ACCREDITED
CERTIFICATE #5473.01

Test Report No.:
FCC2022-0062-RF2

RF Test Report

EUT	:	**LNX3 Mobile Printer**
MODEL	:	**LNX3-1**
BRAND NAME	:	**Honeywell**
APPLICANT	:	**HONEYWELL INTERNATIONAL INC.** **HONEYWELL SAFETY AND PRODUCTIVITY SOLUTIONS**
CLASSIFICATION OF TEST	:	**N/A**

CVC Testing Technology Co., Ltd.

Applicant	**Name : HONEYWELL INTERNATIONAL INC.** **HONEYWELL SAFETY AND PRODUCTIVITY SOLUTIONS** **Address : 9680 OLD BAILES RD., FORT MILL SC 29707-7539, USA**
Manufacturer	**Name : HONEYWELL INTERNATIONAL INC.** **HONEYWELL SAFETY AND PRODUCTIVITY SOLUTIONS** **Address : 9680 OLD BAILES RD., FORT MILL SC 29707-7539, USA**
Equipment Under Test	**Name: LNX3 Mobile Printer** **Model/Type: LNX3-1** **Brand: Honeywell** **Serial No.: N/A** **Sample No.: 3-1**

Date of Receipt.	**2022.08.29**	Date of Testing	**2022.08.30～2022.11.10**

Test Specification	**Test Result**
FCC Part 15, Subpart C, Section 15.247 **Canada RSS-247 Issue 2 (2017-02)** **Canada RSS-Gen Issue 5+A1+A2 (2021-02)**	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: 2022.12.29**

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
FCC2022-0062-RF2	Original release	2022.12.29

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15 Subpart C, Canada RSS-247, Canada RSS-Gen			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
FCC Part 15.207 RSS-Gen 8.8	AC Power Conducted Emission	PASS	Meet the requirement of limit.
FCC Part 15.247(d) FCC Part 15.209 RSS-247 8.10 Table 7 RSS-247 8.9 Table 5	Radiated Emissions	PASS	Meet the requirement of limit.
FCC Part 15.247(d) RSS-247 5.5	Band Edge Measurement	PASS	Meet the requirement of limit.
FCC Part 15.247(a)(2) RSS-247 5.2(a)	6dB Bandwidth Measurement	PASS	Meet the requirement of limit.
RSS-Gen 6.7	Occupied Bandwidth Measurement	PASS	Meet the requirement of limit.
FCC Part 15.247(b) RSS-247 5.4(d)	Conducted Output power	PASS	Meet the requirement of limit.
FCC Part 15.247(e) RSS-2475.2(b)	Power Spectral Density	PASS	Meet the requirement of limit.
FCC Part 15.203 FCC Part 15.247(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 2	4m*3m*3m	CRTDSWKSR 44301	VGDS-0700	CRT	2024/04/24
Bluetooth system integration	/	/	-	Tonscend	/
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2023/06/05
Comprehensive Test Instrument	CMW270	100304	DZ-000240-1	R&S	2023/12/06
Analog Signal Generator	SMB100A	181858	DZ-000238-2	R&S	2023/06/05
Vector Signal Generator	SGT100A	111661	DZ-000238-1	R&S	2023/06/05
RF Radio Frequency Switch	JS0806-2	19H9080187	`	Tonscend	2023/06/06
Programmable DC Power Supply	E3644A	MY58036222	DZ-000178	KEYSIGHT	2023/04/21
Radiation Spurious Test 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	EM-000093	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	851770	DZ-000186	WI	2023/12/06
Comprehensive tester	CMW500	159000	DZ-000240-2	R&S	2023/12/06
Conducted emission					/
EMI Test Receiver	ESCI	100857	WKNB-0081	R&S	2023-12-08
EMI Test Receiver	ESR3	102394	VGDY-0705	R&S	2023-03-04
LISN	NSLK 8127	8127644	VGDY-0150	SCHWARZBECK	2023-09-04
LISN	NSLK 8128	8128-316	VGDY-0149	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
Plus Limiter（#2）	VTSD 9561	9561-F017	VGDY-0152	SCHWARZBECK	2024-09-04
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	2023-09-04
Impedance Stabilization Network	NTFM8158	8158-0092	VGDY-0356	SCHWARZBECK	2023-06-07
ImpedanceStabilizationNetwork	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
Audio Signal Generator	GAG-810	EK871591	EM-000309	GW	2023-12-08
Shielding Room(#1)	GP1A	001	WKNF-0001	LEINING	2024-08-08
Shielding Room(#2)	GP1A	002	WKNF-0006	LEINING	2024-08-08
Current probe	EZ-17	0816.2063.02	EM-000567	R&S	2023-01-16

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	LNX3 Mobile Printer
BRAND	Honeywell
MODEL	LNX3-1
ADDITIONAL MODEL	N/A
FCC ID	HD5-LNX3-1
IC ID	1693B-LNX31
POWER SUPPLY	1. DC 7.4V from Li-ion battery 2. DC 5V from Charging base 3. DC 5V from Adapter
MODULATIONTECHNOLOGY	DSSS, GFKS, OFDM
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM GKSK for BT-LE
OPERATING FREQUENCY	2412MHz ~ 2462MHz for 11b/g/n(HT20) 2422MHz ~ 2452MHz for 11n(HT40) 2402MHz ~ 2480MHz for BT-LE
NUMBER OF CHANNEL	802.11b/g/n (HT20): 11 802.11n (HT40): 7 BT-LE GFSK (1Mbps): 40
PEAK OUTPUT POWER	WLAN: 14.22dBm (Maximum) BLE:7.96dBm (Maximum)
ANTENNA TYPE（Remark 4）	WLAN: FPC Antenna, with 0.52dBi gain BT-LE: PCB Antenna, with 0dBi gain
HARDWARE VERSION:	V1.7
SOFTWARE VERSION:	V1.7
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. Please refer to the EUT photo document for detailed product photo. (Report No.: FCC2022-0062)
4. Please refer to the antenna report.
5. 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
802.11n (HT40)	1TX/1RX
BT-LE (1Mbps)	1TX/1RX

2.2 Description of Accessories

N/A

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		
802.11n (HT40)					
CHANNEL	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**
3	**2422**	6	2437	**9**	**2452**
4	2427	**7**	**2442**		
5	2432	8	2447		

BT-LE (1Mbps)							
CHANNEL	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**	**CHANNEL**	**FREQ. (MHz)**
0	**2402**	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	**19**	**2440**	29	2460	**39**	**2480**

1. 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. By means of test software which provided by manufacture, the power levels during the tests were set according to the following codes:

2.4G WIFI							
802.11b		802.11g		802.11n(HT20)		802.11n(HT40)	
FREQUENCY(MHZ)	POWER SETTING	FREQUENCY(MHZ)	POWER SETTING	FREQUENCY(MHZ)	POWER SETTING	FREQUENCY(MHZ)	POWER SETTING
2412	99	**2412**	99	**2412**	105	**2422**	105
2437	99	**2437**	99	**2437**	105	**2437**	105
2462	99	**2462**	99	**2462**	105	**2452**	105

BT-LE(1 Mbps)					
GFSK					
CHANNEL	POWER SETTING	CHANNEL	POWER SETTING	CHANNEL	POWER SETTING
0	5	**19**	5	**39**	5

FIX FREQUENCY SOFTWARE NAME:	
2.4G WIFI	UI_MPTOOL
BT-LE	BR BLUELETSUITE

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
B	√	√	√	√	BT 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
A	802.11n(HT40)	3 to 9	3, 6, 9	OFDM	BPSK	MCS0
B	BT-LE	0 to 39	0,19, 39	DTS	GFSK	1.0 Mbit/s

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
B	BT 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
A	802.11n (HT40)	3 to 11	3, 7, 11	OFDM	BPSK	MCS0
B	BT-LE	0 to 39	0,19, 39	DTS	GFSK	1.0 Mbit/s

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE<1G	24deg. C, 55%RH	DC 7.4V from Li-ion battery	Liu ShiWei
RE≥1G	24deg. C, 55%RH	DC 7.4V from Li-ion battery	Liu ShiWei
PLC	24deg. C, 55%RH	DC 7.4V from Li-ion battery	Liu ShiWei
APCM	25deg. C, 58%RH	DC 7.4V from Li-ion battery	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
Canada RSS-247 Issue 2 (2017-02)
Canada RSS-Gen Issue 5+A1+A2 (2021-02)

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,

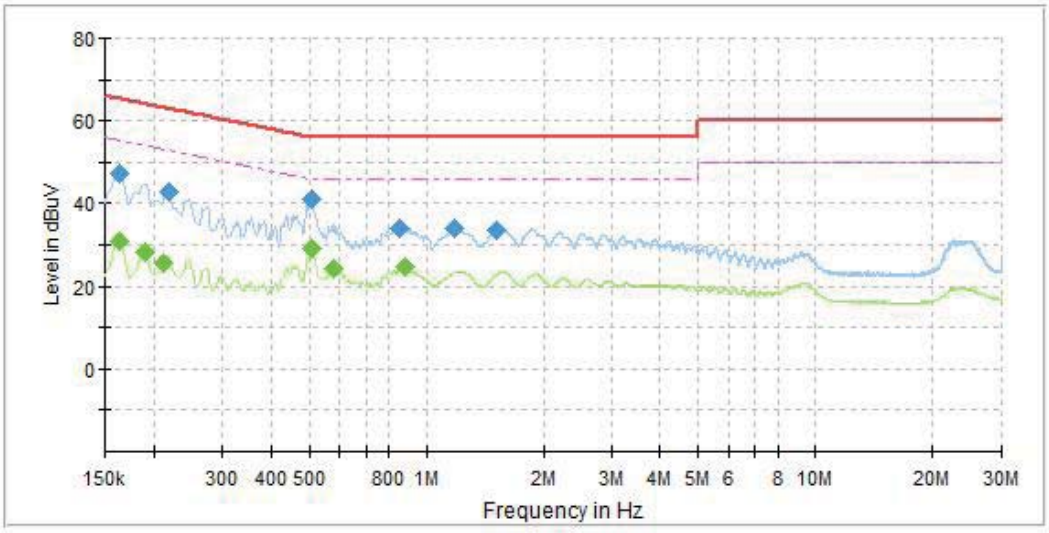
b. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

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

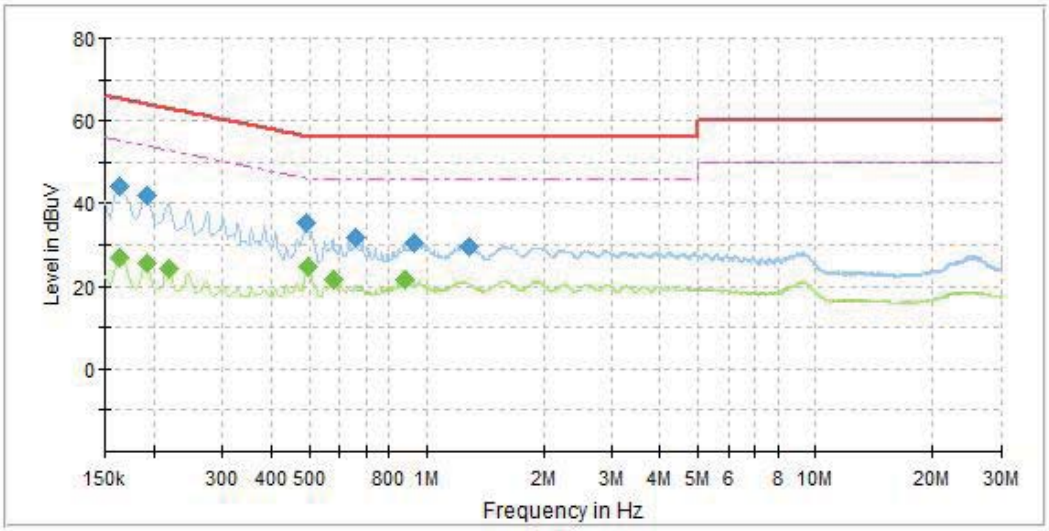
Test Mode	BT Link	Frequency Range	150KHz ~ 30MHz
PHASE	Line (L)		



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.164	47.1	---	65.3	18.2	L1	19.5
2	0.164	---	30.8	55.3	24.5	L1	19.5
3	0.191	---	28.4	54.0	25.6	L1	19.5
4	0.213	---	25.5	53.1	27.6	L1	19.5
5	0.220	42.6	---	62.8	20.2	L1	19.5
6	**0.506**	**41.1**	**---**	**56.0**	**14.9**	**L1**	**19.5**
7	0.508	---	29.0	46.0	17.0	L1	19.5
8	0.575	---	24.3	46.0	21.7	L1	19.6
9	0.854	34.2	---	56.0	21.8	L1	19.6
10	0.879	---	24.6	46.0	21.4	L1	19.6
11	1.183	34.1	---	56.0	21.9	L1	19.5
12	1.507	33.7	---	56.0	22.3	L1	19.6

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

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



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.164	---	27.1	55.3	28.2	N	19.5
2	0.164	44.3	---	65.3	21.0	N	19.5
3	0.193	42.0	---	63.9	21.9	N	19.5
4	0.193	---	25.6	53.9	28.3	N	19.5
5	0.220	---	24.4	52.8	28.5	N	19.5
6	0.492	35.5	---	56.1	20.7	N	19.6
7	0.494	---	24.9	46.1	21.2	N	19.6
8	0.575	---	21.6	46.0	24.4	N	19.6
9	0.656	31.6	---	56.0	24.4	N	19.6
10	0.877	---	21.4	46.0	24.6	N	19.6
11	0.931	30.2	---	56.0	25.8	N	19.6
12	1.286	29.5	---	56.0	26.5	N	19.6

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

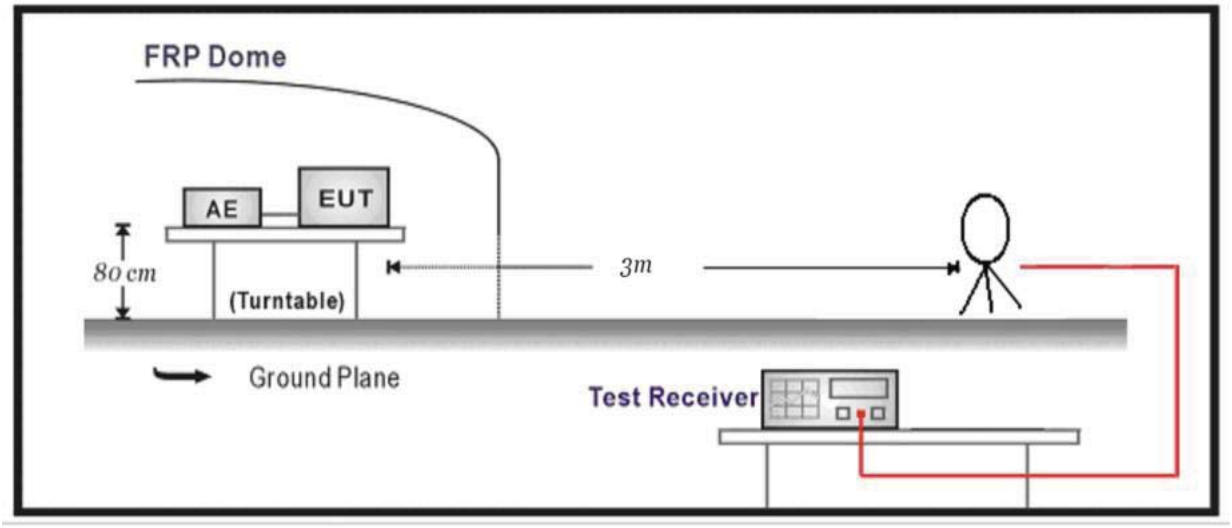
a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving 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:

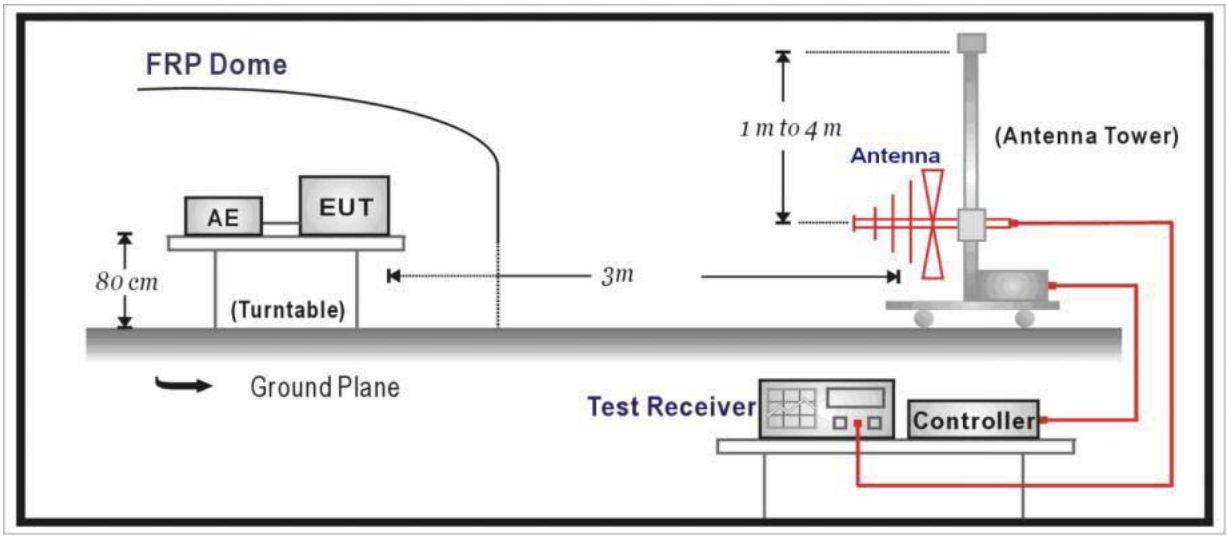
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution 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

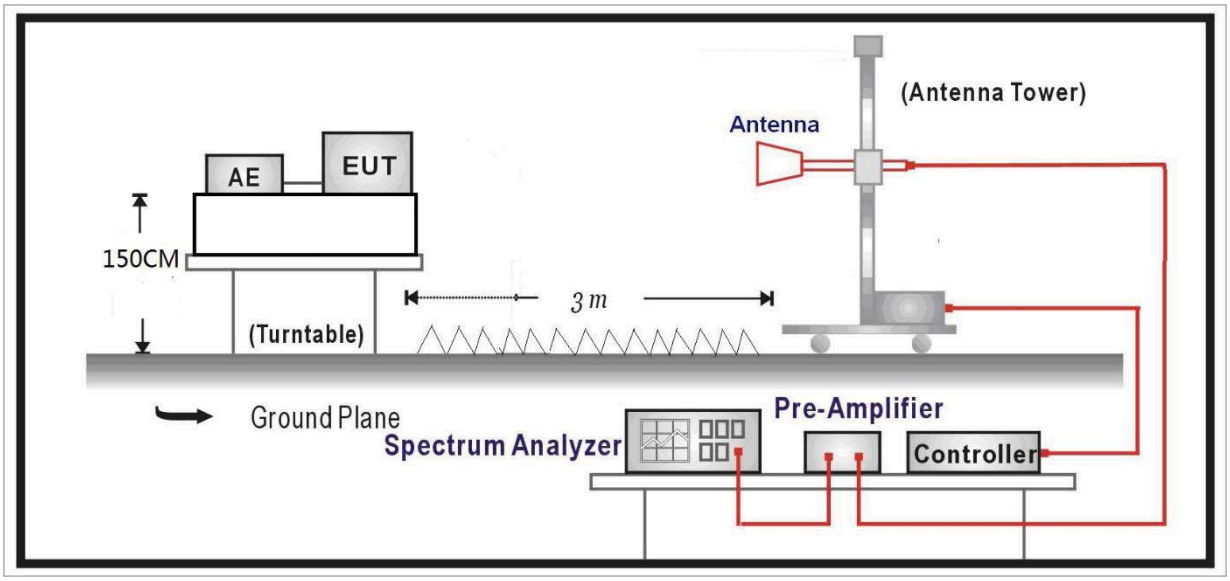
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:

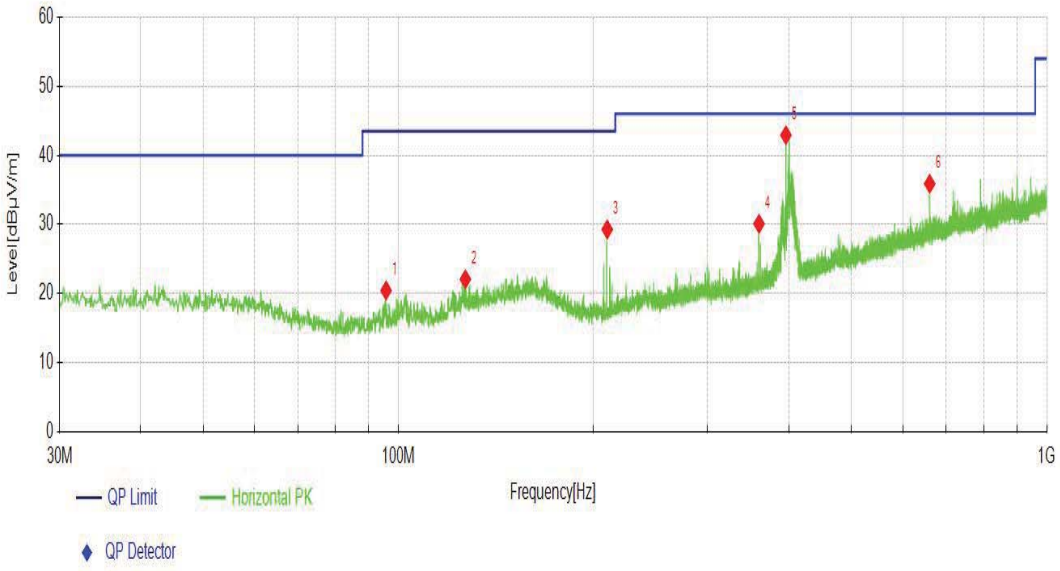


3.2.4 Test results

BELOW 1GHz WORST-CASE DATA:

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

Horizontal

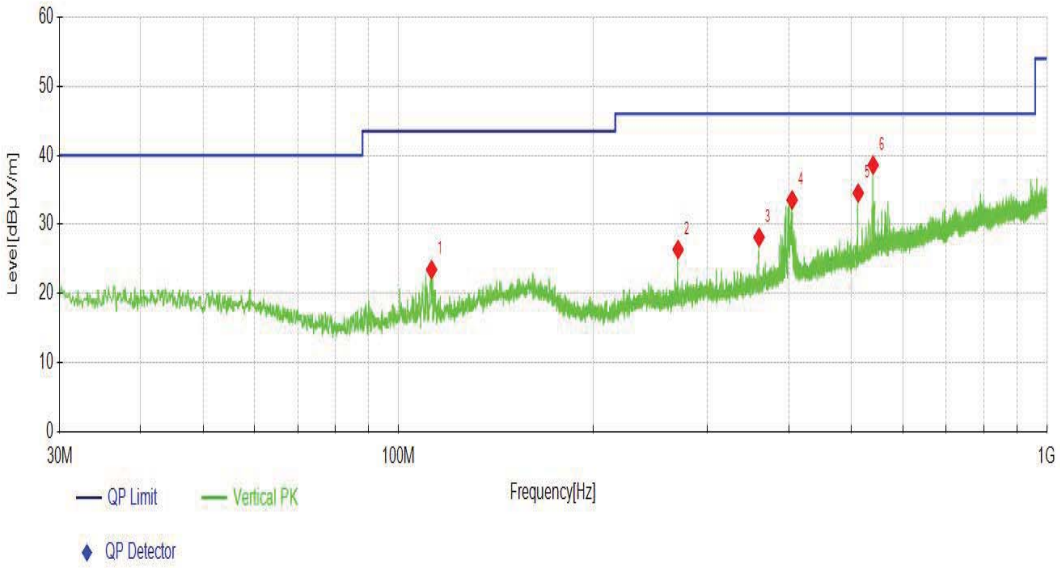


NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]
1	95.6756	4.41	16.00	20.41	43.50	23.09	200	307
2	126.8157	3.61	18.42	22.03	43.50	21.47	200	132
3	209.9530	12.42	16.84	29.26	43.50	14.24	100	234
4	359.9300	9.04	21.03	30.07	46.00	15.93	100	8
5	396.0176	20.94	21.98	42.92	46.00	3.08	100	70
6	659.9810	8.58	27.29	35.87	46.00	10.13	100	85

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	112.4582	6.36	17.07	23.43	43.50	20.07	200	305
2	270.0020	7.28	19.06	26.34	46.00	19.66	200	160
3	360.0270	7.07	21.03	28.10	46.00	17.90	200	160
4	404.8455	11.29	22.23	33.52	46.00	12.48	100	106
5	512.1382	10.35	24.17	34.52	46.00	11.48	100	277
6	539.9800	13.74	24.84	38.58	46.00	7.42	100	72

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	36.70	-0.15	36.55	54.00	17.45	227	115	AV
2	2390.0000	44.53	-0.15	44.38	74.00	29.62	290	314	PK
3	2411.9642	87.06	0.15	87.21			226	254	PK
4	2412.9523	84.41	0.17	84.58			296	254	AV
5	4824.0000	43.04	9.68	52.72	74.00	21.28	243	44	PK
6	4824.0000	35.22	9.68	44.90	54.00	9.10	279	102	AV
7	7236.0000	23.16	12.39	35.55	54.00	18.45	169	74	AV
8	7236.0000	29.75	12.39	42.14	74.00	31.86	159	74	PK
9	9648.0000	27.12	13.13	40.25	74.00	33.75	244	128	PK
10	9648.0000	19.68	13.13	32.81	54.00	21.19	193	157	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	37.04	-0.15	36.89	54.00	17.11	180	79	AV
2	2390.0000	44.42	-0.15	44.27	74.00	29.73	168	159	PK
3	2412.1281	85.84	0.14	85.98			183	219	RMS
4	2412.1732	88.30	0.15	88.45			145	219	PK
5	4824.0000	42.45	9.68	52.13	74.00	21.87	185	58	PK
6	4824.0000	34.76	9.68	44.44	54.00	9.56	271	86	AV
7	7236.0000	25.96	12.39	38.35	54.00	15.65	301	23	AV
8	7236.0000	32.25	12.39	44.64	74.00	29.36	201	10	PK
9	9648.0000	28.09	13.13	41.22	74.00	32.78	126	32	PK
10	9648.0000	20.38	13.13	33.51	54.00	20.49	143	32	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	43.18	9.70	52.88	74.00	21.12	146	19	PK
2	4874.0000	35.38	9.70	45.08	54.00	8.92	170	313	AV
3	7311.0000	23.29	11.03	34.32	54.00	19.68	115	328	AV
4	7311.0000	30.68	11.03	41.71	74.00	32.29	132	154	PK
5	9748.0000	27.31	13.23	40.54	74.00	33.46	126	129	PK
6	9748.0000	20.08	13.23	33.31	54.00	20.69	212	220	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	43.05	9.70	52.75	74.00	21.25	226	192	PK
2	4874.0000	34.90	9.70	44.60	54.00	9.40	225	66	AV
3	7311.0000	25.17	11.03	36.20	54.00	17.80	194	24	AV
4	7311.0000	31.63	11.03	42.66	74.00	31.34	299	28	PK
5	9748.0000	29.43	13.23	42.66	74.00	31.34	310	36	PK
6	9748.0000	21.84	13.23	35.07	54.00	18.93	188	40	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	2462.2622	89.04	0.63	89.67			287	122	PK
2	2463.0793	86.69	0.65	87.34			248	122	AV
3	2483.5000	37.13	0.46	37.59	54.00	16.41	127	282	AV
4	2483.5000	45.20	0.46	45.66	74.00	28.34	219	222	PK
5	4926.0000	42.22	10.07	52.29	74.00	21.71	187	244	PK
6	4926.0000	34.50	10.07	44.57	54.00	9.43	306	94	AV
7	7386.0000	22.32	9.80	32.12	54.00	21.88	271	332	AV
8	7386.0000	30.33	9.80	40.13	74.00	33.87	182	328	PK
9	9848.0000	28.09	13.24	41.33	74.00	32.67	196	147	PK
10	9848.0000	19.82	13.24	33.06	54.00	20.94	310	147	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2462.0342	89.71	0.62	90.33			133	252	PK
2	2463.1743	87.30	0.65	87.95			223	252	AV
3	2483.5000	44.75	0.46	45.21	74.00	28.79	138	125	PK
4	2483.5000	37.13	0.46	37.59	54.00	16.41	237	1	AV
5	4926.0000	42.61	10.07	52.68	74.00	21.32	289	175	PK
6	4926.0000	34.40	10.07	44.47	54.00	9.53	165	175	AV
7	7386.0000	24.08	9.80	33.88	54.00	20.12	304	27	AV
8	7386.0000	31.20	9.80	41.00	74.00	33.00	195	348	PK
9	9848.0000	27.59	13.24	40.83	74.00	33.17	169	48	PK
10	9848.0000	20.36	13.24	33.60	54.00	20.40	121	27	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	37.09	-0.15	36.94	54.00	17.06	171	102	AV
2	2390.0000	44.79	-0.15	44.64	74.00	29.36	207	102	PK
3	2412.6174	85.63	0.17	85.80			250	254	PK
4	2412.6174	78.82	0.17	78.99			260	254	RMS
5	4824.0000	44.07	9.68	53.75	74.00	20.25	270	345	PK
6	4824.0000	34.97	9.68	44.65	54.00	9.35	283	122	AV
7	7236.0000	21.60	12.39	33.99	54.00	20.01	216	102	AV
8	7236.0000	29.86	12.39	42.25	74.00	31.75	176	197	PK
9	9648.0000	28.53	13.13	41.66	74.00	32.34	298	93	PK
10	9648.0000	19.85	13.13	32.98	54.00	21.02	121	321	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	46.86	-0.15	46.71	74.00	27.29	147	112	PK
2	2390.0000	37.18	-0.15	37.03	54.00	16.97	307	12	AV
3	2412.4298	80.22	0.09	80.31			146	112	RMS
4	2412.5794	86.88	0.17	87.05			290	65	PK
5	4824.0000	43.82	9.68	53.50	74.00	20.50	200	34	PK
6	4824.0000	35.71	9.68	45.39	54.00	8.61	132	76	AV
7	7236.0000	21.87	12.39	34.26	54.00	19.74	124	23	AV
8	7236.0000	30.29	12.39	42.68	74.00	31.32	305	35	PK
9	9648.0000	28.33	13.13	41.46	74.00	32.54	237	279	PK
10	9648.0000	19.91	13.13	33.04	54.00	20.96	303	35	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	43.52	9.70	53.22	74.00	20.78	283	355	PK
2	4874.0000	34.98	9.70	44.68	54.00	9.32	186	119	AV
3	7311.0000	21.49	11.03	32.52	54.00	21.48	173	87	AV
4	7311.0000	30.64	11.03	41.67	74.00	32.33	282	154	PK
5	9748.0000	27.40	13.23	40.63	74.00	33.37	152	328	PK
6	9748.0000	20.57	13.23	33.80	54.00	20.20	201	328	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	43.60	9.70	53.30	74.00	20.70	134	54	PK
2	4874.0000	34.44	9.70	44.14	54.00	9.86	165	29	AV
3	7311.0000	21.99	11.03	33.02	54.00	20.98	279	1	AV
4	7311.0000	29.79	11.03	40.82	74.00	33.18	189	102	PK
5	9748.0000	28.51	13.23	41.74	74.00	32.26	171	160	PK
6	9748.0000	21.44	13.23	34.67	54.00	19.33	245	19	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	2462.4593	88.10	0.66	88.76			272	121	PK
2	2462.4735	81.39	0.72	82.11			210	121	AV
3	2483.5000	45.92	0.46	46.38	74.00	27.62	242	88	PK
4	2483.5000	37.77	0.46	38.23	54.00	15.77	174	201	AV
5	4926.0000	42.32	10.07	52.39	74.00	21.61	162	57	PK
6	4926.0000	34.31	10.07	44.38	54.00	9.62	283	119	AV
7	7386.0000	21.17	9.80	30.97	54.00	23.03	220	0	AV
8	7386.0000	29.64	9.80	39.44	74.00	34.56	290	357	PK
9	9848.0000	27.15	13.24	40.39	74.00	33.61	267	245	PK
10	9848.0000	19.44	13.24	32.68	54.00	21.32	281	324	AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2462.5734	88.49	0.67	89.16			186	251	PK
2	2462.2716	81.82	0.74	82.56			234	265	AV
3	2483.5000	38.23	0.46	38.69	54.00	15.31	150	265	AV
4	2483.5000	47.66	0.46	48.12	74.00	25.88	196	258	PK
5	4926.0000	42.44	10.07	52.51	74.00	21.49	230	216	PK
6	4926.0000	34.35	10.07	44.42	54.00	9.58	273	225	AV
7	7386.0000	22.12	9.80	31.92	54.00	22.08	219	360	AV
8	7386.0000	30.30	9.80	40.10	74.00	33.90	113	360	PK
9	9848.0000	28.36	13.24	41.60	74.00	32.40	225	215	PK
10	9848.0000	20.28	13.24	33.52	54.00	20.48	186	252	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	42.22	-0.15	42.07	54.00	11.93	286	96	AV
2	2390.0000	51.57	-0.15	51.42	74.00	22.58	263	275	PK
3	2412.0189	89.36	0.11	89.47			165	255	PK
4	2412.6151	82.19	0.13	82.32			139	255	AV
5	4824.0000	42.85	9.68	52.53	74.00	21.47	162	40	PK
6	4824.0000	35.09	9.68	44.77	54.00	9.23	277	326	AV
7	7236.0000	23.14	12.39	35.53	54.00	18.47	210	329	AV
8	7236.0000	30.80	12.39	43.19	74.00	30.81	154	329	PK
9	9648.0000	27.98	13.13	41.11	74.00	32.89	305	354	PK
10	9648.0000	19.66	13.13	32.79	54.00	21.21	155	150	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	44.83	-0.15	44.68	54.00	9.32	256	65	AV
2	2390.0000	57.71	-0.15	57.56	74.00	16.44	133	238	PK
3	2412.7458	84.08	0.08	84.16			136	79	AV
4	2412.8289	90.96	0.10	91.06			148	85	PK
5	4824.0000	42.67	9.68	52.35	74.00	21.65	138	91	PK
6	4824.0000	34.65	9.68	44.33	54.00	9.67	150	79	AV
7	7229.0729	36.46	12.49	48.95	74.00	25.05	237	7	PK
8	7240.7741	27.06	12.32	39.38	54.00	14.62	209	19	AV
9	9648.0000	28.91	13.13	42.04	74.00	31.96	146	40	PK
10	9648.0000	20.48	13.13	33.61	54.00	20.39	130	40	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	43.14	9.70	52.84	74.00	21.16	116	81	PK
2	4874.0000	35.30	9.70	45.00	54.00	9.00	181	110	AV
3	7311.0000	22.93	11.03	33.96	54.00	20.04	250	328	AV
4	7311.0000	30.93	11.03	41.96	74.00	32.04	260	332	PK
5	9748.0000	27.06	13.23	40.29	74.00	33.71	173	250	PK
6	9748.0000	19.71	13.23	32.94	54.00	21.06	181	42	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	43.11	9.70	52.81	74.00	21.19	291	56	PK
2	4874.0000	34.63	9.70	44.33	54.00	9.67	288	229	AV
3	7311.0000	24.38	11.03	35.41	54.00	18.59	147	44	AV
4	7311.0000	33.43	11.03	44.46	74.00	29.54	124	48	PK
5	9748.0000	29.34	13.23	42.57	74.00	31.43	193	44	PK
6	9748.0000	21.80	13.23	35.03	54.00	18.97	298	15	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	2462.0129	92.13	0.56	92.69			150	116	PK
2	2462.7277	85.34	0.76	86.10			156	95	AV
3	2483.5000	61.91	0.46	62.37	74.00	11.63	123	102	PK
4	2483.5000	50.05	0.46	50.51	54.00	3.49	286	62	AV
5	4926.0000	42.45	10.07	52.52	74.00	21.48	190	330	PK
6	4926.0000	34.22	10.07	44.29	54.00	9.71	124	314	AV
7	7386.0000	22.30	9.80	32.10	54.00	21.90	276	337	AV
8	7386.0000	30.20	9.80	40.00	74.00	34.00	289	332	PK
9	9848.0000	27.06	13.24	40.30	74.00	33.70	228	12	PK
10	9848.0000	19.35	13.24	32.59	54.00	21.41	118	87	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2462.2219	92.55	0.56	93.11			203	355	PK
2	2462.3666	85.79	0.74	86.53			159	264	AV
3	2483.5000	62.63	0.46	63.09	74.00	10.91	204	359	PK
4	2483.5000	47.43	0.46	47.89	54.00	6.11	293	1	AV
5	4926.0000	42.88	10.07	52.95	74.00	21.05	277	104	PK
6	4926.0000	34.37	10.07	44.44	54.00	9.56	262	290	AV
7	7384.6985	36.20	9.85	46.05	74.00	27.95	157	24	PK
8	7386.0000	22.91	9.80	32.71	54.00	21.29	285	28	AV
9	9848.0000	27.72	13.24	40.96	74.00	33.04	224	28	PK
10	9848.0000	20.73	13.24	33.97	54.00	20.03	216	16	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	802.11n40 CH 3	Frequency	2422MHz
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	53.08	-0.15	52.93	74.00	21.07	136	268	PK
2	2390.0000	45.63	-0.15	45.48	54.00	8.52	114	261	AV
3	2422.0325	80.20	0.40	80.60			208	75	AV
4	2422.1108	87.64	0.43	88.07			209	75	PK
5	4844.0000	42.57	9.94	52.51	74.00	21.49	309	56	PK
6	4844.0000	34.99	9.94	44.93	54.00	9.07	193	56	AV
7	7266.0000	21.79	11.99	33.78	54.00	20.22	202	113	AV
8	7266.0000	29.56	11.99	41.55	74.00	32.45	289	138	PK
9	9688.0000	27.42	13.15	40.57	74.00	33.43	275	217	PK
10	9688.0000	19.87	13.15	33.02	54.00	20.98	185	353	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	46.81	-0.15	46.66	54.00	7.34	198	219	AV
2	2390.0000	55.39	-0.15	55.24	74.00	18.76	219	66	PK
3	2422.8949	88.42	0.35	88.77			170	259	PK
4	2422.1062	81.03	0.37	81.40			209	259	AV
5	4844.0000	42.87	9.94	52.81	74.00	21.19	288	304	PK
6	4844.0000	34.91	9.94	44.85	54.00	9.15	112	172	AV
7	7266.0000	22.55	11.99	34.54	54.00	19.46	129	19	AV
8	7266.0000	30.09	11.99	42.08	74.00	31.92	279	36	PK
9	9688.0000	28.70	13.15	41.85	74.00	32.15	267	36	PK
10	9688.0000	20.68	13.15	33.83	54.00	20.17	166	19	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	802.11n40 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	43.40	9.70	53.10	74.00	20.90	229	182	PK
2	4874.0000	35.40	9.70	45.10	54.00	8.90	245	215	AV
3	7311.0000	21.93	11.03	32.96	54.00	21.04	262	337	AV
4	7311.0000	30.35	11.03	41.38	74.00	32.62	298	75	PK
5	9748.0000	27.83	13.23	41.06	74.00	32.94	255	312	PK
6	9748.0000	19.57	13.23	32.80	54.00	21.20	233	312	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	44.57	9.70	54.27	74.00	19.73	243	157	PK
2	4874.0000	35.23	9.70	44.93	54.00	9.07	241	116	AV
3	7311.0000	23.86	11.03	34.89	54.00	19.11	305	23	AV
4	7311.0000	30.25	11.03	41.28	74.00	32.72	129	23	PK
5	9748.0000	29.03	13.23	42.26	74.00	31.74	243	44	PK
6	9748.0000	21.19	13.23	34.42	54.00	19.58	246	53	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	802.11n40 CH 9	Frequency	2452MHz
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	2452.4785	78.22	0.57	78.79			254	84	AV
2	2452.7659	85.62	0.56	86.18			193	84	PK
3	2483.5000	43.14	0.46	43.60	54.00	10.40	165	11	AV
4	2483.5000	53.72	0.46	54.18	74.00	19.82	276	64	PK
5	4904.0000	42.87	10.10	52.97	74.00	21.03	250	226	PK
6	4904.0000	34.71	10.10	44.81	54.00	9.19	156	301	AV
7	7356.0000	21.78	10.31	32.09	54.00	21.91	114	58	AV
8	7356.0000	30.88	10.31	41.19	74.00	32.81	289	149	PK
9	9808.0000	27.83	13.20	41.03	74.00	32.97	168	215	PK
10	9808.0000	19.77	13.20	32.97	54.00	21.03	174	215	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2452.3835	78.69	0.57	79.26			217	84	AV
2	2452.9559	85.86	0.56	86.42			117	91	PK
3	2483.5000	42.71	0.46	43.17	54.00	10.83	284	38	AV
4	2483.5000	53.09	0.46	53.55	74.00	20.45	259	58	PK
5	4874.0000	43.02	9.70	52.72	74.00	21.28	255	50	PK
6	4874.0000	34.98	9.70	44.68	54.00	9.32	183	150	AV
7	7311.0000	21.35	11.03	32.38	54.00	21.62	235	252	AV
8	7311.0000	29.01	11.03	40.04	74.00	33.96	155	265	PK
9	9748.0000	27.30	13.23	40.53	74.00	33.47	272	31	PK
10	9748.0000	19.05	13.23	32.28	54.00	21.72	293	328	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	BT-LE CH0	Frequency	2402MHz
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	44.65	-0.15	44.50	74.00	29.50	268	240	PK
2	2390.0000	36.82	-0.15	36.67	54.00	17.33	254	214	AV
3	2401.7412	81.95	-0.04	81.91			164	195	PK
4	2402.0832	80.98	-0.03	80.95			249	195	AV
5	4804.0000	37.00	9.29	46.29	54.00	7.71	226	178	AV
6	4804.0000	44.06	9.29	53.35	74.00	20.65	292	174	PK
7	7206.0000	28.16	12.81	40.97	74.00	33.03	188	100	PK
8	7206.0000	20.42	12.81	33.23	54.00	20.77	194	336	AV
9	9608.0000	19.43	13.32	32.75	54.00	21.25	146	55	AV
10	9608.0000	27.65	13.32	40.97	74.00	33.03	211	324	PK

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2390.0000	45.34	-0.15	45.19	74.00	28.81	301	348	PK
2	2390.0000	37.14	-0.15	36.99	54.00	17.01	135	348	AV
3	2401.7412	75.59	-0.04	75.55			284	18	AV
4	2401.7602	76.55	-0.04	76.51			117	44	PK
5	4804.0000	44.25	9.29	53.54	74.00	20.46	139	268	PK
6	4804.0000	36.93	9.29	46.22	54.00	7.78	197	268	AV
7	7206.0000	20.49	12.81	33.30	54.00	20.70	129	337	AV
8	7206.0000	29.19	12.81	42.00	74.00	32.00	162	132	PK
9	9608.0000	28.24	13.32	41.56	74.00	32.44	212	99	PK
10	9608.0000	19.56	13.32	32.88	54.00	21.12	226	95	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	BT-LE CH19	Frequency	2440MHz
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	4880.0000	44.53	9.80	54.33	74.00	19.67	110	179	PK
2	4880.0000	38.10	9.80	47.90	54.00	6.10	170	179	AV
3	7320.0000	20.95	11.01	31.96	54.00	22.04	271	340	AV
4	7320.0000	28.92	11.01	39.93	74.00	34.07	305	287	PK
5	9760.0000	28.90	13.25	42.15	74.00	31.85	188	324	PK
6	9760.0000	22.80	13.25	36.05	54.00	17.95	110	315	AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	4880.0000	45.23	9.80	55.03	74.00	18.97	235	266	PK
2	4880.0000	38.25	9.80	48.05	54.00	5.95	152	266	AV
3	7320.0000	21.21	11.01	32.22	54.00	21.78	208	256	AV
4	7320.0000	28.79	11.01	39.80	74.00	34.20	278	325	PK
5	9760.0000	28.50	13.25	41.75	74.00	32.25	262	260	PK
6	9760.0000	21.31	13.25	34.56	54.00	19.44	141	268	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	BT-LE CH39	Frequency	2480MHz
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	2479.8580	82.16	0.32	82.48			167	196	AV
2	2479.9720	82.99	0.32	83.31			178	196	PK
3	2483.5000	37.81	0.46	38.27	54.00	15.73	119	250	AV
4	2483.5000	50.74	0.46	51.20	74.00	22.80	238	250	PK
5	4960.0000	44.24	10.69	54.93	74.00	19.07	116	194	PK
6	4960.0000	37.73	10.69	48.42	54.00	5.58	286	183	AV
7	7440.0000	21.80	9.75	31.55	54.00	22.45	217	350	AV
8	7440.0000	30.41	9.75	40.16	74.00	33.84	186	182	PK
9	9920.0000	28.27	13.83	42.10	74.00	31.90	139	326	PK
10	9920.0000	21.60	13.83	35.43	54.00	18.57	176	326	AV

Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2479.8960	79.05	0.32	79.37			278	37	AV
2	2480.0100	80.15	0.31	80.46			160	37	PK
3	2483.5000	39.78	0.46	40.24	54.00	13.76	206	196	AV
4	2483.5000	54.35	0.46	54.81	74.00	19.19	159	196	PK
5	4960.0000	45.09	10.69	55.78	74.00	18.22	252	273	PK
6	4960.0000	38.29	10.69	48.98	54.00	5.02	249	112	AV
7	7440.0000	21.76	9.75	31.51	54.00	22.49	181	46	AV
8	7440.0000	29.23	9.75	38.98	74.00	35.02	206	259	PK
9	9920.0000	29.67	13.83	43.50	74.00	30.50	110	239	PK
10	9920.0000	21.35	13.83	35.18	54.00	18.82	272	272	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

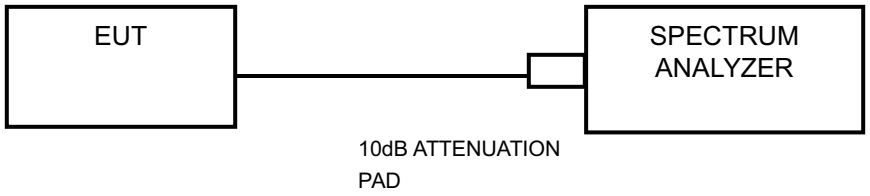
3.3.1 Limits

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

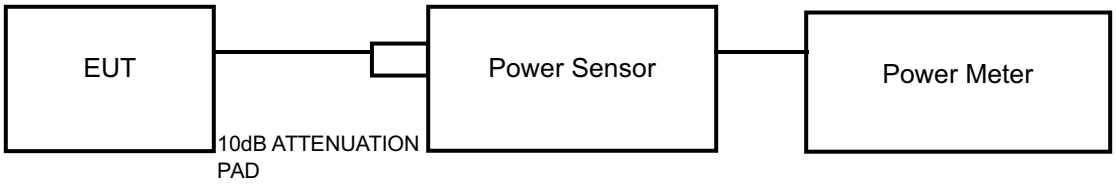
3.4.1 Limits

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

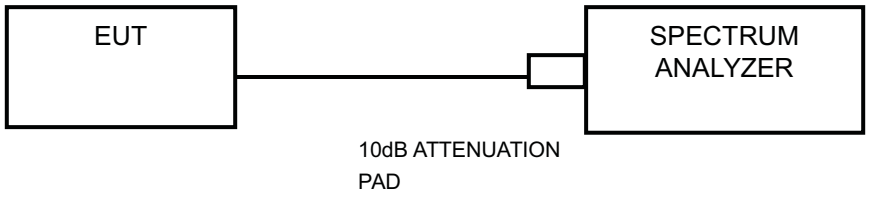
3.5.1 Limits

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

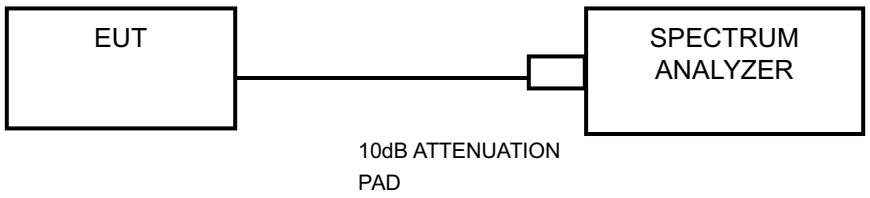
Measurement Procedure -Reference Level

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.

3.7 OCCUPIED BANDWIDTH MEASUREMENT

3.7.1 Measurement procedure

The transmitter antenna output was connected to the spectrum analyzer through an attenuator. The resolution bandwidth shall be set to the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth.
below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.7.2 TEST SETUP

3.7.3 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

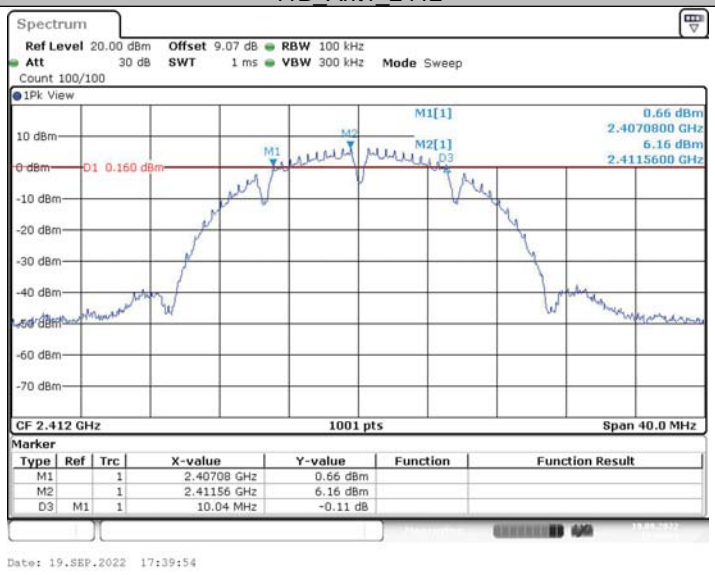
6.1.1 Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.04	2407.08	2417.12	0.5	PASS
		2437	10.04	2432.08	2442.12	0.5	PASS
		2462	10.04	2457.08	2467.12	0.5	PASS
11G	Ant1	2412	16.56	2403.80	2420.36	0.5	PASS
		2437	16.44	2428.84	2445.28	0.5	PASS
		2462	16.44	2453.88	2470.32	0.5	PASS
11N20SISO	Ant1	2412	17.68	2403.28	2420.96	0.5	PASS
		2437	17.60	2428.28	2445.88	0.5	PASS
		2462	17.64	2453.28	2470.92	0.5	PASS
11N40SISO	Ant1	2422	36.24	2404.00	2440.24	0.5	PASS
		2437	36.32	2418.92	2455.24	0.5	PASS
		2452	36.40	2433.92	2470.32	0.5	PASS

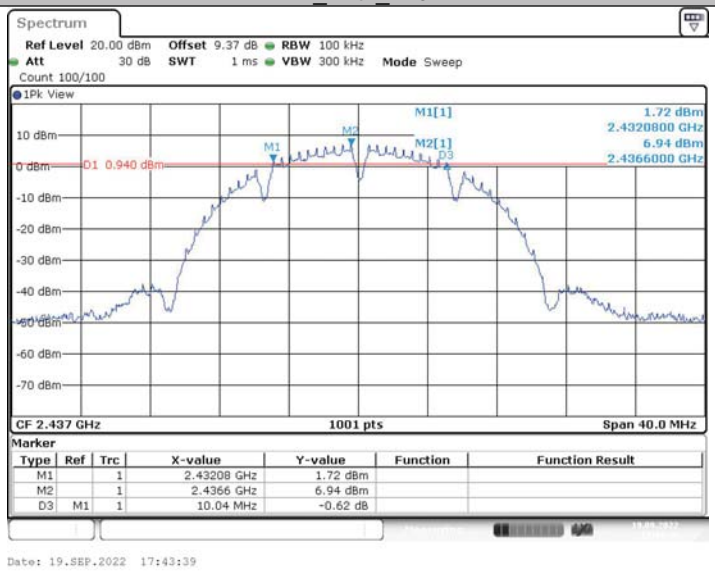
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.71	2401.65	2402.36	0.5	PASS
		2440	0.72	2439.65	2440.36	0.5	PASS
		2480	0.74	2479.64	2480.38	0.5	PASS

6.1.2 Test Graphs

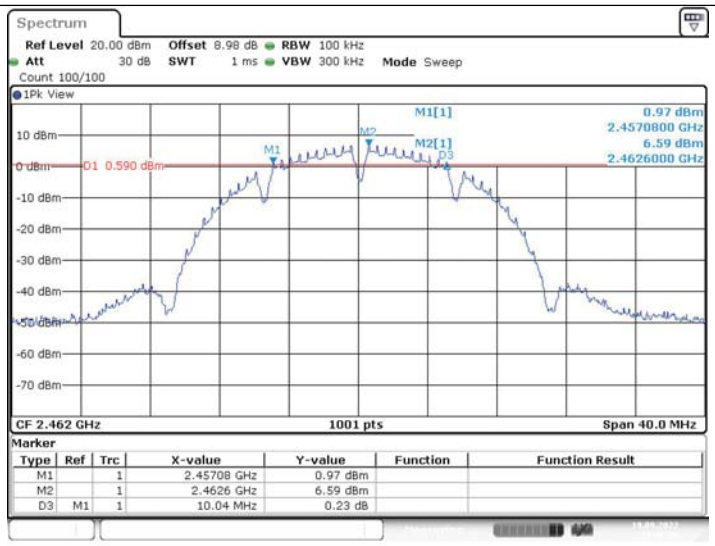
11B_Ant1_2412



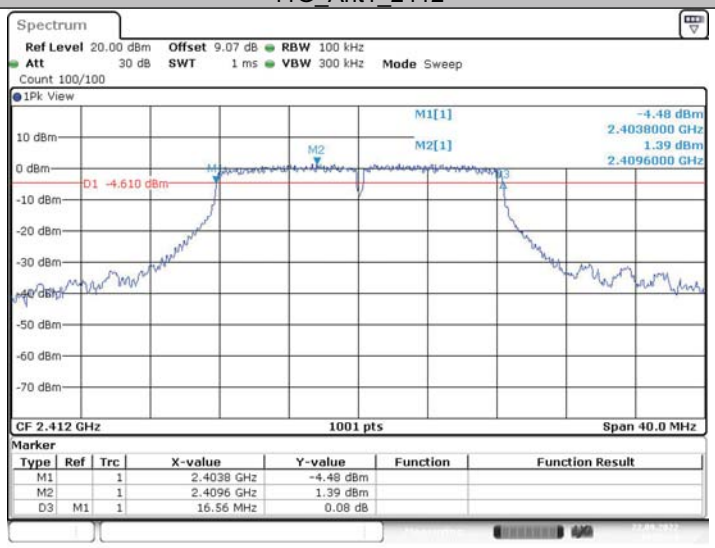
11B_Ant1_2437



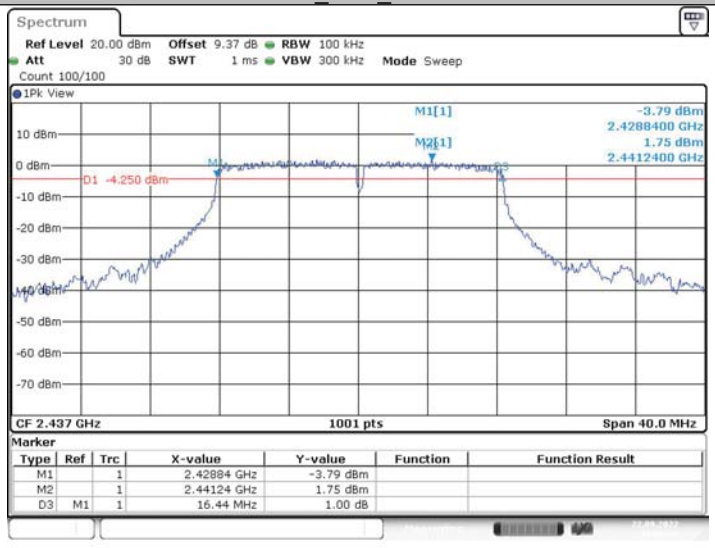
11B_Ant1_2462

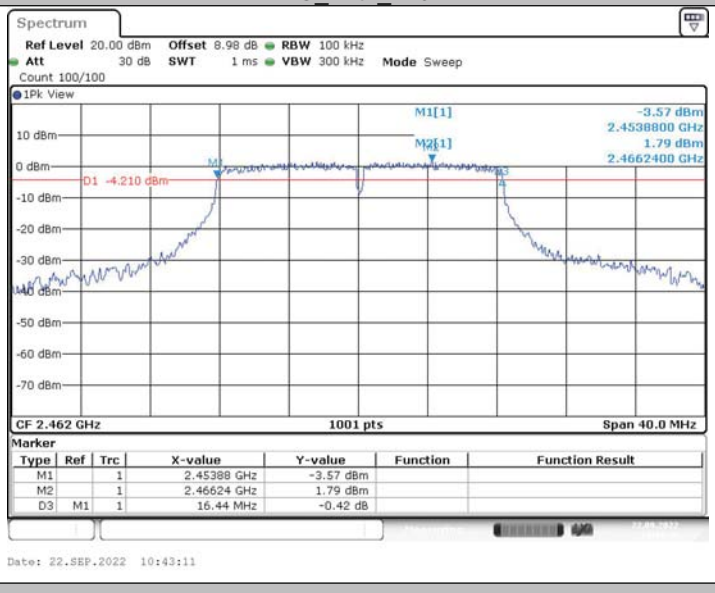
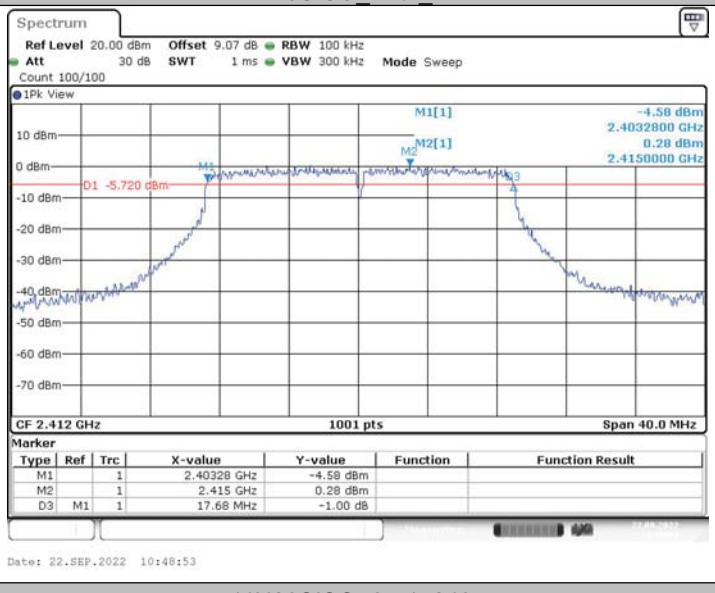


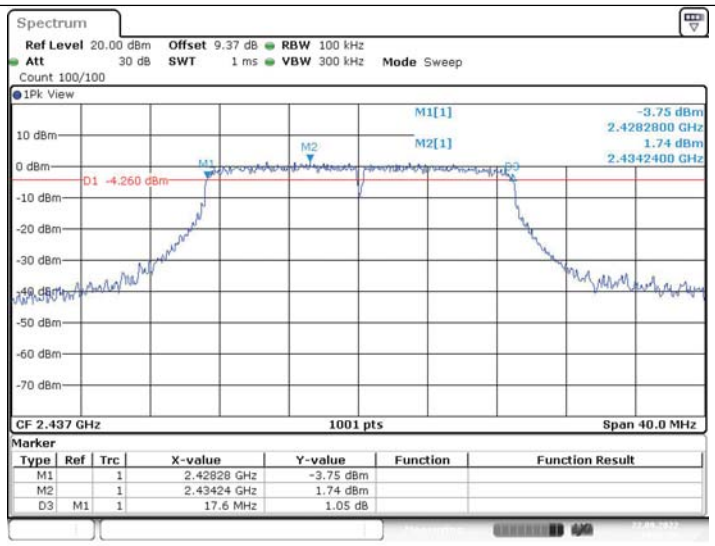
11G_Ant1_2412



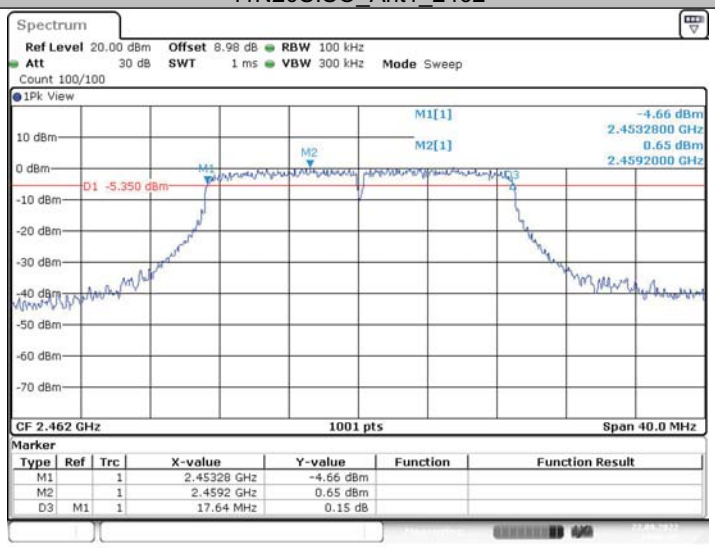
11G_Ant1_2437



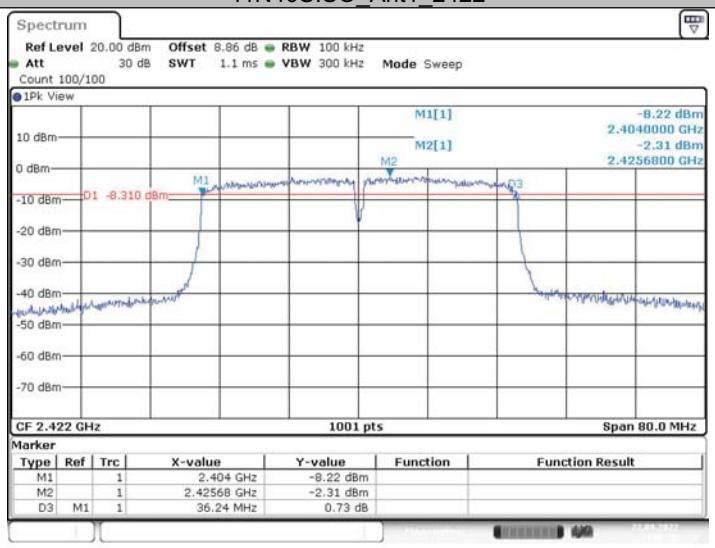
11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



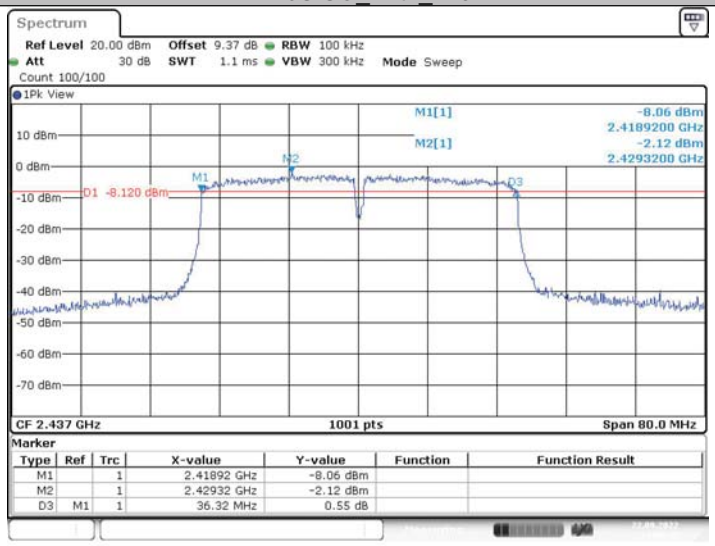
11N20SISO_Ant1_2462



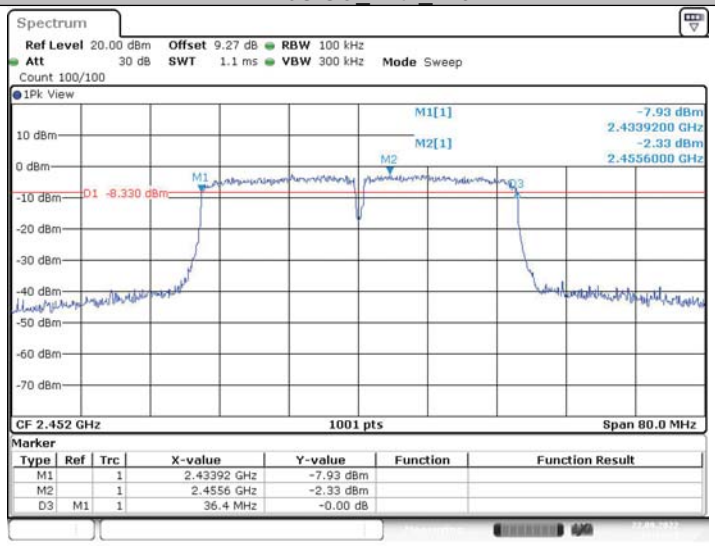
11N40SISO_Ant1_2422



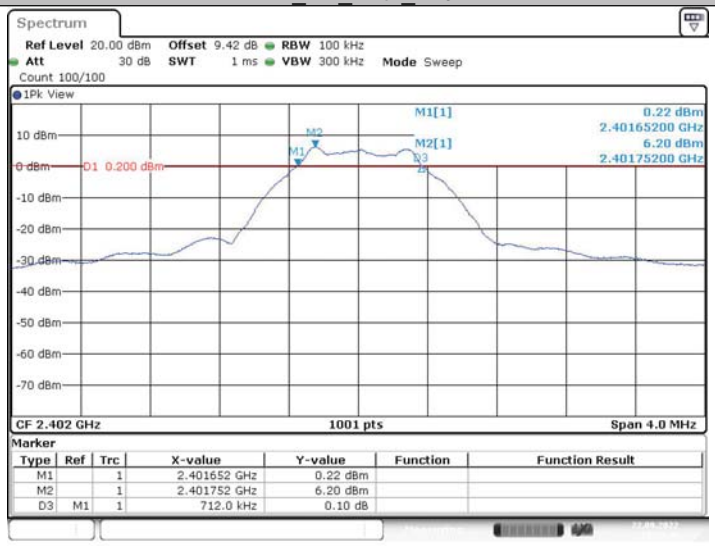
11N40SISO_Ant1_2437



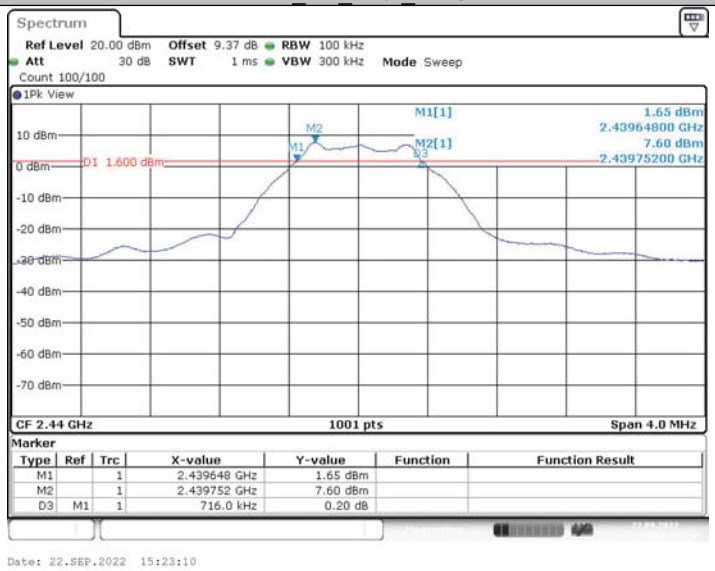
11N40SISO_Ant1_2452



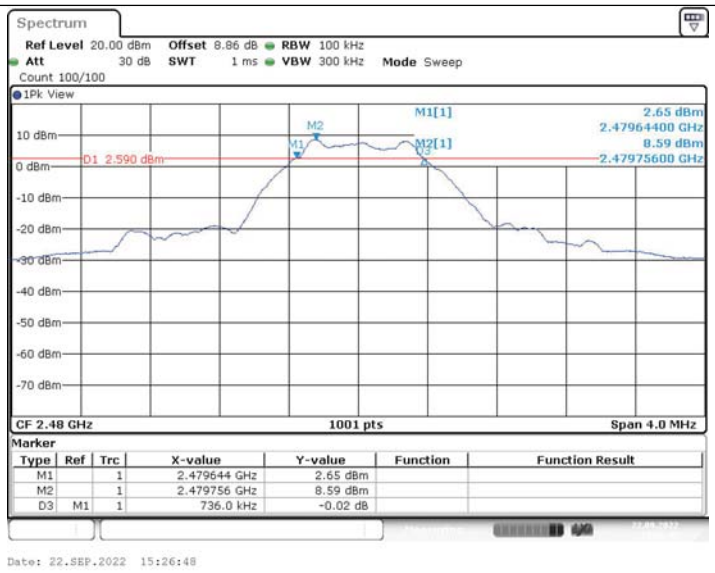
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Spectrum
Ref Level 20.00 dBm Offset 8.86 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep
Count 100/100
1Pk View
M1[1] 2.65 dBm
2.47964400 GHz
M2[1] 8.59 dBm
2.47975600 GHz
D1 2.590 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.48 GHz
1001 pts
Span 4.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.479644 GHz 2.65 dBm
M2 1 2.479756 GHz 8.59 dBm
D3 M1 1 736.0 kHz -0.02 dB
Date: 22.SEP.2022 15:26:48

6.2 Occupied Channel Bandwidth

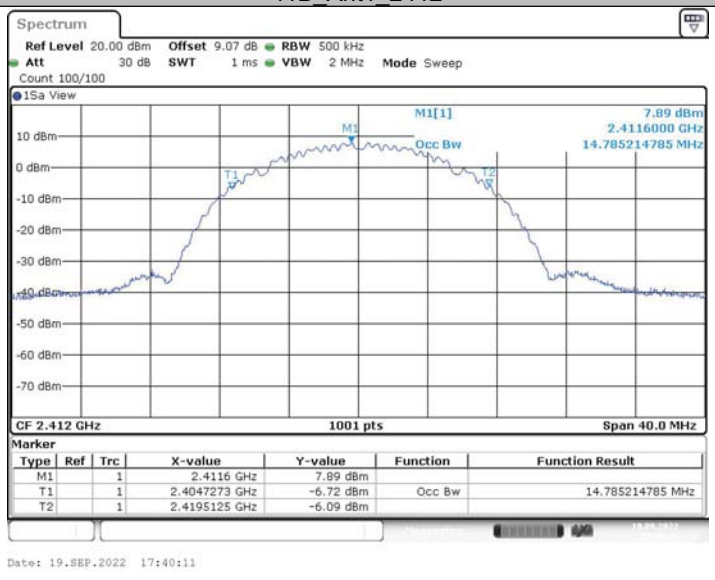
6.2.1 Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.785	2404.727	2419.512	---	---
		2437	14.705	2429.647	2444.353	---	---
		2462	14.745	2454.767	2469.512	---	---
11G	Ant1	2412	17.343	2403.249	2420.591	---	---
		2437	17.303	2428.209	2445.511	---	---
		2462	17.343	2453.289	2470.631	---	---
11N20SISO	Ant1	2412	18.182	2402.969	2421.151	---	---
		2437	18.182	2427.929	2446.111	---	---
		2462	18.142	2453.009	2471.151	---	---
11N40SISO	Ant1	2422	35.724	2404.258	2439.982	---	---
		2437	35.724	2419.258	2454.982	---	---
		2452	35.884	2434.178	2470.062	---	---

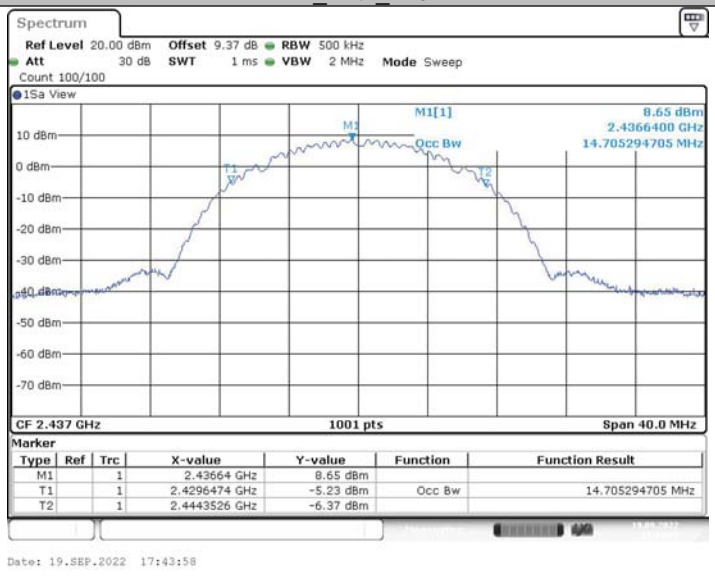
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.035	2401.500	2402.535	---	---
		2440	1.035	2439.497	2440.531	---	---
		2480	1.079	2479.481	2480.559	---	---

6.2.2 Test Graphs

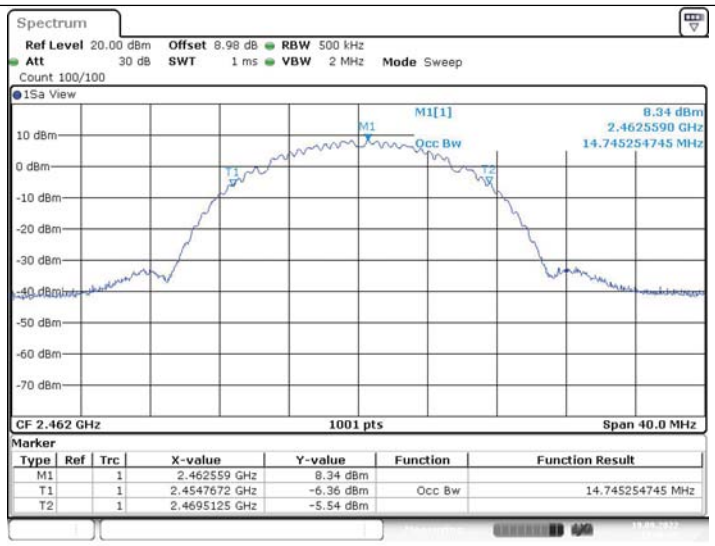
11B_Ant1_2412



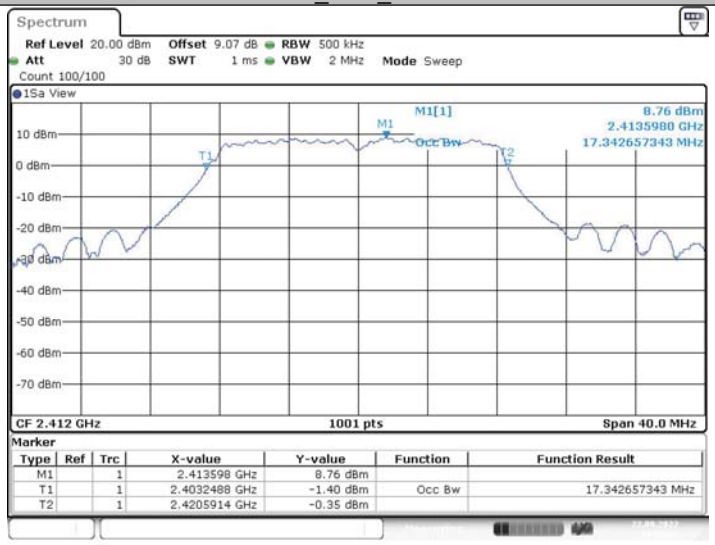
11B_Ant1_2437



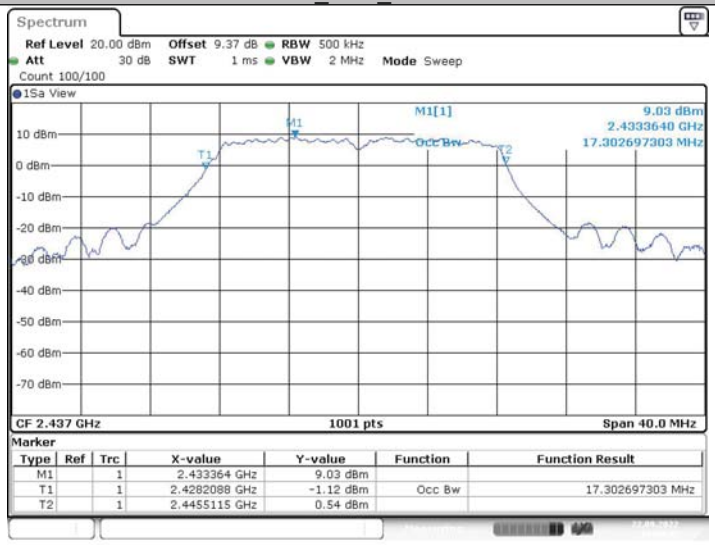
11B_Ant1_2462



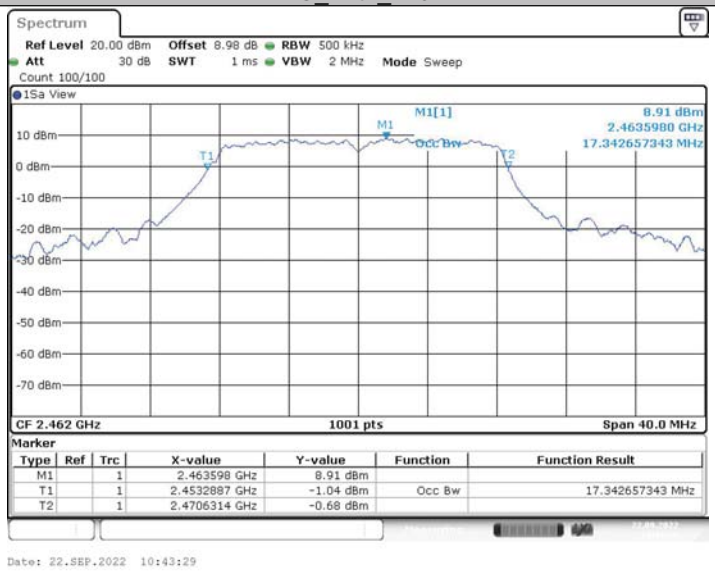
11G_Ant1_2412



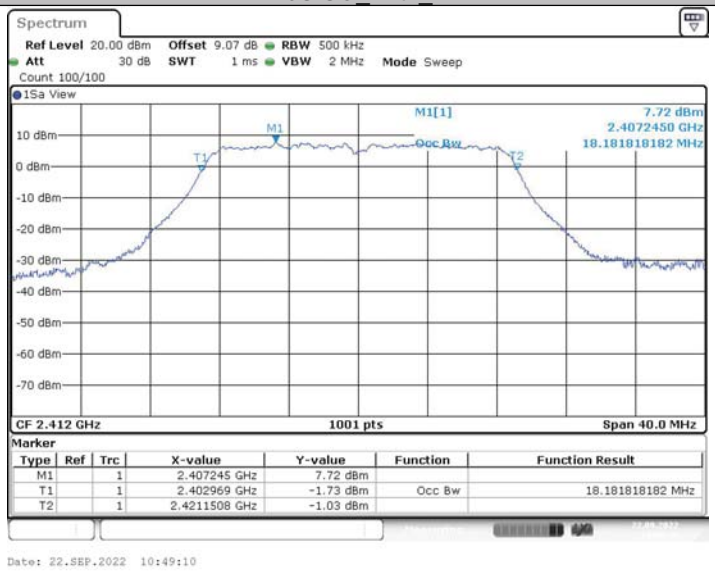
11G_Ant1_2437



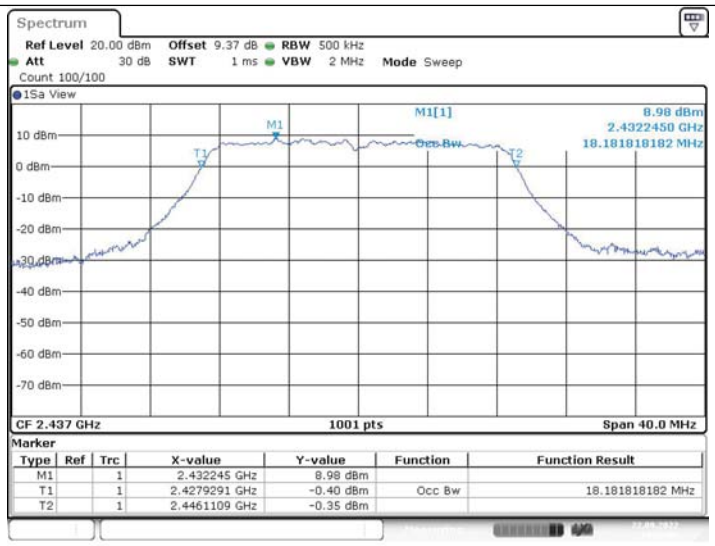
11G_Ant1_2462



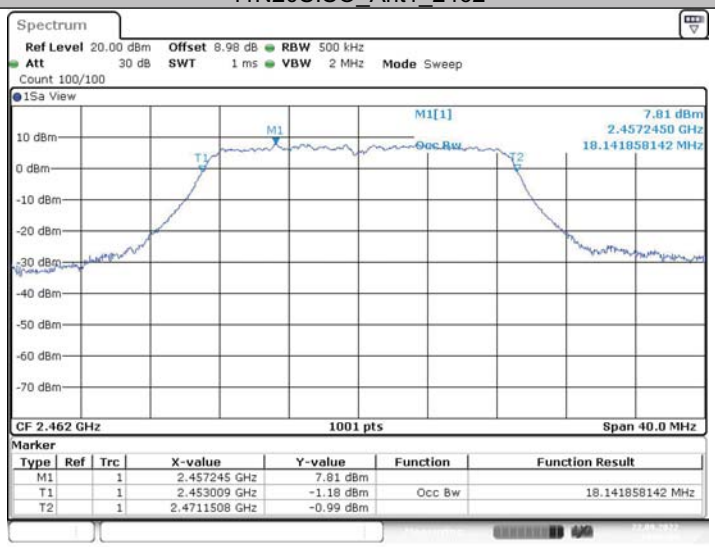
11N20SISO_Ant1_2412



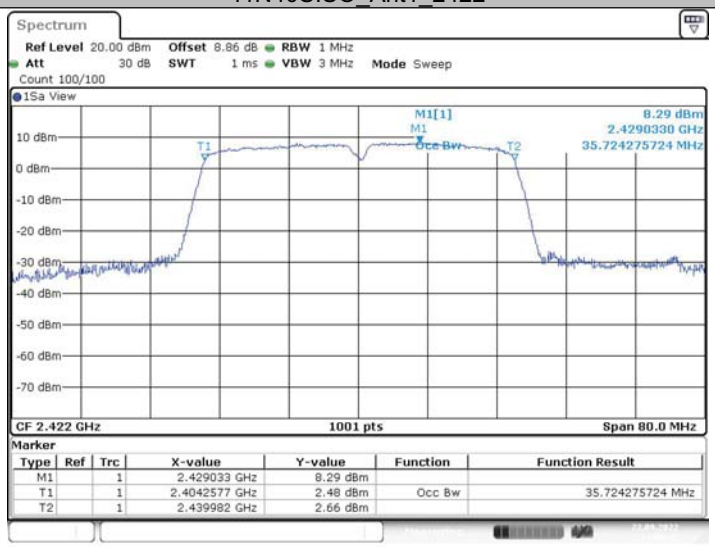
11N20SISO_Ant1_2437

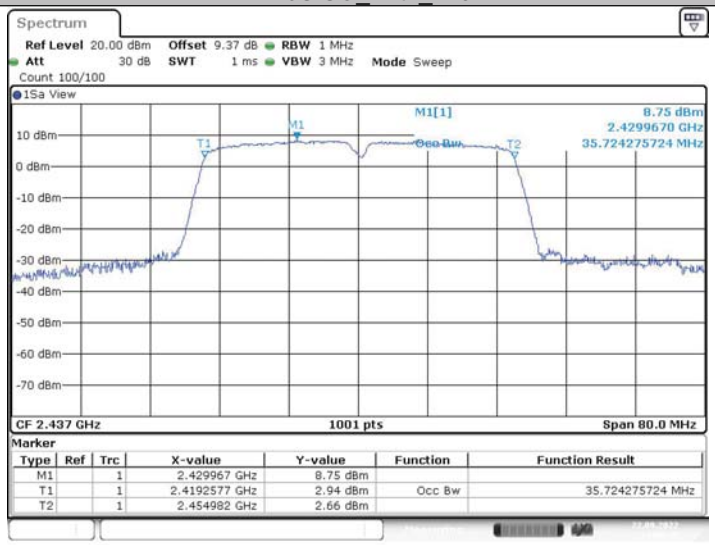


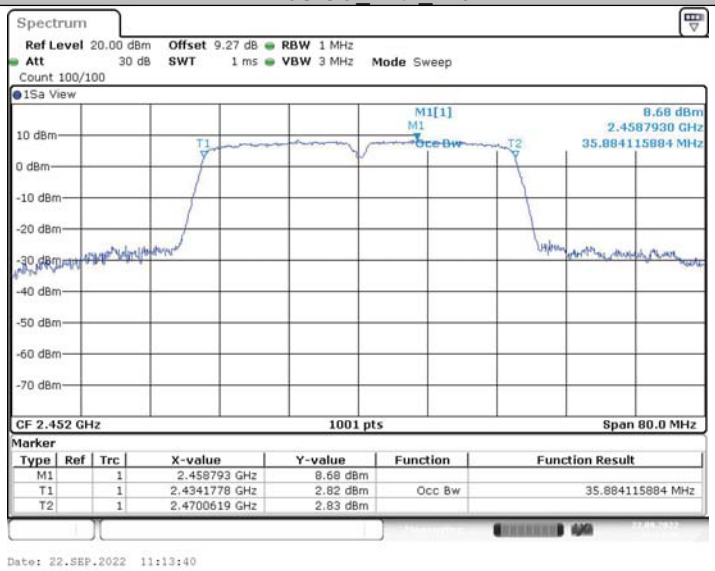
11N20SISO_Ant1_2462



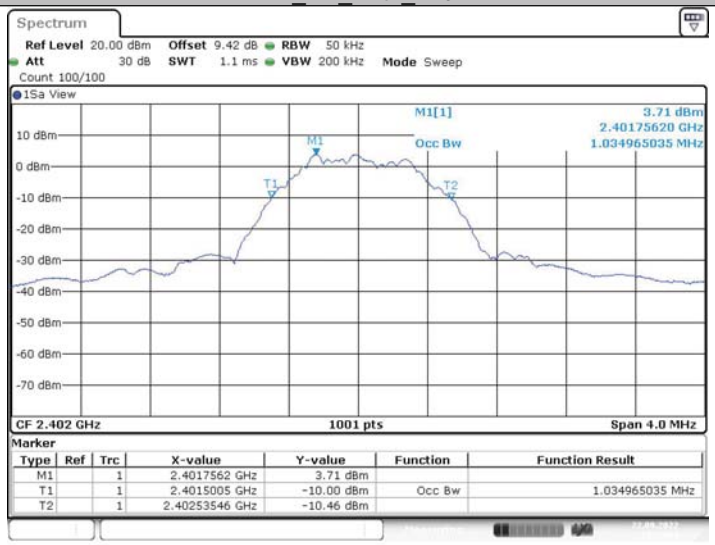
11N40SISO_Ant1_2422



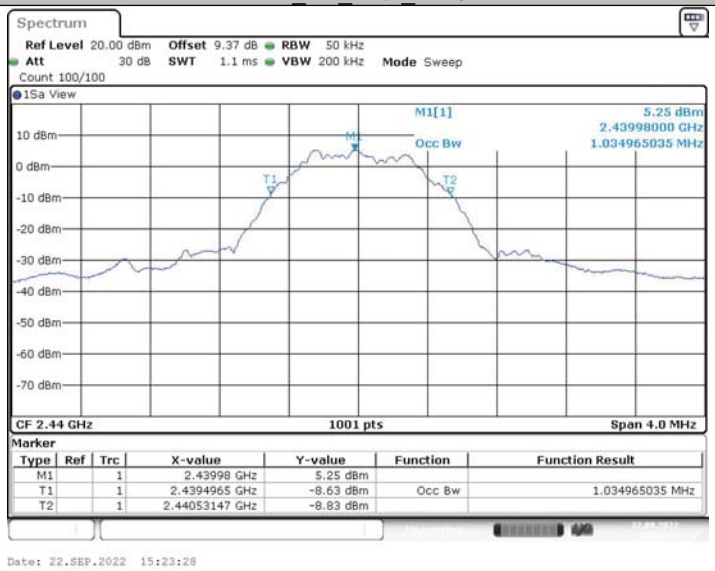
11N40SISO_Ant1_2437


11N40SISO_Ant1_2452


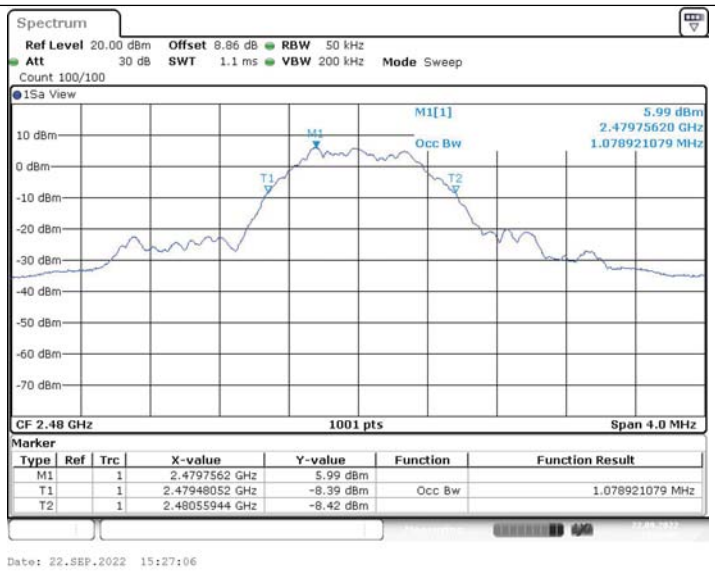
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Spectrum
Ref Level 20.00 dBm Offset 8.86 dB RBW 50 kHz
Att 30 dB SWT 1.1 ms VBW 200 kHz Mode Sweep
Count 100/100
1Sa View
M1[1] 5.99 dBm
2.47975620 GHz
Occ Bw 1.078921079 MHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.48 GHz
1001 pts
Span 4.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.4797562 GHz 5.99 dBm
T1 1 2.47948052 GHz -8.39 dBm Occ Bw 1.078921079 MHz
T2 1 2.48055944 GHz -8.42 dBm
Date: 22.SEP.2022 15:27:06

6.3 CONDUCTED OUTPUT POWER

6.3.1 Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
11B	Ant1	2412	12.95	≤30.00	13.47	≤36.00	PASS
		2437	13.70	≤30.00	14.22	≤36.00	PASS
		2462	13.41	≤30.00	13.93	≤36.00	PASS
11G	Ant1	2412	12.54	≤30.00	13.06	≤36.00	PASS
		2437	12.77	≤30.00	13.29	≤36.00	PASS
		2462	12.65	≤30.00	13.17	≤36.00	PASS
11N20SISO	Ant1	2412	11.32	≤30.00	11.84	≤36.00	PASS
		2437	12.36	≤30.00	12.88	≤36.00	PASS
		2462	11.50	≤30.00	12.02	≤36.00	PASS
11N40SISO	Ant1	2422	11.00	≤30.00	11.52	≤36.00	PASS
		2437	11.19	≤30.00	11.71	≤36.00	PASS
		2452	11.29	≤30.00	11.81	≤36.00	PASS

TestMode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.78	≤30	5.78	≤36.00	PASS
		2440	7.15	≤30	7.15	≤36.00	PASS
		2480	7.96	≤30	7.96	≤36.00	PASS

6.3.2 Test Result Average

Test Mode	Antenna	Frequency[MHz]	Average power [dBm]	Limit [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	11.70	≤30.00	12.22	≤36.00	PASS
		2437	11.98	≤30.00	12.50	≤36.00	PASS
		2462	12.11	≤30.00	12.63	≤36.00	PASS
11G	Ant1	2412	11.22	≤30.00	11.74	≤36.00	PASS
		2437	11.07	≤30.00	11.59	≤36.00	PASS
		2462	11.36	≤30.00	11.88	≤36.00	PASS
11N20SISO	Ant1	2412	10.07	≤30.00	10.59	≤36.00	PASS
		2437	10.68	≤30.00	11.20	≤36.00	PASS
		2462	10.21	≤30.00	10.73	≤36.00	PASS
11N40SISO	Ant1	2422	9.92	≤30.00	10.44	≤36.00	PASS
		2437	9.71	≤30.00	10.23	≤36.00	PASS
		2452	9.95	≤30.00	10.47	≤36.00	PASS

Test Mode	Antenna	Frequency[MHz]	Average power [dBm]	Limit [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
BLE_1M	Ant1	2402	4.83	≤30.00	4.83	≤36.00	PASS
		2440	6.61	≤30.00	6.61	≤36.00	PASS
		2480	7.51	≤30.00	7.51	≤36.00	PASS

6.4 POWER SPECTRAL DENSITY MEASUREMENT

6.4.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-16.49	≤8.00	PASS
		2437	-15.73	≤8.00	PASS
		2462	-15.99	≤8.00	PASS
11G	Ant1	2412	-19.32	≤8.00	PASS
		2437	-18.71	≤8.00	PASS
		2462	-18.63	≤8.00	PASS
11N20SISO	Ant1	2412	-20.63	≤8.00	PASS
		2437	-19.59	≤8.00	PASS
		2462	-20.04	≤8.00	PASS
11N40SISO	Ant1	2422	-23.96	≤8.00	PASS
		2437	-23.61	≤8.00	PASS
		2452	-23.71	≤8.00	PASS

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.16	≤8.00	PASS
		2440	-7.72	≤8.00	PASS
		2480	-6.74	≤8.00	PASS

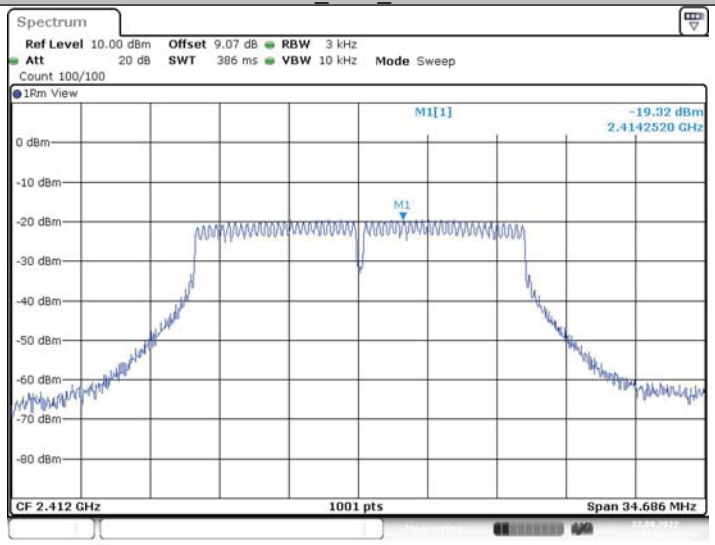
6.4.2 Test Graphs

11B_Ant1_2412

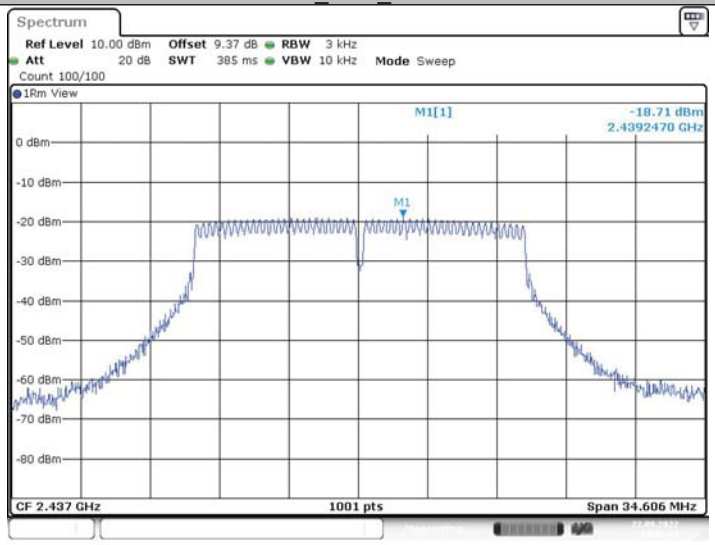
11B_Ant1_2437

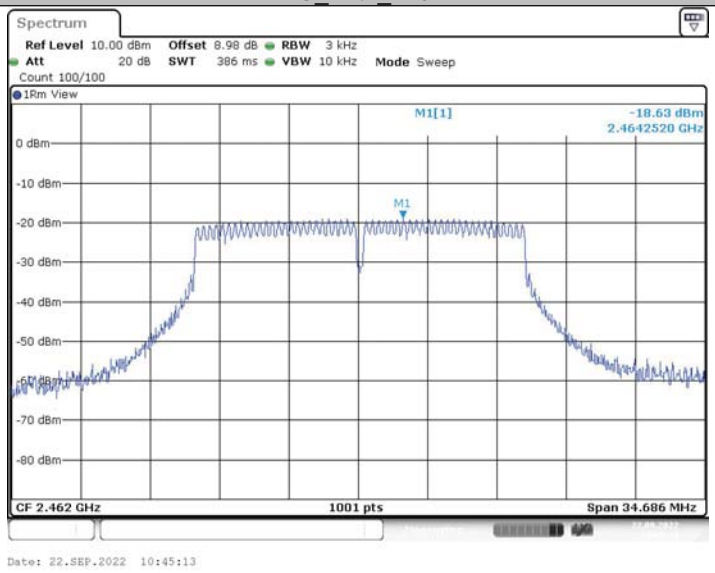
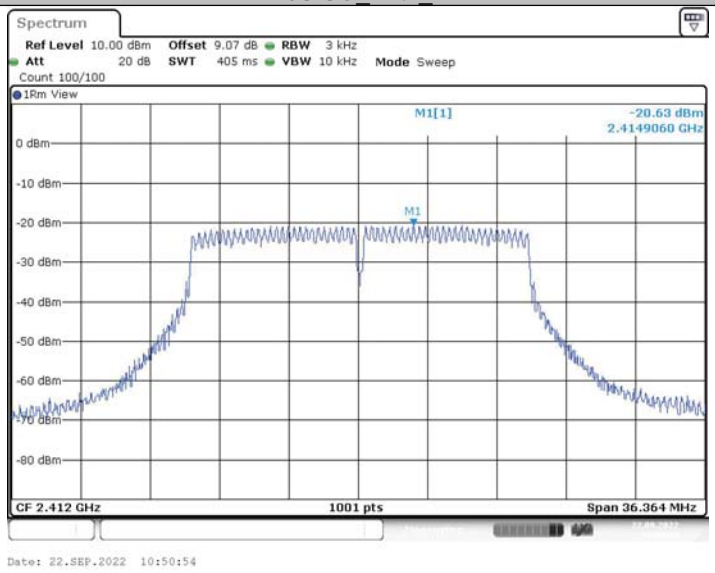
11B_Ant1_2462

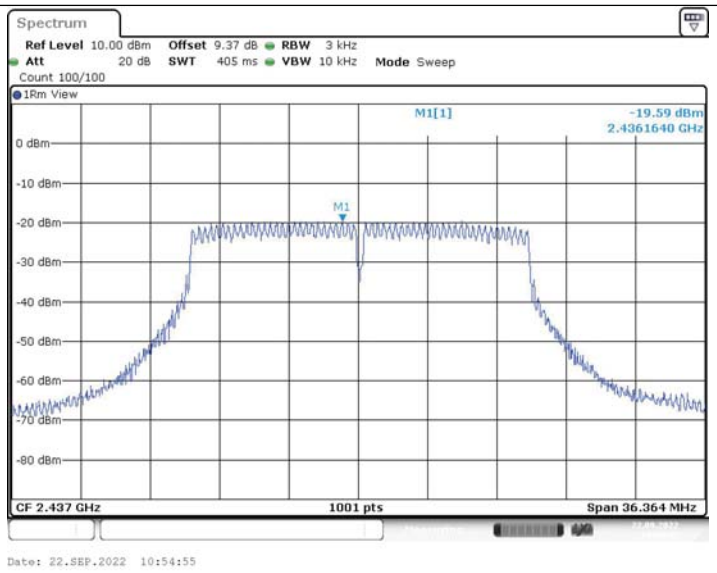
11G_Ant1_2412



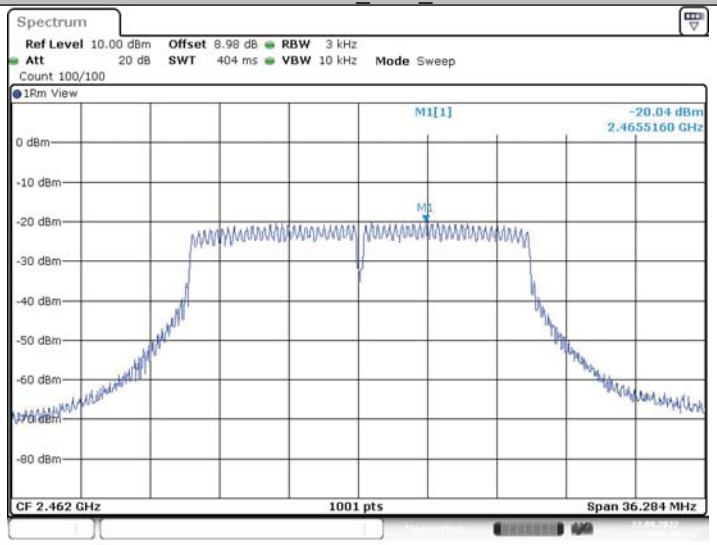
11G_Ant1_2437



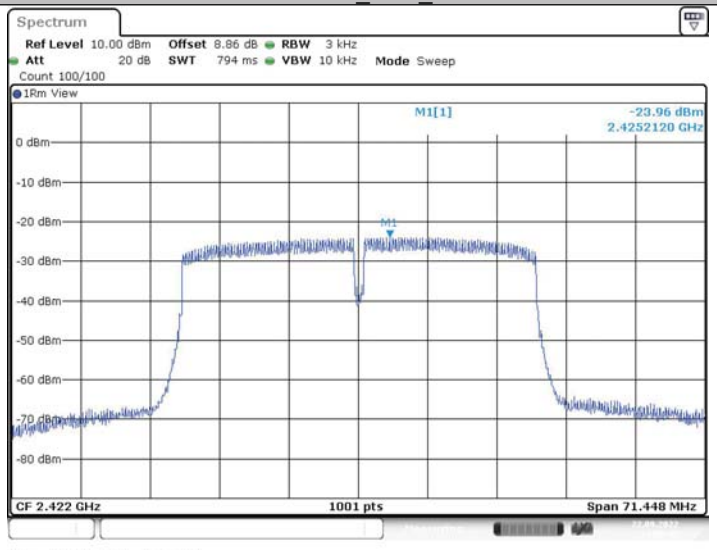
11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



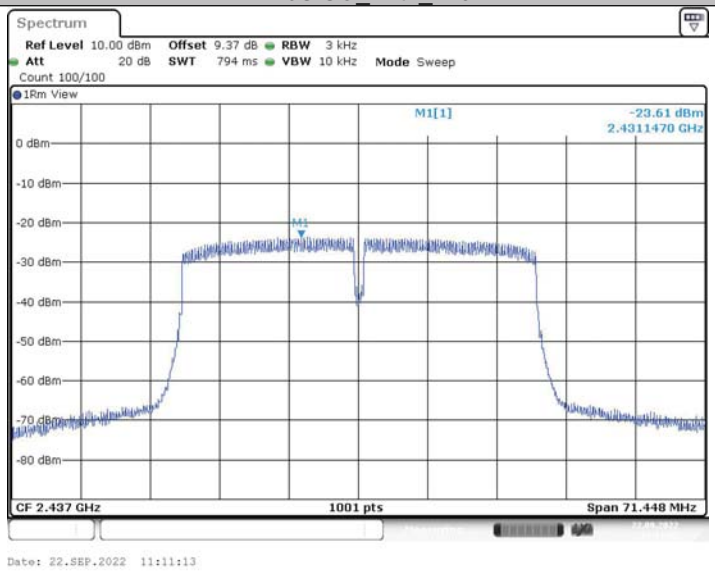
11N20SISO_Ant1_2462



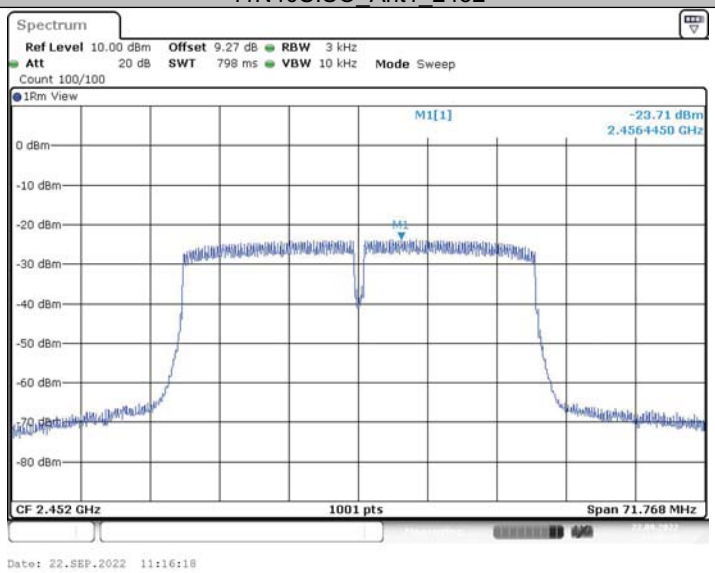
11N40SISO_Ant1_2422



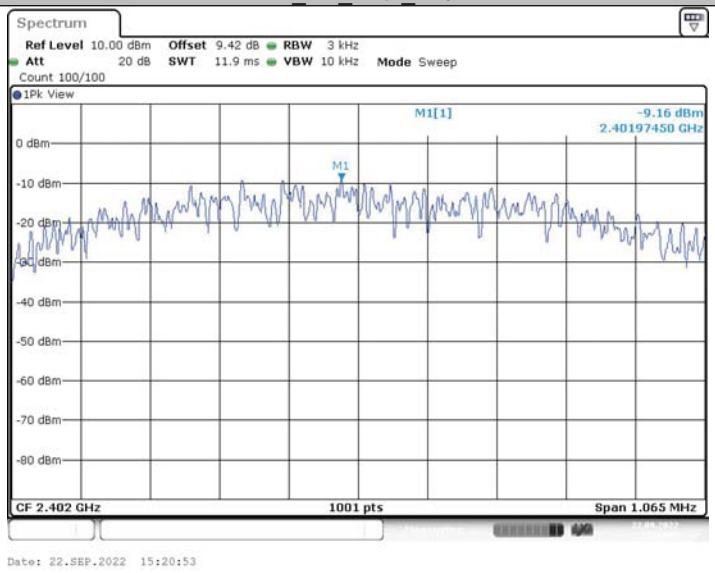
11N40SISO_Ant1_2437



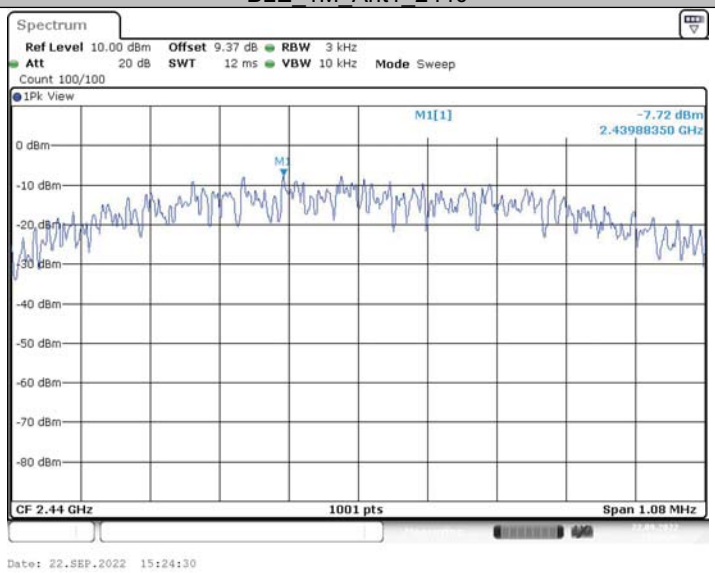
11N40SISO_Ant1_2452



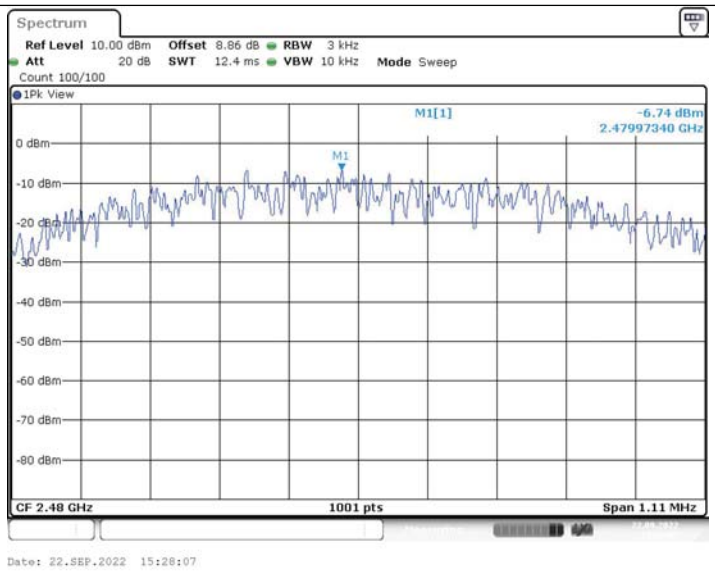
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Spectrum
Ref Level 10.00 dBm Offset 8.86 dB RBW 3 kHz
Att 20 dB SWT 12.4 ms VBW 10 kHz Mode Sweep
Count 100/100
1Pk View
M1[1] -6.74 dBm
2.47997340 GHz
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.48 GHz
1001 pts
Span 1.11 MHz
Date: 22.SEP.2022 15:28:07

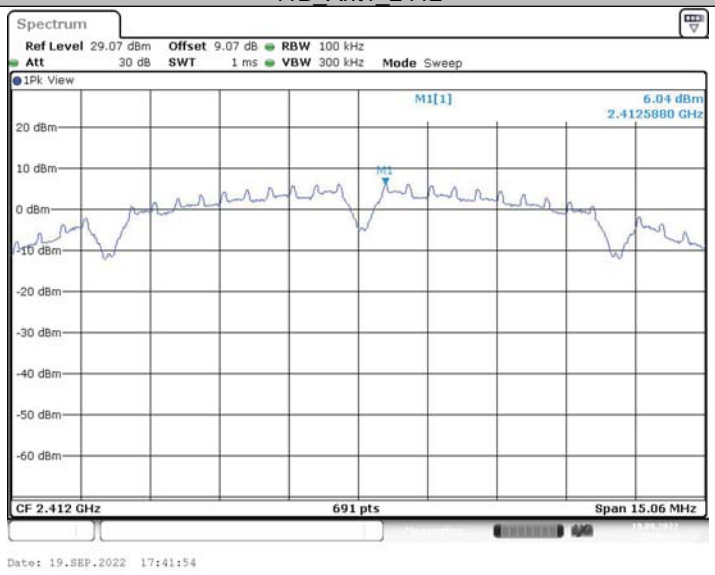
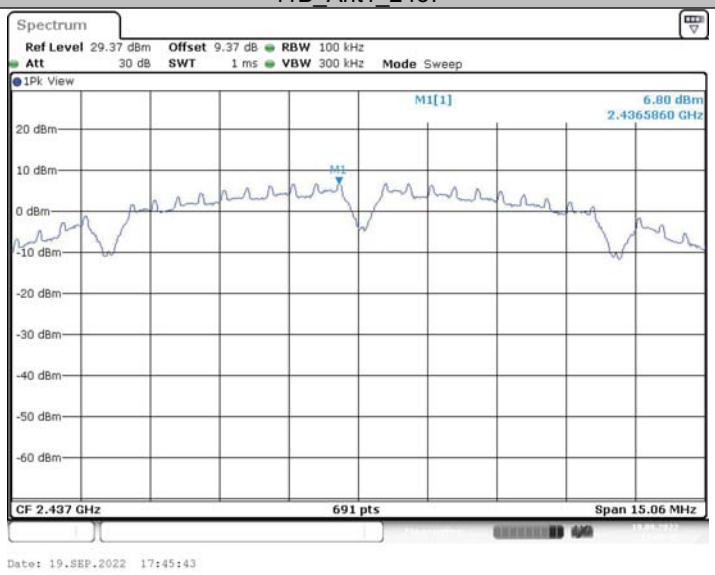
6.5 REFERENCE LEVEL MEASUREMENT

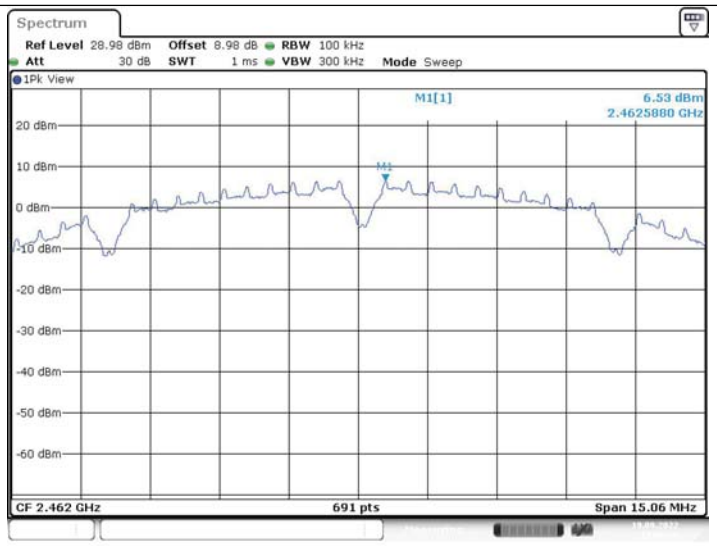
6.5.1 Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2412.59	6.04
		2437	2436.59	6.80
		2462	2462.59	6.53
11G	Ant1	2412	2416.21	1.36
		2437	2441.21	1.63
		2462	2466.21	1.79
11N20SISO	Ant1	2412	2409.20	0.46
		2437	2434.21	1.76
		2462	2459.21	0.59
11N40SISO	Ant1	2422	2425.62	-2.56
		2437	2429.35	-2.27
		2452	2455.64	-2.42

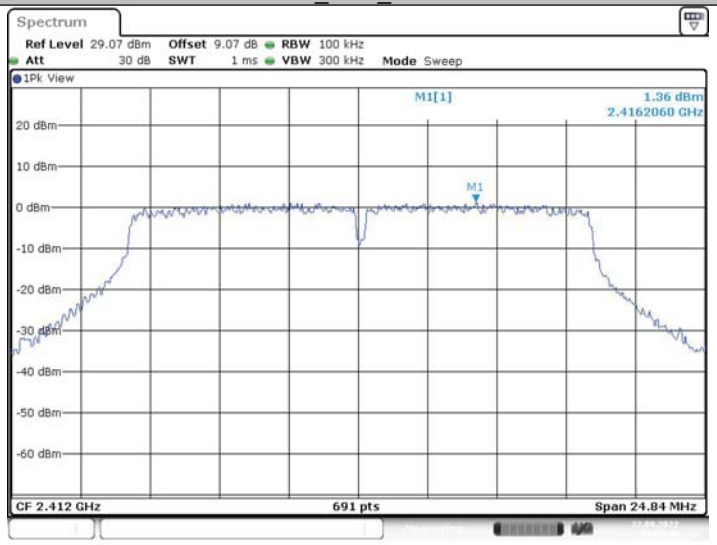
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2401.75	6.10
		2440	2439.75	7.58
		2480	2479.75	8.56

6.5.2 Test Graphs

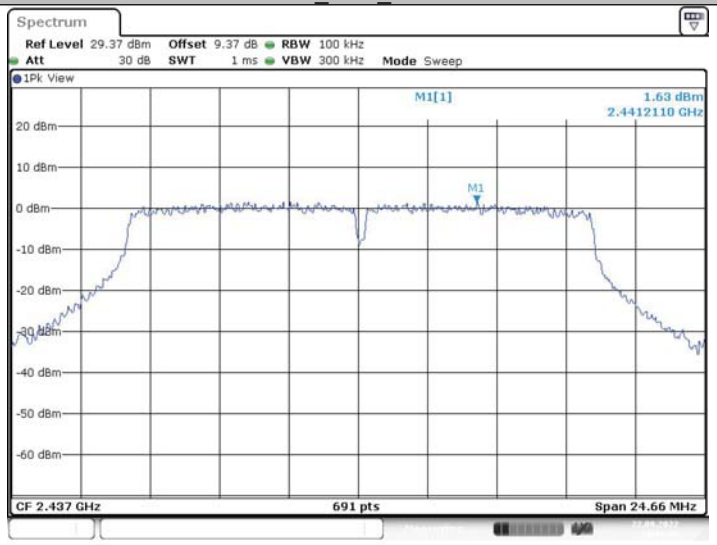
11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

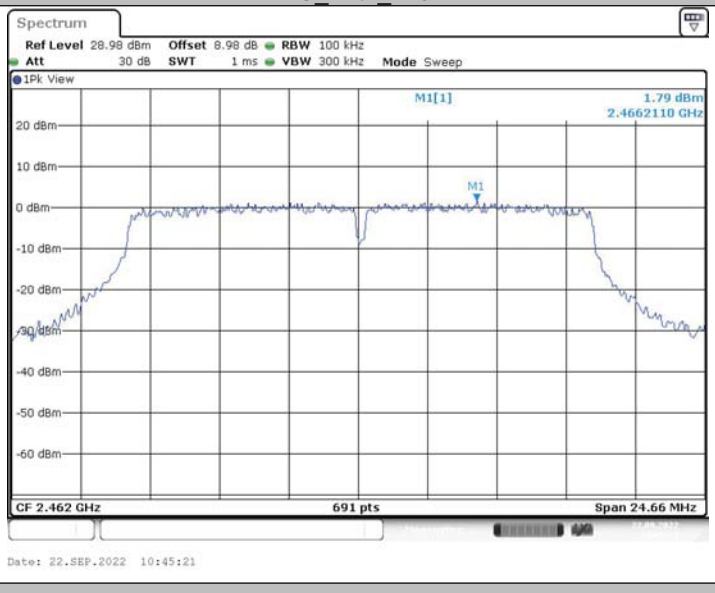
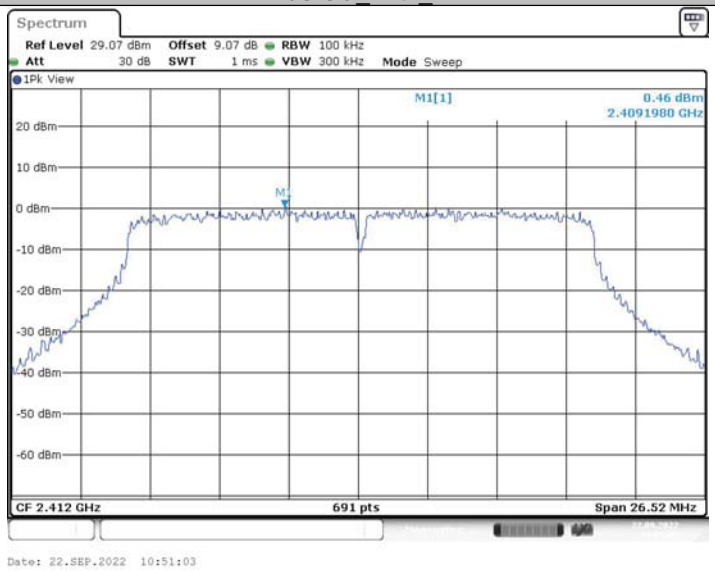


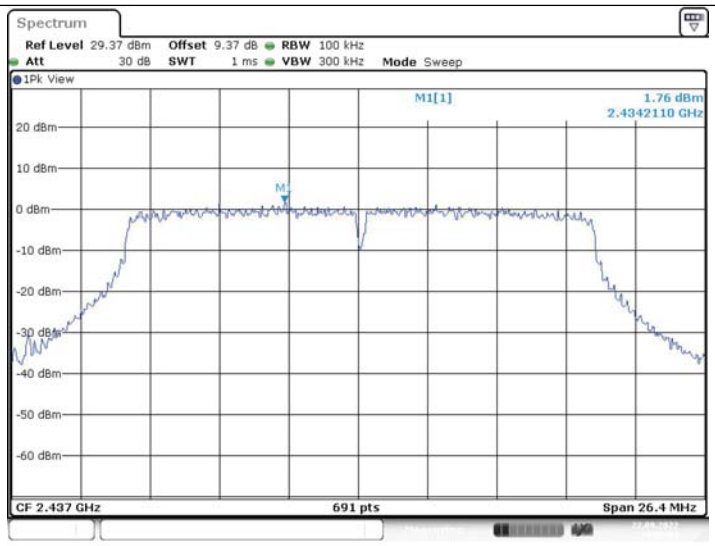
11G_Ant1_2412



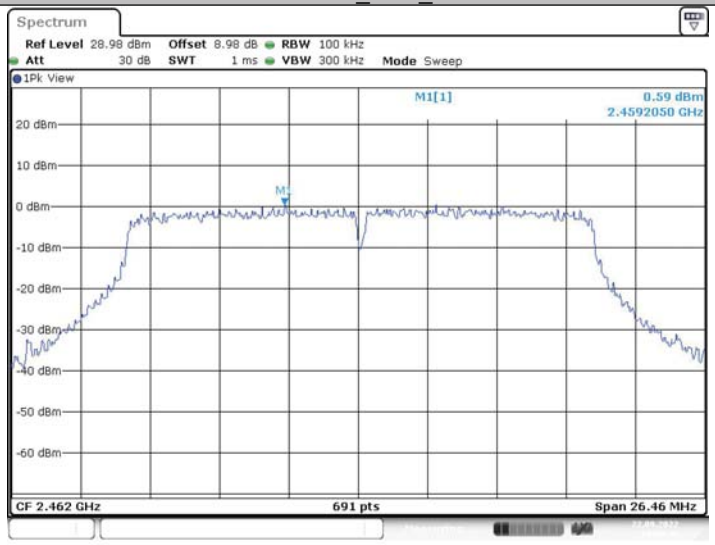
11G_Ant1_2437



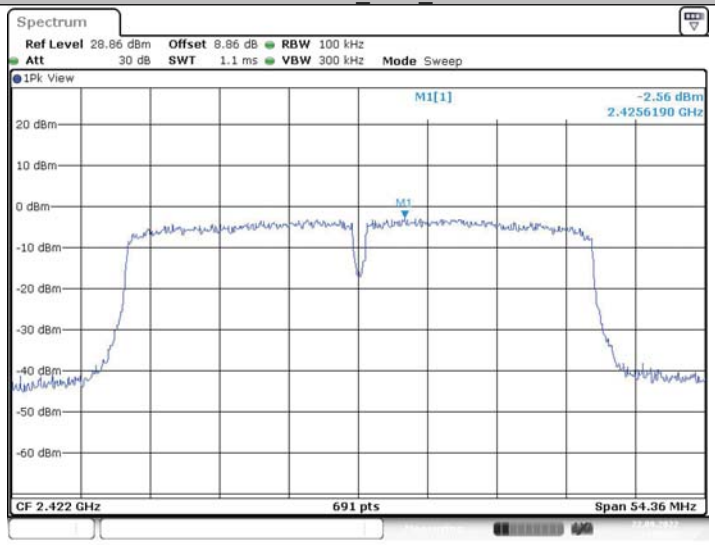
11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437

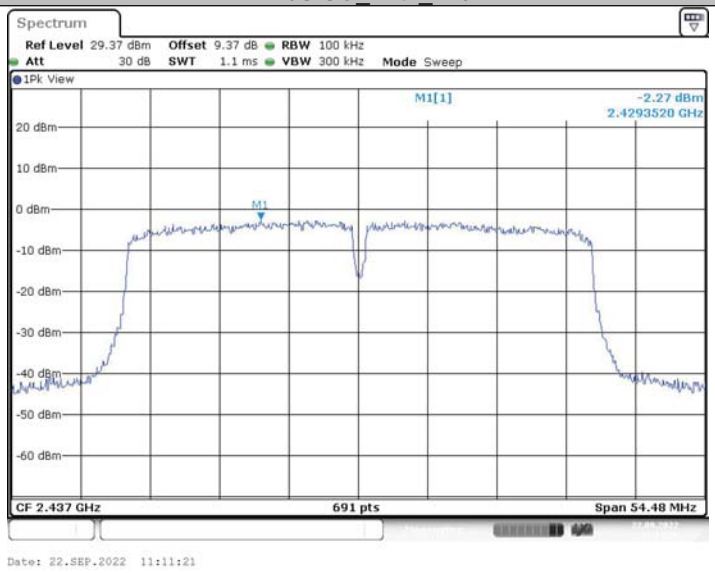
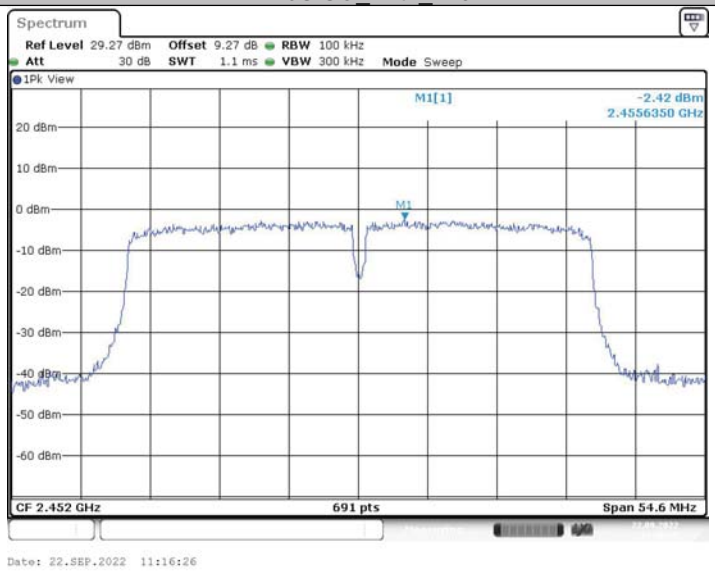


11N20SISO_Ant1_2462

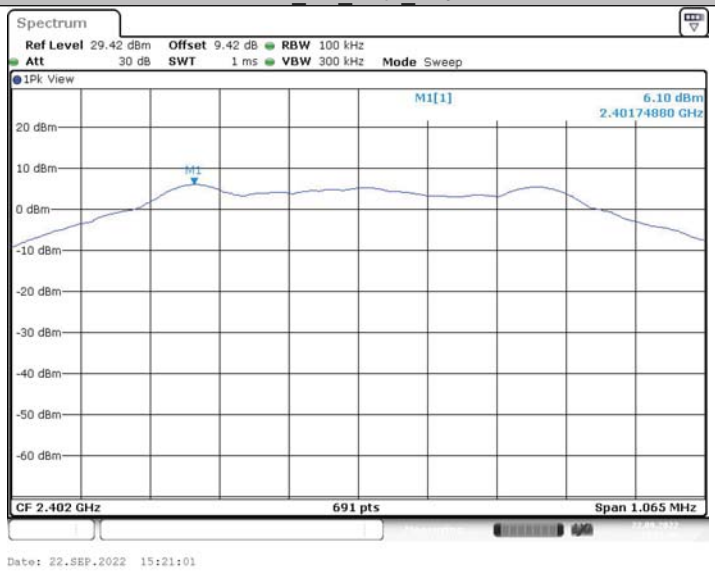


11N40SISO_Ant1_2422

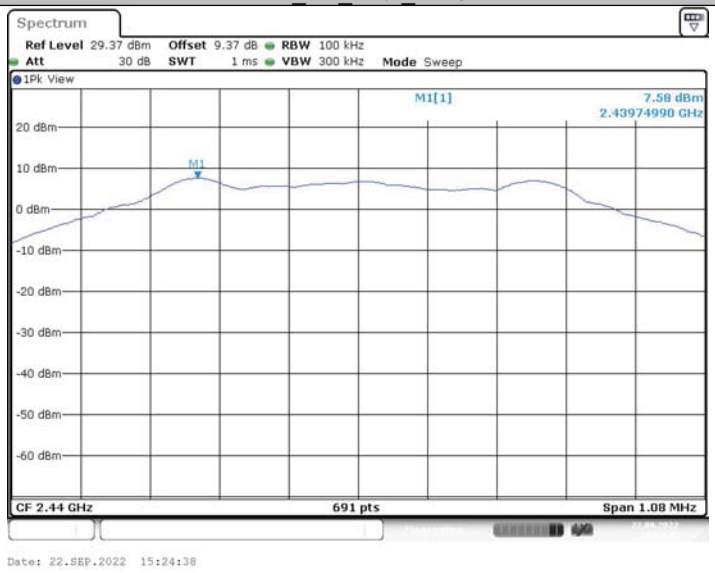


11N40SISO_Ant1_2437

11N40SISO_Ant1_2452


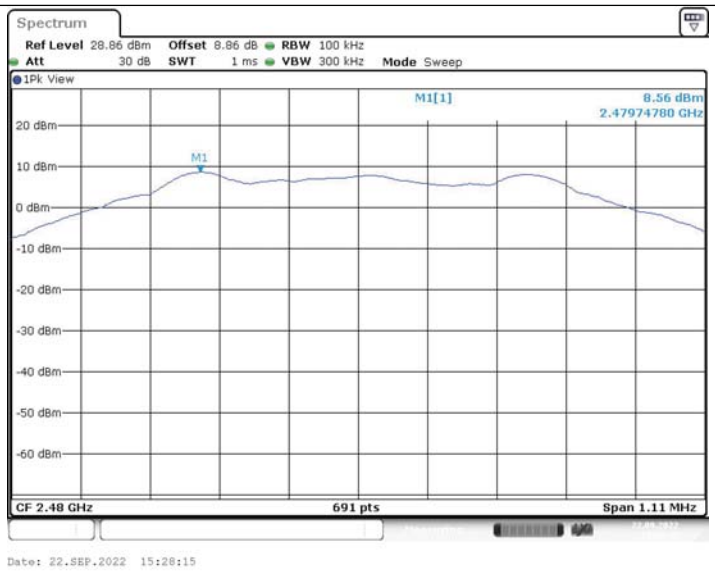
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Spectrum
Ref Level 28.86 dBm Offset 8.86 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep
1Pk View
M1[1] 8.56 dBm
2.47974780 GHz
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
M1
CF 2.48 GHz
691 pts
Span 1.11 MHz
Date: 22.SEP.2022 15:28:15

6.6 Band edge measurements

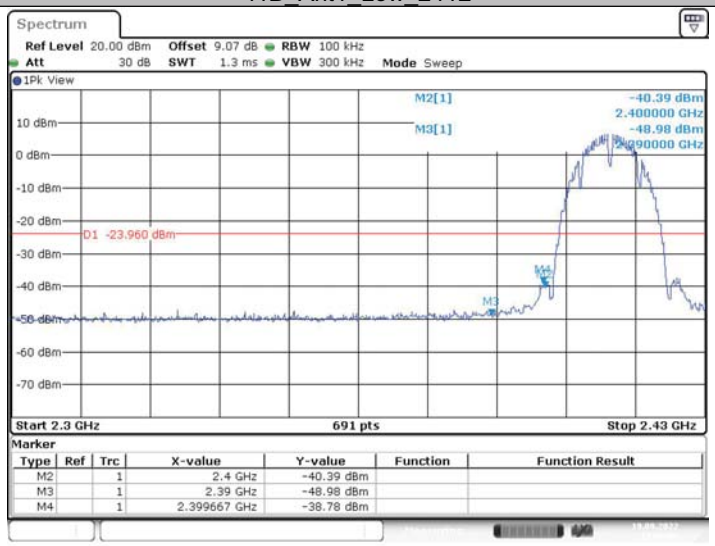
6.6.1 Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.04	-38.78	≤-23.96	PASS
		High	2462	6.53	-44.94	≤-23.47	PASS
11G	Ant1	Low	2412	1.36	-33.05	≤-28.64	PASS
		High	2462	1.79	-38.03	≤-28.21	PASS
11N20SISO	Ant1	Low	2412	0.46	-33.87	≤-29.54	PASS
		High	2462	0.59	-40.75	≤-29.41	PASS
11N40SISO	Ant1	Low	2422	-2.56	-40.65	≤-32.56	PASS
		High	2452	-2.42	-39.38	≤-32.42	PASS

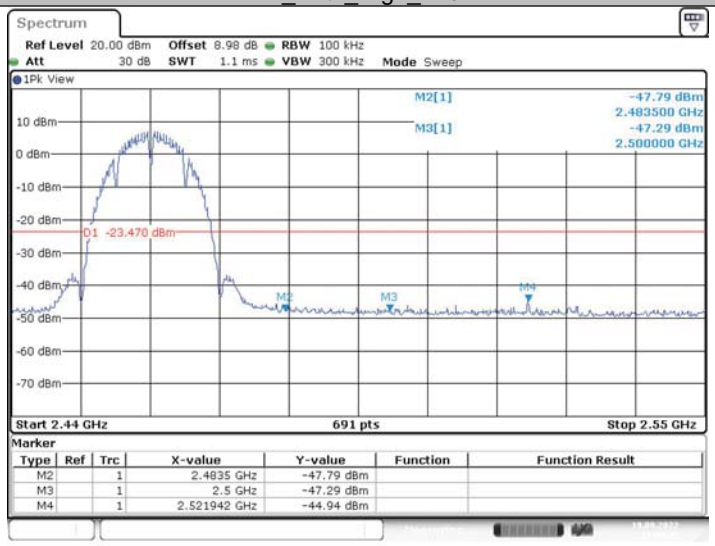
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.10	-31.98	≤-13.90	PASS
		High	2480	8.56	-33.98	≤-11.44	PASS

6.6.2 Test Graphs

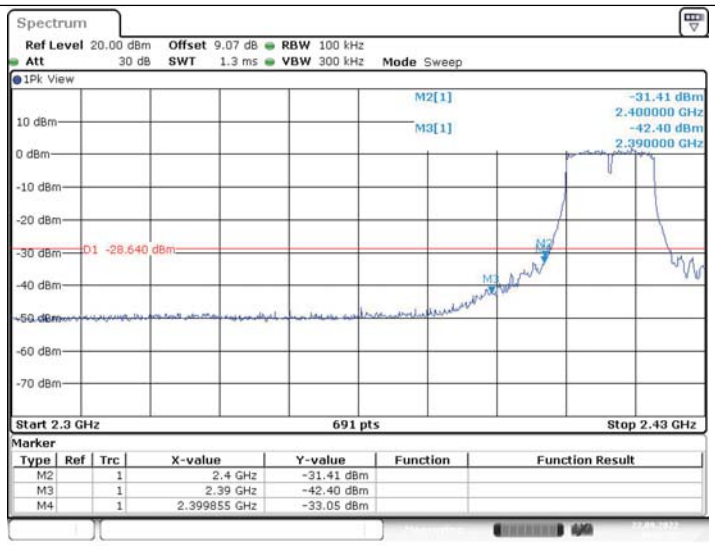
11B_Ant1_Low_2412



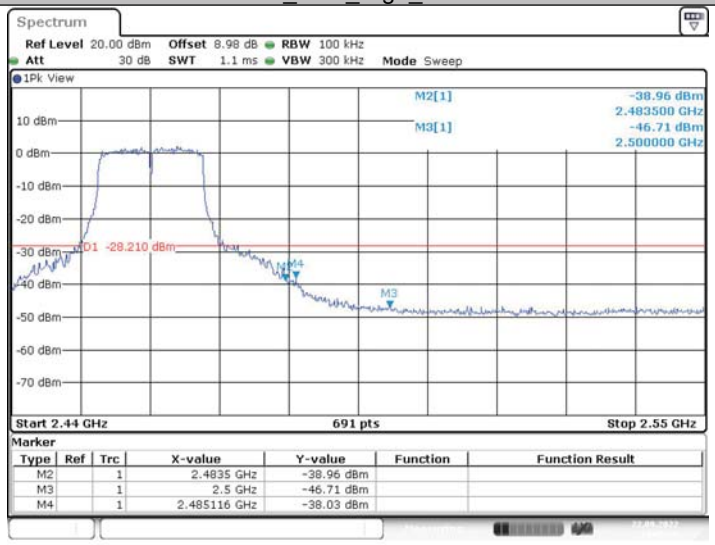
11B_Ant1_High_2462



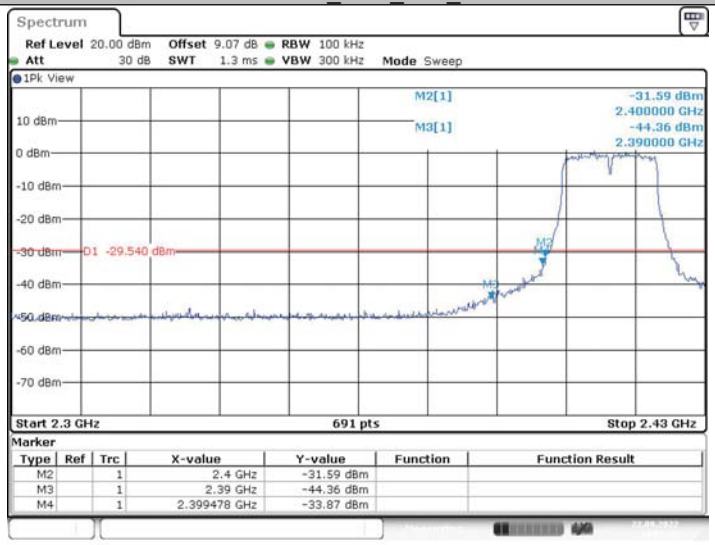
11G_Ant1_Low_2412



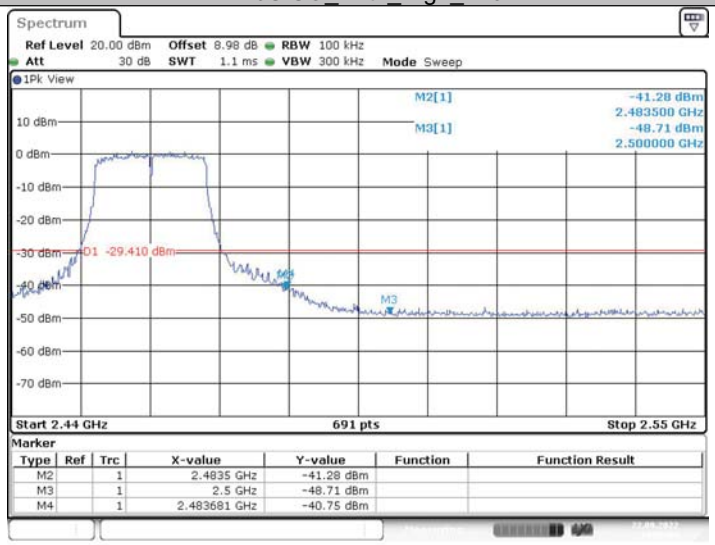
11G_Ant1_High_2462



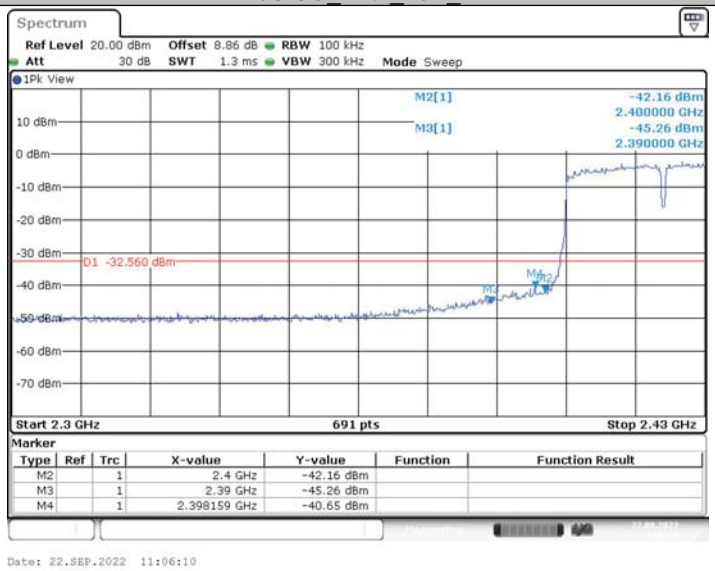
11N20SISO_Ant1_Low_2412



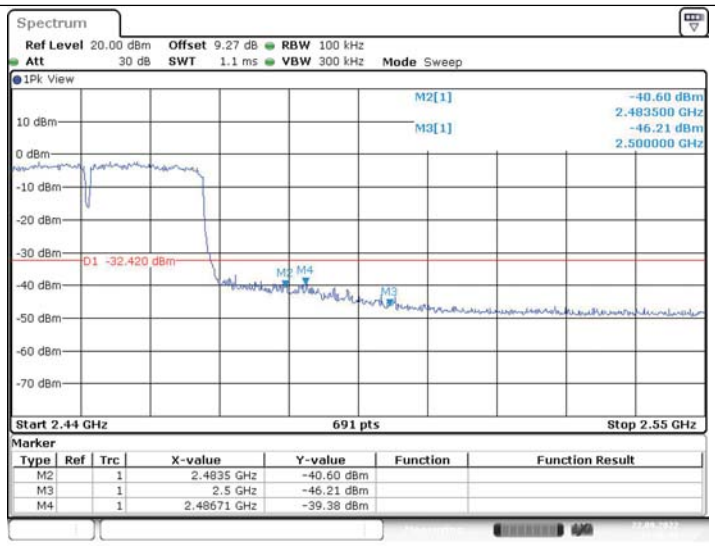
11N20SISO_Ant1_High_2462



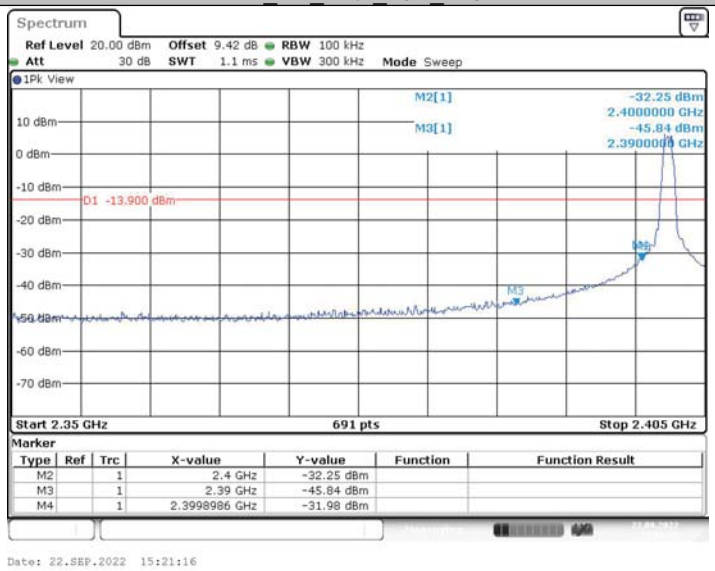
11N40SISO_Ant1_Low_2422



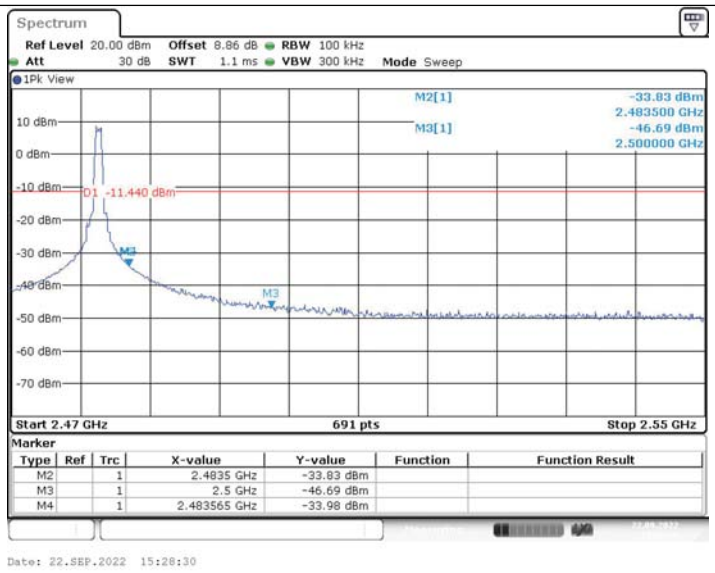
11N40SISO_Ant1_High_2452



BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480


Spectrum
Ref Level 20.00 dBm Offset 8.86 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Sweep
1Pk View
M2[1] -33.83 dBm
2.483500 GHz
M3[1] -46.69 dBm
2.500000 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
D1 -11.440 dBm
M1
M3
Start 2.47 GHz
691 pts
Stop 2.55 GHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M2 1 2.4835 GHz -33.83 dBm
M3 1 2.5 GHz -46.69 dBm
M4 1 2.483565 GHz -33.98 dBm
Date: 22.SEP.2022 15:28:30

6.7 OUT OF BAND EMISSION MEASUREMENT

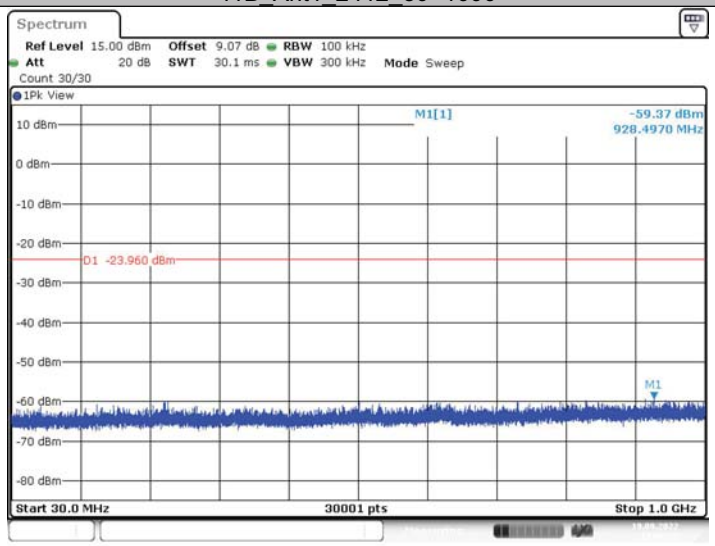
6.7.1 Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	6.04	-59.37	≤-23.96	PASS
			1000~26500	6.04	-47.49	≤-23.96	PASS
		2437	30~1000	6.80	-58.48	≤-23.2	PASS
			1000~26500	6.80	-47.63	≤-23.2	PASS
		2462	30~1000	6.53	-59.63	≤-23.47	PASS
			1000~26500	6.53	-48.41	≤-23.47	PASS
11G	Ant1	2412	30~1000	1.36	-59.32	≤-28.64	PASS
			1000~26500	1.36	-47.94	≤-28.64	PASS
		2437	30~1000	1.63	-59.01	≤-28.37	PASS
			1000~26500	1.63	-47.71	≤-28.37	PASS
		2462	30~1000	1.79	-59.34	≤-28.21	PASS
			1000~26500	1.79	-48.29	≤-28.21	PASS
11N20SISO	Ant1	2412	30~1000	0.46	-59.83	≤-29.54	PASS
			1000~26500	0.46	-47.66	≤-29.54	PASS
		2437	30~1000	1.76	-59.19	≤-28.24	PASS
			1000~26500	1.76	-47.78	≤-28.24	PASS
		2462	30~1000	0.59	-59.34	≤-29.41	PASS
			1000~26500	0.59	-48.20	≤-29.41	PASS
11N40SISO	Ant1	2422	30~1000	-2.56	-58.97	≤-32.56	PASS
			1000~26500	-2.56	-48.28	≤-32.56	PASS
		2437	30~1000	-2.27	-58.95	≤-32.27	PASS
			1000~26500	-2.27	-47.54	≤-32.27	PASS
		2452	30~1000	-2.42	-59.63	≤-32.42	PASS
			1000~26500	-2.42	-47.10	≤-32.42	PASS

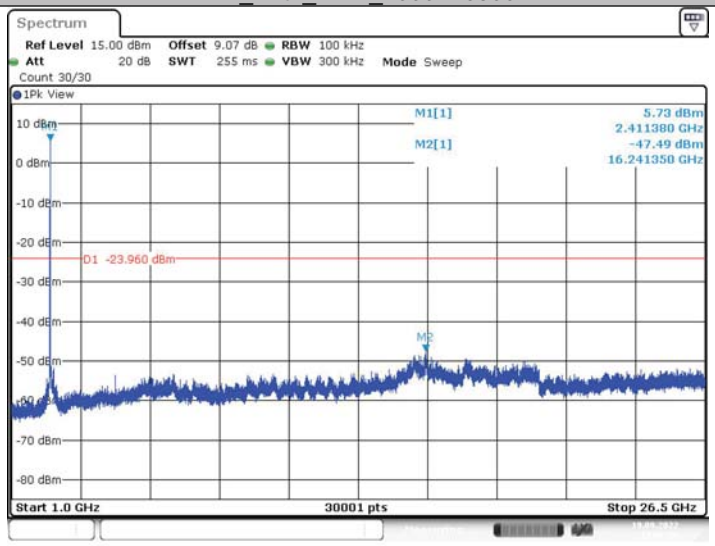
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	6.10	-58.73	≤-13.9	PASS
			1000~26500	6.10	-48.40	≤-13.9	PASS
		2440	30~1000	7.58	-59.00	≤-12.42	PASS
			1000~26500	7.58	-47.74	≤-12.42	PASS
		2480	30~1000	8.56	-59.53	≤-11.44	PASS
			1000~26500	8.56	-46.10	≤-11.44	PASS

6.7.2 Test Graphs

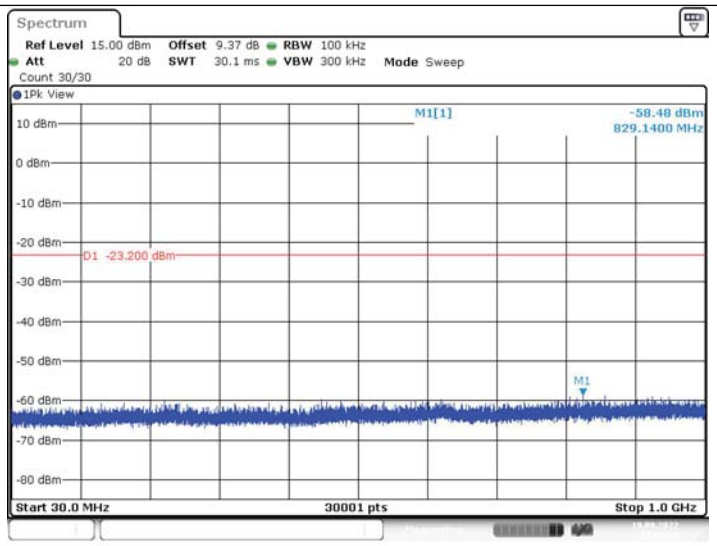
11B_Ant1_2412_30~1000



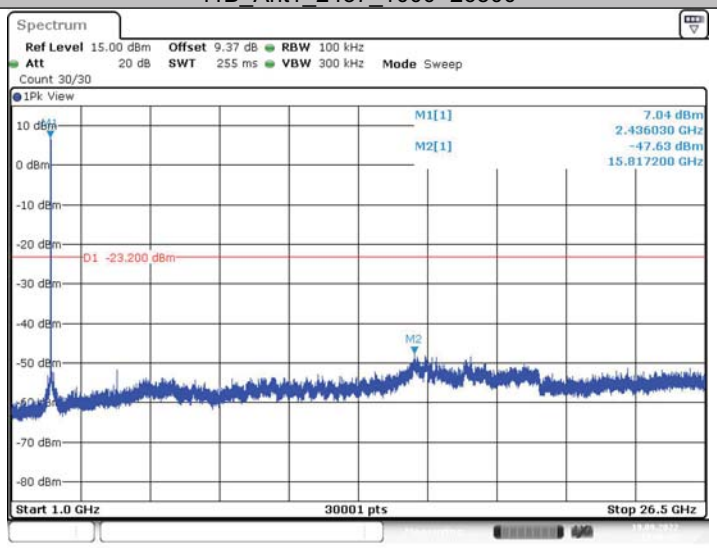
11B_Ant1_2412_1000~26500



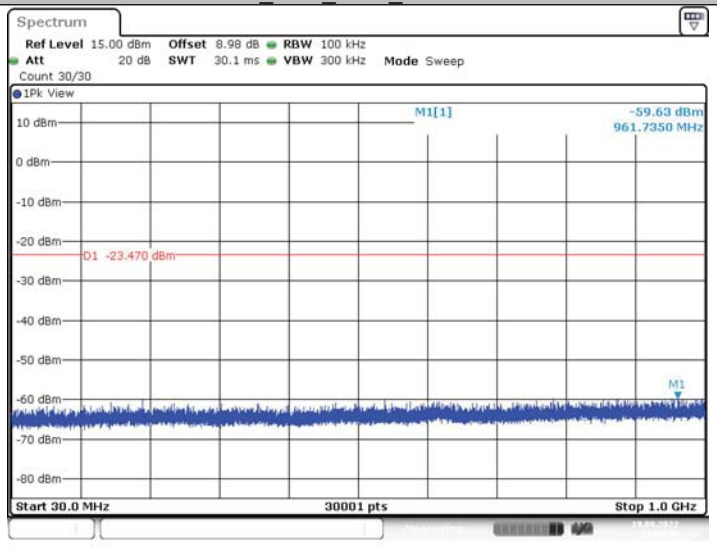
11B_Ant1_2437_30~1000



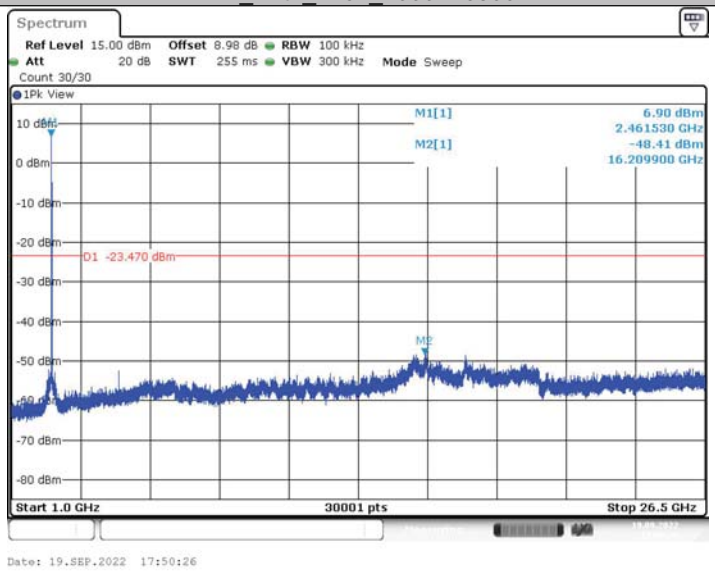
11B_Ant1_2437_1000~26500



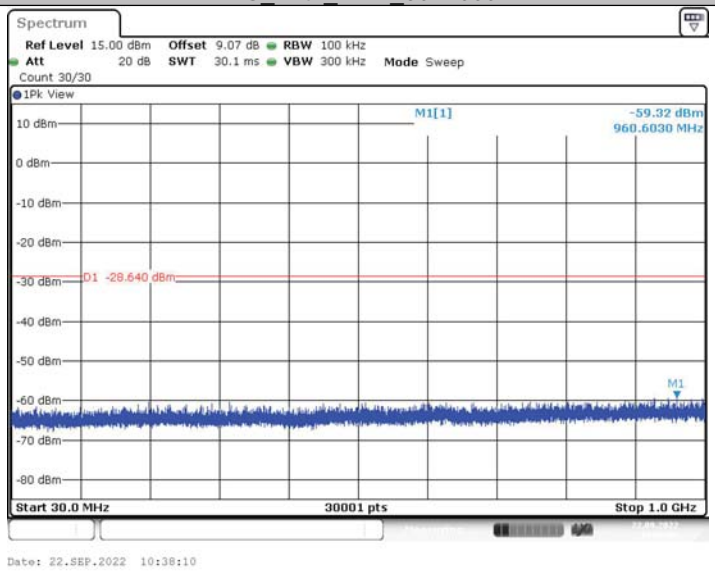
11B_Ant1_2462_30~1000



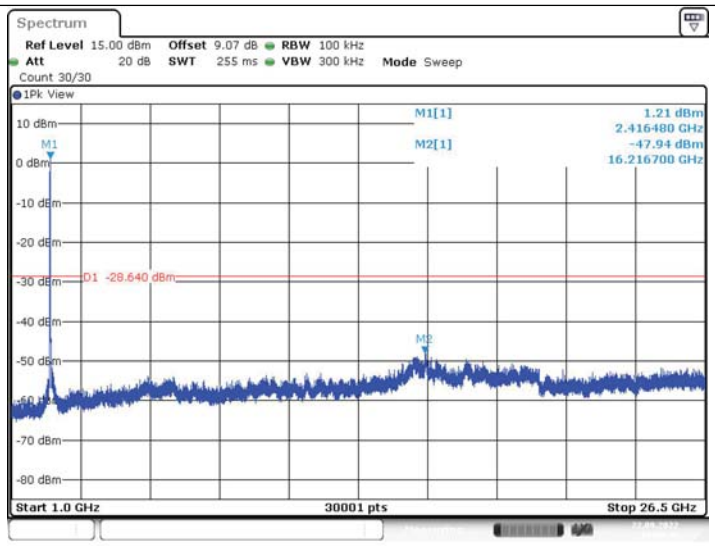
11B_Ant1_2462_1000~26500



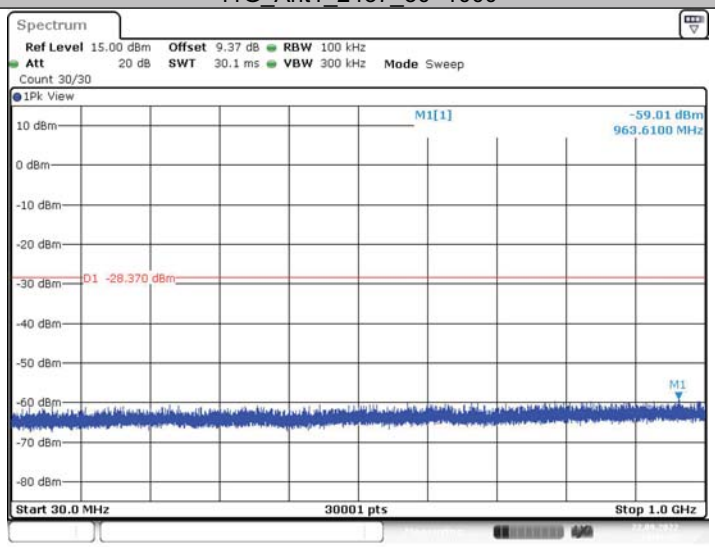
11G_Ant1_2412_30~1000



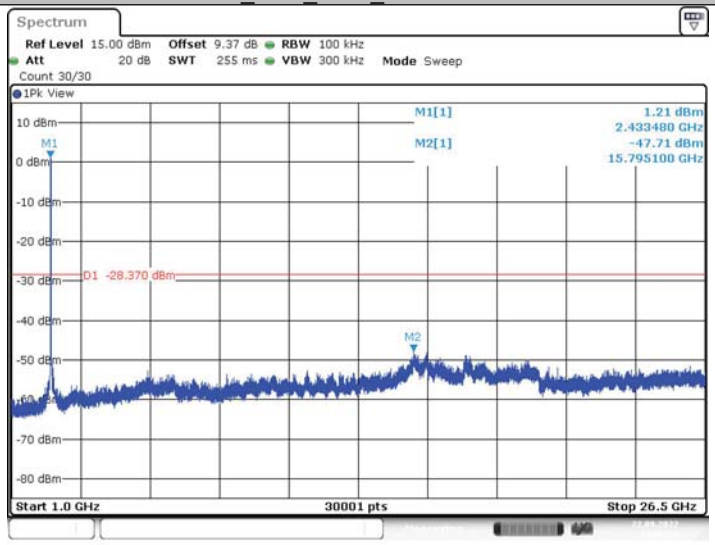
11G_Ant1_2412_1000~26500

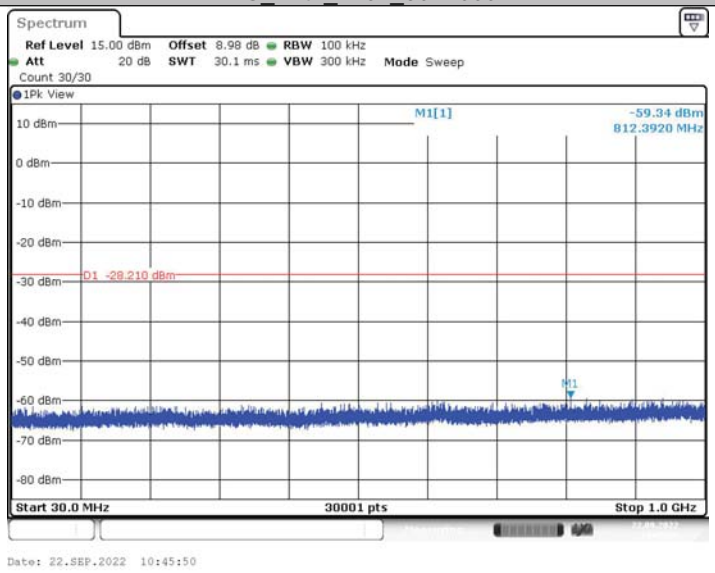
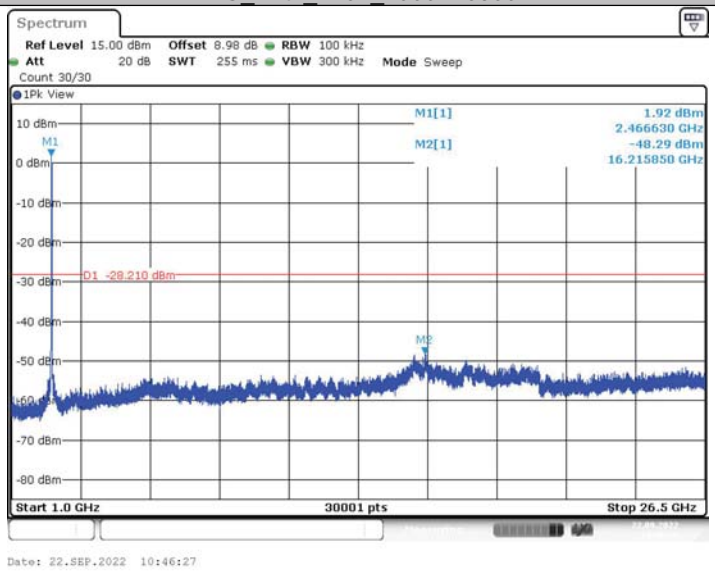


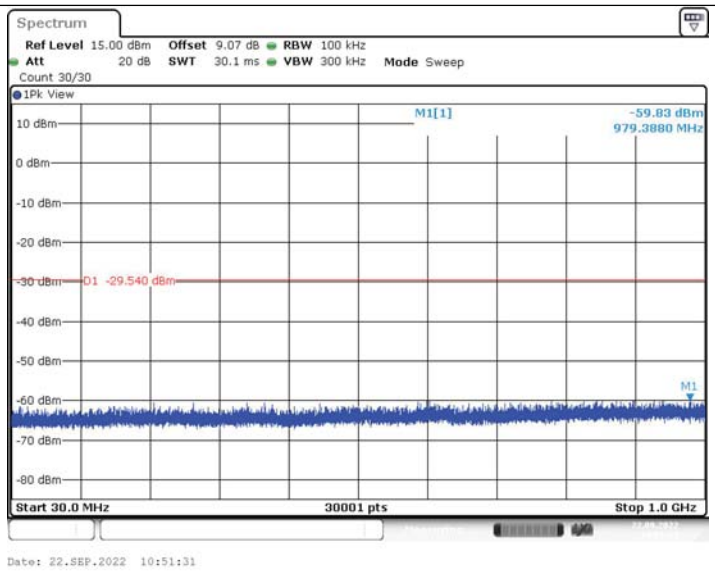
11G_Ant1_2437_30~1000



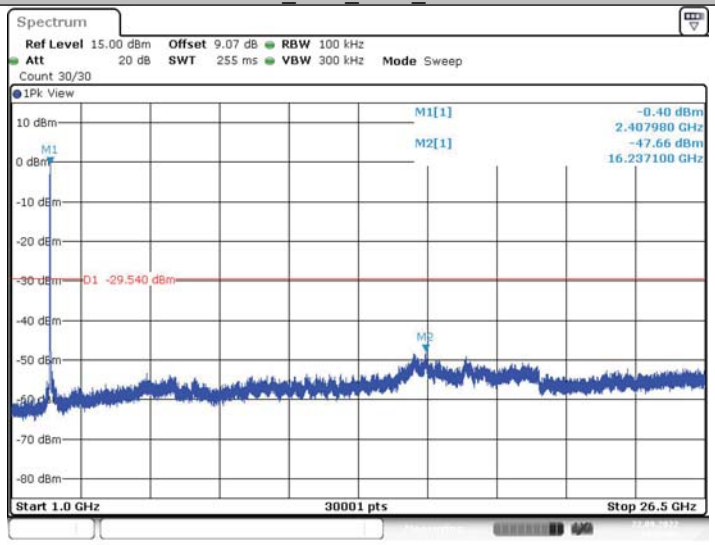
11G_Ant1_2437_1000~26500



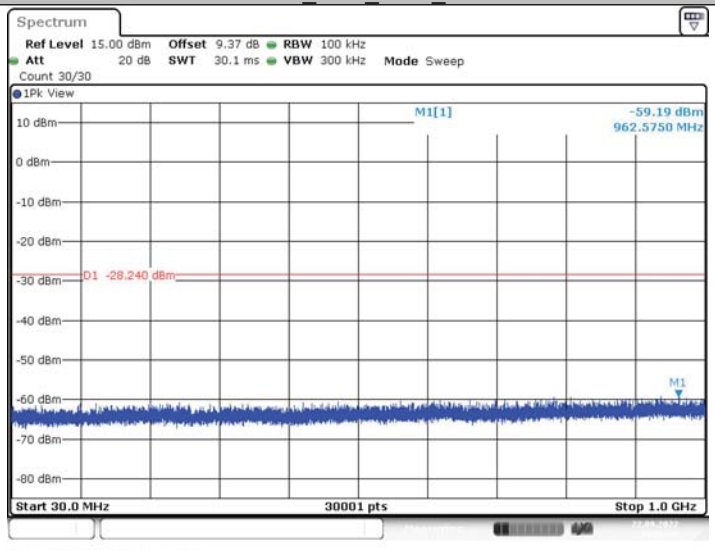
11G_Ant1_2462_30~1000

11G_Ant1_2462_1000~26500

11N20SISO_Ant1_2412_30~1000



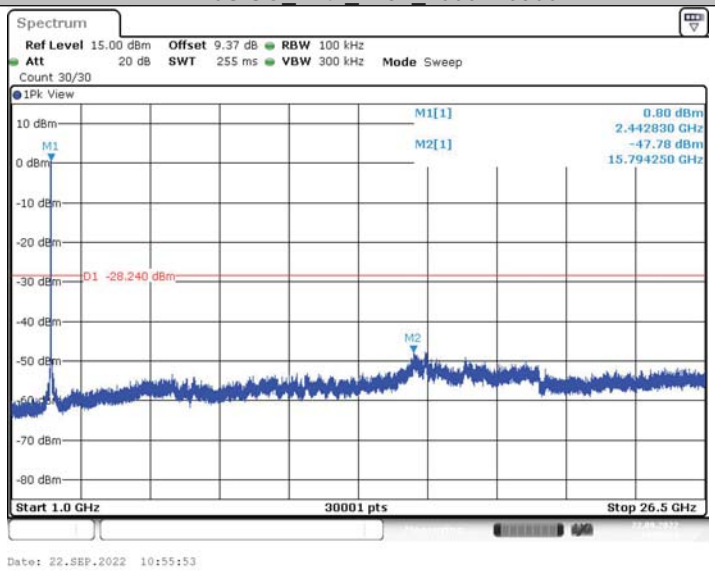
11N20SISO_Ant1_2412_1000~26500



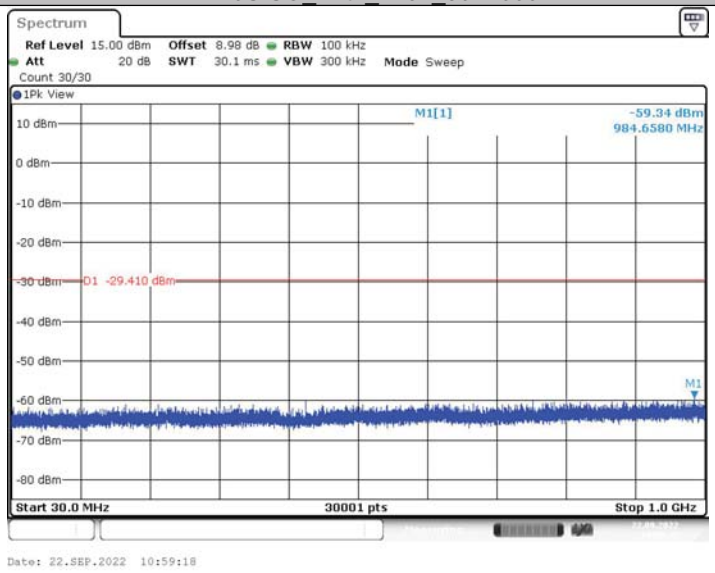
11N20SISO_Ant1_2437_30~1000



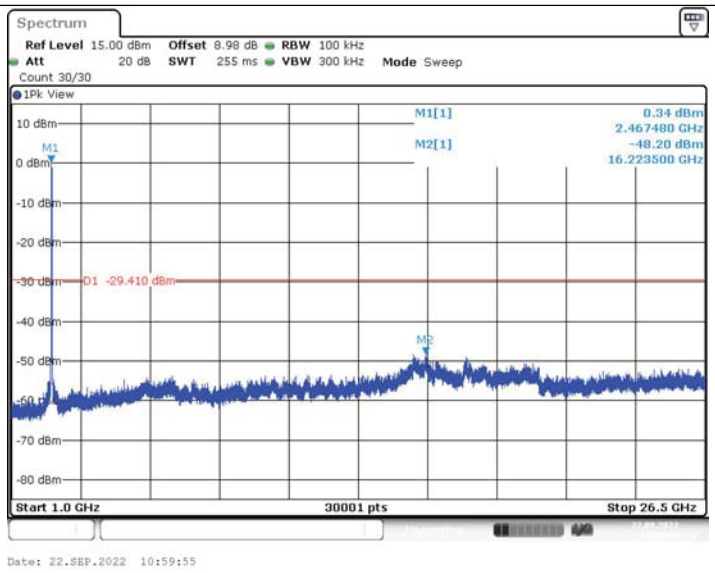
11N20SISO_Ant1_2437_1000~26500



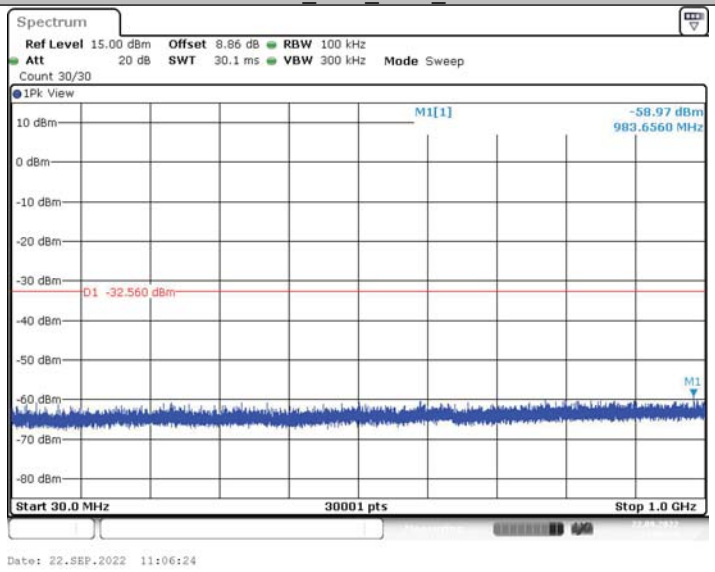
11N20SISO_Ant1_2462_30~1000



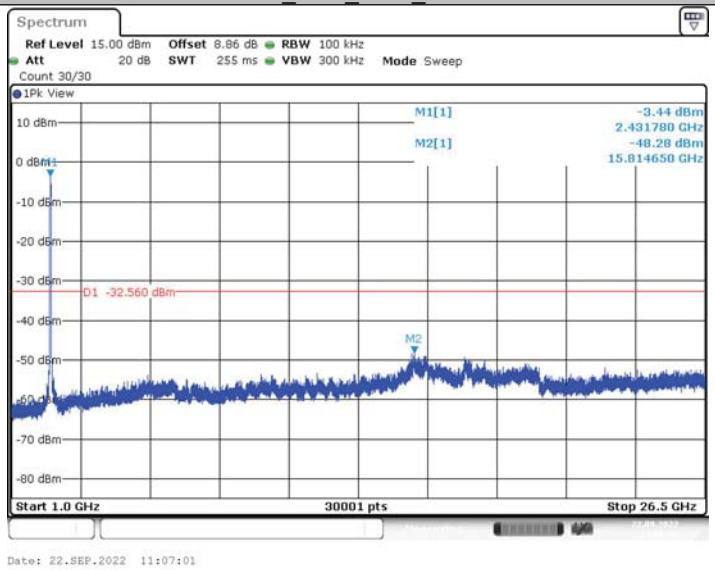
11N20SISO_Ant1_2462_1000~26500



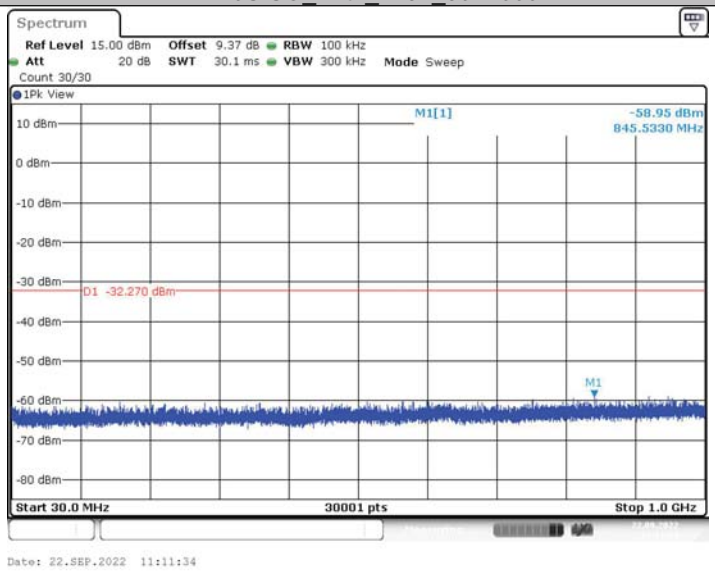
11N40SISO_Ant1_2422_30~1000



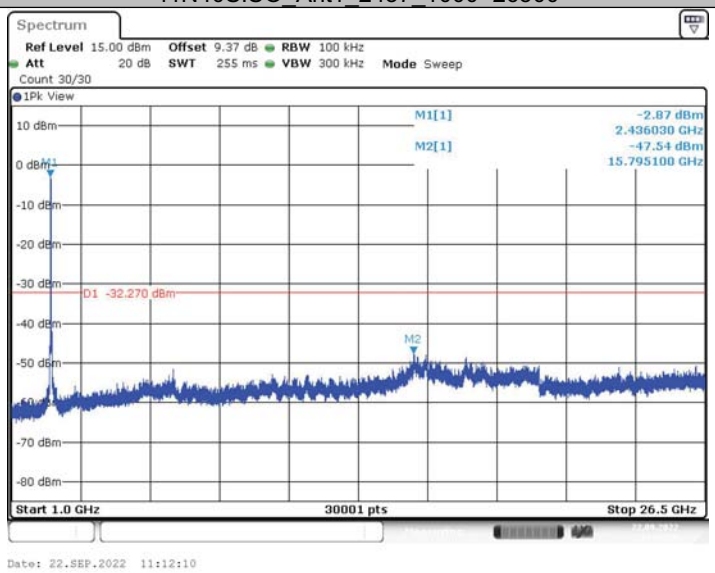
11N40SISO_Ant1_2422_1000~26500



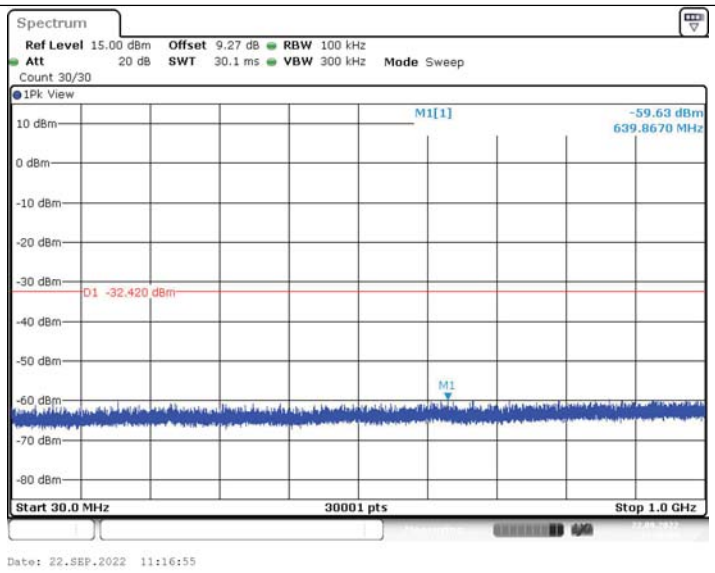
11N40SISO_Ant1_2437_30~1000



11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_30~1000



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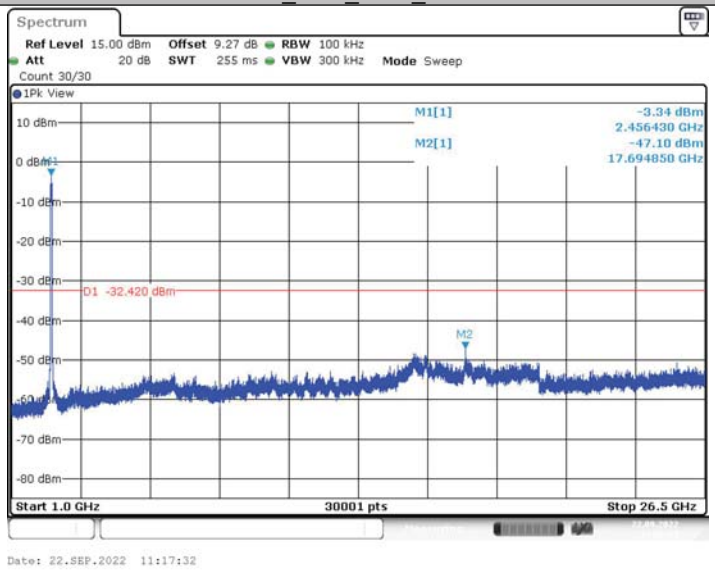
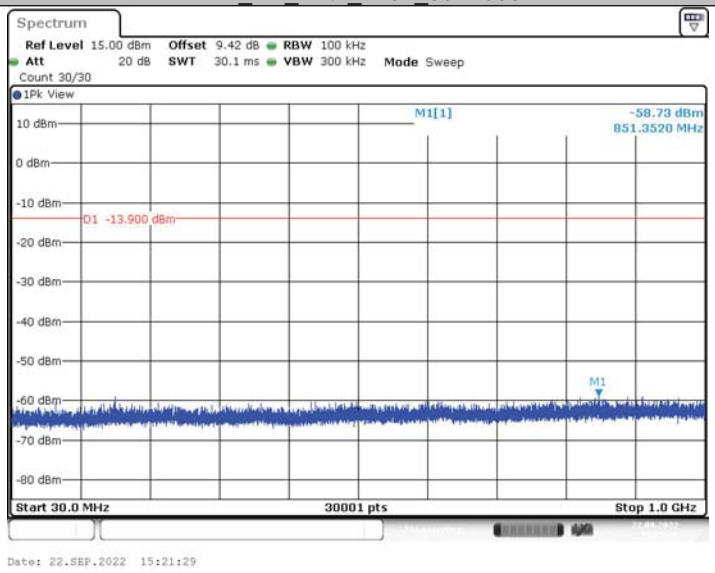
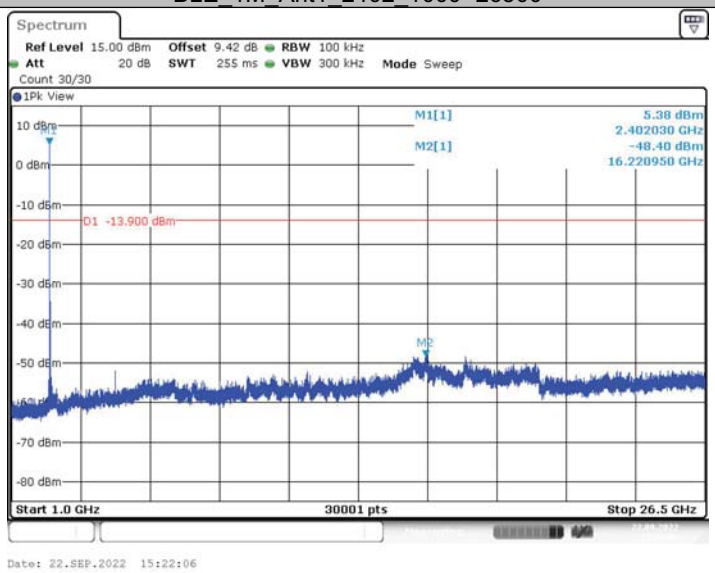


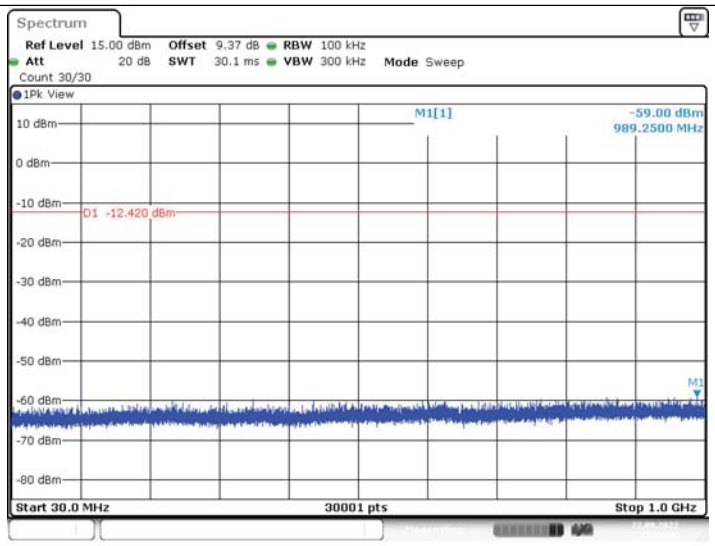
BLE_1M_Ant1_2402_30~1000



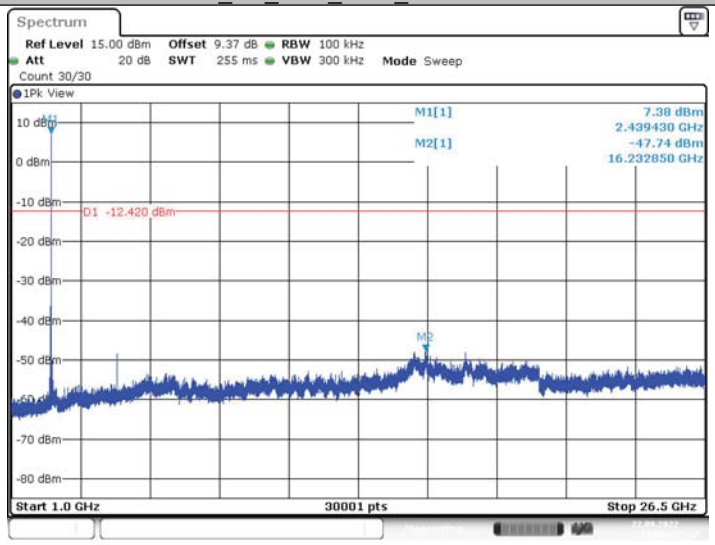
BLE_1M_Ant1_2402_1000~26500



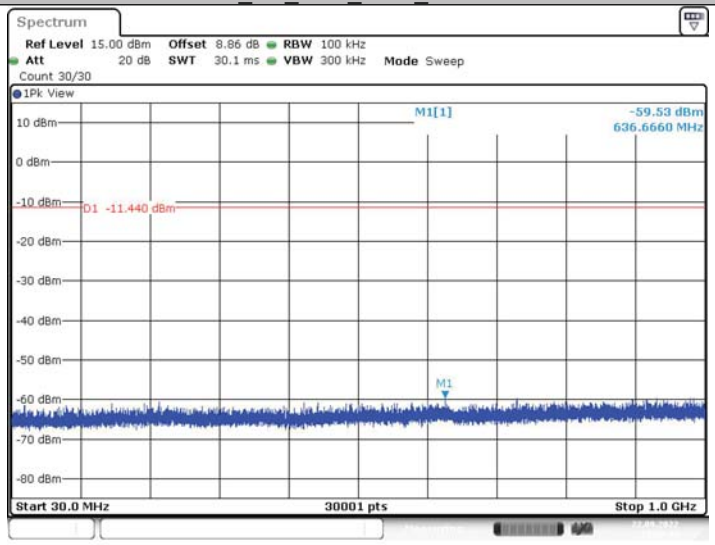
BLE_1M_Ant1_2440_30~1000



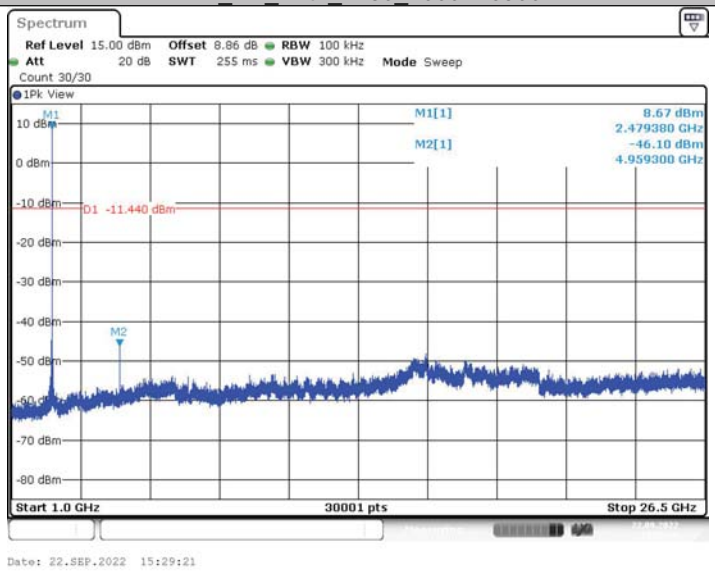
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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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