AS/NZS Test Report

Equipment	:	**LoRaWAN-enabled Gateway with Wi-Fi**
Model No.	:	**Sentrius RG191 Gateway**
Brand Name	:	**Laird Connectivity**
Applicant	:	**Laird Connectivity**
Address	:	**W66N220 Commerce Court, Cedarburg, Wisconsin 53012, USA**
Standard	:	**AS/NZS 4268:2017**
Received Date	:	**Feb. 25, 2019**
Tested Date	:	**Feb. 25 ~ Jun. 15, 2019**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

James Fan / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
AR932202-01AC	Rev. 01	Initial issue	Jul. 25, 2019

Summary of Test Results

Ref. Std. Clause	Test Items	Measured	Result
6.3	Maximum EIRP	26.02 dBm	Pass
6.5	Emission Bandwidth	Meet the requirement of limit.	Pass
6.6	Operating Frequencies	Meet the requirement of limit.	Pass
6.4	Transmitter Spurious Emissions	Meet the requirement of limit.	Pass
7.2	Receiver Spurious Emissions	Meet the requirement of limit.	Pass
Row 59	Peak Power Spectral Density	Meet the requirement of limit.	Pass

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information						
Country	**Frequency Range (MHz)**	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
AUSTRALIA and NEW ZEALAND	2400-2483.5	b	2412-2472	1-13 [13]	2	1-11 Mbps
	2400-2483.5	g	2412-2472	1-13 [13]	2	6-54 Mbps
	2400-2483.5	n (HT20)	2412-2472	1-13 [13]	2	MCS 0-15
Note 1: RF output power specifies that Maximum Peak Output Power. Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation. Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.						

1.1.2 Antenna Details

Ant. No.	Brand / Model	Type	Connector	Gain (dBi)
1	LSR/001-0009	Dipole	RP-SMA	2

1.1.3 EUT Operational Condition

Power Supply Type	12Vdc from adapter		
Operational Voltage	☒ Vnom (12 Vdc)	☒ Vmax (12.19 Vdc)	☒ Vmin (11.81Vdc)
Operational Climatic	☒ Tnom (20°C)	☒ Tmax (70°C)	☒ Tmin (-30°C)

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	Adapter	Brand: MW Model: GST25U12 Power Rating: I/P: 100-240Vac, 50/60Hz, 0.6A O/P: 12Vdc, 2.08A, 25W MAX Power line: 1m non-shielded with two cores
2	RJ45 cable	Brand: BRIGHT PLUS CO., LTD Model: WAS-G0736-1 1.81m non-shielded without core

1.1.5 Channel List

Channel	Frequency(MHz)
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462
12	2467
13	2472

1.1.6 Test Tool and Duty Cycle

Test Tool	by command	
Modulation Mode	**Duty Cycle Of Test Signal (%)**	**Duty Factor (dB)**
b	99.61%	0.02
g	97.34%	0.12
HT20	97.18%	0.12

1.1.7 Power Index of Test Tool

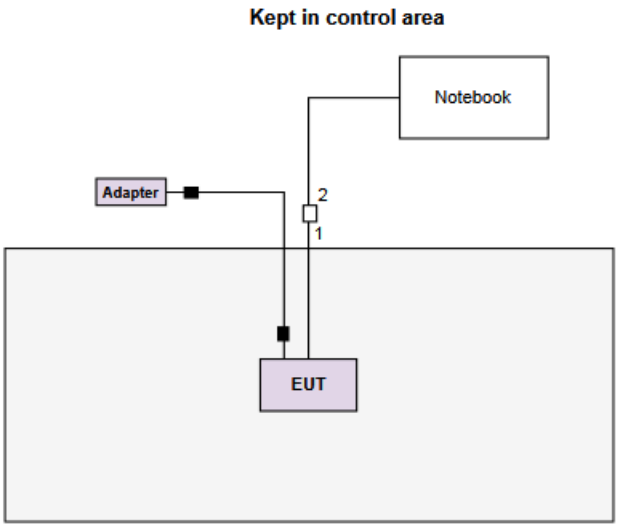
Modulation Mode	Test Frequency (MHz)		
	2412	**2442**	**2472**
b	12.5	12.5	12
g	15	14.5	14.5
HT20	15	15	15

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**S/N**	**Remarks**
1	Notebook	DELL	Latitude E5470	DoC	---

1.3 Test Setup Chart

Test Setup Diagram



No.	Signal cable / Length (m)
1	RJ45, 1.81m non-shielded.
2	RJ45, 10m non-shielded.

1.4 Test Equipment and Calibration Data

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101486	Jan. 08, 2019	Jan. 07, 2020
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 05, 2018	Dec. 04, 2019
Power Sensor	Agilent	U2021XA	MY53480019	Jan. 30, 2019	Jan. 29, 2020
AC POWER SOURCE	APC	AFC-500W	F312060012	Nov. 29, 2018	Nov. 28, 2019
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Measurement Software	Agilent	EN RF test	1.1501125	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emissions				
Test Site	Fully-anechoic chamber 1 / (05CH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	Agilent	N9010A	MY54200247	Sep. 17, 2018	Sep. 16, 2019
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-524	Oct. 09, 2018	Oct. 08, 2019
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1094	Oct. 26, 2018	Oct. 25, 2019
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Dec. 22, 2018	Dec. 21, 2019
Preamplifier	Agilent	83017A	MY39501310	Nov. 29, 2018	Nov. 28, 2019
Preamplifier	EMC	EMC02325	980146	Oct. 11, 2018	Oct. 10, 2019
Preamplifier	EMC	EMC184045B	980192	Aug. 09, 2018	Aug. 08, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY22626/4	Oct. 15, 2018	Oct. 14, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16608/4	Oct. 15, 2018	Oct. 14, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY15686/4	Oct. 15, 2018	Oct. 14, 2019
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-005	Oct. 15, 2018	Oct. 14, 2019
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-006	Oct. 15, 2018	Oct. 14, 2019
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emissions				
Test Site	(10CH01-HY)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	Keysight	N9038A	MY54130031	Nov. 06, 2018	Nov. 05, 2019
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 09, 2018	Nov. 08, 2019
RF Cable-R10m	Suhner Switzerland + Rosenberger	RG223/U + UAA220A-0	CB022-DOOR	Nov. 11, 2018	Nov. 10, 2019
Turn Table	HD	DT 60 RPS	1513/004/00	NA	NA
Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

AS/NZS 4268:2017

1.6 Deviation from Test Standard and Measurement Procedure

None

1.7 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2).

Measurement Uncertainty	
Parameters	**Uncertainty**
Radio Frequency	$\pm 1.4 \times 10^{-9}$
RF Power Conducted	±0.808 dB
RF Power Radiated	±3.398 dB
Spurious Emission, Conducted	±2.470 dB
Spurious Emission, Radiated	±3.398 dB
Humidity	±0.8 ^{o}C
Temperature	±4.7%
Time	±0.1%

2 Test Configuration

2.1 Testing Condition

Testing Location		
☒	ICC Lab	ADD : No.3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan (R.O.C.) TEL : 886-3-271-8666 FAX : 886-3-318-0155
☒	Sporton Lab	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973

Test Item	Test Site	Ambient Condition	Conducted / Radiated measurement	TX/RX test	Tested By
RF Conducted	TH01-WS	25°C / 62%	Conducted	TX	Ryan Lee
Radiated Emission > 30 MHz	05CH01-WS	23°C / 63%	Radiated	TX RX	Brad Wu
Radiated Emission ≤ 30 MHz	10CH01-HY*	25°C / 65%	Radiated	TX RX	Jack Li

Note: * ICC lab subcontracts this test item to Sporton Lab (TAF:1190).
Sporton Lab is a TAF accreditation test firm and also is an approved provider of ICC lab.

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Conducted / Radiated measurement	TX/RX test	Data Rate
Maximum EIRP Emission Bandwidth Peak Power Spectral Density	11b 11g HT20	2412 / 2442 / 2472 2412 / 2442 / 2472 2412 / 2442 / 2472	Conducted	TX	1 Mbps 6 Mbps MCS 0
Operating Frequencies	11b 11g HT20	2412 / 2472 2412 / 2472 2412 / 2472	Conducted	TX	1 Mbps 6 Mbps MCS 0
Transmitter Spurious Emissions ≤ 30 MHz Transmitter Spurious Emissions > 1GHz Receiver Spurious Emissions ≤ 30 MHz	11b 11g HT20	2412 / 2472 2412 / 2472 2412 / 2472	Radiated	TX RX RX	1 Mbps 6 Mbps MCS 0
Transmitter Spurious Emissions ≤ 1GHz Receiver Spurious Emissions ≤ 1GHz Receiver Spurious Emissions > 1GHz	11g	2412 / 2472	Radiated	TX RX RX	6 Mbps

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.

3 Transmitter Test Results

3.1 Maximum EIRP

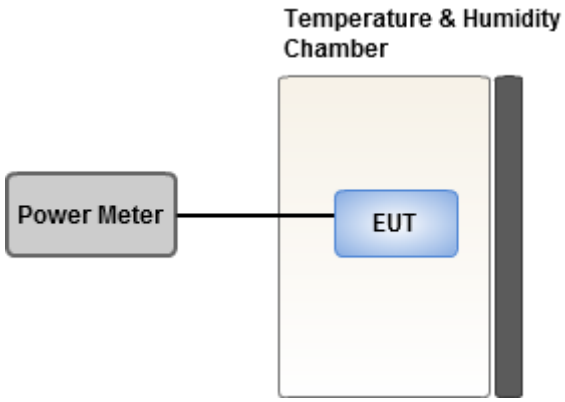
3.1.1 EIRP Limits

The equivalent isotropic radiated power (e.i.r.p.) shall be equal to or less than 4 W (36dBm).
Note: Limit is from AS/NZS 4268:2017

3.1.2 Test Procedures

Reference to clause 6.2.1 of AS/NZS 4268:2017.

3.1.3 Test Setup



3.1.4 Test Result of EIRP

EIRP (dBm)					
Modulation Mode	11b				
Condition	**Freq. (MHz)**	**EIRP PK Power (dBm)**	**EIRP AV Power (dBm)**	**Limit (dBm)**	**Results**
$T_{nom}V_{nom}$	2412	20.69	17.02	36	Pass
$T_{min}V_{max}$	2412	21.43	17.76	36	Pass
$T_{min}V_{min}$	2412	21.45	17.78	36	Pass
$T_{max}V_{max}$	2412	20.66	16.99	36	Pass
$T_{max}V_{min}$	2412	20.63	16.96	36	Pass
$T_{nom}V_{nom}$	2442	20.95	17.29	36	Pass
$T_{min}V_{max}$	2442	21.68	18.02	36	Pass
$T_{min}V_{min}$	2442	21.71	18.05	36	Pass
$T_{max}V_{max}$	2442	20.63	16.97	36	Pass
$T_{max}V_{min}$	2442	20.61	16.95	36	Pass
$T_{nom}V_{nom}$	2472	20.29	17.04	36	Pass
$T_{min}V_{max}$	2472	20.69	17.44	36	Pass
$T_{min}V_{min}$	2472	20.72	17.47	36	Pass
$T_{max}V_{max}$	2472	19.55	16.30	36	Pass
$T_{max}V_{min}$	2472	19.53	16.28	36	Pass

RF Output Power (dBm)					
Modulation Mode	11g				
Condition	**Freq. (MHz)**	**EIRP PK Power (dBm)**	**EIRP AV Power (dBm)**	**Limit (dBm)**	**Results**
$T_{nom}V_{nom}$	2412	25.20	18.98	36	Pass
$T_{min}V_{max}$	2412	25.88	19.66	36	Pass
$T_{min}V_{min}$	2412	25.90	19.68	36	Pass
$T_{max}V_{max}$	2412	25.18	18.96	36	Pass
$T_{max}V_{min}$	2412	25.16	18.94	36	Pass
$T_{nom}V_{nom}$	2442	24.87	18.80	36	Pass
$T_{min}V_{max}$	2442	25.57	19.50	36	Pass
$T_{min}V_{min}$	2442	25.59	19.52	36	Pass
$T_{max}V_{max}$	2442	24.38	18.31	36	Pass
$T_{max}V_{min}$	2442	24.36	18.29	36	Pass
$T_{nom}V_{nom}$	2472	25.07	18.75	36	Pass
$T_{min}V_{max}$	2472	25.34	19.02	36	Pass
$T_{min}V_{min}$	2472	25.36	19.04	36	Pass
$T_{max}V_{max}$	2472	24.26	17.94	36	Pass
$T_{max}V_{min}$	2472	24.24	17.92	36	Pass

RF Output Power (dBm)					
Modulation Mode	HT20				
Condition	**Freq. (MHz)**	**EIRP PK Power (dBm)**	**EIRP AV Power (dBm)**	**Limit (dBm)**	**Results**
$T_{nom}V_{nom}$	2412	25.48	18.76	36	Pass
$T_{min}V_{max}$	2412	25.98	19.26	36	Pass
$T_{min}V_{min}$	2412	26.01	19.29	36	Pass
$T_{max}V_{max}$	2412	25.37	18.65	36	Pass
$T_{max}V_{min}$	2412	25.35	18.63	36	Pass
$T_{nom}V_{nom}$	2442	25.52	19.02	36	Pass
$T_{min}V_{max}$	2442	25.98	19.48	36	Pass
$T_{min}V_{min}$	2442	26.02	19.52	36	Pass
$T_{max}V_{max}$	2442	24.85	18.35	36	Pass
$T_{max}V_{min}$	2442	24.82	18.32	36	Pass
$T_{nom}V_{nom}$	2472	25.60	18.99	36	Pass
$T_{min}V_{max}$	2472	25.81	19.20	36	Pass
$T_{min}V_{min}$	2472	25.83	19.22	36	Pass
$T_{max}V_{max}$	2472	24.78	18.17	36	Pass
$T_{max}V_{min}$	2472	24.74	18.13	36	Pass

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limits

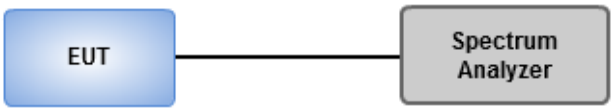
The upper and lower frequency limits of the transmitter 99% emission power bandwidth shall at all times remain within the operating frequency limits(2.4 ~ 2.4835 GHz).

Note: Limit is from AS/NZS 4268:2017

3.2.2 Test Procedures

Reference to clause 6.2.1 of AS/NZS 4268:2017.

3.2.3 Test Setup



3.2.4 Test Result of Emission Bandwidth

Summary

Mode	OBW (Hz)	ITU-Code
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	11.214M	11M2G1D
802.11g_Nss1,(6Mbps)_2TX	16.632M	16M6D1D
802.11n HT20_Nss1,(MCS0)_2TX	17.811M	17M8D1D

OBW = 99% occupied bandwidth;

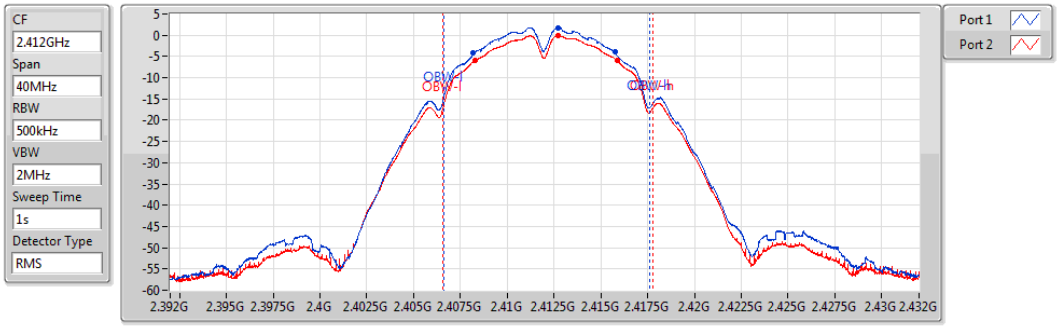
Result

Mode	Result	Limit (Hz)	fl-OBW (Hz)	fh-OBW (Hz)	OBW (Hz)	N dB (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.4-2.4835G	2.406563G	2.417777G	11.214M	7.62M
2442MHz_TnomVnom	Pass	2.4-2.4835G	2.436603G	2.447557G	10.915M	7.6M
2472MHz_TnomVnom	Pass	2.4-2.4835G	2.466443G	2.477597G	10.995M	7.6M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.4-2.4835G	2.403664G	2.420296G	16.632M	16.72M
2442MHz_TnomVnom	Pass	2.4-2.4835G	2.433684G	2.450316G	16.632M	16.76M
2472MHz_TnomVnom	Pass	2.4-2.4835G	2.463644G	2.480296G	16.632M	16.76M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.4-2.4835G	2.403084G	2.420896G	17.791M	17.92M
2442MHz_TnomVnom	Pass	2.4-2.4835G	2.433104G	2.450896G	17.791M	17.96M
2472MHz_TnomVnom	Pass	2.4-2.4835G	2.463064G	2.480876G	17.811M	17.98M

fl-OBW = fl lower edge 99% occupied bandwidth; **fh-OBW** = fh higher edge 99% occupied bandwidth; **OBW** = 99% occupied bandwidth; **N dB** = 6dB down bandwidth;

802.11b_Nss1,(1Mbps)_2TX **EBW**

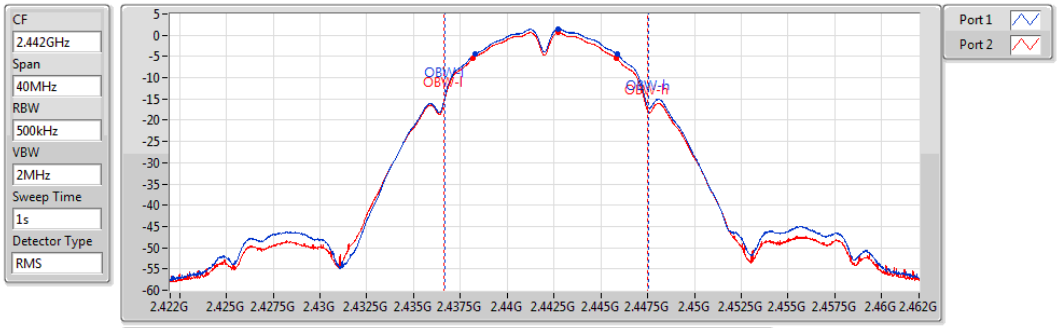
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.56M	2.4082G	2.41576G	11.014M	2.406603G	2.417617G	2.4-2.4835G	1
7.62M	2.40826G	2.41588G	11.214M	2.406563G	2.417777G	2.4-2.4835G	2

802.11b_Nss1,(1Mbps)_2TX **EBW**

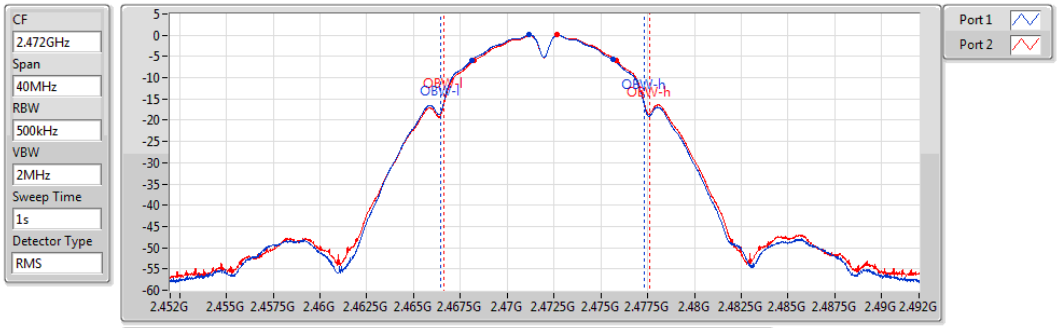
2442MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.58M	2.43828G	2.44586G	10.855M	2.436703G	2.447557G	2.4-2.4835G	1
7.6M	2.4382G	2.4458G	10.915M	2.436603G	2.447517G	2.4-2.4835G	2

802.11b_Nss1,(1Mbps)_2TX **EBW**

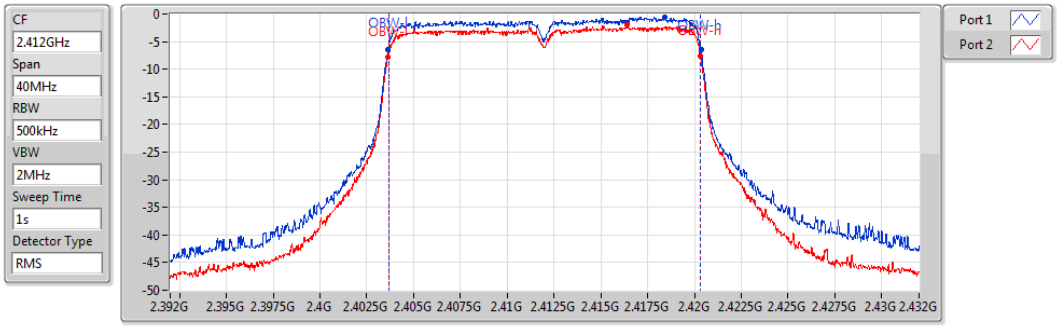
2472MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.58M	2.4681G	2.47568G	10.895M	2.466443G	2.477337G	2.4-2.4835G	1
7.6M	2.46824G	2.47584G	10.995M	2.466603G	2.477597G	2.4-2.4835G	2

802.11g_Nss1,(6Mbps)_2TX **EBW**

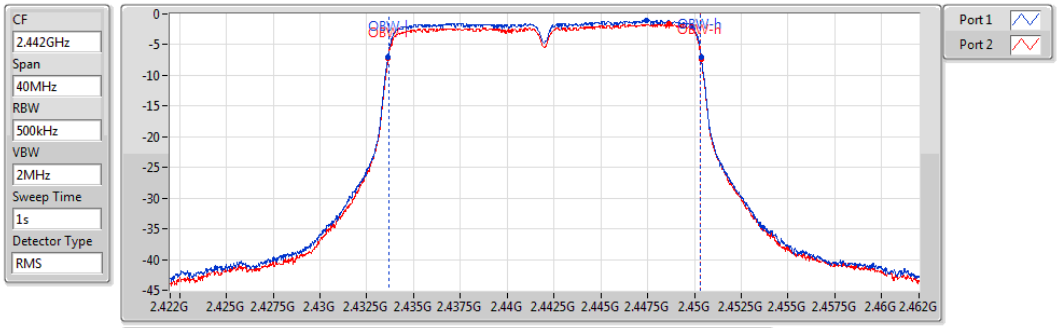
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.72M	2.40364G	2.42036G	16.612M	2.403684G	2.420296G	2.4-2.4835G	1
16.72M	2.40362G	2.42034G	16.632M	2.403664G	2.420296G	2.4-2.4835G	2

802.11g_Nss1,(6Mbps)_2TX **EBW**

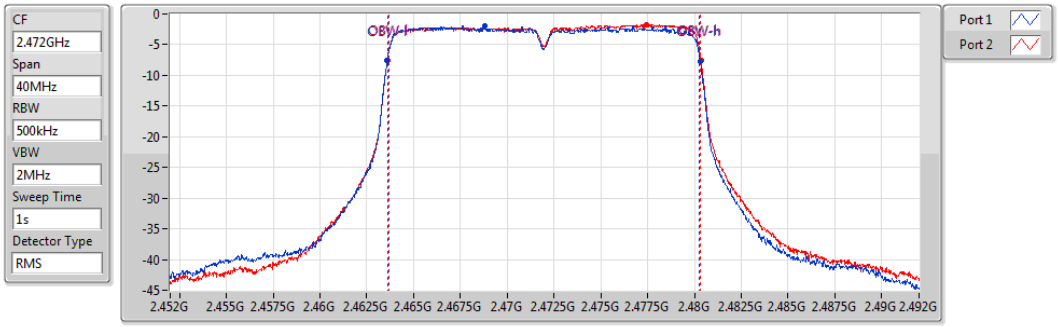
2442MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.76M	2.43362G	2.45038G	16.592M	2.433704G	2.450296G	2.4-2.4835G	1
16.74M	2.43364G	2.45038G	16.632M	2.433684G	2.450316G	2.4-2.4835G	2

802.11g_Nss1,(6Mbps)_2TX **EBW**

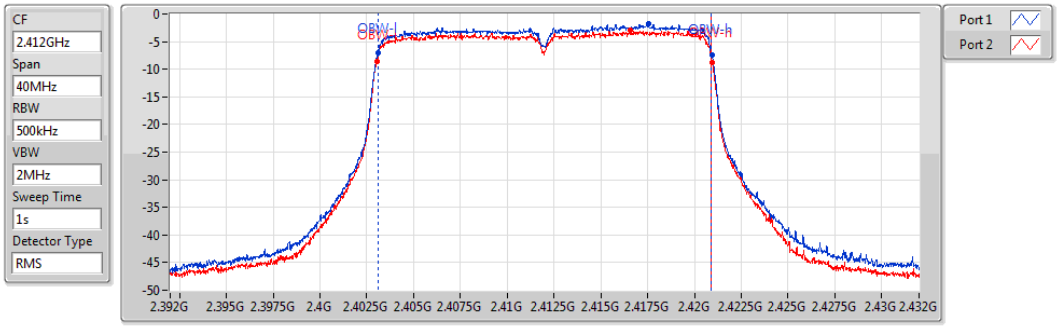
2472MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.74M	2.46358G	2.48032G	16.612M	2.463644G	2.480256G	2.4-2.4835G	1
16.76M	2.4636G	2.48036G	16.632M	2.463664G	2.480296G	2.4-2.4835G	2

802.11n HT20_Nss1,(MCS0)_2TX **EBW**

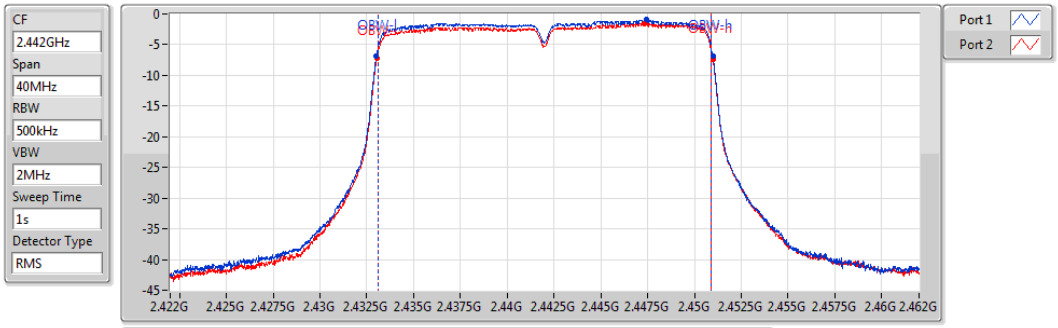
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.86M	2.40308G	2.42094G	17.791M	2.403104G	2.420896G	2.4-2.4835G	1
17.92M	2.40304G	2.42096G	17.791M	2.403084G	2.420876G	2.4-2.4835G	2

802.11n HT20_Nss1,(MCS0)_2TX **EBW**

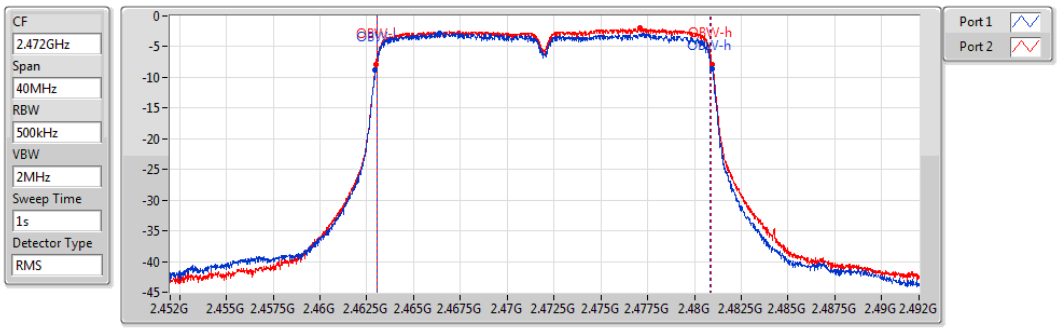
2442MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.96M	2.43302G	2.45098G	17.791M	2.433104G	2.450896G	2.4-2.4835G	1
17.94M	2.43304G	2.45098G	17.791M	2.433104G	2.450896G	2.4-2.4835G	2

802.11n HT20_Nss1,(MCS0)_2TX **EBW**

2472MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.98M	2.46296G	2.48094G	17.791M	2.463064G	2.480856G	2.4-2.4835G	1
17.98M	2.46298G	2.48096G	17.811M	2.463064G	2.480876G	2.4-2.4835G	2

3.3 Peak Power Spectral Density

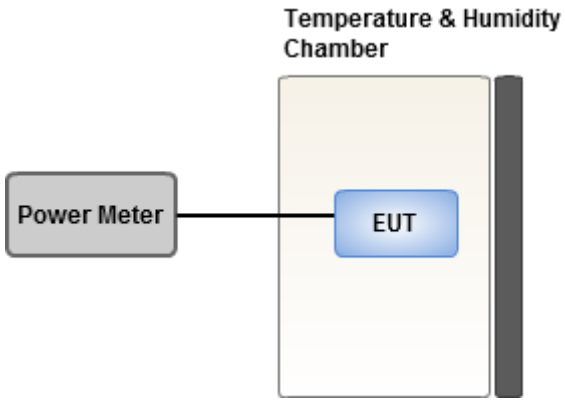
3.3.1 Peak Power Spectral Density Limits

The radiated peak power spectral density in any 3 kHz is limited to 25 mW (14dBm) per 3 kHz.
Note: Limit is from AS/NZS 4268:2017

3.3.2 Test Procedures

Reference to clause 6.2.1 of AS/NZS 4268:2017.

3.3.3 Test Setup



3.3.4 Test Result of Peak Power Spectral Density

Modulation Mode	Freq. (MHz)	Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Results
11b	2412	-6.73	14	Pass
11b	2442	-6.68	14	Pass
11b	2472	-6.93	14	Pass
11g	2412	-7.78	14	Pass
11g	2442	-8.37	14	Pass
11g	2472	-7.87	14	Pass
HT20	2412	-7.28	14	Pass
HT20	2442	-7.59	14	Pass
HT20	2472	-7.45	14	Pass

3.4 Operating Frequencies

3.4.1 Operating Frequencies Limits

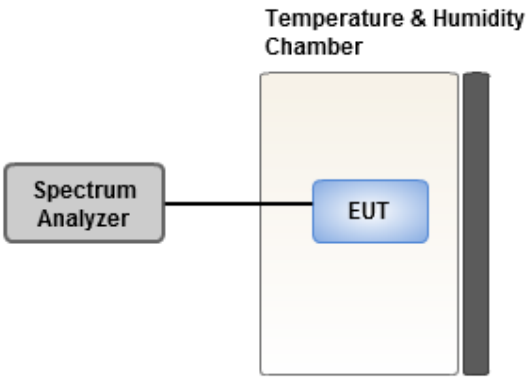
The upper and lower frequency limit of the emission bandwidth shall at all times remain within the operating frequency (f_L > 2,4 GHz and f_H < 2,4835 GHz).

Note: Limit is from AS/NZS 4268:2017

3.4.2 Test Procedures

Reference to clause 6.2.1 of AS/NZS 4268:2017.

3.4.3 Test Setup



3.4.4 Test Result of Operating Frequencies

Condition	Modulation Mode	Freqeuncy (MHz)	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
$T_{nom}V_{nom}$	11b	2412	2406.56	-	2400	2483.5
$T_{min}V_{max}$	11b	2412	2406.55	-	2400	2483.5
$T_{min}V_{min}$	11b	2412	2406.55	-	2400	2483.5
$T_{max}V_{max}$	11b	2412	2406.57	-	2400	2483.5
$T_{max}V_{min}$	11b	2412	2406.57	-	2400	2483.5
$T_{nom}V_{nom}$	11b	2472	-	2477.59	2400	2483.5
$T_{min}V_{max}$	11b	2472	-	2477.60	2400	2483.5
$T_{min}V_{min}$	11b	2472	-	2477.60	2400	2483.5
$T_{max}V_{max}$	11b	2472	-	2477.58	2400	2483.5
$T_{max}V_{min}$	11b	2472	-	2477.58	2400	2483.5
$T_{nom}V_{nom}$	11g	2412	2403.66	-	2400	2483.5
$T_{min}V_{max}$	11g	2412	2403.65	-	2400	2483.5
$T_{min}V_{min}$	11g	2412	2403.65	-	2400	2483.5
$T_{max}V_{max}$	11g	2412	2403.67	-	2400	2483.5
$T_{max}V_{min}$	11g	2412	2403.67	-	2400	2483.5
$T_{nom}V_{nom}$	11g	2472	-	2480.29	2400	2483.5
$T_{min}V_{max}$	11g	2472	-	2480.30	2400	2483.5
$T_{min}V_{min}$	11g	2472	-	2480.30	2400	2483.5
$T_{max}V_{max}$	11g	2472	-	2480.28	2400	2483.5
$T_{max}V_{min}$	11g	2472	-	2480.28	2400	2483.5
$T_{nom}V_{nom}$	HT20	2412	2403.08	-	2400	2483.5
$T_{min}V_{max}$	HT20	2412	2403.07	-	2400	2483.5
$T_{min}V_{min}$	HT20	2412	2403.07	-	2400	2483.5
$T_{max}V_{max}$	HT20	2412	2403.09	-	2400	2483.5
$T_{max}V_{min}$	HT20	2412	2403.09	-	2400	2483.5
$T_{nom}V_{nom}$	HT20	2472	-	2480.87	2400	2483.5
$T_{min}V_{max}$	HT20	2472	-	2480.88	2400	2483.5
$T_{min}V_{min}$	HT20	2472	-	2480.88	2400	2483.5
$T_{max}V_{max}$	HT20	2472	-	2480.86	2400	2483.5
$T_{max}V_{min}$	HT20	2472	-	2480.86	2400	2483.5

3.5 Transmitter Spurious Emissions

3.5.1 Transmitter Spurious Emissions Limits

Spurious Emissions Limit (Peak Power)	Frequency Range	Measurement Bandwidth
-56 dBW (2.5μW) e.i.r.p (59 dBμV/m at 10 metres)	< 150 kHz	1 kHz
	150 kHz – 30 MHz	10 kHz

Note: Limit is from NEW ZEALAND https://gazette.govt.nz/notice/id/2015-go694 Table2"

Frequency Range (MHz)	Maximum power (dBm)	Bandwidth (kHz)
30 to 47	-36	100
47 to 74	-54	100
74 to 87.5	-36	100
87.5 to 118	-54	100
118 to 174	-36	100
174 to 230	-54	100
230 to 470	-36	100
470 to 862	-54	100
862 to 1000	-36	100
1000 to 12750	-30	1000

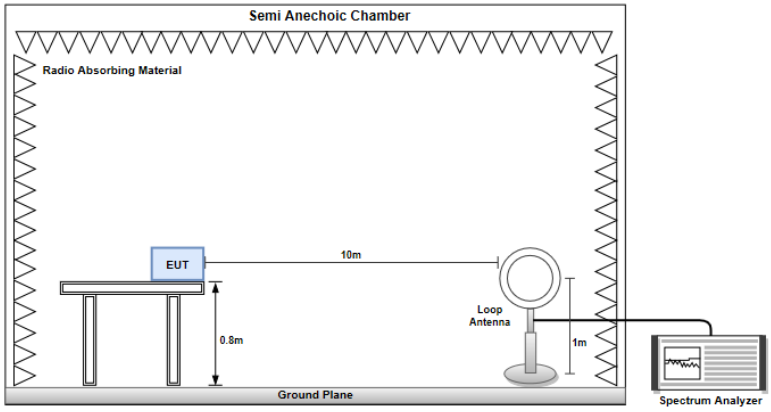
Note: Limit is from ETSI EN 300 328

3.5.2 Test Procedures

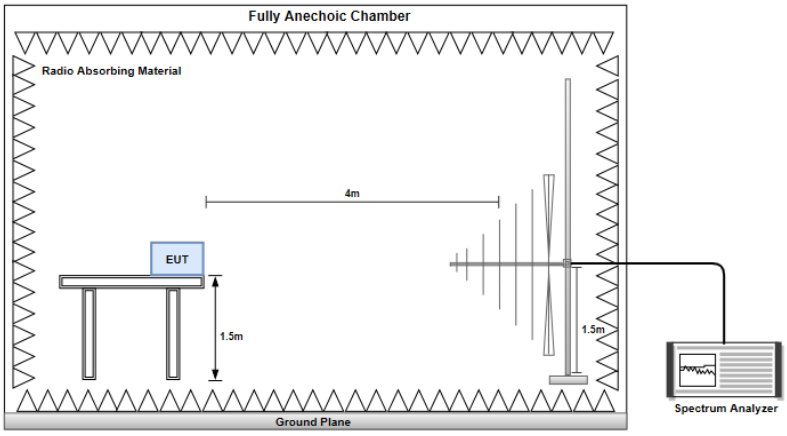
Reference to clause 6.2.1 of AS/NZS 4268:2017.

3.5.3 Test Setup

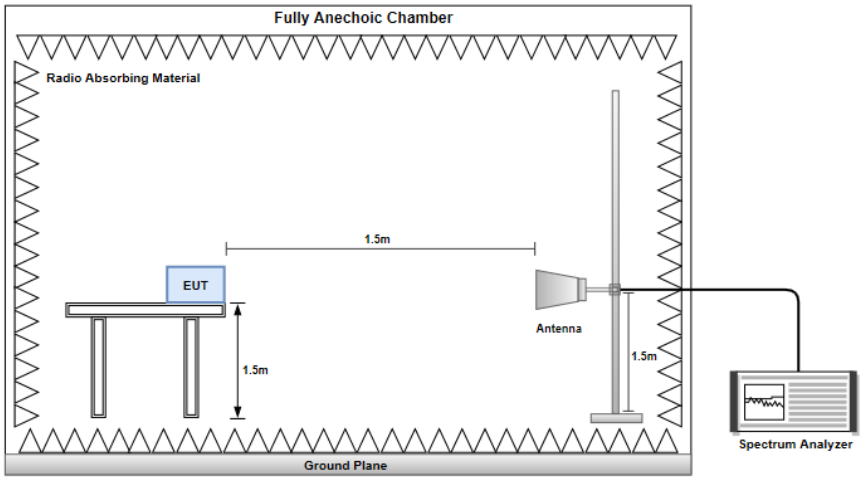
Below 30MHz



Below 1GHz

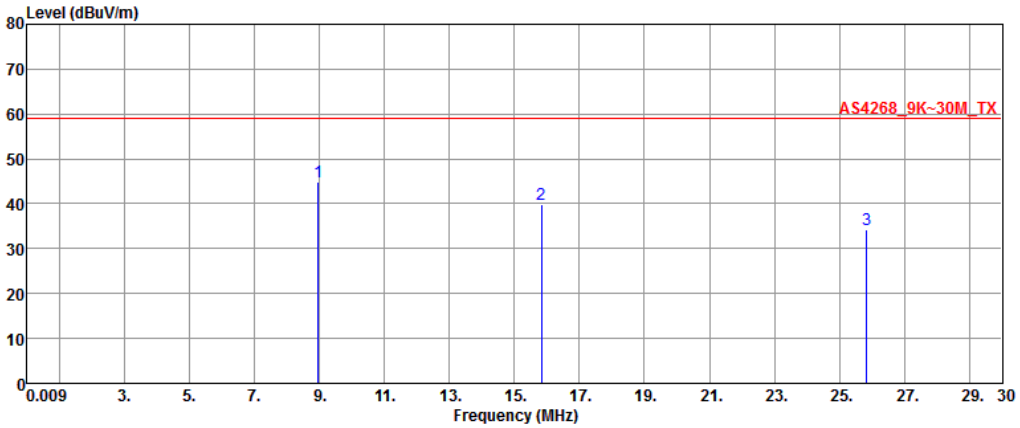


Above 1 GHz



3.5.4 Transmitter Spurious Emissions (≤ 30MHz)

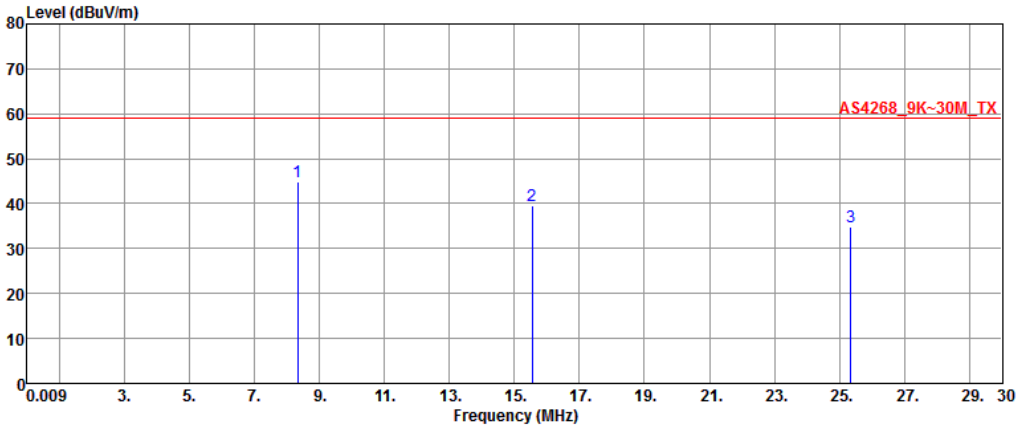
Modulation	11b	Test Freq. (MHz)	2412
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.95	44.98	59.00	-14.02	20.23	24.75
2	15.84	39.84	59.00	-19.16	21.31	18.53
3	25.84	34.27	59.00	-24.73	22.08	12.19

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

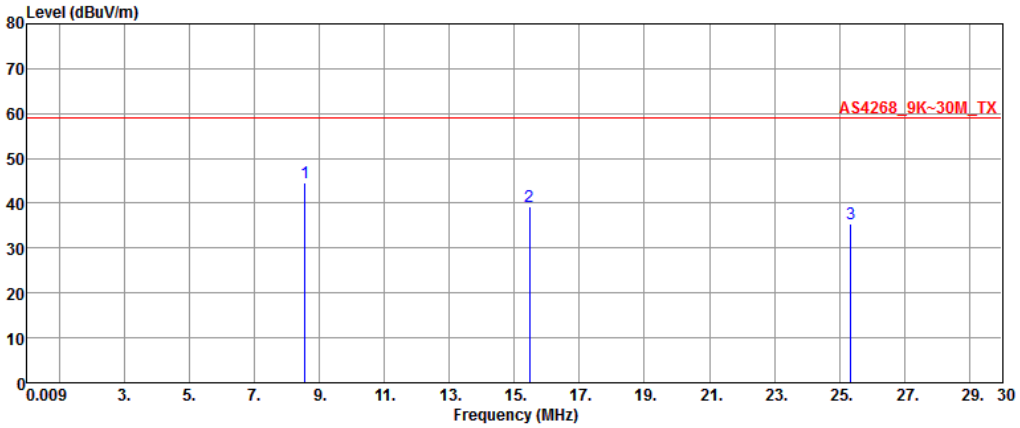
Modulation	11b	Test Freq. (MHz)	2472
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.32	44.97	59.00	-14.03	20.17	24.80
2	15.54	39.66	59.00	-19.34	21.26	18.40
3	25.34	34.75	59.00	-24.25	22.05	12.70

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

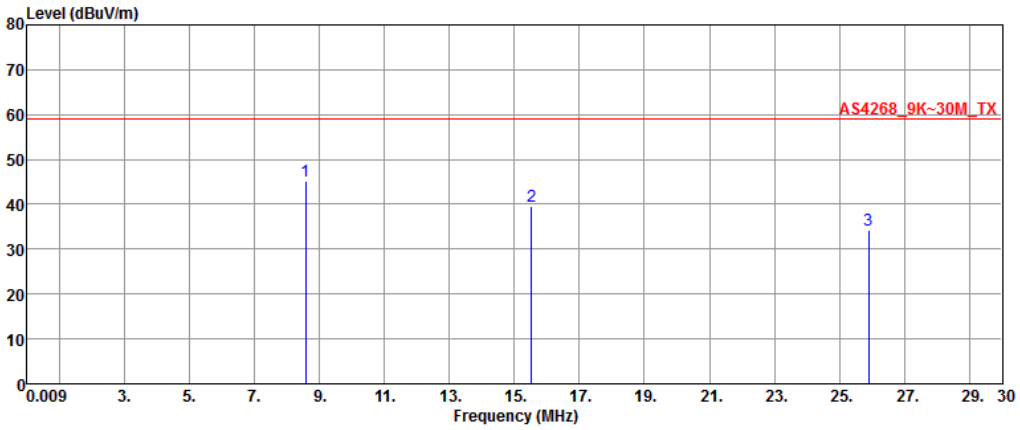
Modulation	11g	Test Freq. (MHz)	2412
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.54	44.54	59.00	-14.46	20.20	24.34
2	15.47	39.27	59.00	-19.73	21.25	18.02
3	25.36	35.54	59.00	-23.46	22.05	13.49

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

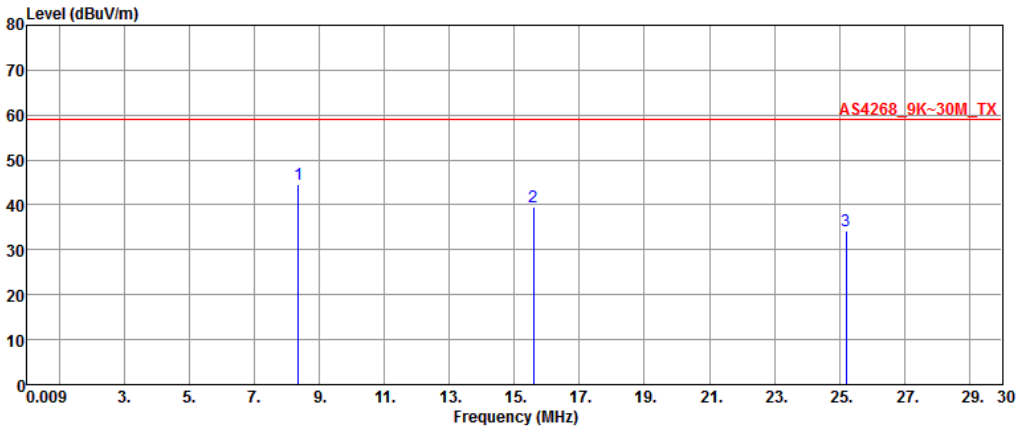
Modulation	11g	Test Freq. (MHz)	2472
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.56	45.20	59.00	-13.80	20.20	25.00
2	15.51	39.52	59.00	-19.48	21.26	18.26
3	25.90	34.33	59.00	-24.67	22.09	12.24

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

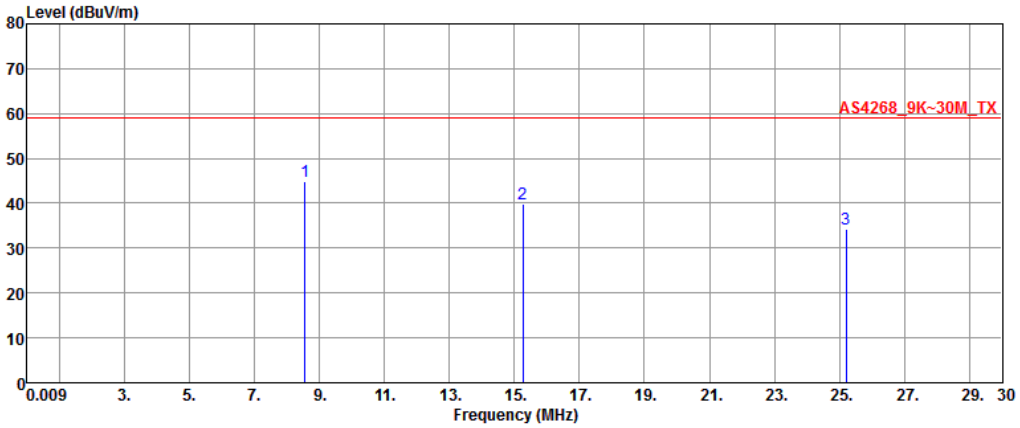
Modulation	HT20	Test Freq. (MHz)	2412
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.35	44.47	59.00	-14.53	20.17	24.30
2	15.58	39.56	59.00	-19.44	21.28	18.28
3	25.22	34.11	59.00	-24.89	22.05	12.06

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	HT20	Test Freq. (MHz)	2472
Frequency	9kHz~30MHz	Loop	open

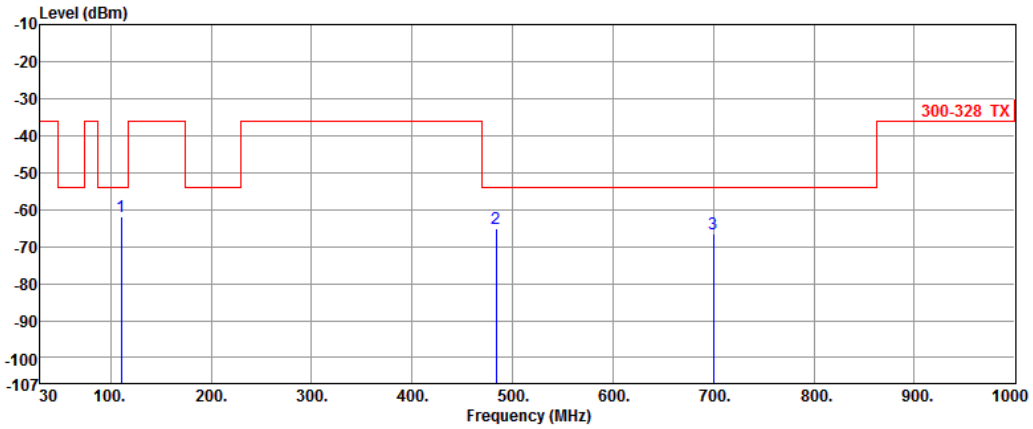


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.55	44.78	59.00	-14.22	20.20	24.58
2	15.25	39.96	59.00	-19.04	21.22	18.74
3	25.21	34.25	59.00	-24.75	22.05	12.20

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.5.5 Transmitter Spurious Emissions (Below 1GHz)

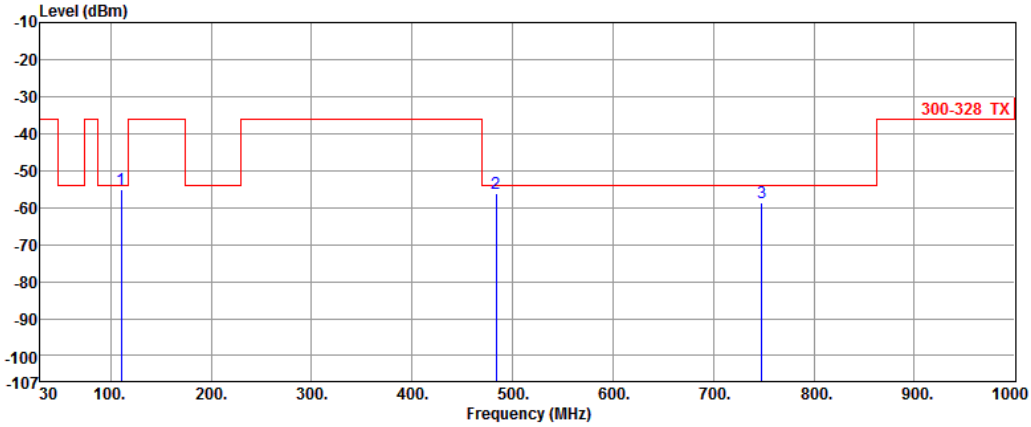
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.51	-61.89	-54.00	-7.89	-5.24	-56.65
2	483.96	-64.98	-54.00	-10.98	2.91	-67.89
3	700.27	-66.61	-54.00	-12.61	6.82	-73.43

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

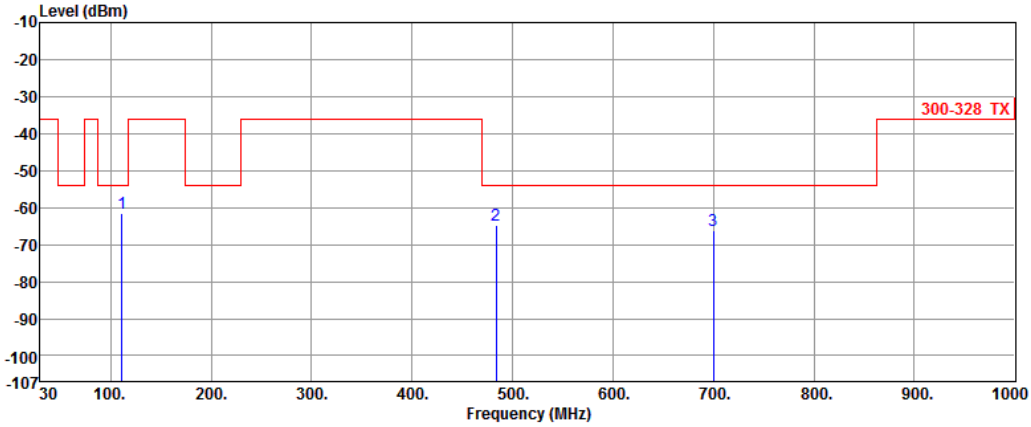
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.48	-55.27	-54.00	-1.27	-3.96	-51.31
2	483.89	-56.13	-54.00	-2.13	2.96	-59.09
3	747.80	-58.56	-54.00	-4.56	7.82	-66.38

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

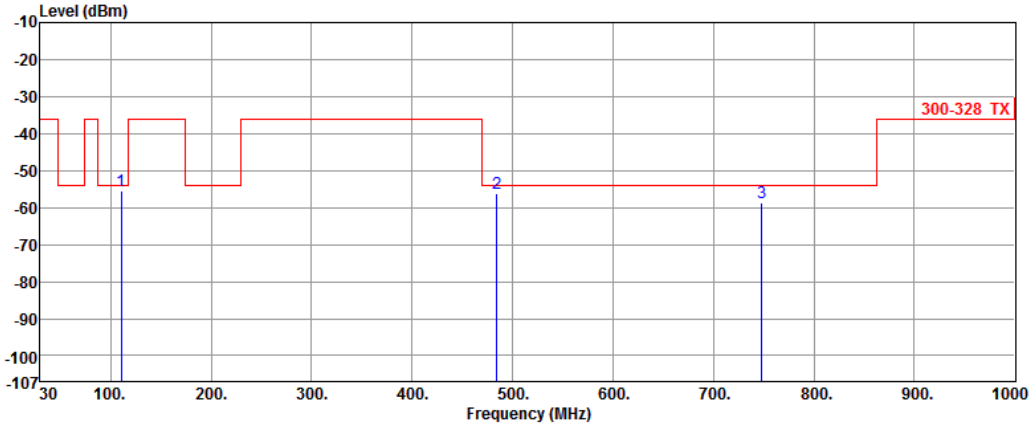
Modulation	11g	Test Freq. (MHz)	2472
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.84	-61.46	-54.00	-7.46	-5.19	-56.27
2	483.85	-64.65	-54.00	-10.65	2.91	-67.56
3	700.08	-66.24	-54.00	-12.24	6.82	-73.06

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	11g	Test Freq. (MHz)	2472
Polarization	Vertical		

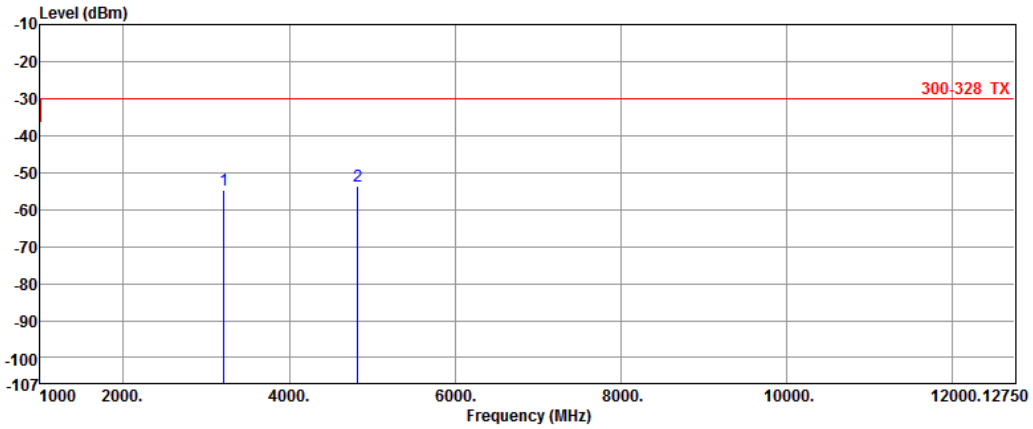


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.65	-55.52	-54.00	-1.52	-3.92	-51.60
2	484.08	-56.31	-54.00	-2.31	2.97	-59.28
3	747.95	-58.69	-54.00	-4.69	7.82	-66.51

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 802.11b

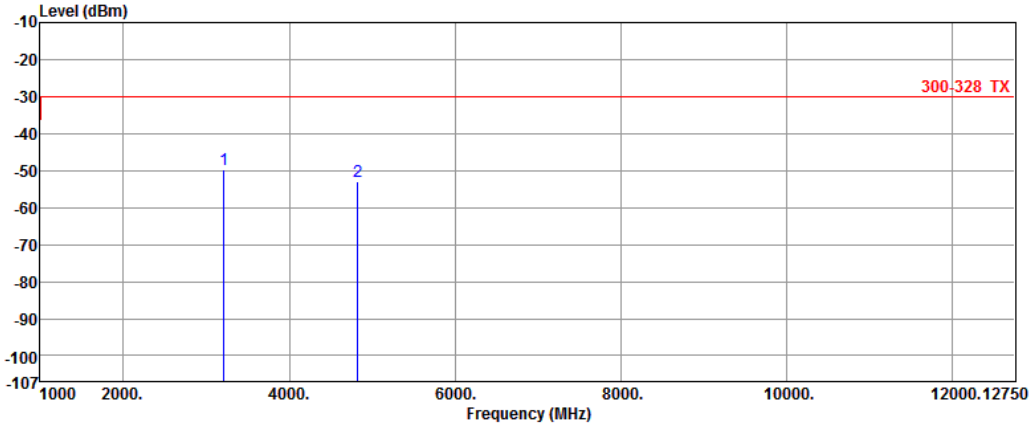
Modulation	11b	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3215.94	-54.64	-30.00	-24.64	5.37	-60.01
2	4824.19	-53.70	-30.00	-23.70	9.05	-62.75

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

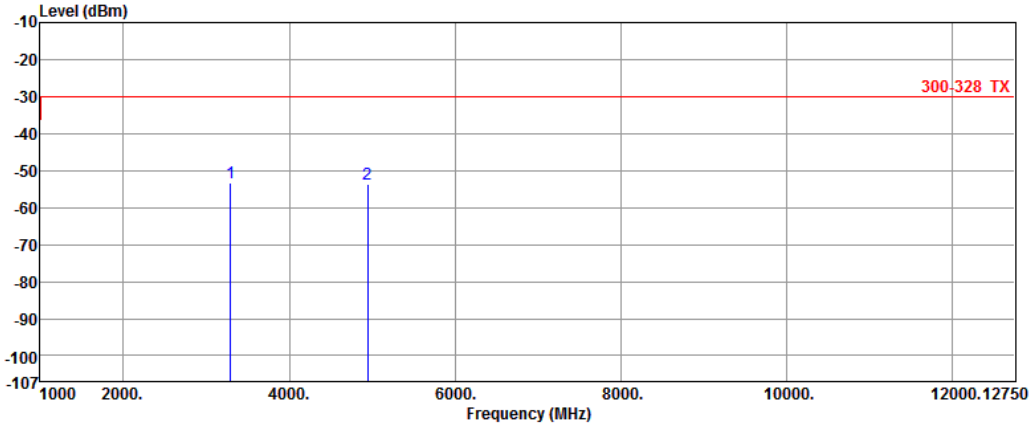
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3216.06	-49.66	-30.00	-19.66	5.76	-55.42
2	4823.91	-53.10	-30.00	-23.10	9.31	-62.41

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

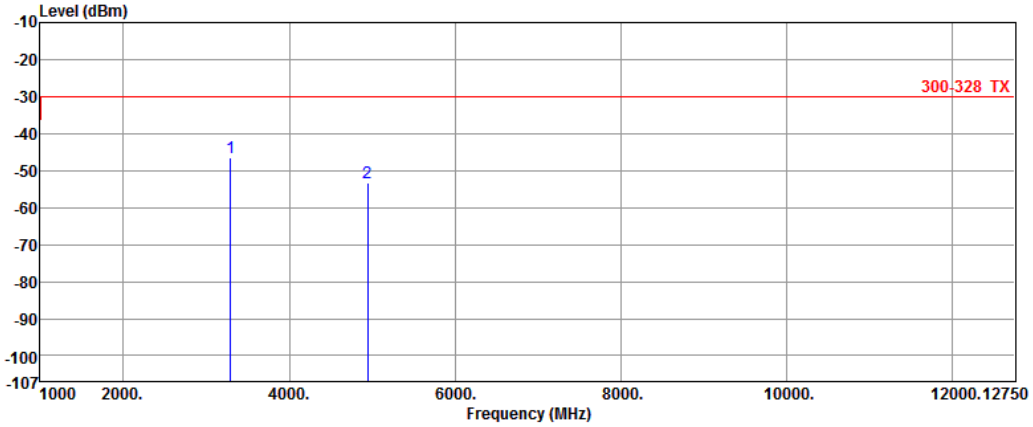
Modulation	11b	Test Freq. (MHz)	2472
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3295.95	-53.17	-30.00	-23.17	4.49	-57.66
2	4944.05	-53.66	-30.00	-23.66	10.07	-63.73

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	11b	Test Freq. (MHz)	2472
Polarization	Vertical		

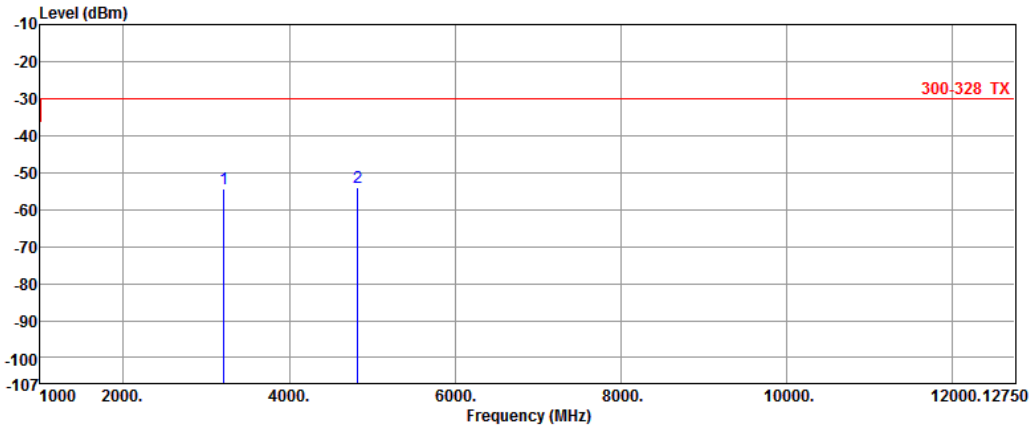


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3296.03	-46.64	-30.00	-16.64	4.79	-51.43
2	4944.21	-53.44	-30.00	-23.44	10.17	-63.61

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.5.7 Transmitter Spurious Emissions (Above 1GHz) for 802.11g

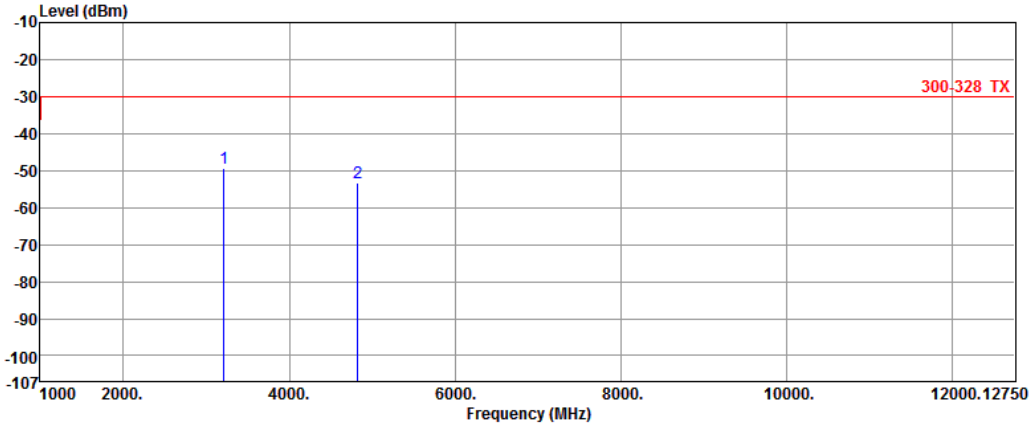
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3216.21	-54.54	-30.00	-24.54	5.37	-59.91
2	4824.07	-53.89	-30.00	-23.89	9.04	-62.93

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

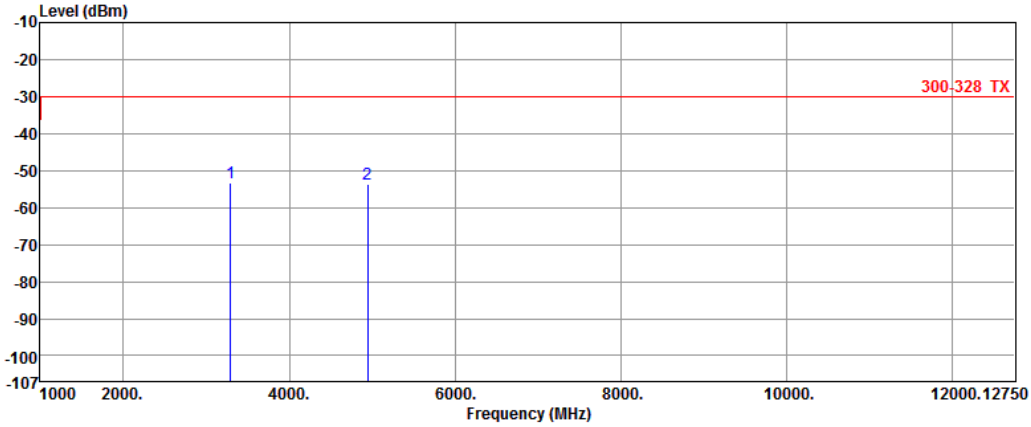
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3216.03	-49.52	-30.00	-19.52	5.76	-55.28
2	4823.86	-53.34	-30.00	-23.34	9.31	-62.65

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

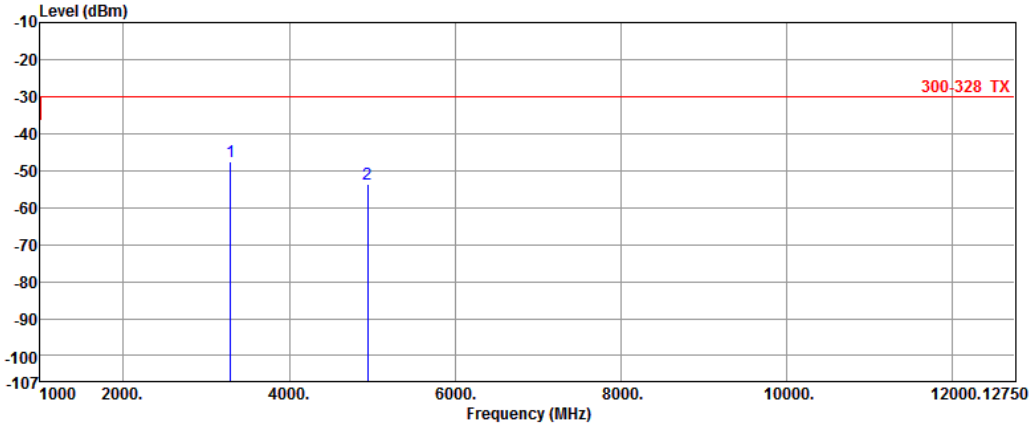
Modulation	11g	Test Freq. (MHz)	2472
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3296.12	-53.28	-30.00	-23.28	4.49	-57.77
2	4944.14	-53.84	-30.00	-23.84	10.07	-63.91

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	11g	Test Freq. (MHz)	2472
Polarization	Vertical		

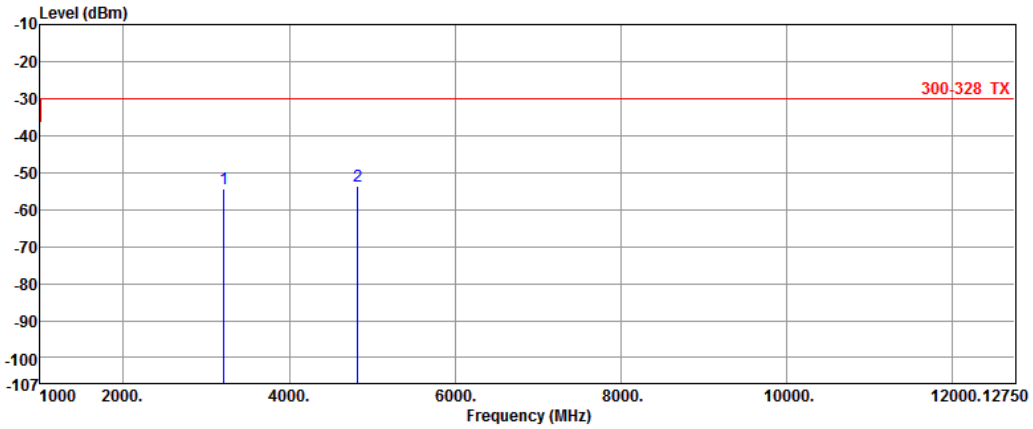


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3295.87	-47.42	-30.00	-17.42	4.79	-52.21
2	4944.50	-53.74	-30.00	-23.74	10.17	-63.91

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.5.8 Transmitter Spurious Emissions (Above 1GHz) for 802.11n HT 20

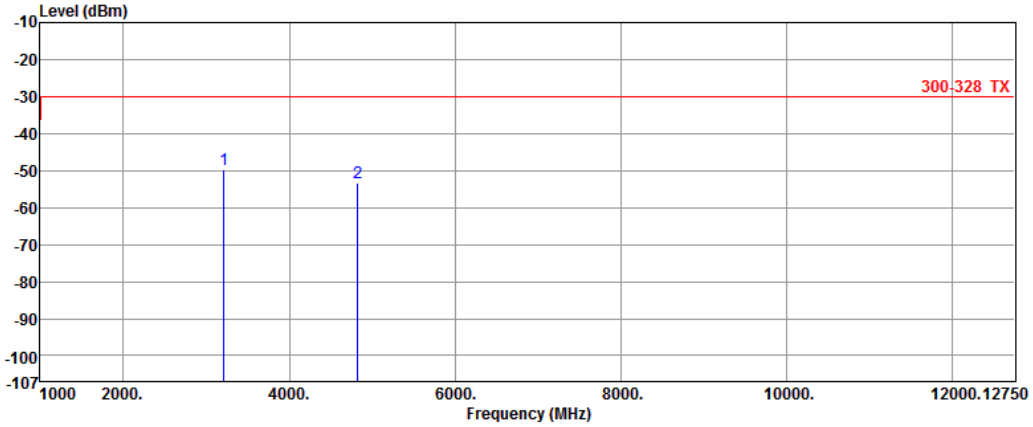
Modulation	HT20	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3216.18	-54.45	-30.00	-24.45	5.37	-59.82
2	4824.13	-53.69	-30.00	-23.69	9.05	-62.74

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

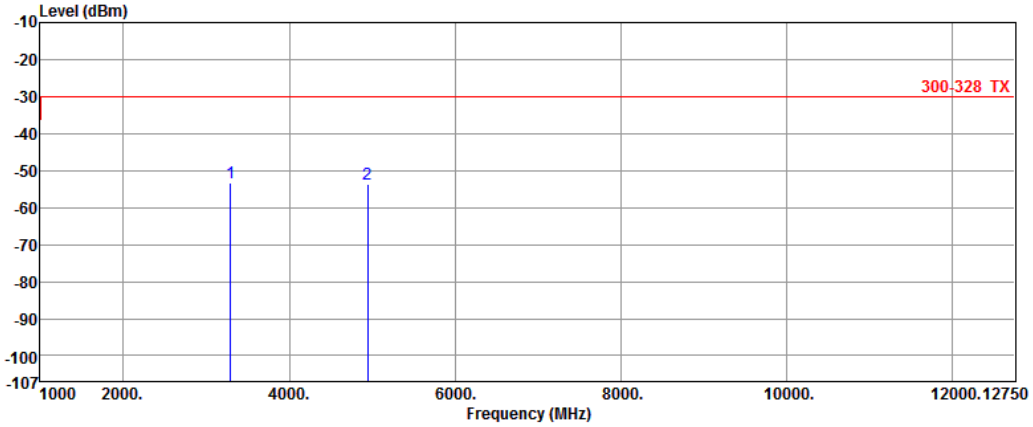
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3216.11	-49.88	-30.00	-19.88	5.76	-55.64
2	4823.94	-53.15	-30.00	-23.15	9.31	-62.46

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

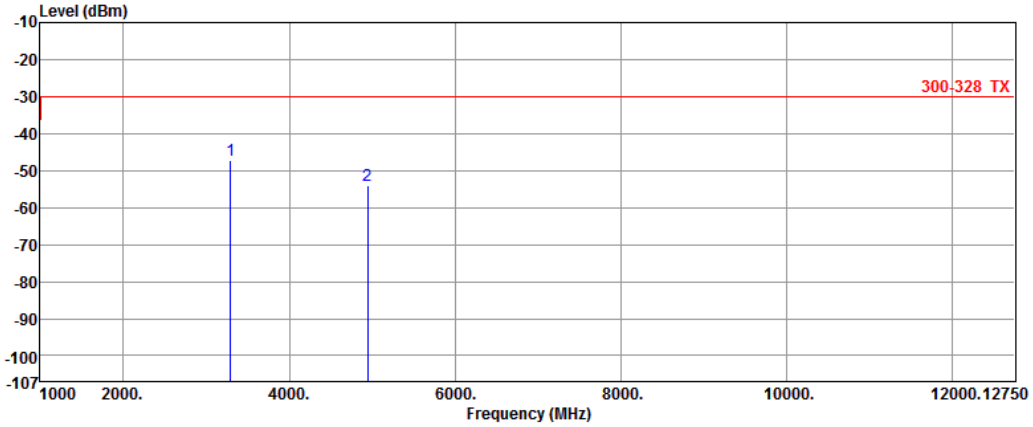
Modulation	HT20	Test Freq. (MHz)	2472
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3296.16	-53.41	-30.00	-23.41	4.49	-57.90
2	4944.09	-53.65	-30.00	-23.65	10.07	-63.72

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	HT20	Test Freq. (MHz)	2472
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3295.95	-47.27	-30.00	-17.27	4.79	-52.06
2	4944.42	-53.95	-30.00	-23.95	10.17	-64.12

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4 Receiver Test Results

4.1 Receiver Spurious Emissions

4.1.1 Receiver Spurious Emissions Limits

Spurious Emissions Limit (Peak Power)	Frequency Range	Measurement Bandwidth
-56 dBW (2.5μW) e.i.r.p (59 dBμV/m at 10 metres)	< 150 kHz	1 kHz
	150 kHz – 30 MHz	10 kHz

Note: Limit is from NEW ZEALAND https://gazette.govt.nz/notice/id/2015-go694 Table2”

Frequency Range	Maximum power (dBm)	Measurement bandwidth (kHz)
30 MHz to 1 GHz	-57	100
Above 1 GHz to 12,75 GHz	-47	1000

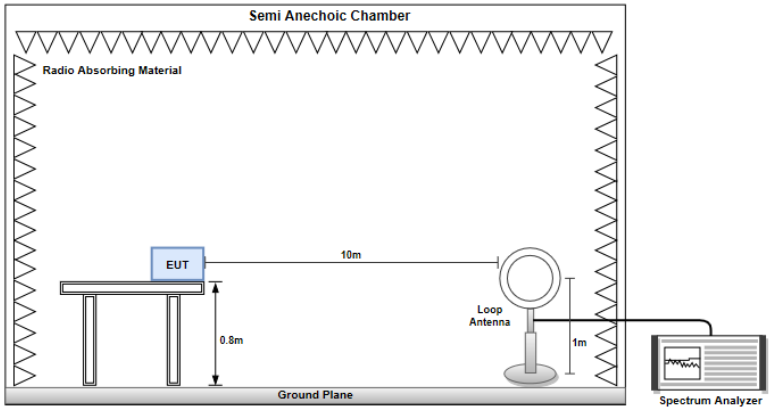
Note: Limit is from ETSI EN 300 328

4.1.2 Test Procedures

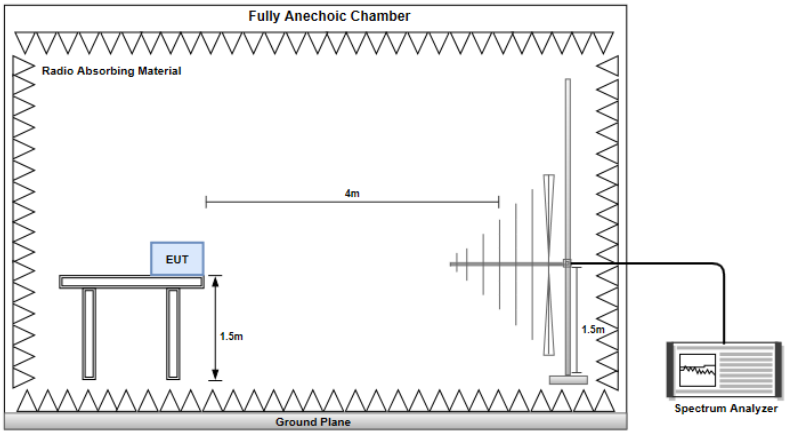
Reference to clause 7.2.1 of AS/NZS 4268:2017.

4.1.3 Test Setup

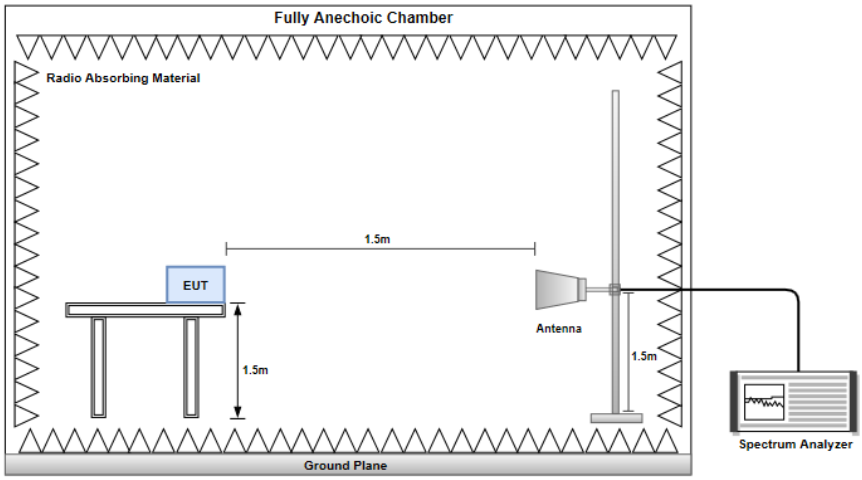
Below 30MHz



Below 1GHz

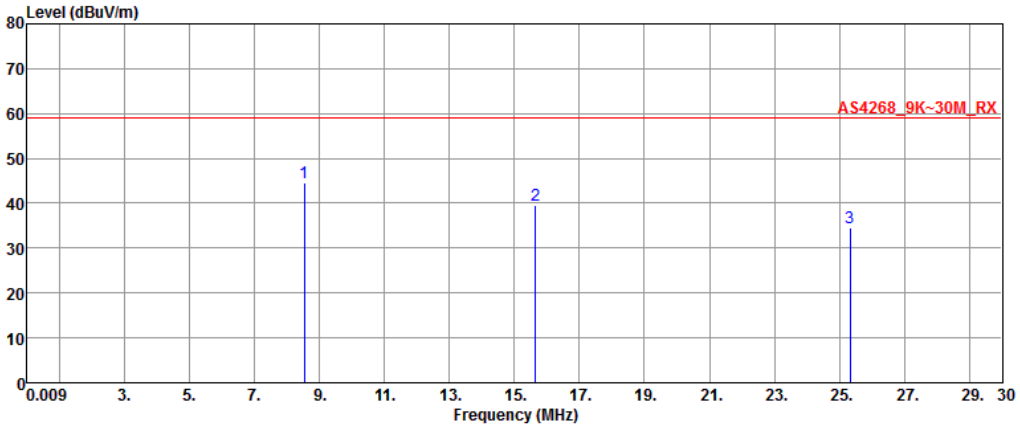


Above 1 GHz



4.1.4 Receiver Spurious Emissions (≤ 30MHz)

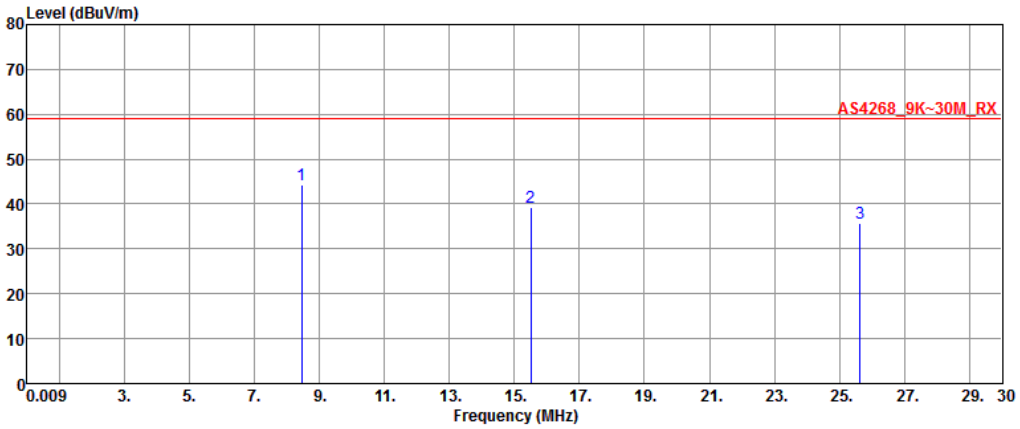
Modulation	11b	Test Freq. (MHz)	2412
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.54	44.65	59.00	-14.35	20.20	24.45
2	15.64	39.64	59.00	-19.36	21.28	18.36
3	25.34	34.65	59.00	-24.35	22.05	12.60

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

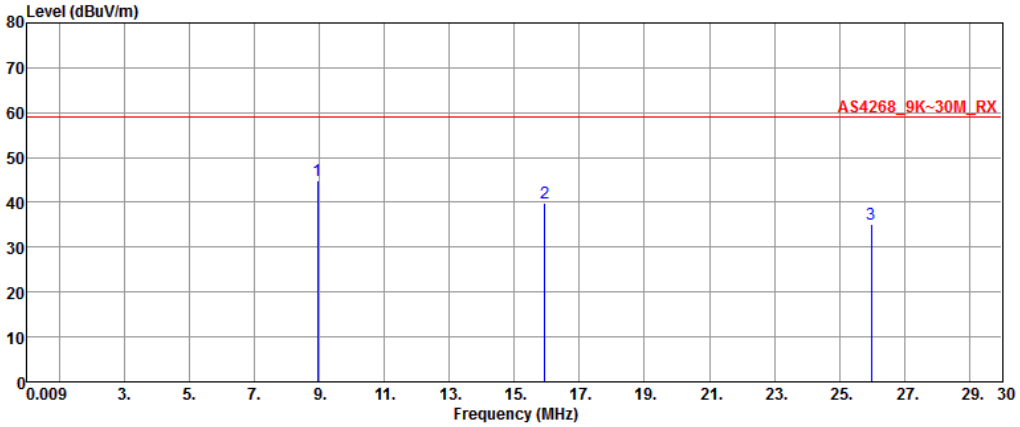
Modulation	11b	Test Freq. (MHz)	2472
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.45	44.23	59.00	-14.77	20.19	24.04
2	15.50	39.12	59.00	-19.88	21.25	17.87
3	25.64	35.64	59.00	-23.36	22.08	13.56

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

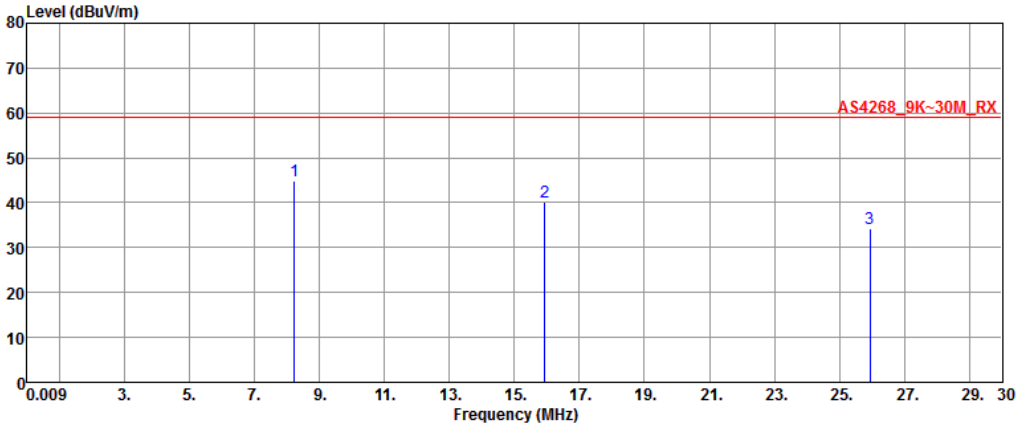
Modulation	11g	Test Freq. (MHz)	2412
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.94	44.94	59.00	-14.06	20.23	24.71
2	15.94	39.94	59.00	-19.06	21.32	18.62
3	25.97	35.15	59.00	-23.85	22.09	13.06

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

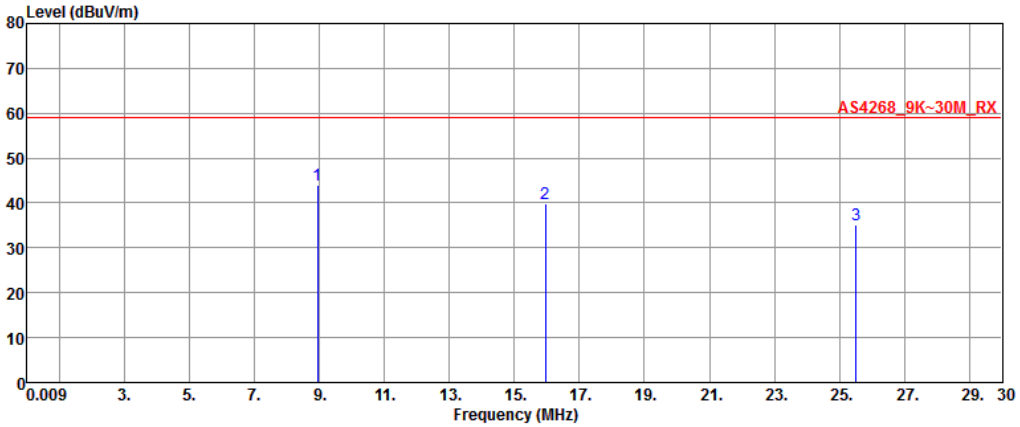
Modulation	11g	Test Freq. (MHz)	2472
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.23	44.74	59.00	-14.26	20.16	24.58
2	15.94	40.23	59.00	-18.77	21.32	18.91
3	25.94	34.12	59.00	-24.88	22.09	12.03

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

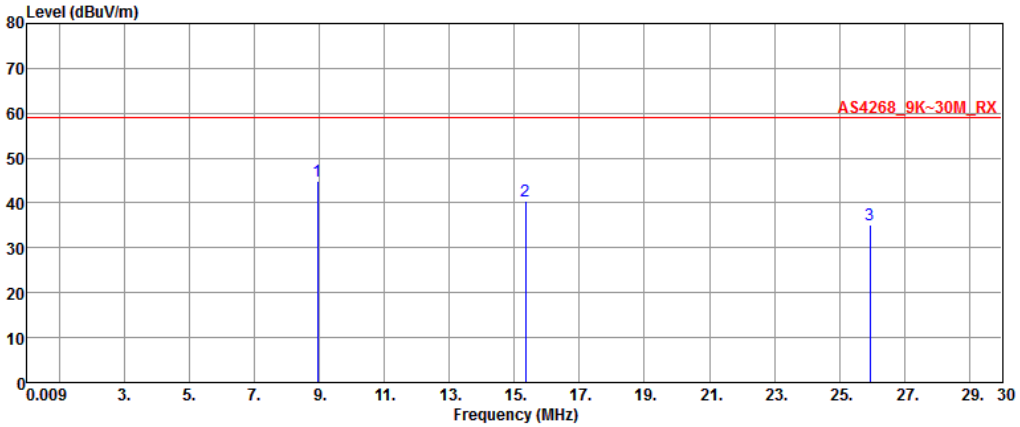
Modulation	HT20	Test Freq. (MHz)	2412
Frequency	9kHz~30MHz	Loop	open



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.94	44.12	59.00	-14.88	20.23	23.89
2	15.95	39.94	59.00	-19.06	21.32	18.62
3	25.51	35.12	59.00	-23.88	22.07	13.05

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	HT20	Test Freq. (MHz)	2472
Frequency	9kHz~30MHz	Loop	open

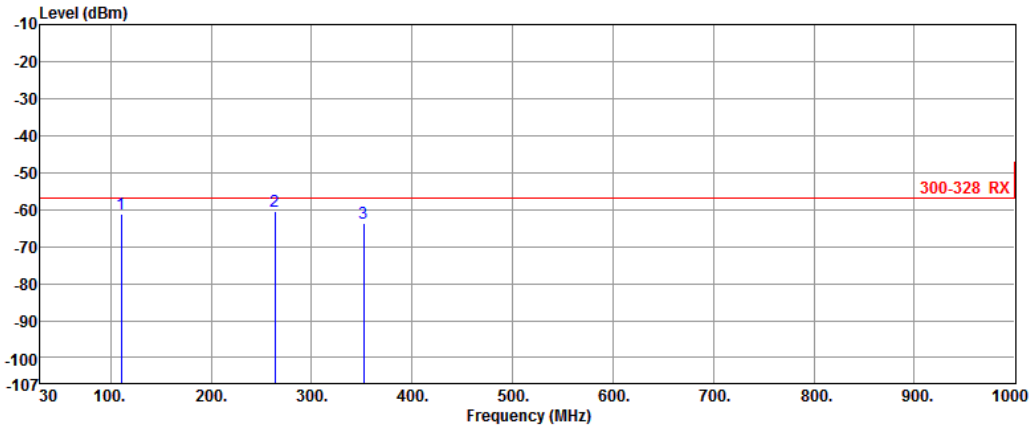


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBuV/m	dBuV/m	dB	dB	dBuV
1	8.94	44.81	59.00	-14.19	20.23	24.58
2	15.35	40.32	59.00	-18.68	21.24	19.08
3	25.94	35.21	59.00	-23.79	22.09	13.12

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4.1.5 Receiver Spurious Emissions (Below 1GHz)

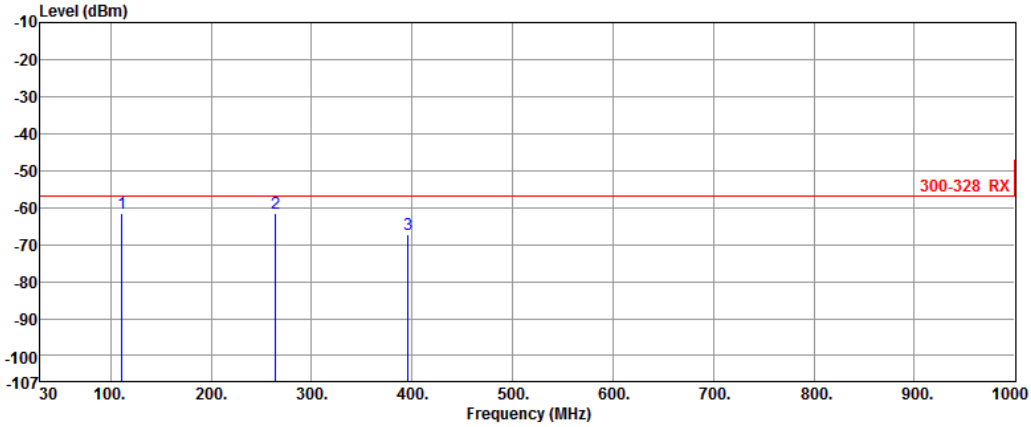
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.51	-61.02	-57.00	-4.02	-5.24	-55.78
2	263.77	-60.42	-57.00	-3.42	-2.55	-57.87
3	352.00	-63.82	-57.00	-6.82	-0.25	-63.57

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

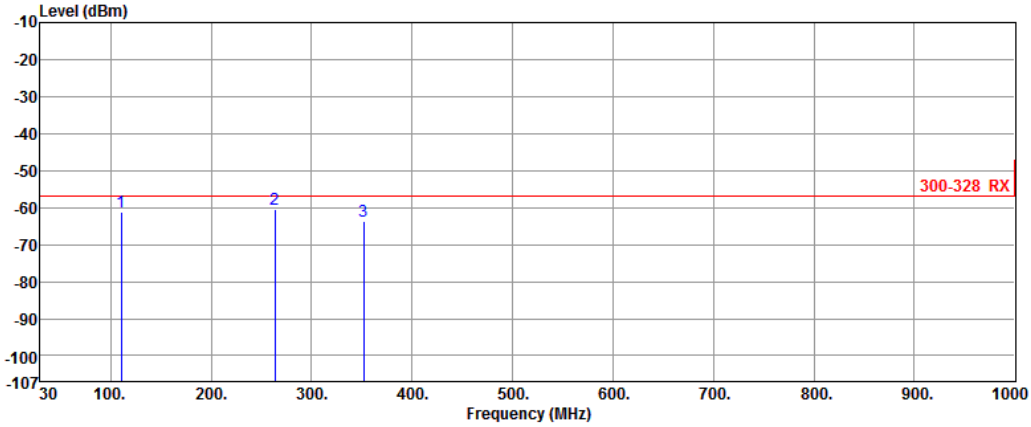
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.82	-61.48	-57.00	-4.48	-3.87	-57.61
2	264.00	-61.38	-57.00	-4.38	-2.76	-58.62
3	396.01	-67.10	-57.00	-10.10	1.14	-68.24

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

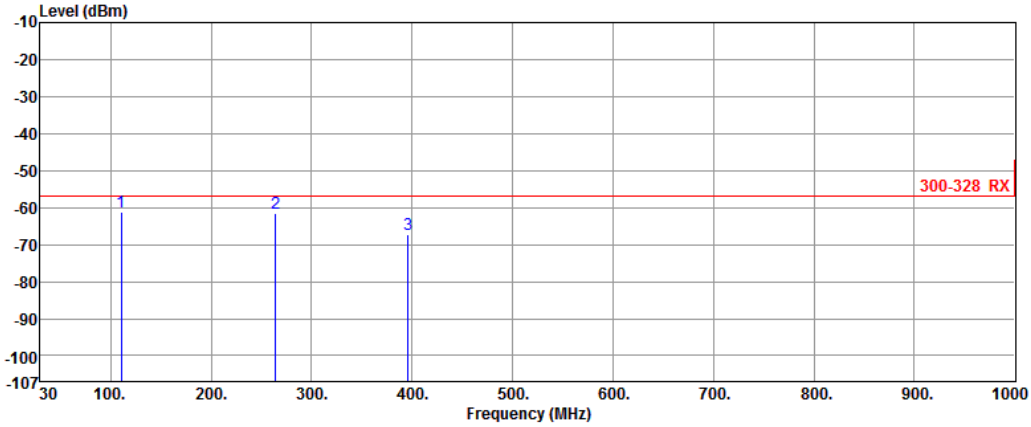
Modulation	11g	Test Freq. (MHz)	2472
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.65	-61.28	-57.00	-4.28	-5.22	-56.06
2	263.59	-60.65	-57.00	-3.65	-2.56	-58.09
3	352.08	-63.52	-57.00	-6.52	-0.25	-63.27

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	11g	Test Freq. (MHz)	2472
Polarization	Vertical		

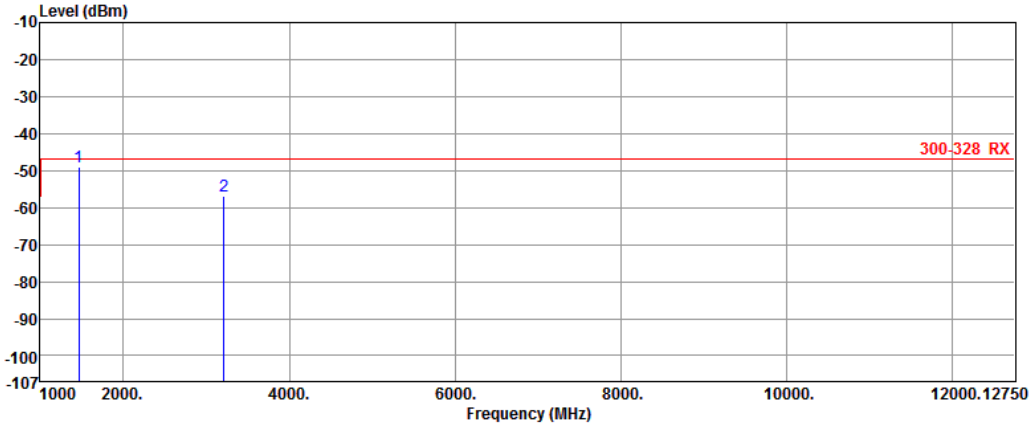


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	110.54	-61.34	-57.00	-4.34	-3.95	-57.39
2	263.99	-61.48	-57.00	-4.48	-2.76	-58.72
3	396.03	-67.27	-57.00	-10.27	1.14	-68.41

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4.1.6 Receiver Spurious Emissions (Above 1GHz) for 802.11g

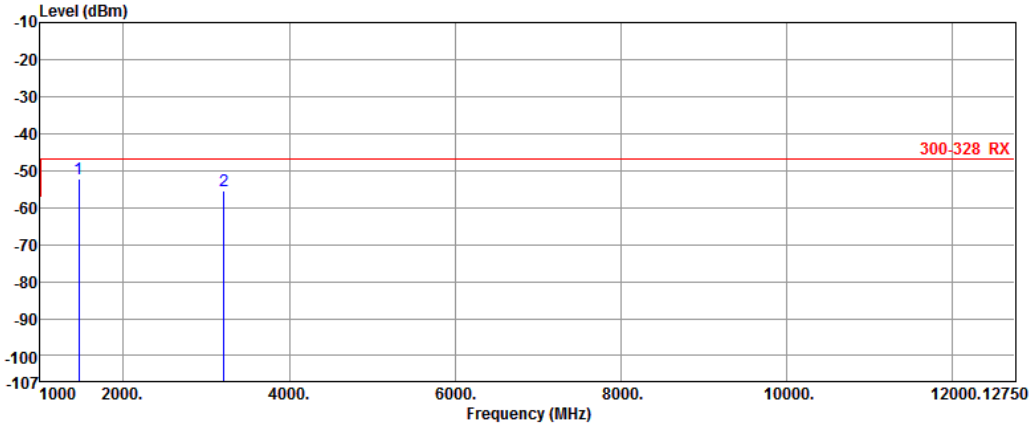
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	1463.00	-49.10	-47.00	-2.10	-0.34	-48.76
2	3216.47	-56.74	-47.00	-9.74	5.36	-62.10

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

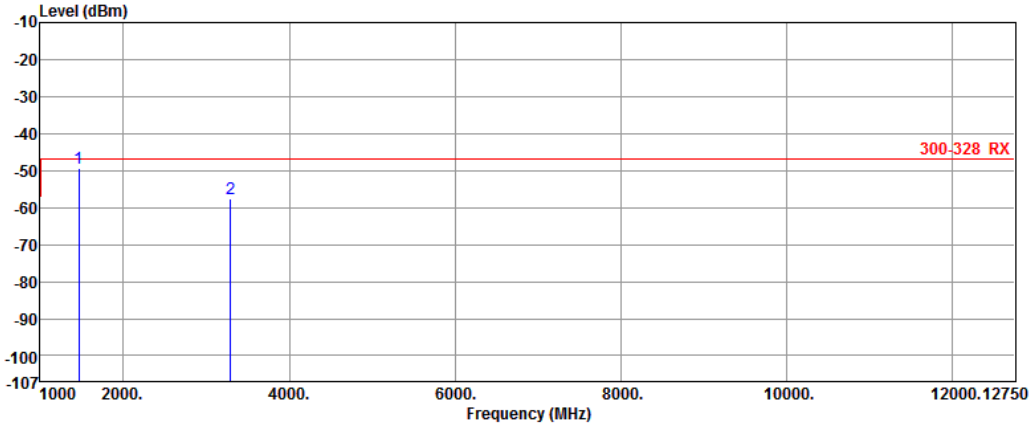
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	1463.02	-52.21	-47.00	-5.21	-0.01	-52.20
2	3216.04	-55.37	-47.00	-8.37	5.76	-61.13

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

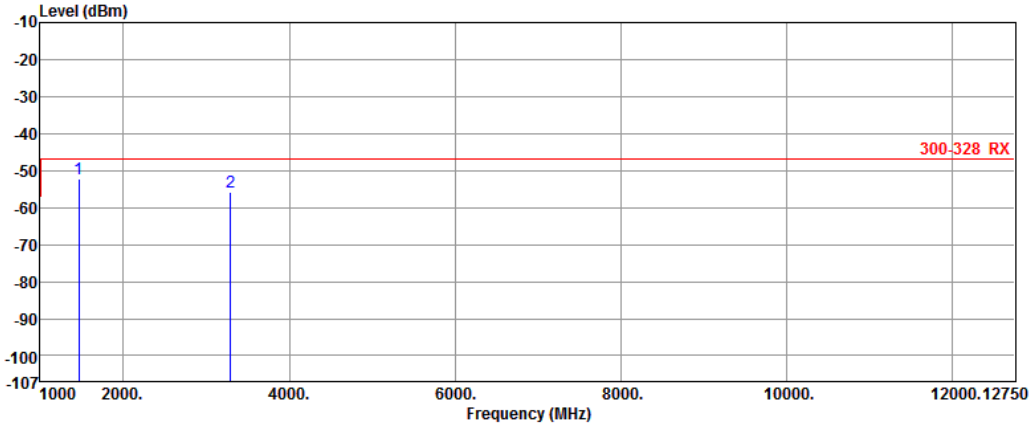
Modulation	11g	Test Freq. (MHz)	2472
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	1463.01	-49.35	-47.00	-2.35	-0.34	-49.01
2	3296.44	-57.59	-47.00	-10.59	4.49	-62.08

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	11g	Test Freq. (MHz)	2472
Polarization	Vertical		

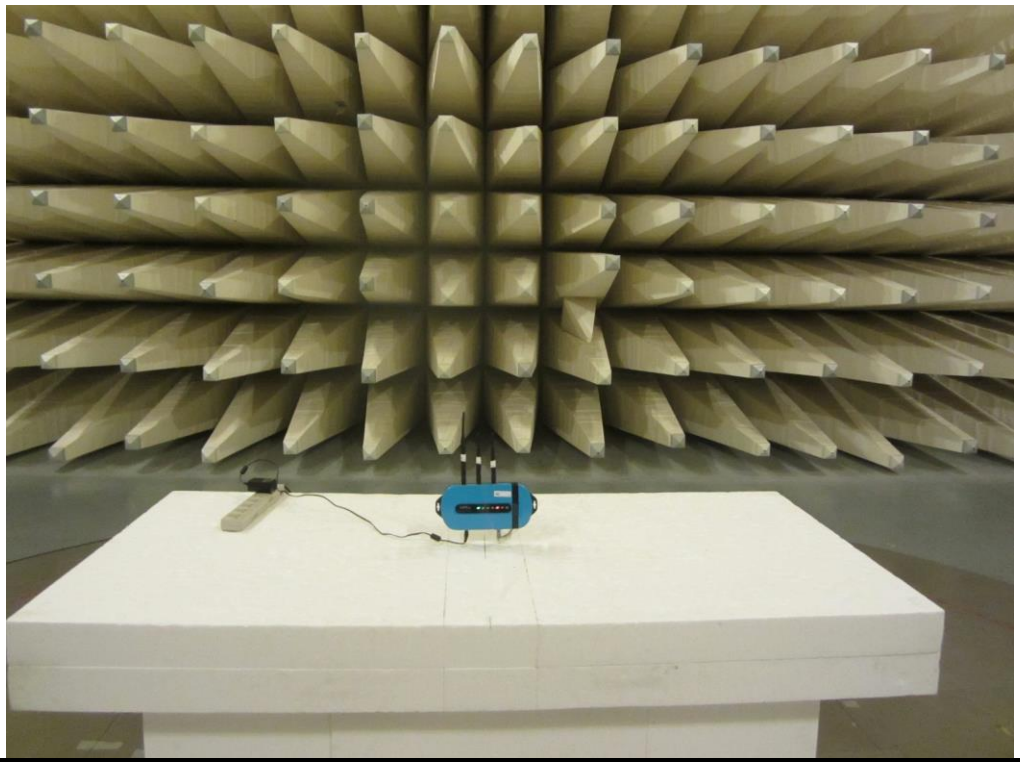


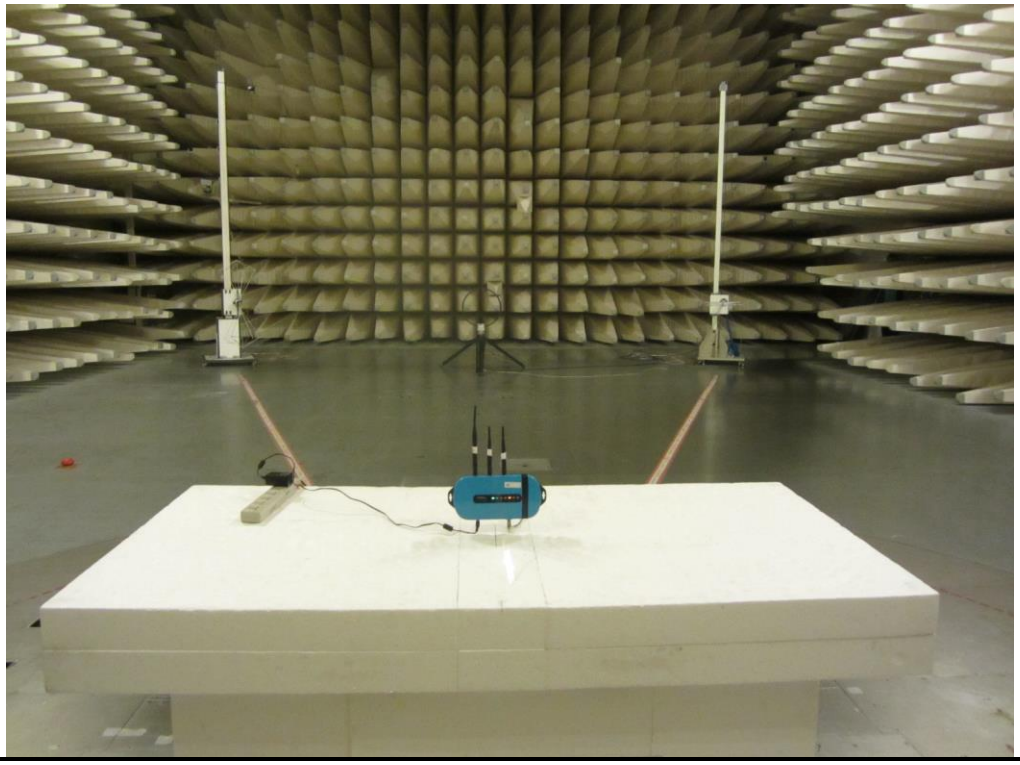
	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	1463.03	-52.38	-47.00	-5.38	-0.01	-52.37
2	3295.87	-55.64	-47.00	-8.64	4.79	-60.43

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

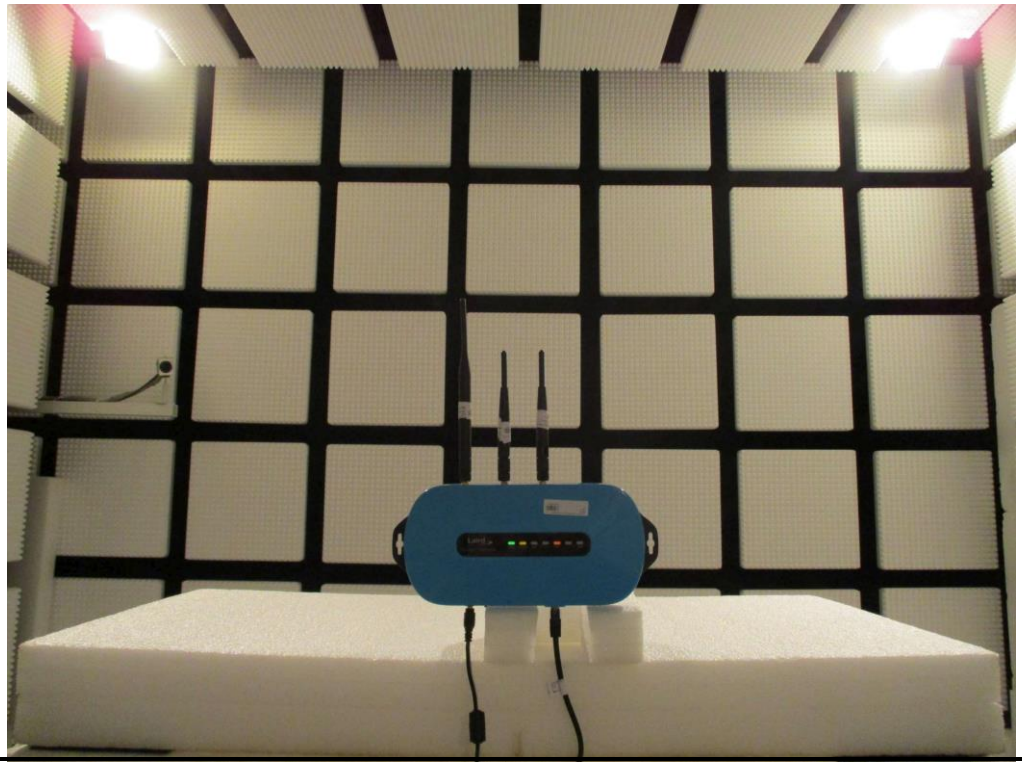
5 Photographs of the Test Configuration

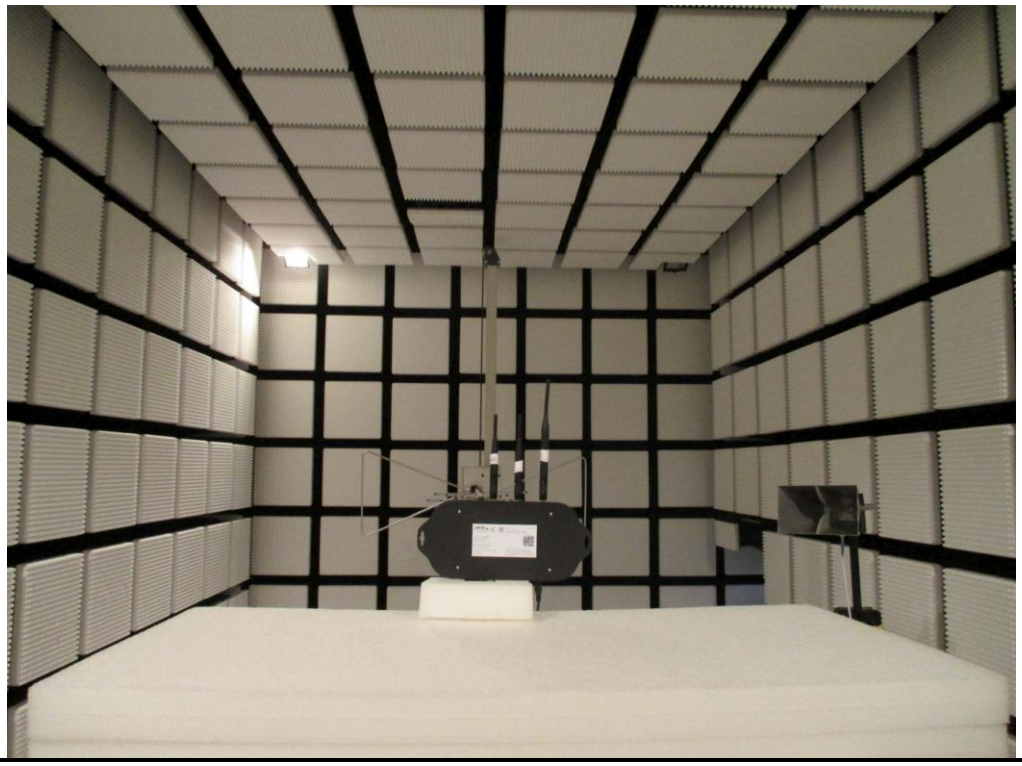
Spurious Emission below 30MHz Test





Spurious Emission above 30MHz Test





6 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C..

If you have any suggestion, please feel free to contact us as below information

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Email: ICC_Service@icertifi.com.tw

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