



Test Report No.:
FCC2022-0038-RF4

RF Test Report

EUT : **IoT Display**
MODEL : **DS7610-915M**
BRAND NAME : **Milesight**
APPLICANT : **Xiamen Milesight IoT Co., Ltd.**
CLASSIFICATION OF TEST : **N/A**

CVC Testing Technology Co., Ltd.



CVC Testing Technology Co., Ltd.

Test Report No.: FCC2022-0038-RF4

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Applicant		Name: Xiamen Milesight IoT Co., Ltd.	
		Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China	
Manufacturer		Name: Xiamen Milesight IoT Co., Ltd.	
		Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China	
Equipment Under Test		Name: IoT Display Model/Type: DS7610-915M Additional Models/Types: See Section 2.2 Brand: Milesight Serial NO.: N/A Sampe NO.: 4-1	
Date of Receipt.	2022.07.11	Date of Testing	2022.07.11~2022.12.06
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: 2022.12.10	
Tested by:  Xu ZhenFei Name Signature		Reviewed by:  Liu YongHai Name Signature	
		Approved by:  Chen HuaWen Name Signature	
Other Aspects: NONE.			
Abbreviations: OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2022-0038-RF4	Original release	2022.12.10



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
FCC Part 15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
FCC Part 15.247(d) FCC Part 15.209	Radiated Emission and Restricted bands Measurements	PASS	Meet the requirement of limit.
FCC Part 15.247(d)	Out of band Emission and Band edge measurements	PASS	Meet the requirement of limit.
FCC Part 15.247(a)(2)	6dB Bandwidth Measurement	PASS	Meet the requirement of limit.
---	Occupied Channel Bandwidth	N/A	For reference
FCC Part 15.247(b)	Conducted Output power	PASS	Meet the requirement of limit.
FCC Part 15.247(e)	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	CRTDSWKS 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	VG DY-0705	R&S	2023-03-04
LISN	NSLK 8127	8127644	VG DY-0150	SCHWARZBECK	2023-09-04
LISN	NSLK 8128	8128-316	VG DY-0149	SCHWARZBECK	2023-09-04
LISN	NSLK 8129	8129-268	EM-000388	SCHWARZBECK	2023-03-03
Plus Limiter (#1)	VTSD 9561 F-N	00515	VG DY-0808	SCHWARZBECK	2023-03-04
Plus Limiter (#2)	VTSD 9561	9561-F017	VG DY-0152	SCHWARZBECK	2024-09-04
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	2023-09-04
Impedance Stabilization Network	NTFM8158	8158-0092	VG DY-0356	SCHWARZBECK	2023-06-07
ImpedanceStabilizationNetwork	NTFM8131	#184	EM-000498	SCHWARZBECK	2023-06-07
Voltage Probe	TK9420	9420-499	VG DY-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	$\pm 2.66\text{dB}$
2	Radiated emissions	9KHz ~ 30MHz	$\pm 0.769\text{dB}$
		30MHz ~ 1GMHz	$\pm 0.877\text{dB}$
		1GHz ~ 18GHz	$\pm 0.777\text{dB}$
		18GHz ~ 40GHz	$\pm 1.315\text{dB}$

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	IoT Display												
BRAND	Milesight												
MODEL	DS7610-915M												
ADDITIONAL MODEL	See Section 2.2												
FCC ID	2AYHY-DS7610												
POWER SUPPLY	1. DC 5V from USB host unit 2. DC 56V from POE 3. DC 12V from Adapter												
MODULATIONTECHNOLOGY	DSSS, GFSK, OFDM												
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM GFSK for BT-LE												
OPERATING FREQUENCY	2412MHz ~ 2462MHz for 11b/g/n(HT20) 2422MHz ~ 2452MHz for 11n(HT40) 2402MHz ~ 2480MHz for BT-LE (1Mbps/2Mbps)												
NUMBER OF CHANNEL	802.11b/g/n (HT20): 11 802.11n (HT40): 7 BT-LE GFSK (1Mbps/2Mbps): 40												
PEAK OUTPUT POWER	WLAN: 16.87dBm (Maximum) BLE: 5.16dBm (Maximum)												
ANTENNA TYPE (Remark 4)	WLAN: Ceramic Antenna, with 2.26dBi gain BT-LE: Ceramic Antenna, with 2.26dBi gain												
HARDWARE VERSION:	UD00-00-V1.2												
SOFTWARE VERSION:	72.0.0.5-r1												
I/O PORTS	Refer to user's manual												
CABLE SUPPLIED	N/A												
Remark: - For more detailed features description, please refer to the manufacturer's specifications or the User's Manual. - For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report. - Please refer to the EUT photo document for detailed product photo. (Report NO.: FCC2022-0038-E) - Please refer to the antenna report. - The EUT have SISO function, provides 1 completed transmitter and 1 receiver. <table><tr><th>MODULATION MODE</th><th>TX FUNCTION</th></tr><tr><td>802.11b</td><td>1TX/1RX</td></tr><tr><td>802.11g</td><td>1TX/1RX</td></tr><tr><td>802.11n (HT20)</td><td>1TX/1RX</td></tr><tr><td>802.11n (HT40)</td><td>1TX/1RX</td></tr><tr><td>BT-LE (1Mbps/2Mbps)</td><td>1TX/1RX</td></tr></table>		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/2Mbps)	1TX/1RX
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/2Mbps)	1TX/1RX												



2.2 ADDITIONAL MODELS/TYPES

Models	
1	DS7610-9M
2	NH7610-915M
3	NH7610-9M
Note: The only differences are silk-screen 、trade name and model no. for trading purpose.	

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)	CHANNEL	FREQ. (MHz)
1	2412	5	2432	9	2452		
2	2417	6	2437	10	2457		
3	2422	7	2442	11	2462		
4	2427	8	2447				
802.11n (HT40)							
CHANNEL	FREQ. (MHz)	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/2Mbps)							
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

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
B	√	√	√	√	BT Function

Where **RE < 1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE ≥ 1G: Radiated Emission above 1GHz
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	1.0

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
B	BT-LE	0 to 39	0,19, 39	DTS	GFSK	2.0 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 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
B	BT-LE	0 to 39	0,19, 39	DTS	GFSK	2.0 Mbit/s

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RSE<1G	25.3deg. C, 59%RH	DC 5V from USB host unit	Liu ShiWei
RSE≥1G	25.3deg. C, 59%RH	DC 5V from USB host unit	Liu ShiWei
PLC	25.7deg. C, 54%RH	DC 5V from USB host unit	Liu ShiWei
APCM	25.7deg. C, 54%RH	DC 5V from USB host unit	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

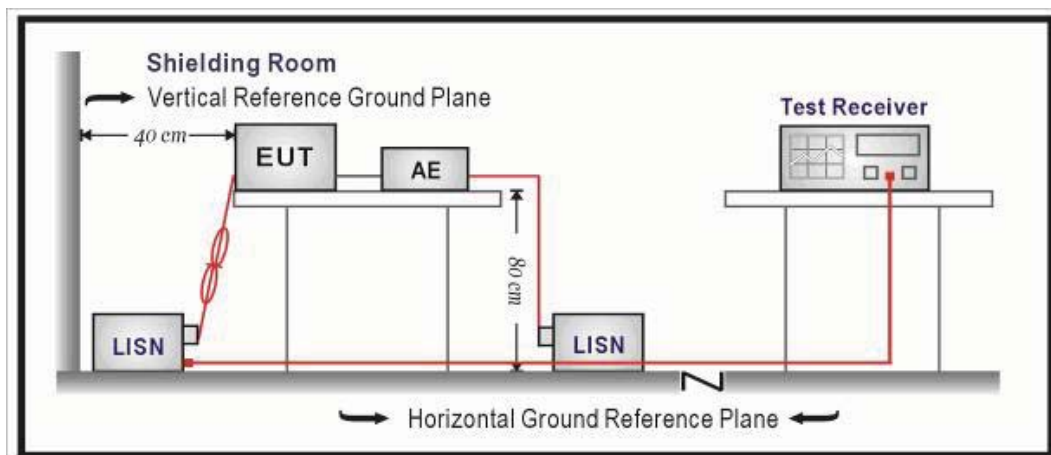
Frequency (MHz)	Conducted Limits(dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

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

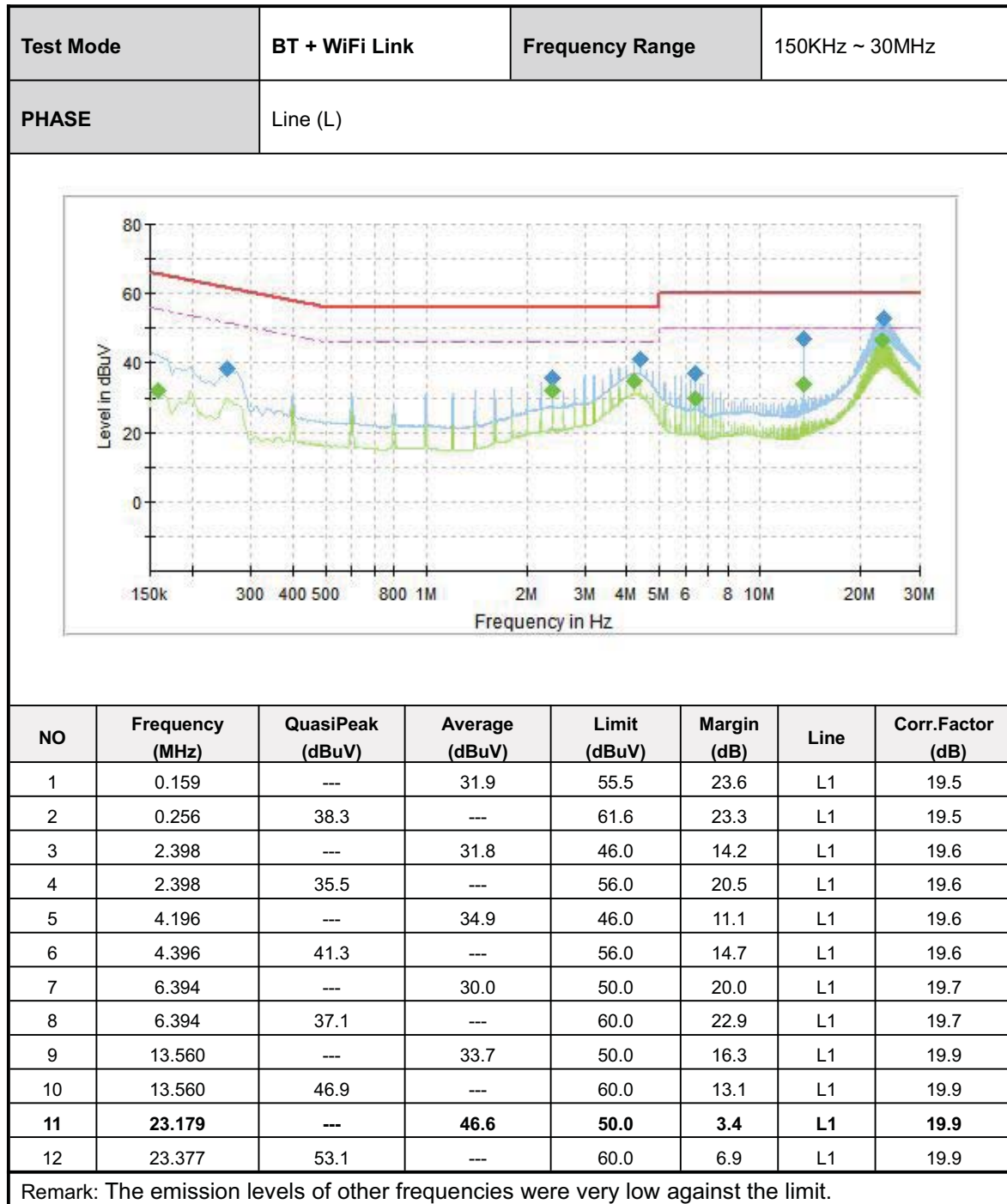
- The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are 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 be 1.5m above the ground,
- 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.
- Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

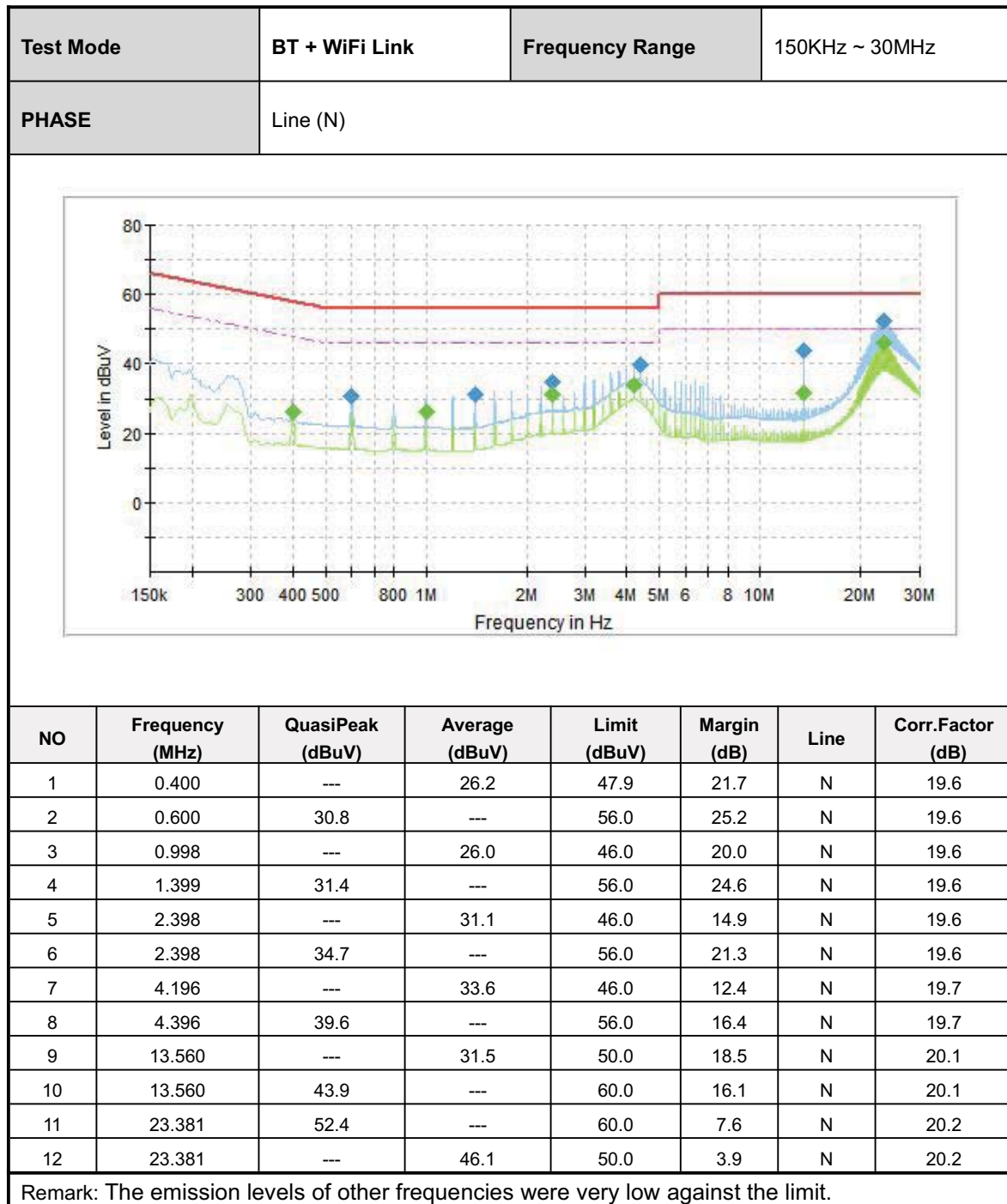
3.1.3 Test setup





3.1.4 Test results







3.2 RADIATED EMISSION AND RESTRICTED BANDS MEASUREMENTS

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

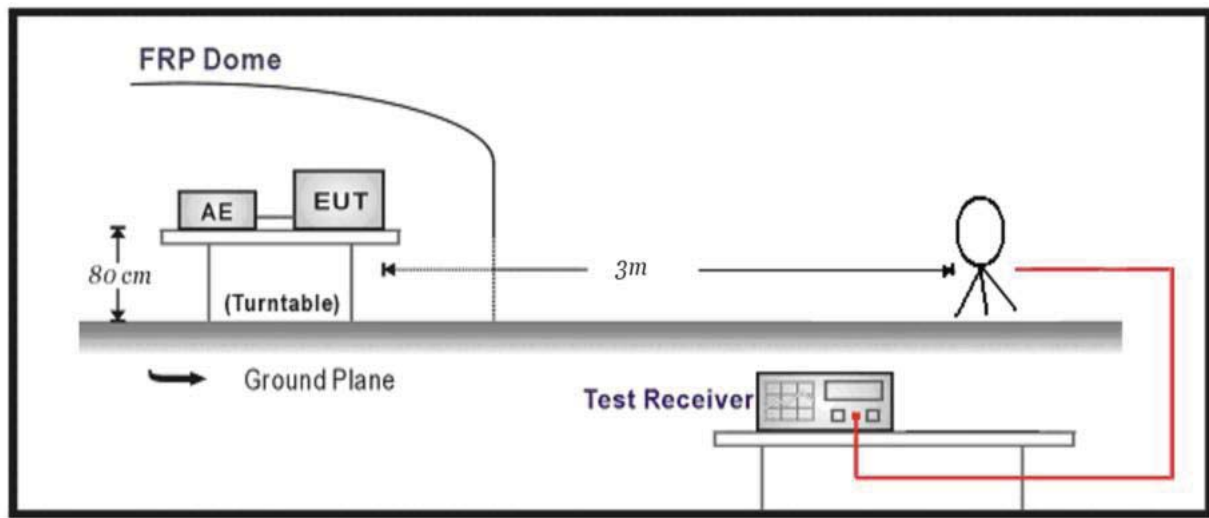
- The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.
- 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:

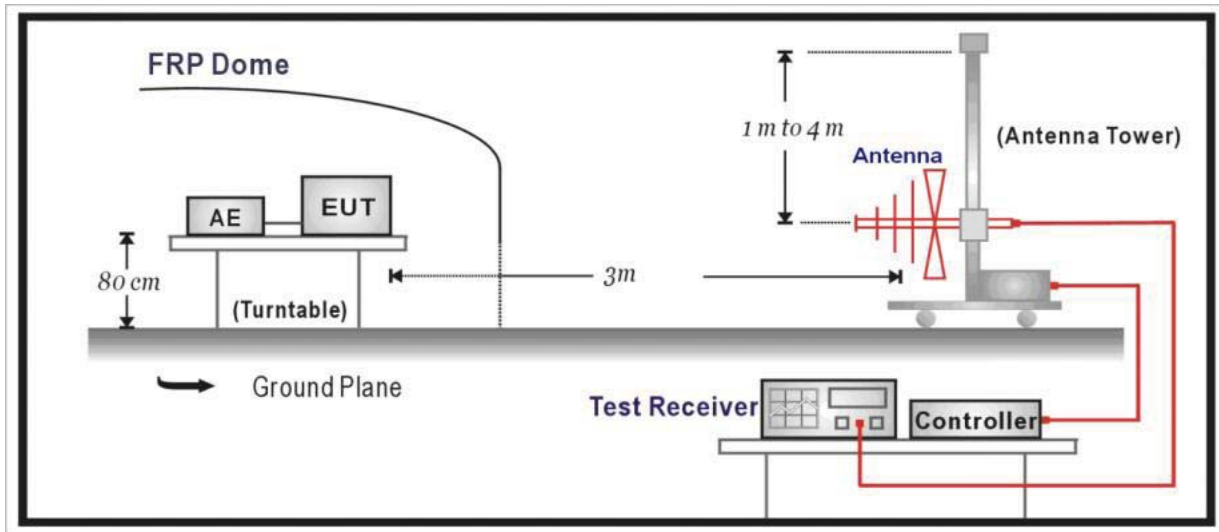
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

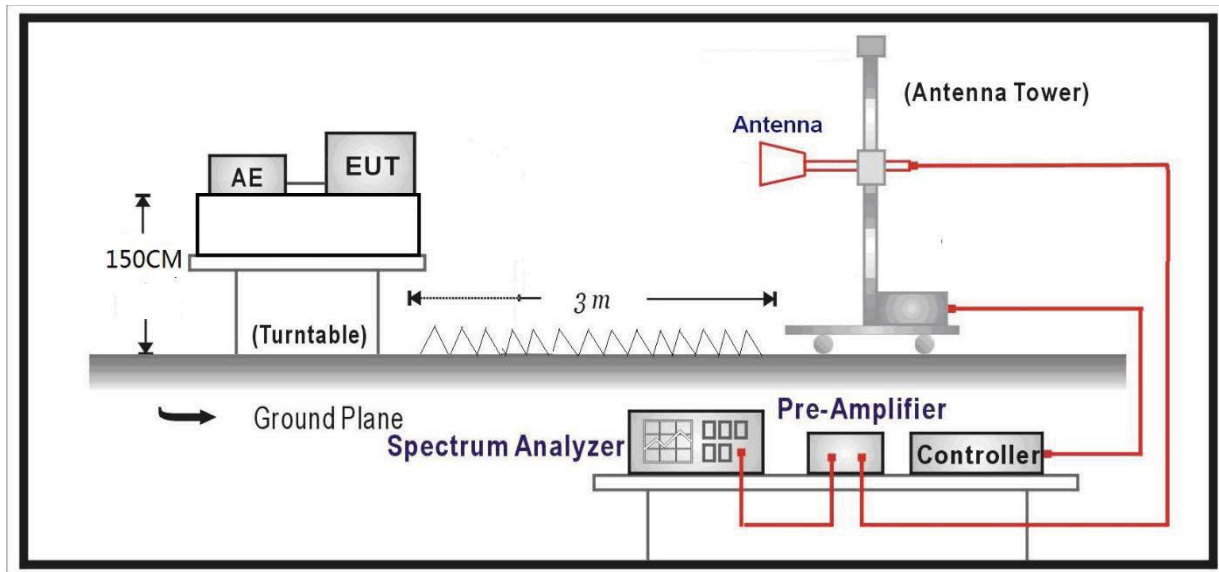
Below 30MHz Test Setup:



Below 1GHz Test Setup:



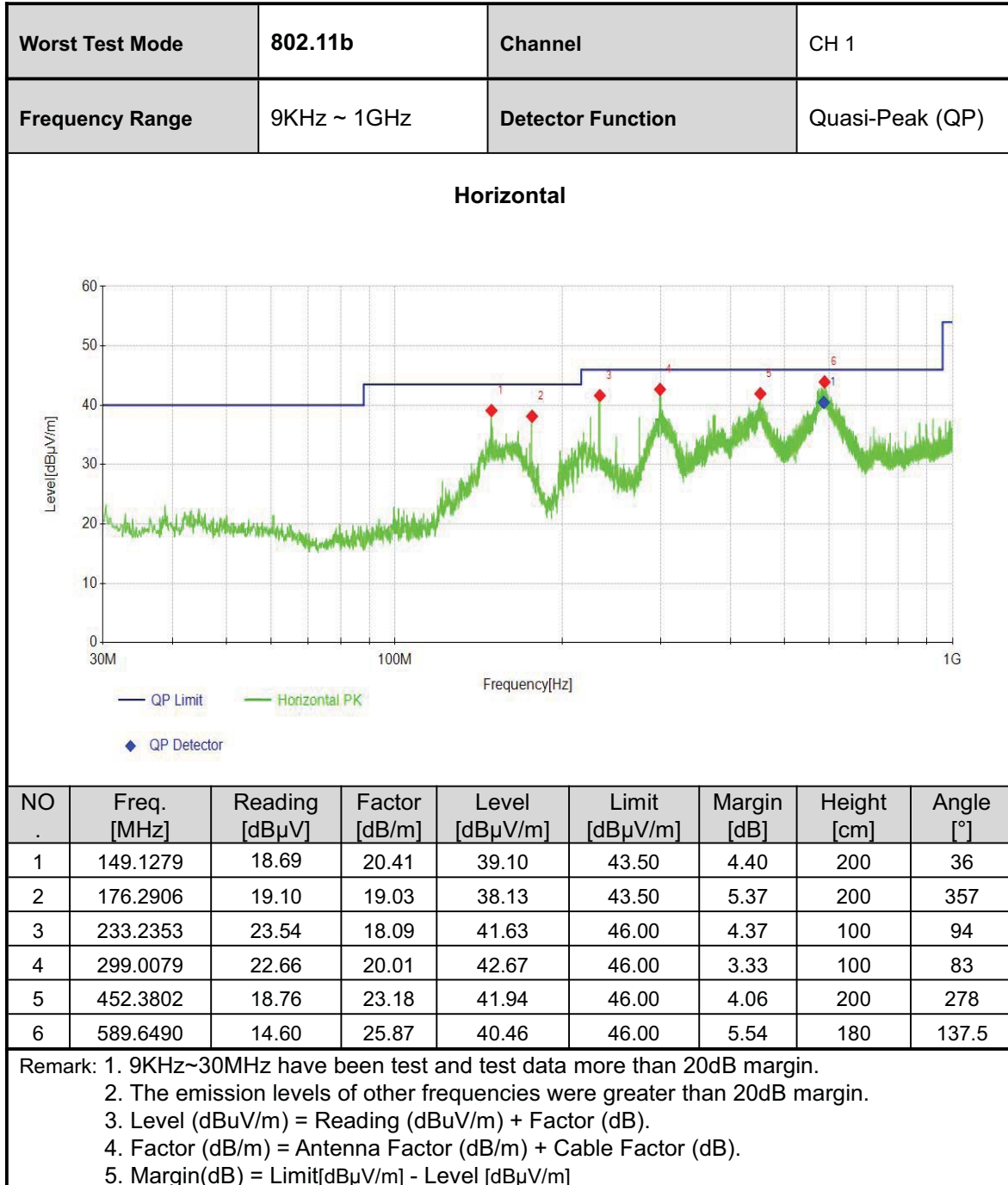
Above 1GHz Test Setup:





3.2.4 Test results

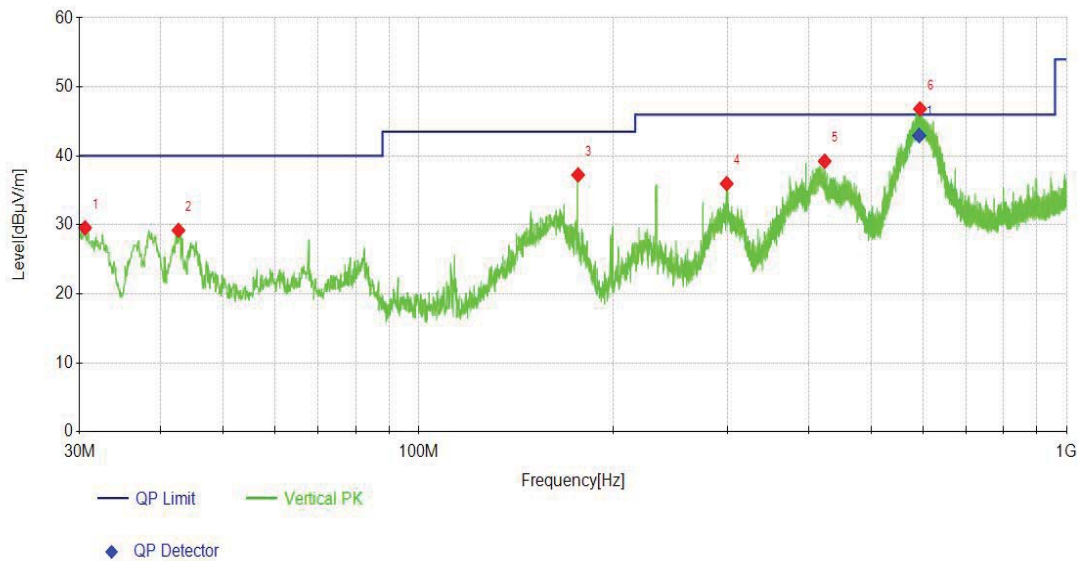
BELOW 1GHz WORST-CASE DATA:





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

Vertical



NO	Freq. [MHz]	Reading [dBuV/m]	Factor [dB]	Level [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [°]
1	30.5821	10.46	19.10	29.56	40.00	10.44	100	86
2	42.6113	9.67	19.53	29.20	40.00	10.80	100	80
3	176.2906	18.21	19.03	37.24	43.50	6.26	100	350
4	298.9109	15.97	20.01	35.98	46.00	10.02	200	358
5	423.3743	16.44	22.79	39.23	46.00	6.77	200	356
6	594.0144	17.00	25.96	42.96	46.00	3.04	102	352.4

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[dBuV/m] - Level [dBuV/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	41.72	-0.15	41.57	54.00	12.43	295	39	AV
2	2390.0000	48.76	-0.15	48.61	74.00	25.39	126	45	PK
3	2412.8763	97.48	0.16	97.64			198	52	PK
4	2413.0473	95.49	0.17	95.66			282	52	AV
5	4824.0000	44.04	9.68	53.72	74.00	20.28	159	195	PK
6	4824.0000	35.20	9.68	44.88	54.00	9.12	121	0	AV
7	7236.0000	26.35	12.39	38.74	54.00	15.26	230	36	AV
8	7236.0000	31.24	12.39	43.63	74.00	30.37	267	36	PK
9	9648.0000	30.28	13.13	43.41	74.00	30.59	227	280	PK
10	9648.0000	19.69	13.13	32.82	54.00	21.18	221	133	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	39.04	-0.15	38.89	54.00	15.11	132	328	AV
2	2390.0000	45.61	-0.15	45.46	74.00	28.54	296	328	PK
3	2411.0331	90.81	0.14	90.95			279	341	AV
4	2411.0901	92.60	0.14	92.74			269	341	PK
5	4824.0000	34.70	9.68	44.38	54.00	9.62	180	280	AV
6	4824.0000	42.10	9.68	51.78	74.00	22.22	195	85	PK
7	7236.0000	35.97	12.39	48.36	74.00	25.64	203	17	PK
8	7236.0000	30.25	12.39	42.64	54.00	11.36	113	23	AV
9	9648.0000	19.88	13.13	33.01	54.00	20.99	261	238	AV
10	9648.0000	28.33	13.13	41.46	74.00	32.54	235	323	PK
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[dBuV/m] - Level [dBuV/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	43.65	9.70	53.35	74.00	20.65	189	254	PK
2	4874.0000	35.51	9.70	45.21	54.00	8.79	300	289	AV
3	7311.0000	24.49	11.03	35.52	54.00	18.48	172	27	AV
4	7311.0000	30.07	11.03	41.10	74.00	32.90	245	22	PK
5	9748.0000	27.63	13.23	40.86	74.00	33.14	160	267	PK
6	9748.0000	19.45	13.23	32.68	54.00	21.32	202	356	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	43.04	9.70	52.74	74.00	21.26	245	276	PK
2	4874.0000	34.55	9.70	44.25	54.00	9.75	196	360	AV
3	7311.0000	29.10	11.03	40.13	54.00	13.87	266	329	AV
4	7311.0000	33.95	11.03	44.98	74.00	29.02	172	329	PK
5	9748.0000	27.45	13.23	40.68	74.00	33.32	176	223	PK
6	9748.0000	19.58	13.23	32.81	54.00	21.19	250	249	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[dBuV/m] - Level [dBuV/m]									



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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	2462.9083	99.69	0.65	100.34			156	46	PK
2	2463.0793	97.84	0.65	98.49			153	46	AV
3	2483.5000	47.07	0.46	47.53	54.00	6.47	194	46	AV
4	2483.5000	51.04	0.46	51.50	74.00	22.50	210	39	PK
5	4926.0000	42.31	10.07	52.38	74.00	21.62	244	84	PK
6	4926.0000	34.02	10.07	44.09	54.00	9.91	130	128	AV
7	7386.0000	22.83	9.80	32.63	54.00	21.37	310	32	AV
8	7386.0000	30.28	9.80	40.08	74.00	33.92	226	17	PK
9	9848.0000	27.09	13.24	40.33	74.00	33.67	162	162	PK
10	9848.0000	19.56	13.24	32.80	54.00	21.20	273	107	AV
Vertical									
NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2460.9891	88.21	0.59	88.80			155	101	AV
2	2462.9463	90.14	0.65	90.79			171	101	PK
3	2483.5000	39.08	0.46	39.54	54.00	14.46	158	20	AV
4	2483.5000	45.92	0.46	46.38	74.00	27.62	248	14	PK
5	4926.0000	43.16	10.07	53.23	74.00	20.77	304	212	PK
6	4926.0000	34.05	10.07	44.12	54.00	9.88	164	212	AV
7	7386.0000	27.90	9.80	37.70	54.00	16.30	205	8	AV
8	7386.0000	32.73	9.80	42.53	74.00	31.47	227	339	PK
9	9848.0000	28.86	13.24	42.10	74.00	31.90	255	213	PK
10	9848.0000	19.71	13.24	32.95	54.00	21.05	296	234	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[dBuV/m] - Level [dBuV/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	46.61	-0.15	46.46	54.00	7.54	141	90	AV
2	2390.0000	59.62	-0.15	59.47	74.00	14.53	293	90	PK
3	2412.5723	98.12	0.16	98.28			259	90	PK
4	2412.6863	91.42	0.16	91.58			185	170	AV
5	4824.0000	45.62	9.68	55.30	74.00	18.70	283	170	PK
6	4824.0000	35.92	9.68	45.60	54.00	8.40	206	170	AV
7	7236.0000	36.80	12.49	49.29	74.00	24.71	248	360	PK
8	7236.0000	26.56	12.46	39.02	54.00	14.98	110	310	AV
9	9648.0000	27.03	13.13	40.16	74.00	33.84	190	270	PK
10	9648.0000	19.58	13.13	32.71	54.00	21.29	115	260	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	46.92	-0.15	46.77	54.00	7.23	147	90	AV
2	2390.0000	60.14	-0.15	59.99	74.00	14.01	204	90	PK
3	2411.0521	91.40	0.14	91.54			178	90	AV
4	2412.6483	98.09	0.16	98.25			279	290	PK
5	4824.0000	41.61	9.68	51.29	74.00	22.71	179	100	PK
6	4824.0000	34.61	9.68	44.29	54.00	9.71	289	250	AV
7	7236.0000	27.95	12.39	40.34	54.00	13.66	275	150	AV
8	7236.0000	35.77	12.39	48.16	74.00	25.84	206	140	PK
9	9648.0000	29.17	13.13	42.30	74.00	31.70	229	290	PK
10	9648.0000	19.76	13.13	32.89	54.00	21.11	259	50	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[dBuV/m] - Level [dBuV/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	42.53	9.70	52.23	74.00	21.77	132	315	PK
2	4874.0000	34.83	9.70	44.53	54.00	9.47	294	276	AV
3	7311.0000	22.15	11.03	33.18	54.00	20.82	218	242	AV
4	7311.0000	29.72	11.03	40.75	74.00	33.25	245	26	PK
5	9748.0000	27.21	13.23	40.44	74.00	33.56	284	16	PK
6	9748.0000	19.51	13.23	32.74	54.00	21.26	216	79	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	307	237	PK
2	4874.0000	34.66	9.70	44.36	54.00	9.64	121	251	AV
3	7311.0000	25.94	11.03	36.97	54.00	17.03	283	16	AV
4	7311.0000	32.22	11.03	43.25	74.00	30.75	206	20	PK
5	9748.0000	27.70	13.23	40.93	74.00	33.07	294	113	PK
6	9748.0000	19.48	13.23	32.71	54.00	21.29	129	319	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[dBuV/m] - Level [dBuV/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	2462.5663	101.90	0.64	102.54			201	46	PK
2	2462.6043	95.06	0.64	95.70			143	46	AV
3	2483.5000	48.46	0.46	48.92	54.00	5.08	147	46	AV
4	2483.5000	61.34	0.46	61.80	74.00	12.20	141	46	PK
5	4926.0000	42.81	10.07	52.88	74.00	21.12	282	246	PK
6	4926.0000	34.93	10.07	45.00	54.00	9.00	291	246	AV
7	7386.0000	21.54	9.80	31.34	54.00	22.66	154	193	AV
8	7386.0000	29.79	9.80	39.59	74.00	34.41	305	12	PK
9	9848.0000	27.97	13.24	41.21	74.00	32.79	212	159	PK
10	9848.0000	19.26	13.24	32.50	54.00	21.50	261	306	AV
Vertical									
NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2461.4261	86.73	0.60	87.33			122	288	AV
2	2462.6803	93.91	0.64	94.55			275	110	PK
3	2483.5000	52.37	0.46	52.83	74.00	21.17	138	203	PK
4	2483.5000	44.29	0.46	44.75	54.00	9.25	232	203	AV
5	4926.0000	43.64	10.07	53.71	74.00	20.29	282	178	PK
6	4926.0000	34.11	10.07	44.18	54.00	9.82	157	164	AV
7	7386.0000	26.26	9.80	36.06	54.00	17.94	239	329	AV
8	7386.0000	34.70	9.80	44.50	74.00	29.50	237	5	PK
9	9848.0000	27.74	13.24	40.98	74.00	33.02	127	349	PK
10	9848.0000	19.41	13.24	32.65	54.00	21.35	128	99	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[dBuV/m] - Level [dBuV/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	50.19	-0.15	50.04	54.00	3.96	262	34	AV
2	2390.0000	59.92	-0.15	59.77	74.00	14.23	211	42	PK
3	2411.2991	100.29	0.14	100.43			238	34	PK
4	2411.2991	93.77	0.14	93.91			131	34	AV
5	4824.0000	43.74	9.68	53.42	74.00	20.58	151	119	PK
6	4824.0000	34.75	9.68	44.43	54.00	9.57	121	119	AV
7	7236.0000	22.32	12.39	34.71	54.00	19.29	200	31	AV
8	7236.0000	30.20	12.39	42.59	74.00	31.41	283	209	PK
9	9648.0000	28.99	13.13	42.12	74.00	31.88	157	124	PK
10	9648.0000	20.30	13.13	33.43	54.00	20.57	269	247	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	46.14	-0.15	45.99	54.00	8.01	196	335	AV
2	2390.0000	54.77	-0.15	54.62	74.00	19.38	251	335	PK
3	2411.2991	89.10	0.14	89.24			209	204	AV
4	2411.5462	95.62	0.15	95.77			264	197	PK
5	4824.0000	43.29	9.68	52.97	74.00	21.03	151	99	PK
6	4824.0000	34.56	9.68	44.24	54.00	9.76	139	26	AV
7	7236.0000	26.94	12.39	39.33	54.00	14.67	276	354	AV
8	7236.0000	35.68	12.39	48.07	74.00	25.93	138	354	PK
9	9648.0000	27.62	13.13	40.75	74.00	33.25	203	181	PK
10	9648.0000	19.84	13.13	32.97	54.00	21.03	256	290	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[dBuV/m] - Level [dBuV/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	43.27	9.70	52.97	74.00	21.03	222	158	PK
2	4874.0000	34.90	9.70	44.60	54.00	9.40	168	275	AV
3	7311.0000	22.89	11.03	33.92	54.00	20.08	213	26	AV
4	7311.0000	29.39	11.03	40.42	74.00	33.58	245	65	PK
5	9748.0000	27.25	13.23	40.48	74.00	33.52	284	354	PK
6	9748.0000	19.24	13.23	32.47	54.00	21.53	124	65	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	43.53	9.70	53.23	74.00	20.77	241	344	PK
2	4874.0000	35.10	9.70	44.80	54.00	9.20	135	348	AV
3	7311.0000	24.55	11.03	35.58	54.00	18.42	243	320	AV
4	7311.0000	32.67	11.03	43.70	74.00	30.30	168	3	PK
5	9748.0000	27.74	13.23	40.97	74.00	33.03	204	320	PK
6	9748.0000	19.99	13.23	33.22	54.00	20.78	190	320	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[dBuV/m] - Level [dBuV/m]									



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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	2461.1981	94.04	0.60	94.64			216	44	AV
2	2462.2503	100.84	0.66	101.50			215	51	PK
3	2483.5000	50.33	0.46	50.79	54.00	3.21	204	58	AV
4	2483.5000	64.43	0.46	64.89	74.00	9.11	116	58	PK
5	4926.0000	42.84	10.07	52.91	74.00	21.09	211	349	PK
6	4926.0000	34.79	10.07	44.86	54.00	9.14	232	320	AV
7	7386.0000	21.24	9.80	31.04	54.00	22.96	278	31	AV
8	7386.0000	29.38	9.80	39.18	74.00	34.82	133	221	PK
9	9848.0000	27.47	13.24	40.71	74.00	33.29	302	172	PK
10	9848.0000	19.25	13.24	32.49	54.00	21.51	111	197	AV
Vertical									
NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2461.3121	86.22	0.60	86.82			268	283	AV
2	2462.1803	93.21	0.64	93.85			156	113	PK
3	2483.5000	53.62	0.46	54.08	74.00	19.92	292	204	PK
4	2483.5000	44.47	0.46	44.93	54.00	9.07	276	204	AV
5	4926.0000	42.70	10.07	52.77	74.00	21.23	154	350	PK
6	4926.0000	34.31	10.07	44.38	54.00	9.62	154	217	AV
7	7386.0000	24.43	9.80	34.23	54.00	19.77	278	325	AV
8	7386.0000	33.50	9.80	43.30	74.00	30.70	126	325	PK
9	9848.0000	28.28	13.24	41.52	74.00	32.48	306	45	PK
10	9848.0000	19.16	13.24	32.40	54.00	21.60	266	197	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[dBuV/m] - Level [dBuV/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	36.83	-0.15	36.68	54.00	17.32	129	58	AV
2	2390.0000	45.48	-0.15	45.33	74.00	28.67	177	164	PK
3	2422.0325	94.48	0.65	95.13			155	46	AV
4	2422.1108	101.37	0.66	102.03			247	58	PK
5	4844.0000	43.54	9.94	53.48	74.00	20.52	119	182	PK
6	4844.0000	35.09	9.94	45.03	54.00	8.97	308	69	AV
7	7266.0000	20.64	11.99	32.63	54.00	21.37	216	265	AV
8	7266.0000	29.14	11.99	41.13	74.00	32.87	289	339	PK
9	9688.0000	28.09	13.15	41.24	74.00	32.76	143	163	PK
10	9688.0000	20.33	13.15	33.48	54.00	20.52	111	348	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	45.19	-0.15	45.04	74.00	28.96	178	296	PK
2	2390.0000	36.53	-0.15	36.38	54.00	17.62	181	132	AV
3	2422.8949	94.29	0.59	94.88			218	106	PK
4	2422.1062	86.36	0.60	86.96			214	112	AV
5	4844.0000	43.26	9.94	53.20	74.00	20.80	171	119	PK
6	4844.0000	34.82	9.94	44.76	54.00	9.24	227	276	AV
7	7266.0000	33.34	9.95	43.29	74.00	30.71	301	320	PK
8	7266.0000	25.04	9.88	34.92	54.00	19.08	165	314	AV
9	9688.0000	27.47	13.15	40.62	74.00	33.38	258	13	PK
10	9688.0000	19.83	13.15	32.98	54.00	21.02	264	13	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[dBuV/m] - Level [dBuV/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	43.31	9.70	53.01	74.00	20.99	129	18	PK
2	4874.0000	35.07	9.70	44.77	54.00	9.23	150	230	AV
3	7311.0000	21.30	11.03	32.33	54.00	21.67	158	248	AV
4	7311.0000	29.05	11.03	40.08	74.00	33.92	265	243	PK
5	9748.0000	27.99	13.23	41.22	74.00	32.78	283	110	PK
6	9748.0000	19.57	13.23	32.80	54.00	21.20	294	125	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	43.12	9.70	52.82	74.00	21.18	219	358	PK
2	4874.0000	34.67	9.70	44.37	54.00	9.63	304	60	AV
3	7311.0000	23.00	11.03	34.03	54.00	19.97	145	357	AV
4	7311.0000	30.12	11.03	41.15	74.00	32.85	110	187	PK
5	9748.0000	26.62	13.23	39.85	74.00	34.15	126	235	PK
6	9748.0000	19.33	13.23	32.56	54.00	21.44	112	4	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[dBuV/m] - Level [dBuV/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	2452.1585	97.02	0.56	97.58			186	51	PK
2	2452.5343	90.69	0.57	91.26			207	51	AV
3	2483.5000	53.34	0.46	53.80	54.00	3.58	239	38	AV
4	2483.5000	68.91	0.46	69.37	74.00	4.63	224	38	PK
5	4904.0000	42.74	10.10	52.84	74.00	21.16	297	255	PK
6	4904.0000	34.80	10.10	44.90	54.00	9.10	279	137	AV
7	7356.0000	22.05	10.31	32.36	54.00	21.64	241	292	AV
8	7356.0000	30.19	10.31	40.50	74.00	33.50	247	208	PK
9	9808.0000	27.15	13.20	40.35	74.00	33.65	130	3	PK
10	9808.0000	19.42	13.20	32.62	54.00	21.38	310	1	AV
Vertical									
NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2452.8920	90.26	0.57	90.83			110	283	PK
2	2452.9893	83.49	0.57	84.06			205	283	AV
3	2483.5000	58.15	0.46	58.61	74.00	15.39	280	110	PK
4	2483.5000	48.09	0.46	48.55	54.00	5.45	301	110	AV
5	4904.0000	42.52	10.10	52.62	74.00	21.38	263	51	PK
6	4904.0000	34.66	10.10	44.76	54.00	9.24	149	26	AV
7	7356.0000	23.03	10.31	33.34	54.00	20.66	256	354	AV
8	7356.0000	30.80	10.31	41.11	74.00	32.89	163	310	PK
9	9808.0000	27.28	13.20	40.48	74.00	33.52	114	330	PK
10	9808.0000	19.72	13.20	32.92	54.00	21.08	271	142	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[dBuV/m] - Level [dBuV/m]									



Channel		BT-LE(1Mbps) 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	37.04	-0.15	36.89	54.00	17.11	118	244	AV
2	2390.0000	44.93	-0.15	44.78	74.00	29.22	282	94	PK
3	2401.7412	87.54	-0.04	87.50			238	15	PK
4	2401.8552	86.68	-0.03	86.65			222	15	AV
5	4804.0000	43.34	9.29	52.63	74.00	21.37	188	216	PK
6	4804.0000	34.64	9.29	43.93	54.00	10.07	244	216	AV
7	7206.0000	21.00	12.81	33.81	54.00	20.19	222	74	AV
8	7206.0000	28.58	12.81	41.39	74.00	32.61	144	172	PK
9	9608.0000	27.51	13.32	40.83	74.00	33.17	162	270	PK
10	9608.0000	20.57	13.32	33.89	54.00	20.11	280	177	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	37.08	-0.15	36.93	54.00	17.07	165	292	AV
2	2390.0000	44.70	-0.15	44.55	74.00	29.45	307	292	PK
3	2401.9502	83.19	-0.03	83.16			258	207	AV
4	2402.2732	84.15	-0.03	84.12			170	207	PK
5	4804.0000	44.15	9.29	53.44	74.00	20.56	171	144	PK
6	4804.0000	35.20	9.29	44.49	54.00	9.51	237	198	AV
7	7206.0000	20.82	12.81	33.63	54.00	20.37	123	306	AV
8	7206.0000	29.06	12.81	41.87	74.00	32.13	188	194	PK
9	9608.0000	27.44	13.32	40.76	74.00	33.24	134	76	PK
10	9608.0000	20.22	13.32	33.54	54.00	20.46	301	243	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[dBuV/m] - Level [dBuV/m]									



Channel		BT-LE(1Mbps) 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	42.60	9.80	52.40	74.00	21.60	134	130	PK
2	4880.0000	34.51	9.80	44.31	54.00	9.69	208	194	AV
3	7320.0000	21.70	11.01	32.71	54.00	21.29	199	334	AV
4	7320.0000	30.13	11.01	41.14	74.00	32.86	180	128	PK
5	9760.0000	27.49	13.25	40.74	74.00	33.26	216	113	PK
6	9760.0000	19.81	13.25	33.06	54.00	20.94	139	40	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	42.83	9.80	52.63	74.00	21.37	277	35	PK
2	4880.0000	34.93	9.80	44.73	54.00	9.27	283	236	AV
3	7320.0000	29.48	11.01	40.49	74.00	33.51	119	193	PK
4	7320.0000	27.00	9.73	36.73	54.00	17.27	203	45	AV
5	9760.0000	19.54	13.25	32.79	54.00	21.21	223	204	AV
6	9760.0000	27.27	13.25	40.52	74.00	33.48	145	277	PK
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[dBuV/m] - Level [dBuV/m]									



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Channel		BT-LE(1Mbps) 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	2479.9530	89.40	0.32	89.72			289	40	AV
2	2480.5611	90.54	0.34	90.88			175	40	PK
3	2483.5000	37.41	0.46	37.87	54.00	16.13	262	47	AV
4	2483.5000	45.83	0.46	46.29	74.00	27.71	120	118	PK
5	4960.0000	42.50	10.69	53.19	74.00	20.81	260	26	PK
6	4960.0000	34.60	10.69	45.29	54.00	8.71	127	80	AV
7	7440.0000	22.08	9.75	31.83	54.00	22.17	126	256	AV
8	7440.0000	31.07	9.75	40.82	74.00	33.18	153	251	PK
9	9920.0000	27.26	13.83	41.09	74.00	32.91	159	349	PK
10	9920.0000	19.57	13.83	33.40	54.00	20.60	238	177	AV
Vertical									
NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2480.0100	80.60	0.31	80.91			248	116	AV
2	2480.6371	81.71	0.34	82.05			203	116	PK
3	2483.5000	45.51	0.46	45.97	54.00	8.03	240	38	PK
4	2483.5000	36.63	0.46	37.09	54.00	16.91	180	247	AV
5	4960.0000	42.79	10.69	53.48	74.00	20.52	215	226	PK
6	4960.0000	34.43	10.69	45.12	54.00	8.88	224	89	AV
7	7440.0000	27.19	9.73	36.92	54.00	17.08	291	45	AV
8	7440.0000	29.72	9.75	39.47	74.00	34.53	207	80	PK
9	9920.0000	20.13	13.83	33.96	54.00	20.04	129	335	AV
10	9920.0000	27.16	13.83	40.99	74.00	33.01	159	178	PK
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[dBuV/m] - Level [dBuV/m]									



Channel		BT-LE(2Mbps) 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	36.67	-0.15	36.52	54.00	17.48	217	1	AV
2	2390.0000	45.37	-0.15	45.22	74.00	28.78	284	321	PK
3	2401.9692	85.60	-0.03	85.57			118	20	AV
4	2402.5963	87.48	-0.02	87.46			214	14	PK
5	4804.0000	34.88	9.29	44.17	54.00	9.83	213	321	AV
6	4804.0000	43.16	9.29	52.45	74.00	21.55	219	149	PK
7	7206.0000	29.13	12.81	41.94	74.00	32.06	112	99	PK
8	7206.0000	20.86	12.81	33.67	54.00	20.33	241	163	AV
9	9608.0000	19.89	13.32	33.21	54.00	20.79	145	231	AV
10	9608.0000	27.35	13.32	40.67	74.00	33.33	201	6	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	37.06	-0.15	36.91	54.00	17.09	157	64	AV
2	2390.0000	44.44	-0.15	44.29	74.00	29.71	167	130	PK
3	2402.0642	82.13	-0.03	82.10			230	202	RMS
4	2402.5583	83.90	-0.02	83.88			171	202	PK
5	4804.0000	44.15	9.29	53.44	74.00	20.56	243	144	PK
6	4804.0000	35.20	9.29	44.49	54.00	9.51	262	198	AV
7	7206.0000	20.82	12.81	33.63	54.00	20.37	138	306	AV
8	7206.0000	29.06	12.81	41.87	74.00	32.13	154	194	PK
9	9608.0000	27.44	13.32	40.76	74.00	33.24	241	76	PK
10	9608.0000	20.22	13.32	33.54	54.00	20.46	162	243	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[dBuV/m] - Level [dBuV/m]									



Channel		BT-LE(2Mbps) 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	42.27	9.80	52.07	74.00	21.93	310	284	PK
2	4880.0000	34.50	9.80	44.30	54.00	9.70	243	41	AV
3	7320.0000	21.38	11.01	32.39	54.00	21.61	149	266	AV
4	7320.0000	29.61	11.01	40.62	74.00	33.38	276	182	PK
5	9760.0000	26.80	13.25	40.05	74.00	33.95	233	172	PK
6	9760.0000	19.50	13.25	32.75	54.00	21.25	260	128	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	43.38	9.80	53.18	74.00	20.82	126	104	PK
2	4880.0000	35.15	9.80	44.95	54.00	9.05	199	202	AV
3	7320.0000	29.94	11.01	40.95	74.00	33.05	190	94	PK
4	7320.0000	27.52	9.73	37.25	54.00	16.75	251	46	AV
5	9760.0000	19.80	13.25	33.05	54.00	20.95	165	324	AV
6	9760.0000	27.97	13.25	41.22	74.00	32.78	146	65	PK
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[dBuV/m] - Level [dBuV/m]									



Channel		BT-LE(2Mbps) 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	2480.1430	89.10	0.32	89.42			129	44	AV
2	2480.6371	90.61	0.34	90.95			124	44	PK
3	2483.5000	37.37	0.46	37.83	54.00	16.17	269	153	AV
4	2483.5000	45.97	0.46	46.43	74.00	27.57	285	153	PK
5	4960.0000	43.09	10.69	53.78	74.00	20.22	157	275	PK
6	4960.0000	34.17	10.69	44.86	54.00	9.14	185	343	AV
7	7440.0000	21.71	9.75	31.46	54.00	22.54	249	158	AV
8	7440.0000	29.17	9.75	38.92	74.00	35.08	302	188	PK
9	9920.0000	27.58	13.83	41.41	74.00	32.59	204	138	PK
10	9920.0000	19.90	13.83	33.73	54.00	20.27	180	173	AV
Vertical									
NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	2480.0860	80.39	0.32	80.71			144	111	AV
2	2480.5611	81.57	0.34	81.91			182	111	PK
3	2483.5000	36.75	0.46	37.21	54.00	16.79	236	356	AV
4	2483.5000	45.04	0.46	45.50	74.00	28.50	121	352	PK
5	4960.0000	42.88	10.69	53.57	74.00	20.43	145	32	PK
6	4960.0000	35.28	10.69	45.97	54.00	8.03	223	280	AV
7	7440.0000	26.39	9.73	36.12	54.00	17.88	129	130	AV
8	7440.0000	30.12	9.75	39.87	74.00	34.13	305	145	PK
9	9920.0000	27.30	13.83	41.13	74.00	32.87	264	66	PK
10	9920.0000	19.73	13.83	33.56	54.00	20.44	122	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[dBuV/m] - Level [dBuV/m]									



3.3 6dB BANDWIDTH MEASUREMENT

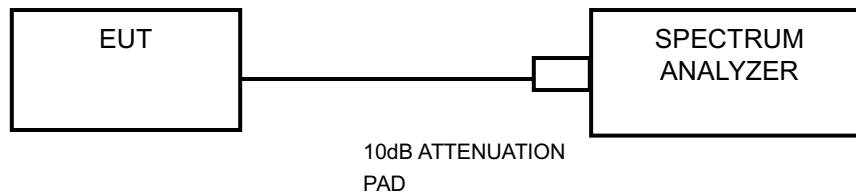
3.3.1 Limits

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

3.3.2 Measurement procedure

- Set resolution bandwidth (RBW) = 100KHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum 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

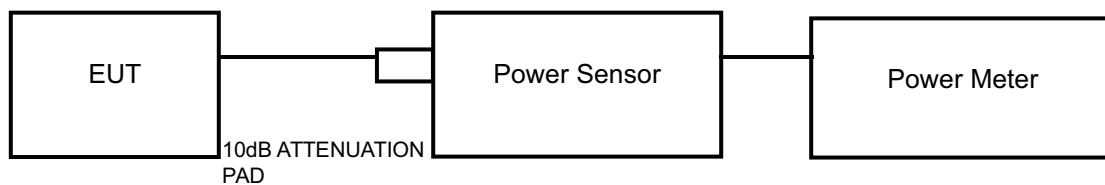
3.4.1 Limits

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

3.4.2 Measurement procedure

- 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.
- An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor 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

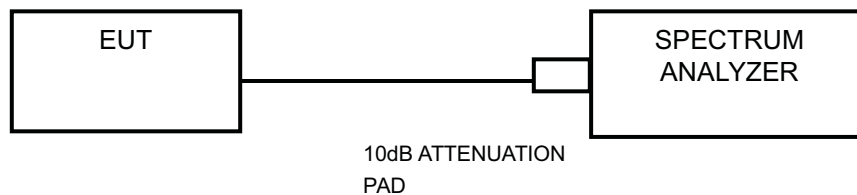
3.5.1 Limits

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

3.5.2 Measurement procedure

- Set instrument center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set RBW to: 3KHz
- Set VBW $\geq 3 \times$ RBW.
- Detector = peak
- Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- Sweep time = auto couple.
- 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 AND BAND EDGE MEASUREMENTS

3.6.1 Limits

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

3.6.2 Measurement procedure

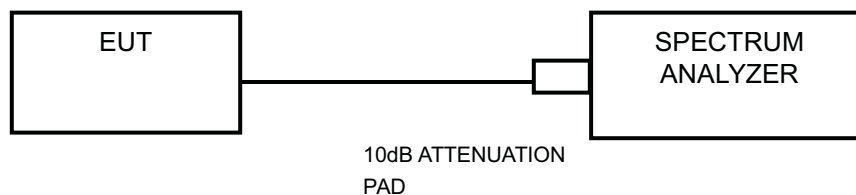
Measurement Procedure -Reference Level

- Set the RBW = 100 kHz.
- Set the VBW $\geq$ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- 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

- Set RBW = 100 kHz.
- Set VBW $\geq$ 300 kHz.
- Set span to encompass the spectrum to be examined
- Detector = peak.
- Trace Mode = max hold.
- Sweep = auto couple.

3.6.3 Test setup



3.6.4 Test result

Please refer Annex A.

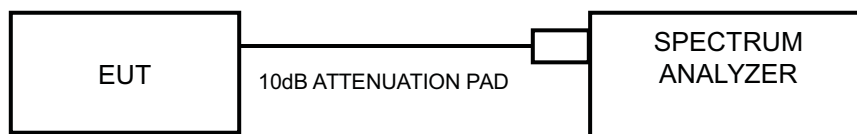


3.7 OCCUPIED BANDWIDTH MEASUREMENT

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

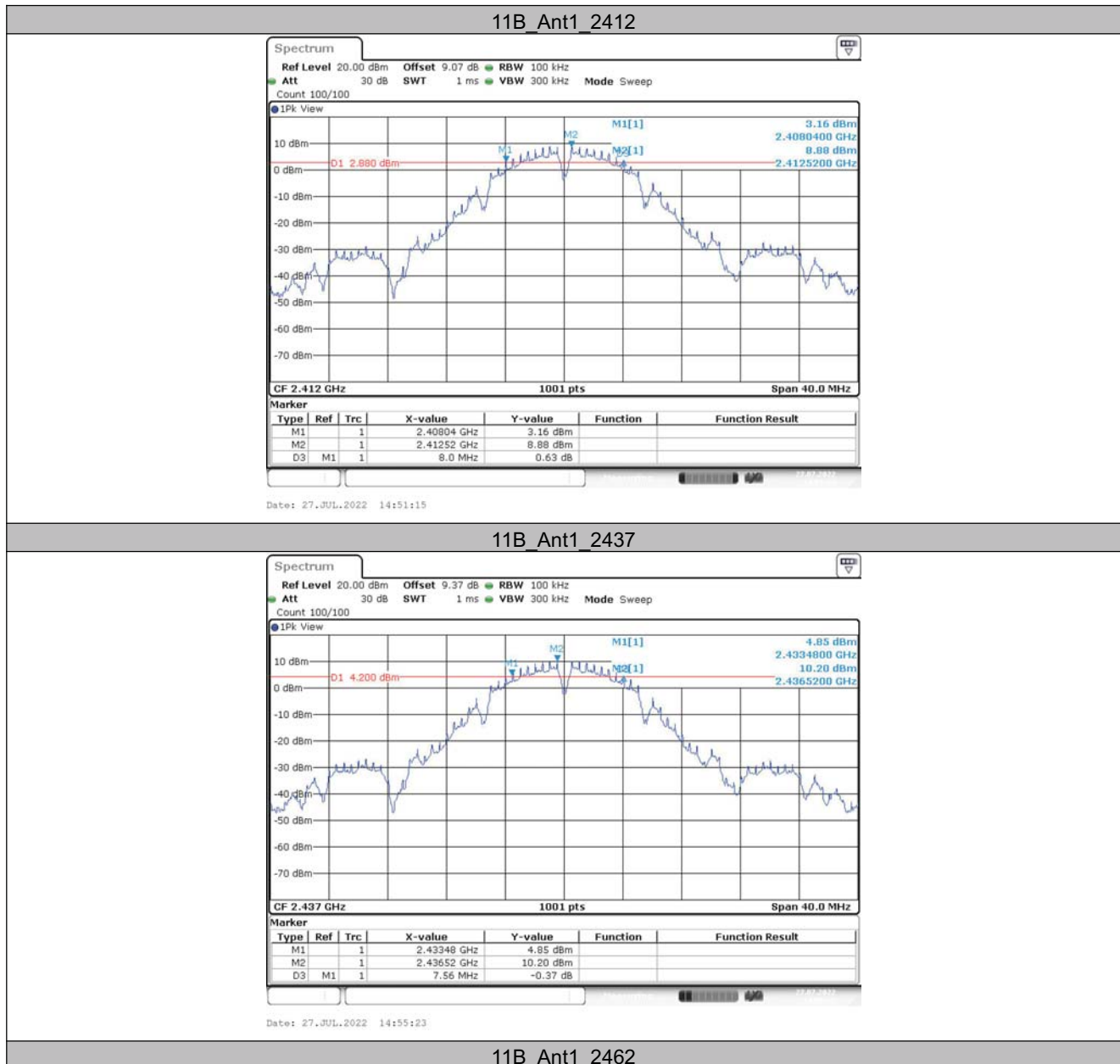
6.1.1 Test Result

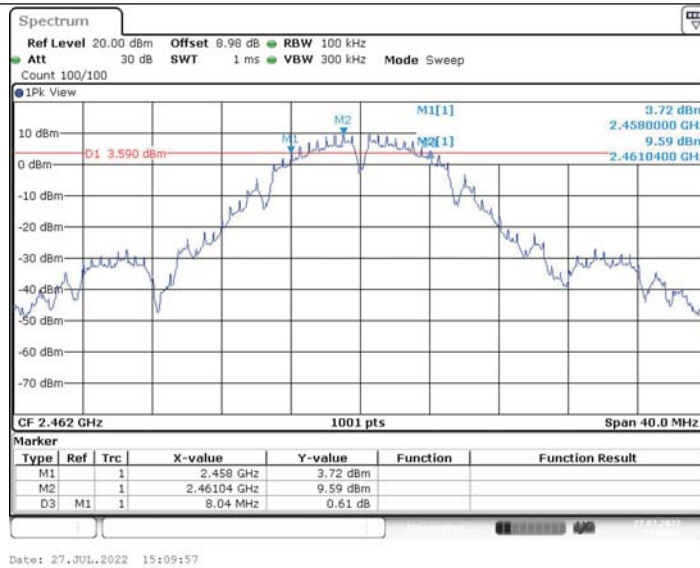
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.00	2408.04	2416.04	0.5	PASS
		2437	7.56	2433.48	2441.04	0.5	PASS
		2462	8.04	2458.00	2466.04	0.5	PASS
11G	Ant1	2412	15.48	2404.44	2419.92	0.5	PASS
		2437	15.16	2429.44	2444.60	0.5	PASS
		2462	15.16	2454.44	2469.60	0.5	PASS
11N20SISO	Ant1	2412	15.12	2404.48	2419.60	0.5	PASS
		2437	15.16	2429.44	2444.60	0.5	PASS
		2462	15.20	2454.44	2469.64	0.5	PASS
11N40SISO	Ant1	2422	35.20	2404.48	2439.68	0.5	PASS
		2437	35.12	2419.48	2454.60	0.5	PASS
		2452	35.12	2434.48	2469.60	0.5	PASS

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.71	2401.68	2402.39	0.5	PASS
		2440	0.71	2439.69	2440.40	0.5	PASS
		2480	0.72	2479.69	2480.40	0.5	PASS
BLE_2M	Ant1	2402	1.12	2401.49	2402.61	0.5	PASS
		2440	1.11	2439.50	2440.60	0.5	PASS
		2480	1.11	2479.50	2480.61	0.5	PASS

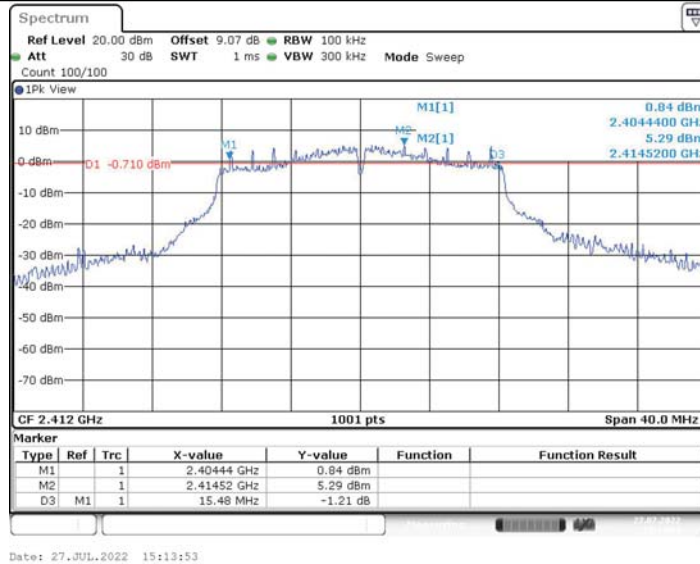


6.1.2 Test Graphs

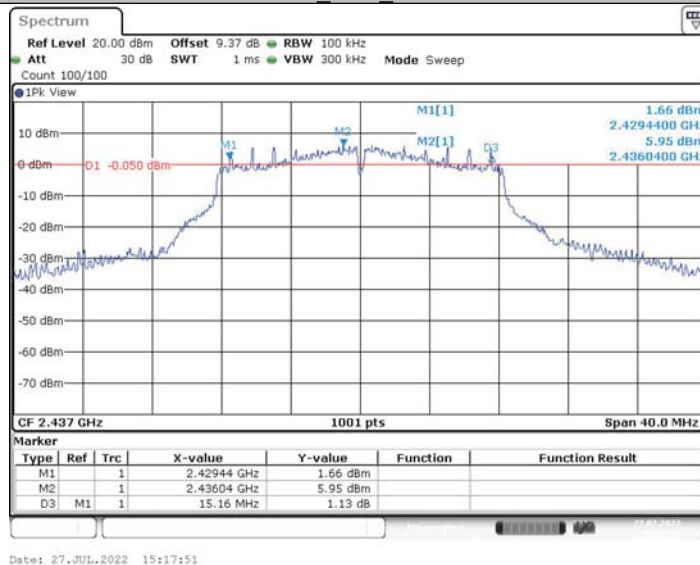




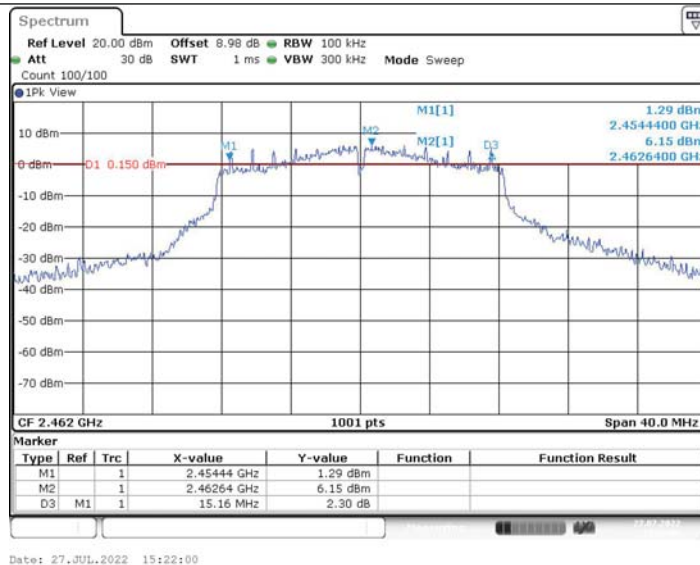
11G_Ant1_2412



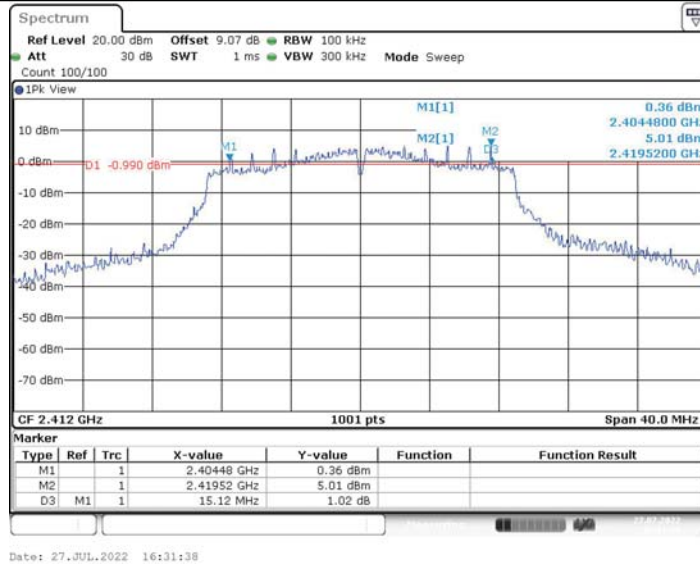
11G_Ant1_2437



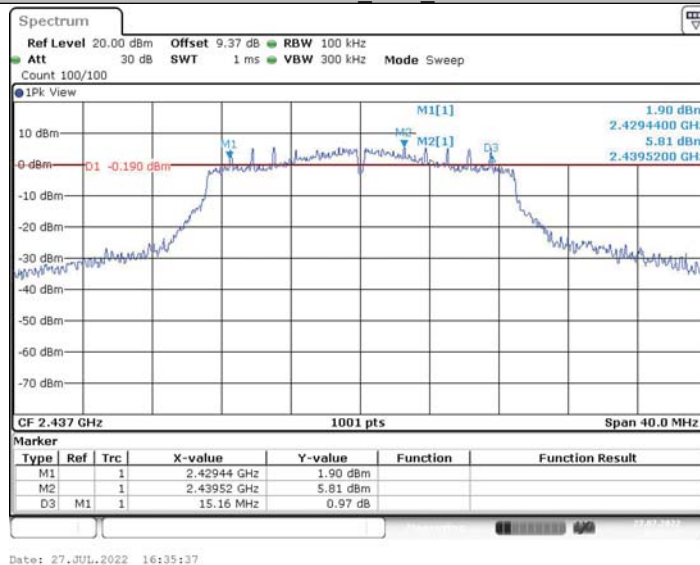
11G_Ant1_2462



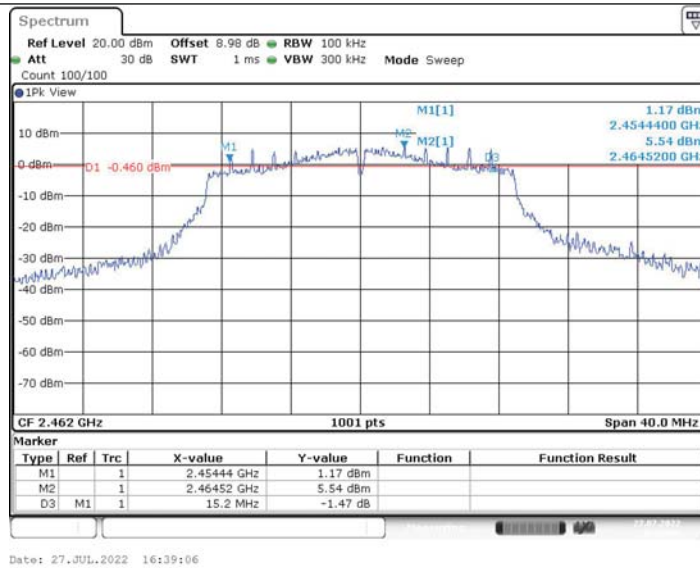
11N20SISO_Ant1_2412



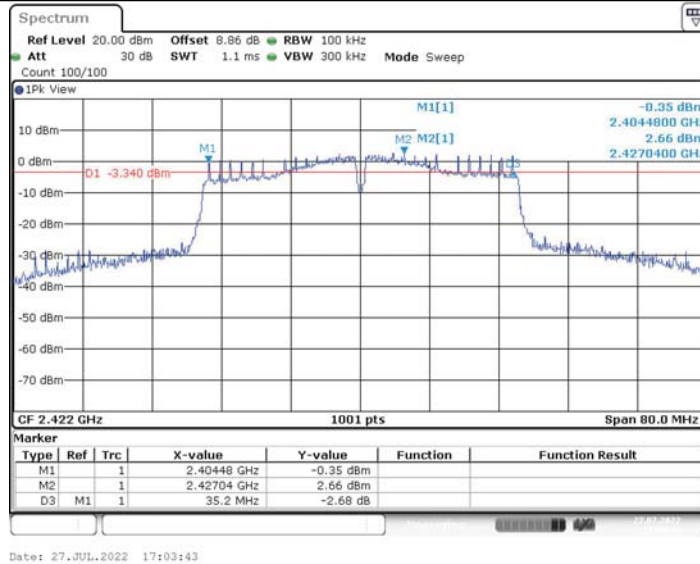
11N20SISO_Ant1_2437



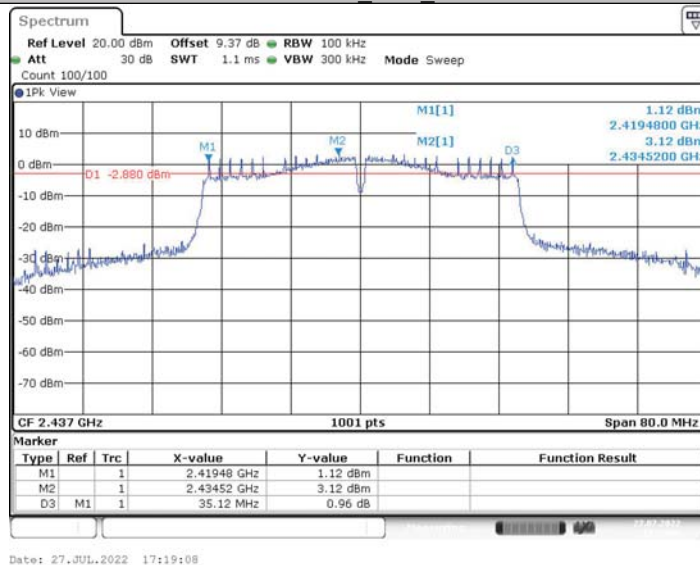
11N20SISO_Ant1_2462



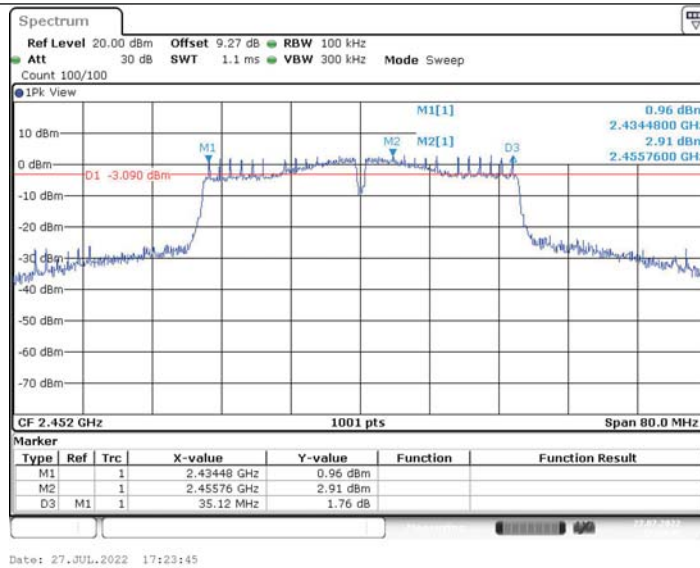
11N40SISO_Ant1_2422



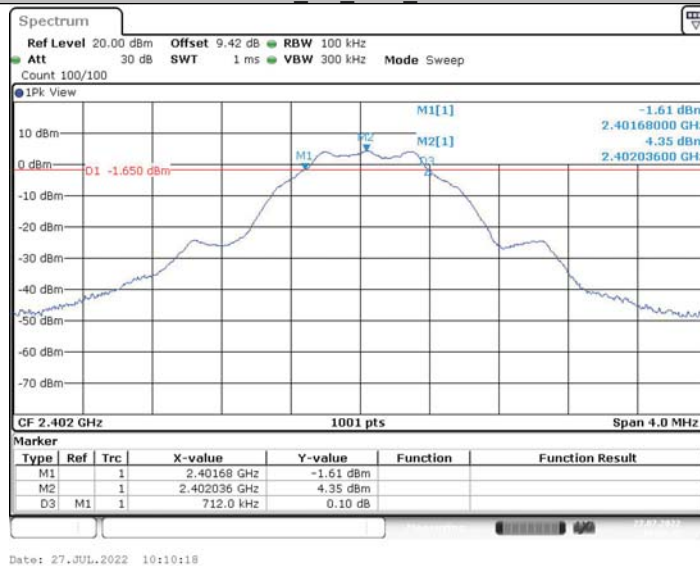
11N40SISO_Ant1_2437



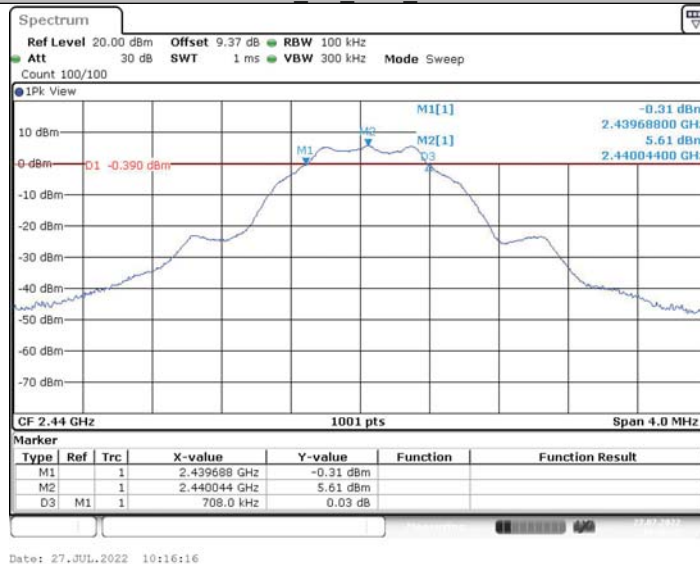
11N40SISO_Ant1_2452



BLE 1M Ant1 2402

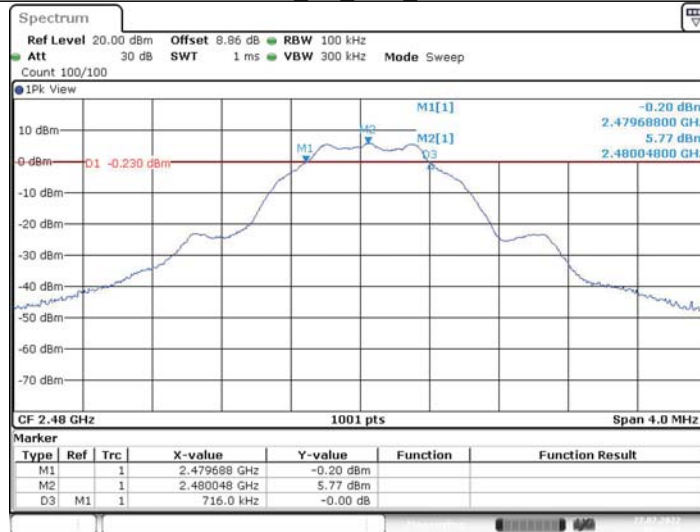


BLE 1M Ant1 2440

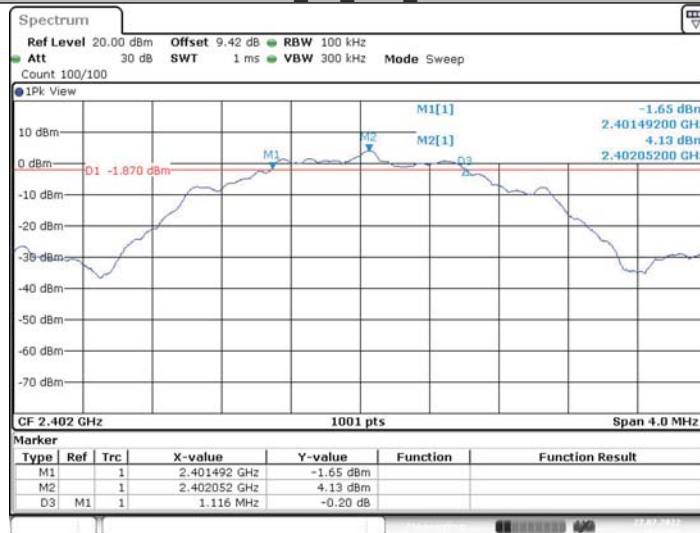




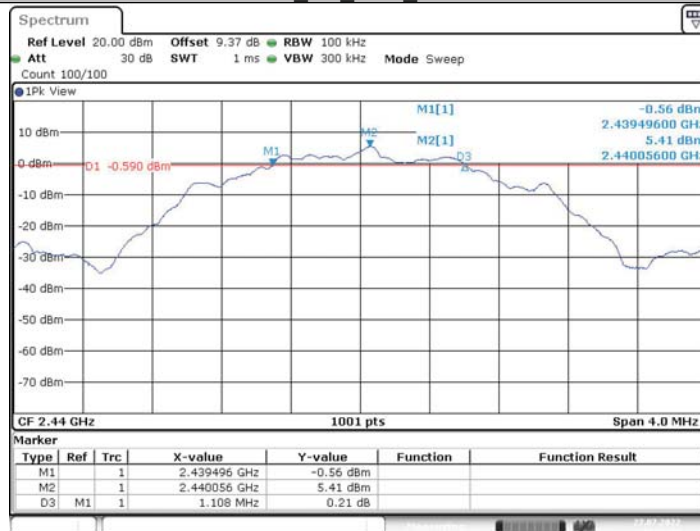
BLE_1M_Ant1_2480

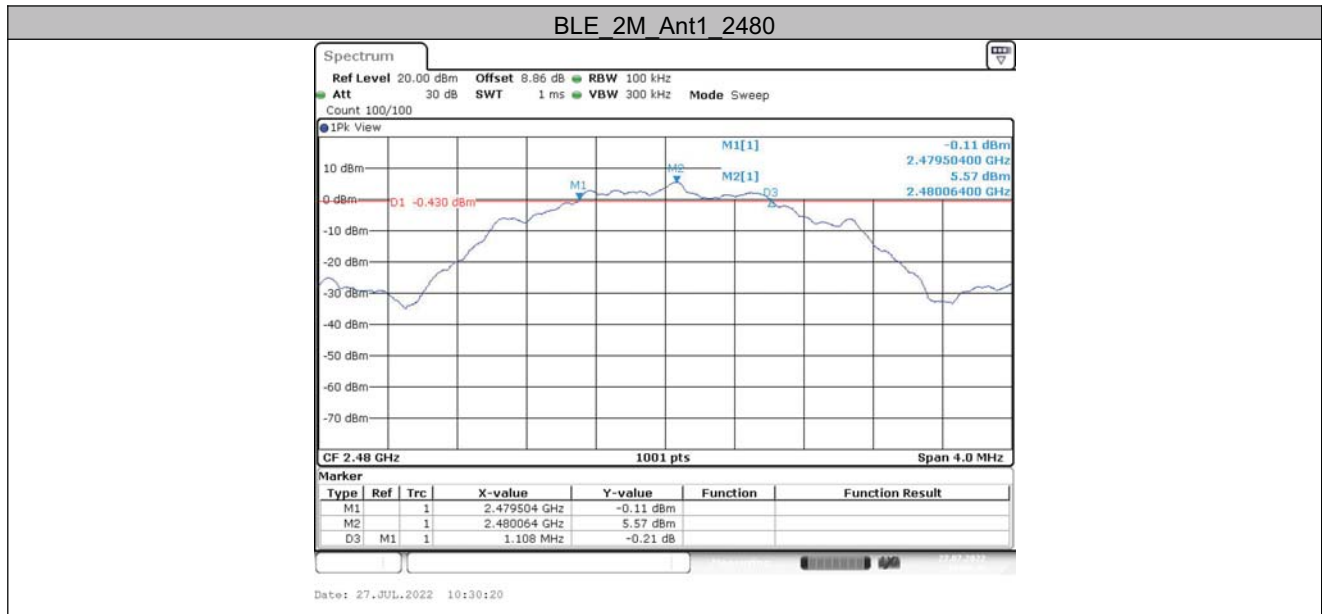


BLE_2M_Ant1_2402



BLE_2M_Ant1_2440







6.2 Occupied Channel Bandwidth (For reference)

6.2.1 Test Result

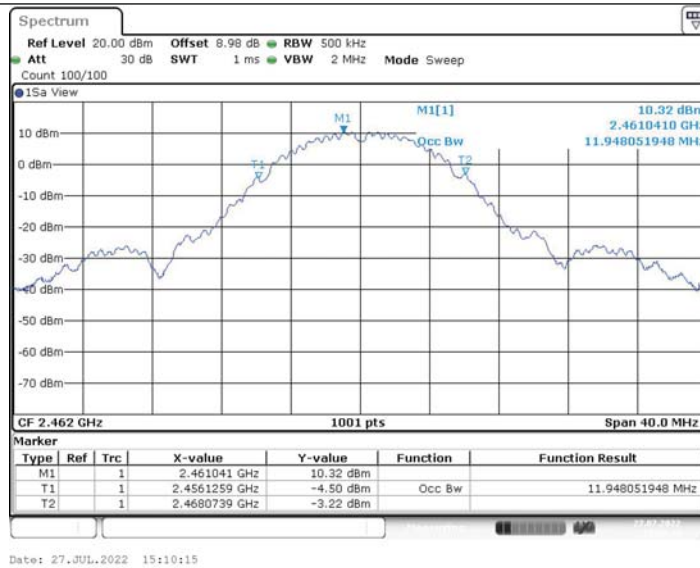
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.868	2406.206	2418.074	---	---
		2437	11.948	2431.046	2442.994	---	---
		2462	11.948	2456.126	2468.074	---	---
11G	Ant1	2412	17.622	2403.329	2420.951	---	---
		2437	17.542	2428.209	2445.751	---	---
		2462	17.343	2453.409	2470.751	---	---
11N20SISO	Ant1	2412	18.581	2402.889	2421.471	---	---
		2437	18.501	2427.809	2446.311	---	---
		2462	18.422	2452.929	2471.351	---	---
11N40SISO	Ant1	2422	36.364	2404.018	2440.382	---	---
		2437	36.444	2418.938	2455.382	---	---
		2452	36.603	2433.858	2470.462	---	---

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.059	2401.516	2402.575	---	---
		2440	1.059	2439.520	2440.579	---	---
		2480	1.059	2479.524	2480.583	---	---
BLE_2M	Ant1	2402	2.07	2401.017	2403.087	---	---
		2440	2.07	2439.021	2441.091	---	---
		2480	2.07	2479.025	2481.095	---	---

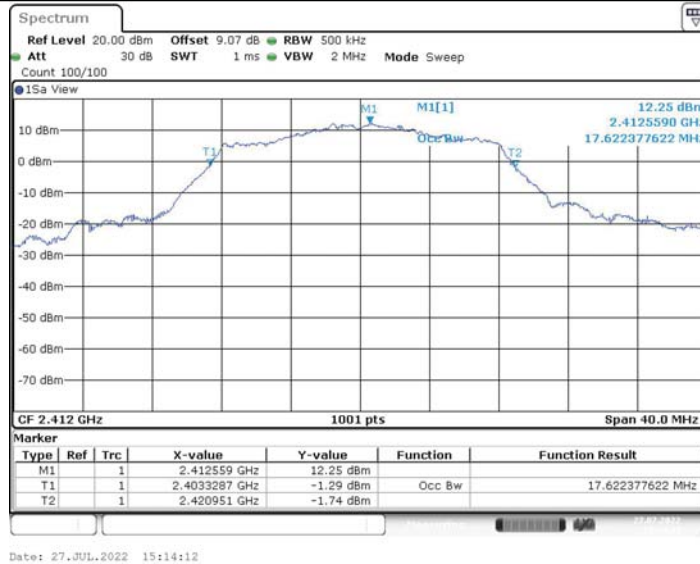


6.2.2 Test Graphs





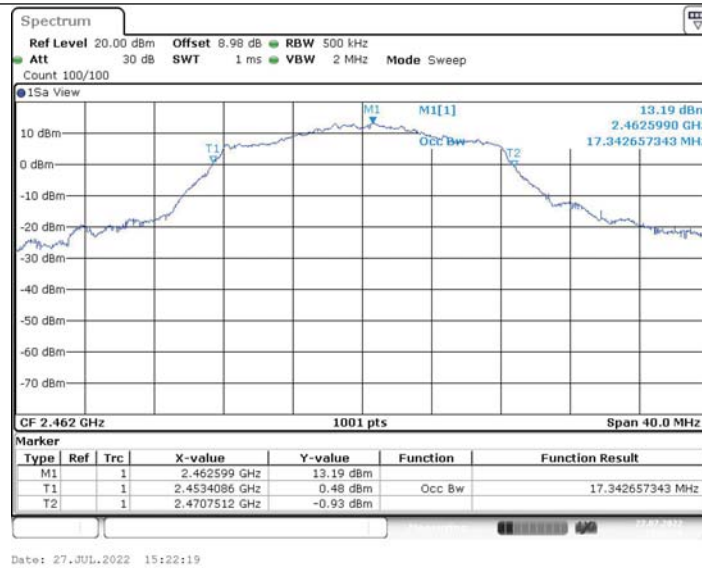
11G_Ant1_2412



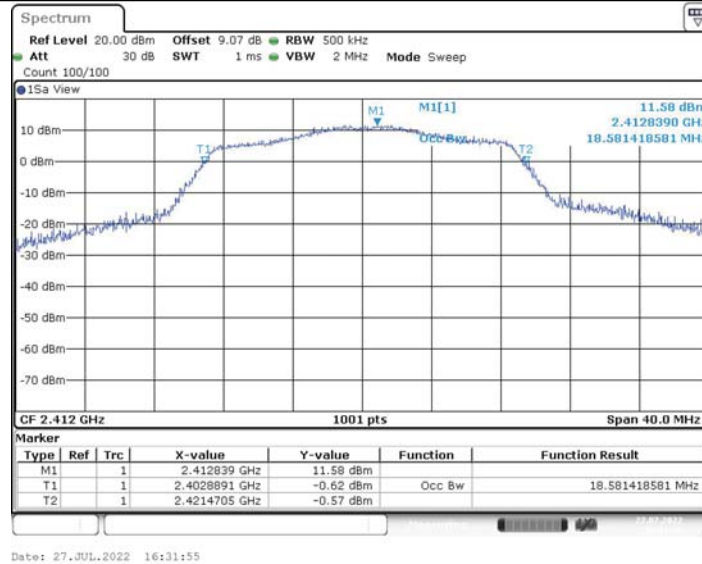
11G_Ant1_2437



11G_Ant1_2462



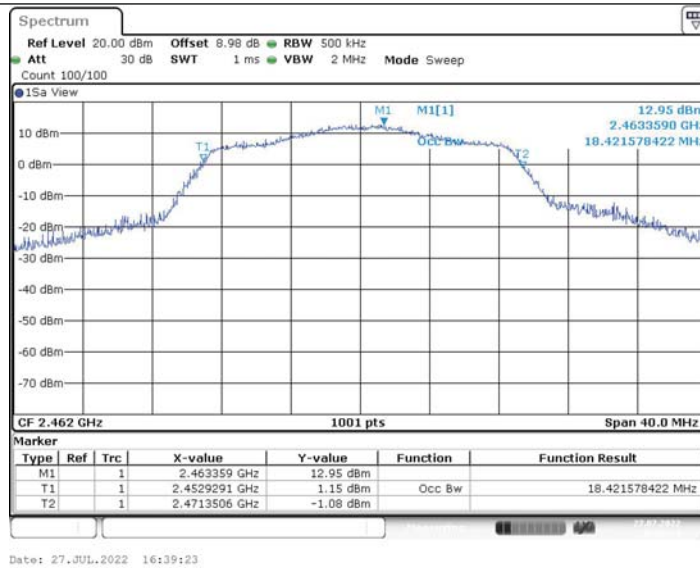
11N20SISO_Ant1_2412



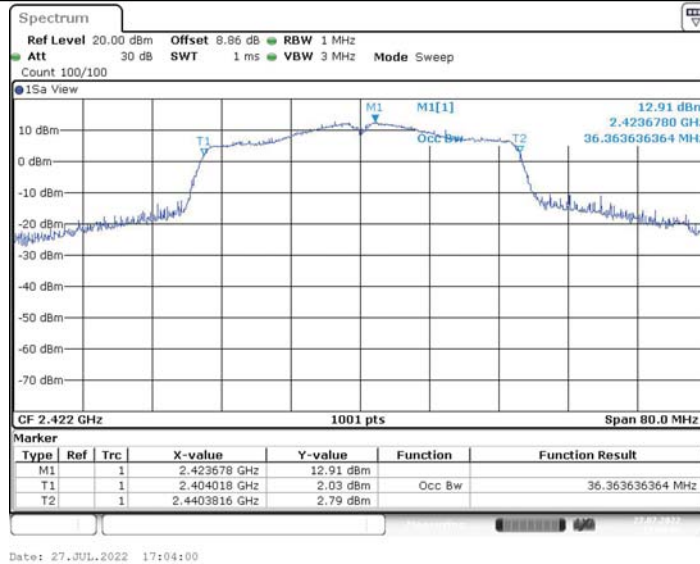
11N20SISO_Ant1_2437



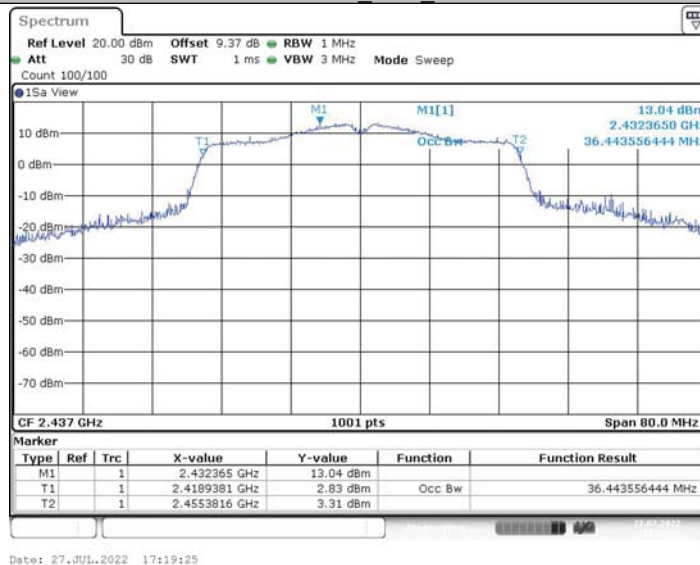
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



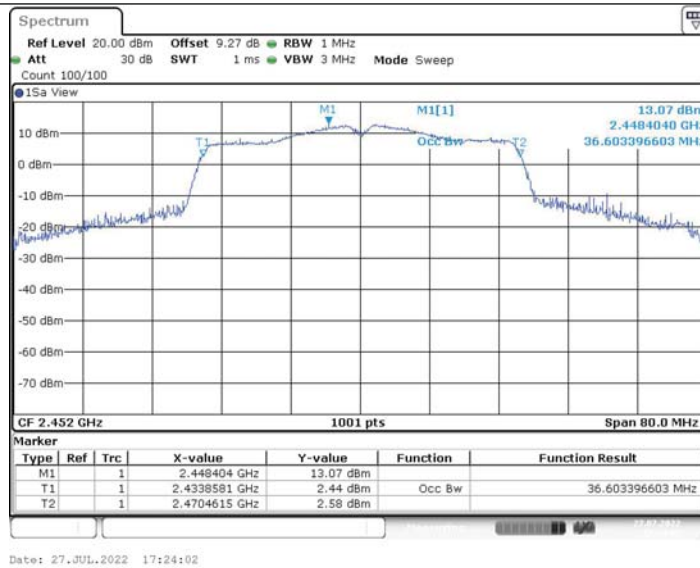
11N40SISO_Ant1_2452



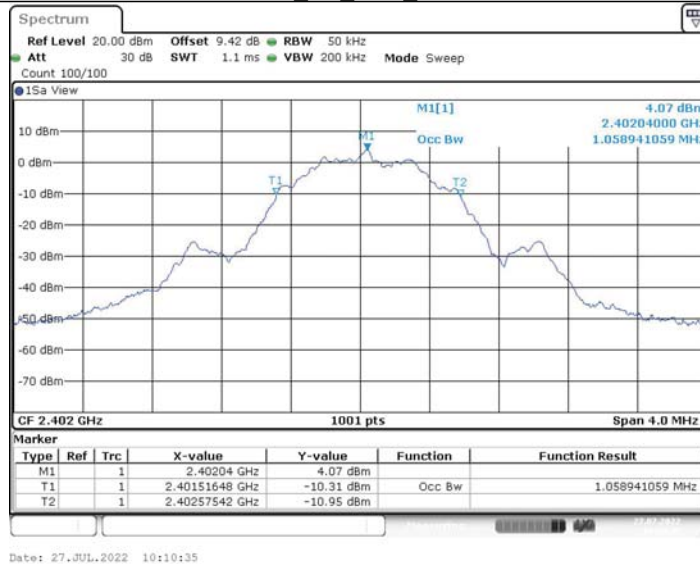
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BLE 1M Ant1 2402



BLE 1M Ant1 2440

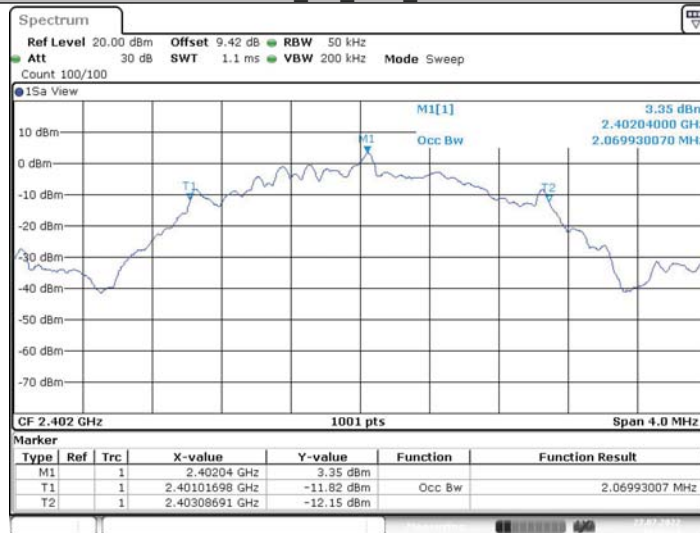




BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

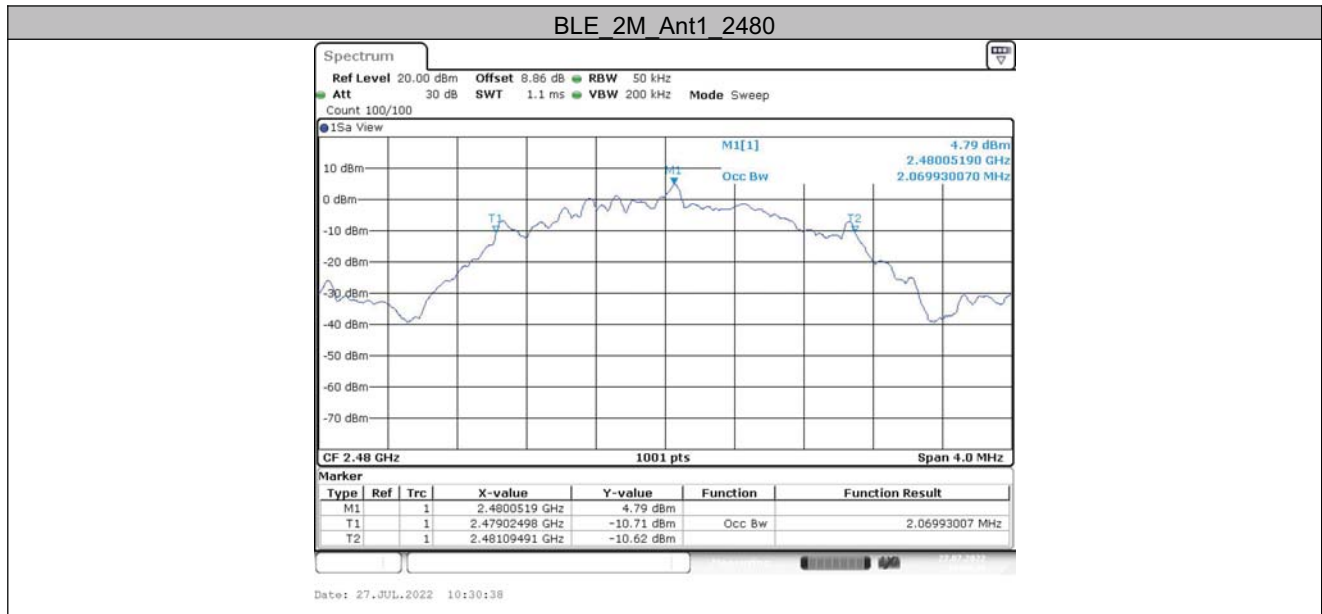




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6.3 CONDUCTED OUTPUT POWER

6.3.1 Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
11B	Ant1	2412	15.86	≤30.00	18.12	≤36.00	PASS
		2437	16.87	≤30.00	19.13	≤36.00	PASS
		2462	16.66	≤30.00	18.92	≤36.00	PASS
11G	Ant1	2412	15.48	≤30.00	17.74	≤36.00	PASS
		2437	16.29	≤30.00	18.55	≤36.00	PASS
		2462	16.36	≤30.00	18.62	≤36.00	PASS
11N20SISO	Ant1	2412	14.93	≤30.00	17.19	≤36.00	PASS
		2437	15.86	≤30.00	18.12	≤36.00	PASS
		2462	15.75	≤30.00	18.01	≤36.00	PASS
11N40SISO	Ant1	2422	15.06	≤30.00	17.32	≤36.00	PASS
		2437	15.81	≤30.00	18.07	≤36.00	PASS
		2452	15.59	≤30.00	17.85	≤36.00	PASS

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.73	≤30	5.99	≤36	PASS
		2440	4.98	≤30	7.24	≤36	PASS
		2480	5.15	≤30	7.41	≤36	PASS
BLE_2M	Ant1	2402	3.70	≤30	5.96	≤36	PASS
		2440	4.97	≤30	7.23	≤36	PASS
		2480	5.16	≤30	7.42	≤36	PASS

6.3.2 Test Result Average

Test Mode	Antenna	Frequency[MHz]	Conducted Average power [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	14.13	≤30.00	2.26	16.39	≤36.00	PASS
		2437	14.7	≤30.00	2.26	16.96	≤36.00	PASS
		2462	14.98	≤30.00	2.26	17.24	≤36.00	PASS
11G	Ant1	2412	13.41	≤30.00	2.26	15.67	≤36.00	PASS
		2437	14.02	≤30.00	2.26	16.28	≤36.00	PASS
		2462	14.35	≤30.00	2.26	16.61	≤36.00	PASS
11N20SISO	Ant1	2412	13.01	≤30.00	2.26	15.27	≤36.00	PASS
		2437	13.58	≤30.00	2.26	15.84	≤36.00	PASS
		2462	13.9	≤30.00	2.26	16.16	≤36.00	PASS
11N40SISO	Ant1	2422	13.31	≤30.00	2.26	15.57	≤36.00	PASS
		2437	13.49	≤30.00	2.26	15.75	≤36.00	PASS
		2452	13.77	≤30.00	2.26	16.03	≤36.00	PASS

Test Mode	Antenna	Frequency[MHz]	Conducted Average power [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
BLE_1M	Ant1	2402	2.05	≤30.00	2.26	4.31	≤36.00	PASS
		2440	3.45	≤30.00	2.26	5.71	≤36.00	PASS
		2480	3.53	≤30.00	2.26	5.79	≤36.00	PASS



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BLE_2M	Ant1	2402	1.99	≤30.00	2.26	4.25	≤36.00	PASS
		2440	3.41	≤30.00	2.26	5.67	≤36.00	PASS
		2480	3.49	≤30.00	2.26	5.75	≤36.00	PASS



6.4 POWER SPECTRAL DENSITY MEASUREMENT

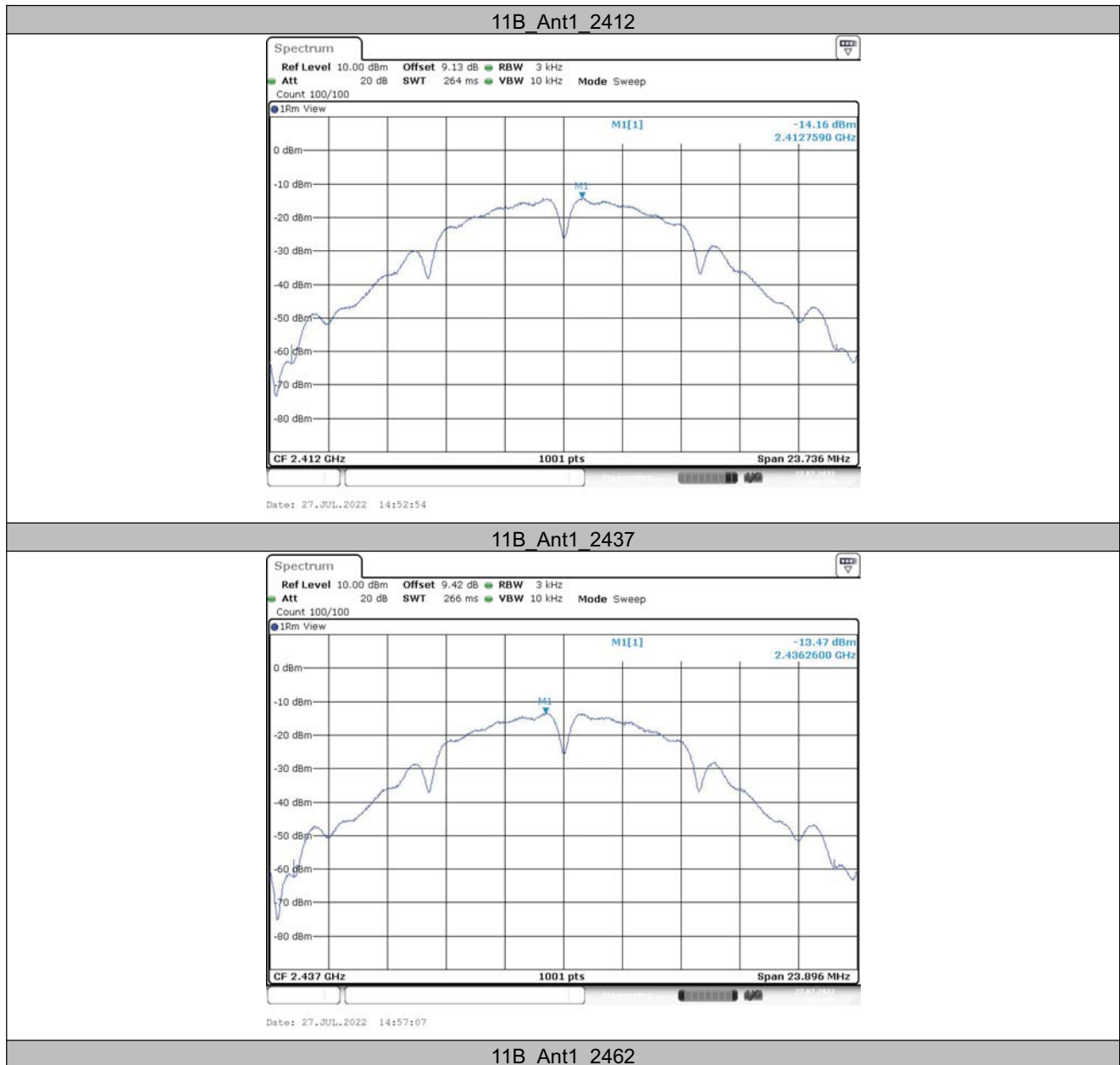
6.4.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-14.16	≤8.00	PASS
		2437	-13.47	≤8.00	PASS
		2462	-13.66	≤8.00	PASS
11G	Ant1	2412	-14.46	≤8.00	PASS
		2437	-13.68	≤8.00	PASS
		2462	-13.54	≤8.00	PASS
11N20SISO	Ant1	2412	-16.07	≤8.00	PASS
		2437	-15.38	≤8.00	PASS
		2462	-14.93	≤8.00	PASS
11N40SISO	Ant1	2422	-19.26	≤8.00	PASS
		2437	-18.68	≤8.00	PASS
		2452	-18.9	≤8.00	PASS

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.24	≤8.00	PASS
		2440	-8.08	≤8.00	PASS
		2480	-7.86	≤8.00	PASS
BLE_2M	Ant1	2402	-12.32	≤8.00	PASS
		2440	-10.83	≤8.00	PASS
		2480	-10.64	≤8.00	PASS

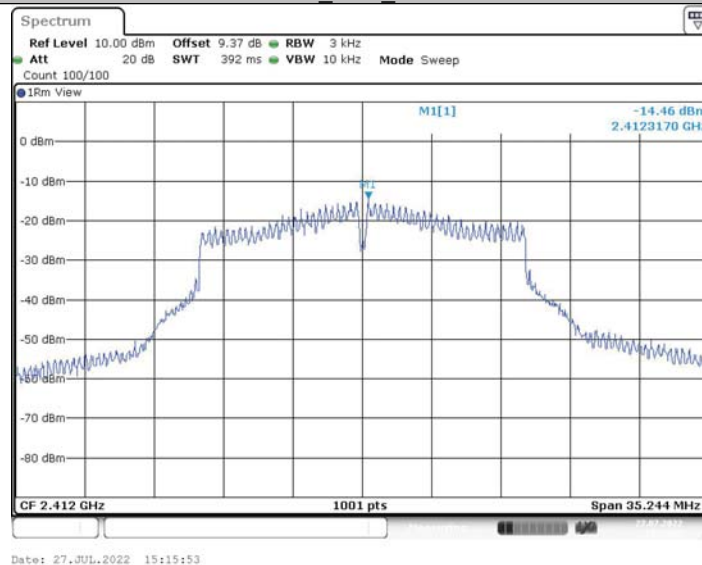


6.4.2 Test Graphs

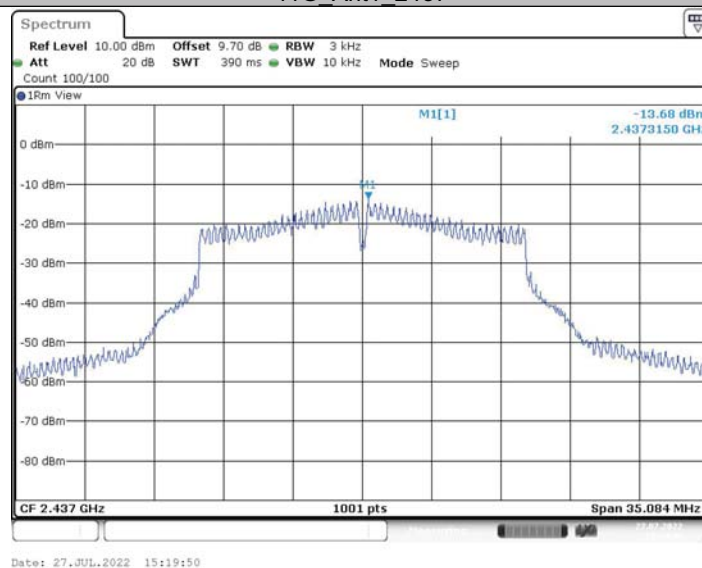




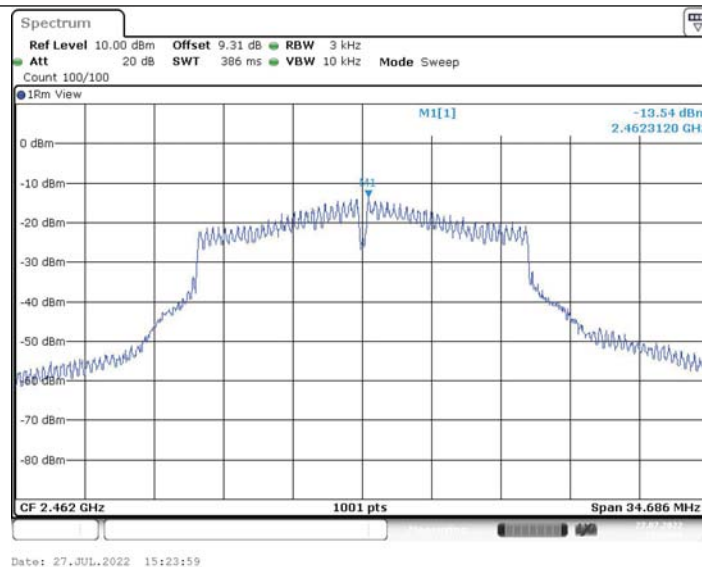
11G_Ant1_2412



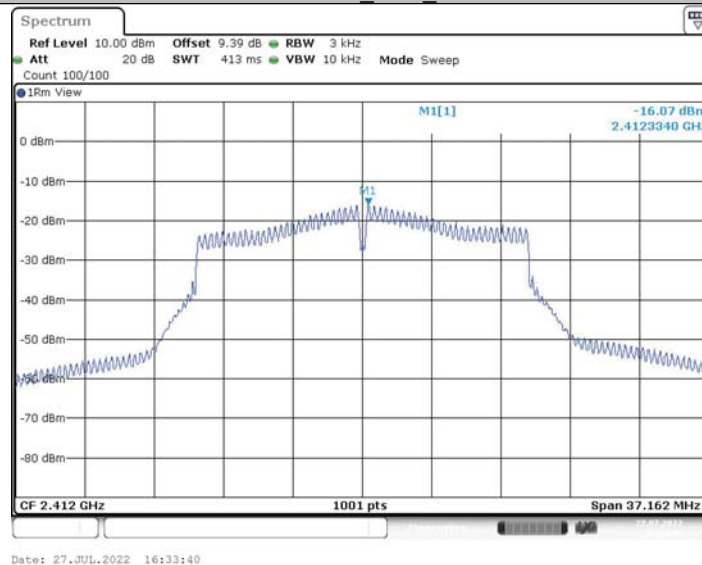
11G_Ant1_2437



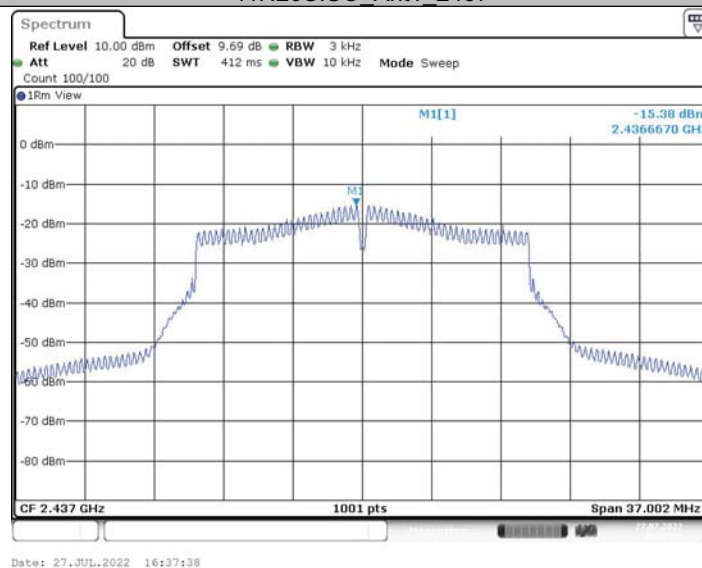
11G_Ant1_2462



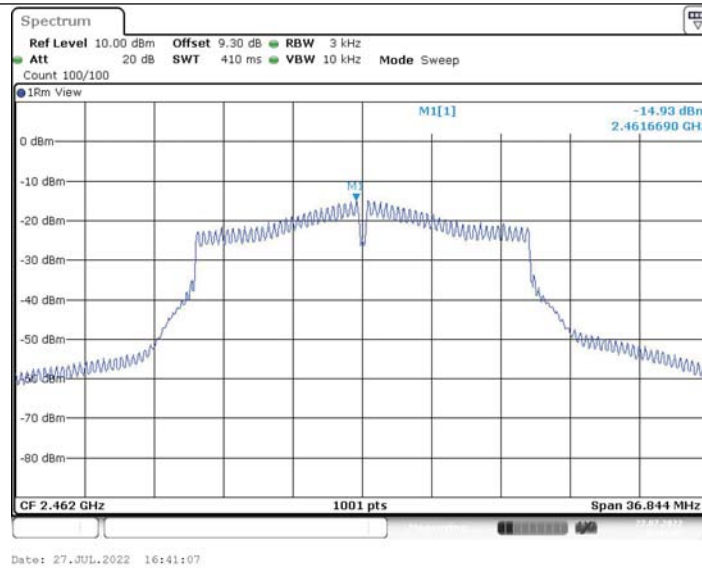
11N20SISO_Ant1_2412



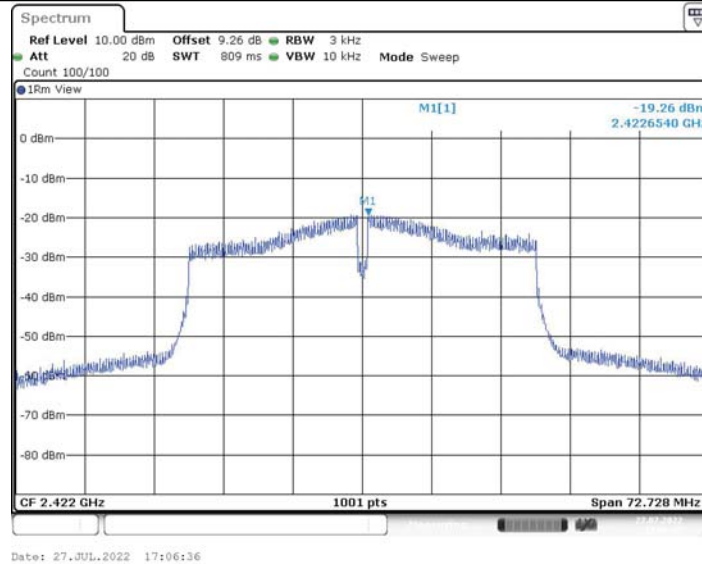
11N20SISO_Ant1_2437



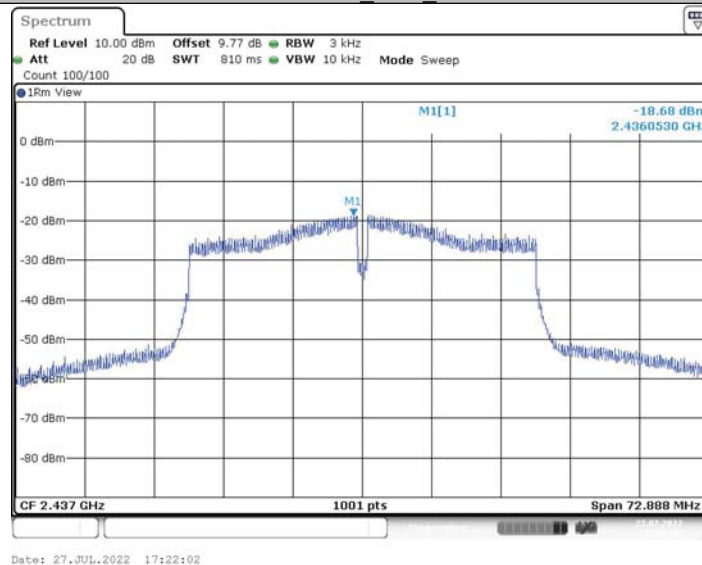
11N20SISO_Ant1_2462



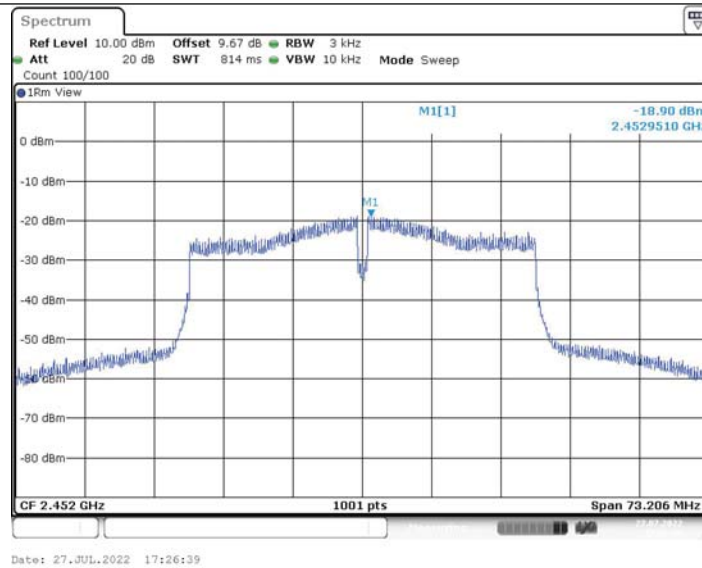
11N40SISO_Ant1_2422



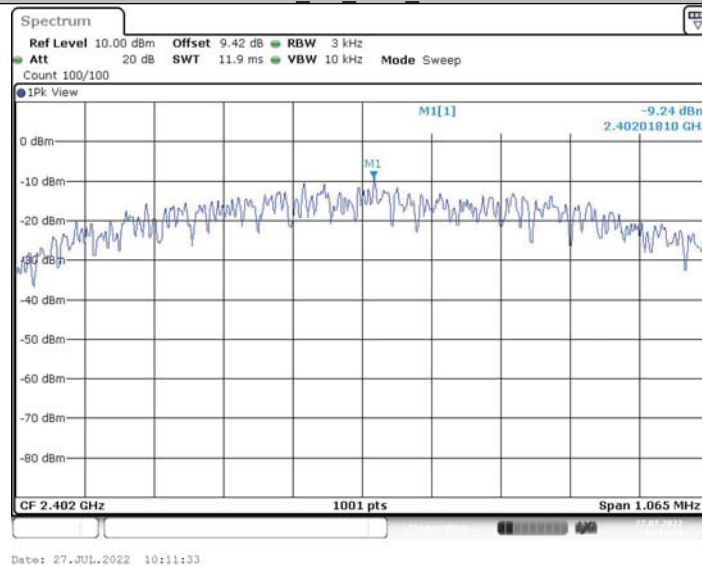
11N40SISO_Ant1_2437



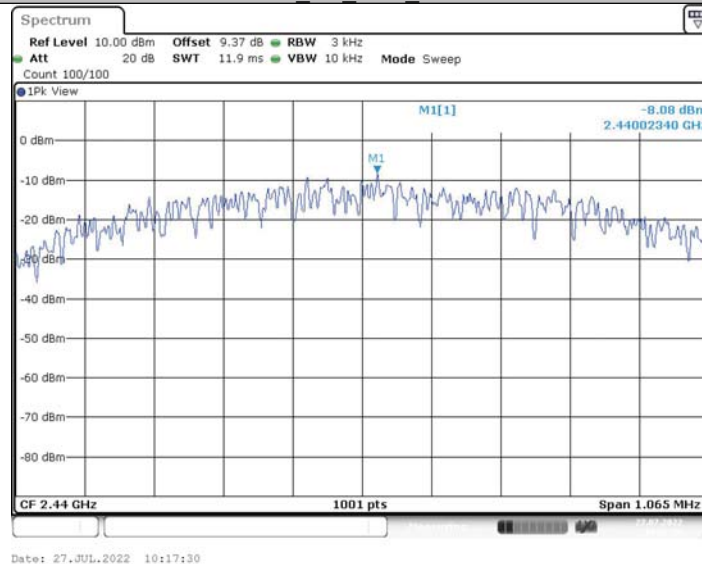
11N40SISO_Ant1_2452



BLE_1M_Ant1_2402

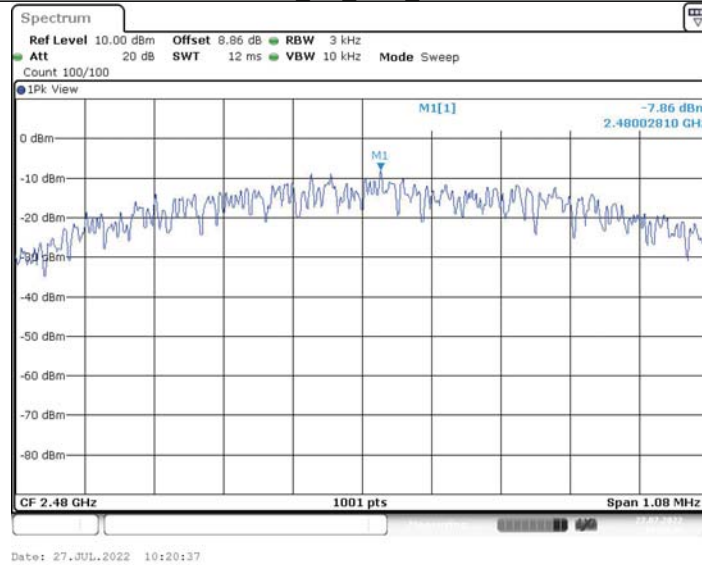


BLE_1M_Ant1_2440

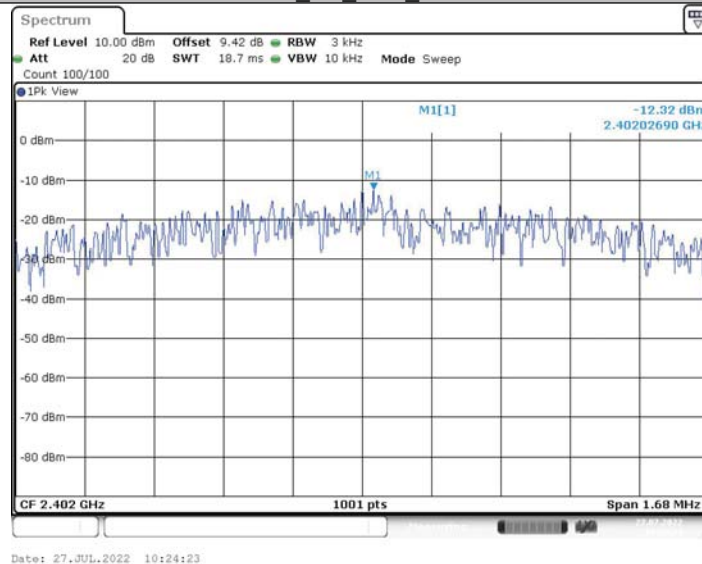




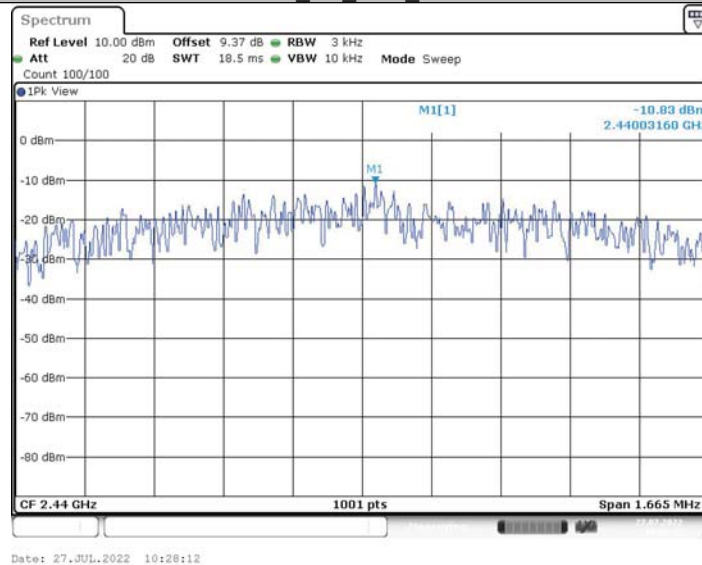
BLE_1M_Ant1_2480

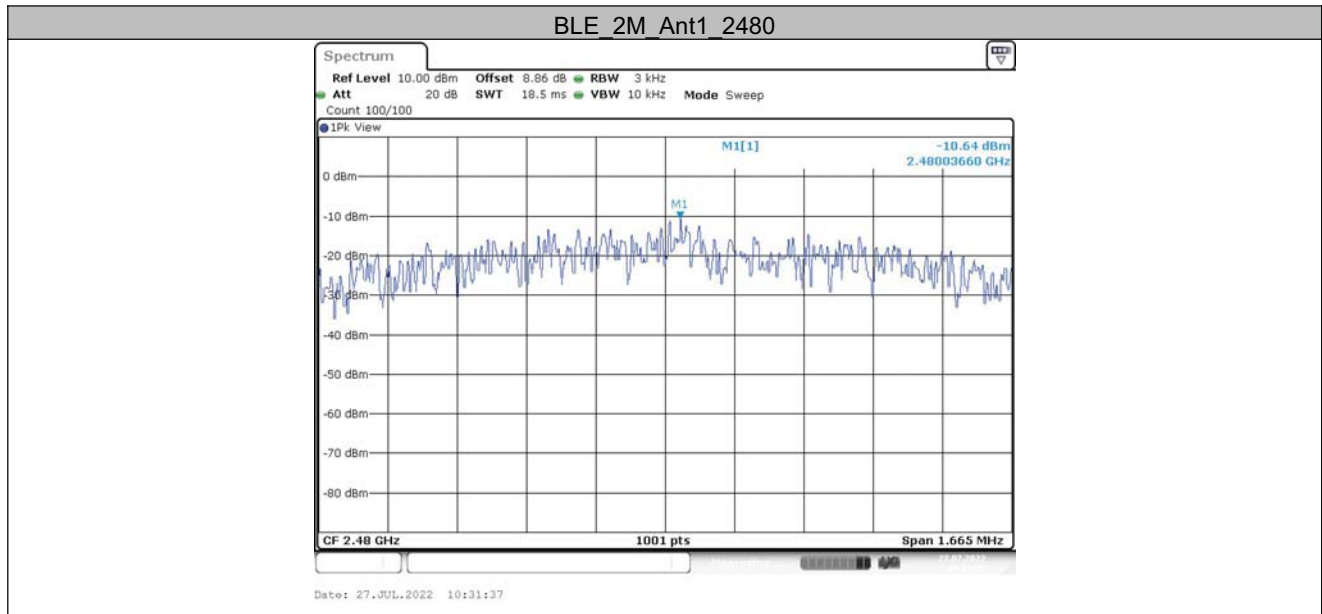


BLE_2M_Ant1_2402



BLE_2M_Ant1_2440







6.5 REFERENCE LEVEL MEASUREMENT

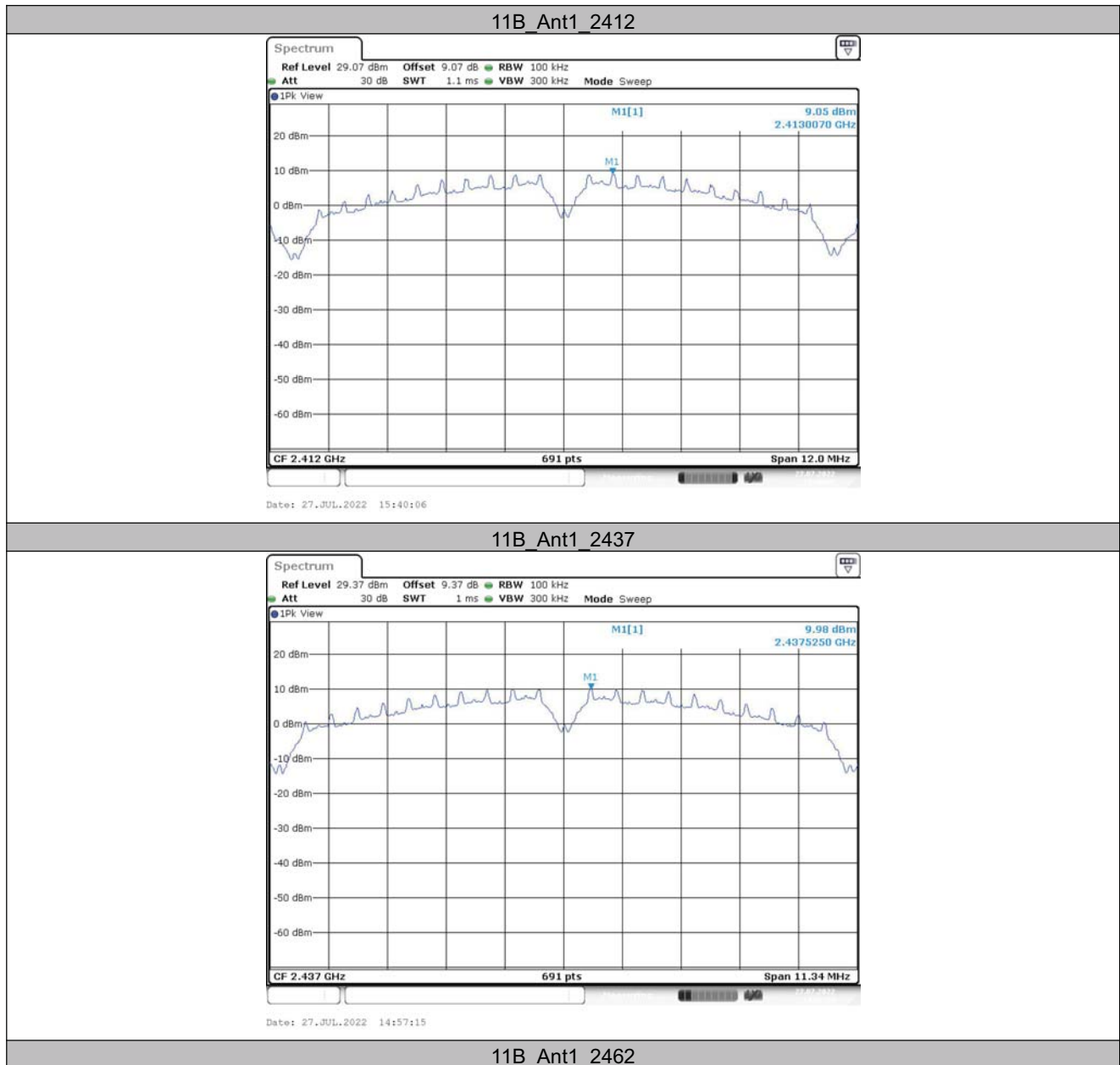
6.5.1 Test Result

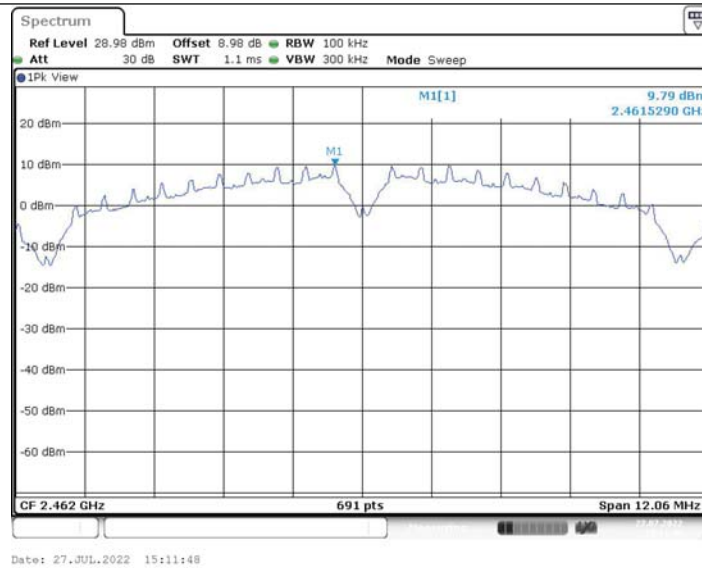
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2413.01	9.05
		2437	2437.53	9.98
		2462	2461.53	9.79
11G	Ant1	2412	2417.01	5.17
		2437	2436.01	5.88
		2462	2462.63	6.15
11N20SISO	Ant1	2412	2414.53	5.21
		2437	2432.03	5.51
		2462	2464.51	6.12
11N40SISO	Ant1	2422	2425.82	2.64
		2437	2434.56	3.06
		2452	2455.74	2.85

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.04	4.30
		2440	2440.04	5.56
		2480	2480.05	5.74
BLE_2M	Ant1	2402	2402.05	4.12
		2440	2440.05	5.42
		2480	2480.06	5.58

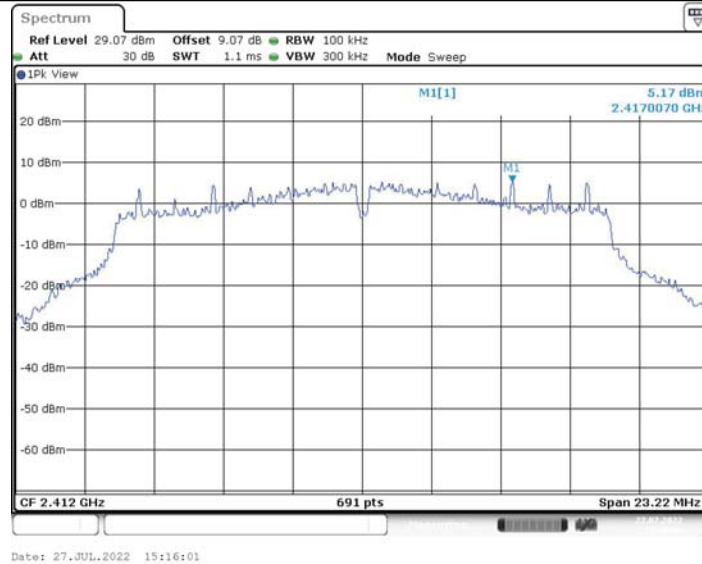


6.5.2 Test Graphs

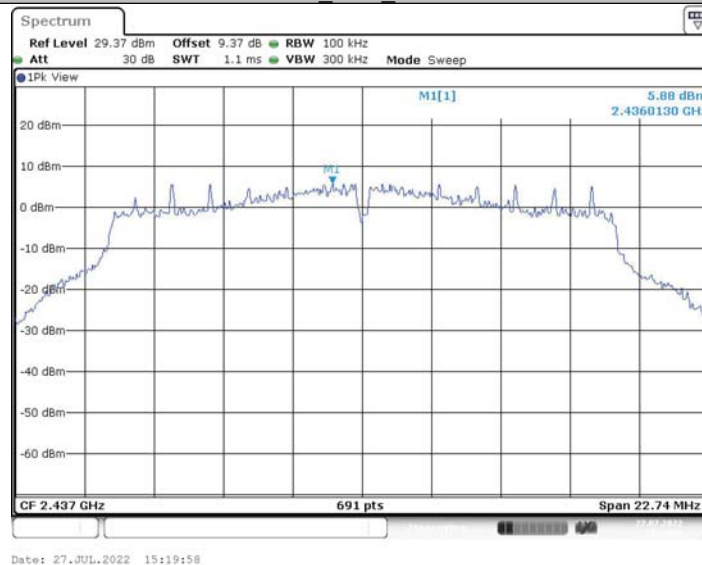




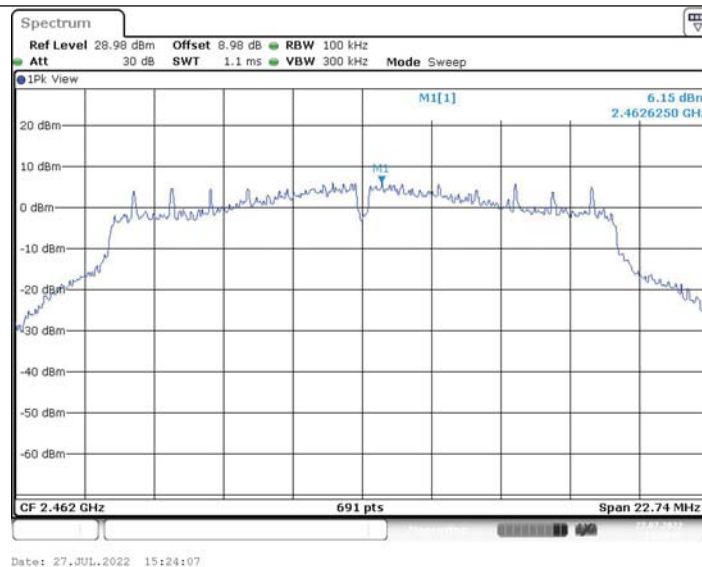
11G_Ant1_2412



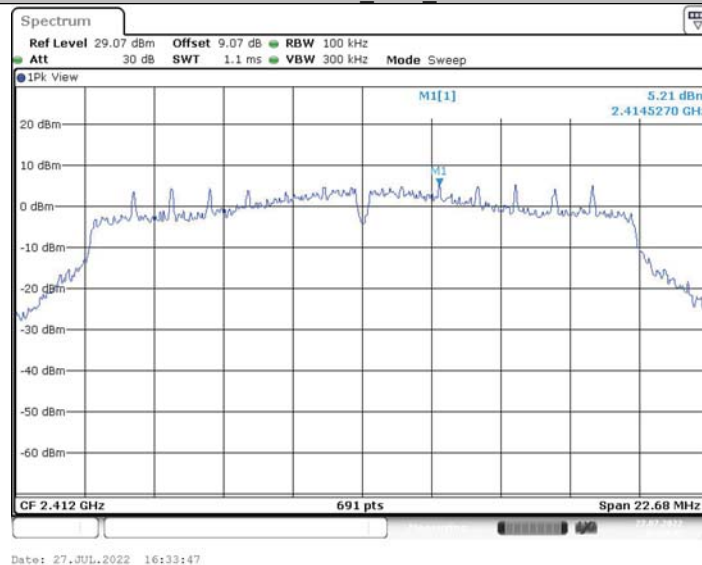
11G_Ant1_2437



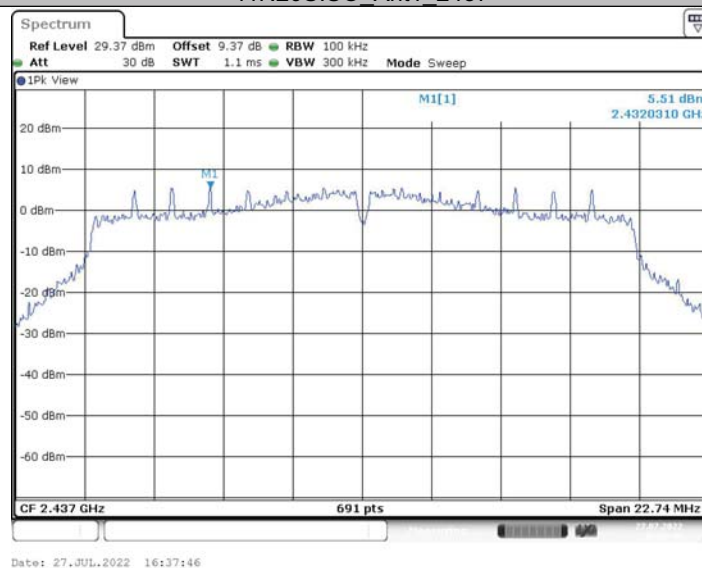
11G_Ant1_2462



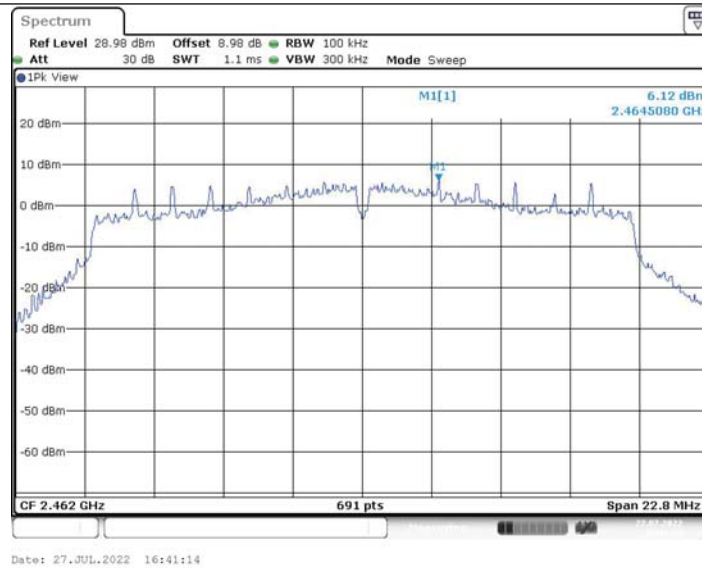
11N20SISO_Ant1_2412



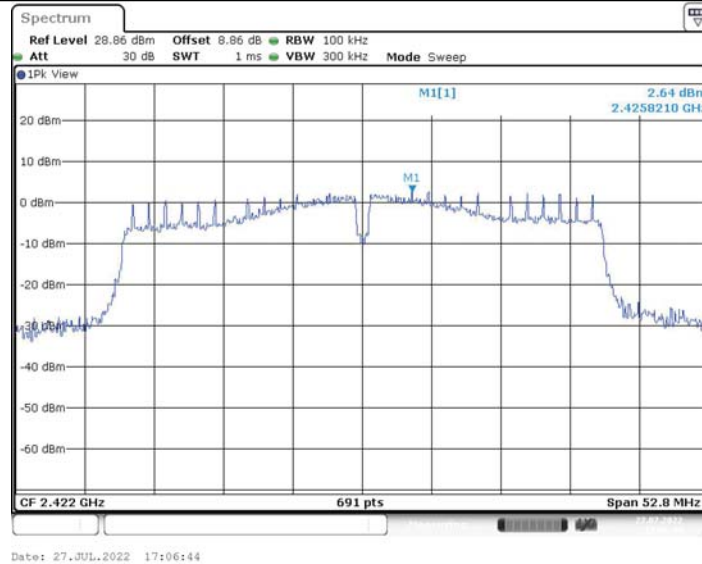
11N20SISO_Ant1_2437



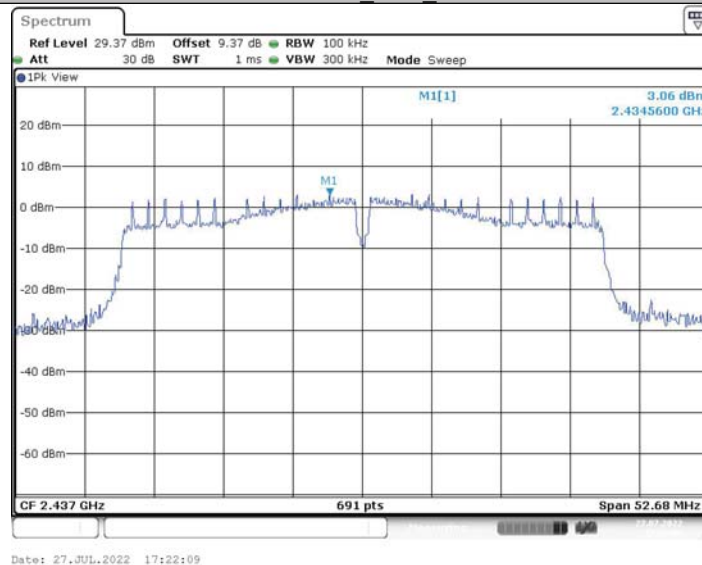
11N20SISO_Ant1_2462



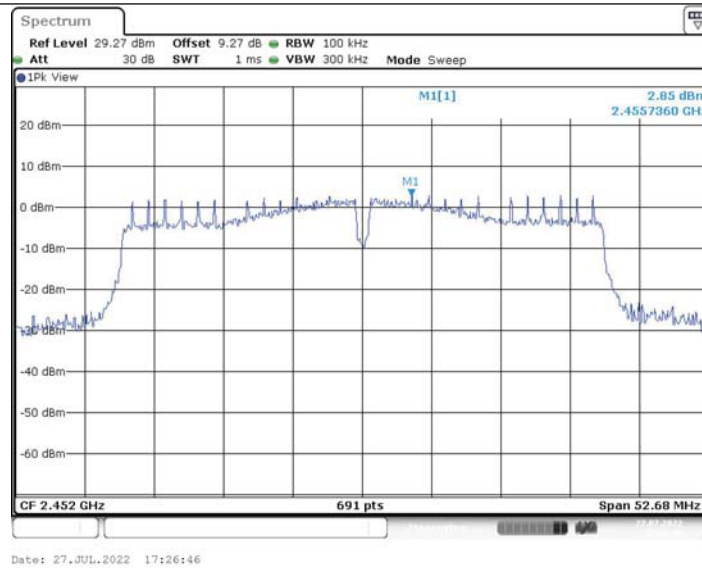
11N40SISO_Ant1_2422



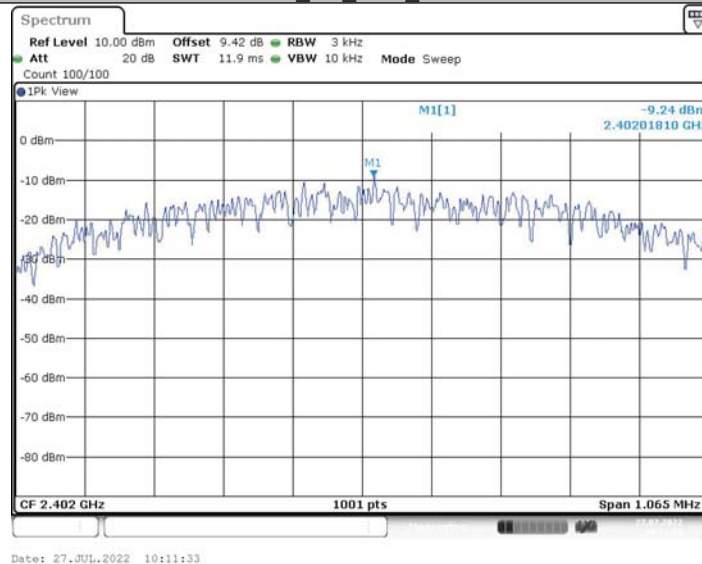
11N40SISO_Ant1_2437



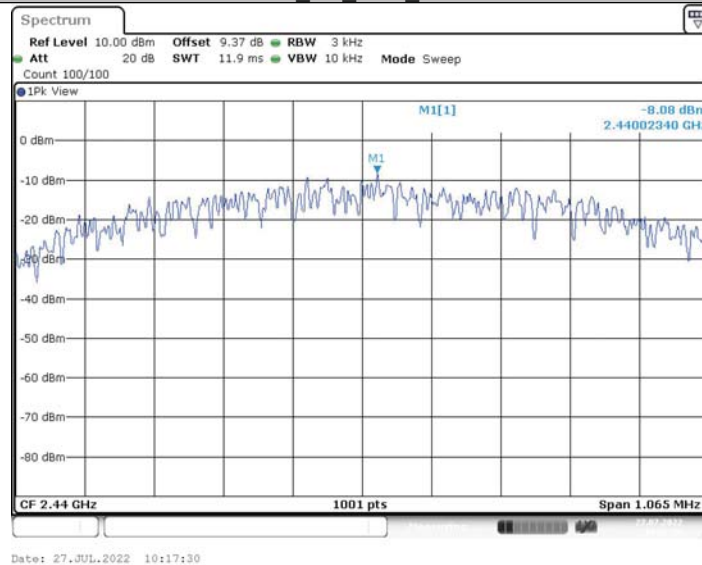
11N40SISO_Ant1_2452



BLE_1M_Ant1_2402

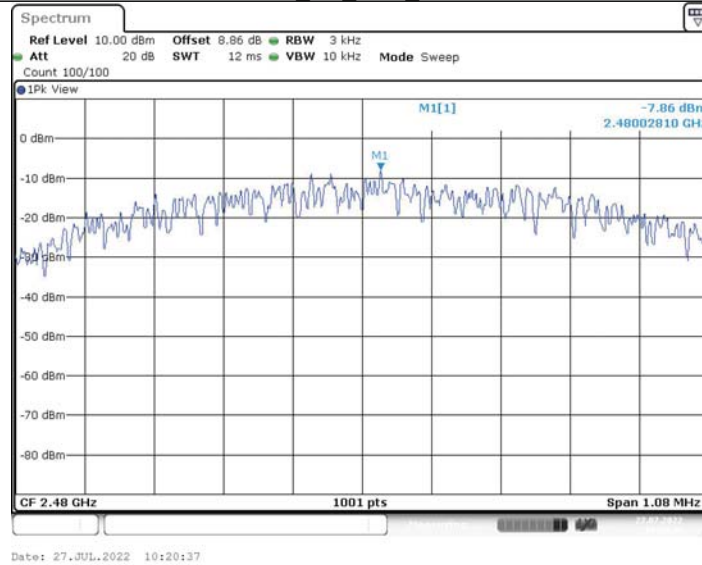


BLE_1M_Ant1_2440

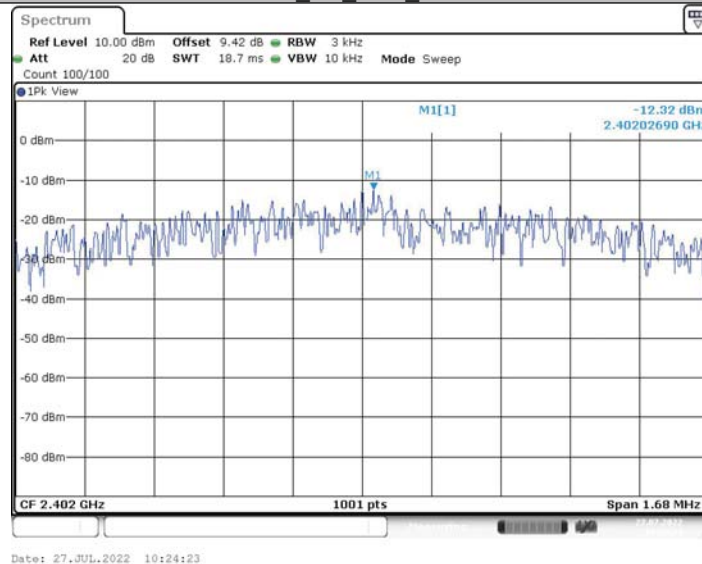




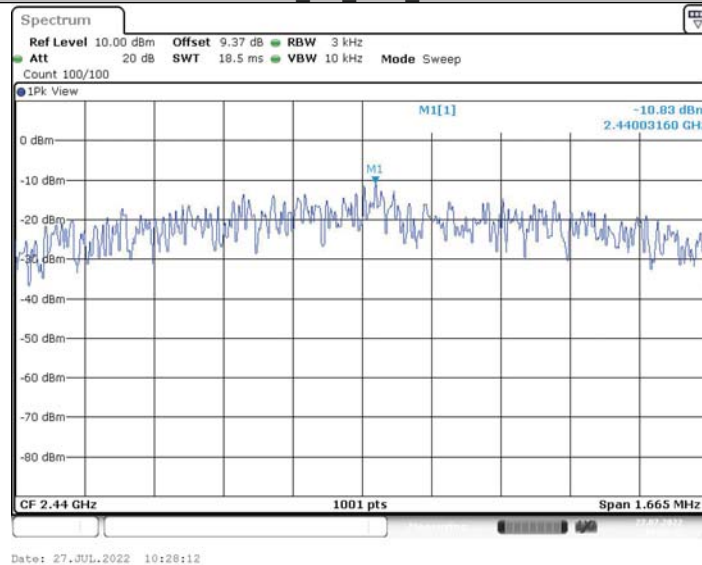
BLE_1M_Ant1_2480

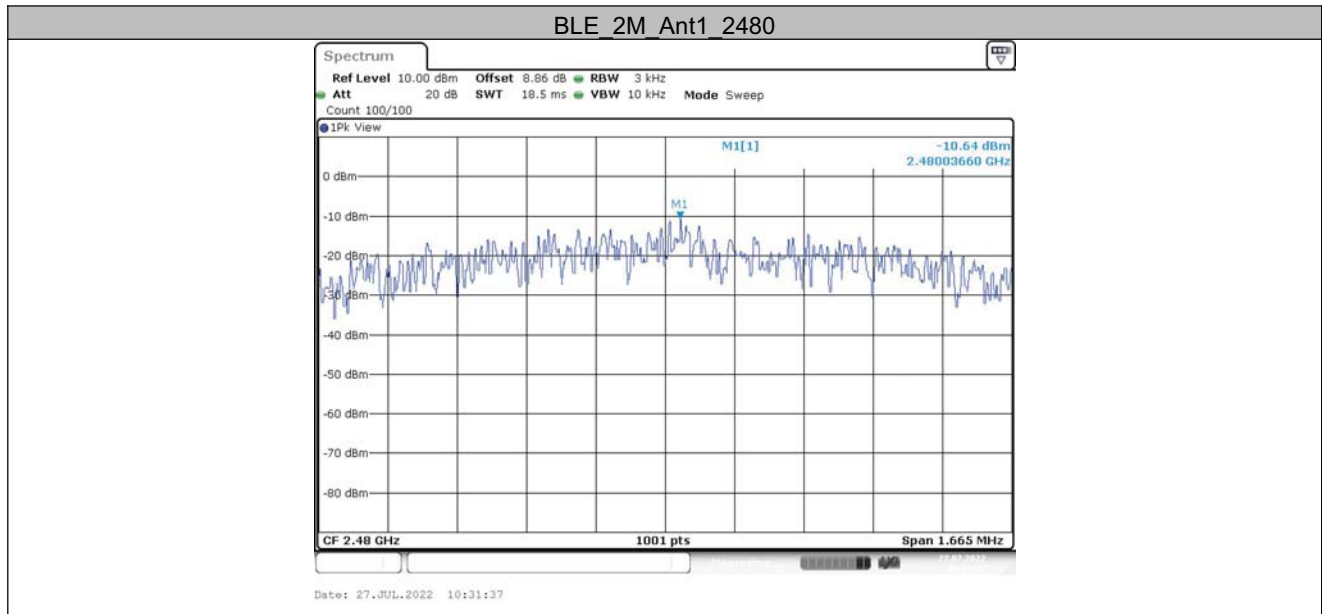


BLE_2M_Ant1_2402



BLE_2M_Ant1_2440







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	9.05	-27.95	≤ -10.95	PASS
		High	2462	9.79	-41.3	≤ -10.21	PASS
11G	Ant1	Low	2412	5.17	-27.15	≤ -14.83	PASS
		High	2462	6.15	-36.07	≤ -13.85	PASS
11N20SISO	Ant1	Low	2412	5.21	-24.67	≤ -14.79	PASS
		High	2462	6.12	-34.63	≤ -13.88	PASS
11N40SISO	Ant1	Low	2422	2.64	-28.2	≤ -17.36	PASS
		High	2452	2.85	-27.12	≤ -17.15	PASS

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.30	-47.09	≤ -15.7	PASS
		High	2480	5.74	-47.24	≤ -14.26	PASS
BLE_2M	Ant1	Low	2402	4.12	-29.66	≤ -15.88	PASS
		High	2480	5.58	-47.11	≤ -14.42	PASS

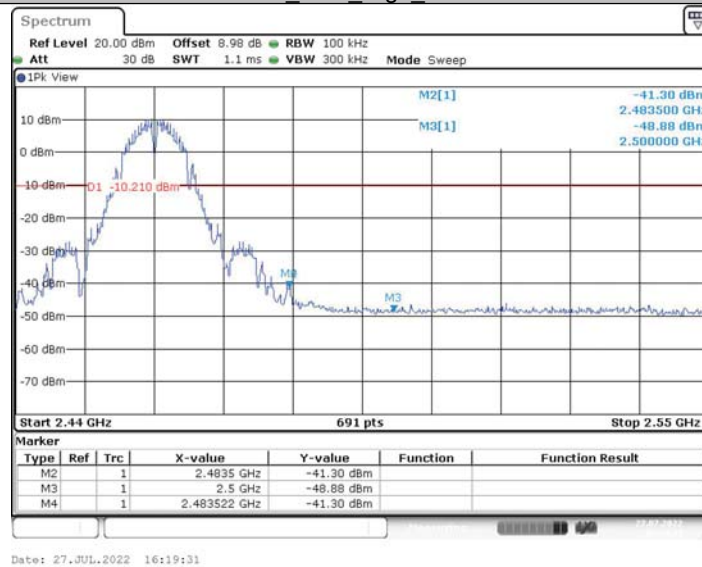


6.6.2 Test Graphs

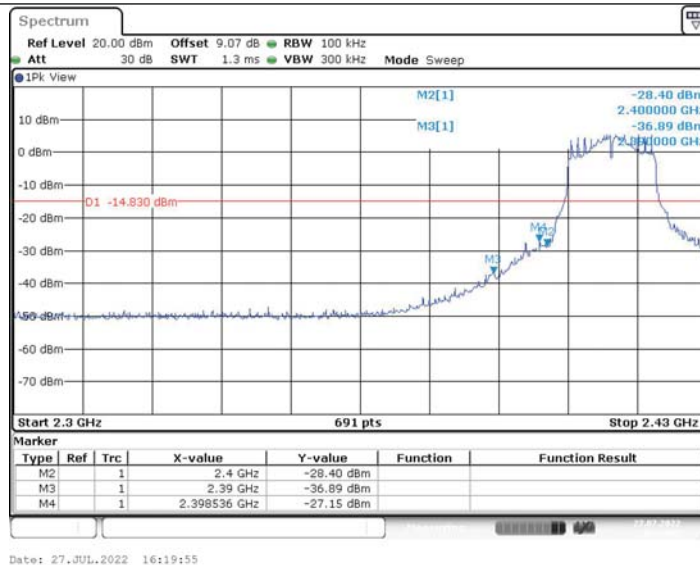
11B_Ant1_Low_2412



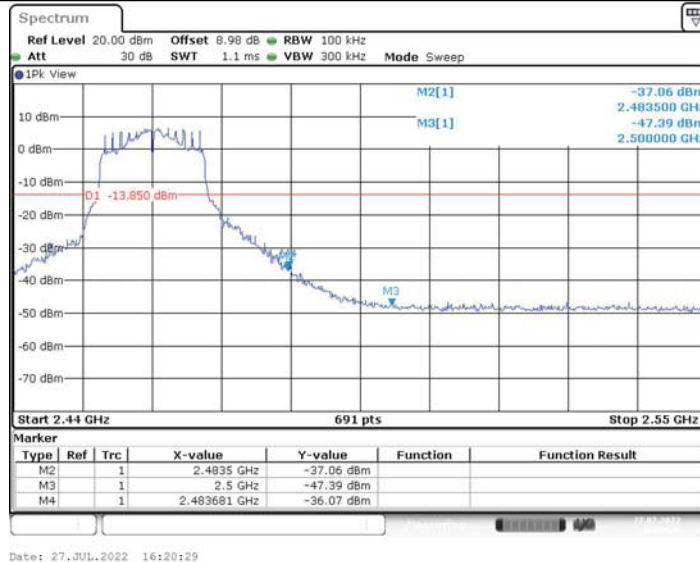
11B_Ant1_High_2462



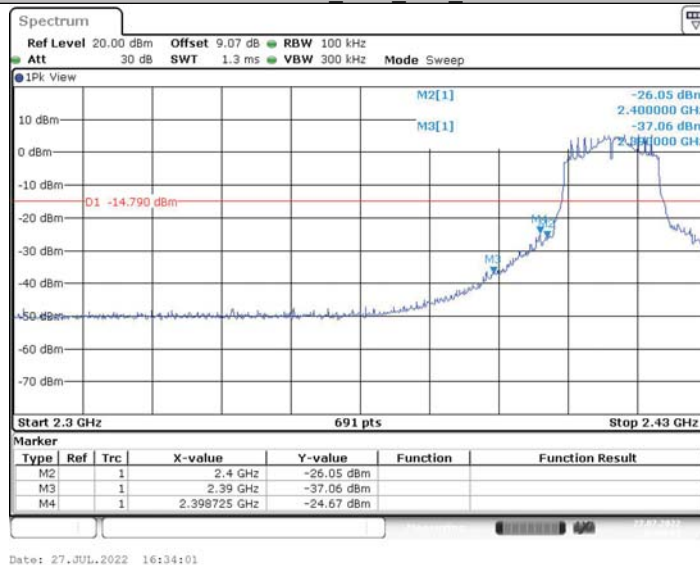
11G_Ant1_Low_2412



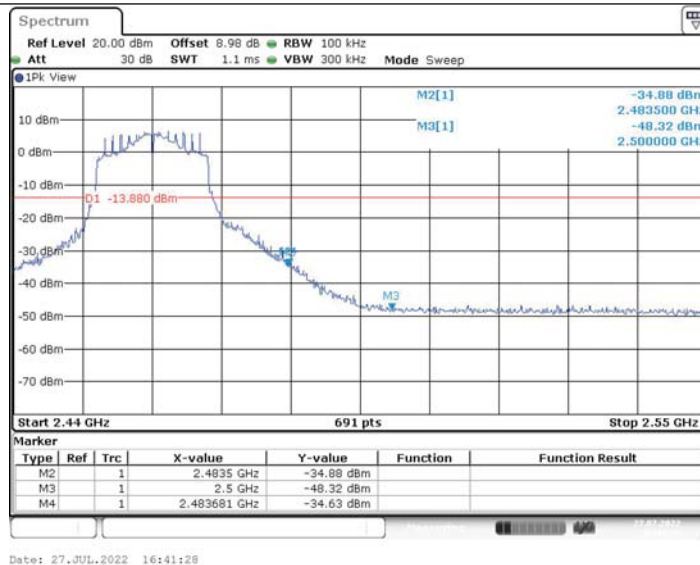
11G_Ant1_High_2462



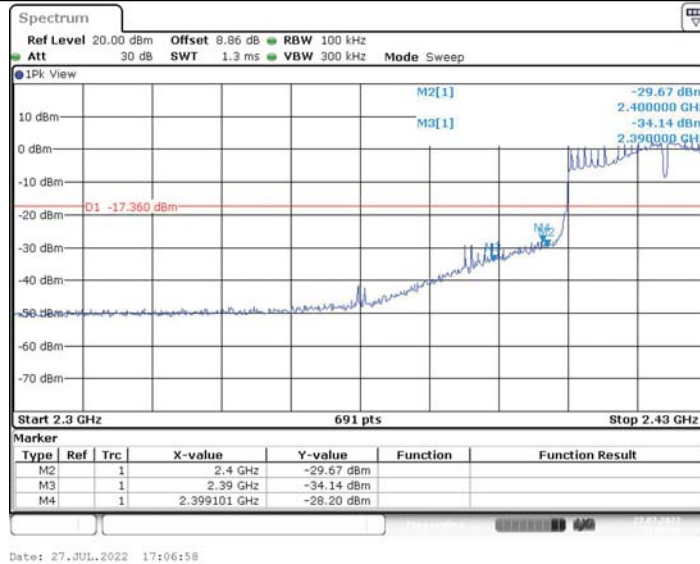
11N20SISO_Ant1_Low_2412



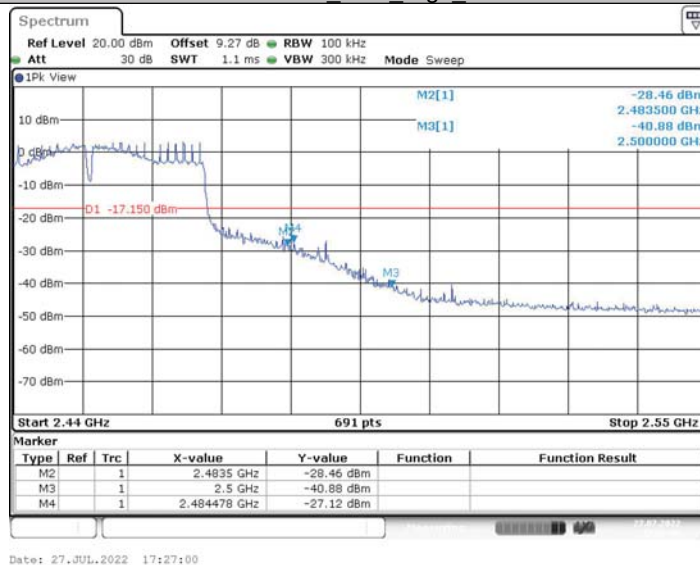
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422

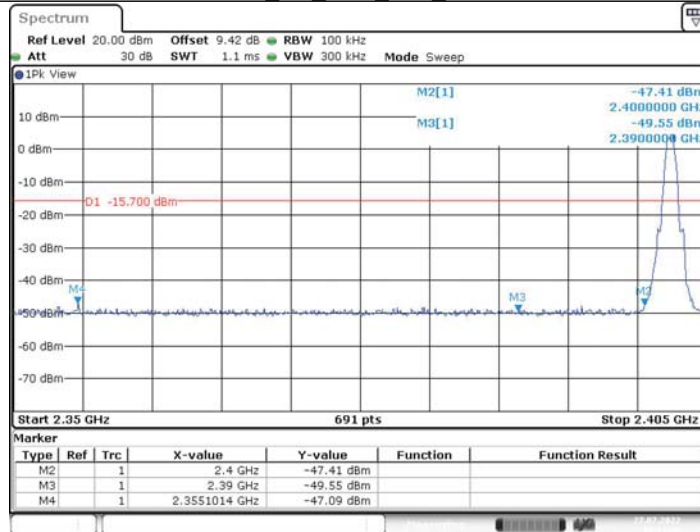


11N40SISO_Ant1_High_2452

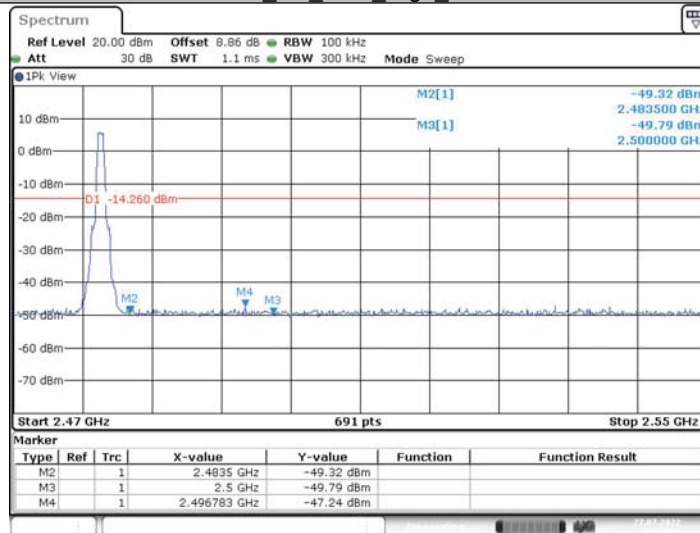




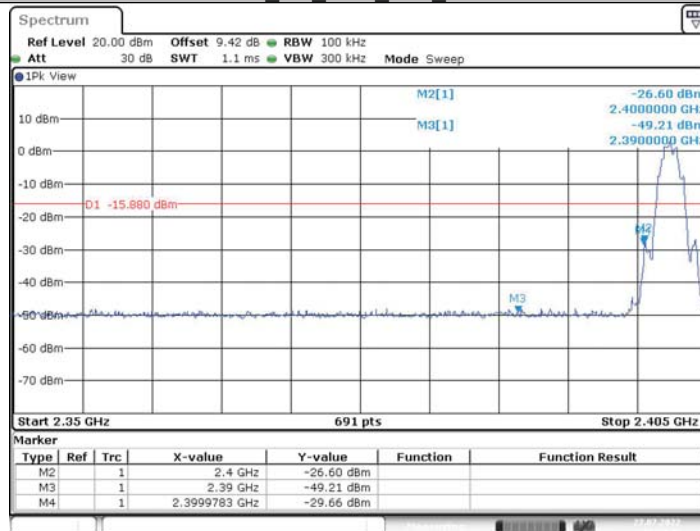
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402

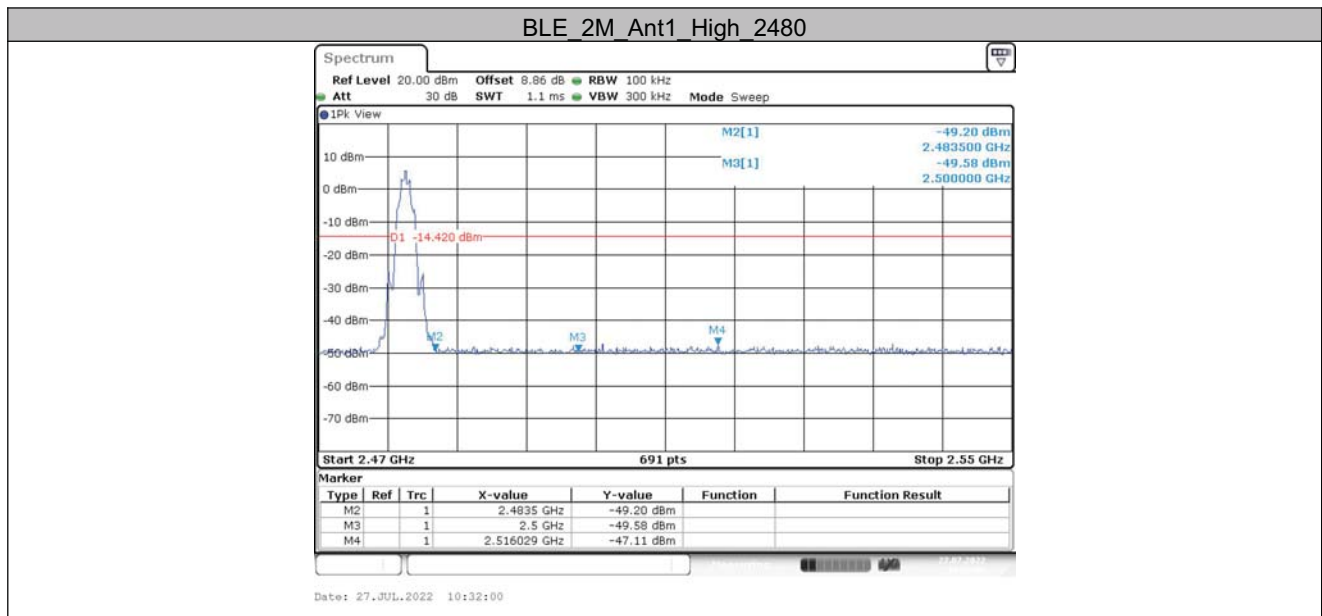




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6.7 OUT OF BAND EMISSION MEASUREMENT

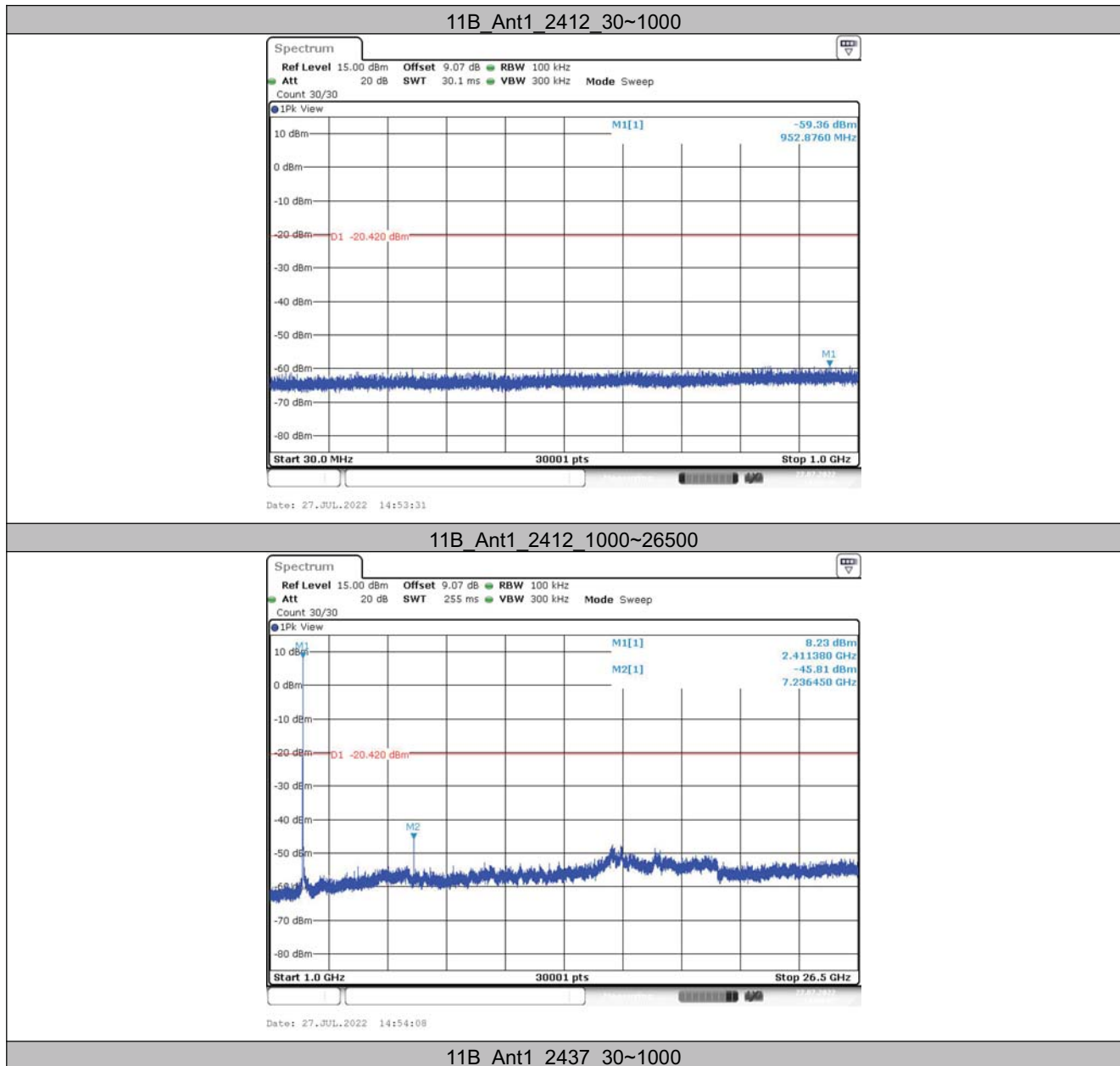
6.7.1 Test Result

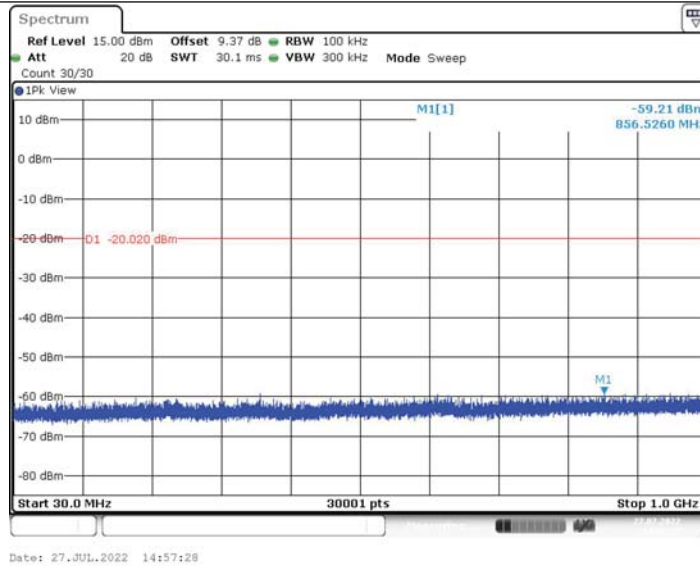
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	9.58	-59.36	≤-20.42	PASS
			1000~26500	9.58	-45.81	≤-20.42	PASS
		2437	30~1000	9.98	-59.21	≤-20.02	PASS
			1000~26500	9.98	-47.03	≤-20.02	PASS
		2462	30~1000	9.79	-59.11	≤-20.21	PASS
			1000~26500	9.79	-47.3	≤-20.21	PASS
11G	Ant1	2412	30~1000	5.17	-58.36	≤-24.83	PASS
			1000~26500	5.17	-47.31	≤-24.83	PASS
		2437	30~1000	5.88	-58.21	≤-24.12	PASS
			1000~26500	5.88	-47.92	≤-24.12	PASS
		2462	30~1000	6.15	-58.19	≤-23.85	PASS
			1000~26500	6.15	-47.45	≤-23.85	PASS
11N20SISO	Ant1	2412	30~1000	5.21	-58.98	≤-24.79	PASS
			1000~26500	5.21	-48	≤-24.79	PASS
		2437	30~1000	5.51	-59.1	≤-24.49	PASS
			1000~26500	5.51	-47.42	≤-24.49	PASS
		2462	30~1000	6.12	-59.26	≤-23.88	PASS
			1000~26500	6.12	-48.15	≤-23.88	PASS
11N40SISO	Ant1	2422	30~1000	2.64	-59.45	≤-27.36	PASS
			1000~26500	2.64	-48.55	≤-27.36	PASS
		2437	30~1000	3.06	-58.71	≤-26.94	PASS
			1000~26500	3.06	-47.19	≤-26.94	PASS
		2452	30~1000	2.85	-58.37	≤-27.15	PASS
			1000~26500	2.85	-47.49	≤-27.15	PASS

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	4.30	-58.6	≤-15.7	PASS
			1000~26500	4.30	-46.87	≤-15.7	PASS
		2440	30~1000	5.56	-58.85	≤-14.44	PASS
			1000~26500	5.56	-47.73	≤-14.44	PASS
		2480	30~1000	5.74	-59.31	≤-14.26	PASS
			1000~26500	5.74	-47.09	≤-14.26	PASS
BLE_2M	Ant1	2402	30~1000	4.12	-58.45	≤-15.88	PASS
			1000~26500	4.12	-46.87	≤-15.88	PASS
		2440	30~1000	5.42	-58.27	≤-14.58	PASS
			1000~26500	5.42	-47.68	≤-14.58	PASS
		2480	30~1000	5.58	-59.25	≤-14.42	PASS
			1000~26500	5.58	-47.37	≤-14.42	PASS

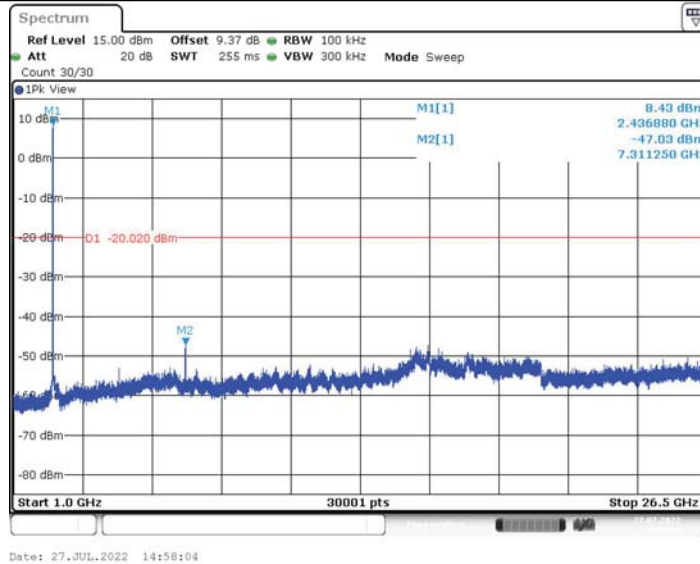


6.7.2 Test Graphs

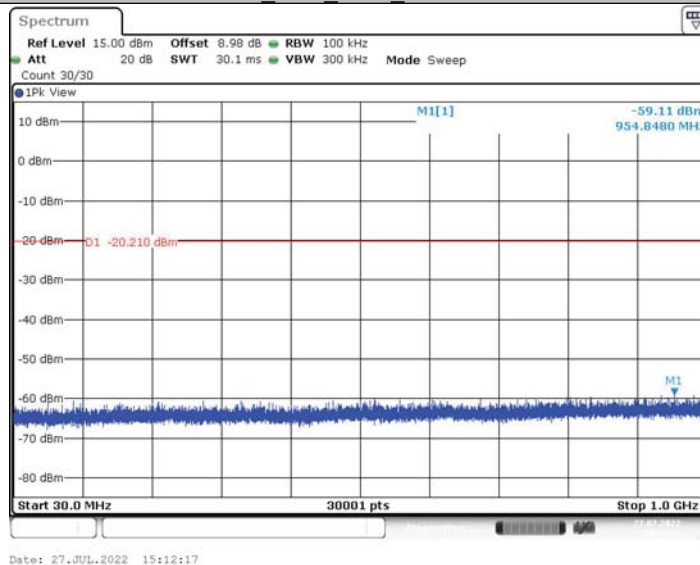




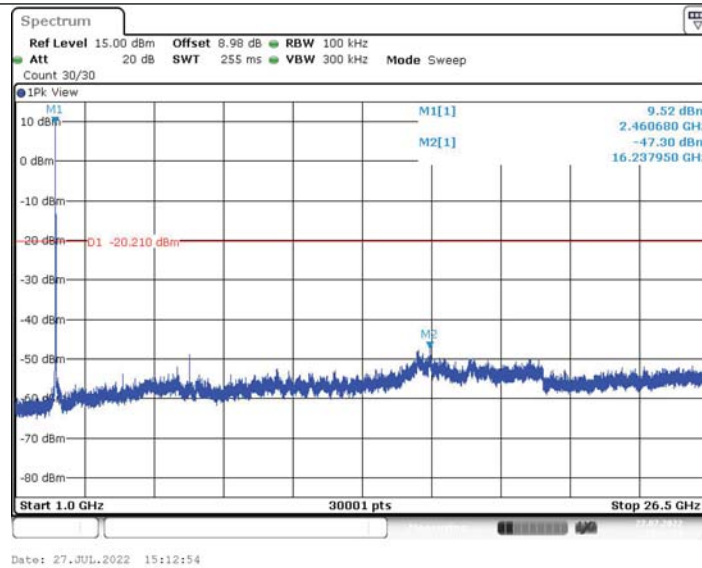
11B_Ant1_2437_1000~26500



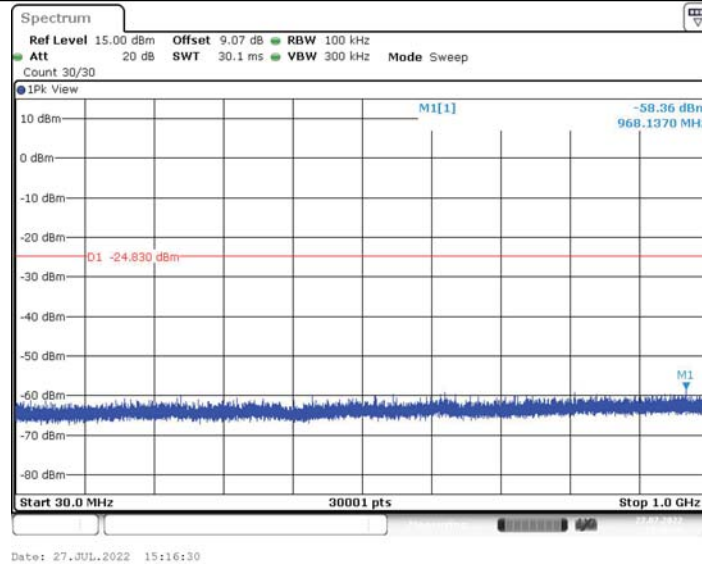
11B_Ant1_2462_30~1000



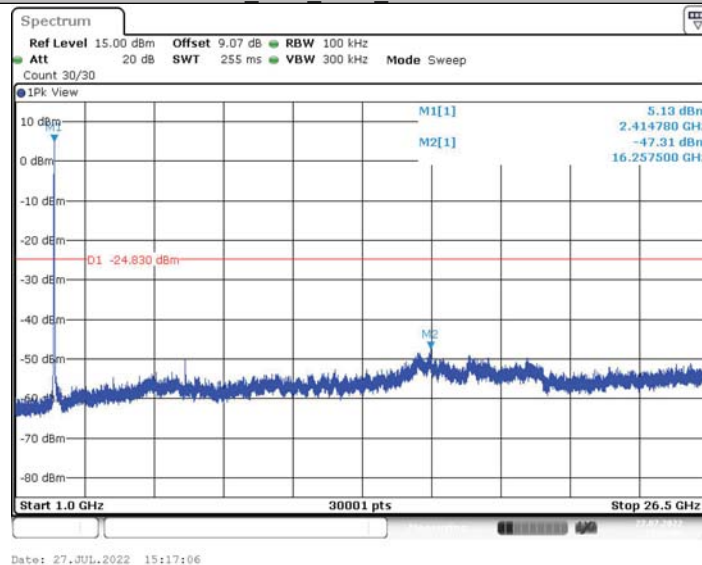
11B_Ant1_2462_1000~26500



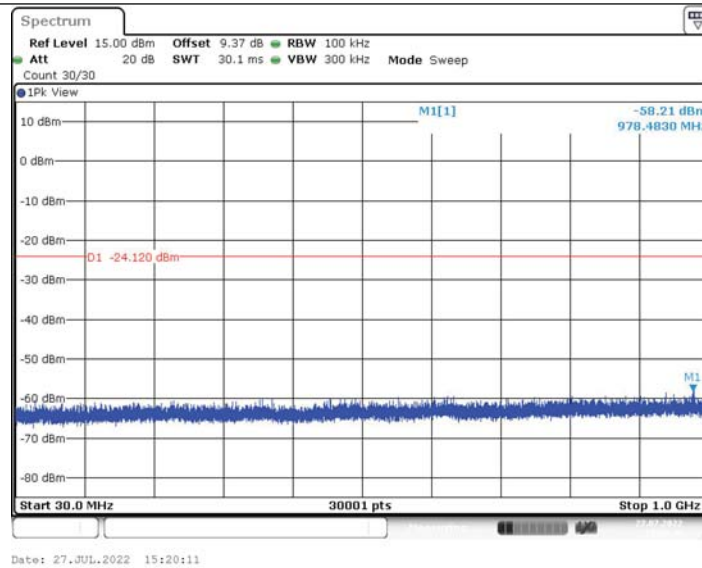
11G_Ant1_2412_30~1000



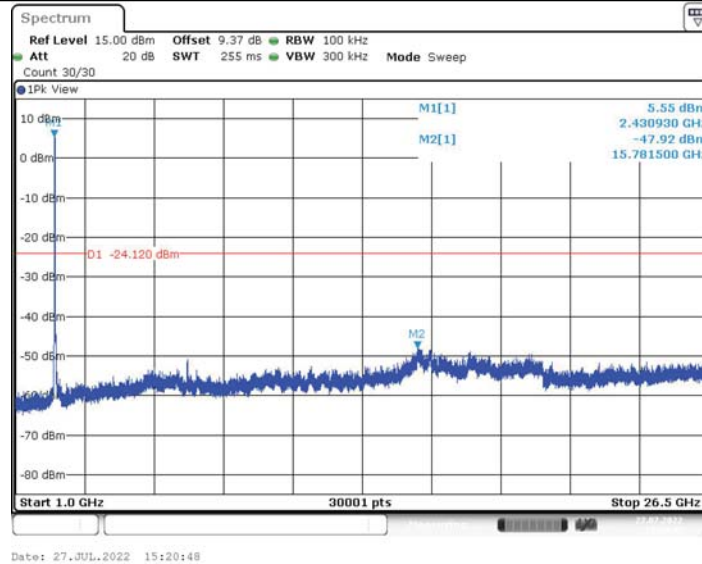
11G_Ant1_2412_1000~26500



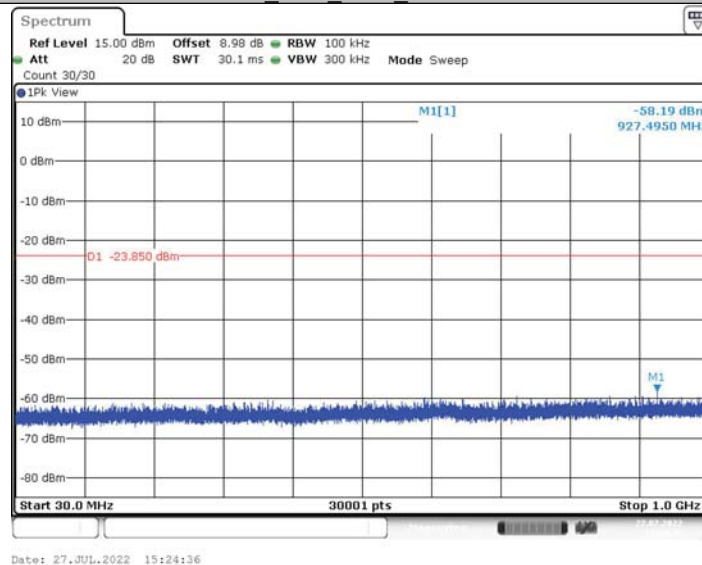
11G_Ant1_2437_30~1000



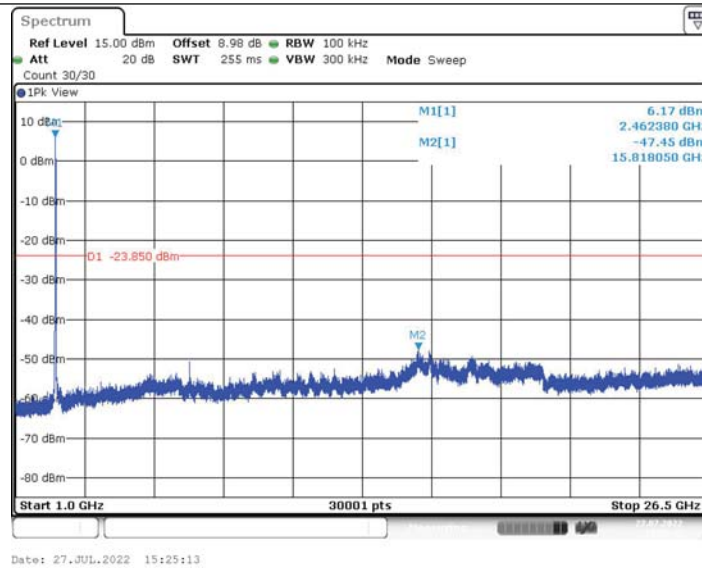
11G_Ant1_2437_1000~26500



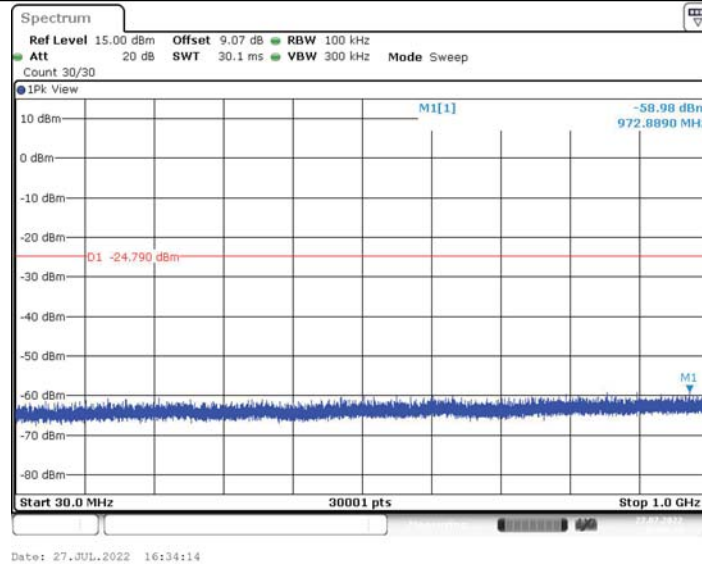
11G_Ant1_2462_30~1000



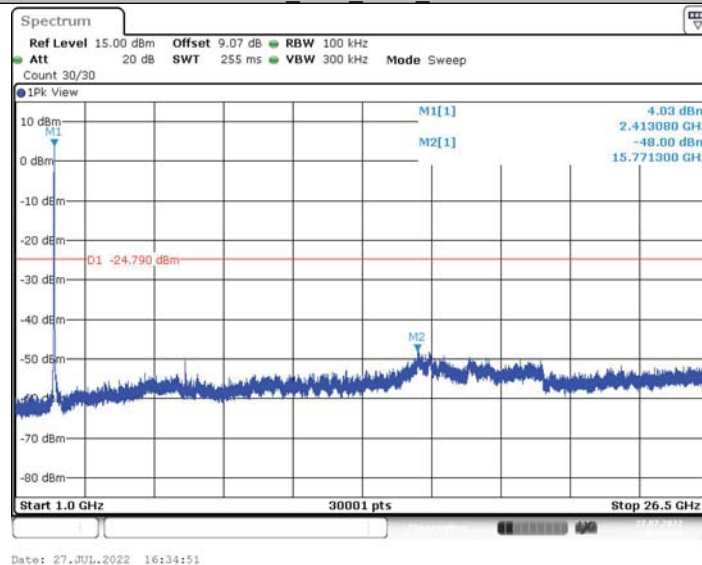
11G_Ant1_2462_1000~26500



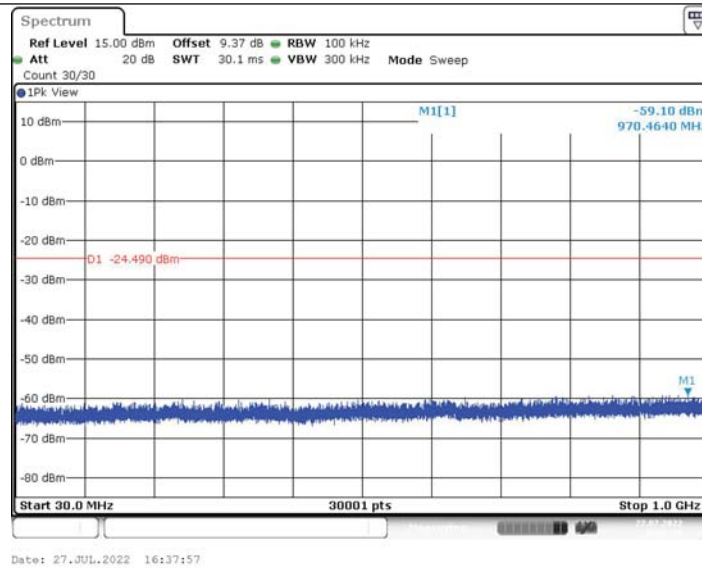
11N20SISO_Ant1_2412_30~1000



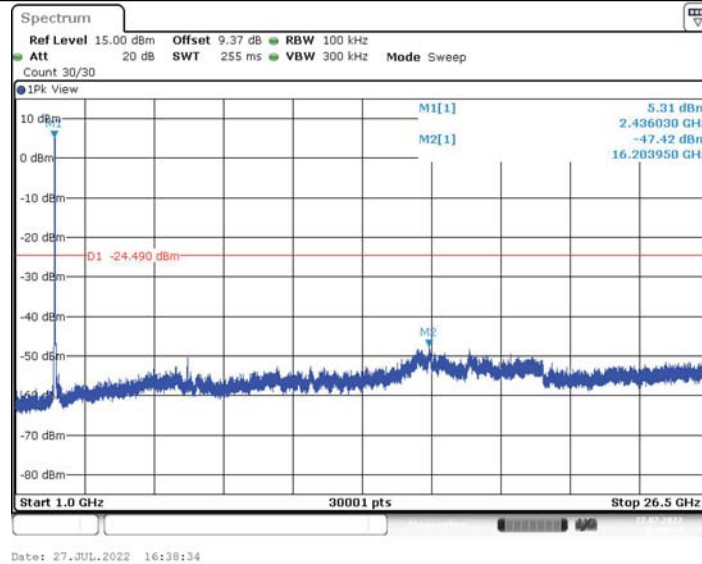
11N20SISO_Ant1_2412_1000~26500



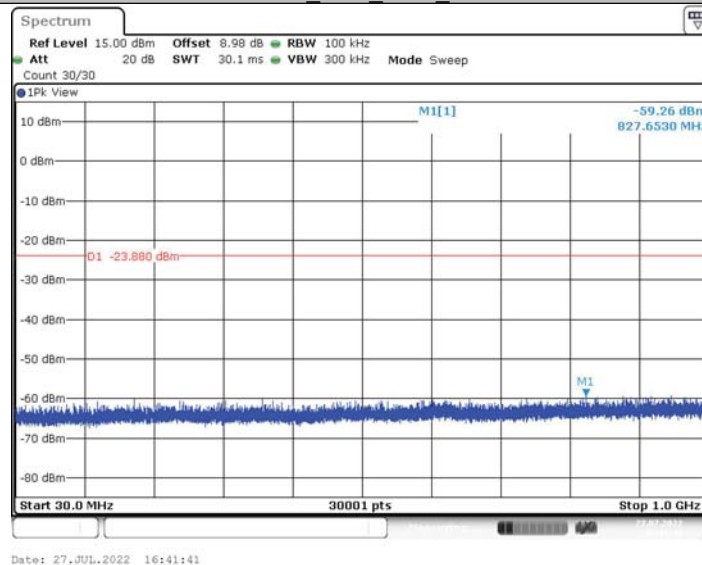
11N20SISO_Ant1_2437_30~1000



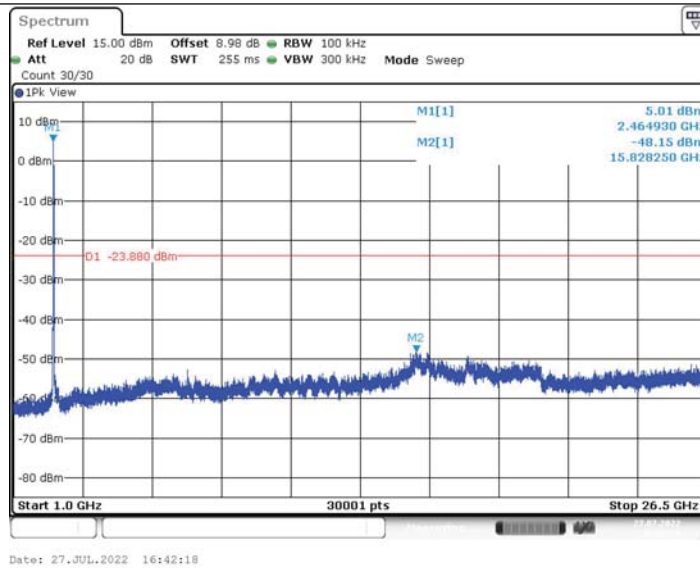
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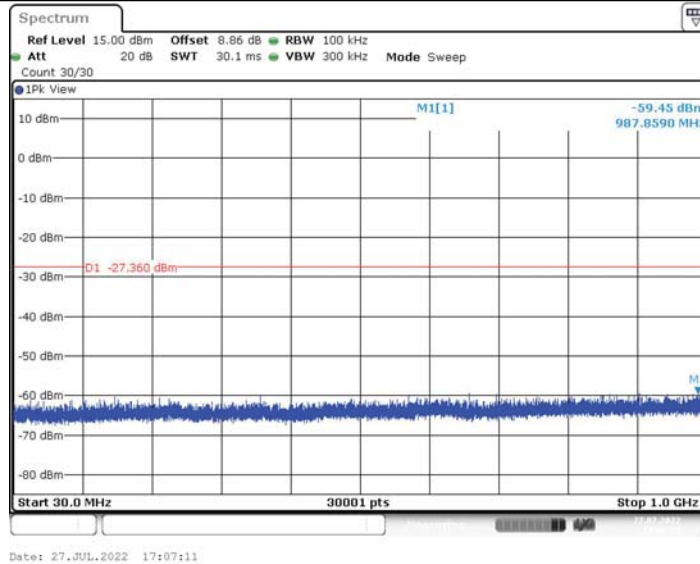
11N20SISO_Ant1_2462_30~1000



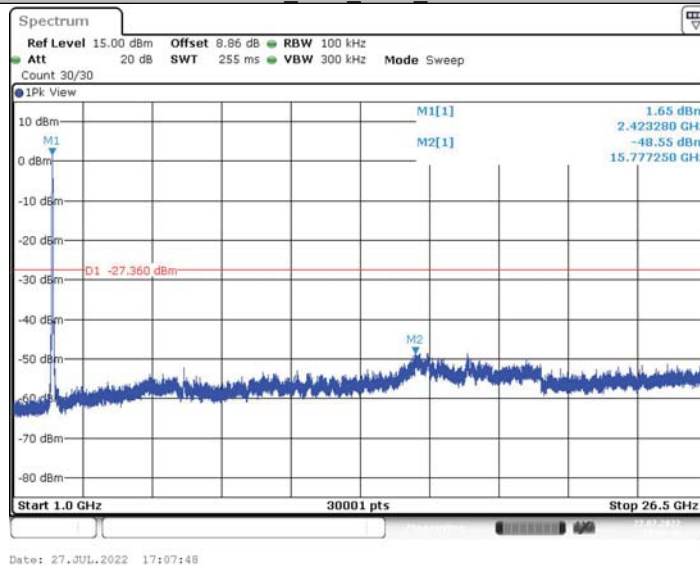
11N20SISO_Ant1_2462_1000~26500



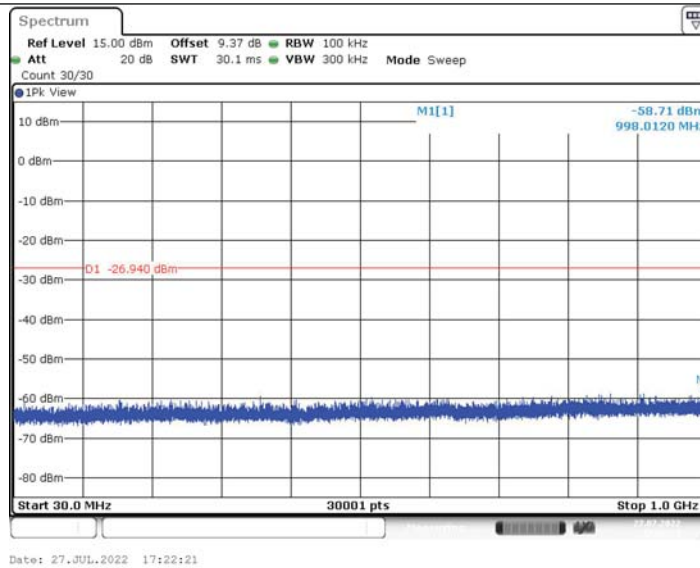
11N40SISO_Ant1_2422_30~1000



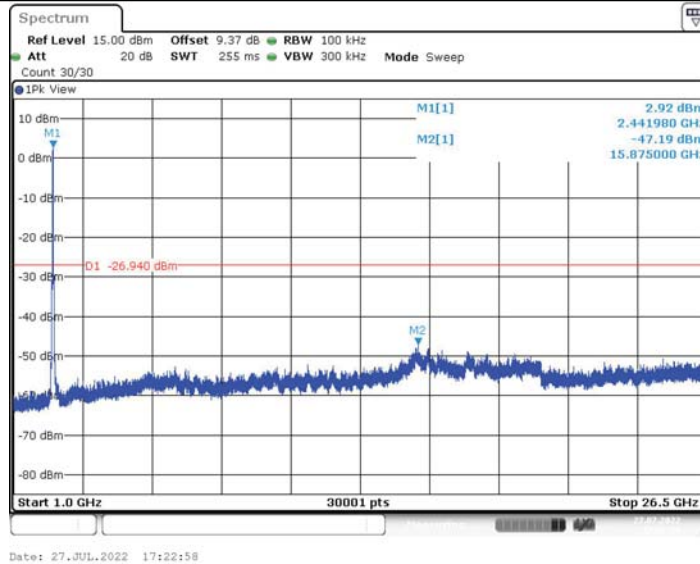
11N40SISO_Ant1_2422_1000~26500



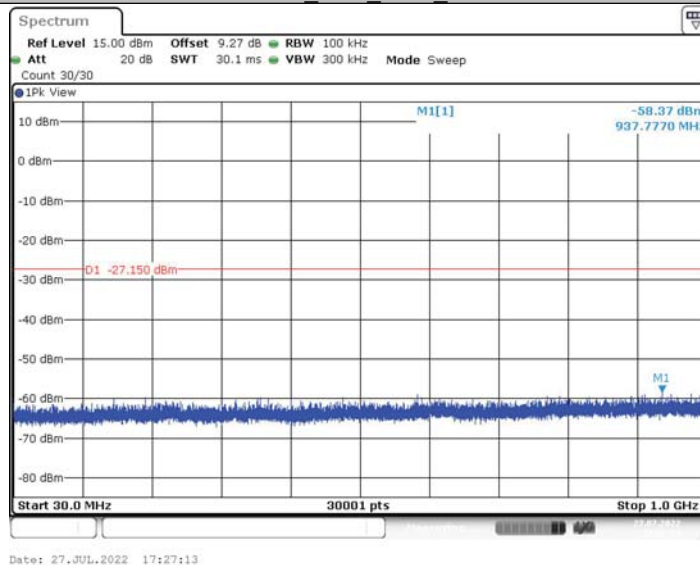
11N40SISO_Ant1_2437_30~1000



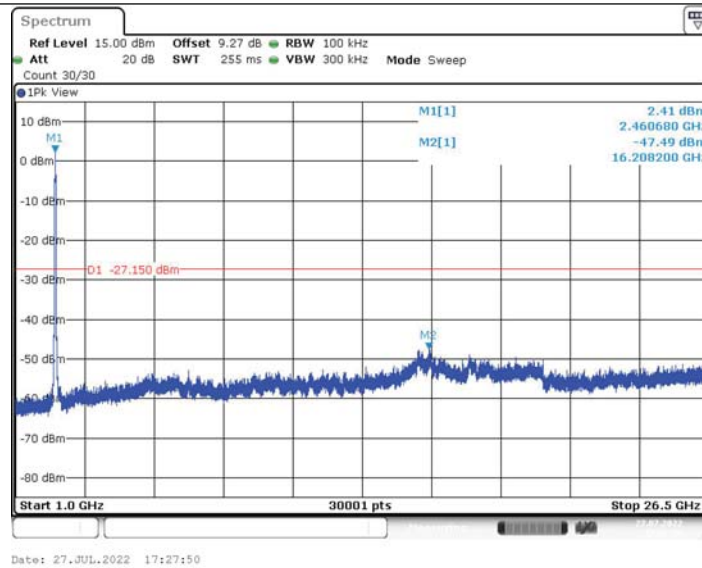
11N40SISO_Ant1_2437_1000~26500



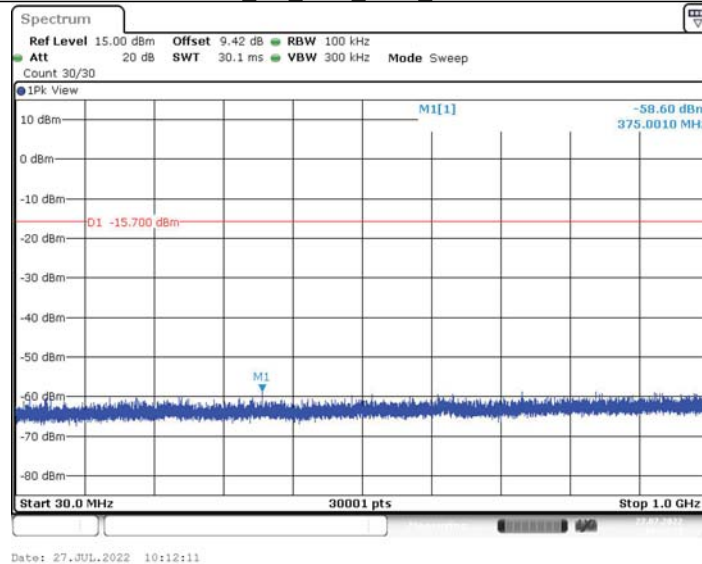
11N40SISO_Ant1_2452_30~1000



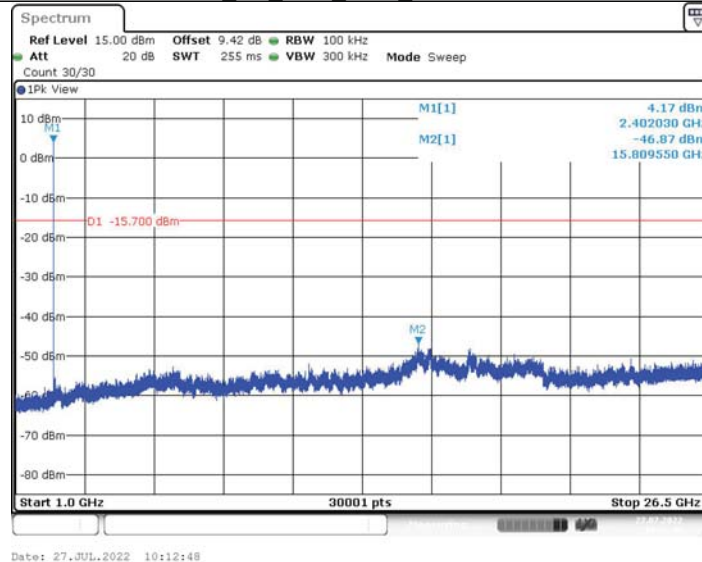
11N40SISO_Ant1_2452_1000~26500



BLE_1M_Ant1_2402_30~1000

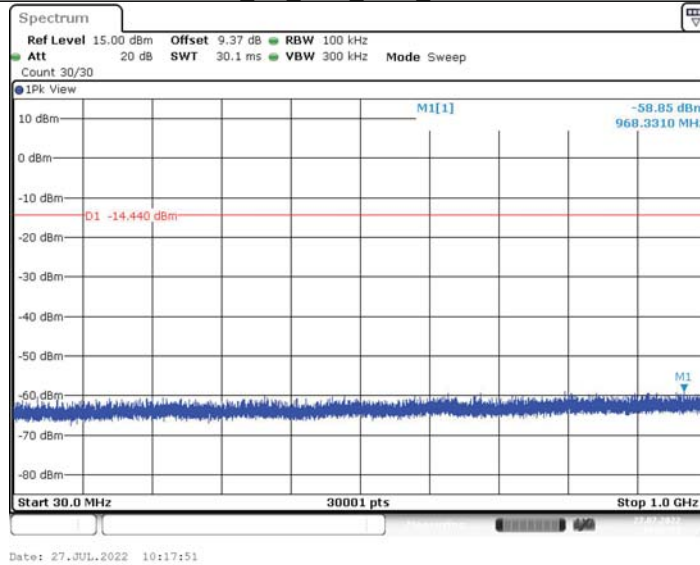


BLE_1M_Ant1_2402_1000~26500

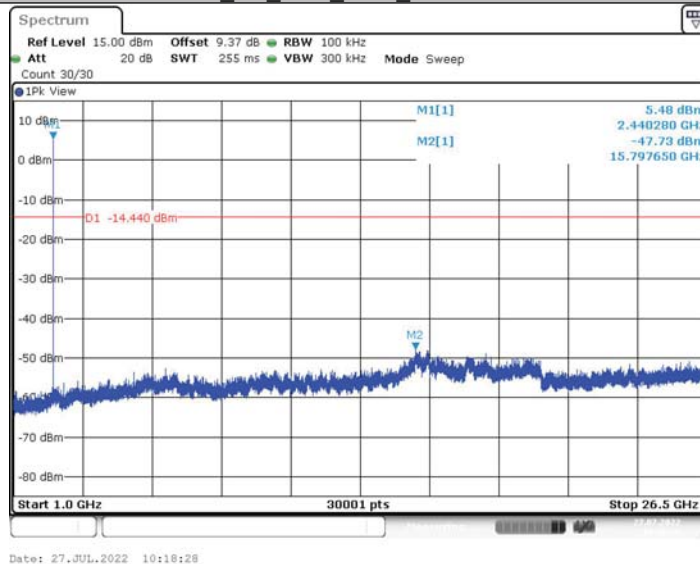




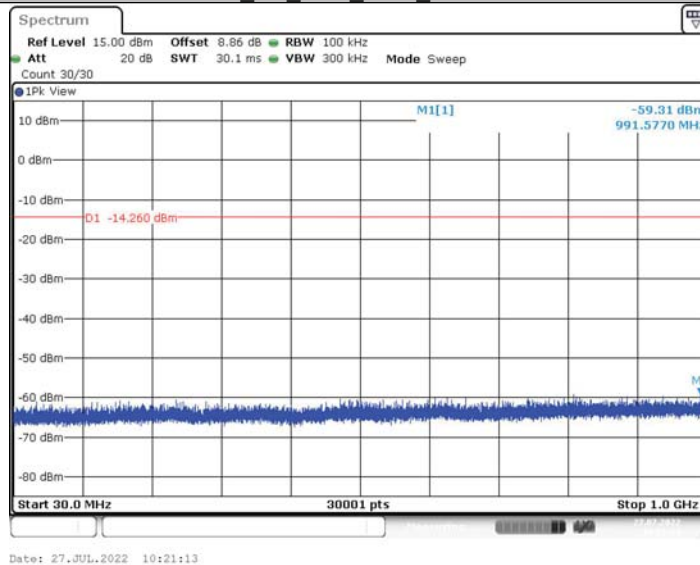
BLE_1M_Ant1_2440_30~1000



BLE_1M_Ant1_2440_1000~26500

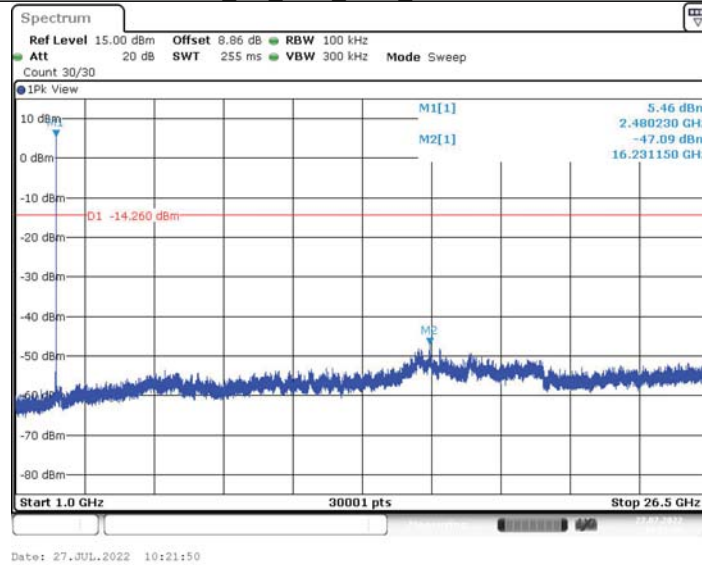


BLE_1M_Ant1_2480_30~1000

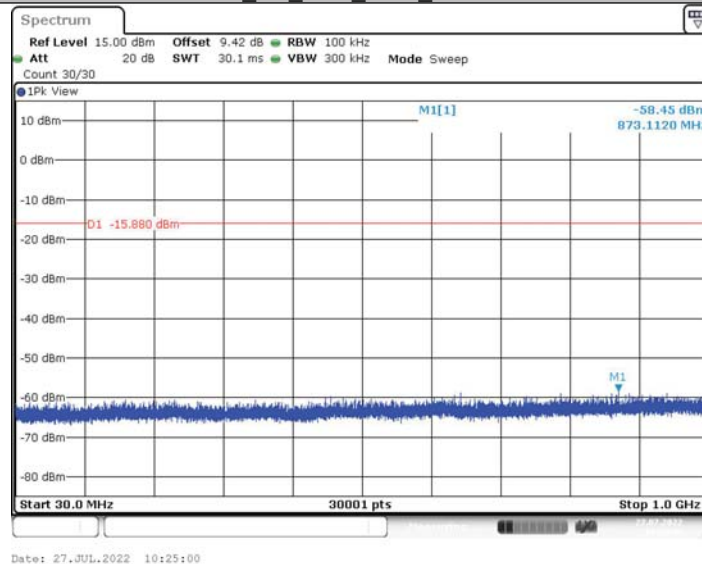




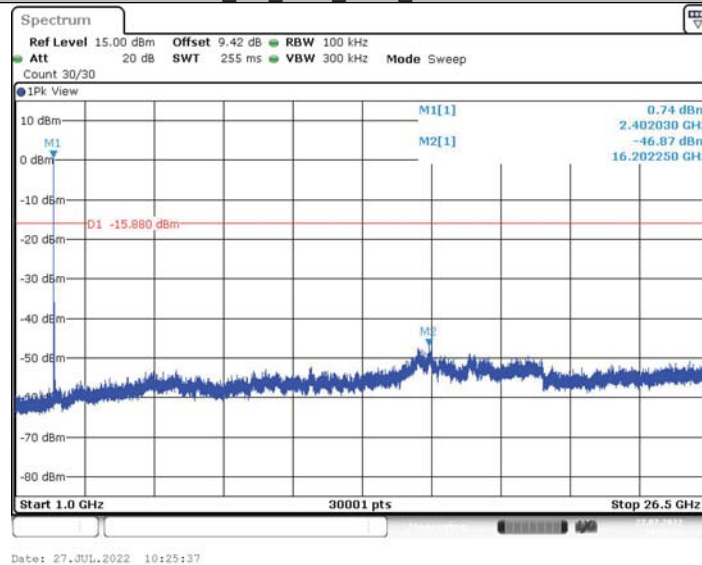
BLE_1M_Ant1_2480_1000~26500



BLE_2M_Ant1_2402_30~1000

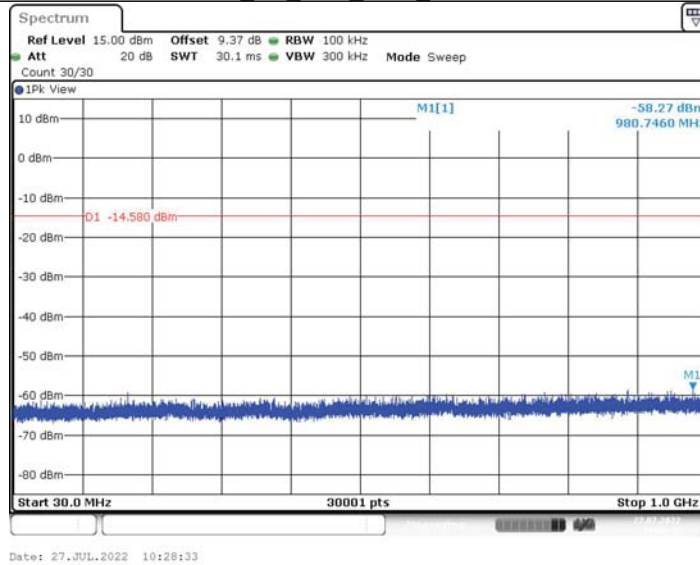


BLE_2M_Ant1_2402_1000~26500

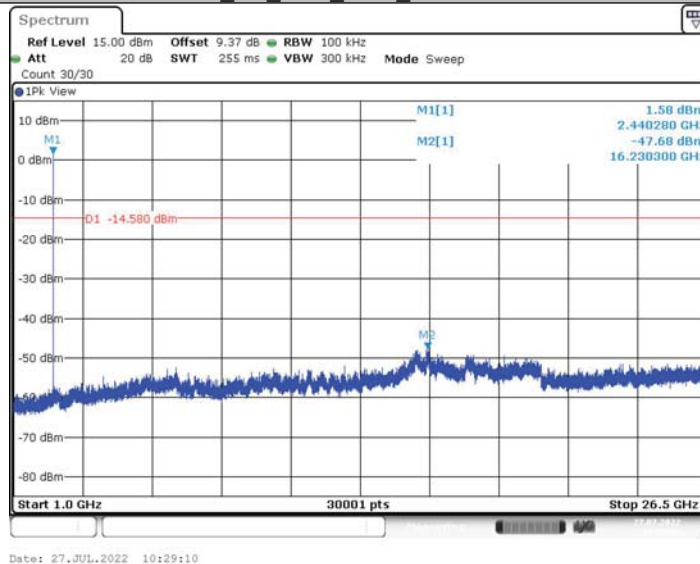




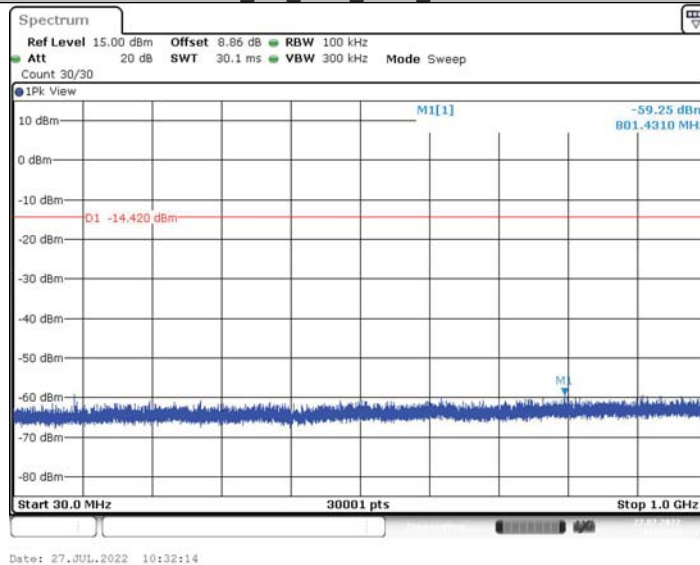
BLE_2M_Ant1_2440_30~1000



BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_30~1000

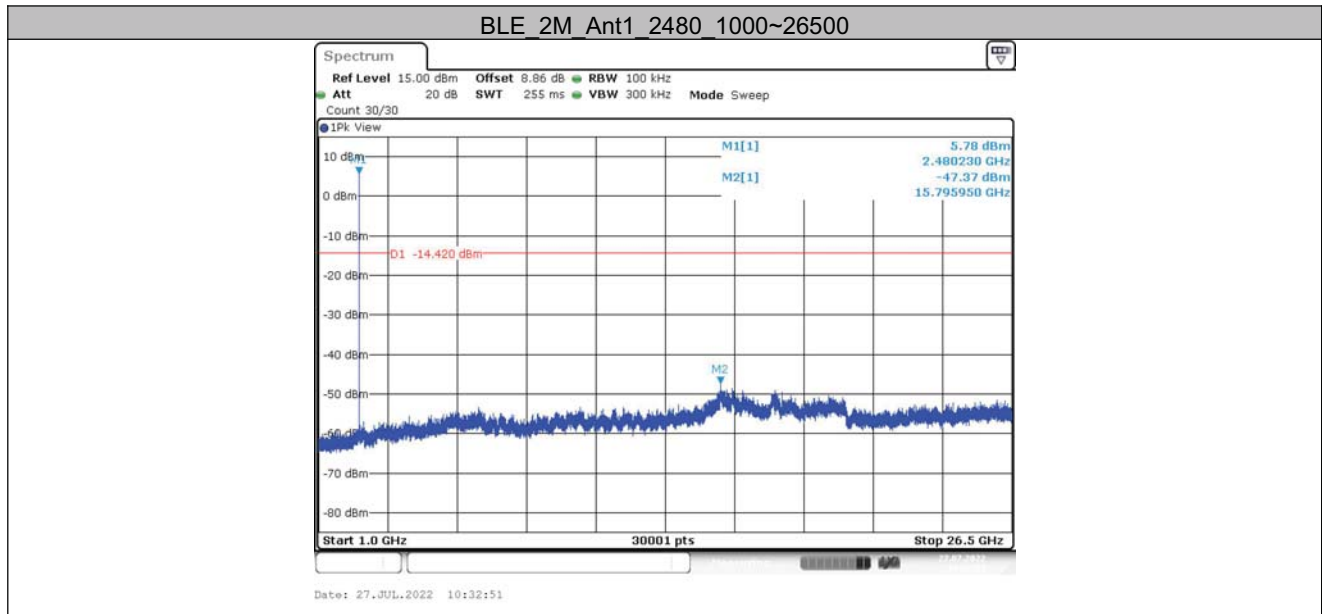




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Important

- (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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