Test Report No.:
FCC2022-0058-RF

RF Test Report

EUT	:	**10.1inch Digital photo frame**
MODEL	:	**J001,J-001A, J-001B, B-001, B-001A,B-001B,WF-12A ,WF-12B**
BRAND NAME	:	**/**
APPLICANT	:	**Shenzhen Xinxiang Electronic Technology Co., Ltd.**
Classification Of Test	:	**N/A**

CVC Testing Technology Co., Ltd.

Client	**Name : Shenzhen Xinxiang Electronic Technology Co., Ltd.** **Address : 5F, Building A, Zhonghengsheng Technology Park, No. 3, Xinyu Road, Xinqiao Street, Shajing, Baoan District, Shenzhen**
Manufacturer	**Name : Shenzhen Xinxiang Electronic Technology Co., Ltd.** **Address : 5F, Building A, Zhonghengsheng Technology Park, No. 3, Xinyu Road, Xinqiao Street, Shajing, Baoan District, Shenzhen**
Equipment Under Test	**Name : 10.1inch Digital photo frame** **Model/Type: J001J-001A, J-001B, B-001, B-001A,B-001B,WF-12A ,WF-12B** **Trade mark : /** **Serial NO.:N/A** **Sampe NO.:3-1**

Date of Receipt.	**2022.09.21**	Date of Testing	**2022.09.21～2022.10.13**

Test Specification	**Test Result**
FCC Part 15, Subpart C, Section 15.247	PASS

Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC **Issue Date: 2022.10.18**

Tested by:	Reviewed by:	Approved by:
Xu ZhenFei	**Liu YongHai**	**Chen HuaWen**
Name Signature	Name Signature	Name Signature

Other Aspects: NONE.

Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2022-0058-RF	Original release	2022.10.18

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15 Subpart C			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.209	Radiated Emissions	PASS	Meet the requirement of limit.
15.247(d) 15.209 8.10 Table 7 8.9 Table 5	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(d) 5.5	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(a)(2) 5.2(a)	Conducted Output power	PASS	Meet the requirement of limit.
15.247(b) 5.4(d)	Power Spectral Density	PASS	Meet the requirement of limit.
15.247(e) 5.2(b)	Antenna Requirement	PASS	Meet the requirement of limit.

1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
WIFI & Bluetooth Test System 1					/
Communication Shielded Room 1	4m*3m*3m	CRTDSWKSR 44301	VGDS-0699	CRT	2024/04/24
Spectrum Analyzer	FSV30	104337	DZ-000235	R&S	/
Comprehensive Test Instrument	CMW500	137779	DZ-000220	R&S	2023/06/05
Comprehensive Test Instrument	CMW500	169888	DZ-000342	R&S	2022/12/09
LTE Comprehensive Test Instrument	E7515A	MY58010639	DZ-000173	KEYSIGHT	2023/06/05
Analog Signal Generator	SMA100B	103663	DZ-000239-2	R&S	2023/06/05
Vector Signal Generator	SMBV100B	101757	DZ-000239-1	R&S	2023/06/06
Programmable DC Power Supply	E3642A	MY59108106	DZ-000242-2	KEYSIGHT	2023/04/21
Radiation SpuriousTest System					/
3m Semi-Anechoic Chamber	FACT-4	ST08035	WKNA-0024	ETS	2024/12/12
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2023/03/02
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2023/03/02
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2023/06/25
Waveguide Horn Antenna	HF906	360306/008	WKNA-0024-8	R&S	2023/03/04
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWARZBECK	2023/07/31
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	2023/06/05
5G Bandstop Filters	WRCJV12-4900-5100-5900-6100-50EE	1	DZ-000186	WI	2022/12/20
Comprehensive tester	CMW500	159000	DZ-000240-2	R&S	2022/12/20
Conducted emission					/
EMI Test Receiver	ESCI	100857	WKNB-0081	R&S	2022-12-08
EMI Test Receiver	ESR3	102394	VGDY-0705	R&S	2023-03-04
LISN	NSLK 8127	8127644	VGDY-0150	SCHWARZBECK	2023-09-04
DC LISN	PVDC8301-017	PVDC8301#17	VGDY-0692	SCHWARZBECK	2023-09-04
LISN	NSLK 8129	8129-268	EM-000388	SCHWARZBECK	2023-03-03
Plus Limiter（#1）	VTSD 9561 F-N	00515	VGDY-0808	SCHWARZBECK	2023-03-04
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	2023-09-04
Impedance Stabilization Network	NTFM8158	8158-0092	VGDY-0356	SCHWARZBECK	2023-06-07
Impedance Stabilization Network	NTFM8131	#184	EM-000498	SCHWARZBECK	2023-06-07
Voltage Probe	TK9420	9420-499	VGDY-0128	SCHWARZBECK	2023-03-04
Power Divider	4901.17.B	22643830	DB-0016	HUBER+SUHNER	2023-09-01
Video Signal Generator	GV-798+	151064920001	VGDS-0215	PROMAX	2023-05-30
AudioSignalGenerator	GAG-810	EK871591	EM-000309	GW	2022-12-08
Shielding Room(#1)	GP1A	001	WKNF-0001	LEINING	2024-08-08

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

No.	ITEM	FREQUENCY	UNCERTAINTY
1	Conducted emissions	9kHz~30MHz	±2.66dB
2	Radiated emissions	9KHz ~ 30MHz	±0.769dB
		30MHz ~ 1GMHz	±0.877dB
		1GHz ~ 18GHz	±0.777dB
		18GHz ~ 40GHz	±1.315dB

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

1.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology Co., Ltd.

Address: No.3,TiantaiyiRoad,KaitaiAvenue,ScienceCity,Guangzhou,China
Post Code：510663 Tel：020-32293888
FAX：020-32293889 E-mail：office@cvc.org.cn

2 GENERAL INFORMATION

2.1 GENERAL PRODUCT INFORMATION

PRODUCT	10.1inch Digital photo frame
BRAND	/
MODEL	J001
ADDITIONAL MODEL	J-001A, J-001B, B-001,B-001A,B-001B,WF-12A ,WF-12B
FCC ID	2A84G-0001
POWER SUPPLY	DC 5V from Adapter
MODULATIONTECHNOLOGY	DSSS, OFDM
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
OPERATING FREQUENCY	2412MHz ~ 2462MHz for 11b/g/n(HT20)
NUMBER OF CHANNEL	802.11b/g/n (HT20): 11
PEAK OUTPUT POWER	WLAN: 15.07dBm (Maximum)
ANTENNA TYPE（Remark 4）	WLAN: PCB Antenna, with 2dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

Remark:

1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. The model J001 is same as the additional model except in brand name and model name.For detailed information ,please refer to manufacturer's Difference Declaration Letter.
4. Please refer to the EUT photo document for detailed product photo. (Report NO.: FCC2022-0058)
5. Please refer to the antenna report.
6. The EUT have SISO function, provides 1 completed transmitter and 1 receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX/1RX
802.11g	1TX/1RX
802.11n (HT20)	1TX/1RX

2.2 Description of Accessories

Adapter	
BRAND	SNROX
Model No.:	SR-C60502000U2
Input:	100-240V~50/60Hz 0.35A
Output:	5.0V/2.0A 10.0W
AC Cable:	N/A
DC Cable:	Unshielded without ferrite

2.3 OTHER INFORMATION

Operating frequency of each channel

2.4G WIFI					
802.11b/g/n (HT20)					
CHANNEL	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**
1	**2412**	**6**	**2437**	**11**	**2462**
2	2417	7	2442		
3	2422	8	2447		
4	2427	9	2452		
5	2432	10	2457		

The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.

2.4 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, xyz axis and antenna ports

EUT CONFIGURE MODE	APPLICABLE TEST ITEMS				DESCRIPTION
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	√	√	2.4G WIFI Function

Where **RE < 1G:** Radiated Emission below 1GHz **RE ≥ 1G:** Radiated Emission above 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.

☒ The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1	DSSS	DBPSK	6.0

For the test results, only the worst case was shown in test report.

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.

☒ The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0 Mbit/s
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0 Mbit/s
A	802.11n(HT20)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CONDITION
A	WIFI (2.4G) Link

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	802.11b	1 to 13	1, 7, 13	DSSS	DBPSK	1.0 Mbit/s
A	802.11g	1 to 13	1, 7, 13	OFDM	BPSK	6.0 Mbit/s
A	802.11n (HT20)	1 to 13	1, 7, 13	OFDM	BPSK	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE<1G	24deg. C, 55%RH	DC 5V from Adapter	Liu ShiWei
RE≥1G	24deg. C, 55%RH	DC 5V from Adapter	Liu ShiWei
PLC	24deg. C, 55%RH	DC 5V from Adapter	Liu ShiWei
APCM	25deg. C, 58%RH	DC 5V from Adapter	Liu ShiWei

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC PART 15, Subpart C. Section 15.247
KDB 558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10-2020

All test items have been performed and recorded as per the above standards

2.6 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support Equipment					
NO	**Description**	**Brand**	**Model No.**	**Serial Number**	**Supplied by**
1	N/A	N/A	N/A	N/A	N/A

Support Cable							
NO	**Description**	**Quantity (Number)**	**Length (cm)**	**Detachable (Yes/ No)**	**Shielded (Yes/ No)**	**Cores (Number)**	**Supplied by**
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 Limit

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
NOTE: 1. The lower limit shall apply at the transition frequencies. NOTE: 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.		

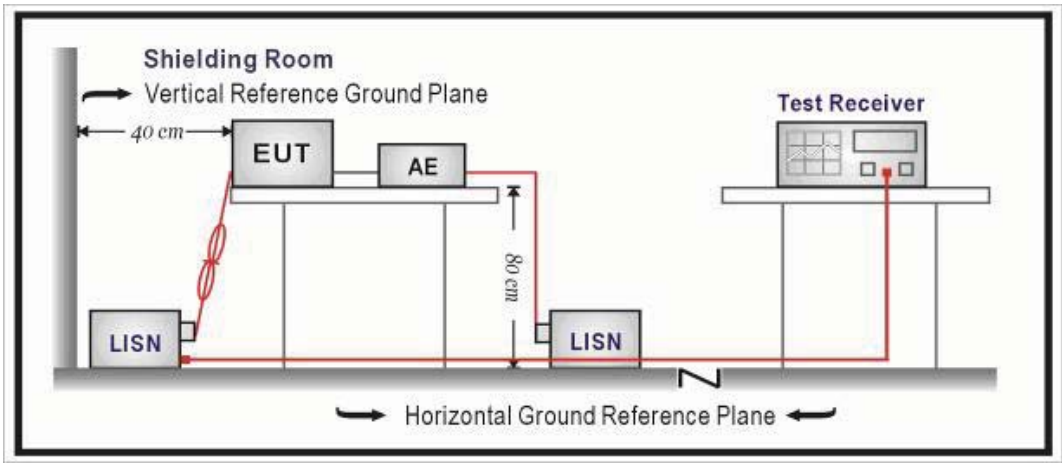
3.1.2 Measurement procedure

a. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the Test photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.The equipment under test shall be placed on a support of non-metallic material, the height of which shall be1.5m above the ground,

b. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

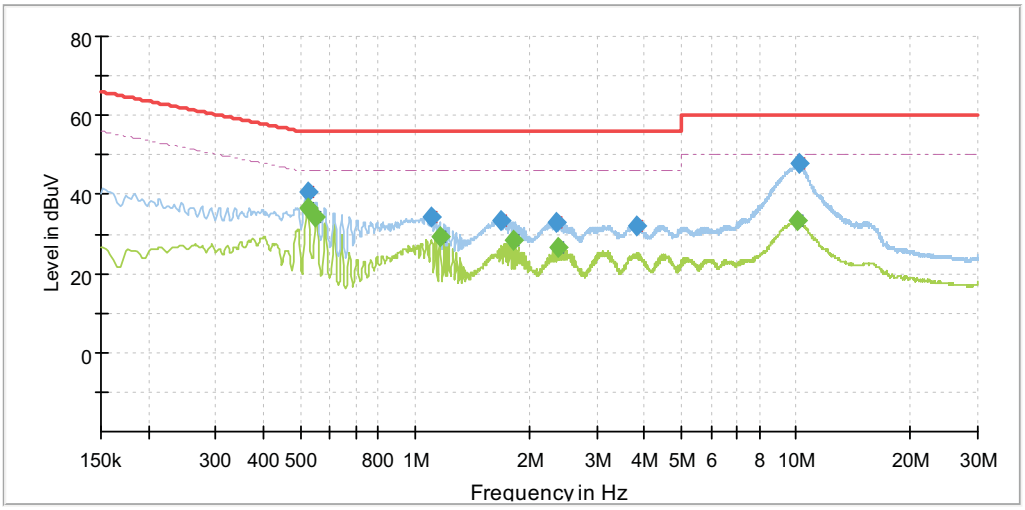
c. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.1.3 Test setup



3.1.4 Test results

Test Mode	WIFI Link	Frequency Range	150KHz ~ 30MHz
PHASE	Line (L)		

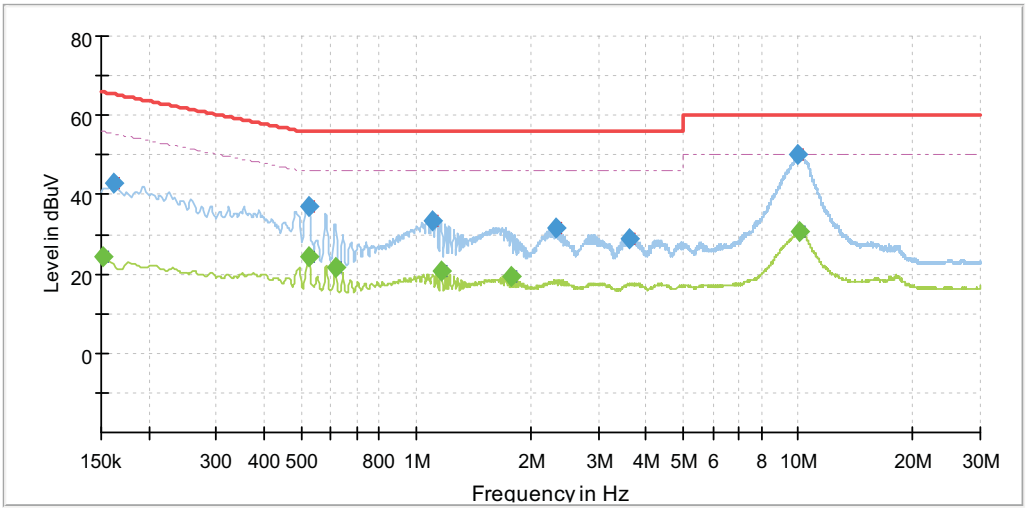


NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.524	40.5	---	56.0	15.5	L1	19.5
2	**0.524**	**---**	**36.4**	**46.0**	**9.6**	**L1**	**19.5**
3	0.551	---	34.2	46.0	11.8	L1	19.6
4	1.104	34.5	---	56.0	21.5	L1	19.5
5	1.165	---	29.3	46.0	16.7	L1	19.5
6	1.687	33.6	---	56.0	22.4	L1	19.6
7	1.811	---	28.3	46.0	17.7	L1	19.6
8	2.355	33.0	---	56.0	23.0	L1	19.6
9	2.387	---	26.8	46.0	19.2	L1	19.6
10	3.818	32.0	---	56.0	24.0	L1	19.6
11	10.093	---	33.3	50.0	16.7	L1	19.7
12	10.187	47.9	---	60.0	12.1	L1	19.7

Remark: The emission levels of other frequencies were very low against the limit.

;

Test Mode	WIFI Link	Frequency Range	150KHz ~ 30MHz
PHASE	Line (N)		



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.152	---	24.5	55.9	31.4	N	19.5
2	0.161	42.9	---	65.4	22.5	N	19.5
3	0.524	---	24.3	46.0	21.7	N	19.6
4	0.524	36.8	---	56.0	19.2	N	19.6
5	0.614	---	21.8	46.0	24.2	N	19.6
6	1.100	33.3	---	56.0	22.7	N	19.6
7	1.165	---	20.6	46.0	25.4	N	19.6
8	1.781	---	19.2	46.0	26.8	N	19.6
9	2.326	31.5	---	56.0	24.5	N	19.6
10	3.608	29.0	---	56.0	27.0	N	19.6
11	9.978	50.0	---	60.0	10.0	N	19.8
12	10.075	---	30.6	50.0	19.4	N	19.8

Remark: The emission levels of other frequencies were very low against the limit.

3.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.2.1 Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

FREQUENCIES (MHz)	FIELD STRENGTH (Microvolts/Meter)	MEASUREMENT DISTANCE (Meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE: 1. The lower limit shall apply at the transition frequencies.
NOTE: 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
NOTE: 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

3.2.2 Measurement procedure

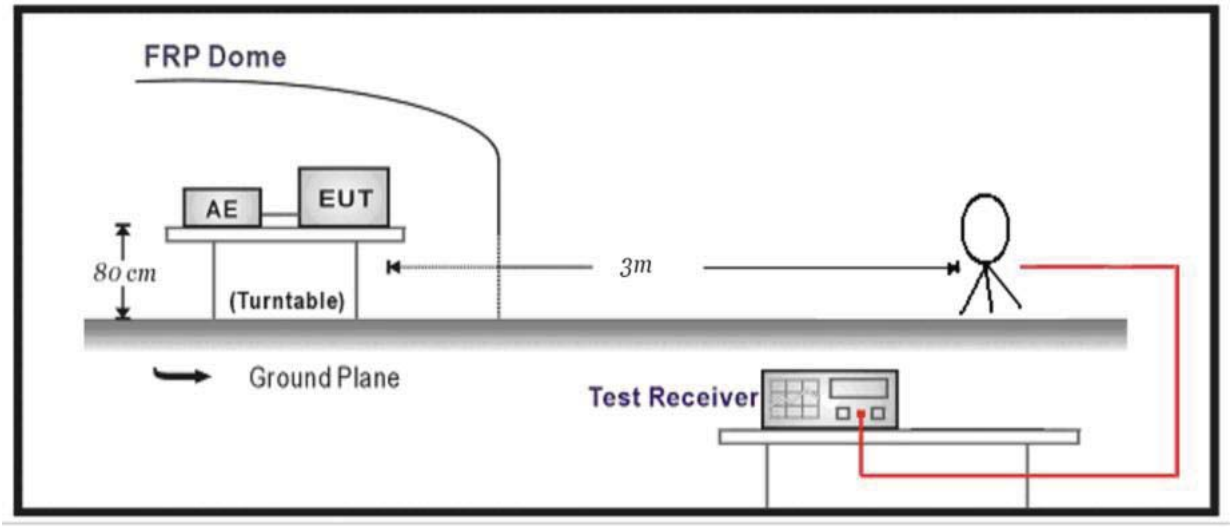
a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
g. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

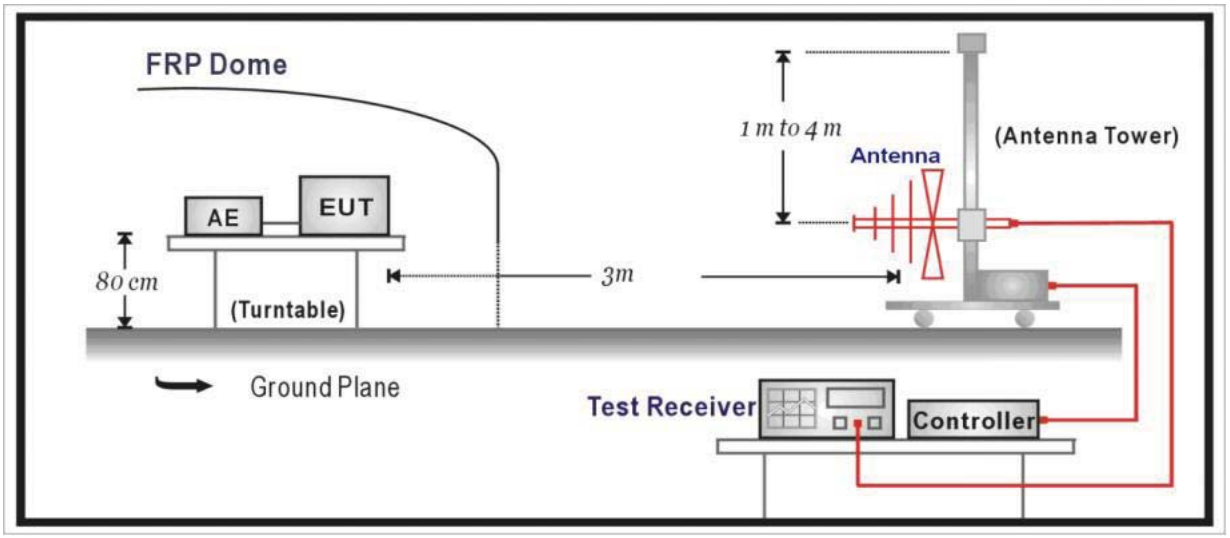
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ⩾ 1/T (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

3.2.3 Test setup

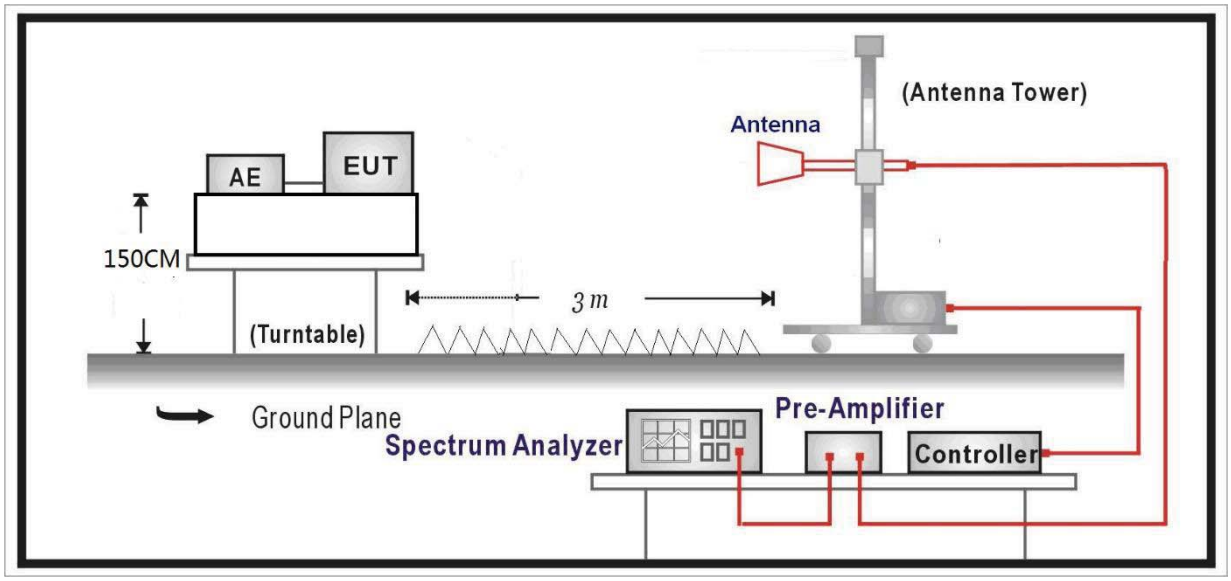
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:

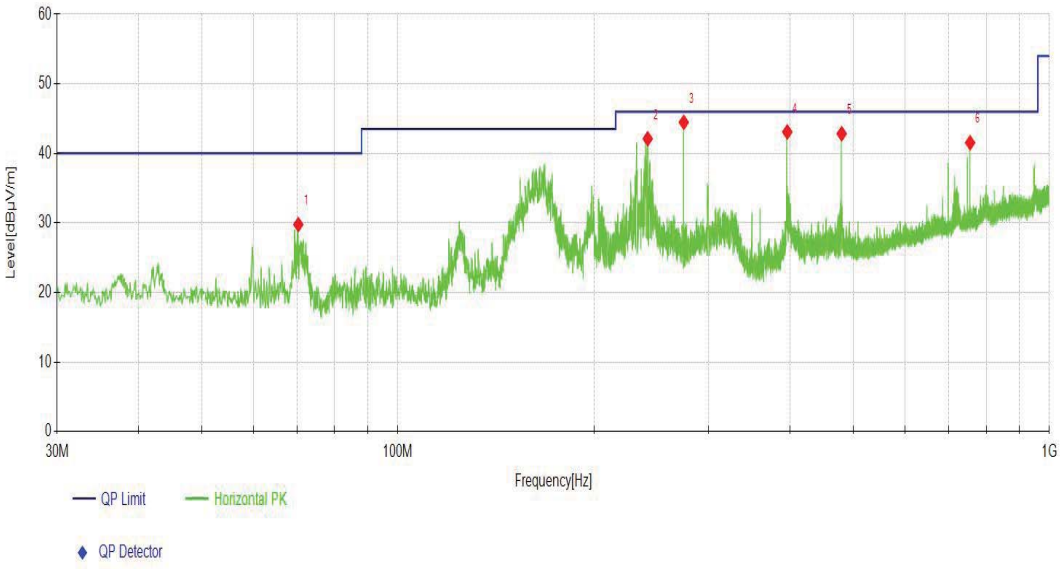


3.2.4 Test results

BELOW 1GHz WORST-CASE DATA:

Worst Test Mode	**802.11b**	**Channel**	CH 1
Frequency Range	9KHz ~ 1GHz	**Detector Function**	Quasi-Peak (QP)

Horizontal

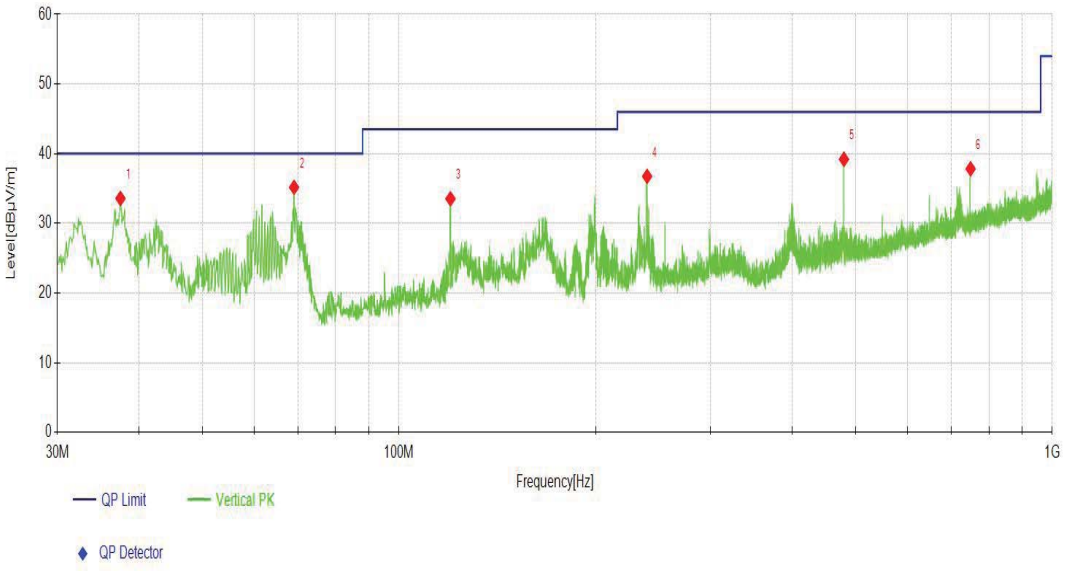


NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]
1	70.3560	12.97	16.79	29.76	40.00	10.24	300	328
2	241.8692	23.71	18.39	42.10	46.00	3.90	100	137
3	**274.7555**	**25.30**	**19.17**	**44.47**	**46.00**	**1.53**	**100**	**358**
4	396.0176	21.10	21.98	43.08	46.00	2.92	100	328
5	480.0280	18.94	23.88	42.82	46.00	3.18	100	215
6	755.7296	12.74	28.79	41.53	46.00	4.47	100	357

Remark: 1. 9KHz~30MHz have been test and test data more than 20dB margin.
2. The emission levels of other frequencies were greater than 20dB margin.
3. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
4. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
5. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Worst Test Mode	**802.11b**	**Channel**	CH 1
Frequency Range	9KHz ~ 1GHz	**Detector Function**	Quasi-Peak (QP)

Vertical



NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]
1	37.4697	14.28	19.29	33.57	40.00	6.43	100	141
2	69.0949	18.12	17.05	35.17	40.00	4.83	100	220
3	119.9280	15.89	17.63	33.52	43.50	9.98	100	96
4	239.8320	18.29	18.45	36.74	46.00	9.26	200	38
5	479.9310	15.32	23.88	39.20	46.00	6.80	100	40
6	750.0060	9.09	28.73	37.82	46.00	8.18	100	135

Remark: 1. 9KHz~30MHz have been test and test data more than 20dB margin.
2. The emission levels of other frequencies were greater than 20dB margin.
3. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
4. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
5. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

ABOVE 1GHz DATA

Channel	**802.11b CH 1**	**Frequency**	2412MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2390.0000	37.45	-0.15	37.30	54.00	16.70	150	3	AV
2	2390.0000	44.42	-0.15	44.27	74.00	29.73	150	266	PK
3	2413.9594	83.19	0.18	83.37			150	3	RMS
4	2414.7195	85.60	0.19	85.79			150	6	PK
5	4824.0000	44.91	9.68	54.59	74.00	19.41	150	120	PK
6	4824.0000	36.44	9.68	46.12	54.00	7.88	150	0	AV
7	7236.0000	25.53	12.39	37.92	54.00	16.08	150	310	AV
8	7236.0000	30.90	12.39	43.29	74.00	30.71	150	310	PK
9	9648.0000	28.48	13.13	41.61	74.00	32.39	150	360	PK
10	9648.0000	19.82	13.13	32.95	54.00	21.05	150	1	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2390.0000	36.72	-0.15	36.57	54.00	17.43	150	307	AV
2	2390.0000	45.22	-0.15	45.07	74.00	28.93	150	154	PK
3	2414.7195	74.13	0.19	74.32			150	114	PK
4	2414.9095	71.55	0.19	71.74			150	114	RMS
5	4824.0000	43.59	9.68	53.27	74.00	20.73	150	156	PK
6	4824.0000	35.57	9.68	45.25	54.00	8.75	150	156	AV
7	7236.0000	23.37	12.39	35.76	54.00	18.24	150	225	AV
8	7236.0000	30.29	12.39	42.68	74.00	31.32	150	212	PK
9	9648.0000	27.66	13.13	40.79	74.00	33.21	150	329	PK
10	9648.0000	19.61	13.13	32.74	54.00	21.26	150	279	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]

Channel	802.11b CH 6	Frequency	2437MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4874.0000	44.51	9.70	54.21	74.00	19.79	150	354	PK
2	4874.0000	36.37	9.70	46.07	54.00	7.93	150	357	AV
3	7311.0000	26.98	11.03	38.01	54.00	15.99	150	311	AV
4	7311.0000	33.00	11.03	44.03	74.00	29.97	150	311	PK
5	9748.0000	28.03	13.23	41.26	74.00	32.74	150	277	PK
6	9748.0000	19.94	13.23	33.17	54.00	20.83	150	260	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	4874.0000	43.88	9.70	53.58	74.00	20.42	150	341	PK
2	4874.0000	35.19	9.70	44.89	54.00	9.11	150	291	AV
3	7311.0000	24.93	11.03	35.96	54.00	18.04	150	152	AV
4	7311.0000	31.78	11.03	42.81	74.00	31.19	150	160	PK
5	9748.0000	27.66	13.23	40.89	74.00	33.11	150	324	PK
6	9748.0000	19.34	13.23	32.57	54.00	21.43	150	0	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]

Channel	802.11b CH 11	Frequency	2462MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2459.2979	87.04	0.56	87.60			150	360	PK
2	2459.4689	84.57	0.56	85.13			150	1	RMS
3	2483.5000	37.14	0.46	37.60	54.00	16.40	150	304	AV
4	2483.5000	46.10	0.46	46.56	74.00	27.44	150	92	PK
5	4926.0000	42.64	10.07	52.71	74.00	21.29	150	250	PK
6	4926.0000	34.42	10.07	44.49	54.00	9.51	150	50	AV
7	7386.0000	29.02	9.80	38.82	54.00	15.18	150	309	AV
8	7386.0000	33.88	9.80	43.68	74.00	30.32	150	314	PK
9	9848.0000	28.19	13.24	41.43	74.00	32.57	150	335	PK
10	9848.0000	19.52	13.24	32.76	54.00	21.24	150	98	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2464.7705	75.29	0.70	75.99			150	215	PK
2	2464.9605	72.83	0.70	73.53			150	215	RMS
3	2483.5000	36.89	0.46	37.35	54.00	16.65	150	341	AV
4	2483.5000	44.52	0.46	44.98	74.00	29.02	150	359	PK
5	4926.0000	42.91	10.07	52.98	74.00	21.02	150	23	PK
6	4926.0000	34.67	10.07	44.74	54.00	9.26	150	314	AV
7	7386.0000	26.57	9.80	36.37	54.00	17.63	150	150	AV
8	7386.0000	33.22	9.80	43.02	74.00	30.98	150	150	PK
9	9848.0000	27.90	13.24	41.14	74.00	32.86	150	113	PK
10	9848.0000	19.35	13.24	32.59	54.00	21.41	150	287	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]

Channel	802.11g CH 1	Frequency	2412MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2390.0000	40.24	-0.15	40.09	54.00	13.91	150	3	AV
2	2390.0000	49.54	-0.15	49.39	74.00	24.61	150	339	PK
3	2414.4344	81.49	0.19	81.68			150	6	RMS
4	2417.7028	87.96	0.23	88.19			150	6	PK
5	4824.0000	44.42	9.68	54.10	74.00	19.90	150	153	PK
6	4824.0000	34.95	9.68	44.63	54.00	9.37	150	359	AV
7	7236.0000	22.69	12.39	35.08	54.00	18.92	150	306	AV
8	7236.0000	30.66	12.39	43.05	74.00	30.95	150	16	PK
9	9648.0000	28.23	13.13	41.36	74.00	32.64	150	232	PK
10	9648.0000	20.04	13.13	33.17	54.00	20.83	150	182	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2390.0000	37.70	-0.15	37.55	54.00	16.45	150	77	AV
2	2390.0000	45.04	-0.15	44.89	74.00	29.11	150	77	PK
3	2417.6838	76.67	0.23	76.90			150	217	PK
4	2417.7408	70.04	0.23	70.27			150	217	RMS
5	4824.0000	43.31	9.68	52.99	74.00	21.01	150	146	PK
6	4824.0000	35.01	9.68	44.69	54.00	9.31	150	268	AV
7	7236.0000	22.02	12.39	34.41	54.00	19.59	150	148	AV
8	7236.0000	30.54	12.39	42.93	74.00	31.07	150	190	PK
9	9648.0000	27.84	13.13	40.97	74.00	33.03	150	161	PK
10	9648.0000	20.02	13.13	33.15	54.00	20.85	150	294	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]

Channel	802.11g CH 6	Frequency	2437MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4874.0000	43.45	9.70	53.15	74.00	20.85	150	0	PK
2	4874.0000	35.33	9.70	45.03	54.00	8.97	150	341	AV
3	7311.0000	28.75	11.03	39.78	54.00	14.22	150	307	AV
4	7311.0000	34.49	11.03	45.52	74.00	28.48	150	307	PK
5	9748.0000	27.22	13.23	40.45	74.00	33.55	150	194	PK
6	9748.0000	19.16	13.23	32.39	54.00	21.61	150	181	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	4874.0000	42.69	9.70	52.39	74.00	21.61	150	102	PK
2	4874.0000	34.92	9.70	44.62	54.00	9.38	150	52	AV
3	7311.0000	24.87	11.03	35.90	54.00	18.10	150	149	AV
4	7311.0000	33.73	11.03	44.76	74.00	29.24	150	162	PK
5	9748.0000	27.85	13.23	41.08	74.00	32.92	150	324	PK
6	9748.0000	19.32	13.23	32.55	54.00	21.45	150	308	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]

Channel	802.11g CH 11	Frequency	2462MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2456.2006	82.97	0.56	83.53			150	359	RMS
2	2457.2457	89.28	0.56	89.84			150	360	PK
3	2483.5000	43.46	0.46	43.92	54.00	10.08	150	1	AV
4	2483.5000	54.11	0.46	54.57	74.00	19.43	150	358	PK
5	4926.0000	43.42	10.07	53.49	74.00	20.51	150	246	PK
6	4926.0000	34.78	10.07	44.85	54.00	9.15	150	333	AV
7	7386.0000	29.45	9.80	39.25	54.00	14.75	150	314	AV
8	7386.0000	38.35	9.80	48.15	74.00	25.85	150	314	PK
9	9848.0000	27.86	13.24	41.10	74.00	32.90	150	1	PK
10	9848.0000	19.25	13.24	32.49	54.00	21.51	150	314	AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2468.4568	78.00	0.80	78.80			150	214	PK
2	2468.7799	71.22	0.81	72.03			150	214	RMS
3	2483.5000	37.16	0.46	37.62	54.00	16.38	150	268	AV
4	2483.5000	45.42	0.46	45.88	74.00	28.12	150	55	PK
5	4926.0000	42.78	10.07	52.85	74.00	21.15	150	255	PK
6	4926.0000	34.40	10.07	44.47	54.00	9.53	150	317	AV
7	7386.0000	27.78	9.80	37.58	54.00	16.42	150	138	AV
8	7386.0000	35.63	9.80	45.43	74.00	28.57	150	138	PK
9	9848.0000	28.83	13.24	42.07	74.00	31.93	150	80	PK
10	9848.0000	19.71	13.24	32.95	54.00	21.05	150	159	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11n20 CH 1**	**Frequency**	2412MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2390.0000	44.58	-0.15	44.43	54.00	9.57	150	1	AV
2	2390.0000	56.58	-0.15	56.43	74.00	17.57	150	1	PK
3	2413.1803	81.75	0.17	81.92			150	360	RMS
4	2413.8644	88.47	0.18	88.65			150	6	PK
5	4824.0000	42.60	9.68	52.28	74.00	21.72	150	46	PK
6	4824.0000	34.65	9.68	44.33	54.00	9.67	150	271	AV
7	7236.0000	22.89	12.39	35.28	54.00	18.72	150	314	AV
8	7236.0000	30.95	12.39	43.34	74.00	30.66	150	314	PK
9	9648.0000	27.05	13.13	40.18	74.00	33.82	150	82	PK
10	9648.0000	19.53	13.13	32.66	54.00	21.34	150	240	AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2390.0000	37.10	-0.15	36.95	54.00	17.05	150	222	AV
2	2390.0000	45.20	-0.15	45.05	74.00	28.95	150	222	PK
3	2413.8264	77.04	0.18	77.22			150	222	PK
4	2418.1588	70.02	0.24	70.26			150	222	RMS
5	4824.0000	43.25	9.68	52.93	74.00	21.07	150	272	PK
6	4824.0000	34.98	9.68	44.66	54.00	9.34	150	251	AV
7	7236.0000	21.78	12.39	34.17	54.00	19.83	150	150	AV
8	7236.0000	31.39	12.39	43.78	74.00	30.22	150	221	PK
9	9648.0000	27.26	13.13	40.39	74.00	33.61	150	320	PK
10	9648.0000	19.57	13.13	32.70	54.00	21.30	150	316	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	802.11n20 CH 6	Frequency	2437MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4874.0000	43.83	9.70	53.53	74.00	20.47	150	59	PK
2	4874.0000	35.23	9.70	44.93	54.00	9.07	150	359	AV
3	7311.0000	26.69	11.03	37.72	54.00	16.28	150	305	AV
4	7311.0000	35.06	11.03	46.09	74.00	27.91	150	305	PK
5	9748.0000	27.22	13.23	40.45	74.00	33.55	150	64	PK
6	9748.0000	18.75	13.23	31.98	54.00	22.02	150	118	AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	4874.0000	43.09	9.70	52.79	74.00	21.21	150	355	PK
2	4874.0000	34.64	9.70	44.34	54.00	9.66	150	360	AV
3	7311.0000	25.58	11.03	36.61	54.00	17.39	150	138	AV
4	7311.0000	33.64	11.03	44.67	74.00	29.33	150	221	PK
5	9748.0000	28.15	13.23	41.38	74.00	32.62	150	121	PK
6	9748.0000	19.33	13.23	32.56	54.00	21.44	150	192	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11n20 CH 11**	**Frequency**	2462MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2459.6590	90.03	0.56	90.59			150	1	PK
2	2463.3833	82.84	0.66	83.50			150	3	RMS
3	2483.5000	46.54	0.46	47.00	54.00	7.00	150	3	AV
4	2483.5000	56.94	0.46	57.40	74.00	16.60	150	3	PK
5	4926.0000	42.29	10.07	52.36	74.00	21.64	150	142	PK
6	4926.0000	34.67	10.07	44.74	54.00	9.26	150	5	AV
7	7386.0000	28.56	9.80	38.36	54.00	15.64	150	311	AV
8	7386.0000	36.39	9.80	46.19	74.00	27.81	150	315	PK
9	9848.0000	26.87	13.24	40.11	74.00	33.89	150	357	PK
10	9848.0000	19.36	13.24	32.60	54.00	21.40	150	360	AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2467.8678	77.78	0.79	78.57			150	214	PK
2	2469.3119	71.30	0.83	72.13			150	88	RMS
3	2483.5000	38.16	0.46	38.62	54.00	15.38	150	88	AV
4	2483.5000	46.06	0.46	46.52	74.00	27.48	150	81	PK
5	4926.0000	42.50	10.07	52.57	74.00	21.43	150	348	PK
6	4926.0000	34.39	10.07	44.46	54.00	9.54	150	135	AV
7	7386.0000	27.51	9.80	37.31	54.00	16.69	150	153	AV
8	7386.0000	36.53	9.80	46.33	74.00	27.67	150	149	PK
9	9848.0000	27.43	13.24	40.67	74.00	33.33	150	8	PK
10	9848.0000	19.11	13.24	32.35	54.00	21.65	150	157	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

3.3 6dB BANDWIDTH MEASUREMENT

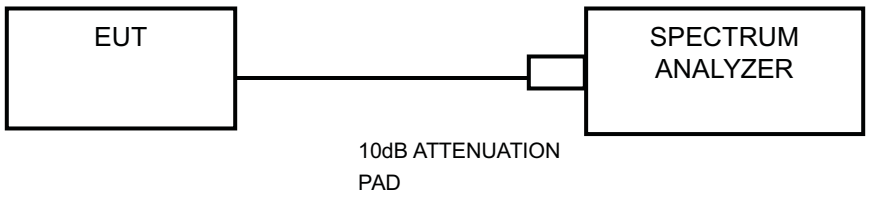
3.3.1 Limits

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

3.3.2 Measurement procedure

a. Set resolution bandwidth (RBW) = 100KHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associatedwith the two amplitude points (upper and lower) that are attenuated by 6 dB relative to themaximum level measured in the fundamental emission.

3.3.3 Test setup



3.3.4 Test result

Please refer Annex A

3.4 CONDUCTED OUTPUT POWER

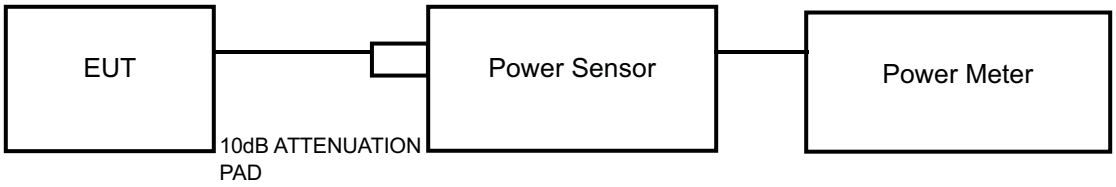
3.4.1 Limits

Forsystems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm).

3.4.2 Measurement procedure

a. A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor and set the detector to PEAK. Record the power level.
b. Anaverage power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power senso and set the detector to AVERAGE. Record the power level.

3.4.3 Test setup



3.4.4 Test result

Please refer Annex A.

3.5 POWER SPECTRAL DENSITY MEASUREMENT

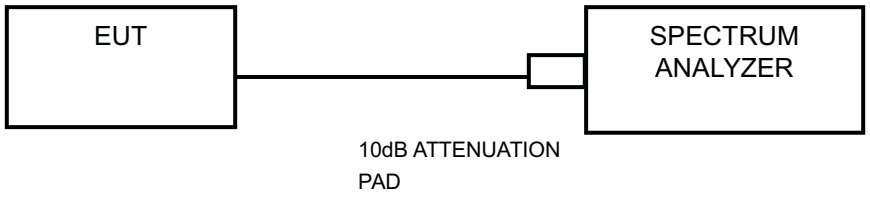
3.5.1 Limits

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.5.2 Measurement procedure

a. Set instrument center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set RBW to: 3KHz
d. Set VBW ≥3 x RBW.
e. Detector = peak
f. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g. Sweep time = auto couple.
h. Use the peak marker function to determine the maximum amplitude level.

3.5.3 Test setup



3.5.4 Test result

Please refer Annex A.

3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 Limits

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.6.2 Measurement procedure

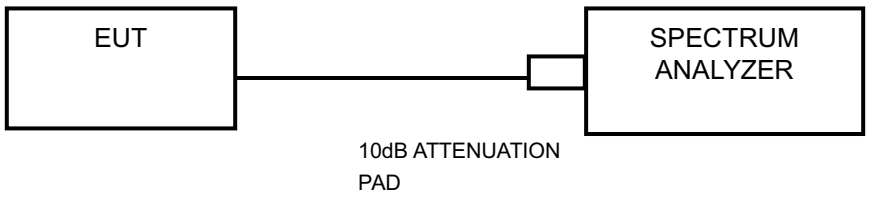
Measurement Procedure -Reference Level

a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHzband segment within the fundamental EBW.

Measurement Procedure –Unwanted Emission Level

a. Set RBW = 100 kHz.
b. Set VBW ≥ 300 kHz.
c. Set span to encompass the spectrum to be examined
d. Detector = peak.
e. Trace Mode = max hold.
f. Sweep = auto couple.

3.6.3 Test setup



3.6.4 Test result

Please refer Annex A.

4 PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Setup Photo).

5 PHOTOGRAPHS OF THE EUT

Please refer to the attached file (External Photos report and Internal Photos).

6 Appendix A (Please refer to the following pages for test results.)

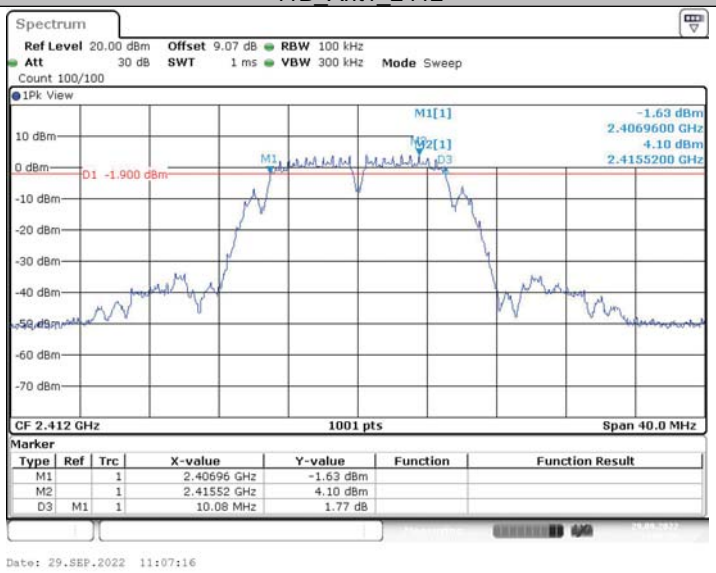
6.1 6DB BANDWIDTH MEASUREMENT

6.1.1 Test Result

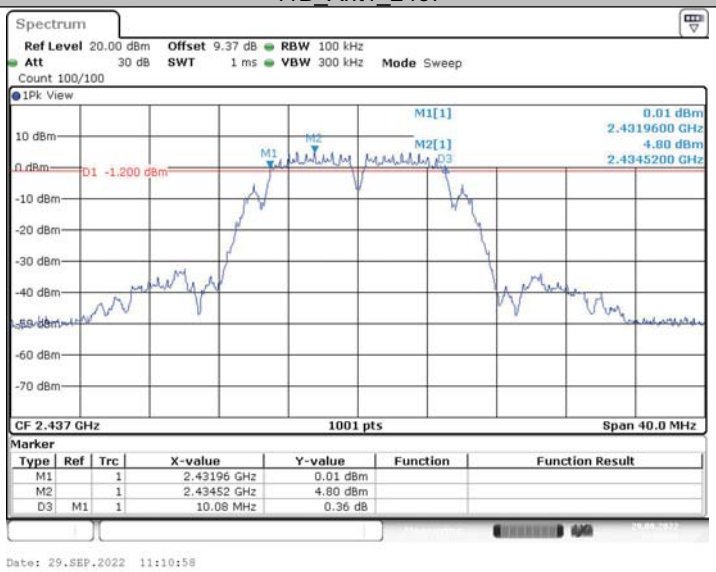
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.08	2406.96	2417.04	0.5	PASS
		2437	10.08	2431.96	2442.04	0.5	PASS
		2462	10.08	2456.96	2467.04	0.5	PASS
11G	Ant1	2412	16.36	2403.84	2420.20	0.5	PASS
		2437	16.32	2428.84	2445.16	0.5	PASS
		2462	16.36	2453.84	2470.20	0.5	PASS
11N20SISO	Ant1	2412	17.56	2403.24	2420.80	0.5	PASS
		2437	17.56	2428.24	2445.80	0.5	PASS
		2462	17.56	2453.24	2470.80	0.5	PASS

6.1.2 Test Graphs

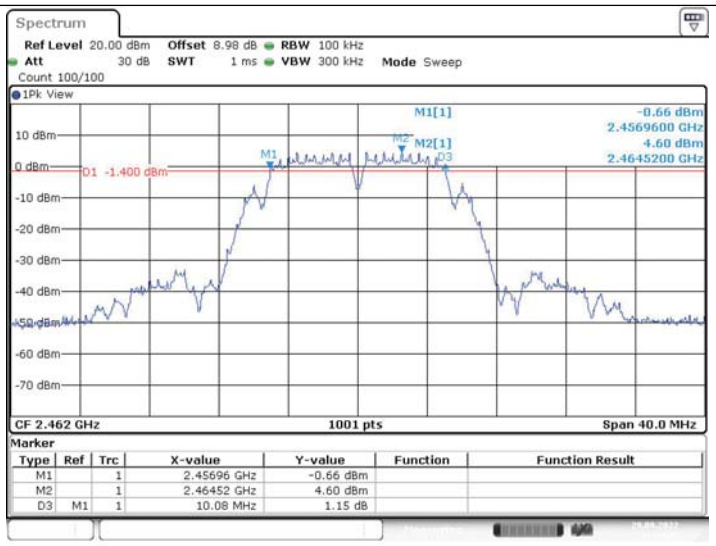
11B_Ant1_2412



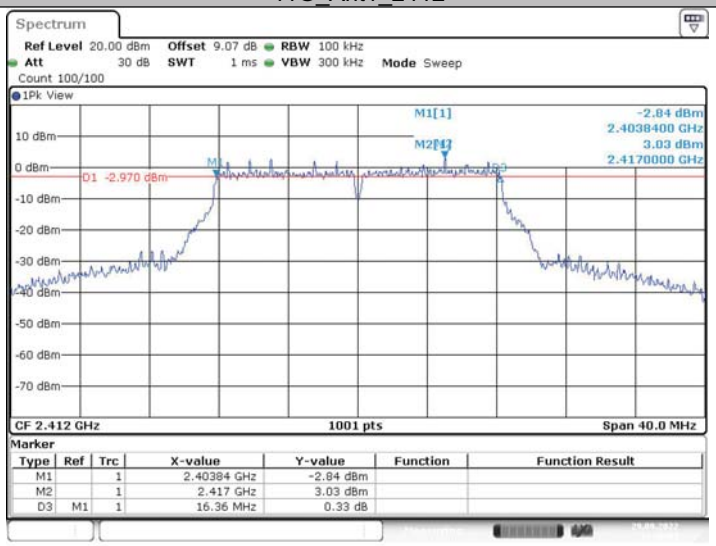
11B_Ant1_2437



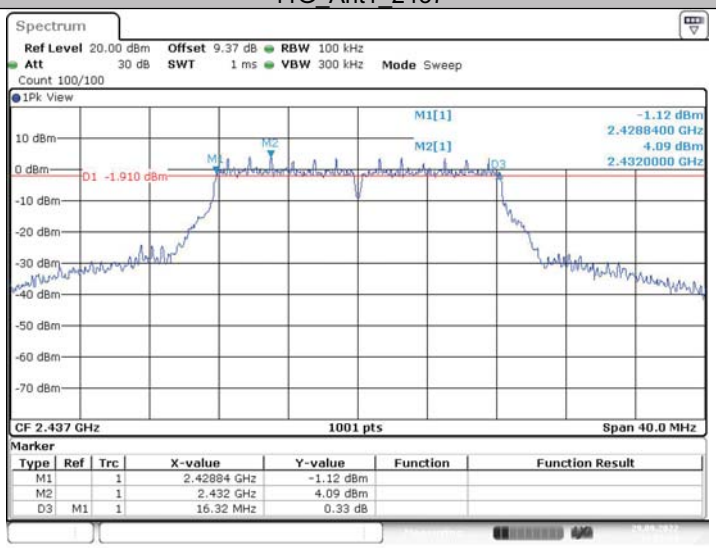
11B_Ant1_2462



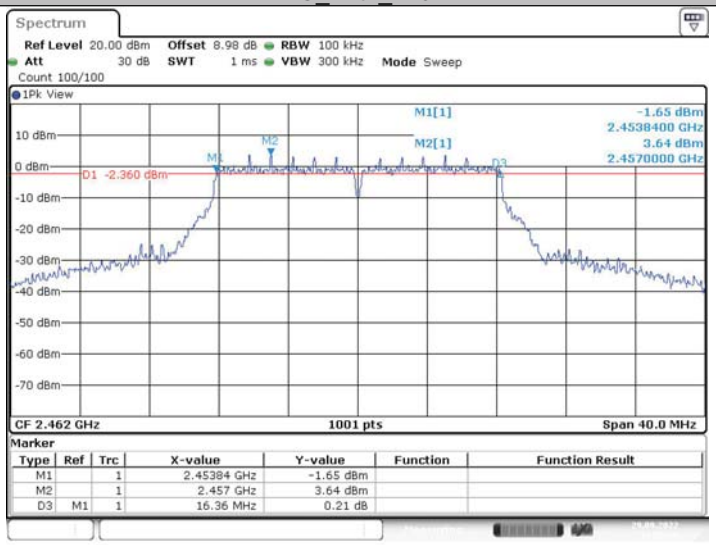
11G_Ant1_2412



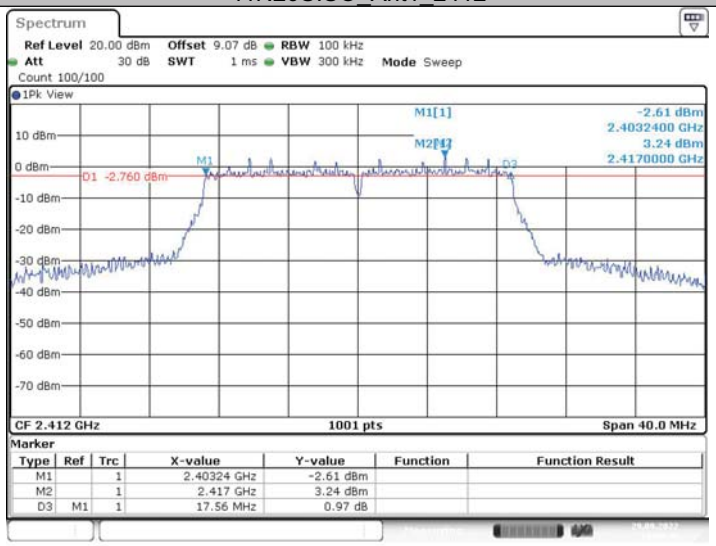
11G_Ant1_2437



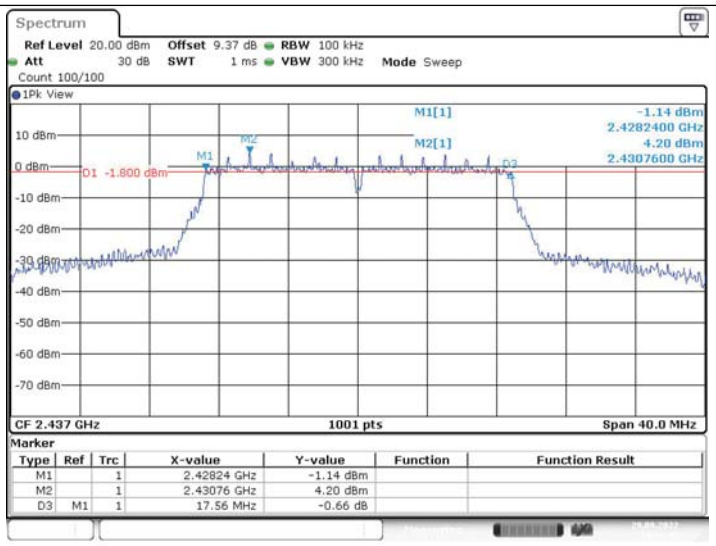
11G_Ant1_2462



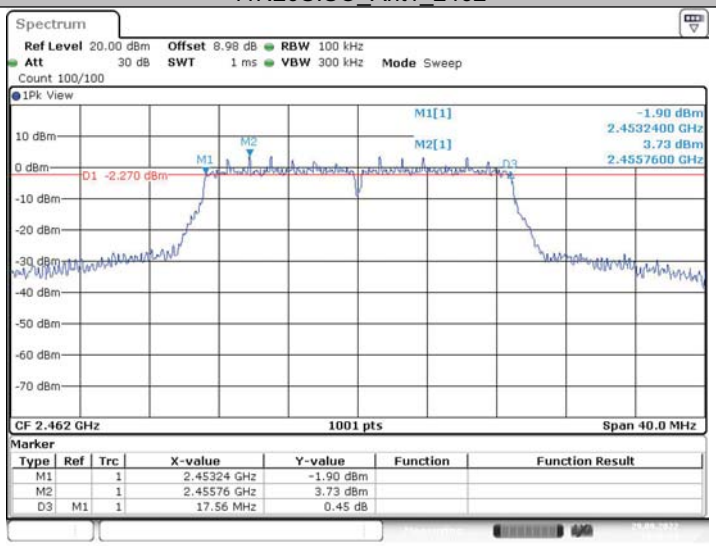
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



6.2 CONDUCTED OUTPUT POWER

6.2.1 Test Result Peak

TestMode	Antenna	Frequency[MHz]	Set Power	Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	---	13.84	≤30.00	PASS
		2437	---	14.88	≤30.00	PASS
		2462	---	14.57	≤30.00	PASS
11G	Ant1	2412	---	14.16	≤30.00	PASS
		2437	---	14.95	≤30.00	PASS
		2462	---	14.58	≤30.00	PASS
11N20SISO	Ant1	2412	---	14.15	≤30.00	PASS
		2437	---	15.07	≤30.00	PASS
		2462	---	14.67	≤30.00	PASS

6.2.2 Test Result Average

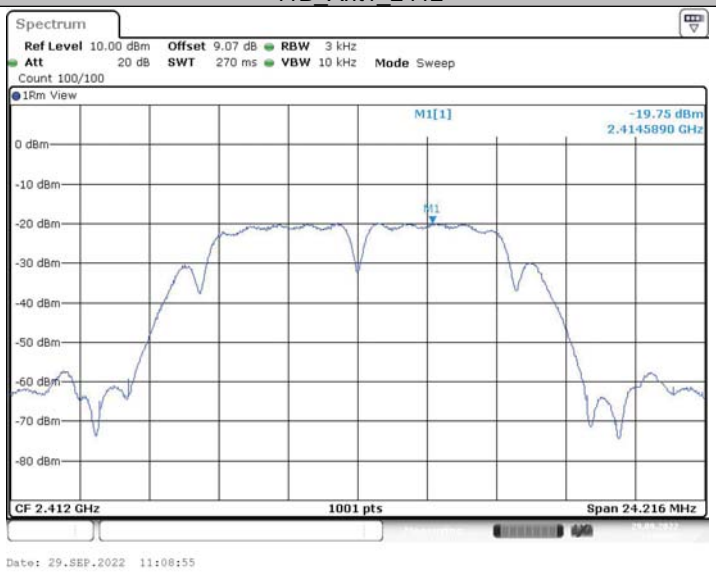
Test Mode	Antenna	Frequency[MHz]	Set Power	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	---	12.72	100.00	0.00	12.72	≤30.00	PASS
		2437	---	12.84	94.02	0.27	13.11	≤30.00	PASS
		2462	---	12.80	94.09	0.26	13.06	≤30.00	PASS
11G	Ant1	2412	---	11.48	72.83	1.38	12.86	≤30.00	PASS
		2437	---	11.75	73.66	1.33	13.08	≤30.00	PASS
		2462	---	11.80	72.93	1.37	13.17	≤30.00	PASS
11N20SISO	Ant1	2412	---	11.42	71.43	1.46	12.88	≤30.00	PASS
		2437	---	11.71	71.15	1.48	13.19	≤30.00	PASS
		2462	---	11.50	71.71	1.44	12.94	≤30.00	PASS

6.3 POWER SPECTRAL DENSITY MEASUREMENT

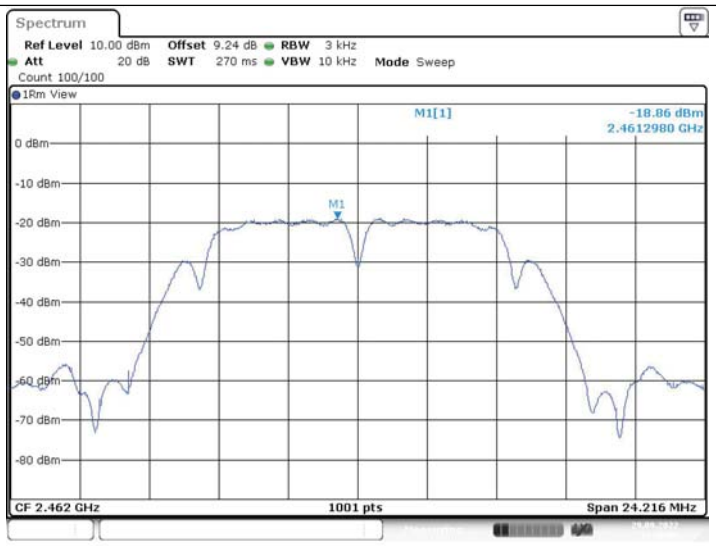
6.3.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-19.75	≤8.00	PASS
		2437	-18.67	≤8.00	PASS
		2462	-18.86	≤8.00	PASS
11G	Ant1	2412	-20.53	≤8.00	PASS
		2437	-19.99	≤8.00	PASS
		2462	-20.22	≤8.00	PASS
11N20SISO	Ant1	2412	-20.9	≤8.00	PASS
		2437	-19.89	≤8.00	PASS
		2462	-20.27	≤8.00	PASS

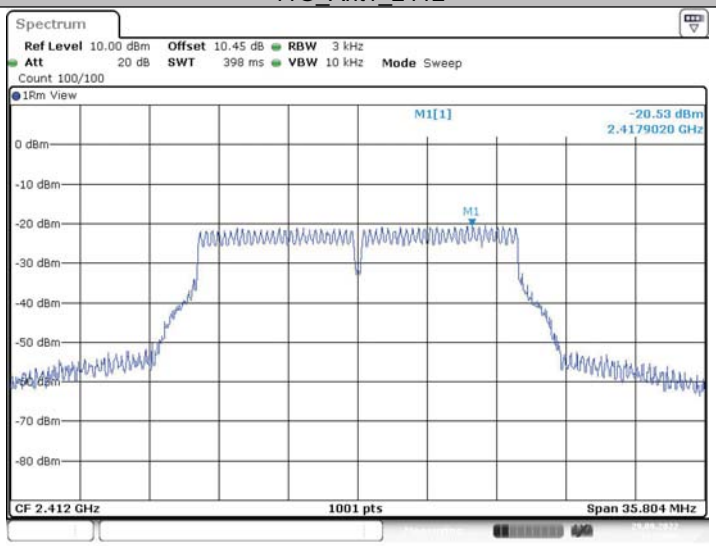
6.3.2 Test Graphs

11B_Ant1_2412

11B_Ant1_2437

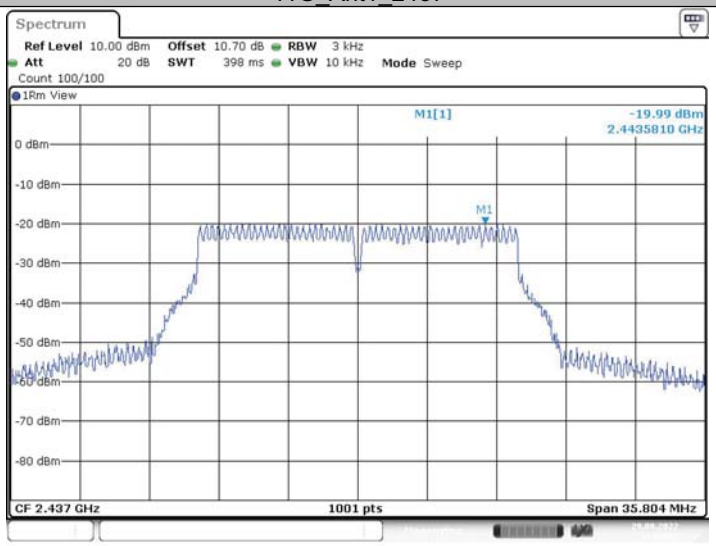
11B_Ant1_2462



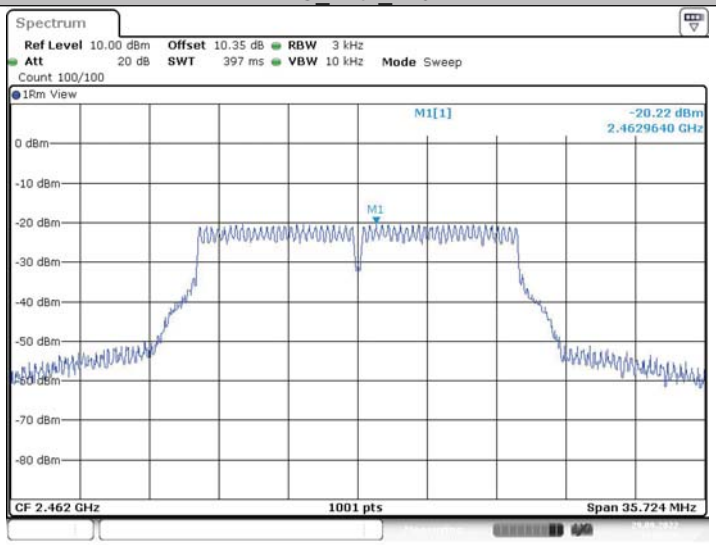
11G_Ant1_2412



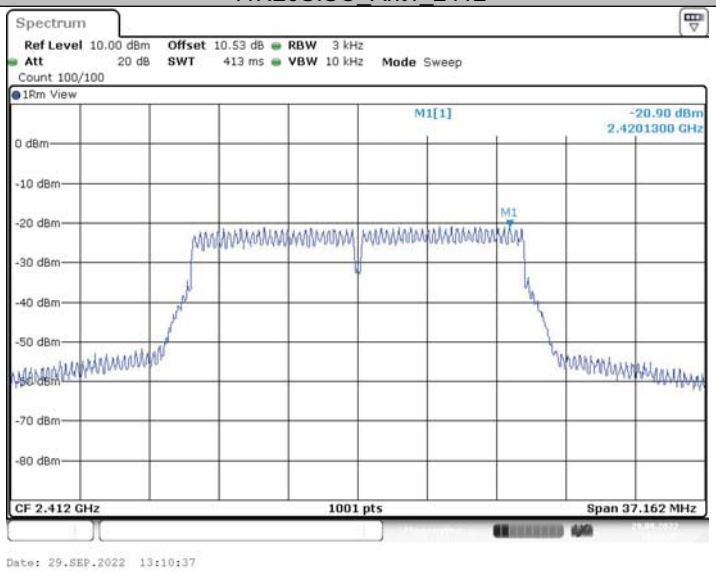
11G_Ant1_2437



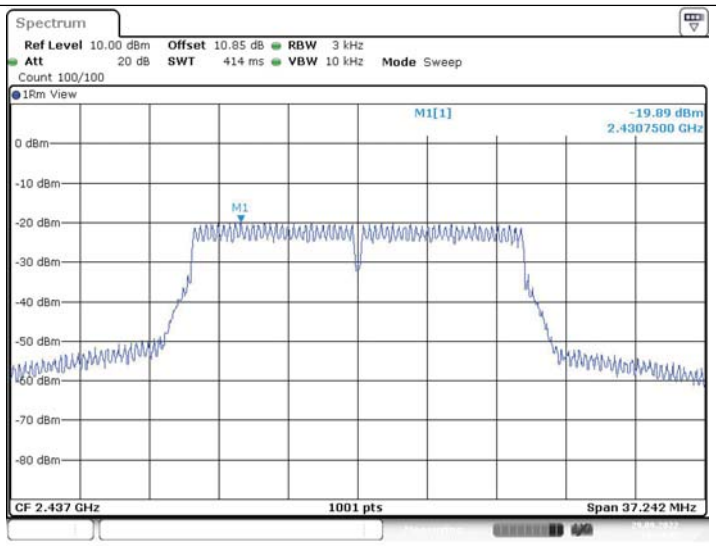
11G_Ant1_2462



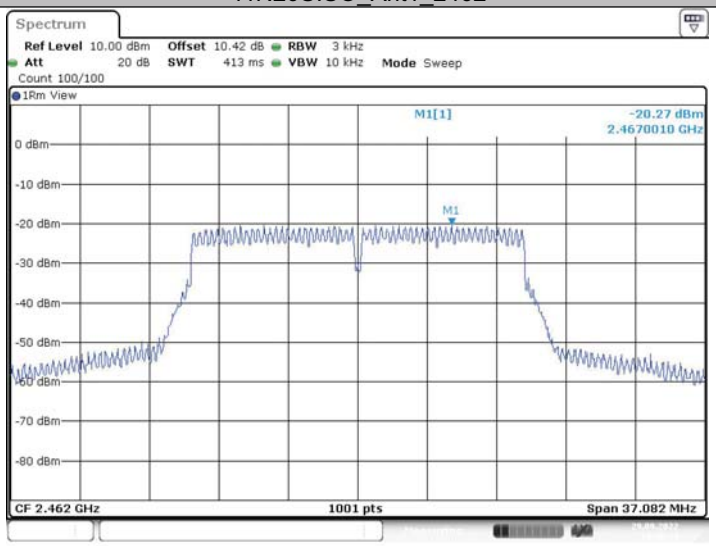
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



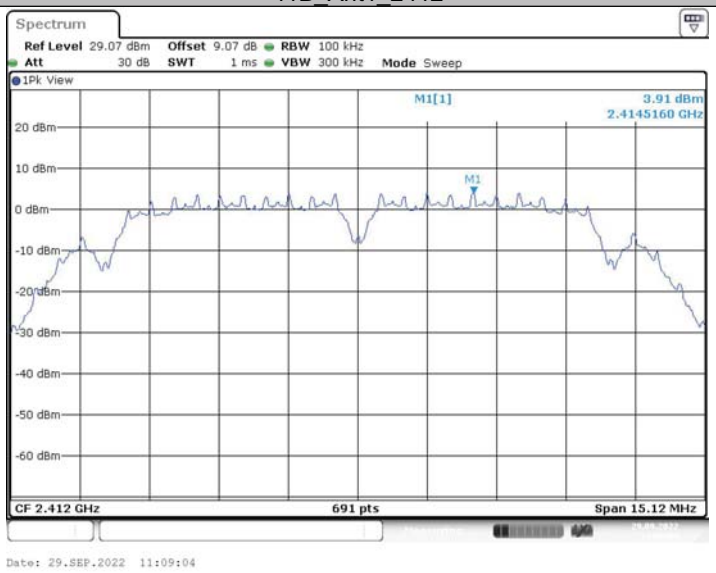
6.4 REFERENCE LEVEL MEASUREMENT

6.4.1 Test Result

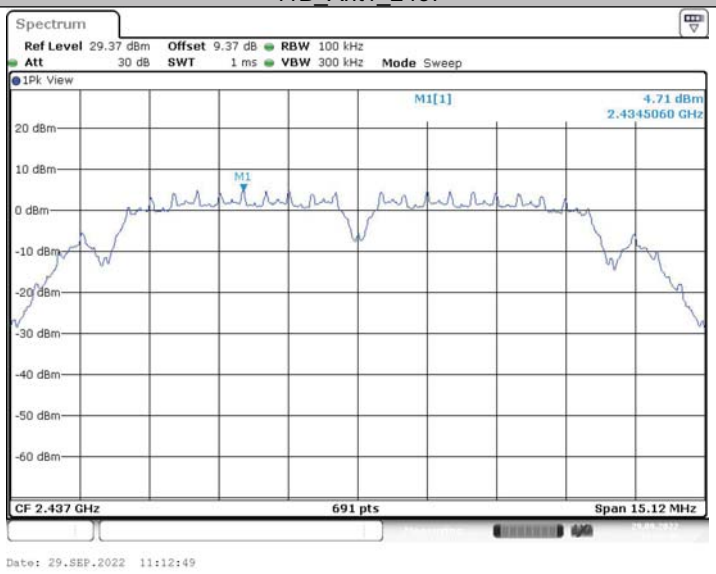
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2414.52	3.91
		2437	2434.51	4.71
		2462	2464.52	4.49
11G	Ant1	2412	2417.01	3.12
		2437	2430.77	3.89
		2462	2467.01	3.70
11N20SISO	Ant1	2412	2419.51	3.00
		2437	2430.75	4.24
		2462	2466.99	3.75

6.4.2 Test Graphs

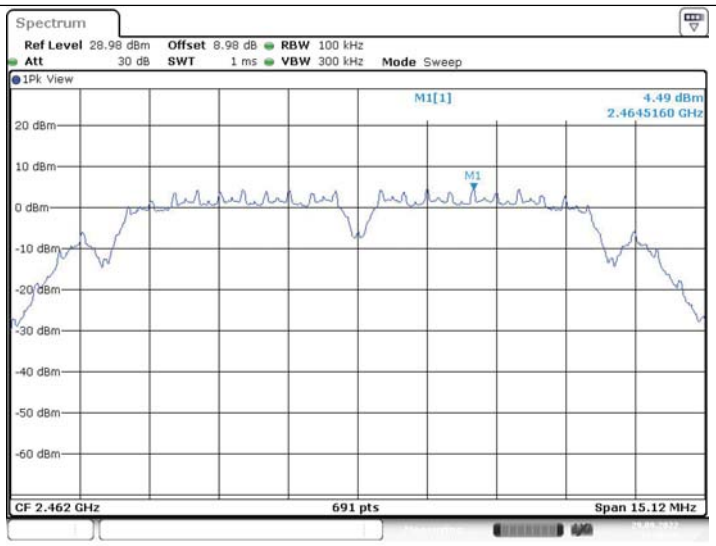
11B_Ant1_2412



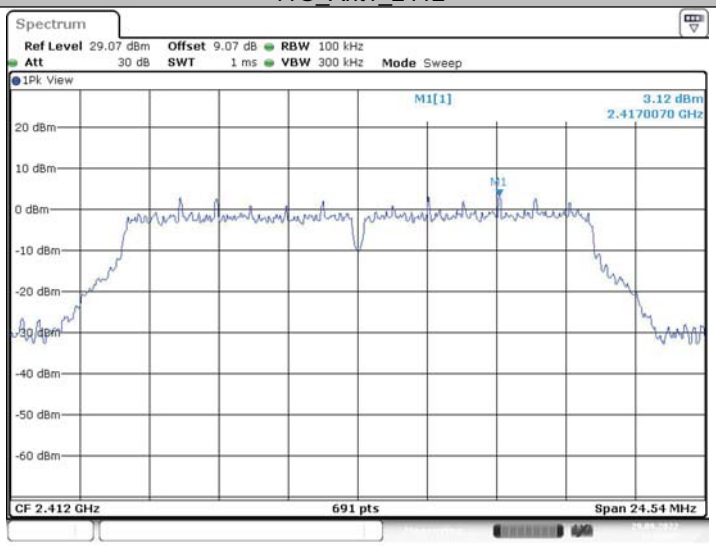
11B_Ant1_2437



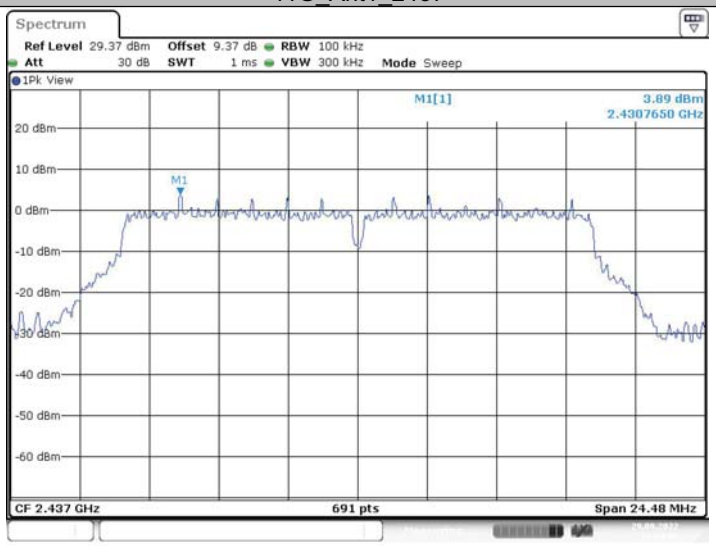
11B_Ant1_2462



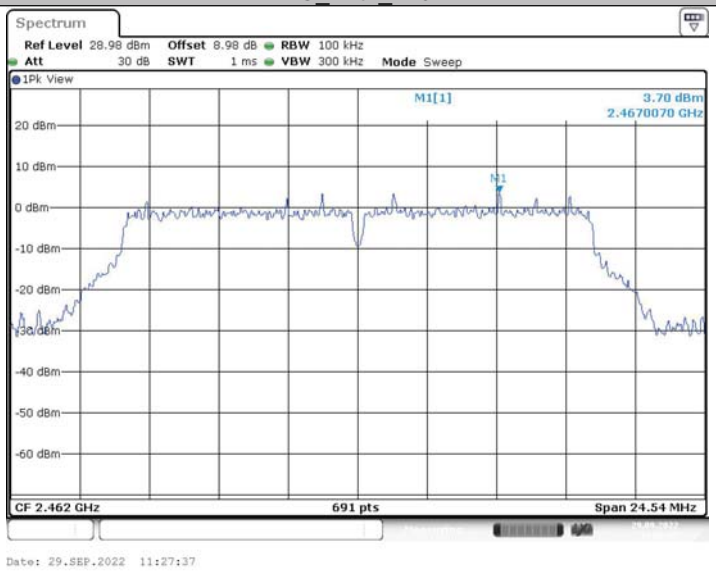
11G_Ant1_2412



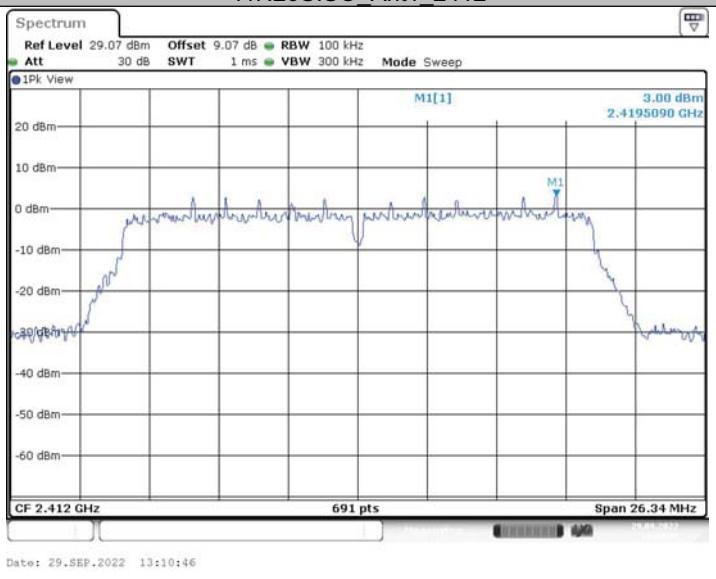
11G_Ant1_2437



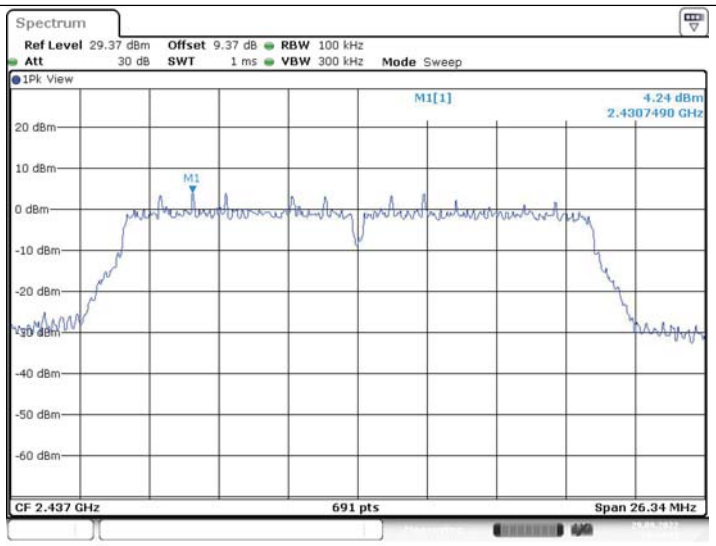
11G_Ant1_2462



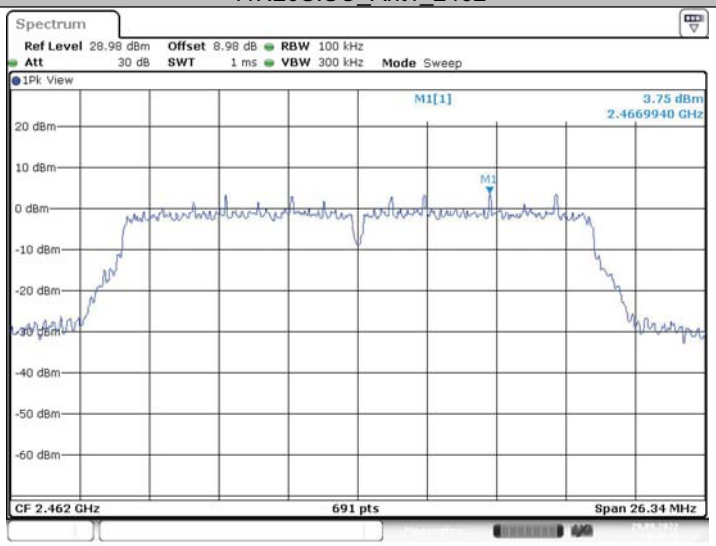
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

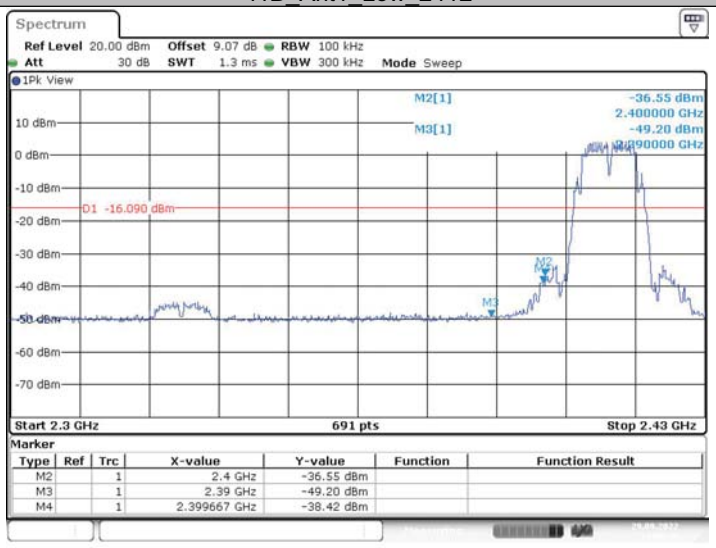


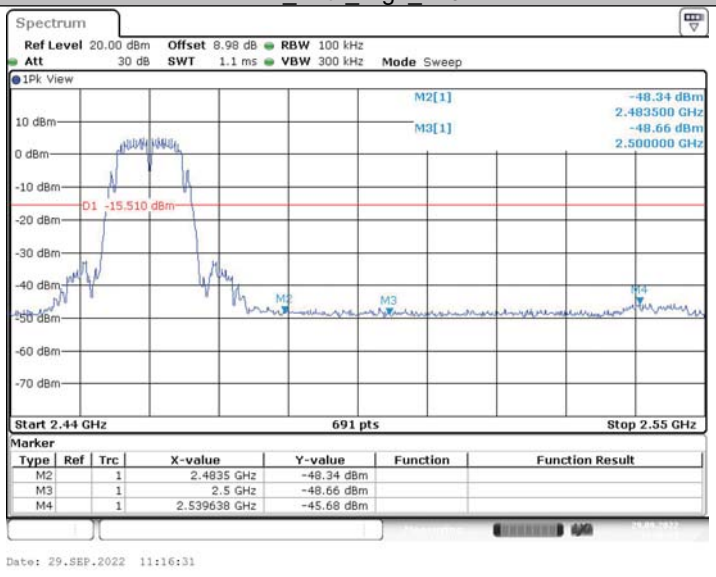
6.5 Band edge measurements

6.5.1 Test Result

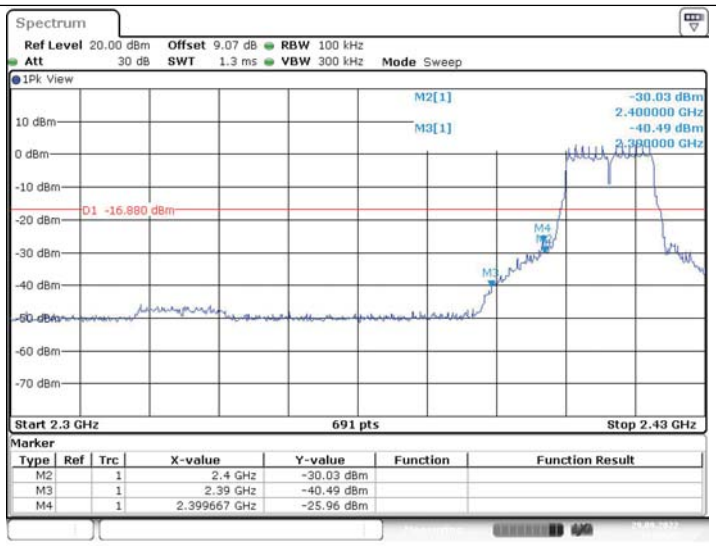
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.91	-38.42	≤-16.09	PASS
		High	2462	4.49	-45.68	≤-15.51	PASS
11G	Ant1	Low	2412	3.12	-25.96	≤-16.88	PASS
		High	2462	3.70	-39.83	≤-16.3	PASS
11N20SISO	Ant1	Low	2412	3.00	-28.06	≤-17	PASS
		High	2462	3.75	-35.78	≤-16.25	PASS

6.5.2 Test Graphs

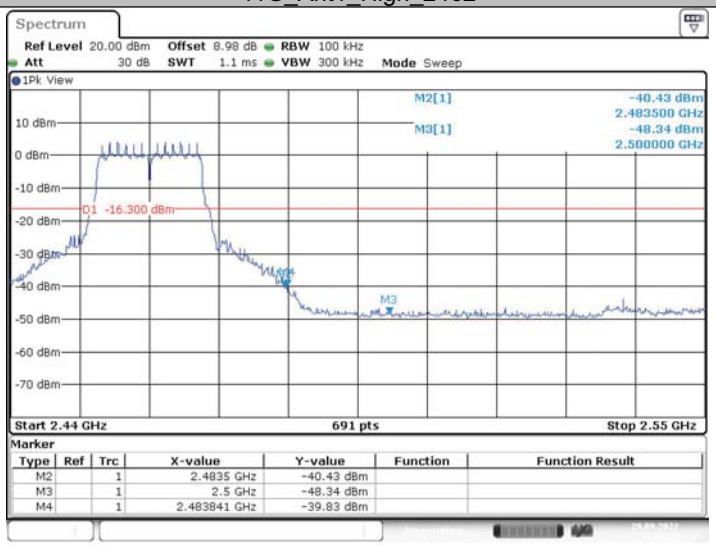
11B_Ant1_Low_2412


11B_Ant1_High_2462


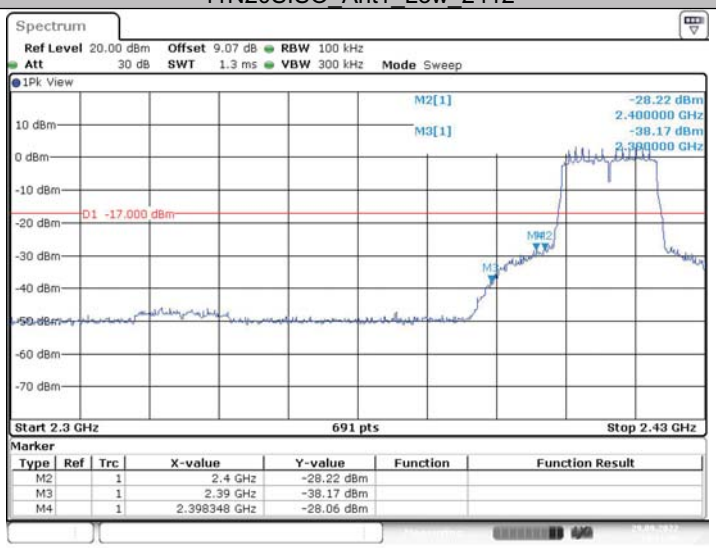
11G_Ant1_Low_2412



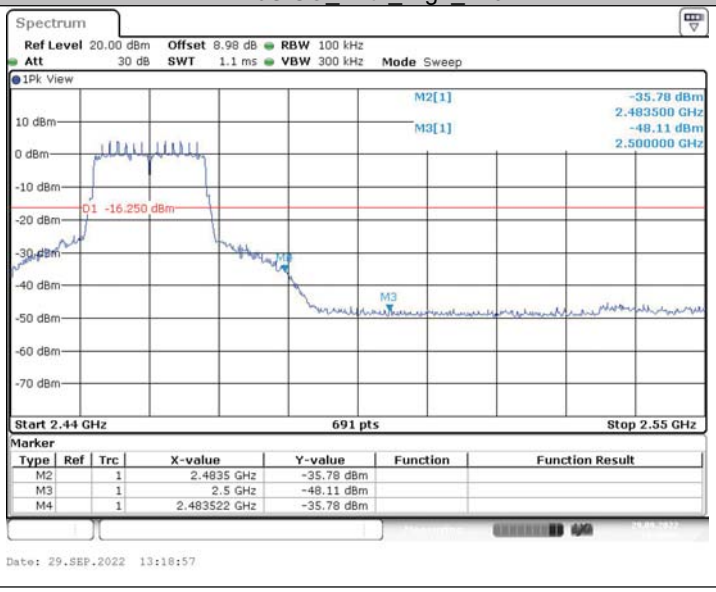
11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462

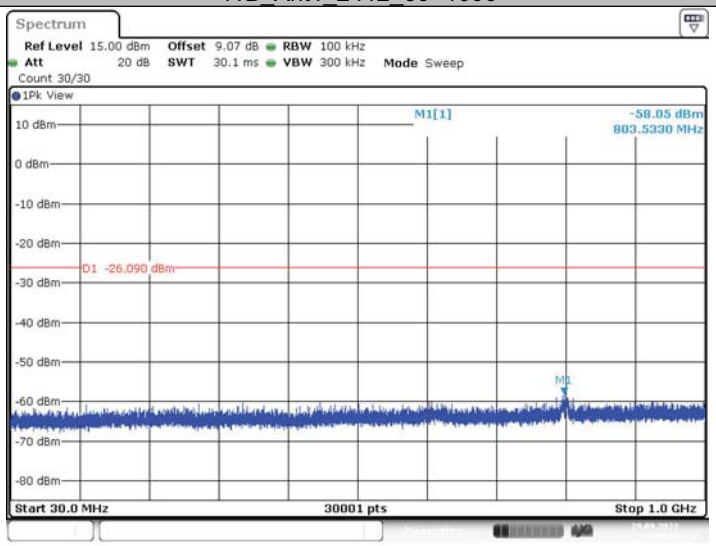
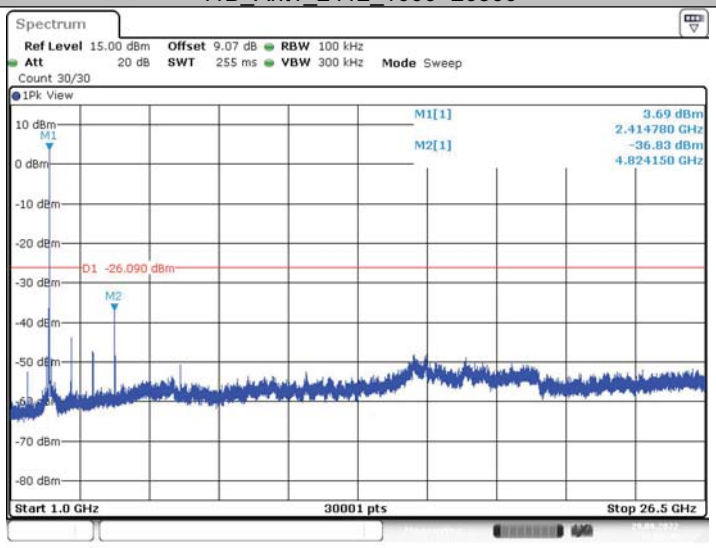


6.6 OUT OF BAND EMISSION MEASUREMENT

6.6.1 Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	3.91	-58.05	≤-26.09	PASS
			1000~26500	3.91	-36.83	≤-26.09	PASS
		2437	30~1000	4.71	-56.92	≤-25.29	PASS
			1000~26500	4.71	-34.89	≤-25.29	PASS
		2462	30~1000	4.49	-58.64	≤-25.51	PASS
			1000~26500	4.49	-35.34	≤-25.51	PASS
11G	Ant1	2412	30~1000	3.12	-59.19	≤-26.88	PASS
			1000~26500	3.12	-43.04	≤-26.88	PASS
		2437	30~1000	3.89	-57.28	≤-26.11	PASS
			1000~26500	3.89	-41.99	≤-26.11	PASS
		2462	30~1000	3.70	-58.17	≤-26.3	PASS
			1000~26500	3.70	-41.05	≤-26.3	PASS
11N20SISO	Ant1	2412	30~1000	3.00	-58.14	≤-27	PASS
			1000~26500	3.00	-42.89	≤-27	PASS
		2437	30~1000	4.24	-58.08	≤-25.76	PASS
			1000~26500	4.24	-42.06	≤-25.76	PASS
		2462	30~1000	3.75	-57.69	≤-26.25	PASS
			1000~26500	3.75	-41.7	≤-26.25	PASS

6.6.2 Test Graphs

11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

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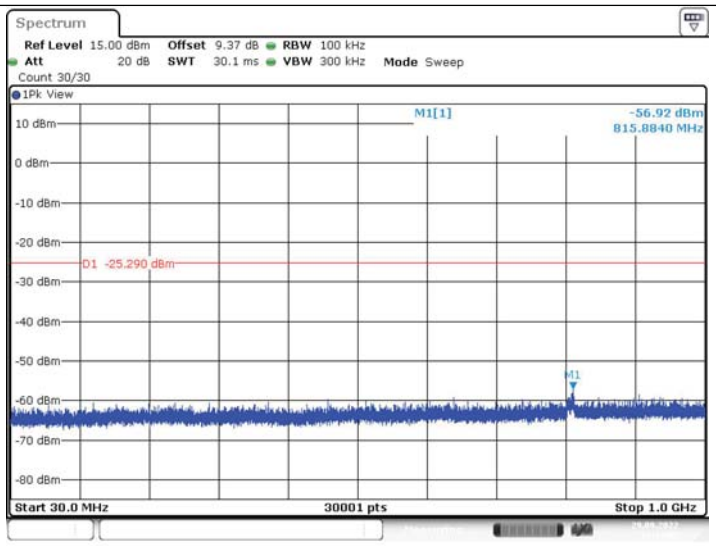

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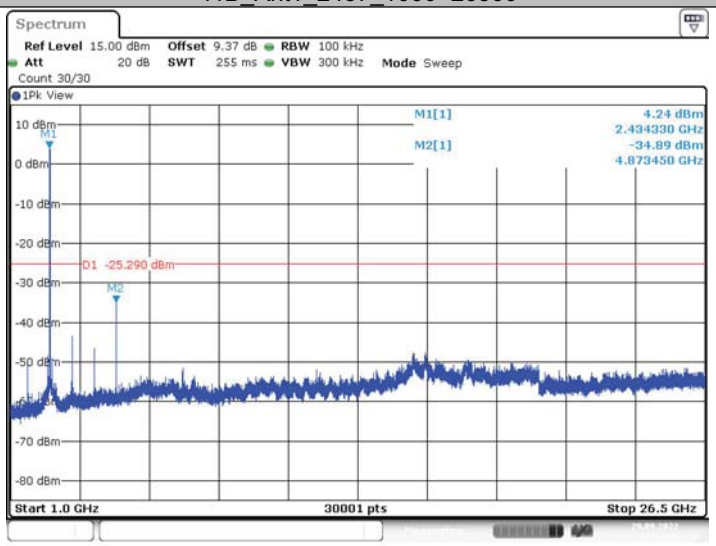

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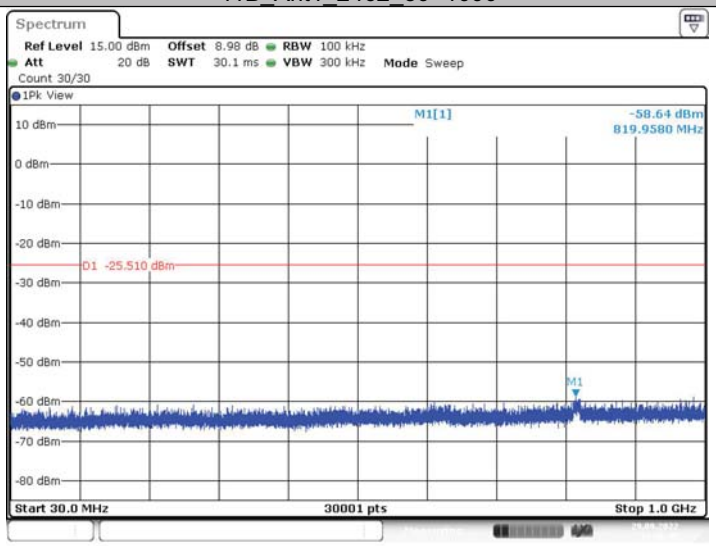

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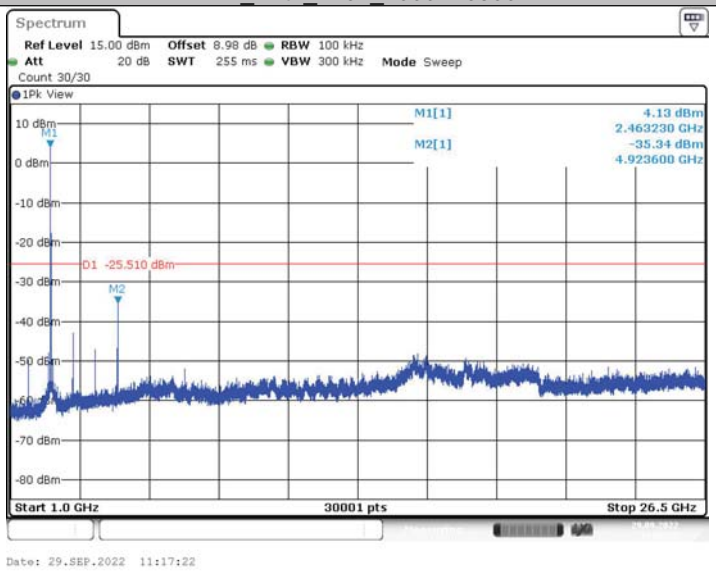

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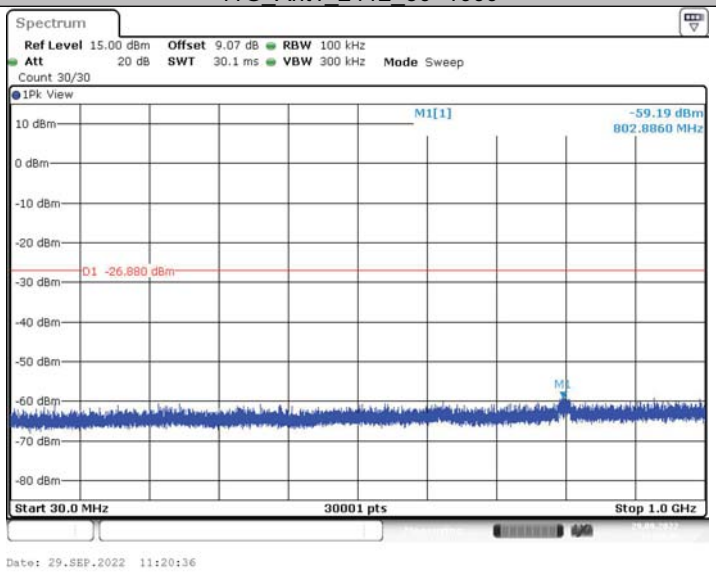

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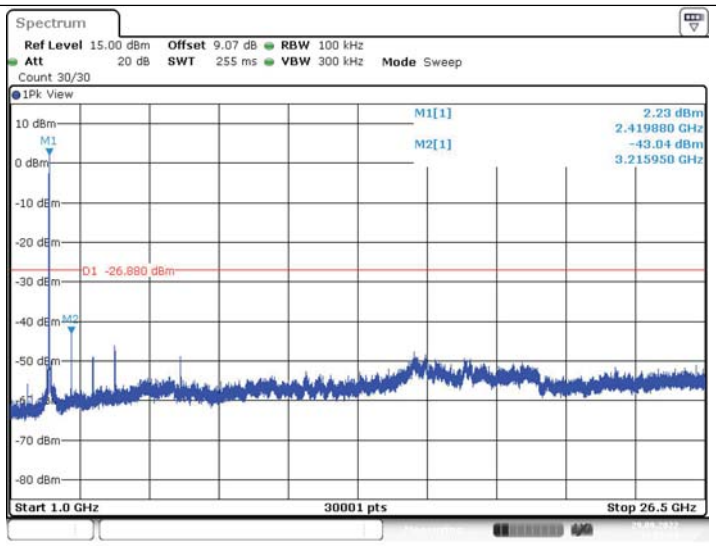

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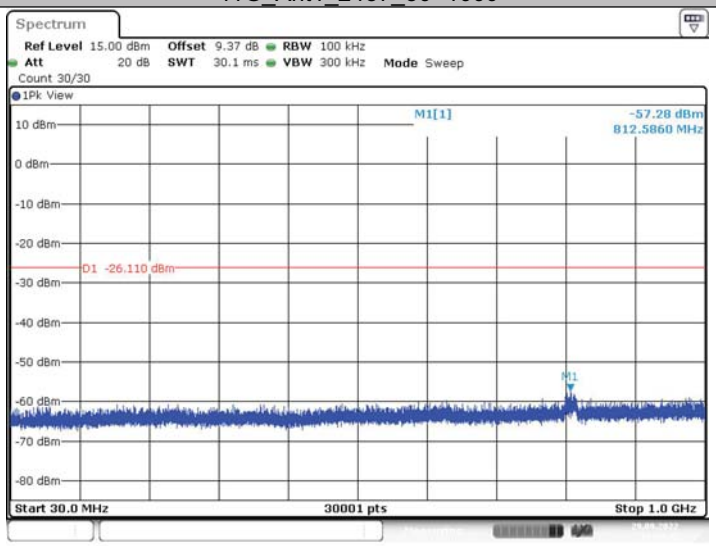

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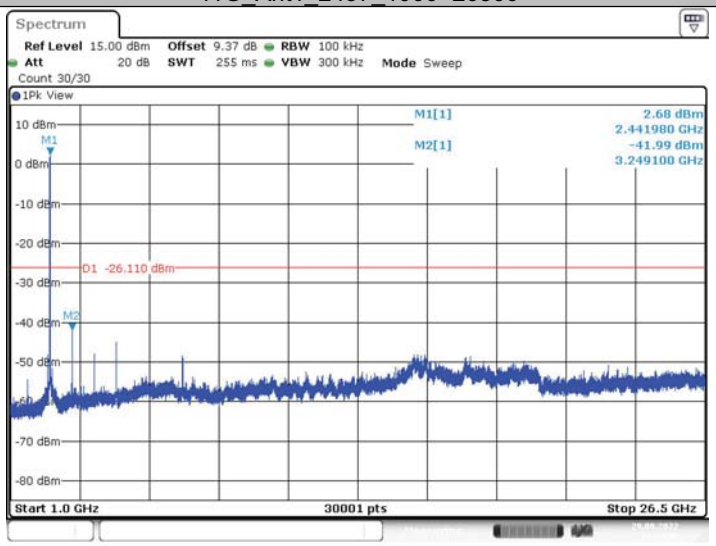

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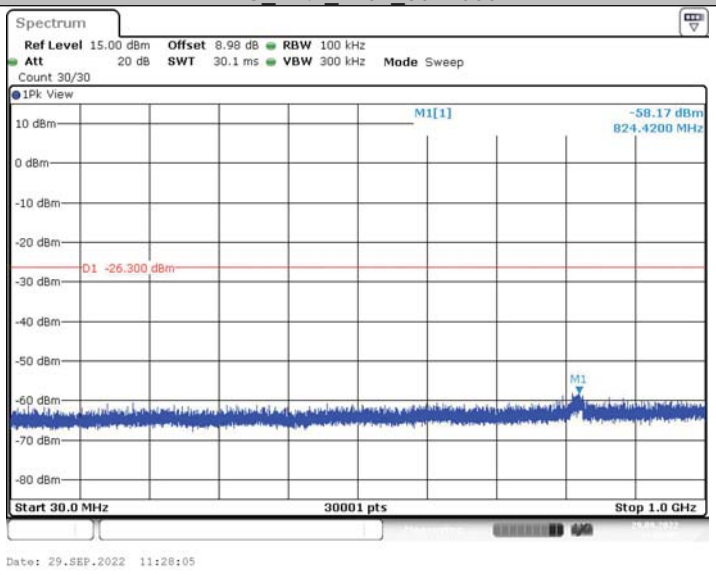
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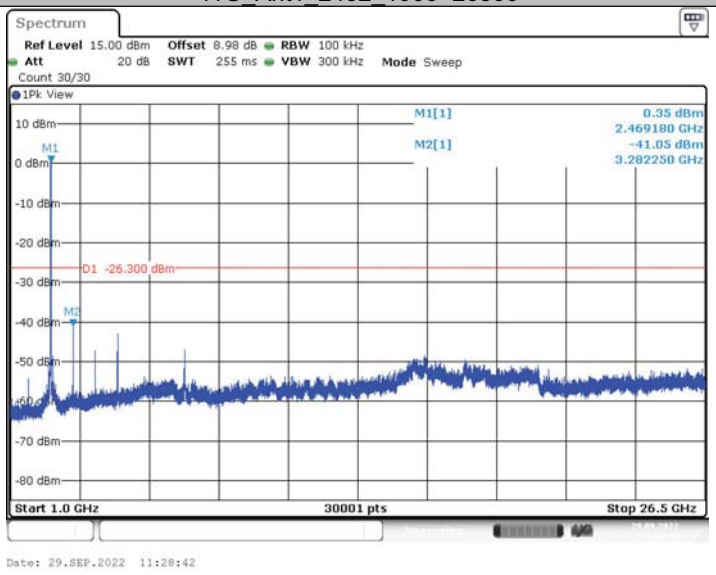
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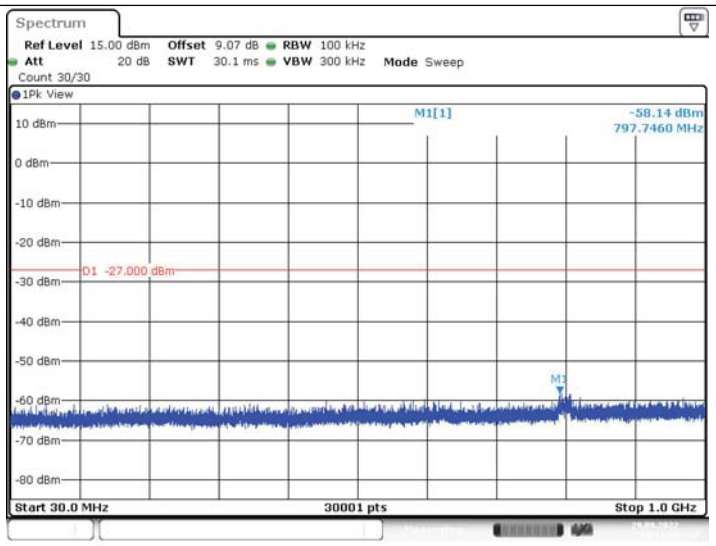

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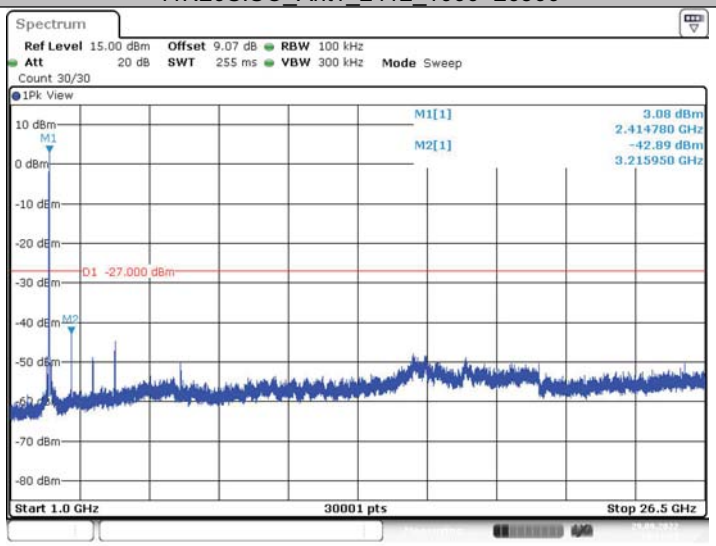

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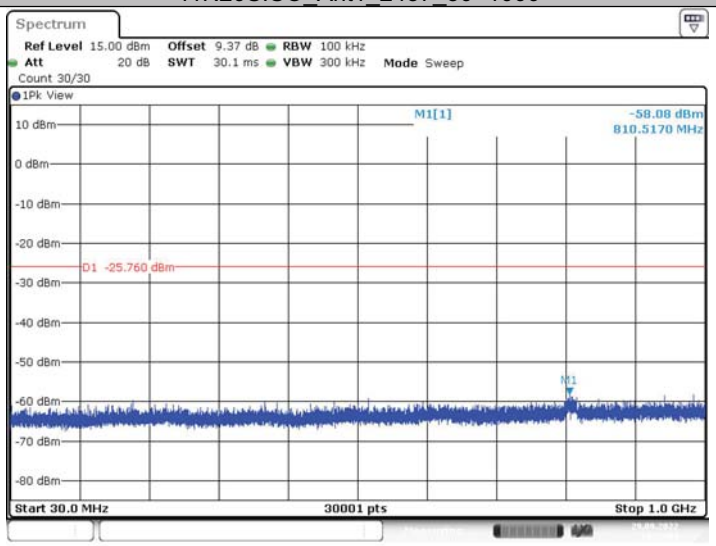

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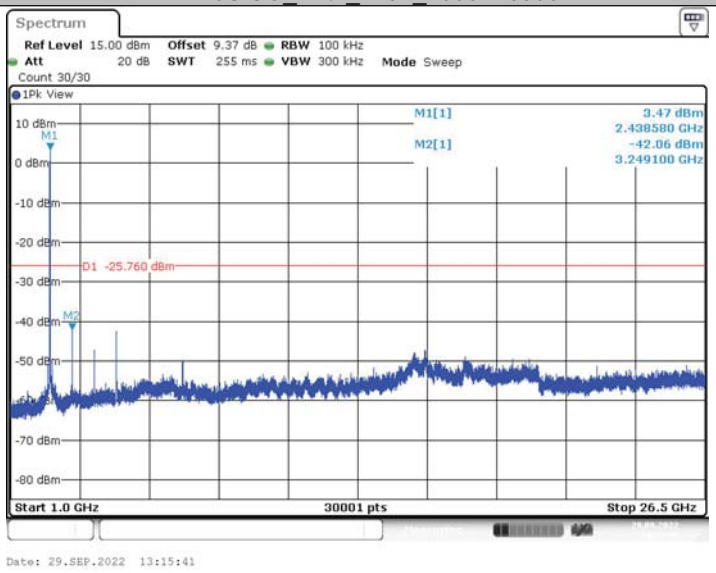

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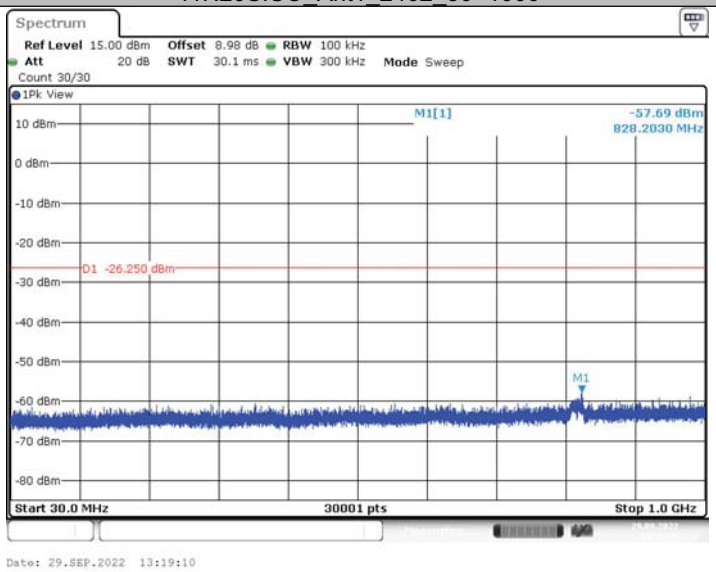

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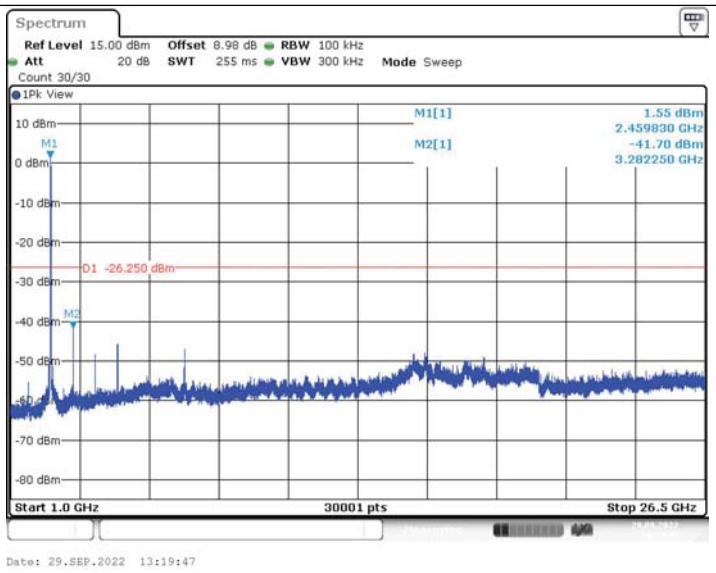
Spectrum
Ref Level 15.00 dBm Offset 8.98 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Sweep
Count 30/30
1Pk View
M1[1] 1.55 dBm
2.459830 GHz
M2[1] -41.70 dBm
3.282250 GHz
D1 -26.250 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
-80 dBm
Start 1.0 GHz
30001 pts
Stop 26.5 GHz
Date: 29.SEP.2022 13:19:47

Important

(1) The test report is valid without the official stamp of CVC;

(2) Any part photocopies of the test report are forbidden without the written permission from CVC;

(3) The test report is invalid without the signatures of Approval and Reviewer;

(4) The test report is invalid if altered;

(5) Objections to the test report must be submitted to CVC within 15 days.

(6) Generally, commission test is responsible for the tested samples only.

(7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented.

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