CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 Issue 3

TEST REPORT

For

WIFI Module

MODEL NUMBER: D3KR1001

REPORT NUMBER: 4791756930-RF-1

ISSUE DATE: May 20, 2025

FCC ID: 2AC23-D3K
IC: 12290A-D3K

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	May 20, 2025	Initial Issue	

Summary of Test Results

Test Item	Clause	Limit/Requirement	Result
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c) RSS-GEN Clause 6.8	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
Conducted Output Power	ANSI C63.10-2013, Clause 11.9.2.3.1	FCC Part 15.247 (b)(3) RSS-247 Clause 5.4 (d)	Pass
6dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013, Clause 11.8.1	FCC Part 15.247 (a)(2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
Power Spectral Density	ANSI C63.10-2013, Clause 11.10.5	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
Conducted Band edge and spurious emission	ANSI C63.10-2013, Clause 11.11	FCC Part 15.247(d) RSS-247 Clause 5.5	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013, Clause 11.12 & Clause 11.13	FCC Part 15.247 (d) FCC Part 15.205/15.209 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 Issue 3> when <Simple Acceptance> decision rule is applied.

CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Hui Zhou Gaoshengda Technology Co.,LTD
Address:	No.6,Qiaoguang Road,Chenjiang Street,Zhongkai High-tech Zone,Huizhou,Guangdong,China

Manufacturer Information

Company Name:	Hui Zhou Gaoshengda Technology Co.,LTD
Address:	No.6,Qiaoguang Road,Chenjiang Street,Zhongkai High-tech Zone,Huizhou,Guangdong,China

EUT Information

EUT Name:	WIFI Module
Model:	D3KR1001
Brand	GSD
Sample Received Date:	April 22, 2025
Sample Status:	Normal
Sample ID:	8385952
Date of Tested:	April 25, 2025 to May 20, 2025

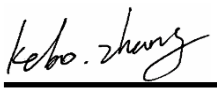
APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C **ISED RSS-247 Issue 3**	**Pass**

Prepared By:

Daniel Zhang

Project Engineer

Checked By:



Kebo Zhang

Senior Project Engineer

Approved By:

Stephen Guo

Operations Manager

2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, KDB 662911 D01 Multiple Transmitter Output v02r01, CFR 47 FCC Part 2, ANSI C63.10-2013 and ISED RSS-GEN Issue 5

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules. **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.

Note 1:
All tests measurement facilities use to collect the measurement data are located at Room 101, Building 2, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, China.

Note 2:
The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd.
Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3:
For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz)
	5.23 dB (18 GHz ~ 26 GHz)
Duty Cycle	±0.028%
DTS and 99% Occupied Bandwidth	±0.0196%
Maximum Conducted Output Power	±0.686 dB
Maximum Power Spectral Density Level	±0.743 dB
Conducted Band-edge Compliance	±1.328 dB
Conducted Unwanted Emissions In Non-restricted Frequency Bands	±0.746 dB (9 kHz ~ 1 GHz)
	±1.328dB (1 GHz ~ 26 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	WIFI Module
Model	D3KR1001

Frequency Range:	2412 MHz to 2462 MHz
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g/n: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Radio Technology:	IEEE 802.11b/g/n HT20/11n HT40
Normal Test Voltage:	DC 3.3 V

5.2. CHANNEL LIST

Channel List For Bandwidth=20 MHz							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

Channel List For Bandwidth=40 MHz							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447	/	/

5.3. MAXIMUM POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)	Maximum AVG EIRP (dBm)
b	2412 ~ 2462	1-11[11]	17.87	19.59
g	2412 ~ 2462	1-11[11]	15.19	16.91
n HT20	2412 ~ 2462	1-11[11]	14.25	15.97
n HT40	2422 ~ 2452	3-9[7]	14.11	15.83

5.4. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		QA Tool					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	20	20	20	/		
	2	20	20	20			
802.11g	1	17	17	17			
	2	17	17	17			
802.11n HT20	1	16	16	16			
	2	16	16	16			
802.11n HT40	1	/			16	16	16
	2	/			16	16	16

WORST-CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.4.

Maximum power setting referring to section 5.5.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

802.11b/g/n HT20/n HT40 only support SISO mode.

802.11b/g/n SISO mode, Antenna 1 and Antenna 2 has the same power setting, so only Antenna 1 worst case test data were recorded in the report except the Maximum conducted output power recording both Antenna1 and Antenna 2.

The EUT has 2 separate antennas which correspond to 2 separate antenna ports. Core 1 and Core 2 correspond to antenna 1 and antenna 2 respectively.

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.

Conducted output power, power spectral density tests separately on each port with all supported SISO port.

Conducted bandedge and spurious emissions tests were performed with SISO mode.

Radiated emissions tests were performed with the SISO mode of Antenna 1. These were found to be the worst modulation scheme with regards to emissions after preliminary investigations and, as this mode emits the highest conducted output power level, it was deemed to be the worst case.

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PIFA antenna	1.72
2	2412-2462	PIFA antenna	1.72

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒1TX, 1RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒1TX, 1RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	☒1TX, 1RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
Note: 1. WLAN 2.4G & WLAN 5G can't transmit simultaneously. (declared by client)		

5.7. SUPPORT UNITS FOR SYSTEM TEST

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remark
1	PC	Lenovo	E14	/
2	AC Adaptor	Lenovo	ADLX65YCC3D	Input: AC 100-240V, 1.8A, 50-60Hz Output: DC 20V, 3.25A,65.0W Max

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0	/

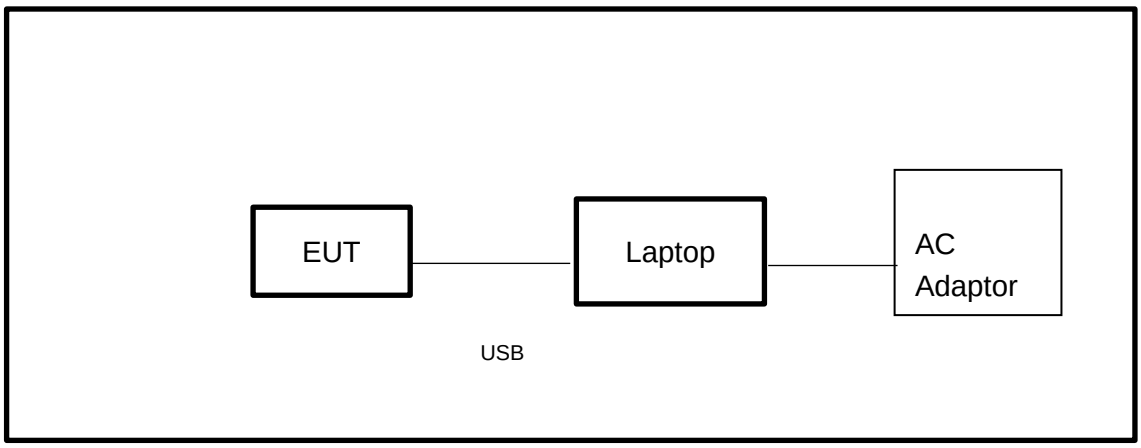
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
/	/	/	/	/

TEST SETUP

The EUT can work in engineering mode with a software through a Laptop.

SETUP DIAGRAM FOR TESTS



Note: AC Adaptor only use for AC POWER LINE CONDUCTED EMISSION test

6. MEASURING EQUIPMENT AND SOFTWARE USED

R&S TS 8997 Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	Dec.27,2024	Dec.26,2025
Vector Signal Generator	R&S	SMBV100A	261637	Sep.28, 2024	Sep.27, 2025
Signal Generator	R&S	SMB100A	178553	Sep.28, 2024	Sep.27, 2025
Signal Analyzer	R&S	FSV40	101118	Sep.28, 2024	Sep.27, 2025
Software					
Description	Manufacturer	Name	Version		
For R&S TS 8997 Test System	Rohde & Schwarz	EMC 32	10.60.10		
Tonsend RF Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Wireless Connectivity Tester	R&S	CMW270	1201.0002N75-102	Sep.13, 2024	Sep.12, 2025
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Sep.28, 2024	Sep.27, 2025
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Sep.28, 2024	Sep.27, 2025
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Sep.28, 2024	Sep.27, 2025
DC power supply	Keysight	E3642A	MY55159130	Sep.28, 2024	Sep.27, 2025
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Sep.28, 2024	Sep.27, 2025
Attenuator	Aglient	8495B	2814a12853	Sep.28, 2024	Sep.27, 2025
RF Control Unit	Tonscend	JS0806-2	23B80620666	Dec.27,2024	Dec.26,2025
Software					
Description	Manufacturer	Name	Version		
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System	V3.2.22		

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Sep.28, 2024	Sep.27, 2025
Two-Line V-Network	R&S	ENV216	101983	Sep.28, 2024	Sep.27, 2025
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Sep.28, 2024	Sep.27, 2025
Software					
Description			Manufacturer	Name	Version
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1

Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Sep.28, 2024	Sep.27, 2025
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	June 28, 2024	June.27 2027
Preamplifier	HP	8447D	2944A09099	Sep.28, 2024	Sep.27, 2025
EMI Measurement Receiver	R&S	ESR26	101377	Sep.28, 2024	Sep.27, 2025
Horn Antenna	TDK	HRN-0118	130940	Dec.10, 2024	Dec.11, 2027
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Sep.28, 2024	Sep.27, 2025
Horn Antenna	Schwarzbeck	BBHA9170	697	Jun 30, 2024	Jun 29, 2027
Preamplifier	TDK	PA-02-2	TRS-307-00003	Sep.28, 2024	Sep.27, 2025
Preamplifier	TDK	PA-02-3	TRS-308-00002	Sep.28, 2024	Sep.27, 2025
Loop antenna	Schwarzbeck	1519B	00008	Dec.09, 2024	Dec.08, 2027
High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Sep.28, 2024	Sep.27, 2025
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Sep.28, 2024	Sep.27, 2025
Software					
Description			Manufacturer	Name	Version
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1

Other Instrument					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Temperature humidity probe	OMEGA	ITHX-SD-5	18470007	Oct.8, 2024	Oct.7, 2025
Barometer	Yiyi	Baro	N/A	Oct.10, 2024	Oct.9, 2025
Attenuator	Agilent	8495B	2814a12853	Sep.28, 2024	Sep.27, 2025

7. ANTENNA PORT TEST RESULTS

7.1. CONDUCTED OUTPUT POWER

LIMITS

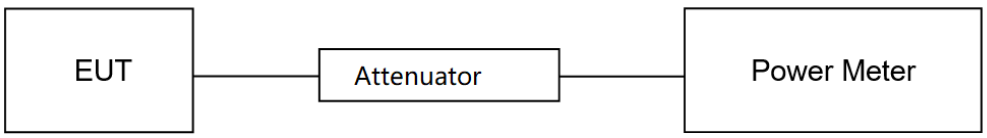
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	AVG Output Power	1 watt or 30 dBm	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.9.2.3.1.

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.
The test result in dBm by adding [10 log (1 / D)], where D is the duty cycle.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.4℃	Relative Humidity	52.1%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST DATE / ENGINEER

Test Date	April 25, 2025	Test By	Walker Yuan

TEST RESULTS

Please refer to section "Test Data" - Appendix C

7.2. 6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

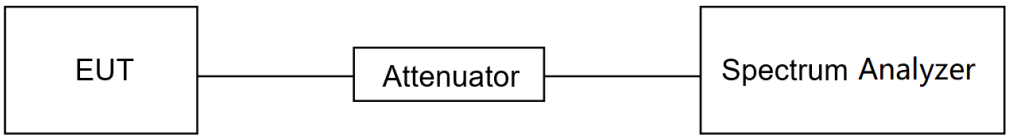
Connect the EUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	For 6 dB Bandwidth: Enough to capture all products of the modulation carrier emission For 99 % Occupied Bandwidth: Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.4℃	Relative Humidity	52.1%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST DATE / ENGINEER

Test Date	April 25, 2025	Test By	Walker Yuan

TEST RESULTS

Please refer to section "Test Data" - Appendix A&B

7.3. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

TEST PROCEDURE

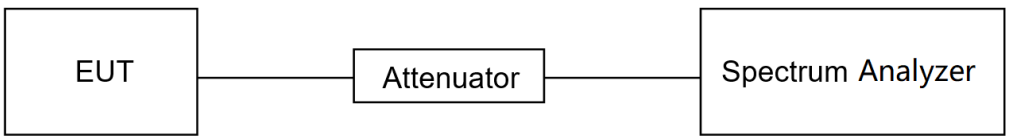
Refer to ANSI C63.10-2013 clause 11.10.2.

Connect the EUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	power averaging (rms)
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x OBW bandwidth
Trace	Employ trace averaging(rms)mode over a minimum of 100 traces
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.4℃	Relative Humidity	52.1%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST DATE / ENGINEER

Test Date	April 25, 2025	Test By	Walker Yuan

TEST RESULTS

Please refer to section "Test Data" - Appendix D

7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyzer and use the following settings for reference level measurement:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

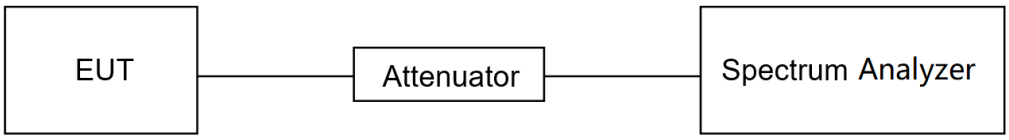
Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.
Change the settings for emission level measurement:

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency

band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.4℃	Relative Humidity	52.1%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST DATE / ENGINEER

Test Date	April 25, 2025	Test By	Walker Yuan

TEST RESULTS

Please refer to section "Test Data" - Appendix E&F

7.5. DUTY CYCLE

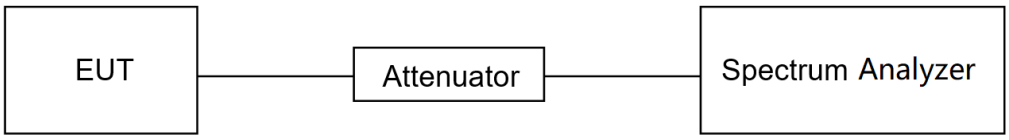
LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.4℃	Relative Humidity	52.1%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST DATE / ENGINEER

Test Date	April 25, 2025	Test By	Walker Yuan

TEST RESULTS

Please refer to section "Test Data" - Appendix G

8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
Frequency (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

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6c

TEST PROCEDURE

Below 30 MHz

The setting of the spectrum analyzer

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyzer

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz

The setting of the spectrum analyzer

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

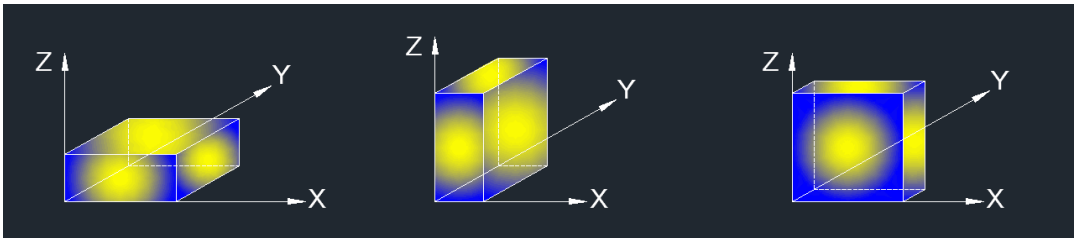
3. The EUT was placed on a turntable with 1.5 m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.5. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

For Restricted Bandedge:
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. PK=Peak: Peak detector.
4. AV=Average: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.5.
6. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
7. Both horizontal and vertical have been tested, only the worst data was recorded in the report.
8. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious emission (9 kHz ~ 30 MHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
4. All modes have been tested, but only the worst data was recorded in the report.
5. dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5

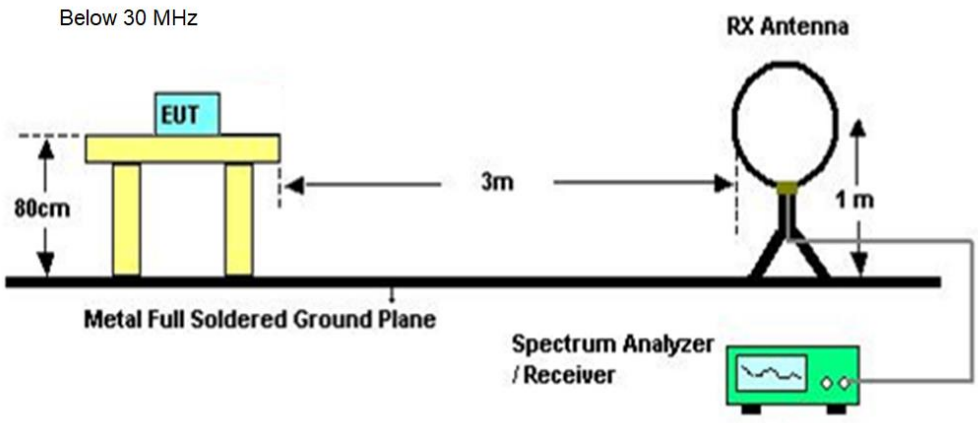
For Radiate Spurious Emission (30 MHz ~ 1 GHz):
Note:
1. Result Level = Read Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious Emission (1 GHz ~ 3 GHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.5.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes have been tested, but only the worst data was recorded in the report.

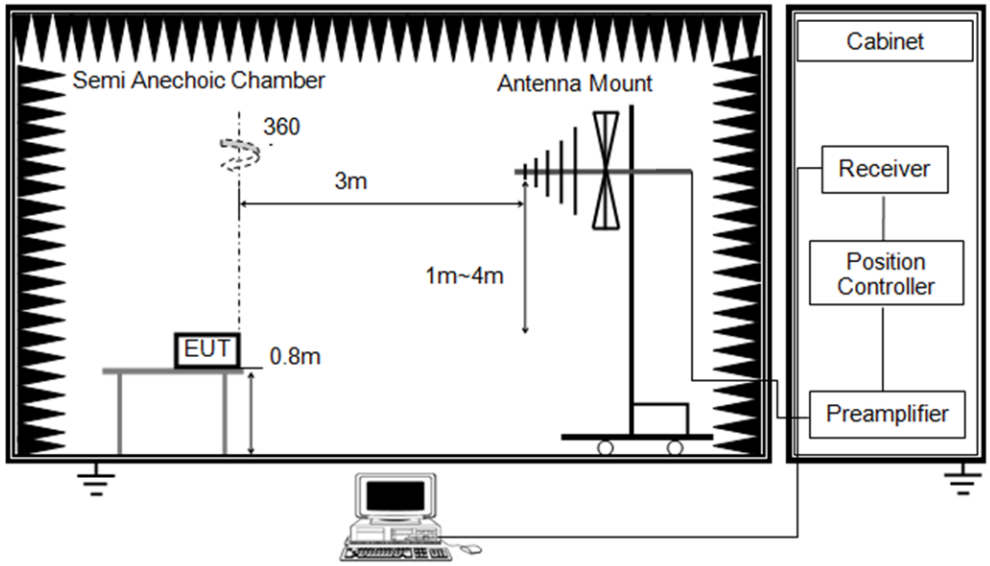
For Radiate Spurious Emission (3 GHz ~ 18 GHz):
Note:
1. Peak Result = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.5.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious emission (18 GHz ~ 26 GHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. All modes have been tested, but only the worst data was recorded in the report.

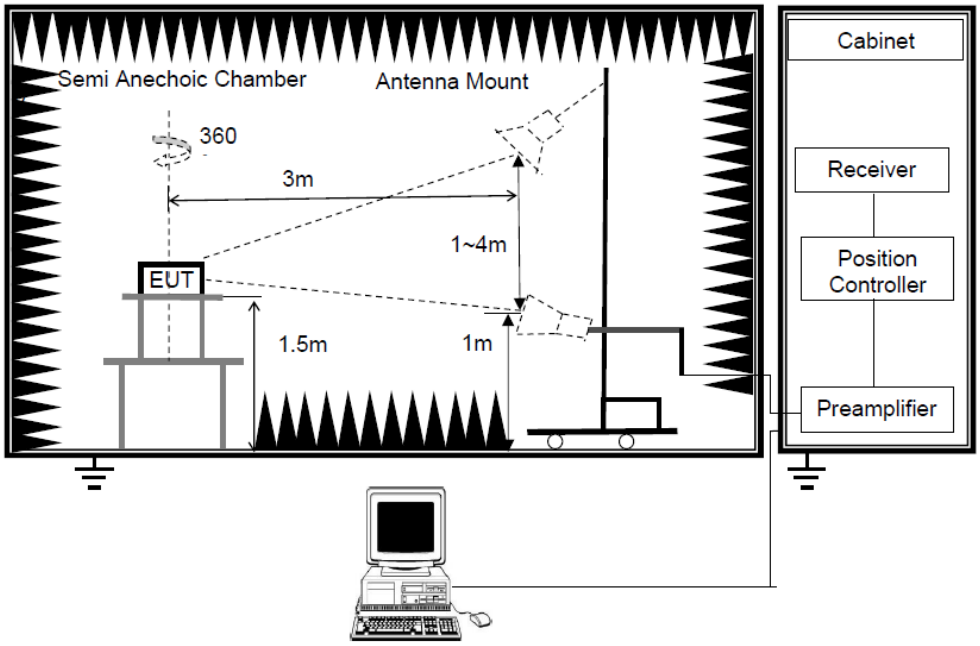
TEST SETUP



Below 1 GHz and above 30 MHz



Above 1GHz



TEST ENVIRONMENT

Temperature	24.2℃	Relative Humidity	55%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST DATE / ENGINEER

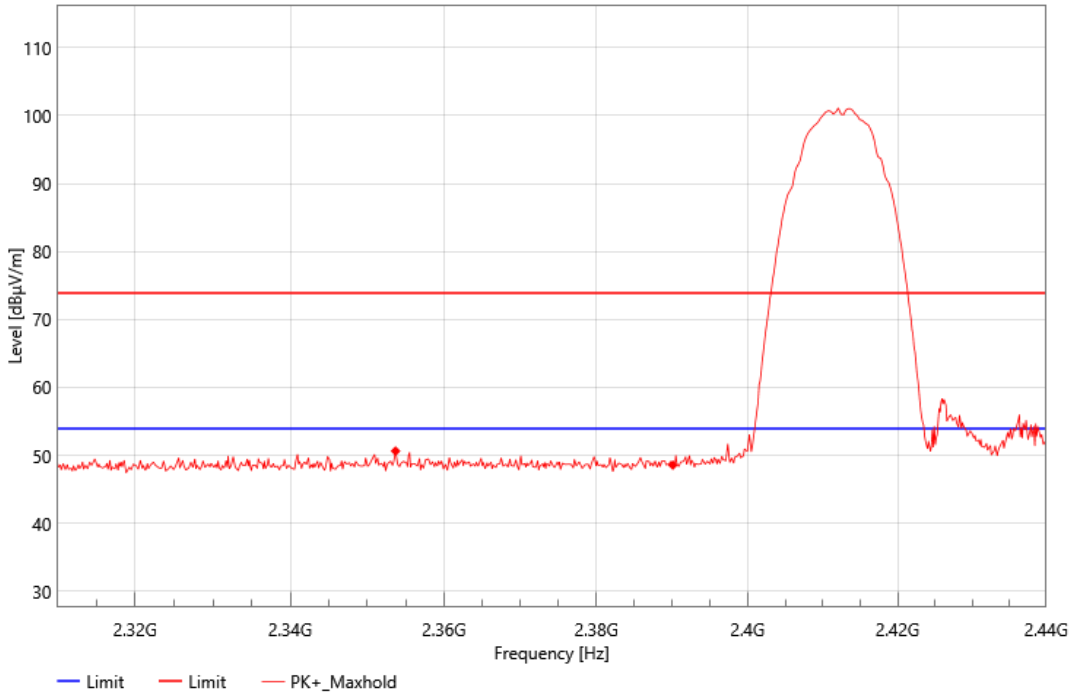
Test Date	May 16, 2025	Test By	Mason Wang

TEST RESULTS

8.1. RESTRICTED BANDEDGE

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V

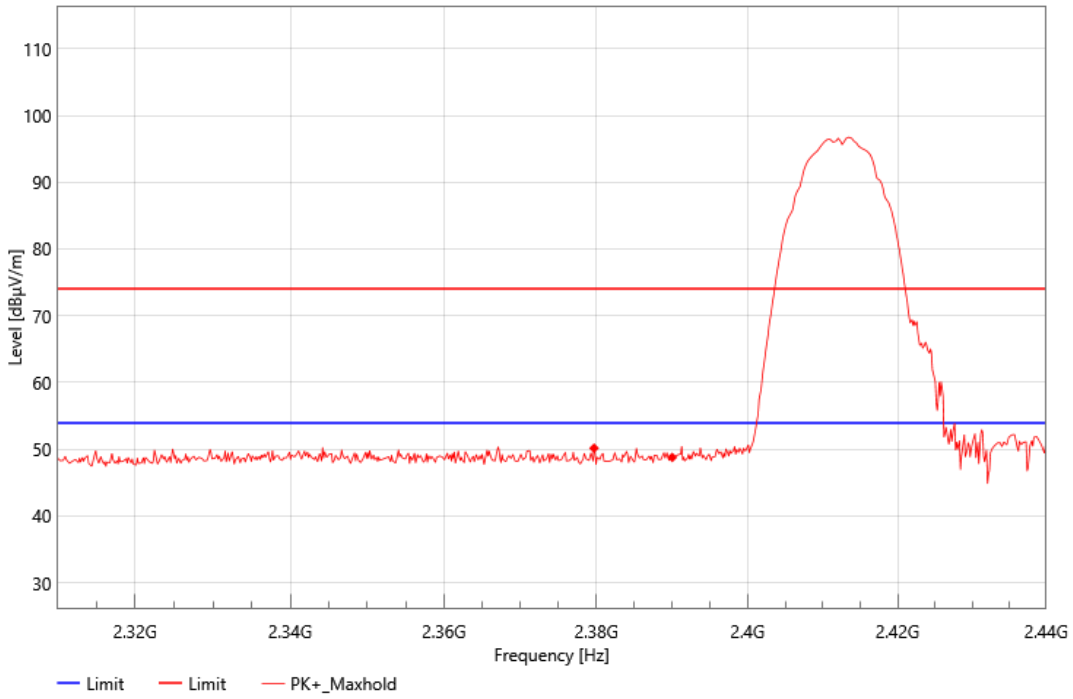
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2353.68	27.89	50.66	22.77	74.00	23.34	Horizontal	PK	PASS
2	2390.08	25.87	48.59	22.72	74.00	25.41	Horizontal	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

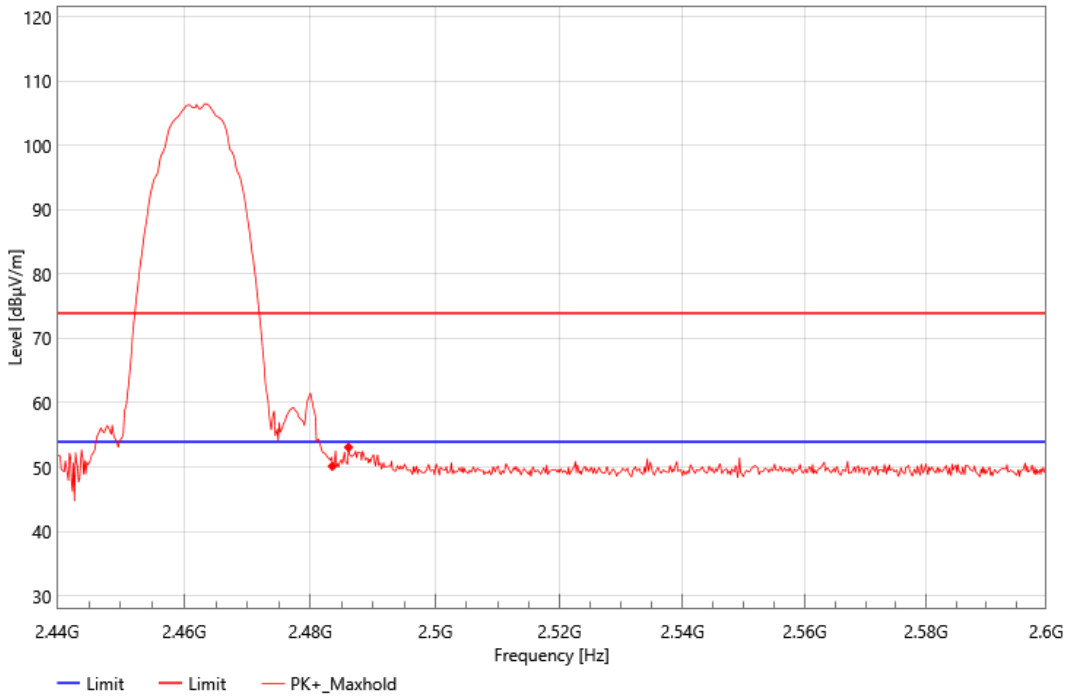


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2379.68	27.63	50.16	22.53	74.00	23.84	Vertical	PK	PASS
2	2390.00	26.06	48.78	22.72	74.00	25.22	Vertical	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	DC 3.3V

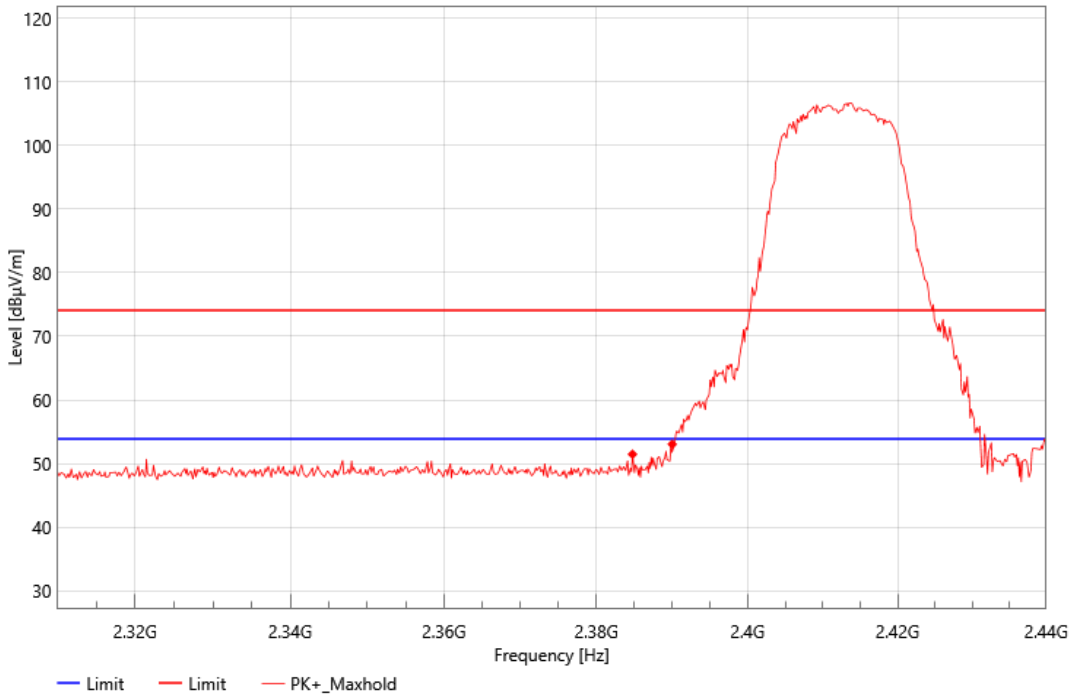
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	26.98	50.13	23.15	74.00	23.87	Horizontal	PK	PASS
2	2486.08	29.95	53.09	23.14	74.00	20.91	Horizontal	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V

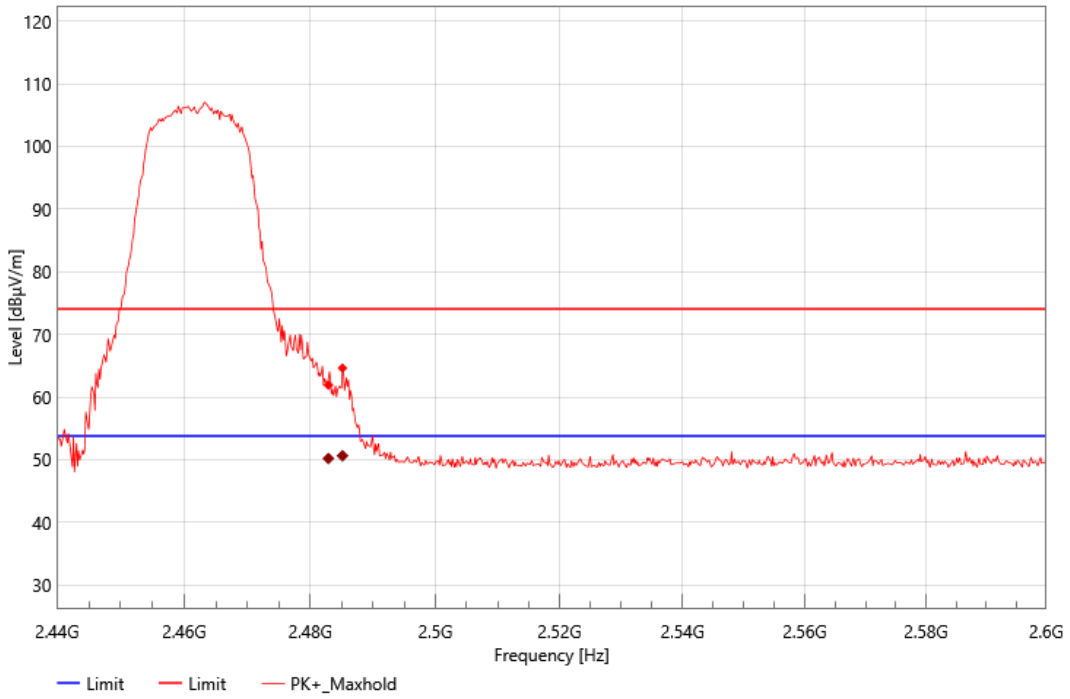
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2384.75	28.85	51.47	22.62	74.00	22.53	Horizontal	PK	PASS
2	2390.00	30.34	53.06	22.72	74.00	20.94	Horizontal	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

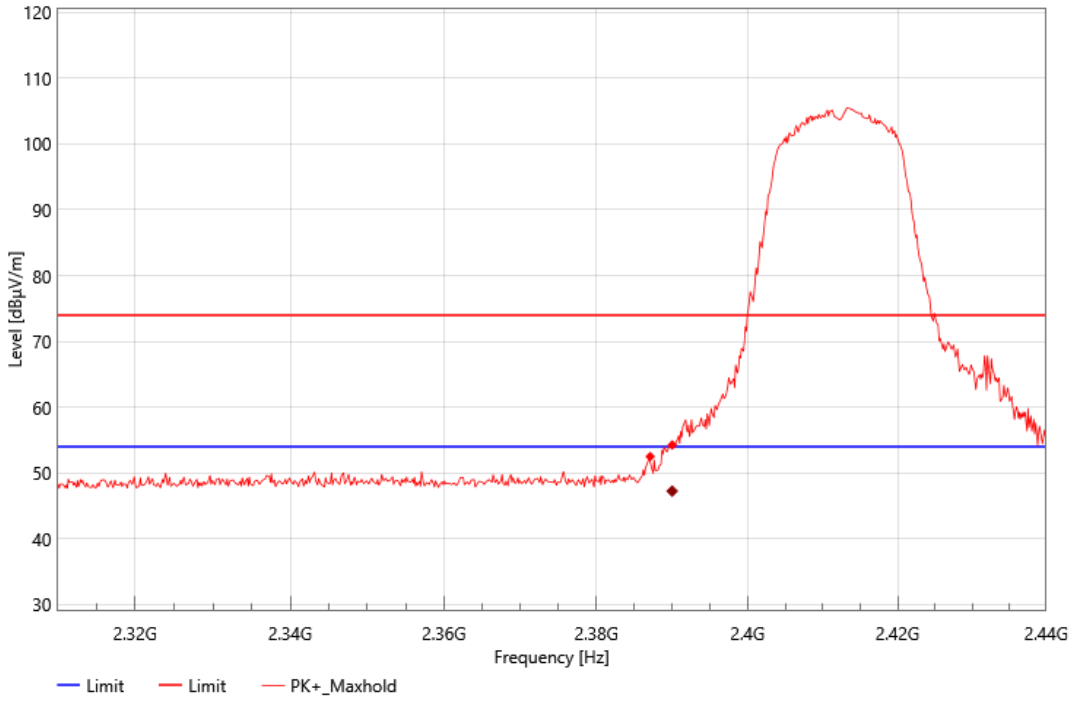


Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	38.78	61.93	23.15	74.00	12.07	Horizontal	PK	PASS
2	2485.12	41.50	64.64	23.14	74.00	9.36	Horizontal	PK	PASS

Final Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	27.08	50.23	23.15	54.00	3.77	Horizontal	AV	PASS
2	2485.12	27.50	50.64	23.14	54.00	3.36	Horizontal	AV	PASS

Test Mode:	802.11n20	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph



Suspected Data List

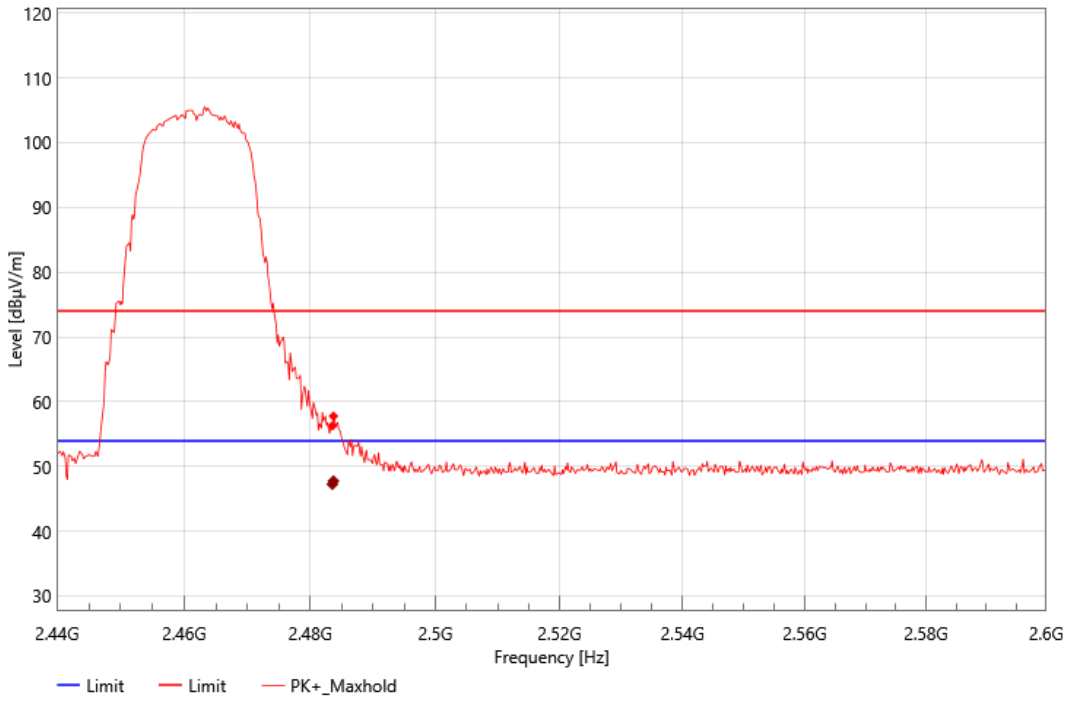
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2387.09	29.86	52.52	22.66	74.00	21.48	Horizontal	PK	PASS
2	2390.00	31.54	54.26	22.72	74.00	19.74	Horizontal	PK	PASS

Final Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2390.00	24.54	47.26	22.72	54.00	6.74	Horizontal	AV	PASS

Test Mode:	802.11n20	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

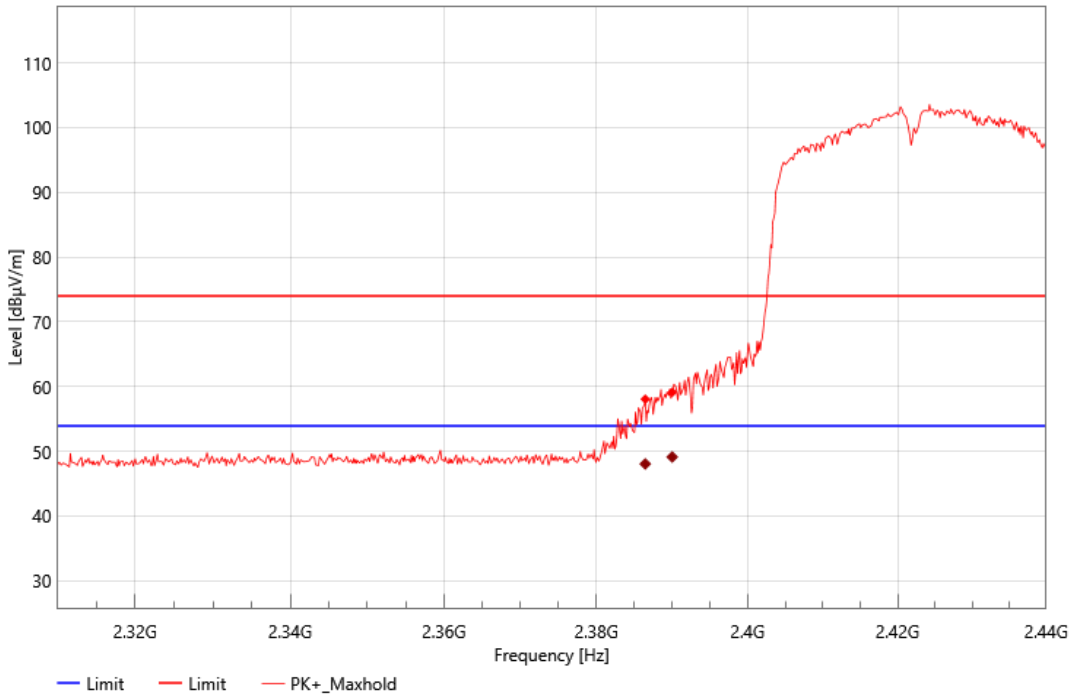


Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	33.13	56.28	23.15	74.00	17.72	Horizontal	PK	PASS
2	2483.68	34.63	57.78	23.15	74.00	16.22	Horizontal	PK	PASS

Final Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	24.13	47.28	23.15	54.00	6.72	Horizontal	AV	PASS
2	2483.68	24.63	47.78	23.15	54.00	6.22	Horizontal	AV	PASS

Test Mode:	802.11n40	Frequency(MHz):	2422
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

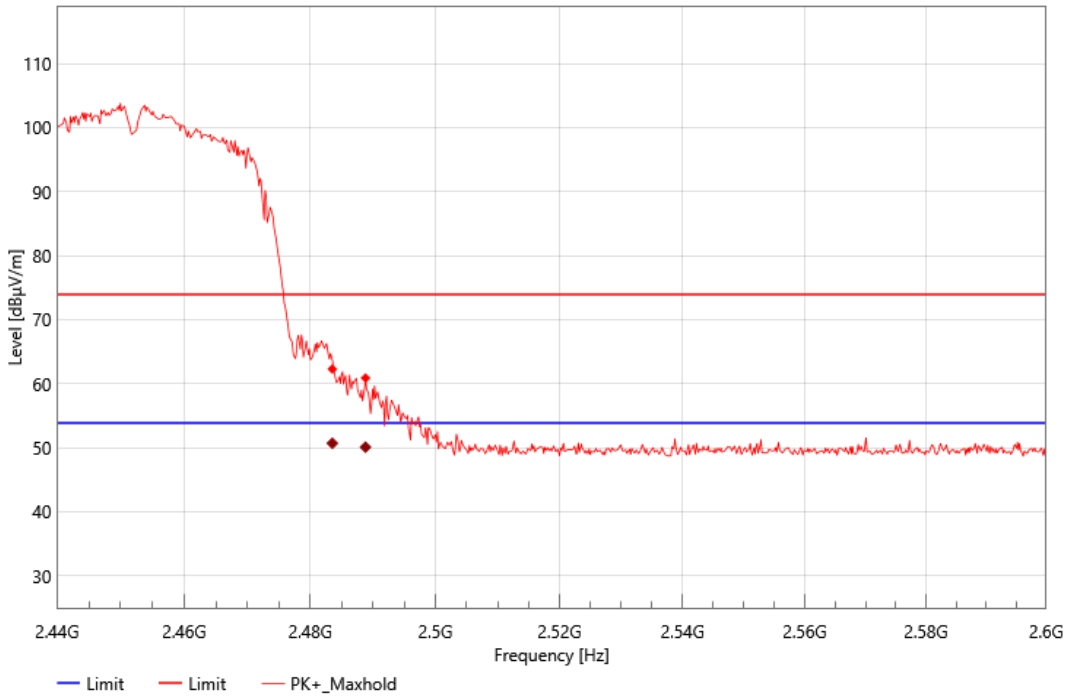


Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2386.44	35.41	58.06	22.65	74.00	15.94	Horizontal	PK	PASS
2	2390.00	36.41	59.13	22.72	74.00	14.87	Horizontal	PK	PASS

Final Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2386.44	25.41	48.06	22.65	53.90	5.84	Horizontal	AV	PASS
2	2390.00	26.41	49.13	22.72	53.90	4.77	Horizontal	AV	PASS

Test Mode:	802.11n40	Frequency(MHz):	2452
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph



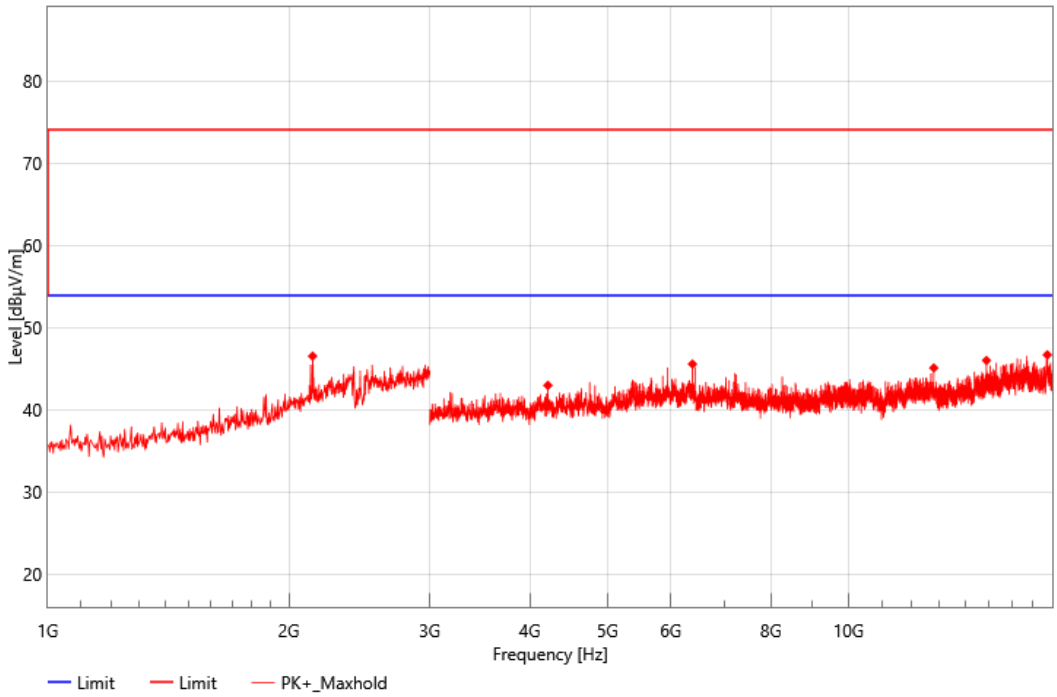
Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	39.15	62.30	23.15	74.00	11.70	Horizontal	PK	PASS
2	2488.80	37.74	60.88	23.14	74.00	13.12	Horizontal	PK	PASS

Final Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2483.50	27.55	50.70	23.15	53.90	3.20	Horizontal	AV	PASS
2	2488.80	26.94	50.08	23.14	53.90	3.82	Horizontal	AV	PASS

8.2. SPURIOUS EMISSIONS(1 GHZ~18 GHZ)

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V

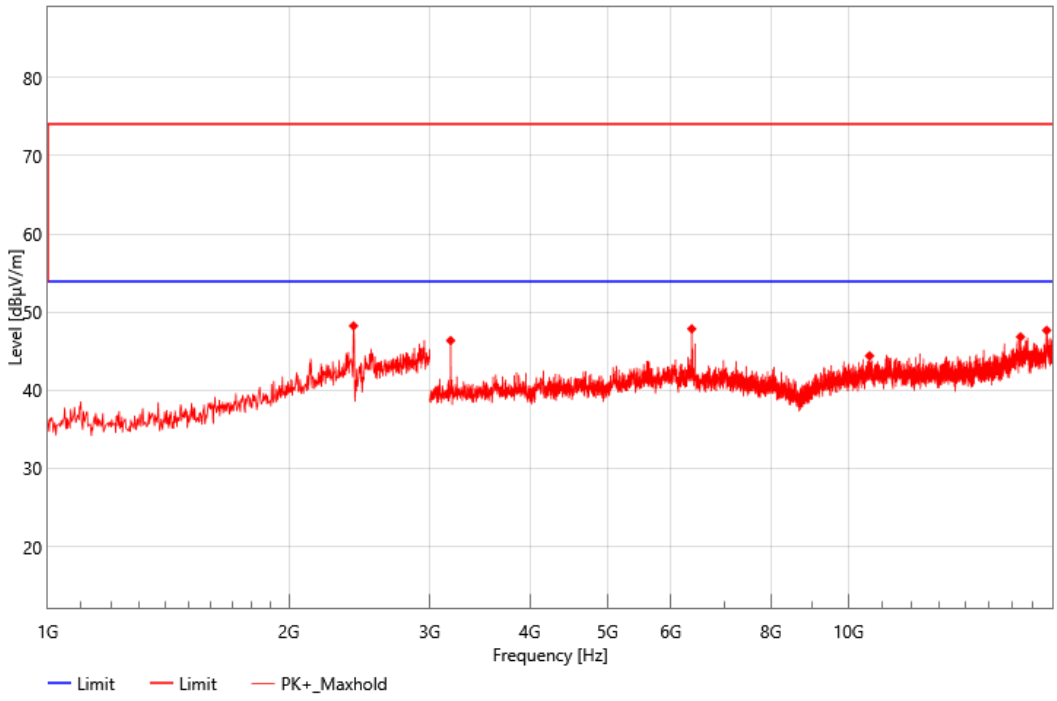
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2142.00	55.57	46.52	-9.05	74.00	27.48	Horizontal	PK	PASS
2	4213.50	55.65	42.96	-12.69	74.00	31.04	Horizontal	PK	PASS
3	6385.50	53.46	45.55	-7.91	74.00	28.45	Horizontal	PK	PASS
4	12780.00	49.46	45.08	-4.38	74.00	28.92	Horizontal	PK	PASS
5	14868.00	48.54	46.00	-2.54	74.00	28.00	Horizontal	PK	PASS
6	17713.50	46.79	46.68	-0.11	74.00	27.32	Horizontal	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

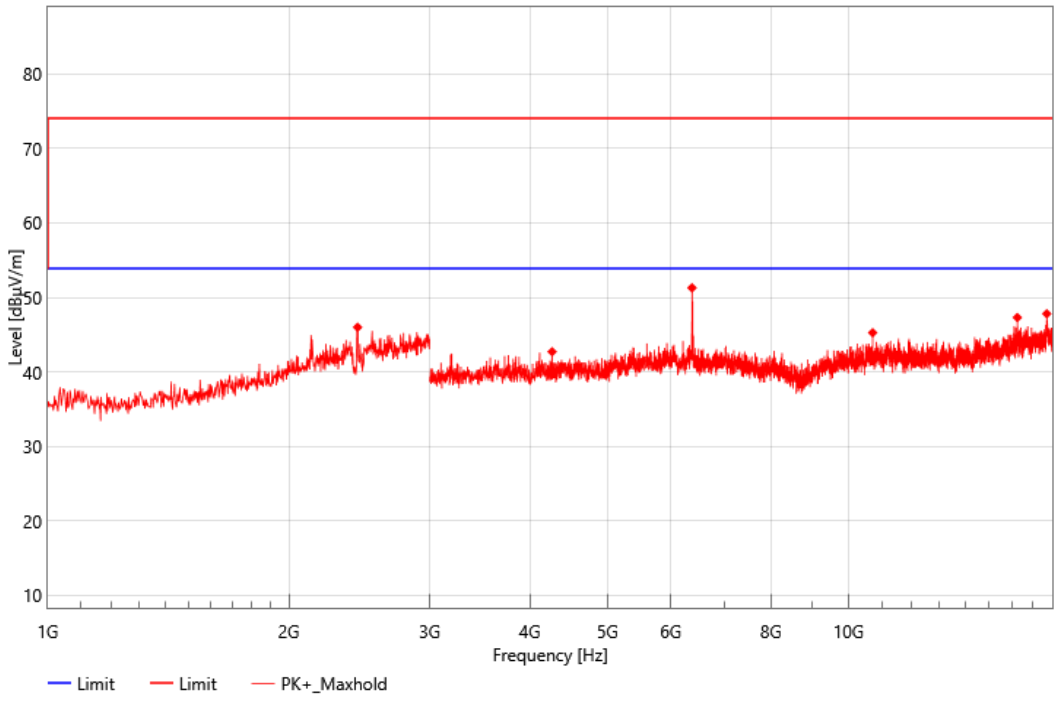


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2410.00	56.75	48.23	-8.52	74.00	25.77	Vertical	PK	PASS
2	3186.00	61.18	46.36	-14.82	74.00	27.64	Vertical	PK	PASS
3	6372.00	55.74	47.85	-7.89	74.00	26.15	Vertical	PK	PASS
4	10624.50	49.71	44.40	-5.31	74.00	29.60	Vertical	PK	PASS
5	16401.00	47.99	46.83	-1.16	74.00	27.17	Vertical	PK	PASS
6	17680.50	47.37	47.66	0.29	74.00	26.34	Vertical	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

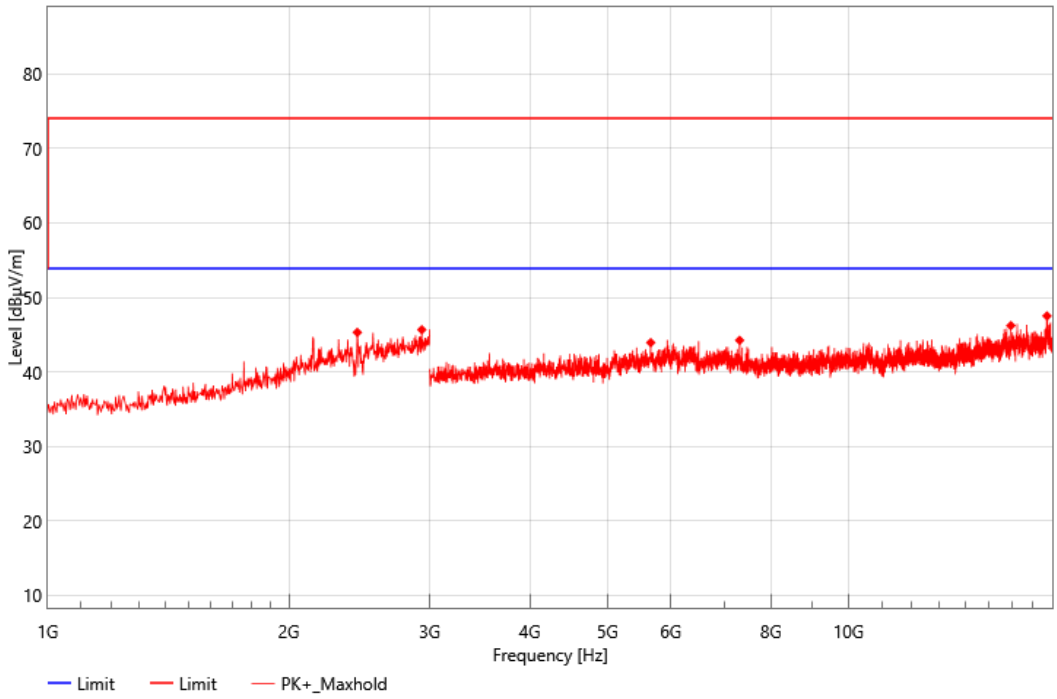


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2438.00	54.49	46.01	-8.48	74.00	27.99	Vertical	PK	PASS
2	4264.50	55.20	42.71	-12.49	74.00	31.29	Vertical	PK	PASS
3	6376.50	59.18	51.30	-7.88	74.00	22.70	Vertical	PK	PASS
4	10719.00	50.22	45.27	-4.95	74.00	28.73	Vertical	PK	PASS
5	16251.00	47.92	47.32	-0.6	74.00	26.68	Vertical	PK	PASS
6	17685.00	47.56	47.82	0.26	74.00	26.18	Vertical	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

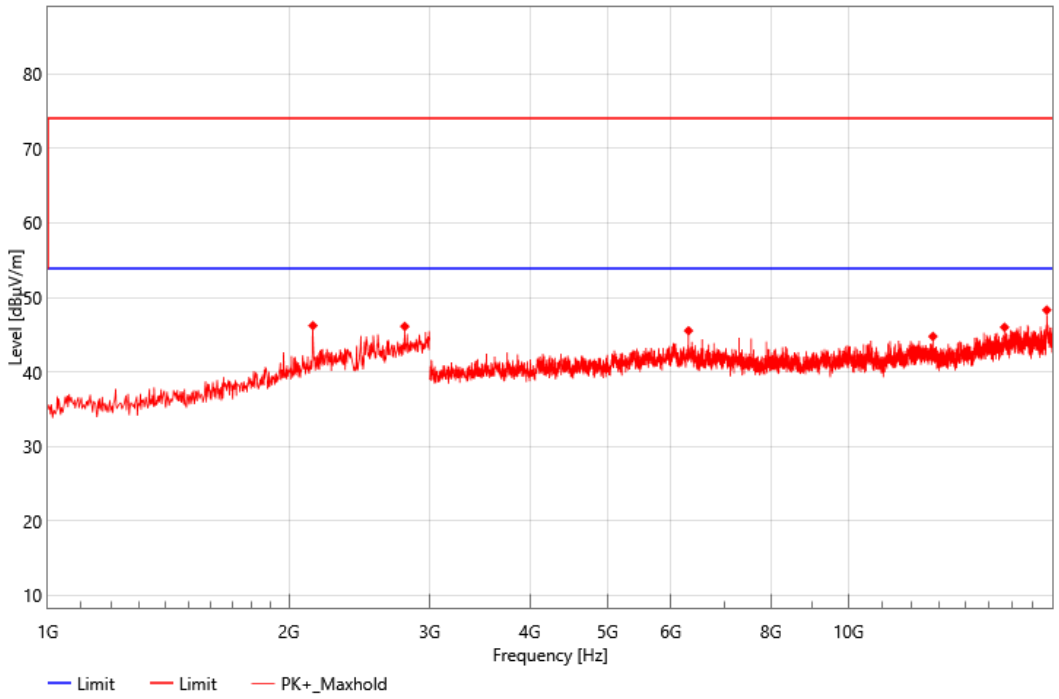


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2436.00	53.81	45.32	-8.49	74.00	28.68	Horizontal	PK	PASS
2	2932.00	53.19	45.67	-7.52	74.00	28.33	Horizontal	PK	PASS
3	5662.50	53.09	43.94	-9.15	74.00	30.06	Horizontal	PK	PASS
4	7312.50	51.89	44.25	-7.64	74.00	29.75	Horizontal	PK	PASS
5	15949.50	48.37	46.22	-2.15	74.00	27.78	Horizontal	PK	PASS
6	17695.50	47.31	47.52	0.21	74.00	26.48	Horizontal	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

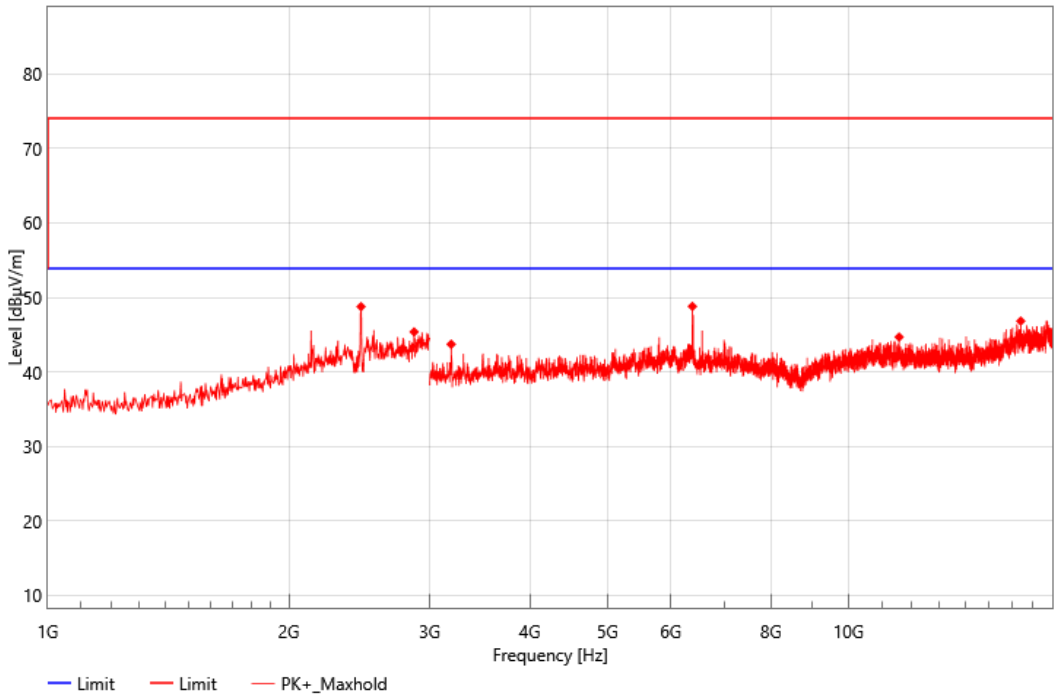


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2144.00	55.27	46.22	-9.05	74.00	27.78	Horizontal	PK	PASS
2	2792.00	54.54	46.12	-8.42	74.00	27.88	Horizontal	PK	PASS
3	6312.00	53.13	45.54	-7.59	74.00	28.46	Horizontal	PK	PASS
4	12748.50	49.10	44.77	-4.33	74.00	29.23	Horizontal	PK	PASS
5	15663.00	48.15	46.01	-2.14	74.00	27.99	Horizontal	PK	PASS
6	17685.00	48.06	48.32	0.26	74.00	25.68	Horizontal	PK	PASS

Test Mode:	802.11b	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

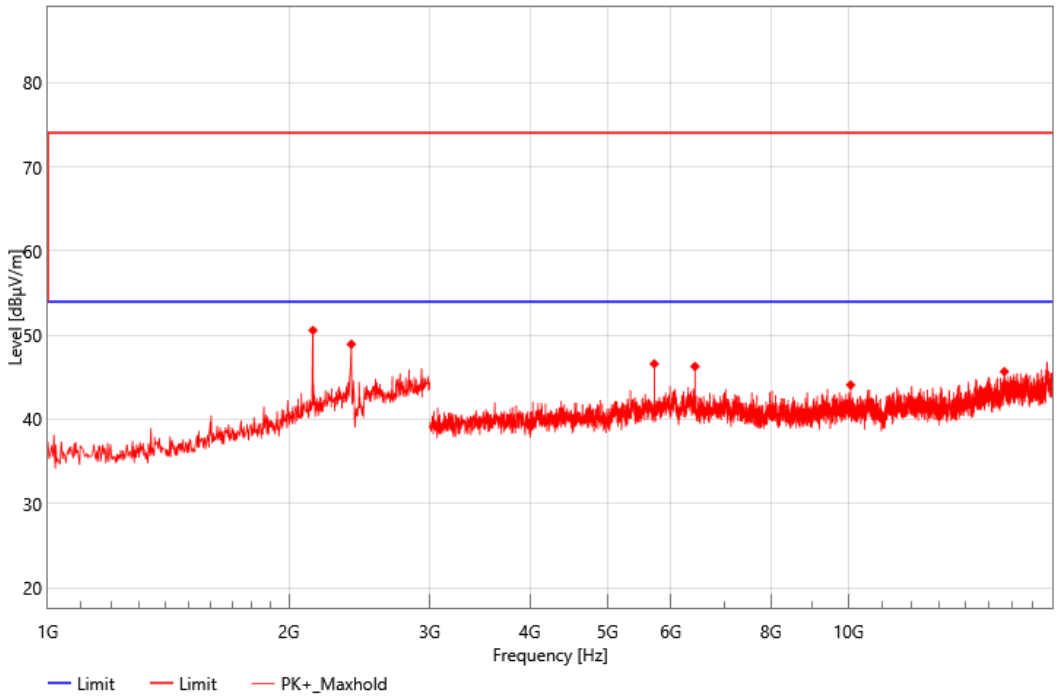


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2462.00	57.23	48.77	-8.46	74.00	25.23	Vertical	PK	PASS
2	2868.00	53.63	45.38	-8.25	74.00	28.62	Vertical	PK	PASS
3	3190.50	58.53	43.72	-14.81	74.00	30.28	Vertical	PK	PASS
4	6384.00	56.70	48.81	-7.89	74.00	25.19	Vertical	PK	PASS
5	11565.00	49.01	44.69	-4.32	74.00	29.31	Vertical	PK	PASS
6	16411.50	48.09	46.84	-1.25	74.00	27.16	Vertical	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

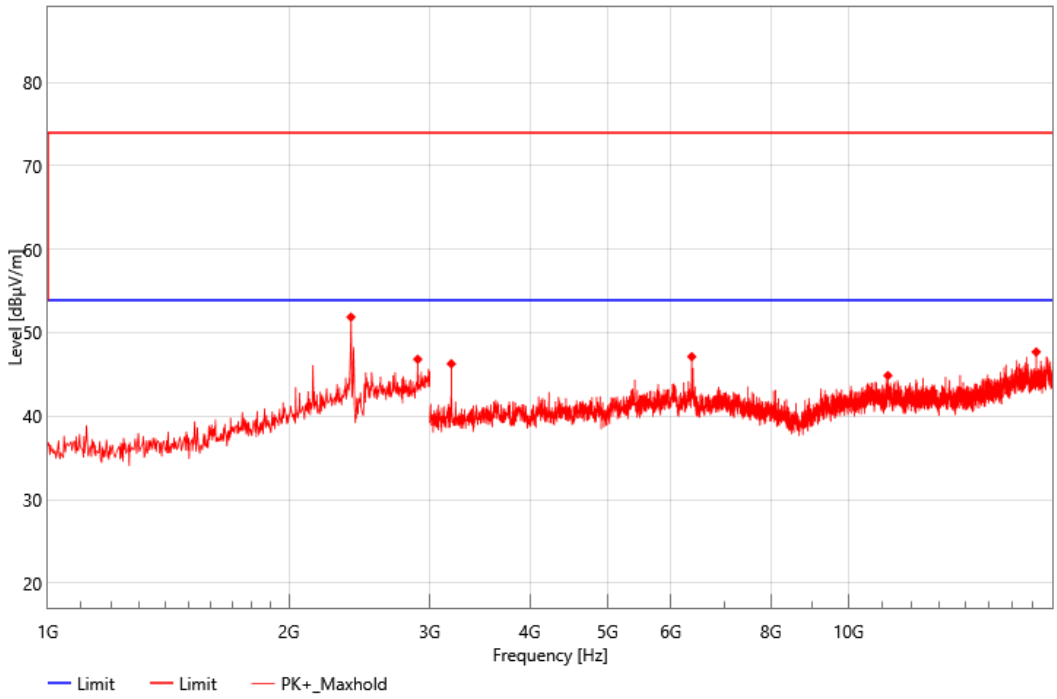


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2144.00	59.64	50.59	-9.05	74.00	23.41	Horizontal	PK	PASS
2	2394.00	57.47	48.94	-8.53	74.00	25.06	Horizontal	PK	PASS
3	5721.00	56.02	46.60	-9.42	74.00	27.40	Horizontal	PK	PASS
4	6432.00	54.39	46.29	-8.1	74.00	27.71	Horizontal	PK	PASS
5	10062.00	50.34	44.10	-6.24	74.00	29.90	Horizontal	PK	PASS
6	15652.50	47.73	45.68	-2.05	74.00	28.32	Horizontal	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

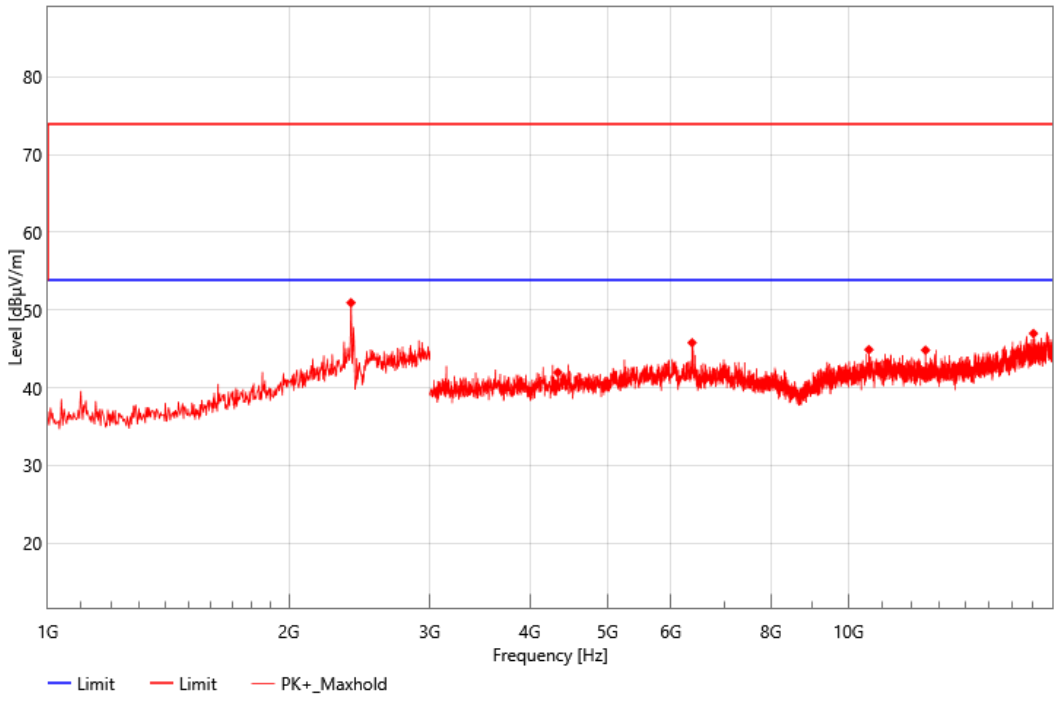


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2392.00	60.40	51.87	-8.53	74.00	22.13	Vertical	PK	PASS
2	2898.00	54.73	46.82	-7.91	74.00	27.18	Vertical	PK	PASS
3	3192.00	61.09	46.28	-14.81	74.00	27.72	Vertical	PK	PASS
4	6372.00	55.02	47.13	-7.89	74.00	26.87	Vertical	PK	PASS
5	11199.00	49.33	44.87	-4.46	74.00	29.13	Vertical	PK	PASS
6	17157.00	48.65	47.69	-0.96	74.00	26.31	Vertical	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	DC 3.3V

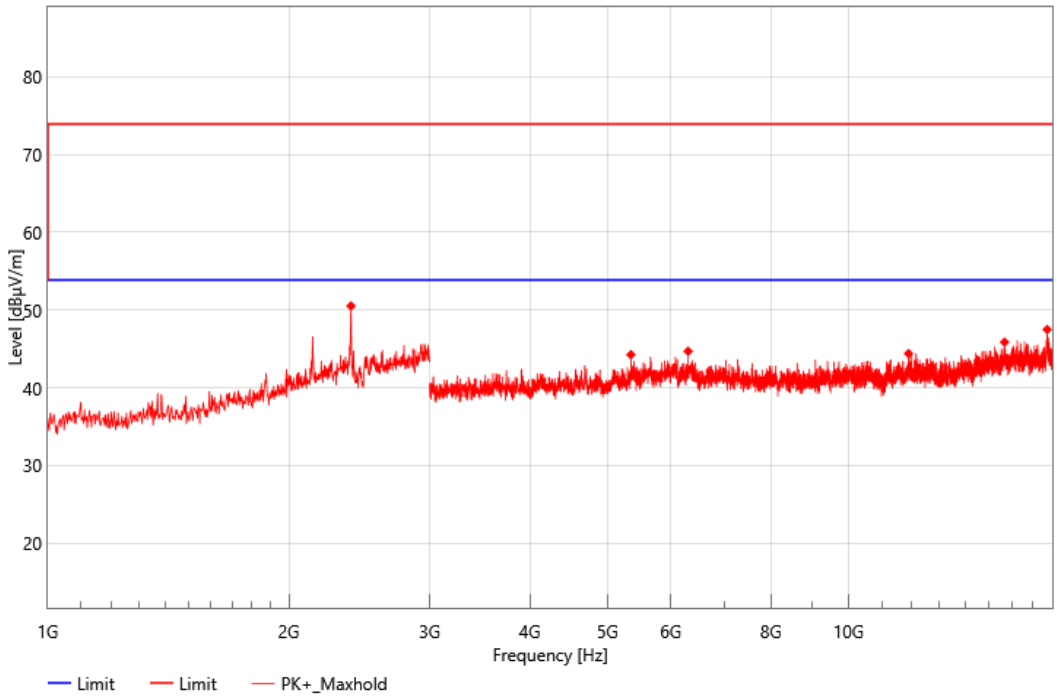
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2392.00	59.48	50.95	-8.53	74.00	23.05	Vertical	PK	PASS
2	4335.00	54.23	41.98	-12.25	74.00	32.02	Vertical	PK	PASS
3	6378.00	53.68	45.80	-7.88	74.00	28.20	Vertical	PK	PASS
4	10605.00	50.15	44.91	-5.24	74.00	29.09	Vertical	PK	PASS
5	12480.00	49.38	44.85	-4.53	74.00	29.15	Vertical	PK	PASS
6	17022.00	47.83	46.99	-0.84	74.00	27.01	Vertical	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

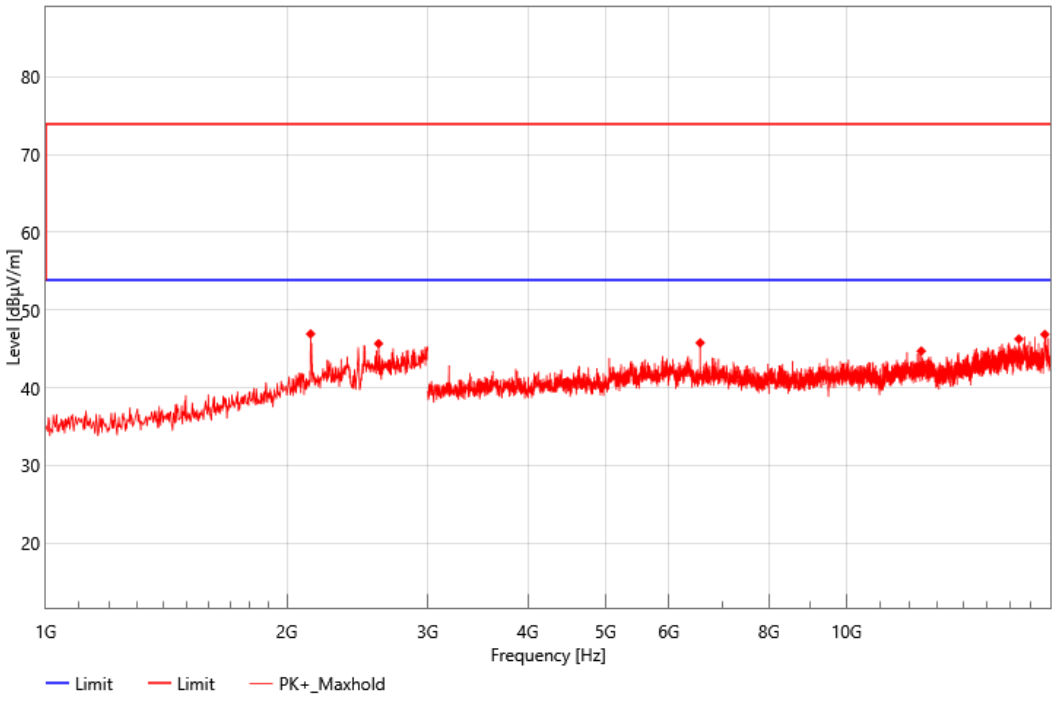


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2392.00	59.06	50.53	-8.53	74.00	23.47	Horizontal	PK	PASS
2	5349.00	53.99	44.26	-9.73	74.00	29.74	Horizontal	PK	PASS
3	6306.00	52.26	44.71	-7.55	74.00	29.29	Horizontal	PK	PASS
4	11886.00	48.73	44.41	-4.32	74.00	29.59	Horizontal	PK	PASS
5	15663.00	48.02	45.88	-2.14	74.00	28.12	Horizontal	PK	PASS
6	17706.00	47.46	47.51	0.05	74.00	26.49	Horizontal	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

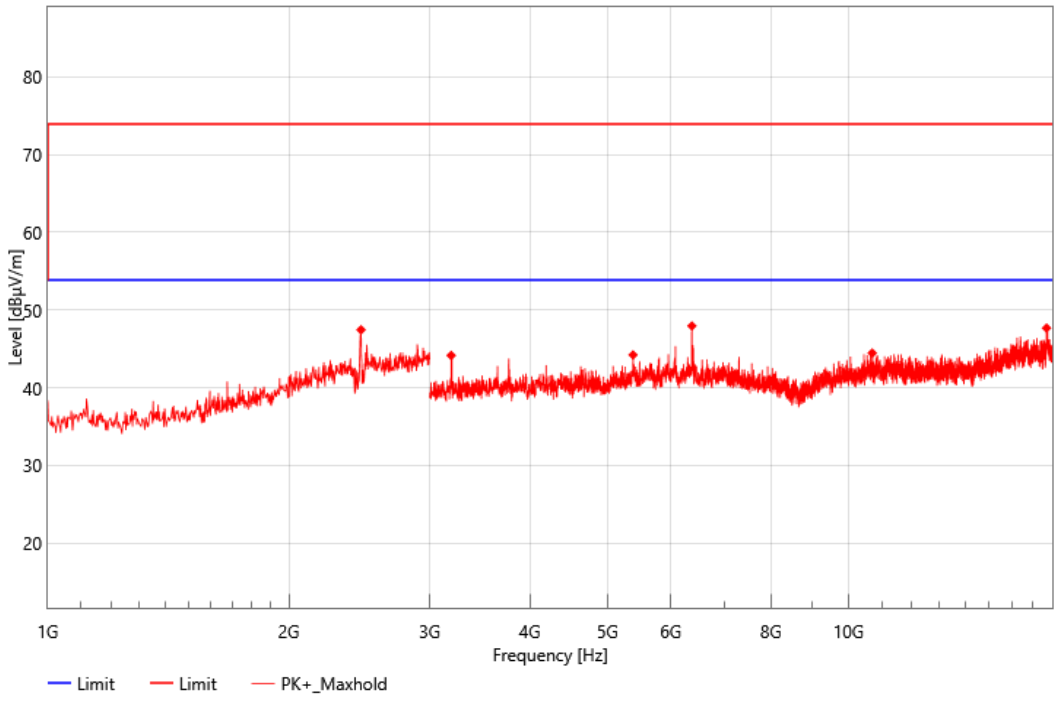


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2142.00	55.99	46.94	-9.05	74.00	27.06	Horizontal	PK	PASS
2	2604.00	53.87	45.69	-8.18	74.00	28.31	Horizontal	PK	PASS
3	6565.50	53.90	45.79	-8.11	74.00	28.21	Horizontal	PK	PASS
4	12399.00	49.40	44.73	-4.67	74.00	29.27	Horizontal	PK	PASS
5	16416.00	47.57	46.28	-1.29	74.00	27.72	Horizontal	PK	PASS
6	17689.50	46.63	46.87	0.24	74.00	27.13	Horizontal	PK	PASS

Test Mode:	802.11g	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

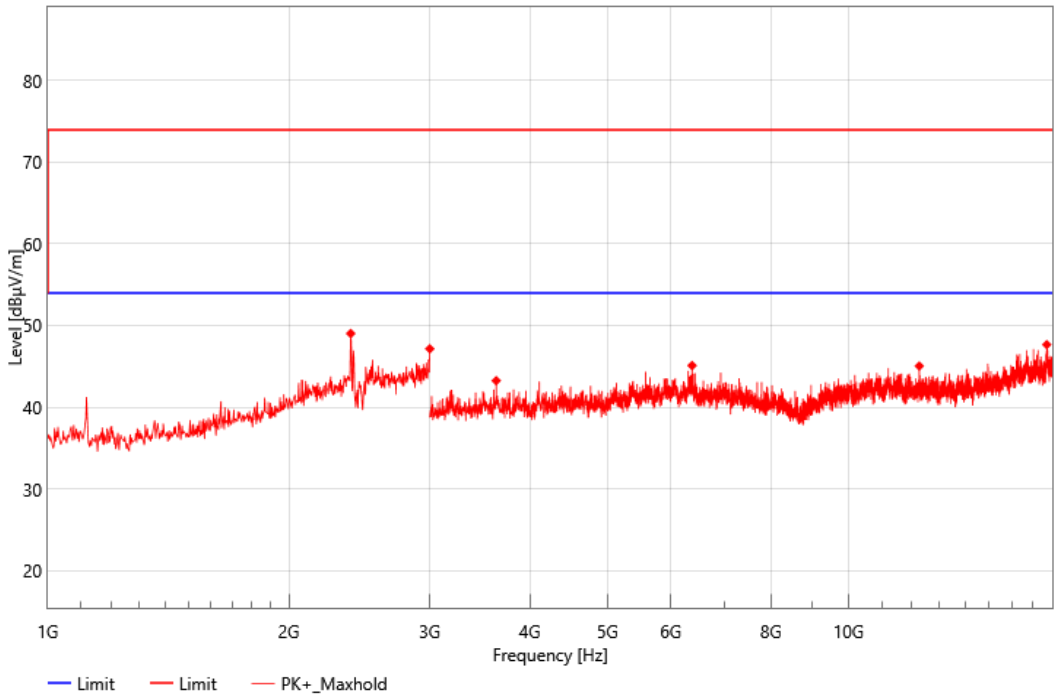


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2462.00	55.92	47.46	-8.46	74.00	26.54	Vertical	PK	PASS
2	3190.50	58.97	44.16	-14.81	74.00	29.84	Vertical	PK	PASS
3	5382.00	53.28	44.23	-9.05	74.00	29.77	Vertical	PK	PASS
4	6375.00	55.86	47.97	-7.89	74.00	26.03	Vertical	PK	PASS
5	10707.00	49.36	44.47	-4.89	74.00	29.53	Vertical	PK	PASS
6	17674.50	47.37	47.69	0.32	74.00	26.31	Vertical	PK	PASS

Test Mode:	802.11n20	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

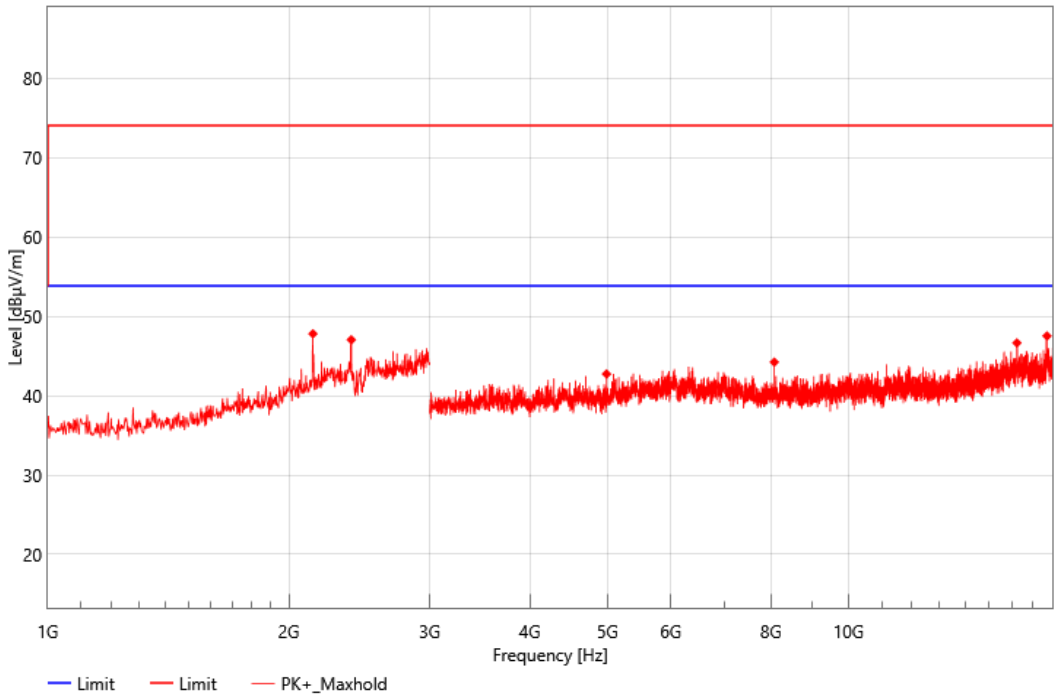


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2390.00	57.56	49.03	-8.53	74.00	24.97	Vertical	PK	PASS
2	3000.00	54.16	47.15	-7.01	74.00	26.85	Vertical	PK	PASS
3	3631.50	56.61	43.25	-13.36	74.00	30.75	Vertical	PK	PASS
4	6378.00	52.98	45.10	-7.88	74.00	28.90	Vertical	PK	PASS
5	12258.00	49.61	45.05	-4.56	74.00	28.95	Vertical	PK	PASS
6	17685.00	47.41	47.67	0.26	74.00	26.33	Vertical	PK	PASS

Test Mode:	802.11n20	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

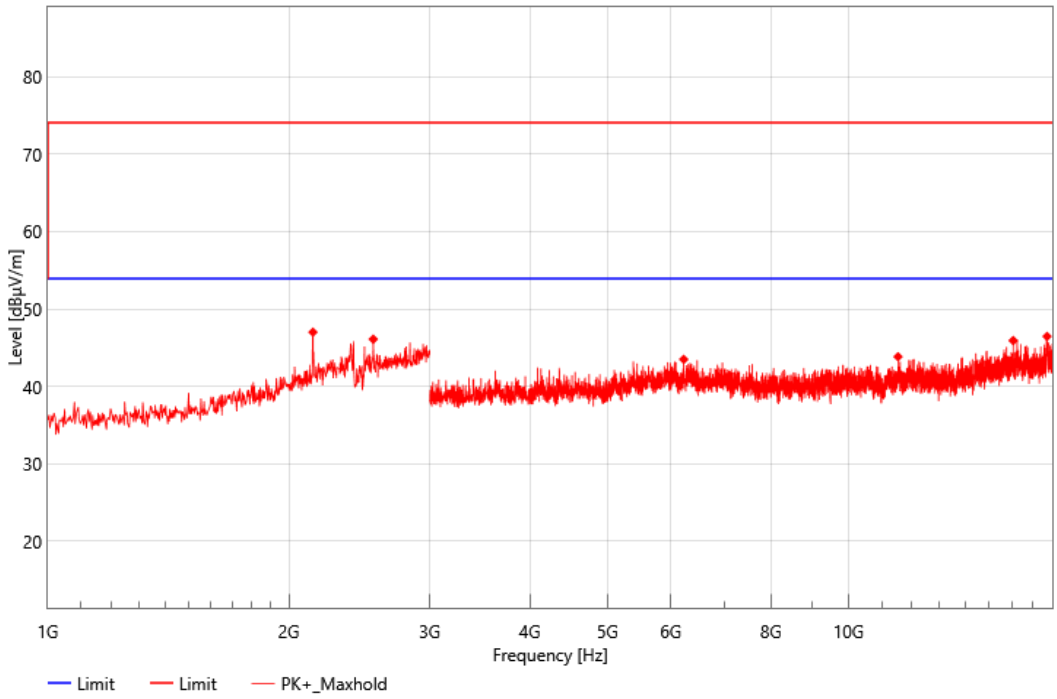


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2144.00	56.87	47.82	-9.05	74.00	26.18	Horizontal	PK	PASS
2	2394.00	55.59	47.06	-8.53	74.00	26.94	Horizontal	PK	PASS
3	4987.50	53.93	42.75	-11.18	74.00	31.25	Horizontal	PK	PASS
4	8079.00	52.14	44.24	-7.9	74.00	29.76	Horizontal	PK	PASS
5	16231.50	47.63	46.67	-0.96	74.00	27.33	Horizontal	PK	PASS
6	17695.50	47.33	47.54	0.21	74.00	26.46	Horizontal	PK	PASS

Test Mode:	802.11n20	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

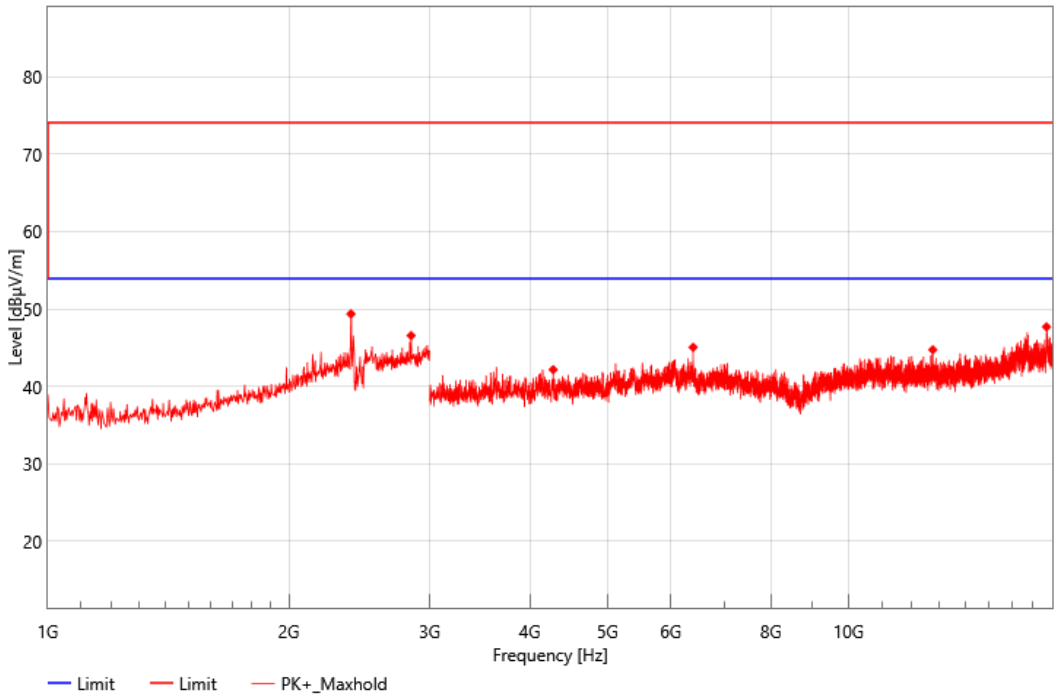


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2144.00	56.07	47.02	-9.05	74.00	26.98	Horizontal	PK	PASS
2	2550.00	54.28	46.11	-8.17	74.00	27.89	Horizontal	PK	PASS
3	6226.50	51.84	43.51	-8.33	74.00	30.49	Horizontal	PK	PASS
4	11530.50	48.12	43.85	-4.27	74.00	30.15	Horizontal	PK	PASS
5	16057.50	47.61	45.94	-1.67	74.00	28.06	Horizontal	PK	PASS
6	17698.50	46.29	46.48	0.19	74.00	27.52	Horizontal	PK	PASS

Test Mode:	802.11n20	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

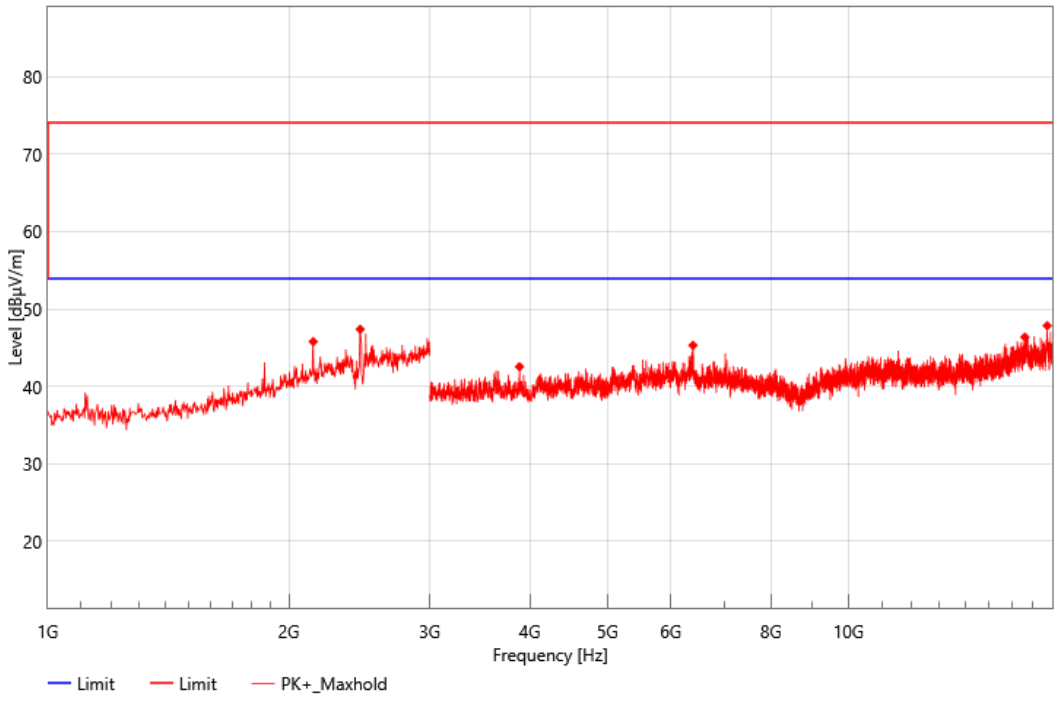


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2392.00	57.91	49.38	-8.53	74.00	24.62	Vertical	PK	PASS
2	2844.00	54.56	46.58	-7.98	74.00	27.42	Vertical	PK	PASS
3	4278.00	54.78	42.18	-12.6	74.00	31.82	Vertical	PK	PASS
4	6397.50	53.17	45.07	-8.1	74.00	28.93	Vertical	PK	PASS
5	12742.50	49.06	44.75	-4.31	74.00	29.25	Vertical	PK	PASS
6	17674.50	47.39	47.71	0.32	74.00	26.29	Vertical	PK	PASS

Test Mode:	802.11n20	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

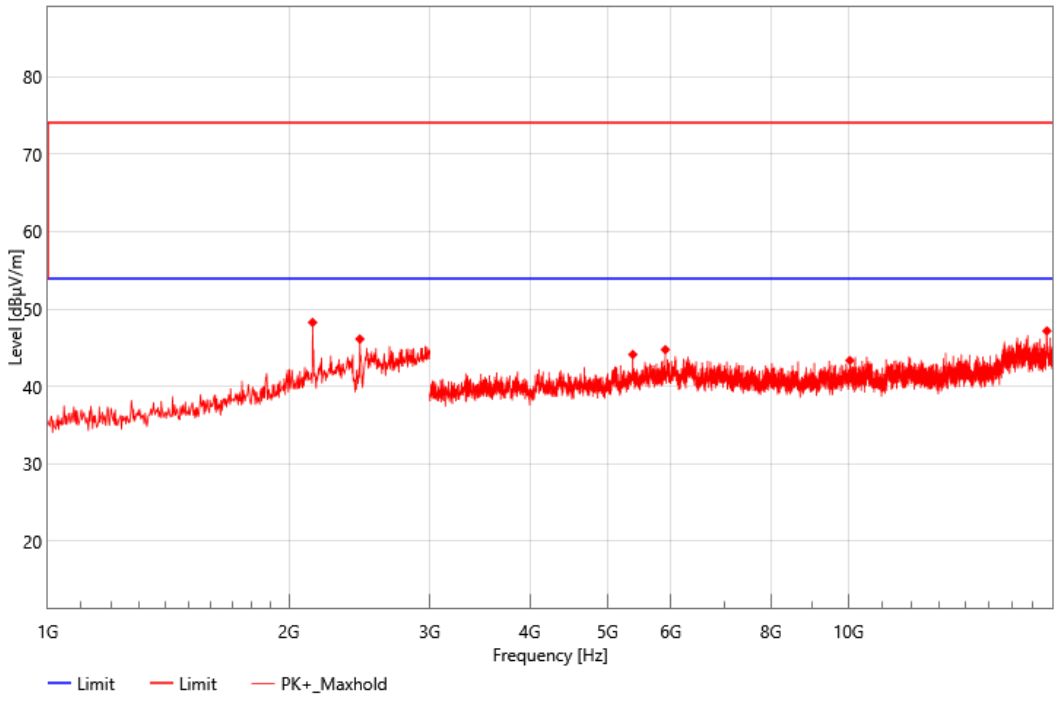


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2146.00	54.84	45.79	-9.05	74.00	28.21	Vertical	PK	PASS
2	2456.00	55.86	47.40	-8.46	74.00	26.60	Vertical	PK	PASS
3	3883.50	55.80	42.56	-13.24	74.00	31.44	Vertical	PK	PASS
4	6394.50	53.37	45.32	-8.05	74.00	28.68	Vertical	PK	PASS
5	16605.00	48.02	46.38	-1.64	74.00	27.62	Vertical	PK	PASS
6	17710.50	47.90	47.85	-0.05	74.00	26.15	Vertical	PK	PASS

Test Mode:	802.11n20	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	DC 3.3V

Test Graph

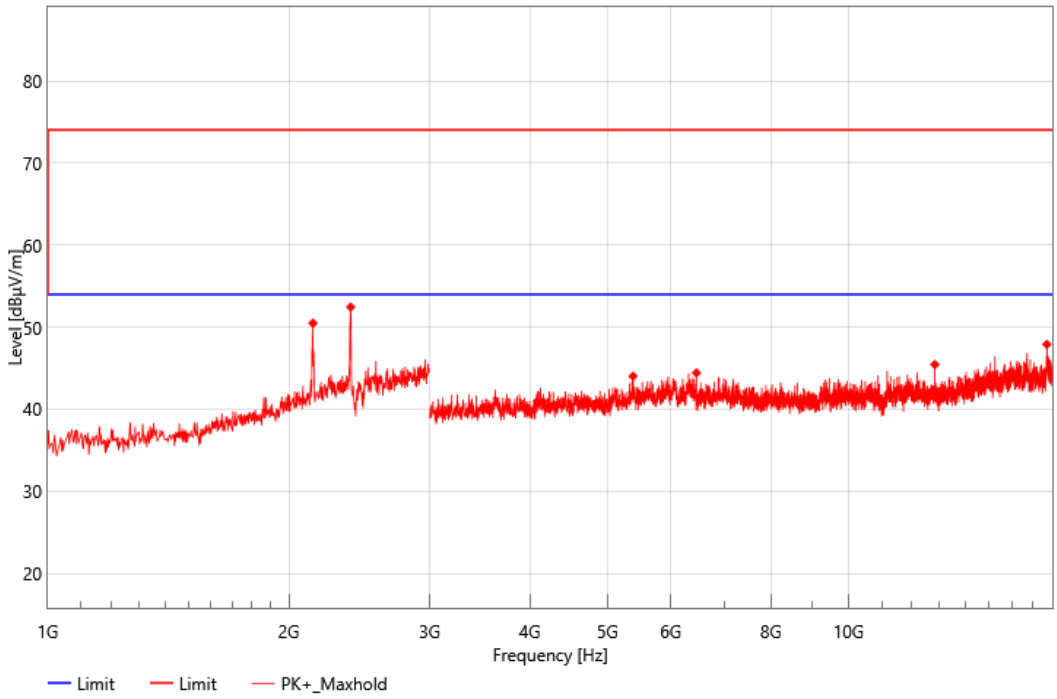


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2142.00	57.33	48.28	-9.05	74.00	25.72	Horizontal	PK	PASS
2	2454.00	54.60	46.13	-8.47	74.00	27.87	Horizontal	PK	PASS
3	5379.00	53.22	44.13	-9.09	74.00	29.87	Horizontal	PK	PASS
4	5905.50	53.75	44.76	-8.99	74.00	29.24	Horizontal	PK	PASS
5	10039.50	49.75	43.36	-6.39	74.00	30.64	Horizontal	PK	PASS
6	17691.00	46.95	47.18	0.23	74.00	26.82	Horizontal	PK	PASS

Test Mode:	802.11n40	Frequency(MHz):	2422
Polarity:	Horizontal	Test Voltage:	DC 3.3V

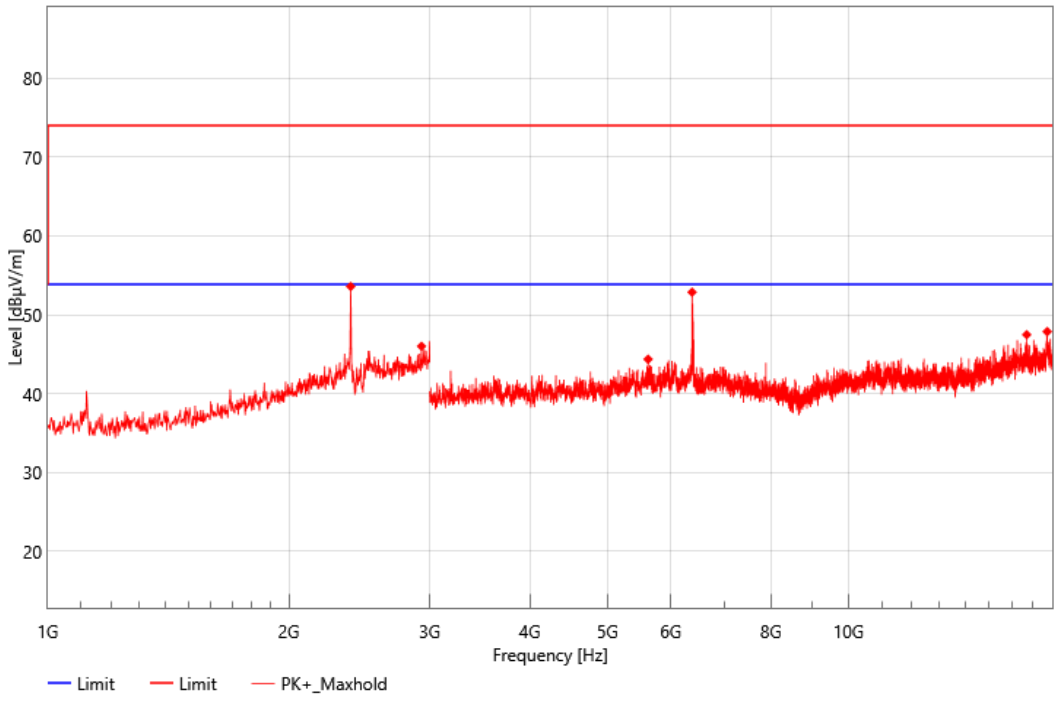
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2144.00	59.54	50.49	-9.05	74.00	23.51	Horizontal	PK	PASS
2	2390.00	60.99	52.46	-8.53	74.00	21.54	Horizontal	PK	PASS
3	5382.00	53.09	44.04	-9.05	74.00	29.96	Horizontal	PK	PASS
4	6459.00	52.93	44.44	-8.49	74.00	29.56	Horizontal	PK	PASS
5	12819.00	49.74	45.45	-4.29	74.00	28.55	Horizontal	PK	PASS
6	17688.00	47.67	47.92	0.25	74.00	26.08	Horizontal	PK	PASS

Test Mode:	802.11n40	Frequency(MHz):	2422
Polarity:	Vertical	Test Voltage:	DC 3.3V

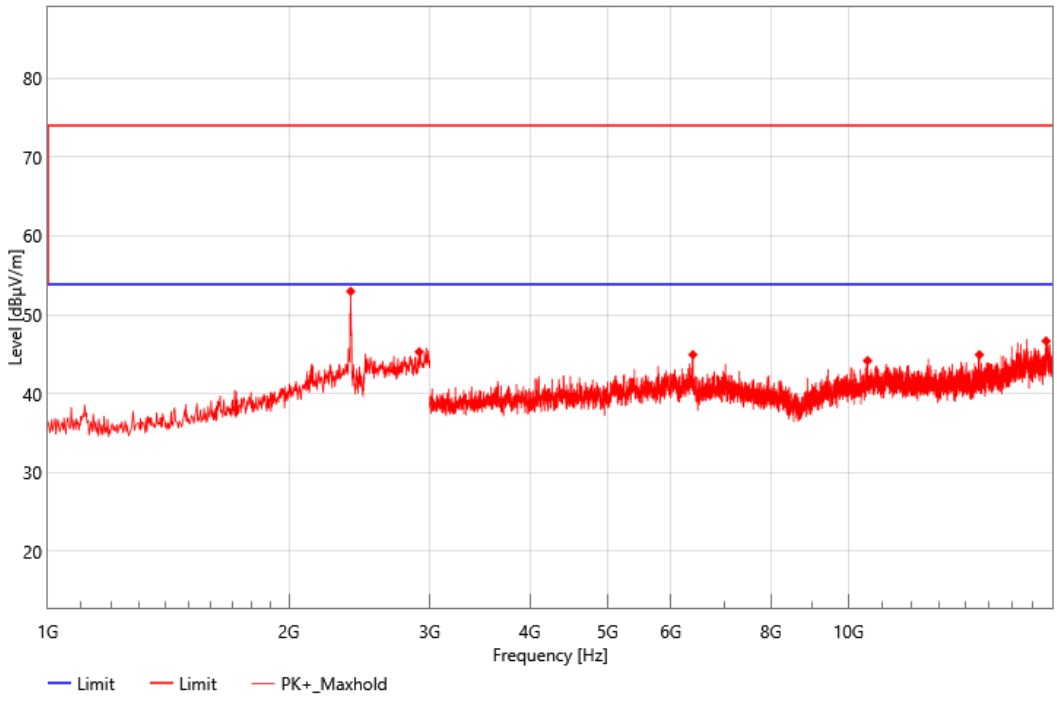
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2390.00	62.12	53.59	-8.53	74.00	20.41	Vertical	PK	PASS
2	2930.00	53.55	46.01	-7.54	74.00	27.99	Vertical	PK	PASS
3	5620.50	53.60	44.36	-9.24	74.00	29.64	Vertical	PK	PASS
4	6378.00	60.74	52.86	-7.88	74.00	21.14	Vertical	PK	PASS
5	16693.50	47.96	47.47	-0.49	74.00	26.53	Vertical	PK	PASS
6	17707.50	47.84	47.86	0.02	74.00	26.14	Vertical	PK	PASS

Test Mode:	802.11n40	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

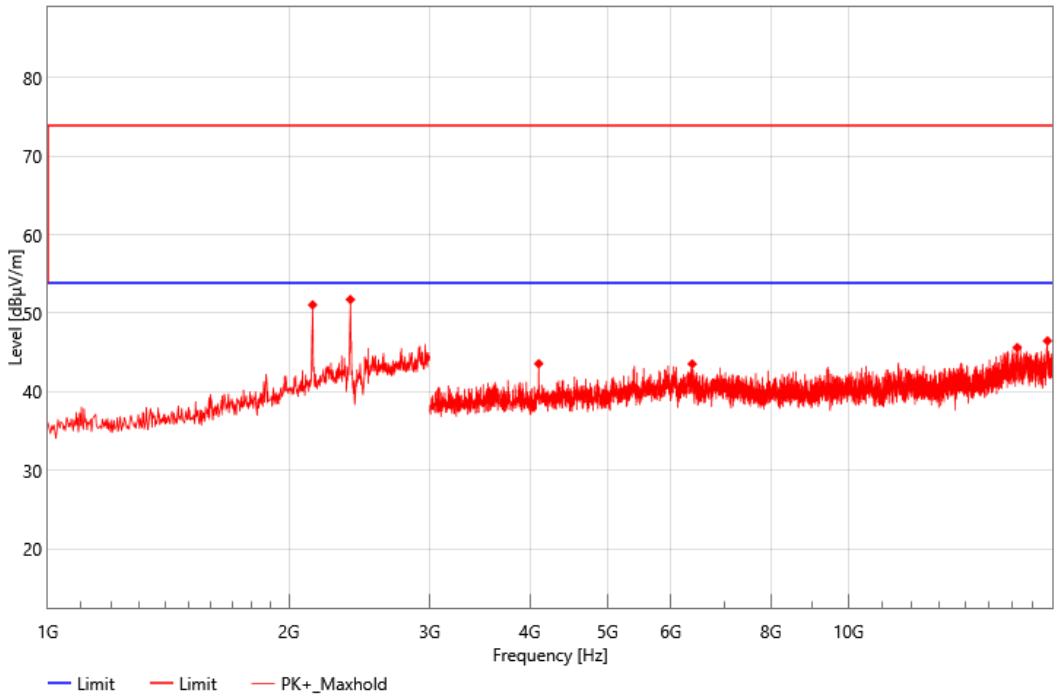


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2390.00	61.50	52.97	-8.53	74.00	21.03	Vertical	PK	PASS
2	2910.00	52.98	45.29	-7.69	74.00	28.71	Vertical	PK	PASS
3	6393.00	52.96	44.93	-8.03	74.00	29.07	Vertical	PK	PASS
4	10563.00	49.25	44.17	-5.08	74.00	29.83	Vertical	PK	PASS
5	14571.00	48.31	44.93	-3.38	74.00	29.07	Vertical	PK	PASS
6	17650.50	46.68	46.67	-0.01	74.00	27.33	Vertical	PK	PASS

Test Mode:	802.11n40	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	DC 3.3V

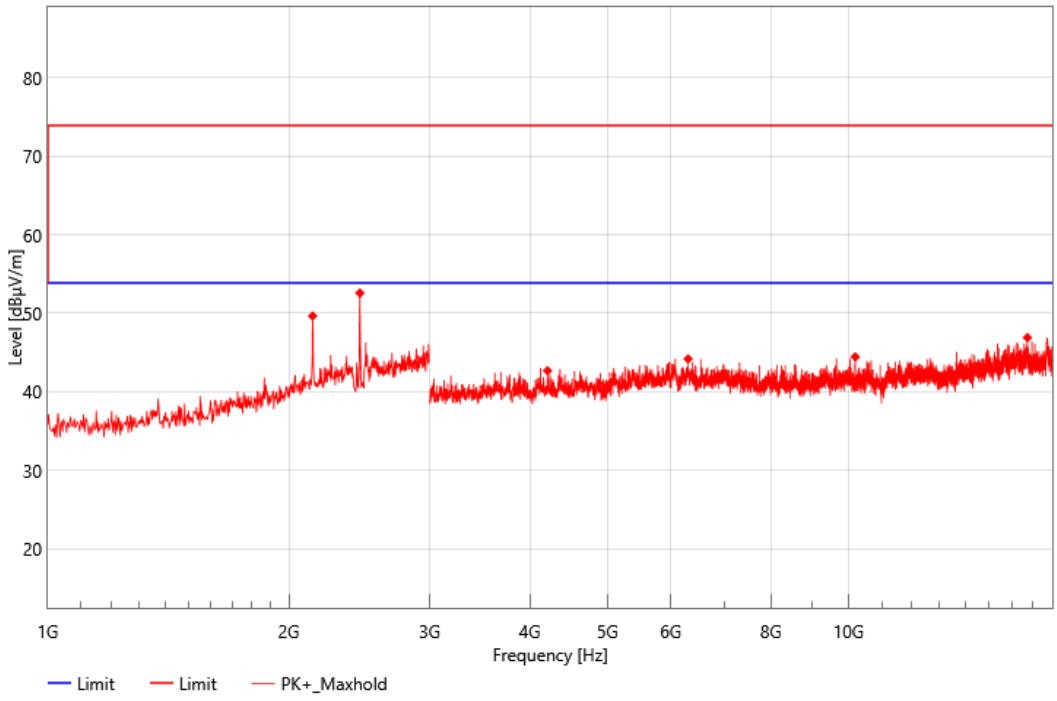
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2142.00	60.12	51.07	-9.05	74.00	22.93	Horizontal	PK	PASS
2	2388.00	60.28	51.75	-8.53	74.00	22.25	Horizontal	PK	PASS
3	4104.00	56.07	43.57	-12.5	74.00	30.43	Horizontal	PK	PASS
4	6381.00	51.42	43.54	-7.88	74.00	30.46	Horizontal	PK	PASS
5	16240.50	46.33	45.63	-0.7	74.00	28.37	Horizontal	PK	PASS
6	17719.50	46.72	46.48	-0.24	74.00	27.52	Horizontal	PK	PASS

Test Mode:	802.11n40	Frequency(MHz):	2452
Polarity:	Horizontal	Test Voltage:	DC 3.3V

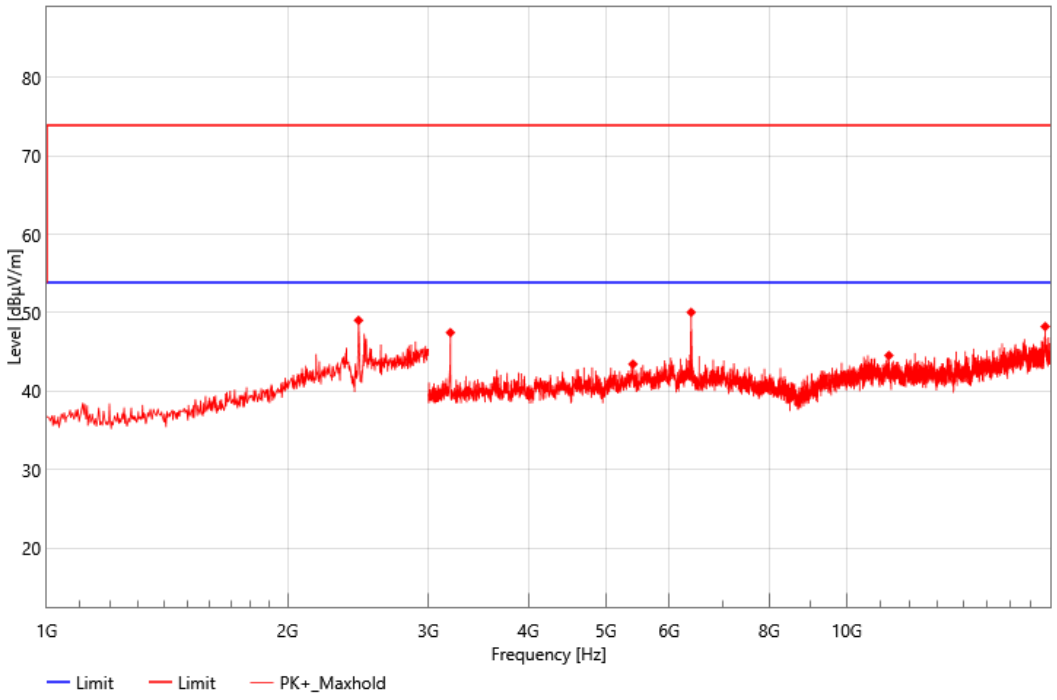
Test Graph



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2142.00	58.69	49.64	-9.05	74.00	24.36	Horizontal	PK	PASS
2	2454.00	61.04	52.57	-8.47	74.00	21.43	Horizontal	PK	PASS
3	4209.00	55.37	42.68	-12.69	74.00	31.32	Horizontal	PK	PASS
4	6306.00	51.73	44.18	-7.55	74.00	29.82	Horizontal	PK	PASS
5	10197.00	50.64	44.45	-6.19	74.00	29.55	Horizontal	PK	PASS
6	16725.00	47.98	46.90	-1.08	74.00	27.10	Horizontal	PK	PASS

Test Mode:	802.11n40	Frequency(MHz):	2452
Polarity:	Vertical	Test Voltage:	DC 3.3V

Test Graph

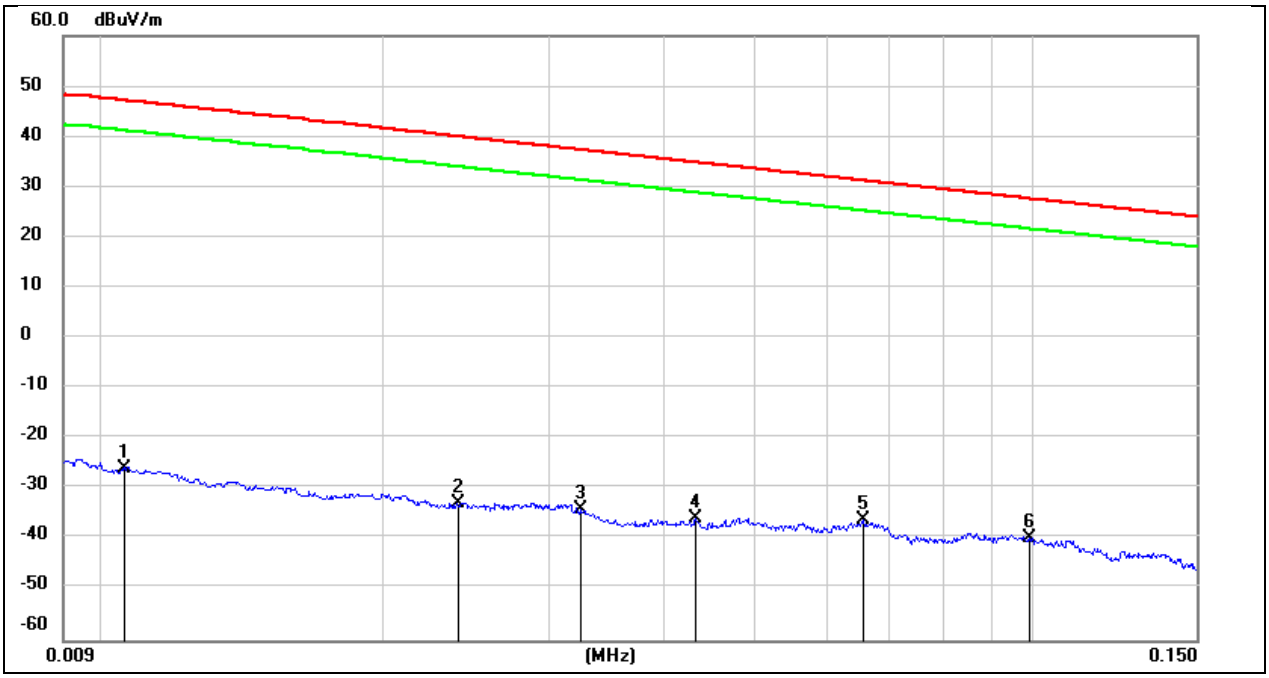


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	2454.00	57.50	49.03	-8.47	74.00	24.97	Vertical	PK	PASS
2	3196.50	62.27	47.47	-14.8	74.00	26.53	Vertical	PK	PASS
3	5406.00	52.98	43.45	-9.53	74.00	30.55	Vertical	PK	PASS
4	6391.50	58.06	50.06	-8	74.00	23.94	Vertical	PK	PASS
5	11290.50	48.73	44.56	-4.17	74.00	29.44	Vertical	PK	PASS
6	17706.00	48.19	48.24	0.05	74.00	25.76	Vertical	PK	PASS

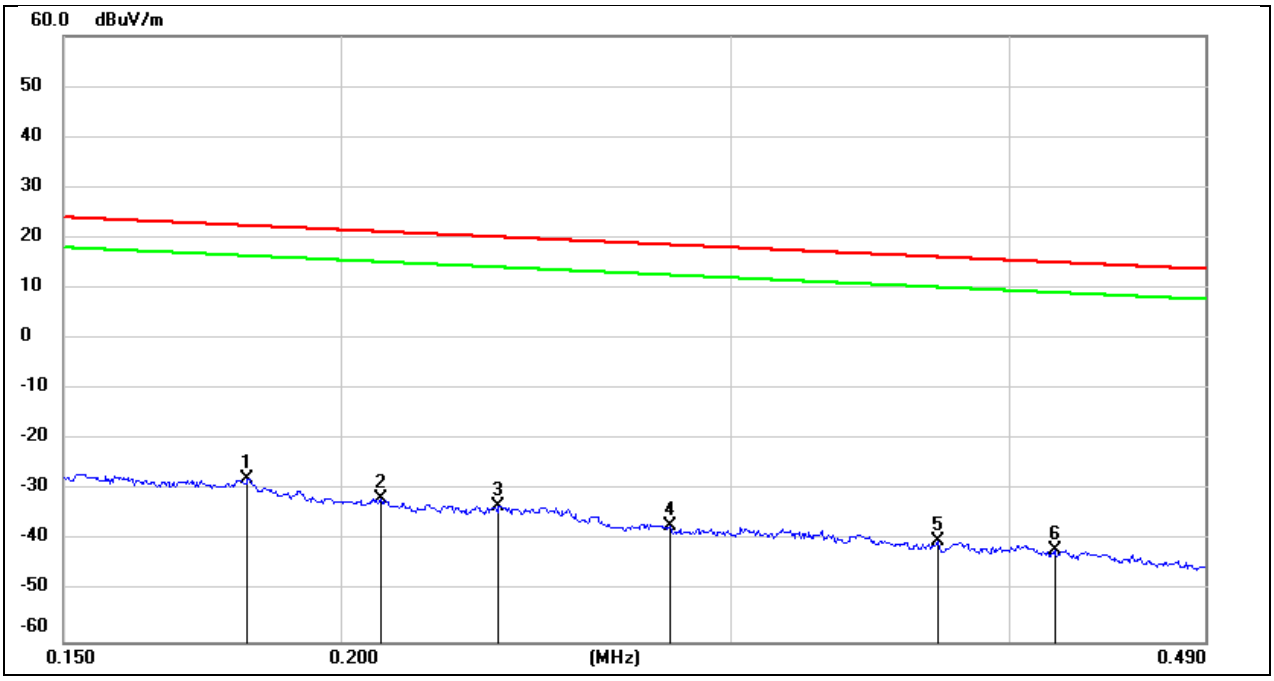
8.3. SPURIOUS EMISSIONS(9 KHZ~30 MHZ)

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V



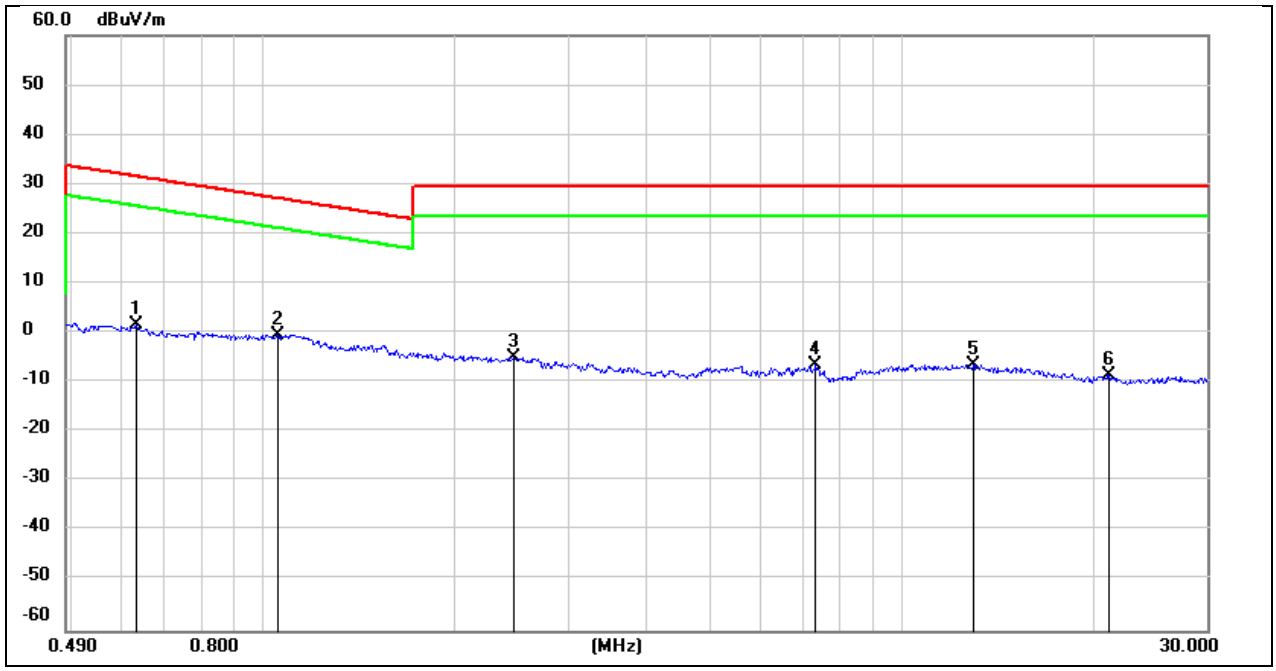
No.	Frequency	Reading	Correct	Result	Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0105	75.60	-101.40	-25.80	47.18	-77.3	-4.32	-72.98	peak
2	0.0240	68.55	-101.36	-32.81	40.00	-84.31	-11.5	-72.81	peak
3	0.0325	67.49	-101.40	-33.91	37.36	-85.41	-14.14	-71.27	peak
4	0.0432	65.57	-101.45	-35.88	34.89	-87.38	-16.61	-70.77	peak
5	0.0656	65.36	-101.55	-36.19	31.26	-87.69	-20.24	-67.45	peak
6	0.0994	62.20	-101.80	-39.60	27.65	-91.1	-23.85	-67.25	peak

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V



No.	Frequency	Reading	Correct	Result	Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1816	74.04	-101.68	-27.64	22.42	-79.14	-29.08	-50.06	peak
2	0.2084	69.97	-101.73	-31.76	21.22	-83.26	-30.28	-52.98	peak
3	0.2356	68.51	-101.78	-33.27	20.16	-84.77	-31.34	-53.43	peak
4	0.2812	64.90	-101.83	-36.93	18.62	-88.43	-32.88	-55.55	peak
5	0.3714	61.78	-101.93	-40.15	16.20	-91.65	-35.3	-56.35	peak
6	0.4193	60.18	-101.98	-41.80	15.15	-93.3	-36.35	-56.95	peak

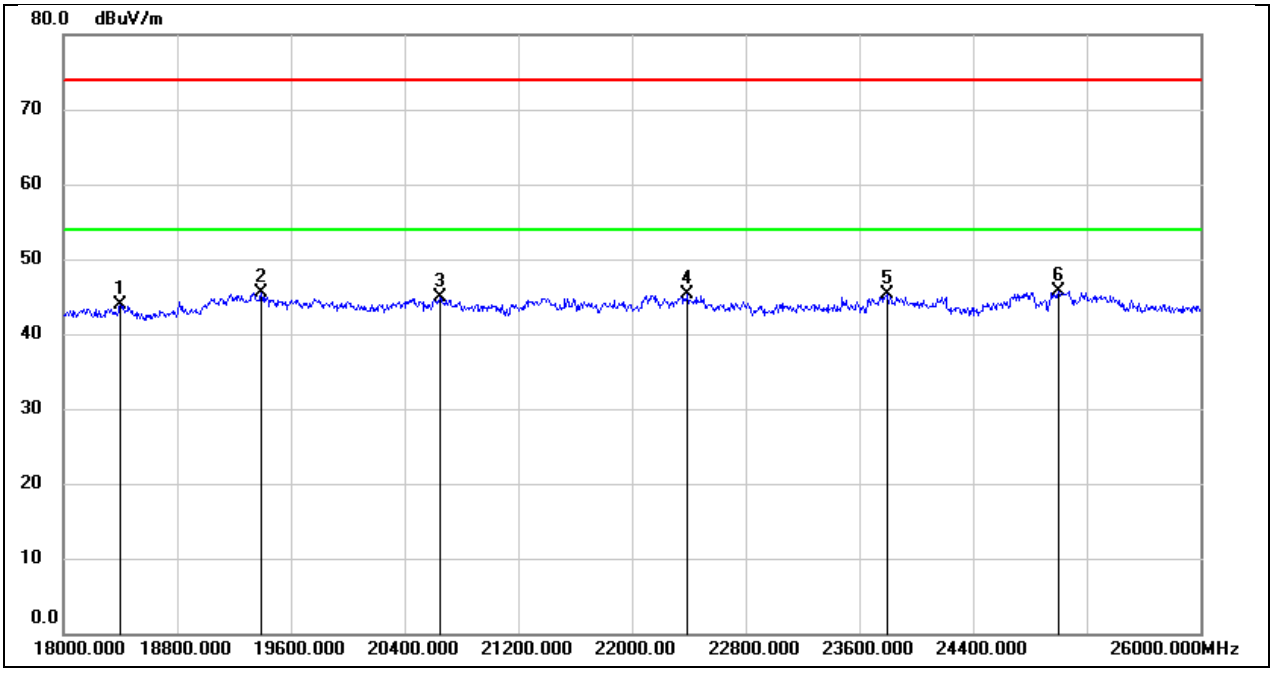
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V



No.	Frequency	Reading	Correct	Result	Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.6320	63.69	-62.09	1.60	31.59	-49.9	-19.91	-29.99	peak
2	1.0524	61.94	-62.24	-0.30	27.16	-51.8	-24.34	-27.46	peak
3	2.4672	56.66	-61.71	-5.05	29.54	-56.55	-21.96	-34.59	peak
4	7.3361	54.58	-61.17	-6.59	29.54	-58.09	-21.96	-36.13	peak
5	12.9137	54.56	-60.93	-6.37	29.54	-57.87	-21.96	-35.91	peak
6	21.0880	52.19	-60.75	-8.56	29.54	-60.06	-21.96	-38.10	peak

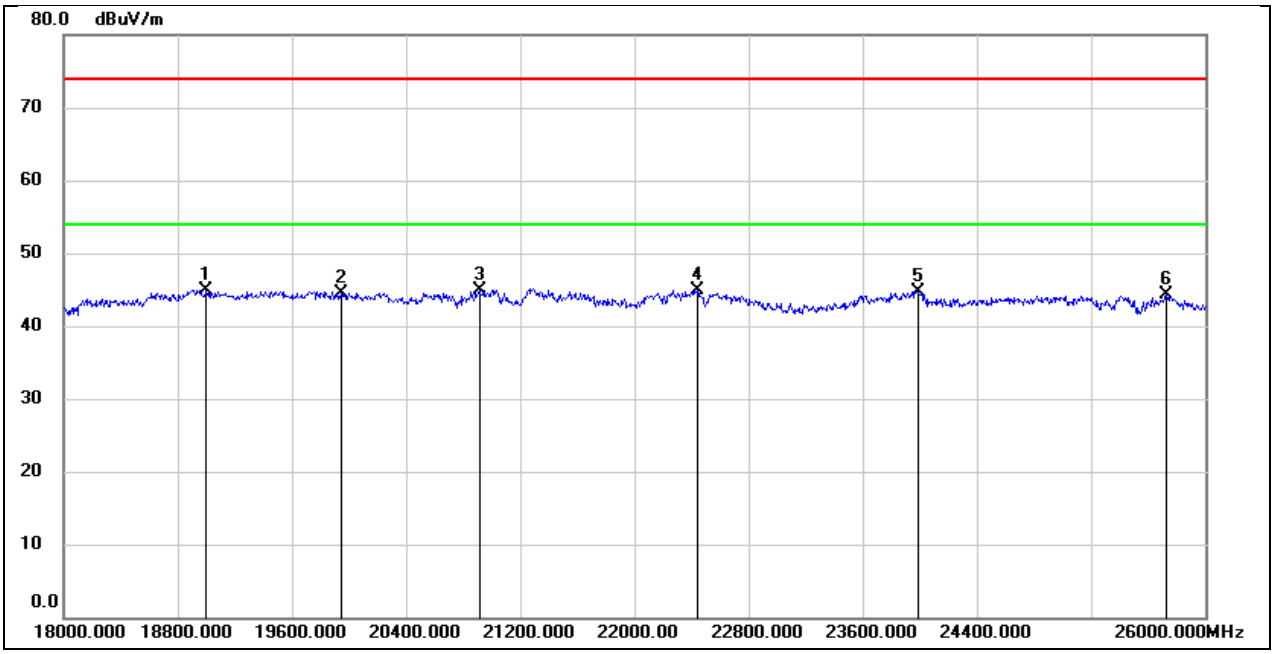
8.4. SPURIOUS EMISSIONS(18 GHZ~26 GHZ)

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18400.000	49.21	-5.37	43.84	74.00	-30.16	peak
2	19392.000	51.12	-5.57	45.55	74.00	-28.45	peak
3	20648.000	50.05	-5.21	44.84	74.00	-29.16	peak
4	22392.000	49.33	-4.02	45.31	74.00	-28.69	peak
5	23800.000	48.41	-3.11	45.30	74.00	-28.70	peak
6	25000.000	47.86	-2.10	45.76	74.00	-28.24	peak

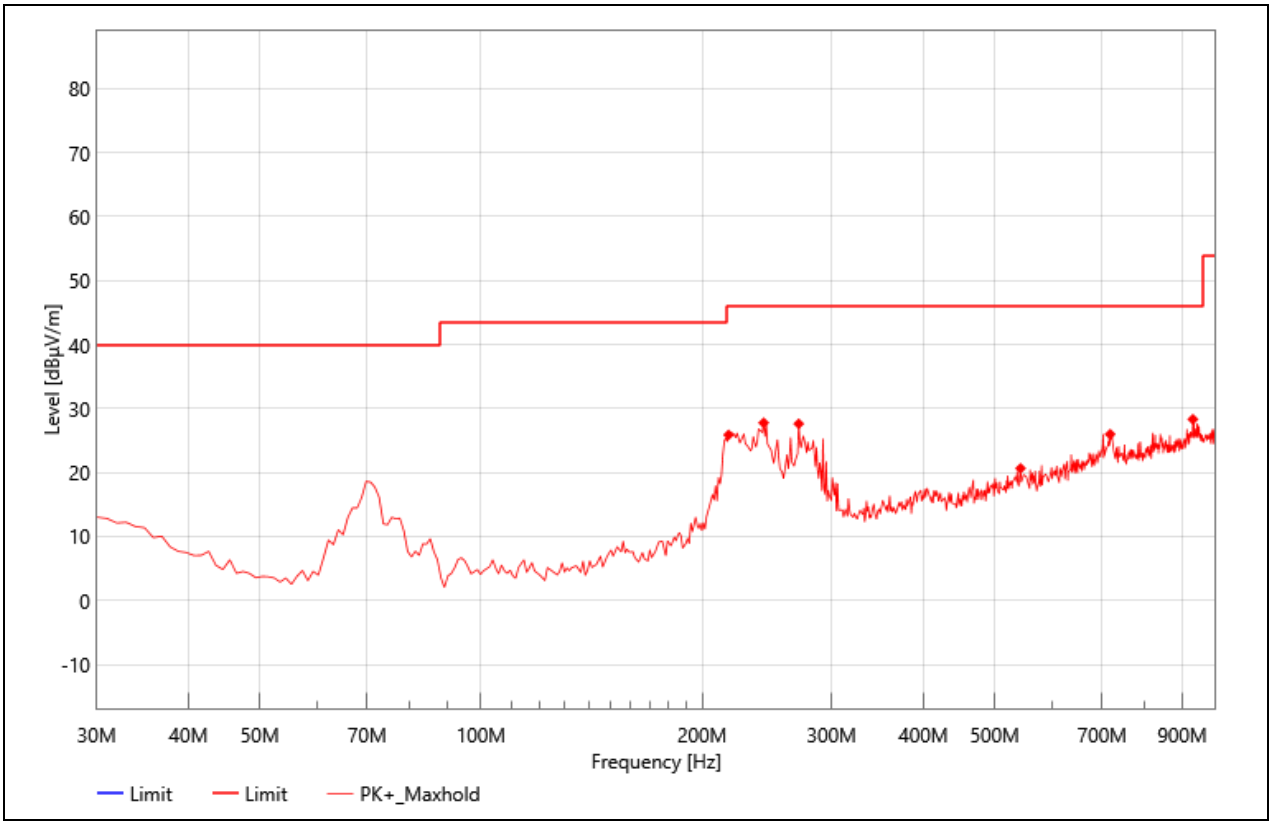
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	DC 3.3V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19000.000	50.20	-5.22	44.98	74.00	-29.02	peak
2	19944.000	49.92	-5.41	44.51	74.00	-29.49	peak
3	20912.000	49.91	-4.97	44.94	74.00	-29.06	peak
4	22440.000	48.88	-3.96	44.92	74.00	-29.08	peak
5	23984.000	47.53	-2.77	44.76	74.00	-29.24	peak
6	25728.000	45.11	-0.72	44.39	74.00	-29.61	peak

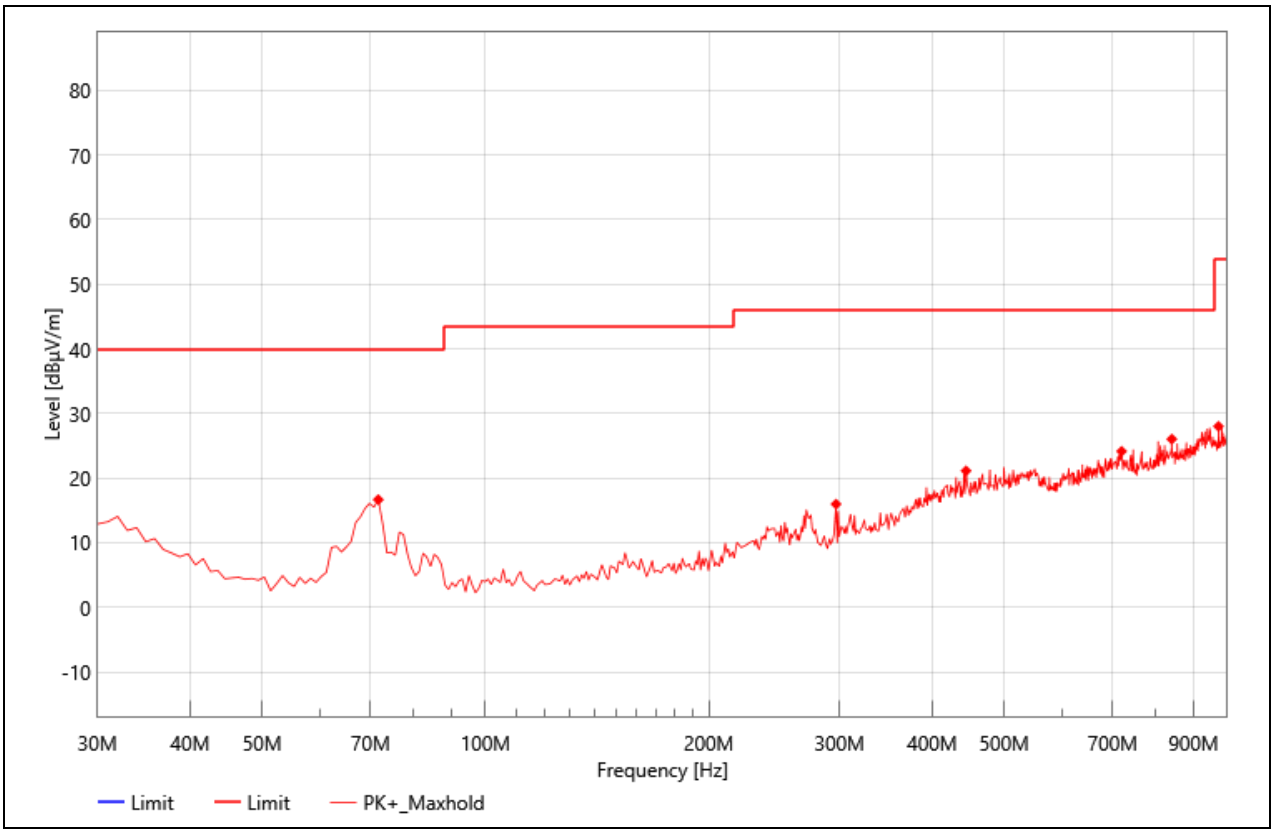
8.5. SPURIOUS EMISSIONS(30 MHZ~1 GHZ)

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	DC 3.3V



NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	217.21	46.57	25.90	-20.67	46.00	20.10	Horizontal	QP	PASS
2	242.43	46.84	27.78	-19.06	46.00	18.22	Horizontal	QP	PASS
3	270.56	46.13	27.63	-18.5	46.00	18.37	Horizontal	QP	PASS
4	542.16	30.54	20.67	-9.87	46.00	25.33	Horizontal	QP	PASS
5	717.73	32.49	26.00	-6.49	46.00	20.00	Horizontal	QP	PASS
6	930.16	30.43	28.33	-2.1	46.00	17.67	Horizontal	QP	PASS

Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	DC 3.3V



NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	71.71	41.47	16.68	-24.79	40.00	23.32	Vertical	QP	PASS
2	296.75	34.89	15.99	-18.9	46.00	30.01	Vertical	QP	PASS
3	444.19	35.04	21.14	-13.9	46.00	24.86	Vertical	QP	PASS
4	719.67	30.64	24.17	-6.47	46.00	21.83	Vertical	QP	PASS
5	840.92	31.23	26.04	-5.19	46.00	19.96	Vertical	QP	PASS
6	971.87	30.82	28.03	-2.79	53.90	25.87	Vertical	QP	PASS

9. ANTENNA REQUIREMENT

REQUIREMENT

Please refer to FCC part 15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC part 15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DESCRIPTION

Pass

10. AC POWER LINE CONDUCTED EMISSION

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

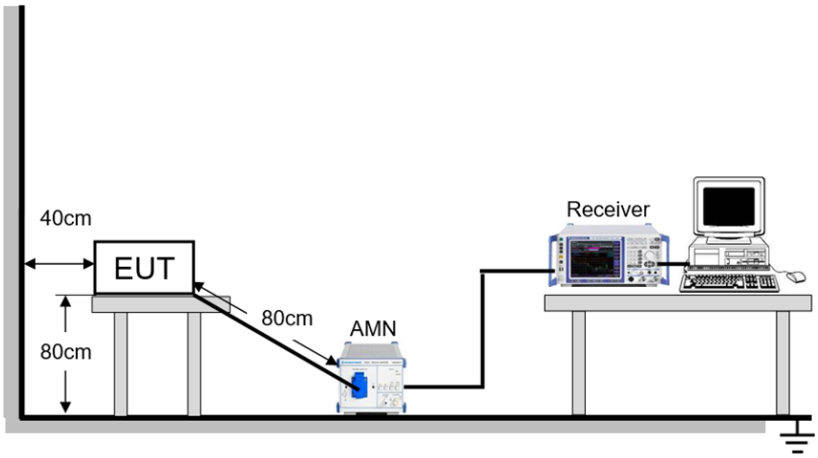
*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST SETUP



TEST ENVIRONMENT

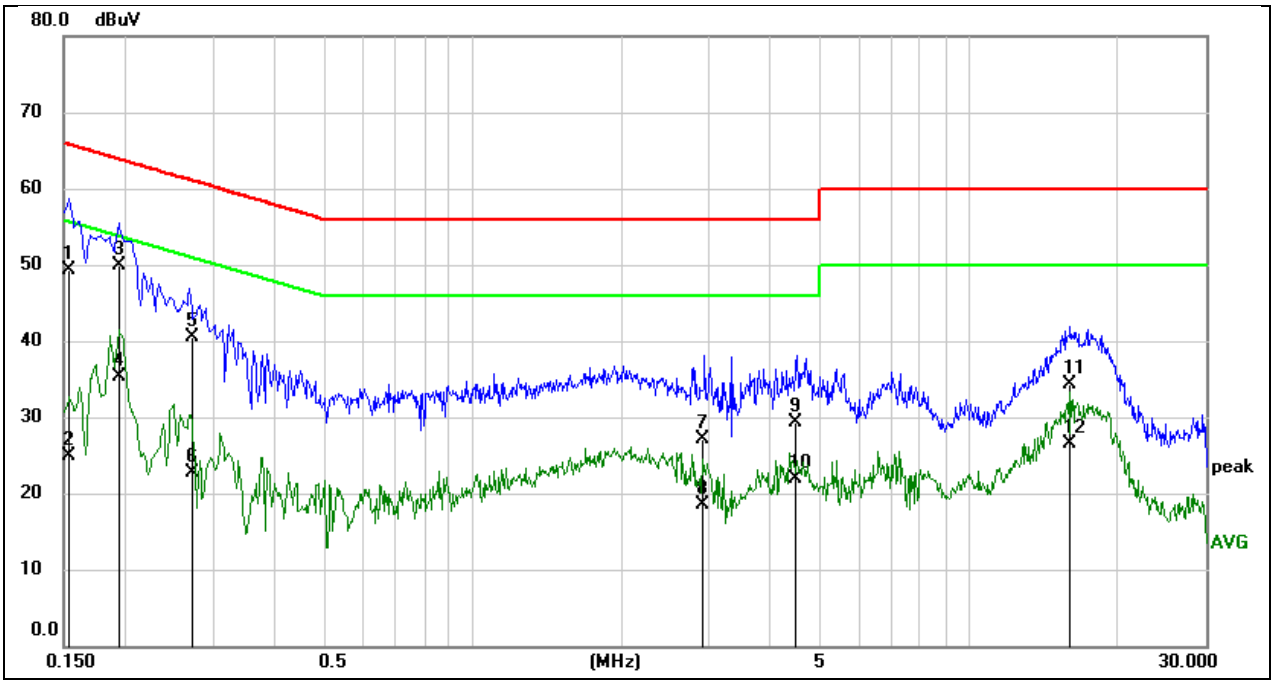
Temperature	23.2℃	Relative Humidity	54.1%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V_60Hz

TEST DATE / ENGINEER

Test Date	May 12, 2025	Test By	Deacon Tan

TEST RESULTS

Test Mode:	802.11b	Frequency(MHz):	2412
Line:	Line		

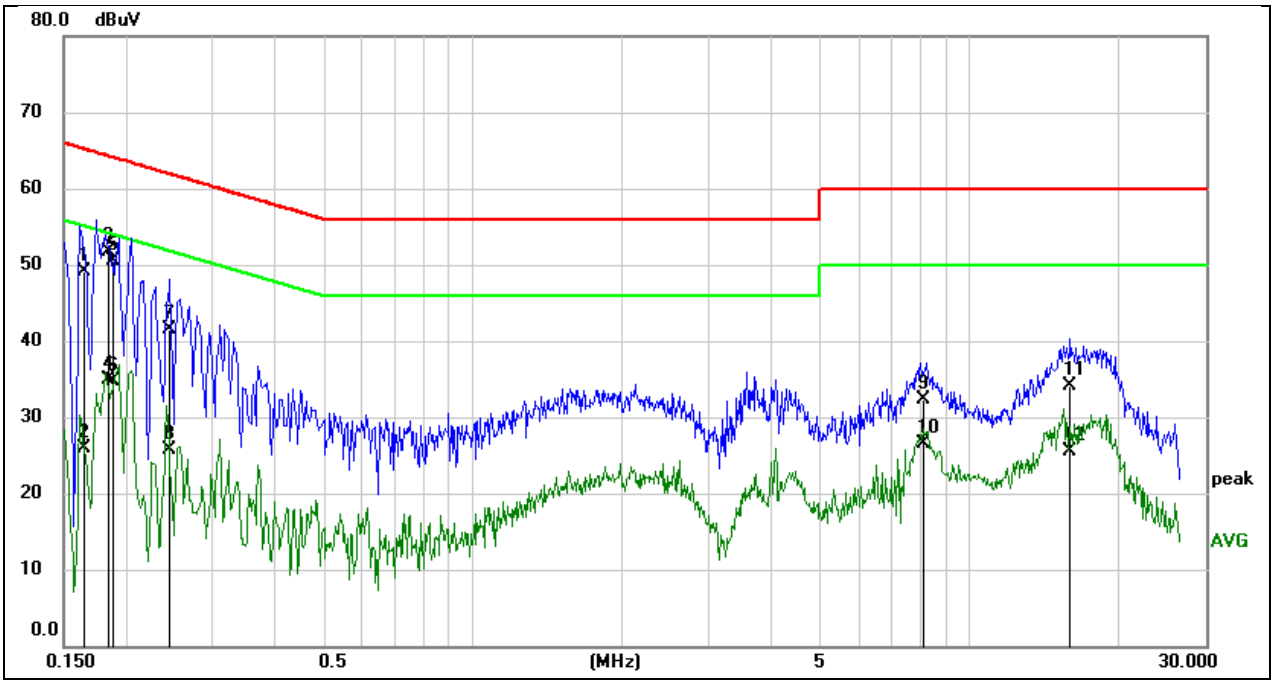


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1528	39.63	9.73	49.36	65.85	-16.49	QP
2	0.1528	15.18	9.73	24.91	55.85	-30.94	AVG
3	0.1924	40.29	9.65	49.94	63.93	-13.99	QP
4	0.1924	25.74	9.65	35.39	53.93	-18.54	AVG
5	0.2722	30.77	9.64	40.41	61.05	-20.64	QP
6	0.2722	13.07	9.64	22.71	51.05	-28.34	AVG
7	2.8987	17.35	9.73	27.08	56.00	-28.92	QP
8	2.8987	8.75	9.73	18.48	46.00	-27.52	AVG
9	4.4691	19.52	9.73	29.25	56.00	-26.75	QP
10	4.4691	12.22	9.73	21.95	46.00	-24.05	AVG
11	16.0303	24.48	9.74	34.22	60.00	-25.78	QP
12	16.0303	16.75	9.74	26.49	50.00	-23.51	AVG

Note:
1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

Test Mode:	802.11b	Frequency(MHz):	2412
Line:	Neutral		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1652	39.43	9.64	49.07	65.20	-16.13	QP
2	0.1652	16.21	9.64	25.85	55.20	-29.35	AVG
3	0.1853	42.10	9.64	51.74	64.24	-12.50	QP
4	0.1853	25.32	9.64	34.96	54.24	-19.28	AVG
5	0.1884	40.94	9.64	50.58	64.11	-13.53	QP
6	0.1884	25.00	9.64	34.64	54.11	-19.47	AVG
7	0.2454	31.96	9.64	41.60	61.91	-20.31	QP
8	0.2454	16.14	9.64	25.78	51.91	-26.13	AVG
9	8.0428	22.67	9.73	32.40	60.00	-27.60	QP
10	8.0428	16.72	9.73	26.45	50.00	-23.55	AVG
11	15.9991	24.29	9.74	34.03	60.00	-25.97	QP
12	15.9991	15.85	9.74	25.59	50.00	-24.41	AVG

Note:
1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

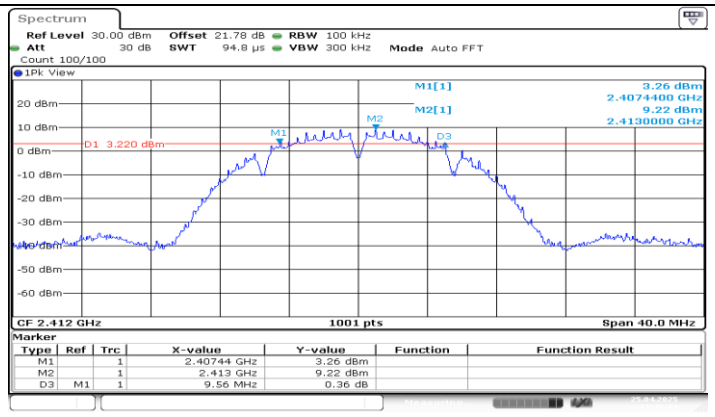
11. TEST DATA

11.1. APPENDIX A: DTS BANDWIDTH

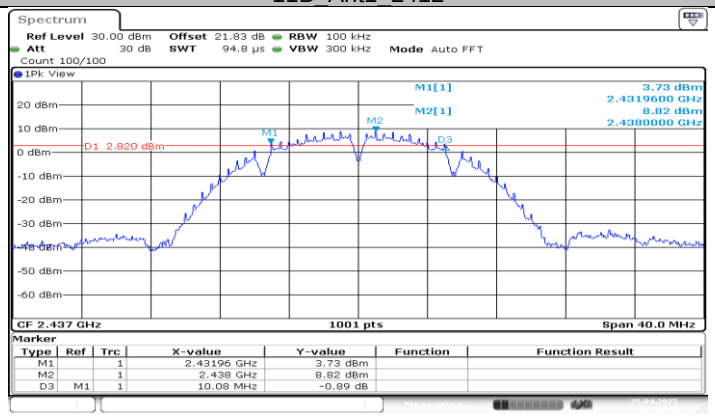
11.1.1. Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.56	2407.44	2417.00	≥0.5	PASS
		2437	10.08	2431.96	2442.04	≥0.5	PASS
		2462	10.00	2457.00	2467.00	≥0.5	PASS
11G	Ant1	2412	15.08	2404.48	2419.56	≥0.5	PASS
		2437	15.12	2429.44	2444.56	≥0.5	PASS
		2462	15.08	2454.48	2469.56	≥0.5	PASS
11N20SISO	Ant1	2412	15.12	2404.44	2419.56	≥0.5	PASS
		2437	15.00	2429.52	2444.52	≥0.5	PASS
		2462	16.56	2453.60	2470.16	≥0.5	PASS
11N40SISO	Ant1	2422	33.76	2405.76	2439.52	≥0.5	PASS
		2437	33.76	2420.76	2454.52	≥0.5	PASS
		2452	33.84	2435.68	2469.52	≥0.5	PASS

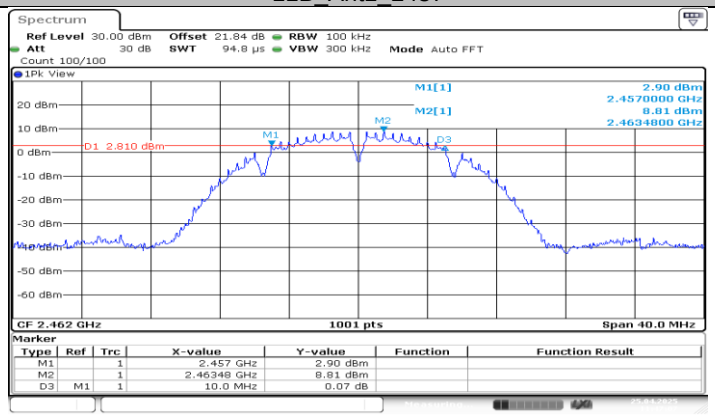
11.1.2. Test Graphs



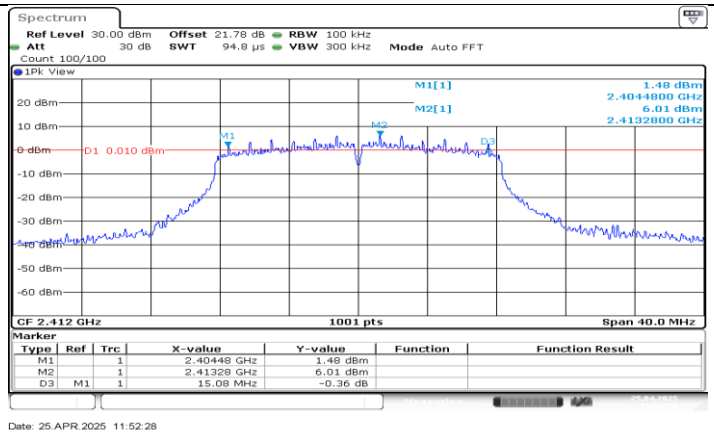
11B_Ant1_2412



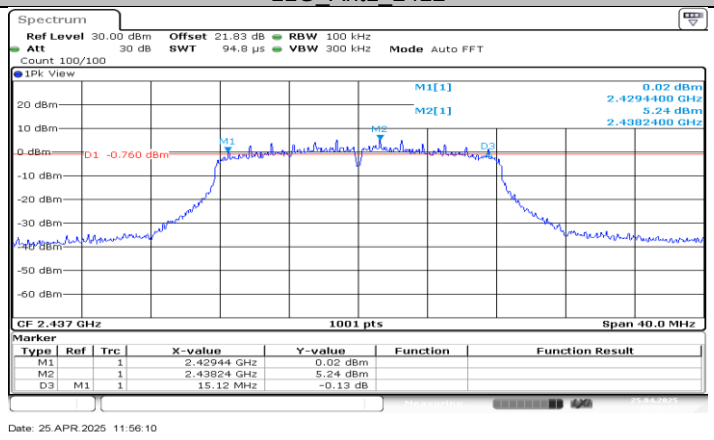
11B_Ant1_2437



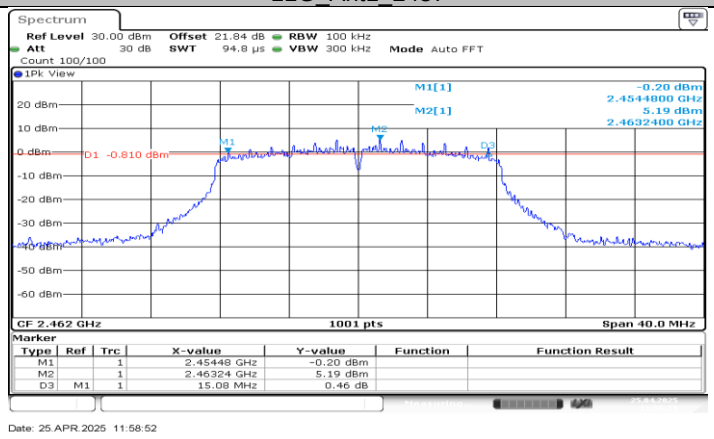
11B_Ant1_2462



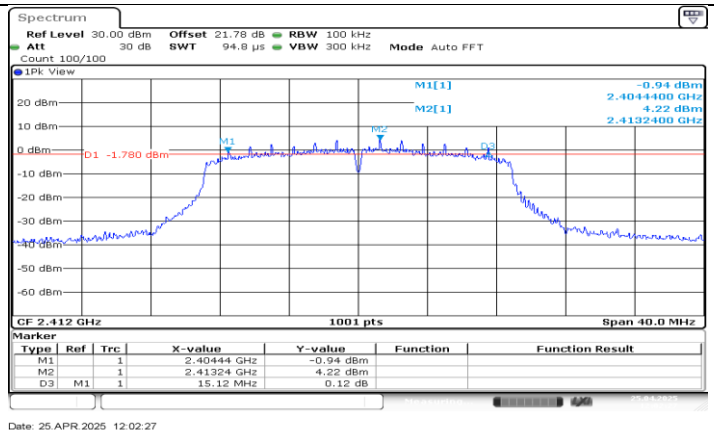
11G_Ant1_2412



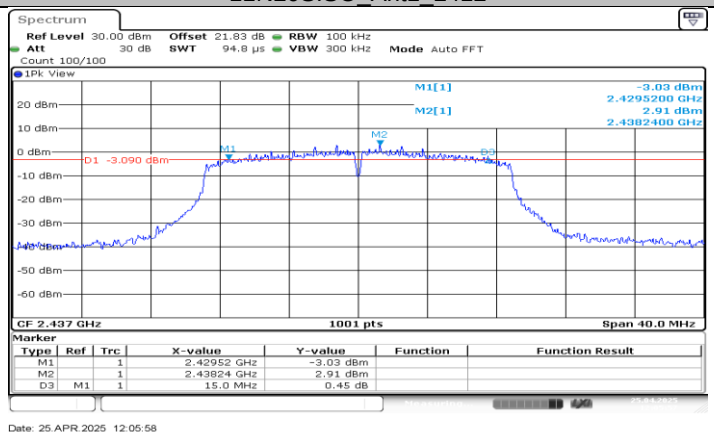
11G_Ant1_2437



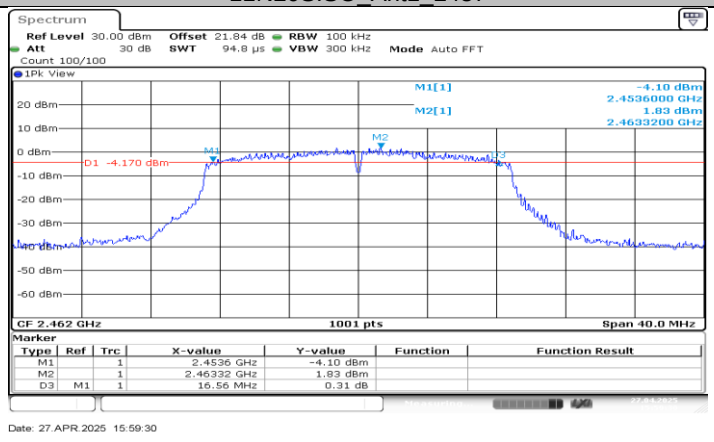
11G_Ant1_2462



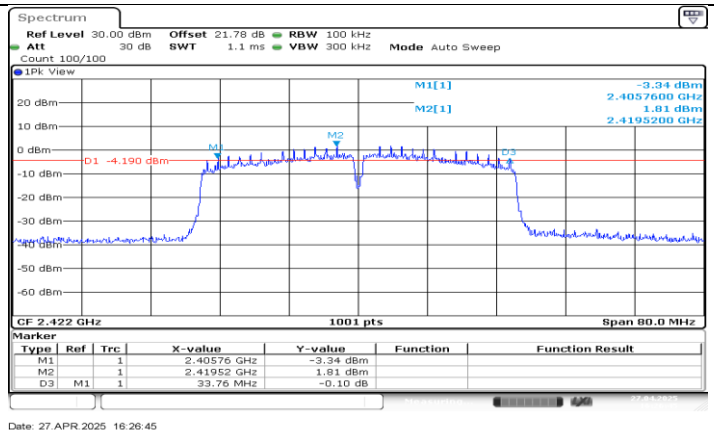
11N20SISO_Ant1_2412



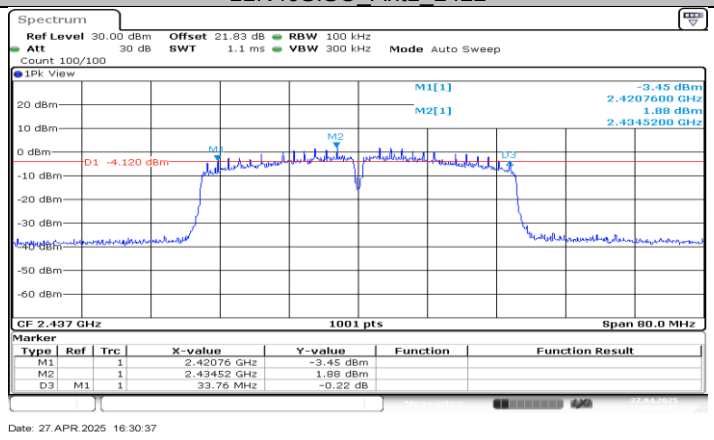
11N20SISO_Ant1_2437



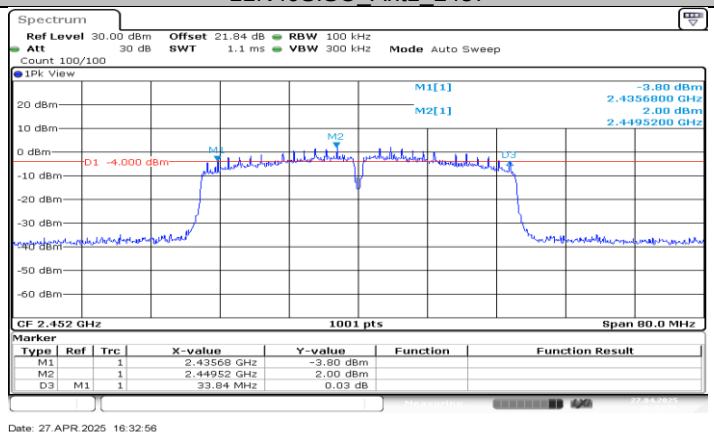
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



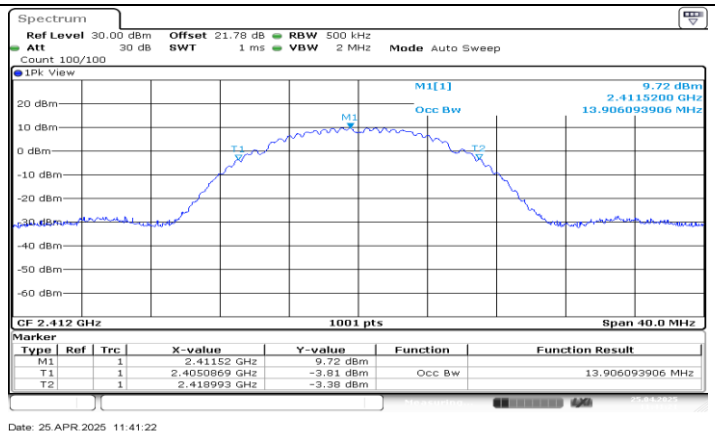
11N40SISO_Ant1_2452

11.2. APPENDIX B: OCCUPIED CHANNEL BANDWIDTH

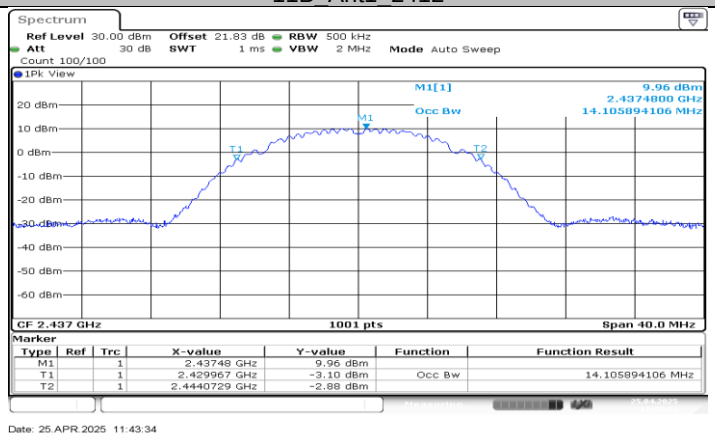
11.2.1. Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
11B	Ant1	2412	13.906	2405.0869	2418.9930	PASS
		2437	14.106	2429.9670	2444.0729	PASS
		2462	13.946	2455.0470	2468.9930	PASS
11G	Ant1	2412	16.783	2403.6883	2420.4715	PASS
		2437	16.783	2428.6883	2445.4715	PASS
		2462	16.783	2453.6484	2470.4316	PASS
11N20SISO	Ant1	2412	17.862	2403.0889	2420.9510	PASS
		2437	17.862	2428.0889	2445.9510	PASS
		2462	17.822	2453.0889	2470.9111	PASS
11N40SISO	Ant1	2422	35.405	2404.3377	2439.7423	PASS
		2437	35.405	2419.3377	2454.7423	PASS
		2452	35.485	2434.2577	2469.7423	PASS

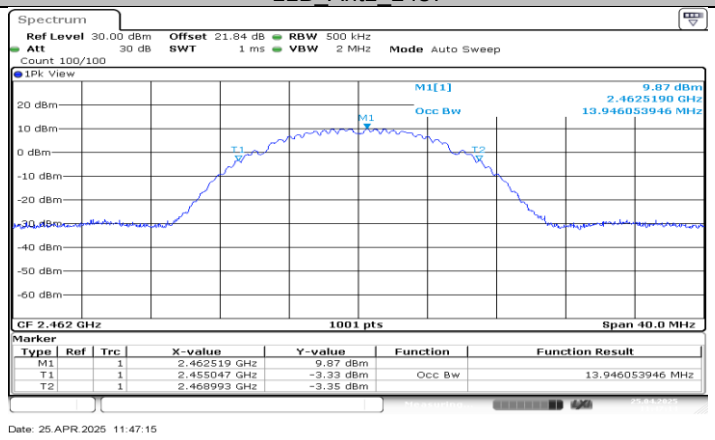
11.2.2. Test Graphs



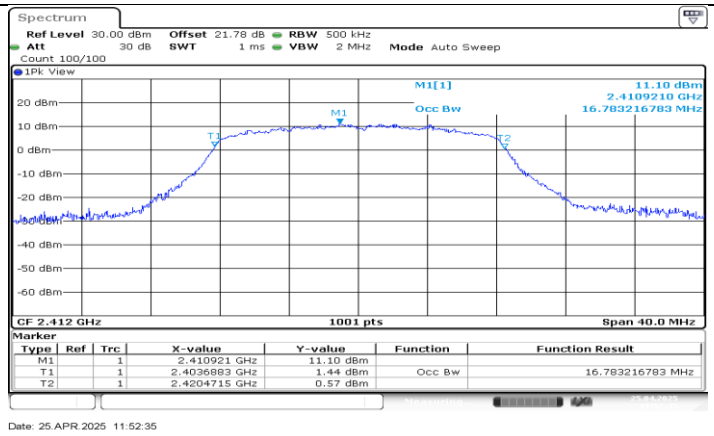
11B_Ant1_2412



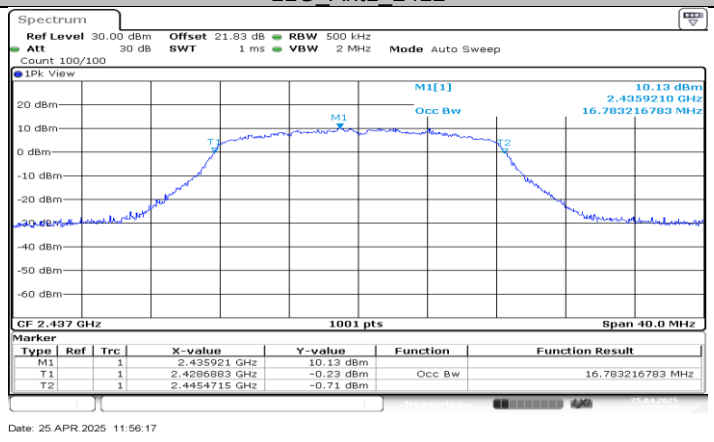
11B_Ant1_2437



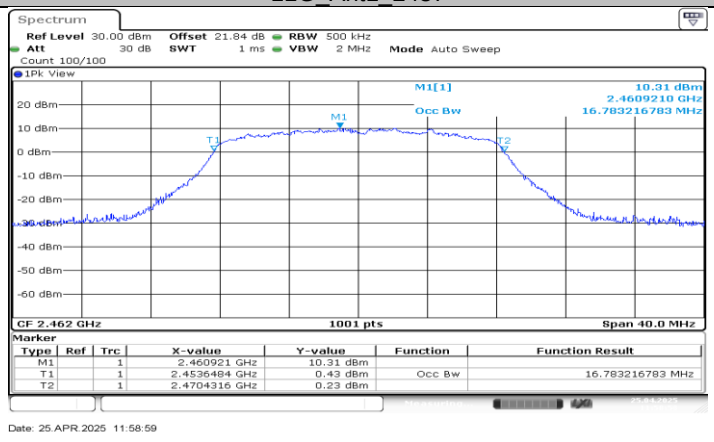
11B_Ant1_2462



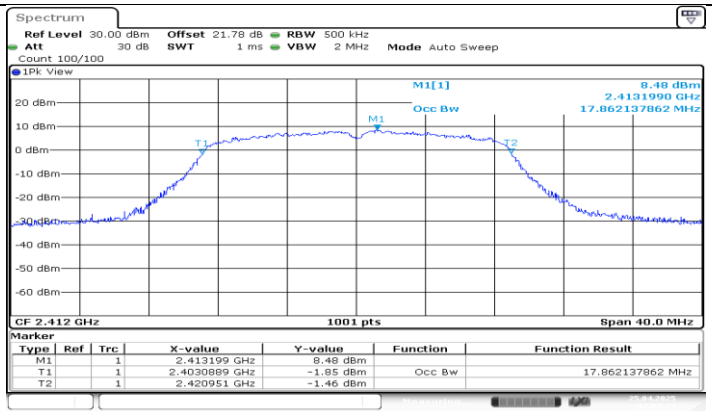
11G_Ant1_2412



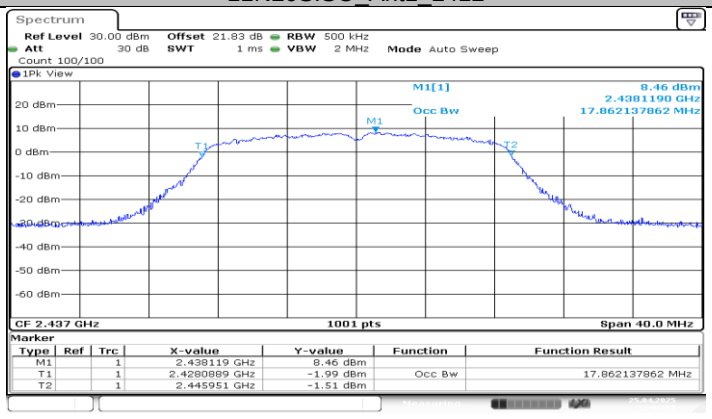
11G_Ant1_2437



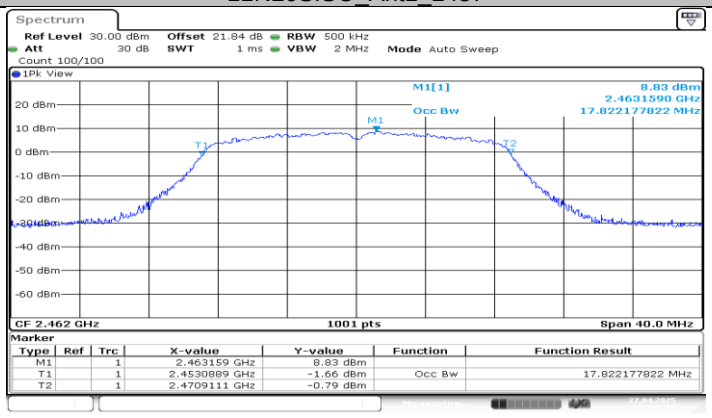
11G_Ant1_2462



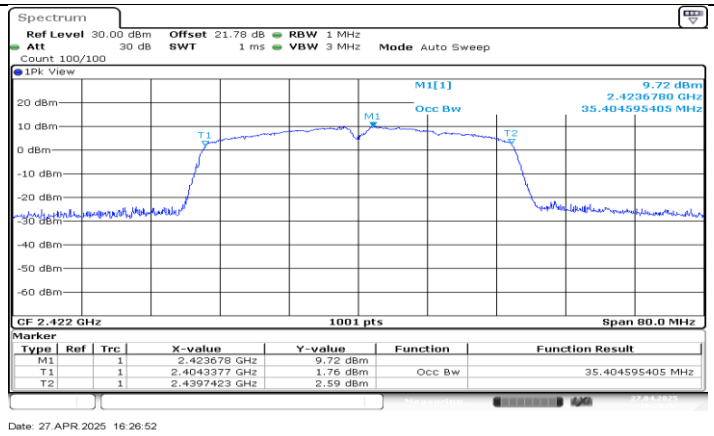
11N20SISO_Ant1_2412



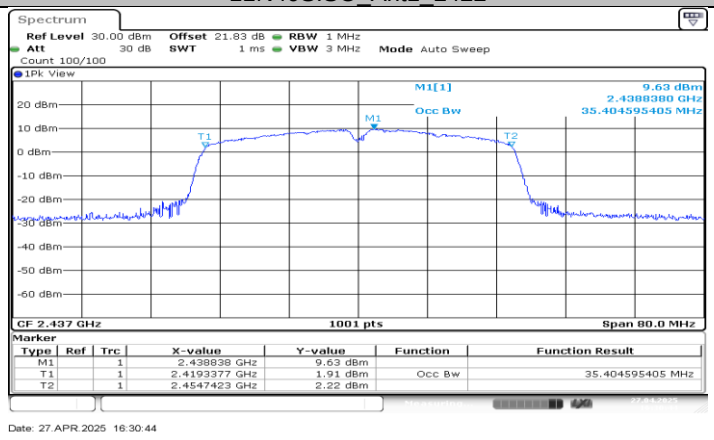
11N20SISO_Ant1_2437



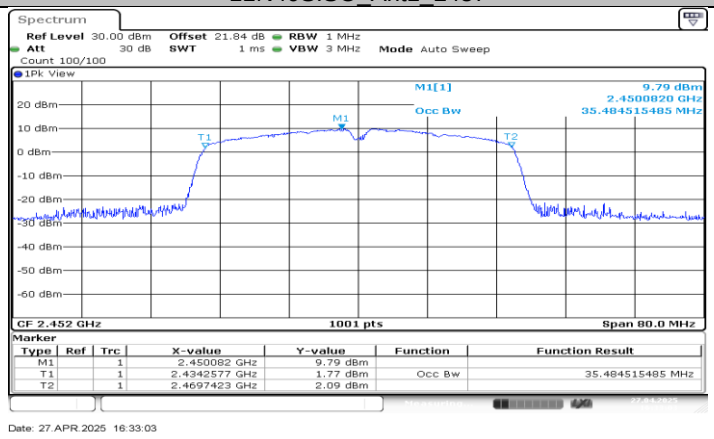
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

11.3. APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER

11.3.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	17.74	≤30.00	PASS
		2437	17.87	≤30.00	PASS
		2462	17.85	≤30.00	PASS
11G	Ant1	2412	15.10	≤30.00	PASS
		2437	15.09	≤30.00	PASS
		2462	15.19	≤30.00	PASS
11N20SISO	Ant1	2412	13.86	≤30.00	PASS
		2437	13.93	≤30.00	PASS
		2462	14.25	≤30.00	PASS
11N40SISO	Ant1	2422	14.04	≤30.00	PASS
		2437	13.97	≤30.00	PASS
		2452	14.11	≤30.00	PASS

Test Mode	Antenna	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant2	2412	17.74	≤30.00	PASS
		2437	17.81	≤30.00	PASS
		2462	17.78	≤30.00	PASS
11G	Ant2	2412	15.08	≤30.00	PASS
		2437	14.72	≤30.00	PASS
		2462	14.84	≤30.00	PASS
11N20SISO	Ant2	2412	13.62	≤30.00	PASS
		2437	13.65	≤30.00	PASS
		2462	13.77	≤30.00	PASS
11N40SISO	Ant2	2422	13.65	≤30.00	PASS
		2437	13.64	≤30.00	PASS
		2452	13.66	≤30.00	PASS

Note: 1. Conducted Power=Meas. Level+ Correction Factor
2. The Duty Cycle Factor (refer to section 7.5) had already compensated to the test data.

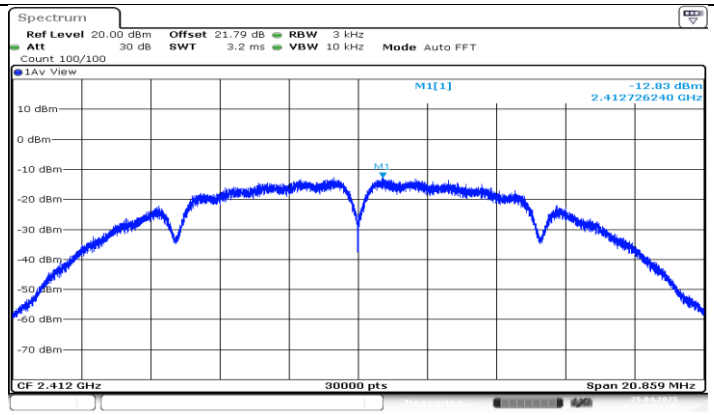
11.4. APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY

11.4.1. Test Result

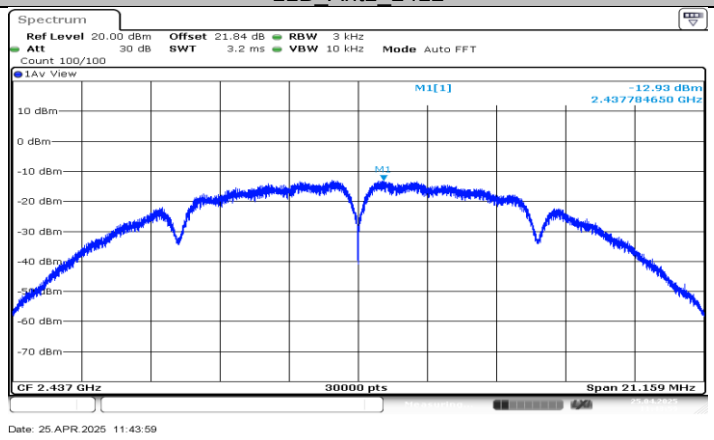
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-12.83	≤8.00	PASS
		2437	-12.93	≤8.00	PASS
		2462	-12.65	≤8.00	PASS
11G	Ant1	2412	-14.90	≤8.00	PASS
		2437	-14.31	≤8.00	PASS
		2462	-14.68	≤8.00	PASS
11N20SISO	Ant1	2412	-15.03	≤8.00	PASS
		2437	-14.81	≤8.00	PASS
		2462	-14.59	≤8.00	PASS
11N40SISO	Ant1	2422	-16.28	≤8.00	PASS
		2437	-16.32	≤8.00	PASS
		2452	-16.17	≤8.00	PASS

Note: 1. The Duty Cycle Factor (refer to section 7.5) had already compensated to the test data.

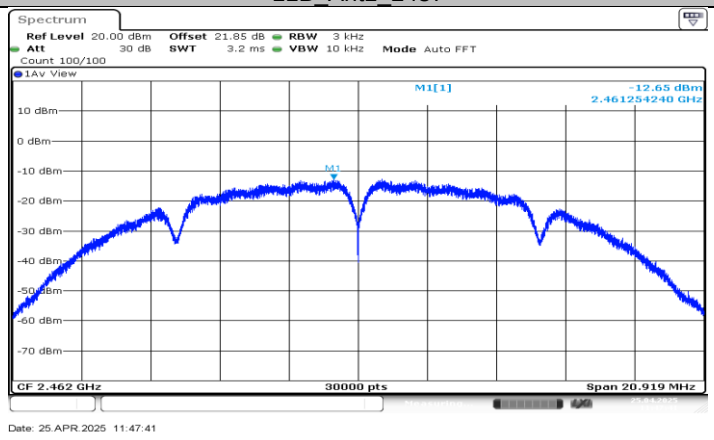
11.4.2. Test Graphs



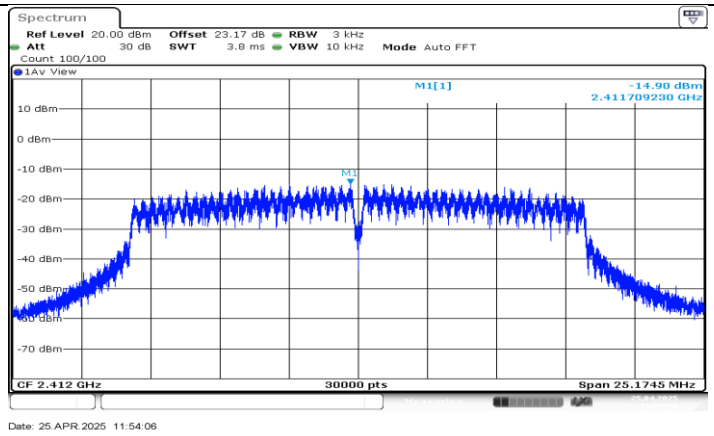
11B_Ant1_2412



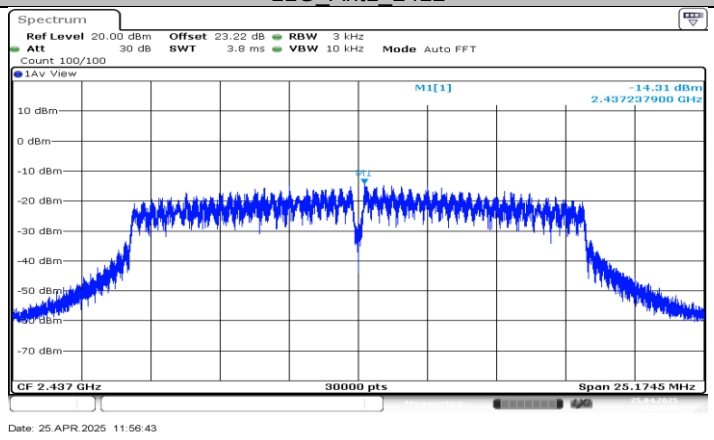
11B_Ant1_2437



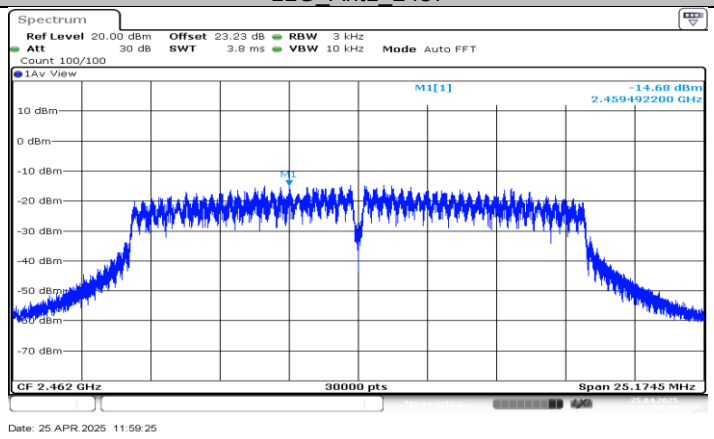
11B_Ant1_2462



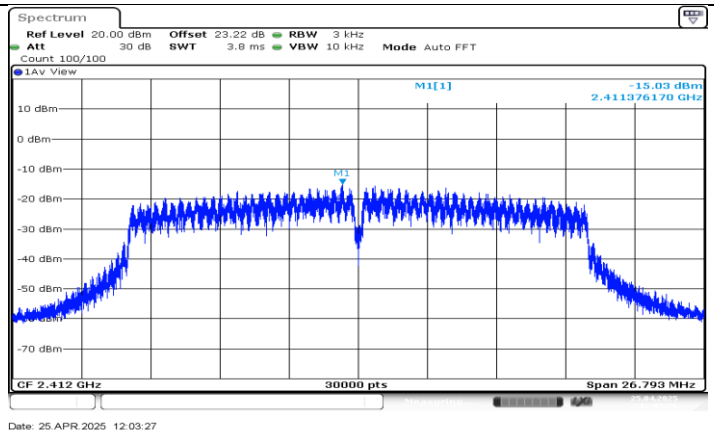
11G_Ant1_2412



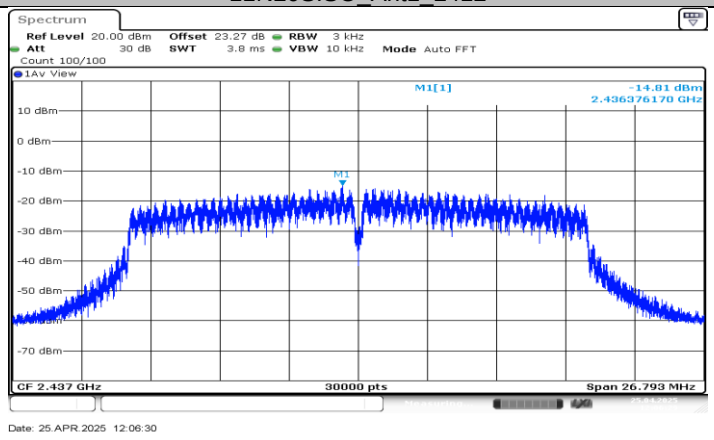
11G_Ant1_2437



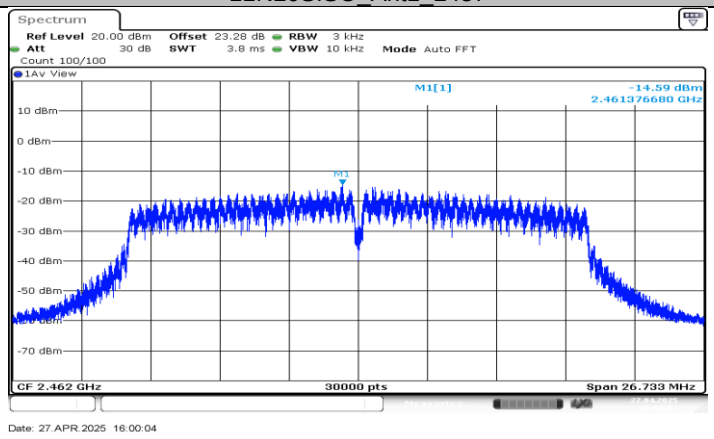
11G_Ant1_2462



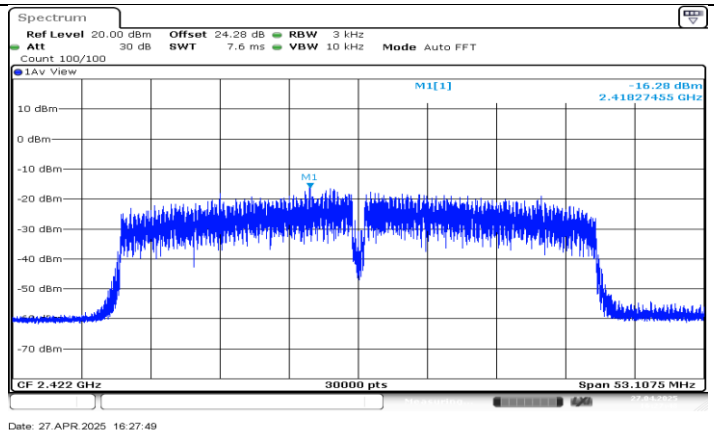
11N20SISO_Ant1_2412



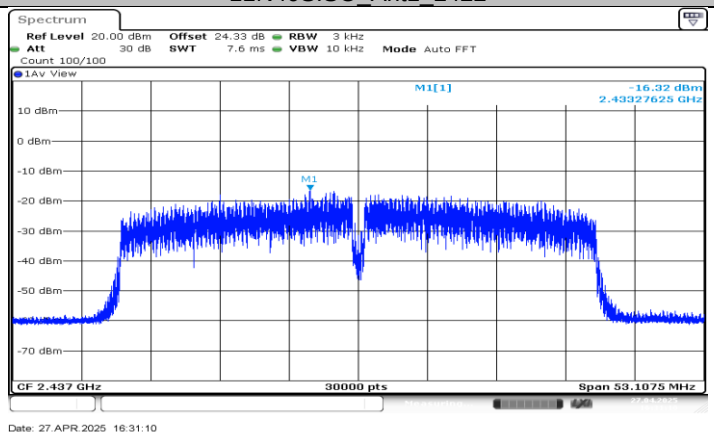
11N20SISO_Ant1_2437



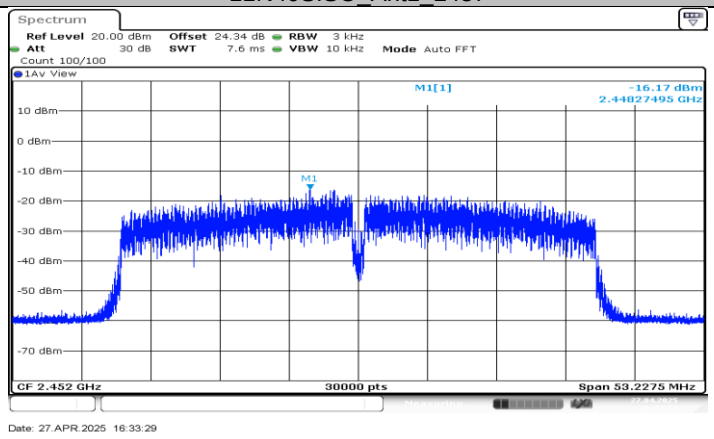
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



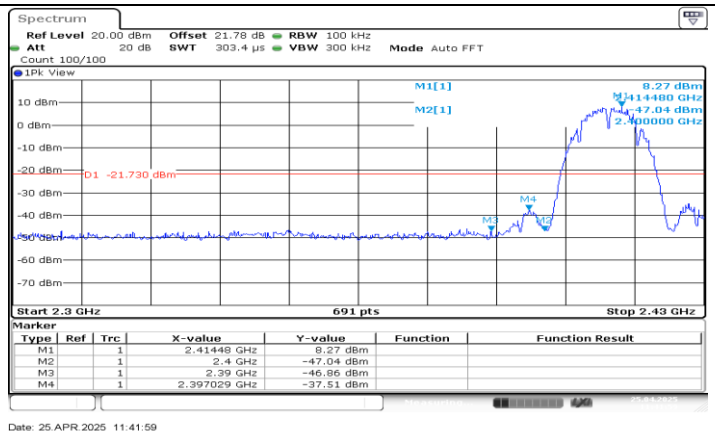
11N40SISO_Ant1_2452

11.5. APPENDIX E: BAND EDGE MEASUREMENTS

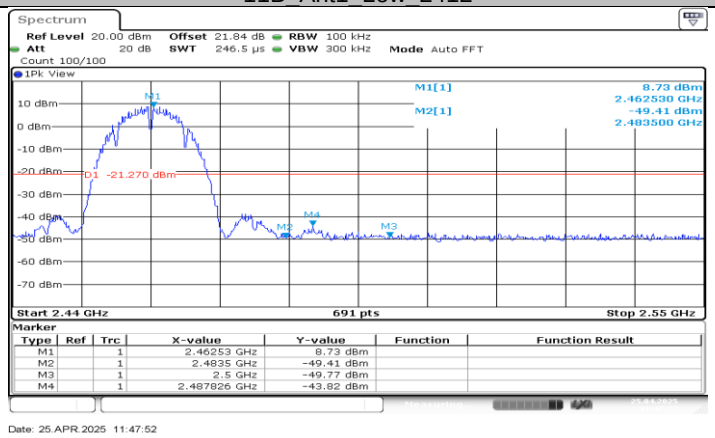
11.5.1. Test Result

Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.27	-37.51	≤-21.73	PASS
		High	2462	8.73	-43.82	≤-21.27	PASS
11G	Ant1	Low	2412	4.48	-36.04	≤-25.52	PASS
		High	2462	5.23	-44.75	≤-24.77	PASS
11N20SISO	Ant1	Low	2412	0.98	-37.35	≤-29.02	PASS
		High	2462	1.73	-45.24	≤-28.27	PASS
11N40SISO	Ant1	Low	2422	0.21	-40.65	≤-29.79	PASS
		High	2452	1.47	-43.24	≤-28.53	PASS

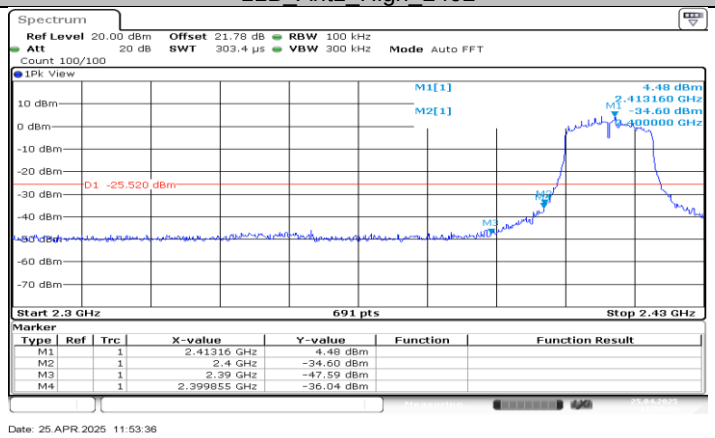
11.5.2. Test Graphs



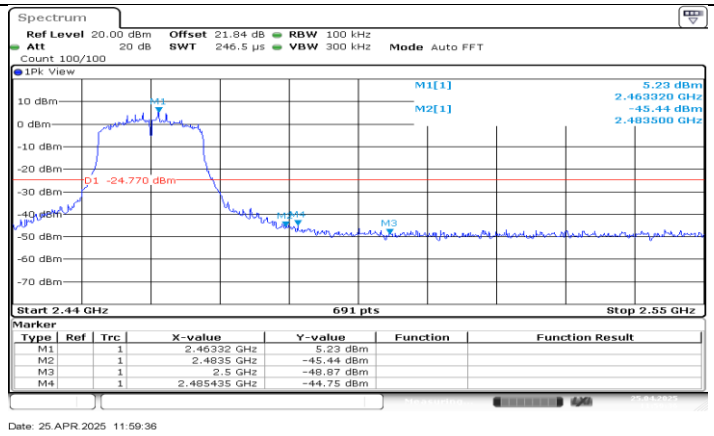
11B_Ant1_Low_2412



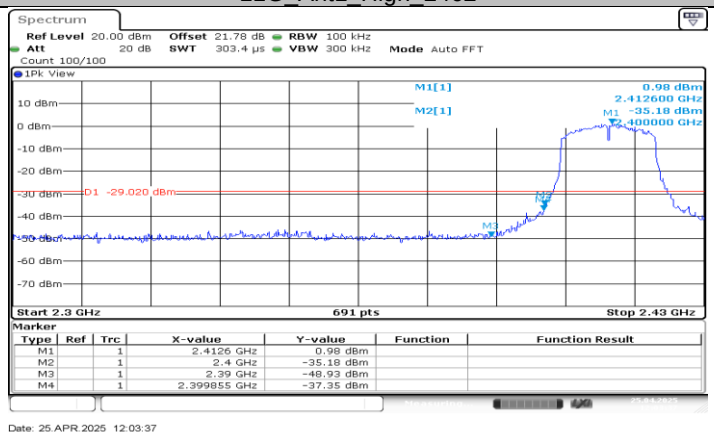
11B_Ant1_High_2462



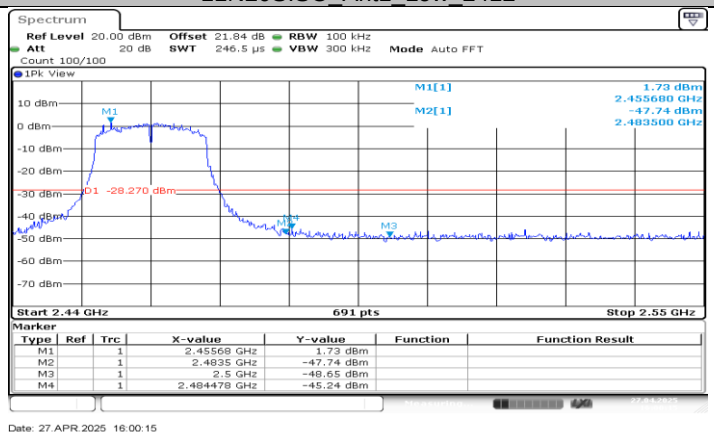
11G_Ant1_Low_2412



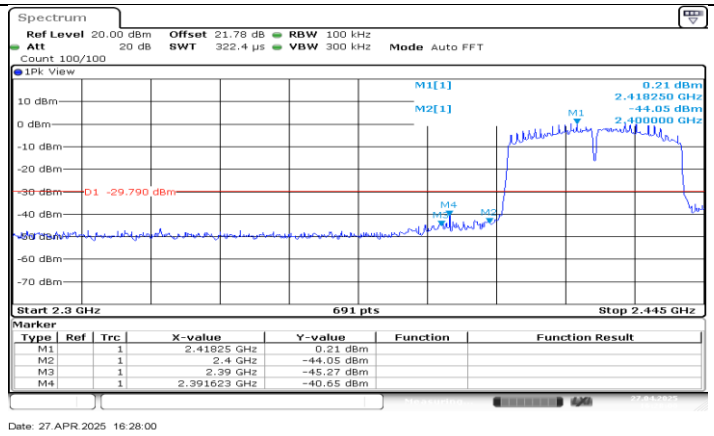
11G_Ant1_High_2462



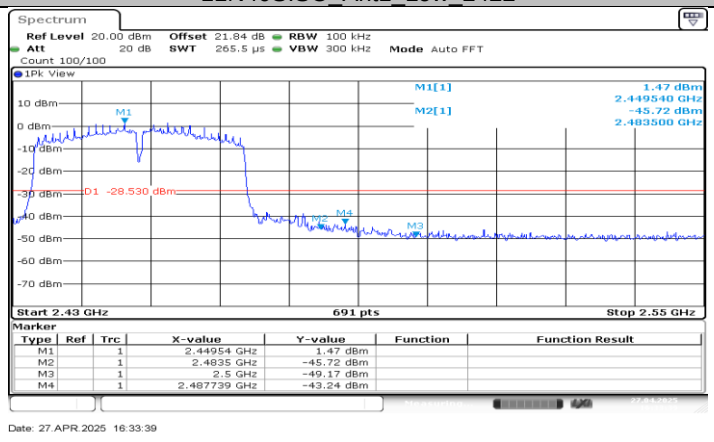
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



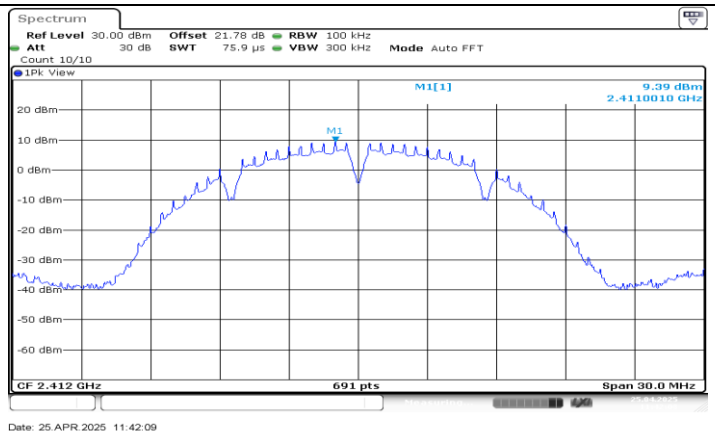
11N40SISO_Ant1_High_2452

11.6. APPENDIX F: CONDUCTED SPURIOUS EMISSION

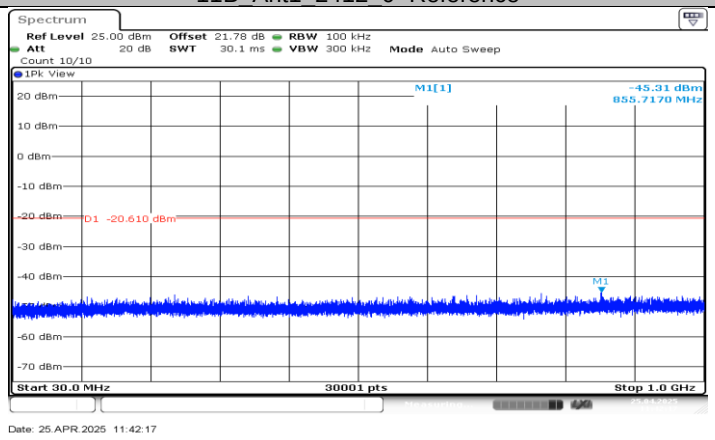
11.6.1. Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [Mhz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	9.39	---	PASS
			30~1000	-45.31	≤-20.61	PASS
			1000~26500	-39.83	≤-20.61	PASS
		2437	Reference	9.32	---	PASS
			30~1000	-45.89	≤-20.68	PASS
			1000~26500	-41.07	≤-20.68	PASS
		2462	Reference	9.27	---	PASS
			30~1000	-45.49	≤-20.73	PASS
			1000~26500	-40.42	≤-20.73	PASS
11G	Ant1	2412	Reference	5.21	---	PASS
			30~1000	-45.43	≤-24.79	PASS
			1000~26500	-40	≤-24.79	PASS
		2437	Reference	5.15	---	PASS
			30~1000	-45.68	≤-24.85	PASS
			1000~26500	-40.04	≤-24.85	PASS
		2462	Reference	5.05	---	PASS
			30~1000	-46.11	≤-24.95	PASS
			1000~26500	-40.17	≤-24.95	PASS
11N20SISO	Ant1	2412	Reference	4.17	---	PASS
			30~1000	-45.89	≤-25.83	PASS
			1000~26500	-40.21	≤-25.83	PASS
		2437	Reference	4.05	---	PASS
			30~1000	-45.92	≤-25.95	PASS
			1000~26500	-41.06	≤-25.95	PASS
		2462	Reference	4.54	---	PASS
			30~1000	-45.58	≤-25.46	PASS
			1000~26500	-39.64	≤-25.46	PASS
11N40SISO	Ant1	2422	Reference	1.64	---	PASS
			30~1000	-45.37	≤-28.36	PASS
			1000~26500	-40.48	≤-28.36	PASS
		2437	Reference	1.50	---	PASS
			30~1000	-46.01	≤-28.5	PASS
			1000~26500	-40.49	≤-28.5	PASS
		2452	Reference	1.92	---	PASS
			30~1000	-45.83	≤-28.08	PASS
			1000~26500	-40.21	≤-28.08	PASS

11.6.2. Test Graphs



11B_Ant1_2412_0~Reference



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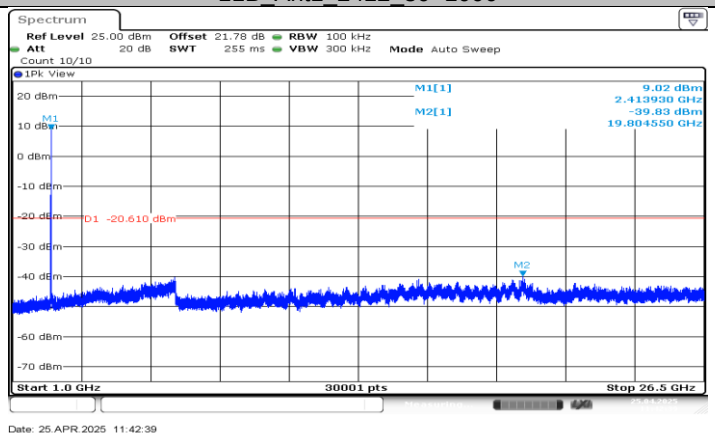

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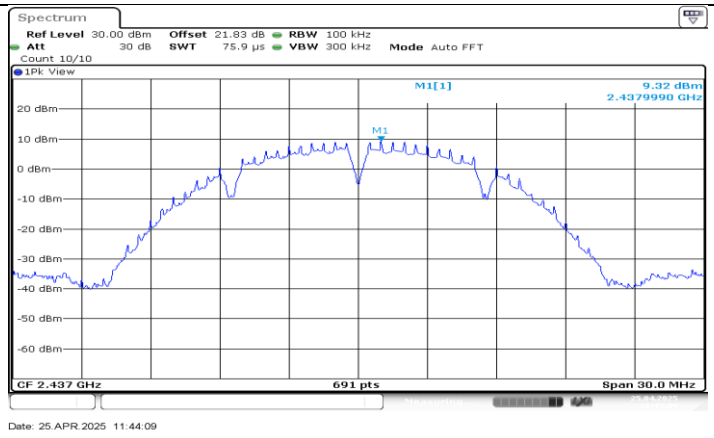

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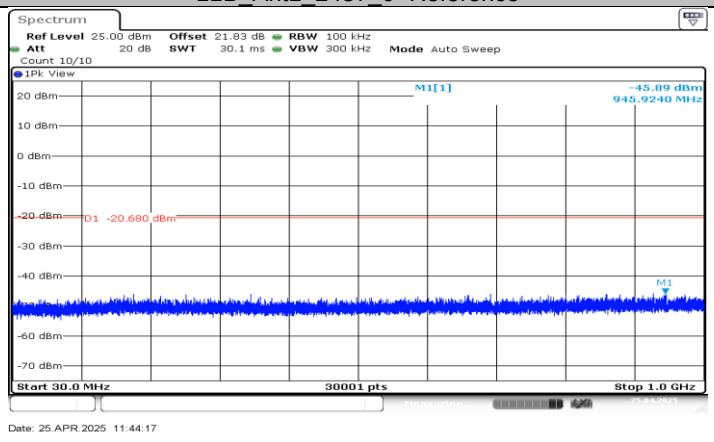

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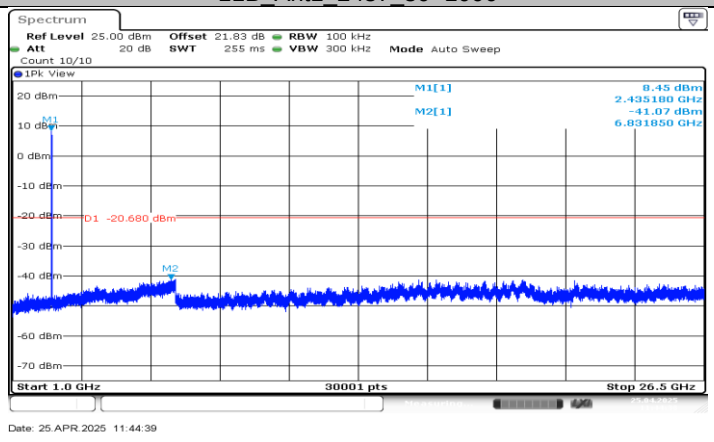

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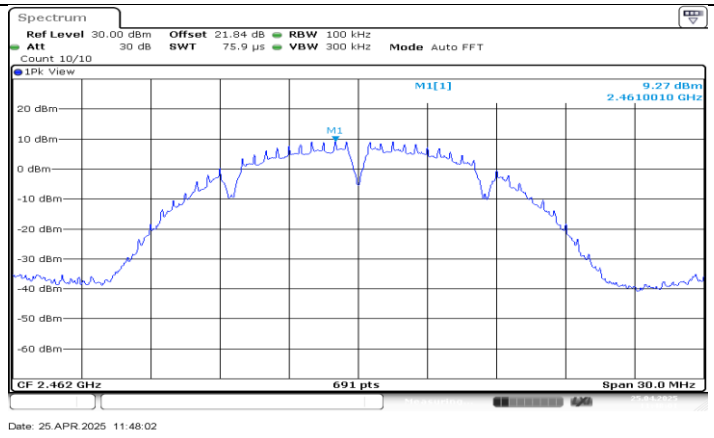

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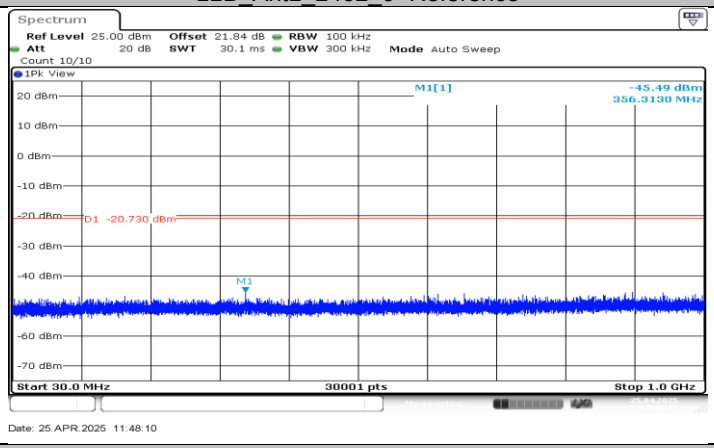

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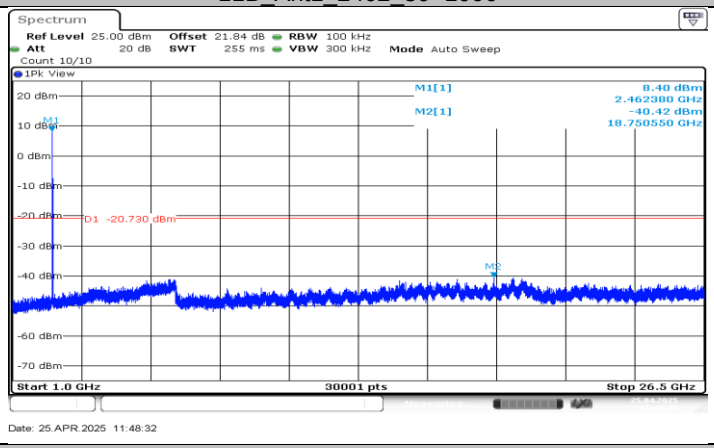

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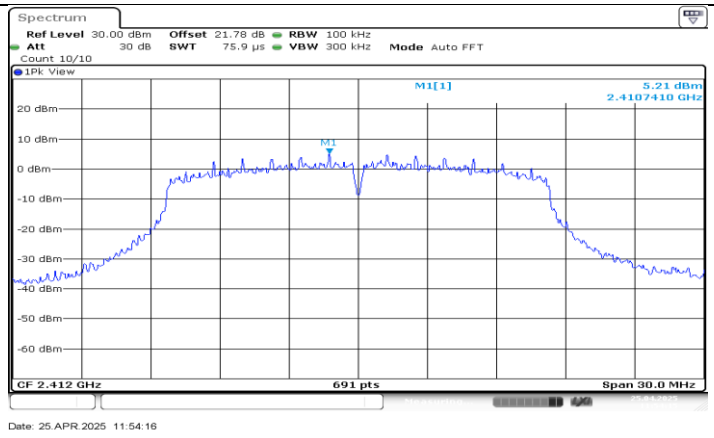

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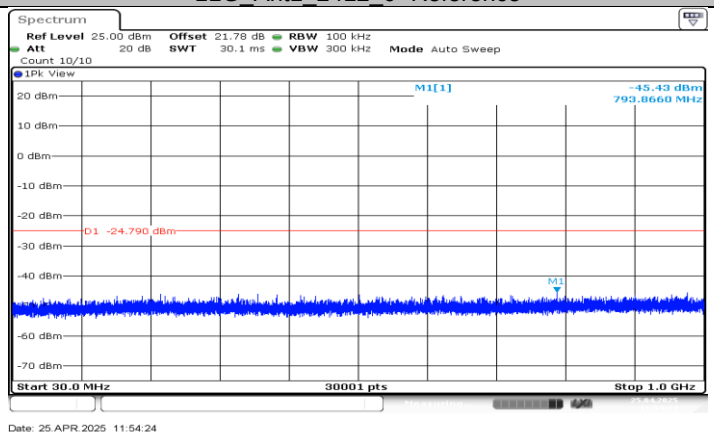

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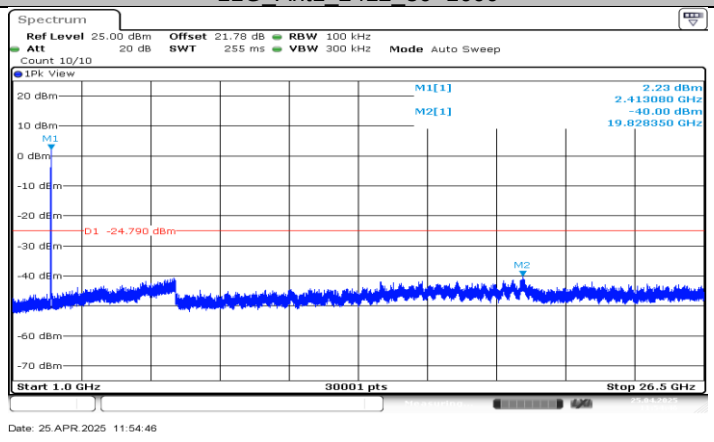

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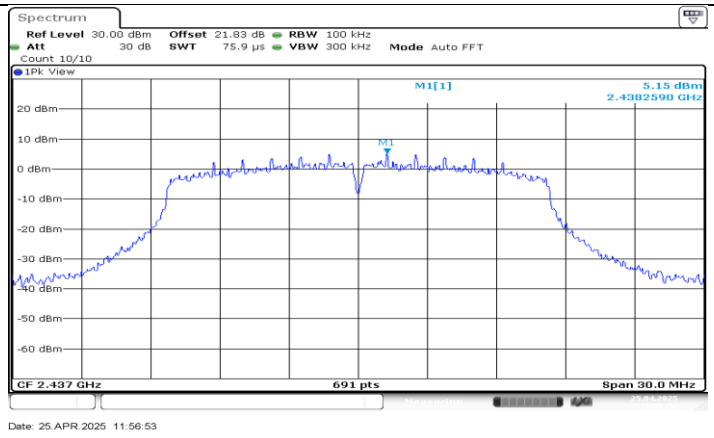

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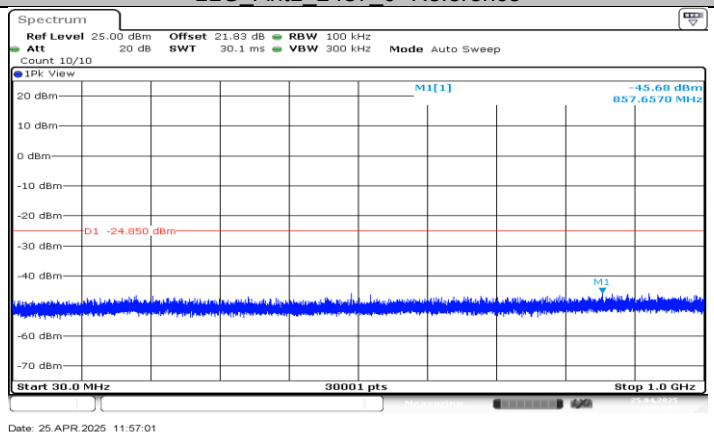

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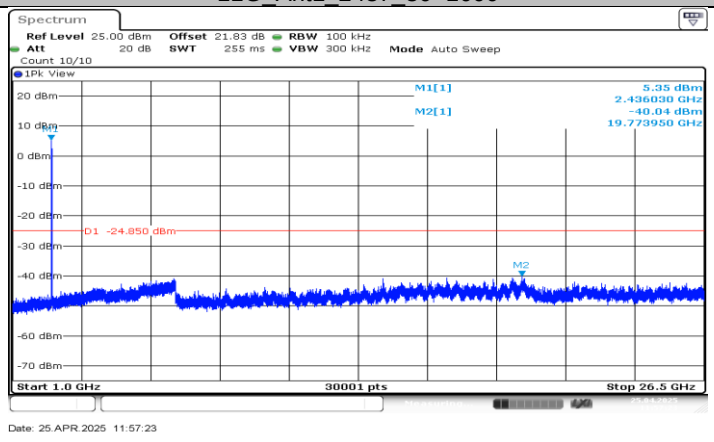

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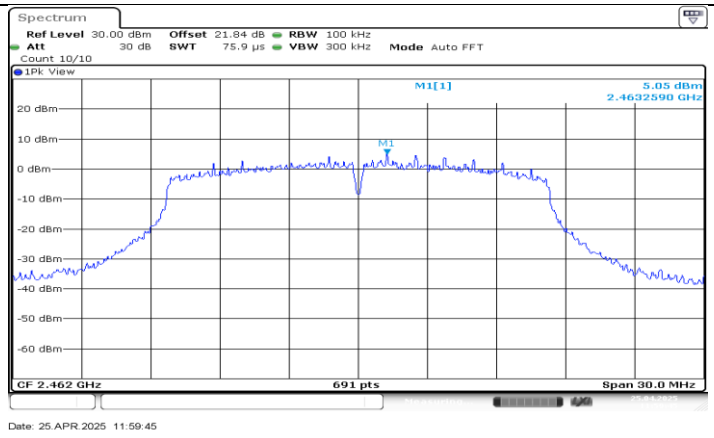

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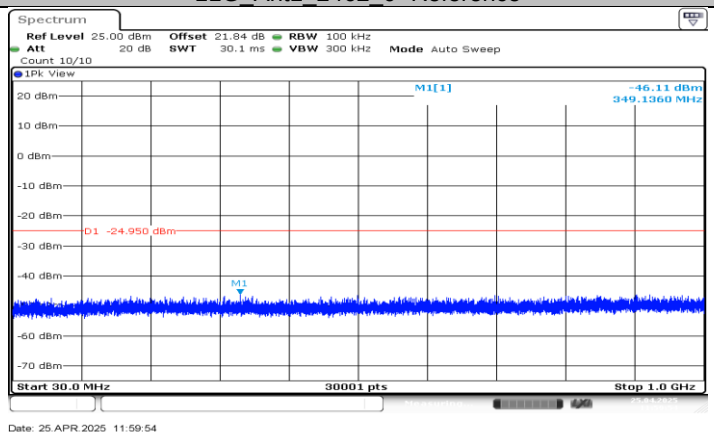

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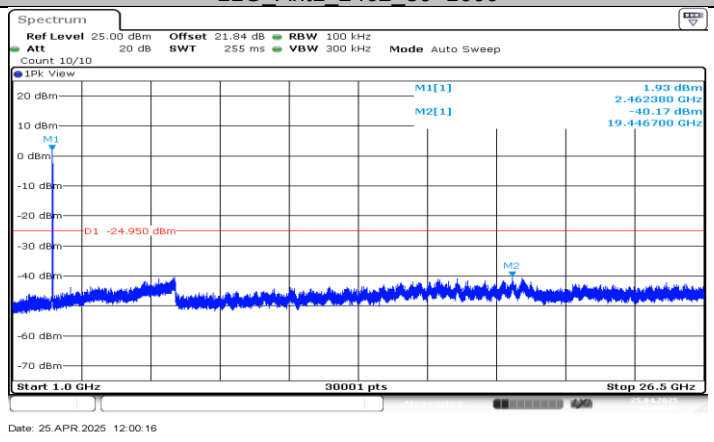

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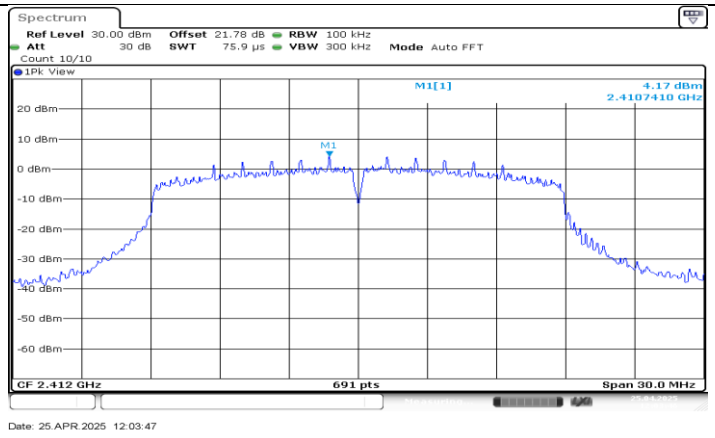

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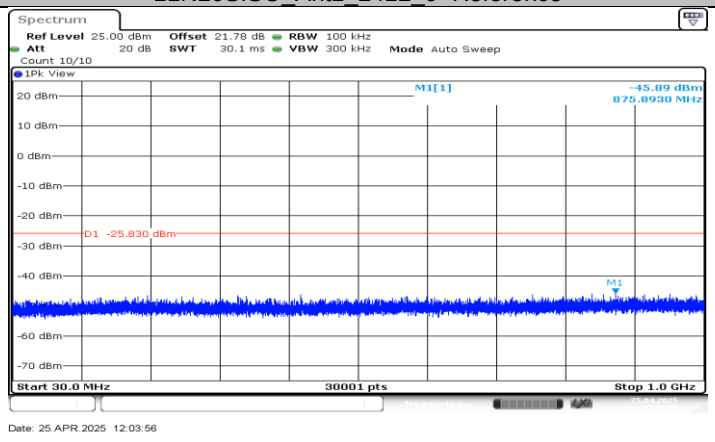

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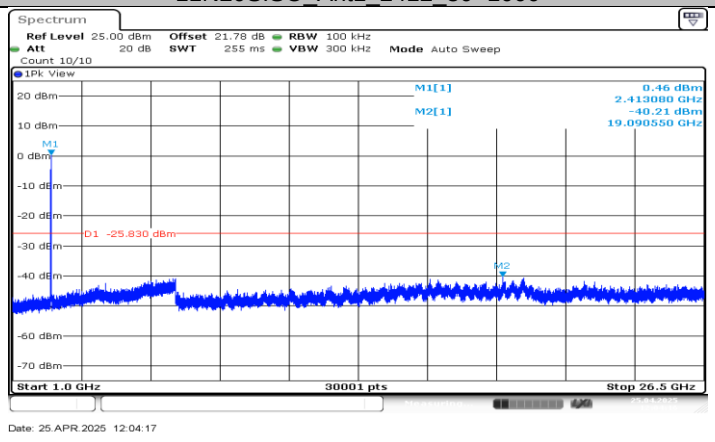

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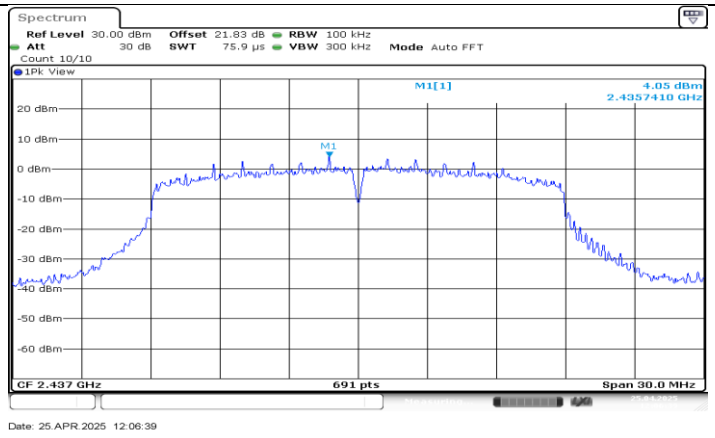

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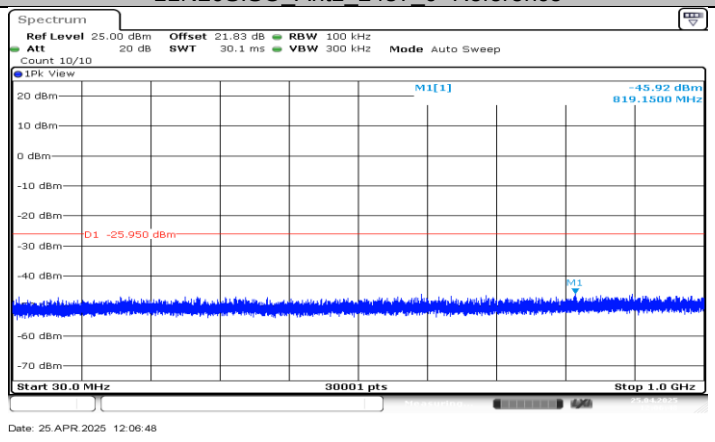

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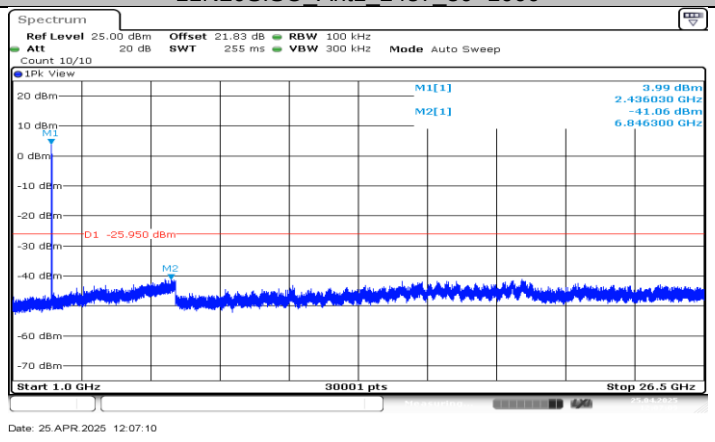

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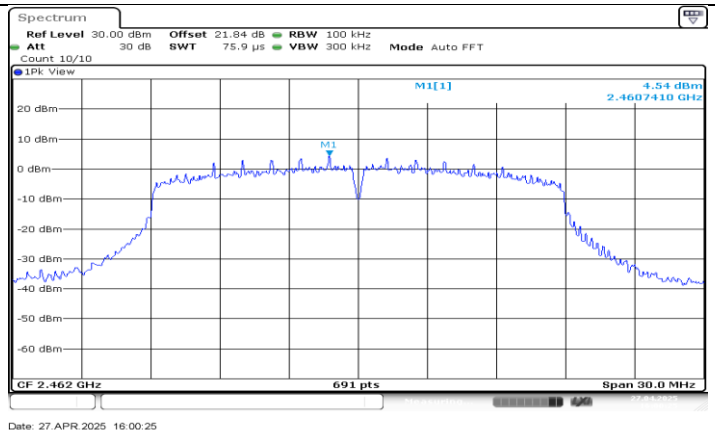

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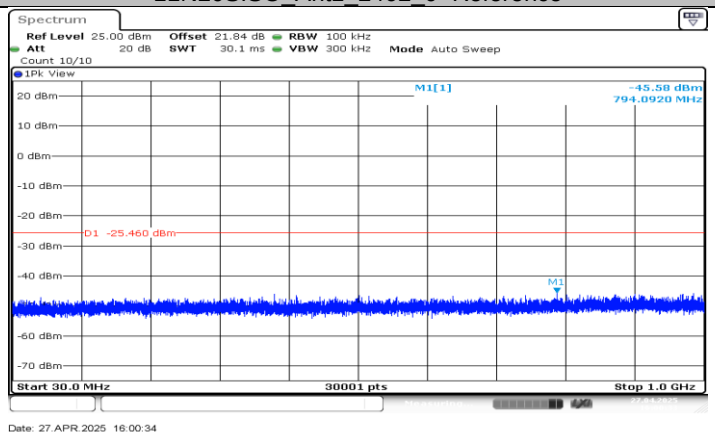

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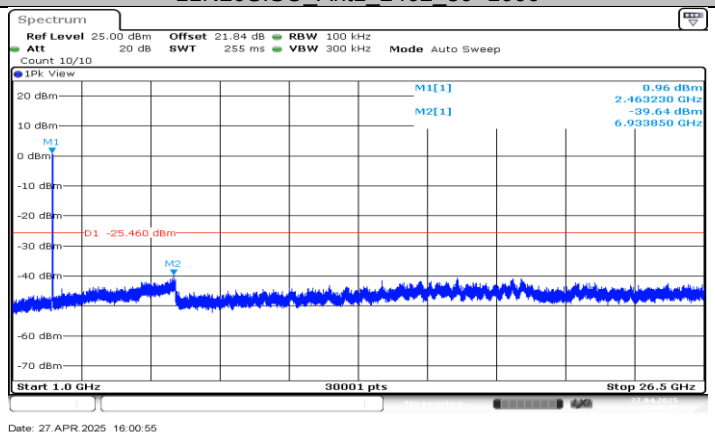

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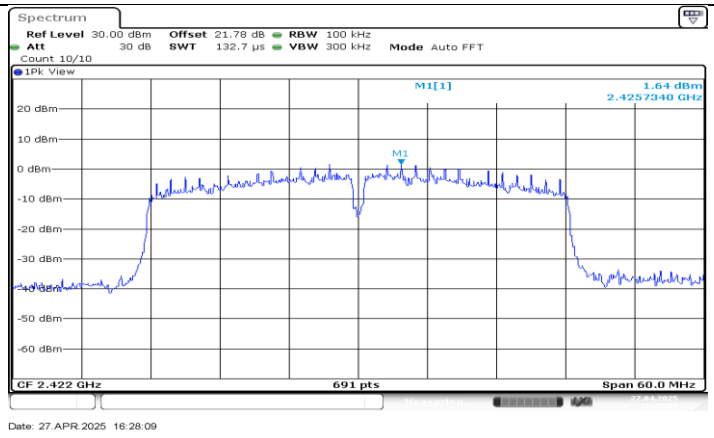

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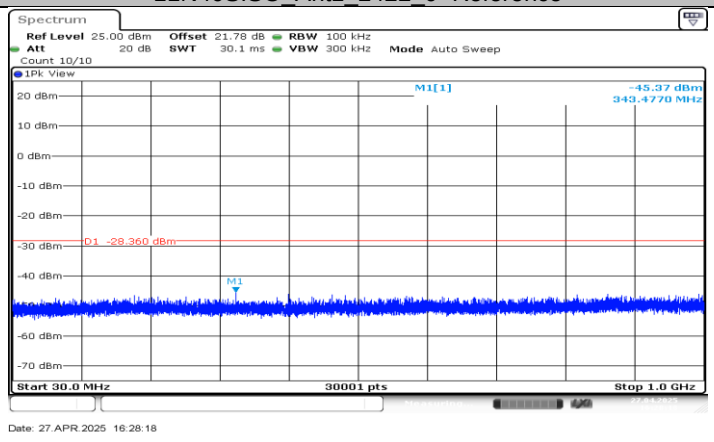

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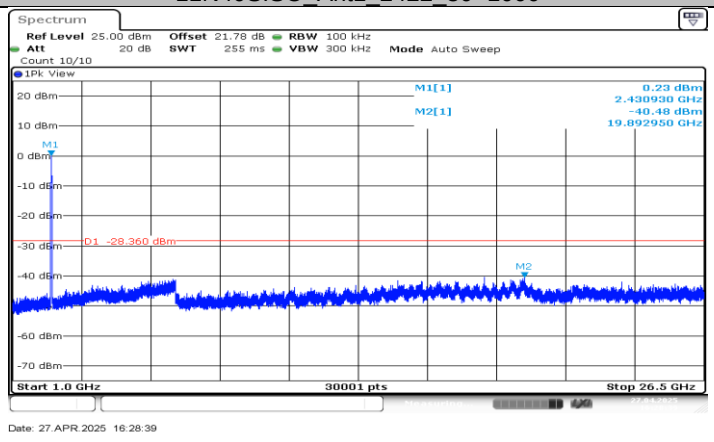

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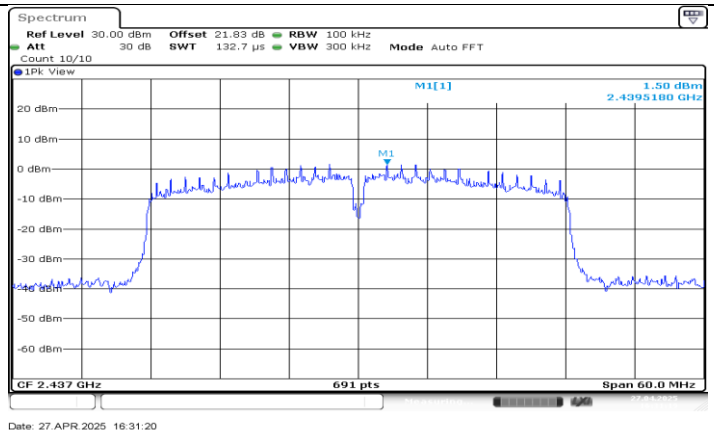

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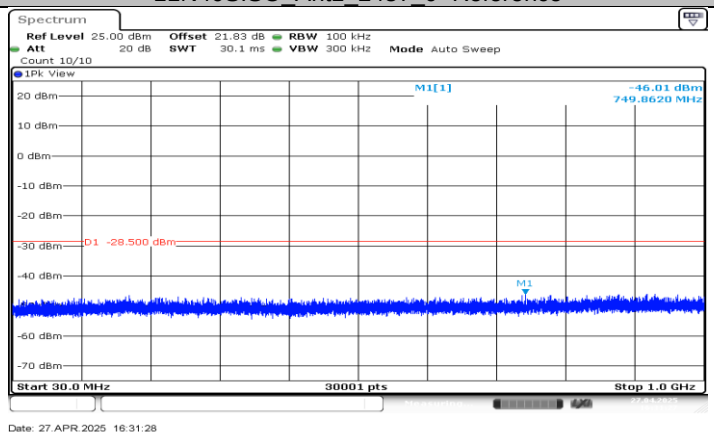

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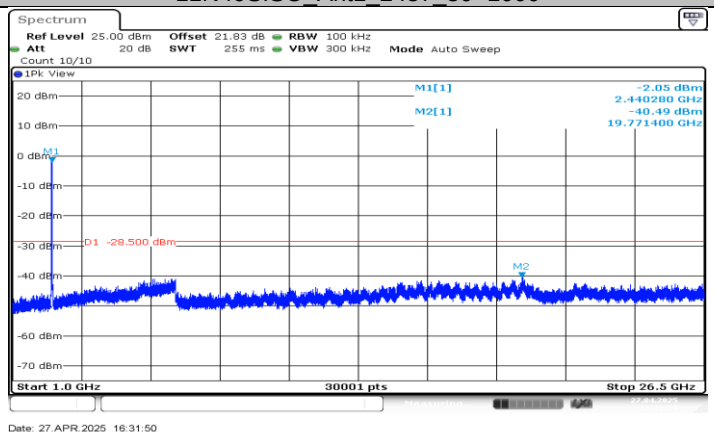

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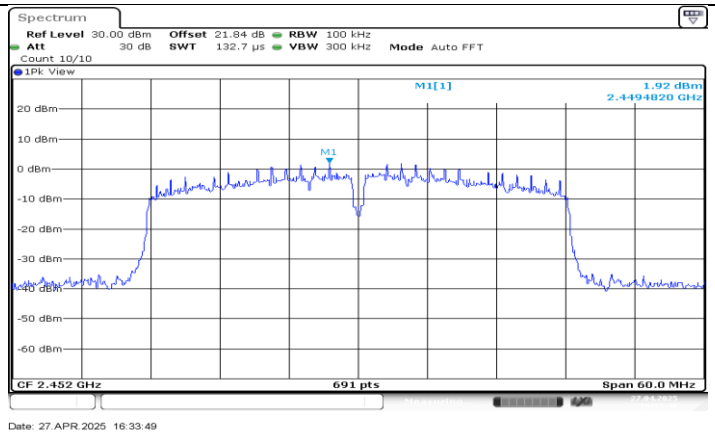

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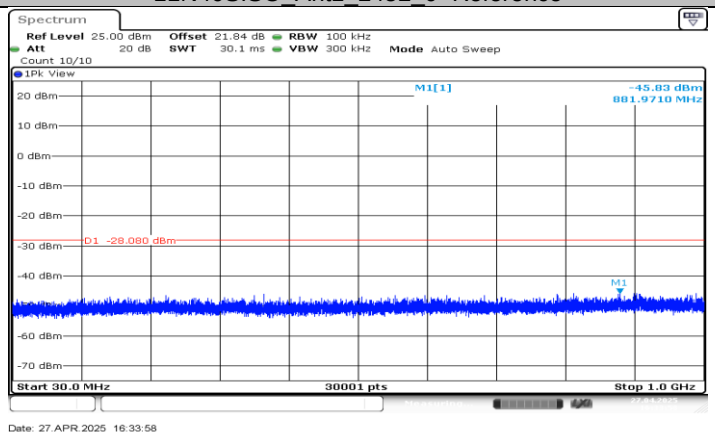

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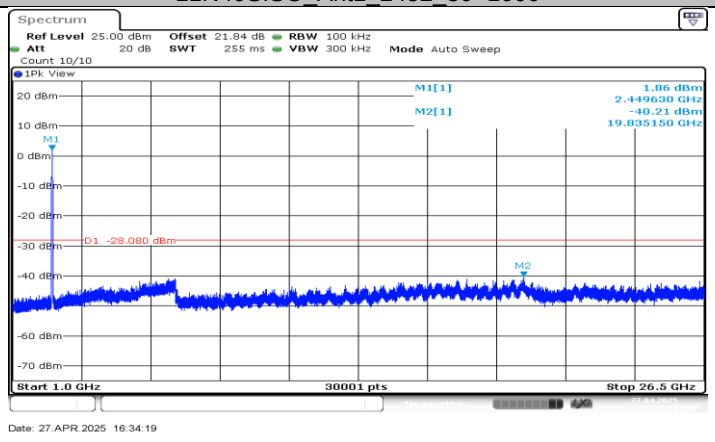


11N40SISO_Ant1_2452_1000~26500

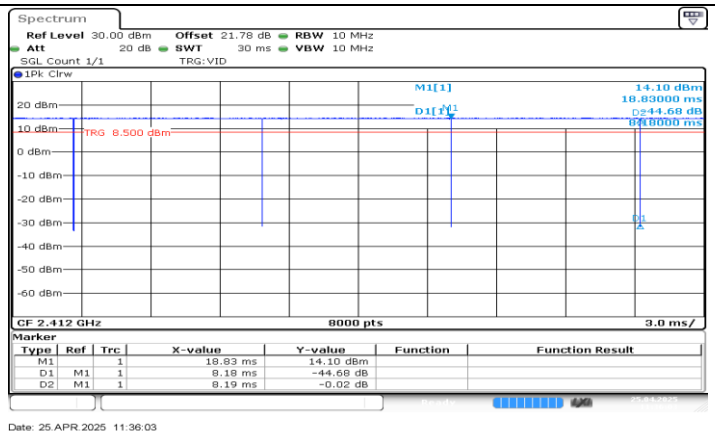
11.7. APPENDIX G: DUTY CYCLE

11.7.1. Test Result

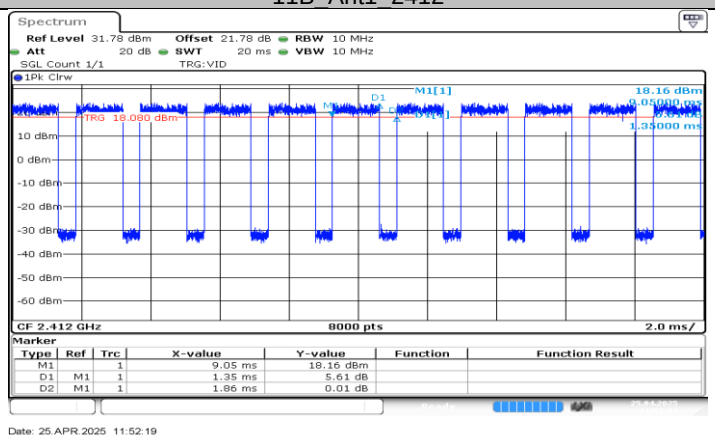
Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11B	8.18	8.19	0.9988	99.88	0.01	0.12	0.01
11G	1.35	1.86	0.7258	72.58	1.39	0.74	1
11N20SISO	1.27	1.77	0.7175	71.75	1.44	0.79	1
11N40SISO	0.63	1.12	0.5625	56.25	2.50	1.59	2

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

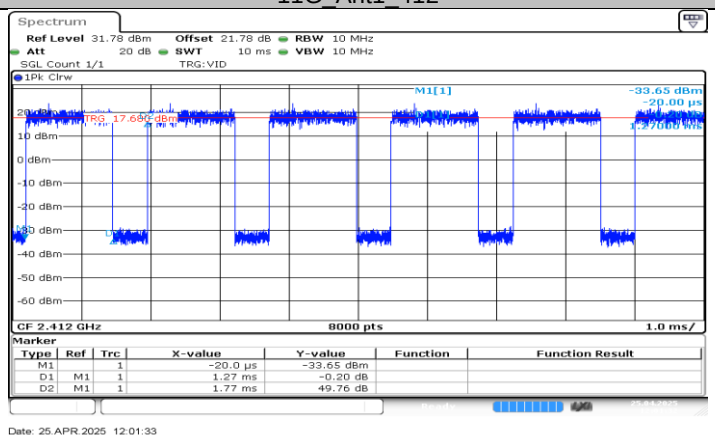
11.7.2. Test Graphs



11B_Ant1_2412



11G_Ant1_412



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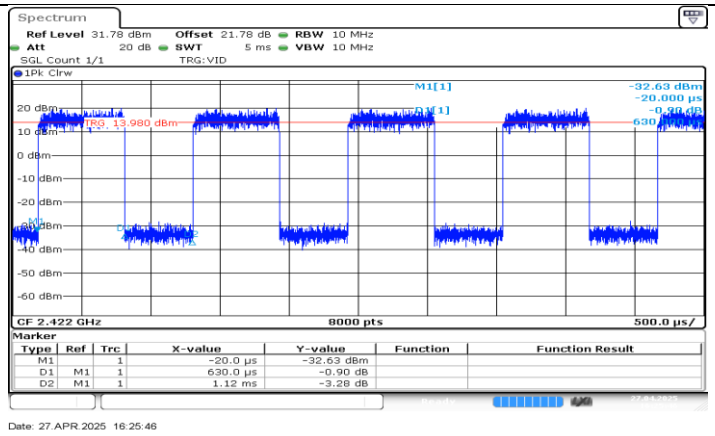

11N40SISO_Ant1_2422

END OF REPORT