Product Name: Smart Phone	**Report No: FCC022023-00500RF3**
Product Model: N50	**Security Classification: Open**
Version: V1.0	**Total Page: 60**

TIRT Testing Report

Prepared By:	**Checked By:**	**Approved By:**	
Stone Tang	Randy Lv	Daniel Chen	
Stone Tang	Randy LV	Daniel Chen	

RF TEST REPORT

FCC ID: 2AX4YN50

According to

47 CFR FCC Part 15, Subpart C(Section 15.247)

ANSI C63.10:2013

Equipment	:	Smart Phone
Model No.	:	N50
Trademark	:	DOOGEE
Applicant	:	Shenzhen DOOGEE Hengtong Technology CO.,LTD B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.
- Test date: 2023/02/20~2023/03/11

Lab: Beijing TIRT Technology Service Co.,Ltd Shenzhen

Add: 101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China

TEL: +86-0755-27087573

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History of this test report

Original Report Issue Date: 2023.03.13

● No additional attachment

○ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Test Item	Standards Paragraph	Result
Conducted Emission	FCC Part 15: 15.207 ANSI C63.10	P
6dB Bandwidth	FCC PART 15:15.247(a)(2) ANSI C63.10	P
Output Power	FCC Part 15: 15.247(b)(3) ANSI C63.10	P
Radiated Spurious Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10	P
Conducted Spurious & Band Edge Emission	FCC Part 15: 15.247(d) ANSI C63.10	P
Power Spectral Density	FCC PART 15:15.247(e) ANSI C63.10	P
Radiated Band Edge Emission	FCC Part 15: 15.247(d) ANSI C63.10	P
Antenna Requirement	FCC Part 15: 15.203	P

Note: 1. P is an abbreviation for Pass.

2. F is an abbreviation for Fail.

3. N/A is an abbreviation for Not Applicable.

4. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT Name	:	Smart Phone
Model No.	:	N50
DIFF.	:	N/A
Power supply	:	DC 9V from adapter, DC 3.7V from battery
2.4G WIFI	:	
Operation frequency	:	2412MHz-2462MHz for IEEE 802.11 b, g. n/HT20 2422MHz~2452MHz for IEEE802.11n/HT40
Channel No.	:	802.11b/802.11g /802.11n(HT20): 11CH 802.11(HT40): 7CH
Modulation type	:	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK)
Antenna Type	:	Internal antenna, Maximum Gain is 1.0dBi. Antenna information is provided by applicant.
Software version	:	DOOGEE-N50-EEA-Android13.0-20230216
Hardware version	:	SC6007_MB_V1.1.0
Intend use environment	:	Residential, commercial and light industrial environment
Note	:	/

2.2. Accessories of Device (EUT)

Accessories : /

Manufacturer : /

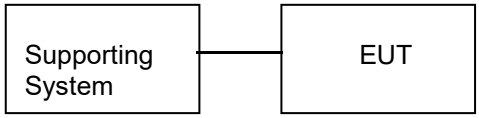
Model : /

Ratings : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC
1	/	/	/	/	/

2.4. Block Diagram of connection between EUT and simulators



2.5. Test Mode Description

Duty cycle :100%Keeping TX			
Mode	**data rate (Mbps)(see Note)**	**Channel**	**Frequency (MHz)**
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11 n/HT20	6.5	Low :CH1	2412
	6.5	Middle: CH6	2437
	6.5	High: CH11	2462
IEEE 802.11 n/HT40	13	Low :CH3	2422
	13	Middle: CH6	2437
	13	High: CH9	2452
Note: According exploratory test, EUT will have maximum output power in those data rate. So those data rate were used for all test.			

Channel list:					
For IEEE 802.11b, g, n/HT20					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
CH1	2412	CH5	2432	CH9	2452
CH2	2417	CH6	2437	CH10	2457
CH3	2422	CH7	2442	CH11	2462
CH4	2427	CH8	2447		
For IEEE 802.11 n/HT40					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
CH1	2422	CH5	2442		
CH2	2427	CH6	2447		
CH3	2432	CH7	2452		
CH4	2437				

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	24℃
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	98kPa

2.7. Test Facility

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Designation Number:	CN1309
Test Firm Registration Number:	825524
Telephone:	+86-0755-27087573

2.8. Measurement Uncertainty

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	±142.12 KHz
RF power conducted	±0.74 dB
RF power radiated	±3.25dB
Spurious emissions, conducted	±1.78dB
Spurious emissions, radiated (9KHz~30MHz)	±2.56dB
Spurious emissions, radiated (30MHz～1GHz)	±4.6dB
Spurious emissions, radiated (Above 1GHz)	±4.9dB
Conduction Emissions(150kHz~30MHz)	±3.1 dB
Humidity	±4.6%
Temperature	±0.7°C
Time	±1.25%

2.9. Test Equipment List

No.	Equipment	Manufacturer	Type No.	Serial No.	Cal. date (yyyy/mm/dd)	Cal. Due date (yyyy/mm/dd)
1	EMI Receiver	Rohde&Schwarz	ESCI	100718	2022/11/09	2023/11/10
2	AMN	Rohde&Schwarz	ENV216	100075	2022/11/09	2023/11/10
3	AMN	Schwarzbeck	NSLK8127	#829	2022/11/09	2023/11/10
4	ECSI RF IN RF Cable	Rohde&Schwarz	RP-X1	\	2022/11/17	2023/11/16
5	ECSI RF IN RF Cable	Rohde&Schwarz	Sapre sm	\	2022/11/09	2023/11/10
6	EMI Receiver	Rohde&Schwarz	ESR7	102013	2022/11/09	2023/11/10
7	Spectrum analyzer	Rohde&Schwarz	FSV30	103741	2022/11/09	2023/11/10
8	Spectrum analyzer	KEYSIGHT	N9010A	MY51440158	2022/11/09	2023/11/10
9	Integral Antenna	Schwarzbeck	VULB 9163	9163-868	2022/12/25	2023/12/24
10	Integral Antenna	Schwarzbeck	BBHA 9120D	BBHA 9120D 1201	2022/11/09	2023/11/10
11	Integral Antenna	Schwarzbeck	BBHA 9170	9170#685	2022/11/06	2023/11/10
12	Preamplifier	CD Systems Inc	PAP-03036-30	85060000	2022/11/09	2023/11/10
13	Preamplifier	Schwarzbeck	BBV9721	9721-019	2022/11/09	2023/11/10
14	Preamplifier	emci	EMC012645SE	980417	2022/11/09	2023/11/10
15	ECSI RF IN RF Cable	Rohde&Schwarz	AP-X1	\	2022/11/09	2023/11/10
16	Spectrum Analyzer	Agilent	N9010A	MY52221119	2022/11/09	2023/11/10
17	Power Collection Unit	Tonscend	JS0806-2	188060134	2022/09/12	2023/09/11
18	Tonscend Test System	Tonscend	2.6.77.0518	NA	NA	NA
19	Power Sensor	Agilent	U2021XA	MY55410011	2022/09/12	2023/09/11
20	Power Sensor	Agilent	U2021XA	MY55410012	2022/09/12	2023/09/11
21	Power Sensor	Agilent	U2021XA	MY55410018	2022/09/12	2023/09/11
22	Power Sensor	Agilent	U2021XA	MY55410019	2022/09/12	2023/09/11
23	Temp&Humidity Recorder	Anymetre	JR900	NA	2022/11/03	2023/11/02
24	Temp&Humidity Chamber	ETOMA	NTH1100-30A	16080628	2022/09/01	2023/08/30

3. SPURIOUS EMISSION

3.1. Test Limits

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

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

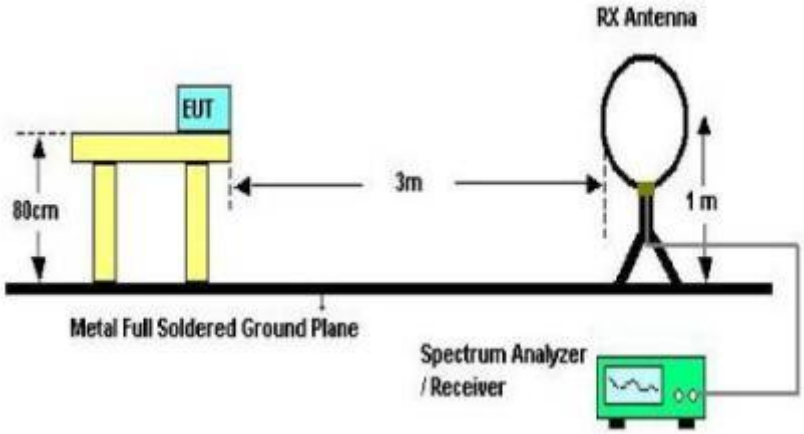
15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009-0.490	300	2400/F(KHz)	/
0.490-1.705	30	24000/F(KHz)	/
1.705-30	30	30	29.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	
Note 1: The peak limit is 20 dB higher than the average limit			
Note 2: Peak limit applies (AVG limit + 20 dB) as well as RSS-247 Section 5.5			

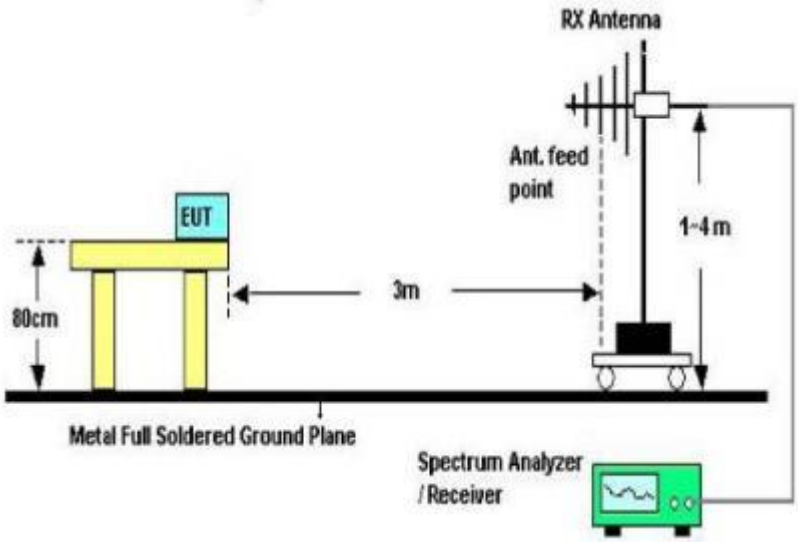
3.2. Test Procedure

The measuring distance of 3m shall be used for measurements at frequency up to 1GH and above 1GHz. The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above1GHz testing, the table was rotated 360 degrees to determine the position of the highest radiation The Test antenna shall vary between 1m and 4m, both Horizontal and Vertical antenna are set of make measurement.
The initial step in collecting radiated emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Quasi Peak Detector mode premeasured
If Peak value comply with QP limit below 1GHz, the EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
For the actual test configuration, please see the test setup photo.

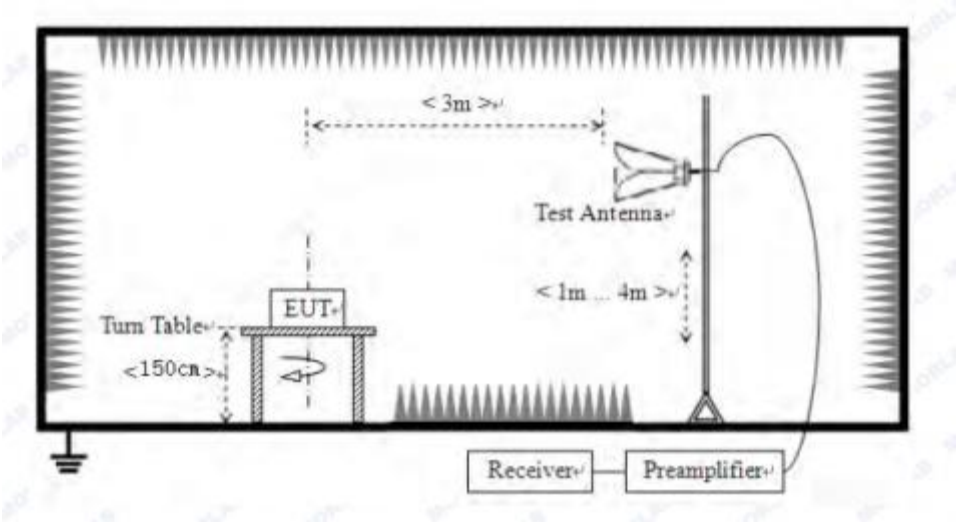
3.3. Test Setup



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

3.4. Test Results

Test Condition
Continual Transmitting in maximum power.

9KHz~150KHz	RBW200Hz	VBW1KHz
150KHz~30MHz	RBW9KHz	VBW 30KHz
30MHZ~1GHz	RBW120KHz	VBW 300KHz
Above1GHz	RBW1MHz	VBW 3MHz

We have scanned the EUT from 9kHz up to the 10th harmonic of the fundamental.

Detailed information please see the following page.

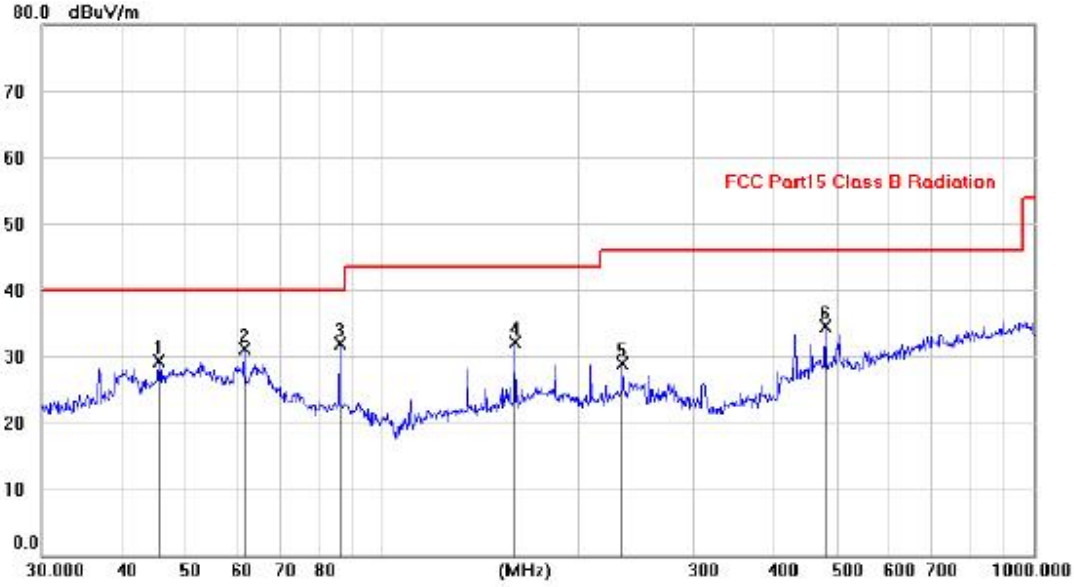
From 9KHz to 30MHz: Conclusion: Pass

Note: 1.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

2.Only show the test data of the worst Channel in this report.

From 30MHz to 1000MHz: Conclusion: Pass

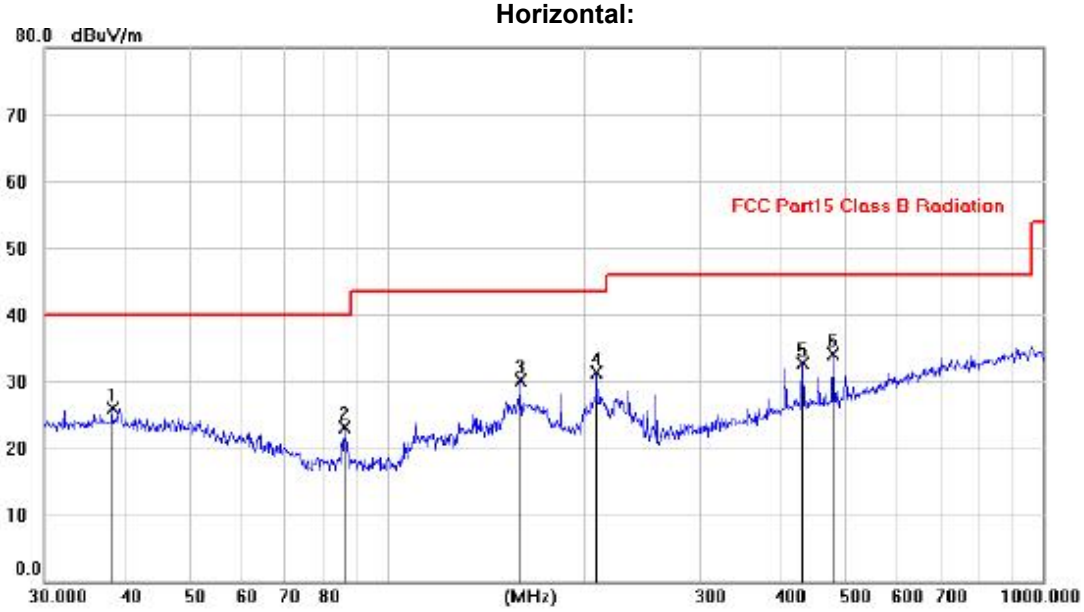
Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		45.3912	15.14	14.10	29.24	40.00	-10.76	peak			
2		61.4395	18.30	12.87	31.17	40.00	-8.83	peak			
3	*	86.0087	21.85	9.98	31.83	40.00	-8.17	peak			
4		159.7470	16.98	15.04	32.02	43.50	-11.48	peak			
5		233.4850	16.57	12.39	28.96	46.00	-17.04	peak			
6		479.2375	16.56	17.93	34.49	46.00	-11.51	peak			

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		38.1405	11.80	14.16	25.96	40.00	-14.04	peak			
2		86.0288	13.13	9.98	23.11	40.00	-16.89	peak			
3		159.7470	14.99	15.04	30.03	43.50	-13.47	peak			
4		208.8974	20.16	11.05	31.21	43.50	-12.29	peak			
5		430.0754	15.69	17.08	32.77	46.00	-13.23	peak			
6	*	479.2375	16.24	17.93	34.17	46.00	-11.83	peak			

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Remark: All modes have been tested, and only worst data of B mode, Channel 2412MHz was listed in this report.

From 1G-25GHz

Test Mode: IEEE 802.11b TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824	48.22	V	33.93	10.18	34.26	58.07	74	-15.93	PK
4824	36.86	V	33.93	10.18	34.26	46.71	54	-7.29	AV
7236	/	/	/	/	/	/	/	/	/
9648	/	/	/	/	/	/	/	/	/
4824	47.04	H	33.93	10.18	34.26	56.89	74	-17.11	PK
4824	35.71	H	33.93	10.18	34.26	45.56	54	-8.44	AV
7236	/	/	/	/	/	/	/	/	/
9648	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11b TX Mid									
4874	49.09	V	33.95	10.20	34.26	58.98	74	-15.02	PK
4874	35.73	V	33.95	10.20	34.26	45.62	54	-8.38	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
4874	48.76	H	33.95	10.20	34.26	58.65	74	-15.35	PK
4874	34.91	H	33.95	10.20	34.26	44.80	54	-9.20	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11b TX High									
4924	47.56	V	33.98	10.22	34.25	57.51	74	-16.49	PK
4924	33.87	V	33.98	10.22	34.25	43.82	54	-10.18	AV
7386	/	/	/	/	/	/	/	/	/
9848	/	/	/	/	/	/	/	/	/
4924	46.09	H	33.98	10.22	34.25	56.04	74	-17.96	PK
4924	32.34	H	33.98	10.22	34.25	42.29	54	-11.71	AV
7386	/	/	/	/	/	/	/	/	/
9848	/	/	/	/	/	/	/	/	/

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Test Mode: IEEE 802.11g TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824	48.99	V	33.93	10.18	34.26	58.84	74	-15.16	PK
4824	36.26	V	33.93	10.18	34.26	46.11	54	-7.89	AV
7236	/	/	/	/	/	/	/	/	/
9648	/	/	/	/	/	/	/	/	/
4824	47.20	H	33.93	10.18	34.26	57.05	74	-16.95	PK
4824	35.19	H	33.93	10.18	34.26	45.04	54	-8.96	AV
7236	/	/	/	/	/	/	/	/	/
9648	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11g TX Mid									
4874	49.14	V	33.95	10.20	34.26	59.03	74	-14.97	PK
4874	35.25	V	33.95	10.20	34.26	45.14	54	-8.86	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
4874	48.13	H	33.95	10.20	34.26	58.02	74	-15.98	PK
4874	34.13	H	33.95	10.20	34.26	44.02	54	-9.98	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11g TX High									
4924	47.71	V	33.98	10.22	34.25	57.66	74	-16.34	PK
4924	33.81	V	33.98	10.22	34.25	43.76	54	-10.24	AV
7386	/	/	/	/	/	/	/	/	/
9848	/	/	/	/	/	/	/	/	/
4924	46.16	H	33.98	10.22	34.25	56.11	74	-17.89	PK
4924	32.78	H	33.98	10.22	34.25	42.73	54	-11.27	AV
7386	/	/	/	/	/	/	/	/	/
9848	/	/	/	/	/	/	/	/	/

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Test Mode: IEEE 802.11n HT20 TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824	48.94	V	33.93	10.18	34.26	58.79	74	-15.21	PK
4824	36.37	V	33.93	10.18	34.26	46.22	54	-7.78	AV
7236	/	/	/	/	/	/	/	/	/
9648	/	/	/	/	/	/	/	/	/
4824	47.21	H	33.93	10.18	34.26	57.06	74	-16.94	PK
4824	35.91	H	33.93	10.18	34.26	45.76	54	-8.24	AV
7236	/	/	/	/	/	/	/	/	/
9648	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11n HT20 TX Mid									
4874	49.03	V	33.95	10.20	34.26	58.92	74	-15.08	PK
4874	35.53	V	33.95	10.20	34.26	45.42	54	-8.58	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
4874	48.24	H	33.95	10.20	34.26	58.13	74	-15.87	PK
4874	34.87	H	33.95	10.20	34.26	44.76	54	-9.24	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11n HT20 TX High									
4924	47.47	V	33.98	10.22	34.25	57.42	74	-16.58	PK
4924	33.52	V	33.98	10.22	34.25	43.47	54	-10.53	AV
7386	/	/	/	/	/	/	/	/	/
9848	/	/	/	/	/	/	/	/	/
4924	46.20	H	33.98	10.22	34.25	56.15	74	-17.85	PK
4924	32.98	H	33.98	10.22	34.25	42.93	54	-11.07	AV
7386	/	/	/	/	/	/	/	/	/
9848	/	/	/	/	/	/	/	/	/

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Test Mode: IEEE 802.11n HT40 TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4844	48.64	V	33.93	10.18	34.26	58.49	74	-15.51	PK
4844	36.48	V	33.93	10.18	34.26	46.33	54	-7.67	AV
7266	/	/	/	/	/	/	/	/	/
9688	/	/	/	/	/	/	/	/	/
4844	47.36	H	33.93	10.18	34.26	57.21	74	-16.79	PK
4844	35.34	H	33.93	10.18	34.26	45.19	54	-8.81	AV
7266	/	/	/	/	/	/	/	/	/
9688	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11n HT40 TX Mid									
4874	49.44	V	33.95	10.20	34.26	59.33	74	-14.67	PK
4874	35.22	V	33.95	10.20	34.26	45.11	54	-8.89	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
4874	48.36	H	33.95	10.20	34.26	58.25	74	-15.75	PK
4874	34.31	H	33.95	10.20	34.26	44.20	54	-9.80	AV
7311	/	/	/	/	/	/	/	/	/
9748	/	/	/	/	/	/	/	/	/
Test Mode: IEEE 802.11n HT40 TX High									
4904	47.36	V	33.98	10.22	34.25	57.31	74	-16.69	PK
4904	33.34	V	33.98	10.22	34.25	43.29	54	-10.71	AV
7356	/	/	/	/	/	/	/	/	/
9808	/	/	/	/	/	/	/	/	/
4904	46.95	H	33.98	10.22	34.25	56.90	74	-17.10	PK
4904	32.68	H	33.98	10.22	34.25	42.63	54	-11.37	AV
7356	/	/	/	/	/	/	/	/	/
9808	/	/	/	/	/	/	/	/	/

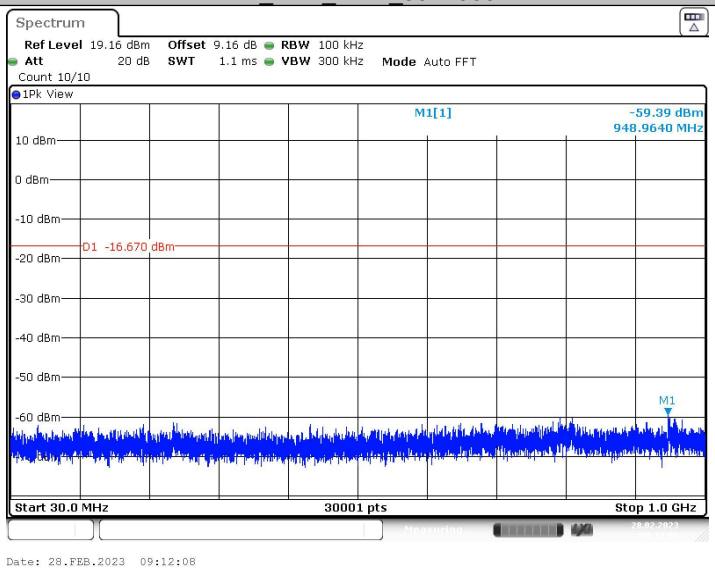
Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

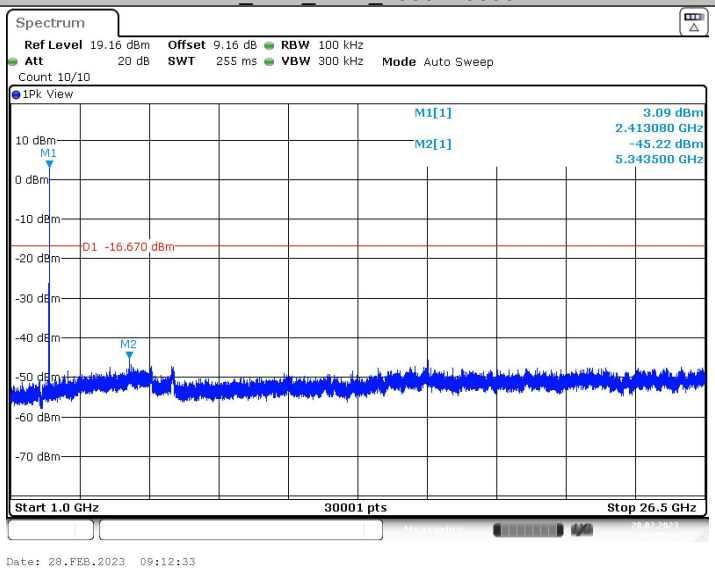
2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Conducted RF Spurious Emission

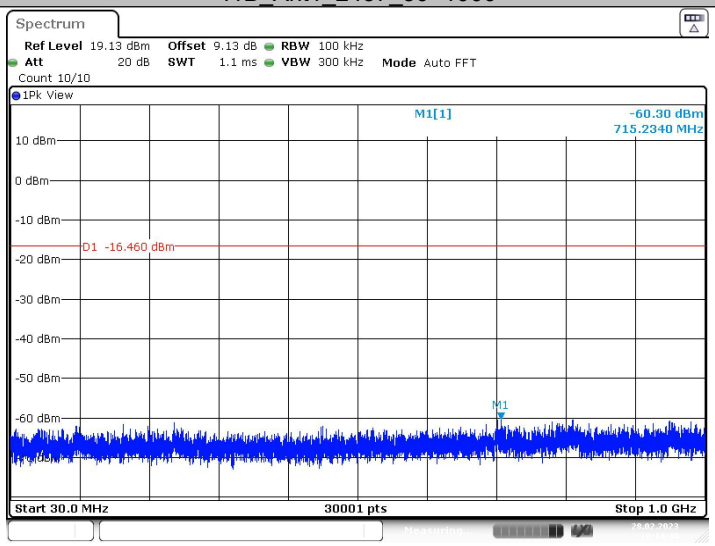
11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500



11B_Ant1_2437_30~1000



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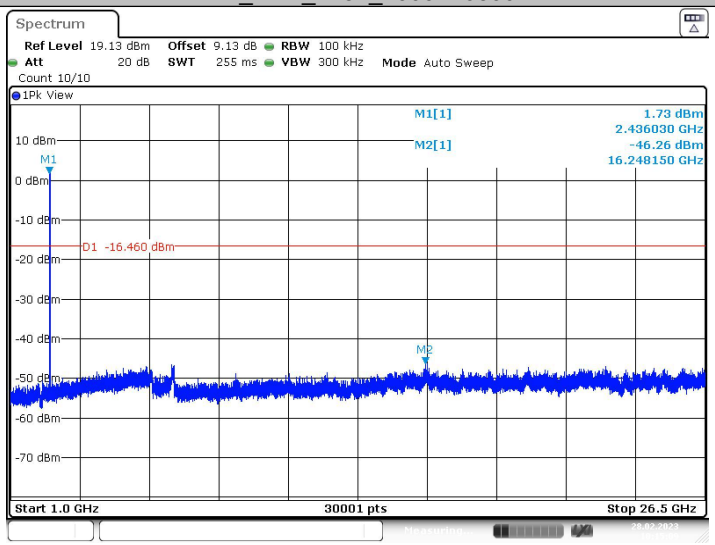

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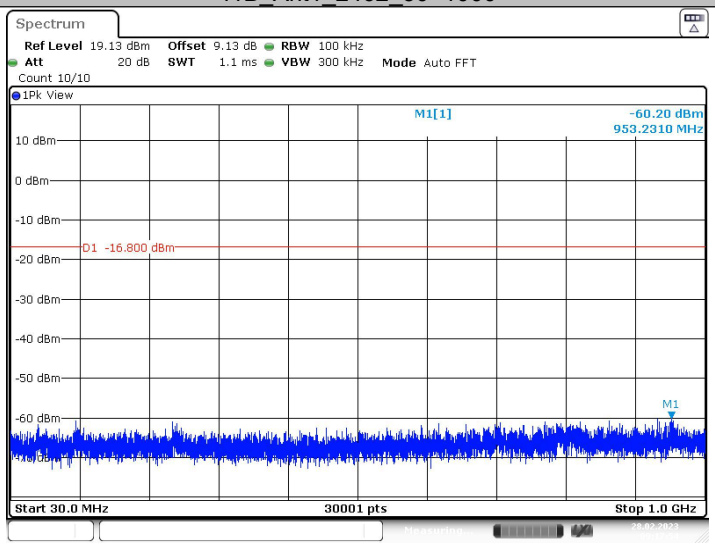
11B_Ant1_2462_30~1000



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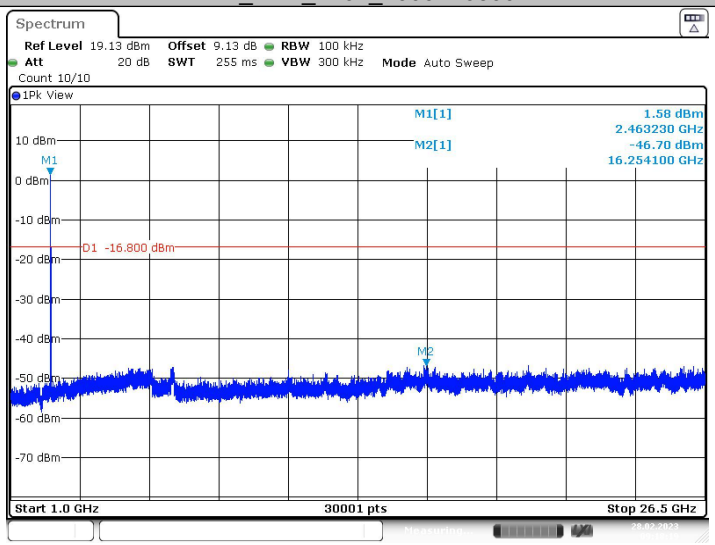
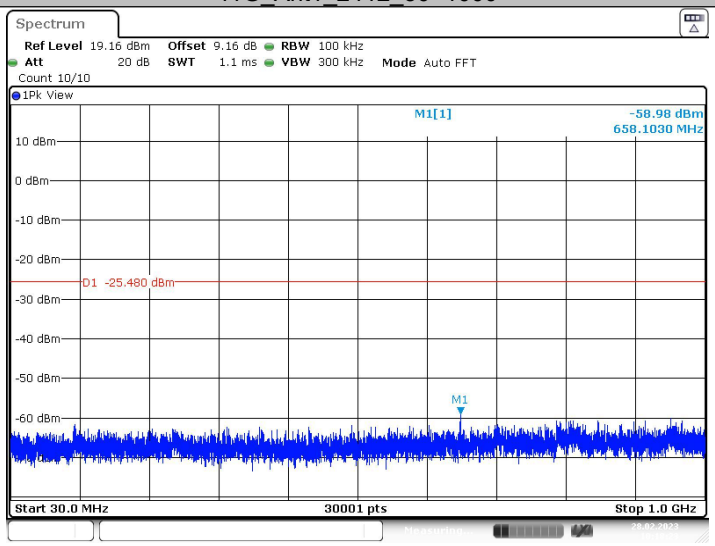


11G_Ant1_2412_30~1000



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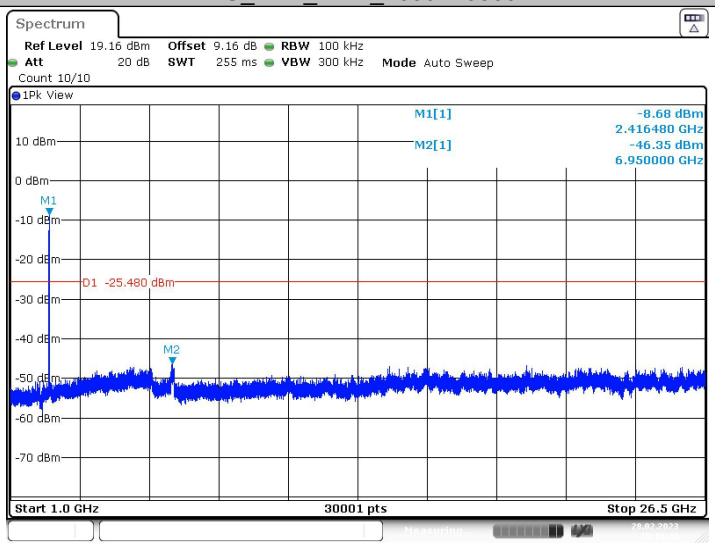
11G_Ant1_2412_1000~26500



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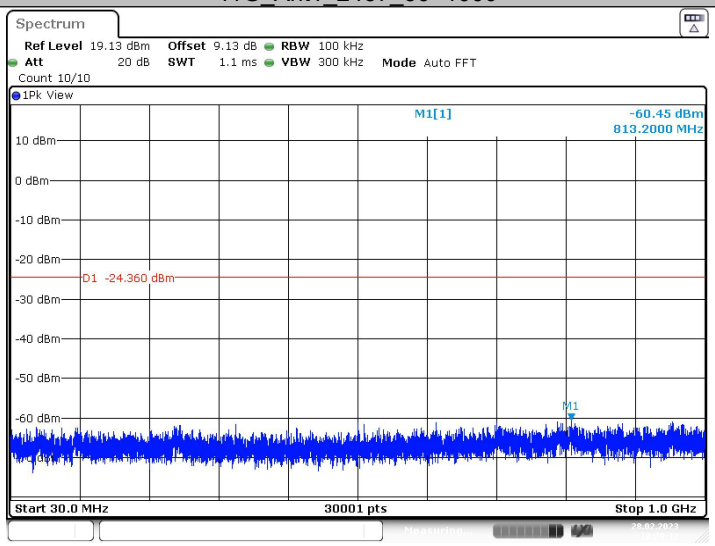
11G_Ant1_2437_30~1000



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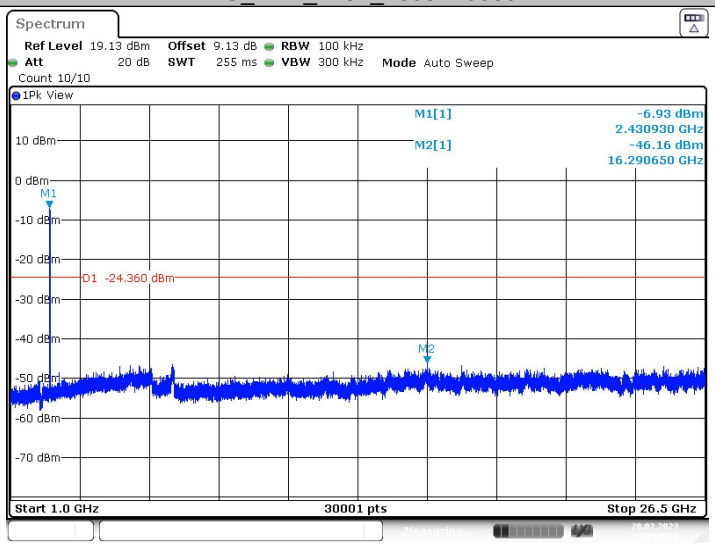

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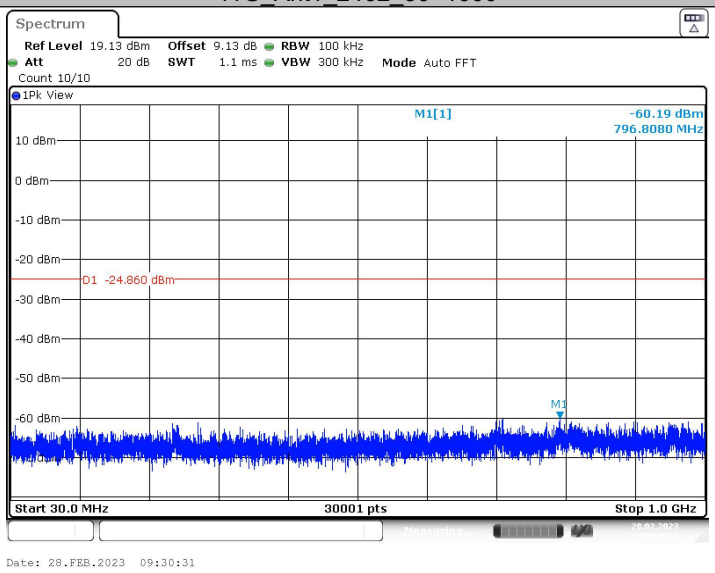

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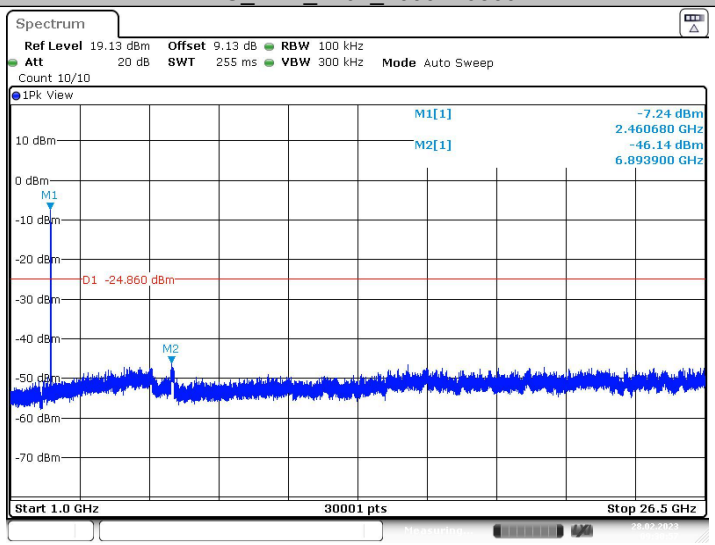
11G_Ant1_2462_1000~26500



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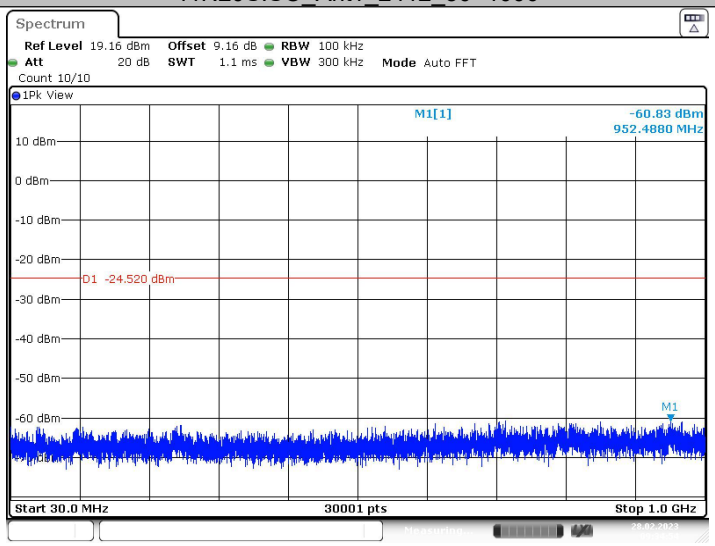
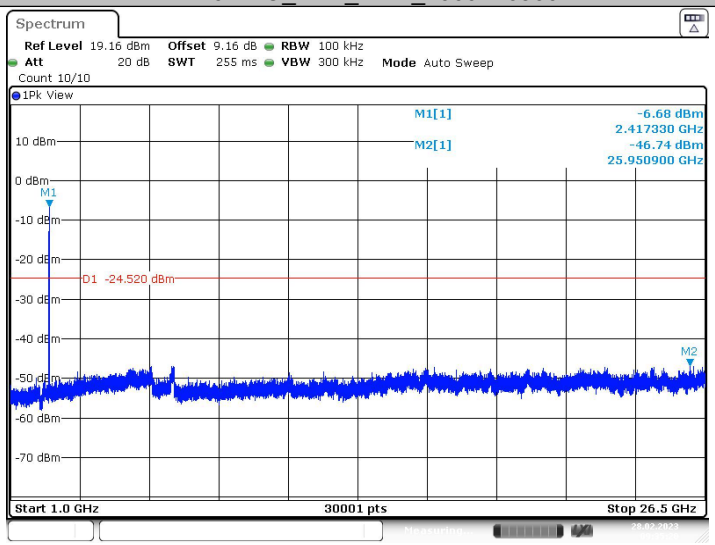
11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500



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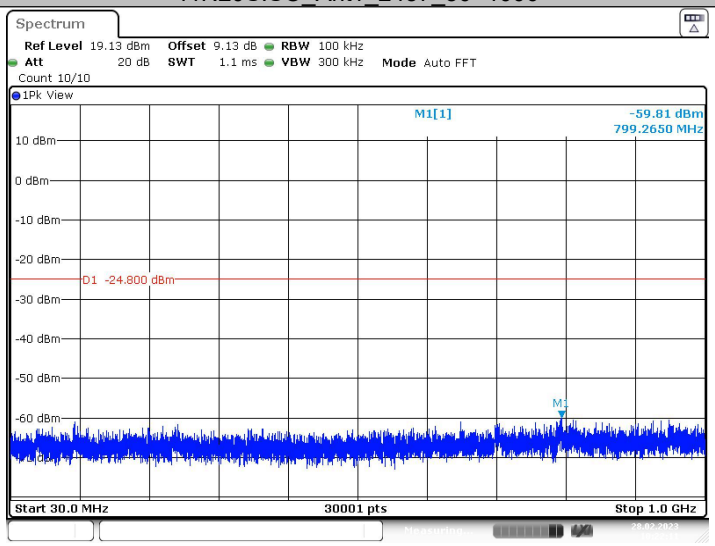
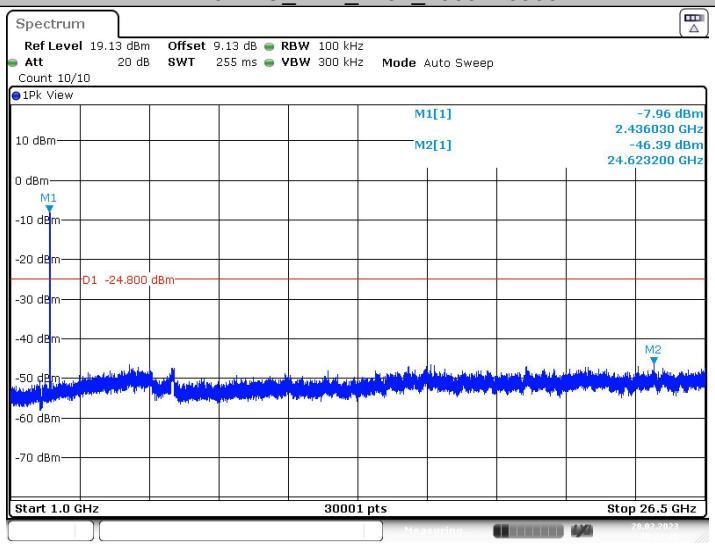


11N20SISO_Ant1_2437_1000~26500



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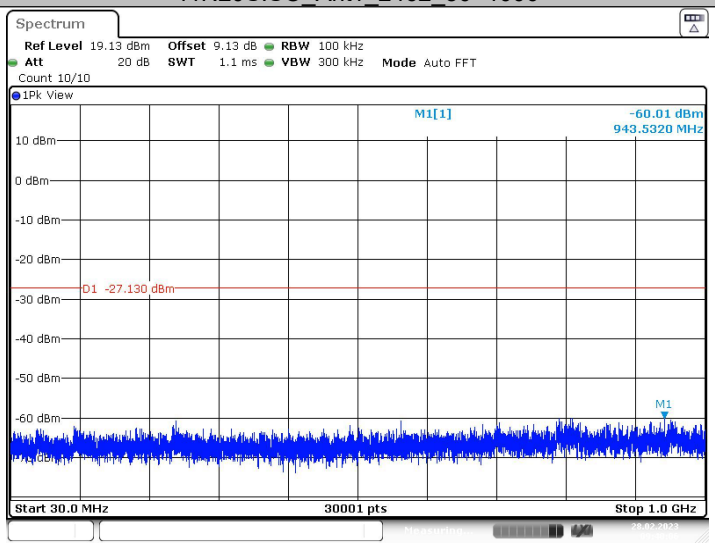

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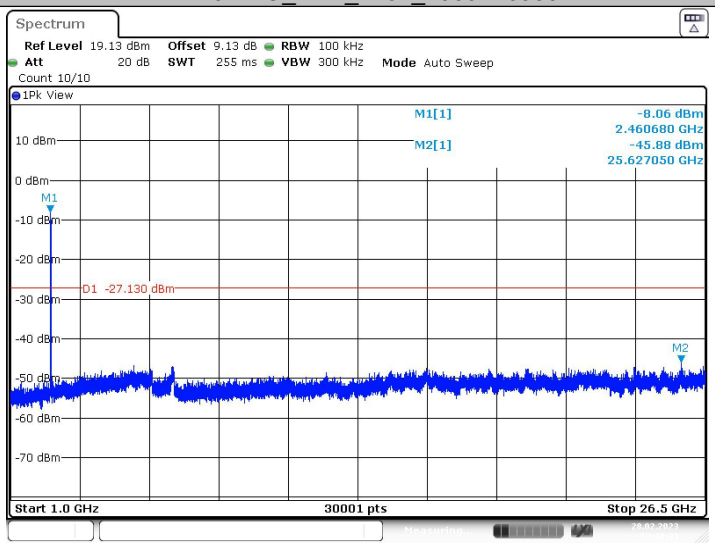
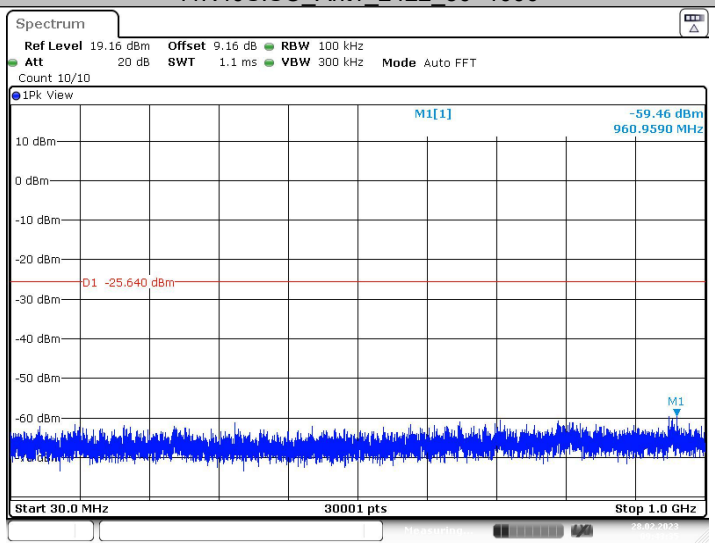


11N40SISO_Ant1_2422_30~1000



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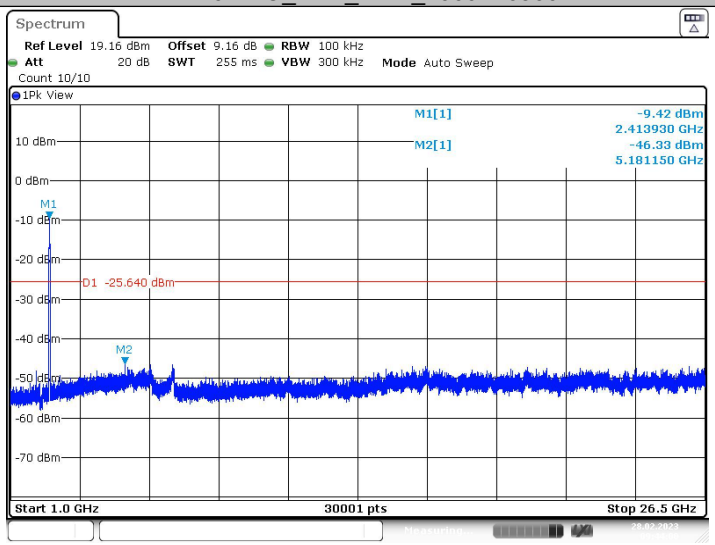
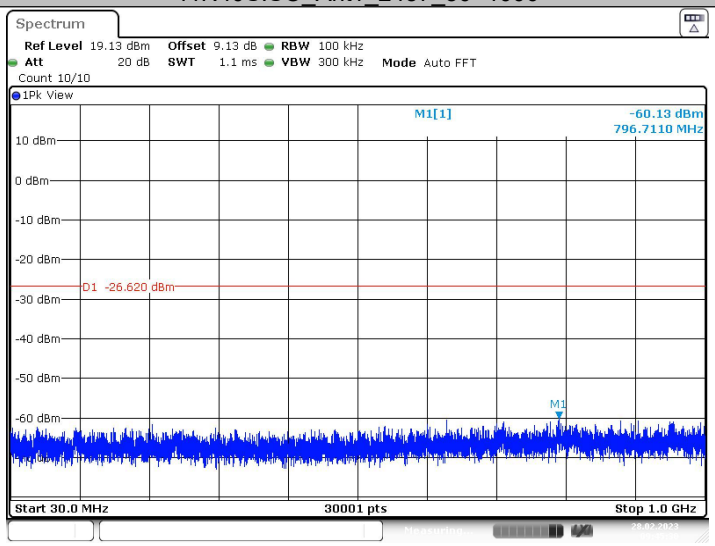
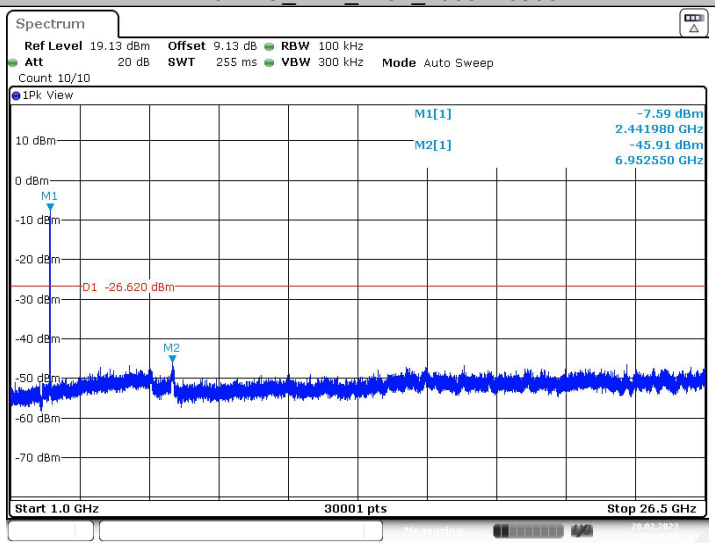


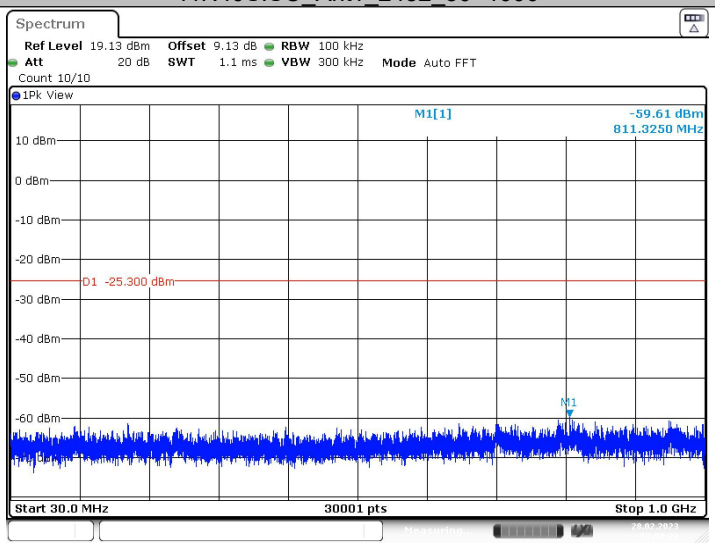
11N40SISO_Ant1_2437_30~1000



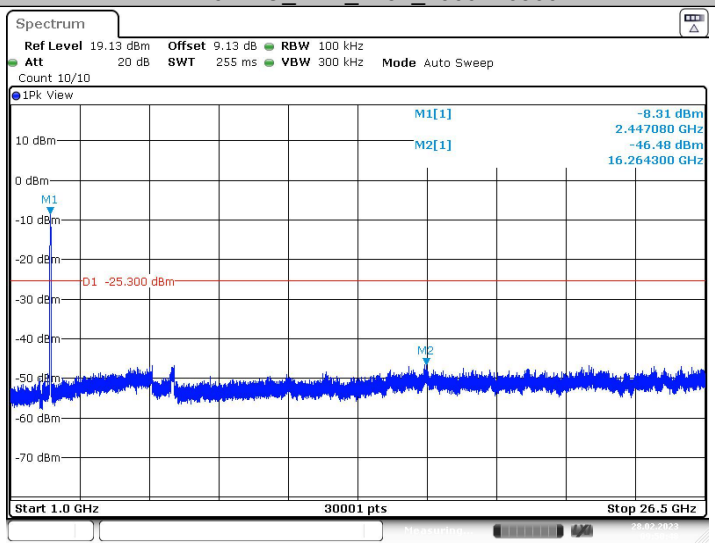
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_30~1000



11N40SISO_Ant1_2452_1000~26500



4. POWER LINE CONDUCTED EMISSION

4.1. Test Limits

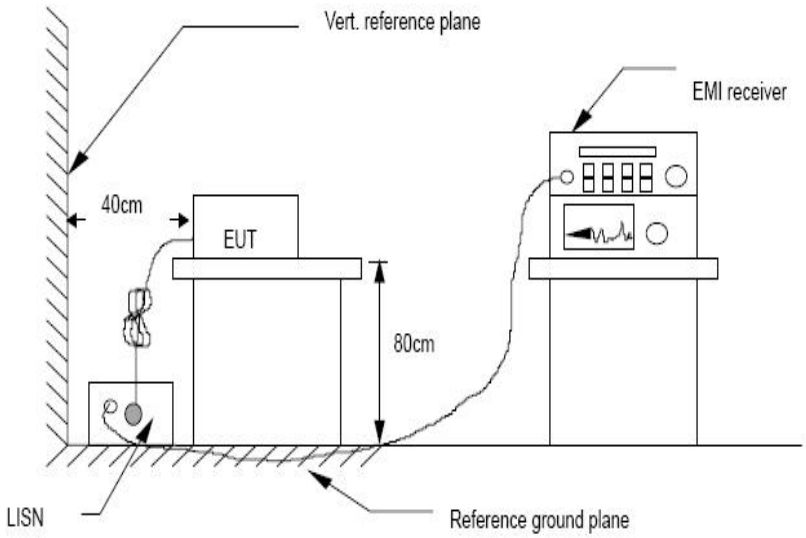
Frequency	Limits dB(μV)	
MHz	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.
3. The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

4.2. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10:2013 on Conducted Emission Measurement.
The bandwidth of test receiver is set at 9 kHz.

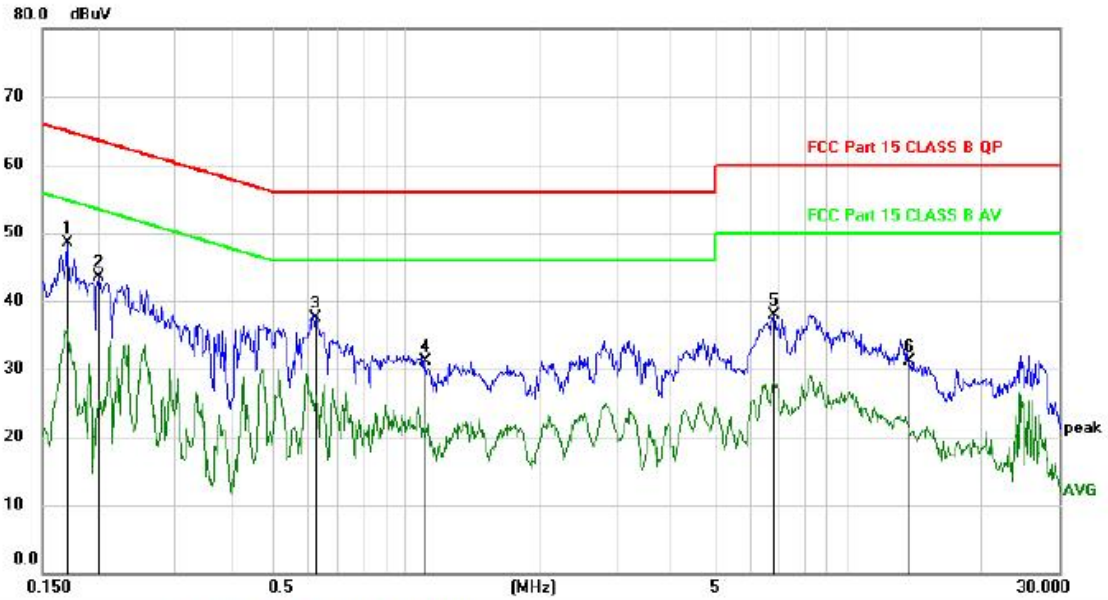
4.3. Test Setup



4.4. Test Results

Pas

Polarity: L

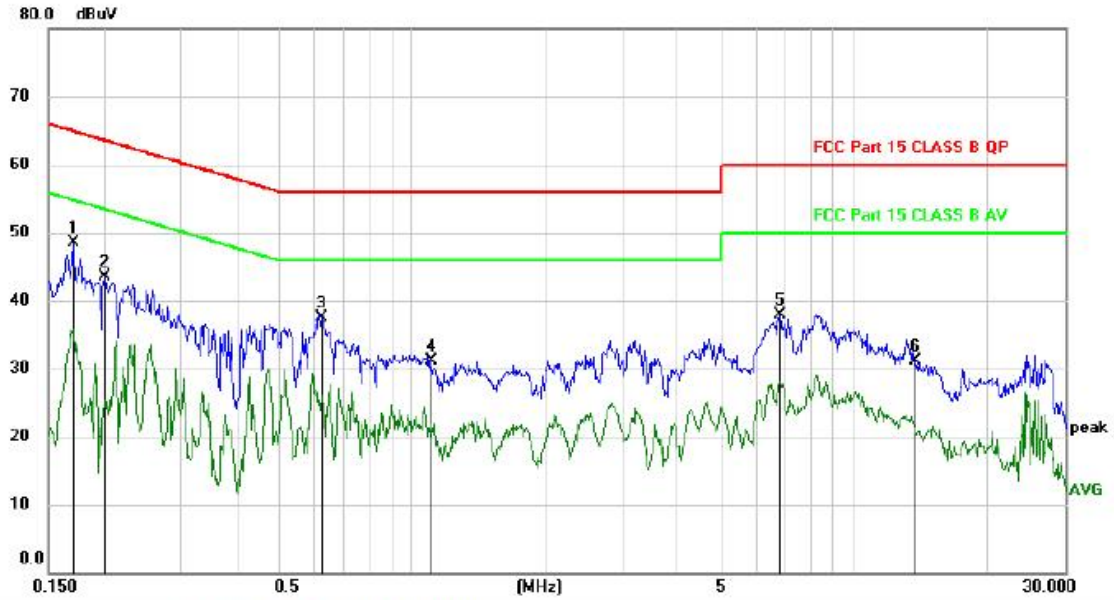


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1710	38.54	9.93	48.47	64.91	-16.44	peak	
2		0.2010	33.67	9.92	43.59	63.57	-19.98	peak	
3		0.6270	27.59	9.92	37.51	56.00	-18.49	peak	
4		1.1038	21.25	9.90	31.15	56.00	-24.85	peak	
5		6.7888	27.84	10.11	37.95	60.00	-22.05	peak	
6		13.7460	20.82	10.30	31.12	60.00	-28.88	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Polarity: N



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1710	38.54	9.93	48.47	64.91	-16.44	peak	
2		0.2010	33.67	9.92	43.59	63.57	-19.98	peak	
3		0.6270	27.59	9.92	37.51	56.00	-18.49	peak	
4		1.1038	21.25	9.90	31.15	56.00	-24.85	peak	
5		6.7888	27.84	10.11	37.95	60.00	-22.05	peak	
6		13.7460	20.82	10.30	31.12	60.00	-28.88	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

5. CONDUCTED MAXIMUM OUTPUT POWER

5.1. Test limits

Please refer RSS-247 & FCC PART 15: 15.247.

Regulation 15.247(b) The limit of Maximum Peak Output Power Measurement is 1 W(30dBm)

5.2. Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

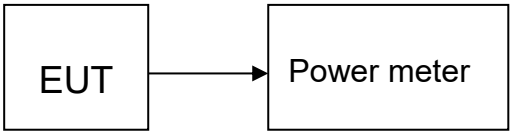
5.2.1 Place the EUT on the table and set it in transmitting mode.

5.2.2 Connected the EUT's antenna port to peak power meter by 20dB attenuator.

5.2.3 Measure out each mode and each bands peak output power of EUT.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

5.3. Test Setup



5.4. Test Results

Pass

Detailed information please see the following page.

Mode	Frequency (MHz)	PK Output power(dBm)	Limit (dBm)	Result
IEEE 802.11 b	CH1: 2412	13.53	30	Pass
	CH6: 2437	**14.21**	30	Pass
	CH11: 2462	14.09	30	Pass
IEEE 802.11 g	CH1: 2412	12.32	30	Pass
	CH6: 2437	12.91	30	Pass
	CH11: 2462	12.90	30	Pass
IEEE 802.11 n/HT20	CH1: 2412	12.12	30	Pass
	CH6: 2437	12.99	30	Pass
	CH11: 2462	12.86	30	Pass
IEEE 802.11 n/HT40	CH3: 2422	11.85	30	Pass
	CH6: 2437	13.11	30	Pass
	CH9: 2452	13.05	30	Pass

6. PEAK POWER SPECTRAL DENSITY

6.1. Test limits

6.1.1 Please refer RSS-247 & FCC PART 15: 15.247.

6.1.2 For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

6.1.3 The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

6.2. Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

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

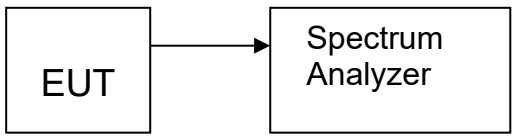
6.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

6.2.3 Set the spectrum analyzer as RBW = 3kHz(Set the RBW to: 3 kHz≤RBW≤100 kHz.), VBW = 10kHz(Set the VBW≥3×RBW), span≥1.5×DTS bandwidth., detail see the test plot.

6.2.4 Record the max reading.

6.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

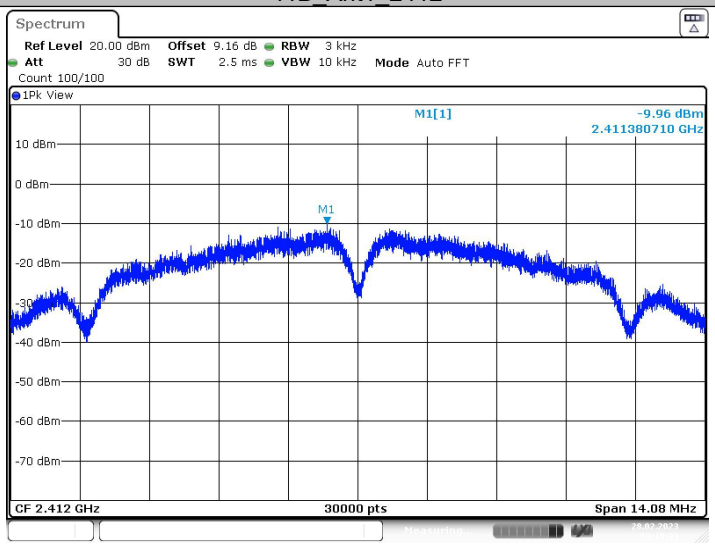
6.3. Test Setup



6.4. Test Results

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	802.11b	2412	Ant 1	-9.96	8	Pass
NVNT	802.11b	2437	Ant 1	-10.47	8	Pass
NVNT	802.11b	2462	Ant 1	-11.14	8	Pass
NVNT	802.11g	2412	Ant 1	-19.7	8	Pass
NVNT	802.11g	2437	Ant 1	-18.12	8	Pass
NVNT	802.11g	2462	Ant 1	-18.54	8	Pass
NVNT	802.11n(HT20)	2412	Ant 1	-17.31	8	Pass
NVNT	802.11n(HT20)	2437	Ant 1	-17.42	8	Pass
NVNT	802.11n(HT20)	2462	Ant 1	-17.51	8	Pass
NVNT	802.11n(HT40)	2422	Ant 1	-20.09	8	Pass
NVNT	802.11n(HT40)	2437	Ant 1	-21.37	8	Pass
NVNT	802.11n(HT40)	2452	Ant 1	-19.04	8	Pass

11B_Ant1_2412



11B_Ant1_2437