Prüfbericht - Produkte
Test Report - Products

TÜVRheinland®

Prüfbericht-Nr.: *Test report no.:*	**CN21WY7V 001**	**Auftrags-Nr.:** *Order no.:*	168332006	Seite 1 von 40 *Page 1 of 40*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2021-08-11	
Auftraggeber: *Client:*	**Shenzhen RAKwireless Technology Co.,Ltd.** Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan Street, XiLi Town Nanshan District, Shenzhen, Guangdong, P.R. China.			
Prüfgegenstand: *Test item:*	Wi-Fi Module			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	RAK634 (Trademark: RAK)			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	EN 62311:2008 EN 62368-1:2014+ A11:2017 EN 301 489-1 V2.2.3 (2019-11) EN 301 489-17 V3.2.4 (2020-09) EN 300 328 V2.2.2 (2019-07)		BS EN 62311:2008 BS EN 62368-1:2014+ A11:2017 ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) ETSI EN 300 328 V2.2.2 (2019-07)	

Wareneingangsdatum: *Date of sample receipt:*	2021-08-13
Prüfmuster-Nr.: *Test sample no.:*	A003110001
Prüfzeitraum: *Testing period:*	2021-09-09 – 2021-10-22
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass

geprüft von: *tested by:*	X Alex Lan Signed by: Alex Lan	**genehmigt von:** *authorized by:*	X Winnie Hou Signed by: Winnie Hou
Datum: *Date:* 2021-10-25		**Ausstellungsdatum:** *Issue date:* 2021-10-26	
Stellung / Position	Senior Project Engineer	**Stellung** / Position	Technical Certifier

Sonstiges / *Other:*

This report is for Article 3.2 Radio Spectrum, Article 3.1a Health and Article 3.1b EMC requirements only.
Refer to TÜV Rheinland report CN2161W1 001 for details of Electrical Safety requirements.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged:*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

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Test Summary

5.1.1 RF OUTPUT POWER
RESULT: Pass

5.1.2 POWER SPECTRAL DENSITY
RESULT: Pass

5.1.3 DUTY CYCLE, TX-SEQUENCE, TX-GAP
RESULT: Not applicable

5.1.4 MEDIUM UTILISATION (MU) FACTOR
RESULT: Not applicable

5.1.5 ADAPTIVITY
RESULT: Pass

5.1.6 OCCUPIED CHANNEL BANDWIDTH
RESULT: Pass

5.1.7 TRANSMITTER UNWANTED EMISSIONS IN THE OOB DOMAIN
RESULT: Pass

5.1.8 TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN
RESULT: Pass

5.2.1 RECEIVER SPURIOUS EMISSIONS
RESULT: Pass

5.2.2 RECEIVER BLOCKING
RESULT: Pass

5.2.3 GEO-LOCATION CAPABILITY
RESULT: Not applicable

5.3.1 RADIATED EMISSIONS
RESULT: Pass

5.3.2 ELECTROSTATIC DISCHARGES (ESD)
RESULT: Pass

5.3.3 RADIO FREQUENCY ELECTROMAGNETIC FIELD (RS)
RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Wireless Connectivity Tester	R&S	CMW270	101375	2022-08-09
Signal Analyzer	R&S	FSV 40	101441	2022-08-09
Vector Signal Generator	R&S	SMBV100A	263301	2022-08-09
Signal Generator	R&S	SMB100A	115186	2022-08-09
OSP	R&S	OSP 150	101017	2021-12-20
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	2021-12-20
Power Sensor	R&S	NRP-Z81	105677	2022-08-09
Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	2022-04-02
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Signal Generator	R&S	SMB100A	180840	2022-08-09
Wideband Radio Communication Tester	R&S	CMW500	165339	2022-08-09
Signal Analyzer	R&S	FSV 40	101440	2022-08-09
System Controller Interface	R&S	SCI-100	S10010036	N/A
Filterbank	R&S	GSM	100811	2022-08-09
OSP	R&S	OSP 120	102041	N/A
OSP	R&S	OSP 150	101385	2021-12-20
Pre-amplifier	R&S	SCU08F1	08320030	2022-08-09
Amplifier	R&S	SCU-18F	180079	2022-08-09
Amplifier	R&S	SCU40A	100450	2022-08-09
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	192	2022-08-08
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218719	2022-08-08
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18312	2022-08-08

Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19066	2022-08-08
Biconical Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VUBA 9117	357	2024-08-02
Double Ridged Broadband Horn Antenna (1 – 18 GHz)	Schwarzbeck	BBHA 9120 D	01760	2024-07-30
Broadband Horn Antenna (15 – 40 GHz)	Schwarzbeck	BBHA 9170	00862	2024-08-02
Test software	R&S	EMC32 (V10.50.40)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NW9P2	N/A
3m Fully Anechoic Chamber	Albatross	FAC-3m	APC17151-FAC	2024-06-22

Radiated Emission				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
3m SAC	ETS-Lindgren	SAC3	CT001632-Q1362	2024-04-26
EMI Test Receiver	R&S	ESR7	102111	2021-12-16
Preamplifier (1-18GHz)	FIT	SCU-18F	180077	2022-08-13
Active magnetic loop antenna	SCHWARZBECK	FMZB1519B	00080	2021-08-30
Trilog-Broadband antenna	SCHWARZBECK	VULB9168	0945	2022-12-12
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A
Electrostatic Discharge (ESD)				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
ESD Tester	TESEQ	NSG-437	1282	2022-08-12
Radio Frequency Electromagnetic Fields (RS)				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
3m FAC	ETS-Lindgren	FAC3	CT001632-Q1360	2024-04-26
Signal Generator	R&S	SMB100A	115183	2022-08-13
Power Amplifier	R&S	BBA150-BC250	103102	2022-08-13
Power Amplifier	R&S	BBA150-D110E100	103117	2022-08-13
NRP6AN Average power sensor	R&S	NRP6AN	101161	2022-08-13
NRP6AN Average power sensor	R&S	NRP6AN	101162	2022-08-13
Stacked double Log.-Per. Antenna1825022	SCHWARZBECK	STLP 9128E	0153	N/A
Stacked Log.-Per. Antenna	SCHWARZBECK	STLP 9149	00520	N/A

EMC32 test software	R&S	EMC32(Ver.10.30.01)	N/A	N/A

2.3 Uncertainty of Measurement

According to the requirement of EN 300 328 V2.2.2, the value of the measurement uncertainty of each parameter is listed as below:

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	±0.9 x 10^{-7}
RF Power (conducted)	±1.6 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	±5.14 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±5.14 dB
Temperature	±0.8 °C
Humidity	±3.2 %
Voltage (DC)	±0.5 %
Voltage (AC, <10kHz)	±0.4 %

3 General Product Information

3.1 Product Function and Intended Use

The EUT is IEEE 802.11 b/g/n 2.4GHz 2T2R Wi-Fi Module.
This product has two different configurations, the two configurations are identical except non-radio related Flash chip U2: 16MB and 32MB, and this two Flash chip are pin to pin only the storage space is different.

This module has five different antennas, the details specifications for these antennas as below:

Antenna #	Model	Antenna Gain	Antenna Type	Connector Type
1#	SA05A01RA	5.4dBi for Ant0 5.0dBi for Ant1	PIFA antenna	IPEX Connector
2#	SA03A01RA	5.4dBi for Ant0 5.0dBi for Ant1	PIFA antenna	IPEX Connector
3#	SA05A02RA	5.4dBi for Ant0 5.0dBi for Ant1	PIFA antenna	IPEX Connector
4#	6147F00013	3.0 dBi for Ant0 & Ant1	PCB Layout Antenna	IPEX Connector
5#	K7ABLG2G4ML400	2.0 dBi for Ant0 & Ant1	Fiber Glass Antenna	N-Type Male

Note:
1. When connecting to the module, all antennas listed above need to transfer to an **IPEX connector**.
2. Antennas 1#, 2# and 3# have the same type and similar in-band and out-of-band characteristics, they are considered as equivalent antennas. Thus, the antenna 1# with highest gain was selected to be tested.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Description
Kind of Equipment:	Wi-Fi Module
Type Designation:	RAK634
Trademark:	RAK
Operating Voltage:	3.3VDC (Supplied by socket of PCB borad)
Operating Temperature Range:	-10 °C -+50 °C

Technical Specification of Wi-Fi 802.11 b/g/n		
Characteristic	**Description**	
Frequency Range:	2412 - 2472 MHz for 802.11b/g/n(HT20) 2422 - 2462 MHz for 802.11n(HT40)	
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)	
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0-MCS15 for 802.11n(HT20) MCS0-MCS15 for 802.11n(HT40)	
Channel Number:	13 channels for 802.11b/g/n(HT20) 9 channels for 802.11n(HT40)	
Type of Product:	Adaptive equipment and does not support non-adaptive mode; LBT based Detect and Avoid (load based equipment)	
Channel Separation:	5 MHz	
Receiver Categories:	Receiver category 1	
Smart Antenna Systems:	Applicable	
Number of Antenna:	2	
Number of Transmission chains	802.11b/g	1 or 2
	802.11n	2

Table 4: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20) Frequency (MHz)	802.11 n(HT40) Frequency (MHz)
01	**2412**	/
02	2417	/
03	2422	**2422**
04	2427	2427
05	2432	2432
06	2437	2437
07	**2442**	**2442**
08	2447	2447
09	2452	2452
10	2457	2457
11	2462	**2462**
12	2467	/
13	**2472**	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2442 MHz and highest channel: 2472 MHz for 802.11b/g/n(HT20)

Test frequencies are lowest channel: 2422 MHz, middle channel: 2442 MHz and highest channel: 2462 MHz for 802.11n(HT40)

3.3 Independent Operation Modes

The basic operation modes are:

A. On
   1. Wi-Fi transmitting mode
      1) Low Channel
      2) Middle Channel
      3) High Channel
   2. Wi-Fi receiving mode
      1) Low Channel
      2) Middle Channel
      3) High Channel

B. On, Wireless connecting mode (Wi-Fi)

C. Off

3.4 Noise Generating and Noise Suppressing Parts

For details refer to the Circuit Diagram.

3.5 Submitted Documents

- Application Form
- Schematics
- User Manual
- Operation Description

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Immunity: The equipment under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the instructions for use.

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 4.

According to clause 3.1, all test were applied on model RAK634 with antennas SA05A01RA, 6147F00013, K7ABLG2G4ML400 and only the worst test data were recorded in appendix A.

Table 5: List of Frequencies under Test, 802.11b/g/n

802.11b/g/n-HT20			
Test Channel	Channel Number	Frequency (MHz)	Remark
Low	1	2412	802.11b: 1Mbps 802.11g: 6Mbps 802.11n-HT20: MCS0
Middle	7	2442	
High	13	2472	
802.11n-HT40			
Test Channel	Channel number	Frequency (MHz)	Remark
Low	3	2422	802.11n-HT40: MCS0
Middle	7	2442	
High	11	2462	

Note: All test modes have been pre-scanning test and the above mode is the worst case of test mode.

4.3 Special Accessories and Auxiliary Equipment

Table 6: Auxiliary Equipment used during test

Description	Manufacturer	Model	S/N
Mobile Phone	HTC	D626w	N/A
Notebook	Lenovo	ThinkPad T480	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 RF Output Power

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.2
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.2.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.2
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	2021-09-09 – 2021-10-14
Test voltage	:	DC 3.3V
Test environment	:	Normal and extreme temperature
Operation mode	:	A.12
Ambient temperature	:	24.0℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the following tables.

For Ant#1 SA05A01RA:

Test Mode：802.11b Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	17.46	17.36	17.70
T min （℃）	-10	17.82	17.72	18.06
T max （℃）	50	17.23	17.13	17.47
Max. e.i.r.p. (dBm)		17.82	17.72	**18.06**
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11g Mode （MIMO）				
Test Conditions		e.i.r.p. Power (dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	19.31	19.05	19.00
T min （℃）	-10	19.66	19.40	19.35
T max （℃）	50	19.06	18.80	18.75
Max. e.i.r.p. (dBm)		**19.66**	19.40	19.35
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11n(20MHz) Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	19.20	19.35	18.98
T min （℃）	-10	19.57	19.72	19.35
T max （℃）	50	18.94	19.09	18.72
Max. e.i.r.p. (dBm)		19.57	**19.72**	19.35
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11n(40MHz) Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2422 MHz	2442 MHz	2462 MHz
T nom （℃）	24	19.06	19.01	18.66
T min （℃）	-10	19.42	19.37	19.02
T max （℃）	50	18.81	18.76	18.41
Max. e.i.r.p. (dBm)		**19.42**	19.37	19.02
Limits (dBm)		20.00	20.00	20.00
Result		PASS		

For Ant#4 6147F00013:

Test Mode：802.11b Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	18.82	18.42	17.16
T min （℃）	-10	19.19	18.79	17.53
T max （℃）	50	18.58	18.18	16.92
Max. e.i.r.p. (dBm)		**19.19**	18.79	17.53
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11g Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	19.55	19.41	19.43
T min （℃）	-10	19.89	19.75	19.77
T max （℃）	50	19.32	19.18	19.20
Max. e.i.r.p. (dBm)		19.89	19.75	**19.77**
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11n(20MHz) Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	19.36	19.22	19.08
T min （℃）	-10	19.72	19.58	19.44
T max （℃）	50	19.13	18.99	18.85
Max. e.i.r.p. (dBm)		**19.72**	19.58	19.44
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11n(40MHz) Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2422 MHz	2442 MHz	2462 MHz
T nom （℃）	24	18.68	18.42	18.40
T min （℃）	-10	19.05	18.79	18.77
T max （℃）	50	18.43	18.17	18.15
Max. e.i.r.p. (dBm)		**19.05**	18.79	18.77
Limits (dBm)		20.00	20.00	20.00
Result		PASS		

For Ant#5 K7ABLG2G4ML400:

Test Mode：802.11b Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	17.47	17.04	16.85
T min （℃）	-10	17.85	17.42	17.23
T max （℃）	50	17.23	16.80	16.61
Max. e.i.r.p. (dBm)		**17.85**	17.42	17.23
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11g Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	19.05	18.81	18.73
T min （℃）	-10	19.42	19.18	19.10
T max （℃）	50	18.82	18.58	18.50
Max. e.i.r.p. (dBm)		**19.42**	19.18	19.10
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11n(20MHz) Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	19.49	19.36	19.30
T min （℃）	-10	19.83	19.70	19.64
T max （℃）	50	19.24	19.11	19.05
Max. e.i.r.p. (dBm)		**19.83**	19.70	19.64
Limits (dBm)		20.00	20.00	20.00
Result		PASS		
Test Mode：802.11n(40MHz) Mode （MIMO）				
Test Conditions		e.i.r.p. Power(dBm)		
		2422 MHz	2442 MHz	2462 MHz
T nom （℃）	24	19.06	18.77	18.69
T min （℃）	-10	19.41	19.12	19.04
T max （℃）	50	18.84	18.55	18.47
Max. e.i.r.p. (dBm)		**19.41**	19.12	19.04
Limits (dBm)		20.00	20.00	20.00
Result		PASS		

5.1.2 Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.3
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.3.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.3
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	2021-09-09 – 2021-10-14
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	A.12
Ambient temperature	:	24℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the following tables.

For Ant#1 SA05A01RA:

Test Mode：802.11b Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	8.78	8.25	9.28
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11g Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	9.17	8.96	8.86
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11n(20MHz) Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	8.84	9.01	8.56
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11n(40MHz) Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2422 MHz	2442 MHz	2462 MHz
T nom （℃）	24	5.60	5.63	5.32
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		

For Ant#4 6147F00013:

Test Mode：802.11b Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	9.76	9.67	8.78
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11g Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	9.87	9.30	9.48
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11n(20MHz) Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	9.17	9.05	8.85
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11n(40MHz) Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2422 MHz	2442 MHz	2462 MHz
T nom （℃）	24	5.35	5.19	5.13
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		

For Ant#5 K7ABLG2G4ML400:

Test Mode：802.11b Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	8.97	8.51	8.40
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11g Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	8.84	8.65	8.54
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11n(20MHz) Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2412 MHz	2442 MHz	2472 MHz
T nom （℃）	24	9.18	9.03	8.90
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		
Test Mode：802.11n(40MHz) Mode （MIMO）				
Test Conditions		Power Spectral Density (dBm/MHz)		
		2422 MHz	2442 MHz	2462 MHz
T nom （℃）	24	5.74	5.54	5.42
Limits (dBm/MHz)		10.00	10.00	10.00
Result		PASS		

5.1.3 Duty Cycle, TX-sequence, TX-gap

RESULT: **Not applicable**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.4

Exemption Condition(s):

☒ These requirements apply to non-adaptive equipment or to adaptive equipment when operating in non-adaptive mode. The equipment is using wide band modulations other than FHSS.

Conclusion:

The EUT is adaptive equipment and does not support non-adaptive mode, hence this requirement is not applicable.

5.1.4 Medium Utilisation (MU) Factor

RESULT: **Not applicable**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.5

Exemption Condition(s):

☒ These requirements apply to non-adaptive equipment or to adaptive equipment when operating in non-adaptive mode. The equipment is using wide band modulations other than FHSS.

Conclusion:

The EUT is adaptive equipment and does not support non-adaptive mode, hence this requirement is not applicable.

5.1.5 Adaptivity

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.6
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.6
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.6
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	2021-10-19
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	B
Ambient temperature	:	24℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.6 Occupied Channel Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.7
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.7.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.7
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	2021-09-07
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	A.12
Ambient temperature	:	24℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.7 Transmitter Unwanted Emissions in the OOB Domain

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.8
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.8.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.8
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	2021-09-07
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	A.1
Ambient temperature	:	24℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.8 Transmitter Unwanted Emissions in the Spurious Domain

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.9
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.9.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.9
Kind of test site	:	3m Fully Anechoic Room

Test Setup

Date of testing	:	2021-09-07 – 2021-10-22
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	A.1
Ambient temperature	:	22.5℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Radiated spurious emissions were performed on the EUT with antenna in three orthogonal orientations and only the worst (antenna vertical Y) orientations was recorded.

For the measurement records, refer to the appendix A.

5.2 Receiver Requirement & Test Suites

5.2.1 Receiver Spurious Emissions

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.10
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.10.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.10
Kind of test site	:	3m Fully Anechoic Room

Test Setup

Date of testing	:	2021-09-07 – 2021-10-22
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	A.23
Ambient temperature	:	22.5℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Radiated spurious emissions were performed on the EUT with antenna in three orthogonal orientations and only the worst (antenna vertical Y) orientations was recorded.

For the measurement records, refer to the appendix A.

5.2.2 Receiver Blocking

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, Clause 4.3.2.11
Limit	:	EN 300 328 V2.2.2, Clause 4.3.2.11.3
Test suites	:	EN 300 328 V2.2.2, Clause 5.4.11
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	2021-10-09
Test voltage	:	DC 3.3V
Test environment	:	Normal temperature
Operation mode	:	BA.2
Ambient temperature	:	24 ℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

Receiver category 1
Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p. shall be considered as receiver category 1 equipment.

For the measurement records, refer to the appendix A.

5.2.3 Geo-location Capability

RESULT: **Not applicable**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	EN 300 328 V2.2.2, 4.3.2.12

Exemption Condition(s):

This requirement only applies to equipment with geo-location capability as defined in clause 4.3.2.12.2.

Conclusion:

The EUT is adaptive equipment and does not support geo-location capability, hence this requirement is not applicable.

5.3 Test Results of EMC Requirement

5.3.1 Radiated Emissions

RESULT: **Pass**

Test Specification

Test standard	:	EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4
Frequency range	:	30 - 6000MHz
Classification	:	Class B
Limit	:	Clause 8.2.3 of EN 301 489-1 V2.2.3
Kind of test site	:	3m Semi-Anechoic Chamber & 3m Full-Anechoic Chamber
Test ports	:	Enclosure

Test Setup

Date of testing	:	2021-09-13
Test voltage	:	DC 3.3V
Operation mode	:	B
Earthing	:	Not connected
Test configuration	:	Table-top
Ambient temperature	:	21 ℃
Relative humidity	:	60 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.3.2 Electrostatic Discharges (ESD)

RESULT: **Pass**

Test Specification

Test standard	:	EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4
Basic standard	:	EN 61000-4-2:2009
Test Requirement	:	Clause 9.3.1 of EN 301 489-1 V2.2.3
Test level	:	Contact discharge: ± 2.0kV, ± 4.0kV Air discharge: ± 2.0kV, ± 4.0kV, ± 8.0kV
Position	:	All exposed surfaces
Criterion	:	Clause 6.4 of EN 301 489-17 V3.2.4

Test Setup

Date of testing	:	2021-09-15
Test voltage	:	DC 3.3V
Operation mode	:	B
Earthing	:	Not connected
Test configuration	:	Table-top
Ambient temperature	:	23.6 ℃
Relative humidity	:	49.2 %
Atmospheric pressure	:	101 kPa

Table 7: Test result of Electrostatic Discharges (ESD)

Operation mode	Test Voltage	Location	Result
B	± 2.0kV, ± 4.0kV / Contact	HCP	A*
		VCP	A*
		Conducted Enclosure	A*
	± 2.0kV, ± 4.0kV, ± 8.0kV / Air	Non-conducted Enclosure	A*
		Button	A*
		Slot	A*

*Remark: No degradation was observed during and after the tests.

5.3.3 Radio Frequency Electromagnetic Field (RS)

RESULT: **Pass**

Test Specification

Test standard	:	EN 301 489-1 V2.2.3
		EN 301 489-17 V3.2.4
Basic standard	:	EN 61000-4-3:2006+A1+A2
Test Requirement	:	Clause 9.2.1 of EN 301 489-1 V2.2.3
Test level	:	3V/m, (unmodulated, rms)
Modulation	:	80% AM by a sinusoidal signal of 1kHz
Frequency range	:	80MHz -6GHz
Criterion	:	Clause 6.3 of EN 301 489-17 V3.2.4

Test Setup

Date of testing	:	2021-09-15
Test voltage	:	DC 3.3V
Operation mode	:	B
Earthing	:	Not connected
Test configuration	:	Table-top
Ambient temperature	:	24.2 ℃
Relative humidity	:	49 %
Atmospheric pressure	:	101 kPa

Table 8: Test result of Radio Frequency Electromagnetic Field (RS)

Test Frequency Band	Test port	Polarity	Location	Result
80MHz – 1000MHz	Enclosure	Vertical / Horizontal	Front	A*
			Rear	A*
			Left	A*
			Right	A*
Test Frequency Band	Test port	Polarity	Location	Result
1000MHz – 6000MHz	Enclosure	Vertical / Horizontal	Front	A*
			Rear	A*
			Left	A*
			Right	A*

*Remark: No degradation was observed during and after the tests.

6 Safety Human Exposure

6.1 Human Exposure to Electromagnetic Fields 0MHz-300GHz

6.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard : EN 62311: 2008

Limit : 61 V/m

Assumed used distance from EUT to Human, 20 cm separation distance warning is required. In this section, the power density at 20 cm location is calculated to examine if it is lower than the limit.
This module has five different antennas, and the maximum e.r.i.p. configuration be evaluated as below:

- **Stand-alone**

The electric field strength:

$$E = \sqrt{30PG_{(\theta,\phi)}} / r$$

Antenna gain (G): Refer to clause 3.1

Reference electromagnetic field strength (E): 61 V/m

Distance from EUT to Human (r): 0.20 m

Input power to antenna (P): refer to below table

Table 9: Test Result of Maximum Measured E Field Strength of Wi-Fi 802.11 b/g/n

Test Mode	Maximum Output power (dBm)	Maximum Output power (mW)	E Field Strength (V/m)	E Field Strength Limit (V/m)	Result
B mode (1 Mbps)	19.17	82.60	7.87	61	Pass
g mode (6 Mbps)	19.77	94.84	8.43	61	Pass
n(HT20) mode (MCS0 Mbps)	19.72	93.76	8.39	61	Pass
n(HT40) mode (MCS0 Mbps)	19.42	87.50	8.10	61	Pass

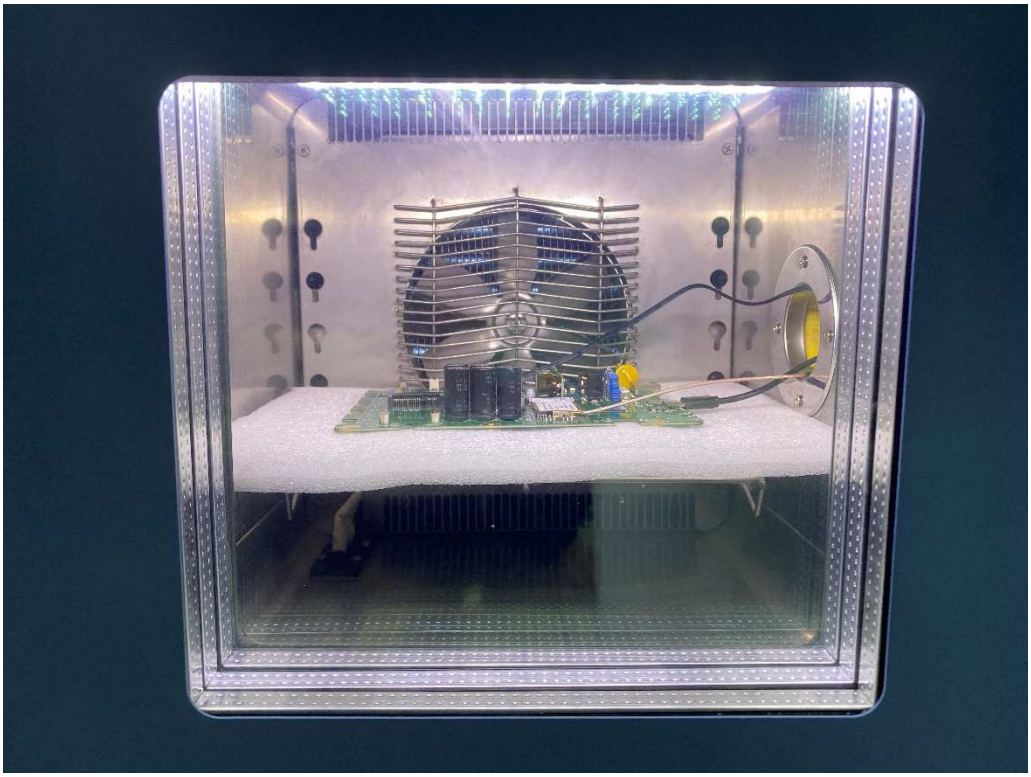
The above evaluation is in the MIMO mode.

Conclusion:
The device complies with the EMF directive 1999/519/EC exposure requirements since the maximum Electric Field is less than the limit 61V/m.

7 Photographs of the Test Set-Up

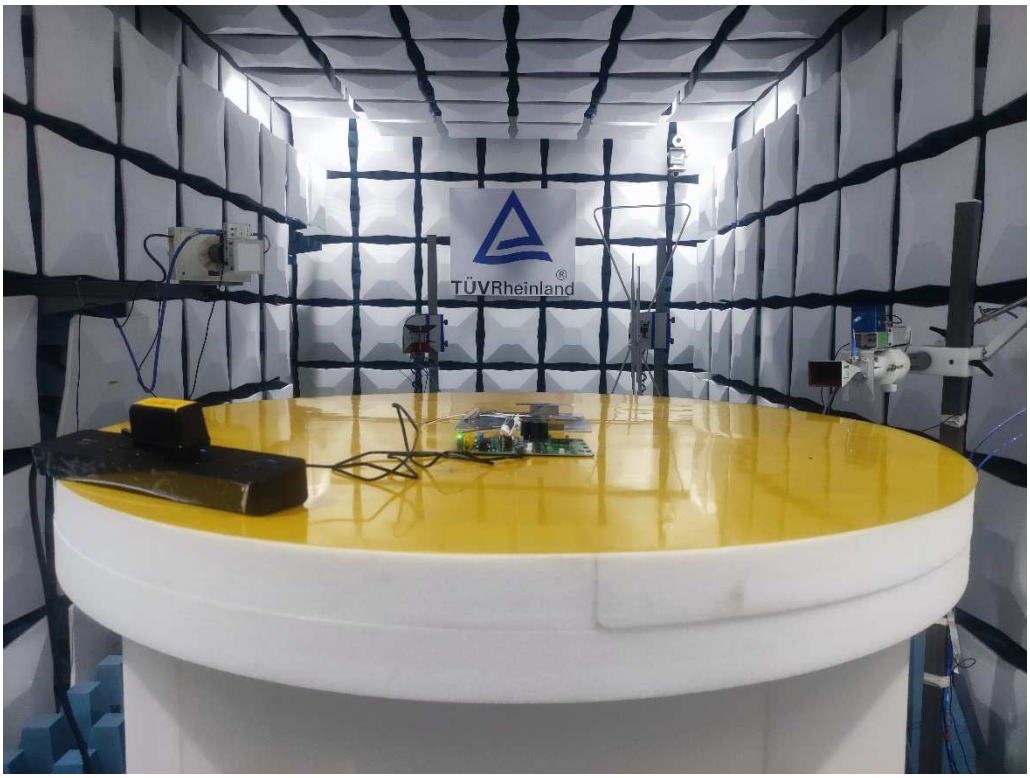
Photograph 1: Set-up for Radio Spectrum Testing, Normal Condition

Photograph 2: Set-up for Radio Spectrum Testing, Extreme Condition

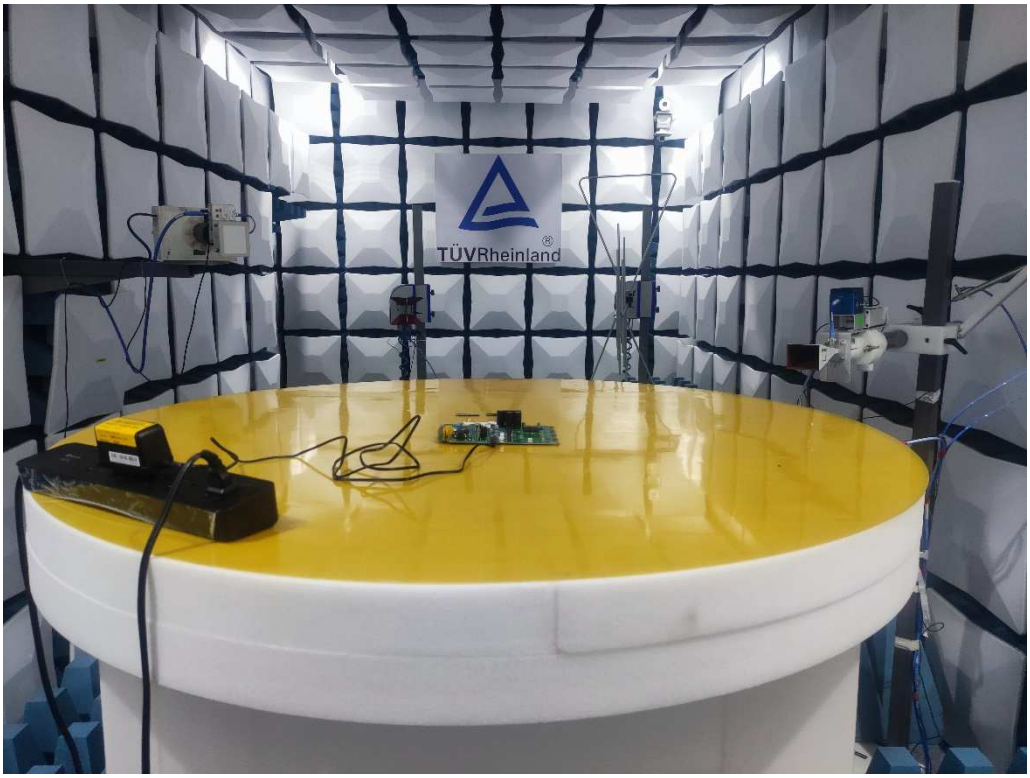


Photograph 3: Set-up for Transmitter & Receiver Spurious Emissions

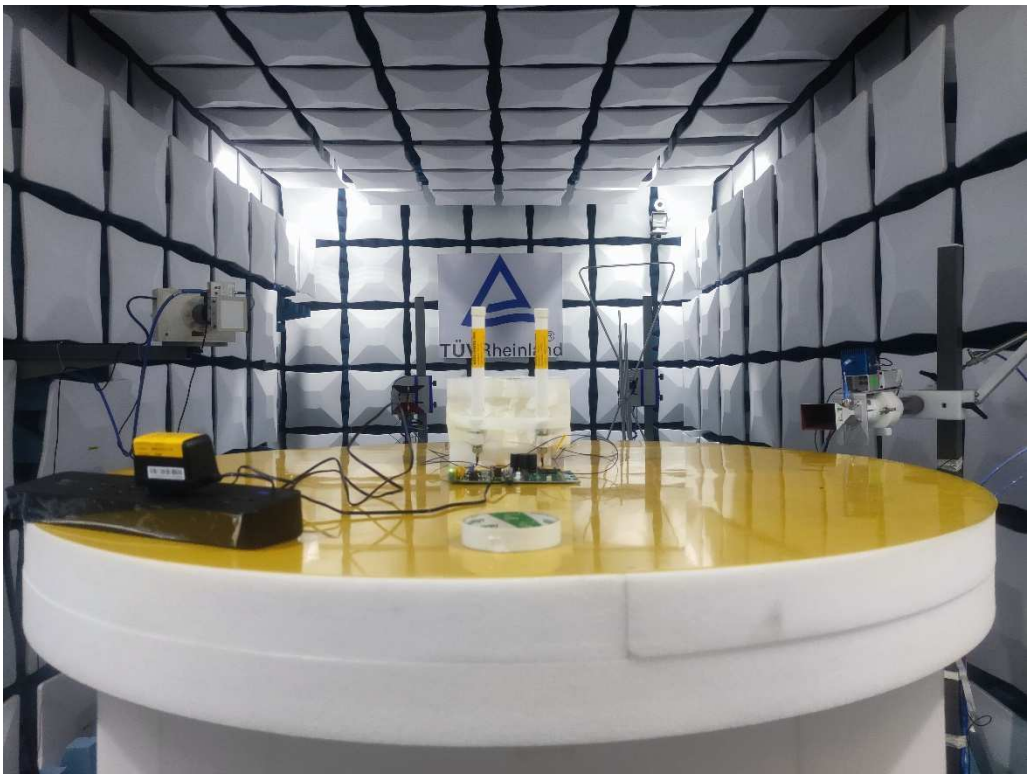
For Ant#1 SA05A01RA:



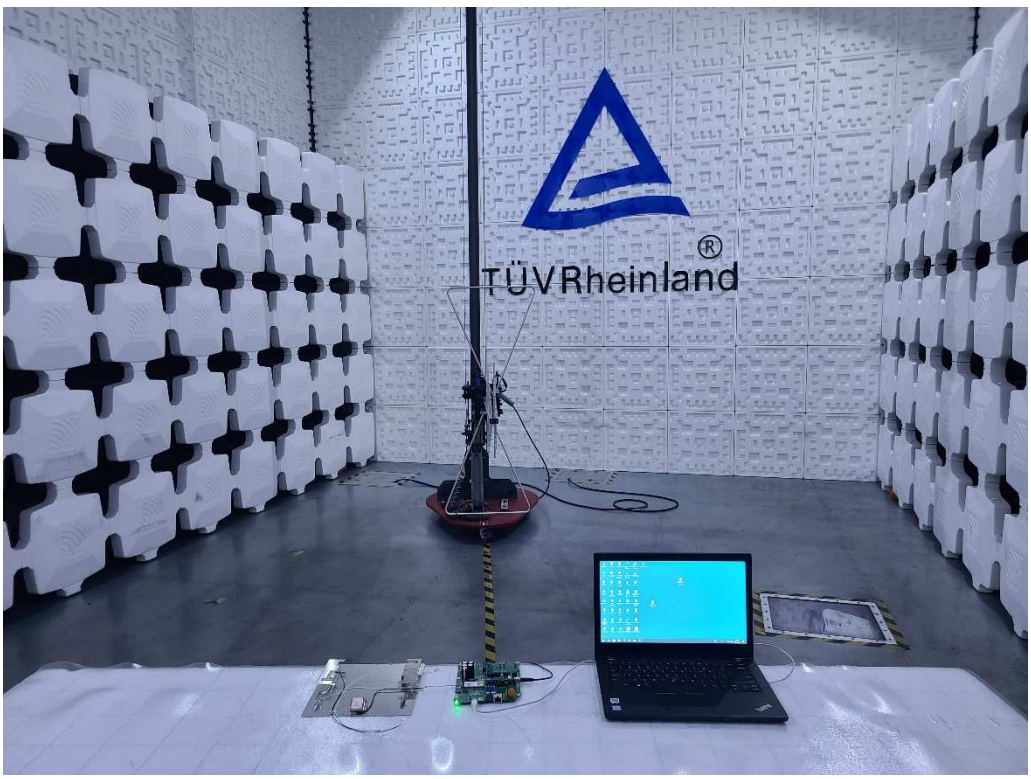
For Ant#4 6147F00013:



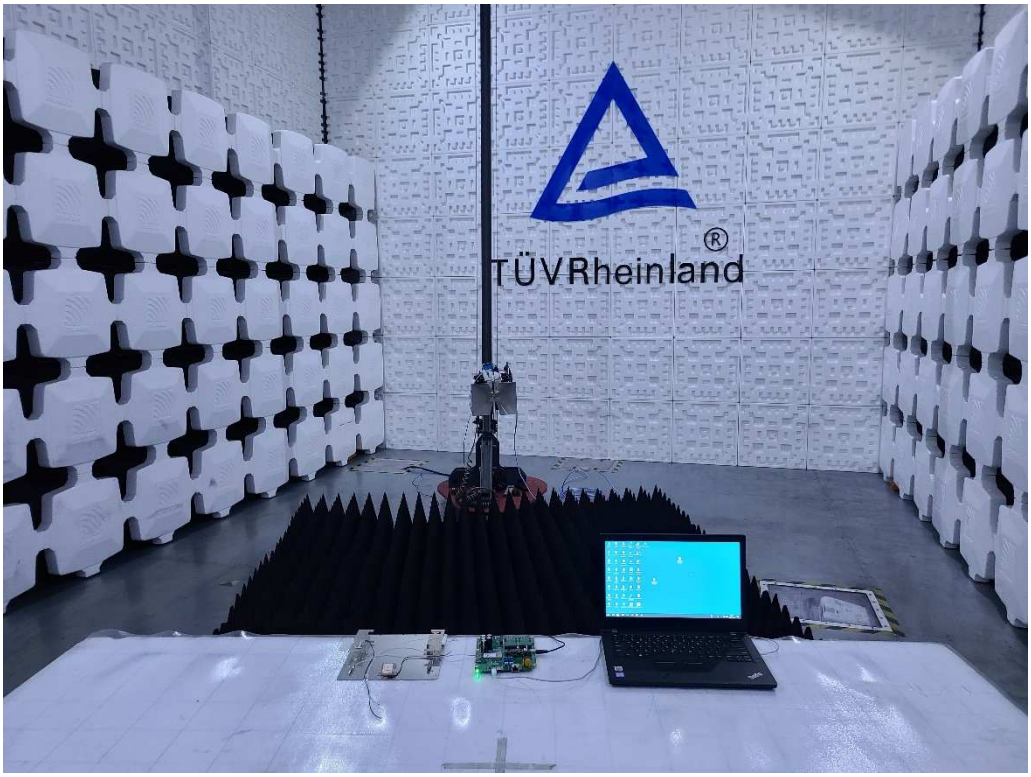
For Ant#5 K7ABLG2G4ML400:



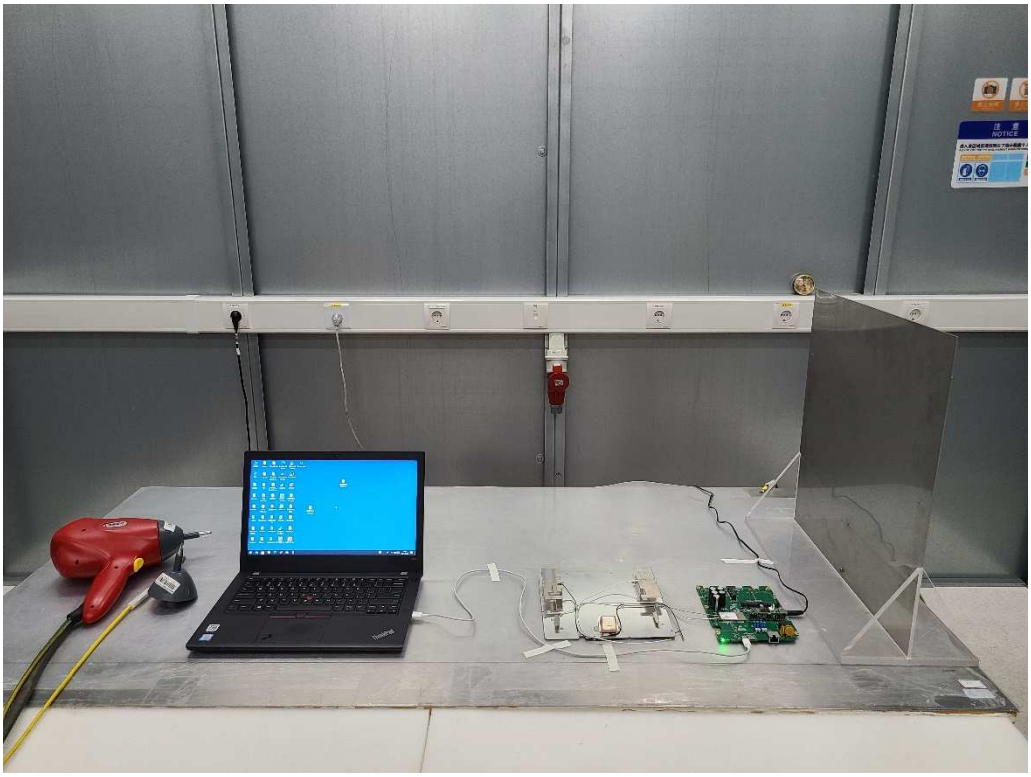
Photograph 4: Set-up for Radiated Emission, Below 1GHz



Photograph 5: Set-up for Radiated Emission, Above 1GHz

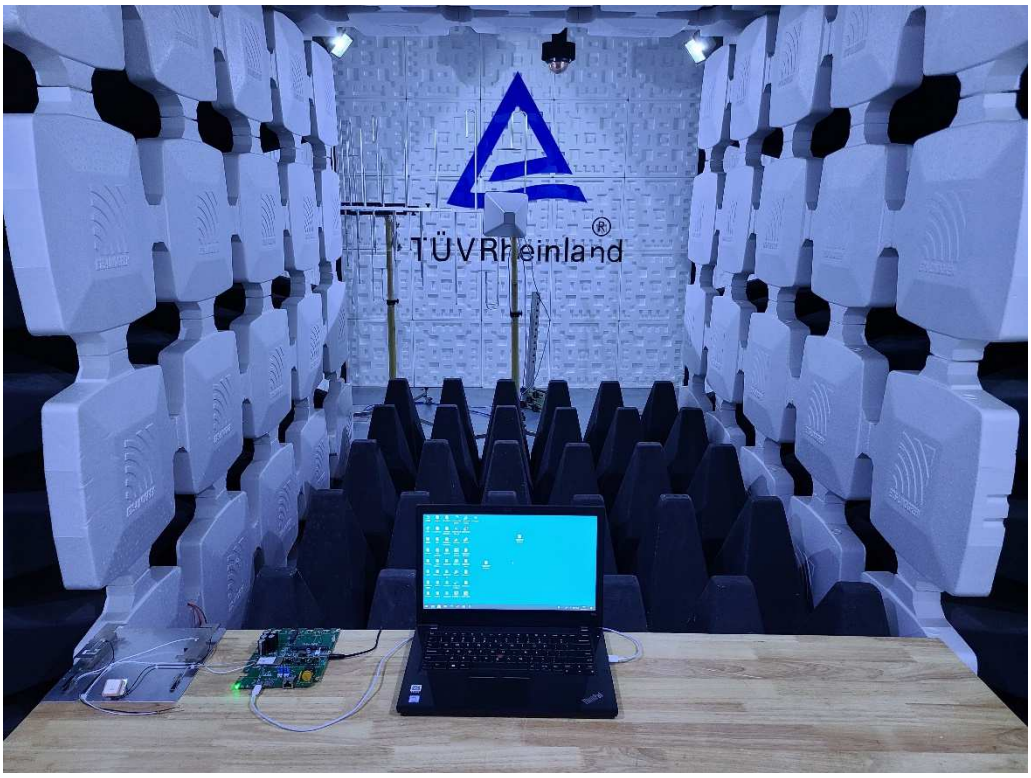


Photograph 6: Setup for Electrostatic Discharges (ESD)



Photograph 7: Set-up for Radio Frequency Electromagnetic Fields (RS, 80MHz-1GHz)

Photograph 8: Set-up for Radio Frequency Electromagnetic Fields (RS, 1GHz-6GHz)



8 List of Tables

9 List of Photographs

Appendix A

Test results

Content

1 Appendix A.1 : Occupied Channel Bandwidth

802.11b – Ant0

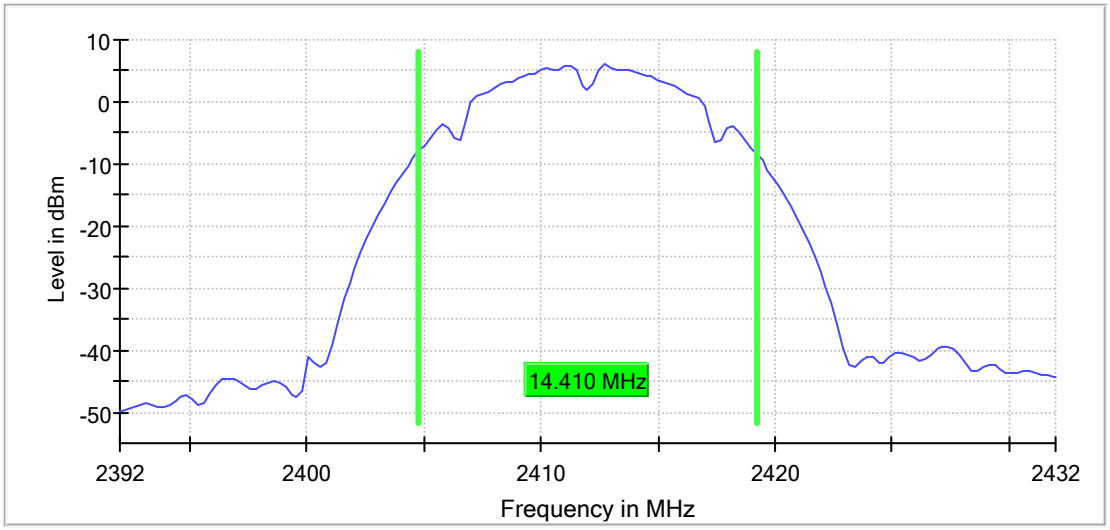
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2412.000000	14.409938	---	---	2404.795031	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2412.000000	2419.204969	2483.500000	PASS

99 % Bandwidth



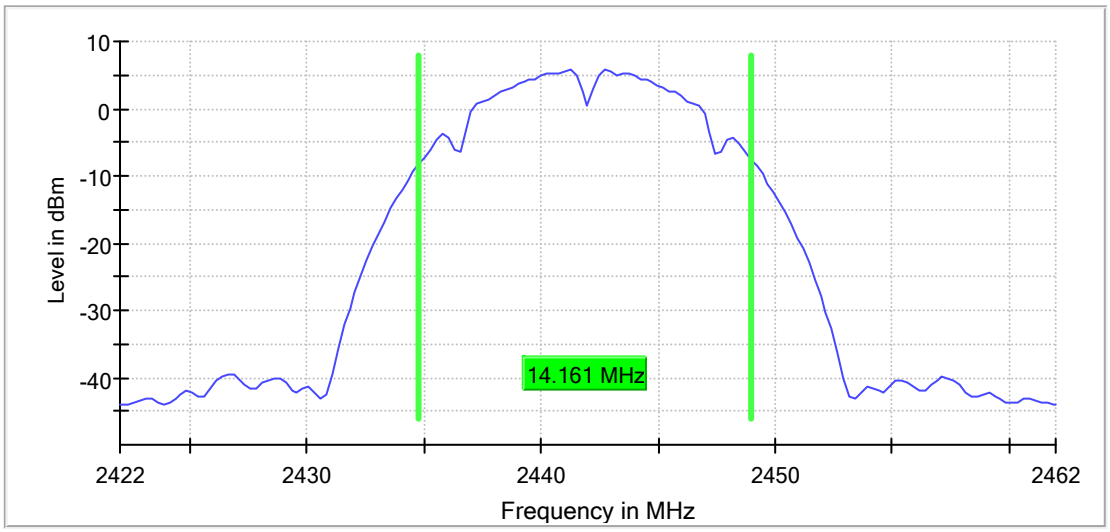
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2442.000000	14.161491	---	---	2434.795031	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2442.000000	2448.956522	2483.500000	PASS

99 % Bandwidth



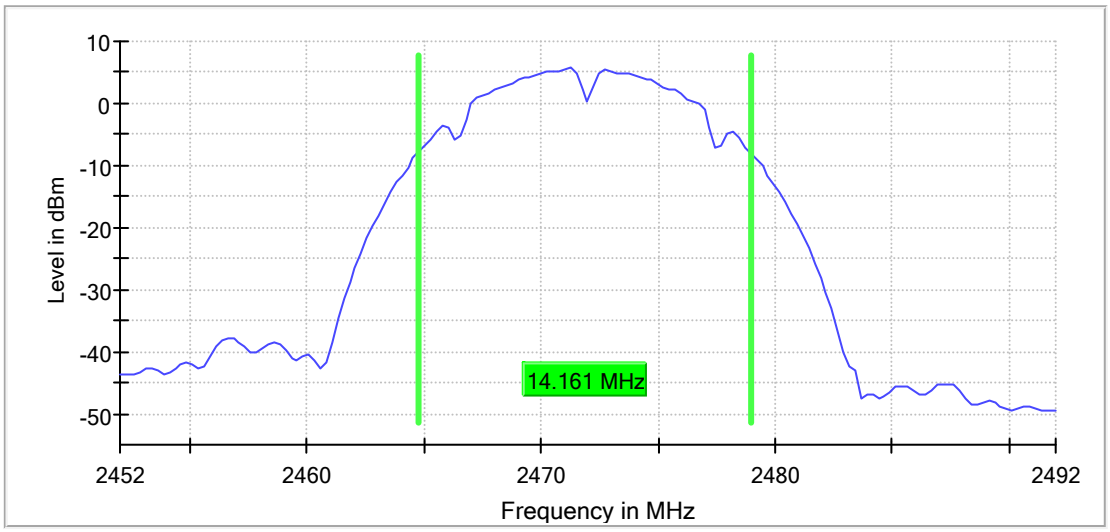
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2472.000000	14.161491	---	---	2464.795031	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2472.000000	2478.956522	2483.500000	PASS

99 % Bandwidth



802.11g – Ant0

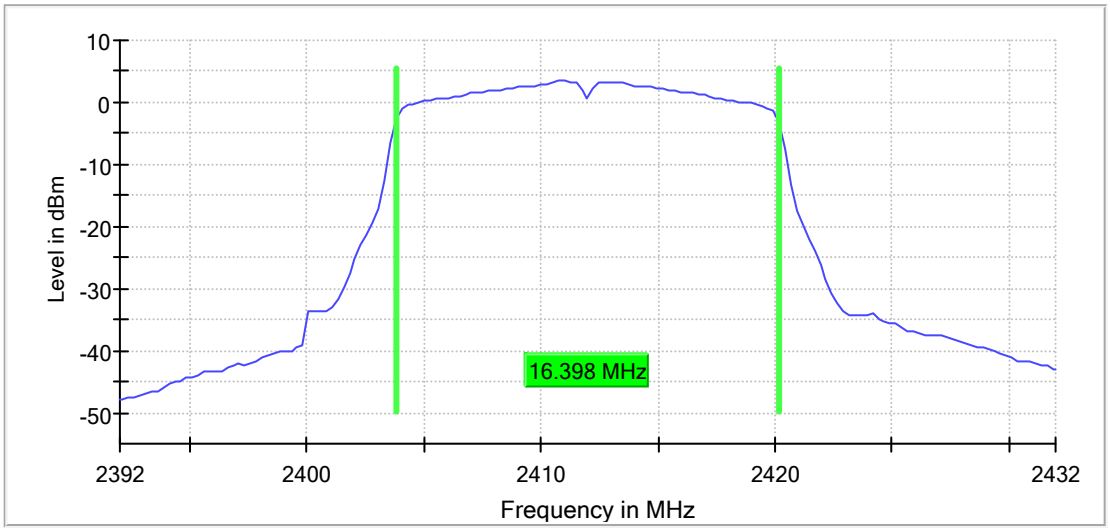
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2412.000000	16.397516	---	---	2403.801242	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2412.000000	2420.198758	2483.500000	PASS

99 % Bandwidth



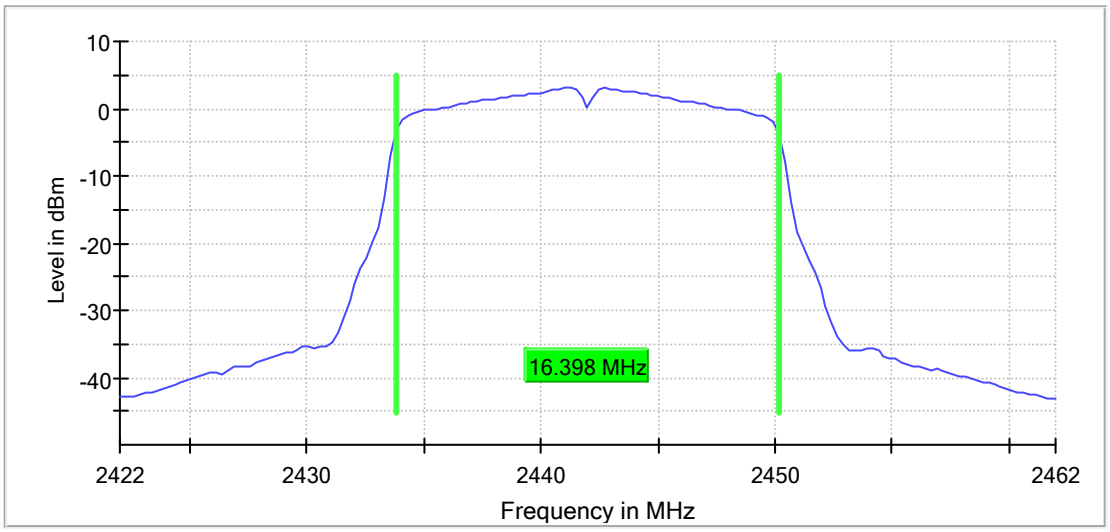
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2442.000000	16.397516	---	---	2433.801242	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2442.000000	2450.198758	2483.500000	PASS

99 % Bandwidth



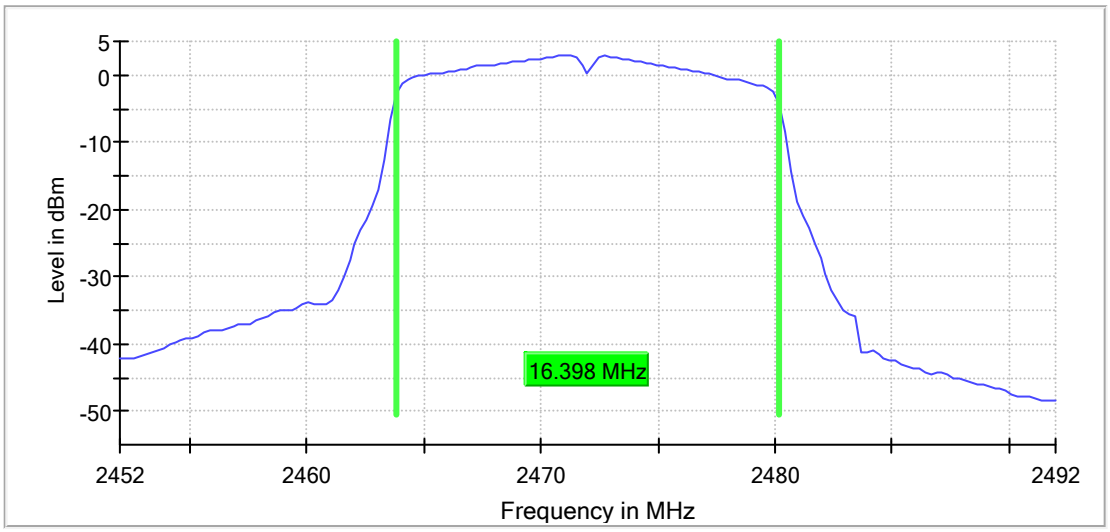
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2472.000000	16.397516	---	---	2463.801242	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2472.000000	2480.198758	2483.500000	PASS

99 % Bandwidth



802.11n-20MHz – Ant0

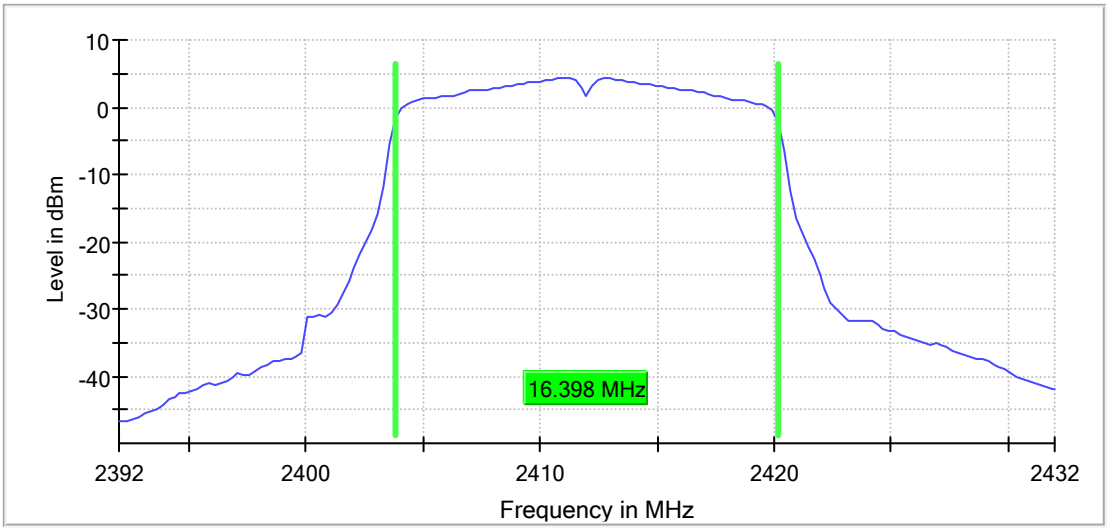
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2412.000000	16.397516	---	---	2403.801242	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2412.000000	2420.198758	2483.500000	PASS

99 % Bandwidth



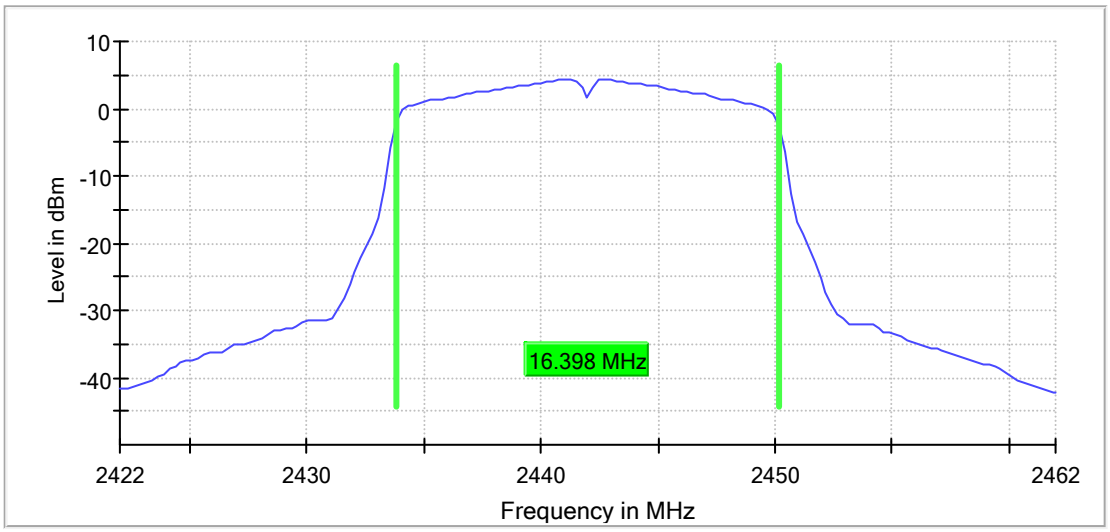
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2442.000000	16.397516	---	---	2433.801242	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2442.000000	2450.198758	2483.500000	PASS

99 % Bandwidth



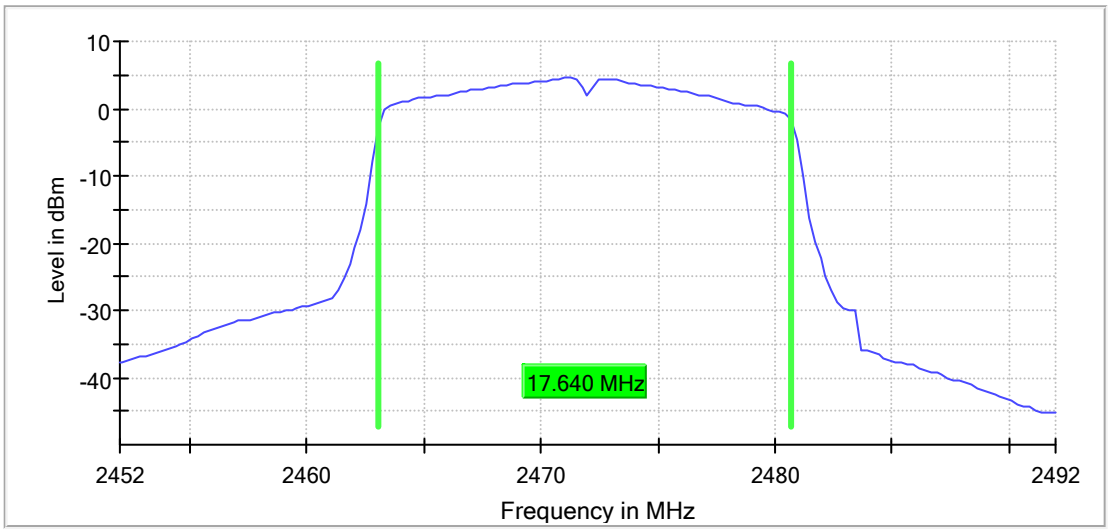
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2472.000000	17.639751	---	---	2463.055901	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2472.000000	2480.695652	2483.500000	PASS

99 % Bandwidth



802.11n-40MHz – Ant0

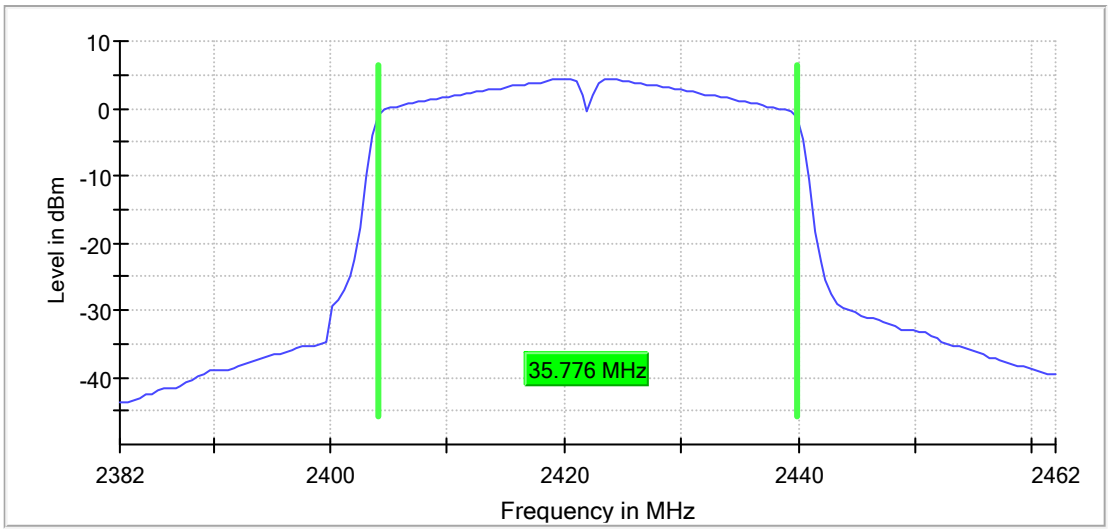
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2422.000000	35.776398	---	---	2404.111801	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2422.000000	2439.888199	2483.500000	PASS

99 % Bandwidth



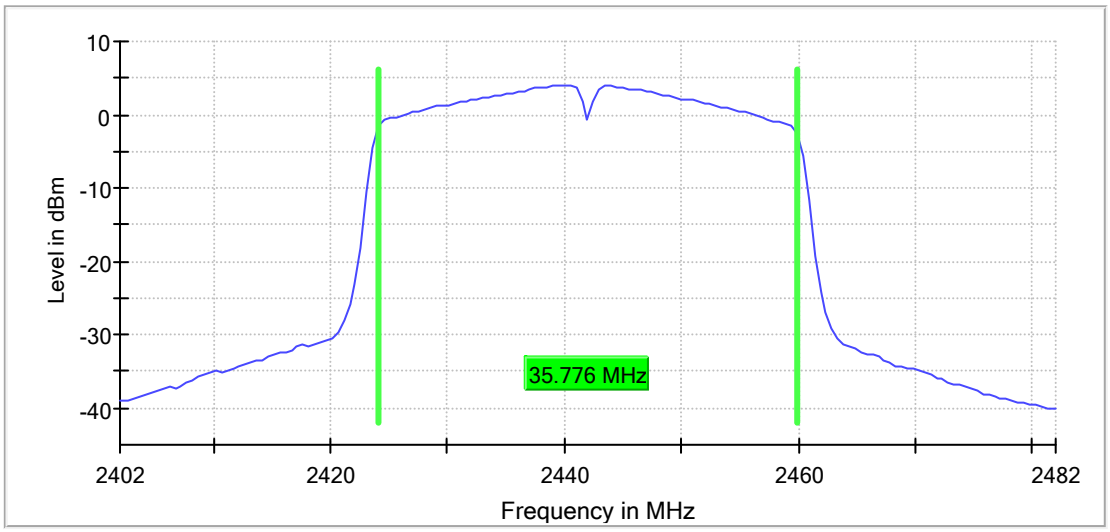
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2442.000000	35.776398	---	---	2424.111801	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2442.000000	2459.888199	2483.500000	PASS

99 % Bandwidth



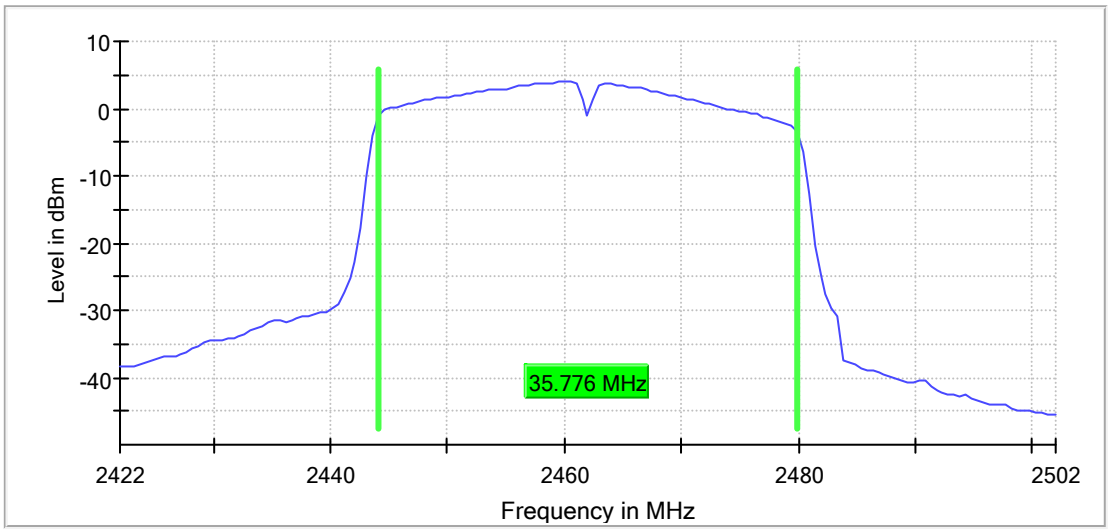
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Limit Min BE L (MHz)
2462.000000	35.776398	---	---	2444.111801	2400.000000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Band Edge Right (MHz)	Limit Max BE R (MHz)	Result
2462.000000	2479.888199	2483.500000	PASS

99 % Bandwidth



2 Appendix A.2: Adaptivity

Adaptivity (2412 MHz; 20.000 dBm; 802.11b_20 MHz)

Summary

Result	Threshold (dBm)
PASS	3.3

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
22.685	10000.000	2.454	13.000	0.203	3211	0.027	85.199

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
22.685	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
0.610	10.000	PASS	50.000

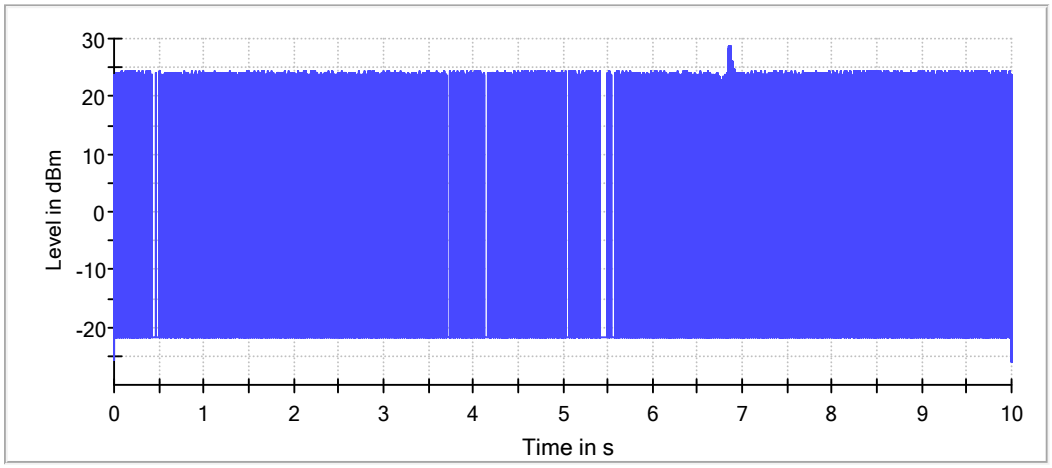
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
0.610	121767.300	121817.300	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

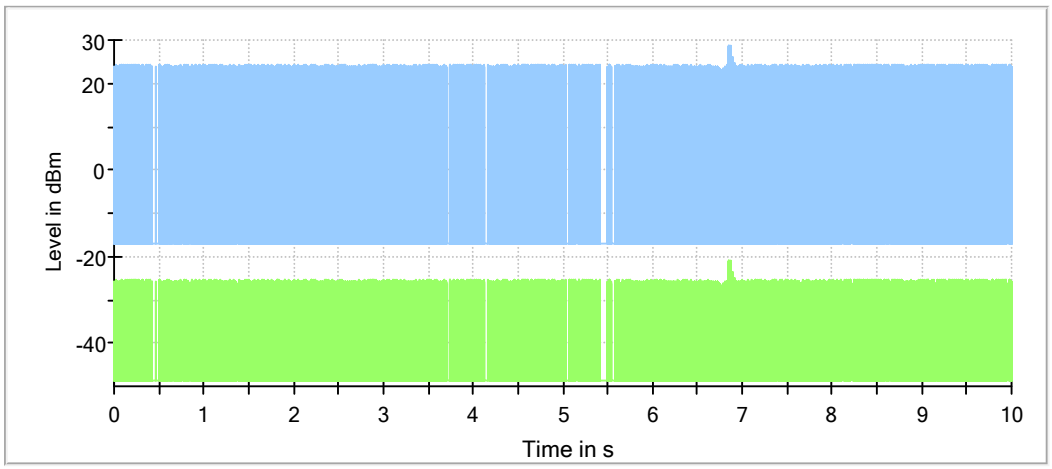
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
0.610	62000.000	13.000	1013.000	121987.000

Normal Operation



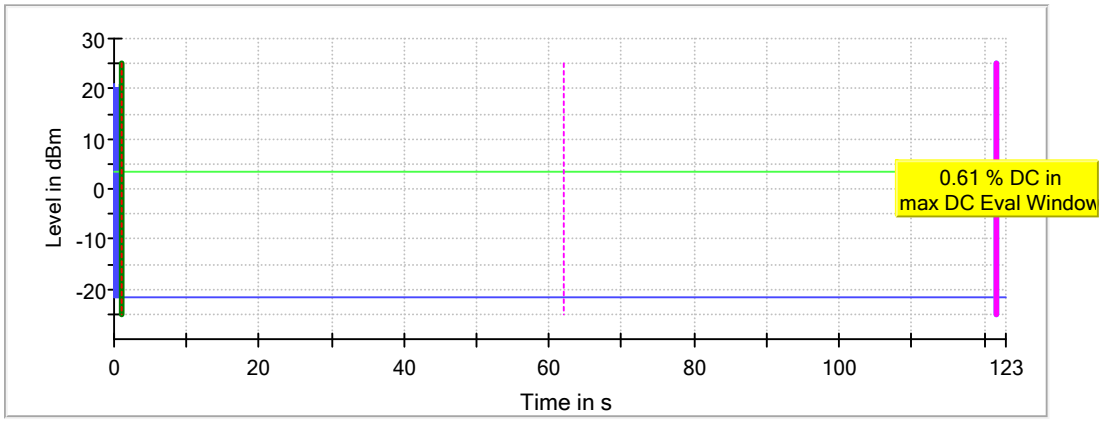
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Adaptivity (2472 MHz; 20.000 dBm; 802.11b_20 MHz)

Summary

Result	Threshold (dBm)
PASS	4.0

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
7.503	10000.000	6.410	13.000	0.282	1001	0.018	37.581

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
7.503	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
3.660	10.000	PASS	50.000

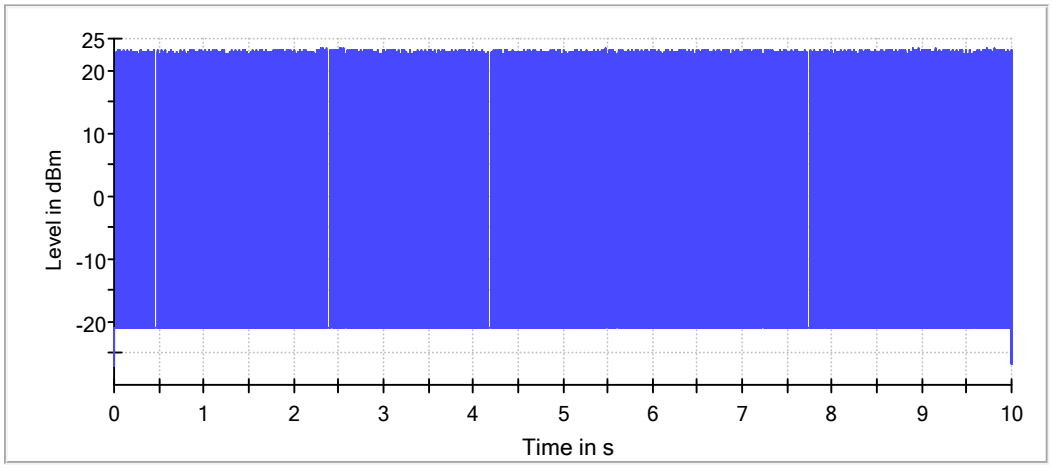
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
3.660	12890.590	12940.590	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

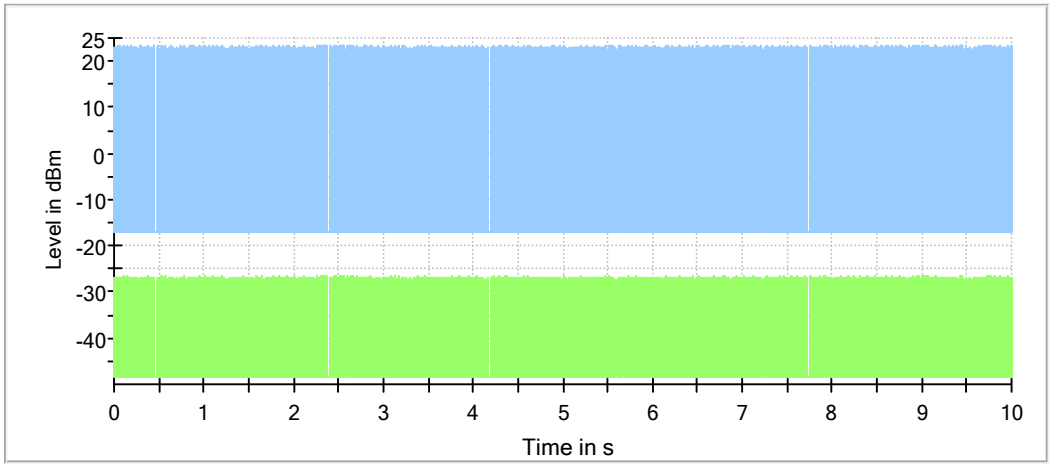
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
3.660	62000.000	13.000	1013.000	121987.000

Normal Operation



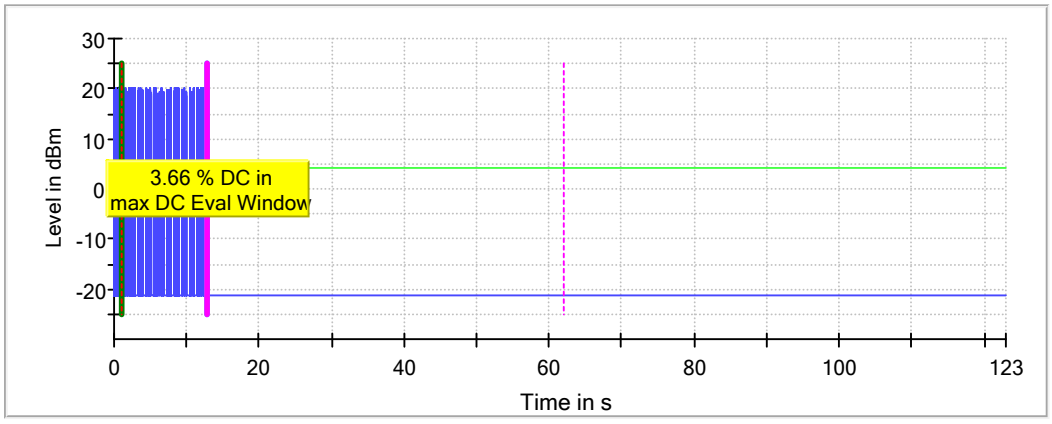
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace Threshold start of monitoring
Trigger Blocker start of evaluation
stop of evaluation

Adaptivity (2412 MHz; 20.000 dBm; 802.11g_20 MHz)

Summary

Result	Threshold (dBm)
PASS	2.8

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
3.647	10000.000	12.626	13.000	0.029	1589	0.019	56.125

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
3.647	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
0.132	10.000	PASS	50.000

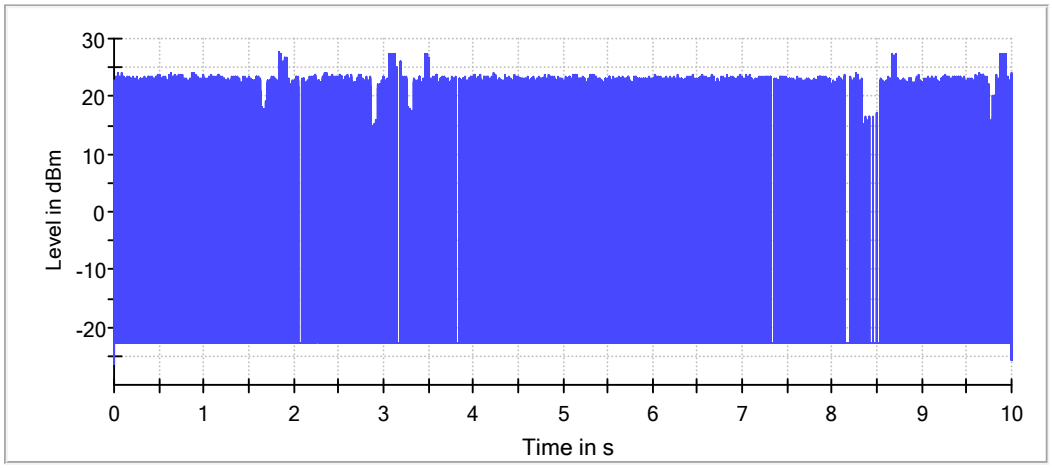
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
0.132	3430.300	3480.300	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

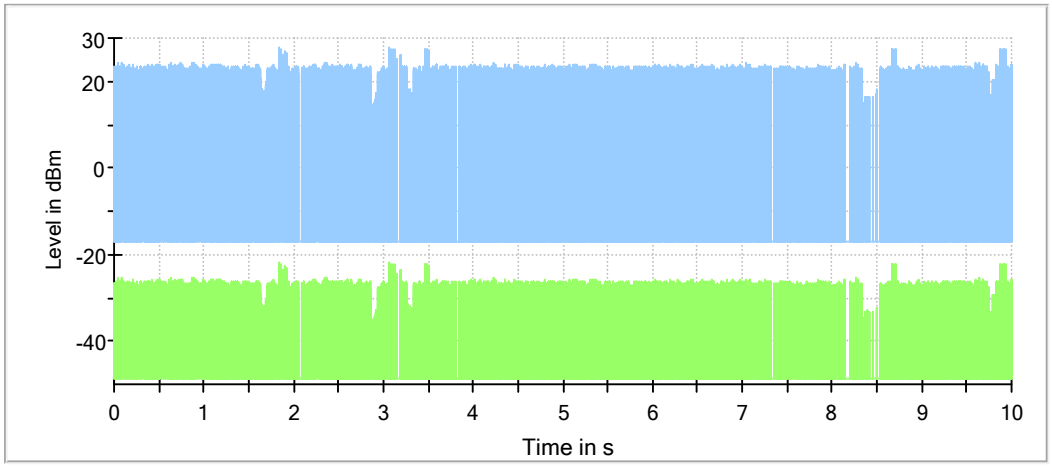
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
0.132	62000.000	13.000	1013.000	121987.000

Normal Operation



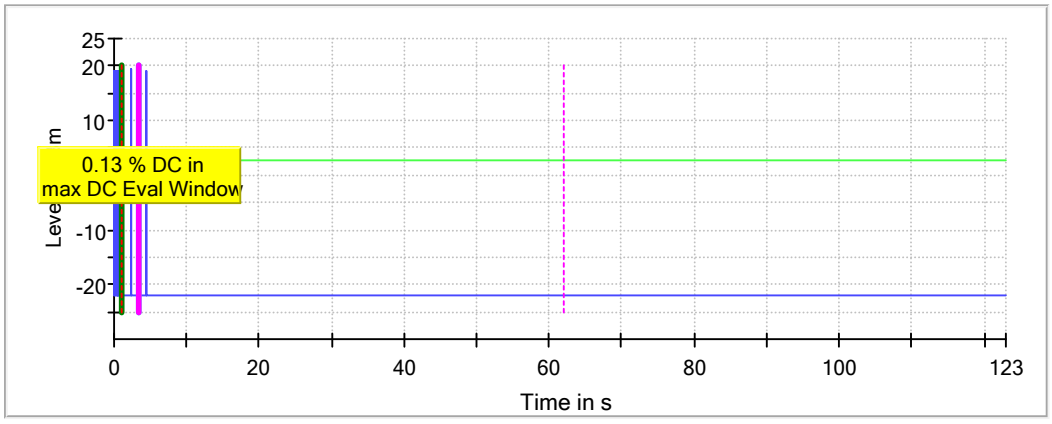
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Adaptivity (2472 MHz; 20.000 dBm; 802.11g_20 MHz)

Summary

Result	Threshold (dBm)
PASS	3.8

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
4.544	10000.000	1.970	13.000	0.029	3840	0.037	199.971

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
4.544	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
2.530	10.000	PASS	50.000

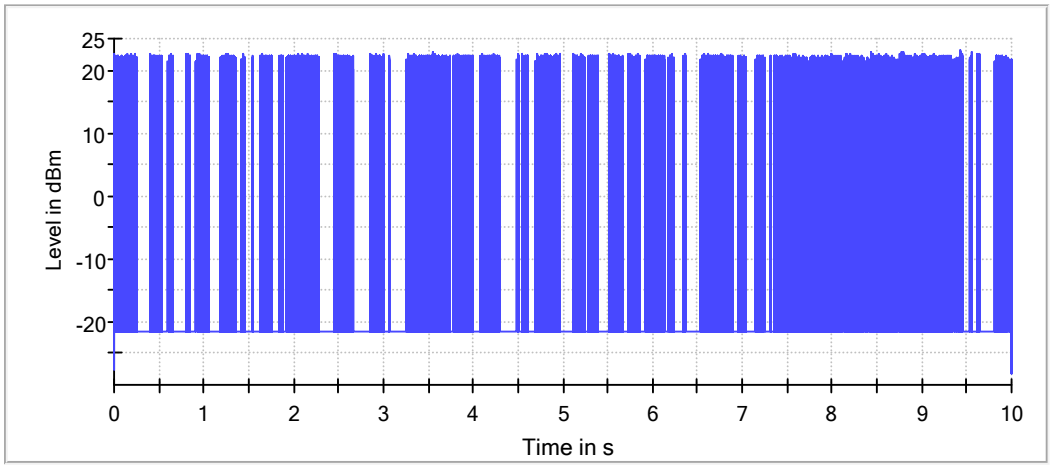
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
2.530	8088.376	8138.376	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

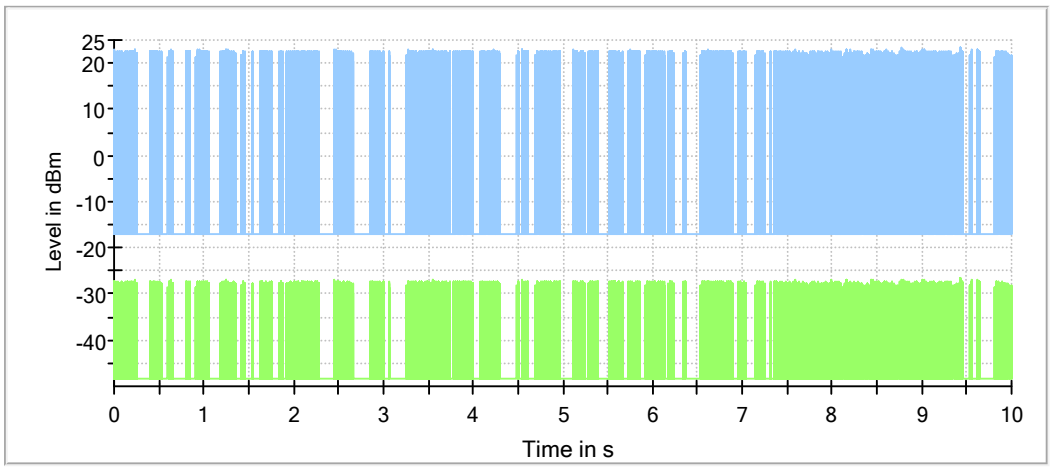
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
2.530	62000.000	13.000	1013.000	121987.000

Normal Operation



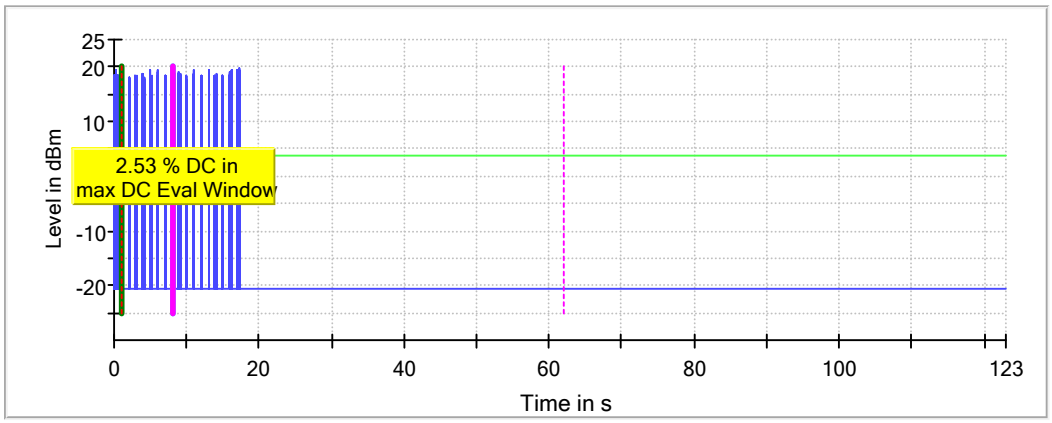
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Adaptivity (2412 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

Result	Threshold (dBm)
PASS	3.4

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
11.805	10000.000	4.849	13.000	0.028	1945	0.036	44.728

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
11.805	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
0.132	10.000	PASS	50.000

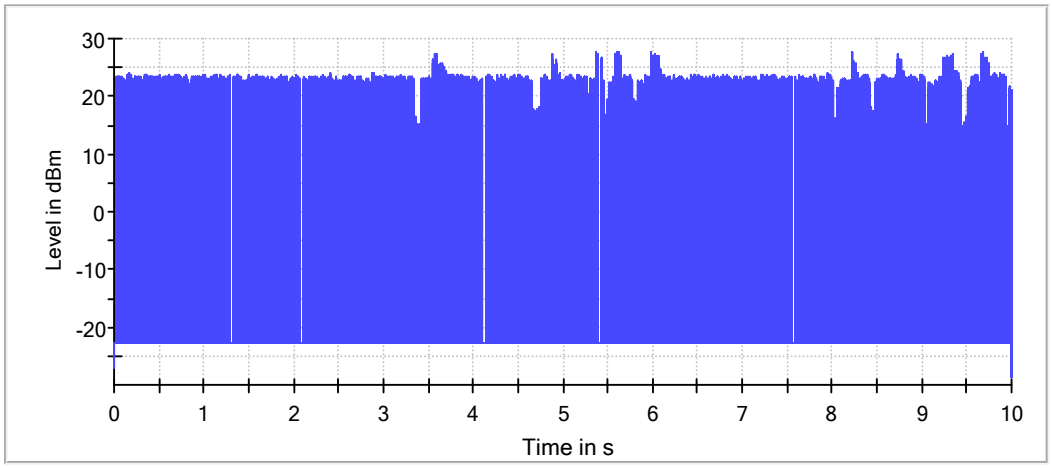
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
0.132	5926.605	5976.605	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

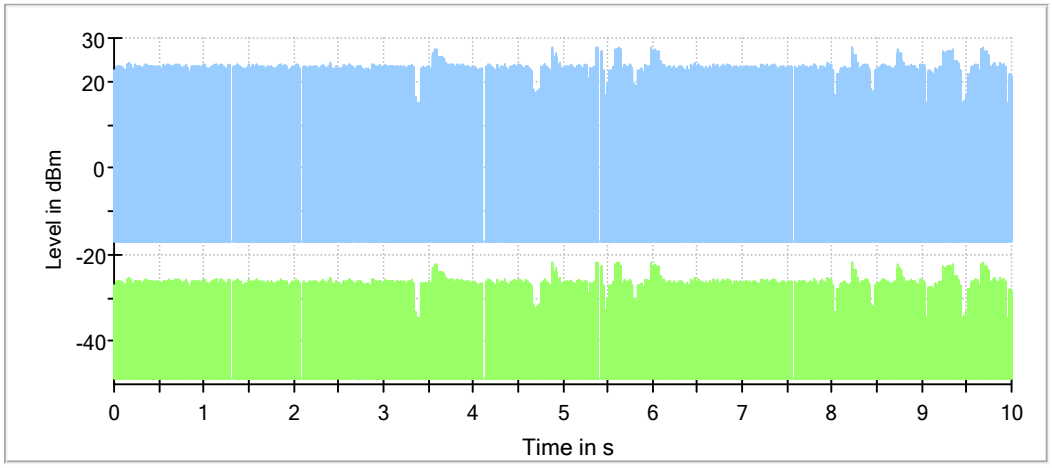
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
0.132	62000.000	13.000	1013.000	121987.000

Normal Operation



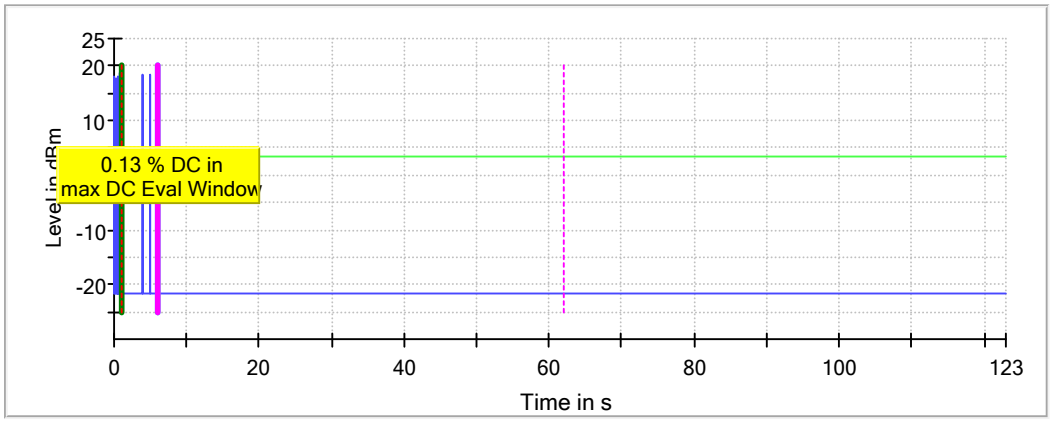
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Adaptivity (2472 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

Result	Threshold (dBm)
PASS	4.2

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
7.038	10000.000	3.885	13.000	0.029	2915	0.036	200.068

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
7.038	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
2.530	10.000	PASS	50.000

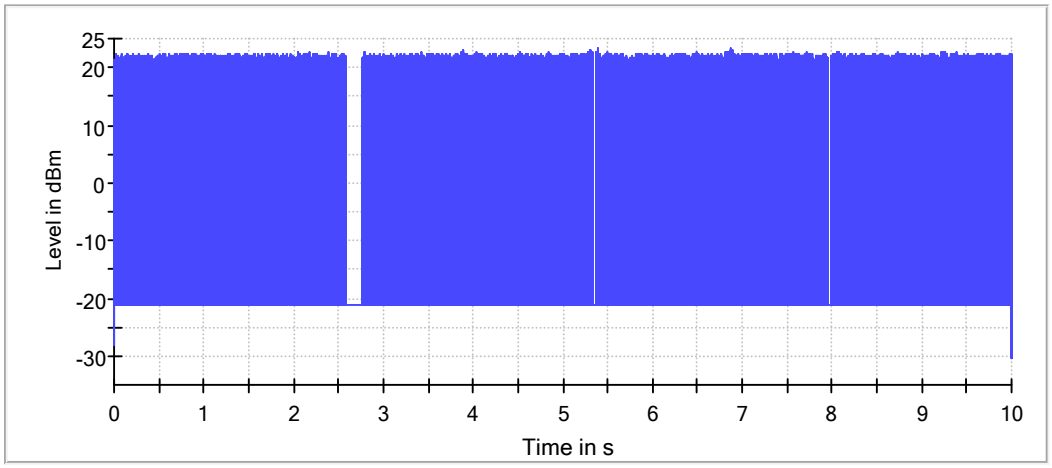
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
2.530	18003.910	18053.910	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

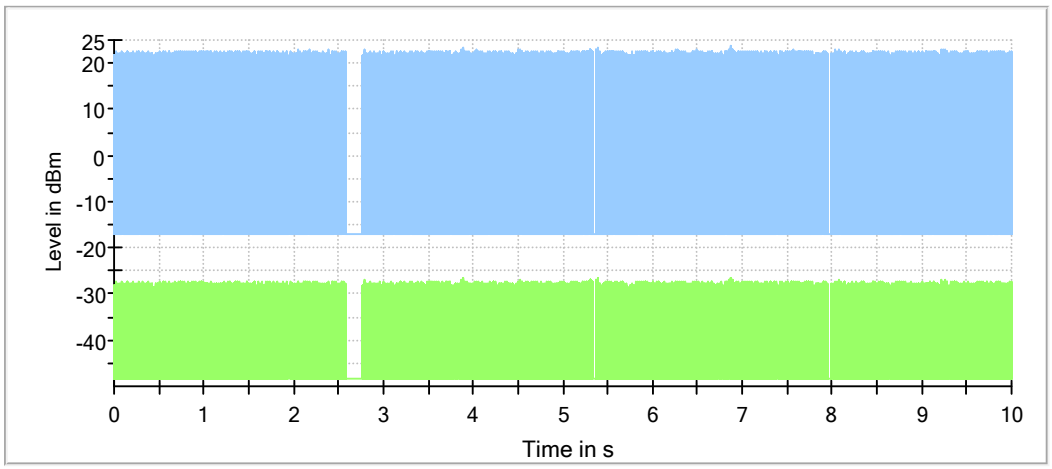
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
2.530	62000.000	13.000	1013.000	121987.000

Normal Operation



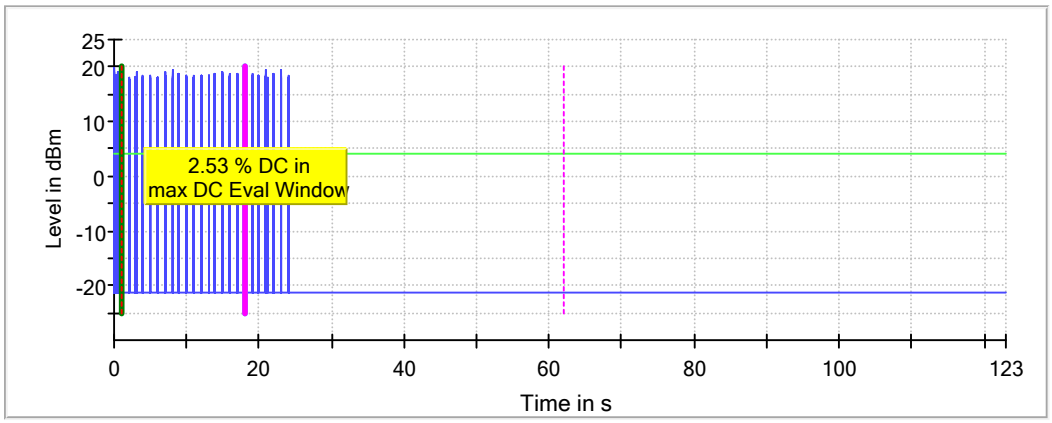
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Adaptivity (2422 MHz; 20.000 dBm; 802.11n_40 MHz_HT40)

Summary

Result	Threshold (dBm)
PASS	-2.3

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
28.055	10000.000	1.581	13.000	0.029	4681	0.042	40.129

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
28.055	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
0.000	10.000	PASS	122987.000

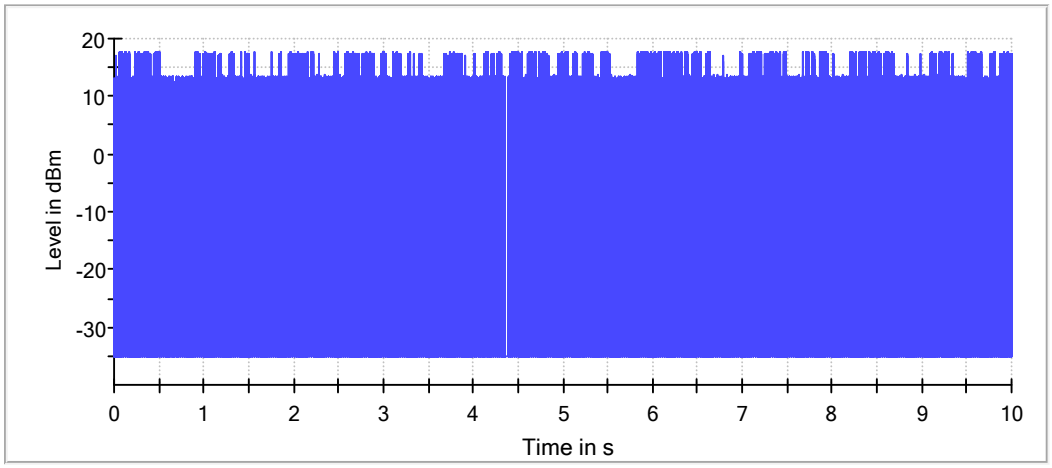
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
0.000	1013.000	124000.000	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

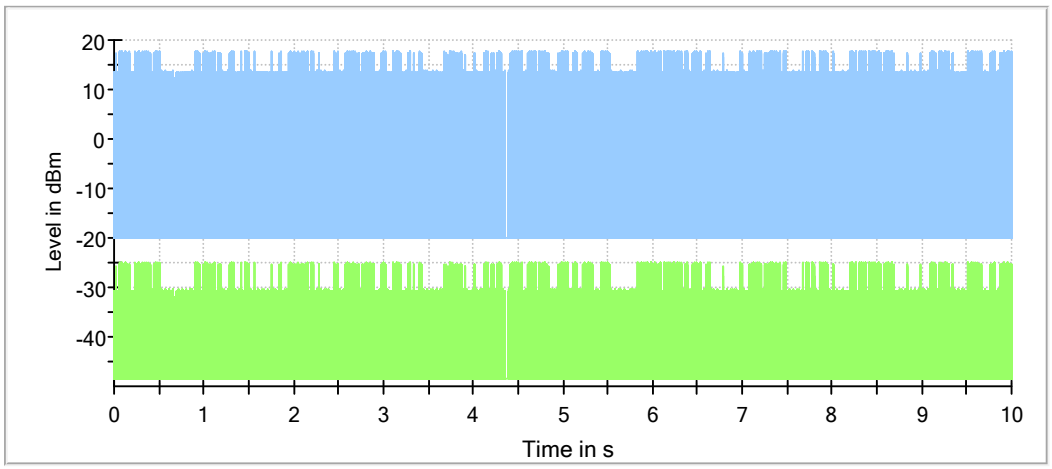
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
0.000	62000.000	13.000	1013.000	121987.000

Normal Operation



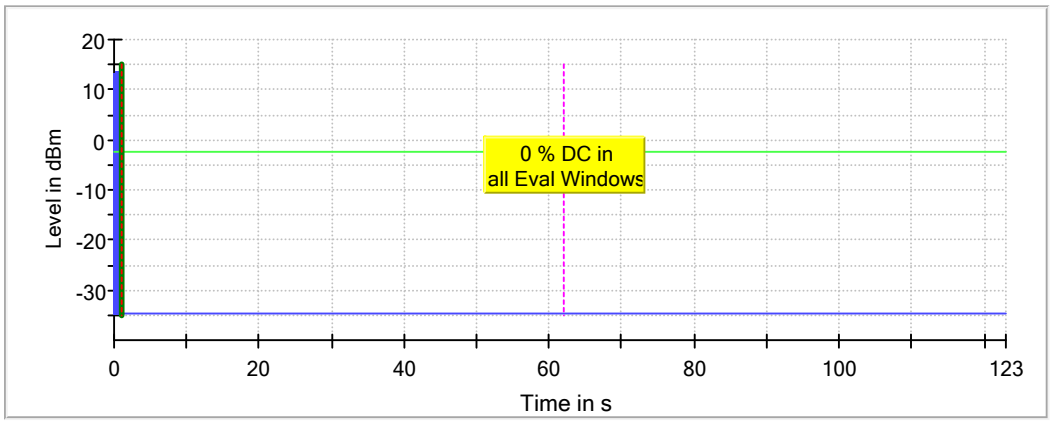
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Adaptivity (2462 MHz; 20.000 dBm; 802.11n_40 MHz_HT40)

Summary

Result	Threshold (dBm)
PASS	-2.7

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
24.750	10000.000	0.618	13.000	0.029	4282	0.042	38.386

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
24.750	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
2.540	10.000	PASS	50.000

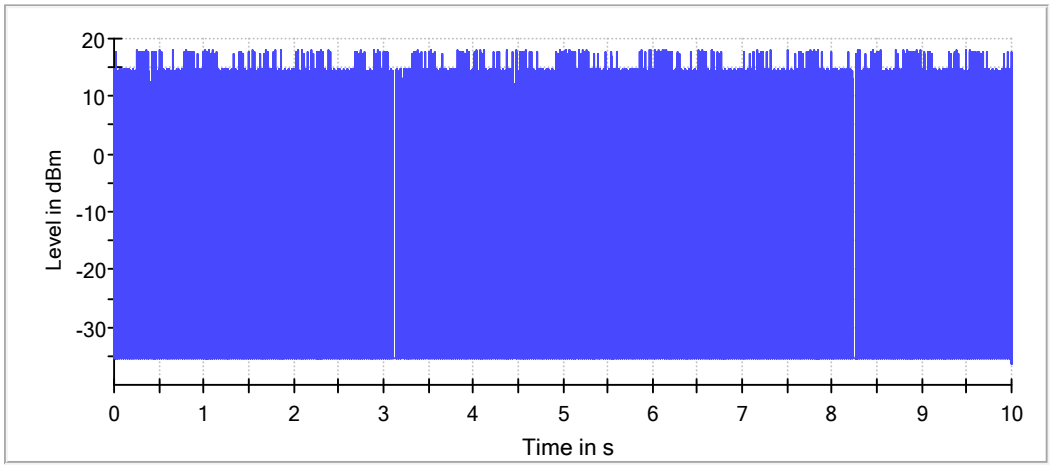
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
2.540	7924.494	7974.494	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

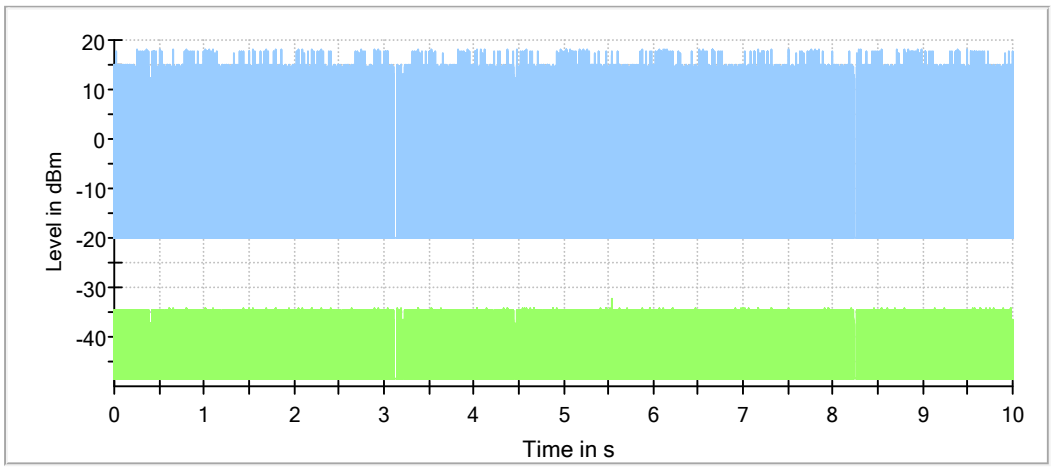
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
2.540	62000.000	13.000	1013.000	121987.000

Normal Operation



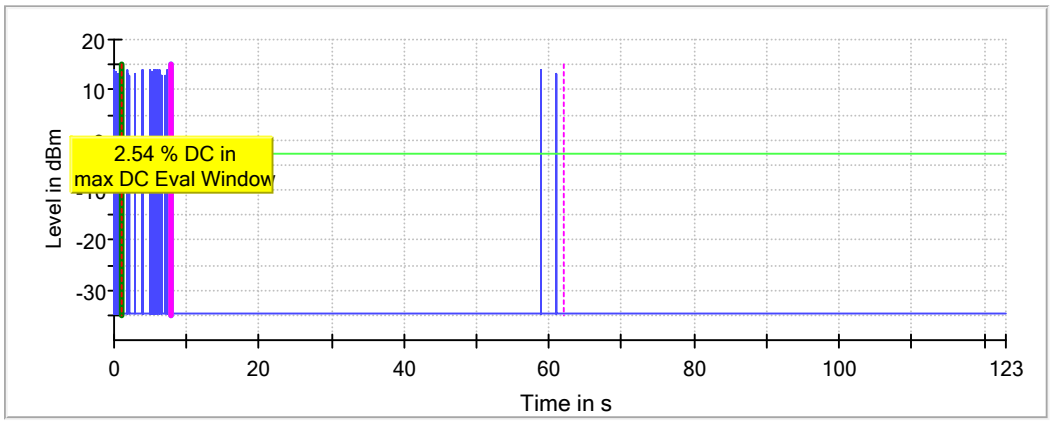
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

3 Appendix A.3: Receiver Blocking

802.11b

Receiver Blocking (2412 MHz; 20.000 dBm; 20MHz)

Summary

DUT Frequency (MHz)	Receiver Category	Companion RMS burst power (dBm)	Result
2412.000000	1	---	PASS

Measurement Overview

Blocking Frequency (MHz)	Result no Offset	Result Offset 1	Result Offset 2	Result
2380.000000	FAIL	PASS	not tested	PASS
2300.000000	PASS	not tested	not tested	PASS
2330.000000	FAIL	FAIL	PASS	PASS
2360.000000	FAIL	FAIL	PASS	PASS

Measurements

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Generator Frequency (MHz)	Blocking Level at DUT	Generator Level (dBm)	Attenuation Generator to DUT	Level of Wanted Signal at DUT (dBm)	Wanted Level Offset (dB)	Attenuation Companion to DUT	Result
1	2380.000000	0.000000	2380.000000	-28.6	5.7	34.3	-62.6	0.0	46.9	FAIL
2	2380.000000	10.000000	2390.000000	-28.6	5.8	34.4	-59.6	3.0	46.9	PASS
3	2380.000000	-10.000000	---	---	---	---	-65.6	-3.0	---	not tested
4	2300.000000	0.000000	2300.000000	-28.6	5.1	33.7	-68.6	0.0	46.9	PASS
5	2300.000000	14.658386	---	---	---	---	-68.6	0.0	---	not tested
6	2300.000000	-14.658386	---	---	---	---	-68.6	0.0	---	not tested
7	2330.000000	0.000000	2330.000000	-28.6	5.2	33.8	-68.6	0.0	46.9	FAIL
8	2330.000000	14.658386	2344.658386	-28.6	5.3	33.9	-68.6	0.0	46.9	FAIL
9	2330.000000	-14.658386	2315.341614	-28.6	5.1	33.7	-68.6	0.0	46.9	PASS
10	2360.000000	0.000000	2360.000000	-28.6	5.5	34.1	-68.6	0.0	46.9	FAIL
11	2360.000000	14.658386	2374.658386	-28.6	5.6	34.2	-68.6	0.0	46.9	FAIL
12	2360.000000	-14.658386	2345.341614	-28.6	5.3	33.9	-68.6	0.0	46.9	PASS

DUT Monitoring

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Name	Value	Limit Min	Limit Max	Result
1	2380.000000	10.000000	PER	0.000	---	10.000	PASS
2	2300.000000	0.000000	PER	3.400	---	10.000	PASS
3	2330.000000	-14.658386	PER	5.800	---	10.000	PASS
4	2360.000000	-14.658386	PER	0.000	---	10.000	PASS

Note 1: When blocking signal frequency at 2330MHz, 2360MHz and 2380MHz, according to EN 300 328 V2.2.2 clause 5.4.11.2.1 step 5, it passes when the frequency of the blocking signal set in step 2 has been decreased with a value equal to the Occupied Channel Bandwidth (OCB). The previous trials presenting the blocking signal at 2330MHz, 2360MHz and 2380MHz fail.
Finally, the UUT is assessed to be compliant at blocking signal frequency 2315.34MHz, 2345.34MHz and 2390MHz.
Note 2: EUT is category 1 receiver.

Receiver Blocking (2472 MHz; 20.000 dBm; 20MHz)

Summary

DUT Frequency (MHz)	Receiver Category	Companion RMS burst power (dBm)	Result
2472.000000	1	---	PASS

Measurement Overview

Blocking Frequency (MHz)	Result no Offset	Result Offset 1	Result Offset 2	Result
2504.000000	FAIL	PASS	not tested	PASS
2524.000000	FAIL	FAIL	PASS	PASS
2584.000000	FAIL	PASS	not tested	PASS
2674.000000	PASS	not tested	not tested	PASS

Measurements

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Generator Frequency (MHz)	Blocking Level at DUT	Generator Level (dBm)	Attenuation Generator to DUT	Level of Wanted Signal at DUT (dBm)	Wanted Level Offset (dB)	Attenuation Companion to DUT	Result
1	2504.00000	0.000000	2504.00000	-28.6	6.2	34.8	-62.6	0.0	47.7	FAIL
2	2504.00000	10.000000	2514.00000	-28.6	6.2	34.8	-65.6	-3.0	47.7	PASS
3	2504.00000	-10.000000	---	---	---	---	-59.6	3.0	---	not tested
4	2524.00000	0.000000	2524.00000	-28.6	6.1	34.7	-68.6	0.0	47.7	FAIL
5	2524.00000	14.658386	2538.65838	-28.6	6.1	34.7	-68.6	0.0	47.7	FAIL
6	2524.00000	-14.658386	2509.34161	-28.6	6.2	34.8	-68.6	0.0	47.7	PASS
7	2584.00000	0.000000	2584.00000	-28.6	5.9	34.5	-68.6	0.0	47.7	FAIL
8	2584.00000	14.658386	2598.65838	-28.6	5.8	34.4	-68.6	0.0	47.7	PASS
9	2584.00000	-14.658386	---	---	---	---	-68.6	0.0	---	not tested
10	2674.00000	0.000000	2674.00000	-28.6	5.7	34.3	-68.6	0.0	47.7	PASS
11	2674.00000	14.658386	---	---	---	---	-68.6	0.0	---	not tested
12	2674.00000	-14.658386	---	---	---	---	-68.6	0.0	---	not tested

DUT Monitoring

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Name	Value	Limit Min	Limit Max	Result
1	2504.000000	10.000000	PER	0.000	---	10.000	PASS
2	2524.000000	-14.658386	PER	0.000	---	10.000	PASS
3	2584.000000	14.658386	PER	3.600	---	10.000	PASS
4	2674.000000	0.000000	PER	6.600	---	10.000	PASS

Note 1: When blocking signal frequency at 2504MHz, 2524MHz and 2584MHz, according to EN 300 328 V2.2.2 clause 5.4.11.2.1 step 5, it passes when the frequency of the blocking signal set in step 2 has been decreased with a value equal to the Occupied Channel Bandwidth (OCB). The previous trials presenting the blocking signal at 2504MHz, 2524MHz and 2584MHz fail.
Finally, the UUT is assessed to be compliant at blocking signal frequency 2509.34MHz, 2514MHz and 2598.66MHz.

Note 2: EUT is category 1 receiver.

4 Appendix A.4 : Tx unwanted emissions in the out-of-band domain

802.11b – Ant0

Tx unwanted emissions in the out-of-band domain (2412 MHz; 20.000 dBm; 802.11b_20 MHz)

Summary

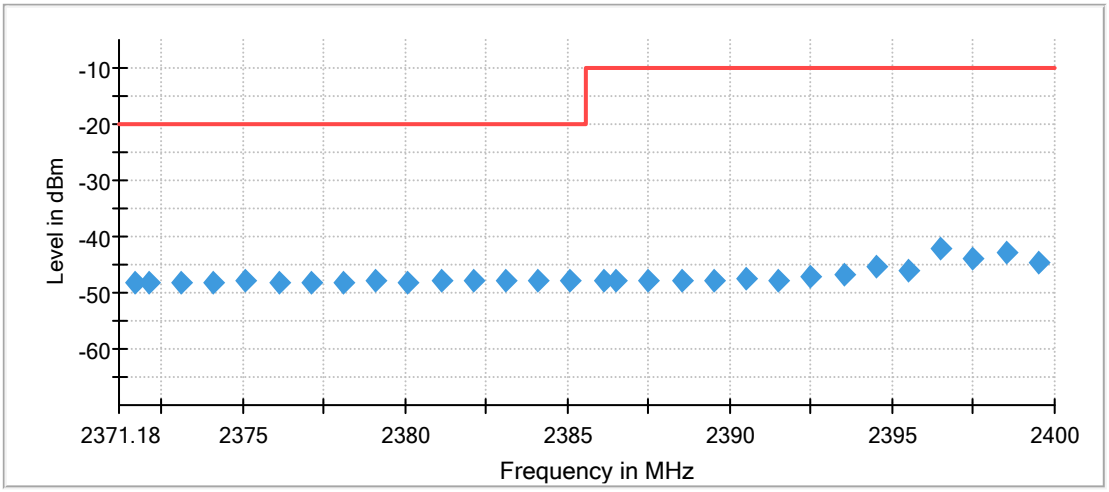
DUT Frequency (MHz)	FAIL	PASS	Result
2412.000000	0	60	PASS

Measurements

Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2371.680124	-48.2	-20.0	PASS
2372.090062	-48.2	-20.0	PASS
2373.090062	-48.2	-20.0	PASS
2374.090062	-48.1	-20.0	PASS
2375.090062	-48.0	-20.0	PASS
2376.090062	-48.1	-20.0	PASS
2377.090062	-48.1	-20.0	PASS
2378.090062	-48.1	-20.0	PASS
2379.090062	-48.0	-20.0	PASS
2380.090062	-48.0	-20.0	PASS
2381.090062	-48.0	-20.0	PASS
2382.090062	-48.0	-20.0	PASS
2383.090062	-48.0	-20.0	PASS
2384.090062	-47.9	-20.0	PASS
2385.090062	-47.9	-20.0	PASS
2386.090062	-47.9	-10.0	PASS
2386.500000	-47.8	-10.0	PASS
2387.500000	-47.9	-10.0	PASS
2388.500000	-47.8	-10.0	PASS
2389.500000	-47.8	-10.0	PASS
2390.500000	-47.7	-10.0	PASS
2391.500000	-47.7	-10.0	PASS
2392.500000	-47.2	-10.0	PASS
2393.500000	-46.7	-10.0	PASS
2394.500000	-45.4	-10.0	PASS
2395.500000	-45.9	-10.0	PASS
2396.500000	-42.0	-10.0	PASS
2397.500000	-44.0	-10.0	PASS
2398.500000	-42.8	-10.0	PASS
2399.500000	-44.6	-10.0	PASS
2484.000000	-47.6	-10.0	PASS
2485.000000	-47.5	-10.0	PASS
2486.000000	-47.5	-10.0	PASS
2487.000000	-47.5	-10.0	PASS
2488.000000	-47.6	-10.0	PASS
2489.000000	-47.5	-10.0	PASS
2490.000000	-47.6	-10.0	PASS
2491.000000	-47.6	-10.0	PASS
2492.000000	-47.5	-10.0	PASS
2493.000000	-47.6	-10.0	PASS
2494.000000	-47.5	-10.0	PASS
2495.000000	-47.5	-10.0	PASS
2496.000000	-47.6	-10.0	PASS
2497.000000	-47.6	-10.0	PASS

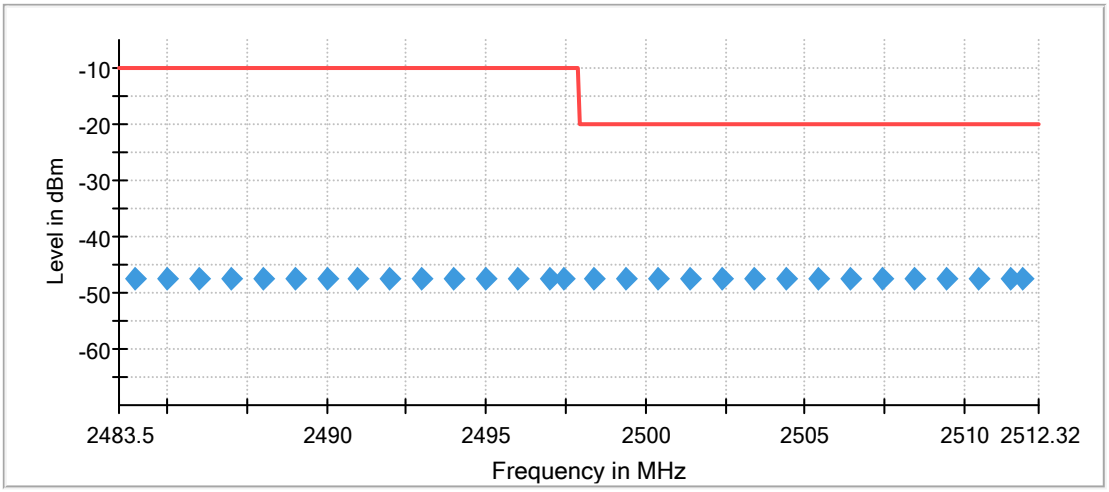
2497.409938	-47.6	-10.0	PASS
2498.409938	-47.6	-20.0	PASS
2499.409938	-47.6	-20.0	PASS
2500.409938	-47.6	-20.0	PASS
2501.409938	-47.5	-20.0	PASS
2502.409938	-47.6	-20.0	PASS
2503.409938	-47.6	-20.0	PASS
2504.409938	-47.7	-20.0	PASS
2505.409938	-47.6	-20.0	PASS
2506.409938	-47.6	-20.0	PASS
2507.409938	-47.6	-20.0	PASS
2508.409938	-47.6	-20.0	PASS
2509.409938	-47.6	-20.0	PASS
2510.409938	-47.6	-20.0	PASS
2511.409938	-47.6	-20.0	PASS
2511.819876	-47.6	-20.0	PASS

Out of band low



Level Limit

Out of band high



Level Limit

Tx unwanted emissions in the out-of-band domain (2472 MHz; 20.000 dBm; 802.11b_20 MHz)

Summary

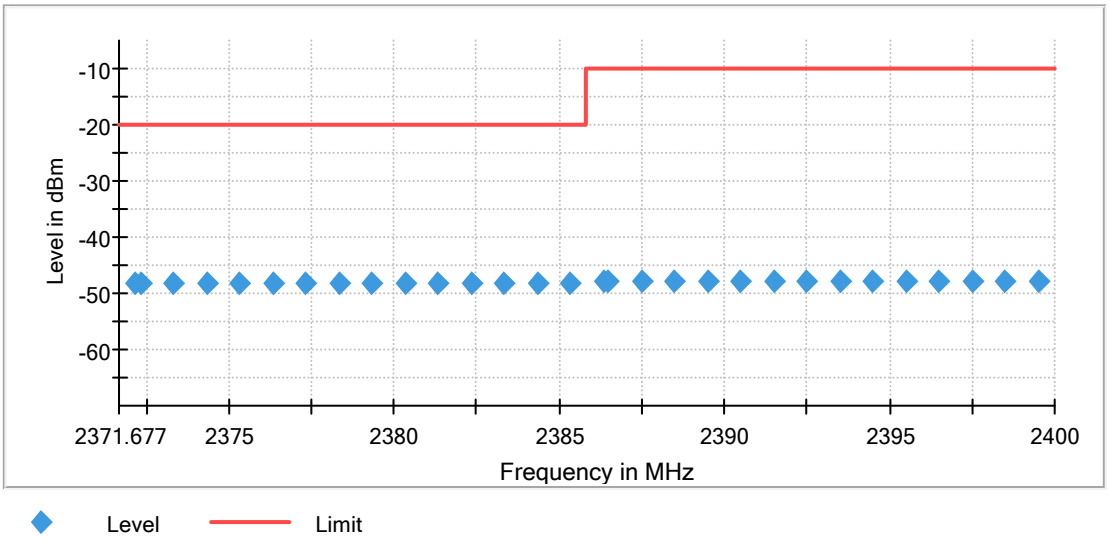
DUT Frequency (MHz)	FAIL	PASS	Result
2472.000000	0	60	PASS

Measurements

Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2372.177018	-48.3	-20.0	PASS
2372.338509	-48.3	-20.0	PASS
2373.338509	-48.2	-20.0	PASS
2374.338509	-48.3	-20.0	PASS
2375.338509	-48.3	-20.0	PASS
2376.338509	-48.2	-20.0	PASS
2377.338509	-48.2	-20.0	PASS
2378.338509	-48.2	-20.0	PASS
2379.338509	-48.2	-20.0	PASS
2380.338509	-48.2	-20.0	PASS
2381.338509	-48.1	-20.0	PASS
2382.338509	-48.1	-20.0	PASS
2383.338509	-48.2	-20.0	PASS
2384.338509	-48.1	-20.0	PASS
2385.338509	-48.1	-20.0	PASS
2386.338509	-47.9	-10.0	PASS
2386.500000	-48.0	-10.0	PASS
2387.500000	-48.0	-10.0	PASS
2388.500000	-48.0	-10.0	PASS
2389.500000	-47.9	-10.0	PASS
2390.500000	-47.9	-10.0	PASS
2391.500000	-48.0	-10.0	PASS
2392.500000	-48.0	-10.0	PASS
2393.500000	-47.9	-10.0	PASS
2394.500000	-47.9	-10.0	PASS
2395.500000	-47.9	-10.0	PASS
2396.500000	-47.9	-10.0	PASS
2397.500000	-48.0	-10.0	PASS
2398.500000	-47.8	-10.0	PASS
2399.500000	-47.8	-10.0	PASS
2484.000000	-44.9	-10.0	PASS
2485.000000	-44.0	-10.0	PASS
2486.000000	-44.2	-10.0	PASS
2487.000000	-41.9	-10.0	PASS
2488.000000	-44.4	-10.0	PASS
2489.000000	-45.7	-10.0	PASS
2490.000000	-47.0	-10.0	PASS
2491.000000	-46.8	-10.0	PASS
2492.000000	-47.5	-10.0	PASS
2493.000000	-47.4	-10.0	PASS
2494.000000	-47.5	-10.0	PASS
2495.000000	-47.6	-10.0	PASS
2496.000000	-47.6	-10.0	PASS
2497.000000	-47.5	-10.0	PASS
2497.161491	-47.5	-10.0	PASS
2498.161491	-47.6	-20.0	PASS
2499.161491	-47.5	-20.0	PASS
2500.161491	-47.5	-20.0	PASS
2501.161491	-47.5	-20.0	PASS
2502.161491	-47.6	-20.0	PASS
2503.161491	-47.5	-20.0	PASS
2504.161491	-47.5	-20.0	PASS
2505.161491	-47.6	-20.0	PASS
2506.161491	-47.6	-20.0	PASS

2507.161491	-47.6	-20.0	PASS
2508.161491	-47.6	-20.0	PASS
2509.161491	-47.6	-20.0	PASS
2510.161491	-47.6	-20.0	PASS
2511.161491	-47.5	-20.0	PASS
2511.322982	-47.5	-20.0	PASS

Out of band low



802.11g – Ant0

Tx unwanted emissions in the out-of-band domain (2412 MHz; 20.000 dBm; 802.11g_20 MHz)

Summary

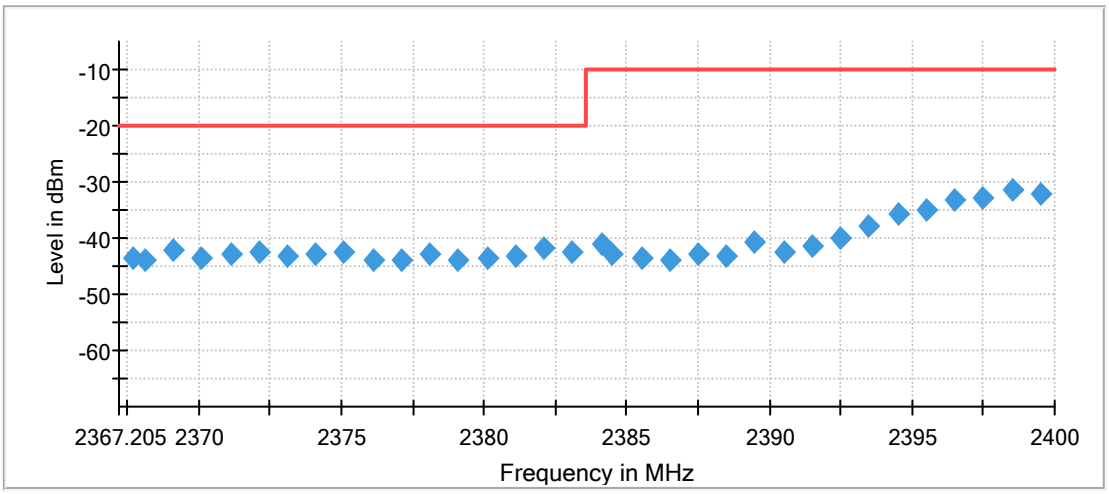
DUT Frequency (MHz)	FAIL	PASS	Result
2412.000000	0	68	PASS

Measurements

Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2367.704968	-43.7	-20.0	PASS
2368.102484	-43.8	-20.0	PASS
2369.102484	-42.2	-20.0	PASS
2370.102484	-43.7	-20.0	PASS
2371.102484	-42.9	-20.0	PASS
2372.102484	-42.5	-20.0	PASS
2373.102484	-43.2	-20.0	PASS
2374.102484	-42.8	-20.0	PASS
2375.102484	-42.5	-20.0	PASS
2376.102484	-43.9	-20.0	PASS
2377.102484	-43.8	-20.0	PASS
2378.102484	-42.7	-20.0	PASS
2379.102484	-43.8	-20.0	PASS
2380.102484	-43.7	-20.0	PASS
2381.102484	-43.3	-20.0	PASS
2382.102484	-41.9	-20.0	PASS
2383.102484	-42.5	-20.0	PASS
2384.102484	-41.0	-10.0	PASS

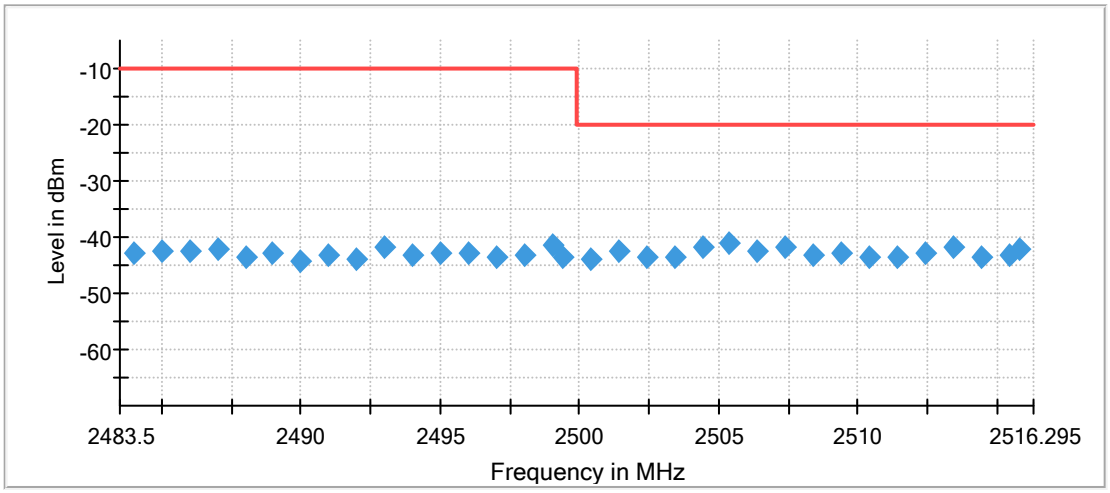
2384.500000	-42.8	-10.0	PASS
2385.500000	-43.5	-10.0	PASS
2386.500000	-43.9	-10.0	PASS
2387.500000	-42.9	-10.0	PASS
2388.500000	-43.1	-10.0	PASS
2389.500000	-40.9	-10.0	PASS
2390.500000	-42.6	-10.0	PASS
2391.500000	-41.3	-10.0	PASS
2392.500000	-39.9	-10.0	PASS
2393.500000	-38.0	-10.0	PASS
2394.500000	-35.8	-10.0	PASS
2395.500000	-35.1	-10.0	PASS
2396.500000	-33.3	-10.0	PASS
2397.500000	-32.8	-10.0	PASS
2398.500000	-31.4	-10.0	PASS
2399.500000	-32.1	-10.0	PASS
2484.000000	-42.9	-10.0	PASS
2485.000000	-42.6	-10.0	PASS
2486.000000	-42.4	-10.0	PASS
2487.000000	-42.3	-10.0	PASS
2488.000000	-43.7	-10.0	PASS
2489.000000	-42.7	-10.0	PASS
2490.000000	-44.2	-10.0	PASS
2491.000000	-43.2	-10.0	PASS
2492.000000	-43.9	-10.0	PASS
2493.000000	-41.9	-10.0	PASS
2494.000000	-43.3	-10.0	PASS
2495.000000	-42.9	-10.0	PASS
2496.000000	-42.7	-10.0	PASS
2497.000000	-43.7	-10.0	PASS
2498.000000	-43.1	-10.0	PASS
2499.000000	-41.4	-10.0	PASS
2499.397516	-43.7	-10.0	PASS
2500.397516	-43.9	-20.0	PASS
2501.397516	-42.4	-20.0	PASS
2502.397516	-43.7	-20.0	PASS
2503.397516	-43.4	-20.0	PASS
2504.397516	-41.9	-20.0	PASS
2505.397516	-41.0	-20.0	PASS
2506.397516	-42.6	-20.0	PASS
2507.397516	-41.8	-20.0	PASS
2508.397516	-43.2	-20.0	PASS
2509.397516	-43.0	-20.0	PASS
2510.397516	-43.5	-20.0	PASS
2511.397516	-43.4	-20.0	PASS
2512.397516	-43.0	-20.0	PASS
2513.397516	-41.7	-20.0	PASS
2514.397516	-43.6	-20.0	PASS
2515.397516	-43.1	-20.0	PASS
2515.795032	-42.3	-20.0	PASS

Out of band low



Level Limit

Out of band high



Level Limit

Tx unwanted emissions in the out-of-band domain (2472 MHz; 20.000 dBm; 802.11g_20 MHz)

Summary

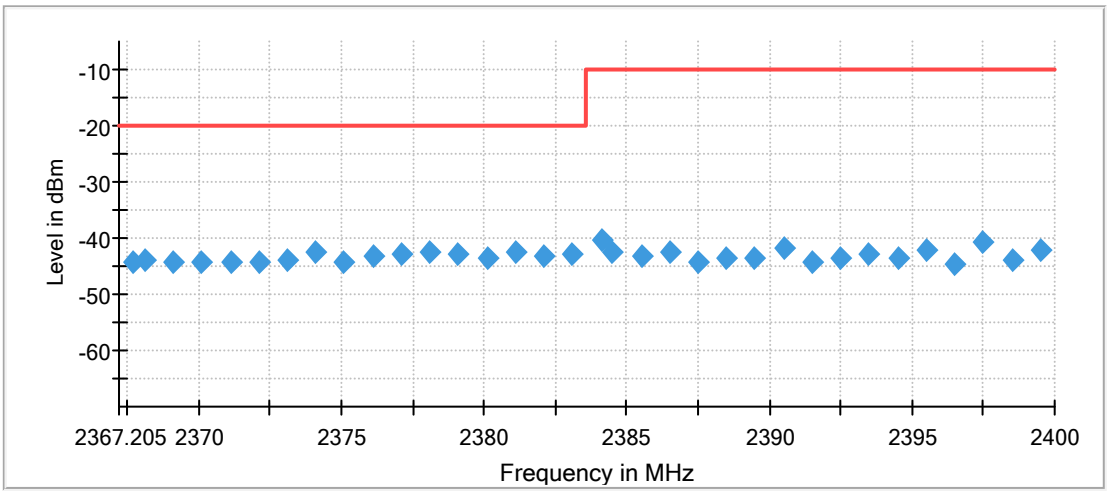
DUT Frequency (MHz)	FAIL	PASS	Result
2472.000000	0	68	PASS

Measurements

Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2367.704968	-44.2	-20.0	PASS
2368.102484	-44.0	-20.0	PASS
2369.102484	-44.3	-20.0	PASS
2370.102484	-44.2	-20.0	PASS
2371.102484	-44.4	-20.0	PASS
2372.102484	-44.3	-20.0	PASS

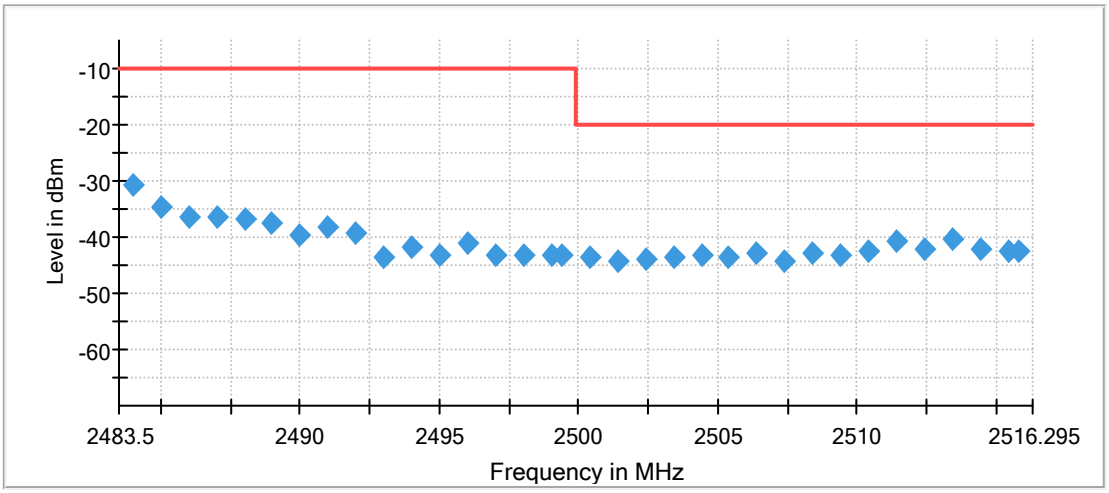
2373.102484	-44.1	-20.0	PASS
2374.102484	-42.4	-20.0	PASS
2375.102484	-44.1	-20.0	PASS
2376.102484	-43.4	-20.0	PASS
2377.102484	-42.7	-20.0	PASS
2378.102484	-42.6	-20.0	PASS
2379.102484	-42.7	-20.0	PASS
2380.102484	-43.6	-20.0	PASS
2381.102484	-42.3	-20.0	PASS
2382.102484	-43.0	-20.0	PASS
2383.102484	-43.0	-20.0	PASS
2384.102484	-40.3	-10.0	PASS
2384.500000	-42.6	-10.0	PASS
2385.500000	-43.3	-10.0	PASS
2386.500000	-42.5	-10.0	PASS
2387.500000	-44.3	-10.0	PASS
2388.500000	-43.6	-10.0	PASS
2389.500000	-43.4	-10.0	PASS
2390.500000	-41.7	-10.0	PASS
2391.500000	-44.1	-10.0	PASS
2392.500000	-43.5	-10.0	PASS
2393.500000	-43.0	-10.0	PASS
2394.500000	-43.6	-10.0	PASS
2395.500000	-42.3	-10.0	PASS
2396.500000	-44.7	-10.0	PASS
2397.500000	-40.6	-10.0	PASS
2398.500000	-43.9	-10.0	PASS
2399.500000	-42.2	-10.0	PASS
2484.000000	-30.7	-10.0	PASS
2485.000000	-34.8	-10.0	PASS
2486.000000	-36.3	-10.0	PASS
2487.000000	-36.3	-10.0	PASS
2488.000000	-36.9	-10.0	PASS
2489.000000	-37.6	-10.0	PASS
2490.000000	-39.8	-10.0	PASS
2491.000000	-38.3	-10.0	PASS
2492.000000	-39.1	-10.0	PASS
2493.000000	-43.6	-10.0	PASS
2494.000000	-41.7	-10.0	PASS
2495.000000	-43.2	-10.0	PASS
2496.000000	-41.1	-10.0	PASS
2497.000000	-43.4	-10.0	PASS
2498.000000	-43.1	-10.0	PASS
2499.000000	-43.1	-10.0	PASS
2499.397516	-43.3	-10.0	PASS
2500.397516	-43.4	-20.0	PASS
2501.397516	-44.2	-20.0	PASS
2502.397516	-43.8	-20.0	PASS
2503.397516	-43.5	-20.0	PASS
2504.397516	-43.2	-20.0	PASS
2505.397516	-43.5	-20.0	PASS
2506.397516	-42.9	-20.0	PASS
2507.397516	-44.2	-20.0	PASS
2508.397516	-42.7	-20.0	PASS
2509.397516	-43.4	-20.0	PASS
2510.397516	-42.5	-20.0	PASS
2511.397516	-40.8	-20.0	PASS
2512.397516	-42.2	-20.0	PASS
2513.397516	-40.3	-20.0	PASS
2514.397516	-42.3	-20.0	PASS
2515.397516	-42.4	-20.0	PASS
2515.795032	-42.4	-20.0	PASS

Out of band low



Level Limit

Out of band high



Level Limit

802.11n-20MHz – Ant0

Tx unwanted emissions in the out-of-band domain (2412 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

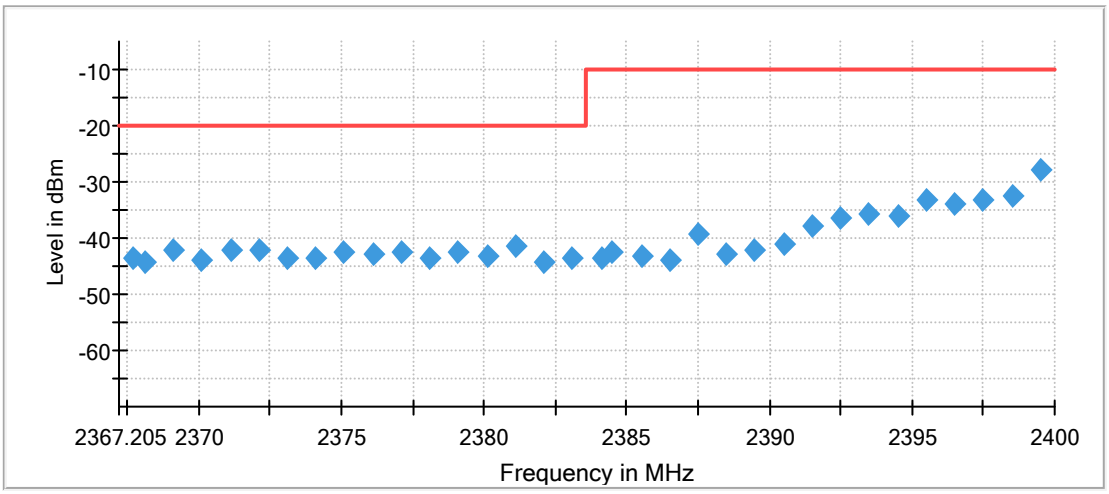
DUT Frequency (MHz)	FAIL	PASS	Result
2412.000000	0	68	PASS

Measurements

Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2367.704968	-43.5	-20.0	PASS
2368.102484	-44.1	-20.0	PASS
2369.102484	-42.0	-20.0	PASS
2370.102484	-43.8	-20.0	PASS

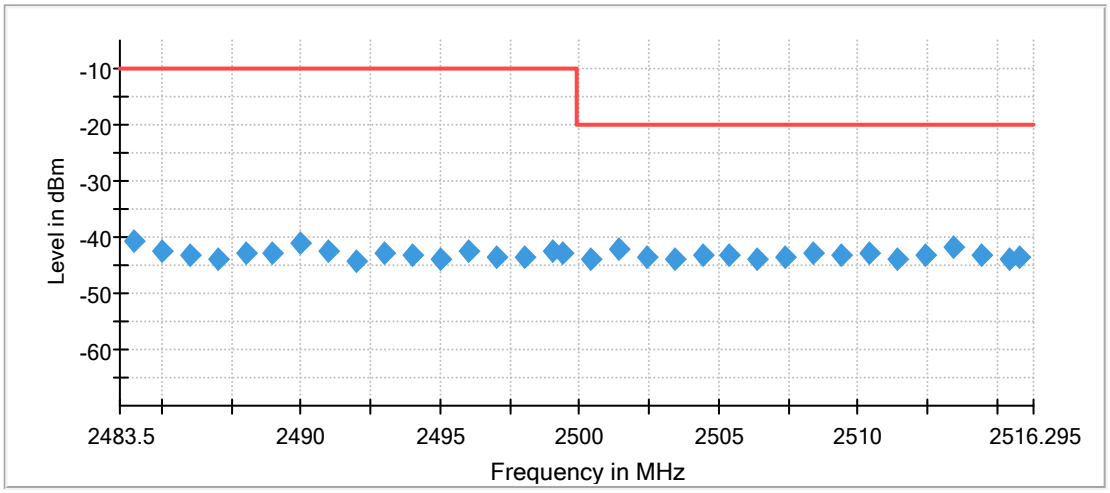
2371.102484	-42.3	-20.0	PASS
2372.102484	-42.3	-20.0	PASS
2373.102484	-43.4	-20.0	PASS
2374.102484	-43.6	-20.0	PASS
2375.102484	-42.3	-20.0	PASS
2376.102484	-42.8	-20.0	PASS
2377.102484	-42.5	-20.0	PASS
2378.102484	-43.7	-20.0	PASS
2379.102484	-42.5	-20.0	PASS
2380.102484	-43.2	-20.0	PASS
2381.102484	-41.4	-20.0	PASS
2382.102484	-44.2	-20.0	PASS
2383.102484	-43.6	-20.0	PASS
2384.102484	-43.5	-10.0	PASS
2384.500000	-42.6	-10.0	PASS
2385.500000	-43.3	-10.0	PASS
2386.500000	-43.8	-10.0	PASS
2387.500000	-39.4	-10.0	PASS
2388.500000	-42.8	-10.0	PASS
2389.500000	-42.0	-10.0	PASS
2390.500000	-40.9	-10.0	PASS
2391.500000	-38.0	-10.0	PASS
2392.500000	-36.6	-10.0	PASS
2393.500000	-35.6	-10.0	PASS
2394.500000	-36.2	-10.0	PASS
2395.500000	-33.2	-10.0	PASS
2396.500000	-34.0	-10.0	PASS
2397.500000	-33.1	-10.0	PASS
2398.500000	-32.3	-10.0	PASS
2399.500000	-28.0	-10.0	PASS
2484.000000	-40.6	-10.0	PASS
2485.000000	-42.5	-10.0	PASS
2486.000000	-43.2	-10.0	PASS
2487.000000	-43.8	-10.0	PASS
2488.000000	-42.7	-10.0	PASS
2489.000000	-42.8	-10.0	PASS
2490.000000	-41.0	-10.0	PASS
2491.000000	-42.7	-10.0	PASS
2492.000000	-44.1	-10.0	PASS
2493.000000	-42.9	-10.0	PASS
2494.000000	-43.1	-10.0	PASS
2495.000000	-43.8	-10.0	PASS
2496.000000	-42.5	-10.0	PASS
2497.000000	-43.5	-10.0	PASS
2498.000000	-43.6	-10.0	PASS
2499.000000	-42.4	-10.0	PASS
2499.397516	-42.7	-10.0	PASS
2500.397516	-43.9	-20.0	PASS
2501.397516	-42.3	-20.0	PASS
2502.397516	-43.7	-20.0	PASS
2503.397516	-43.8	-20.0	PASS
2504.397516	-43.1	-20.0	PASS
2505.397516	-43.3	-20.0	PASS
2506.397516	-43.8	-20.0	PASS
2507.397516	-43.7	-20.0	PASS
2508.397516	-43.0	-20.0	PASS
2509.397516	-43.1	-20.0	PASS
2510.397516	-42.8	-20.0	PASS
2511.397516	-44.1	-20.0	PASS
2512.397516	-43.3	-20.0	PASS
2513.397516	-41.9	-20.0	PASS
2514.397516	-43.1	-20.0	PASS
2515.397516	-43.8	-20.0	PASS
2515.795032	-43.7	-20.0	PASS

Out of band low



Level Limit

Out of band high



Level Limit

Tx unwanted emissions in the out-of-band domain (2472 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

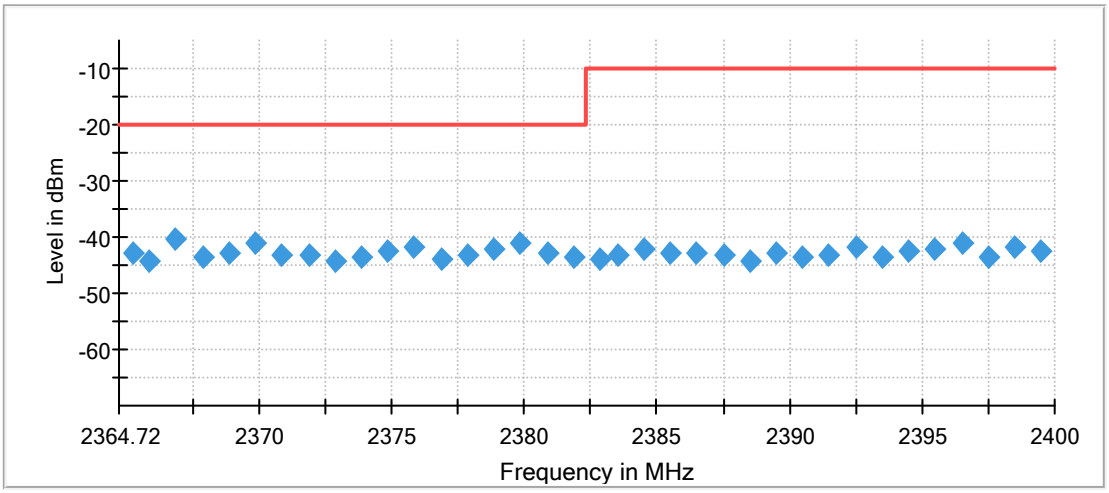
DUT Frequency (MHz)	FAIL	PASS	Result
2472.000000	0	72	PASS

Measurements

Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2365.220498	-42.8	-20.0	PASS
2365.860249	-44.2	-20.0	PASS
2366.860249	-40.3	-20.0	PASS
2367.860249	-43.4	-20.0	PASS
2368.860249	-42.8	-20.0	PASS
2369.860249	-41.1	-20.0	PASS

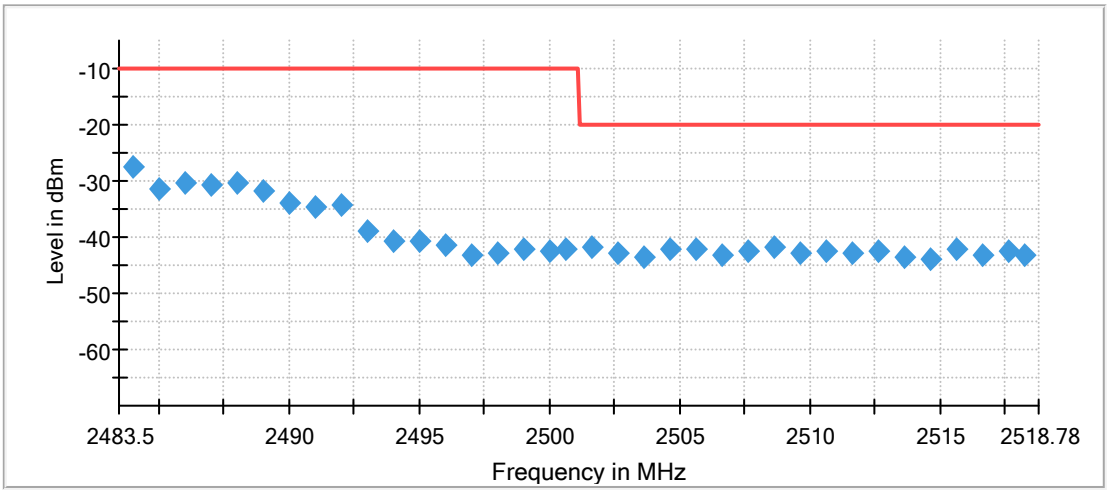
2370.860249	-43.2	-20.0	PASS
2371.860249	-43.2	-20.0	PASS
2372.860249	-44.2	-20.0	PASS
2373.860249	-43.4	-20.0	PASS
2374.860249	-42.6	-20.0	PASS
2375.860249	-41.7	-20.0	PASS
2376.860249	-43.9	-20.0	PASS
2377.860249	-43.1	-20.0	PASS
2378.860249	-42.3	-20.0	PASS
2379.860249	-41.1	-20.0	PASS
2380.860249	-43.0	-20.0	PASS
2381.860249	-43.6	-20.0	PASS
2382.860249	-43.8	-10.0	PASS
2383.500000	-43.3	-10.0	PASS
2384.500000	-42.1	-10.0	PASS
2385.500000	-42.9	-10.0	PASS
2386.500000	-42.9	-10.0	PASS
2387.500000	-43.3	-10.0	PASS
2388.500000	-44.2	-10.0	PASS
2389.500000	-42.9	-10.0	PASS
2390.500000	-43.6	-10.0	PASS
2391.500000	-43.3	-10.0	PASS
2392.500000	-41.7	-10.0	PASS
2393.500000	-43.6	-10.0	PASS
2394.500000	-42.6	-10.0	PASS
2395.500000	-42.3	-10.0	PASS
2396.500000	-41.0	-10.0	PASS
2397.500000	-43.6	-10.0	PASS
2398.500000	-41.9	-10.0	PASS
2399.500000	-42.5	-10.0	PASS
2484.000000	-27.3	-10.0	PASS
2485.000000	-31.4	-10.0	PASS
2486.000000	-30.4	-10.0	PASS
2487.000000	-30.5	-10.0	PASS
2488.000000	-30.4	-10.0	PASS
2489.000000	-31.7	-10.0	PASS
2490.000000	-33.8	-10.0	PASS
2491.000000	-34.8	-10.0	PASS
2492.000000	-34.4	-10.0	PASS
2493.000000	-38.9	-10.0	PASS
2494.000000	-40.9	-10.0	PASS
2495.000000	-40.6	-10.0	PASS
2496.000000	-41.5	-10.0	PASS
2497.000000	-43.2	-10.0	PASS
2498.000000	-42.8	-10.0	PASS
2499.000000	-42.2	-10.0	PASS
2500.000000	-42.4	-10.0	PASS
2500.639751	-42.2	-10.0	PASS
2501.639751	-41.6	-20.0	PASS
2502.639751	-43.0	-20.0	PASS
2503.639751	-43.4	-20.0	PASS
2504.639751	-42.1	-20.0	PASS
2505.639751	-42.3	-20.0	PASS
2506.639751	-43.4	-20.0	PASS
2507.639751	-42.4	-20.0	PASS
2508.639751	-41.8	-20.0	PASS
2509.639751	-42.8	-20.0	PASS
2510.639751	-42.6	-20.0	PASS
2511.639751	-42.9	-20.0	PASS
2512.639751	-42.4	-20.0	PASS
2513.639751	-43.5	-20.0	PASS
2514.639751	-44.0	-20.0	PASS
2515.639751	-42.2	-20.0	PASS
2516.639751	-43.1	-20.0	PASS
2517.639751	-42.6	-20.0	PASS
2518.279502	-43.4	-20.0	PASS

Out of band low



Level Limit

Out of band high



Level Limit

802.11n-40MHz – Ant0

Tx unwanted emissions in the out-of-band domain (2422 MHz; 20.000 dBm; 802.11n_40 MHz_HT40)

Summary

DUT Frequency (MHz)	FAIL	PASS	Result
2422.000000	0	144	PASS

Measurements

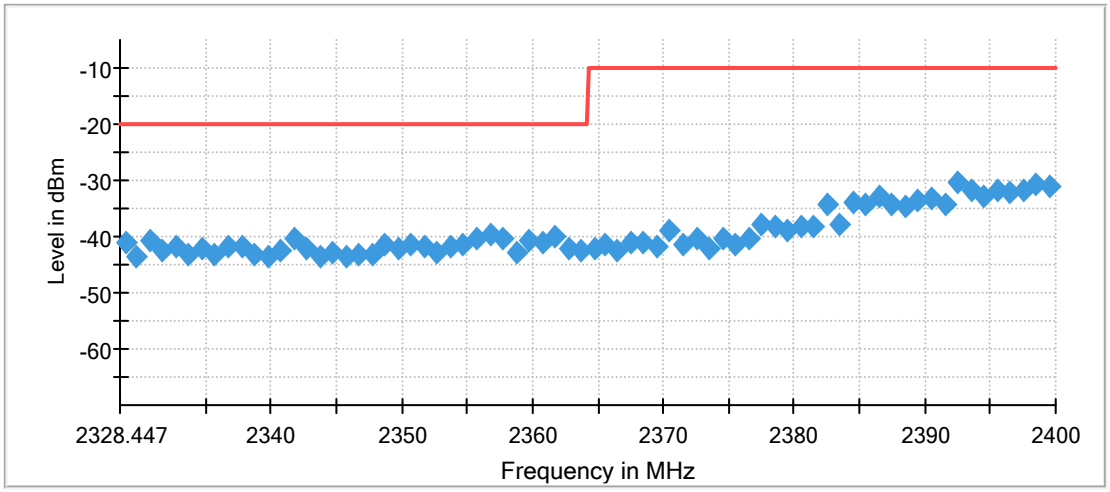
Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2328.947204	-41.0	-20.0	PASS
2329.723602	-43.7	-20.0	PASS
2330.723602	-40.6	-20.0	PASS
2331.723602	-42.4	-20.0	PASS

2332.723602	-41.7	-20.0	PASS
2333.723602	-43.2	-20.0	PASS
2334.723602	-42.1	-20.0	PASS
2335.723602	-43.1	-20.0	PASS
2336.723602	-41.7	-20.0	PASS
2337.723602	-41.7	-20.0	PASS
2338.723602	-43.3	-20.0	PASS
2339.723602	-43.6	-20.0	PASS
2340.723602	-42.5	-20.0	PASS
2341.723602	-40.5	-20.0	PASS
2342.723602	-42.3	-20.0	PASS
2343.723602	-43.7	-20.0	PASS
2344.723602	-42.8	-20.0	PASS
2345.723602	-43.4	-20.0	PASS
2346.723602	-43.2	-20.0	PASS
2347.723602	-43.3	-20.0	PASS
2348.723602	-41.5	-20.0	PASS
2349.723602	-42.3	-20.0	PASS
2350.723602	-41.5	-20.0	PASS
2351.723602	-41.8	-20.0	PASS
2352.723602	-42.9	-20.0	PASS
2353.723602	-41.8	-20.0	PASS
2354.723602	-41.5	-20.0	PASS
2355.723602	-40.4	-20.0	PASS
2356.723602	-39.5	-20.0	PASS
2357.723602	-40.3	-20.0	PASS
2358.723602	-42.8	-20.0	PASS
2359.723602	-40.9	-20.0	PASS
2360.723602	-40.9	-20.0	PASS
2361.723602	-40.0	-20.0	PASS
2362.723602	-42.3	-20.0	PASS
2363.723602	-42.6	-20.0	PASS
2364.723602	-42.2	-10.0	PASS
2365.500000	-41.6	-10.0	PASS
2366.500000	-42.5	-10.0	PASS
2367.500000	-41.2	-10.0	PASS
2368.500000	-41.2	-10.0	PASS
2369.500000	-41.9	-10.0	PASS
2370.500000	-39.1	-10.0	PASS
2371.500000	-41.3	-10.0	PASS
2372.500000	-40.3	-10.0	PASS
2373.500000	-42.3	-10.0	PASS
2374.500000	-40.4	-10.0	PASS
2375.500000	-41.5	-10.0	PASS
2376.500000	-40.3	-10.0	PASS
2377.500000	-37.7	-10.0	PASS
2378.500000	-38.0	-10.0	PASS
2379.500000	-38.9	-10.0	PASS
2380.500000	-38.1	-10.0	PASS
2381.500000	-38.3	-10.0	PASS
2382.500000	-34.2	-10.0	PASS
2383.500000	-37.9	-10.0	PASS
2384.500000	-33.9	-10.0	PASS
2385.500000	-34.1	-10.0	PASS
2386.500000	-33.0	-10.0	PASS
2387.500000	-34.2	-10.0	PASS
2388.500000	-34.8	-10.0	PASS
2389.500000	-33.5	-10.0	PASS
2390.500000	-33.2	-10.0	PASS
2391.500000	-34.3	-10.0	PASS
2392.500000	-30.3	-10.0	PASS
2393.500000	-31.8	-10.0	PASS
2394.500000	-32.9	-10.0	PASS
2395.500000	-31.6	-10.0	PASS
2396.500000	-32.1	-10.0	PASS
2397.500000	-31.7	-10.0	PASS
2398.500000	-30.8	-10.0	PASS
2399.500000	-31.1	-10.0	PASS
2484.000000	-40.3	-10.0	PASS

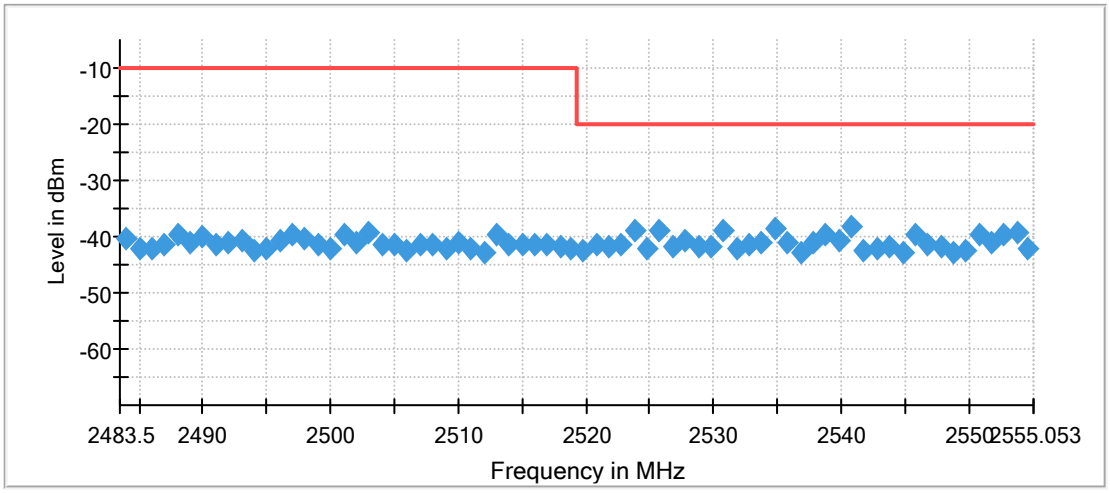
2485.000000	-42.1	-10.0	PASS
2486.000000	-42.2	-10.0	PASS
2487.000000	-41.3	-10.0	PASS
2488.000000	-39.5	-10.0	PASS
2489.000000	-40.9	-10.0	PASS
2490.000000	-40.1	-10.0	PASS
2491.000000	-41.5	-10.0	PASS
2492.000000	-41.2	-10.0	PASS
2493.000000	-40.7	-10.0	PASS
2494.000000	-42.7	-10.0	PASS
2495.000000	-42.1	-10.0	PASS
2496.000000	-40.7	-10.0	PASS
2497.000000	-39.5	-10.0	PASS
2498.000000	-40.4	-10.0	PASS
2499.000000	-41.4	-10.0	PASS
2500.000000	-42.3	-10.0	PASS
2501.000000	-39.5	-10.0	PASS
2502.000000	-41.0	-10.0	PASS
2503.000000	-39.1	-10.0	PASS
2504.000000	-41.3	-10.0	PASS
2505.000000	-41.3	-10.0	PASS
2506.000000	-42.6	-10.0	PASS
2507.000000	-41.3	-10.0	PASS
2508.000000	-41.6	-10.0	PASS
2509.000000	-42.0	-10.0	PASS
2510.000000	-41.2	-10.0	PASS
2511.000000	-42.0	-10.0	PASS
2512.000000	-42.7	-10.0	PASS
2513.000000	-39.6	-10.0	PASS
2514.000000	-41.6	-10.0	PASS
2515.000000	-41.5	-10.0	PASS
2516.000000	-41.4	-10.0	PASS
2517.000000	-41.5	-10.0	PASS
2518.000000	-41.7	-10.0	PASS
2518.776398	-42.2	-10.0	PASS
2519.776398	-42.4	-20.0	PASS
2520.776398	-41.5	-20.0	PASS
2521.776398	-41.7	-20.0	PASS
2522.776398	-41.5	-20.0	PASS
2523.776398	-39.1	-20.0	PASS
2524.776398	-42.1	-20.0	PASS
2525.776398	-39.0	-20.0	PASS
2526.776398	-41.8	-20.0	PASS
2527.776398	-40.8	-20.0	PASS
2528.776398	-41.6	-20.0	PASS
2529.776398	-41.7	-20.0	PASS
2530.776398	-38.9	-20.0	PASS
2531.776398	-42.0	-20.0	PASS
2532.776398	-41.6	-20.0	PASS
2533.776398	-41.2	-20.0	PASS
2534.776398	-38.7	-20.0	PASS
2535.776398	-41.0	-20.0	PASS
2536.776398	-42.9	-20.0	PASS
2537.776398	-41.0	-20.0	PASS
2538.776398	-39.7	-20.0	PASS
2539.776398	-40.6	-20.0	PASS
2540.776398	-38.3	-20.0	PASS
2541.776398	-42.3	-20.0	PASS
2542.776398	-42.3	-20.0	PASS
2543.776398	-41.6	-20.0	PASS
2544.776398	-42.7	-20.0	PASS
2545.776398	-39.6	-20.0	PASS
2546.776398	-41.4	-20.0	PASS
2547.776398	-41.8	-20.0	PASS
2548.776398	-42.8	-20.0	PASS
2549.776398	-42.3	-20.0	PASS
2550.776398	-39.6	-20.0	PASS
2551.776398	-40.9	-20.0	PASS
2552.776398	-39.5	-20.0	PASS

2553.776398	-39.2	-20.0	PASS
2554.552796	-42.2	-20.0	PASS

Out of band low



Out of band high



Tx unwanted emissions in the out-of-band domain (2462 MHz; 20.000 dBm; 802.11n_40 MHz_HT40)

Summary

DUT Frequency (MHz)	FAIL	PASS	Result
2462.000000	0	144	PASS

Measurements

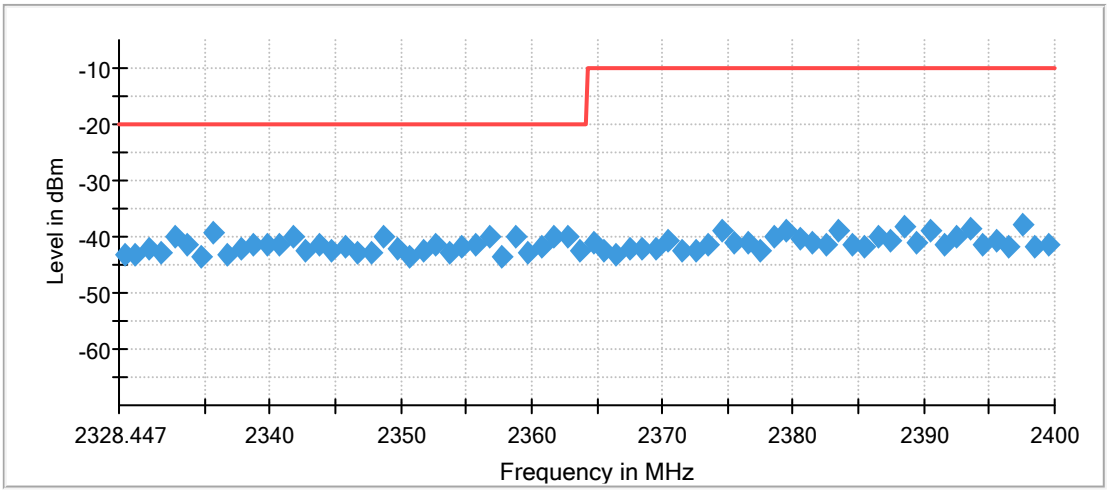
Frequency (MHz)	level (dBm)	Limit (dBm)	Result
2328.947204	-43.2	-20.0	PASS
2329.723602	-43.1	-20.0	PASS
2330.723602	-42.2	-20.0	PASS

2331.723602	-42.8	-20.0	PASS
2332.723602	-40.1	-20.0	PASS
2333.723602	-41.3	-20.0	PASS
2334.723602	-43.5	-20.0	PASS
2335.723602	-39.5	-20.0	PASS
2336.723602	-43.1	-20.0	PASS
2337.723602	-42.0	-20.0	PASS
2338.723602	-41.5	-20.0	PASS
2339.723602	-41.4	-20.0	PASS
2340.723602	-41.3	-20.0	PASS
2341.723602	-40.1	-20.0	PASS
2342.723602	-42.5	-20.0	PASS
2343.723602	-41.3	-20.0	PASS
2344.723602	-42.4	-20.0	PASS
2345.723602	-41.9	-20.0	PASS
2346.723602	-42.9	-20.0	PASS
2347.723602	-43.0	-20.0	PASS
2348.723602	-40.0	-20.0	PASS
2349.723602	-42.2	-20.0	PASS
2350.723602	-43.7	-20.0	PASS
2351.723602	-42.5	-20.0	PASS
2352.723602	-41.6	-20.0	PASS
2353.723602	-42.8	-20.0	PASS
2354.723602	-41.9	-20.0	PASS
2355.723602	-41.4	-20.0	PASS
2356.723602	-40.0	-20.0	PASS
2357.723602	-43.4	-20.0	PASS
2358.723602	-40.0	-20.0	PASS
2359.723602	-42.9	-20.0	PASS
2360.723602	-41.8	-20.0	PASS
2361.723602	-40.1	-20.0	PASS
2362.723602	-40.1	-20.0	PASS
2363.723602	-42.6	-20.0	PASS
2364.723602	-41.1	-10.0	PASS
2365.500000	-42.5	-10.0	PASS
2366.500000	-43.1	-10.0	PASS
2367.500000	-42.1	-10.0	PASS
2368.500000	-42.1	-10.0	PASS
2369.500000	-42.0	-10.0	PASS
2370.500000	-40.7	-10.0	PASS
2371.500000	-42.5	-10.0	PASS
2372.500000	-42.6	-10.0	PASS
2373.500000	-41.4	-10.0	PASS
2374.500000	-38.9	-10.0	PASS
2375.500000	-41.1	-10.0	PASS
2376.500000	-41.1	-10.0	PASS
2377.500000	-42.5	-10.0	PASS
2378.500000	-40.0	-10.0	PASS
2379.500000	-38.8	-10.0	PASS
2380.500000	-40.3	-10.0	PASS
2381.500000	-41.1	-10.0	PASS
2382.500000	-41.5	-10.0	PASS
2383.500000	-39.0	-10.0	PASS
2384.500000	-41.4	-10.0	PASS
2385.500000	-41.8	-10.0	PASS
2386.500000	-39.9	-10.0	PASS
2387.500000	-40.6	-10.0	PASS
2388.500000	-38.3	-10.0	PASS
2389.500000	-41.2	-10.0	PASS
2390.500000	-39.1	-10.0	PASS
2391.500000	-41.6	-10.0	PASS
2392.500000	-39.9	-10.0	PASS
2393.500000	-38.7	-10.0	PASS
2394.500000	-41.5	-10.0	PASS
2395.500000	-40.7	-10.0	PASS
2396.500000	-41.7	-10.0	PASS
2397.500000	-38.0	-10.0	PASS
2398.500000	-41.8	-10.0	PASS
2399.500000	-41.3	-10.0	PASS

2484.000000	-31.7	-10.0	PASS
2485.000000	-33.2	-10.0	PASS
2486.000000	-31.5	-10.0	PASS
2487.000000	-34.5	-10.0	PASS
2488.000000	-33.0	-10.0	PASS
2489.000000	-35.2	-10.0	PASS
2490.000000	-34.3	-10.0	PASS
2491.000000	-33.5	-10.0	PASS
2492.000000	-35.7	-10.0	PASS
2493.000000	-34.4	-10.0	PASS
2494.000000	-34.5	-10.0	PASS
2495.000000	-35.9	-10.0	PASS
2496.000000	-37.7	-10.0	PASS
2497.000000	-37.7	-10.0	PASS
2498.000000	-38.3	-10.0	PASS
2499.000000	-39.9	-10.0	PASS
2500.000000	-40.1	-10.0	PASS
2501.000000	-40.8	-10.0	PASS
2502.000000	-40.8	-10.0	PASS
2503.000000	-39.8	-10.0	PASS
2504.000000	-39.3	-10.0	PASS
2505.000000	-36.7	-10.0	PASS
2506.000000	-42.1	-10.0	PASS
2507.000000	-40.5	-10.0	PASS
2508.000000	-41.5	-10.0	PASS
2509.000000	-40.4	-10.0	PASS
2510.000000	-41.3	-10.0	PASS
2511.000000	-41.3	-10.0	PASS
2512.000000	-38.8	-10.0	PASS
2513.000000	-42.4	-10.0	PASS
2514.000000	-38.8	-10.0	PASS
2515.000000	-40.5	-10.0	PASS
2516.000000	-39.6	-10.0	PASS
2517.000000	-42.4	-10.0	PASS
2518.000000	-41.5	-10.0	PASS
2518.776398	-42.3	-10.0	PASS
2519.776398	-39.0	-20.0	PASS
2520.776398	-41.0	-20.0	PASS
2521.776398	-40.9	-20.0	PASS
2522.776398	-41.8	-20.0	PASS
2523.776398	-40.3	-20.0	PASS
2524.776398	-42.1	-20.0	PASS
2525.776398	-40.3	-20.0	PASS
2526.776398	-42.1	-20.0	PASS
2527.776398	-42.4	-20.0	PASS
2528.776398	-41.7	-20.0	PASS
2529.776398	-42.4	-20.0	PASS
2530.776398	-41.8	-20.0	PASS
2531.776398	-38.2	-20.0	PASS
2532.776398	-41.7	-20.0	PASS
2533.776398	-41.2	-20.0	PASS
2534.776398	-42.7	-20.0	PASS
2535.776398	-42.4	-20.0	PASS
2536.776398	-40.1	-20.0	PASS
2537.776398	-41.4	-20.0	PASS
2538.776398	-41.6	-20.0	PASS
2539.776398	-41.0	-20.0	PASS
2540.776398	-40.2	-20.0	PASS
2541.776398	-40.9	-20.0	PASS
2542.776398	-40.5	-20.0	PASS
2543.776398	-41.8	-20.0	PASS
2544.776398	-42.1	-20.0	PASS
2545.776398	-41.7	-20.0	PASS
2546.776398	-41.1	-20.0	PASS
2547.776398	-41.8	-20.0	PASS
2548.776398	-41.3	-20.0	PASS
2549.776398	-42.7	-20.0	PASS
2550.776398	-41.6	-20.0	PASS
2551.776398	-41.3	-20.0	PASS

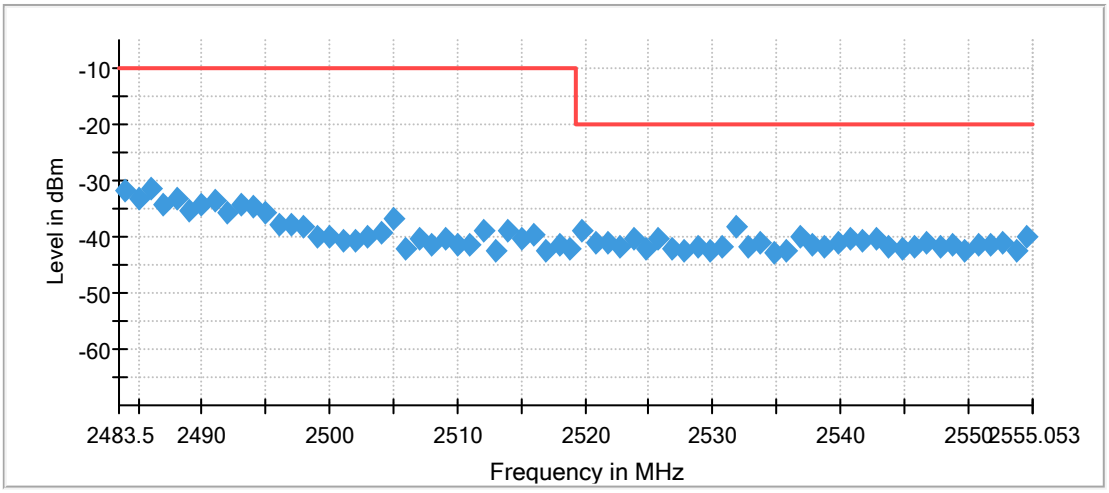
2552.776398	**-41.1**	**-20.0**	**PASS**
2553.776398	**-42.4**	**-20.0**	**PASS**
2554.552796	**-40.1**	**-20.0**	**PASS**

Out of band low



Level Limit

Out of band high

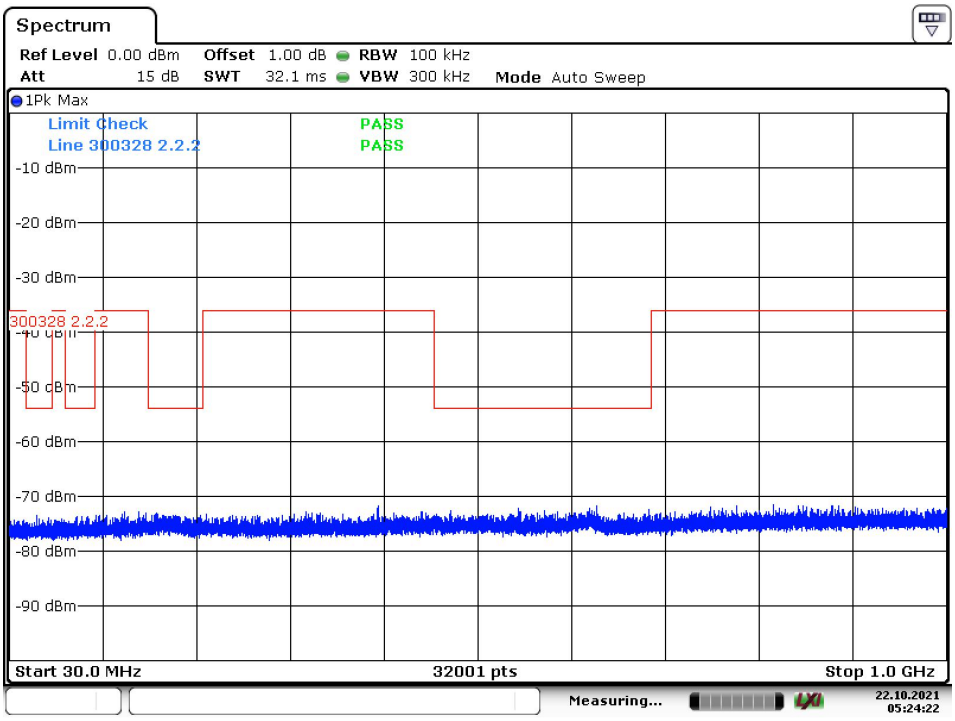


Level Limit

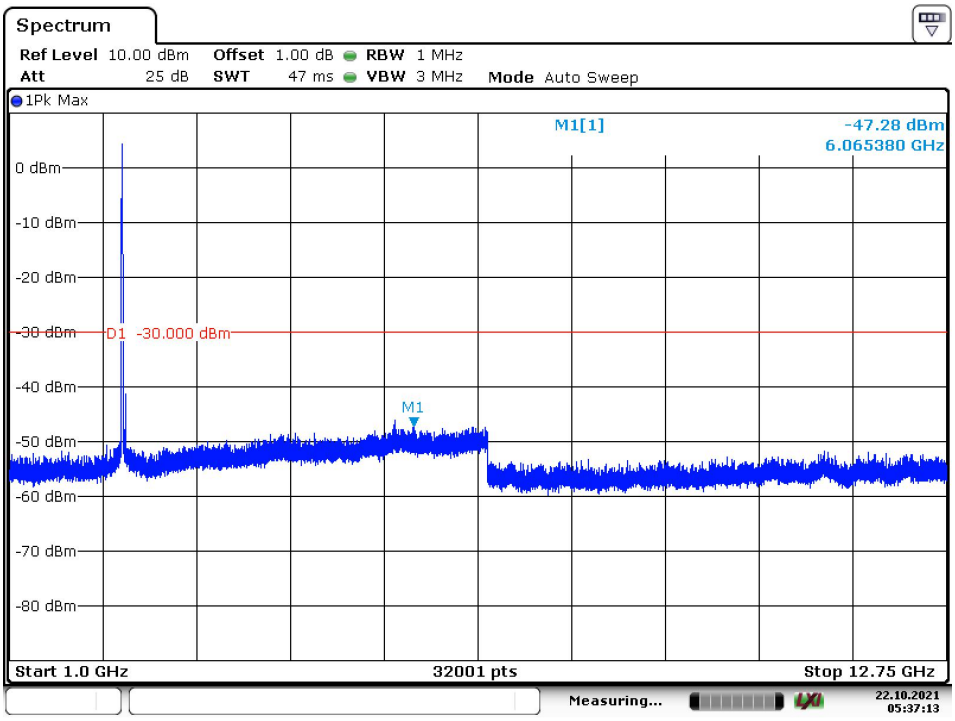
5 Appendix A.5 : Transmitter unwanted emissions (Conducted)

802.11 b mode

Low channel

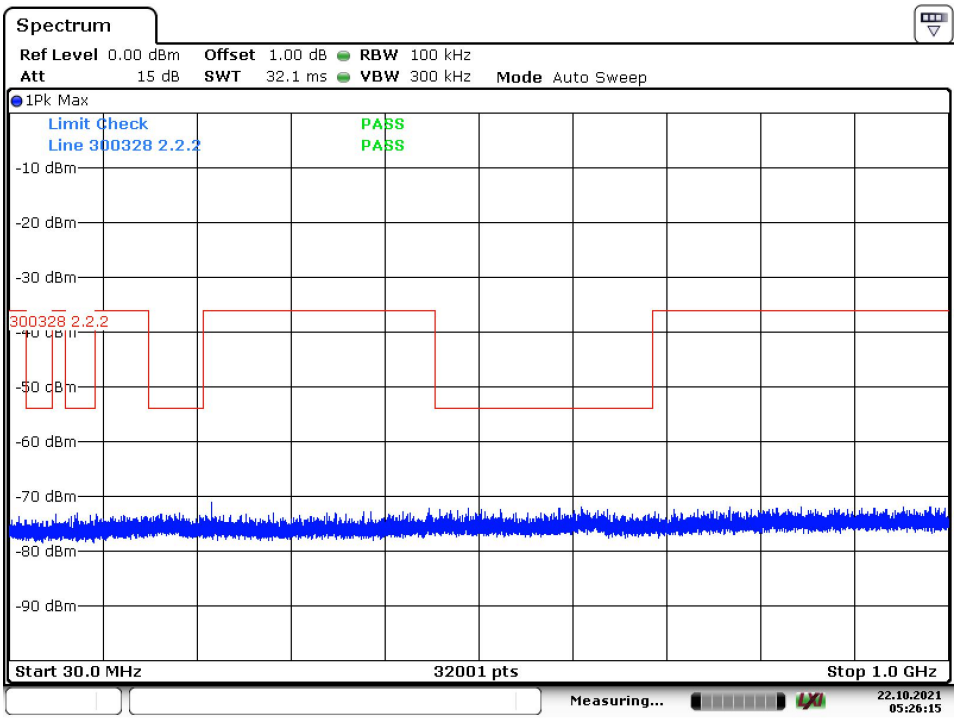


Date: 22.OCT.2021 05:24:22

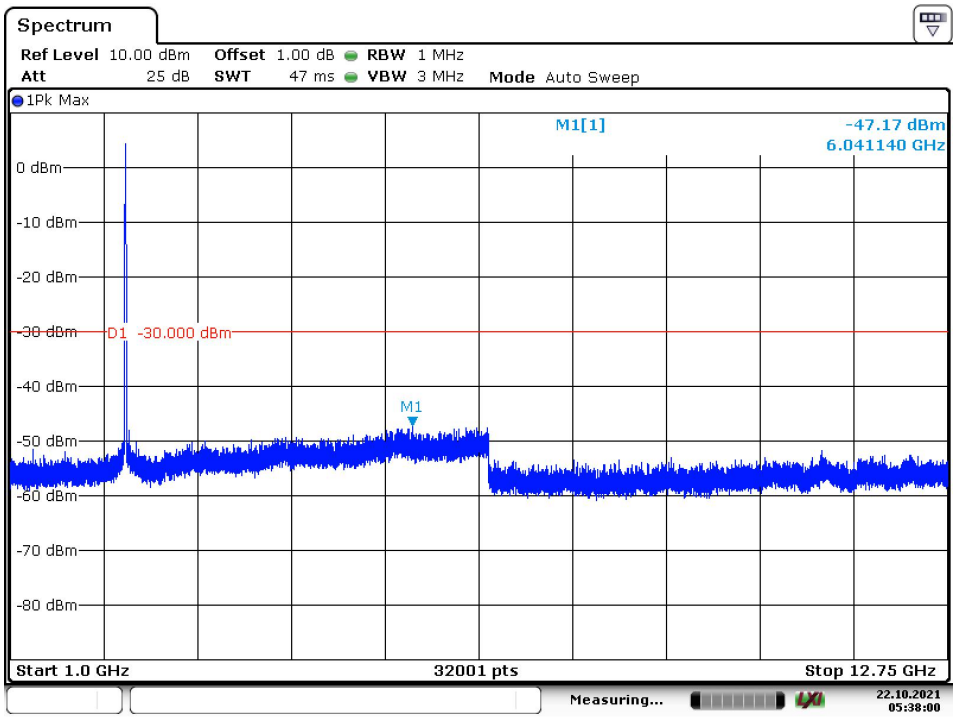


Date: 22.OCT.2021 05:37:14

Middle Channel

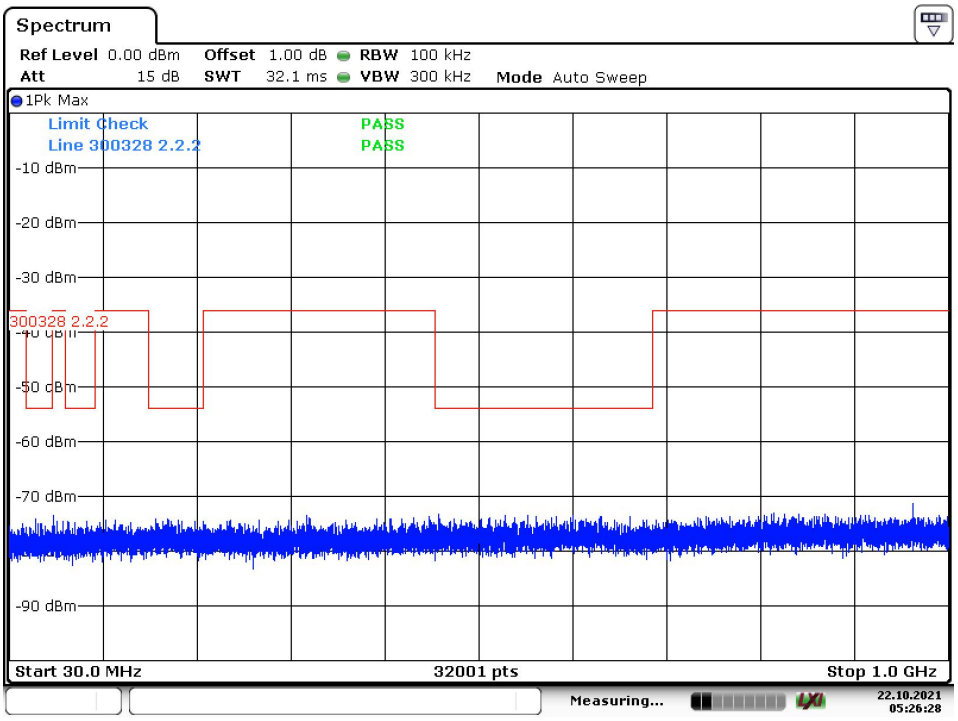


Date: 22.OCT.2021 05:26:15

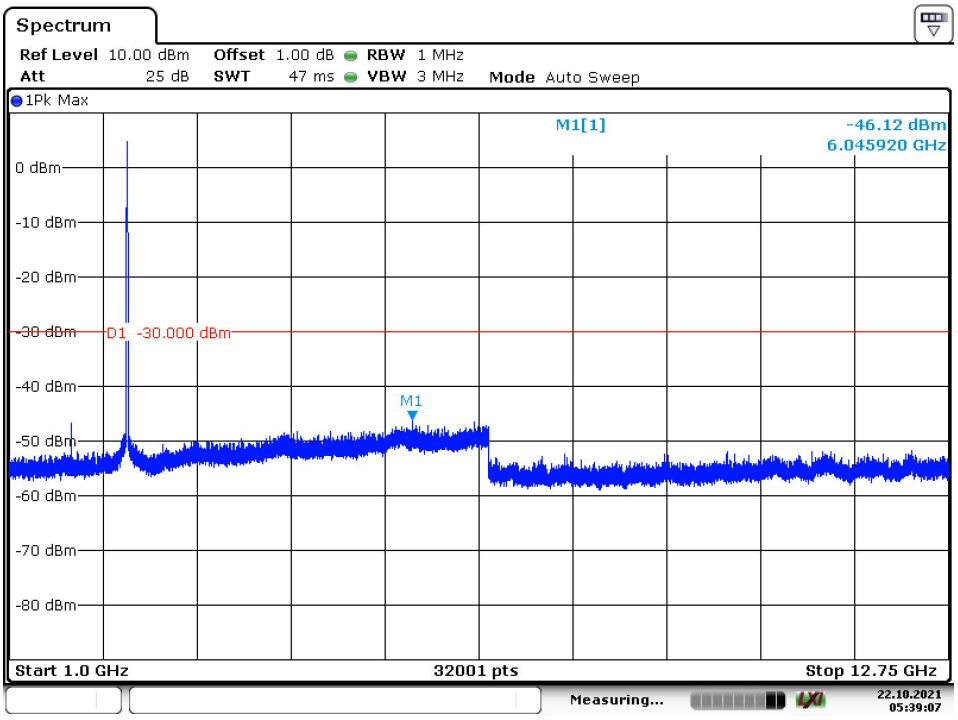


Date: 22.OCT.2021 05:38:00

High Channel



Date: 22.OCT.2021 05:26:28

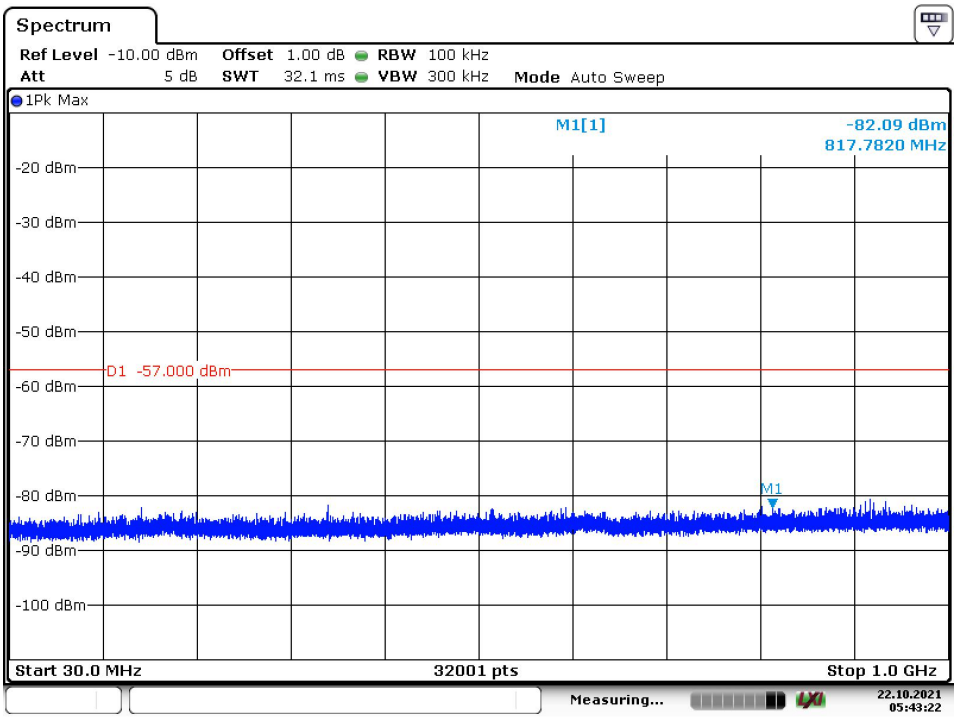


Date: 22.OCT.2021 05:39:07

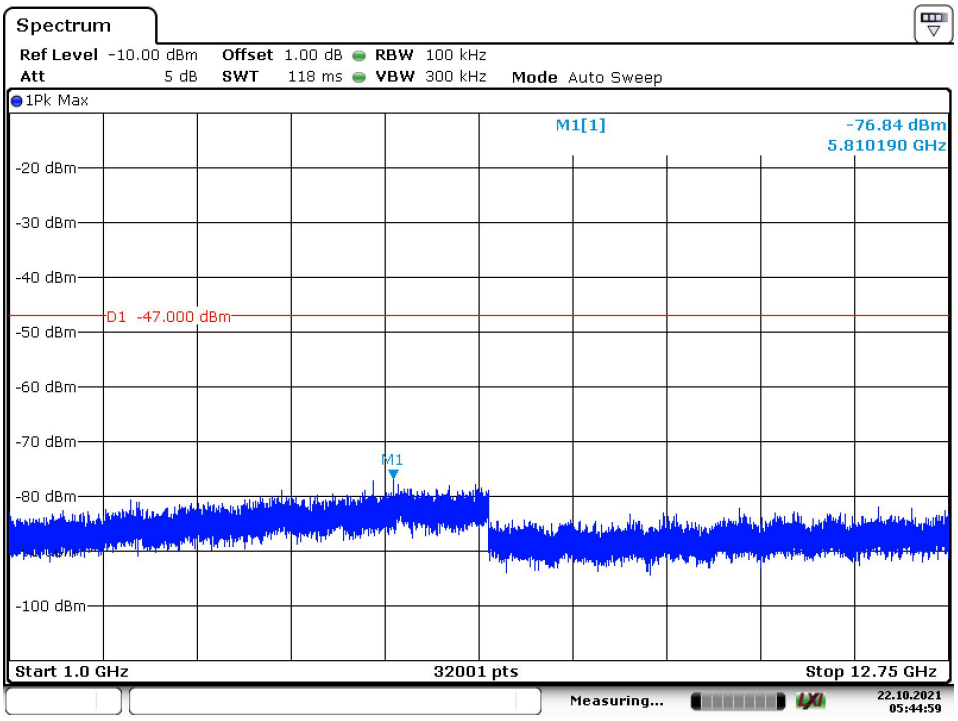
6 Appendix A.6 : Receiver unwanted emissions (Conducted)

802.11 b mode

Low channel

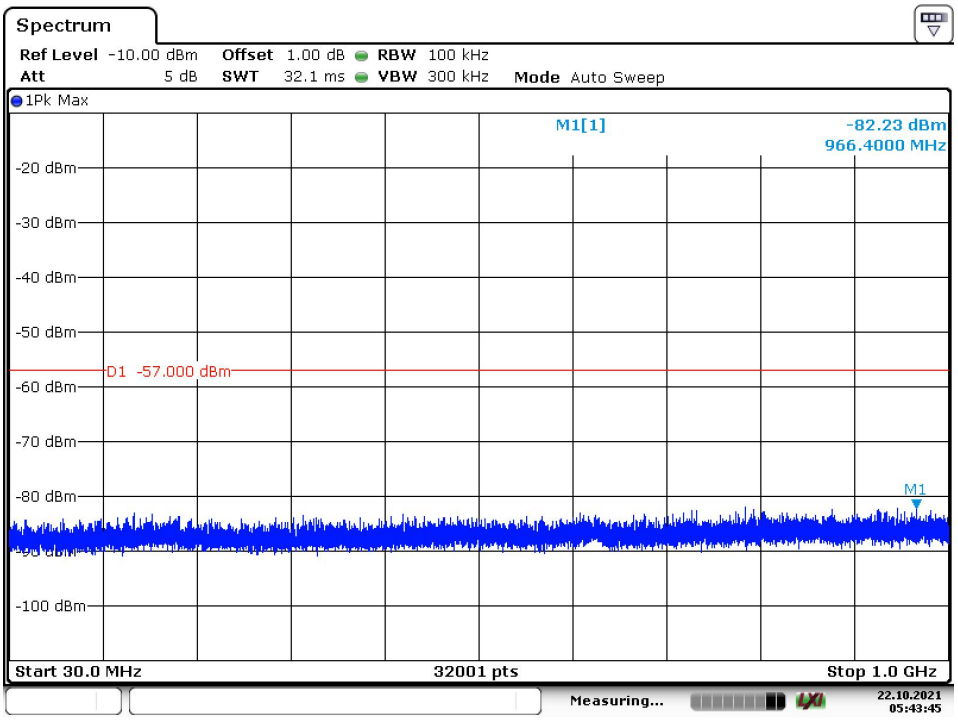


Date: 22.OCT.2021 05:43:22

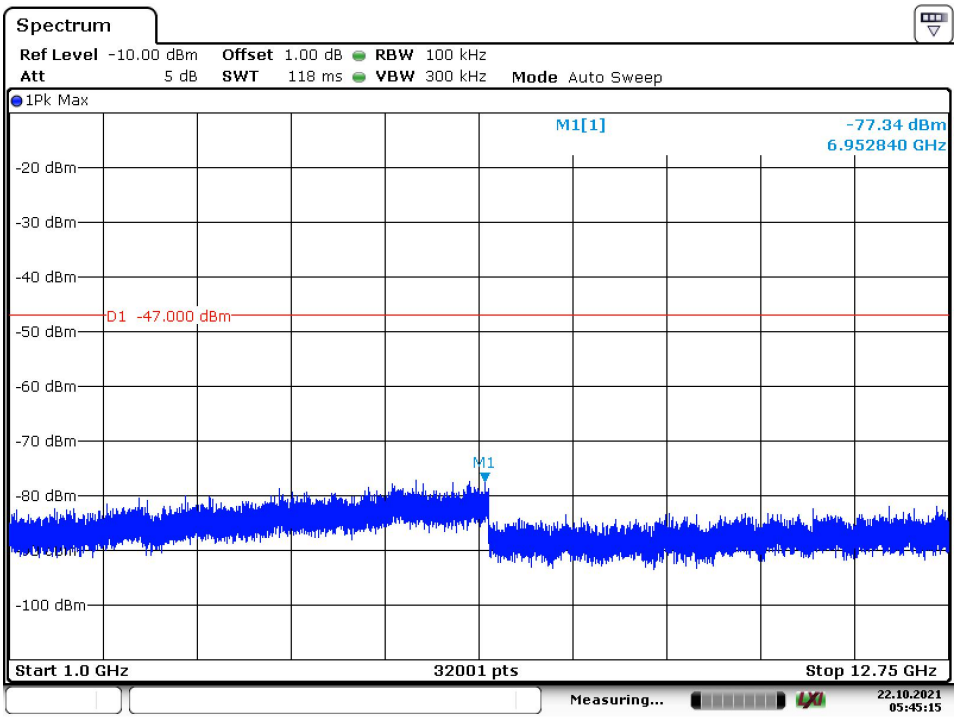


Date: 22.OCT.2021 05:45:00

Middle Channel

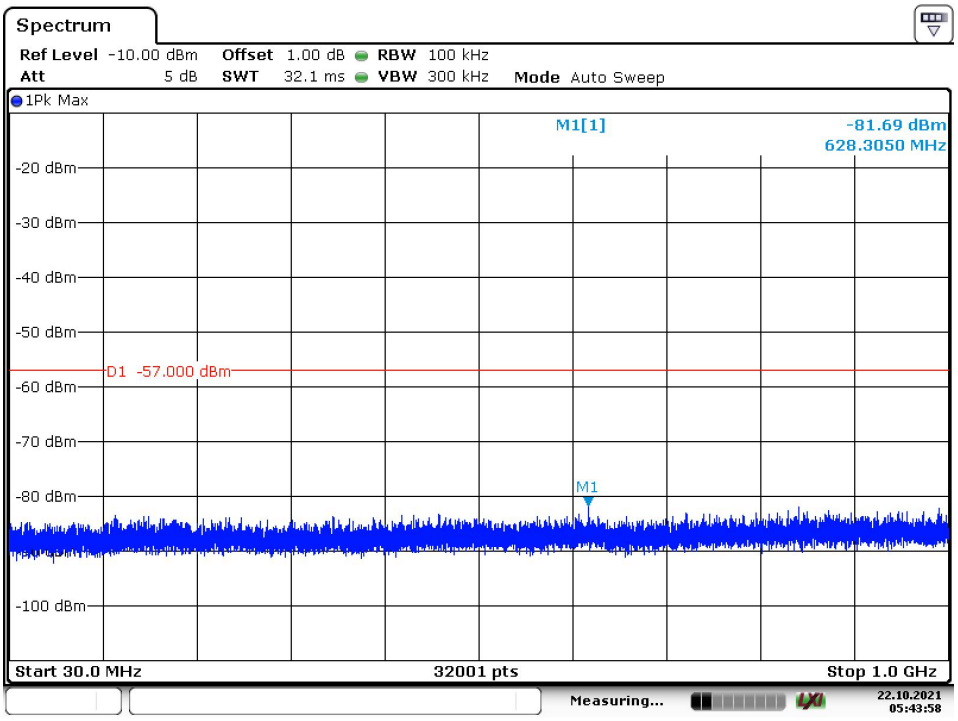


Date: 22.OCT.2021 05:43:46



Date: 22.OCT.2021 05:45:15

High Channel



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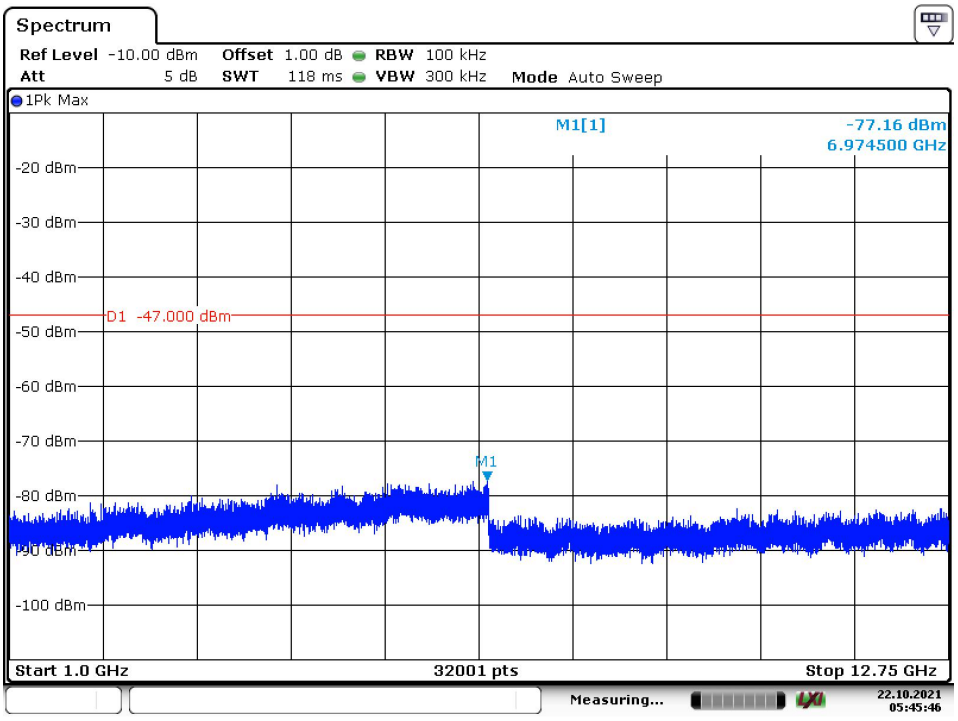


Date: 22.OCT.2021 05:45:47

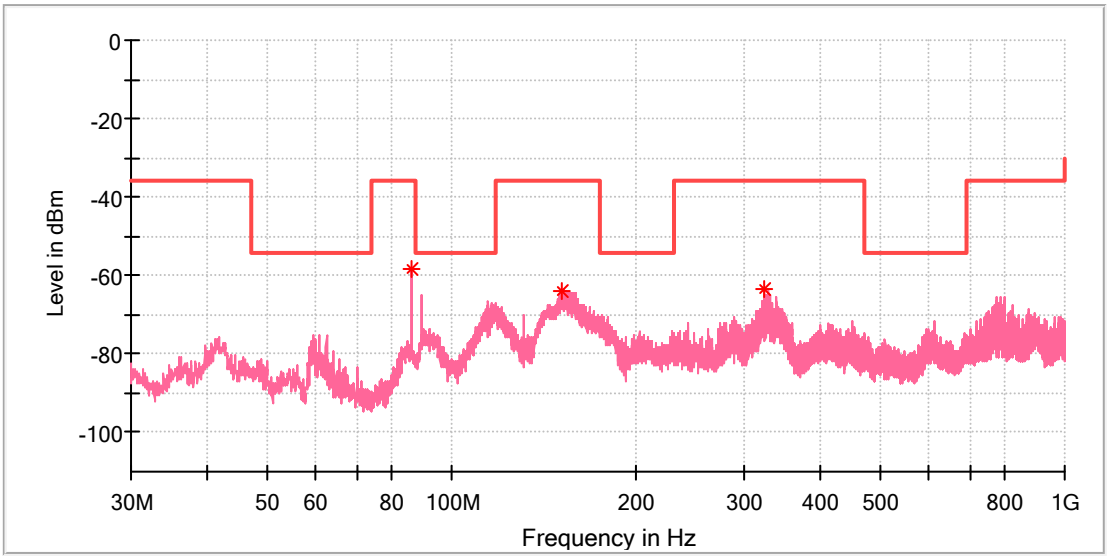
Note 1: All test modes (802.11 b/g/n) have been pre-scanning test and only the worst case of test mode (802.11b) for Radiated Spurious Emissions were reported.
Note 2: All different configurations (16MB and 32MB flash) have been pre-scanning test and only the worst case of configurations (16MB) for Radiated Spurious Emissions were reported.

7 Appendix A.7 : Transmitter unwanted emissions (Radiated) for Ant #1 SA05A01RA

Below 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

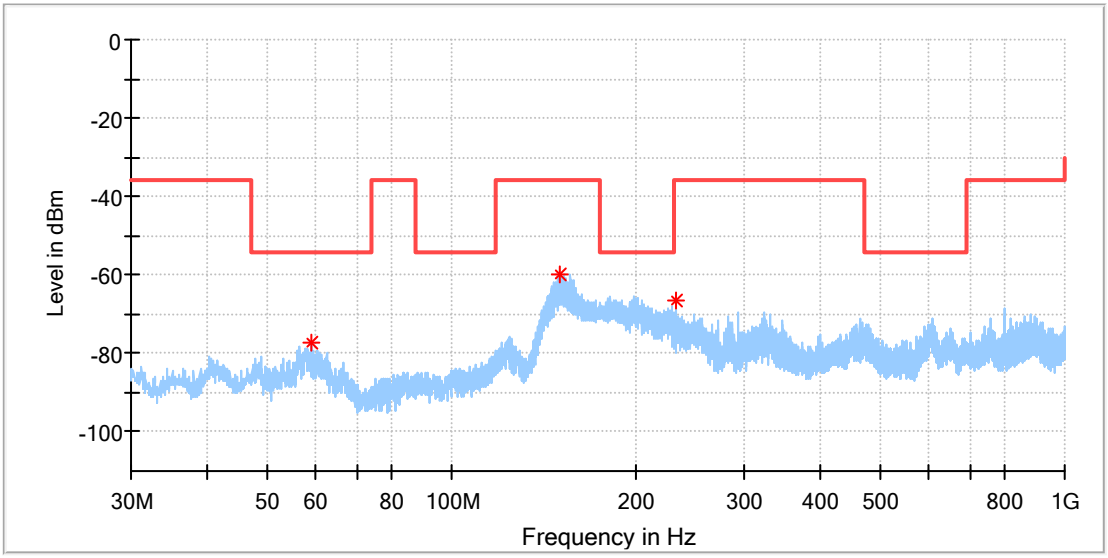


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
86.039546	-58.41	-36.00	22.41	150.0	V	248.0	-121.0	
151.117727	-63.72	-36.00	27.72	150.0	V	194.0	-121.8	
324.174546	-63.67	-36.00	27.67	150.0	V	176.0	-113.7	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

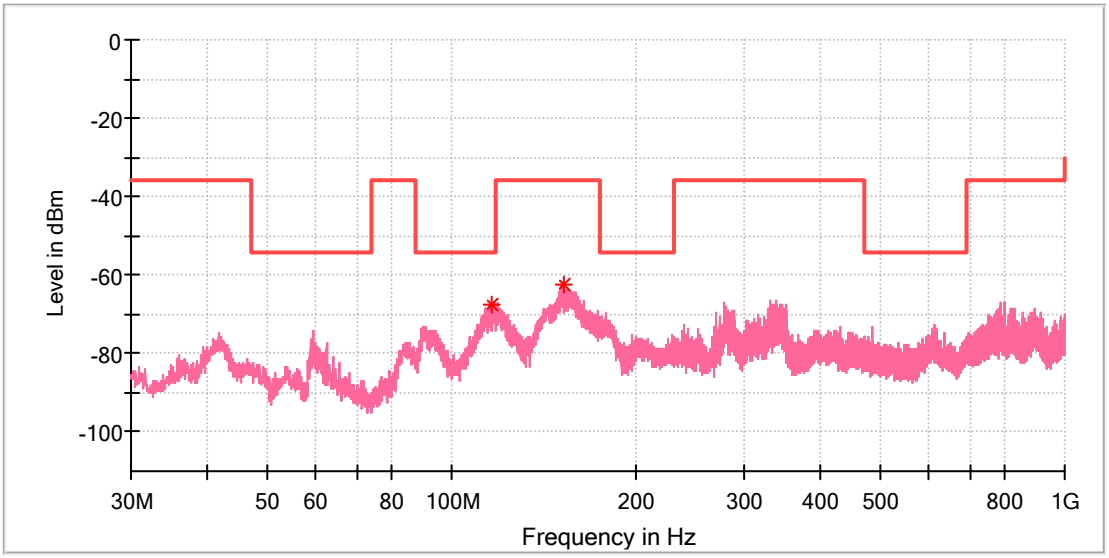


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
59.100000	-77.02	-54.00	23.02	150.0	H	345.0	-116.2	
150.500455	-59.61	-36.00	23.61	150.0	H	100.0	-121.8	
232.597727	-66.32	-36.00	30.32	150.0	H	199.0	-116.3	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

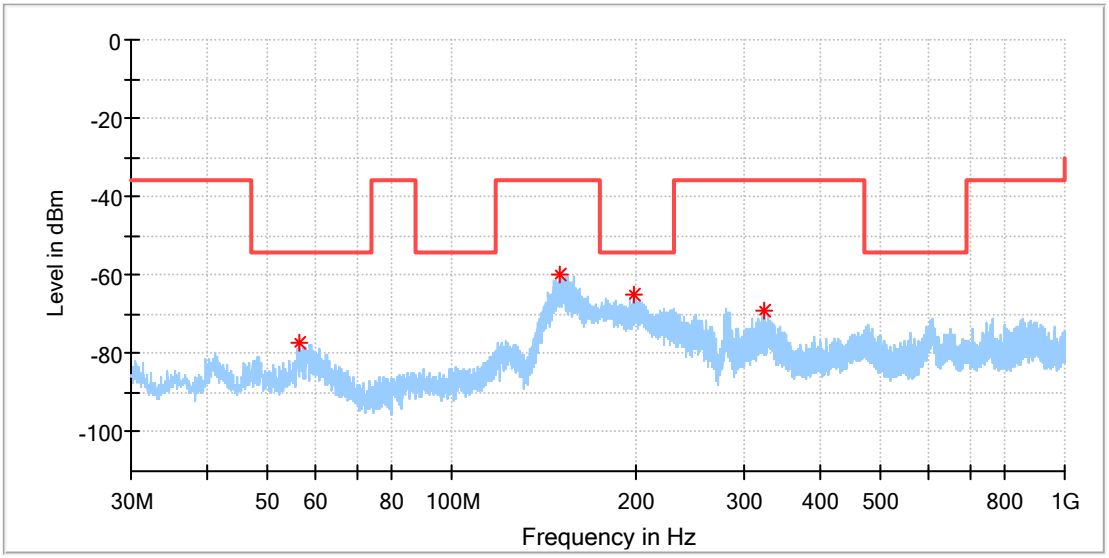


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
116.109546	-67.61	-54.00	13.61	150.0	V	151.0	-119.3	
151.911364	-62.28	-36.00	26.28	150.0	V	163.0	-121.6	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



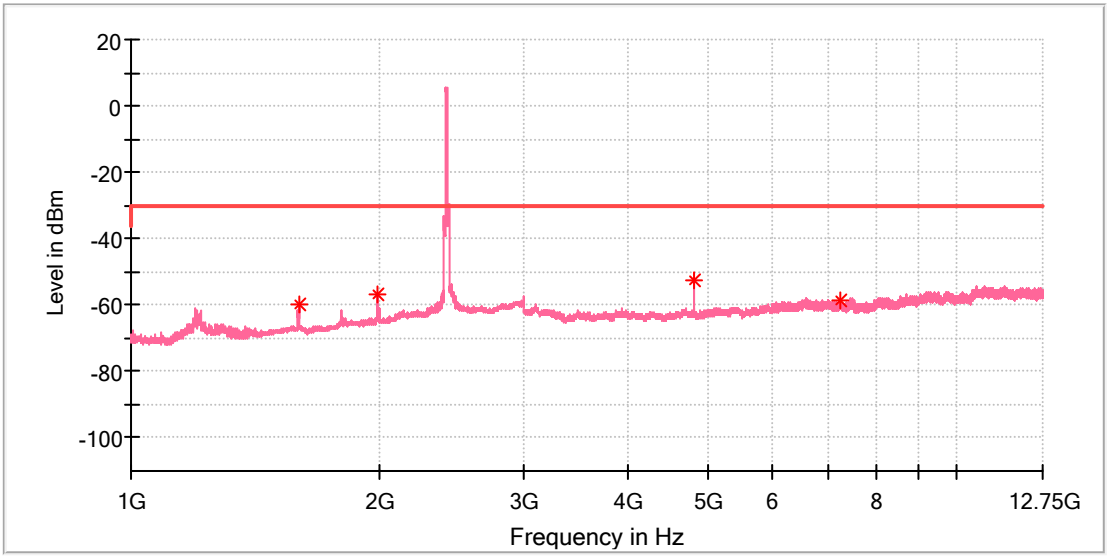
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
56.542727	-77.09	-54.00	23.09	150.0	H	53.0	-117.3	
150.456364	-59.97	-36.00	23.97	150.0	H	78.0	-121.8	
198.780000	-65.12	-54.00	11.12	150.0	H	300.0	-117.5	
322.587273	-69.09	-36.00	33.09	150.0	H	312.0	-114.8	

Above 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

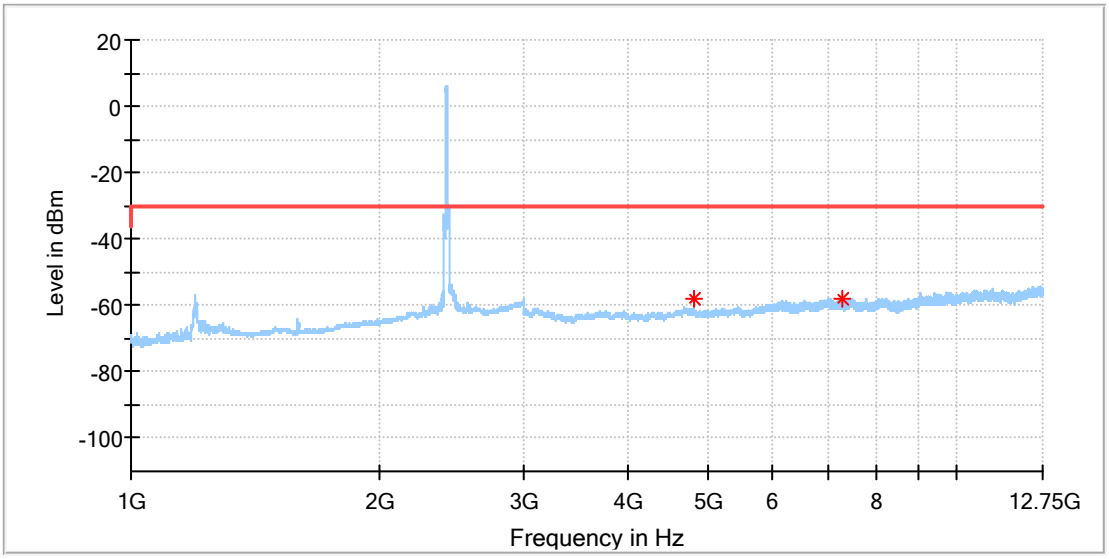


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1599.000000	-59.54	-30.00	29.54	190.0	V	166.0	-98.7	
1994.000000	-56.75	-30.00	26.75	190.0	V	173.0	-96.9	
4824.000000	-52.34	-30.00	22.34	190.0	V	181.0	-95.1	
7245.375000	-58.46	-30.00	28.46	190.0	V	227.0	-91.4	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

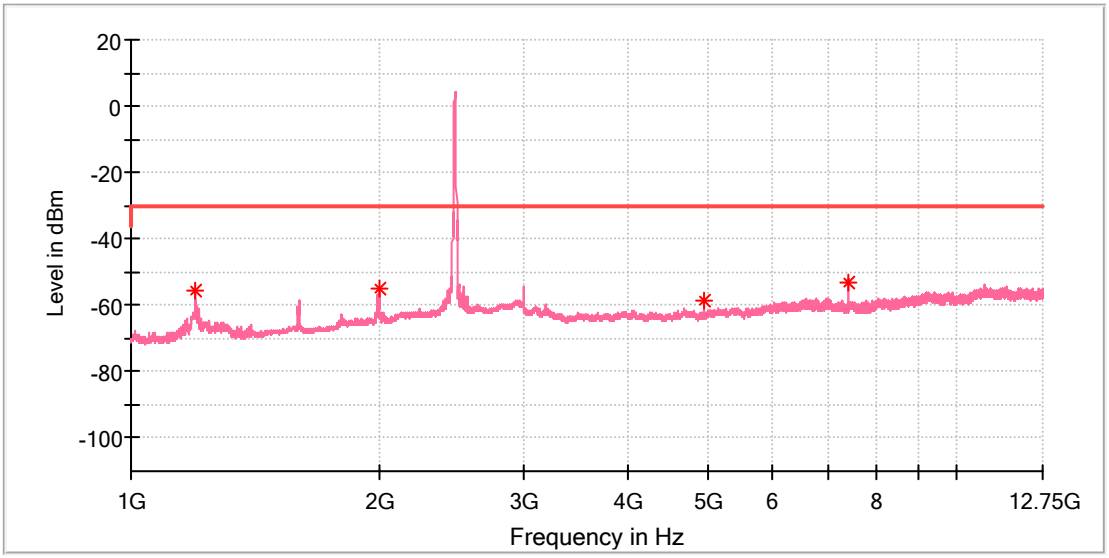


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4823.500000	-57.91	-30.00	27.91	190.0	H	218.0	-94.8	
7288.285714	-58.10	-30.00	28.10	190.0	H	245.0	-91.1	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

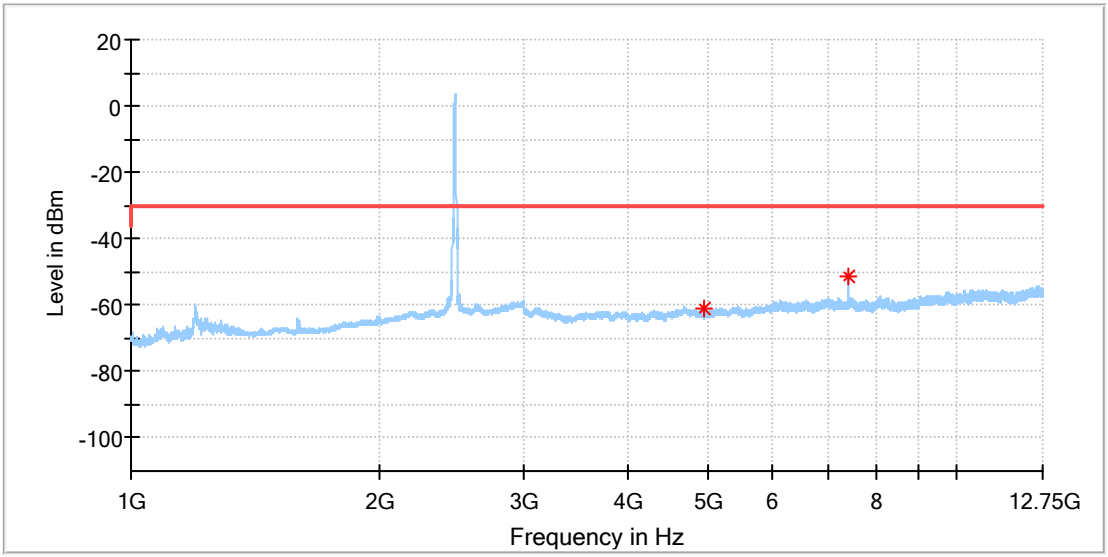


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1196.000000	-55.71	-30.00	25.71	190.0	V	166.0	-101.3	
1996.500000	-54.94	-30.00	24.94	190.0	V	156.0	-96.9	
4944.000000	-58.62	-30.00	28.62	190.0	V	92.0	-95.1	
7413.642857	-53.27	-30.00	23.27	190.0	V	357.0	-91.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

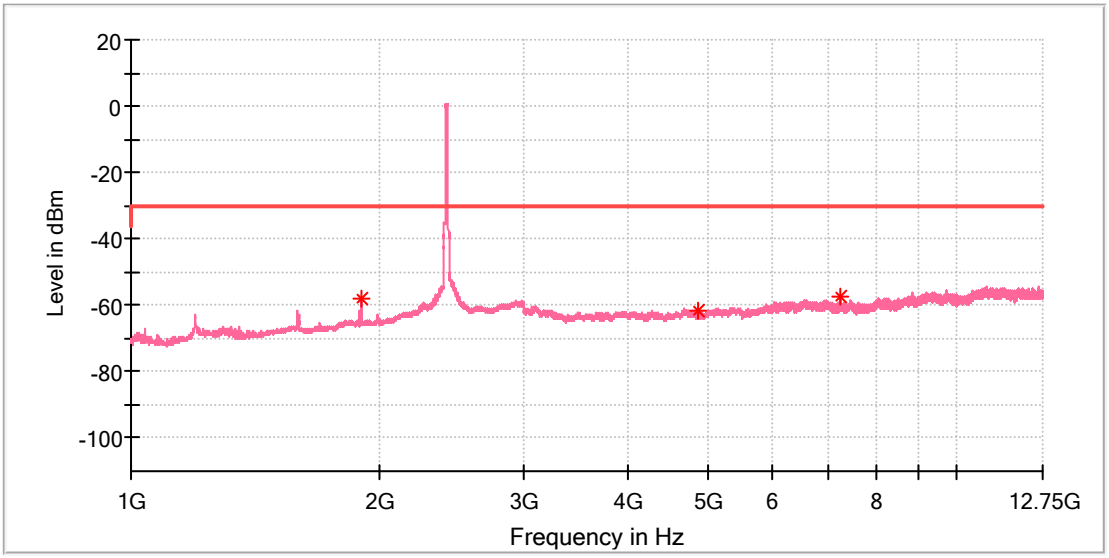


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4944.000000	-60.85	-30.00	30.85	190.0	H	212.0	-94.8	
7414.607143	-50.33	-30.00	20.33	190.0	H	280.0	-90.9	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11G20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

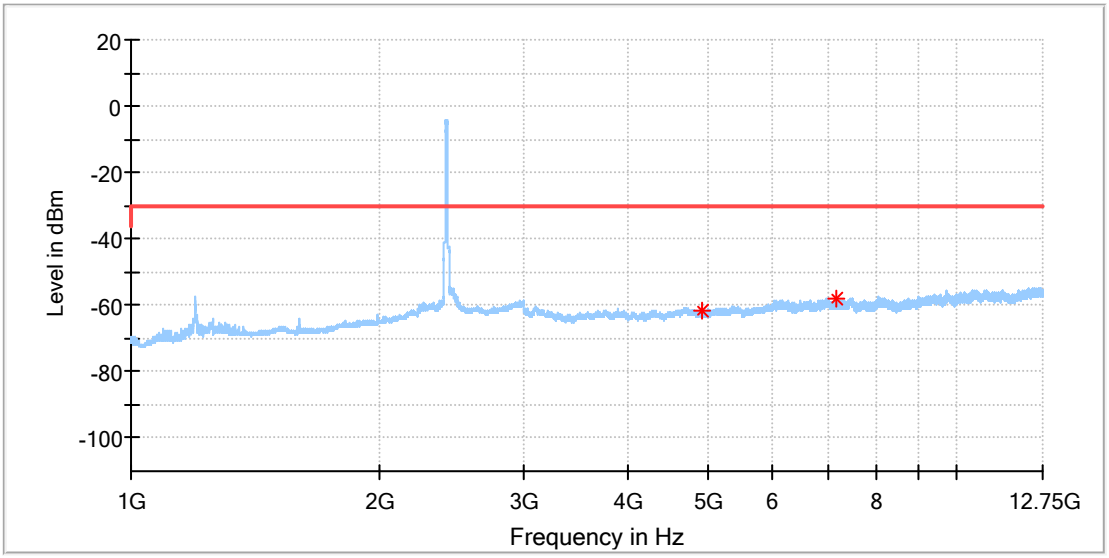


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1900.000000	-58.23	-30.00	28.23	190.0	V	220.0	-96.9	
4881.500000	-61.71	-30.00	31.71	190.0	V	170.0	-95.1	
7236.696429	-57.49	-30.00	27.49	190.0	V	352.0	-91.3	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11G20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

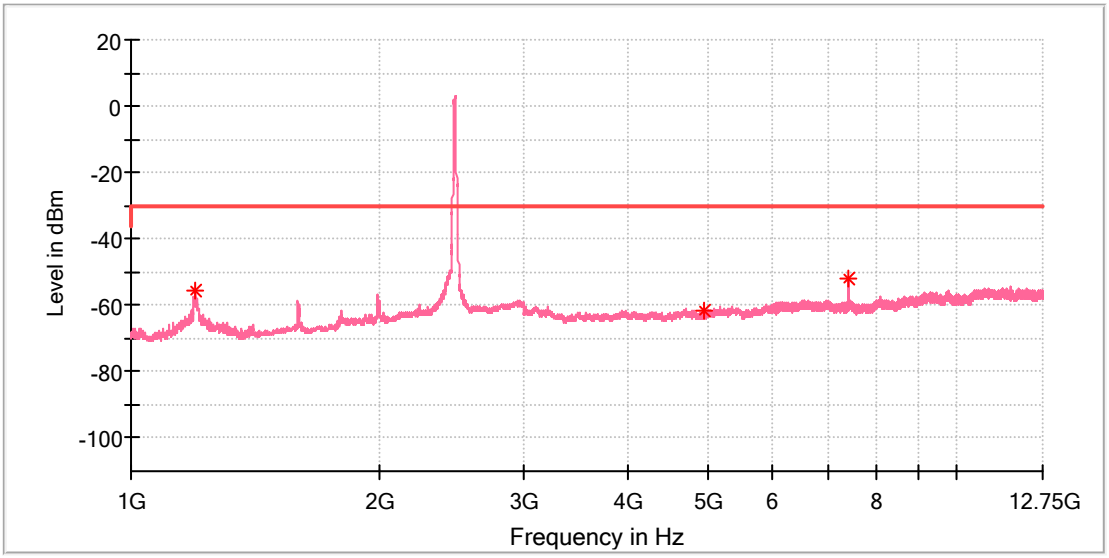


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4915.000000	**-61.43**	**-30.00**	**31.43**	**190.0**	**H**	**90.0**	**-94.8**	
7183.660714	**-57.83**	**-30.00**	**27.83**	**190.0**	**H**	**162.0**	**-90.7**	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11G20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

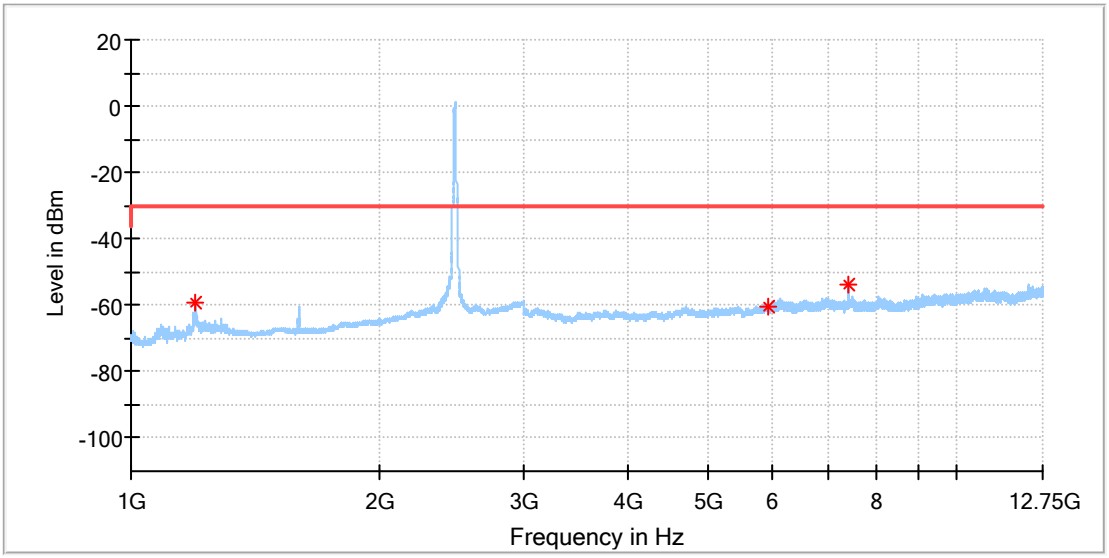


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1193.500000	-55.66	-30.00	25.66	190.0	V	160.0	-101.5	
4943.500000	-61.53	-30.00	31.53	190.0	V	91.0	-95.1	
7417.500000	-52.05	-30.00	22.05	190.0	V	359.0	-91.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11G20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

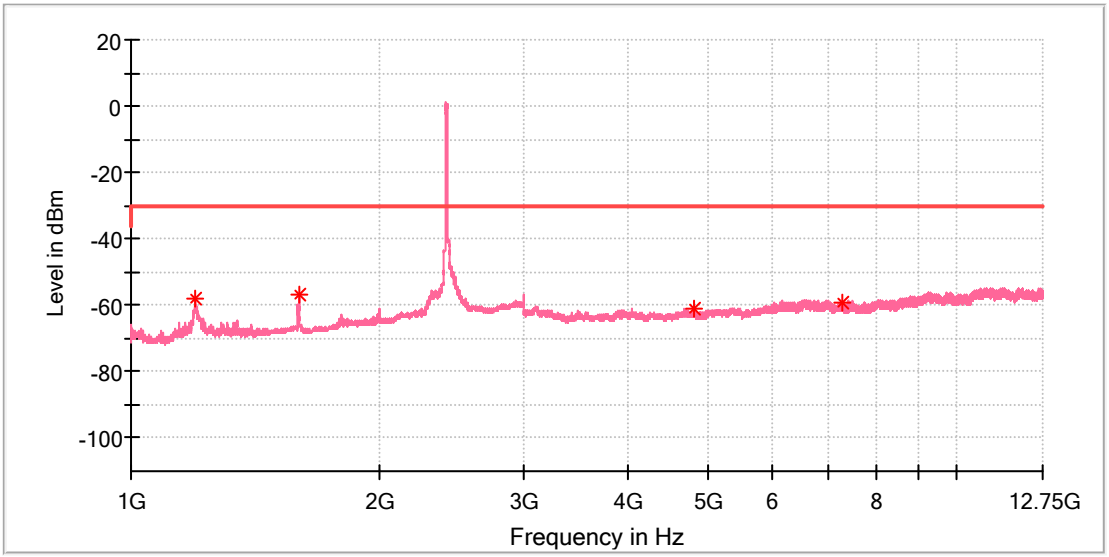


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1195.000000	-59.12	-30.00	29.12	190.0	H	71.0	-102.4	
5918.000000	-60.38	-30.00	30.38	190.0	H	1.0	-91.7	
7416.535714	-53.52	-30.00	23.52	190.0	H	279.0	-90.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

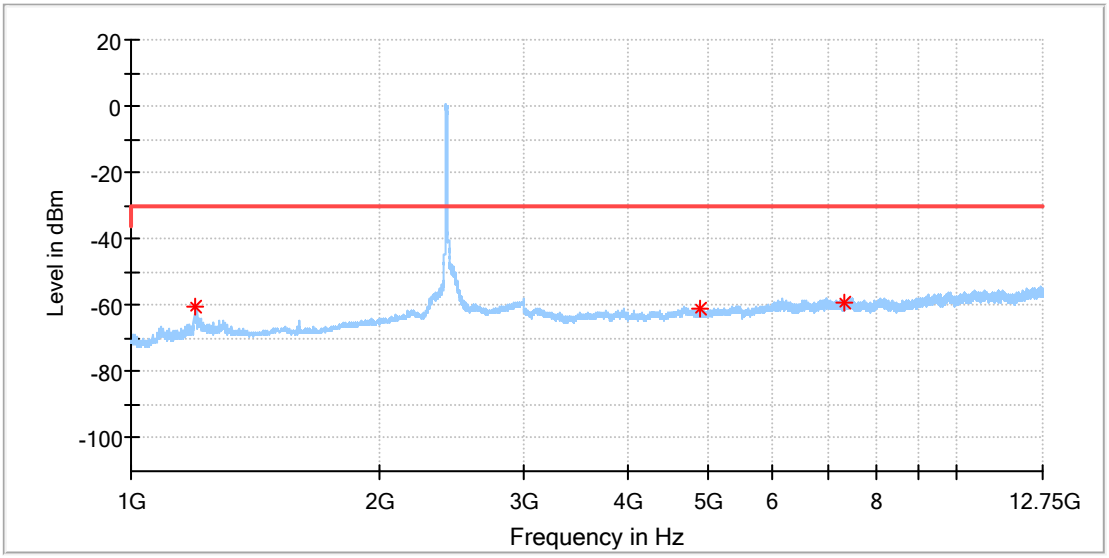


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1194.500000	-57.99	-30.00	27.99	190.0	V	150.0	-101.4	
1597.500000	-57.09	-30.00	27.09	190.0	V	160.0	-98.7	
4826.000000	-61.31	-30.00	31.31	190.0	V	95.0	-95.1	
7282.017857	-59.00	-30.00	29.00	190.0	V	0.0	-91.6	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

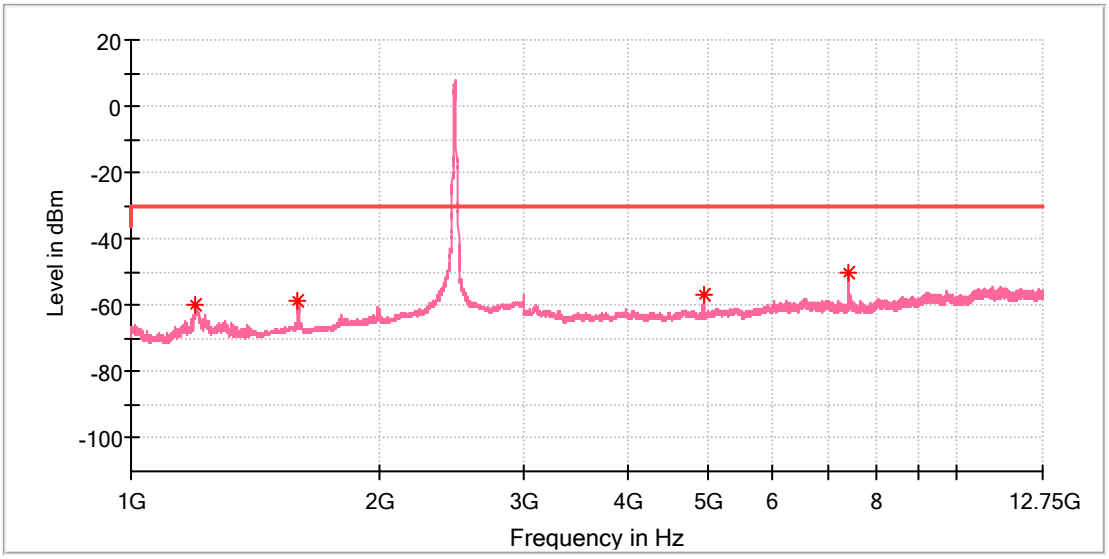


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1195.000000	-60.46	-30.00	30.46	190.0	H	114.0	-102.4	
4906.000000	-61.04	-30.00	31.04	190.0	H	71.0	-94.8	
7316.732143	-59.27	-30.00	29.27	190.0	H	202.0	-91.3	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

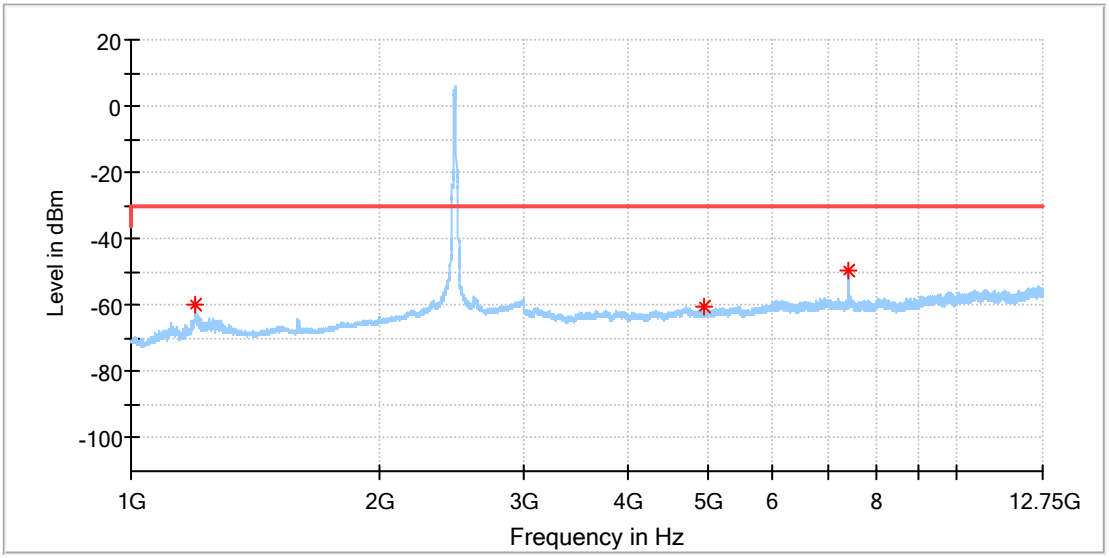


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1197.000000	-59.86	-30.00	29.86	190.0	V	123.0	-101.3	
1595.000000	-58.32	-30.00	28.32	190.0	V	194.0	-98.6	
4944.000000	-56.96	-30.00	26.96	190.0	V	91.0	-95.1	
7422.321429	-50.17	-30.00	20.17	190.0	V	359.0	-91.7	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

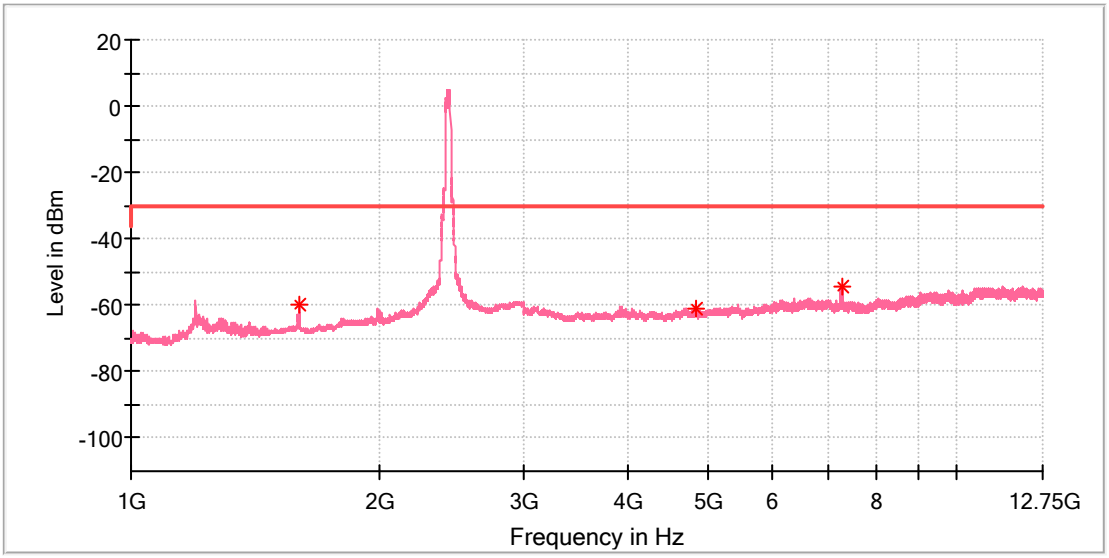


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1196.000000	-59.76	-30.00	29.76	190.0	H	92.0	-102.4	
4944.500000	-60.34	-30.00	30.34	190.0	H	143.0	-94.8	
7413.642857	-49.71	-30.00	19.71	190.0	H	284.0	-90.9	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N40 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

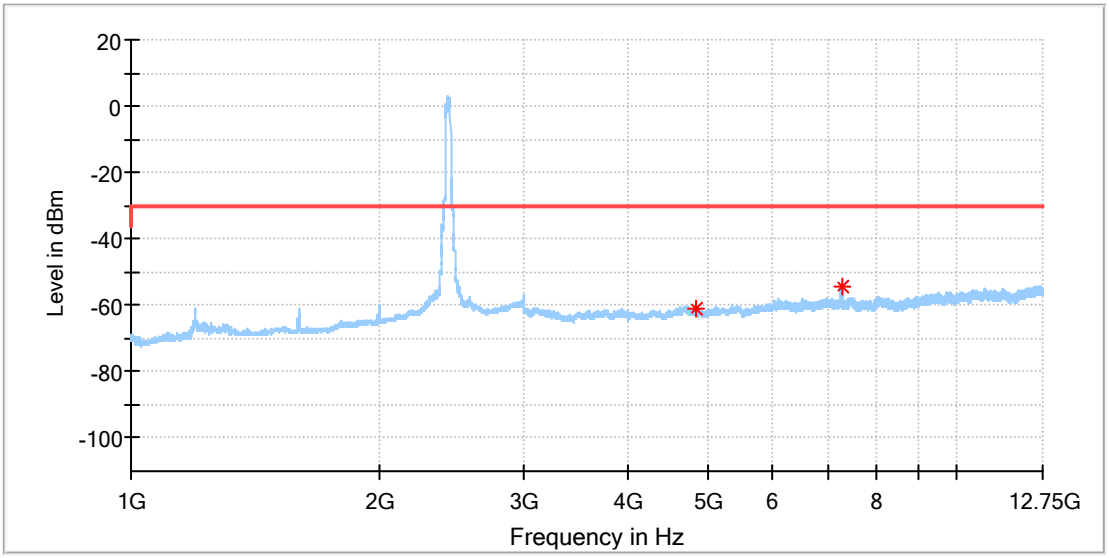


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1599.000000	-59.58	-30.00	29.58	190.0	V	150.0	-98.7	
4832.500000	-60.92	-30.00	30.92	190.0	V	245.0	-95.1	
7278.642857	-54.14	-30.00	24.14	190.0	V	1.0	-91.5	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N40 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

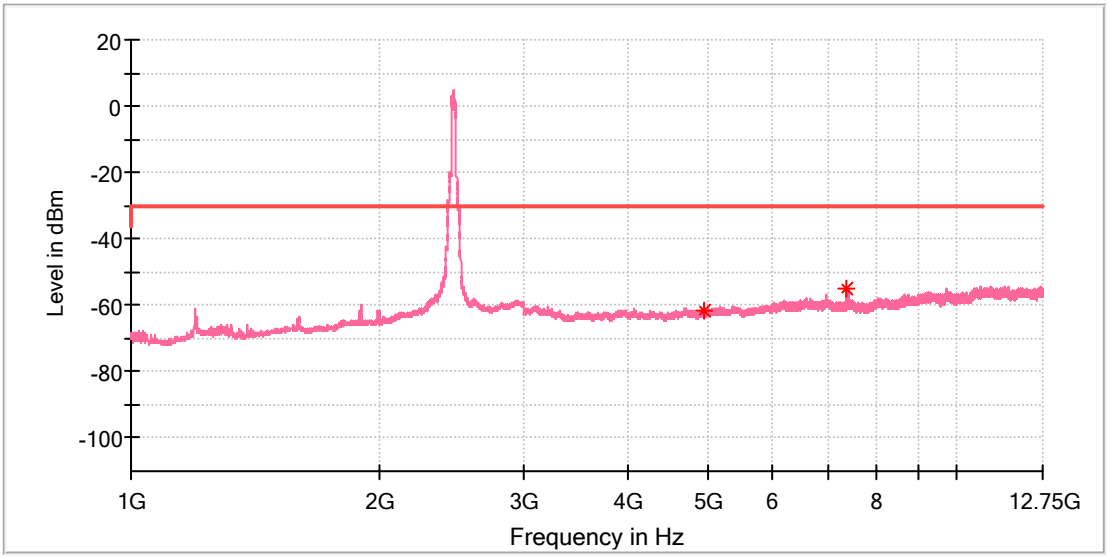


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4857.000000	**-60.82**	**-30.00**	**30.82**	**190.0**	**H**	**150.0**	**-94.7**	
7269.482143	**-54.38**	**-30.00**	**24.38**	**190.0**	**H**	**278.0**	**-90.9**	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N40 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

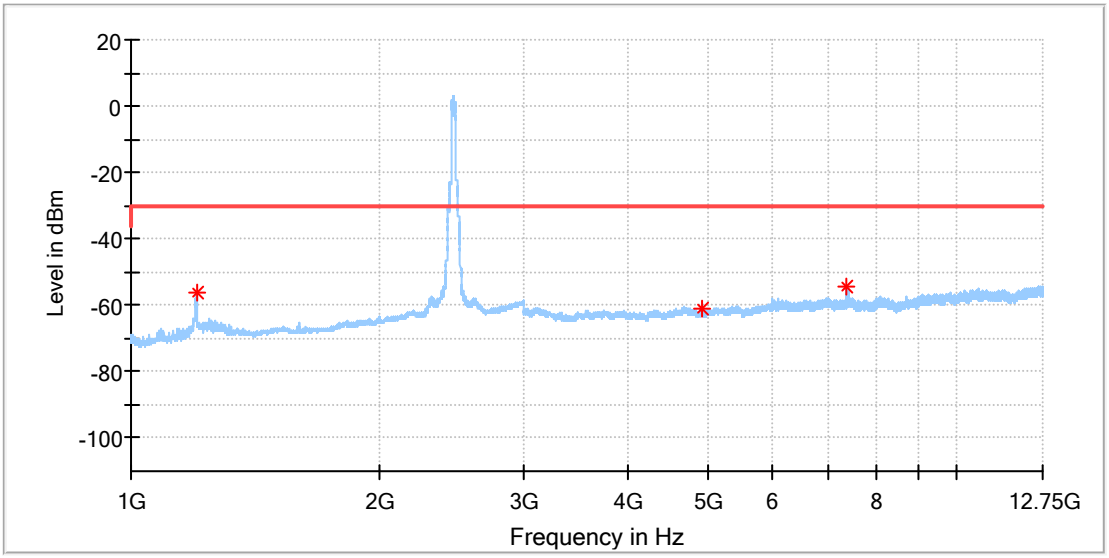


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4941.000000	-61.55	-30.00	31.55	190.0	V	1.0	-95.1	
7388.571429	-54.81	-30.00	24.81	190.0	V	359.0	-92.0	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N40 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

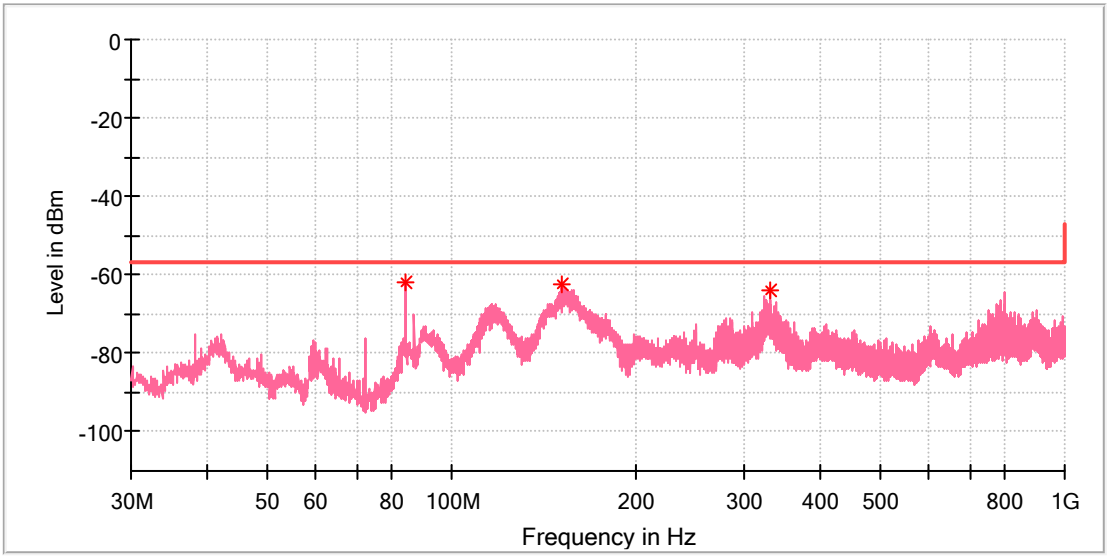
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1199.500000	-56.43	-30.00	26.43	190.0	H	50.0	-102.2	
4935.000000	-60.77	-30.00	30.77	190.0	H	226.0	-94.8	
7387.125000	-54.17	-30.00	24.17	190.0	H	280.0	-91.1	

8 Appendix A.8 : Receiver spurious emissions (Radiated) for Ant #1 SA05A01RA

Below 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

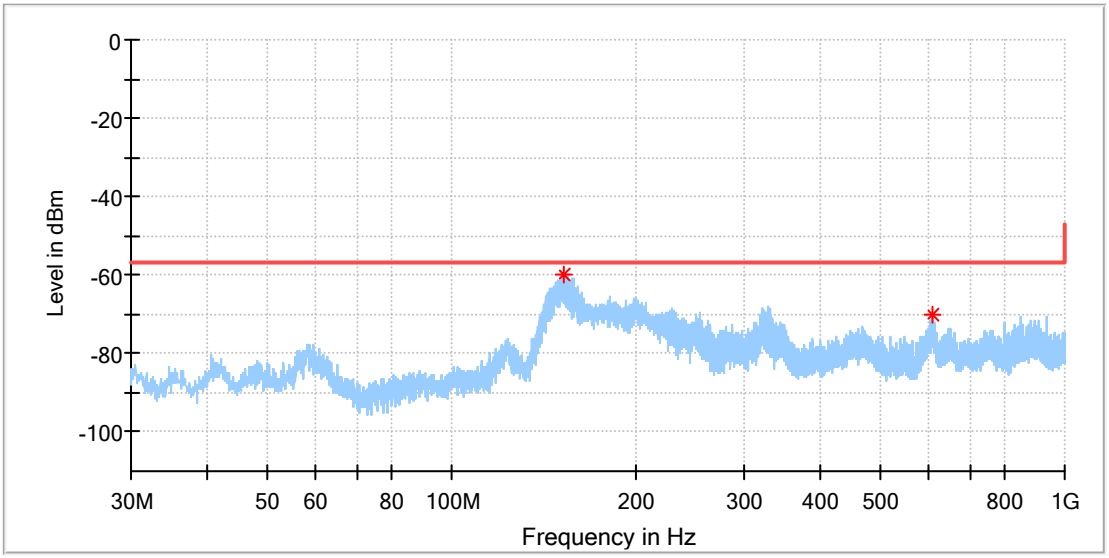


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
84.174500	-62.02	-57.00	5.02	190.0	V	169.0	-121.8	
151.686500	-62.65	-57.00	5.65	190.0	V	152.0	-121.6	
330.409000	-64.13	-57.00	7.13	190.0	V	163.0	-113.1	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

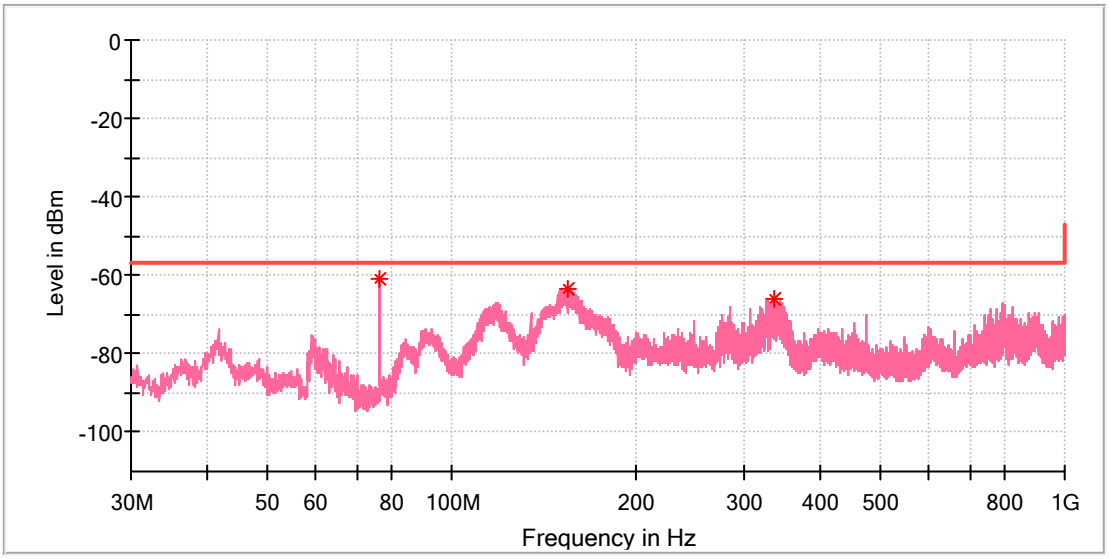


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
151.880500	-60.07	-57.00	3.07	190.0	H	65.0	-121.5	
606.907500	-69.90	-57.00	12.90	190.0	H	246.0	-108.7	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

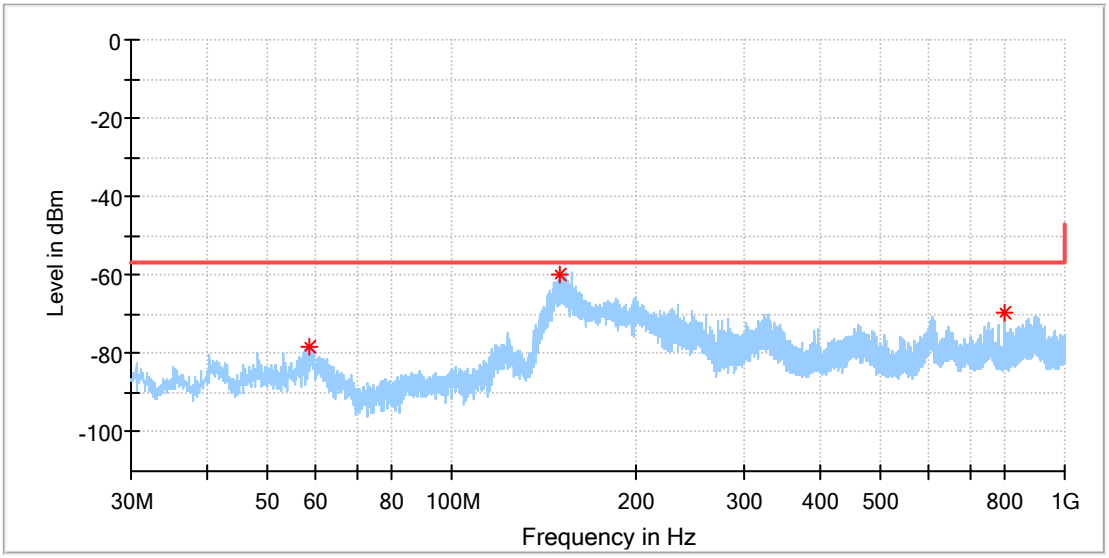


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
76.366000	-60.72	-57.00	3.72	190.0	V	230.0	-123.2	
154.548000	-63.24	-57.00	6.24	190.0	V	154.0	-122.0	
334.871000	-65.83	-57.00	8.83	190.0	V	136.0	-112.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



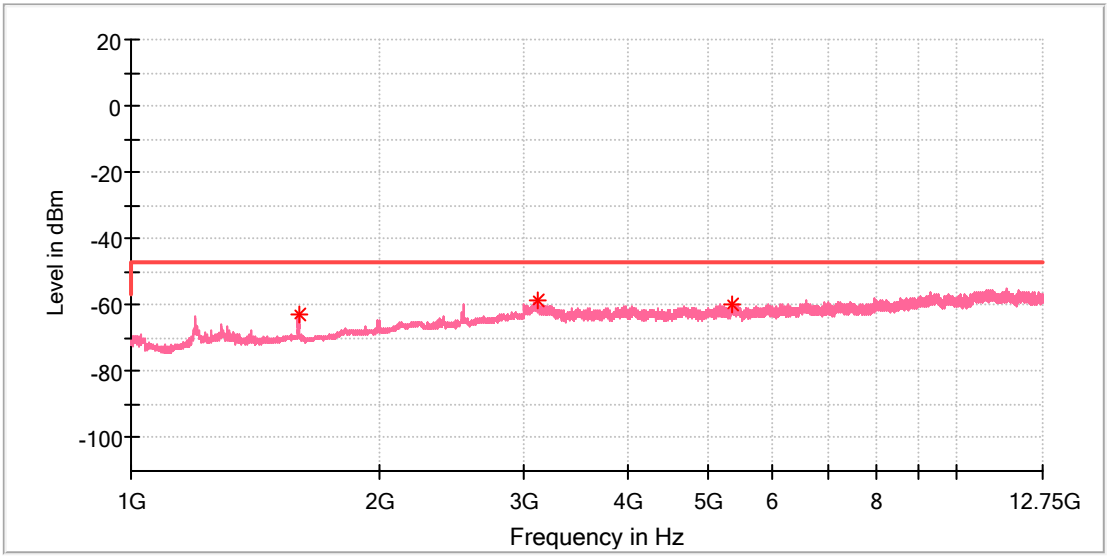
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
58.712000	-78.05	-57.00	21.05	190.0	H	355.0	-116.3	
150.037500	-60.05	-57.00	3.05	190.0	H	106.0	-121.9	
796.882000	-69.56	-57.00	12.56	190.0	H	39.0	-108.1	

Above 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

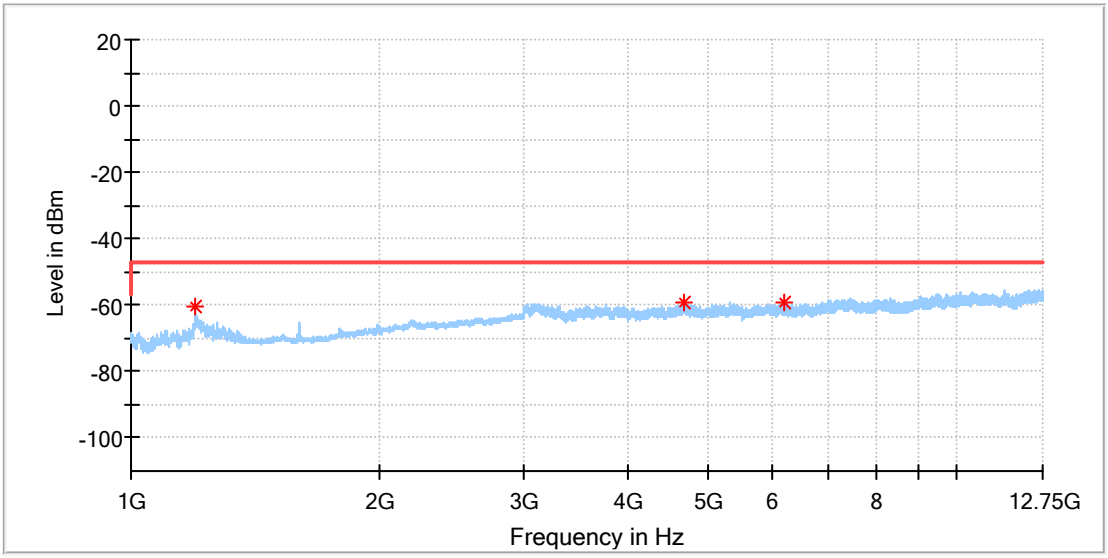


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1599.000000	-62.79	-47.00	15.79	150.0	V	14.0	-98.7	
3109.416667	-58.65	-47.00	11.65	150.0	V	1.0	-94.9	
5364.375000	-59.78	-47.00	12.78	150.0	V	25.0	-93.3	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 L CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

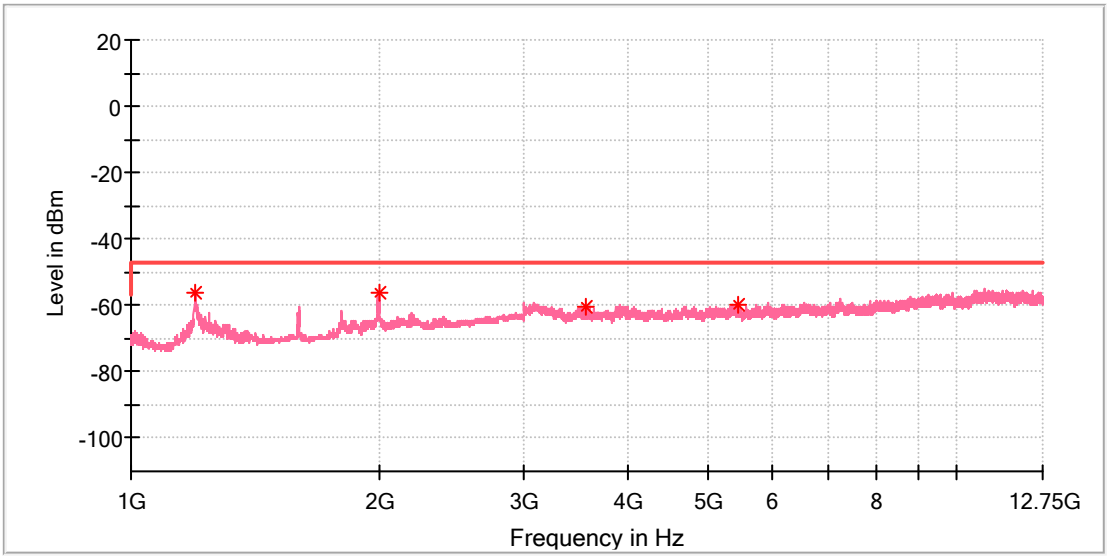


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1194.500000	-60.42	-47.00	13.42	190.0	H	61.0	-102.4	
4684.041667	-59.24	-47.00	12.24	190.0	H	102.0	-94.5	
6193.666667	-59.21	-47.00	12.21	190.0	H	2.0	-91.5	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

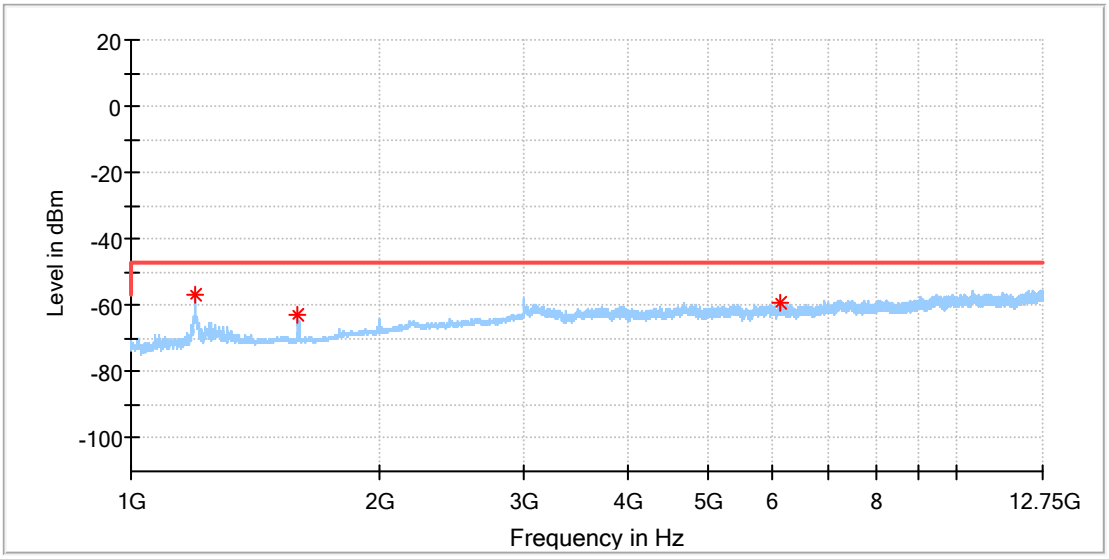


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1197.000000	-56.37	-47.00	9.37	150.0	V	149.0	-101.3	
1996.000000	-56.33	-47.00	9.33	150.0	V	181.0	-96.9	
3569.291667	-60.43	-47.00	13.43	150.0	V	124.0	-97.1	
5440.208333	-59.53	-47.00	12.53	150.0	V	124.0	-93.0	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

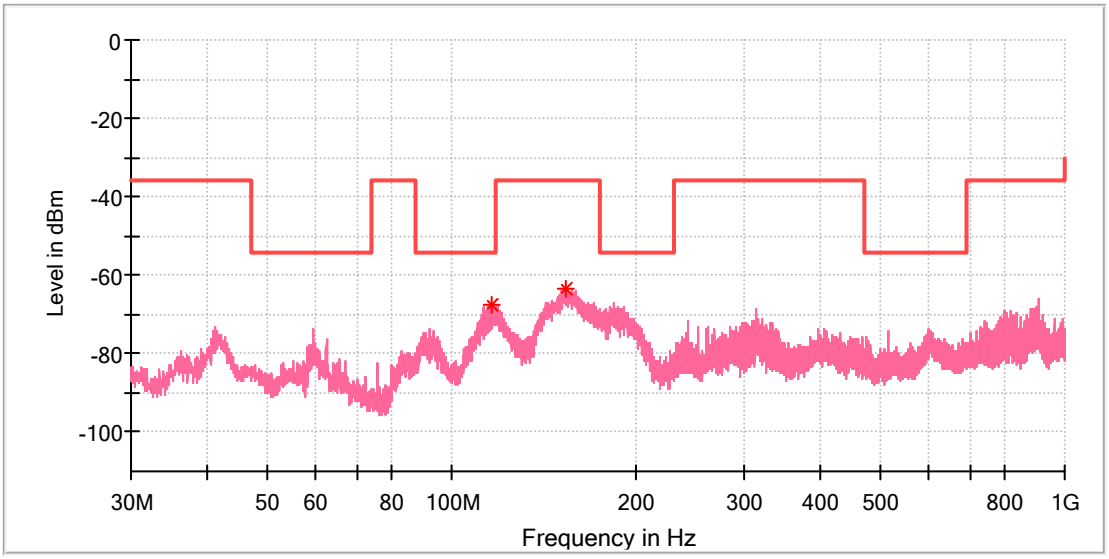
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1196.000000	-57.09	-47.00	10.09	190.0	H	74.0	-102.4	
1594.500000	-63.12	-47.00	16.12	190.0	H	94.0	-99.7	
6142.208333	-58.96	-47.00	11.96	190.0	H	92.0	-91.5	

9 Appendix A.9 : Transmitter unwanted emissions (Radiated) for Ant #4 6147F00013

Below 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

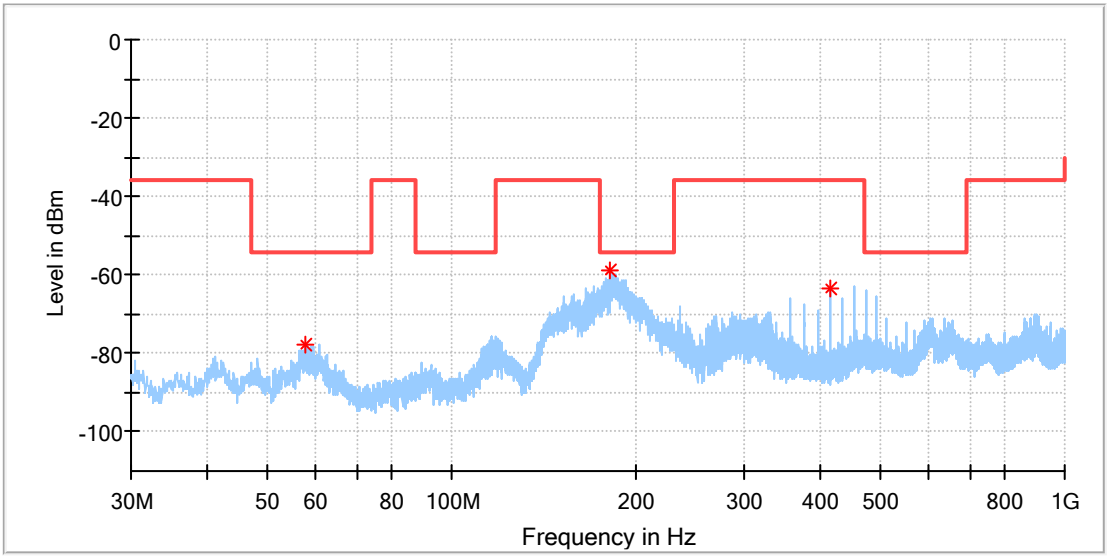


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
116.285909	-67.29	-54.00	13.29	150.0	V	161.0	-119.3	
153.234091	-63.38	-36.00	27.38	150.0	V	179.0	-121.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



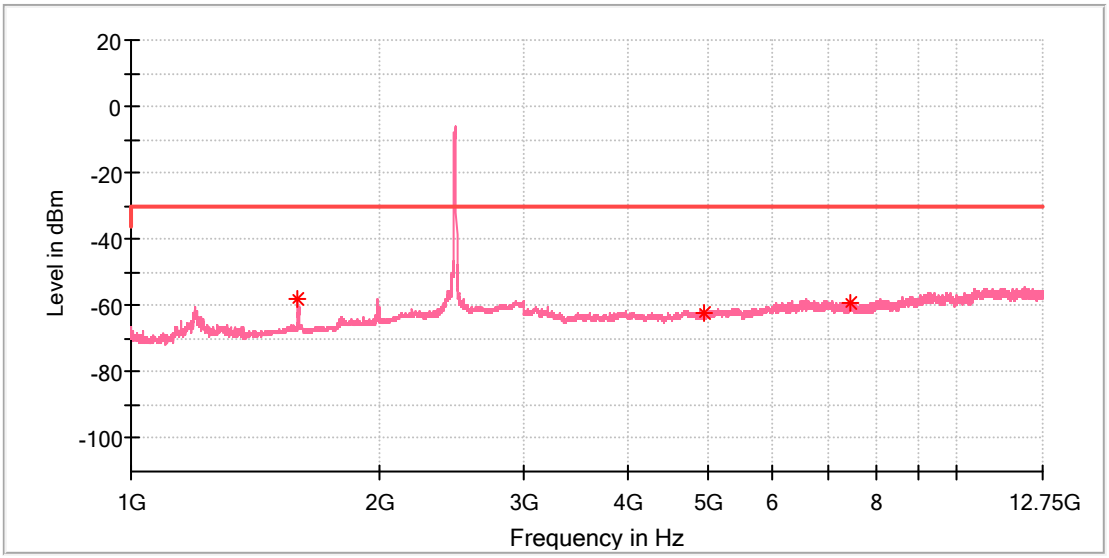
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
57.645000	-77.64	-54.00	23.64	150.0	H	54.0	-116.7	
181.496364	-58.84	-54.00	4.84	150.0	H	221.0	-118.1	
415.663182	-63.20	-36.00	27.20	150.0	H	4.0	-113.7	

Above 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

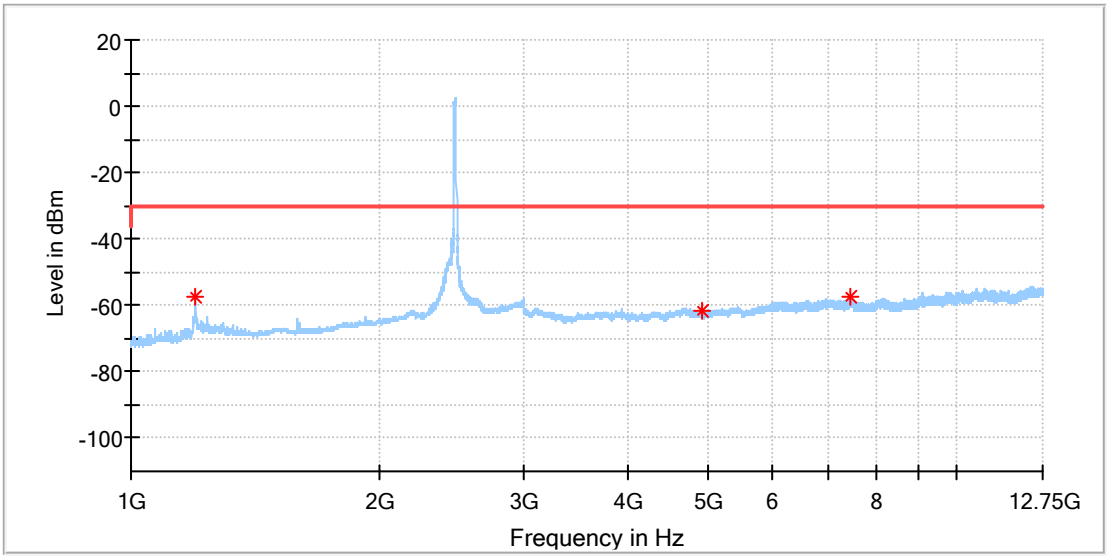


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1593.500000	-57.89	-30.00	27.89	190.0	V	187.0	-98.6	
4943.500000	-62.20	-30.00	32.20	190.0	V	161.0	-95.1	
7433.892857	-59.21	-30.00	29.21	190.0	V	354.0	-91.6	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

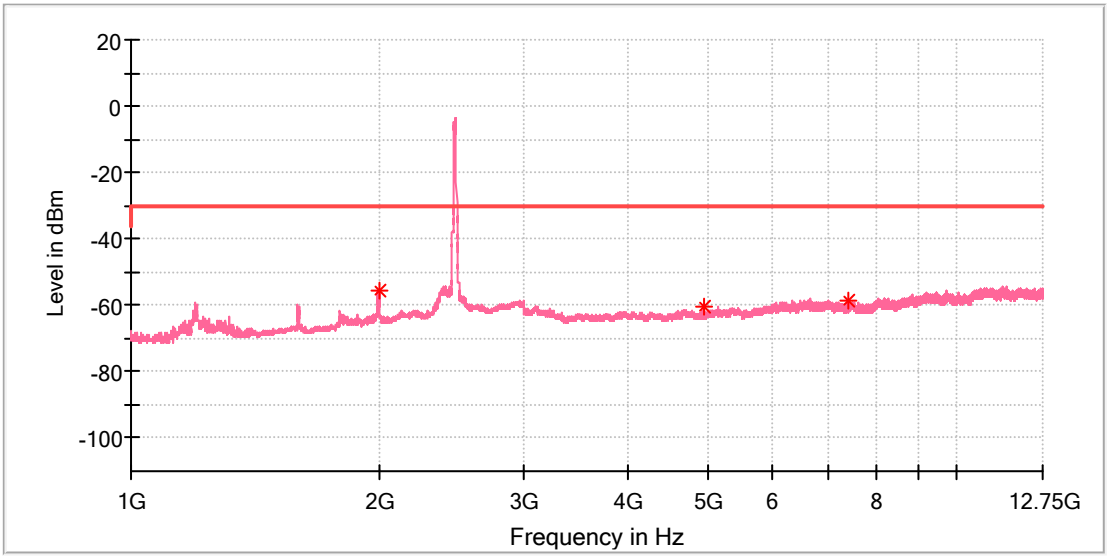


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1196.000000	-57.57	-30.00	27.57	190.0	H	108.0	-102.4	
4939.000000	-61.67	-30.00	31.67	190.0	H	268.0	-94.8	
7443.053572	-57.44	-30.00	27.44	190.0	H	154.0	-90.6	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

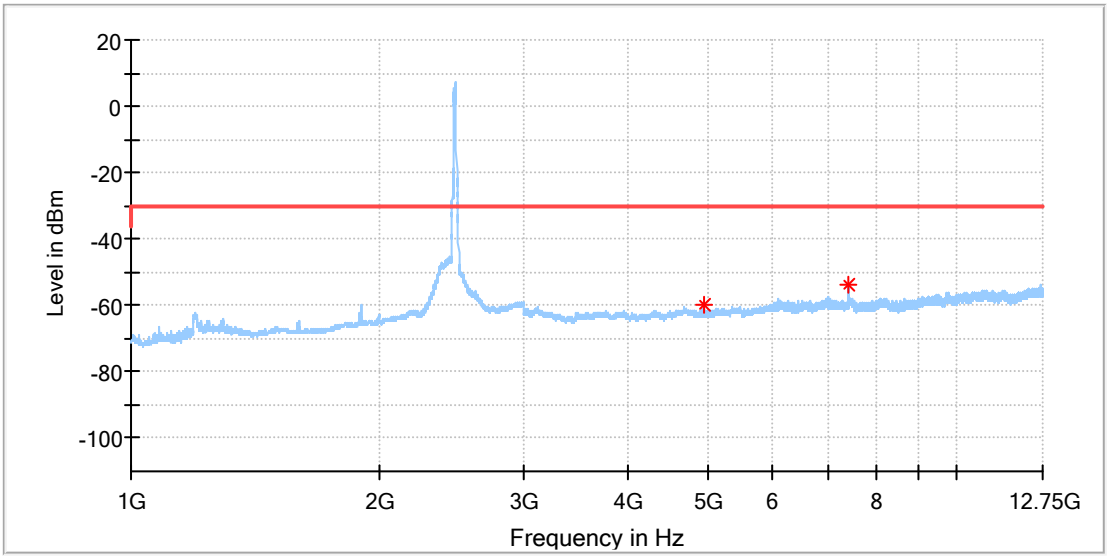


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1997.000000	-55.47	-30.00	25.47	190.0	V	187.0	-96.9	
4940.000000	-60.65	-30.00	30.65	190.0	V	114.0	-95.1	
7420.392857	-58.87	-30.00	28.87	190.0	V	284.0	-91.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

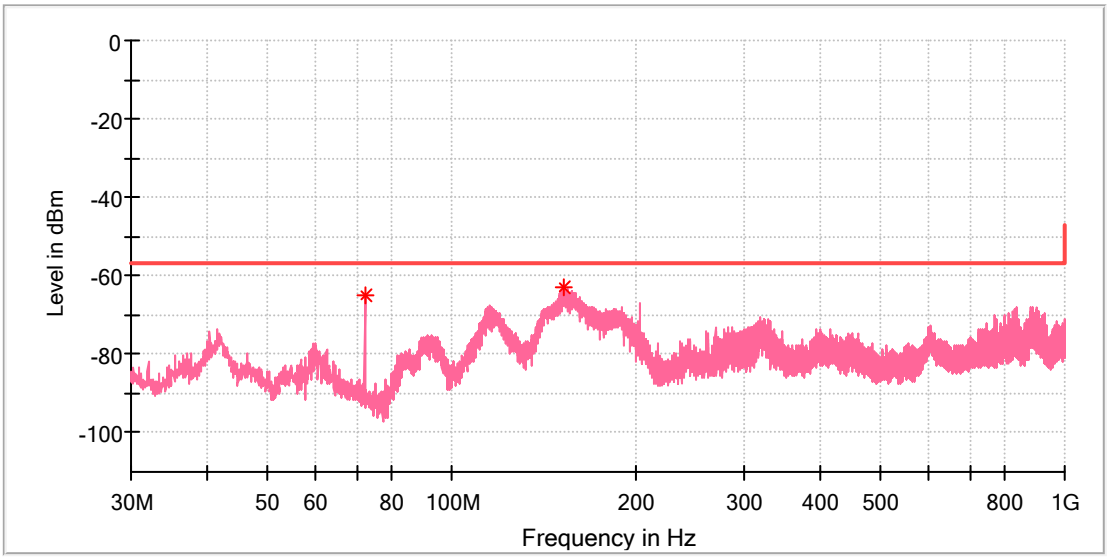
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4941.500000	-59.92	-30.00	29.92	190.0	H	187.0	-94.8	
7413.642857	-53.85	-30.00	23.85	190.0	H	287.0	-90.9	

10 Appendix A.10 : Receiver spurious emissions (Radiated) for Ant #4 6147F00013

Below 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

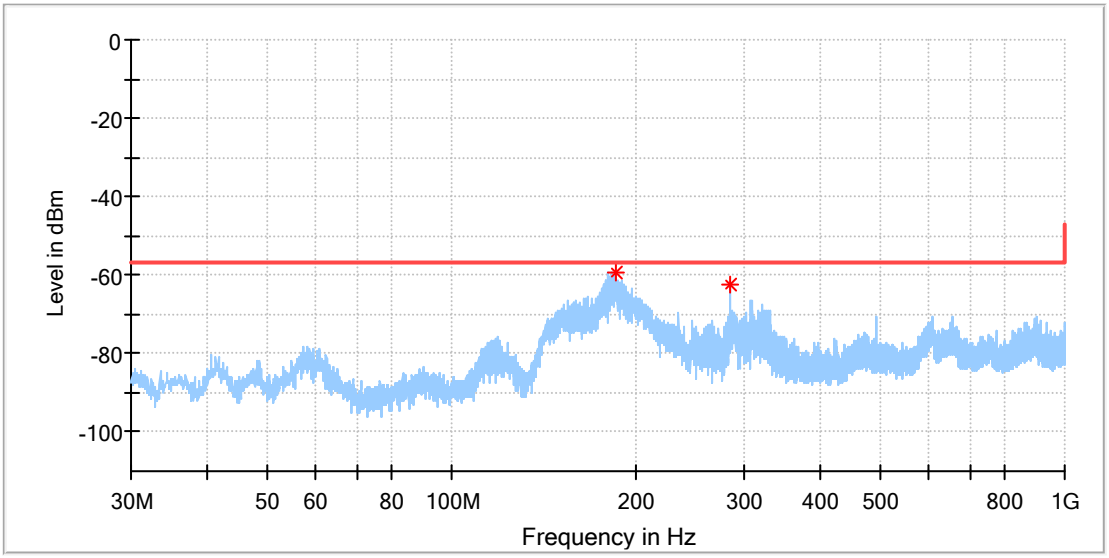


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
72.146500	-65.18	-57.00	8.18	190.0	V	126.0	-122.5	
152.705000	-63.12	-57.00	6.12	190.0	V	185.0	-121.7	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



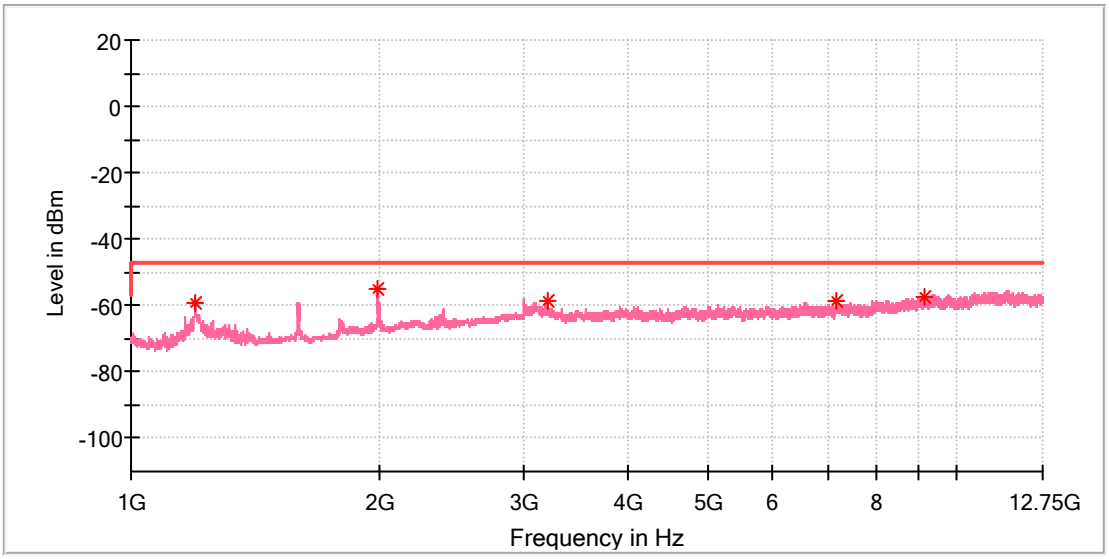
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
184.909000	-60.00	-57.00	3.00	190.0	H	85.0	-117.6	
285.013000	-62.66	-57.00	5.66	190.0	H	151.0	-116.8	

Above 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

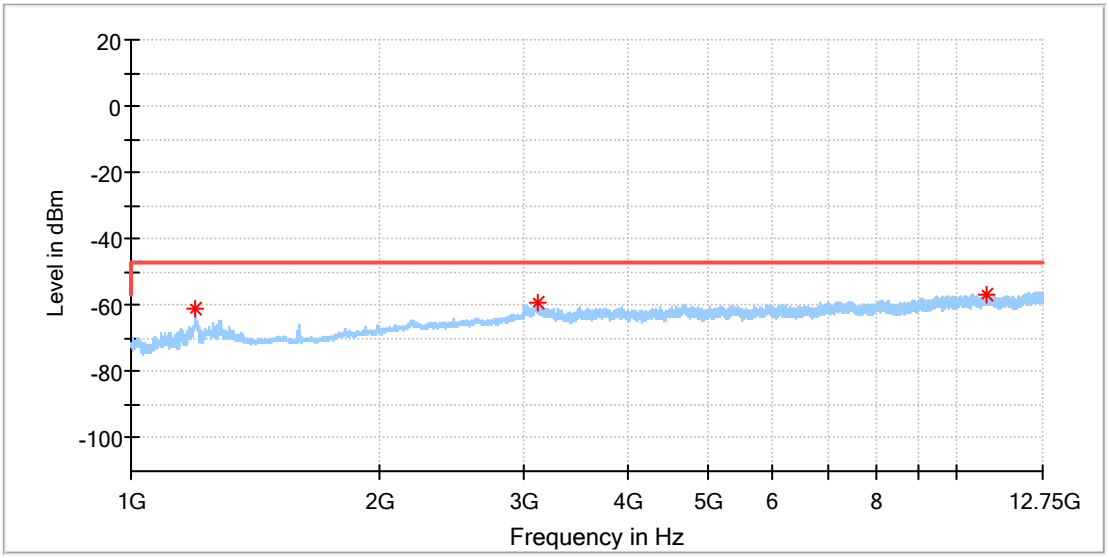


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1195.500000	-58.92	-47.00	11.92	150.0	V	173.0	-101.4	
1994.500000	-54.87	-47.00	7.87	150.0	V	181.0	-96.9	
3198.791667	-58.56	-47.00	11.56	150.0	V	189.0	-96.0	
7165.958333	-58.89	-47.00	11.89	150.0	V	164.0	-91.4	
9173.916667	-57.34	-47.00	10.34	150.0	V	226.0	-89.3	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

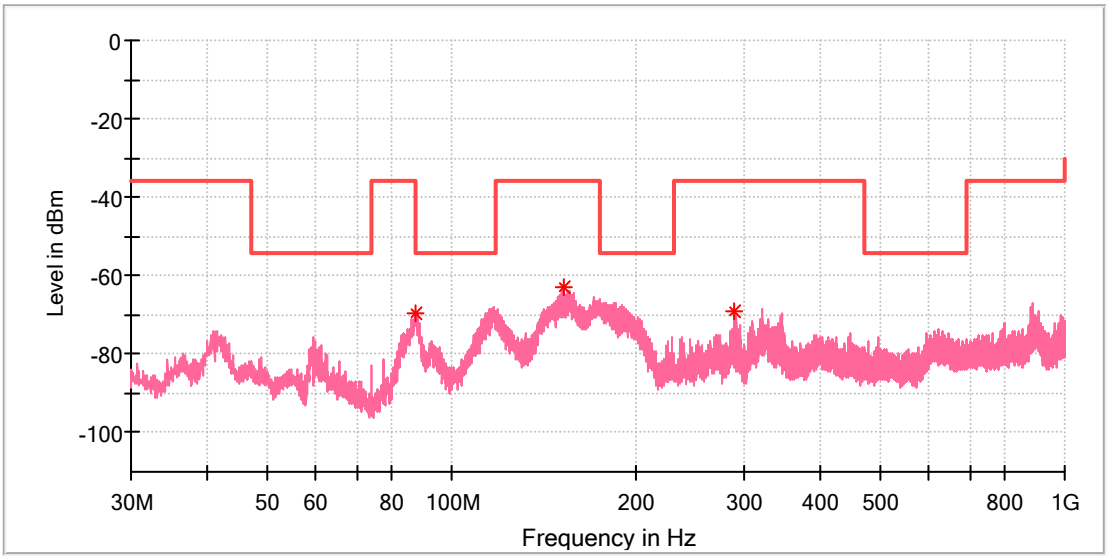
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1194.000000	-60.78	-47.00	13.78	190.0	H	86.0	-102.5	
3113.750000	-59.48	-47.00	12.48	190.0	H	249.0	-95.2	
10911.583333	-56.53	-47.00	9.53	190.0	H	0.0	-88.3	

11 Appendix A.11:Transmitter unwanted emissions (Radiated) for Ant #5 K7ABLG2G4ML400

Below 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

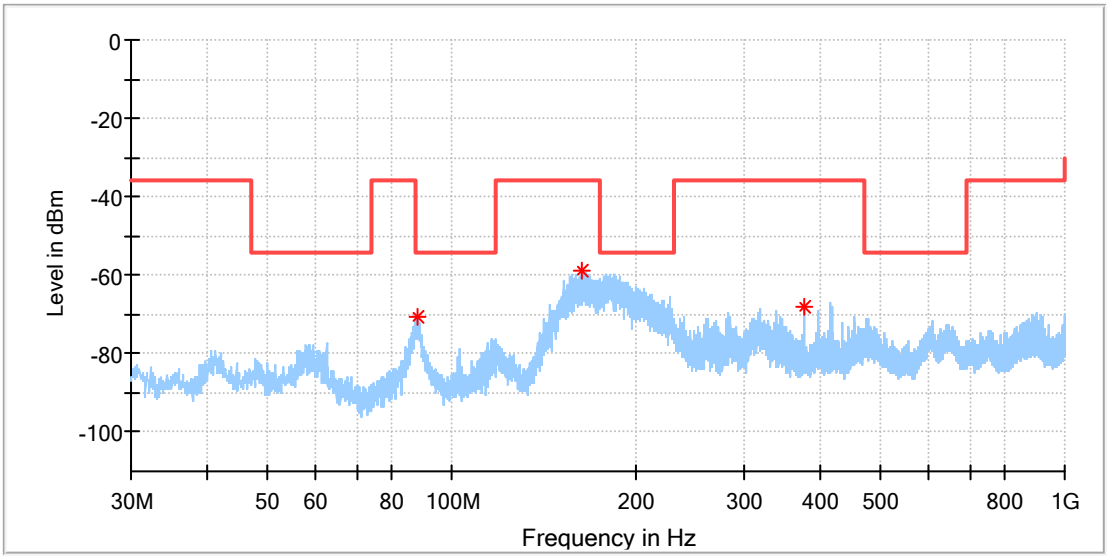


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
87.185909	-69.61	-36.00	33.61	150.0	V	14.0	-120.9	
152.660909	-63.09	-36.00	27.09	150.0	V	171.0	-121.7	
289.783636	-69.04	-36.00	33.04	150.0	V	194.0	-116.9	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



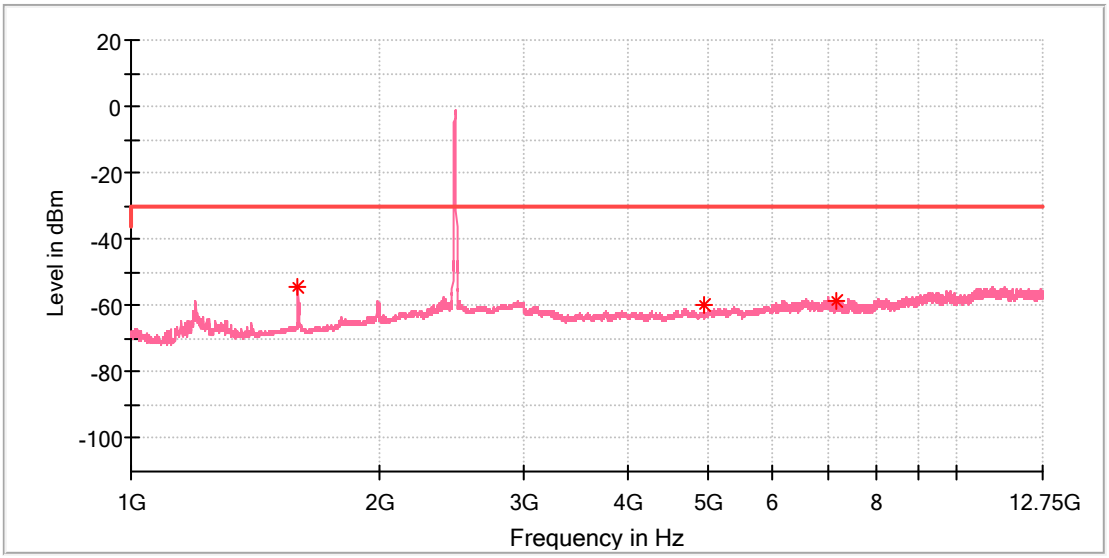
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
87.759091	-70.35	-54.00	16.35	150.0	H	153.0	-121.7	
163.242727	-58.79	-36.00	22.79	150.0	H	71.0	-120.5	
376.995455	-67.80	-36.00	31.80	150.0	H	199.0	-113.7	

Above 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

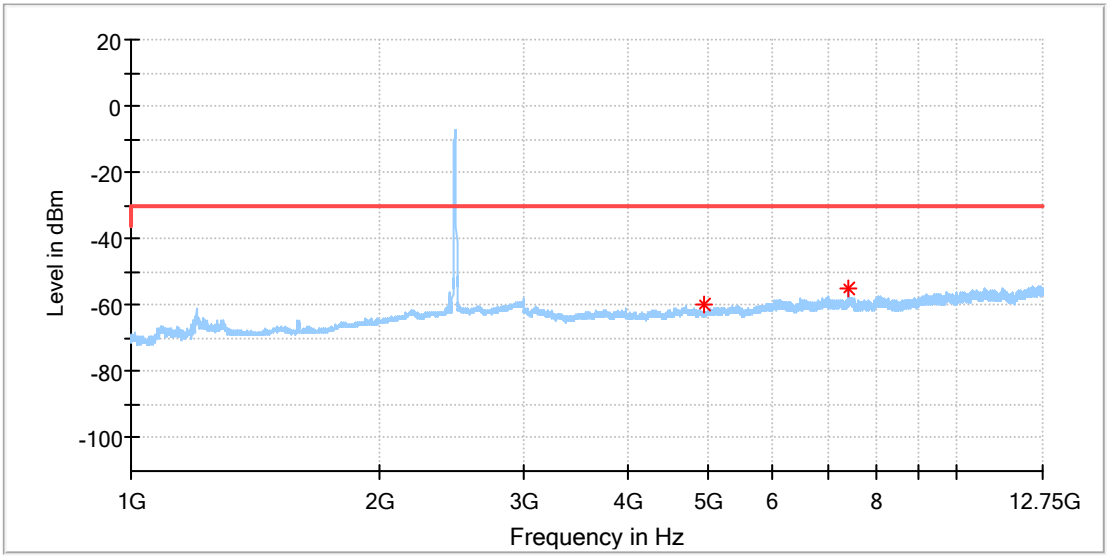


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1595.000000	-54.31	-30.00	24.31	190.0	V	171.0	-98.6	
4944.000000	-59.74	-30.00	29.74	190.0	V	107.0	-95.1	
7172.571429	-58.62	-30.00	28.62	190.0	V	80.0	-91.4	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

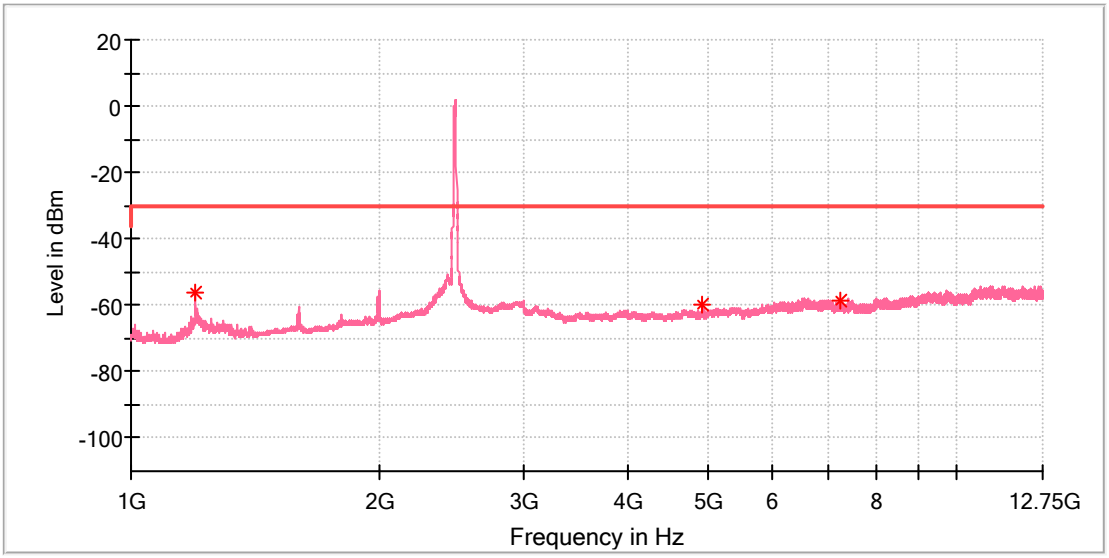


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
4944.000000	-59.99	-30.00	30.00	190.0	H	306.0	-94.8	
7416.535714	-54.79	-30.00	24.79	190.0	H	0.0	-90.8	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

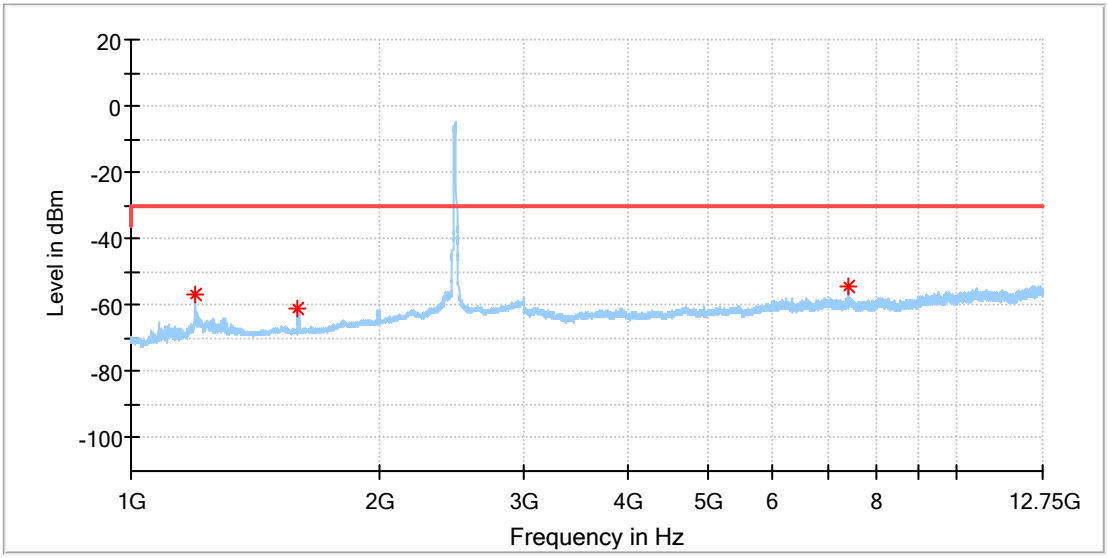


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1197.500000	-55.95	-30.00	25.95	190.0	V	140.0	-101.3	
4937.000000	-59.95	-30.00	29.95	190.0	V	96.0	-95.1	
7226.571429	-58.71	-30.00	28.71	190.0	V	112.0	-91.4	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	TX_11N20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

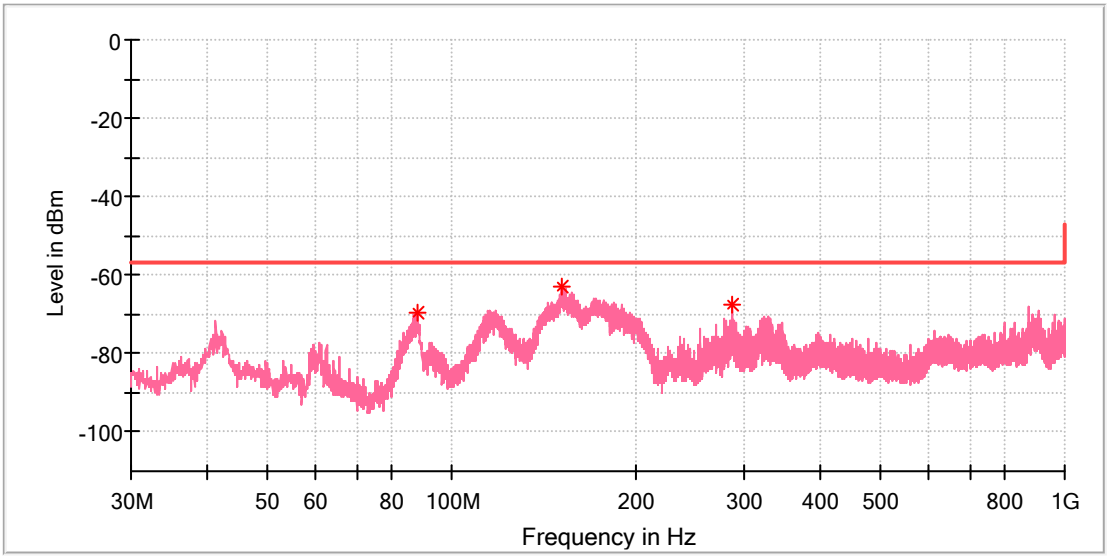
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1198.000000	-56.64	-30.00	26.64	190.0	H	87.0	-102.3	
1593.000000	-61.27	-30.00	31.27	190.0	H	124.0	-99.7	
7414.125000	-54.25	-30.00	24.25	190.0	H	0.0	-90.9	

12 Appendix A.12: Receiver spurious emissions (Radiated) for Ant #5 K7ABLG2G4ML400

Below 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

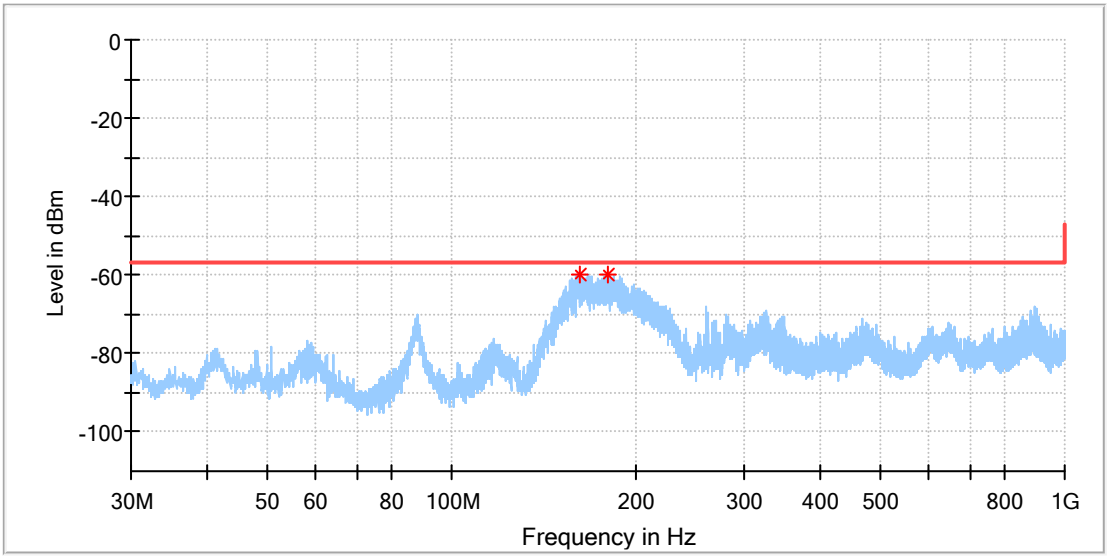


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
87.909000	-69.45	-57.00	12.45	190.0	V	310.0	-120.8	
150.910500	-62.84	-57.00	5.84	190.0	V	182.0	-121.8	
286.322500	-67.64	-57.00	10.64	190.0	V	163.0	-117.0	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



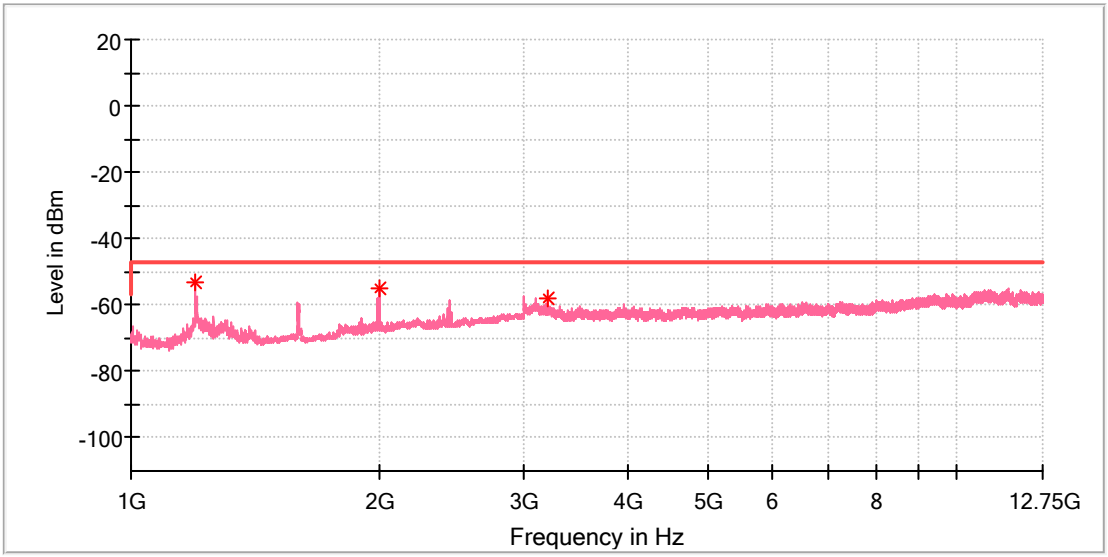
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
179.913500	-60.03	-57.00	3.03	190.0	H	78.0	-118.3	
162.259500	-60.13	-57.00	3.13	190.0	H	108.0	-120.5	

Above 1GHz

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

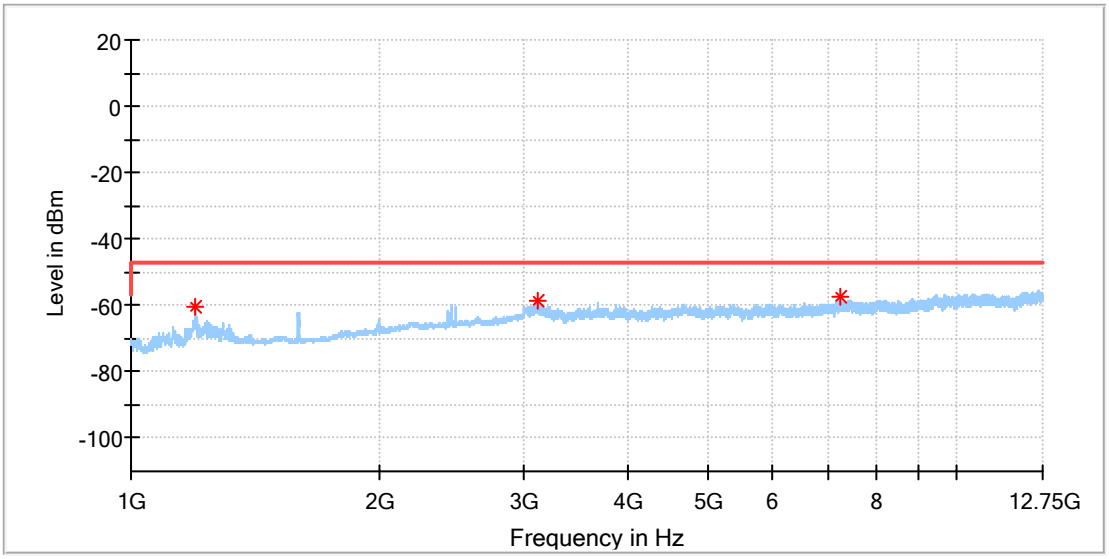


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1198.500000	-53.37	-47.00	6.37	150.0	V	158.0	-101.2	
1998.000000	-55.00	-47.00	8.00	150.0	V	201.0	-96.9	
3197.166667	-57.97	-47.00	10.97	150.0	V	143.0	-96.0	

EUT Information

EUT Name:	WIFI Module
Model:	RAK634
Sample No:	A003110001-008
Test Mode:	RX_11B20 H CH
Test Voltage:	DC 3.3V
Remark:	Temp:22.5;Humi:56%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

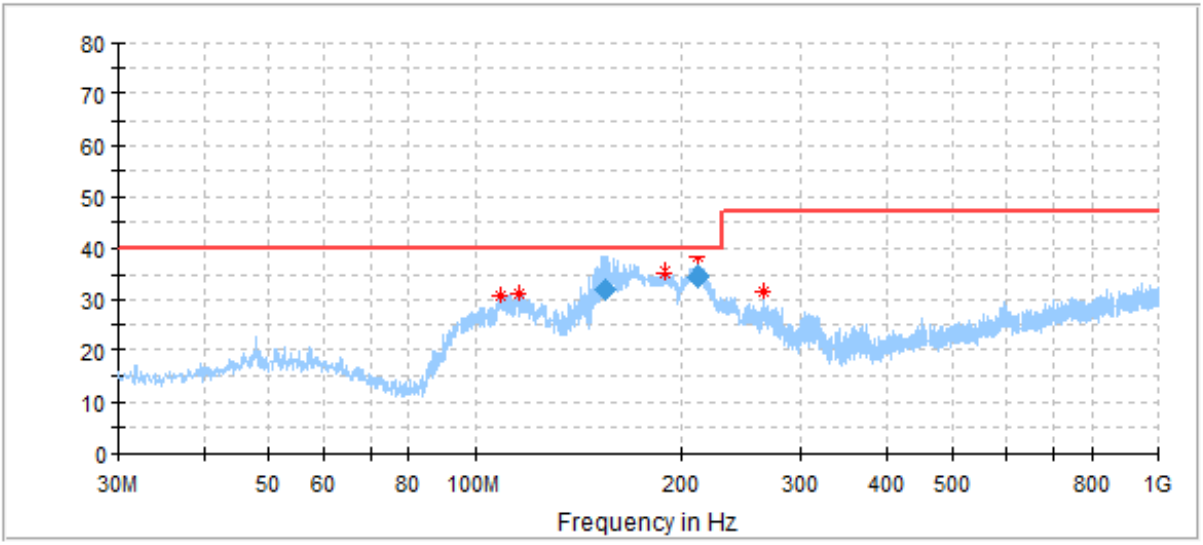
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1198.500000	-60.55	-47.00	13.55	190.0	H	78.0	-102.2	
3114.833333	-58.78	-47.00	11.78	190.0	H	24.0	-95.3	
7233.666667	-57.42	-47.00	10.42	190.0	H	293.0	-90.8	

13 Appendix A.13 : Test Plots of Radiated Emissions

EUT Information

EUT Name:	WIFI module
Model	RAK634
Order No:	168332006_P00391882
Test Mode:	ON, normal working
Test Voltage:	DC 3.3V
Test By:	Steve Lan
Review By:	Gary Chen
Remark:	3m Chamber

Level in dBµV/m



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
109.249000	30.73	40.00	9.27	200.0	H	192.0	17.8
115.845000	31.05	40.00	8.95	200.0	H	192.0	19.1
188.983000	35.14	40.00	4.86	200.0	H	218.0	17.7
263.576000	31.60	47.00	15.40	100.0	H	213.0	20.3

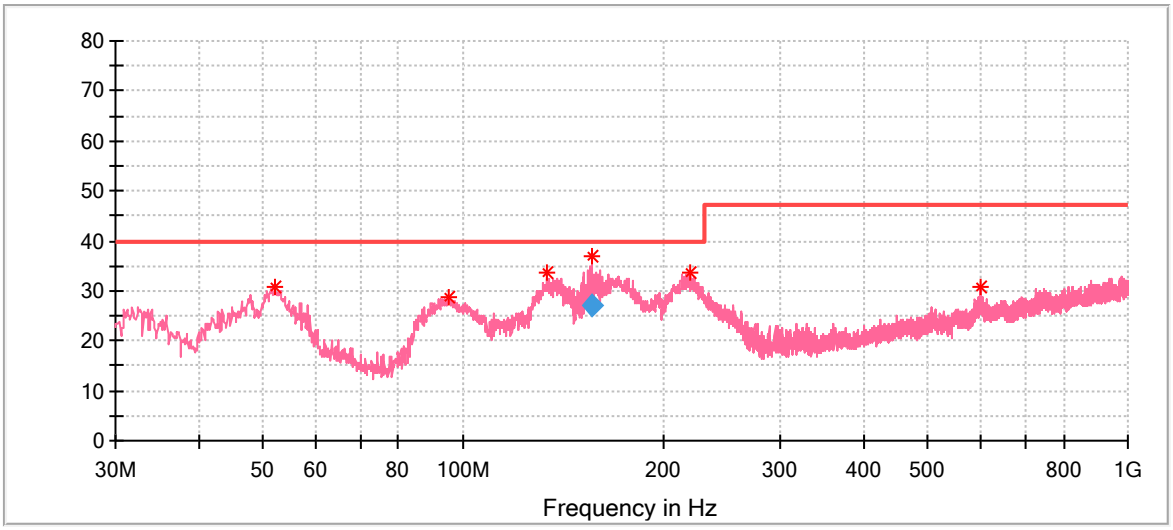
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
155.458000	31.94	40.00	8.06	1000.0	120.000	100.0	H	50.0	21.5
212.671000	34.52	40.00	5.48	1000.0	120.000	200.0	H	39.0	18.1

EUT Information

EUT Name:	WIFI module
Model	RAK634
Order No:	168332006_P00391882
Test Mode:	ON, normal working
Test Voltage:	DC 3.3V
Test By:	Steve Lan
Review By:	Gary Chen
Remark:	3m Chamber

Level in dBµV/m



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
52.213000	30.70	40.00	9.30	100.0	V	166.0	20.9
95.378000	28.81	40.00	11.19	100.0	V	321.0	16.4
133.887000	33.73	40.00	6.27	100.0	V	286.0	19.6
219.538000	33.71	40.00	6.29	100.0	V	37.0	18.6
599.293000	30.77	47.00	16.23	100.0	V	271.0	28.0

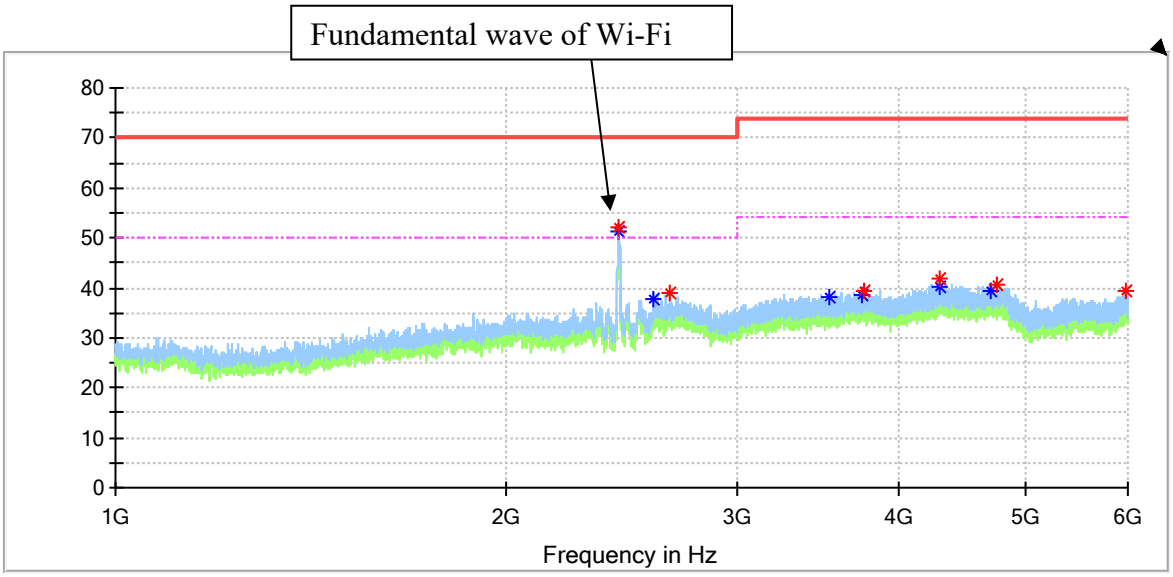
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
156.508000	27.07	40.00	12.93	1000.0	120.000	100.0	V	118.0	21.5

EUT Information

EUT Name:	WIFI module
Model	RAK634
Order No:	168332006_P00391882
Test Mode:	ON, normal working
Test Voltage:	AC 230V/50Hz
Test By:	Steve Lan
Review By:	Gary Chen
Remark:	3m Chamber

Level in dBµV/m



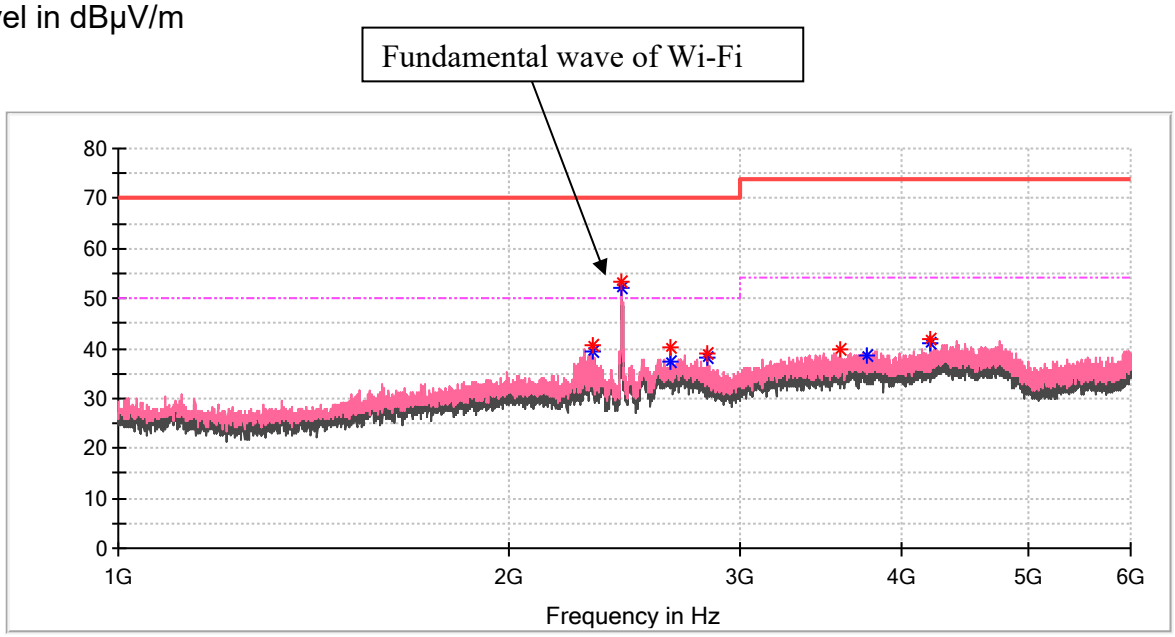
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2436.000000	---	51.42	50.00	-1.42	100.0	H	33.0	-5.3
2436.500000	52.28	---	70.00	17.72	100.0	H	33.0	-5.3
2591.000000	---	37.89	50.00	12.11	100.0	H	302.0	-4.0
2671.500000	39.14	---	70.00	30.86	100.0	H	194.0	-3.3
3533.000000	---	37.96	54.00	16.04	100.0	H	256.0	-0.9
3747.000000	---	38.37	54.00	15.63	100.0	H	142.0	0.2
3758.000000	39.49	---	74.00	34.51	100.0	H	90.0	0.1
4301.000000	---	40.23	54.00	13.77	100.0	H	222.0	2.2
4301.000000	41.98	---	74.00	32.02	100.0	H	222.0	2.2
4699.500000	---	39.40	54.00	14.60	100.0	H	184.0	2.6
4753.500000	40.81	---	74.00	33.19	100.0	H	290.0	2.9
5970.000000	39.28	---	74.00	34.72	100.0	H	0.0	2.2

EUT Information

EUT Name:	WIFI module
Model	RAK634
Order No:	168332006_P00391882
Test Mode:	ON, normal working
Test Voltage:	AC 230V/50Hz
Test By:	Steve Lan
Review By:	Gary Chen
Remark:	3m Chamber

Level in dBµV/m



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2319.000000	---	39.52	50.00	10.48	100.0	V	104.0	-6.4
2319.000000	40.42	---	70.00	29.58	100.0	V	104.0	-6.4
2436.500000	---	52.15	50.00	-2.15	100.0	V	190.0	-5.3
2436.500000	53.16	---	70.00	16.84	100.0	V	190.0	-5.3
2657.000000	40.05	---	70.00	29.95	100.0	V	294.0	-3.2
2657.500000	---	37.52	50.00	12.48	100.0	V	167.0	-3.2
2837.000000	---	38.33	50.00	11.67	100.0	V	91.0	-4.4
2837.000000	39.07	---	70.00	30.93	100.0	V	91.0	-4.4
3586.500000	39.86	---	74.00	34.14	100.0	V	0.0	-0.7
3765.000000	---	38.61	54.00	15.39	100.0	V	275.0	0.1
4211.000000	41.80	---	74.00	32.20	100.0	V	218.0	1.4
4211.000000	---	41.08	54.00	12.92	100.0	V	218.0	1.4