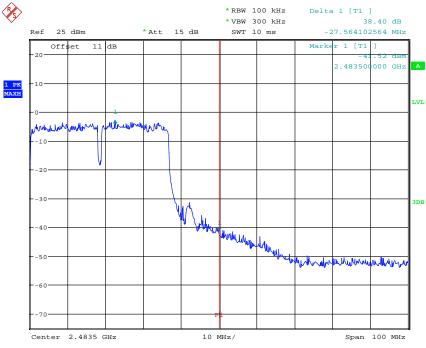






BANDEDGE 802.11N 40MHZ CH01 Date: 20.NOV.2013 05:23:39





BANDEDGE 802.11N 40MHZ CH07 Date: 20.NOV.2013 05:25:38

#### Limit:

Frequency Range / MHz	Limit
902 –928	
2400 - 2483.5	- 20 dB
5725 - 5850	

Test equipment used: ETSTW-RE 055, ETSTW-RE 050



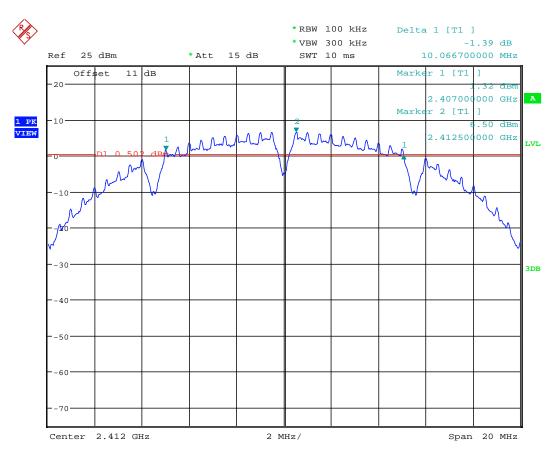
Registration number: W6M21310-13607-C-1

FCC ID: SZY-SA5117

## 3.7 Minimum 6 dB Bandwidth

The analyzer ResBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK reading was taken, two markers were set 6 dB below the maximum level on the right and the left side of the emission. The 6 dB bandwidth is the frequency difference between the two markers.

Mode A

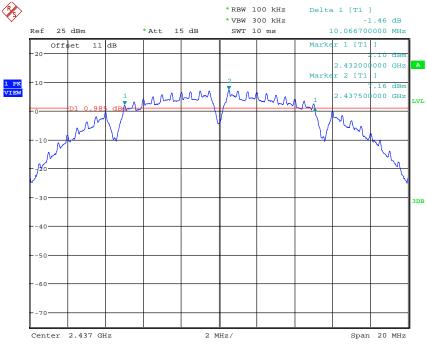


6DB BANDWIDTH 802.11B CH01 Date: 20.NOV.2013 05:13:22

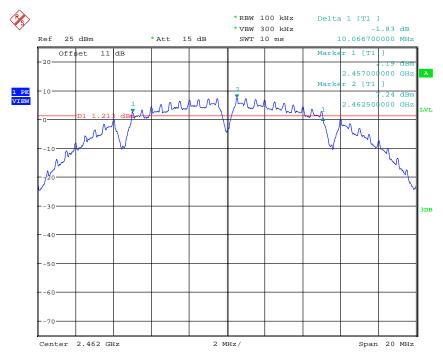


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21310-13607-C-1 FCC ID: SZY-SA5117

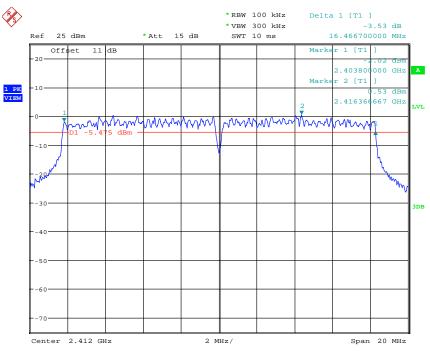


<sup>6</sup>DB BANDWIDTH 802.11B CH06 Date: 20.NOV.2013 05:14:26

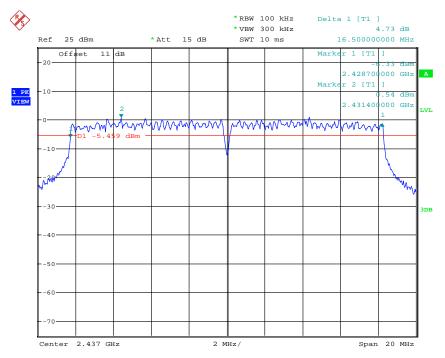


6DB BANDWIDTH 802.11B CH11 Date: 20.NOV.2013 05:15:04



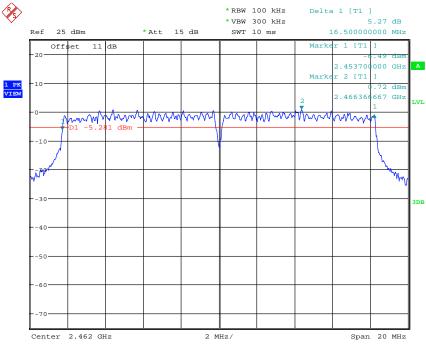


<sup>6</sup>DB BANDWIDTH 802.11G CH01 Date: 20.NOV.2013 05:16:00



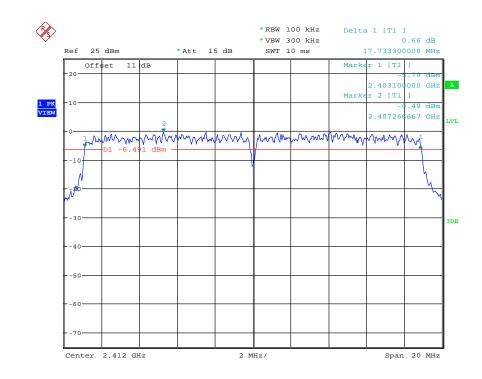
6DB BANDWIDTH 802.11G CH06 Date: 20.NOV.2013 05:16:50





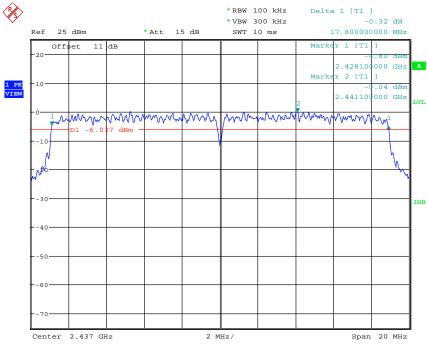
<sup>6</sup>DB BANDWIDTH 802.11G CH11 Date: 20.NOV.2013 05:17:37

#### Mode C

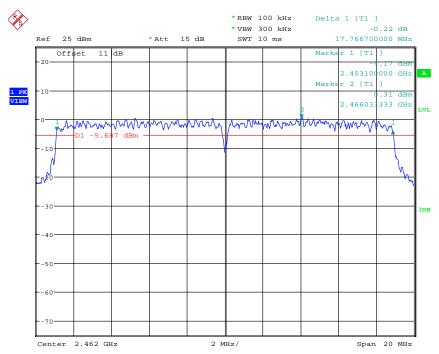


6DB BANDWIDTH 802.11N 20MHZ CH01 Date: 20.NOV.2013 05:18:49



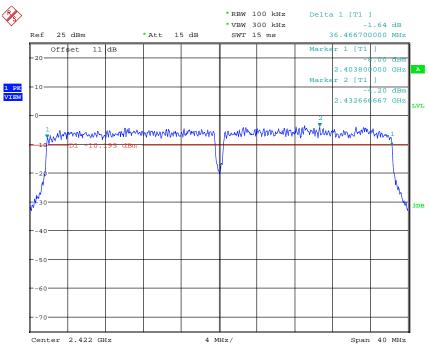


<sup>6</sup>DB BANDWIDTH 802.11N 20MHZ CH06 Date: 20.NOV.2013 05:20:18

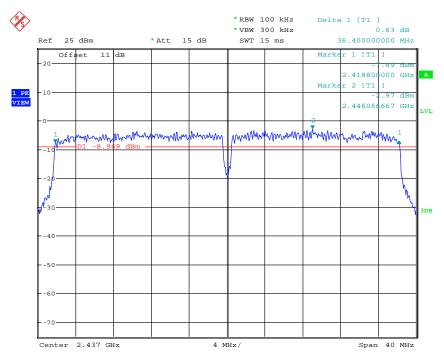


6DB BANDWIDTH 802.11N 20MHZ CH11 Date: 20.NOV.2013 05:21:09



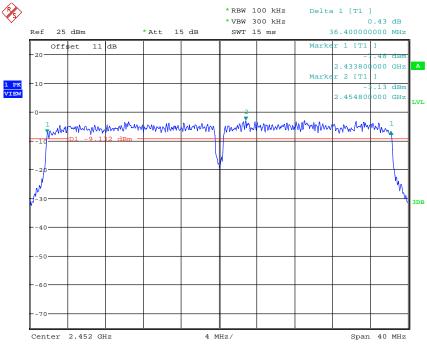


6DB BANDWIDTH 802.11N 40MHZ CH01 Date: 20.NOV.2013 05:23:26



6DB BANDWIDTH 802.11N 40MHZ CH04 Date: 20.NOV.2013 05:24:35





6DB BANDWIDTH 802.11N 40MHZ CH07 Date: 20.NOV.2013 05:25:26

Limits:

Frequency Range MHz	Limits		
902-928	min 500 kHz		
2400-2483.5	min 500 kHz		
5725-5850	min 500 kHz		

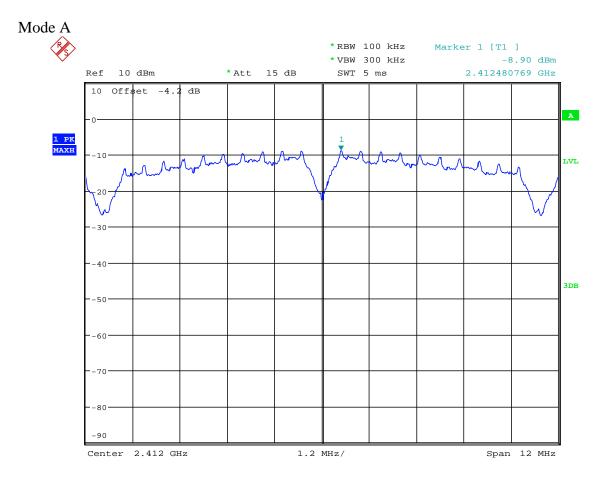
Test equipment used: ETSTW-RE 055, ETSTW-RE 050



#### 3.8 Peak Power Spectral Density

Peak Power Spectral density is a measured at low, middle and high channel.

The peak output power is measured with a measurement bandwidth of 10 MHz and displayed on diagram together with Peak Power Spectral Density result which was measured with a bandwidth of 3 kHz, appreciate frequency span and sweep time.

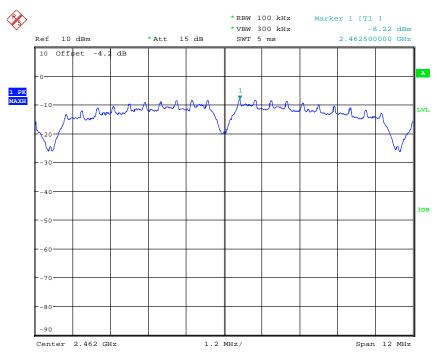


POWER DENSITY 802.11B CH01 Date: 20.NOV.2013 05:13:28



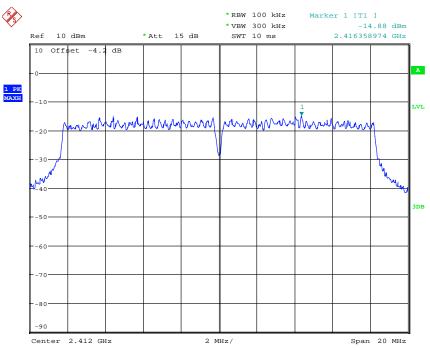


POWER DENSITY 802.11B CH06 Date: 20.NOV.2013 05:14:33

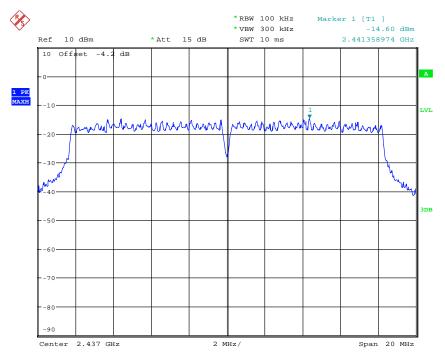


POWER DENSITY 802.11B CH11 Date: 20.NOV.2013 05:15:11



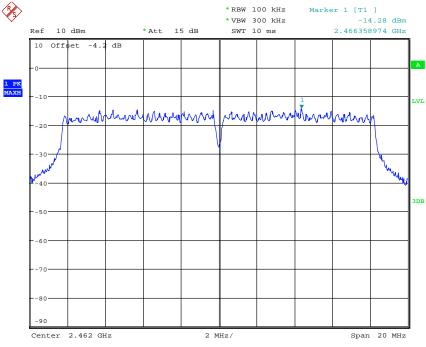


POWER DENSITY 802.11G CH01 Date: 20.NOV.2013 05:16:07



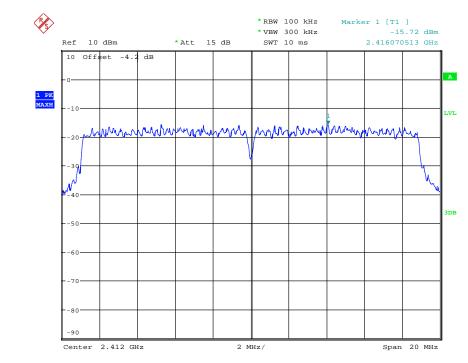
POWER DENSITY 802.11G CH06 Date: 20.NOV.2013 05:16:56





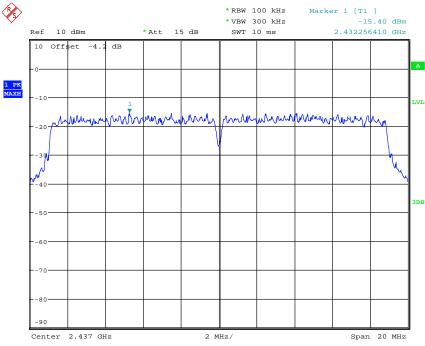
POWER DENSITY 802.11G CH11 Date: 20.NOV.2013 05:17:44



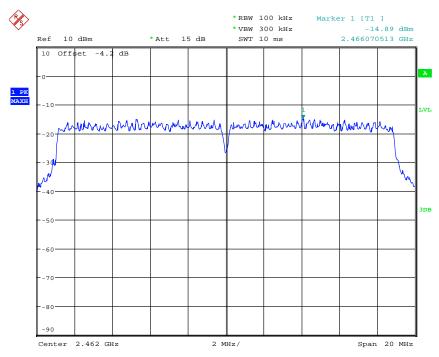


POWER DENSITY 802.11N 20MHZ CH01 Date: 20.NOV.2013 05:18:55



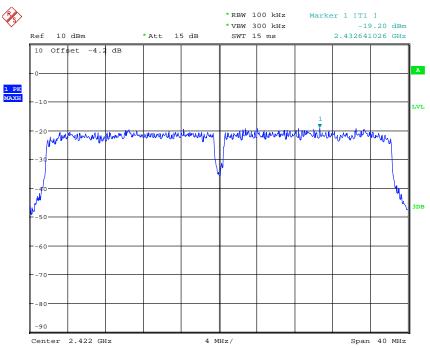


POWER DENSITY 802.11N 20MHZ CH06 Date: 20.NOV.2013 05:20:24

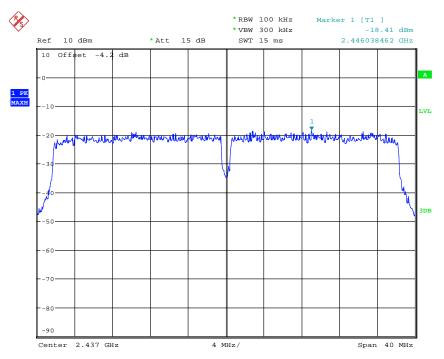


POWER DENSITY 802.11N 20MHZ CH11 Date: 20.NOV.2013 05:21:16



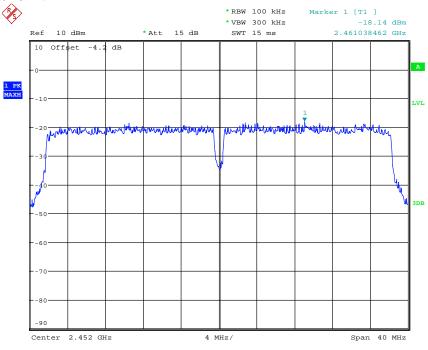


POWER DENSITY 802.11N 40MHZ CH01 Date: 20.NOV.2013 05:23:33



POWER DENSITY 802.11N 40MHZ CH04 Date: 20.NOV.2013 05:24:41





POWER DENSITY 802.11N 40MHZ CH07 Date: 20.NOV.2013 05:25:32

#### Limits:

Frequency Range MHz	dBm
902-928	8
2400-2483.5	8
5725-5850	8

Test equipment used: ETSTW-RE 055, ETSTW-RE 050



#### 3.9 Radiated Emission from Digital Part

FCC Rule: 15.109

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Field Strength (dBmicrovolts/meter)
30-88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test equipment used: ETSTW-RE 055, ETSTW-RE 064, ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030 ETSTW-RE 111

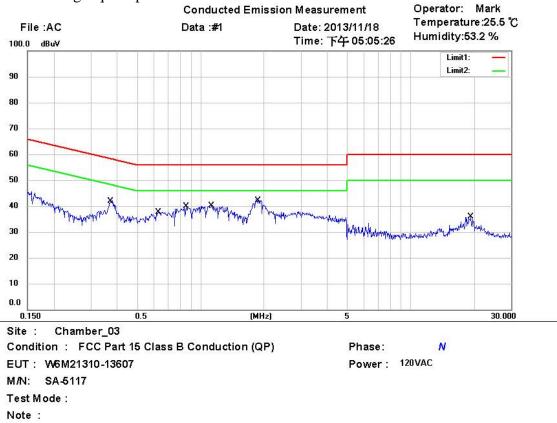
Explanation: The test results are listed in the separated test report no.: W6M21310-13607-P-15B.



#### 3.9 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.



Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
18	0.3730	27.25	QP	10.11	37.36	58.43	-21.07	
()	0.3730	15.67	AVG	10.11	25.78	48.43	-22.65	
	0.6350	22.67	QP	10.13	32.80	56.00	-23.20	
3	0.6350	7.89	AVG	10.13	18.02	46.00	-27.98	
	0.8477	24.59	QP	10.13	34.72	56.00	-21.28	
	0.8477	11.94	AVG	10.13	22.07	46.00	-23.93	
	1.1168	20.81	QP	10.14	30.95	56.00	-25.05	
	1.1168	7.03	AVG	10.14	17.17	46.00	-28.83	
*	1.8593	27.33	QP	10.17	37.50	56.00	-18.50	
	1.8593	14.46	AVG	10.17	24.63	46.00	-21.37	
	19.2646	17.11	QP	10.89	28.00	60.00	-32.00	
ĺ.	19.2646	8.01	AVG	10.89	18.90	50.00	-31.10	





Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
x	0.3710	33.34	QP	10.11	43.45	58.48	-15.03	
	0.3710	22.83	AVG	10.11	32.94	48.48	-15.54	
	0.6454	25.33	QP	10.13	35.46	56.00	-20.54	
	0.6454	15.85	AVG	10.13	25.98	46.00	-20.02	
	0.8296	27.21	QP	10.13	37.34	56.00	-18.66	
	0.8296	16.56	AVG	10.13	26.69	46.00	-19.31	
	1.1002	23.94	QP	10.15	34.09	56.00	-21.91	
	1.1002	13.95	AVG	10.15	24.10	46.00	-21.90	
	1.8280	26.61	QP	10.18	36.79	56.00	-19.21	
	1.8280	15.89	AVG	10.18	26.07	46.00	-19.93	
	3.1715	23.04	QP	10.27	33.31	56.00	-22.69	
	3.1715	10.31	AVG	10.27	20.58	46.00	-25.42	

Note: 1. The formula of measured value as: Test Result = Reading + Correction Factor

2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss

- **3.** Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
- 4. All not in the table noted test results are more than 20 dB below the relevant limits.
- 5. Measurement uncertainty =  $\pm 1.60$  dB; Reported uncertainties represent expanded uncertainties
- expressed at approximately the 95% confidence level using a coverage factor of k = 2.
- 6. Up Line: QP Limit Line, Down Line: Ave Limit Line.



#### Limits:

Frequency of Emission (MHz)	Conducted I	Limit (dBuV)
	Quasi Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Test equipment used: ETSTW-CE 001, ETSTW-CE 004, ETSTW-CE 006, ETSTW-RE 045



# **Appendix**

# **Measurement diagrams**

Spurious Emissions radiated

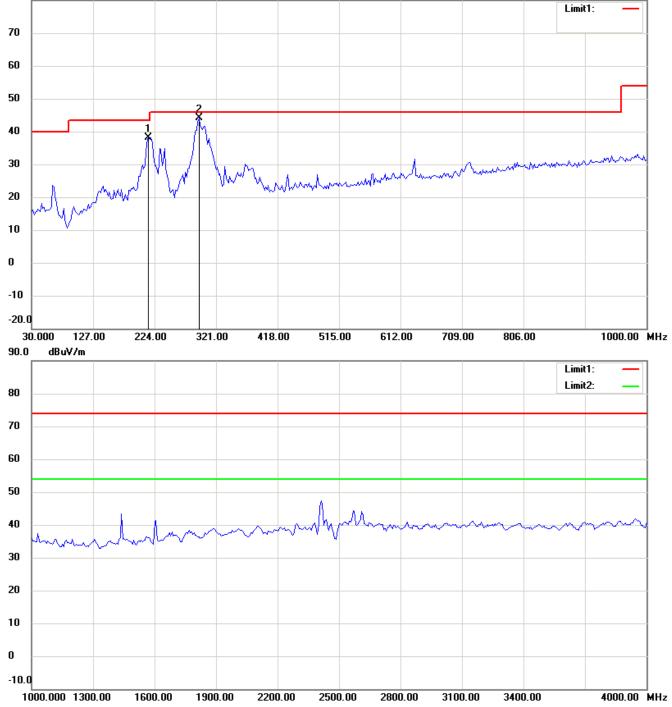


Registration number: W6M21310-13607-C-1 FCC ID: SZY-SA5117 Radiated Emission-Transmitter

802.11b CH1

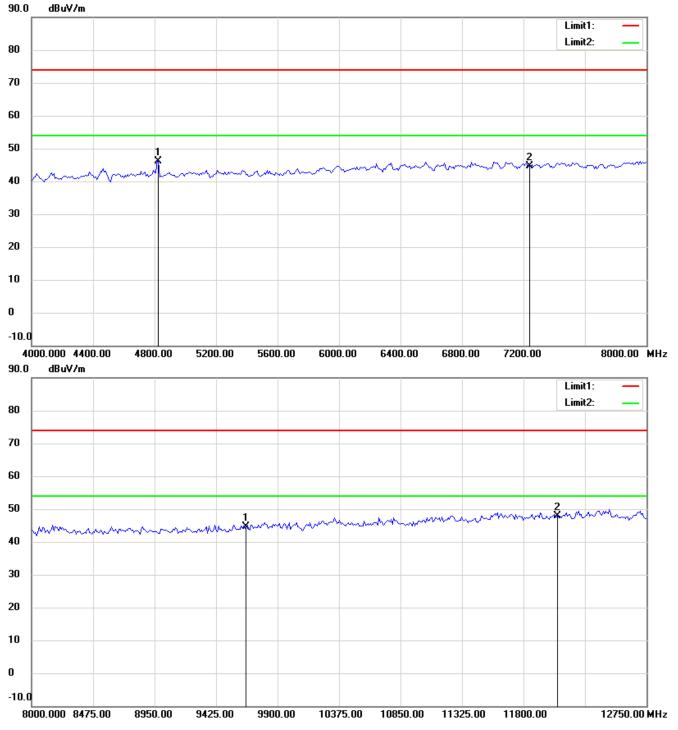
Antenna Polarization H





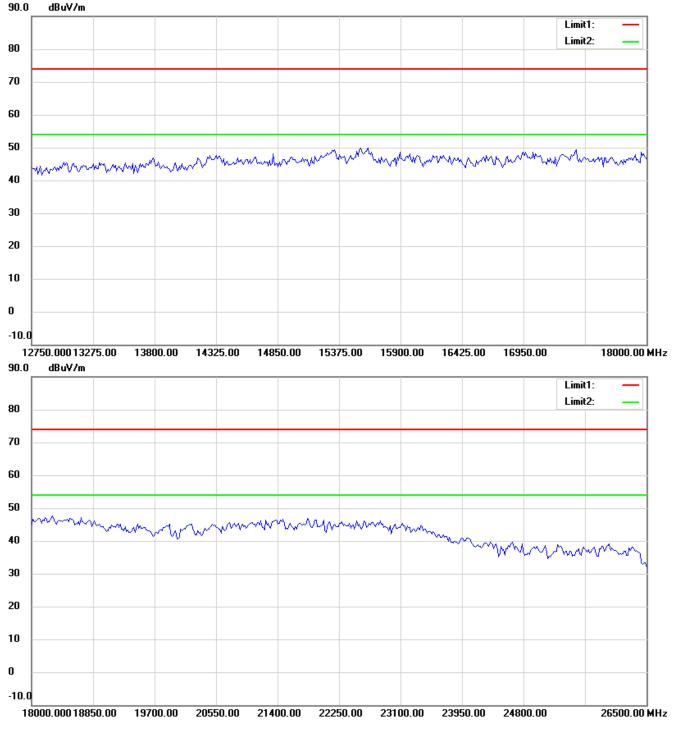
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

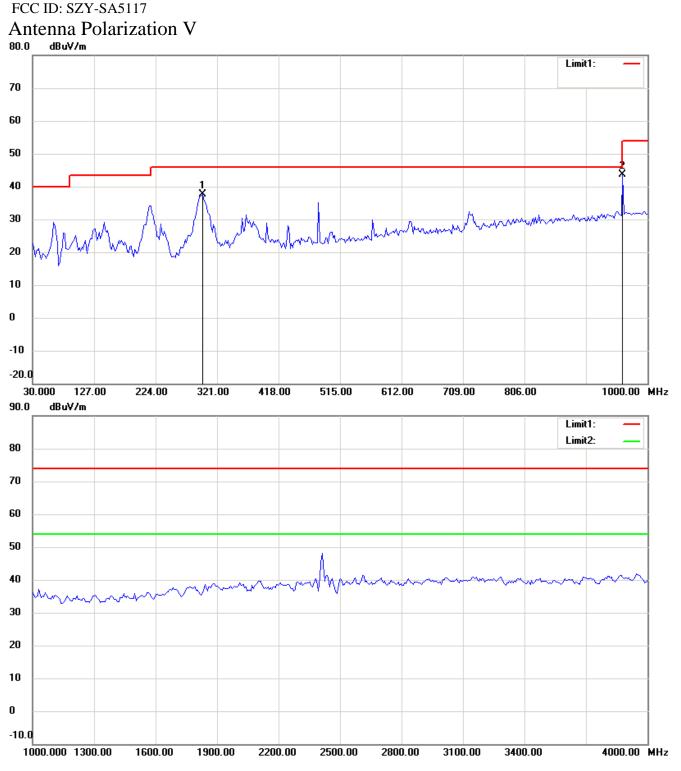




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

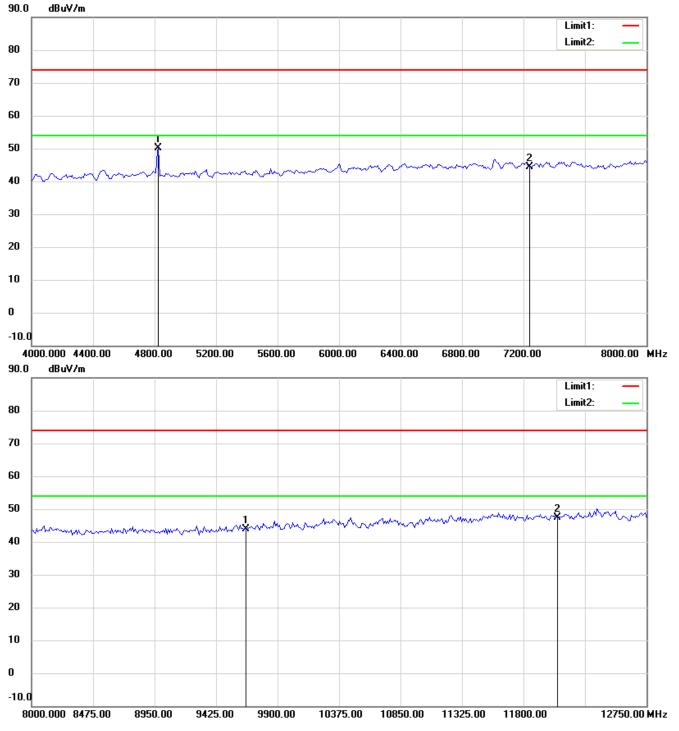


Registration number: W6M21310-13607-C-1



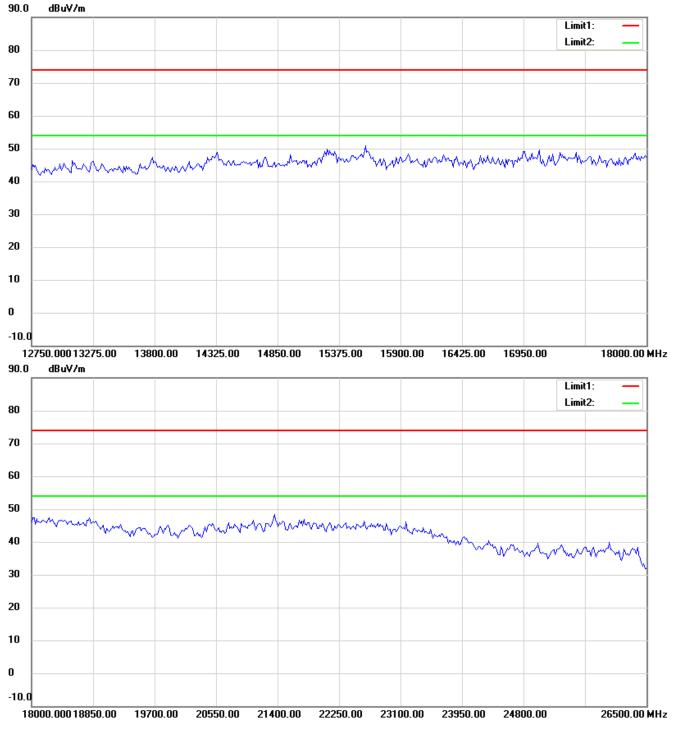
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





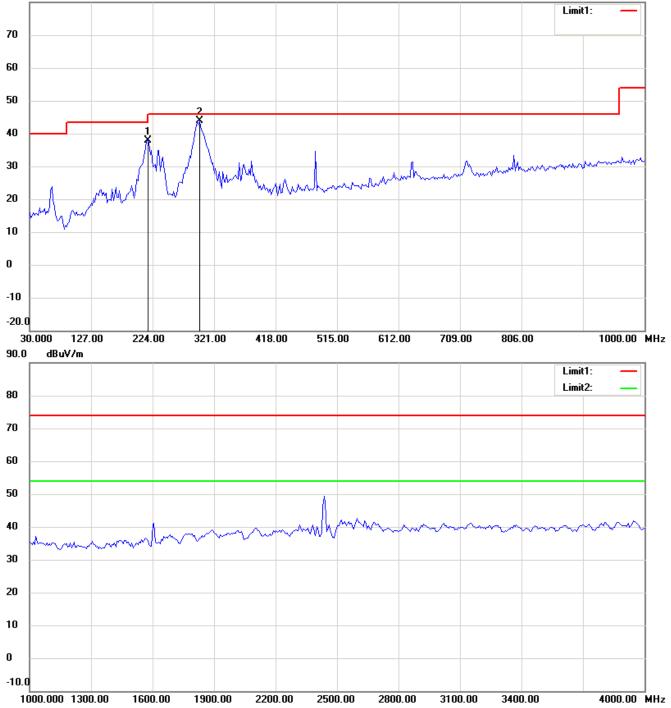
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



## 802.11b CH6

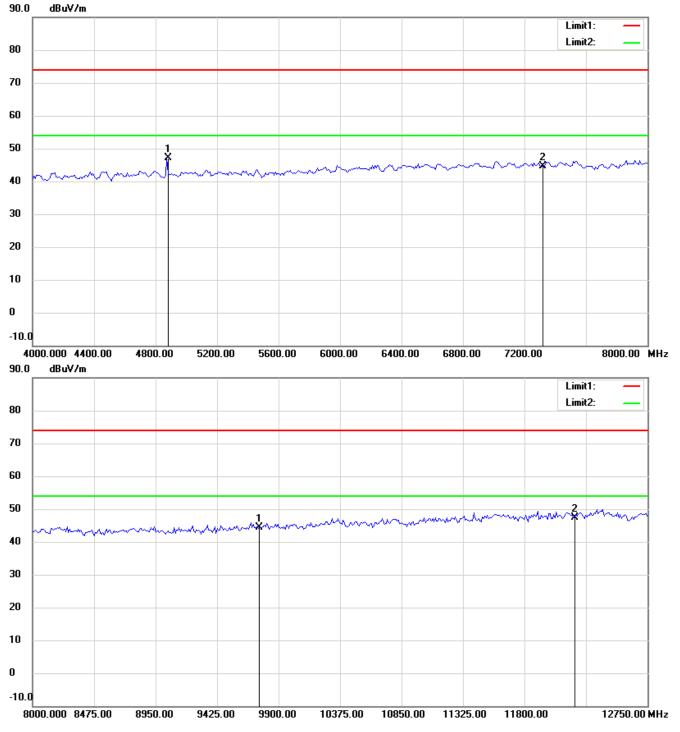
Antenna Polarization H

80.0 dBuV/m



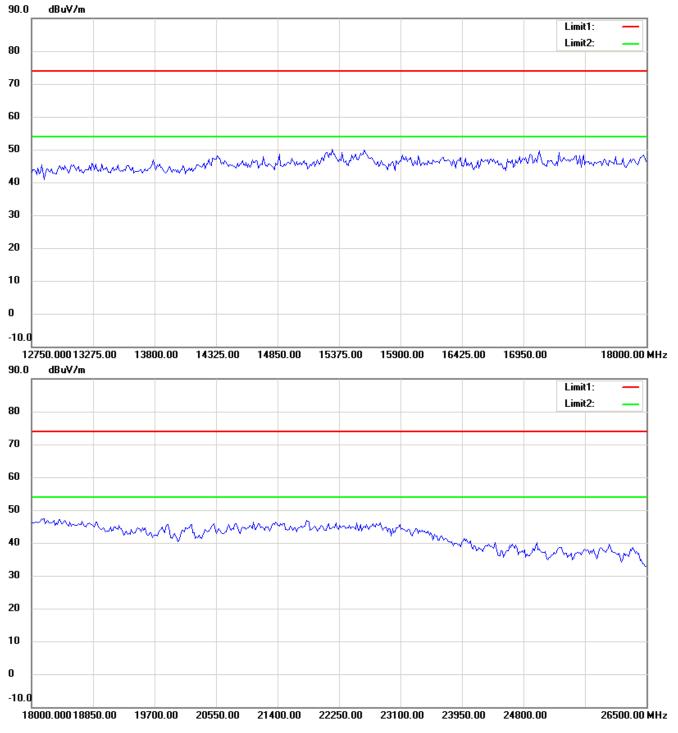
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

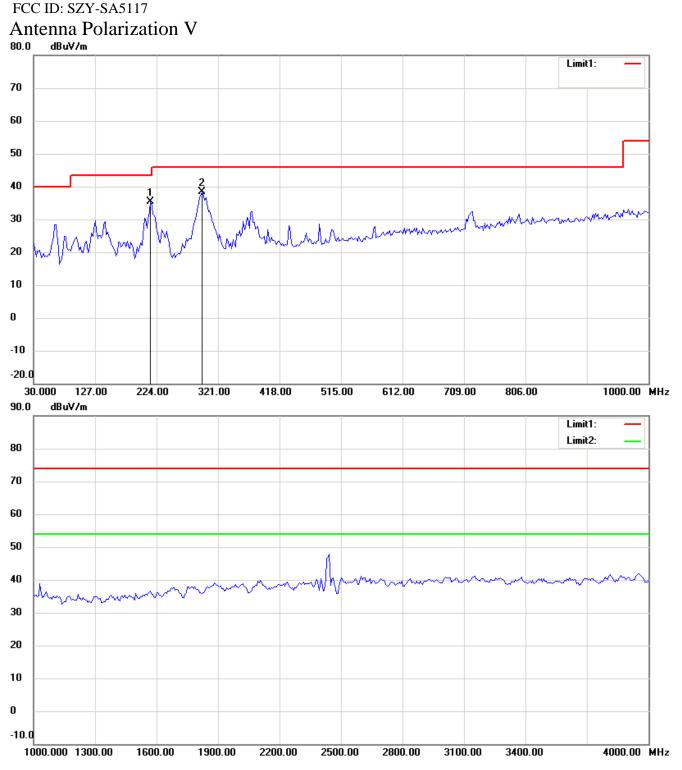




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

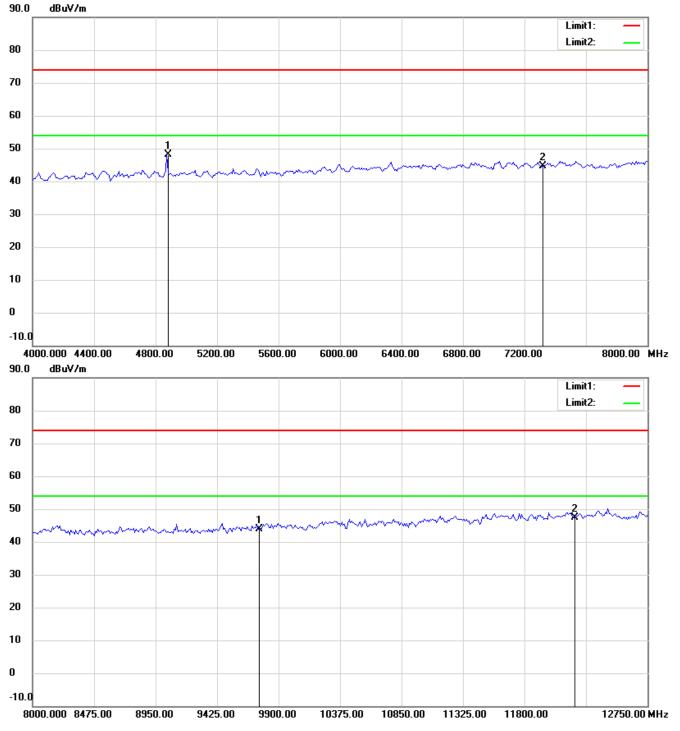


Registration number: W6M21310-13607-C-1



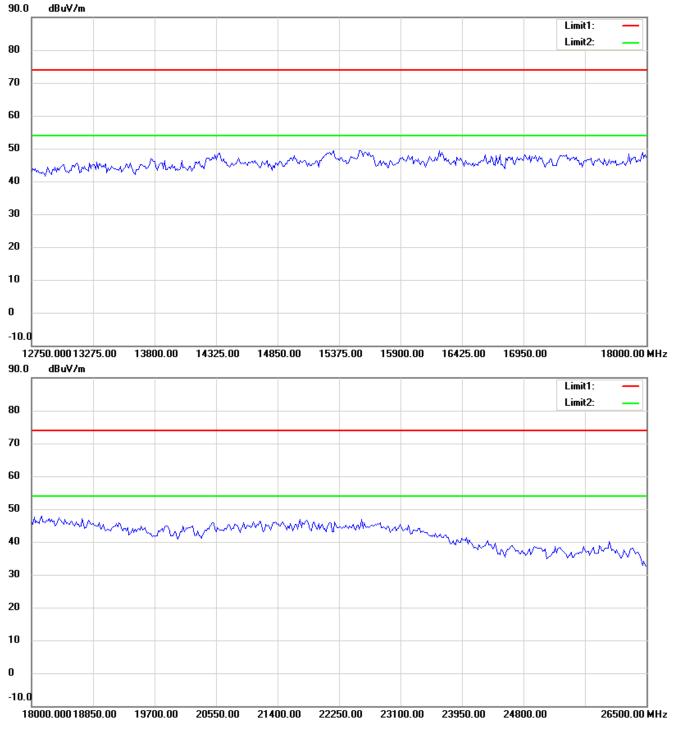
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





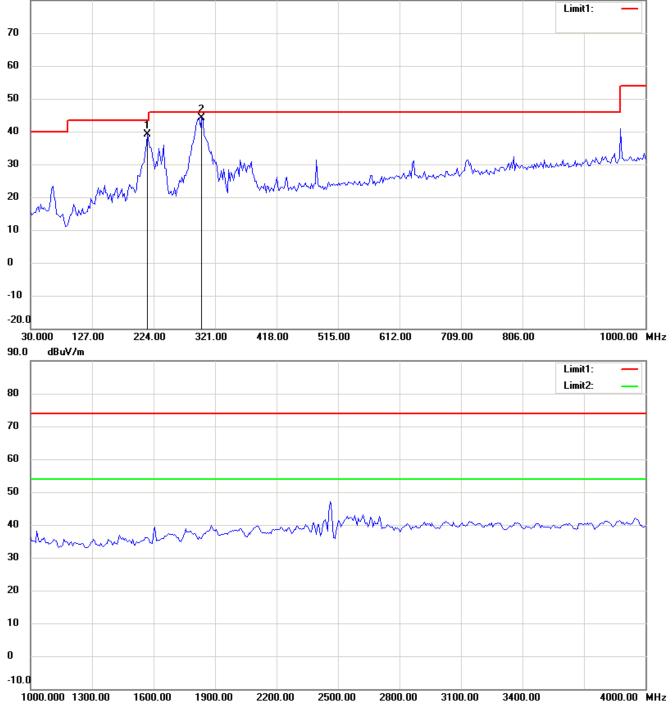
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



## 802.11b CH11

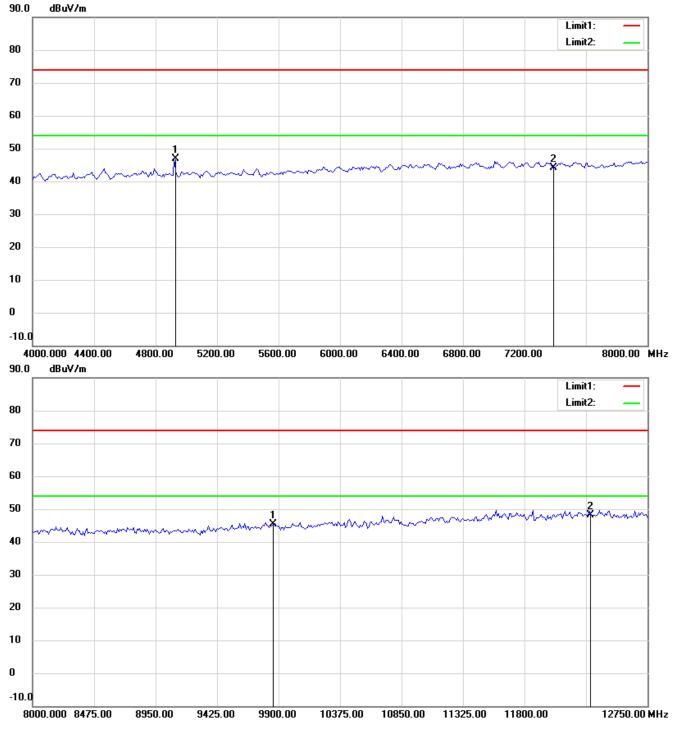
Antenna Polarization H

80.0 dBuV/m



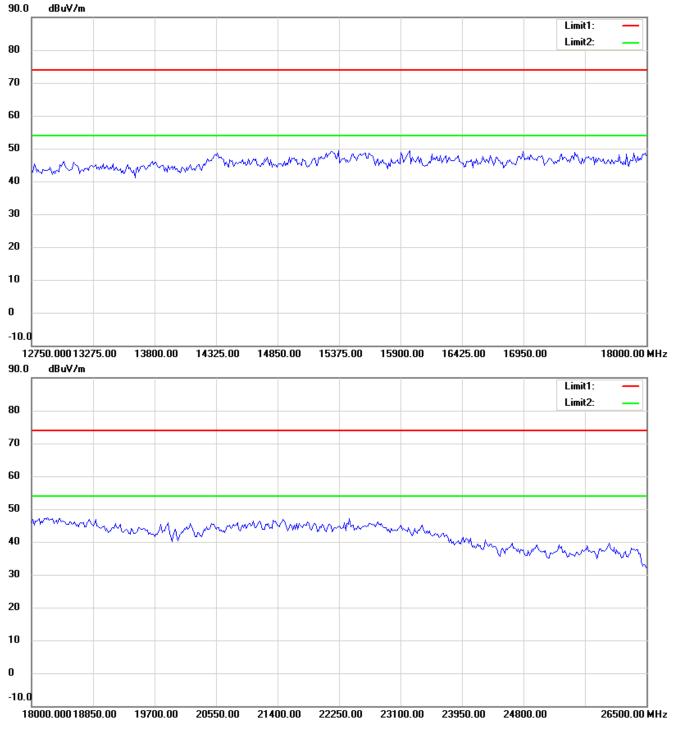
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

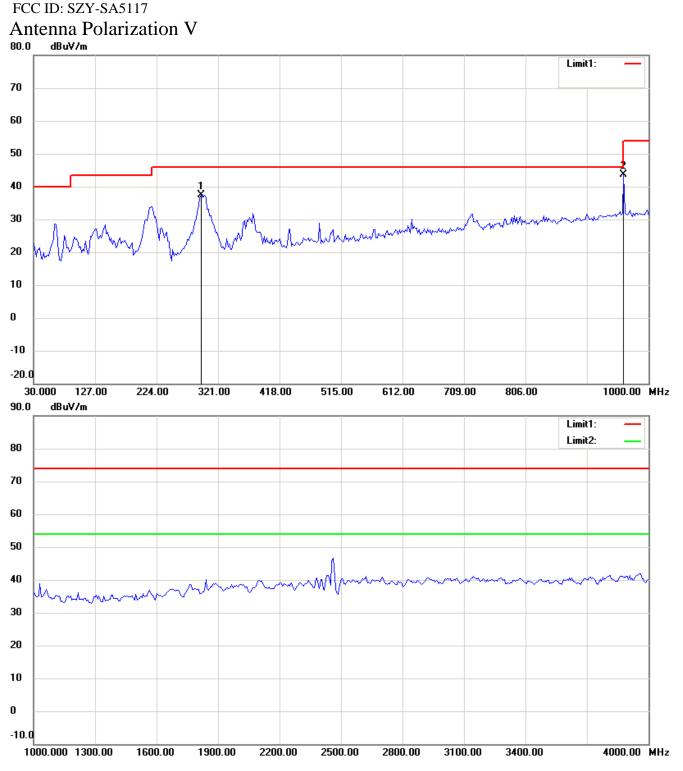




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

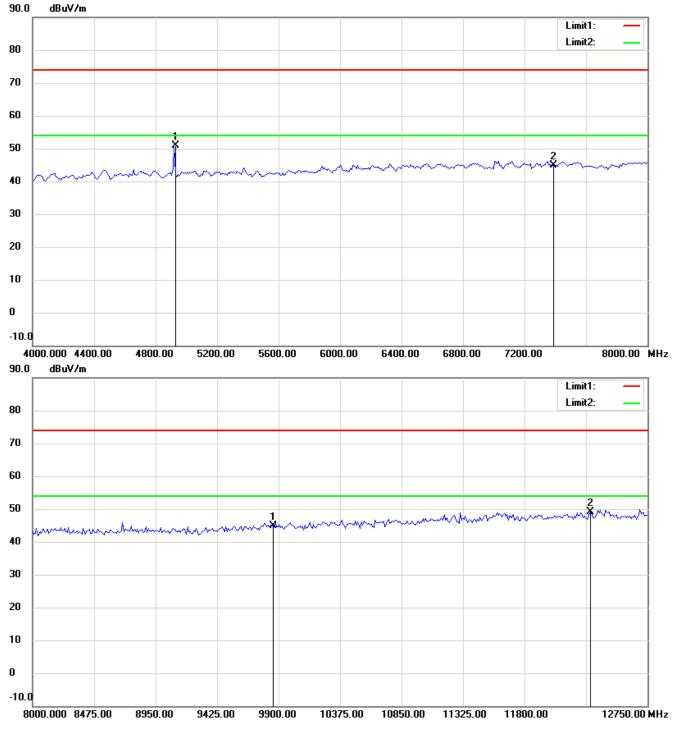


Registration number: W6M21310-13607-C-1



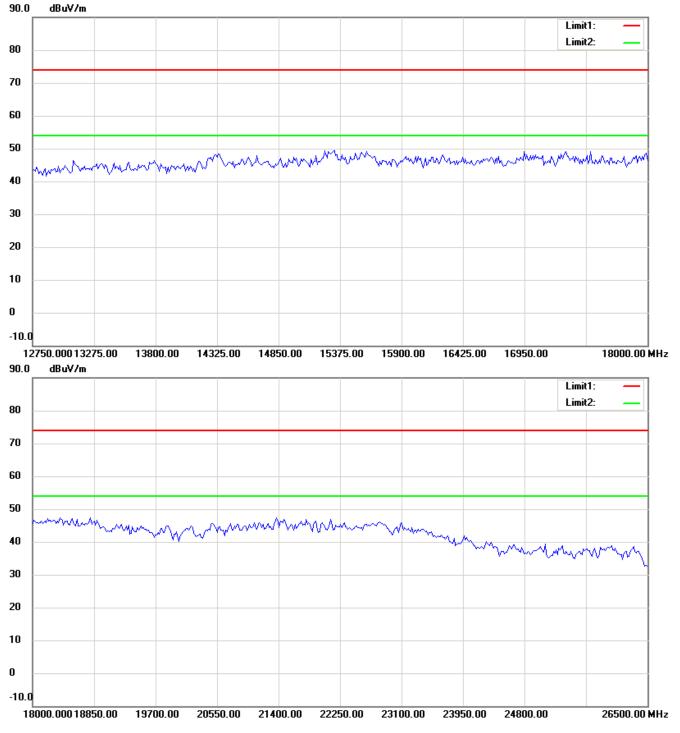
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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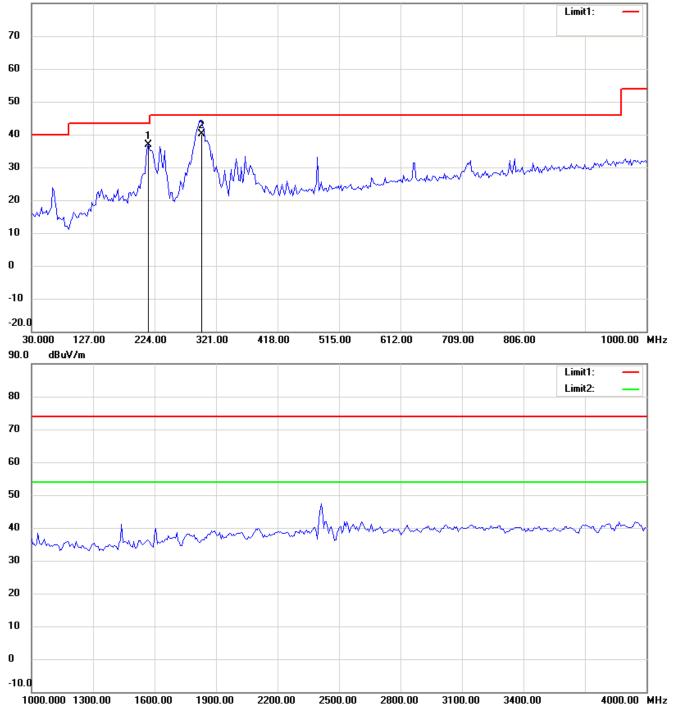
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



# 802.11g CH1

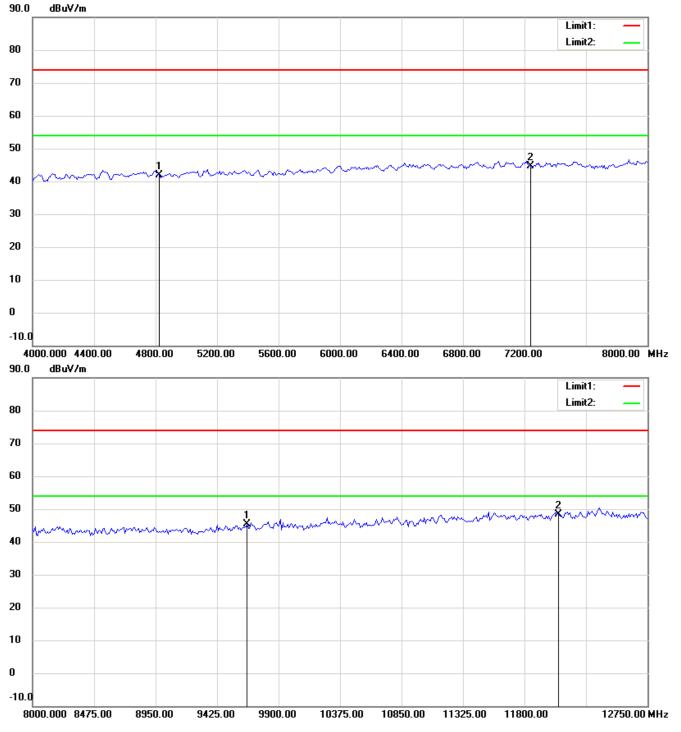
Antenna Polarization H

80.0 dBuV/m



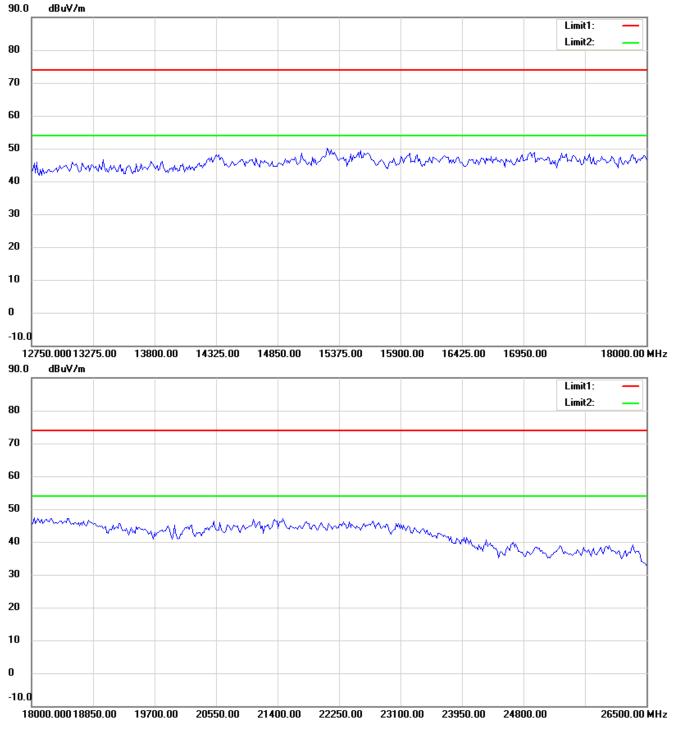
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

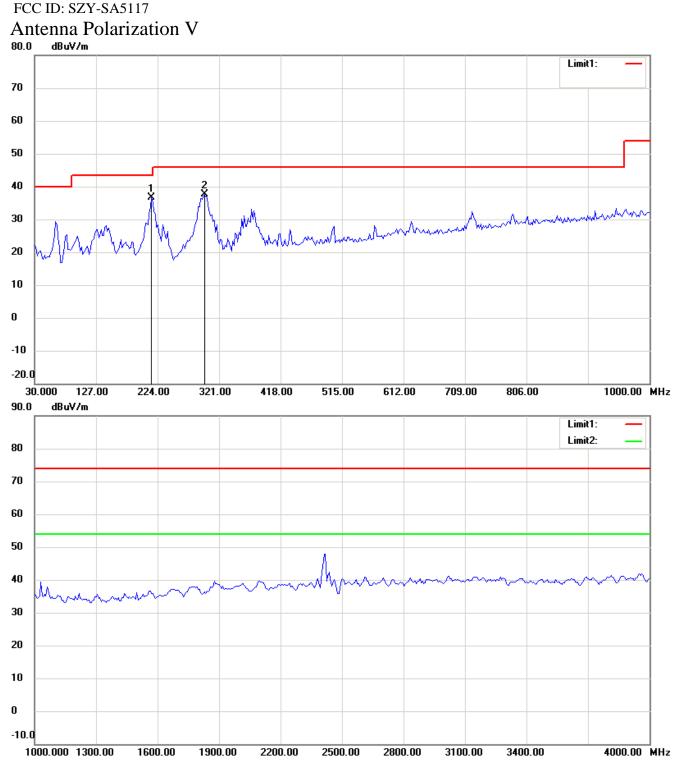




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

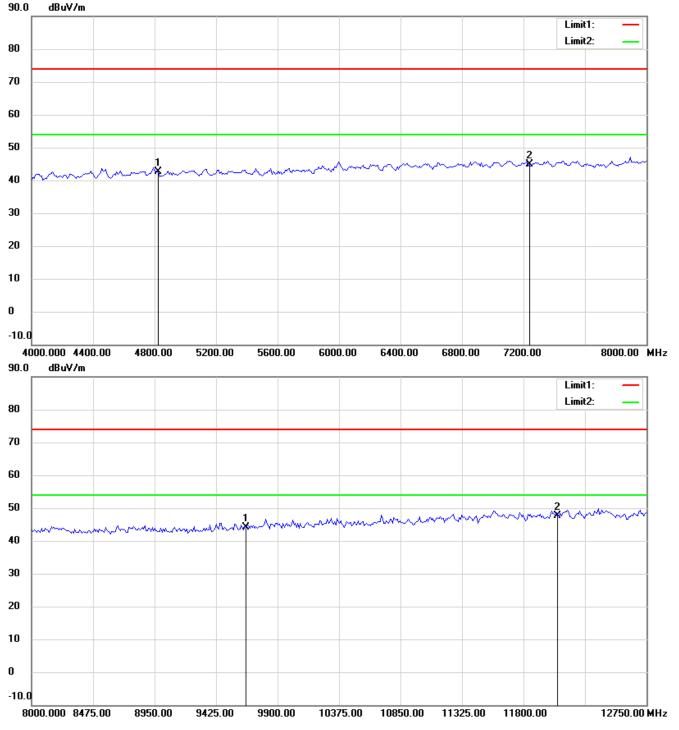


Registration number: W6M21310-13607-C-1



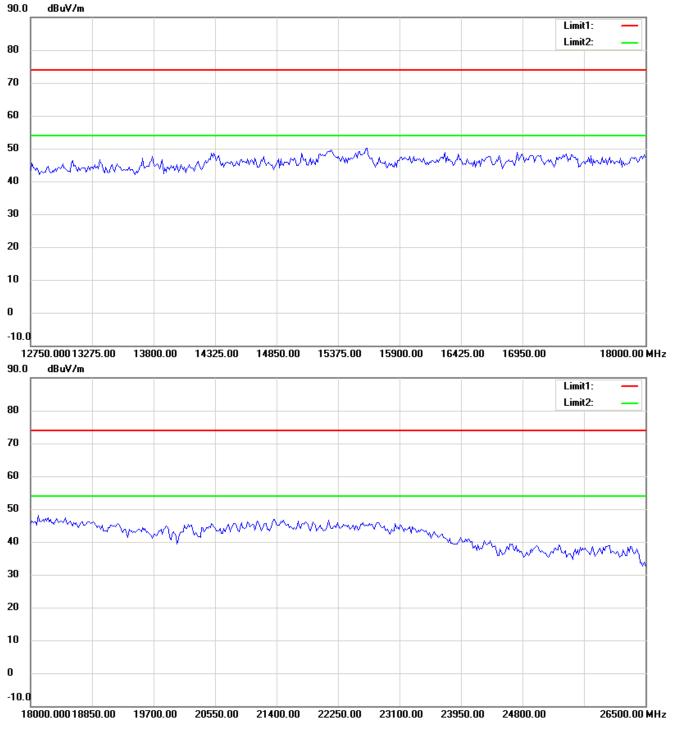
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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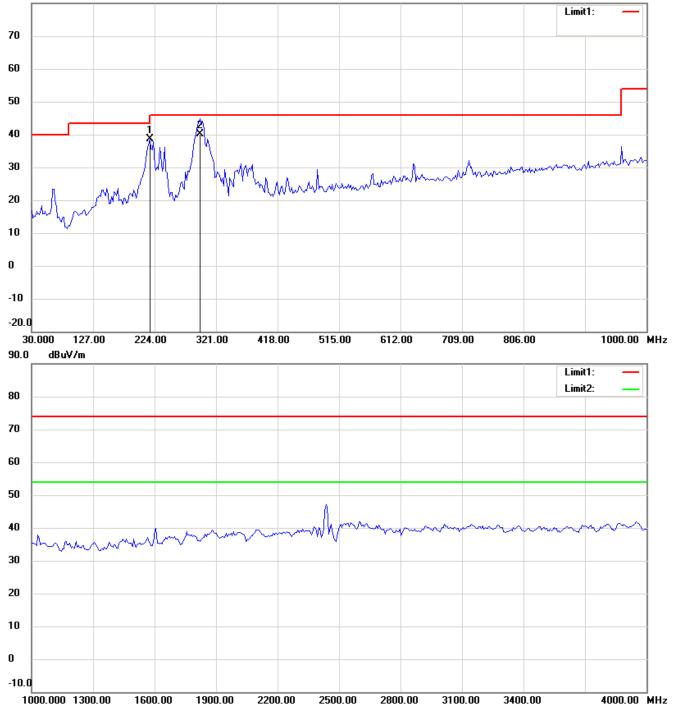
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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# 802.11g CH6

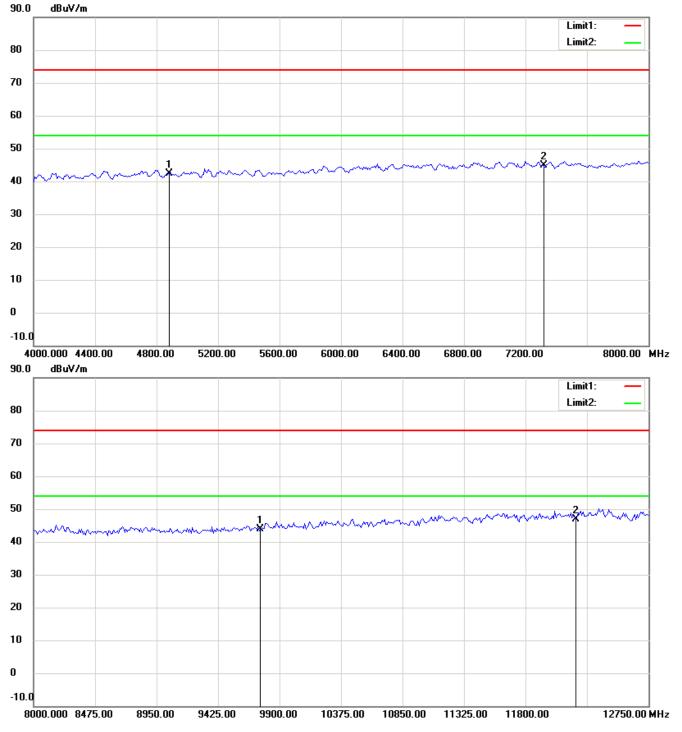
Antenna Polarization H

80.0 dBuV/m



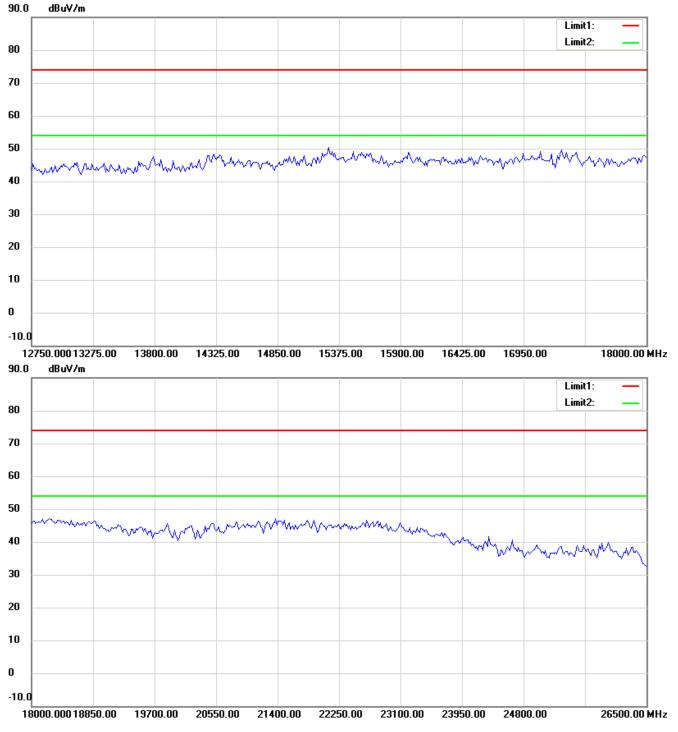
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

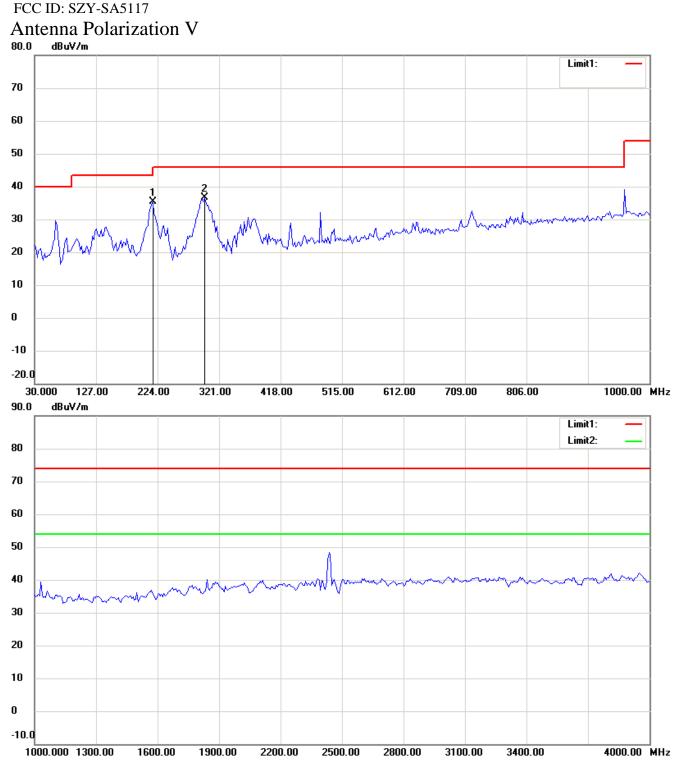




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

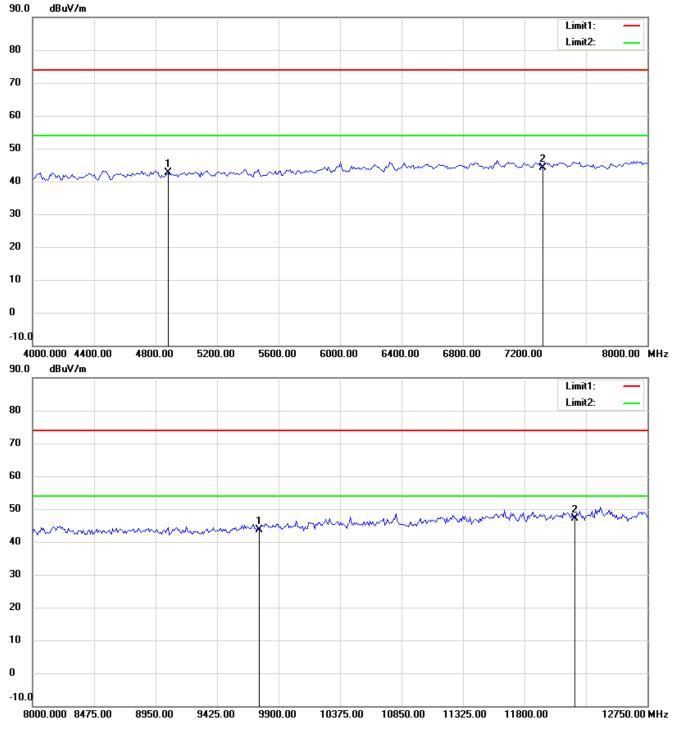


Registration number: W6M21310-13607-C-1



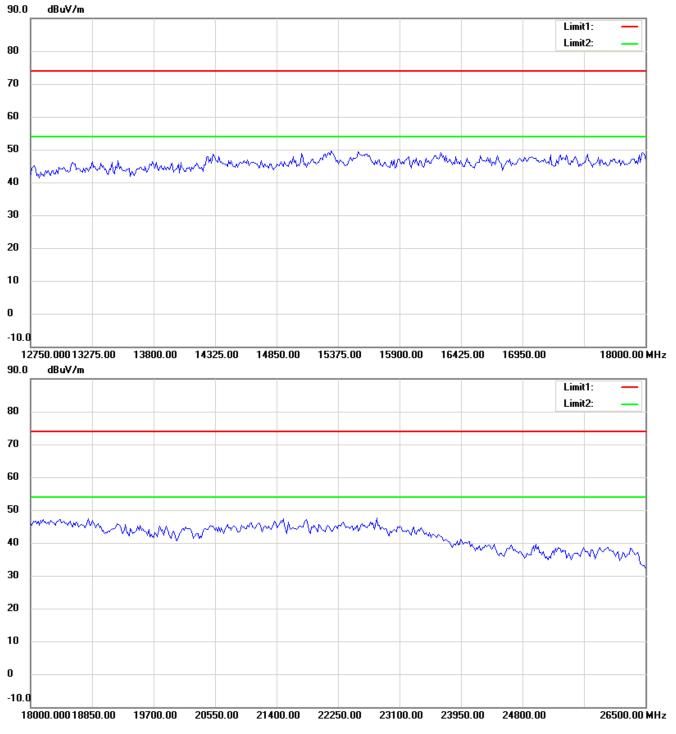
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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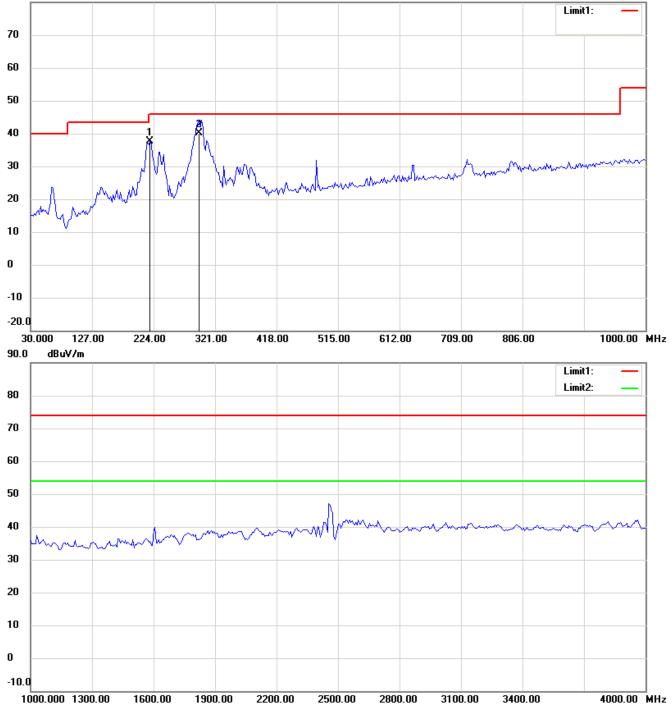
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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## 802.11g CH11

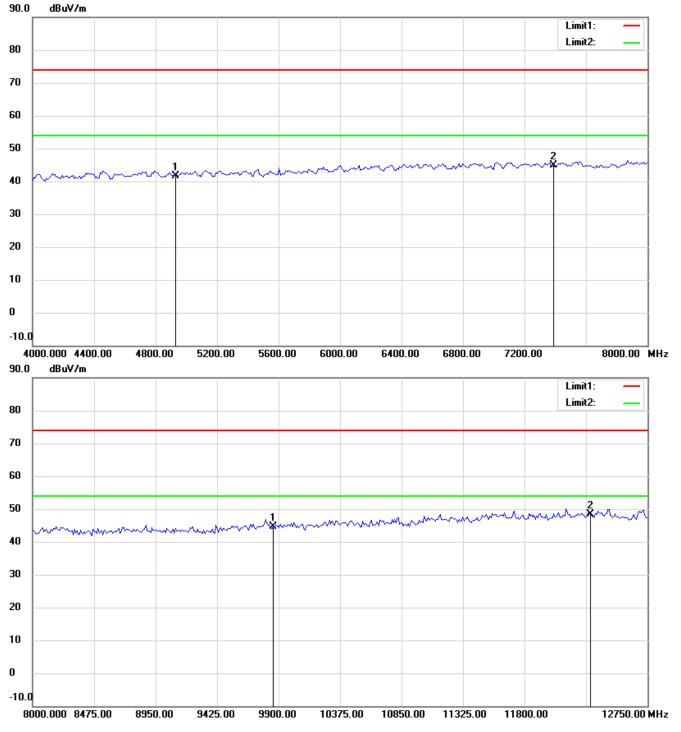
Antenna Polarization H

80.0 dBuV/m



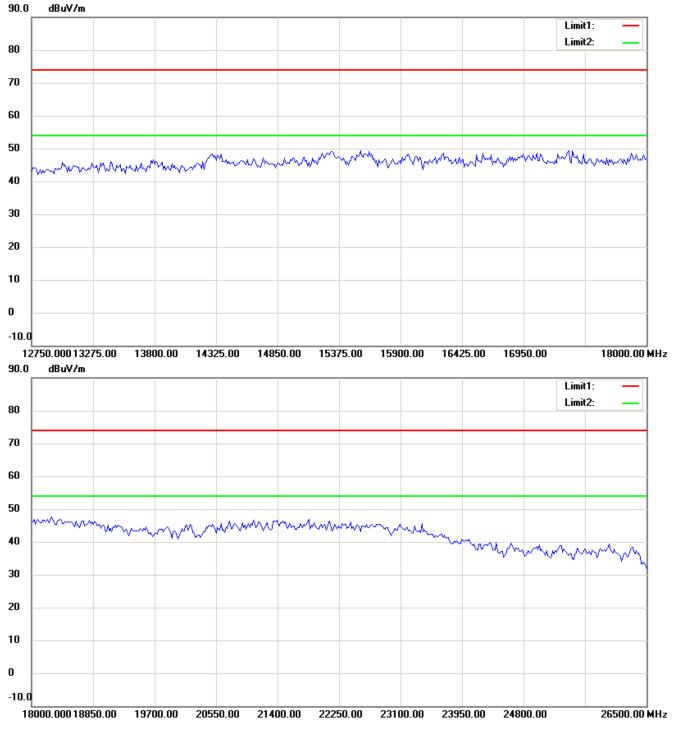
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

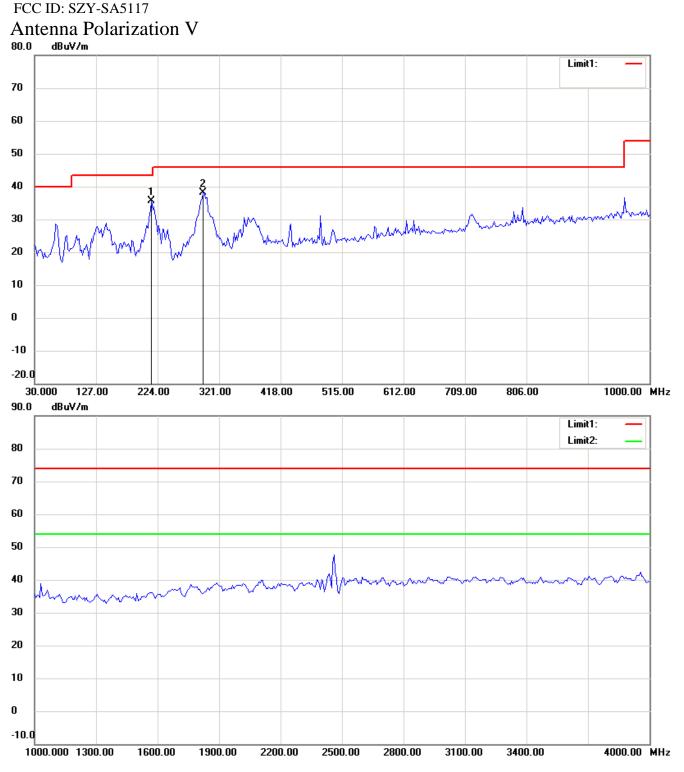




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

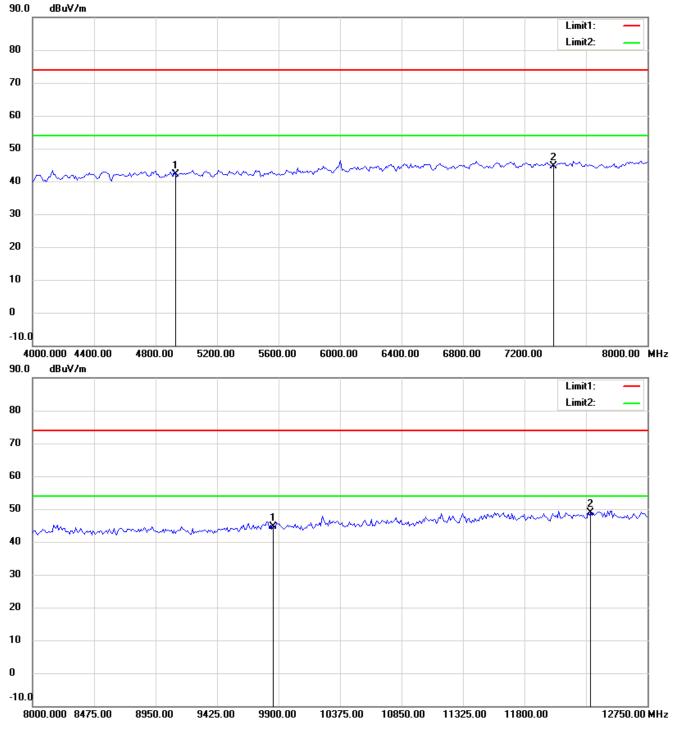


Registration number: W6M21310-13607-C-1



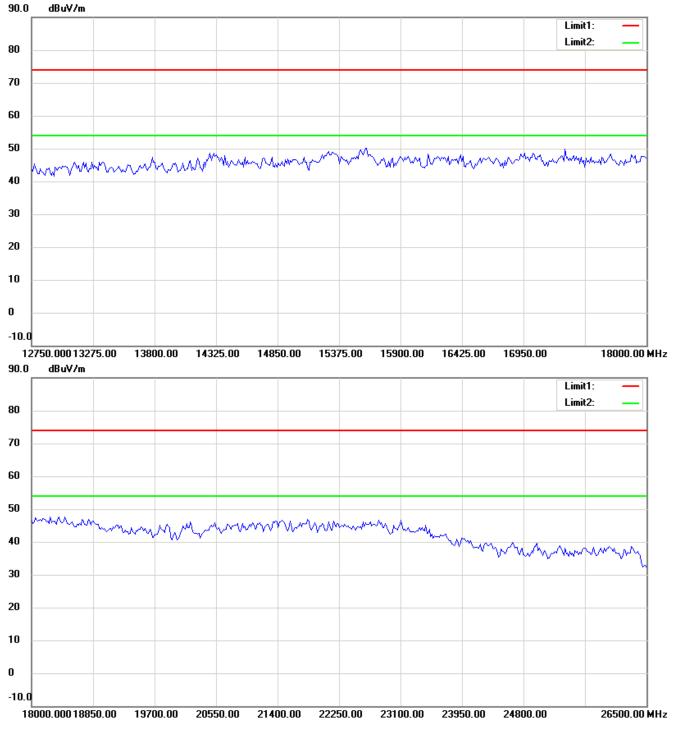
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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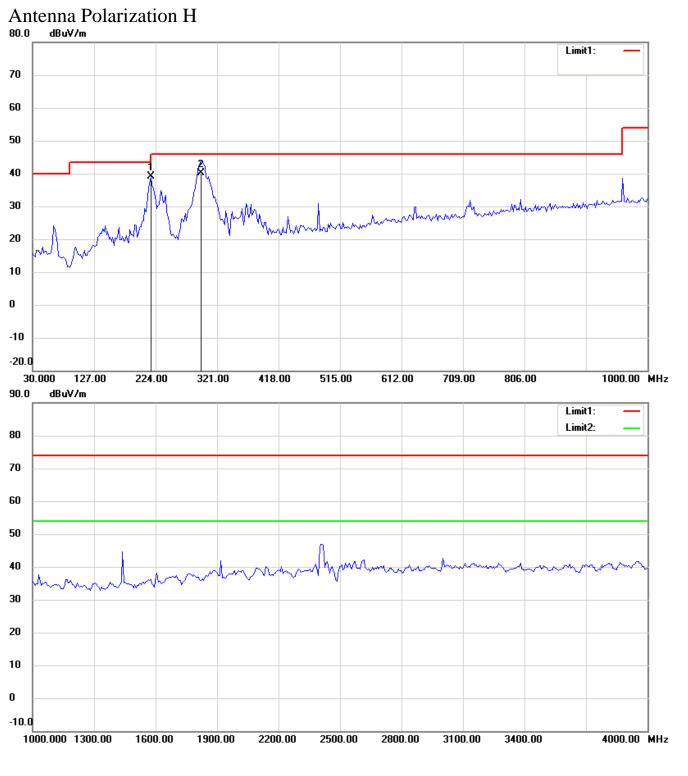




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

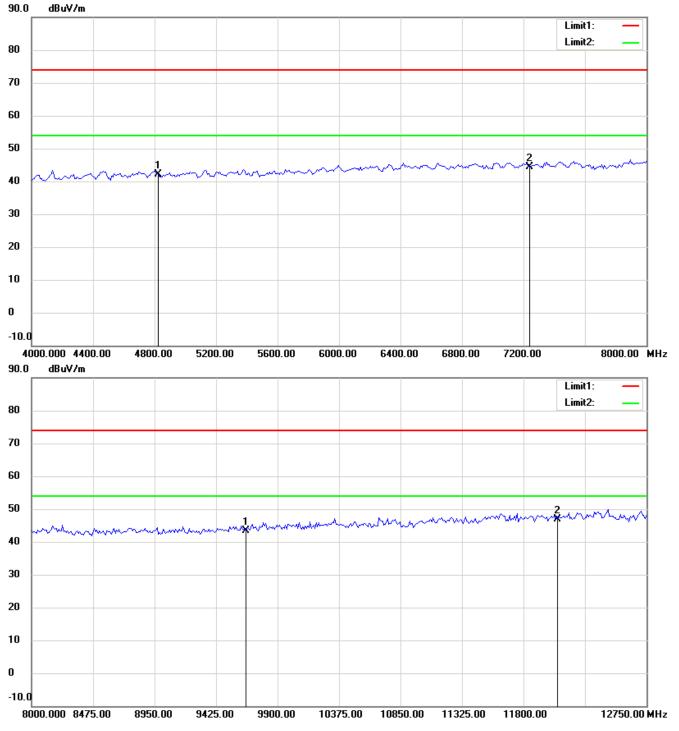


#### 802.11n 20MHz CH1



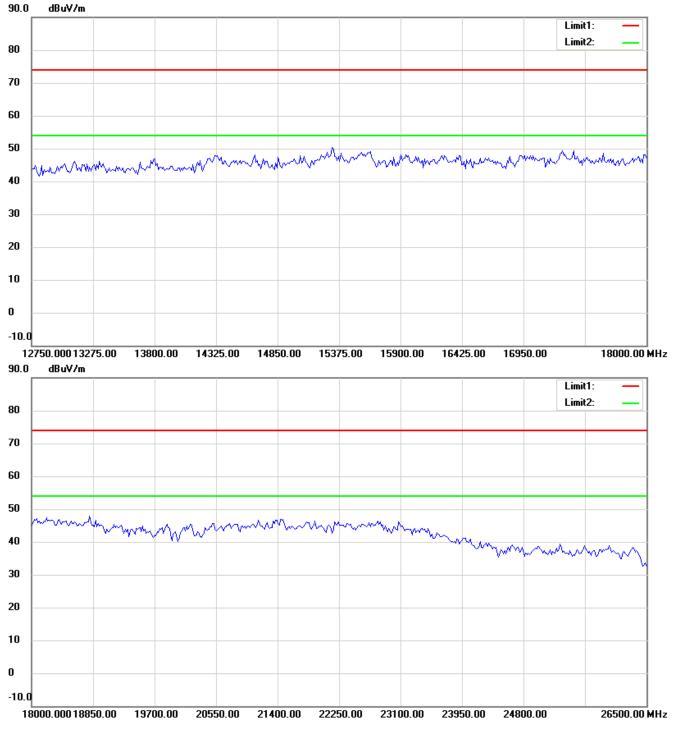
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

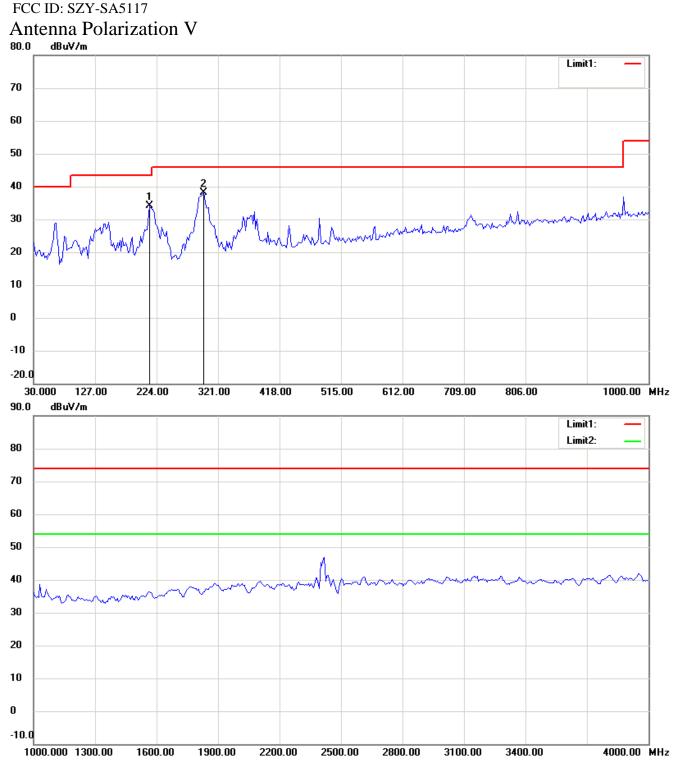




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

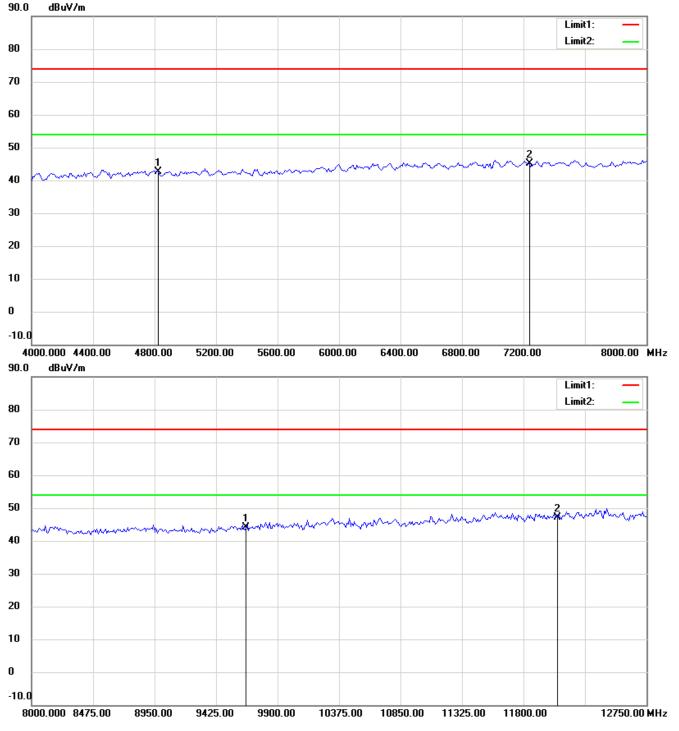


Registration number: W6M21310-13607-C-1



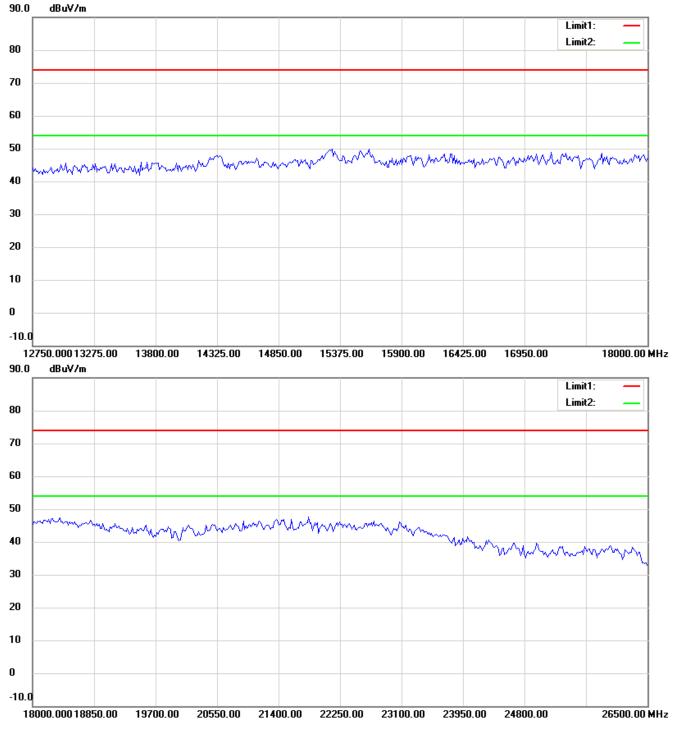
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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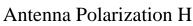




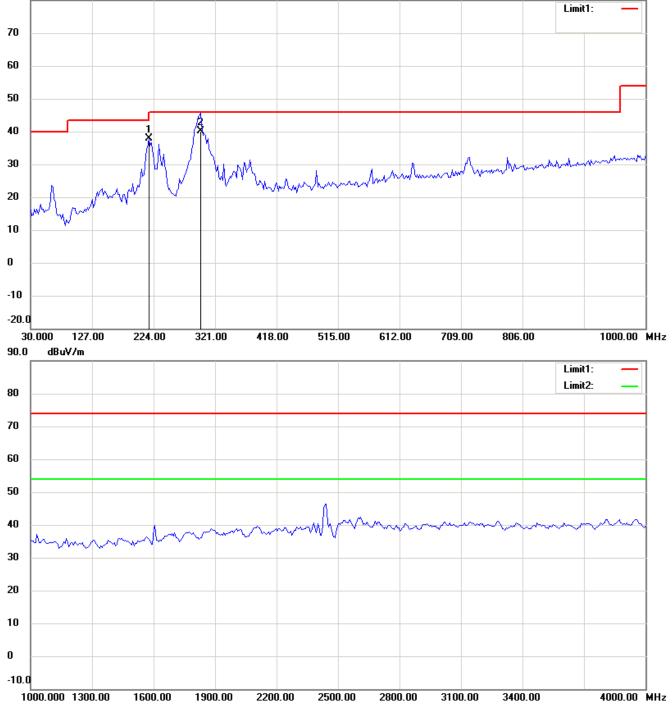
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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### 802.11n 20MHz CH6

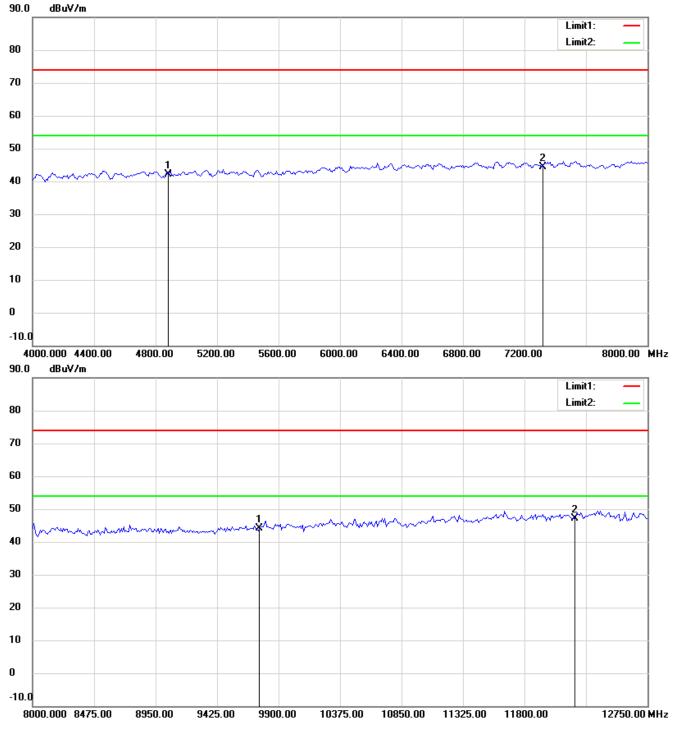


80.0 dBuV/m



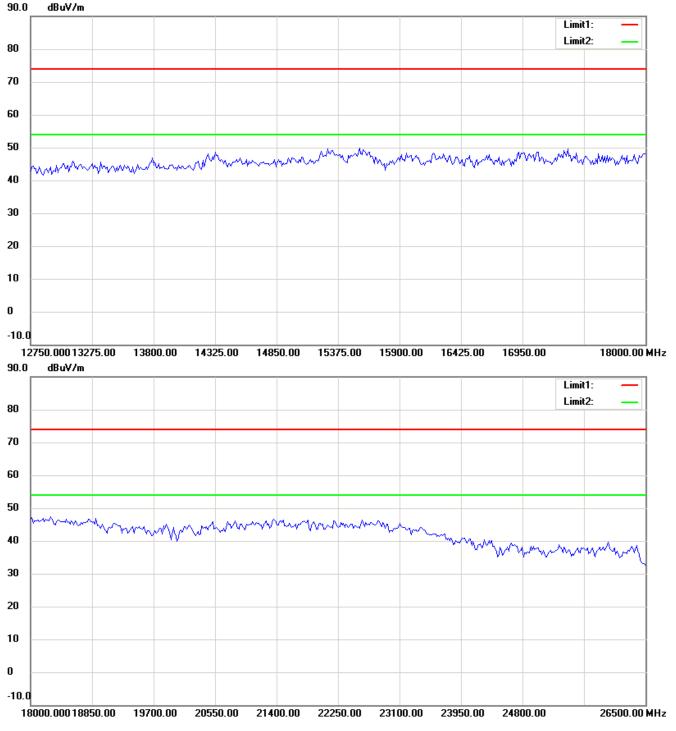
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

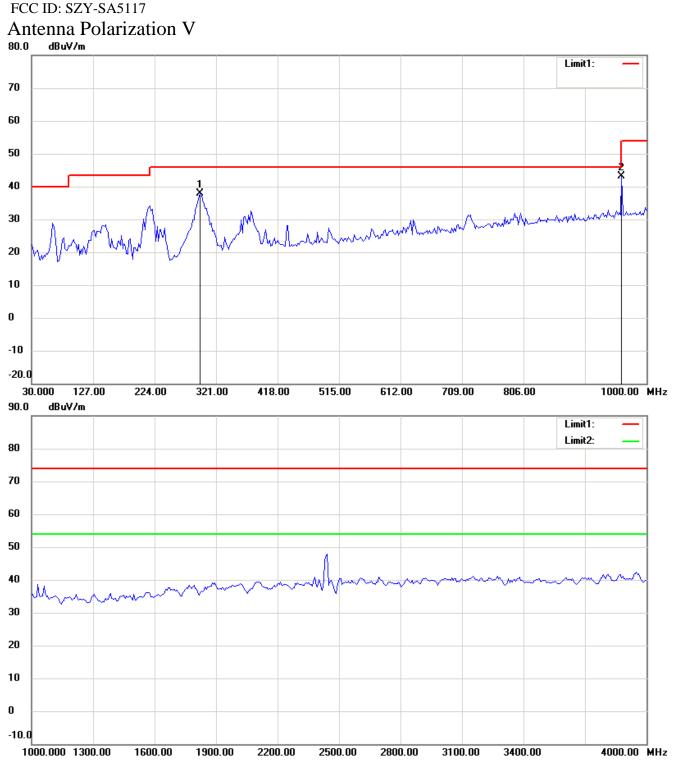




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

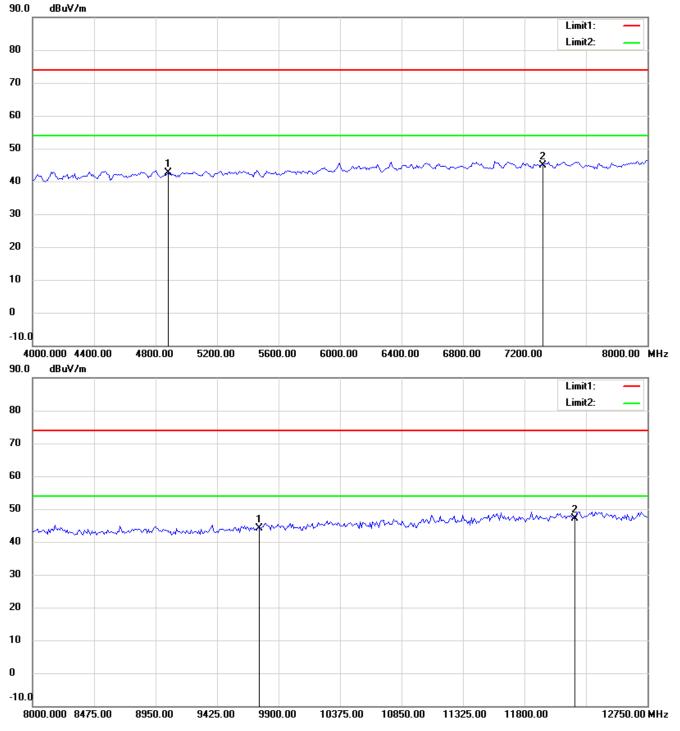


Registration number: W6M21310-13607-C-1



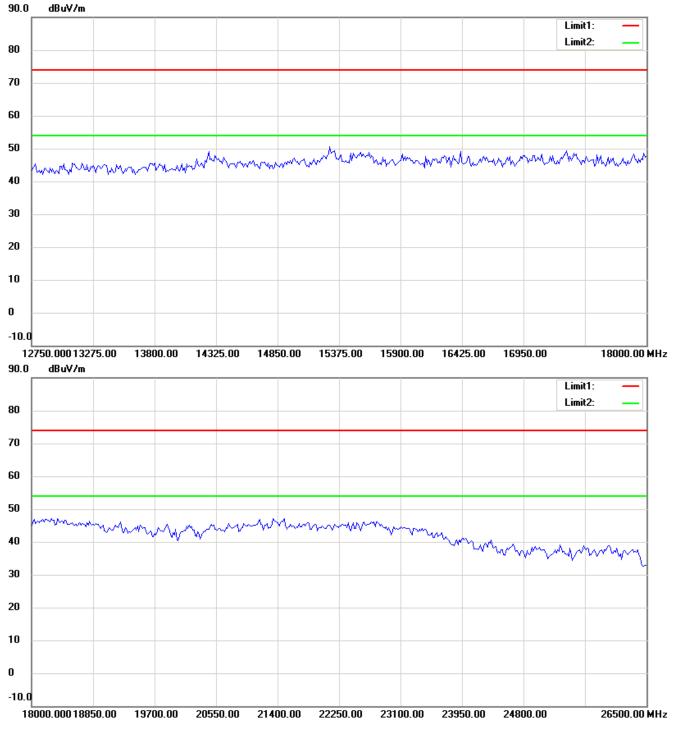
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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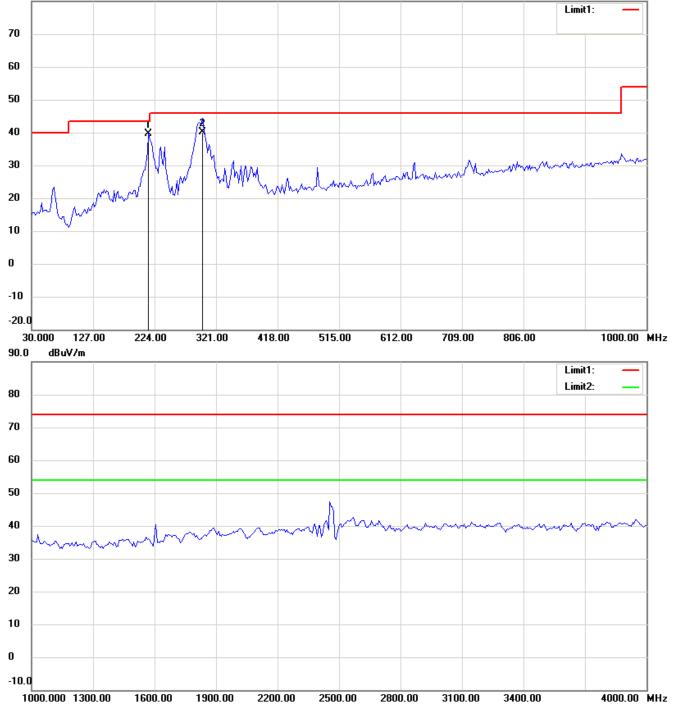
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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### 802.11n 20MHz CH11

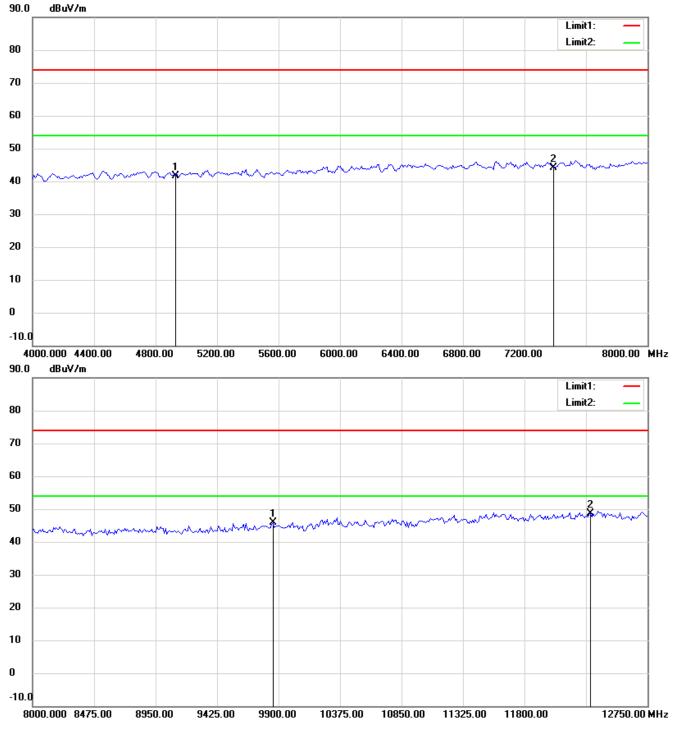


80.0 dBuV/m



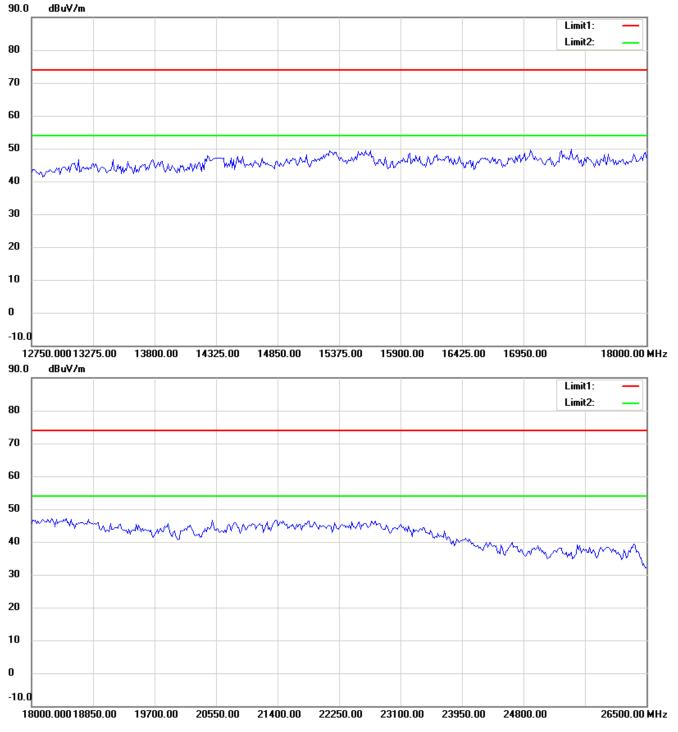
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.





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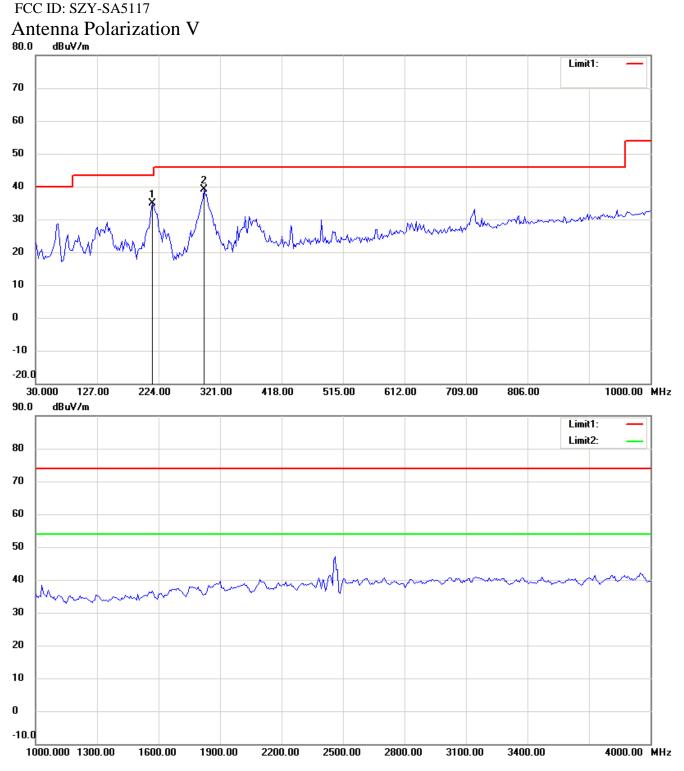




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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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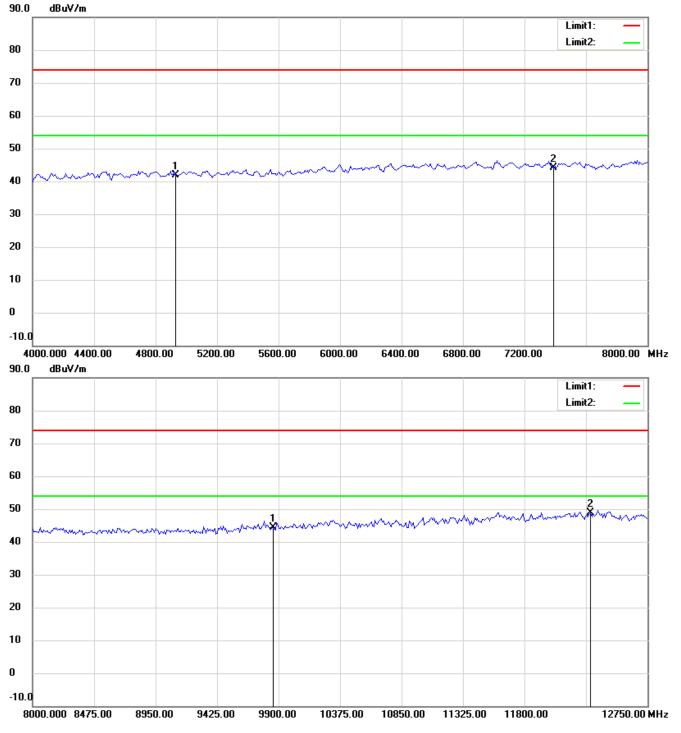


Registration number: W6M21310-13607-C-1



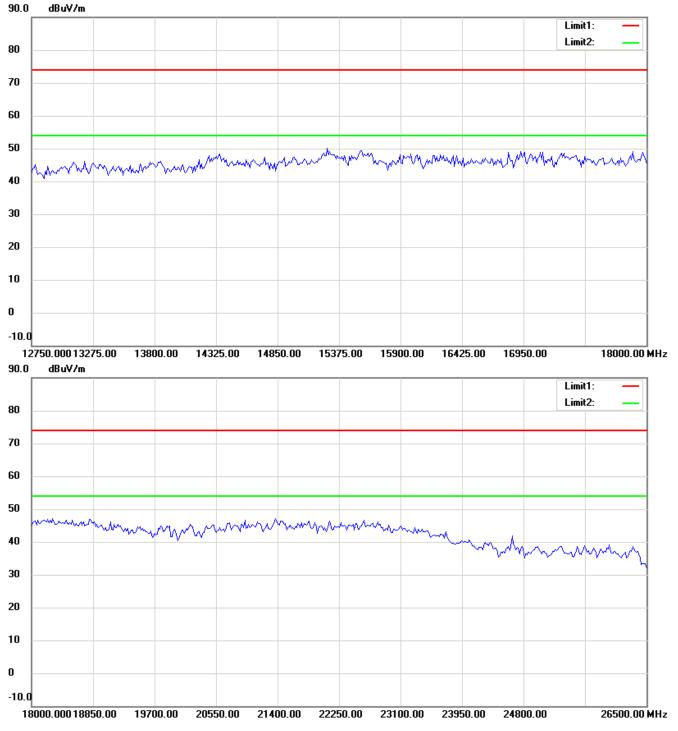
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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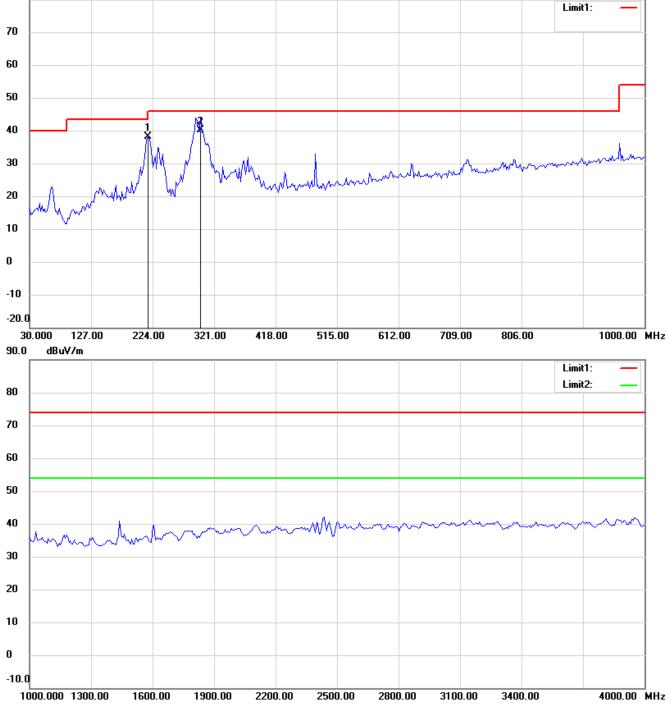
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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## 802.11n 40MHz CH1

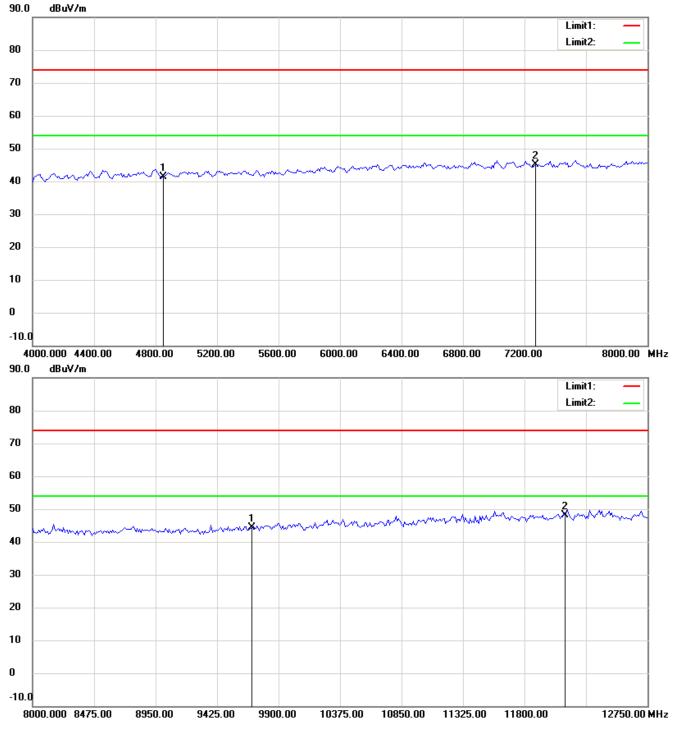
Antenna Polarization H

80.0 dBuV/m



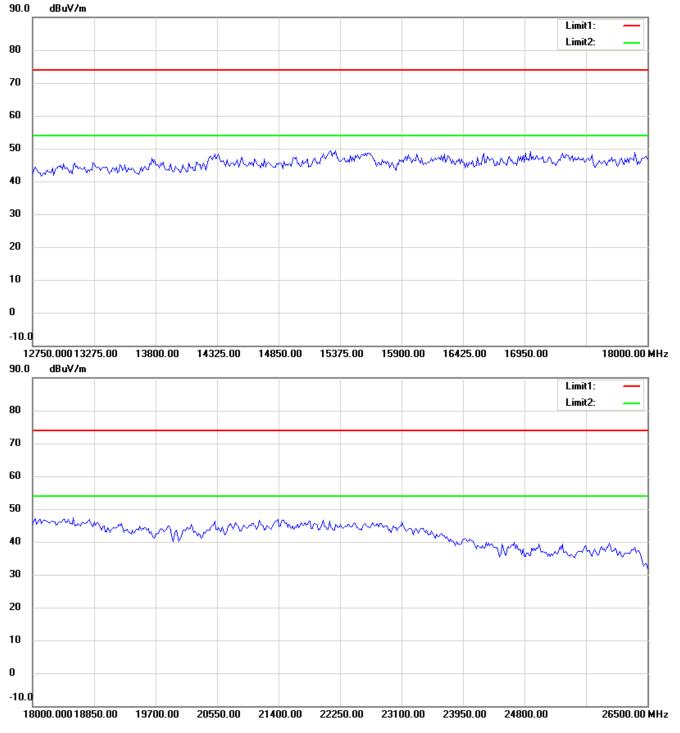
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

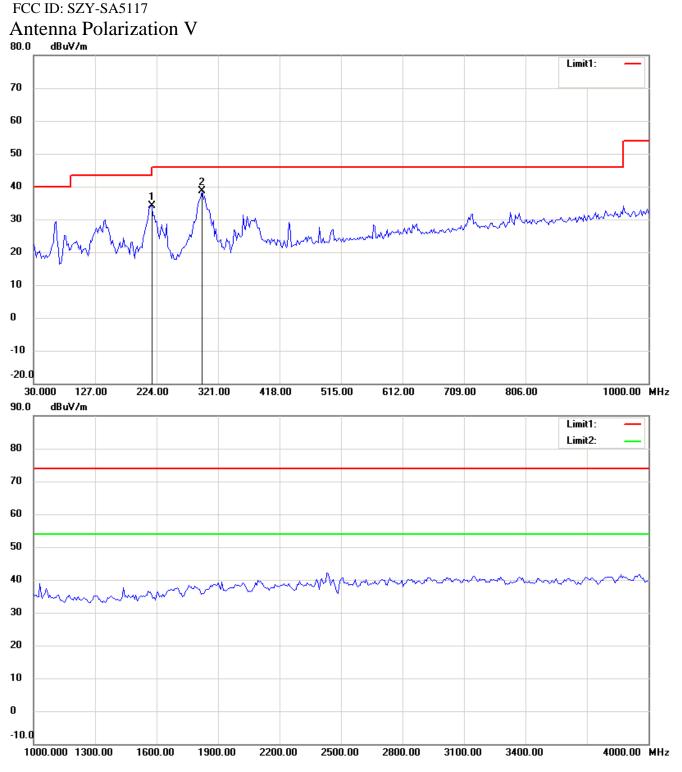




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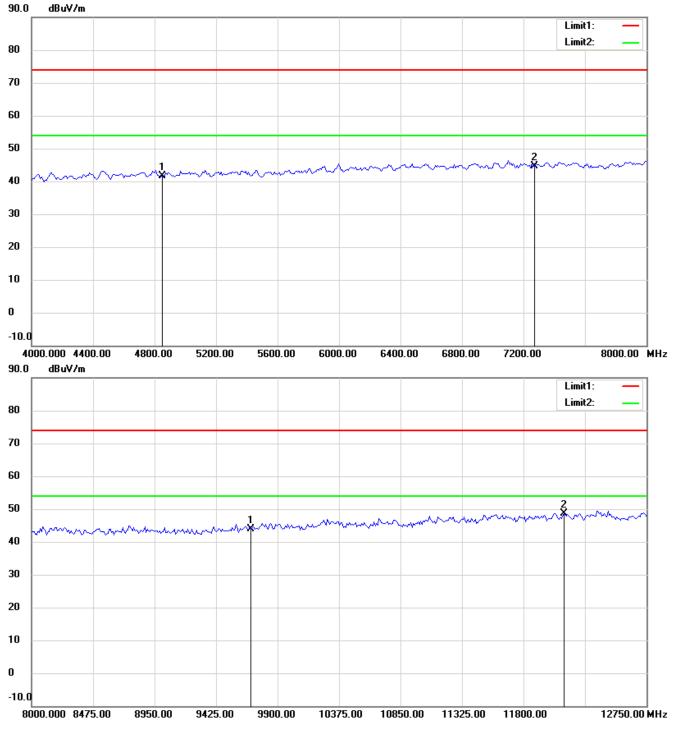


Registration number: W6M21310-13607-C-1



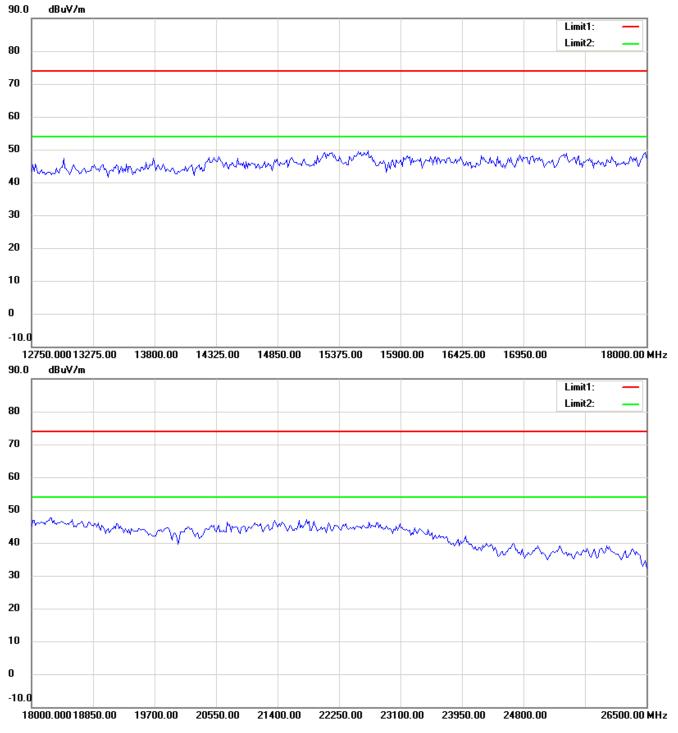
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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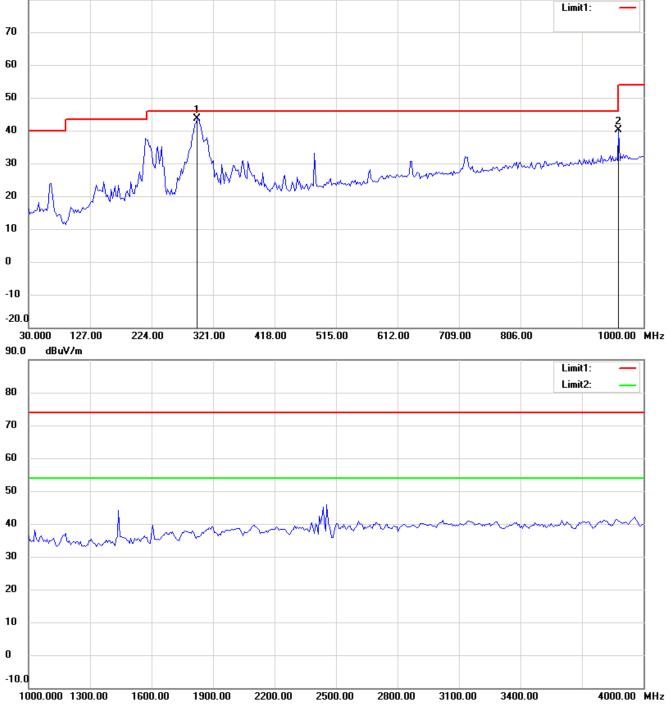
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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## 802.11n 40MHz CH4

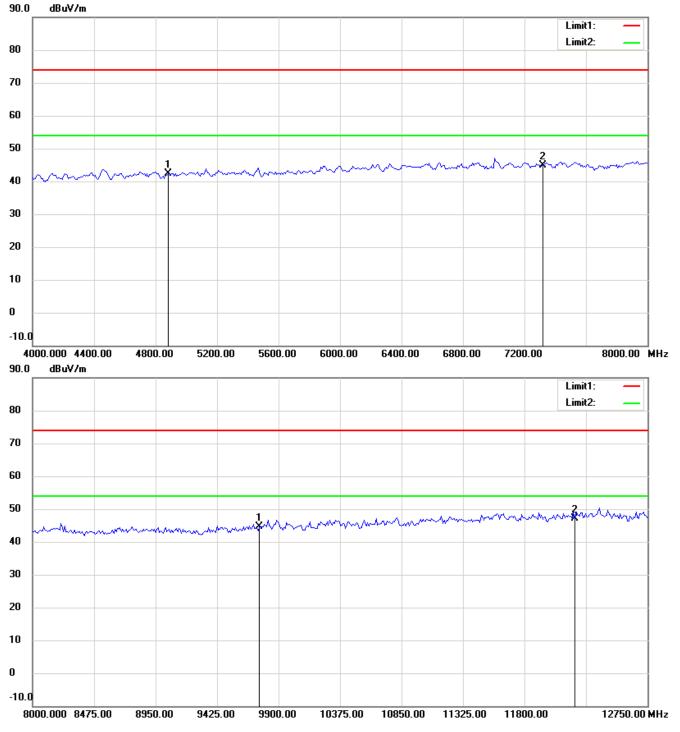
Antenna Polarization H

80.0 dBuV/m



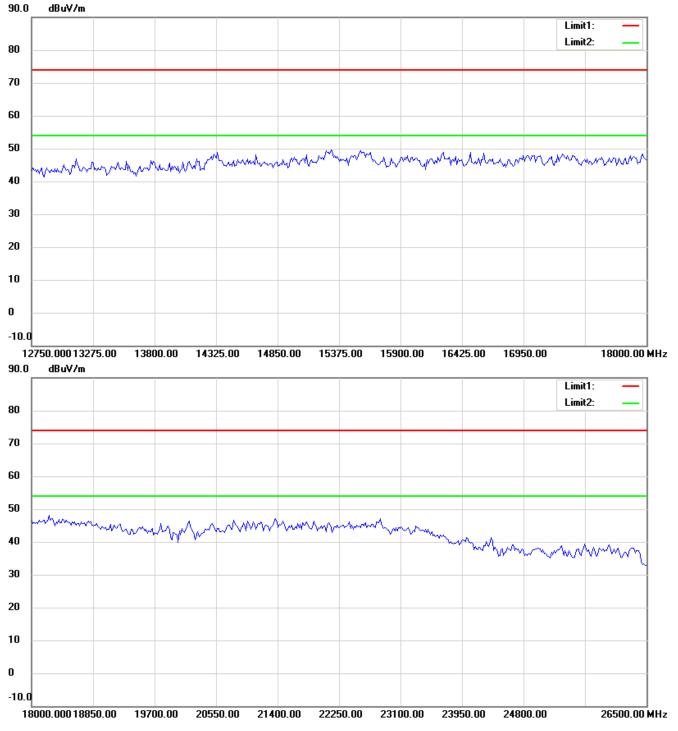
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

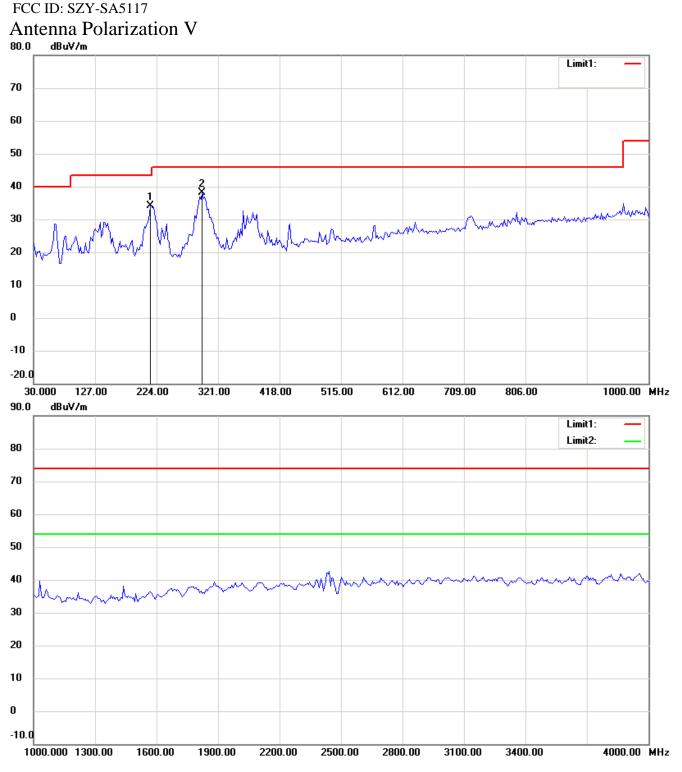




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- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

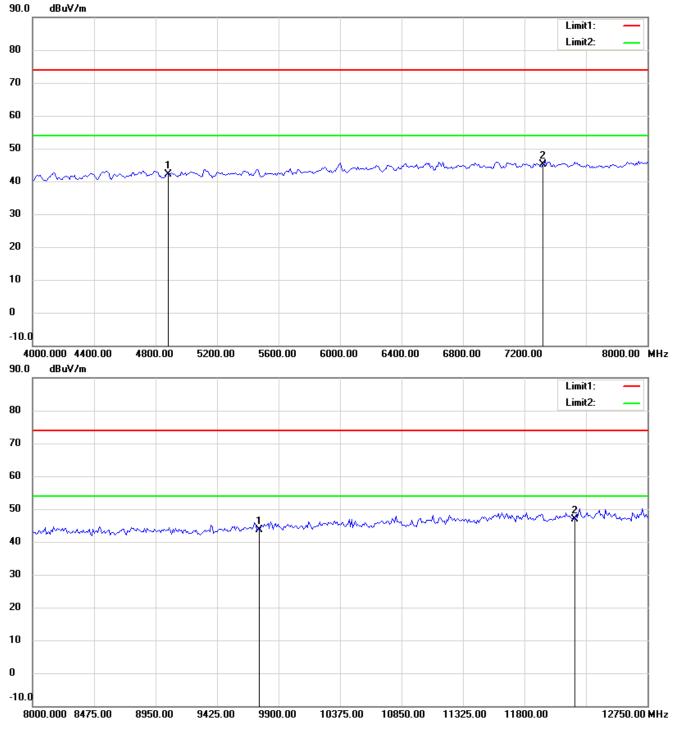


Registration number: W6M21310-13607-C-1



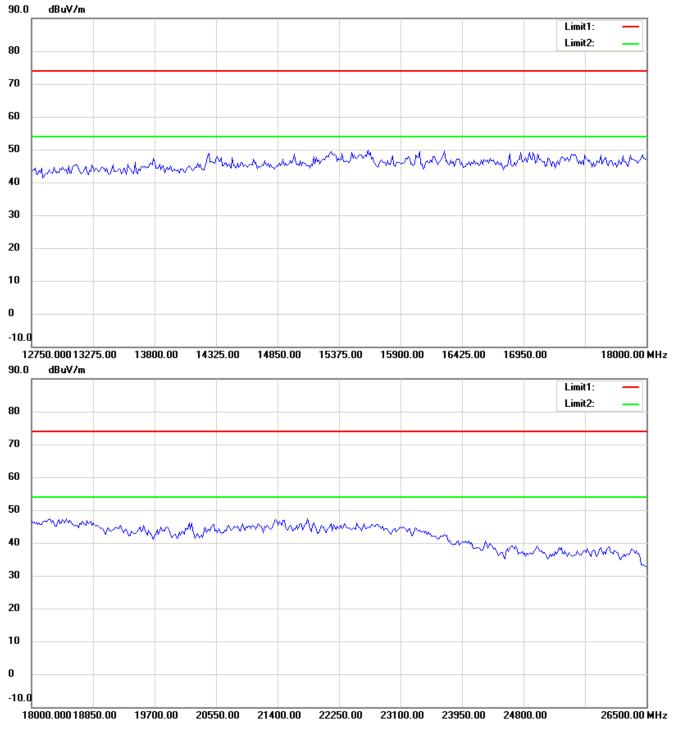
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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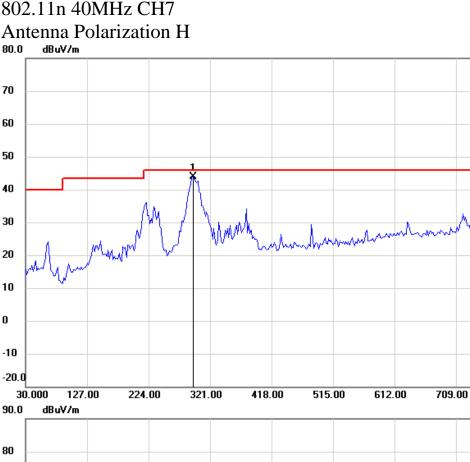
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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Limit1: Limit2: 80 70 60 50 40 30 20 10 0 -10.0 1000.000 1300.00 1600.00 1900.00 4000.00 MHz 2200.00 2500.00 2800.00 3100.00 3400.00

Up Line: Peak Limit Line Down Line: Ave Limit Line Note:

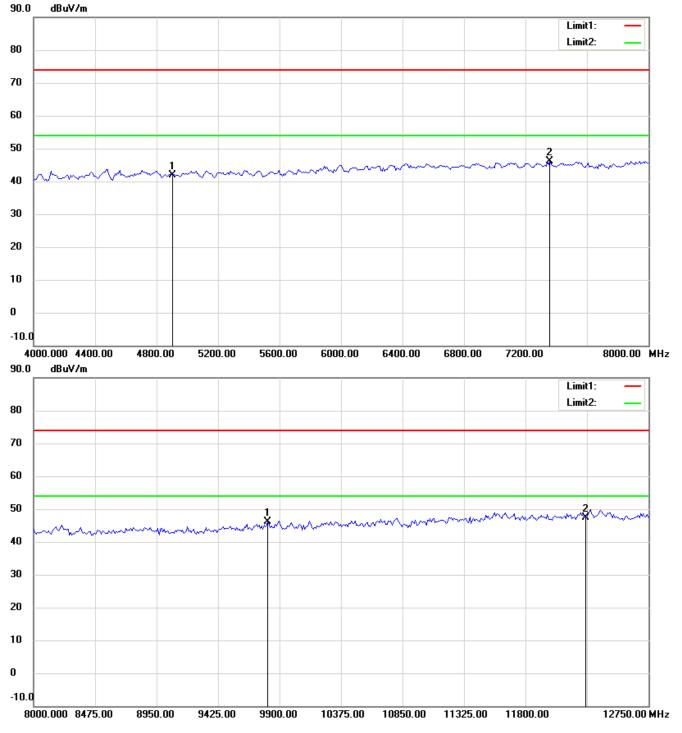
- The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final 1. checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

Limit1:

806.00

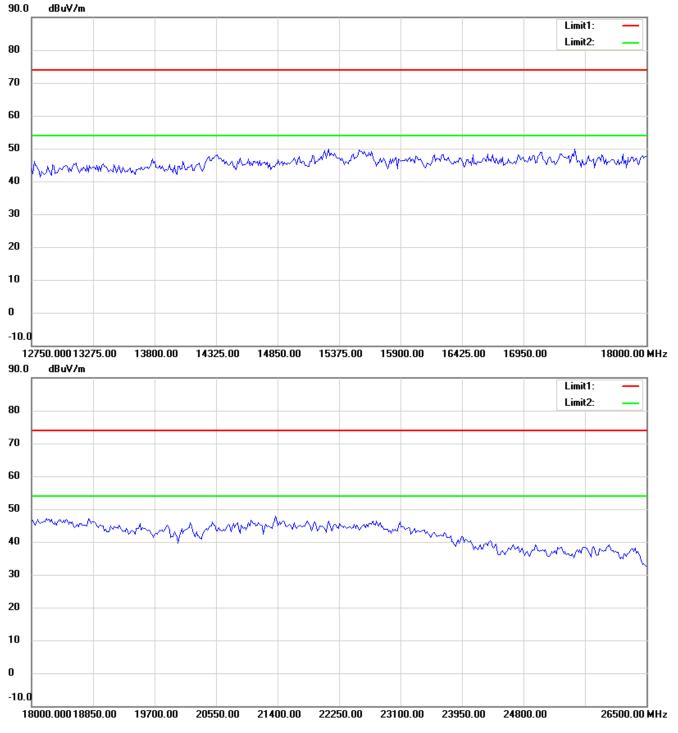
1000.00 MHz





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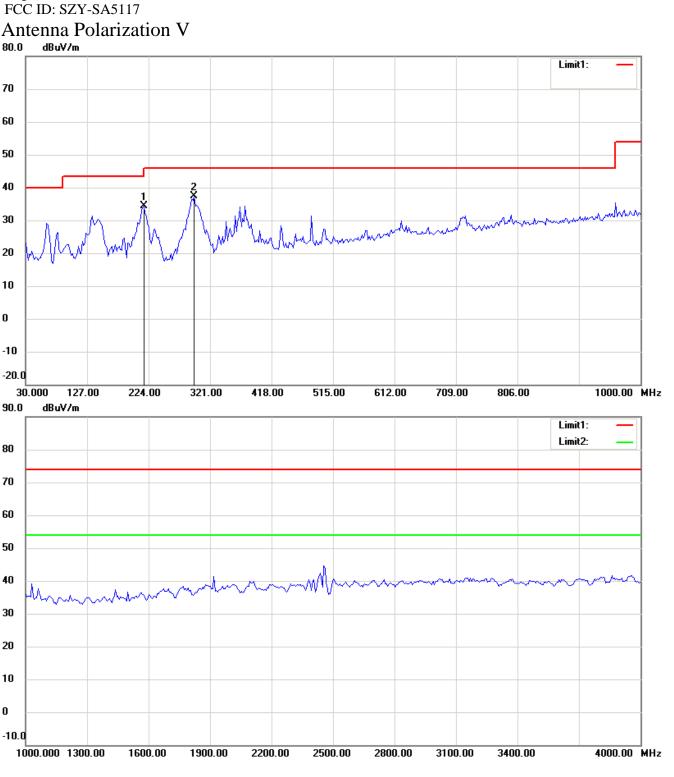




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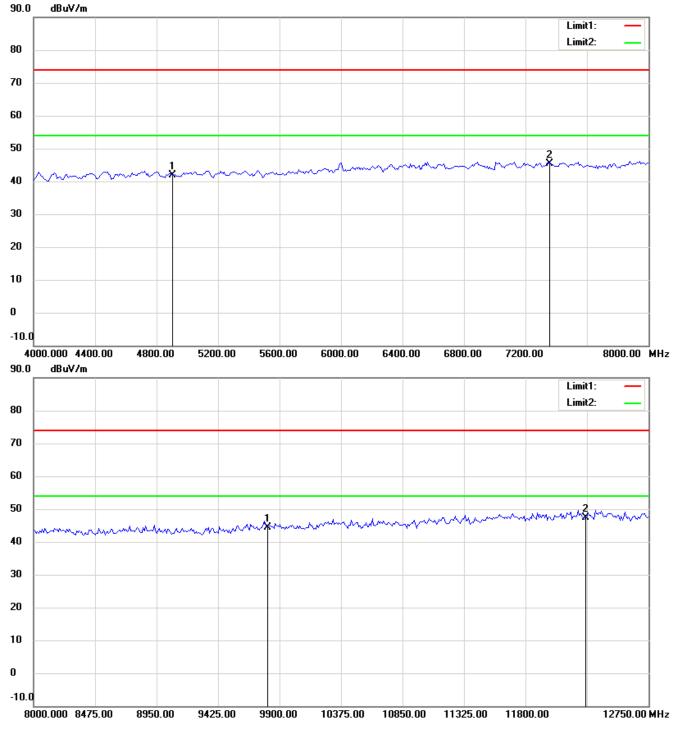


Registration number: W6M21310-13607-C-1



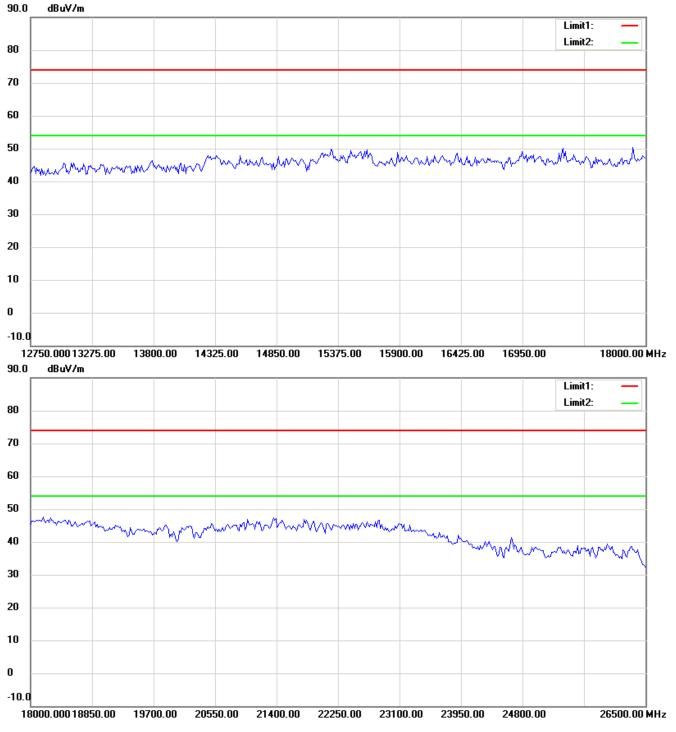
- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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