

Prüfbericht-Nr.: Test Report No.:	50289118 001	Auftrags-Nr.: Order No.:	168126584	Seite 1 von 25 Page 1 of 25
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	07.08.2019	
Auftraggeber: Client:	Telit Communications S.p.A., Viale Stazione di Prosecco 5/b, 34010, Trieste, Italy			
Prüfgegenstand: Test item:	Data Terminal Module			
Bezeichnung / Typ-Nr.: Identification / Type No.:	ME910G1-W1			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	47 CFR FCC Part 22 47 CFR FCC Part 24 47 CFR FCC Part 27 47 CFR FCC Part 90 47 CFR FCC Part 2	RSS-132 Issue 3 RSS-133 Issue 6 RSS-130 Issue 2 RSS-139 Issue 3 RSS-Gen Issue 5		
Wareneingangsdatum: Date of receipt:	10.09.2019	Refer to Photo Documentation		
Prüfmuster-Nr.: Test sample No.:	A000971166-005, A000971166-006			
Prüfzeitraum: Testing period:	20.09.2019 - 13.01.2020			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
14.01.2020 Lin Lin / Senior Project Manager		15.01.2020 Sam Lin / Technical Certifier		
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position
Sonstiges / Other: FCC ID: R17ME910G1W1; IC: 5131A-ME910G1W1 This report is for NB-IoT operation.				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
5 = mangelhaft N/T = nicht getestet 5 = poor N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

TEST SUMMARY

5.1.1 RF POWER OUTPUT

RESULT: Pass

5.1.2 MODULATION CHARACTERISTICS

RESULT: Pass

5.1.3 OCCUPIED BANDWIDTH AND 26dB BANDWIDTH

RESULT: Pass

5.1.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

RESULT: Pass

5.1.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS – BAND EDGE

RESULT: Pass

5.1.6 FIELD STRENGTH OF SPURIOUS RADIATION

RESULT: Pass

5.1.7 FREQUENCY STABILITY

RESULT: Pass

5.1.8 PEAK TO AVERAGE RATIO

RESULT: Pass

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1. GENERAL REMARKS

1.1 COMPLEMENTARY MATERIALS

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Band 2 for NB-IoT operation

Appendix B: Test Results of Band 4 for NB-IoT operation

Appendix C: Test Results of Band 5 for NB-IoT operation

Appendix D: Test Results of Band 12 for NB-IoT operation

Appendix E: Test Results of Band 13 for NB-IoT operation

Appendix F: Test Results of Band 25 for NB-IoT operation

Appendix G: Test Results of Band 26 Lower Band for NB-IoT operation

Appendix H: Test Results of Band 26 Upper Band for NB-IoT operation

Appendix I: Test Results of Band 66 for NB-IoT operation

Appendix J: Test Results of Band 71 for NB-IoT operation

Appendix K: Test Results of Band 85 for NB-IoT operation

Appendix L: Test Results of Field Strength of Spurious Radiation for NB-IoT operation

1.2 TEST STANDARD(S)

Applied Rules:	47 CFR FCC Part 22	RSS-130 Issue 2
	47 CFR FCC Part 24	RSS-132 Issue 3
	47 CFR FCC Part 27	RSS-133 Issue 6
	47 CFR FCC Part 90	RSS-139 Issue 3
	47 CFR FCC Part 2	RSS-Gen Issue 5
Test Method:	KDB 971168 D01	
	ANSI C63.26	

2. TEST SITES

2.1 TEST FACILITIES

TÜV Rheinland (Shenzhen) Co., Ltd.

(FCC Registration No.: 694916 & IC Registration Number: 25069)

Address: 1F East & 2-4F, Cybio Technology Building No.1, No.16 Kejibei 2nd Road, High-Tech Industrial Park North Nanshan District, 518057, Shenzhen, China

2.2 TEST DATE

Date of test: 20.09.2019 - 13.01.2020

2.3 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Table 1: List of Test and Measurement Equipment

Description	Manufacturer	Model	Serial No.	Calibrated until (DD.MM.YYYY)
Radio Spectrum Testing				
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	166305	20.09.2020
Signal Analyzer	Rohde & Schwarz	FSV 40	101475	20.09.2020
Vector Signal Generator	Rohde & Schwarz	SMBV100A	263466	20.09.2020
Signal Generator	Rohde & Schwarz	SMB100A	181041	17.12.2020
High Speed Power Supply	KEITHLEY	2303	4080052	17.12.2020
RF Control Unit	Tonscend	JS0806-1	19H8060192	N/A
Field Strength of Spurious Radiation				
Signal Generator	Rohde & Schwarz	SMB100A	180840	20.08.2020
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	165339	20.08.2020
Signal Analyzer	Rohde & Schwarz	FSV 40	101440	21.08.2020
System Controller Interface	Rohde & Schwarz	SCI-100	S10010036	N/A
Filterbank	Rohde & Schwarz	GSM	100811	21.08.2020
OSP	Rohde & Schwarz	OSP 120	102041	N/A
OSP	Rohde & Schwarz	OSP 150	101385	17.12.2020
Pre-amplifier	Rohde & Schwarz	SCU08F1	08320030	20.08.2020

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Amplifier	Rohde & Schwarz	SCU-18F	180079	20.08.2020
Amplifier	Rohde & Schwarz	SCU40A	100450	20.09.2020
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	192	02.09.2020
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218719	02.09.2020
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18312	02.09.2020
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19066	02.09.2020
Biconical Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VUBA 9117	357	02.09.2020
Double Ridged Broadband Horn Antenna (1 – 18 GHz)	Schwarzbeck	BBHA 9120 D	01760	02.09.2020
Broadband Horn Antenna (15 – 40 GHz)	Schwarzbeck	BBHA 9170	00862	02.09.2020
Test software	Rohde & Schwarz	EMC32 (V10.40.00)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NW9P2	N/A
3m Fully Anechoic Chamber	Albatross	FAC-3m	APC17151-FAC	06.07.2020

2.4 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.5 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. facility located at 1F East & 2-4F, Cybio Technology Building No.1, No.16 Kejibei 2nd Road, High-Tech Industrial Park North Nanshan District, 518057, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. GENERAL PRODUCT INFORMATION

3.1 GENERAL DESCRIPTION

The EUT is wireless module which supports NB-IoT and eMTC wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 RATING AND SYSTEM DETAILS

Table 2: Rating of EUT

General Information of EUT	Description
Kind of Equipment:	Data Terminal Module
Type Designation:	ME910G1-W1
FCC ID:	RI7ME910G1W1
IC:	5131A-ME910G1W1
Hardware Version:	0.0
Software Version:	M0C.300001
IMEI:	356813109993754
Type of Equipment:	Single Module
Antenna Type:	External Antenna
Operating Voltage:	DC 3.8V
Operating Temperature Range:	-40°C ~ +85°C

Table 3: Technical Specification of EUT

Characteristic	Description
Operated Modes:	NB-IoT
Operational Frequency Band(s):	Band 2, Band 4, Band 5, Band 12, Band 13, Band 25, Band 26, Band 66, Band 71, Band 85
Nominal RF Output Power:	20 dBm ± 2dB
Modulation Type:	BPSK, QPSK
Antenna Type:	External Antenna The EUT doesn't have antenna, The adapter and antenna used for testing in this report is the after-market accessory
Antenna Gain:	2.14 dBi
Device Category:	Category NB1 and NB2
Operation mode:	Stand-alone
Subcarrier spacing:	3.75kHz, 15kHz
Tones Configuration:	Single tone, Multi-tone
Extreme Voltage:	DC 3.2 ~ 4.5V

Table 4: Operating Frequency Range of EUT

Frequency Band(s)	Frequency Range		Channel Bandwidth (MHz)	Subcarrier Spacing (kHz)
	Transmitting f_{UL} (MHz)	Receiving f_{DL} (MHz)		
Band 2	1850 ~ 1910	1930 ~ 1990	1.4, 3, 5, 10, 15, 20	3.75, 15
Band 4	1710 ~ 1755	2110 ~ 2155	1.4, 3, 5, 10, 15, 20	3.75, 15
Band 5	824 ~ 849	869 ~ 894	1.4, 3, 5, 10	3.75, 15
Band 12	699 ~ 716	729 ~ 746	1.4, 3, 5, 10	3.75, 15
Band 13	777 ~ 787	746 ~ 756	5, 10	3.75, 15
Band 25	1850 ~ 1915	1930 ~ 1995	1.4, 3, 5, 10, 15, 20	3.75, 15
Band 26	814 ~ 849	859 ~ 894	1.4, 3, 5, 10, 15	3.75, 15
Band 66	1710 ~ 1780	2110 ~ 2200	1.4, 3, 5, 10, 15, 20	3.75, 15
Band 71	663 ~ 698	617 ~ 652	5, 10, 15, 20	3.75, 15
Band 85	698 ~ 716	728 ~ 746	5, 10	3.75, 15

3.3 INDEPENDENT OPERATION MODES

The basic operation modes are:

- A. On, communication link established, Transmitting
 - 1) NB-IoT operating
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
- B. On, communication link established, Receiving
 - 1) NB-IoT operating
- C. Idle
- D. Off

3.4 NOISE GENERATING AND NOISE SUPPRESSING PARTS

Refer to the Circuit Diagram.

3.5 SUBMITTED DOCUMENTS

- | | |
|---|--|
| ☒ User Manual | ☒ Rating Label |
| ☒ Circuit Diagram | ☒ PCB Layout |
| ☒ Block Diagram | ☒ Photo Document |
| ☒ Schematics | ☒ Parts List |
| ☐ Model Difference Letter | |

4. TEST SET-UP AND OPERATION MODES

4.1 PRINCIPLE OF CONFIGURATION SELECTION

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 TEST OPERATION AND TEST SOFTWARE

Test operation refers to test setup in chapter 5. All testing were performed according to the procedure in KDB 971168 D01 and ANSI C63.26.

Table 5: List of Frequencies under Test

Operation bands	Mode	Frequencies under Test					
		Uplink			Downlink		
		Range	EARFCN	Frequencies (MHz)	Range	EARFCN	Frequencies (MHz)
2	Standalone	Low	18601	1850.1000	Low	601	1930.1000
		Mid	18900	1880.0000	Mid	900	1960.0000
		High	19199	1909.9000	High	1199	1989.9000
4	Standalone	Low	19951	1710.1000	Low	1951	2110.1000
		Mid	20175	1732.5000	Mid	2175	2132.5000
		High	20399	1754.9000	High	2399	2154.9000
5	Standalone	Low	20401	824.1000	Low	2401	869.1000
		Mid	20525	836.5000	Mid	2525	881.5000
		High	20649	848.9000	High	2649	893.9000
12	Standalone	Low	23011	699.1000	Low	5011	729.1000
		Mid	23095	707.5000	Mid	5095	737.5000
		High	23179	715.9000	High	5179	745.9000
13	Standalone	Low	23181	777.1000	Low	5181	746.1000
		Mid	23230	782.0000	Mid	5230	751.0000
		High	23279	786.9000	High	5279	755.9000
25	Standalone	Low	26041	1850.1000	Low	8041	1930.1000
		Mid	26365	1882.5000	Mid	8365	1962.5000
		High	26689	1914.9000	High	8689	1994.9000
26_Lower Band (814-824 MHz)	Standalone	Low	26691	814.1000	Low	8691	859.1000
		Mid	26740	819.0000	Mid	8740	864.0000
		High	26789	823.9000	High	8789	868.9000
26_Upper	Standalone	Low	26791	824.1000	Low	8791	869.1000

Band (824-849 MHz)		Mid	26915	836.5000	Mid	8915	881.5000
		High	27039	848.9000	High	9039	893.9000
66	Standalone	Low	131973	1710.1000	Low	66437	2110.1000
		Mid	132322	1745.0000	Mid	66786	2145.0000
		High	132671	1779.9000	High	67135	2179.9000
71	Standalone	Low	133123	663.1000	Low	68587	617.1000
		Mid	133297	680.5000	Mid	68761	634.5000
		High	133471	697.9000	High	68935	651.9000
85	Standalone	Low	134003	698.1000	Low	70367	728.1000
		Mid	134092	707.0000	Mid	70456	737.0000
		High	134181	715.9000	High	70545	745.9000

Table 6: Test Environments

Environment Parameter	Selected Values During Tests		
	Temperature (°C)	Voltage (V) DC	Relative Humidity
Normal (NTNV)	24	3.8	51%
HTHV	85 °C	4.5	---
LTHV	-40 °C	4.5	---
HTLV	85 °C	3.2	---
LTLV	-40 °C	3.2	---

Table 7: Test Configurations

Frequency Bands	Bandwidths (MHz)						Modulation		Subcarrier Spacing (kHz)	
	1.4	3	5	10	15	20	BPSK	QPSK	3.75	15
2	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
4	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
5	Δ	Δ	Δ	Δ	-	-	Δ	Δ	Δ	Δ
12	Δ	Δ	Δ	Δ	-	-	Δ	Δ	Δ	Δ
13	-	-	Δ	Δ	-	-	Δ	Δ	Δ	Δ
25	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
26	Δ	Δ	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ
66	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
71	-	-	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
85	-	-	Δ	Δ	-	-	Δ	Δ	Δ	Δ

4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT

Table 8: Cables used during test

Port	Quantity	Length (m)	Connector	Type of Cable
USB	1	1.2	USB	USB cable, shielding

Table 9: Auxiliary Equipment used during test

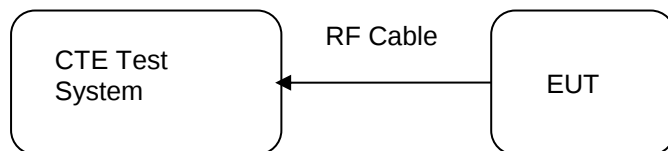
Name	Model	Manufacturer	S/N
Evaluation Kit	EVK2	Telit	N/A
LTE Magnetic Antenna	T-AT305 Frequency Range: 700-960 MHz / 1710-2700 MHz Omnidirectional antenna Gain: 2.14 dBi (Max.) Cable: RG 174mm 2500	ATEL-CAB	N/A

4.4 COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Equipment Configuration for Transmitter Measurement



5. TEST RESULTS

5.1 ESSENTIAL REQUIREMENTS OF STANDARD

5.1.1 RF POWER OUTPUT

RESULT: **Pass**

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2	
		47 CFR FCC Part 24	RSS-132 Issue 3	
		47 CFR FCC Part 27	RSS-133 Issue 6	
		47 CFR FCC Part 90	RSS-139 Issue 3	
		47 CFR FCC Part 2	RSS-Gen Issue 5	
Limits	:	Operating band	FCC Limit	ISED Limit
		Band 2	EIRP 2 watts	EIRP 2 watts
		Band 4	EIRP 1 watts	EIRP 1 watts
		Band 5	ERP 7 watts	ERP 11.5 watts
		Band 12	ERP 3 watts	ERP 3 watts
		Band 13	ERP 3 watts	ERP 3 watts
		Band 25	EIRP 2 watts	EIRP 2 watts
		Band 26 Lower Band	< 100 watts	N/A
		Band 26 Upper Band	ERP 7 watts	ERP 11.5 watts
		Band 66	EIRP 1 watts	EIRP 1 watts
		Band 71	ERP 3 watts	ERP 3 watts
		Band 85	ERP 3 watts	ERP 3 watts
Test procedure	:	Clause 5.2.4.2 of ANSI C63.26		
Kind of test site	:	Shielding Room		

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	23 °C
Relative humidity	:	50%
Atmospheric pressure	:	101.0 kPa

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}}$$

where

ERP or EIRP: effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas} , e.g. dBm)

P_{Meas} : measured transmitter output power, in dBm

G_{T} : gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

Refer to attached Appendix A to Appendix K for details of test results.

5.1.2 MODULATION CHARACTERISTICS

RESULT:**Pass**

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2
	:	47 CFR FCC Part 24	RSS-132 Issue 3
	:	47 CFR FCC Part 27	RSS-133 Issue 6
	:	47 CFR FCC Part 90	RSS-139 Issue 3
	:	47 CFR FCC Part 2	RSS-Gen Issue 5
Limits	:	"Other types of equipment", the use of higher order modulations such as OFDM or LTE or other modulation are acceptable for use	
Test procedure	:	Clause 5.2.3 of ANSI C63.26	
Kind of test site	:	Shielding Room	

Note:

The device implement digital modulation such as BPSK and QPSK, hence the EUT is deemed to comply with this requirement without additional testing.

5.1.3 OCCUPIED BANDWIDTH AND 26dB BANDWIDTH**RESULT:****Pass**

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2
		47 CFR FCC Part 24	RSS-132 Issue 3
		47 CFR FCC Part 27	RSS-133 Issue 6
		47 CFR FCC Part 90	RSS-139 Issue 3
		47 CFR FCC Part 2	RSS-Gen Issue 5
Test requirement	:	Section 2.1049 of 47 CFR FCC Part 2	
Limits	:	No limit	
Test procedure	:	Section 5.4.3 of ANSI C63.26	
		☒ Conducted measurements	
		☐ Radiated measurements	
Kind of test site	:	Shielding Room	

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions
		☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 °C
Relative humidity	:	50%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A to Appendix K for details of test results.

5.1.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

RESULT:
Pass

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2
		47 CFR FCC Part 24	RSS-132 Issue 3
		47 CFR FCC Part 27	RSS-133 Issue 6
		47 CFR FCC Part 90	RSS-139 Issue 3
		47 CFR FCC Part 2	RSS-Gen Issue 5
Limits	:	Operating band	FCC Limit ISED Limit
		Band 2	< - 13 dBm /1MHz < - 13 dBm /1MHz
		Band 4	< - 13 dBm /1MHz < - 13 dBm /1MHz
			< - 13 dBm /100kHz < - 13 dBm / 100 kHz
		Band 5	@ < 1GHz < - 13 dBm /1MHz @ > 1GHz
		Band 12	< - 13 dBm /100kHz < - 13 dBm /100kHz
		Band 13	< - 13 dBm /100kHz < - 13 dBm /100kHz
		Band 25	< - 13 dBm /1MHz < - 13 dBm /1MHz
		Band 26 Lower Band	< - 13 dBm /100kHz N/A
			< - 13 dBm /100kHz < - 13 dBm / 100 kHz
		Band 26 Upper Band	@ < 1GHz < - 13 dBm /1MHz @ > 1GHz
		Band 66	< - 13 dBm /1MHz < - 13 dBm /1MHz
		Band 71	< - 13 dBm /100kHz < - 13 dBm /100kHz
		Band 85	< - 13 dBm /100kHz < - 13 dBm /100kHz
Test procedure	:	Clause 5.7.4 of ANSI C63.26	
Kind of test site	:	Shielding Room	

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 °C
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

The limit calculation:

$$\text{Limit} = P_{\text{Meas}} \text{ (dBm)} - [43 + 10 \log(P_{\text{Meas}})] = -13 \text{ dBm}$$

Refer to attached Appendix A to Appendix K for details of test results.

5.1.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS – BAND EDGE

RESULT:
Pass

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2
		47 CFR FCC Part 24	RSS-132 Issue 3
		47 CFR FCC Part 27	RSS-133 Issue 6
		47 CFR FCC Part 90	RSS-139 Issue 3
		47 CFR FCC Part 2	RSS-Gen Issue 5
Limits	:	Operating band	FCC Limit ISED Limit
		Band 2	< - 13 dBm /1%EBW < - 13 dBm / 1%OBW
		Band 4	< - 13 dBm /1%EBW < - 13 dBm / 1%OBW
		Band 5	< - 13 dBm /1%EBW < - 13 dBm / 1%OBW
		Band 12	< - 13 dBm /30kHz < - 13 dBm /30kHz
		Band 13	< - 13 dBm /30kHz < - 13 dBm /30kHz
		Band 25	< - 13 dBm /1%EBW < - 13 dBm / 1%OBW
		Band 26 Lower Band	< - 20 dBm /1%EBW N/A
		Band 26 Upper Band	< - 13 dBm /1%EBW < - 13 dBm / 1%OBW
		Band 66	< - 13 dBm /1%EBW < - 13 dBm / 1%OBW
		Band 71	< - 13 dBm /30kHz < - 13 dBm /30kHz
		Band 85	< - 13 dBm /30kHz < - 13 dBm /30kHz
Test procedure	:	Clause 5.7.3 of ANSI C63.26	
Kind of test site	:	Shielding Room	

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 °C
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

The limit calculation:

$$\text{Limit} = P_{\text{Meas}} \text{ (dBm)} - [43 + 10 \log(P_{\text{Meas}})] = -13 \text{ dBm}$$

Refer to attached Appendix A to Appendix K for details of test results.

5.1.6 FIELD STRENGTH OF SPURIOUS RADIATION

RESULT:
Pass

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2	
		47 CFR FCC Part 24	RSS-132 Issue 3	
		47 CFR FCC Part 27	RSS-133 Issue 6	
		47 CFR FCC Part 90	RSS-139 Issue 3	
		47 CFR FCC Part 2	RSS-Gen Issue 5	
Limits	:	Operating band	FCC Limit	ISED Limit
		Band 2	< - 13 dBm /1MHz	< - 13 dBm /1MHz
		Band 4	< - 13 dBm /1MHz	< - 13 dBm /1MHz
			< - 13 dBm /100kHz	< - 13 dBm / 100 kHz
		Band 5	@ < 1GHz	
			< - 13 dBm /1MHz	
			@ > 1GHz	
		Band 12	< - 13 dBm /100kHz	< - 13 dBm /100kHz
		Band 13	< - 13 dBm /100kHz	< - 13 dBm /100kHz
		Band 25	< - 13 dBm /1MHz	< - 13 dBm /1MHz
		Band 26 Lower Band	< - 13 dBm /100kHz	N/A
			< - 13 dBm /100kHz	< - 13 dBm / 100 kHz
		Band 26 Upper Band	@ < 1GHz	
			< - 13 dBm /1MHz	
			@ > 1GHz	
		Band 66	< - 13 dBm /1MHz	< - 13 dBm /1MHz
		Band 71	< - 13 dBm /100kHz	< - 13 dBm /100kHz
		Band 85	< - 13 dBm /100kHz	< - 13 dBm /100kHz
Test procedure	:	Clause 5.5 of ANSI C63.26		
Kind of test site	:	3m Semi Anechoic Room		

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 °C
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

The limit calculation:

$$\text{Limit} = P_{\text{Meas}} (\text{dBm}) - [43 + 10 \log(P_{\text{Meas}})] = -13 \text{ dBm}$$

Refer to attached Appendix L for details of test results.

5.1.7 FREQUENCY STABILITY

RESULT:
Pass

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2	
		47 CFR FCC Part 24	RSS-132 Issue 3	
		47 CFR FCC Part 27	RSS-133 Issue 6	
		47 CFR FCC Part 90	RSS-139 Issue 3	
		47 CFR FCC Part 2	RSS-Gen Issue 5	
Limits	:	Operating band	FCC Limit	ISED Limit
		Band 2	Within authorized bands	2.5 ppm
		Band 4	Within authorized bands	Within authorized bands
		Band 5	2.5 ppm	2.5 ppm
		Band 12	Within authorized bands	Within authorized bands
		Band 13	Within authorized bands	Within authorized bands
		Band 25	Within authorized bands	2.5 ppm
		Band 26 Lower Band	2.5 ppm	N/A
		Band 26 Upper Band	2.5 ppm	2.5 ppm
		Band 66	Within authorized bands	Within authorized bands
		Band 71	Within authorized bands	Within authorized bands
		Band 85	Within authorized bands	Within authorized bands
Test procedure	:	Clause 5.6.3 of ANSI C63.26		
Kind of test site	:	Shielding Room		

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions ☒ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 °C
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A to Appendix K for details of test results.

5.1.8 PEAK TO AVERAGE RATIO

RESULT:
Pass

Test standard	:	47 CFR FCC Part 22	RSS-130 Issue 2
		47 CFR FCC Part 24	RSS-132 Issue 3
		47 CFR FCC Part 27	RSS-133 Issue 6
		47 CFR FCC Part 90	RSS-139 Issue 3
		47 CFR FCC Part 2	RSS-Gen Issue 5
Limits	:	Operating band	FCC Limit ISED Limit
		Band 2	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 4	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 5	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 12	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 13	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 25	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 26 Lower Band	N/A N/A
		Band 26 Upper Band	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 66	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 71	PAR ≤ 13 dB PAR ≤ 13 dB
		Band 85	PAR ≤ 13 dB PAR ≤ 13 dB
Test procedure	:	Clause 5.2.6 of ANSI C63.26	
Kind of test site	:	Shielding Room	

Test Setup

Date of testing	:	20.09.2019 - 13.01.2020
Input voltage	:	DC 3.8V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 °C
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A to Appendix K for details of test results.

6. SYSTEM MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Table 10: System Measurement Uncertainty

Items		Extended Uncertainty
RE	Radiated emission 9 kHz - 30 MHz	±3.97 dB
	Radiated emission 30 MHz - 1 GHz	±4.30 dB
Remark: 95% Confidence Levels, K=2.		

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Appendix A: Test Results of Band 2 for NB-IoT operation

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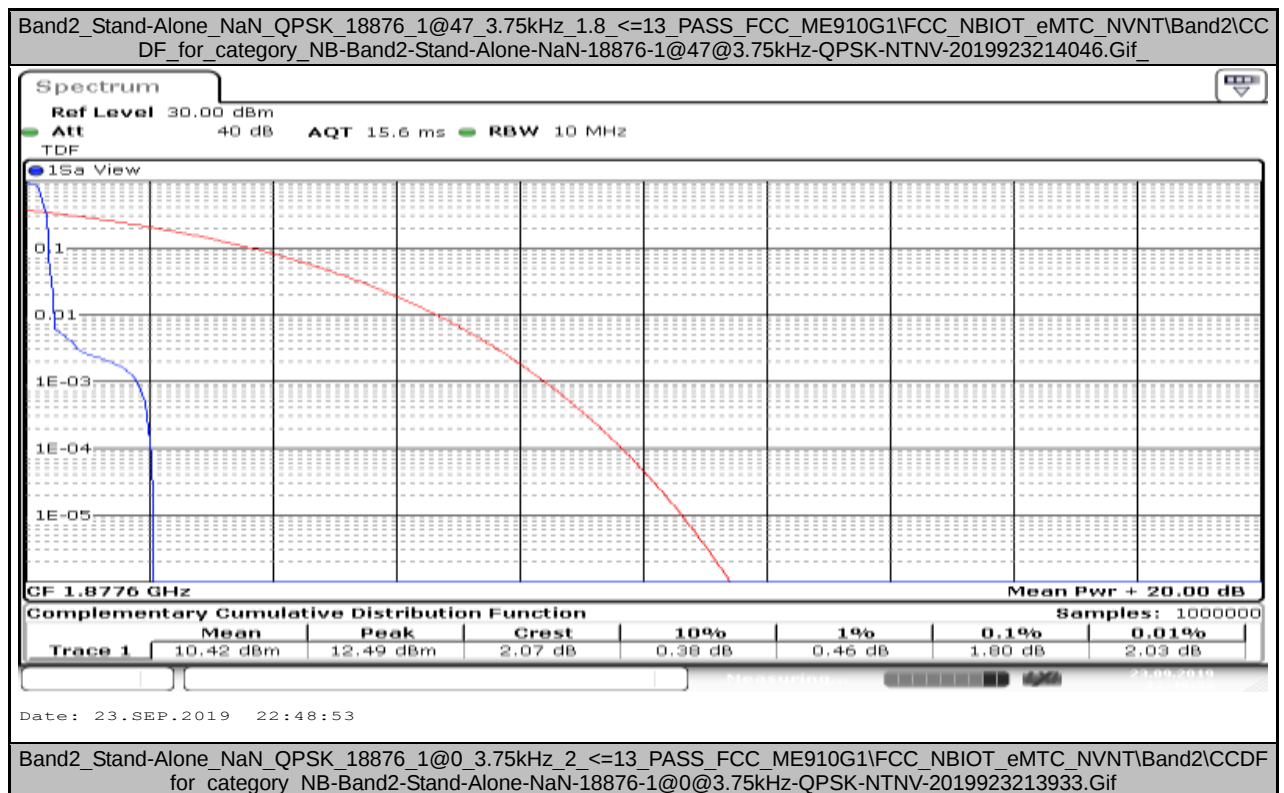
Appendix A.1: RF Power Output and Effective (Isotropic) Radiated Power Output Data for NB Test Result

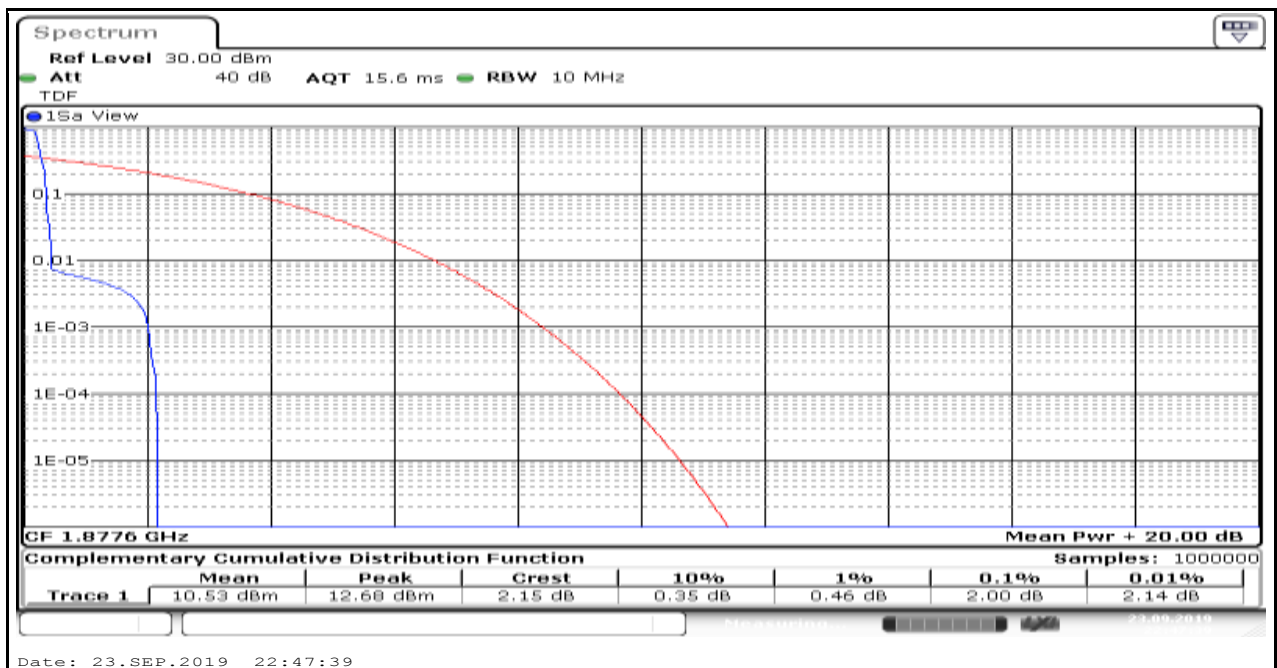
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result	EIRP		Limit (watts)	Verdict
							dBm	dBm	Watts		
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	11.24	13.38	0.022	2	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@47	3.75kHz	11.2	13.34	0.022	2	PASS
Band2	Stand-Alone	NaN	QPSK	18601	3@3	15kHz	11.19	13.33	0.022	2	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@11	15kHz	11.16	13.30	0.021	2	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	15kHz	11.22	13.36	0.022	2	PASS
Band2	Stand-Alone	NaN	QPSK	18602	1@0	3.75kHz	19.79	21.93	0.156	2	PASS
Band2	Stand-Alone	NaN	QPSK	18602	3@3	15kHz	20.37	22.51	0.178	2	PASS
Band2	Stand-Alone	NaN	QPSK	18602	1@47	3.75kHz	19.74	21.88	0.154	2	PASS
Band2	Stand-Alone	NaN	QPSK	18602	1@11	15kHz	20.09	22.23	0.167	2	PASS
Band2	Stand-Alone	NaN	QPSK	18602	1@0	15kHz	20.33	22.47	0.177	2	PASS
Band2	Stand-Alone	NaN	QPSK	18900	1@11	15kHz	20.46	22.60	0.182	2	PASS
Band2	Stand-Alone	NaN	QPSK	18900	3@3	15kHz	20.72	22.86	0.193	2	PASS
Band2	Stand-Alone	NaN	QPSK	18900	1@0	15kHz	20.52	22.66	0.185	2	PASS
Band2	Stand-Alone	NaN	QPSK	18900	1@47	3.75kHz	20.1	22.24	0.167	2	PASS
Band2	Stand-Alone	NaN	QPSK	18900	1@0	3.75kHz	20.14	22.28	0.169	2	PASS
Band2	Stand-Alone	NaN	QPSK	19198	1@11	15kHz	20.57	22.71	0.187	2	PASS
Band2	Stand-Alone	NaN	QPSK	19198	1@47	3.75kHz	20.66	22.80	0.191	2	PASS
Band2	Stand-Alone	NaN	QPSK	19198	1@0	3.75kHz	20.21	22.35	0.172	2	PASS
Band2	Stand-Alone	NaN	QPSK	19198	3@3	15kHz	20.87	23.01	0.200	2	PASS
Band2	Stand-Alone	NaN	QPSK	19198	1@0	15kHz	20.55	22.69	0.186	2	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	15kHz	11.63	13.77	0.024	2	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@47	3.75kHz	11.46	13.60	0.023	2	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@11	15kHz	11.57	13.71	0.023	2	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	11.57	13.71	0.023	2	PASS
Band2	Stand-Alone	NaN	QPSK	19199	3@3	15kHz	11.53	13.67	0.023	2	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	11.24	13.38	0.022	2	PASS
Band2	Stand-Alone	NaN	BPSK	18601	3@3	15kHz	11.18	13.32	0.021	2	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	3.75kHz	11.25	13.39	0.022	2	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@47	3.75kHz	11.14	13.28	0.021	2	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@11	15kHz	11.18	13.32	0.021	2	PASS
Band2	Stand-Alone	NaN	BPSK	18602	1@0	3.75kHz	19.81	21.95	0.157	2	PASS
Band2	Stand-Alone	NaN	BPSK	18602	1@47	3.75kHz	19.74	21.88	0.154	2	PASS
Band2	Stand-Alone	NaN	BPSK	18602	3@3	15kHz	20.47	22.61	0.182	2	PASS
Band2	Stand-Alone	NaN	BPSK	18602	1@0	15kHz	20.22	22.36	0.172	2	PASS
Band2	Stand-Alone	NaN	BPSK	18602	1@11	15kHz	20.1	22.24	0.167	2	PASS
Band2	Stand-Alone	NaN	BPSK	18900	1@0	15kHz	20.51	22.65	0.184	2	PASS
Band2	Stand-Alone	NaN	BPSK	18900	1@11	15kHz	20.33	22.47	0.177	2	PASS
Band2	Stand-Alone	NaN	BPSK	18900	3@3	15kHz	20.82	22.96	0.198	2	PASS
Band2	Stand-Alone	NaN	BPSK	18900	1@0	3.75kHz	20.2	22.34	0.171	2	PASS
Band2	Stand-Alone	NaN	BPSK	18900	1@47	3.75kHz	20.06	22.20	0.166	2	PASS
Band2	Stand-Alone	NaN	BPSK	19198	3@3	15kHz	20.85	22.99	0.199	2	PASS
Band2	Stand-Alone	NaN	BPSK	19198	1@0	15kHz	20.68	22.82	0.191	2	PASS
Band2	Stand-Alone	NaN	BPSK	19198	1@11	15kHz	20.51	22.65	0.184	2	PASS
Band2	Stand-Alone	NaN	BPSK	19198	1@0	3.75kHz	20.12	22.26	0.168	2	PASS
Band2	Stand-Alone	NaN	BPSK	19198	1@47	3.75kHz	20.66	22.80	0.191	2	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	15kHz	11.6	13.74	0.024	2	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@11	15kHz	11.57	13.71	0.023	2	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@47	3.75kHz	11.55	13.69	0.023	2	PASS
Band2	Stand-Alone	NaN	BPSK	19199	3@3	15kHz	11.55	13.69	0.023	2	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	3.75kHz	11.59	13.73	0.024	2	PASS

Appendix A.2: Peak-to-Average Ratio(CCDF) for NB Test Result

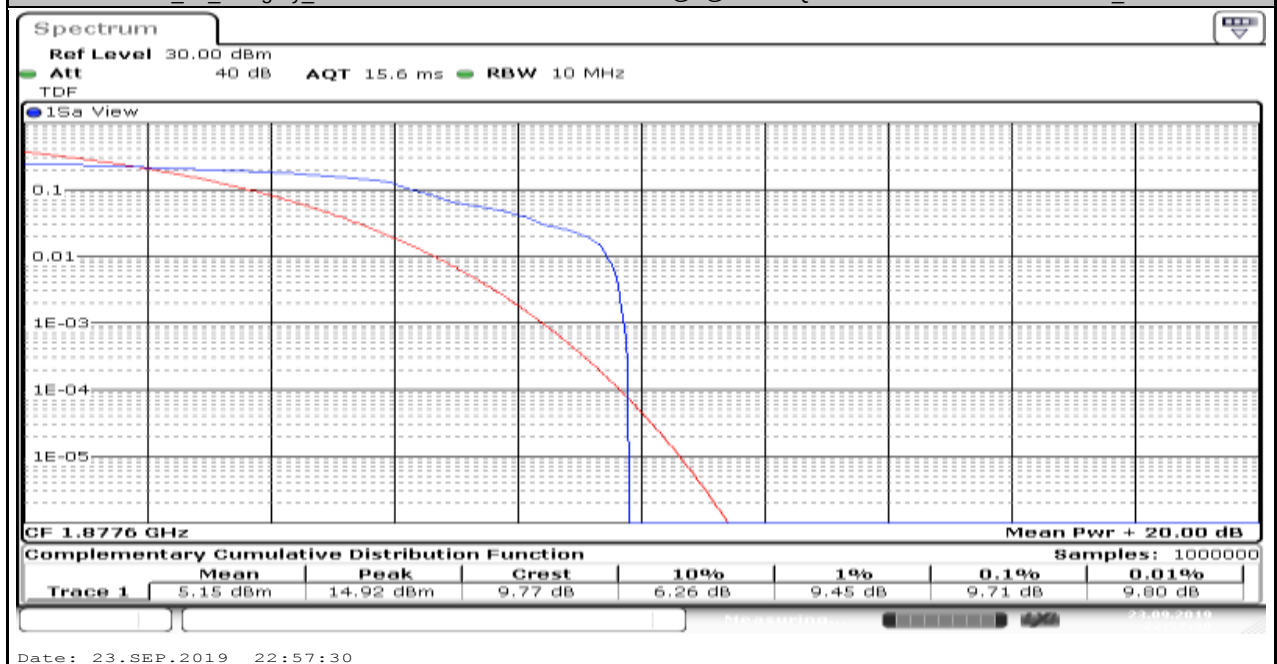
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	1.8	<=13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	2	<=13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	3@3	15kHz	9.71	<=13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	5.62	<=13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	4.46	<=13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@47	3.75kHz	2.09	<=13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@0	3.75kHz	2.06	<=13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	3@3	15kHz	9.65	<=13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@11	15kHz	2.12	<=13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@0	15kHz	8.43	<=13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	3@3	15kHz	9.74	<=13	PASS

Test Graphs

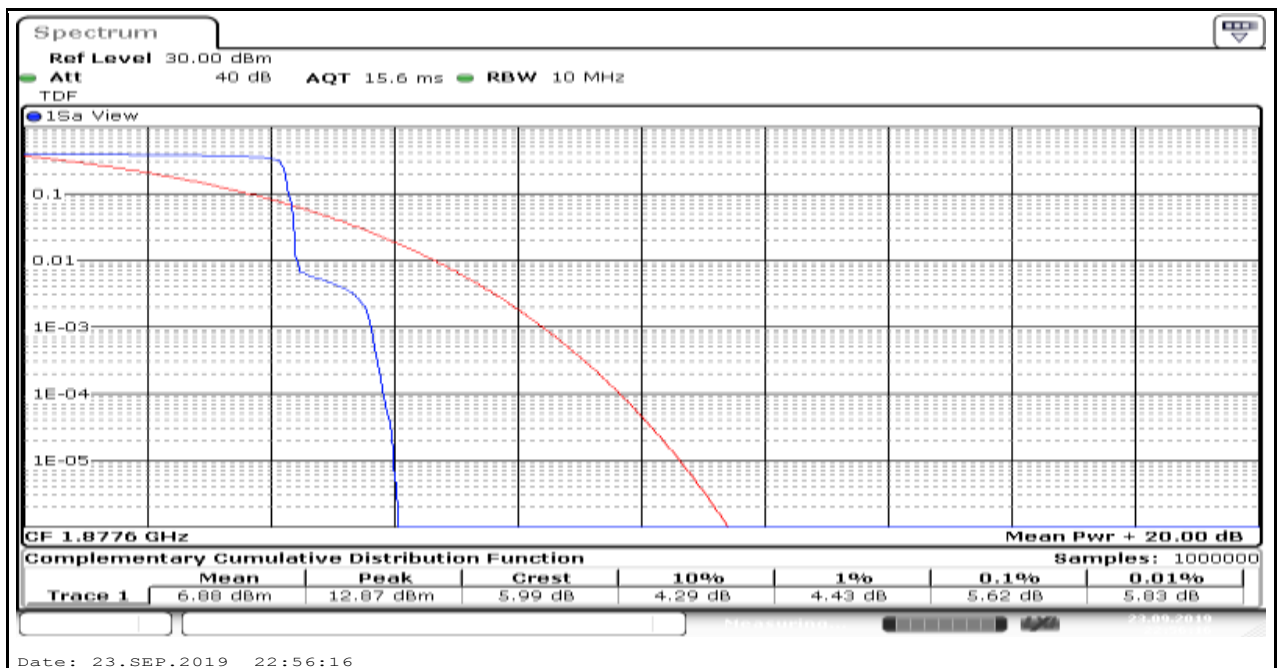




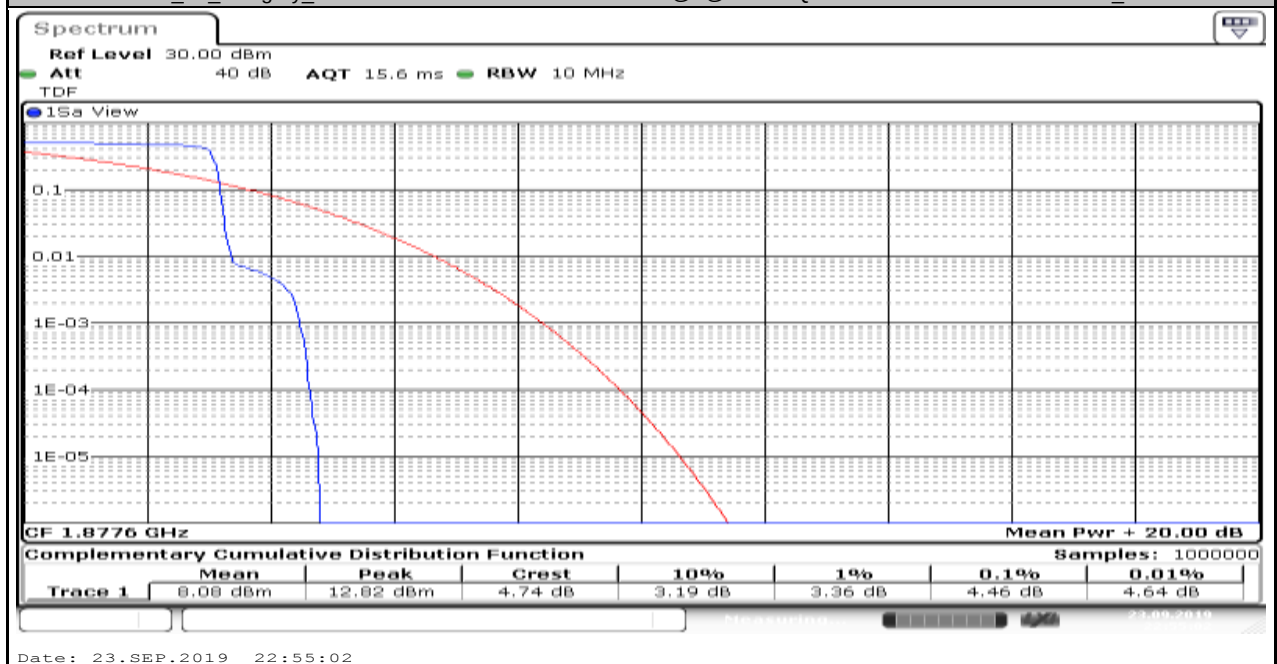
Band2_Stand-Alone_NaN_QPSK_18876_3@3_15kHz_9.71_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band2\CCD
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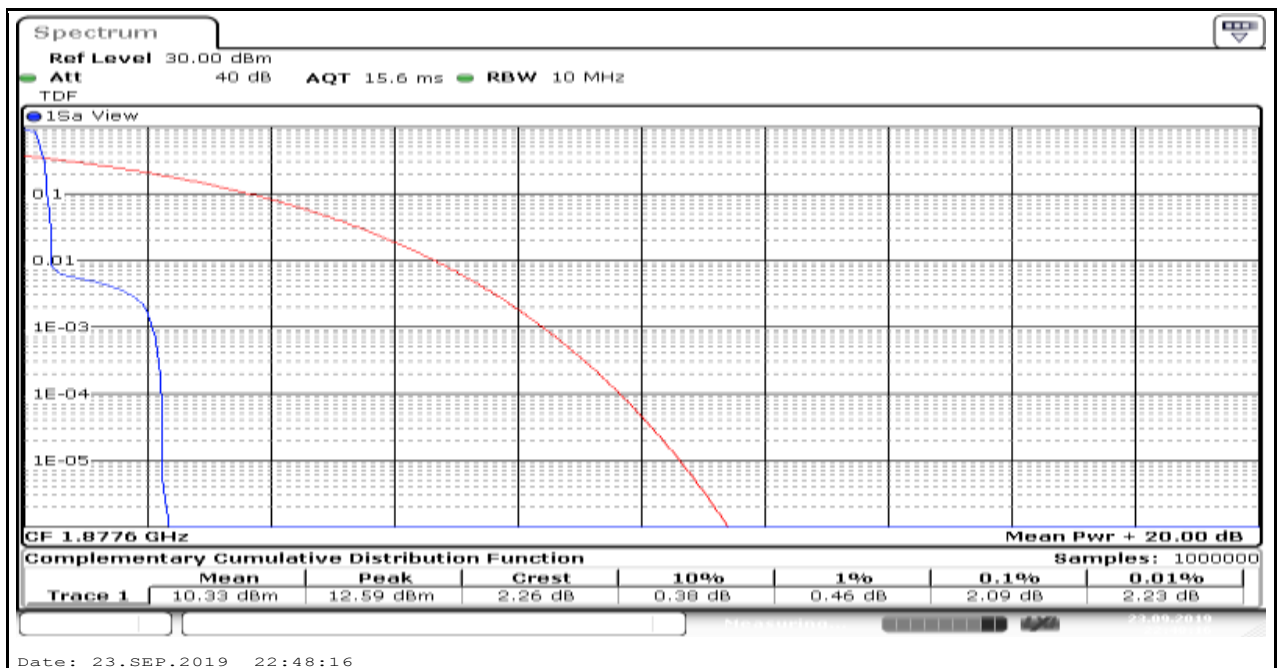
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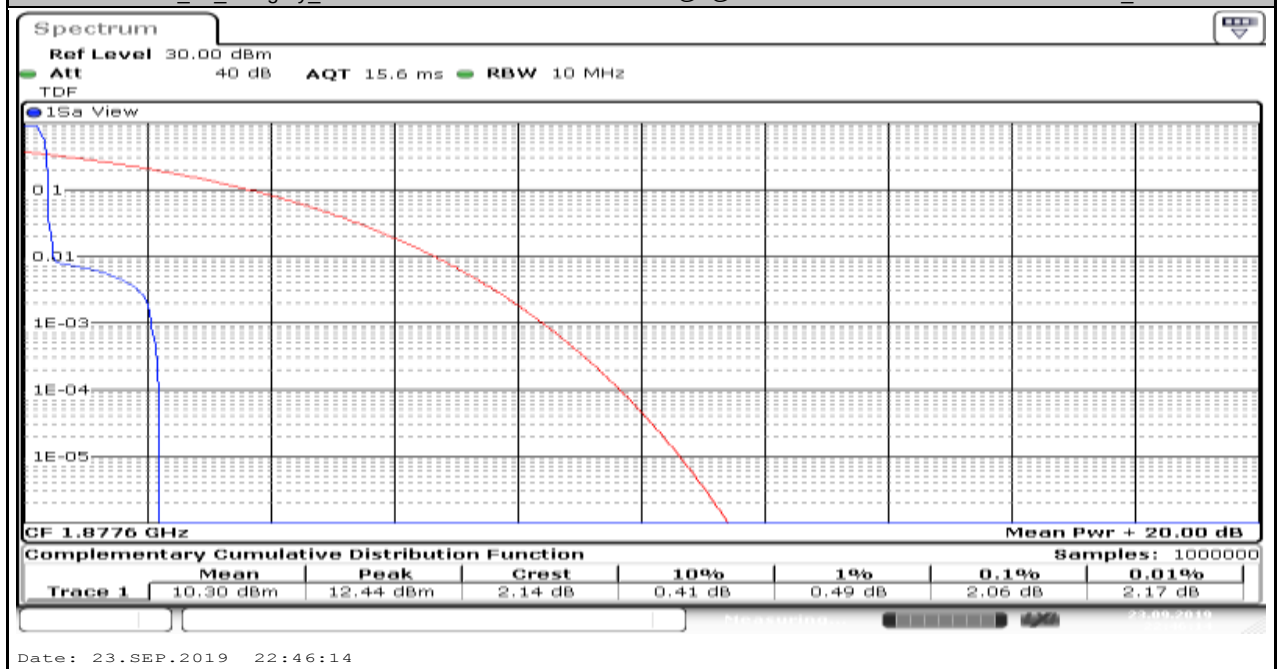
Band2_Stand-Alone_NaN_QPSK_18876_1@0_15kHz_4.46_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band2\CCD
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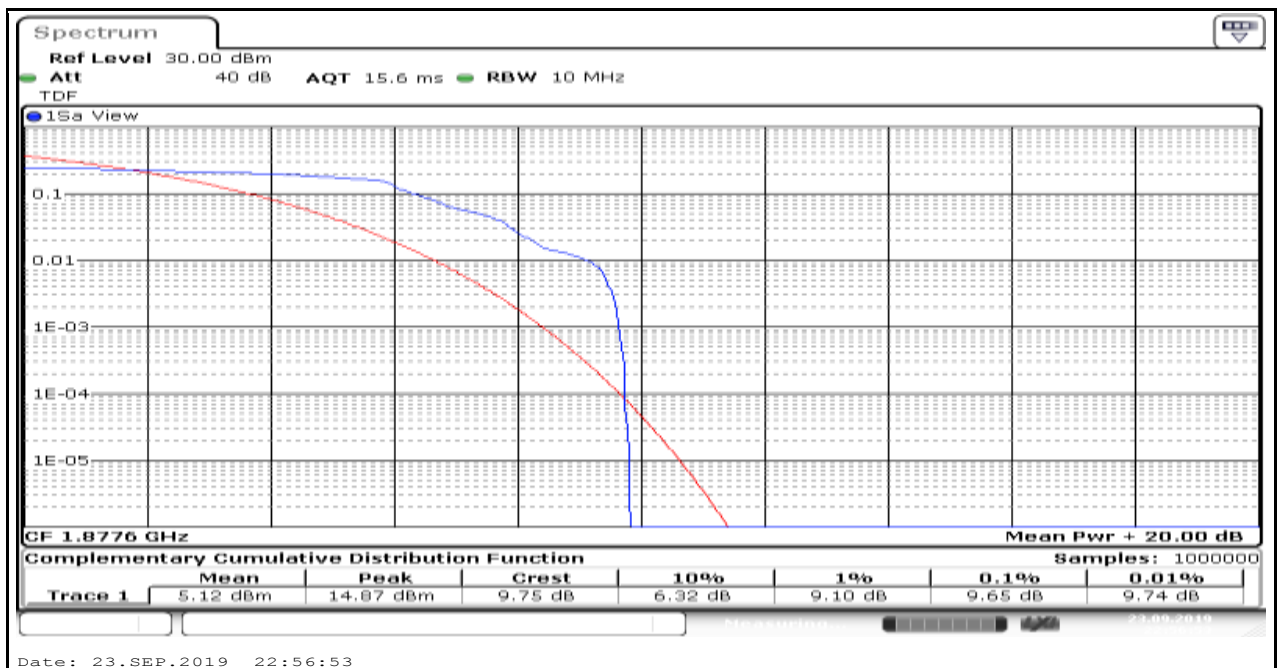
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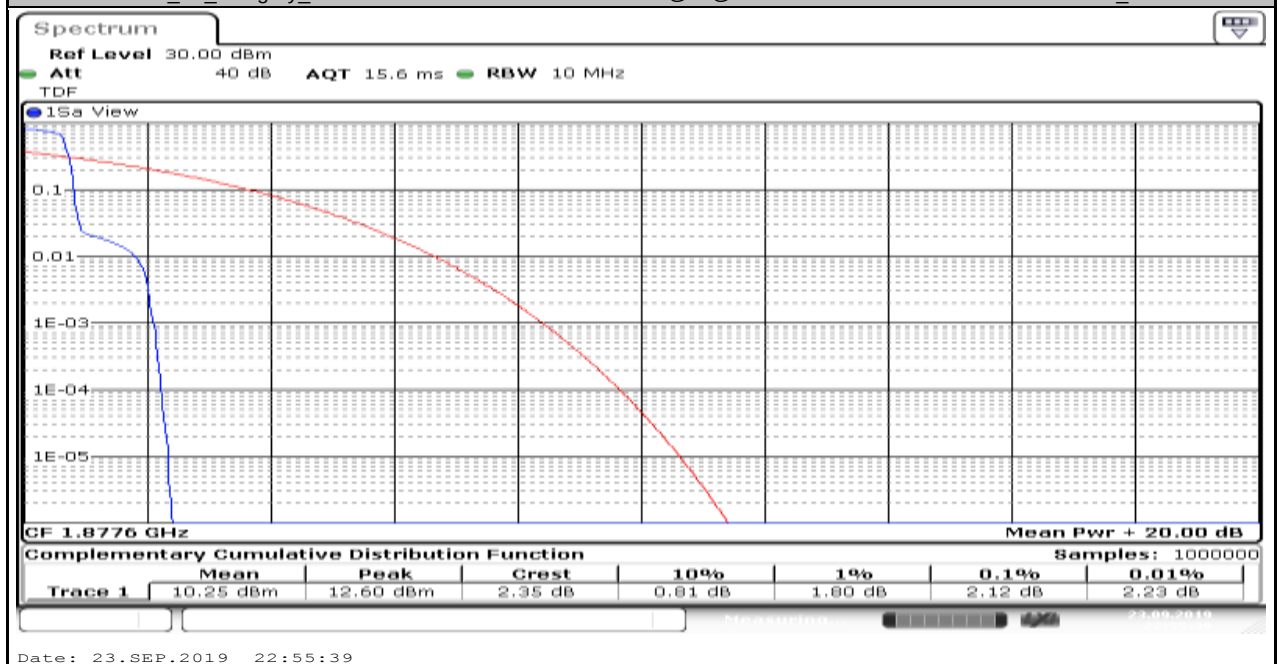
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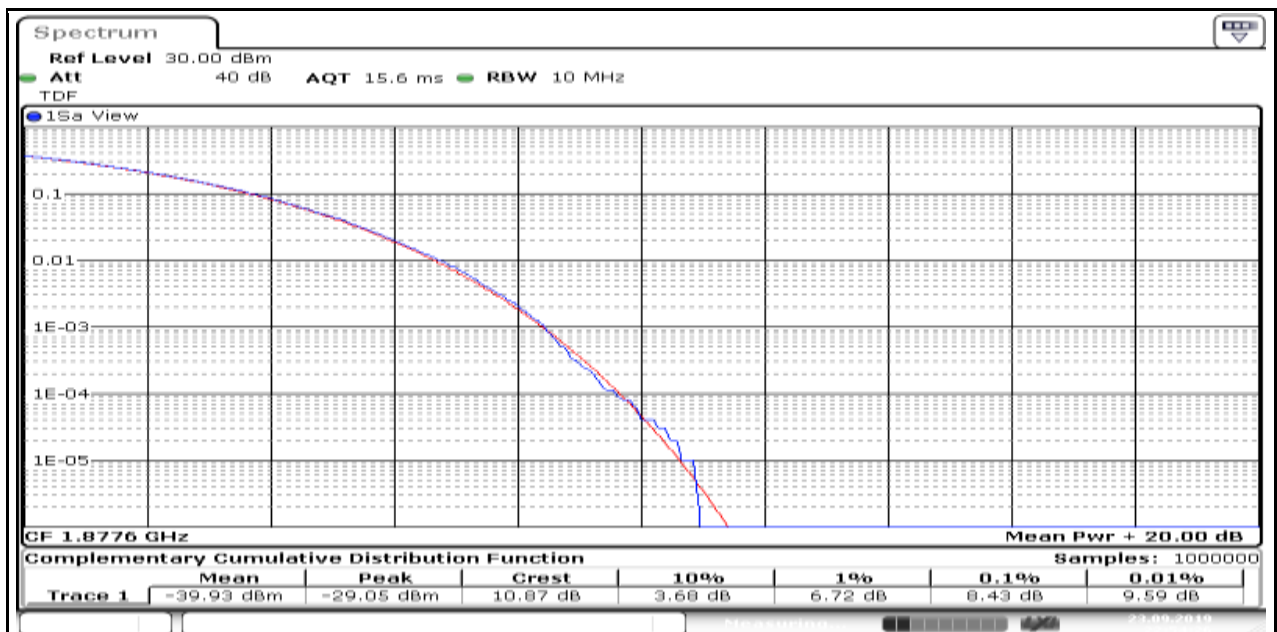
Band2_Stand-Alone_NaN_BPSK_18876_3@3_15kHz_9.65_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band2\CCDF_for_category_NB-Band2-Stand-Alone-NaN-18876-3@3@15kHz-BPSK-NTNV-2019923214846.Gif_



Band2_Stand-Alone_NaN_BPSK_18876_1@11_15kHz_2.12 <=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band2\CCD
F_for_category_NB-Band2-Stand-Alone-NaN-18876-1@11@15kHz-BPSK-NTNV-2019923214733.Gif

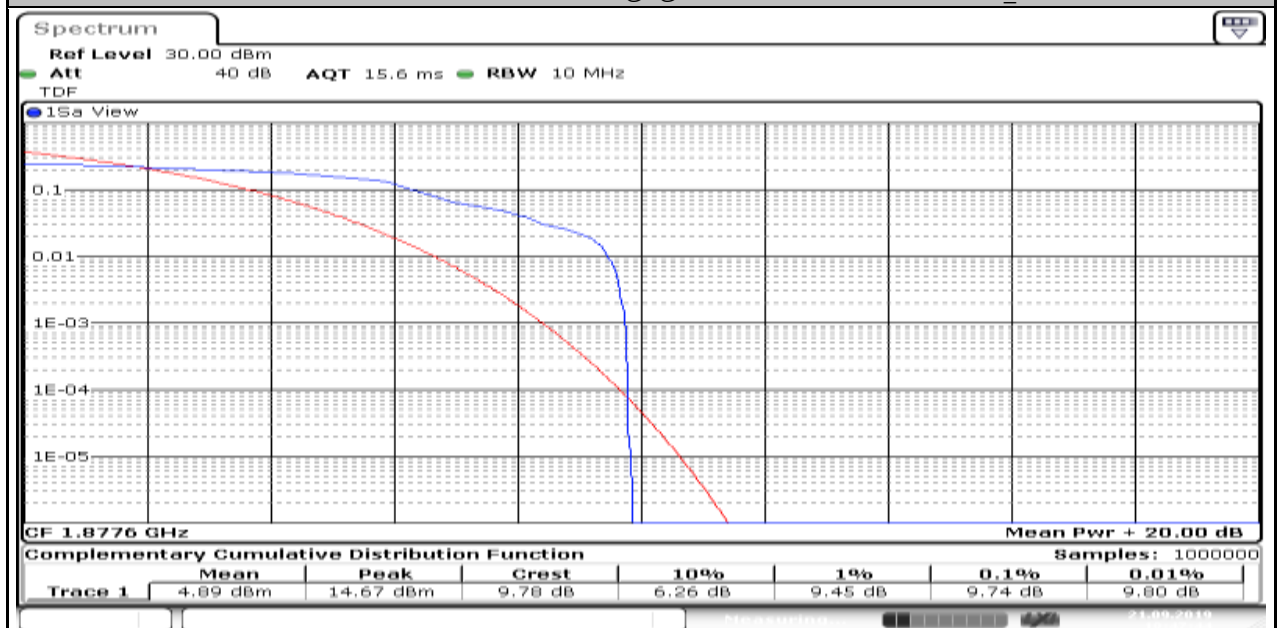


Band2_Stand-Alone_NaN_BPSK_18876_1@0_15kHz_8.43 <=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band2\CCD
F_for_category_NB-Band2-Stand-Alone-NaN-18876-1@0@15kHz-BPSK-NTNV-2019923214619.Gif



Date: 23.SEP.2019 22:54:25

Band2_Stand-Alone_NaN_18876_3@3_15kHz_9.74 <=13_PASS_FCC_ME910G1\NBIOT_B2_NTNV\Band2\CCDF_for_category_NB-Band2-Stand-Alone-NaN-18876-3@3@15kHz--NTNV-2019921173940.Gif_



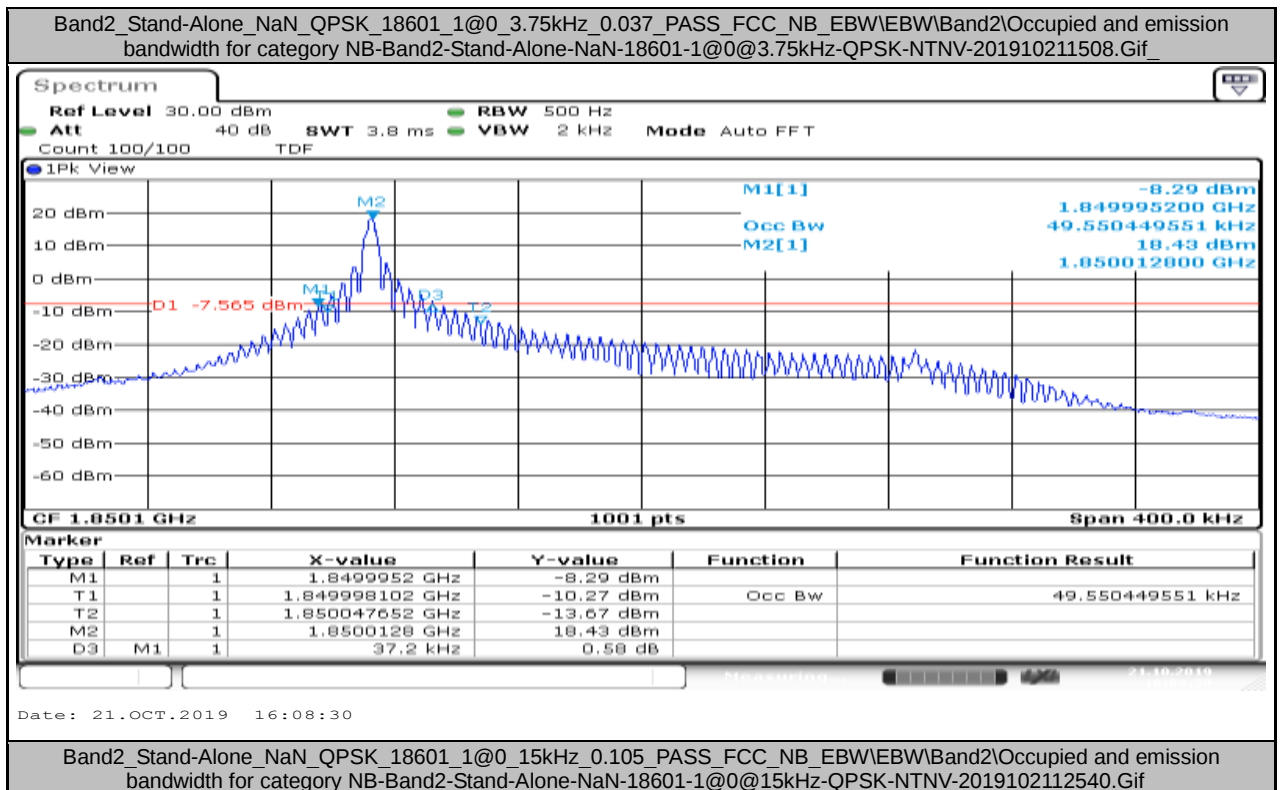
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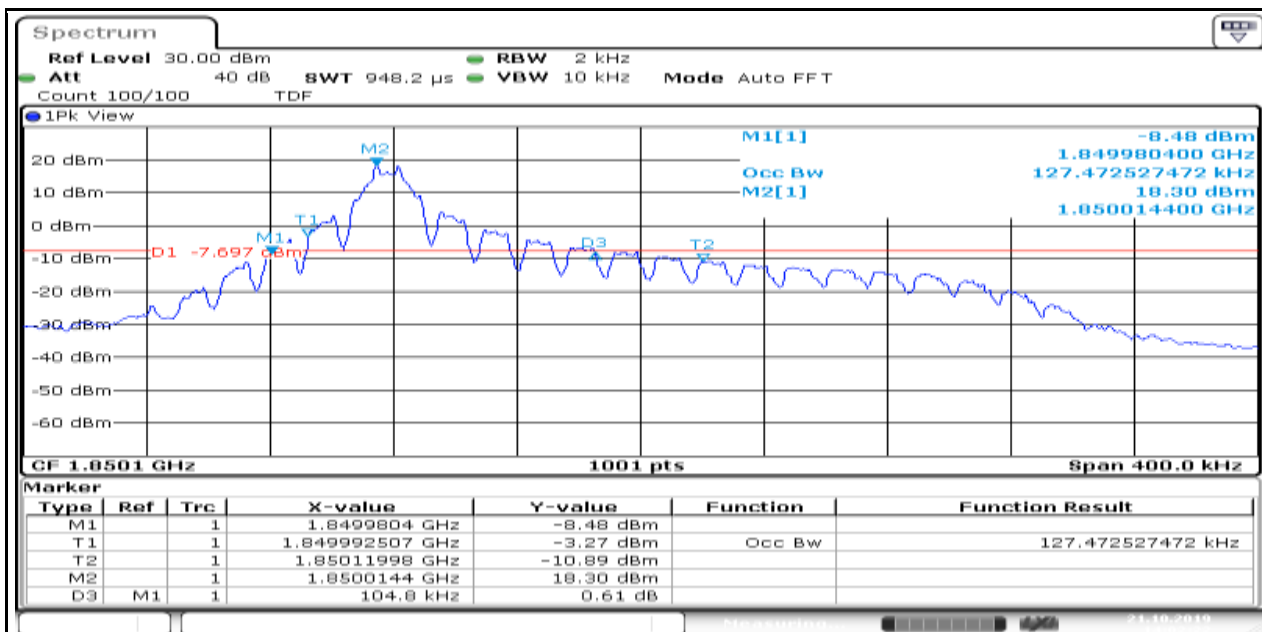
Appendix A.3: 26dB Emission Bandwidth and Occupied Bandwidth for NB

Test Result

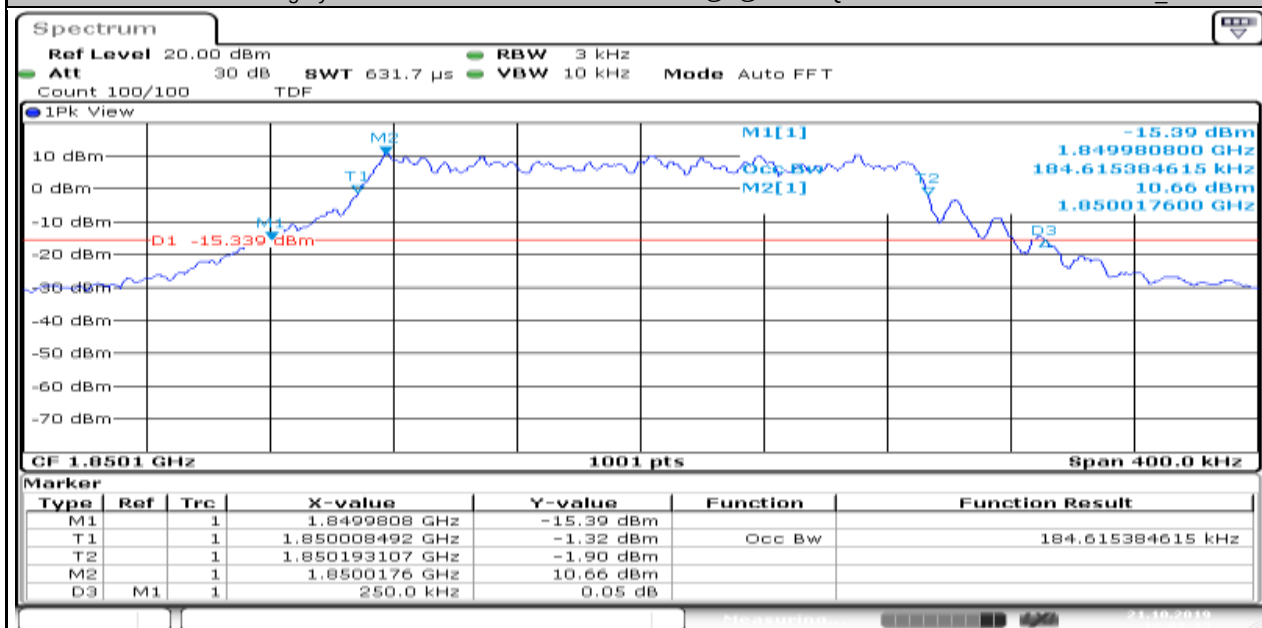
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	0.037	0.050	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	15kHz	0.105	0.127	PASS
Band2	Stand-Alone	NaN	QPSK	18601	12@0	15kHz	0.250	0.185	PASS
Band2	Stand-Alone	NaN	QPSK	18900	1@0	3.75kHz	0.037	0.049	PASS
Band2	Stand-Alone	NaN	QPSK	18900	1@0	15kHz	0.104	0.127	PASS
Band2	Stand-Alone	NaN	QPSK	18900	12@0	15kHz	0.251	0.184	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	0.037	0.049	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	15kHz	0.104	0.127	PASS
Band2	Stand-Alone	NaN	QPSK	19199	12@0	15kHz	0.251	0.185	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	3.75kHz	0.032	0.056	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	0.104	0.127	PASS
Band2	Stand-Alone	NaN	BPSK	18900	1@0	3.75kHz	0.032	0.056	PASS
Band2	Stand-Alone	NaN	BPSK	18900	1@0	15kHz	0.104	0.127	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	3.75kHz	0.032	0.055	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	15kHz	0.104	0.128	PASS

Test Graphs

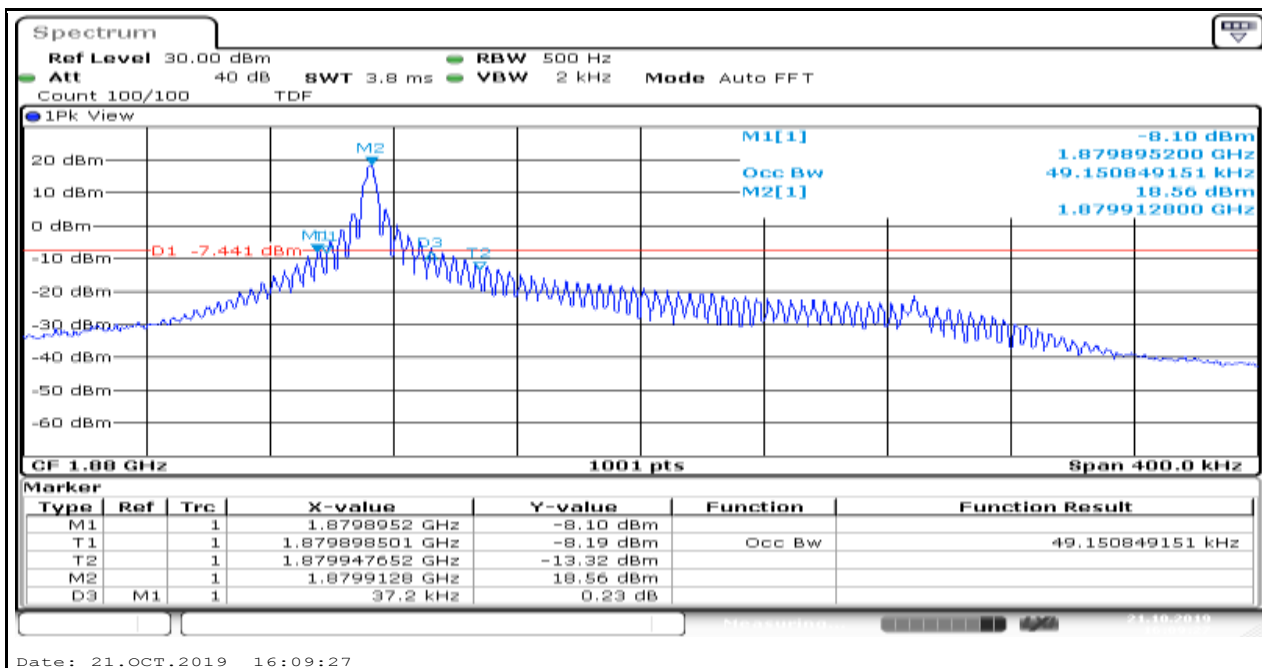




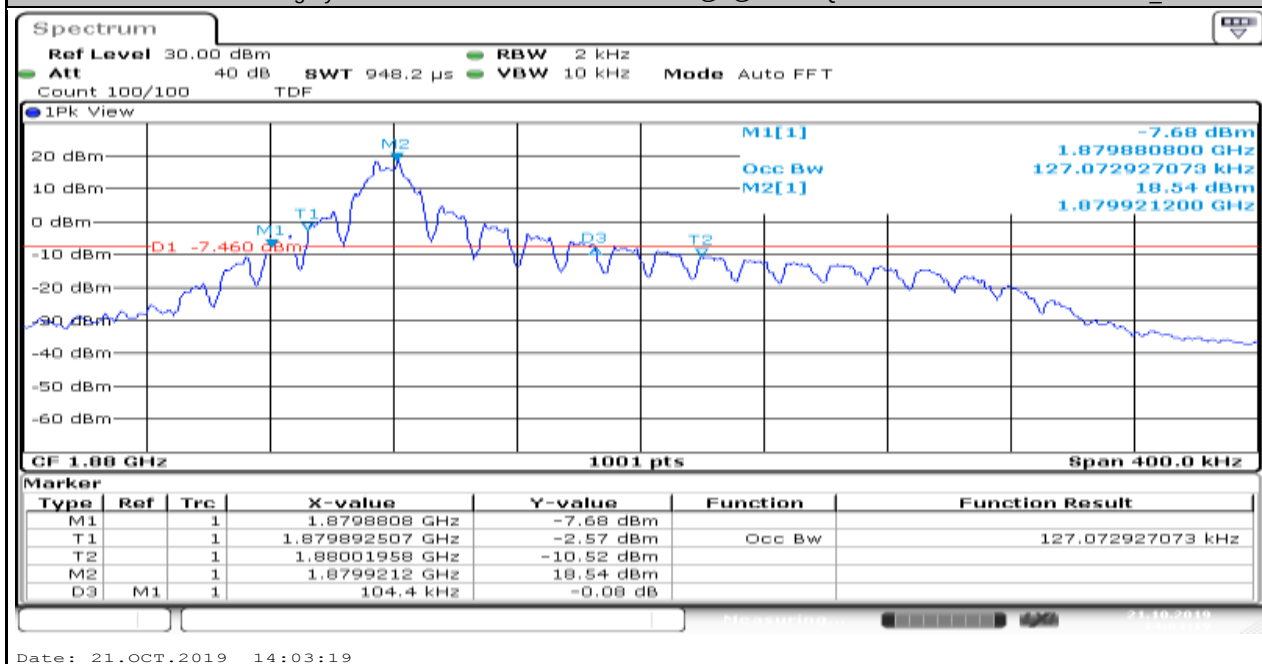
Band2_Stand-Alone_NaN_QPSK_18601_12@0_15kHz_0.250_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18601-12@0@15kHz-QPSK-NTNV-20191021105512.Gif_



Band2_Stand-Alone_NaN_QPSK_18900_1@0_3.75kHz_0.037_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18900-1@0@3.75kHz-QPSK-NTNV-201910211515.Gif_

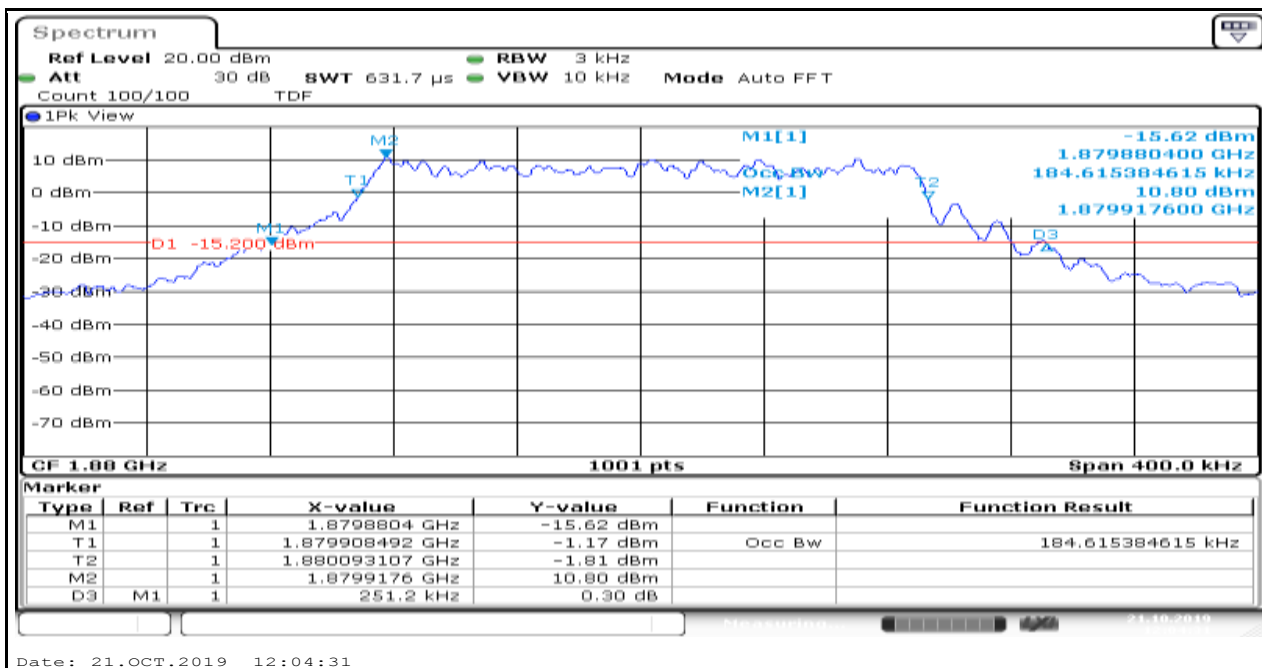


Band2_Stand-Alone_NaN_QPSK_18900_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18900-1@0@15kHz-QPSK-NTNV-20191021125457.Gif_

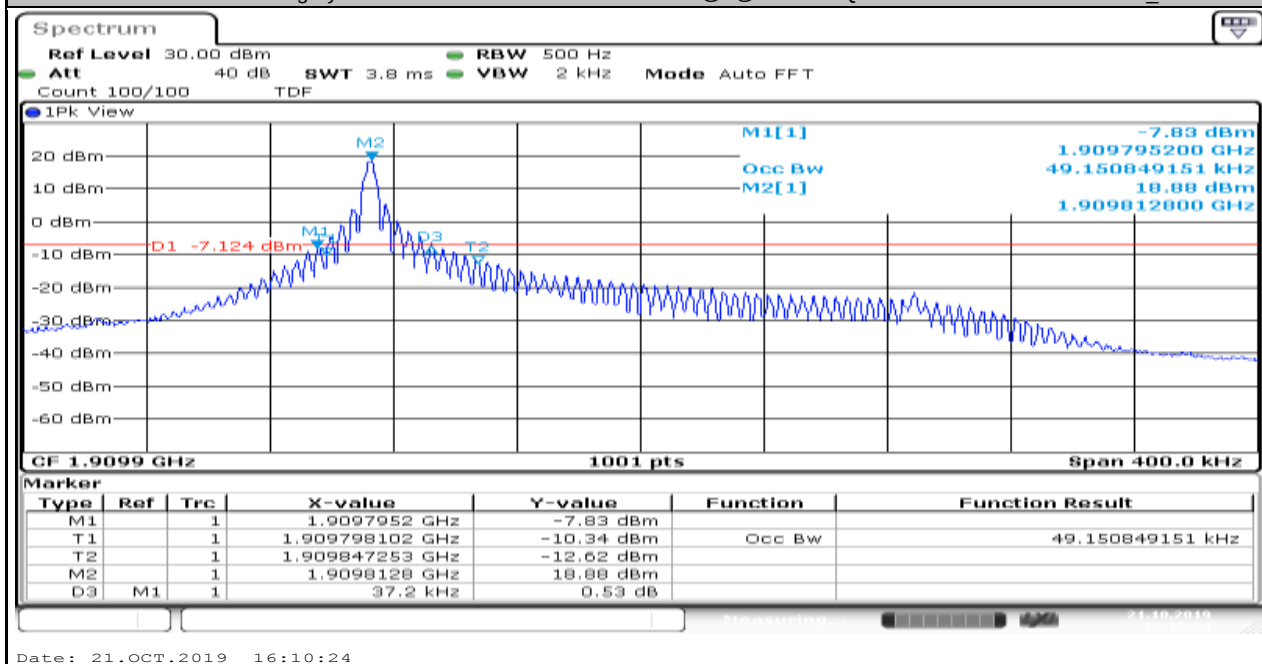


Band2_Stand-Alone_NaN_QPSK_18900_12@0_15kHz_0.251_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18900-12@0@15kHz-QPSK-NTNV-2019102110569.Gif_

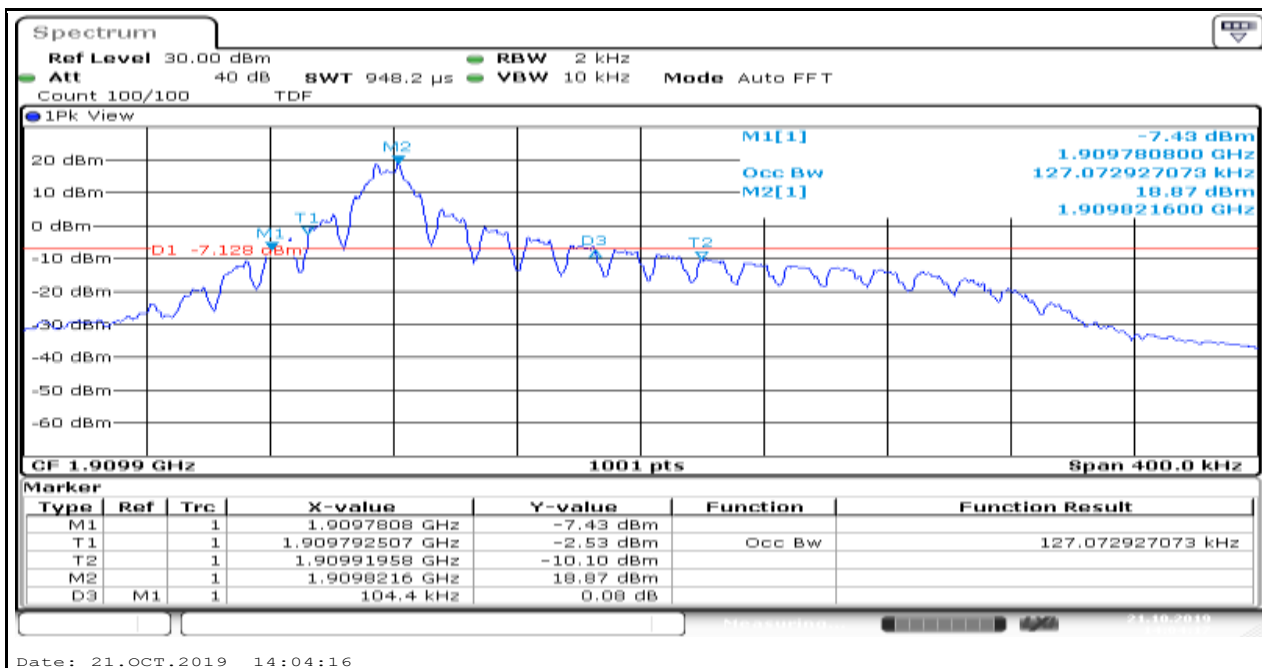
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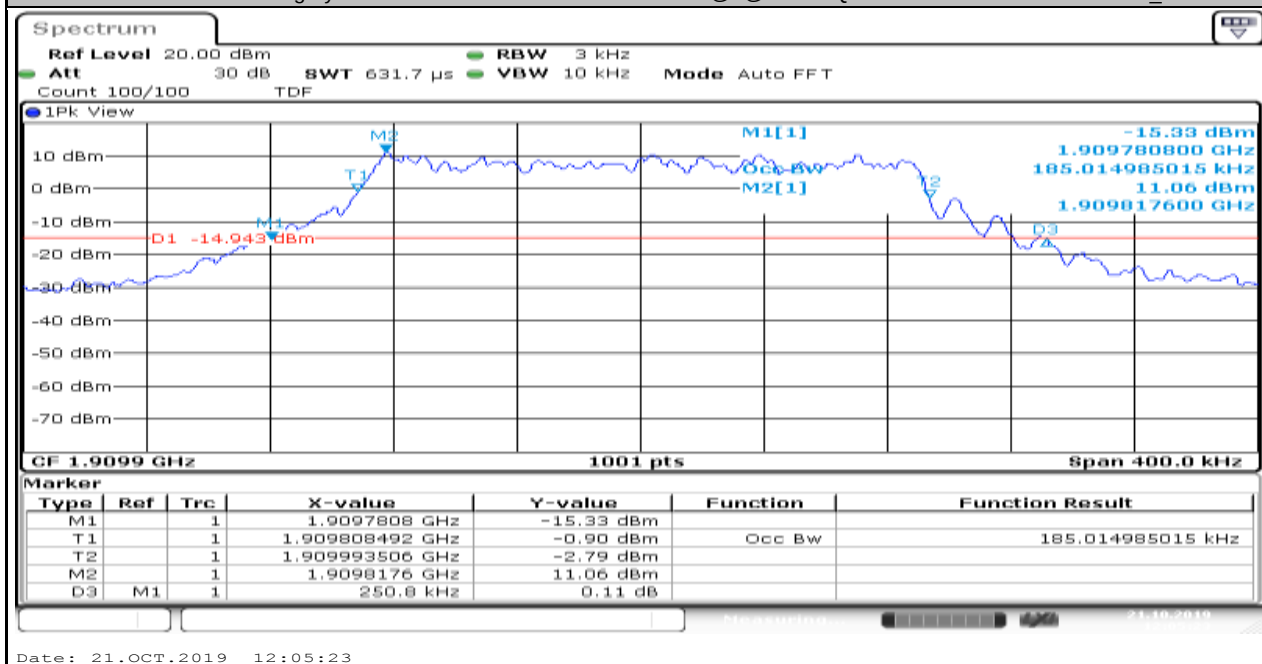
Band2_Stand-Alone_NaN_QPSK_19199_1@0_3.75kHz_0.037_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-19199-1@0@3.75kHz-QPSK-NTNV-201910211522.Gif_



Band2_Stand-Alone_NaN_QPSK_19199_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-19199-1@0@15kHz-QPSK-NTNV-20191021125554.Gif_

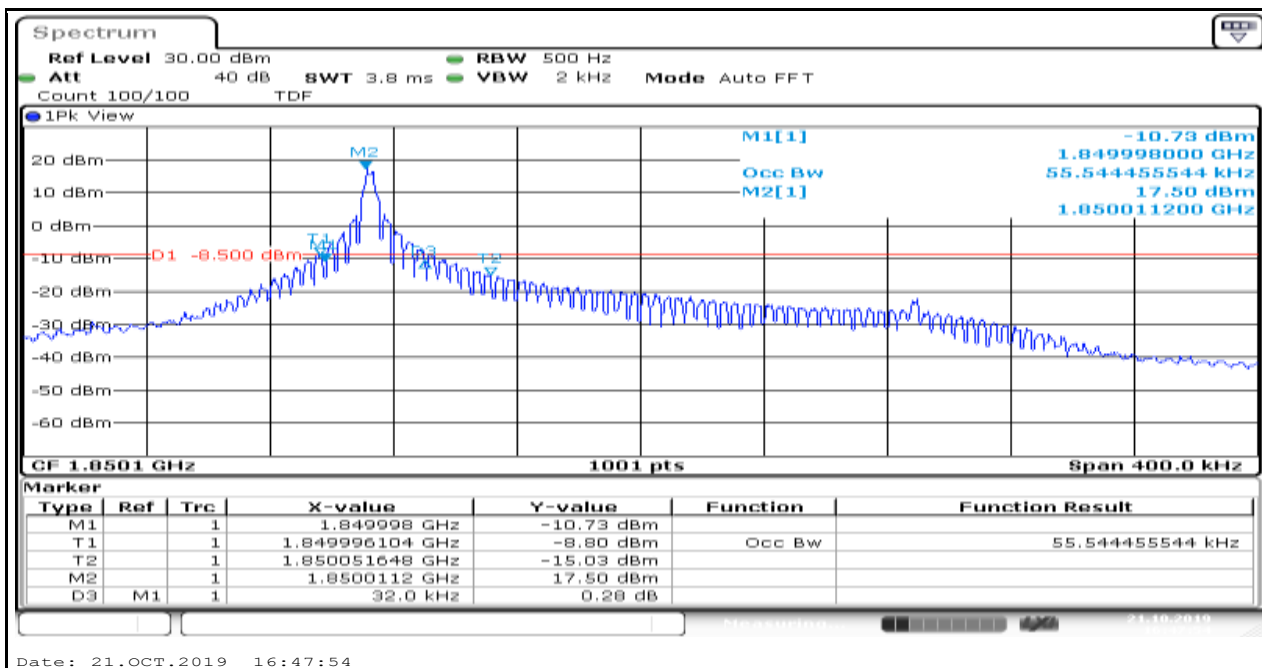


Band2_Stand-Alone_NaN_QPSK_19199_12@0_15kHz_0.251_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-19199-12@0@15kHz-QPSK-NTNV-2019102110571.Gif_

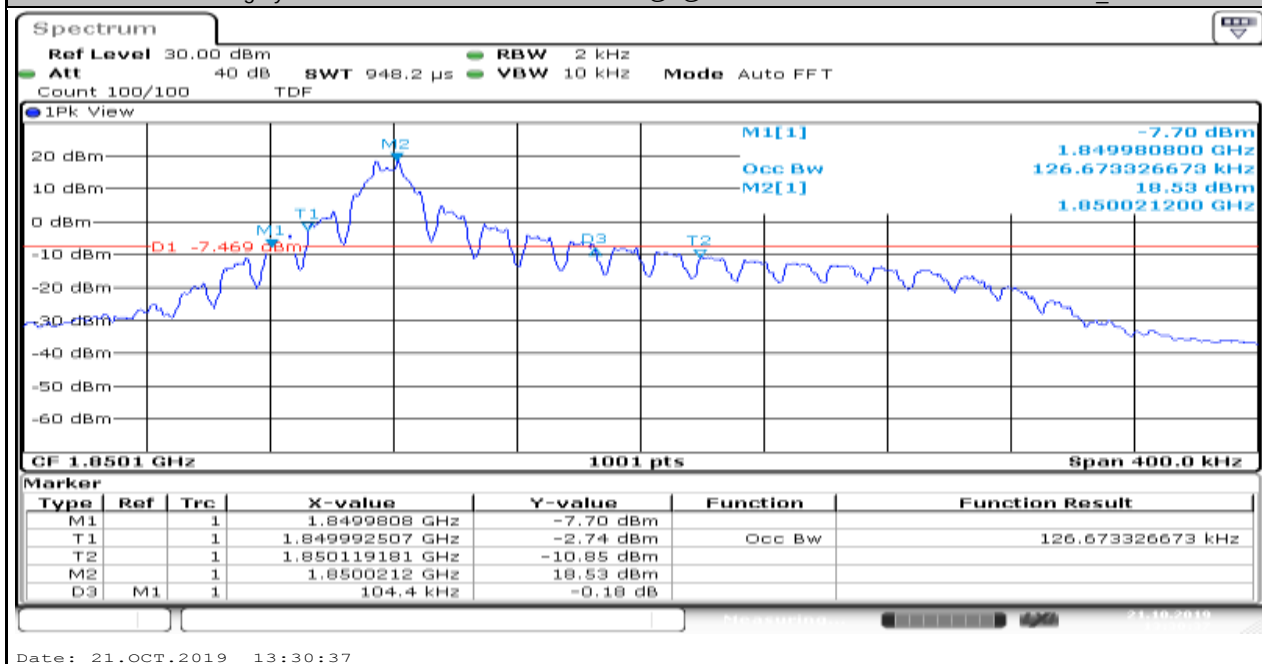


Band2_Stand-Alone_NaN_BPSK_18601_1@0_3.75kHz_0.032_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18601-1@0@3.75kHz-BPSK-NTNV-20191021153932.Gif_

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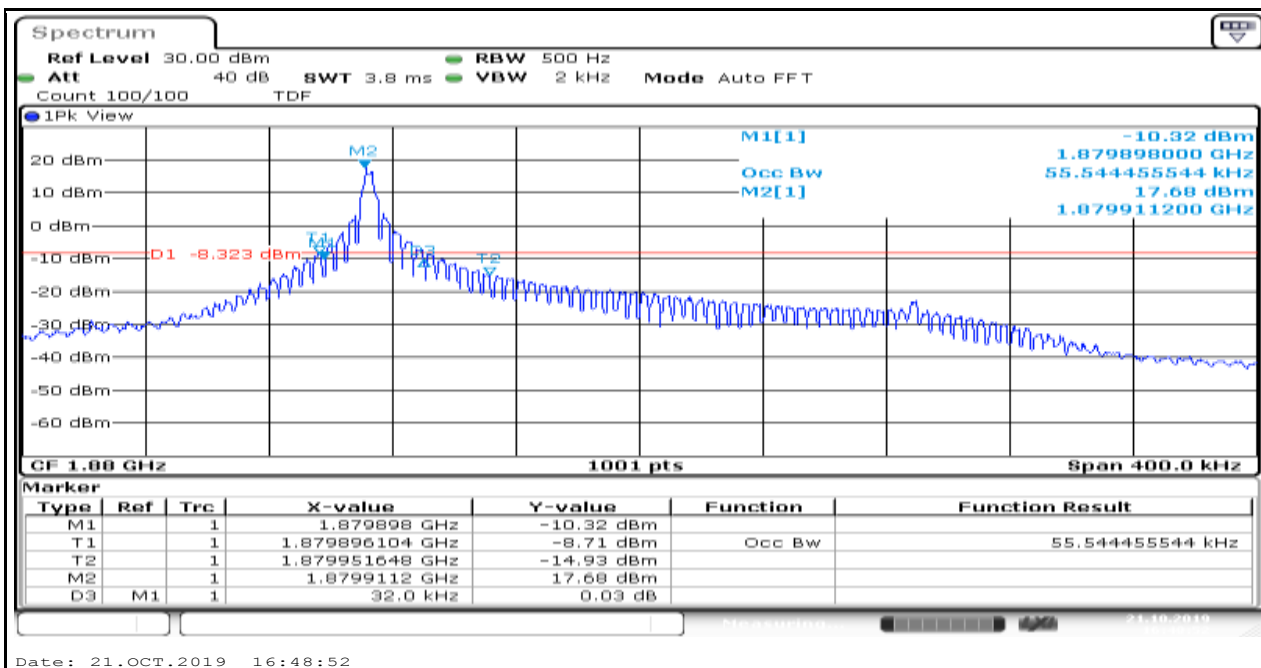


Band2_Stand-Alone_NaN_BPSK_18601_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18601-1@0@15kHz-BPSK-NTNV-20191021122215.Gif_

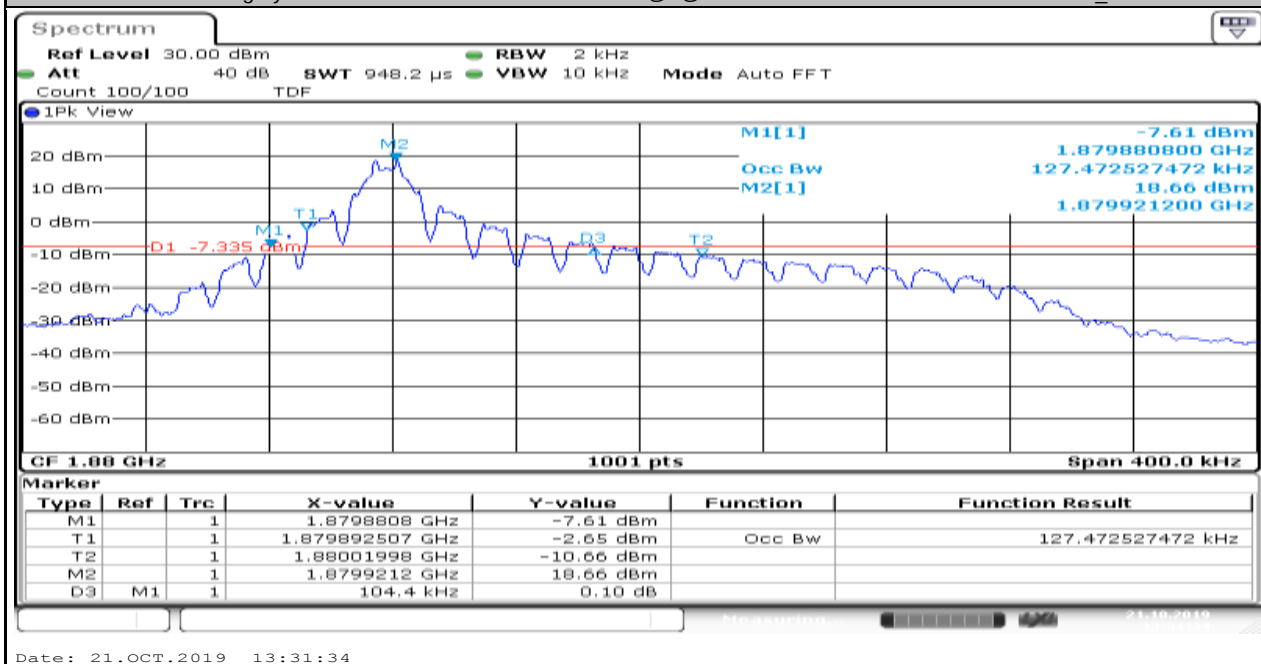


Band2_Stand-Alone_NaN_BPSK_18900_1@0_3.75kHz_0.032_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18900-1@0@3.75kHz-BPSK-NTNV-20191021154030.Gif_

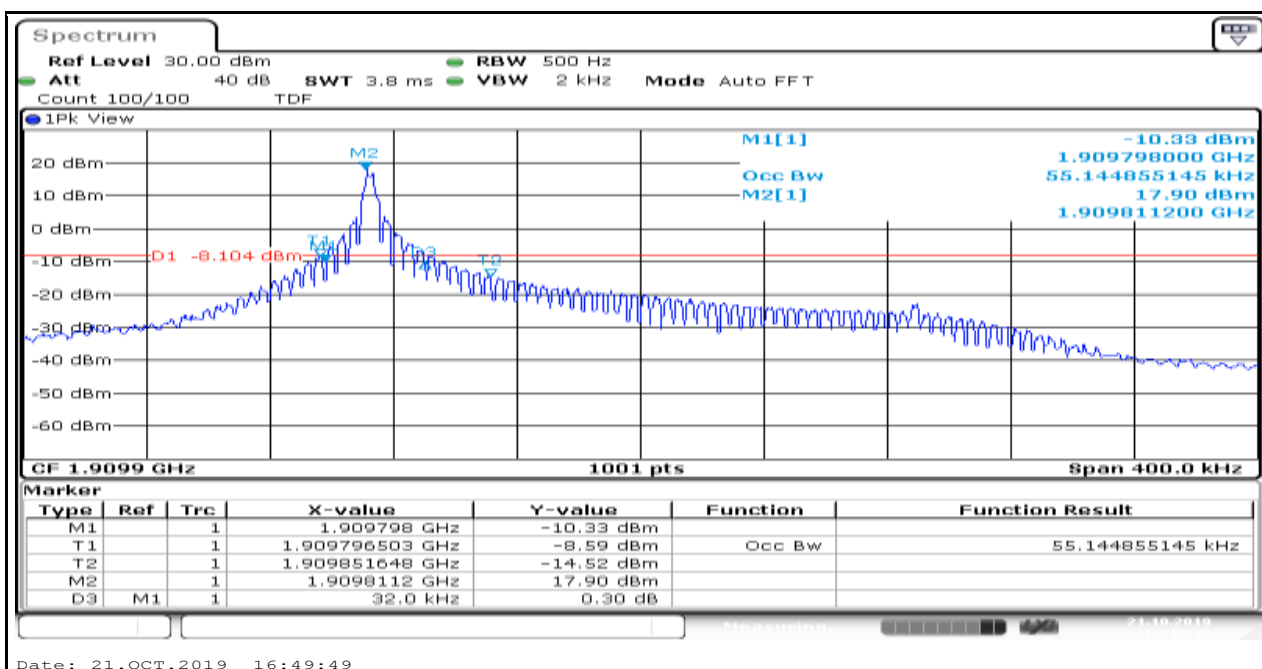
Produkte
Products



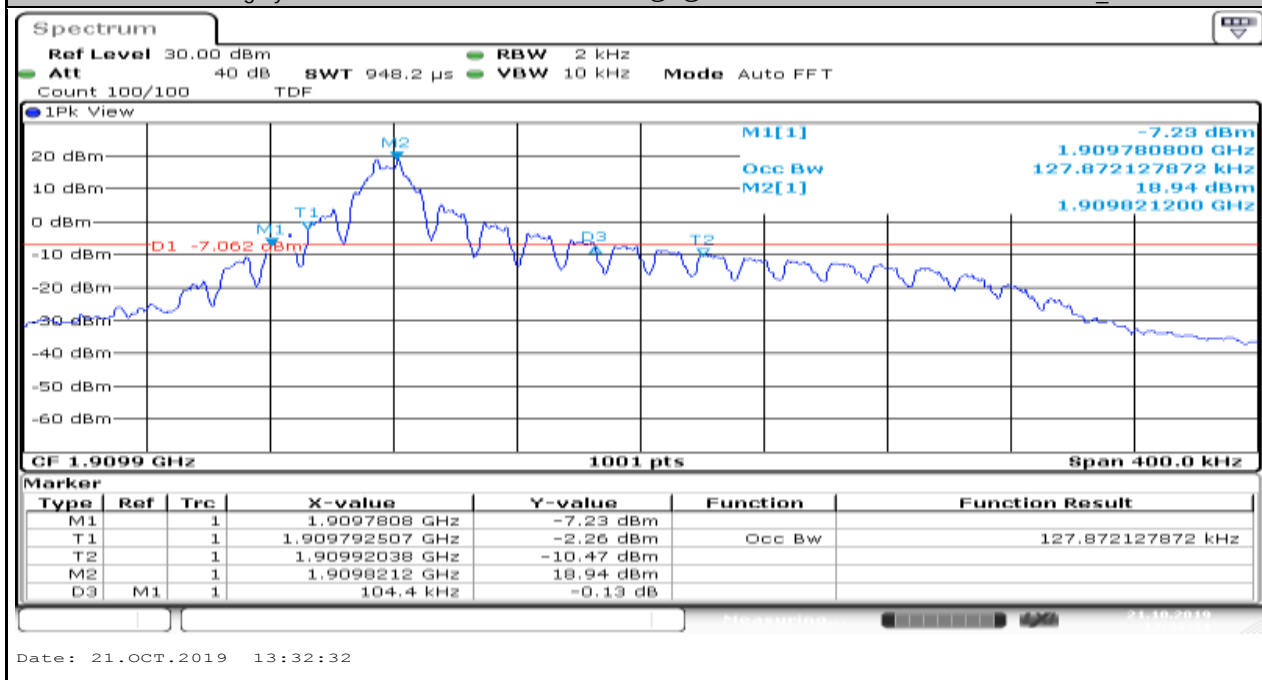
Band2_Stand-Alone_NaN_BPSK_18900_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-18900-1@0@15kHz-BPSK-NTNV-20191021122312.Gif_



Band2_Stand-Alone_NaN_BPSK_19199_1@0_3.75kHz_0.032_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-19199-1@0@3.75kHz-BPSK-NTNV-20191021154127.Gif_



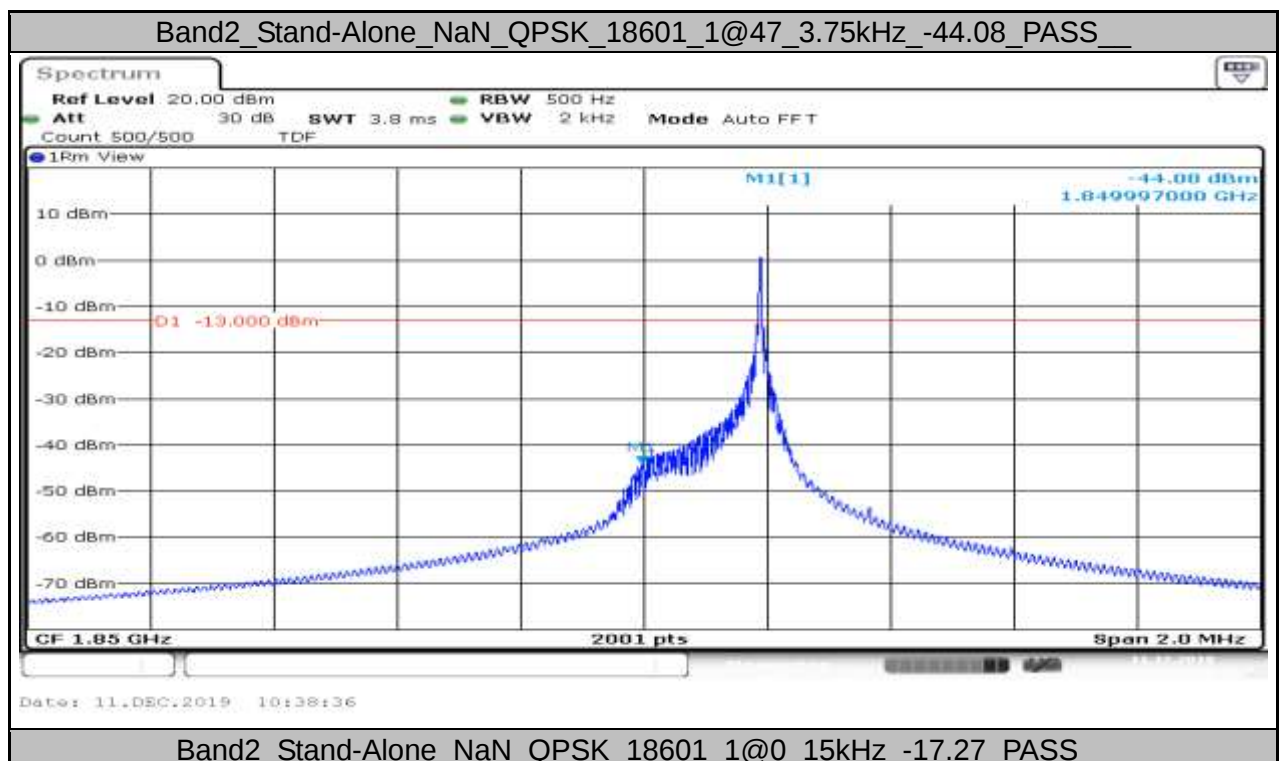
Band2_Stand-Alone_NaN_BPSK_19199_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band2\Occupied and emission bandwidth for category NB-Band2-Stand-Alone-NaN-19199-1@0@15kHz-BPSK-NTNV-20191021122410.Gif_

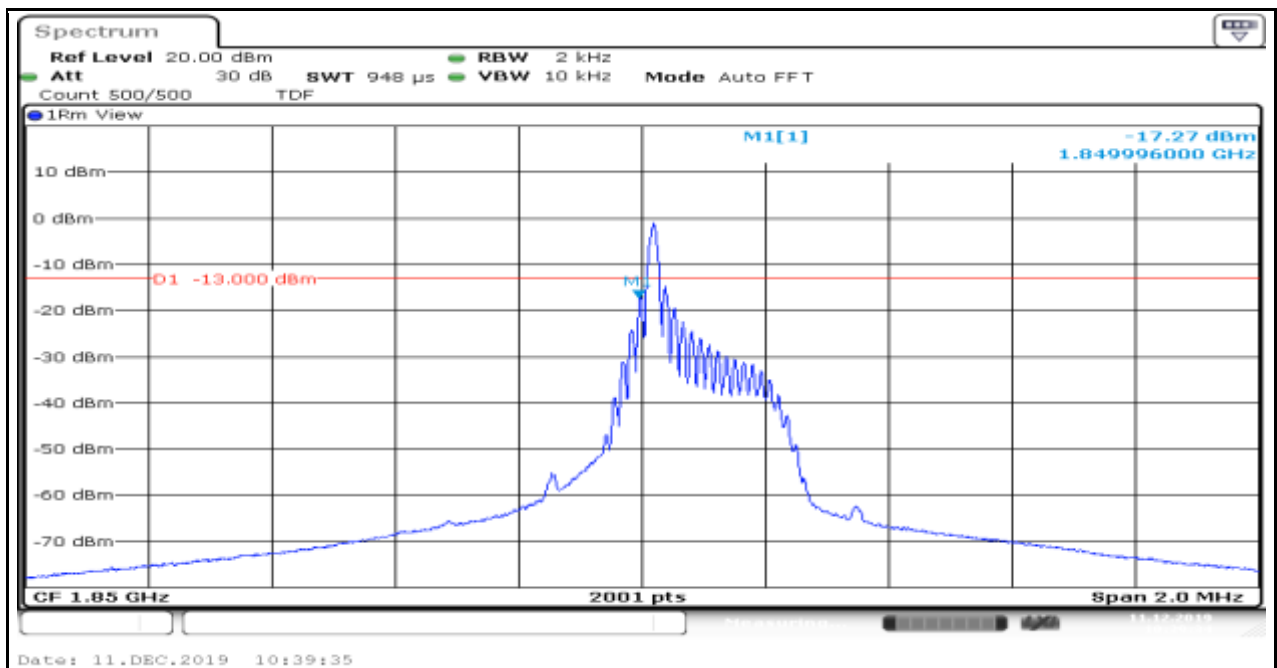


Appendix A.4: Band Edge for NB Test Result

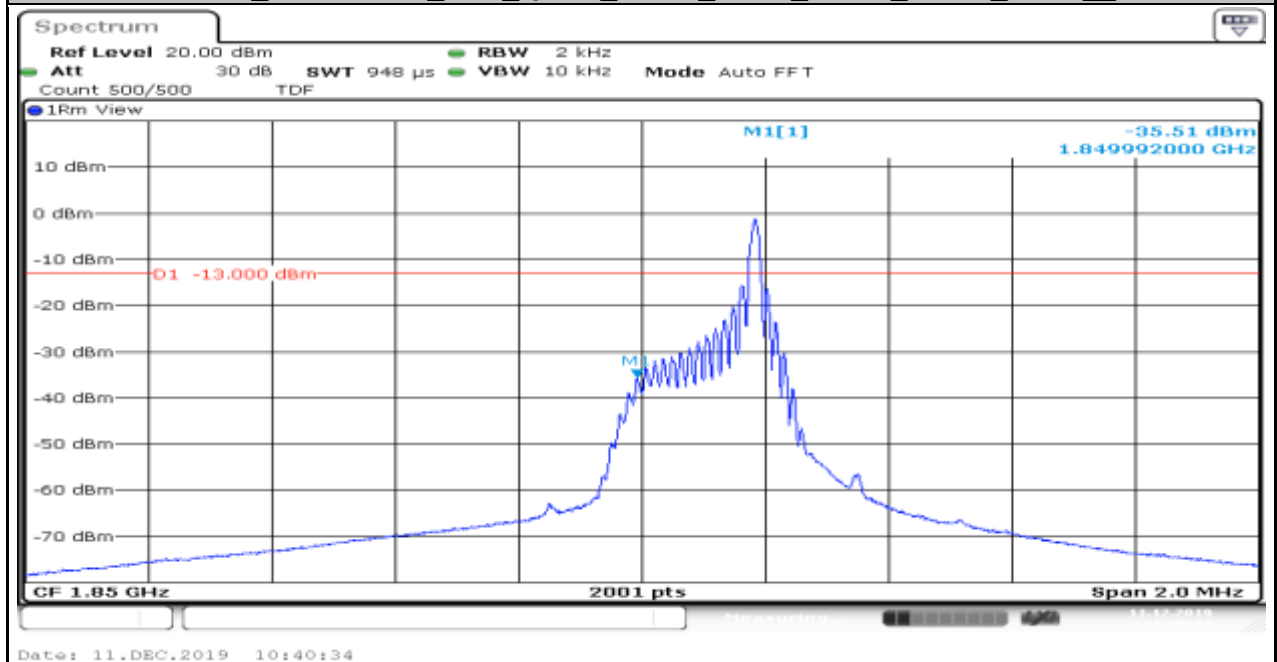
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
Band2	Stand-Alone	NaN	QPSK	18601	1@47	3.75kHz	-44.08	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	15kHz	-17.27	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@11	15kHz	-35.51	PASS
Band2	Stand-Alone	NaN	QPSK	18601	12@0	15kHz	-33.05	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	-22.93	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	15kHz	-34.84	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@11	15kHz	-16.08	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@47	3.75kHz	-21.31	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	-42.98	PASS
Band2	Stand-Alone	NaN	QPSK	19199	12@0	15kHz	-31.18	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@11	15kHz	-33.82	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	3.75kHz	-20.88	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@47	3.75kHz	-42.92	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	-14.85	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@11	15kHz	-14.78	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@47	3.75kHz	-20.62	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	15kHz	-33.86	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	3.75kHz	-42.31	PASS

Test Graphs

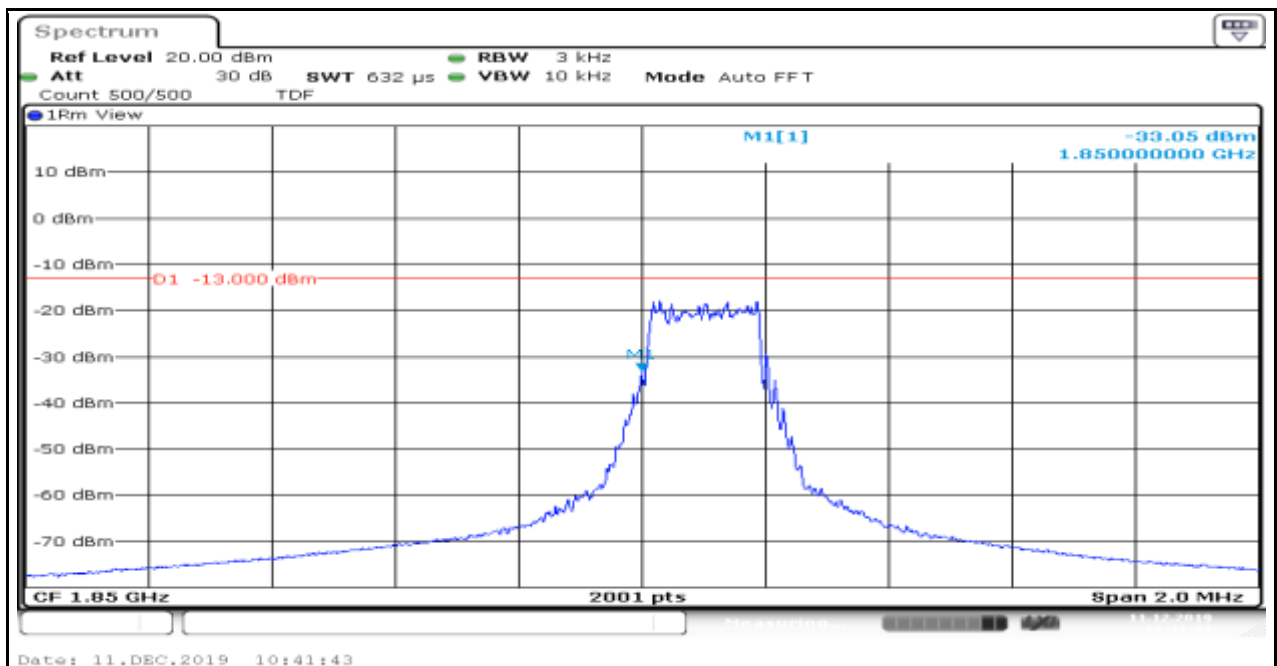




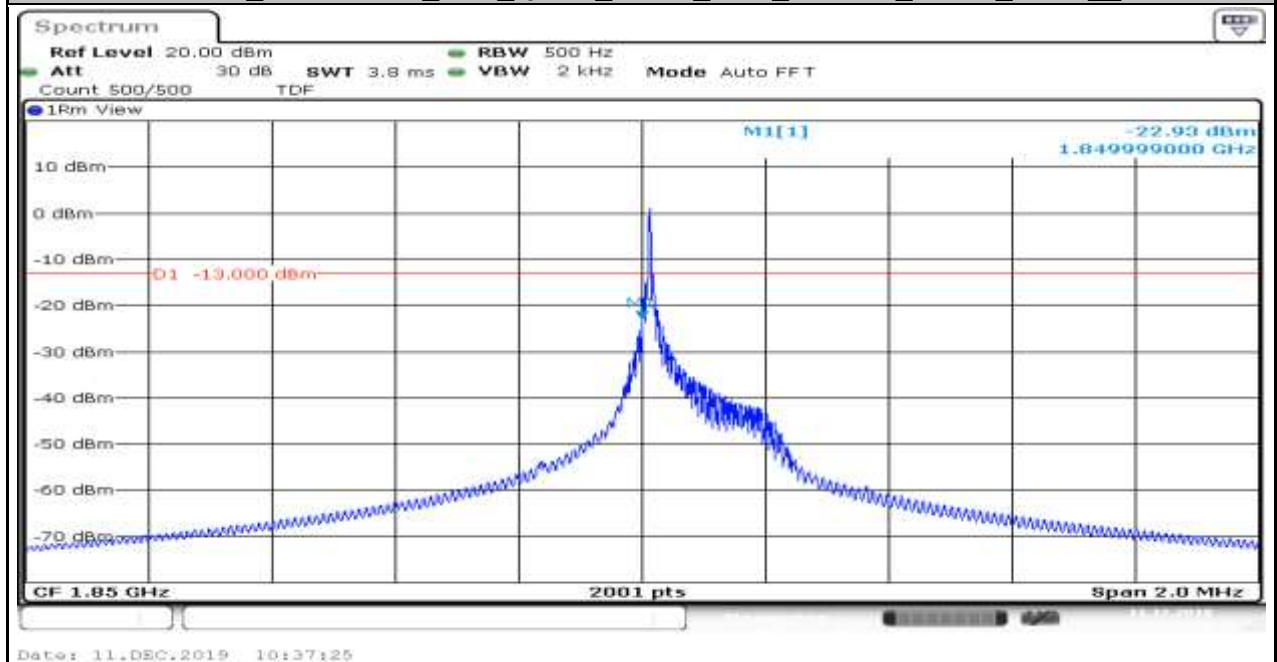
Band2_Stand-Alone_NaN_QPSK_18601_1@11_15kHz_-35.51_PASS__



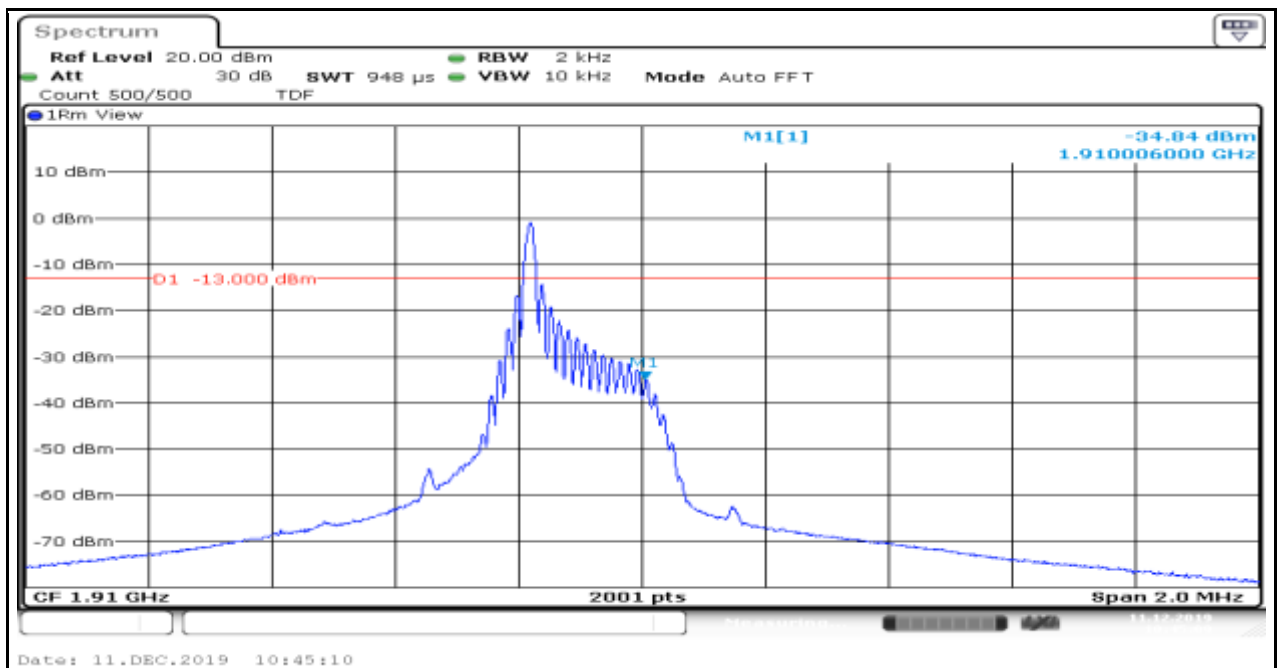
Band2_Stand-Alone_NaN_QPSK_18601_12@0_15kHz_-33.05_PASS__



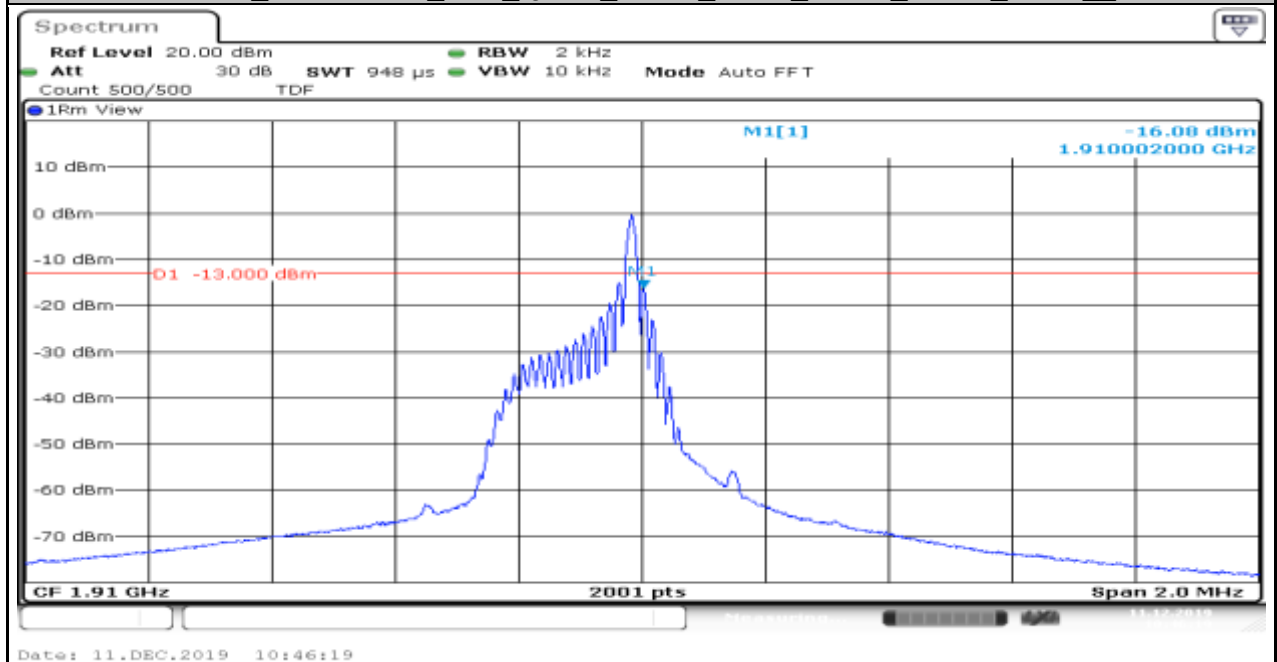
Band2_Stand-Alone_NaN_QPSK_18601_1@0_3.75kHz_-22.93_PASS__



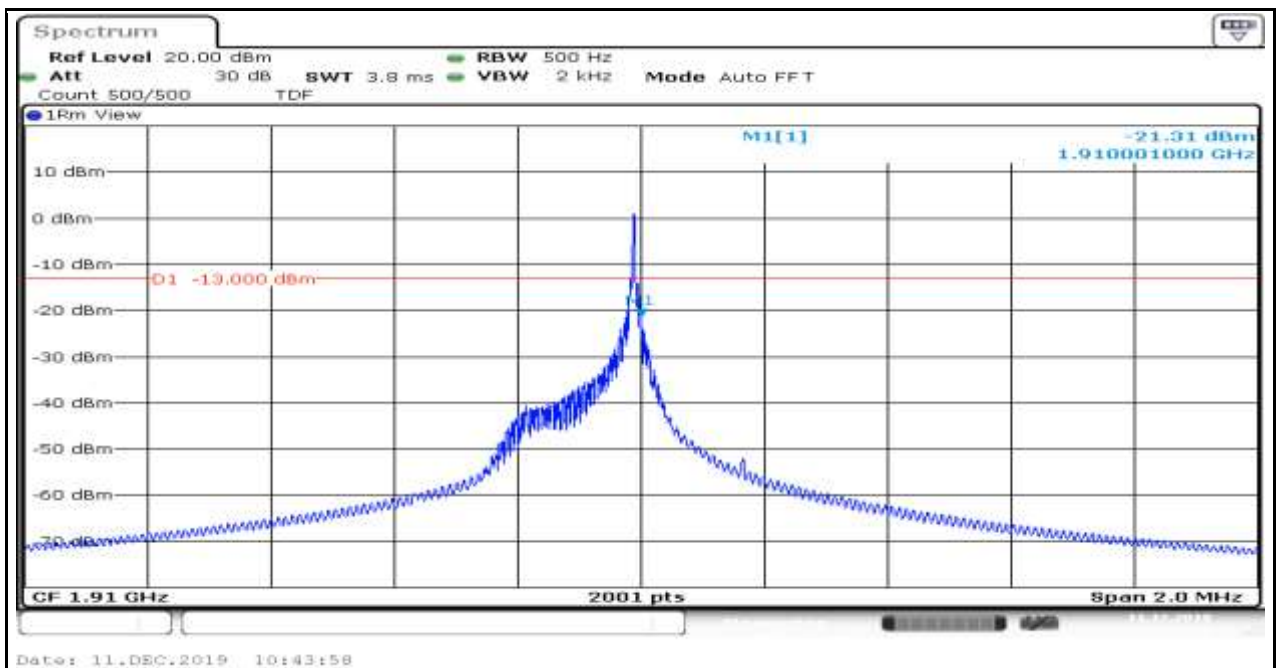
Band2_Stand-Alone_NaN_QPSK_19199_1@0_15kHz_-34.84_PASS__



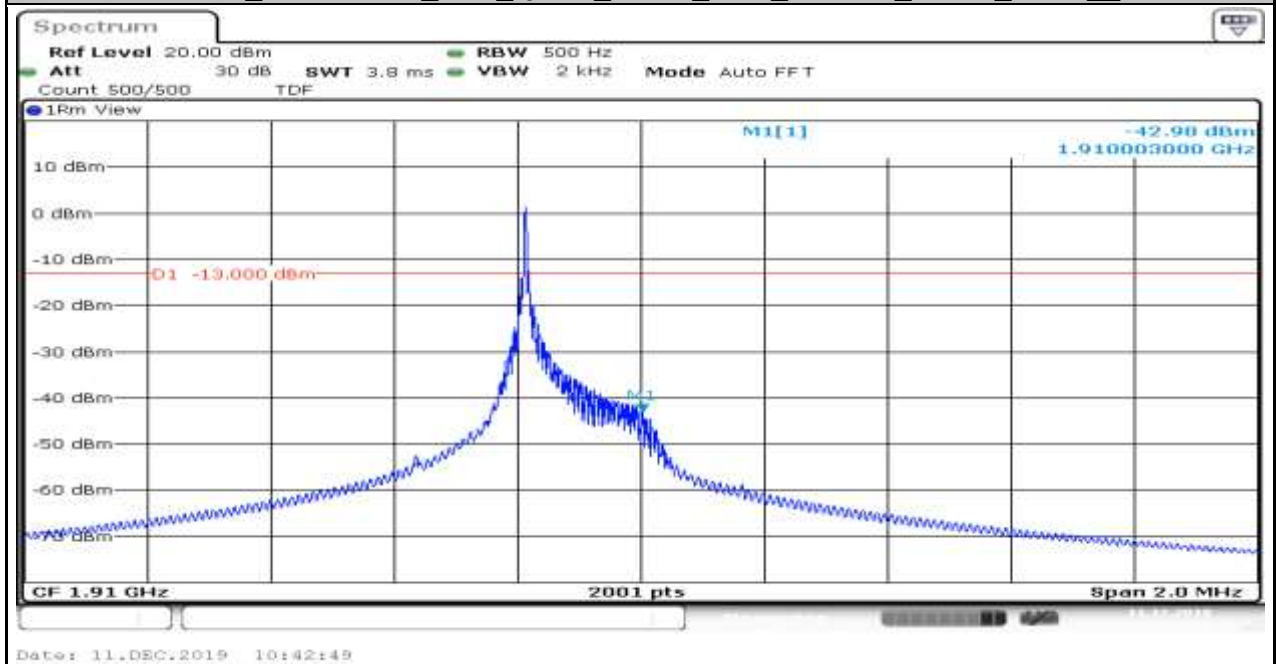
Band2_Stand-Alone_NaN_QPSK_19199_1@11_15kHz_-16.08_PASS__



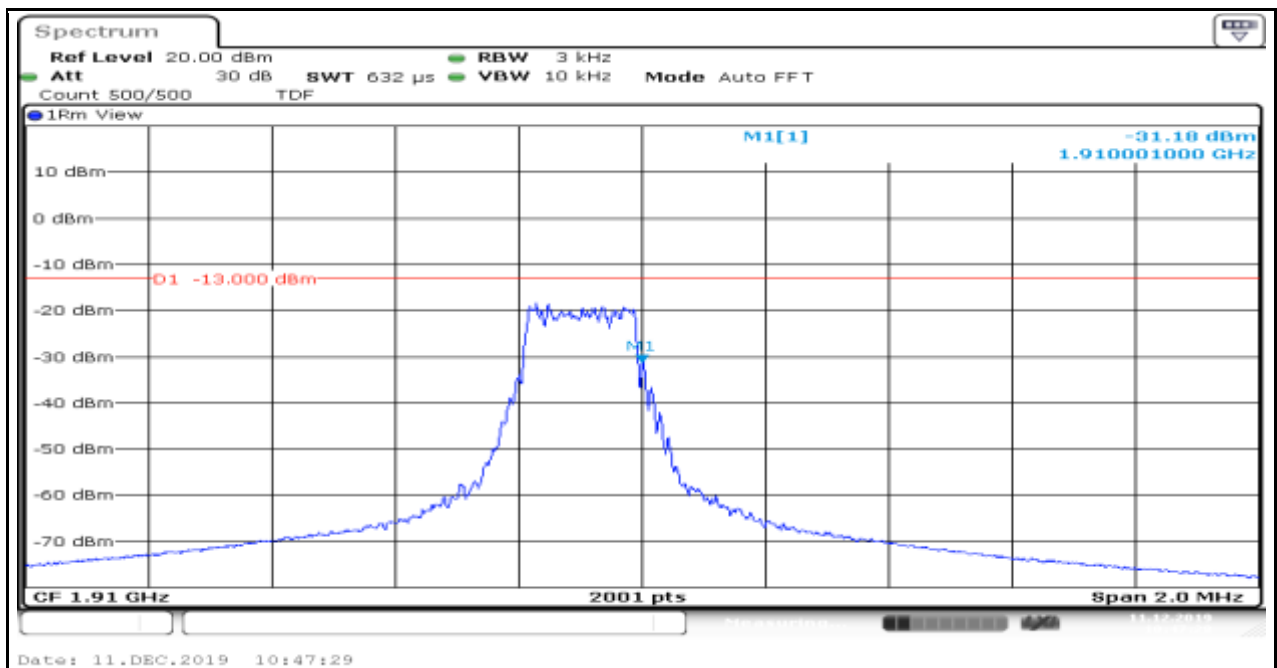
Band2_Stand-Alone_NaN_QPSK_19199_1@47_3.75kHz_-21.31_PASS__



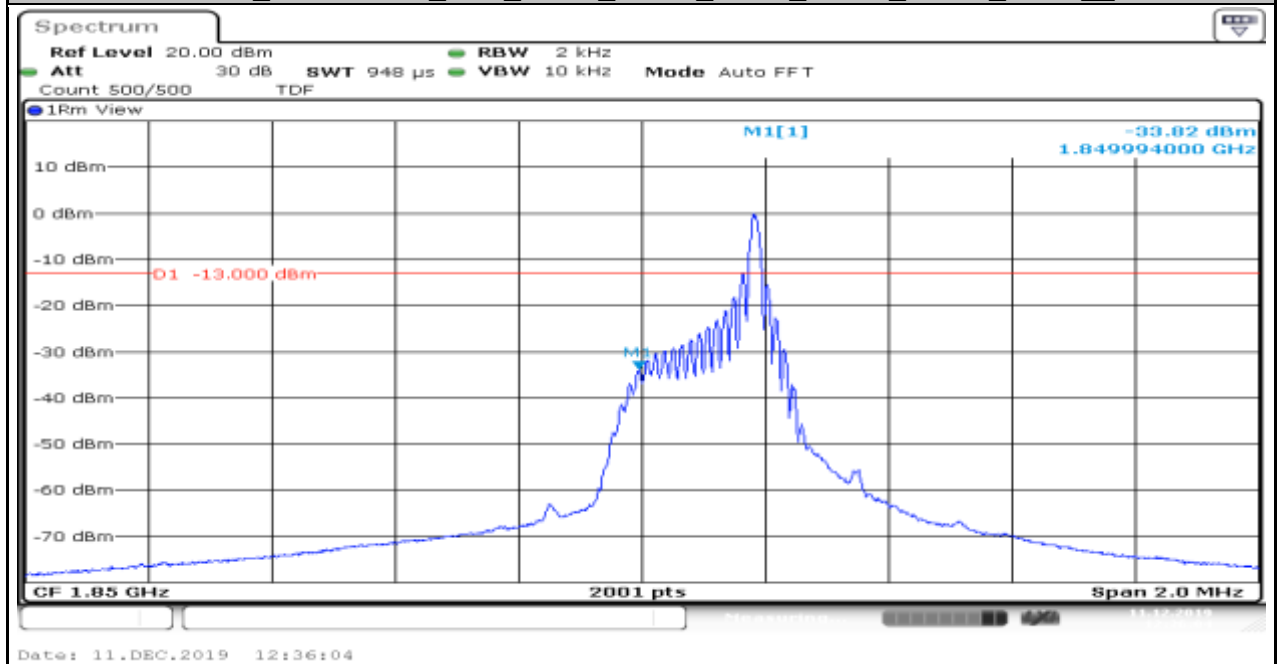
Band2_Stand-Alone_NaN_QPSK_19199_1@0_3.75kHz_-42.98_PASS__



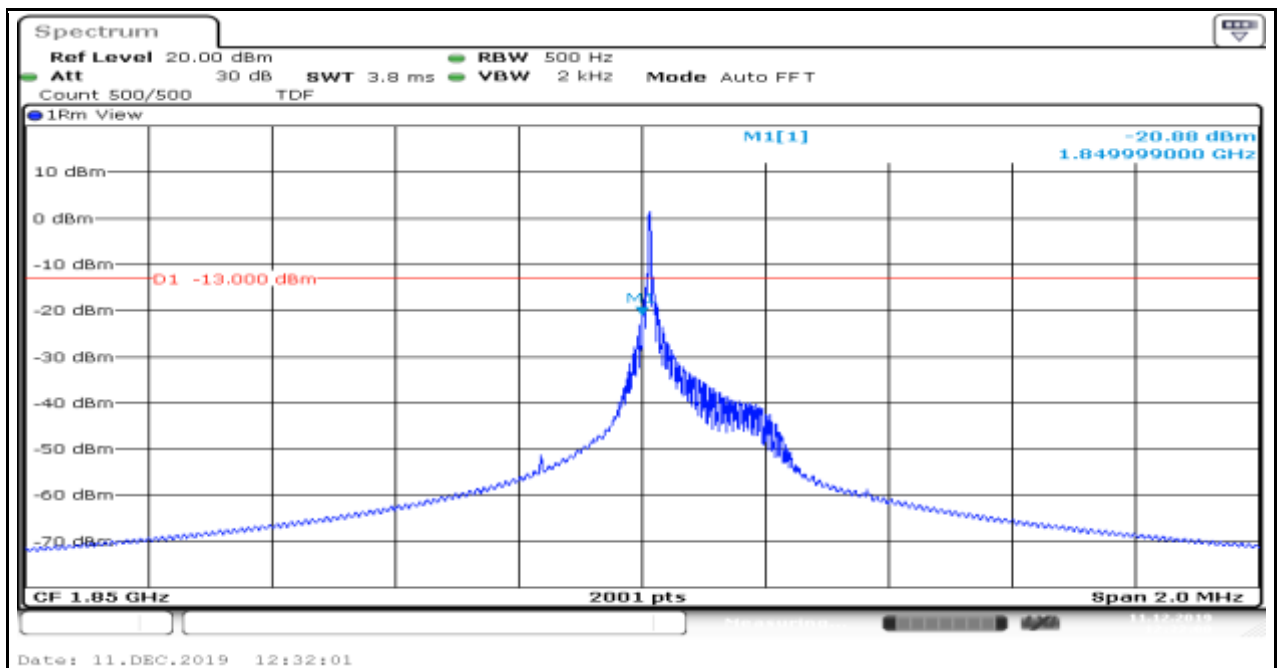
Band2_Stand-Alone_NaN_QPSK_19199_12@0_15kHz_-31.18_PASS__



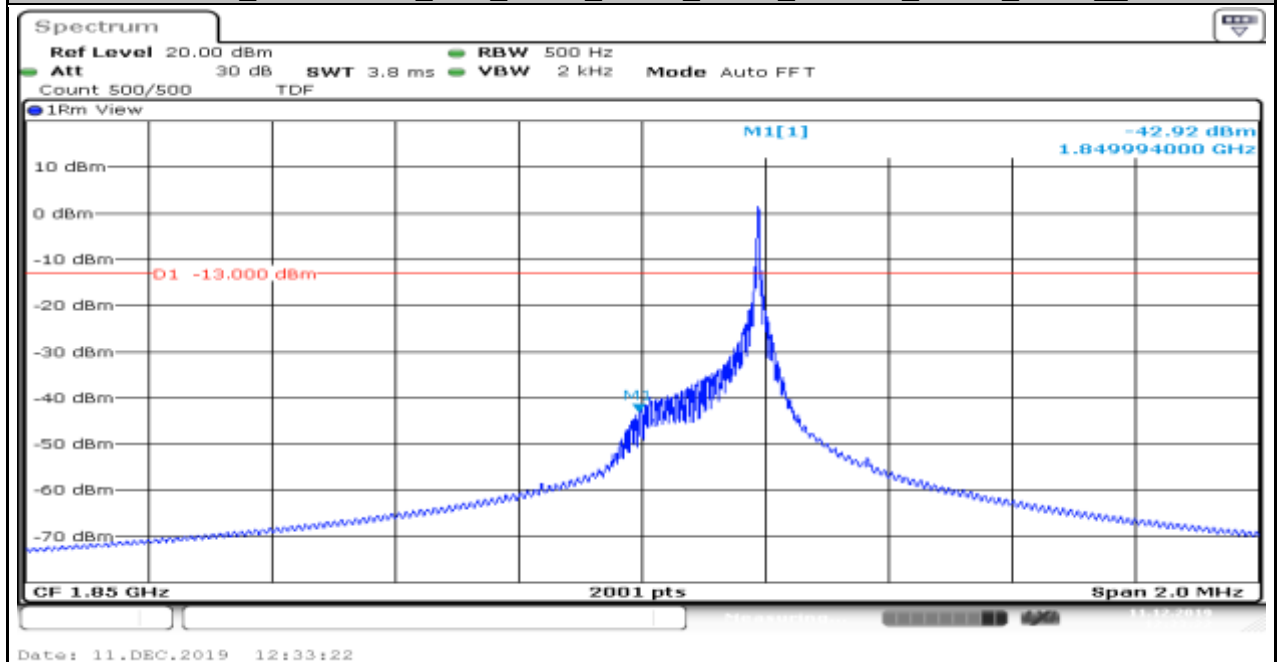
Band2_Stand-Alone_NaN_BPSK_18601_1@11_15kHz_-33.82_PASS__



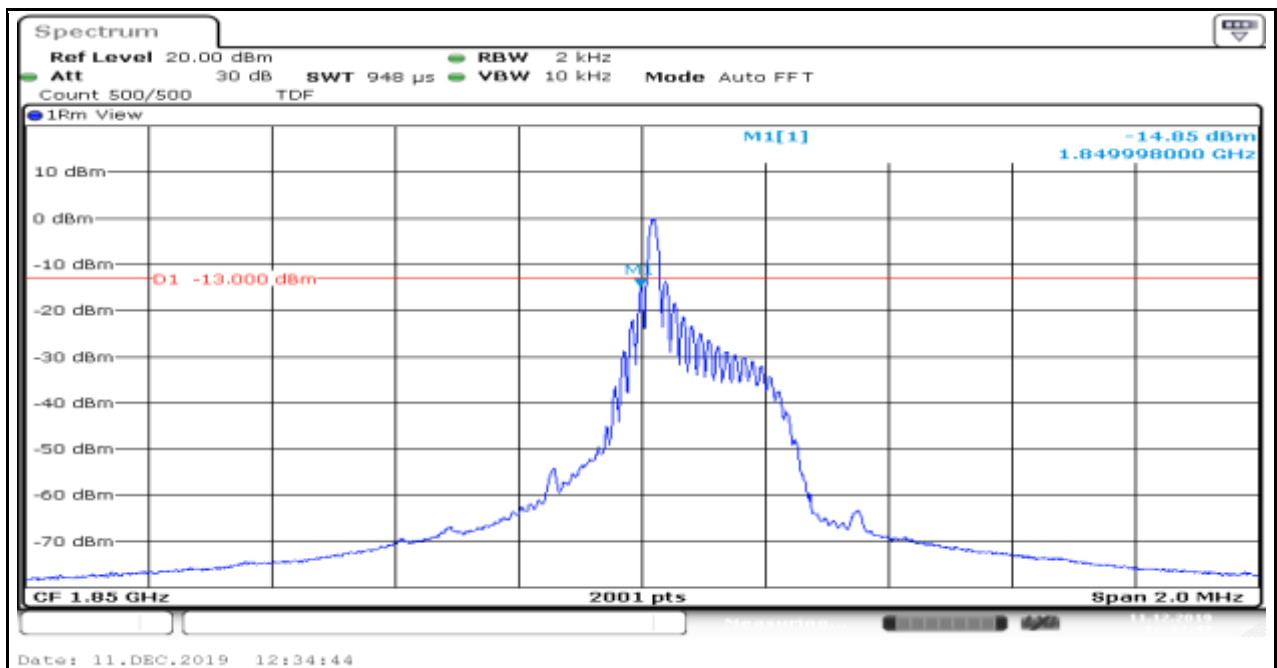
Band2_Stand-Alone_NaN_BPSK_18601_1@0_3.75kHz_-20.88_PASS__



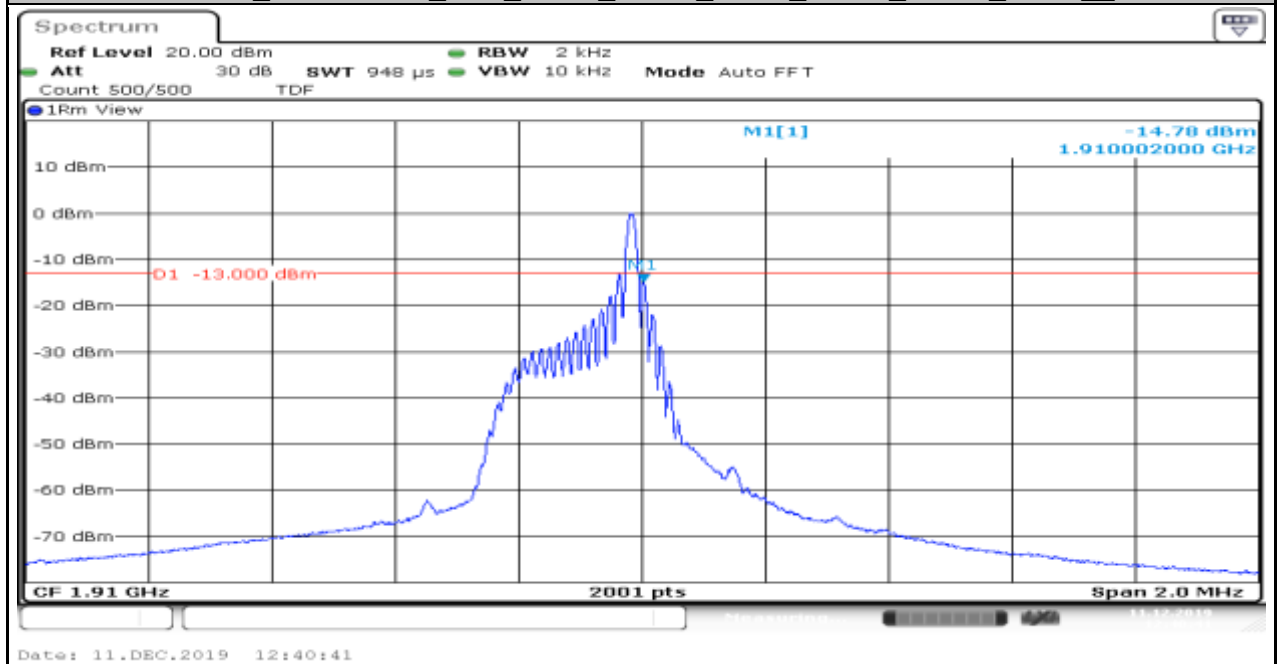
Band2_Stand-Alone_NaN_BPSK_18601_1@47_3.75kHz_-42.92_PASS__



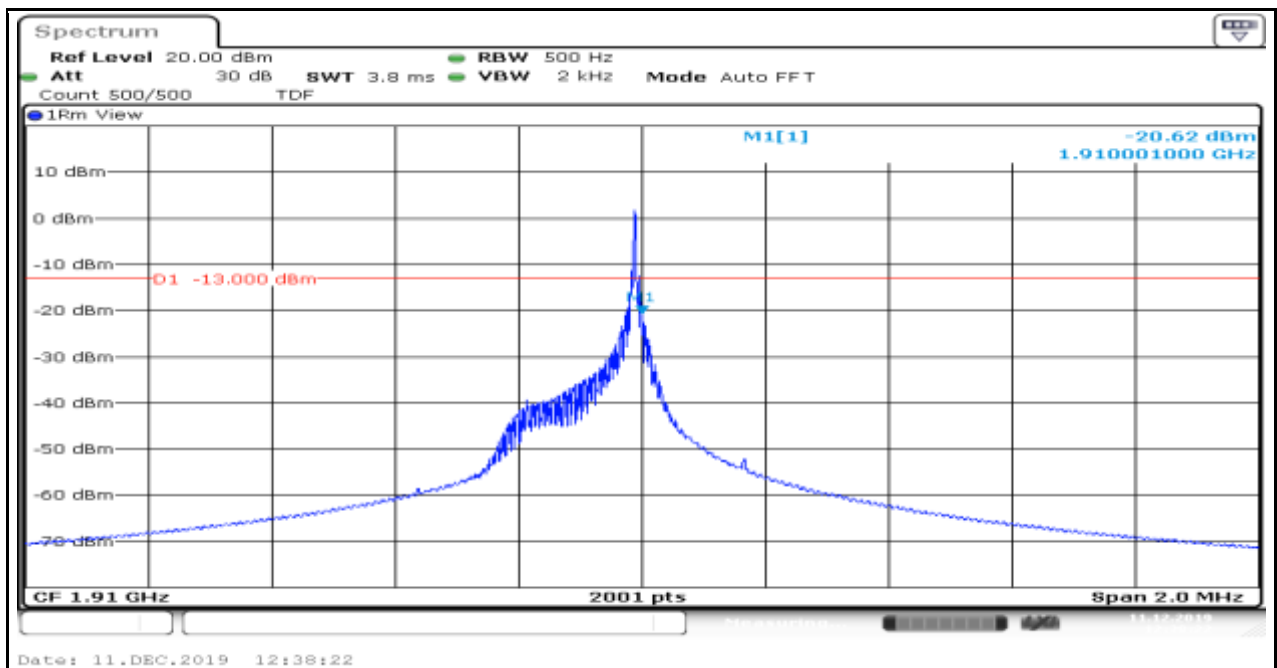
Band2_Stand-Alone_NaN_BPSK_18601_1@0_15kHz_-14.85_PASS__



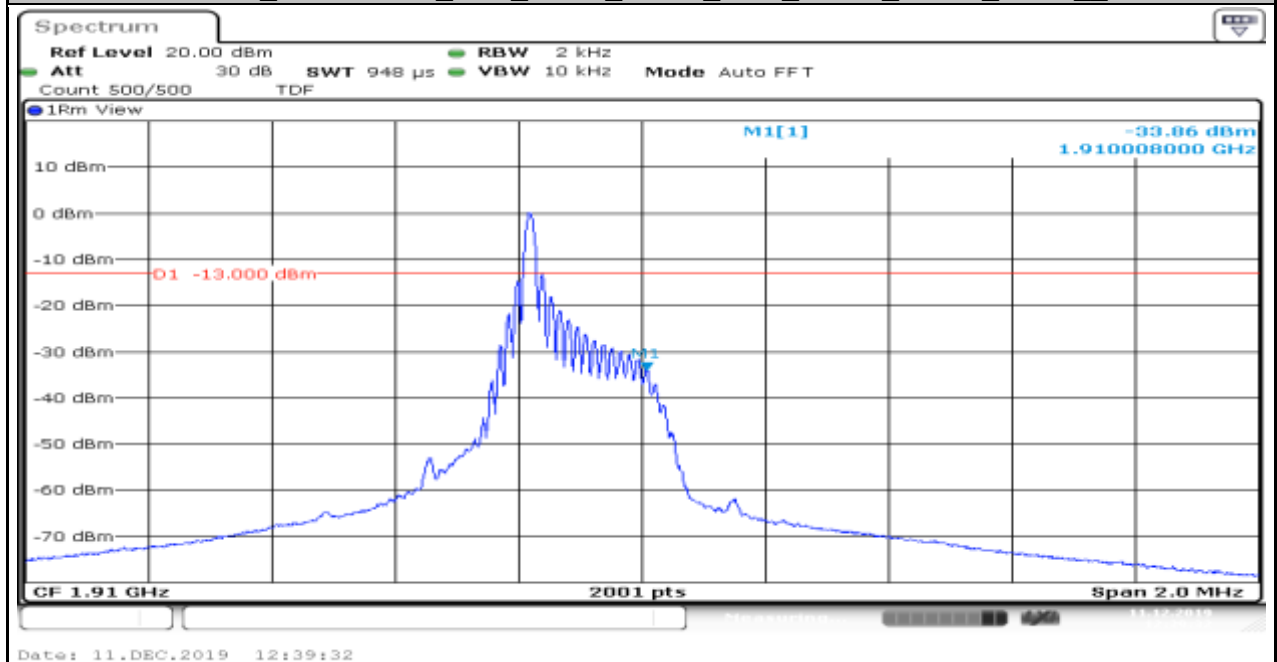
Band2_Stand-Alone_NaN_BPSK_19199_1@11_15kHz_-14.78_PASS__



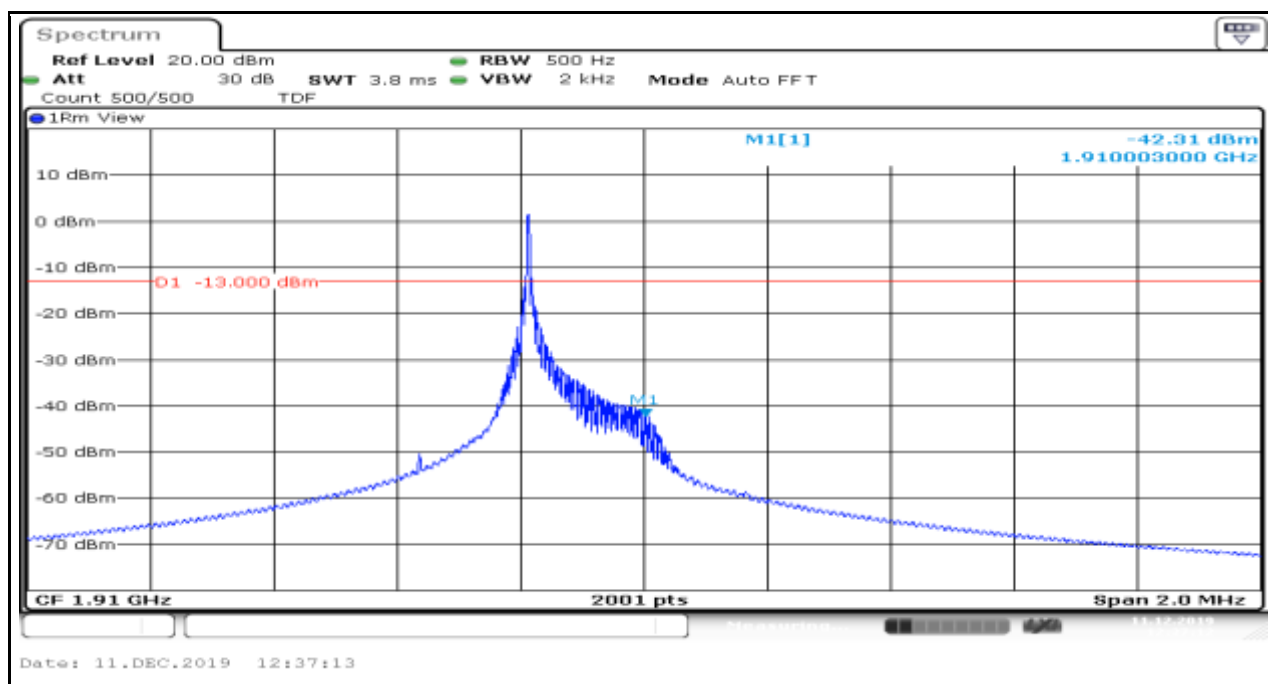
Band2_Stand-Alone_NaN_BPSK_19199_1@47_3.75kHz_-20.62_PASS__



Band2_Stand-Alone_NaN_BPSK_19199_1@0_15kHz_-33.86_PASS__



Band2_Stand-Alone_NaN_BPSK_19199_1@0_3.75kHz_-42.31_PASS__



Appendix A.5: Conducted Spurious Emission for NB Test Result

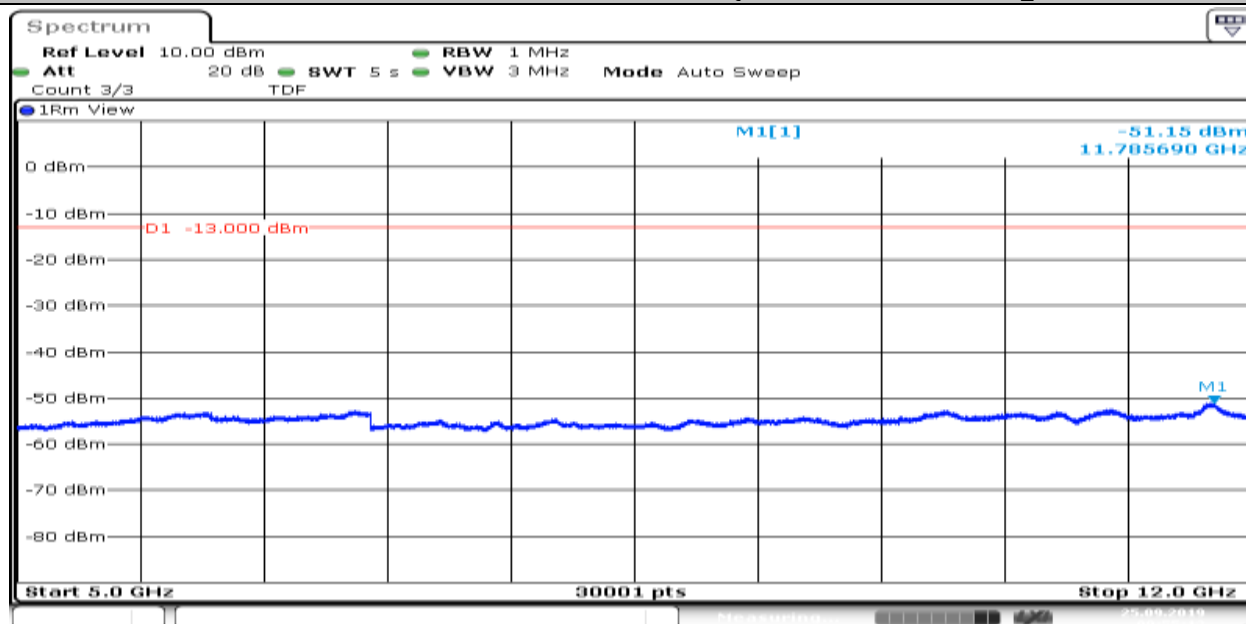
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band2	Stand-Alone	NaN	QPSK	18601	12@0	15kHz	5000	12000	5000~12000MHz@-51.15dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	12@0	15kHz	30	1000	30~1000MHz@-36.83dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	12@0	15kHz	12000	26500	12000~26500MHz@-45.9dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	12@0	15kHz	1000	5000	1000~5000MHz@-40.11dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	30	1000	30~1000MHz@-36.94dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	1000	5000	1000~5000MHz@-40.22dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	5000	12000	5000~12000MHz@-41.16dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@0	3.75kHz	12000	26500	12000~26500MHz@-45.97dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@47	3.75kHz	30	1000	30~1000MHz@-36.59dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@47	3.75kHz	1000	5000	1000~5000MHz@-40.05dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@47	3.75kHz	5000	12000	5000~12000MHz@-41.28dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18601	1@47	3.75kHz	12000	26500	12000~26500MHz@-45.71dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	12@0	15kHz	12000	26500	12000~26500MHz@-45.81dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	12@0	15kHz	30	1000	30~1000MHz@-36.77dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	30	1000	30~1000MHz@-37.17dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	12@0	15kHz	5000	12000	5000~12000MHz@-43.88dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	12@0	15kHz	1000	5000	1000~5000MHz@-40.26dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	12000	26500	12000~26500MHz@-45.88dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	30	1000	30~1000MHz@-37.04dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	5000	12000	5000~12000MHz@-41.54dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	12000	26500	12000~26500MHz@-45.79dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	1000	5000	1000~5000MHz@-40.06dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	5000	12000	5000~12000MHz@-41.52dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	1000	5000	1000~5000MHz@-40.14dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	30	1000	30~1000MHz@-35.31dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@47	3.75kHz	5000	12000	5000~12000MHz@-40.26dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@47	3.75kHz	12000	26500	12000~26500MHz@-45.88dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@47	3.75kHz	30	1000	30~1000MHz@-36.33dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	12000	26500	12000~26500MHz@-45.7dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	5000	12000	5000~12000MHz@-40.45dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@0	3.75kHz	1000	5000	1000~5000MHz@-40.13dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	1@47	3.75kHz	1000	5000	1000~5000MHz@-39.97dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	12@0	15kHz	12000	26500	12000~26500MHz@-45.87dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	12@0	15kHz	30	1000	30~1000MHz@-36.32dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	12@0	15kHz	1000	5000	1000~5000MHz@-40.37dBm	-13	PASS
Band2	Stand-Alone	NaN	QPSK	19199	12@0	15kHz	5000	12000	5000~12000MHz@-42.21dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@11	15kHz	1000	5000	1000~5000MHz@-40.11dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@11	15kHz	5000	12000	5000~12000MHz@-42.81dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@11	15kHz	12000	26500	12000~26500MHz@-45.53dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	1000	5000	1000~5000MHz@-40.15dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	5000	12000	5000~12000MHz@-41.04dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@11	15kHz	30	1000	30~1000MHz@-36.73dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	30	1000	30~1000MHz@-36.29dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18601	1@0	15kHz	12000	26500	12000~26500MHz@-45.71dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@0	15kHz	30	1000	30~1000MHz@-36.67dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@0	15kHz	1000	5000	1000~5000MHz@-39.94dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@0	15kHz	5000	12000	5000~12000MHz@-50.95dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@0	15kHz	12000	26500	12000~26500MHz@-45.71dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@11	15kHz	30	1000	30~1000MHz@-36.91dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@11	15kHz	1000	5000	1000~5000MHz@-39.94dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@11	15kHz	12000	26500	12000~26500MHz@-45.59dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	18876	1@11	15kHz	5000	12000	5000~12000MHz@-40.62dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	15kHz	5000	12000	5000~12000MHz@-39.6dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	15kHz	1000	5000	1000~5000MHz@-39.75dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@0	15kHz	12000	26500	12000~26500MHz@-45.74dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@11	15kHz	30	1000	30~1000MHz@-36.89dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@11	15kHz	1000	5000	1000~5000MHz@-40.07dBm	-13	PASS
Band2	Stand-Alone	NaN	BPSK	19199	1@11	15kHz	5000	12000	5000~12000MHz@-39.68dBm	-13	PASS

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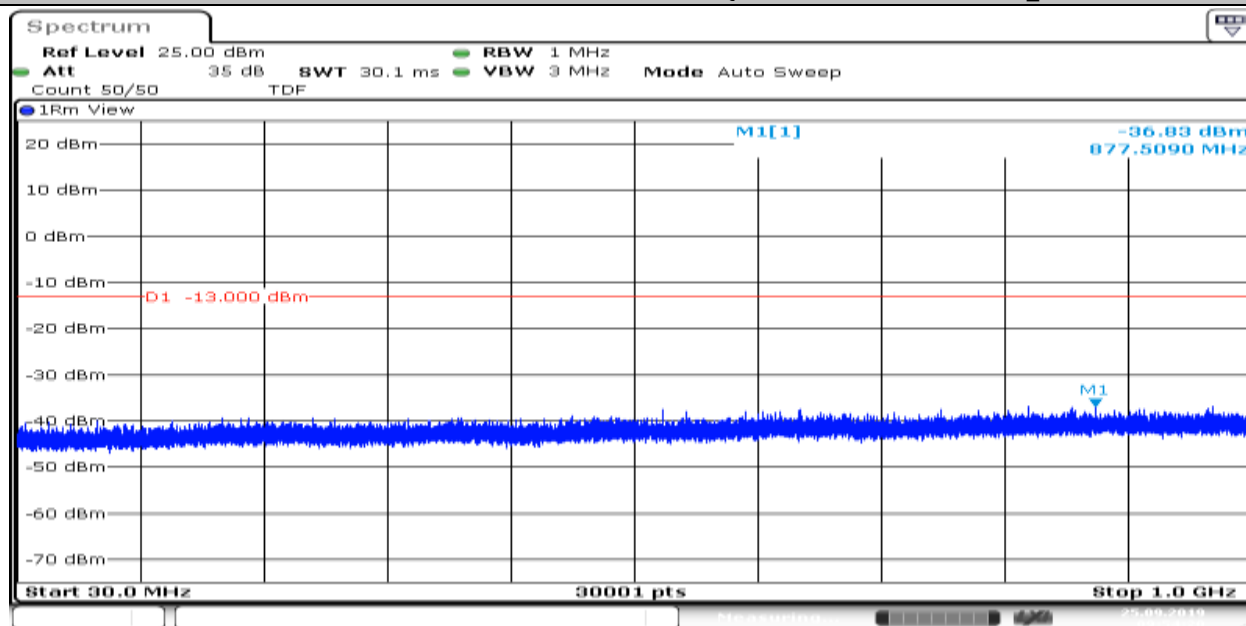
Band2	Stand-Alone	NaN	BPSK	19199	1@11	15kHz	12000	26500	12000~26500MHz@-45.68dBm	-13	PASS
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Test Graphs

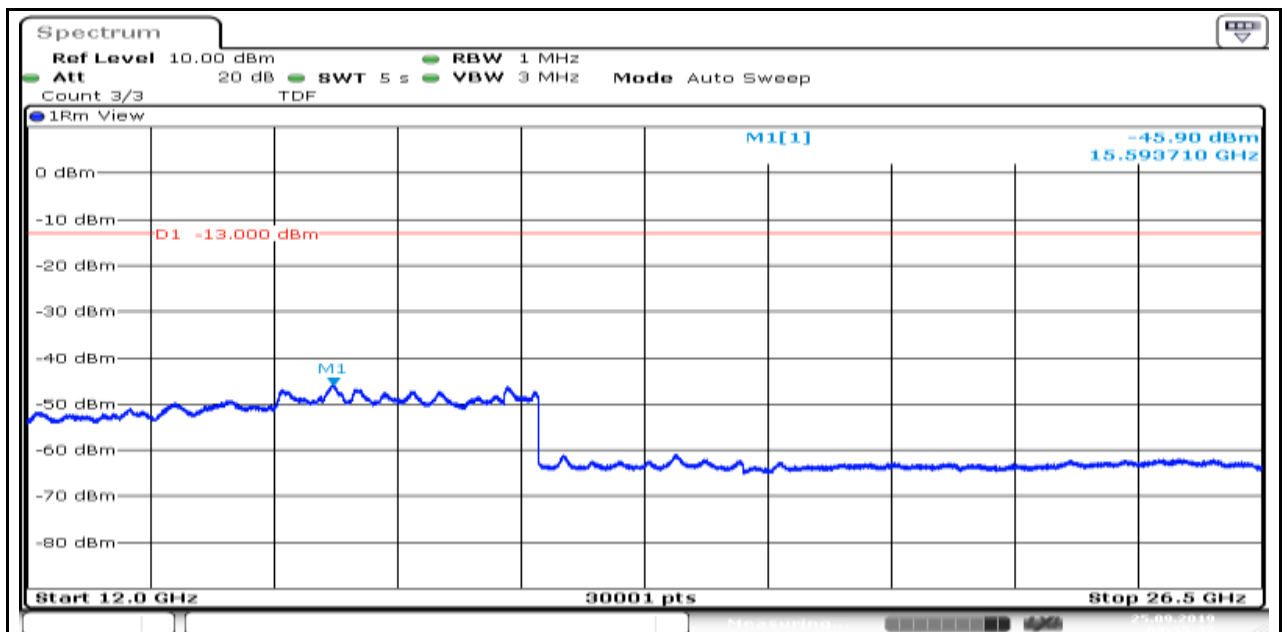
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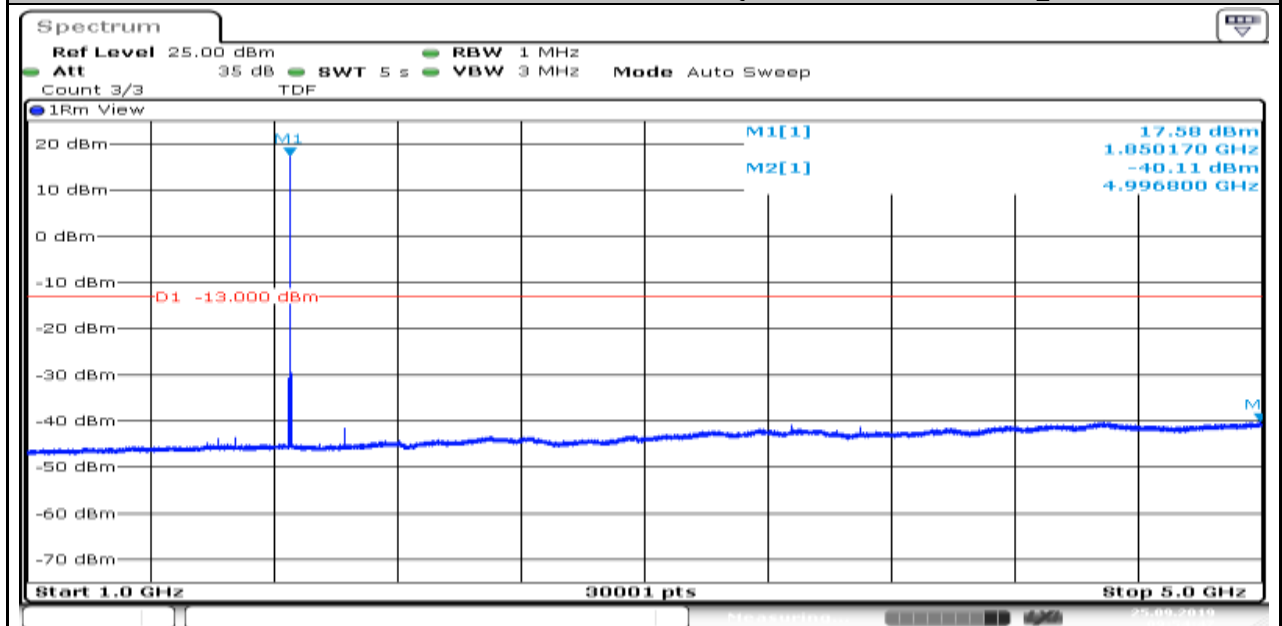
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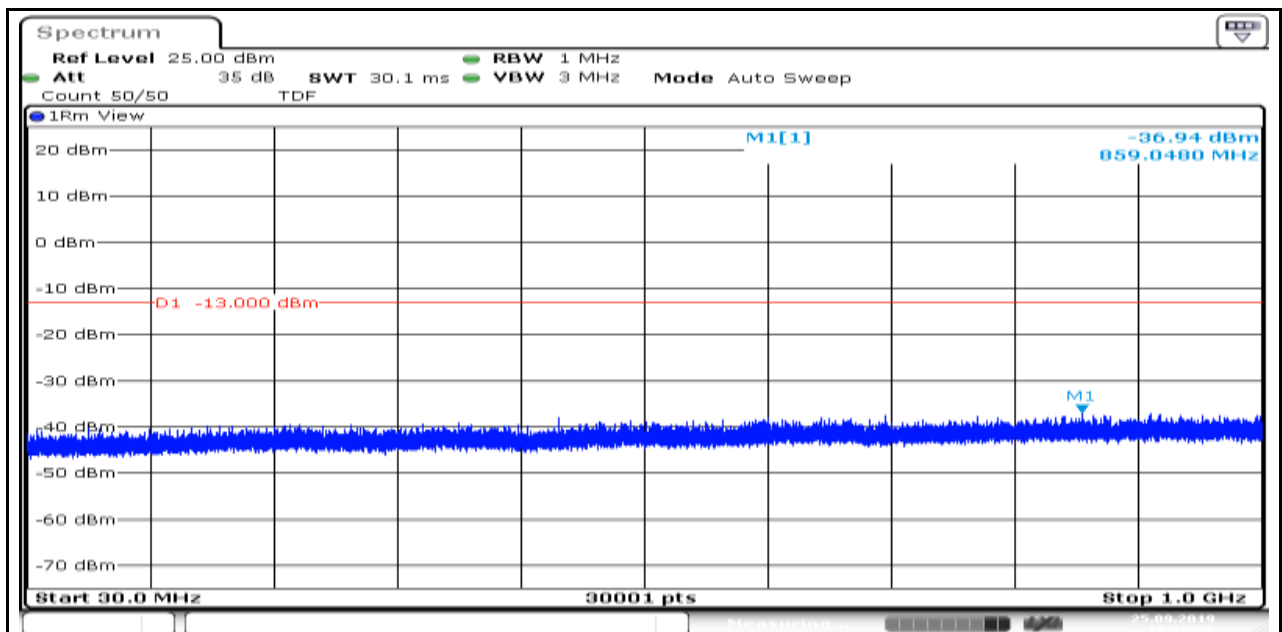
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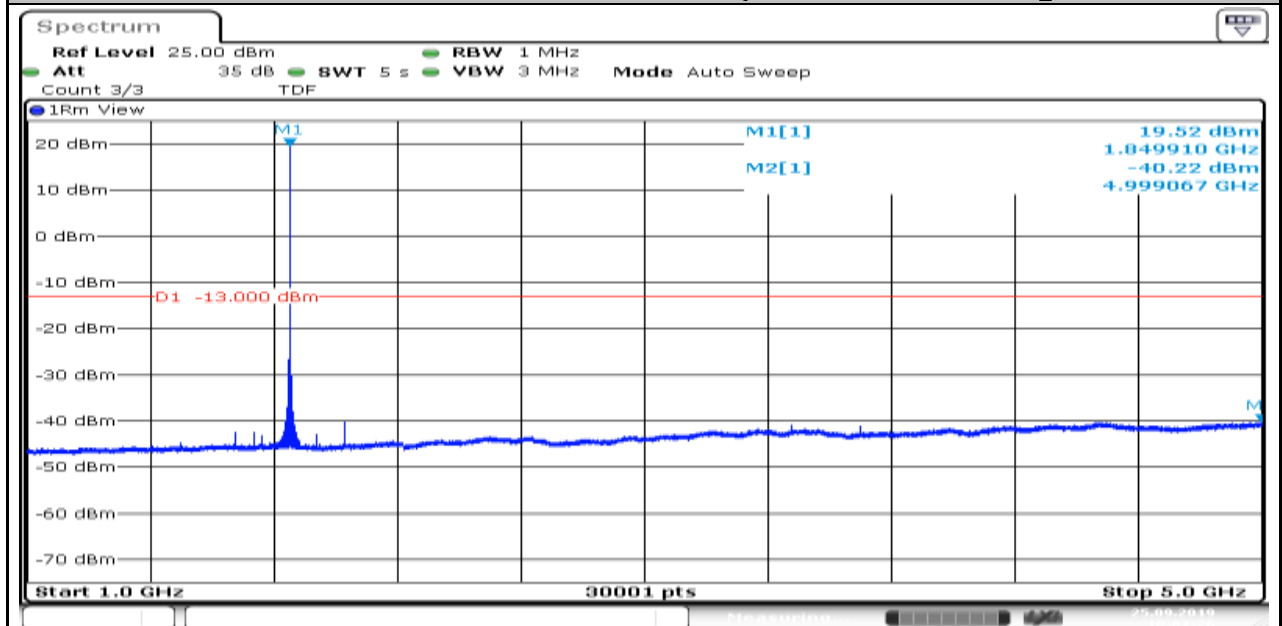
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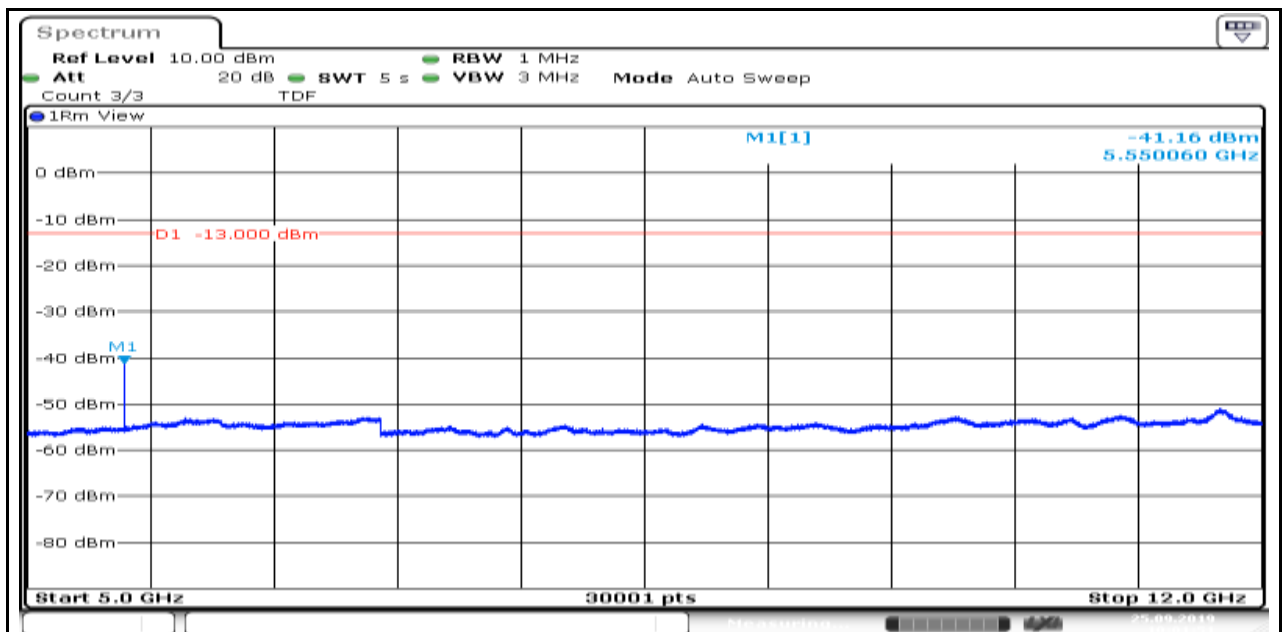
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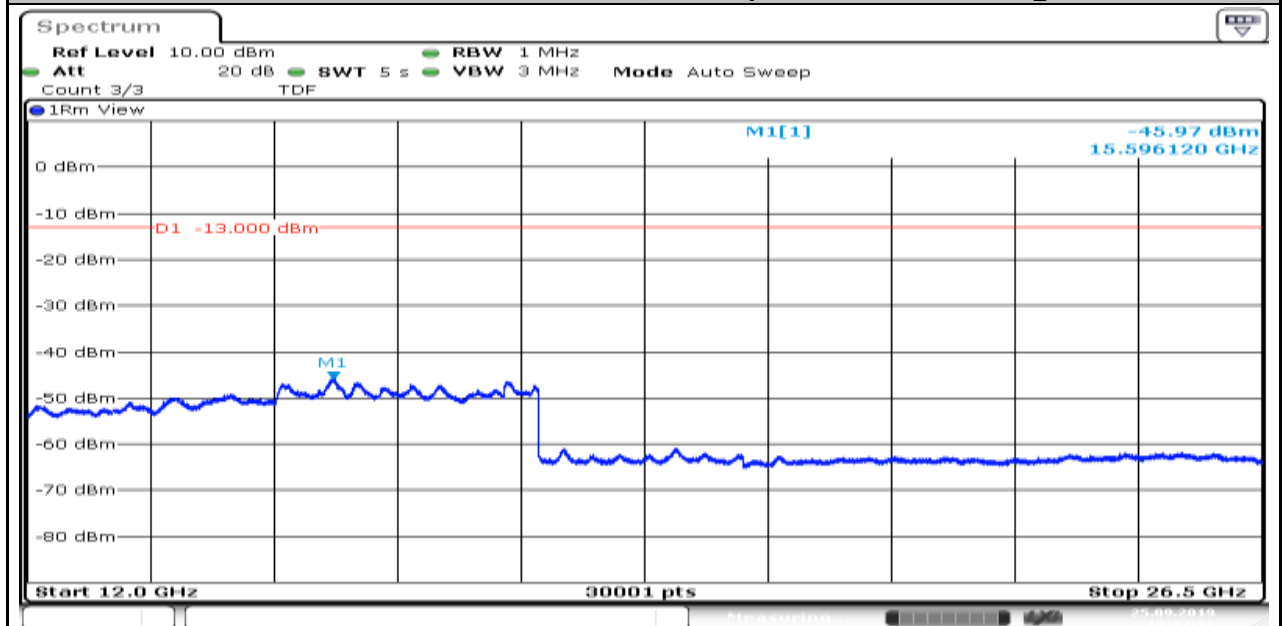
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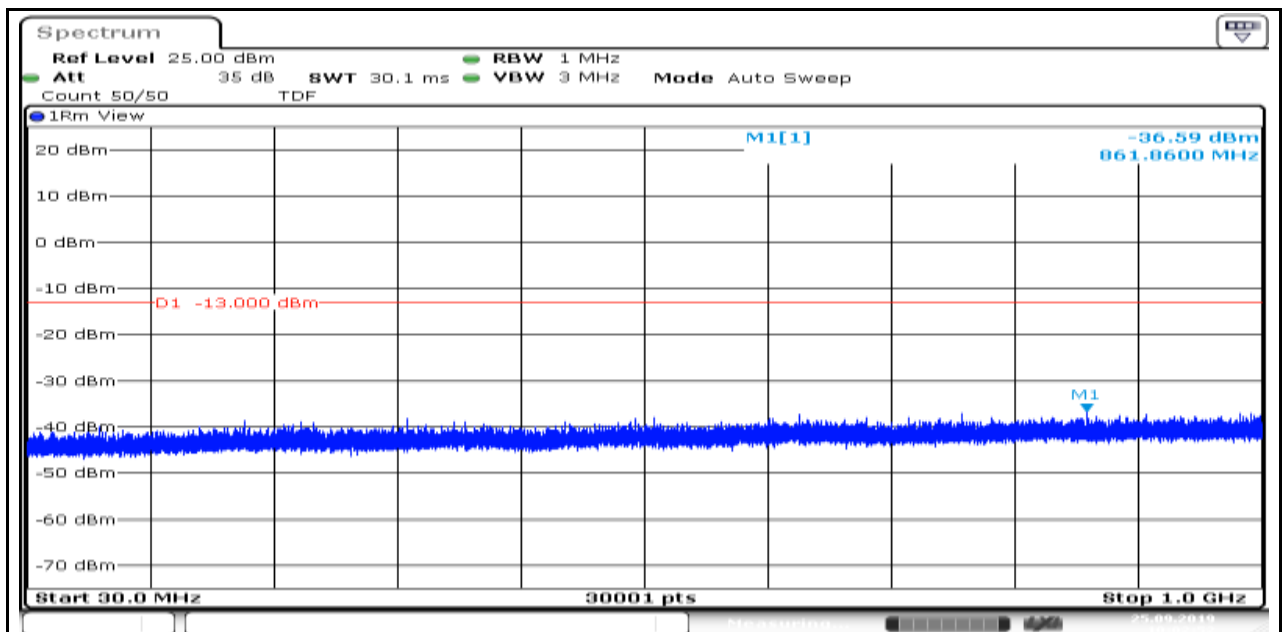
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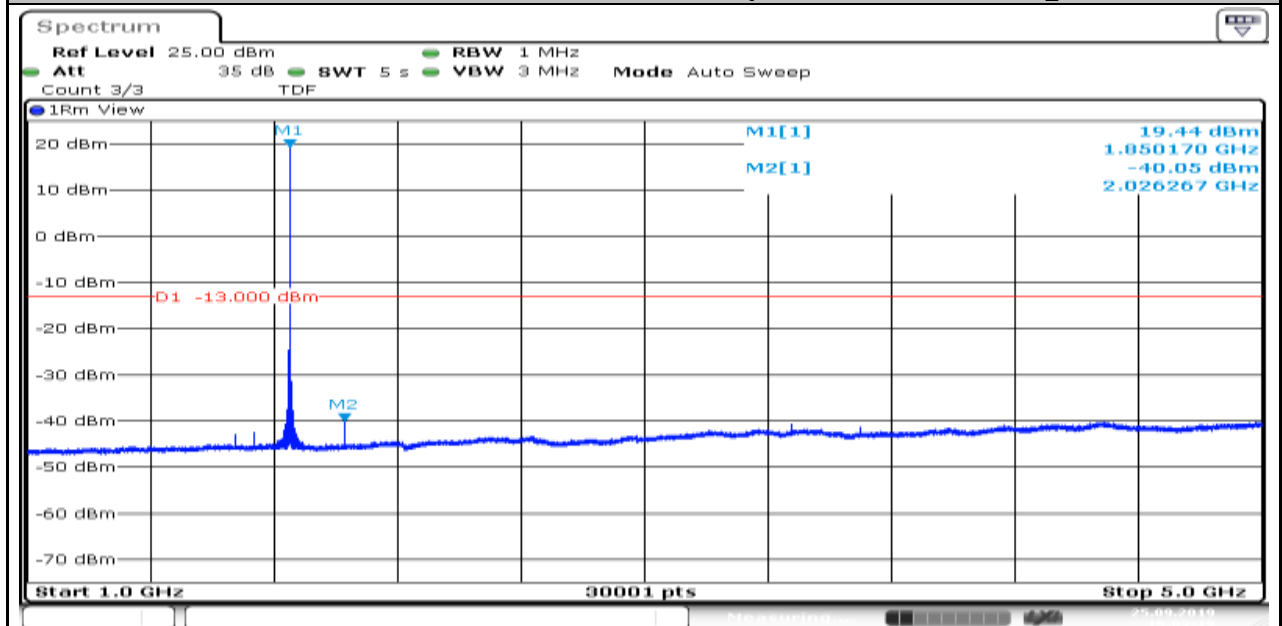
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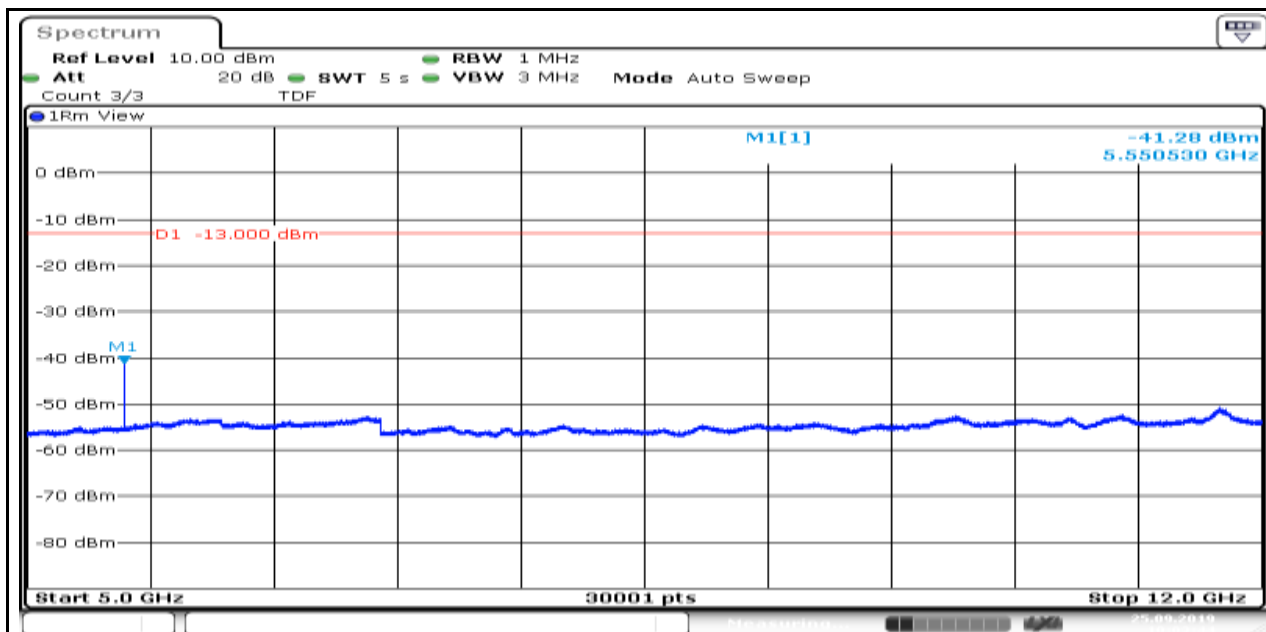
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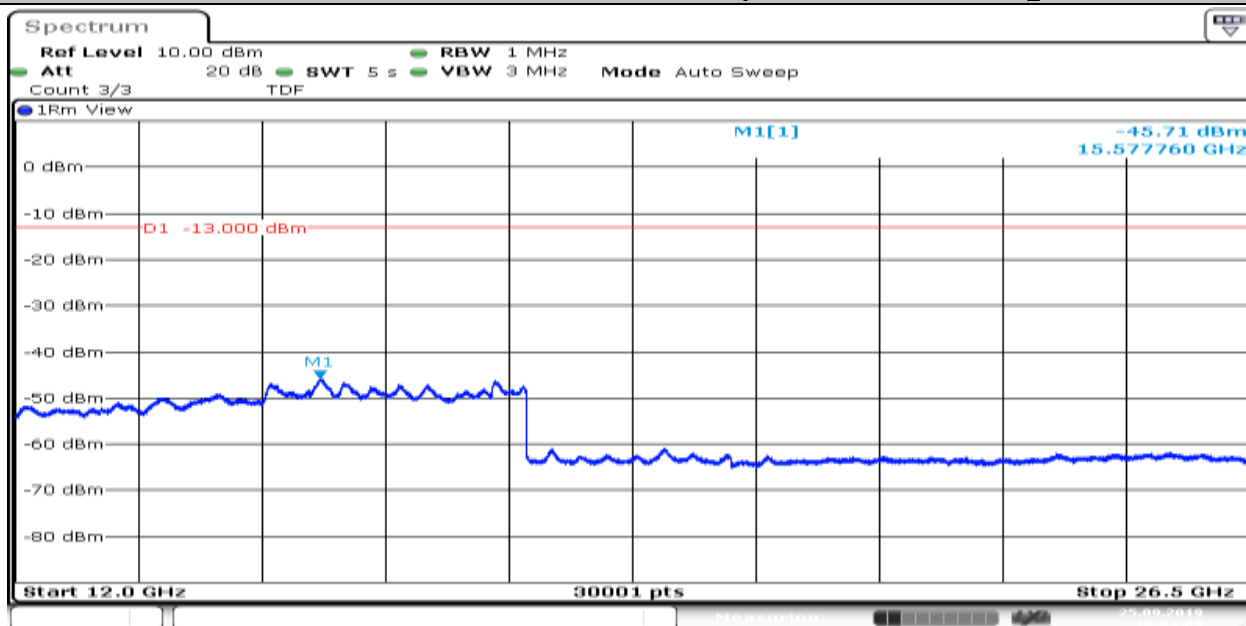
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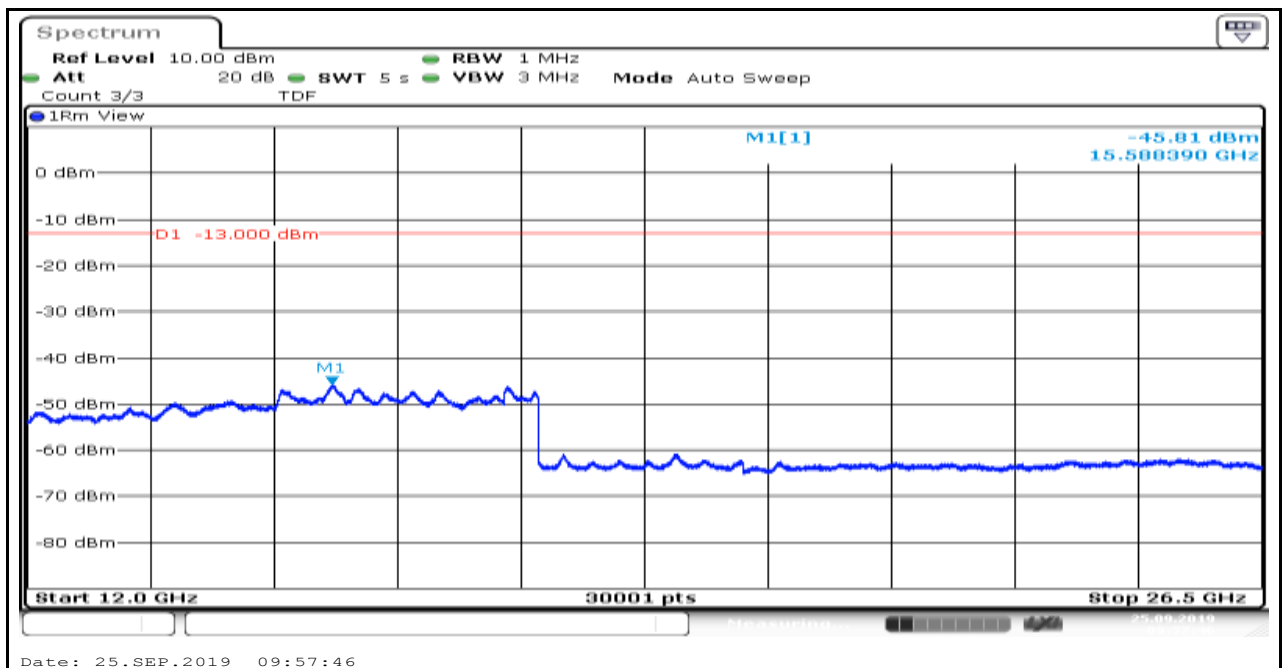
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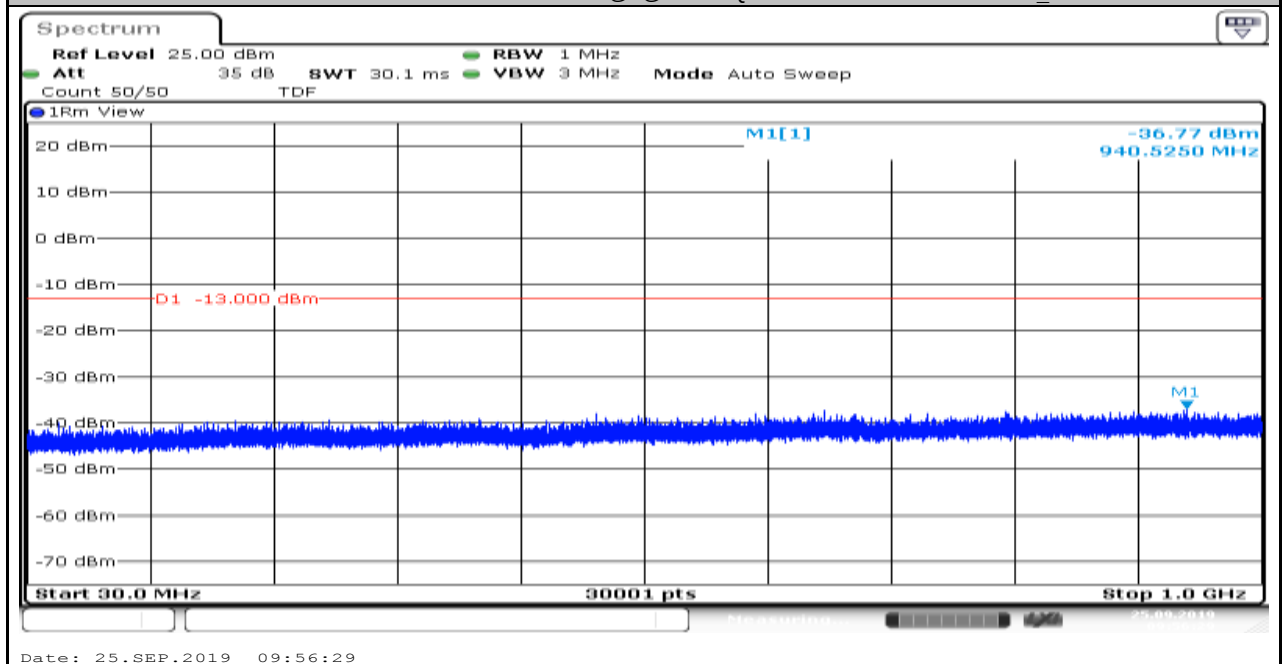
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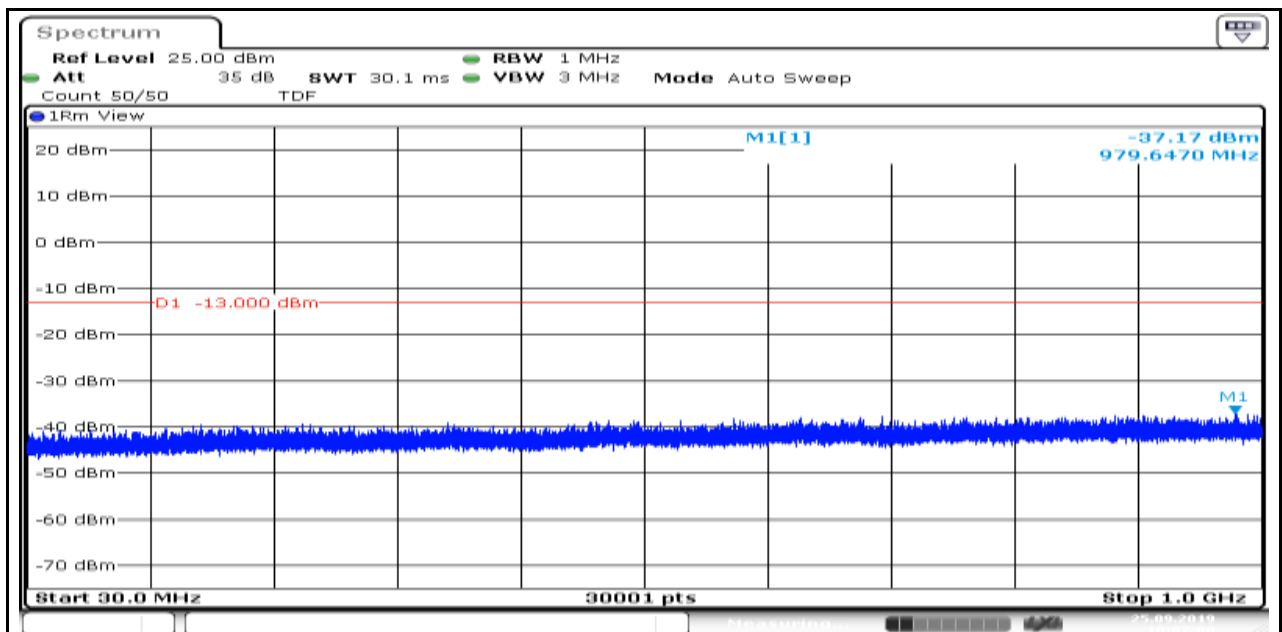
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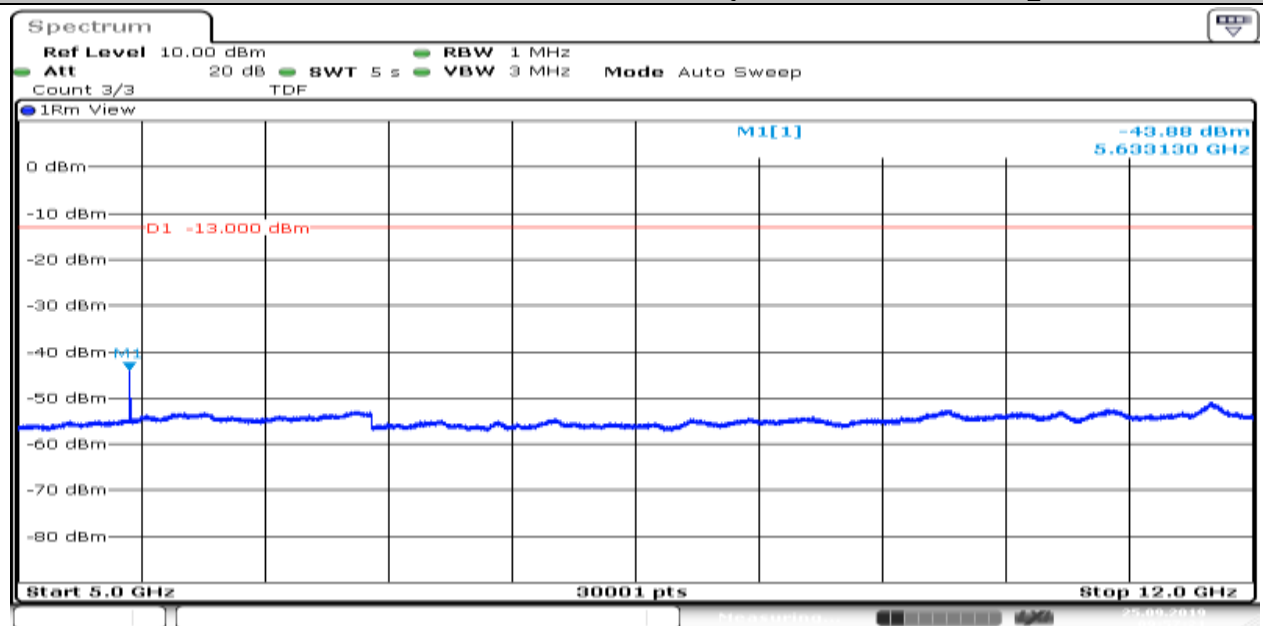
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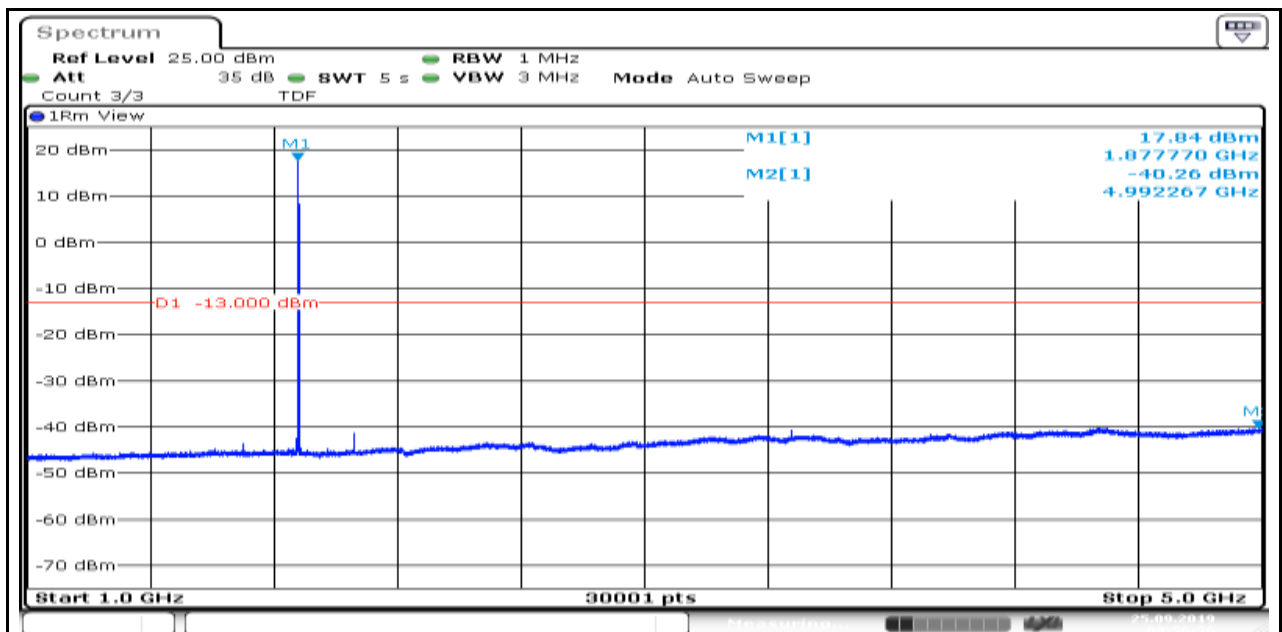
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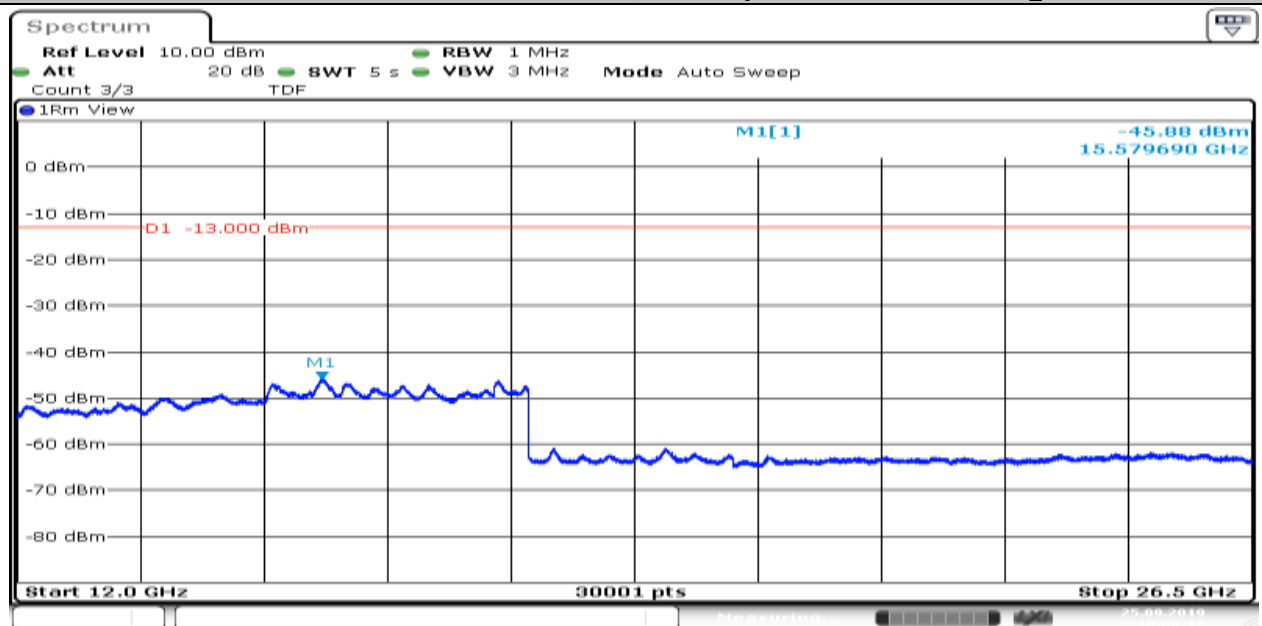
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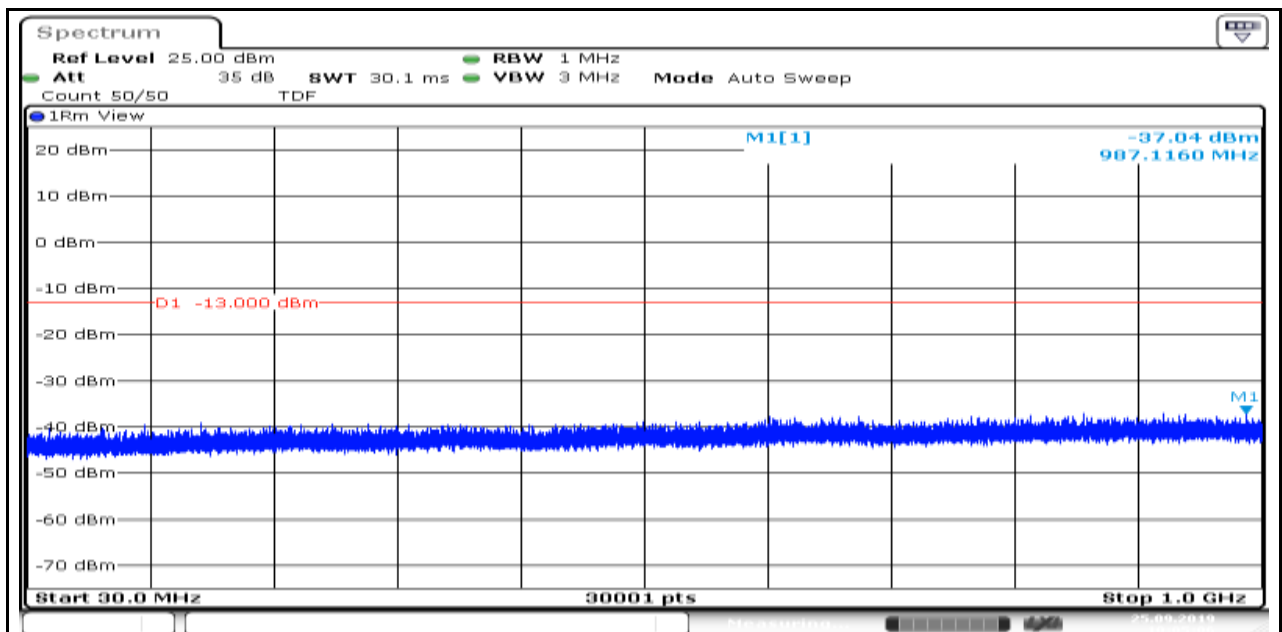
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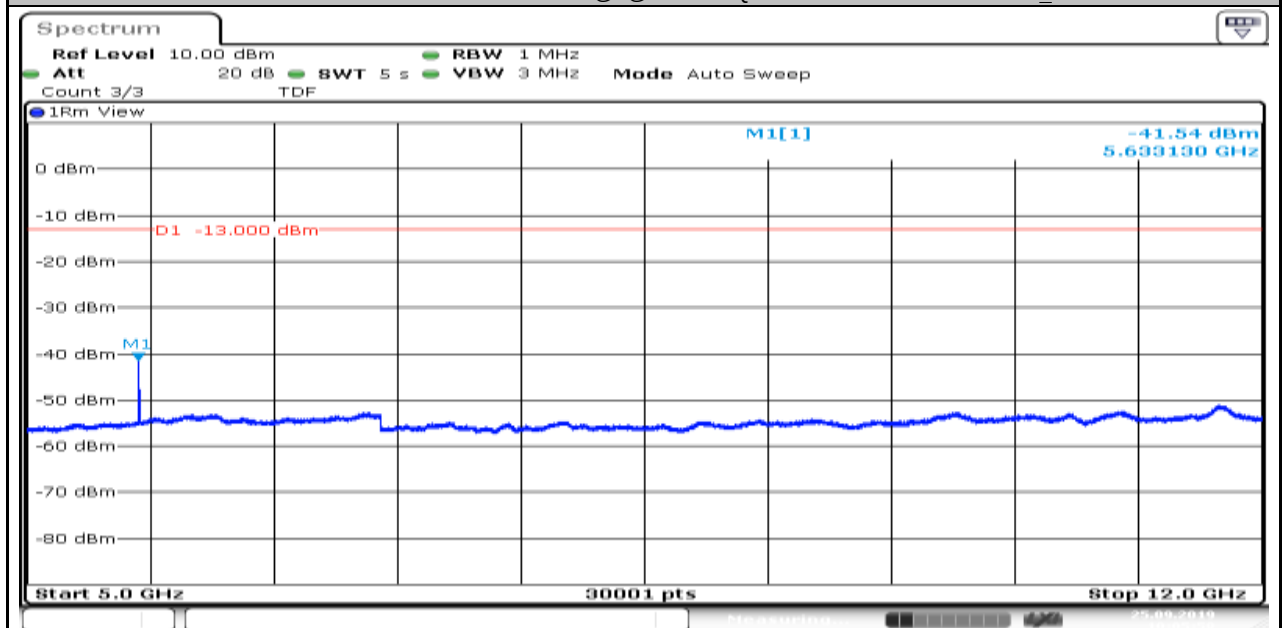
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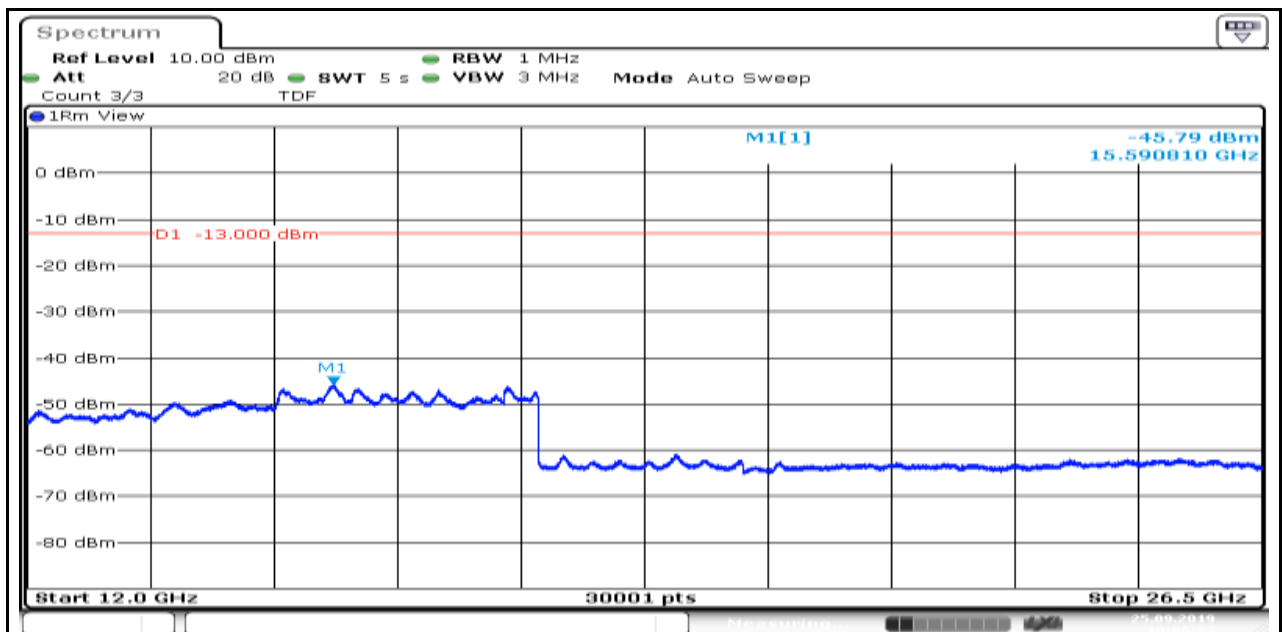
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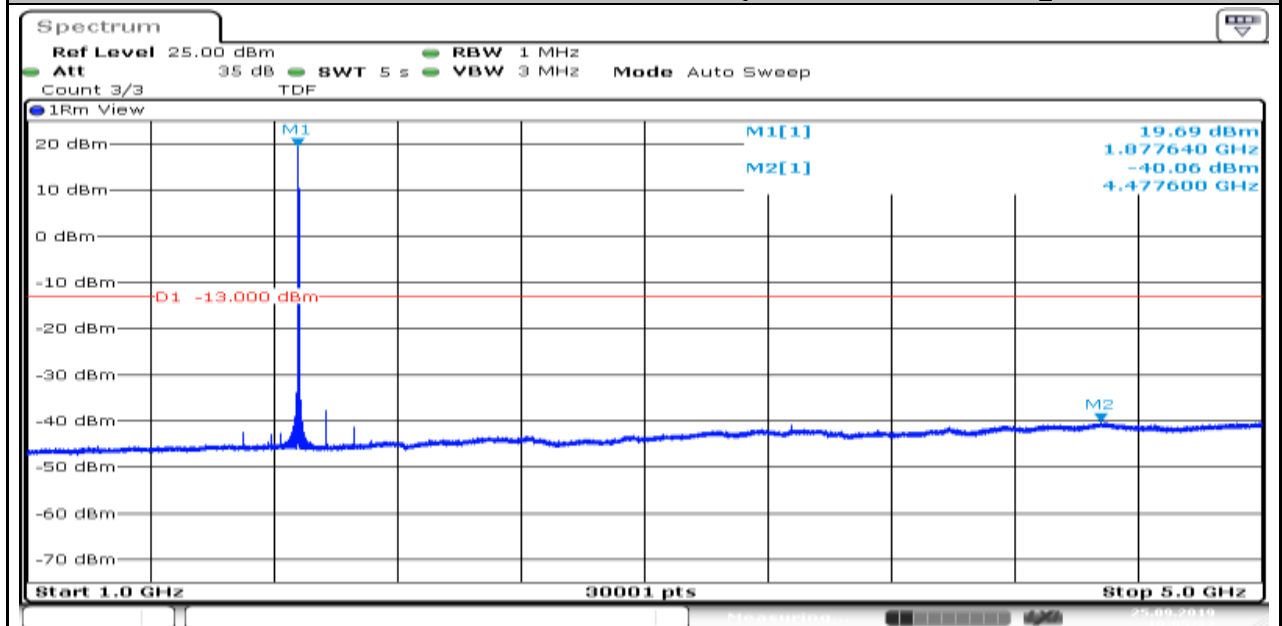
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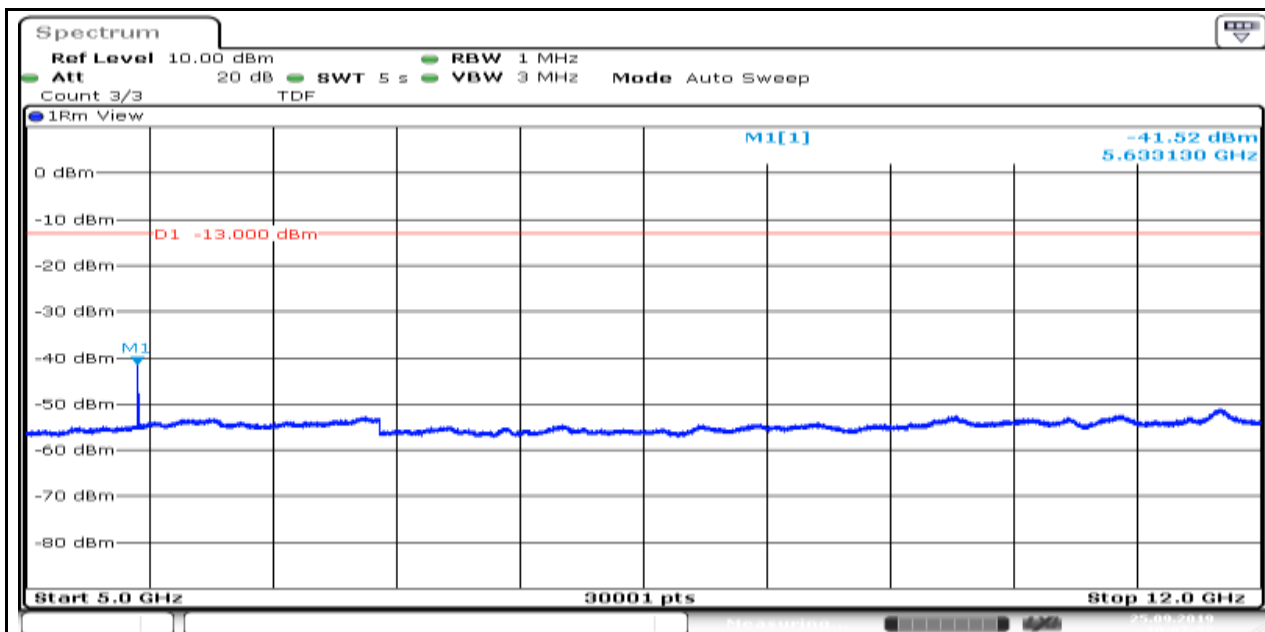
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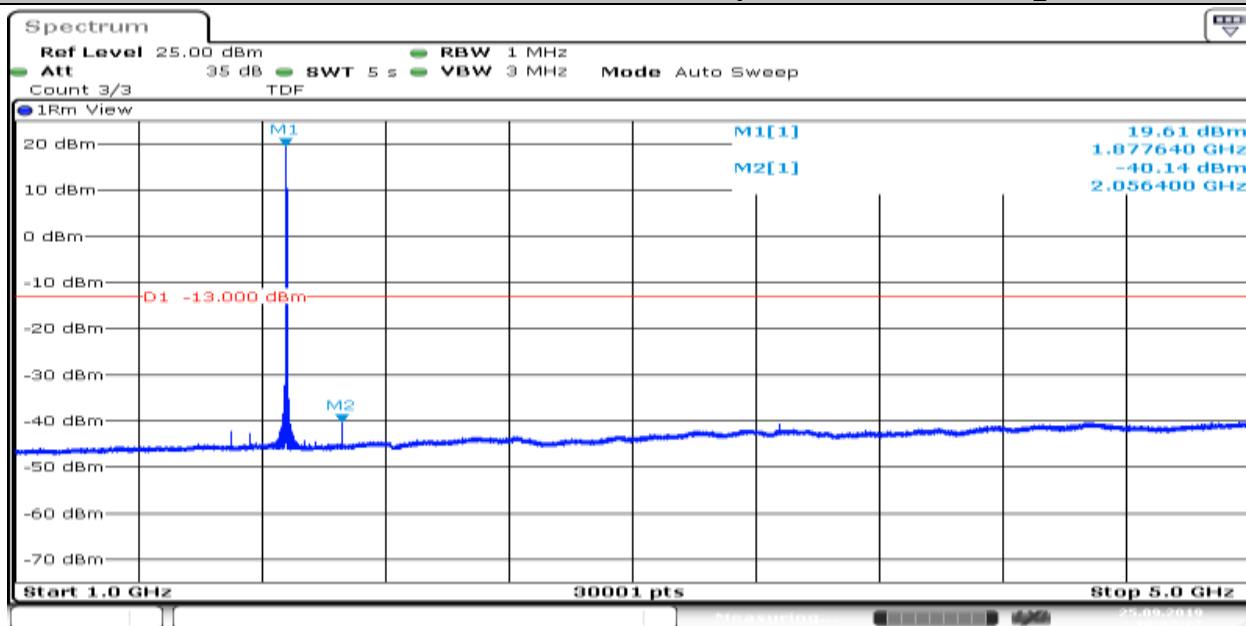
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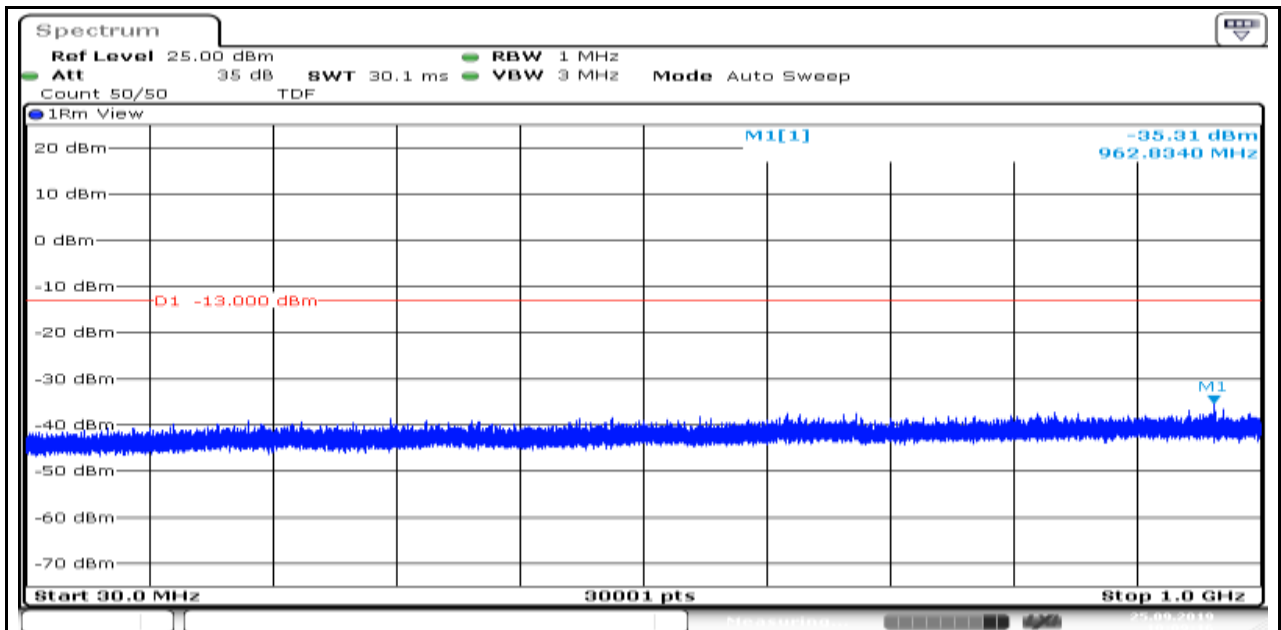
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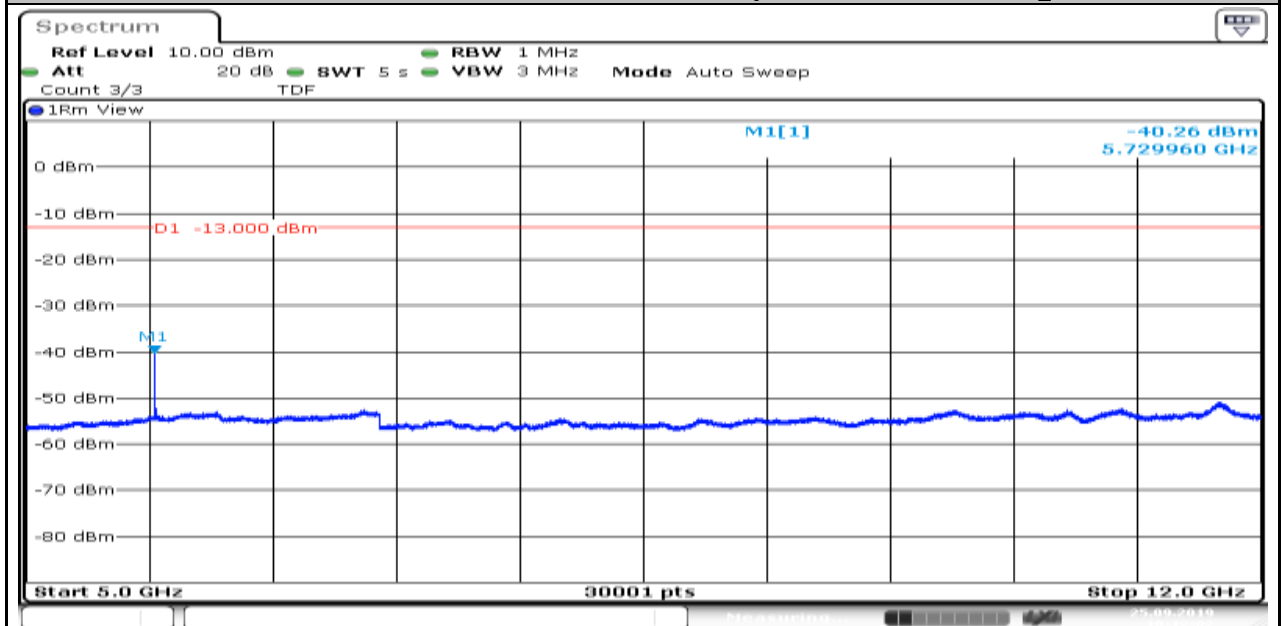
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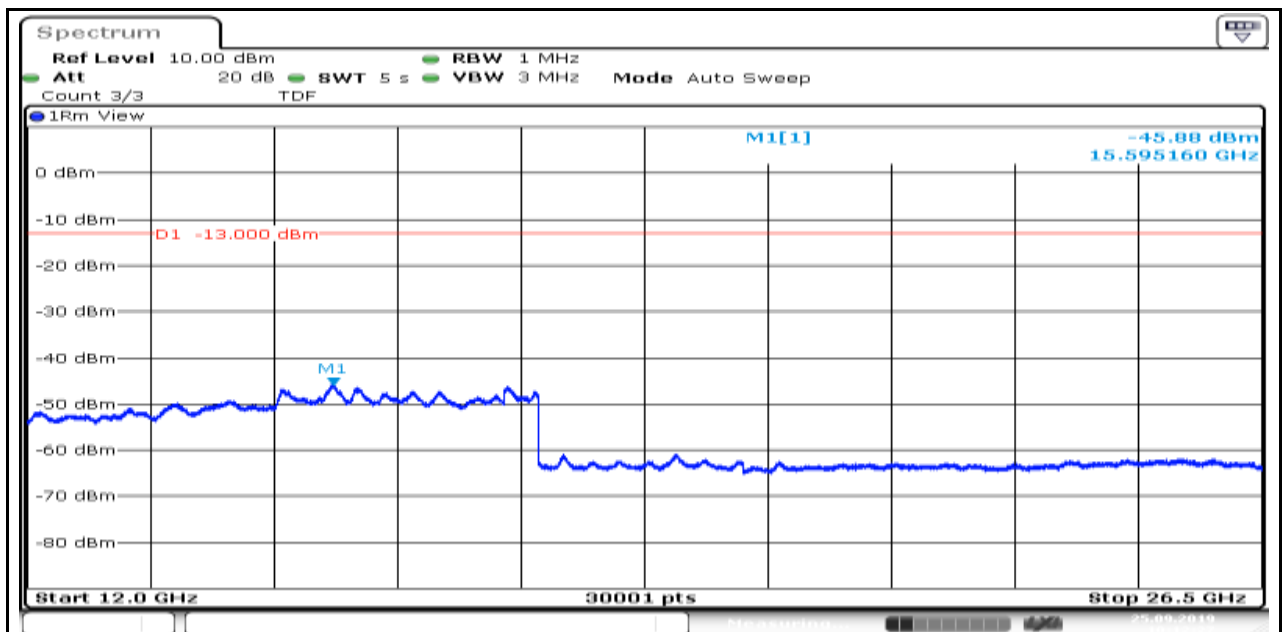
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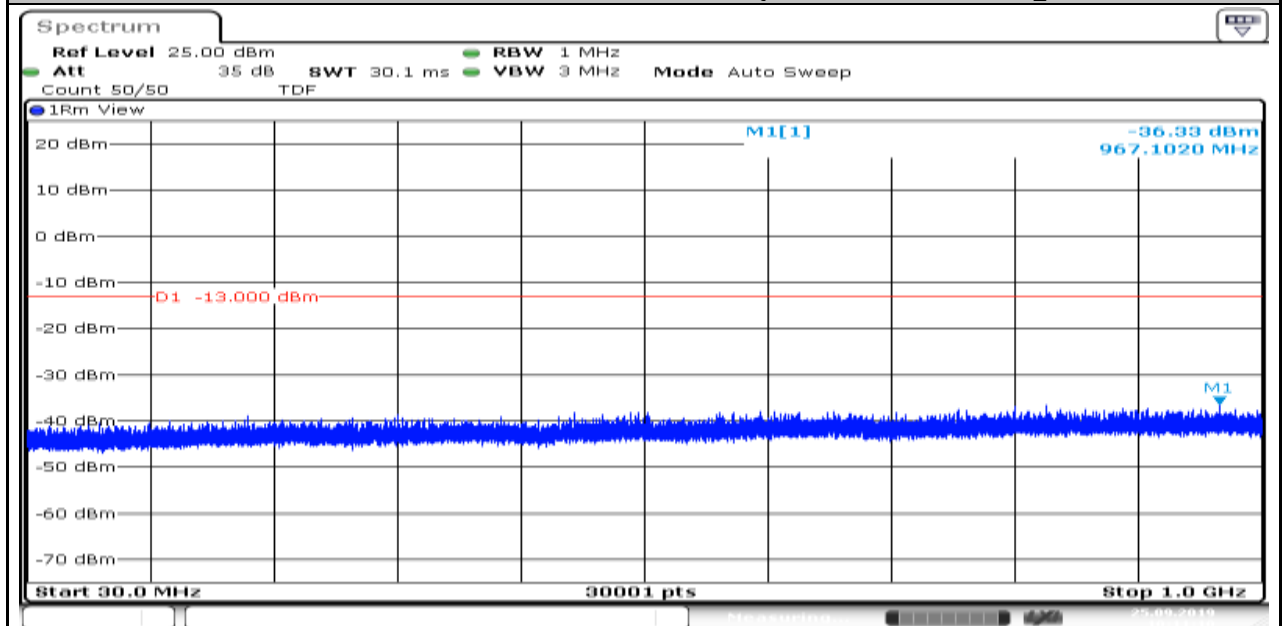
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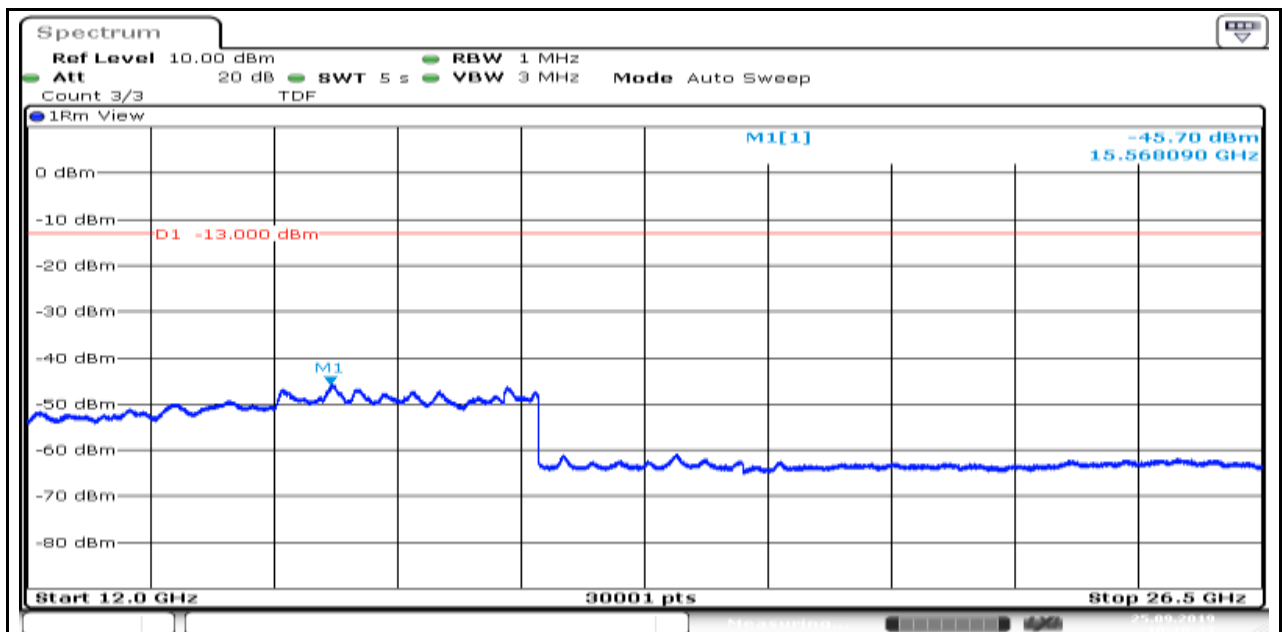
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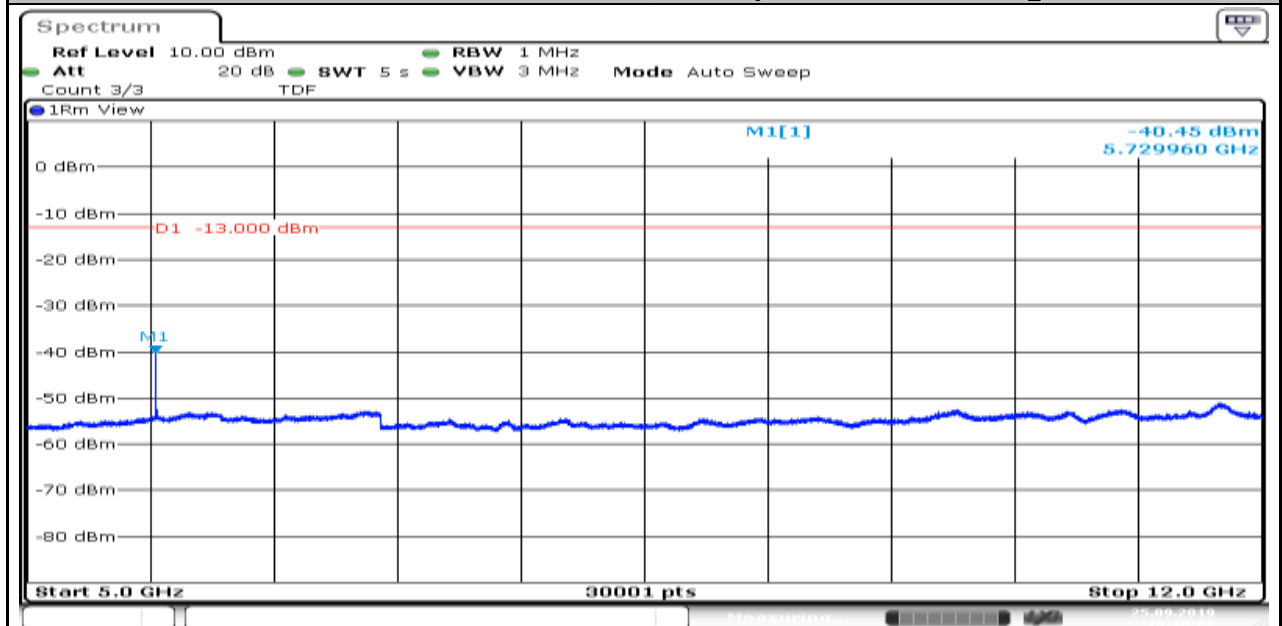
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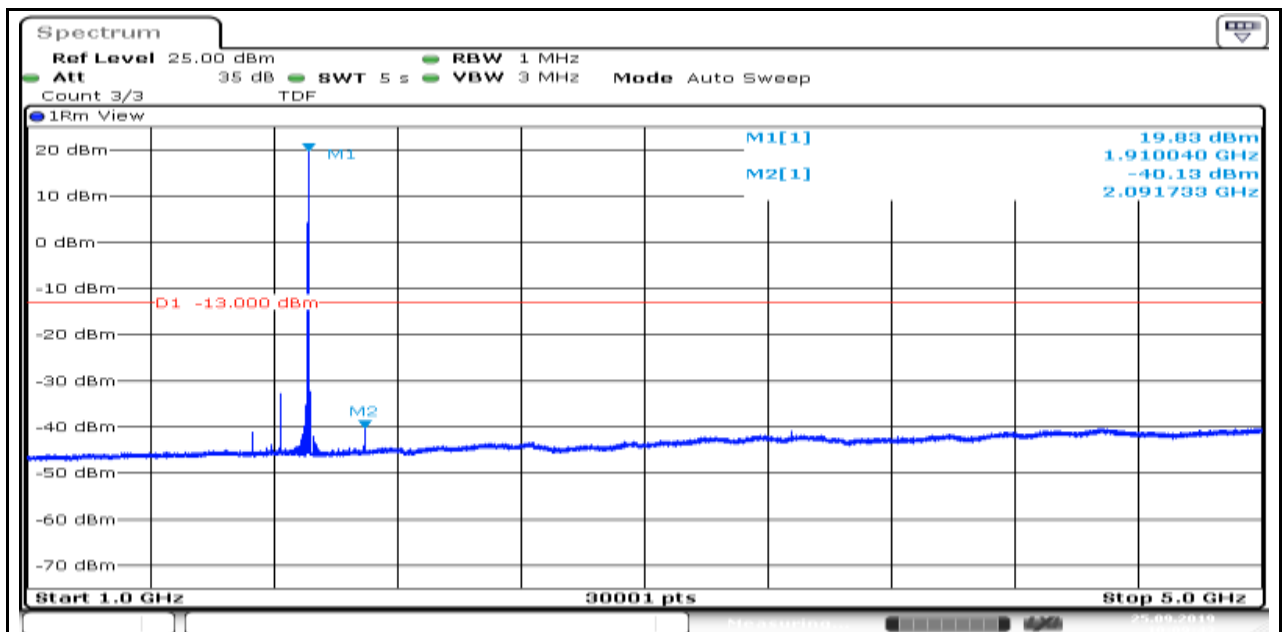
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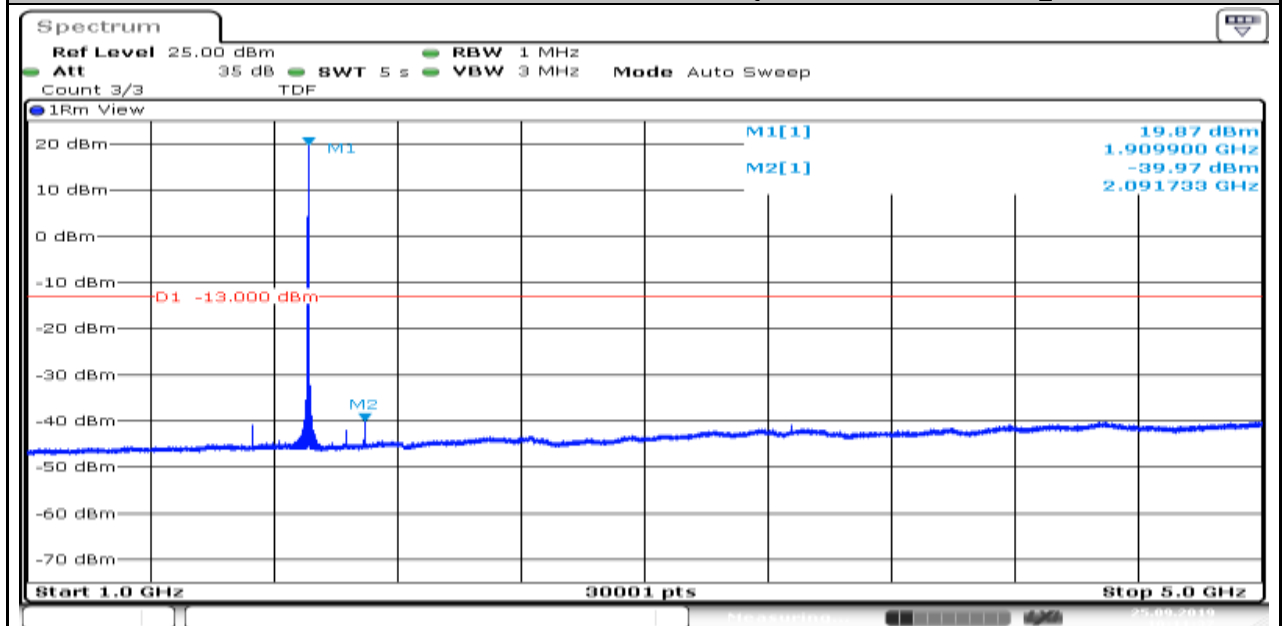
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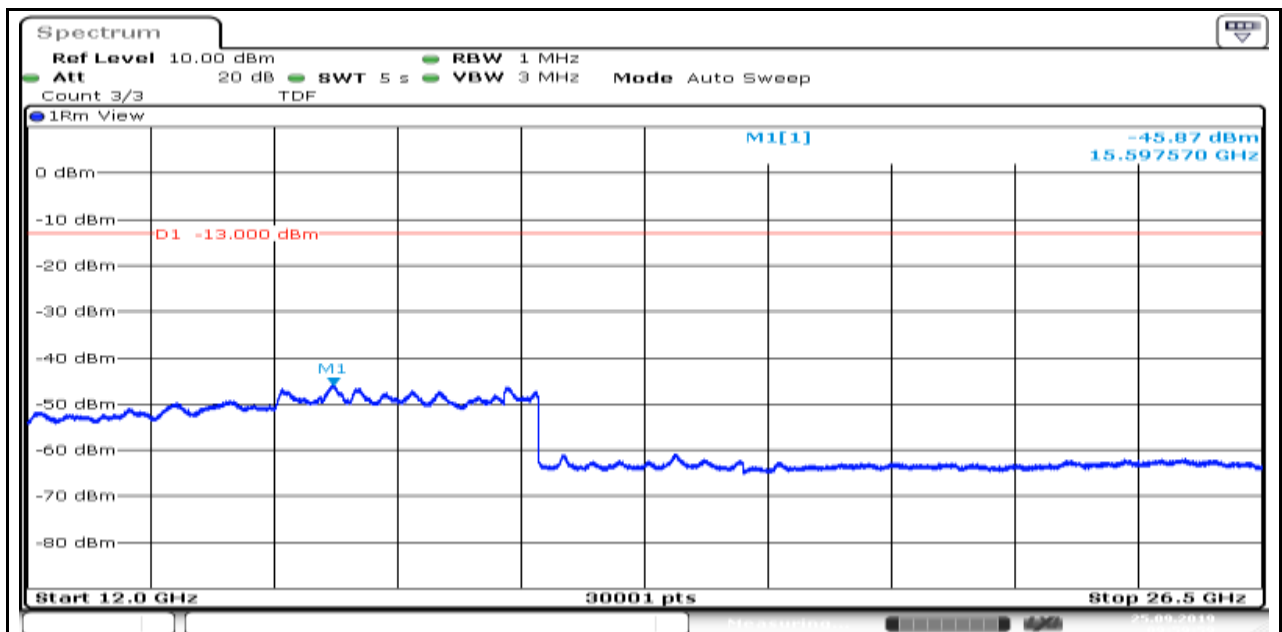
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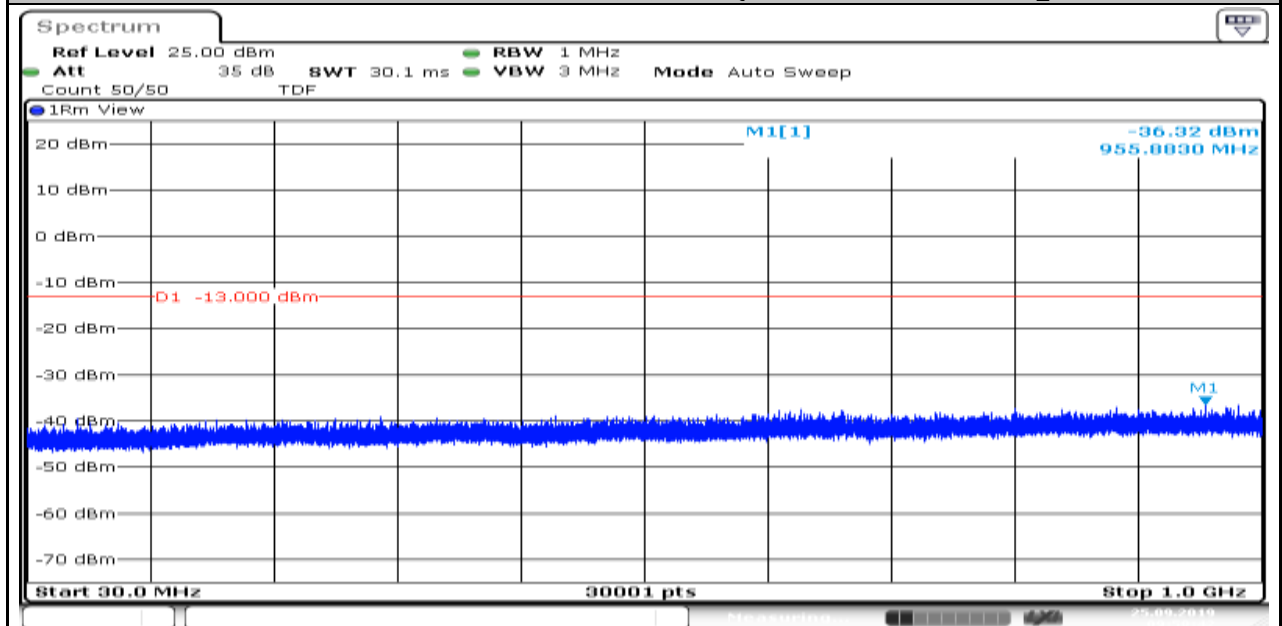
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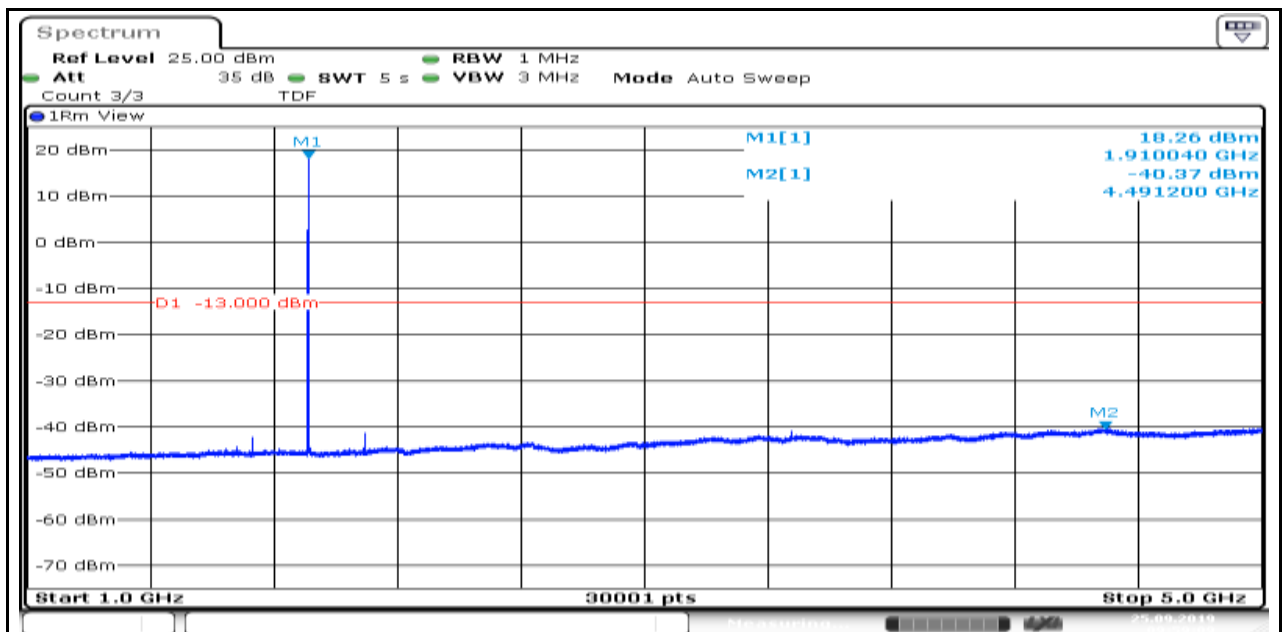
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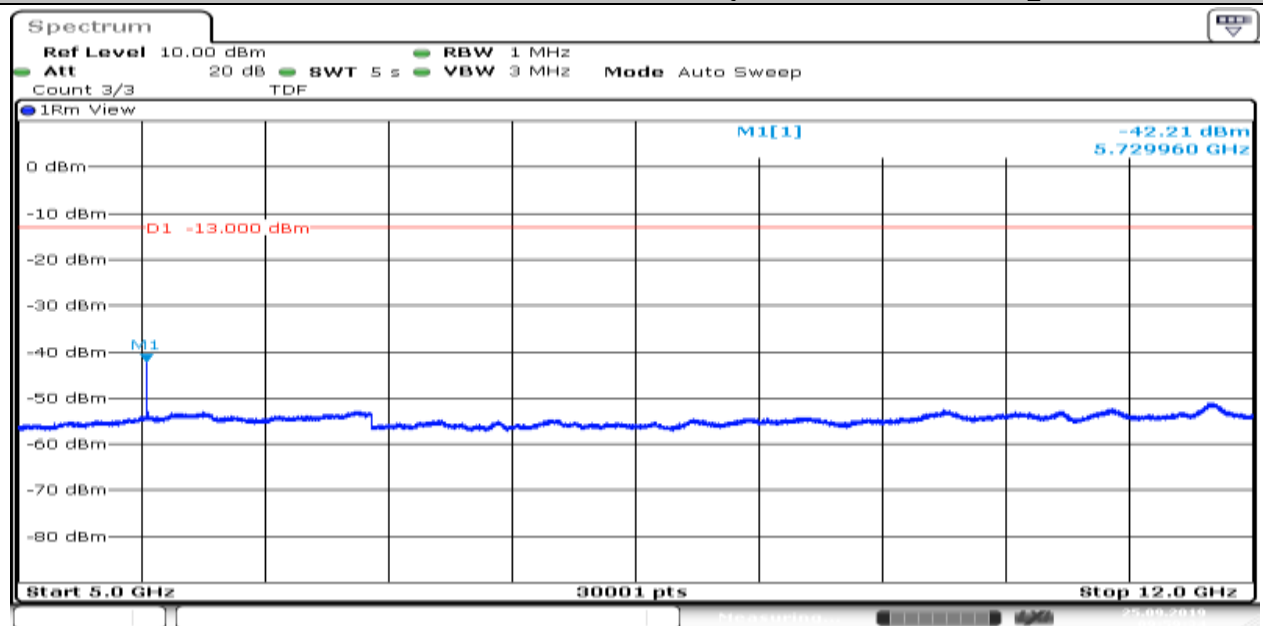
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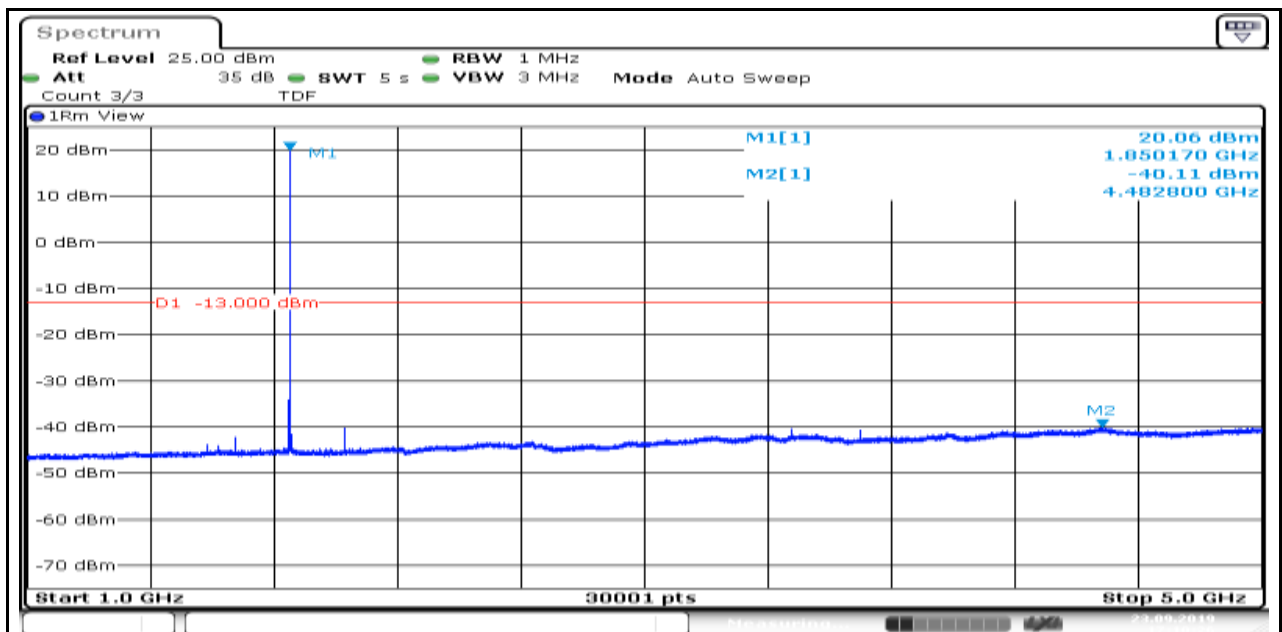
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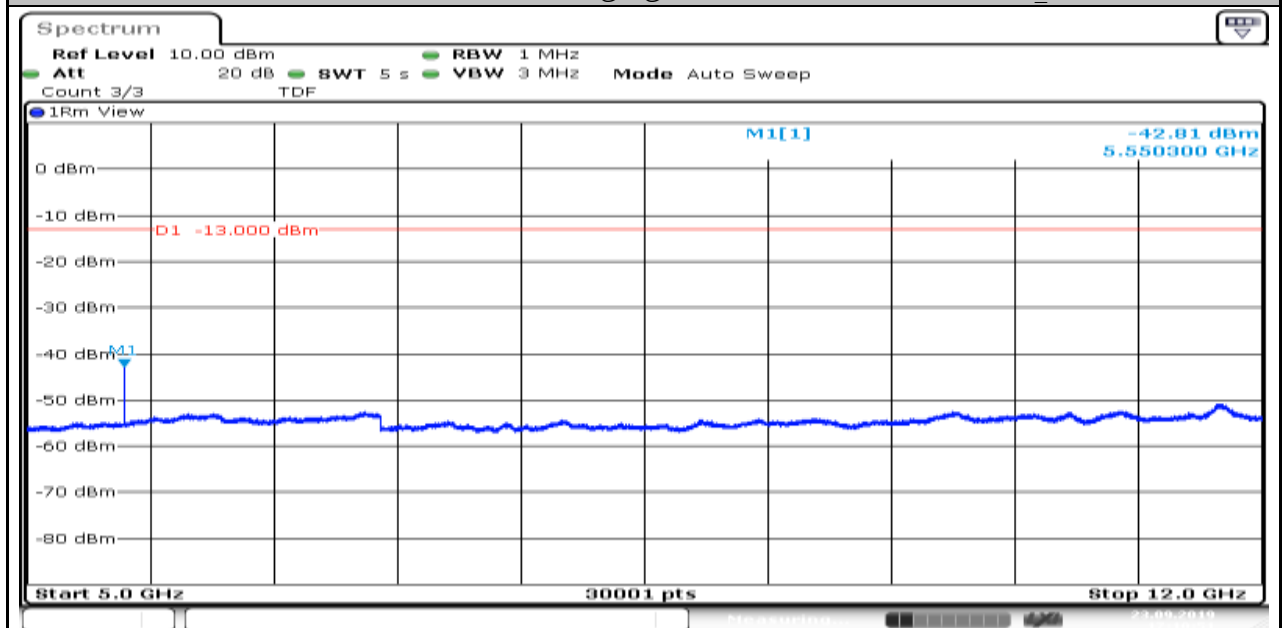
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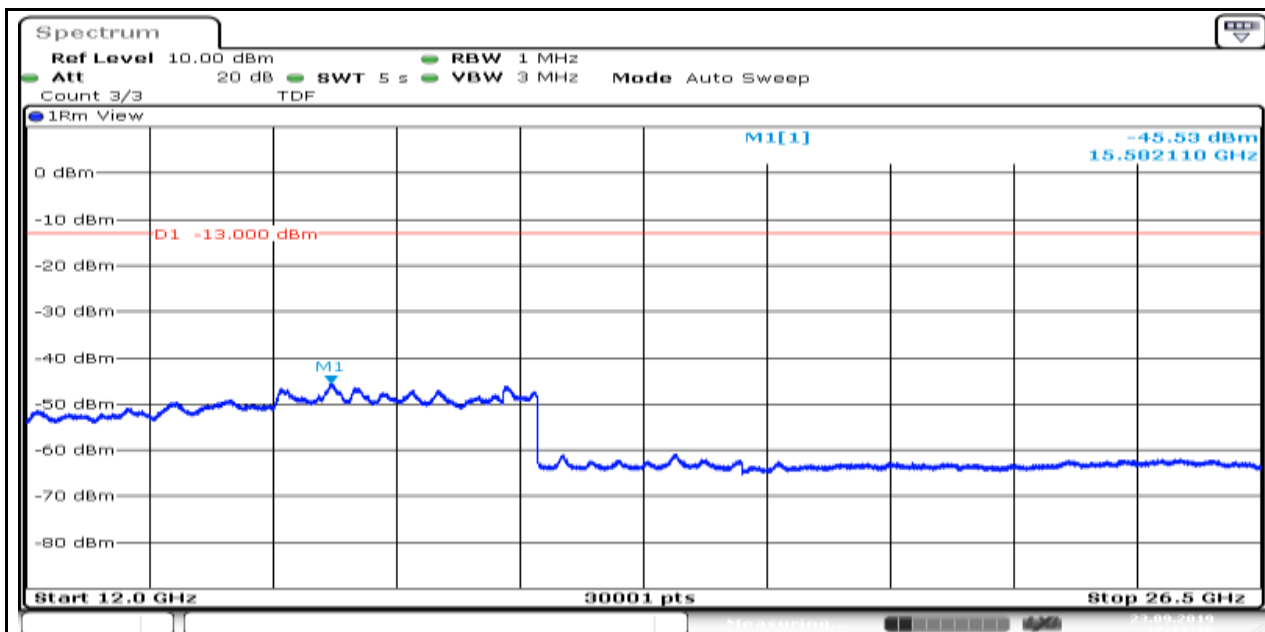
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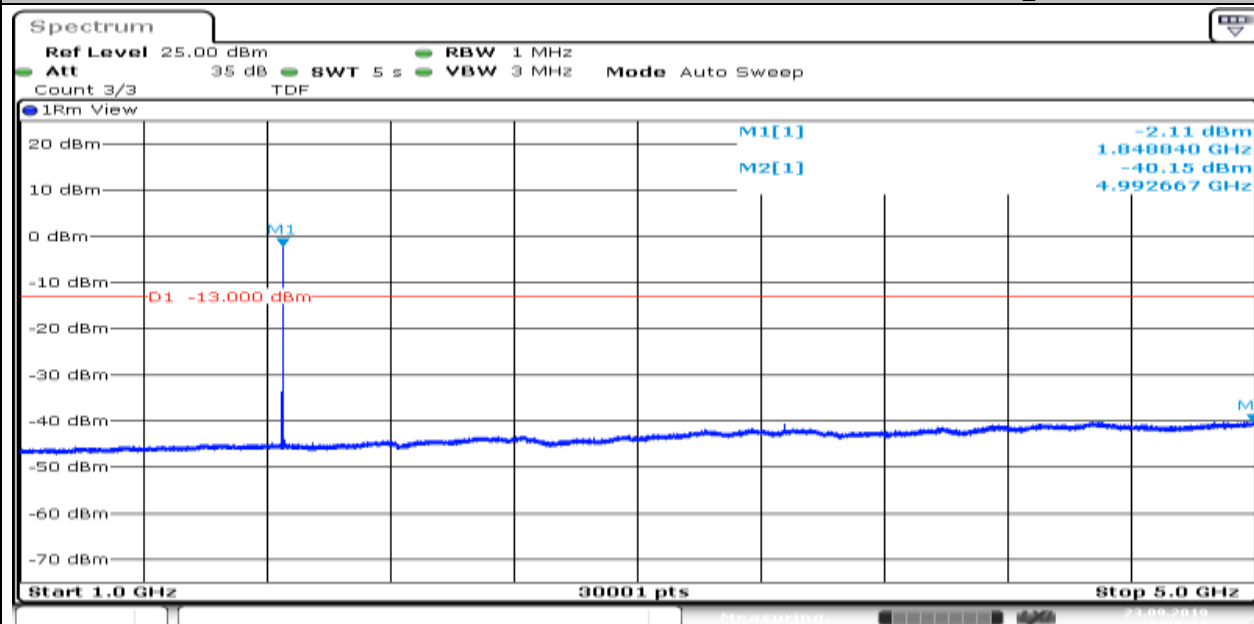
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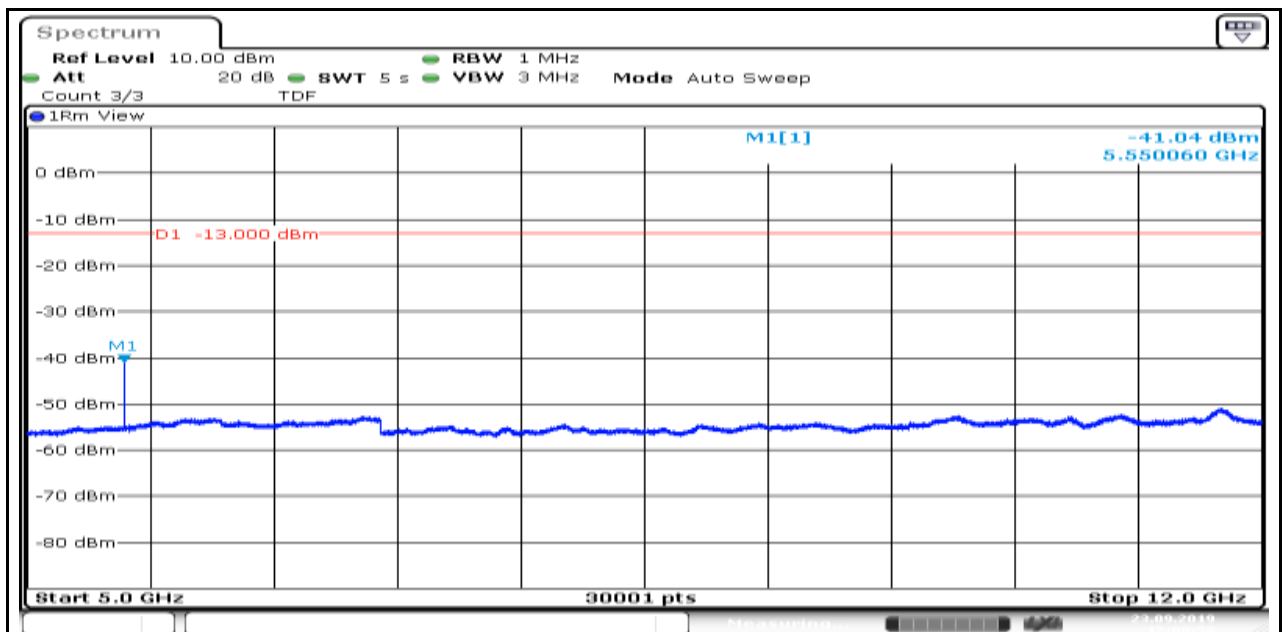
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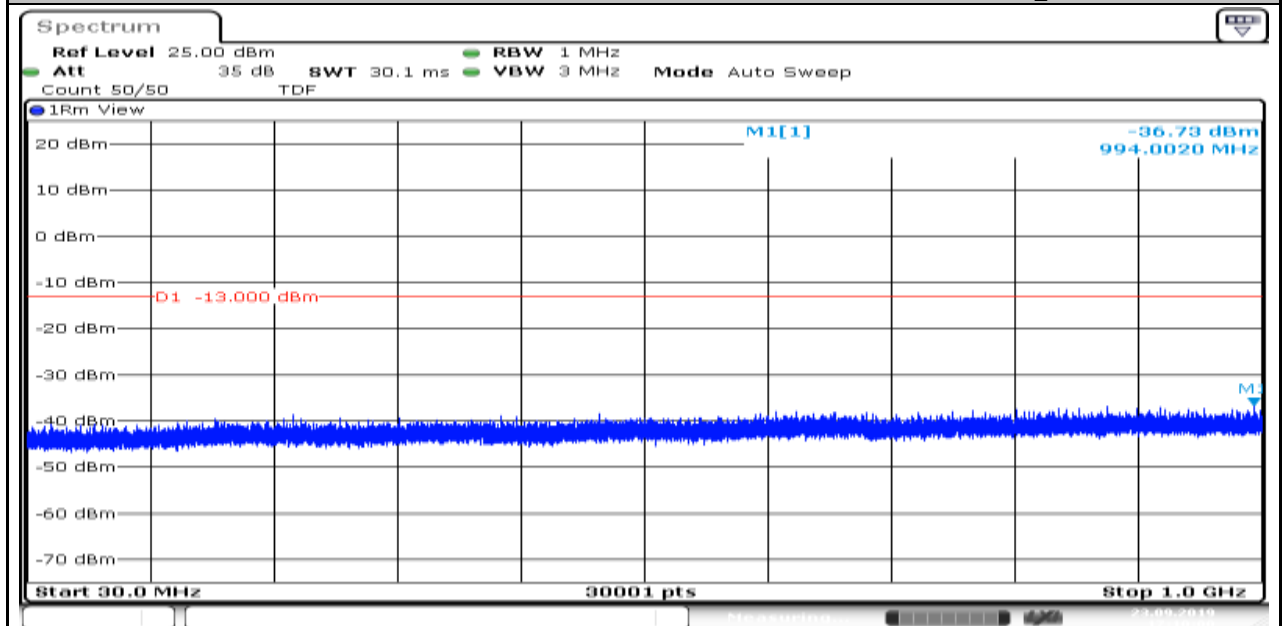
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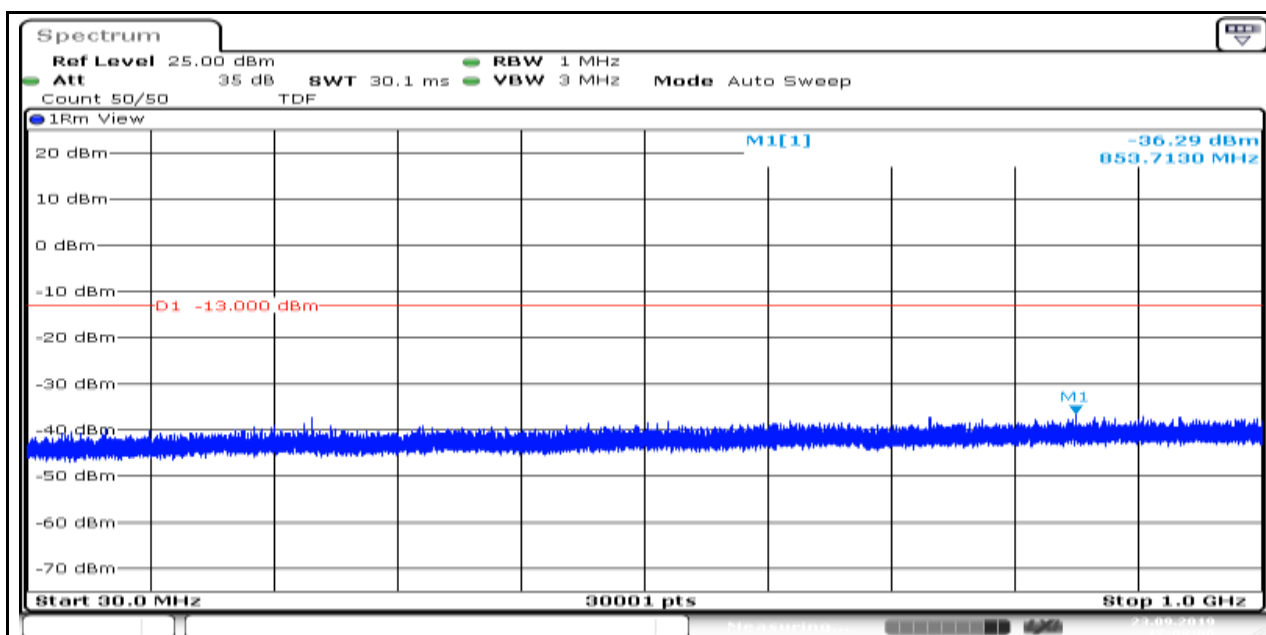
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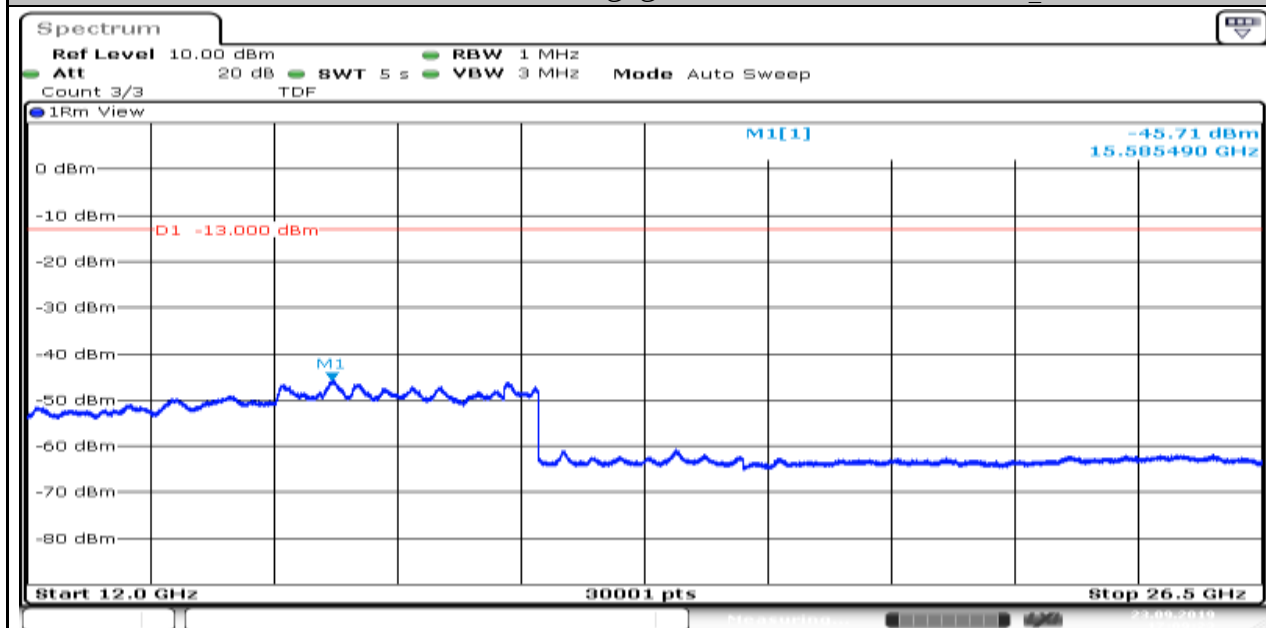
Band2_Stand-Alone_NaN_BPSK_18601_1@11_15kHz_30_1000_30~1000MHz@-36.73dBm_-13_PASS_FCC_ME910G1\FCC_NBI
OT_NTNV\Band2\Spurious emission at antenna terminals for category
NB-Band2-Stand-Alone-NaN-18601-1@11@15kHz-BPSK-NTNV-201992316154.Gif_



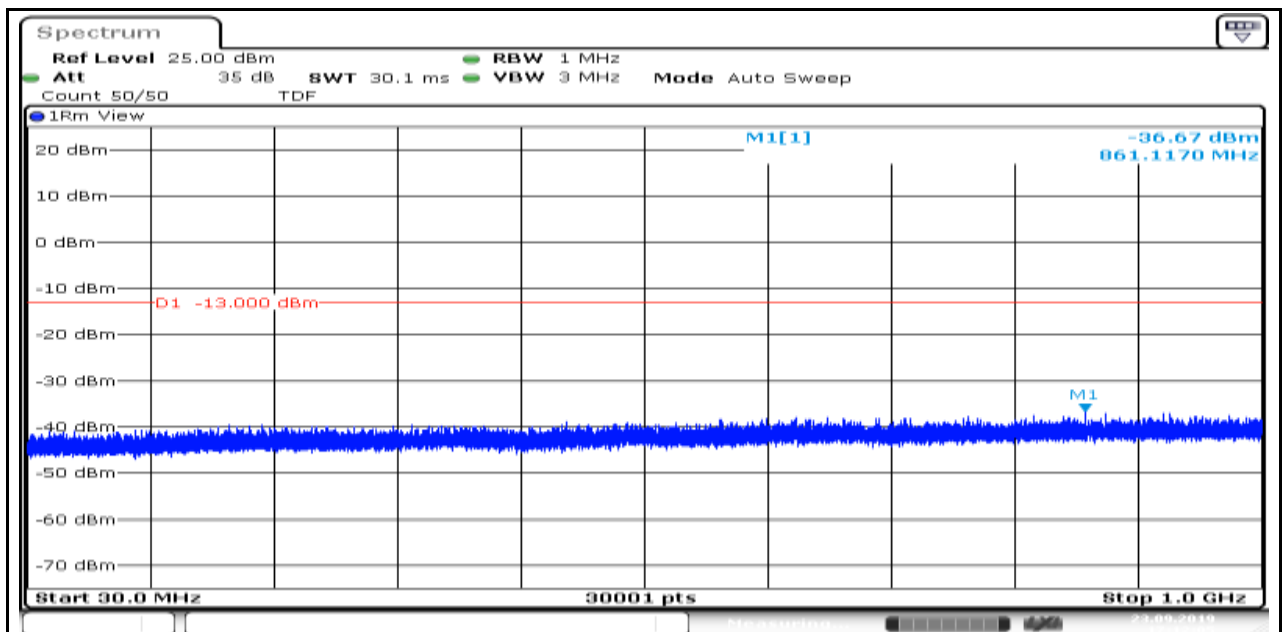
Band2_Stand-Alone_NaN_BPSK_18601_1@0_15kHz_30_1000_30~1000MHz@-36.29dBm_-13_PASS_FCC_ME910G1\FCC_NBI
OT_NTNV\Band2\Spurious emission at antenna terminals for category
NB-Band2-Stand-Alone-NaN-18601-1@0@15kHz-BPSK-NTNV-20199231601.Gif_



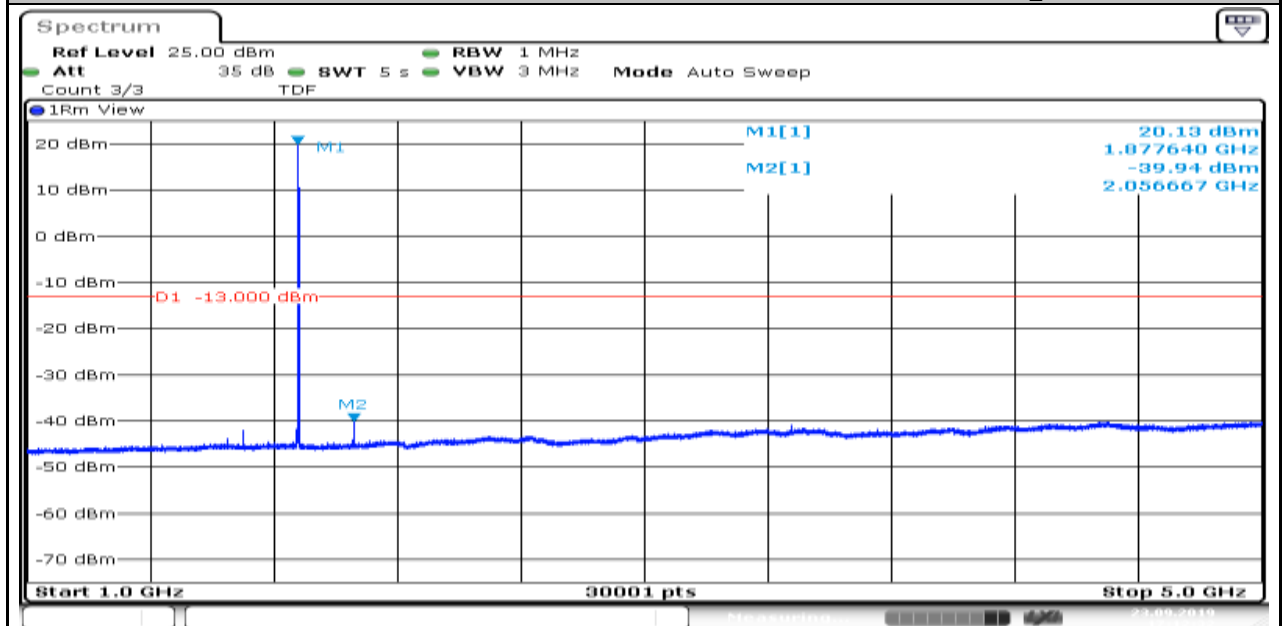
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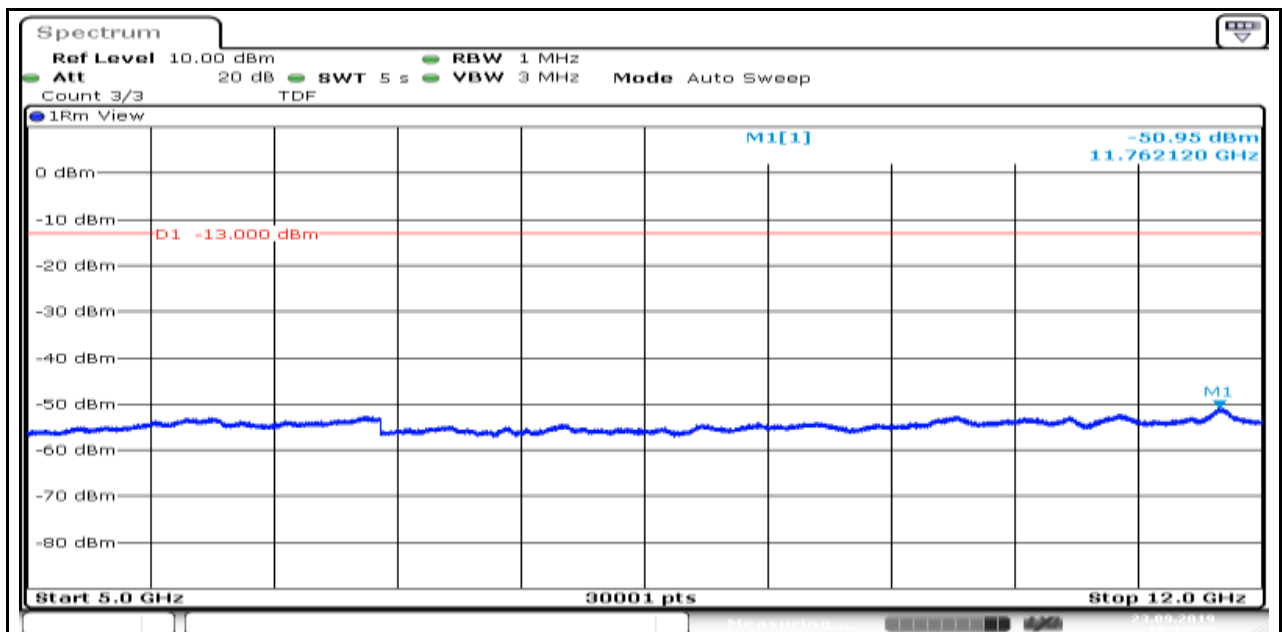
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Band2_Stand-Alone_NaN_BPSK_18876_1@0_15kHz_1000_5000_1000~5000MHz@-39.94dBm_-13_PASS_FCC_ME910G1\FCC_NBIOT_NTNV\Band2\Spurious emission at antenna terminals for category NB-Band2-Stand-Alone-NaN-18876-1@0@15kHz-BPSK-NTNV-201992316426.Gif_

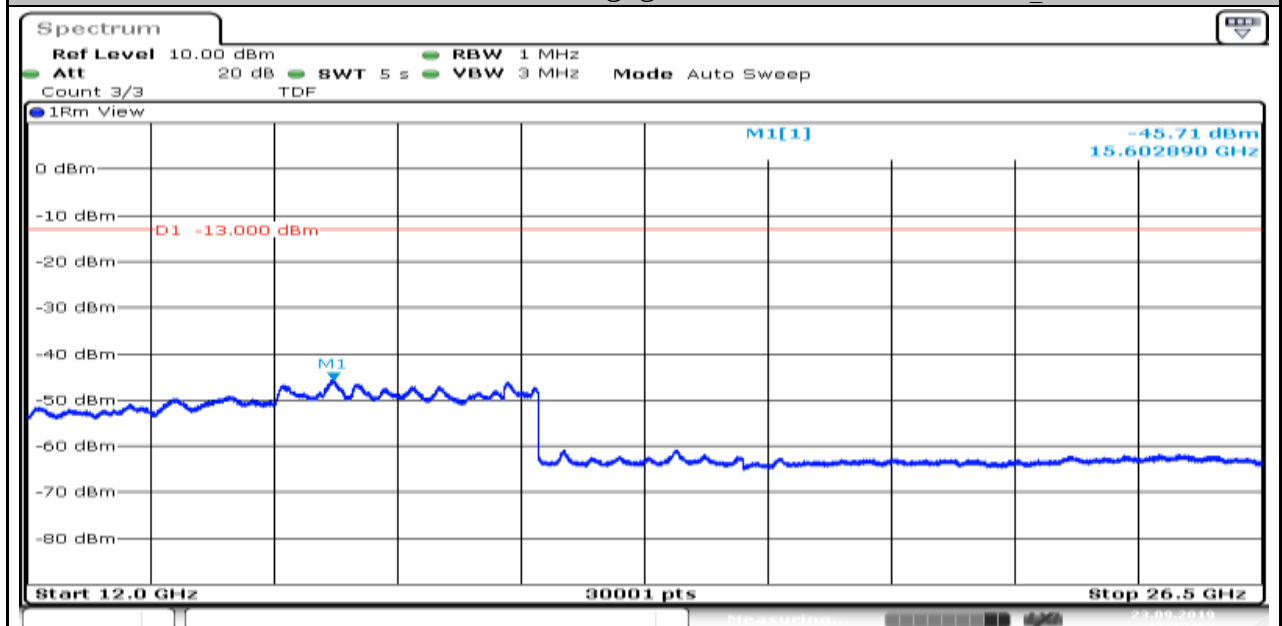


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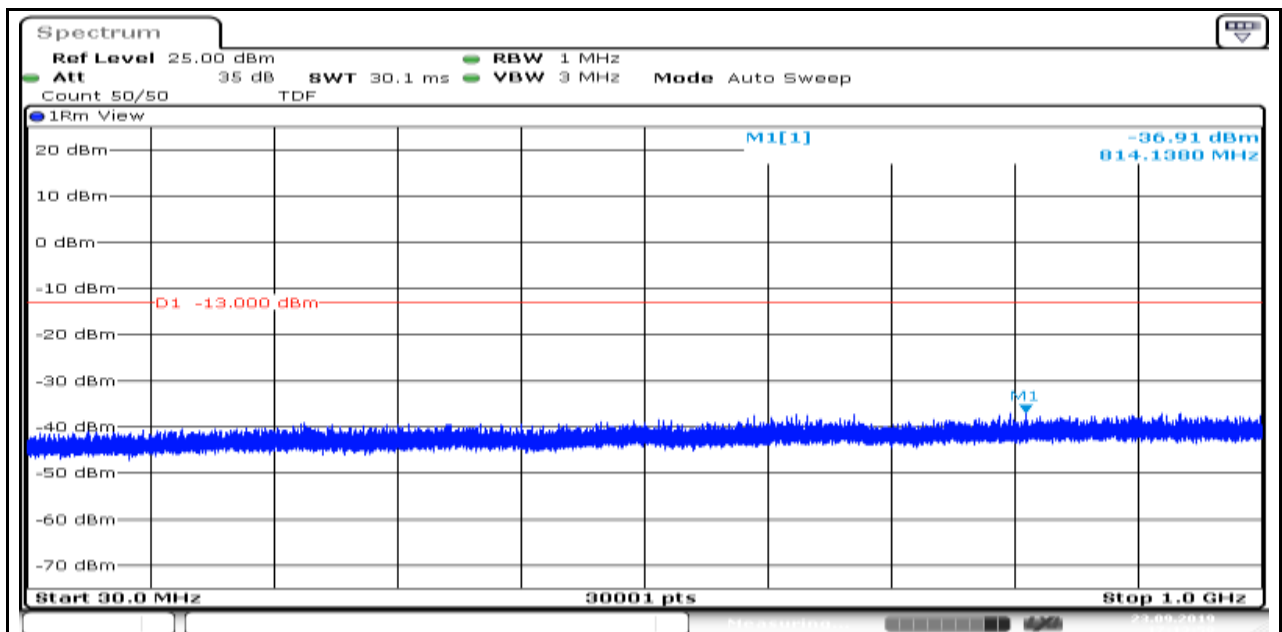
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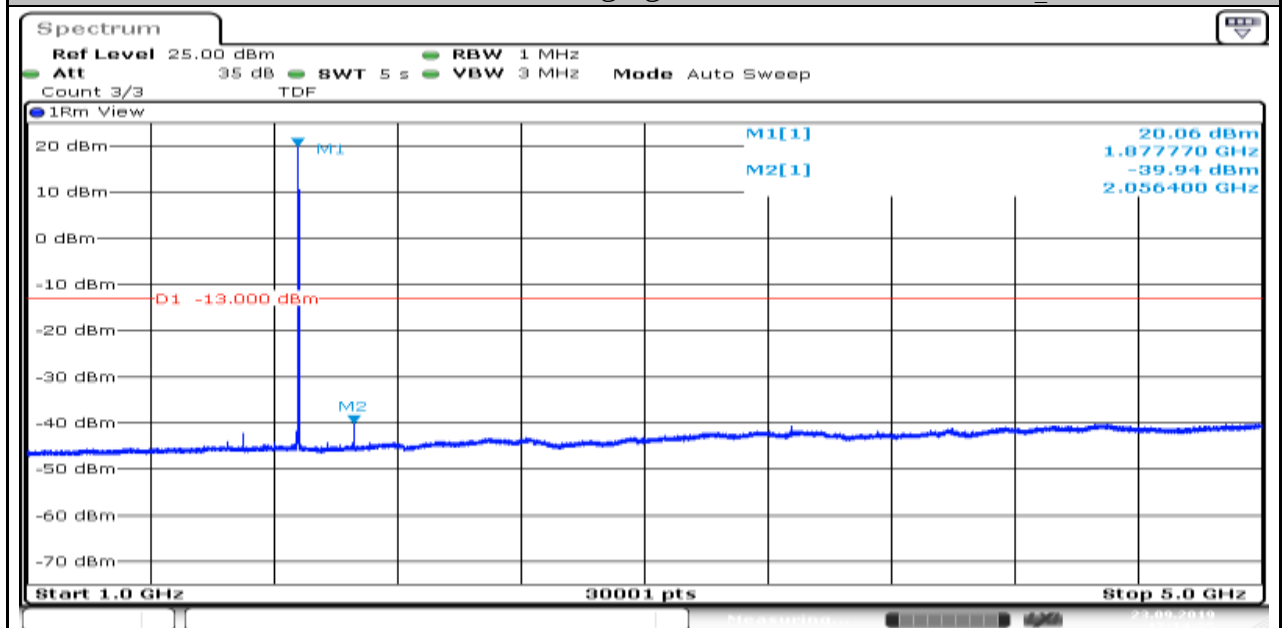


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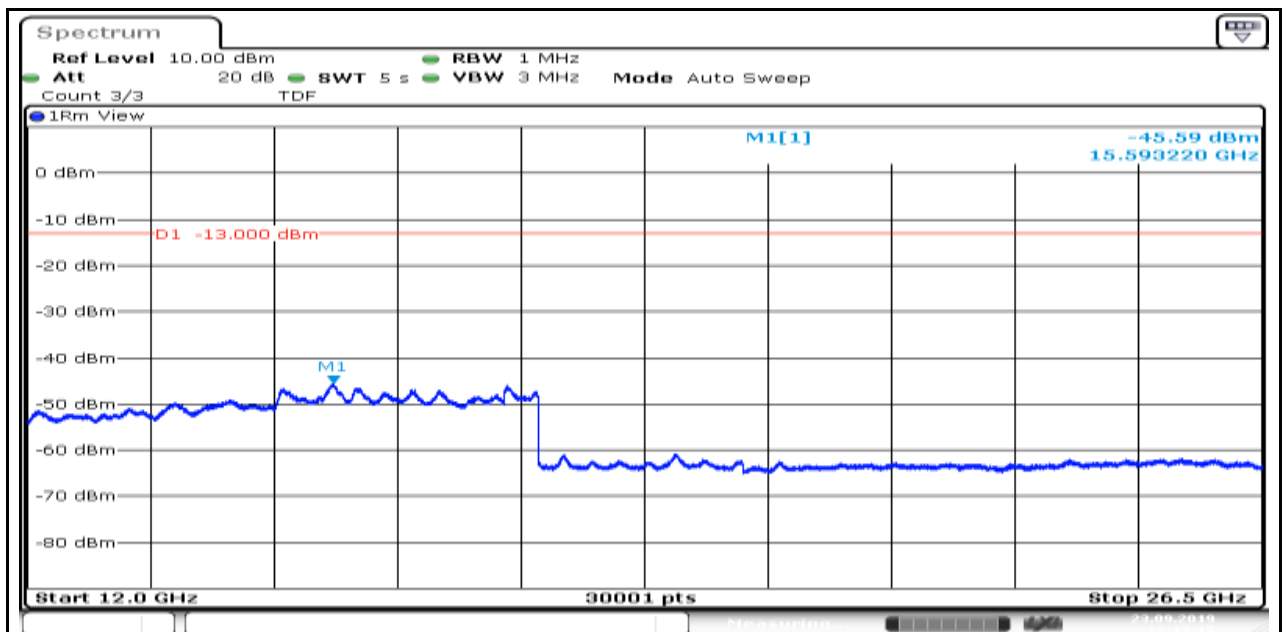
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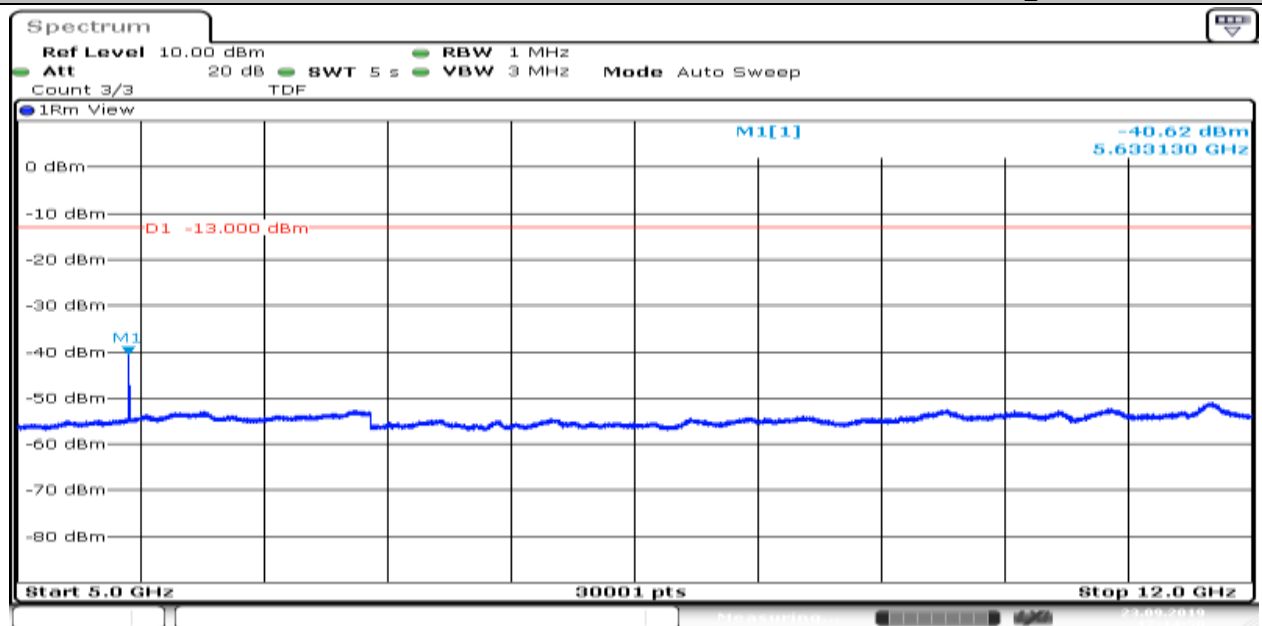
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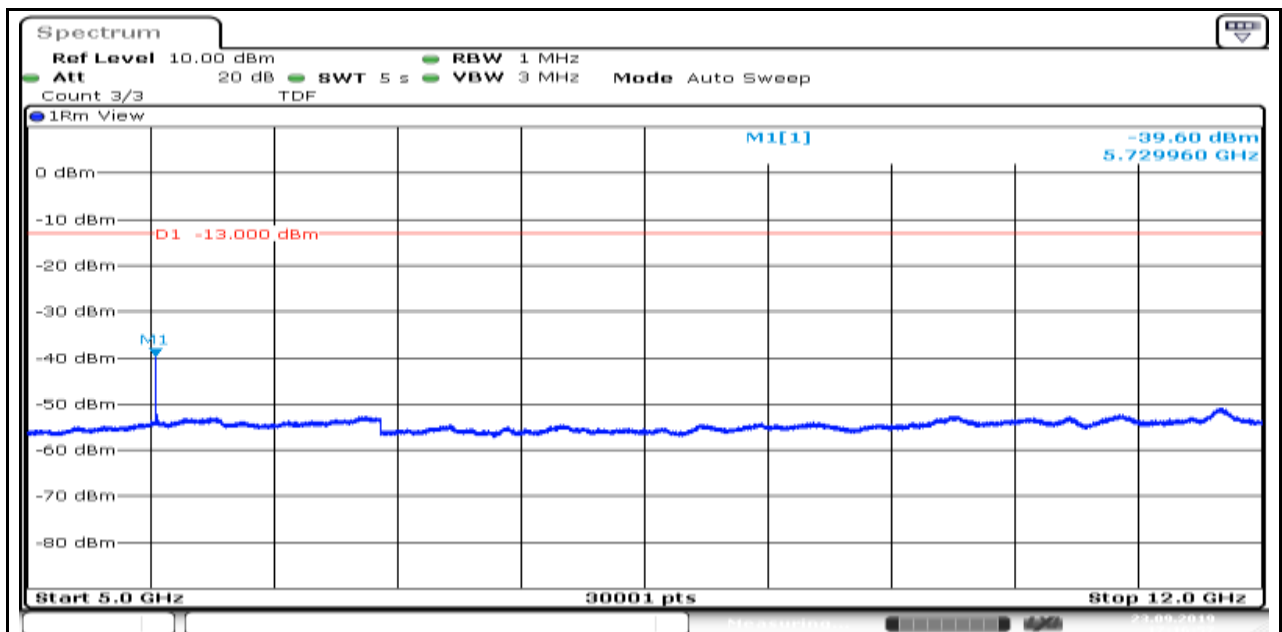
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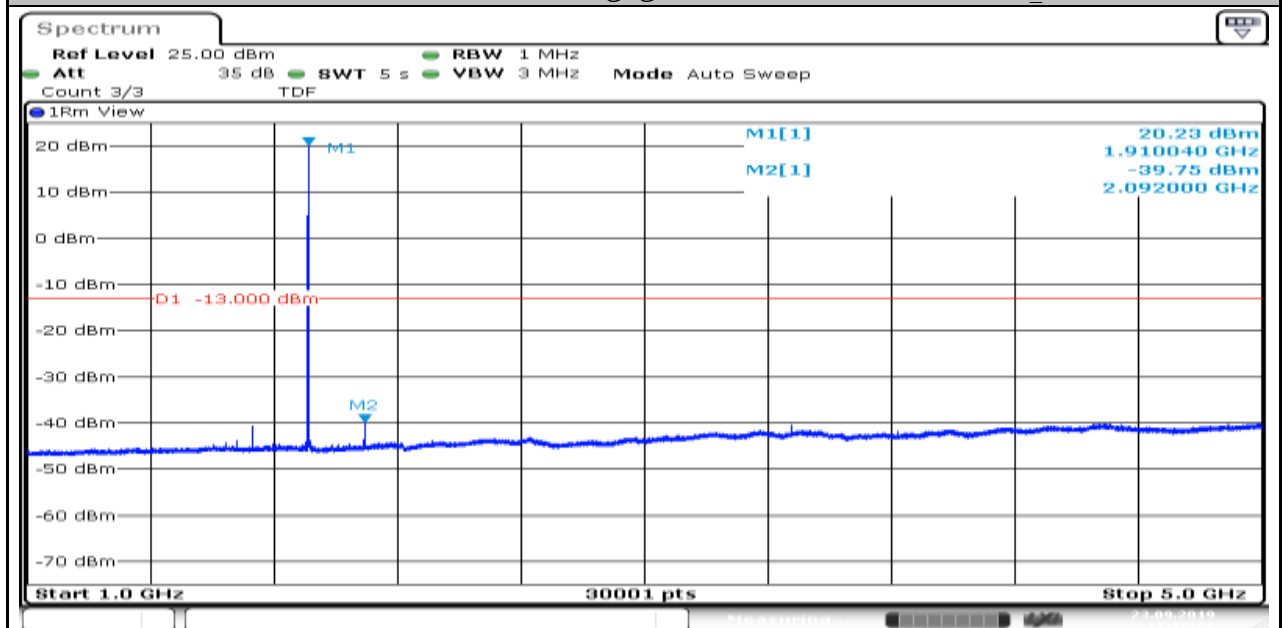
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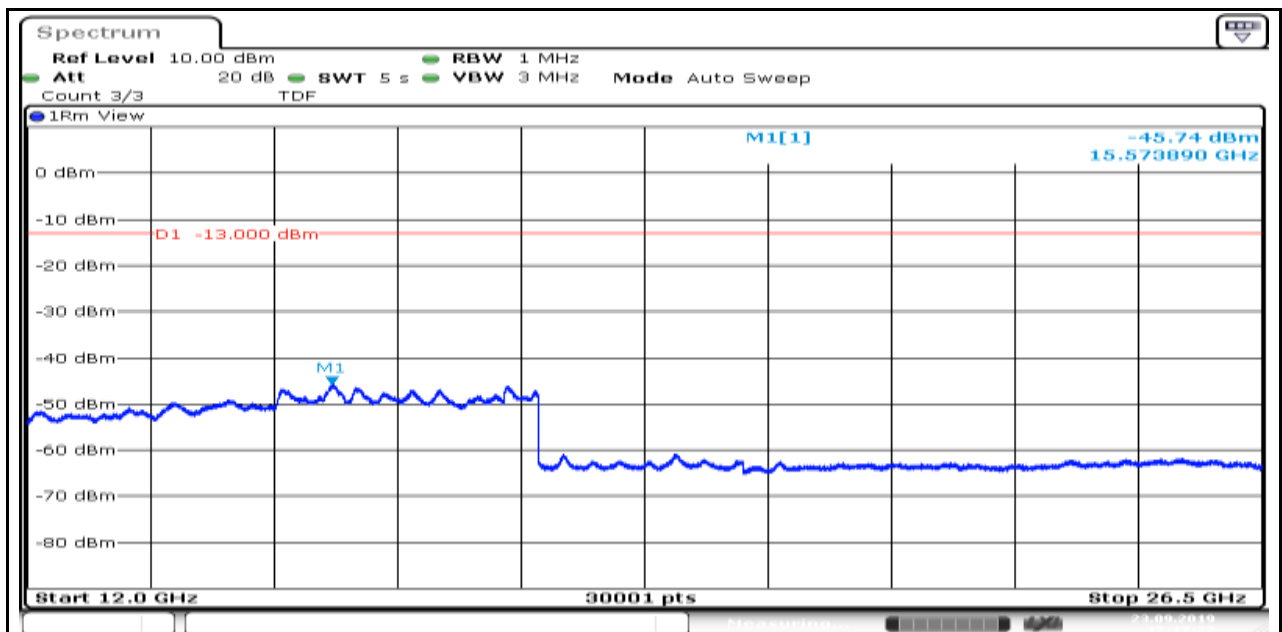
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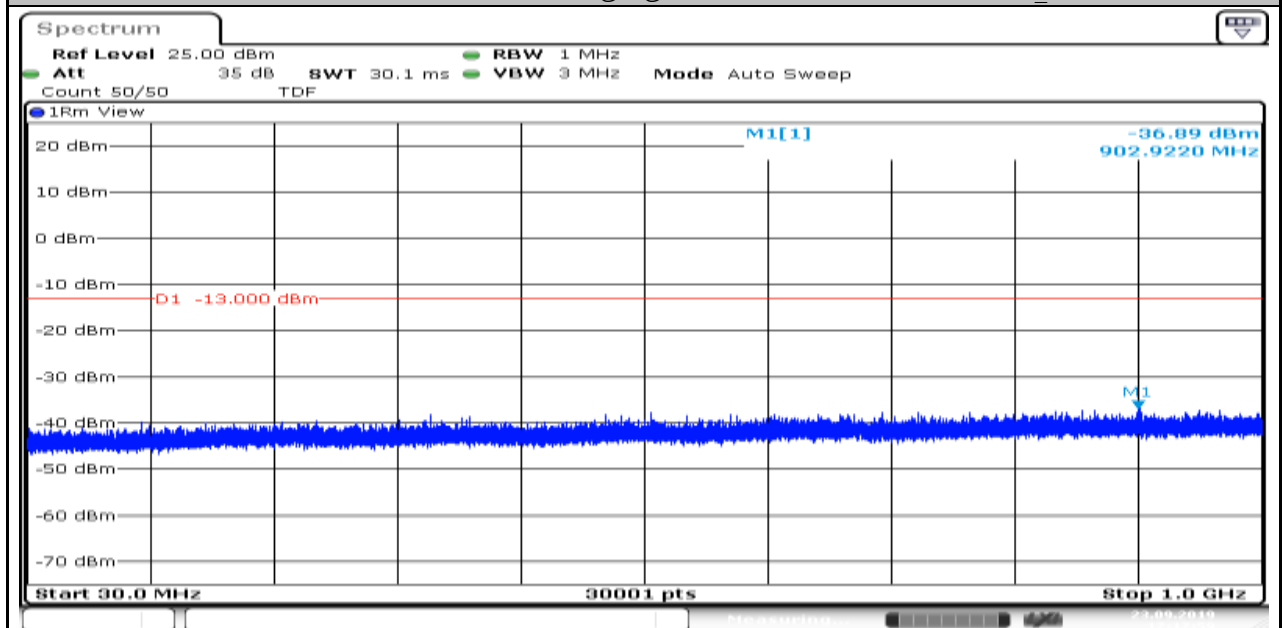
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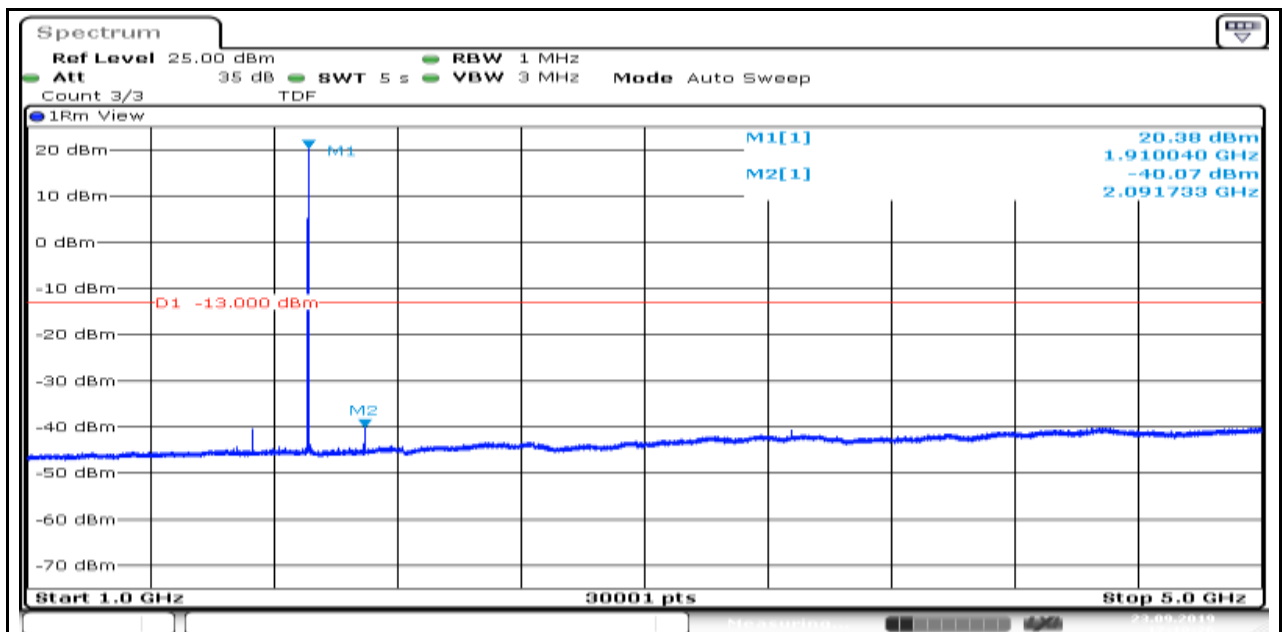
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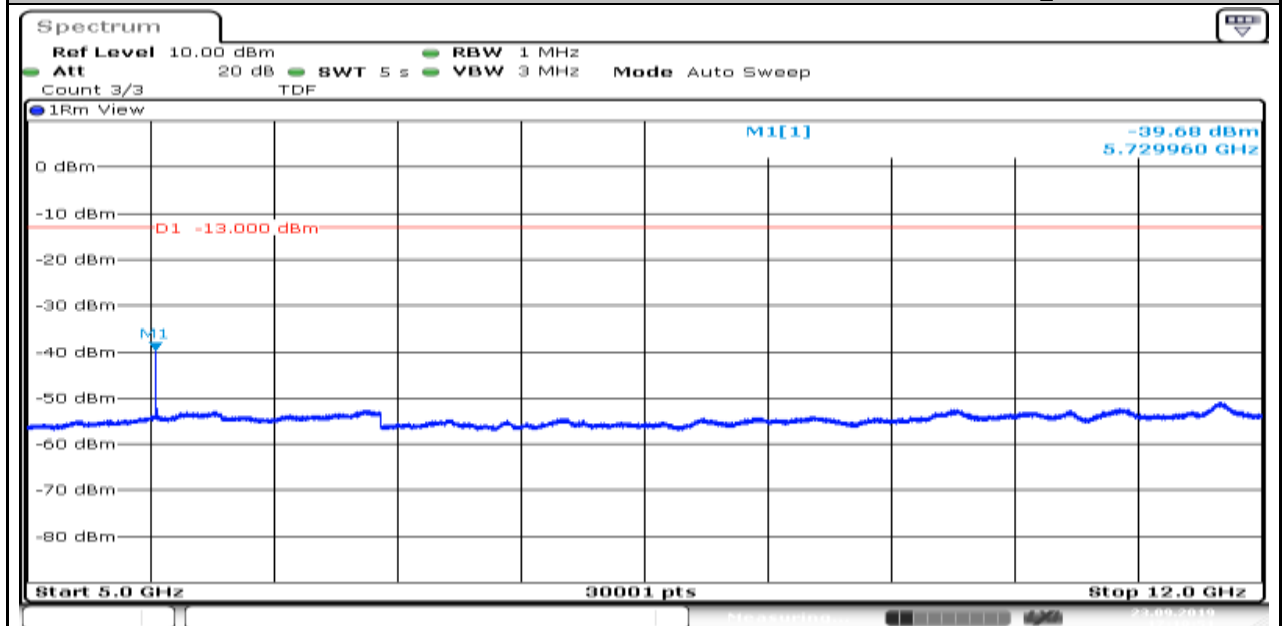
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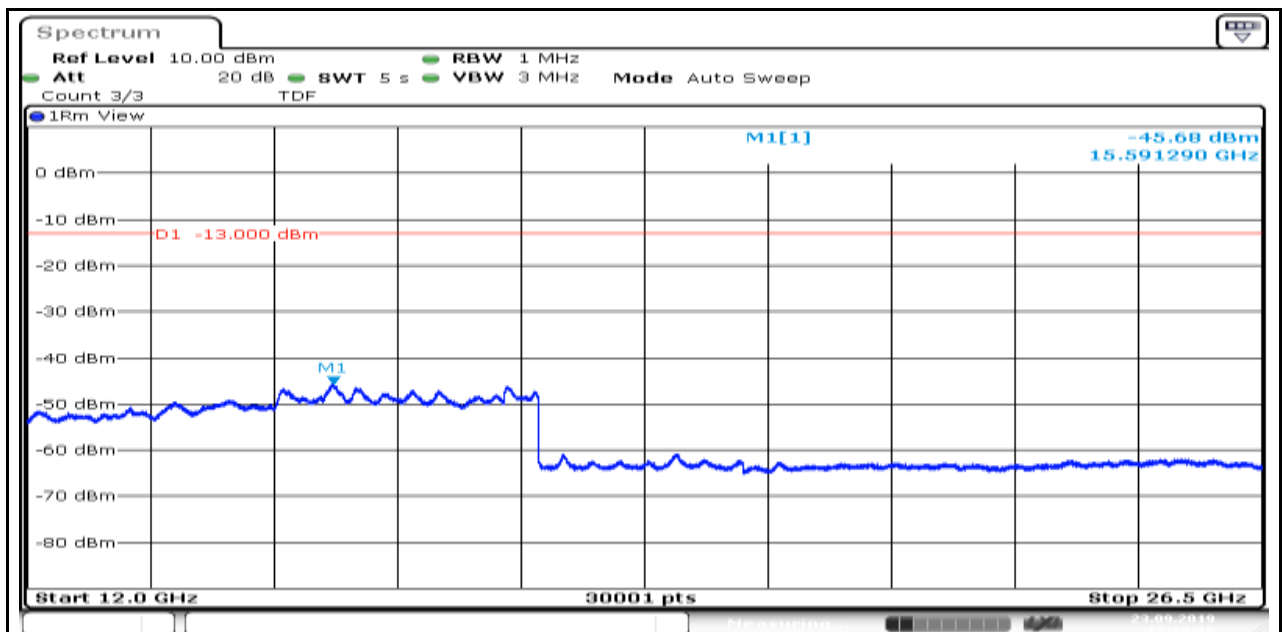
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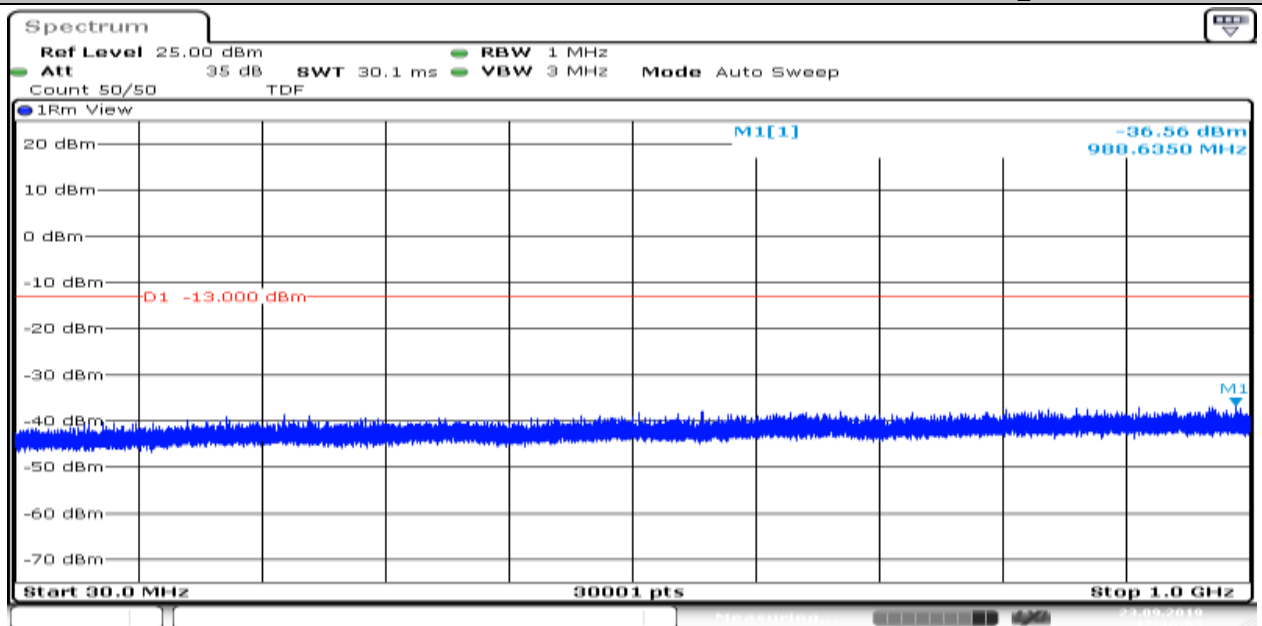
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Band2_Stand-Alone_NaN_BPSK_19199_1@11_15kHz_12000_26500_12000-26500MHz@-45.68dBm_-13_PASS_FCC_ME910G1\FCC_NBIOT_NTNV\Band2\Spurious emission at antenna terminals for category NB-Band2-Stand-Alone-NaN-19199-1@11@15kHz-BPSK-NTNV-2019923161110.Gif_



Band2_Stand-Alone_NaN_BPSK_19199_1@0_15kHz_30_1000_30~1000MHz@-36.56dBm_-13_PASS_FCC_ME910G1\FCC_NBI
OT_NTNV\Band2\Spurious emission at antenna terminals for category
NB-Band2-Stand-Alone-NaN-19199-1@0@15kHz-BPSK-NTNV-201992316759.Gif_



Appendix A.6: Frequency Stability for NB Test Result

Voltage												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	HV	NT	-32.97	-0.017560	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	LV	NT	-10.61	-0.005651	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	NT	14.83	0.007898	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	HV	NT	-14.88	-0.007925	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	LV	NT	-30.87	-0.016441	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	NT	14.26	0.007595	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	HV	NT	-21.10	-0.011238	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	LV	NT	-24.46	-0.013027	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	NT	-33.69	-0.017943	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	HV	NT	-31.01	-0.016516	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	LV	NT	-29.44	-0.015680	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	NT	-31.04	-0.016532	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	50	-25.28	-0.013464	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	-30	-36.13	-0.019243	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	30	-28.78	-0.015328	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	20	-19.35	-0.010306	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	10	-37.04	-0.019727	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	0	-25.89	-0.013789	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	-10	-35.81	-0.019072	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	50	-19.03	-0.010135	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	-30	-34.90	-0.018588	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	-30	-34.36	-0.018300	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	40	-22.27	-0.011861	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	30	-16.11	-0.008580	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	20	-31.80	-0.016937	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	10	-24.56	-0.013081	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	0	-15.78	-0.008404	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	-10	-28.65	-0.015259	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	-20	-36.23	-0.019296	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	-20	-23.78	-0.012665	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	50	-33.27	-0.017719	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	40	-20.97	-0.011169	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	30	-12.26	-0.006530	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	20	-26.34	-0.014029	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	10	-15.71	-0.008367	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	0	-31.11	-0.016569	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	-10	-18.53	-0.009869	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	40	-36.44	-0.019408	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	-30	-14.75	-0.007856	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	50	-31.51	-0.016782	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	40	11.30	0.006018	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	30	-19.23	-0.010242	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	20	-13.18	-0.007020	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	10	-14.53	-0.007739	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	0	-36.28	-0.019323	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	-10	-26.89	-0.014321	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	-20	-20.90	-0.011131	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	-20	-30.56	-0.016276	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	-40	-10.33	-0.005502	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	60	-32.13	-0.017112	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	70	-17.94	-0.009555	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	80	-25.21	-0.013427	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	85	-29.05	-0.015472	±2.5	PASS

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Produkte
Products

Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	-40	-29.95	-0.015951	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	60	-14.96	-0.007968	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	70	-20.86	-0.011110	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	3.75kHz	NV	-40	-32.74	-0.017437	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	85	-11.89	-0.006333	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	85	-24.65	-0.013128	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	60	-25.63	-0.013650	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	70	12.76	0.006796	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	80	-22.80	-0.012143	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@0	15kHz	NV	85	-14.69	-0.007824	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	-40	-19.77	-0.010529	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	60	-13.36	-0.007115	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	70	-33.49	-0.017837	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@11	15kHz	NV	80	-21.97	-0.011701	±2.5	PASS
Band2	Stand-Alone	NaN	QPSK	18876	1@47	3.75kHz	NV	80	-31.60	-0.016830	±2.5	PASS

Appendix B: Test Results of Band 4 for NB-IoT operation

APPENDIX B: TEST RESULTS OF BAND 4 FOR NB-IOT OPERATION	1
APPENDIX B.1: RF POWER OUTPUT AND EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA FOR NB	2
Test Result	2
APPENDIX B.2: PEAK-TO-AVERAGE RATIO(CCDF) FOR NB	3
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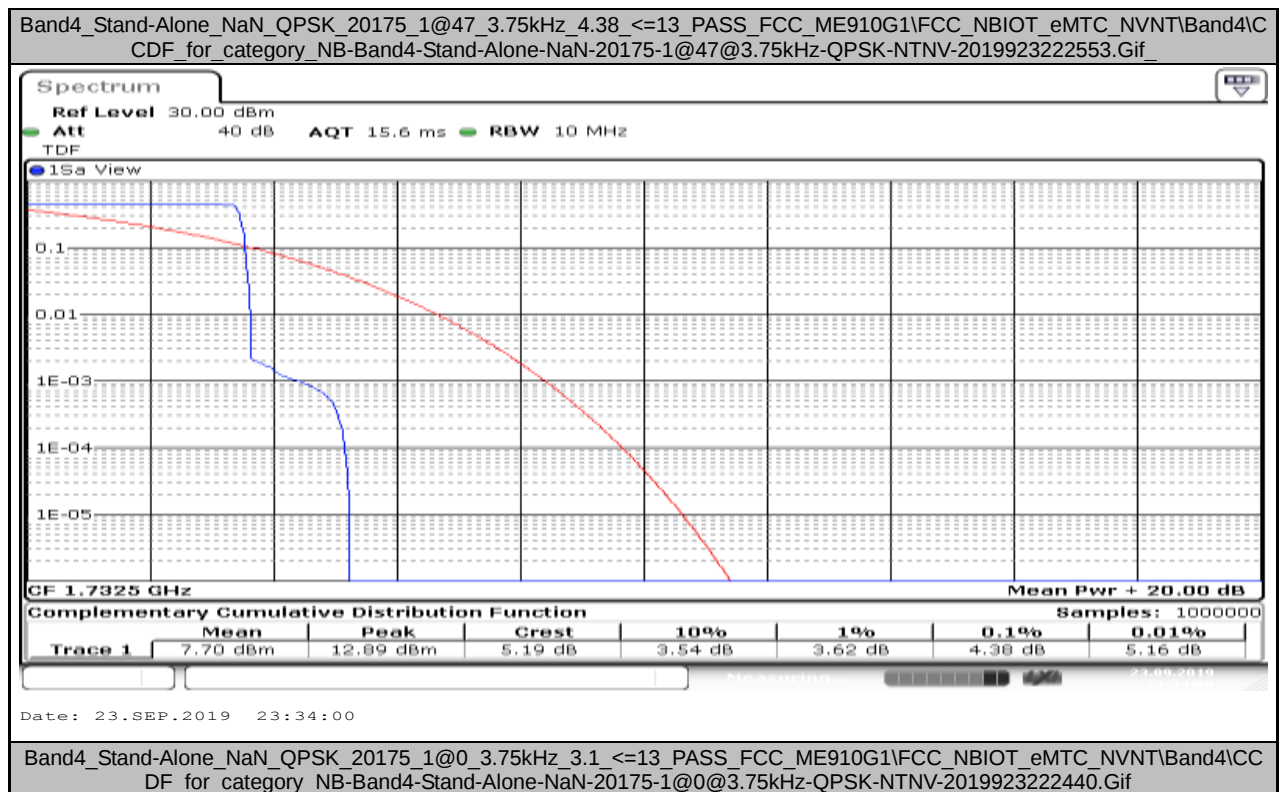
Appendix B.1: RF Power Output and Effective (Isotropic) Radiated Power Output Data for NB Test Result

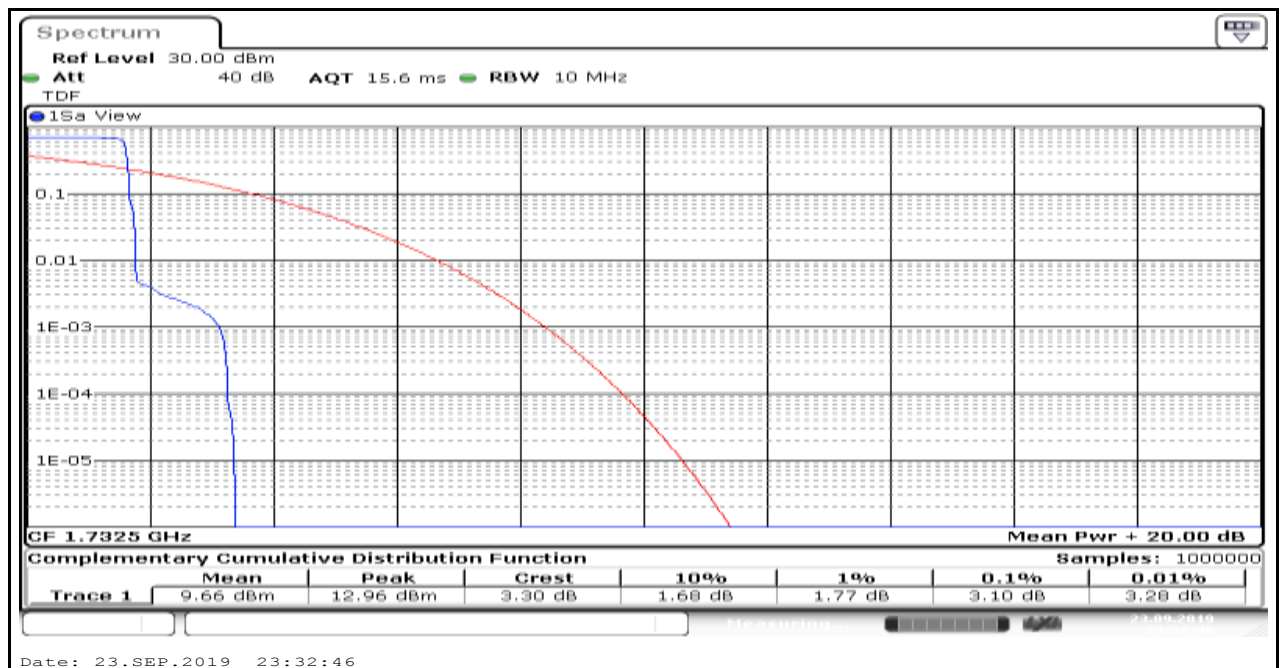
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result	EIRP		Limit (watts)	Verdict
							dBm	dBm	Watts		
Band4	Stand-Alone	NaN	QPSK	19951	3@3	15kHz	11.01	13.15	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@47	3.75kHz	10.95	13.09	0.020	1	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	11.01	13.15	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	15kHz	10.98	13.12	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@11	15kHz	10.99	13.13	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	19952	1@47	3.75kHz	19.52	21.66	0.147	1	PASS
Band4	Stand-Alone	NaN	QPSK	19952	1@0	3.75kHz	19.62	21.76	0.150	1	PASS
Band4	Stand-Alone	NaN	QPSK	19952	1@11	15kHz	19.92	22.06	0.161	1	PASS
Band4	Stand-Alone	NaN	QPSK	19952	3@3	15kHz	20.19	22.33	0.171	1	PASS
Band4	Stand-Alone	NaN	QPSK	19952	1@0	15kHz	19.98	22.12	0.163	1	PASS
Band4	Stand-Alone	NaN	QPSK	20175	3@3	15kHz	20.32	22.46	0.176	1	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	20.19	22.33	0.171	1	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	20.13	22.27	0.169	1	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	20.3	22.44	0.175	1	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	20.06	22.20	0.166	1	PASS
Band4	Stand-Alone	NaN	QPSK	20398	1@47	3.75kHz	19.7	21.84	0.153	1	PASS
Band4	Stand-Alone	NaN	QPSK	20398	1@0	3.75kHz	19.74	21.88	0.154	1	PASS
Band4	Stand-Alone	NaN	QPSK	20398	1@0	15kHz	20.15	22.29	0.169	1	PASS
Band4	Stand-Alone	NaN	QPSK	20398	1@11	15kHz	20.09	22.23	0.167	1	PASS
Band4	Stand-Alone	NaN	QPSK	20398	3@3	15kHz	20.29	22.43	0.175	1	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@11	15kHz	11.12	13.26	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	20399	3@3	15kHz	11.15	13.29	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	15kHz	11.16	13.30	0.021	1	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	11.19	13.33	0.022	1	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@47	3.75kHz	11.17	13.31	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	19951	3@3	15kHz	10.98	13.12	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	3.75kHz	11.05	13.19	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	11.05	13.19	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@11	15kHz	10.99	13.13	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@47	3.75kHz	11	13.14	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	19952	1@0	15kHz	19.92	22.06	0.161	1	PASS
Band4	Stand-Alone	NaN	BPSK	19952	1@11	15kHz	19.86	22.00	0.158	1	PASS
Band4	Stand-Alone	NaN	BPSK	19952	3@3	15kHz	20.18	22.32	0.171	1	PASS
Band4	Stand-Alone	NaN	BPSK	19952	1@0	3.75kHz	19.59	21.73	0.149	1	PASS
Band4	Stand-Alone	NaN	BPSK	19952	1@47	3.75kHz	19.58	21.72	0.149	1	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	3.75kHz	20.15	22.29	0.169	1	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@47	3.75kHz	20.17	22.31	0.170	1	PASS
Band4	Stand-Alone	NaN	BPSK	20175	3@3	15kHz	20.23	22.37	0.173	1	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@11	15kHz	20.11	22.25	0.168	1	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	20.17	22.31	0.170	1	PASS
Band4	Stand-Alone	NaN	BPSK	20398	1@47	3.75kHz	19.65	21.79	0.151	1	PASS
Band4	Stand-Alone	NaN	BPSK	20398	1@0	15kHz	20.03	22.17	0.165	1	PASS
Band4	Stand-Alone	NaN	BPSK	20398	1@0	3.75kHz	19.73	21.87	0.154	1	PASS
Band4	Stand-Alone	NaN	BPSK	20398	1@11	15kHz	20.17	22.31	0.170	1	PASS
Band4	Stand-Alone	NaN	BPSK	20398	3@3	15kHz	20.28	22.42	0.175	1	PASS
Band4	Stand-Alone	NaN	BPSK	20399	3@3	15kHz	11.14	13.28	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	11.13	13.27	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@11	15kHz	11.09	13.23	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	3.75kHz	11.16	13.30	0.021	1	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@47	3.75kHz	11.15	13.29	0.021	1	PASS

Appendix B.2: Peak-to-Average Ratio(CCDF) for NB Test Result

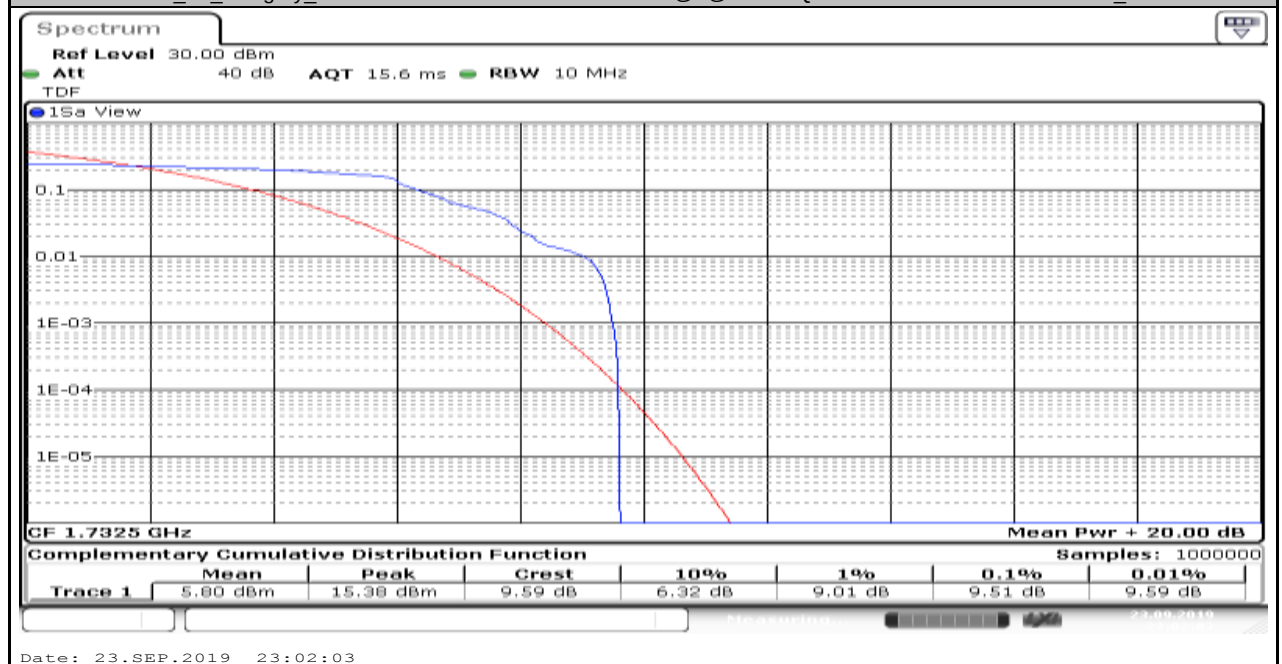
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	4.38	<=13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	3.1	<=13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	3@3	15kHz	9.51	<=13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	4.43	<=13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	4.43	<=13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@47	3.75kHz	10.41	<=13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	3.75kHz	1.01	<=13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	3@3	15kHz	11.25	<=13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@11	15kHz	10.61	<=13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	8.41	<=13	PASS

Test Graphs

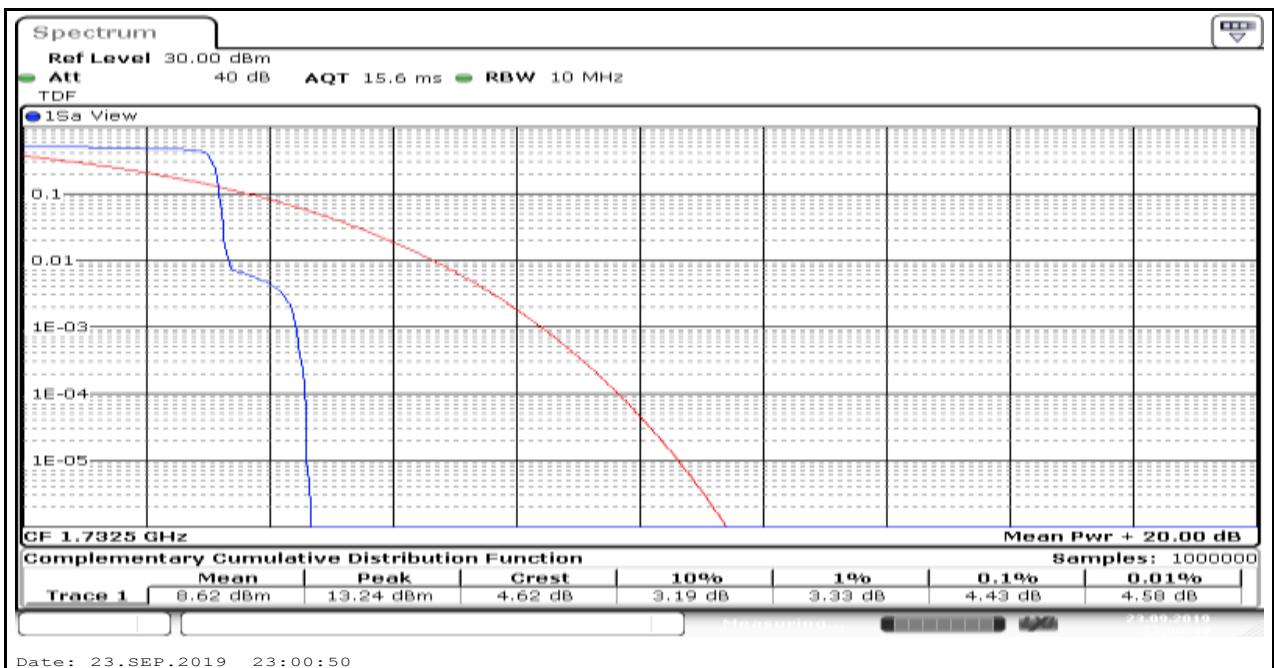




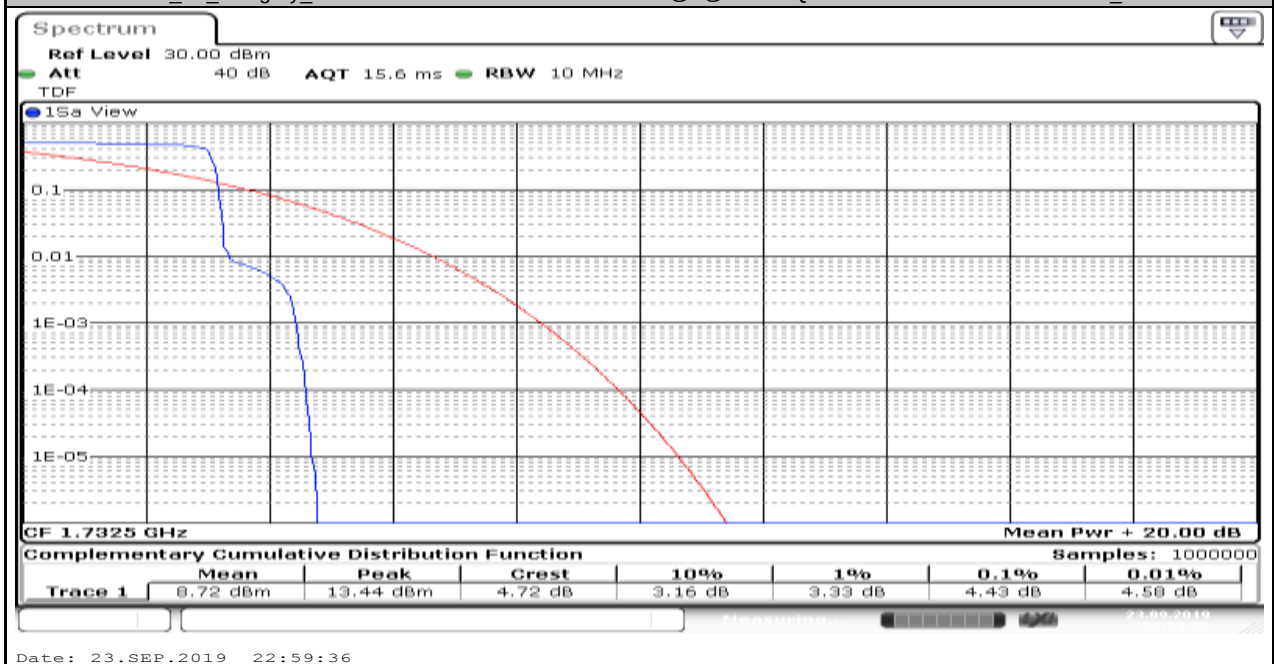
Band4_Stand-Alone_NaN_QPSK_20175_3@3_15kHz_9.51_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CCDF_for_category_NB-Band4-Stand-Alone-NaN-20175-3@3@15kHz-QPSK-NTNV-2019923215356.Gif_



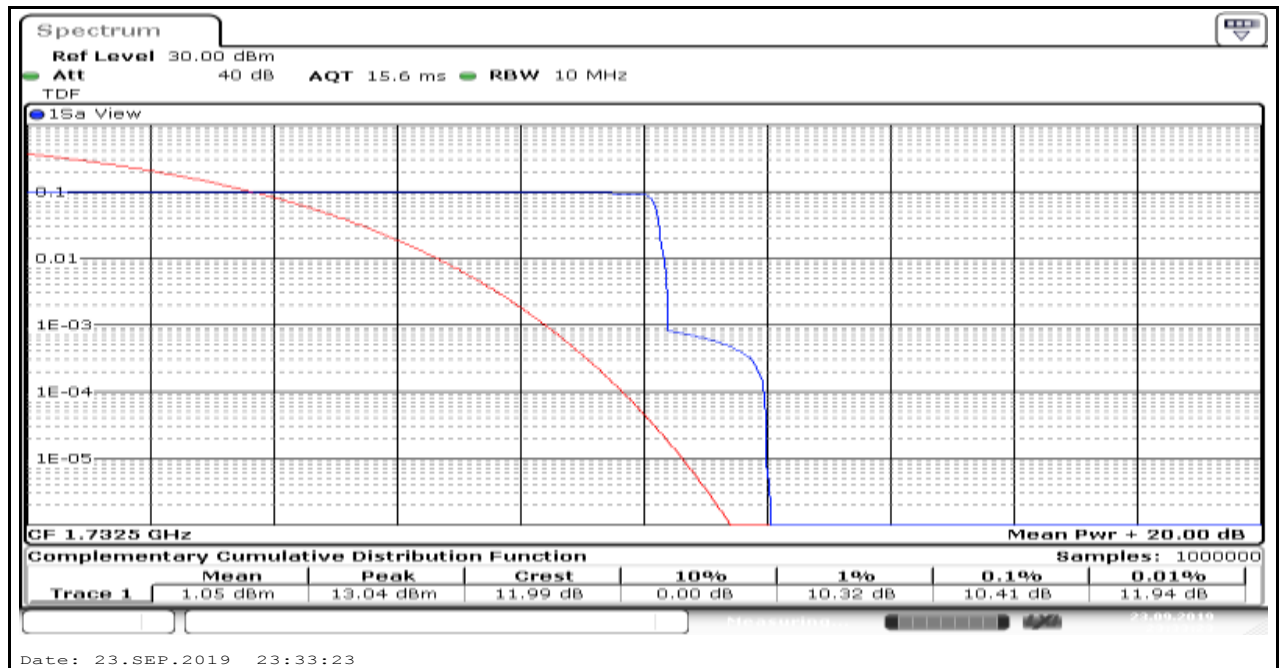
Band4_Stand-Alone_NaN_QPSK_20175_1@11_15kHz_4.43_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CCDF_for_category_NB-Band4-Stand-Alone-NaN-20175-1@11@15kHz-QPSK-NTNV-2019923215243.Gif_



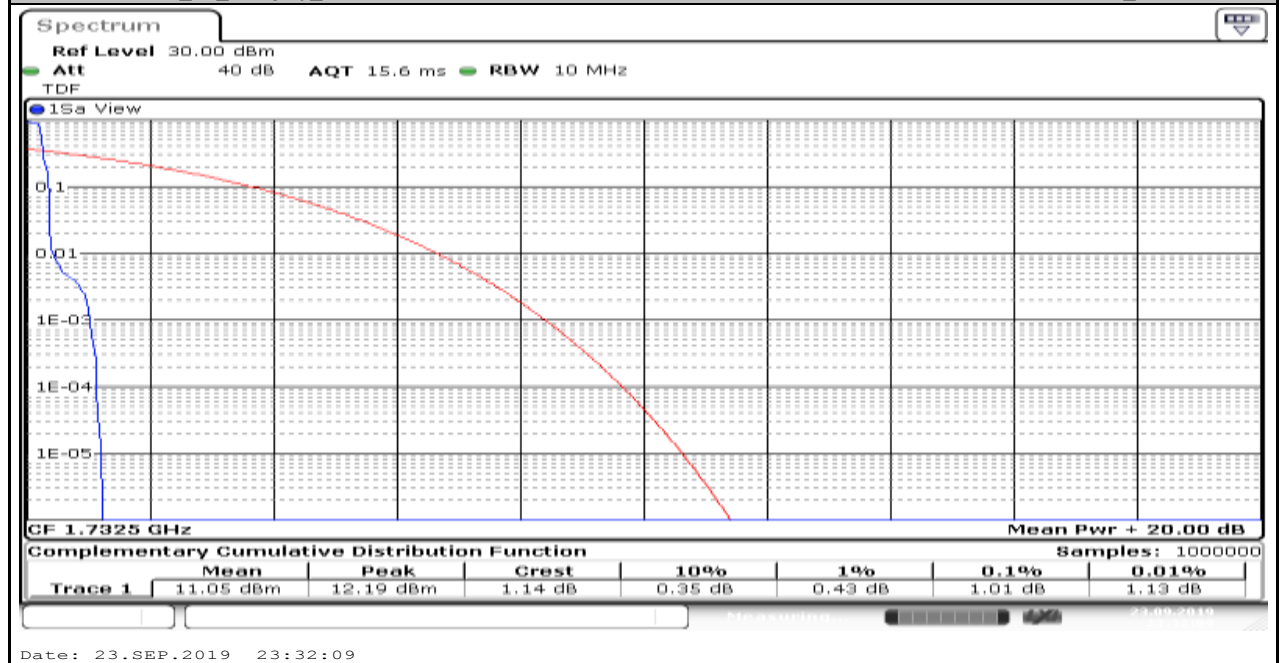
Band4_Stand-Alone_NaN_QPSK_20175_1@0_15kHz_4.43_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CCDF_for_category_NB-Band4-Stand-Alone-NaN-20175-1@0@15kHz-QPSK-NTNV-2019923215129.Gif



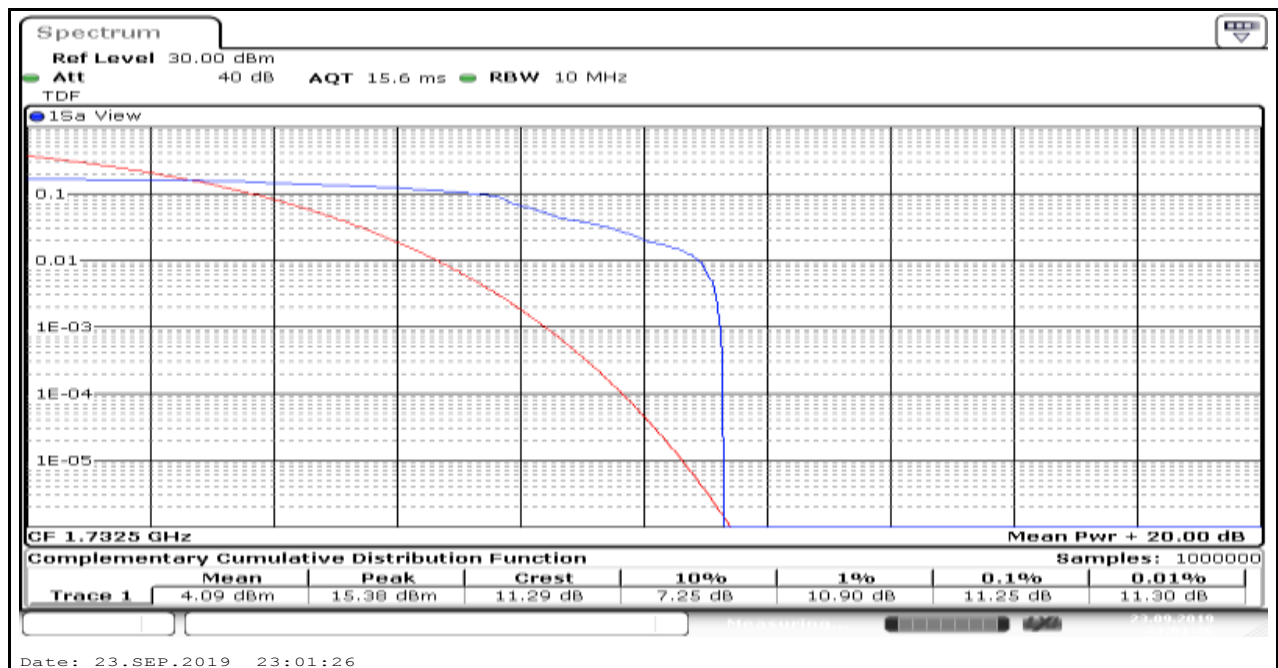
Band4_Stand-Alone_NaN_BPSK_20175_1@47_3.75kHz_10.41_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CCDF_for_category_NB-Band4-Stand-Alone-NaN-20175-1@47@3.75kHz-BPSK-NTNV-2019923222516.Gif



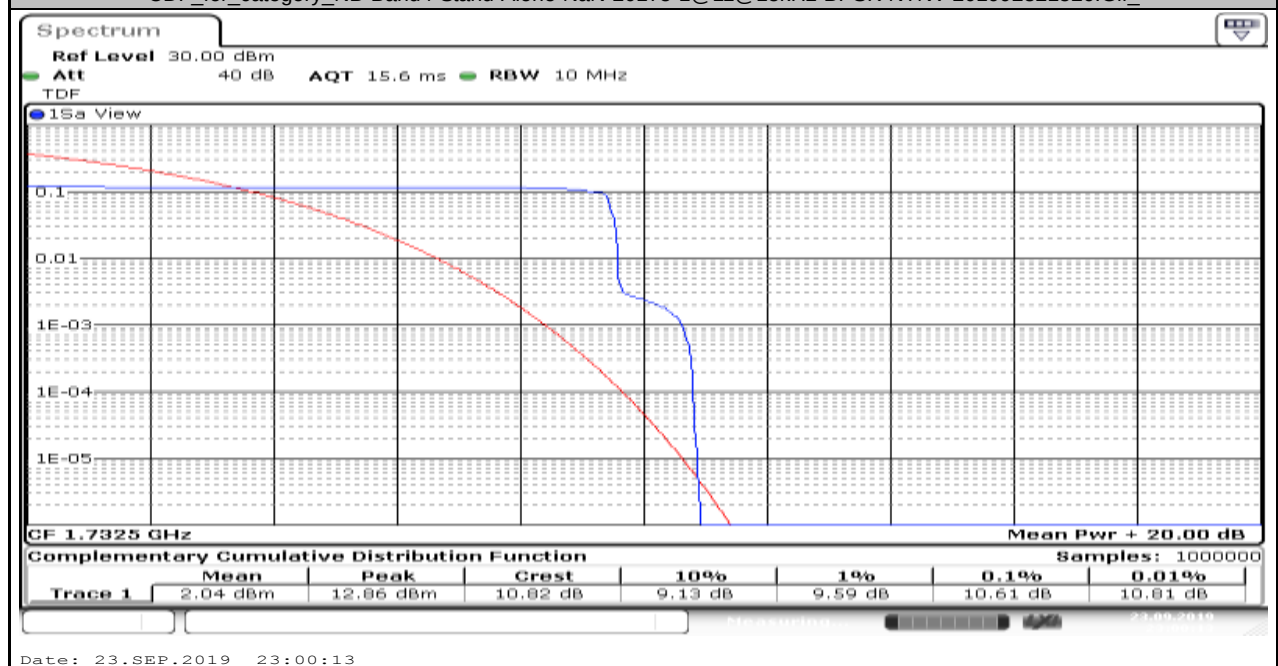
Band4_Stand-Alone_NaN_BPSK_20175_1@0_3.75kHz_1.01_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CC
DF_for_category_NB-Band4-Stand-Alone-NaN-20175-1@0@3.75kHz-BPSK-NTNV-201992322243.Gif



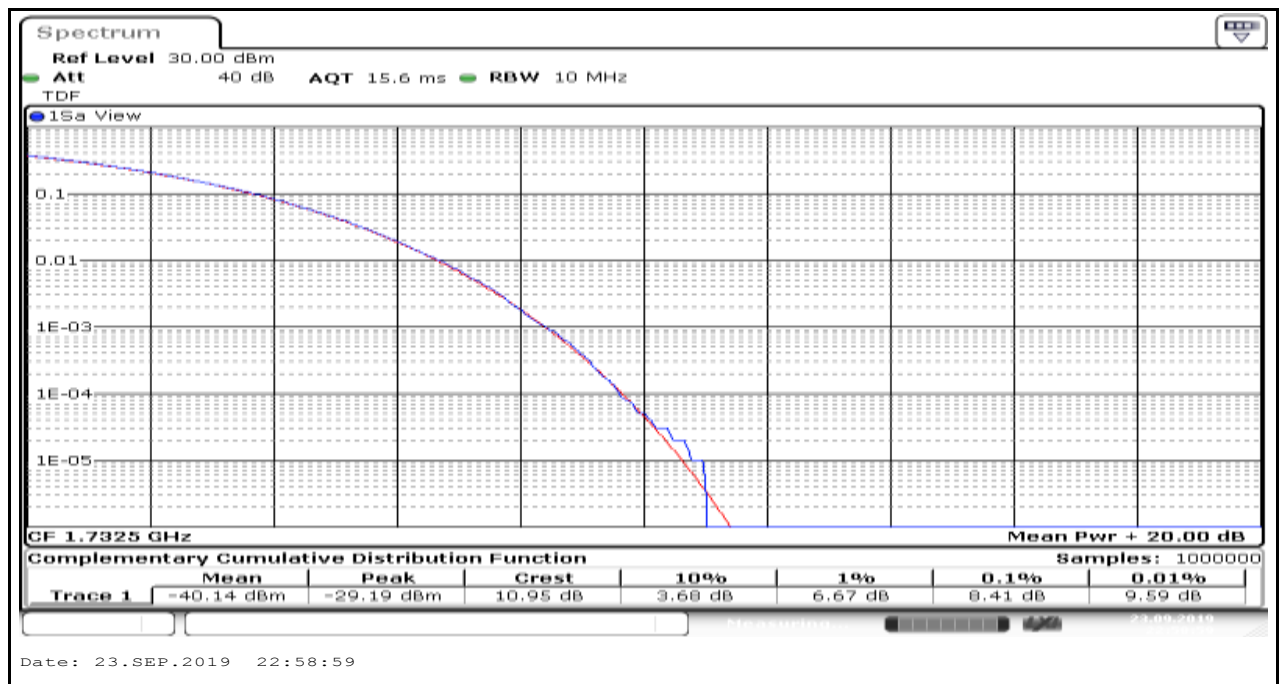
Band4_Stand-Alone_NaN_BPSK_20175_3@3_15kHz_11.25_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CC
DF_for_category_NB-Band4-Stand-Alone-NaN-20175-3@3@15kHz-BPSK-NTNV-2019923215320.Gif



Band4_Stand-Alone_NaN_BPSK_20175_1@11_15kHz_10.61_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CCDF_for_category_NB-Band4-Stand-Alone-NaN-20175-1@11@15kHz-BPSK-NTNV-201992321526.Gif_



Band4_Stand-Alone_NaN_BPSK_20175_1@0_15kHz_8.41_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\CCDF_for_category_NB-Band4-Stand-Alone-NaN-20175-1@0@15kHz-BPSK-NTNV-2019923215053.Gif_

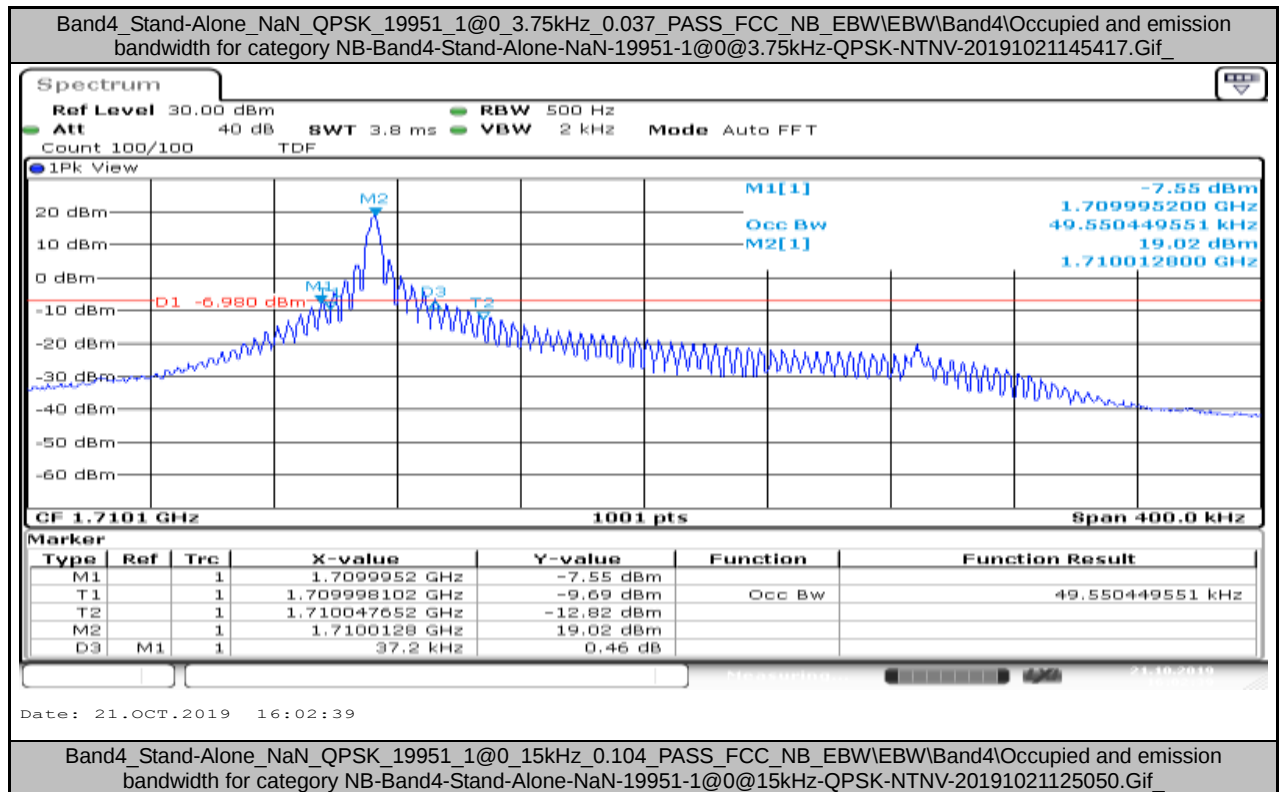


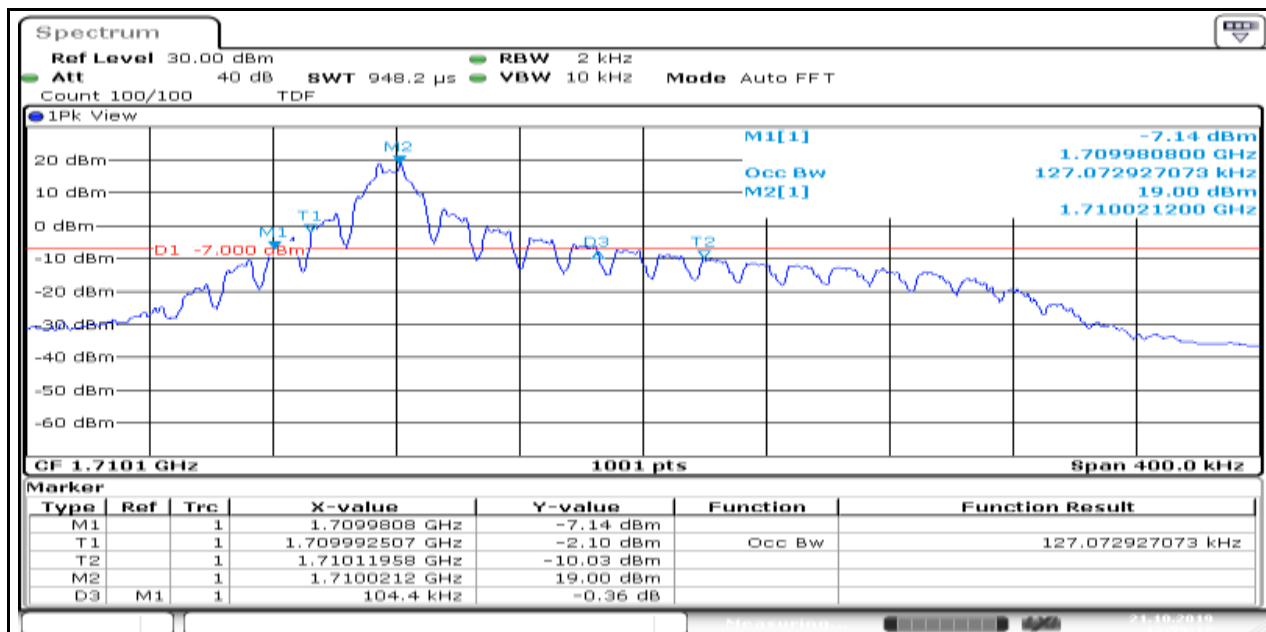
Appendix B.3: 26dB Emission Bandwidth and Occupied Bandwidth for NB

Test Result

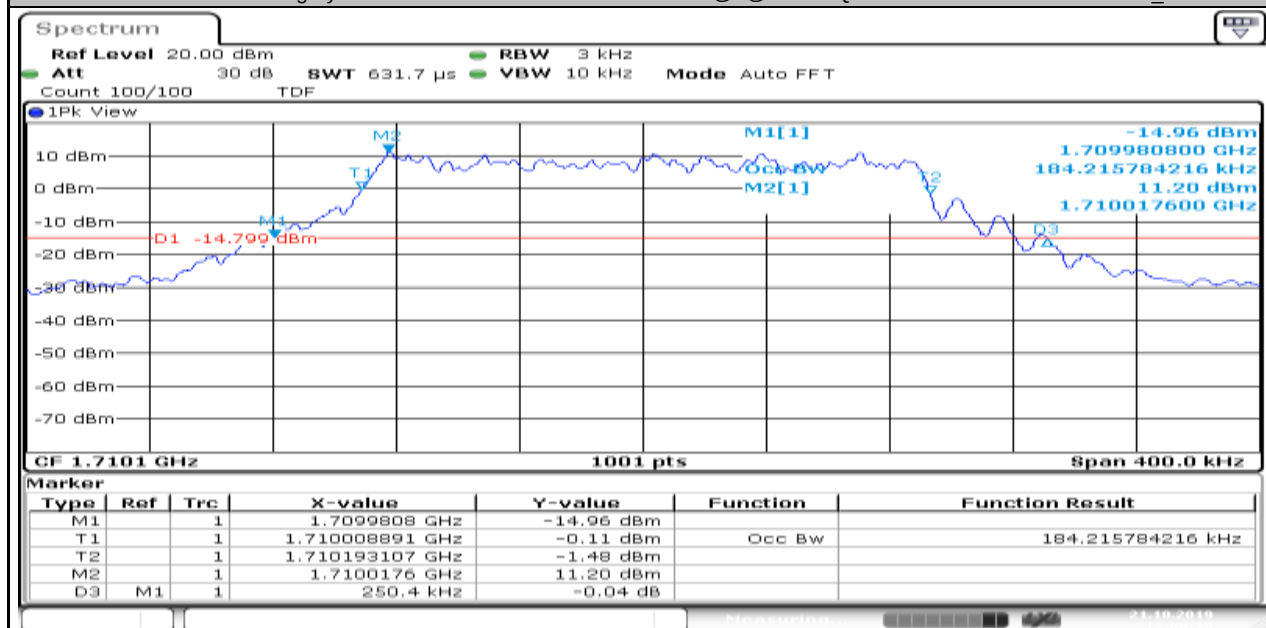
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	0.037	0.050	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	15kHz	0.104	0.127	PASS
Band4	Stand-Alone	NaN	QPSK	19951	12@0	15kHz	0.250	0.184	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	0.037	0.050	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	0.104	0.127	PASS
Band4	Stand-Alone	NaN	QPSK	20175	12@0	15kHz	0.250	0.184	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	0.037	0.050	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	15kHz	0.104	0.127	PASS
Band4	Stand-Alone	NaN	QPSK	20399	12@0	15kHz	0.250	0.185	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	3.75kHz	0.032	0.055	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	0.104	0.127	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	3.75kHz	0.032	0.055	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	0.104	0.127	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	3.75kHz	0.032	0.055	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	0.104	0.127	PASS

Test Graphs



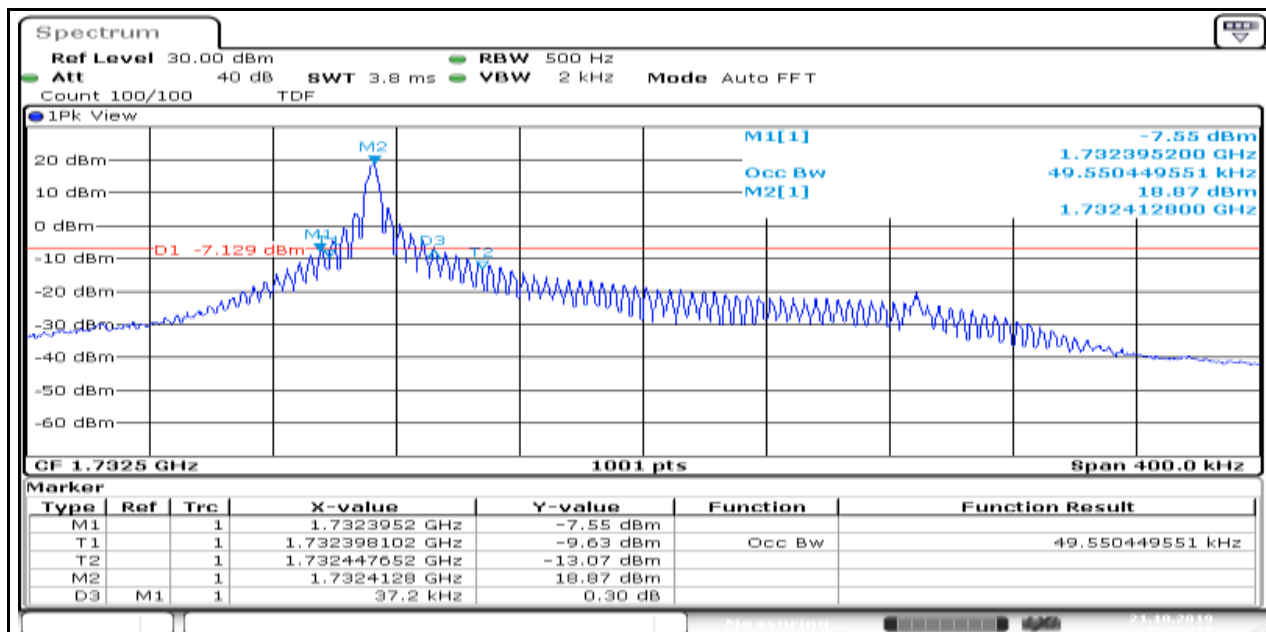


Band4_Stand-Alone_NaN_QPSK_19951_12@0_15kHz_0.250_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-19951-12@0@15kHz-QPSK-NTNV-2019102110524.Gif_

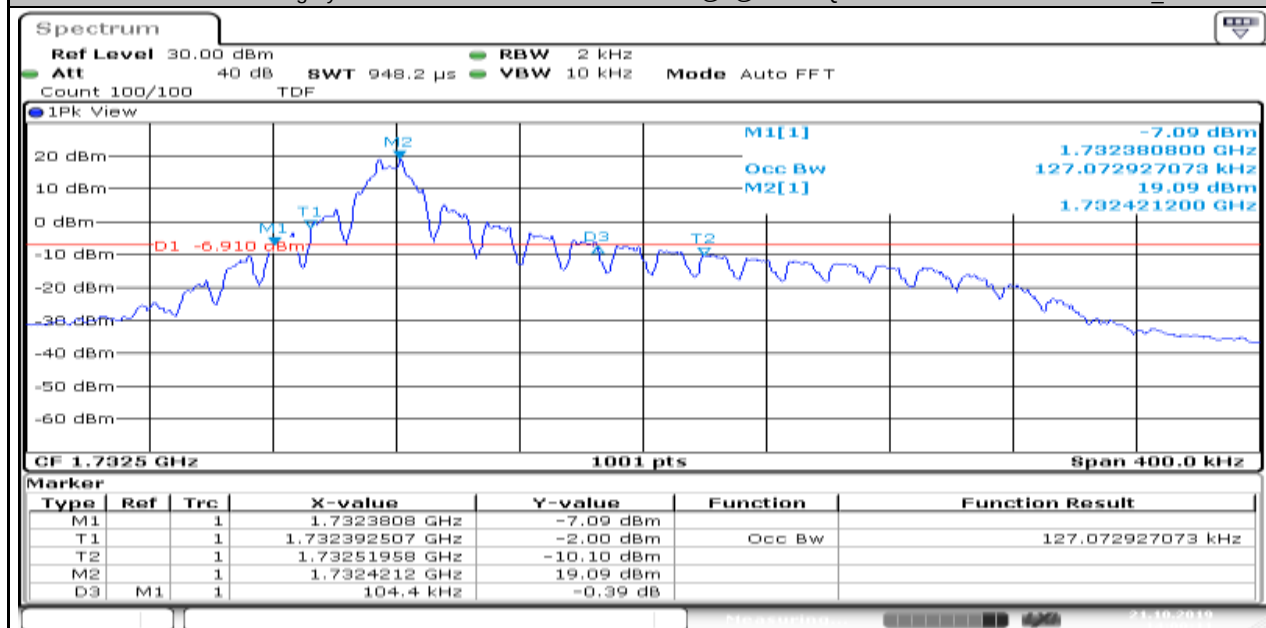


Band4_Stand-Alone_NaN_QPSK_20175_1@0_3.75kHz_0.037_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20175-1@0@3.75kHz-QPSK-NTNV-20191021145755.Gif_

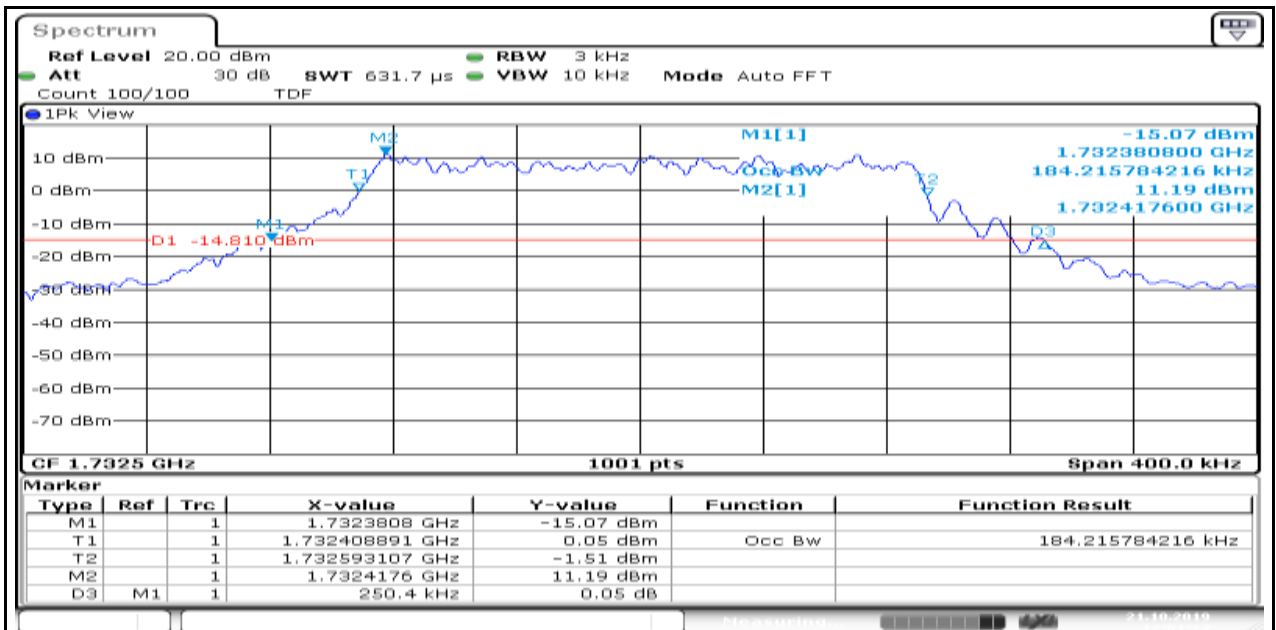
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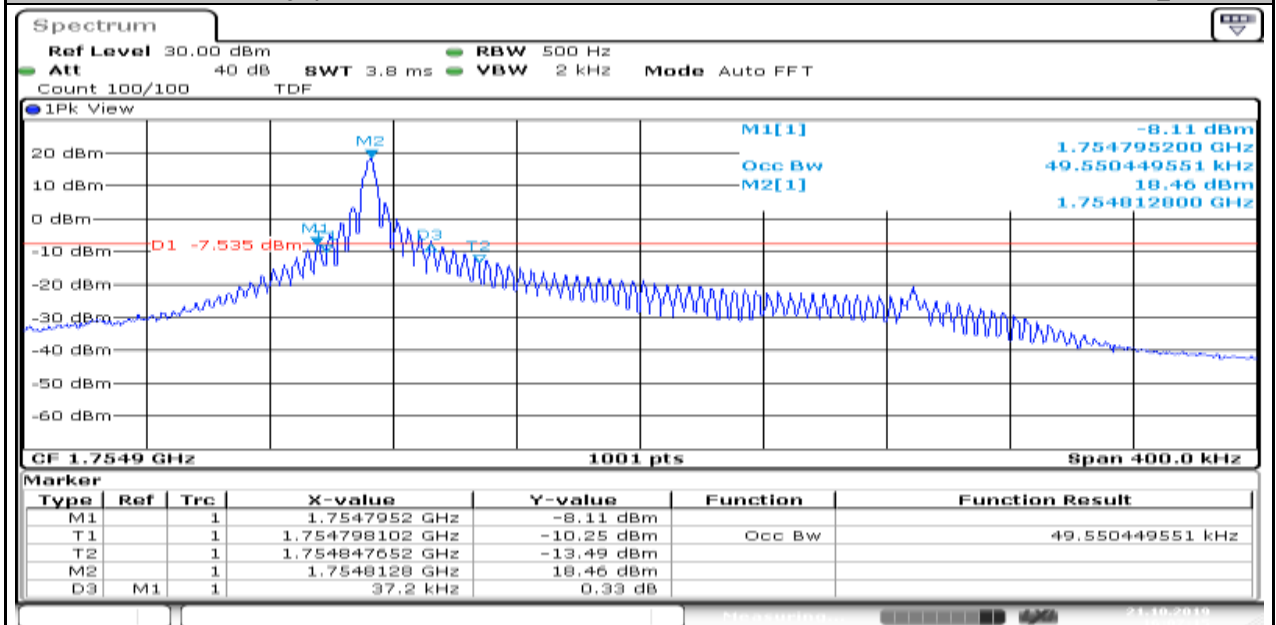
Band4_Stand-Alone_NaN_QPSK_20175_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20175-1@0@15kHz-QPSK-NTNV-20191021125149.Gif_



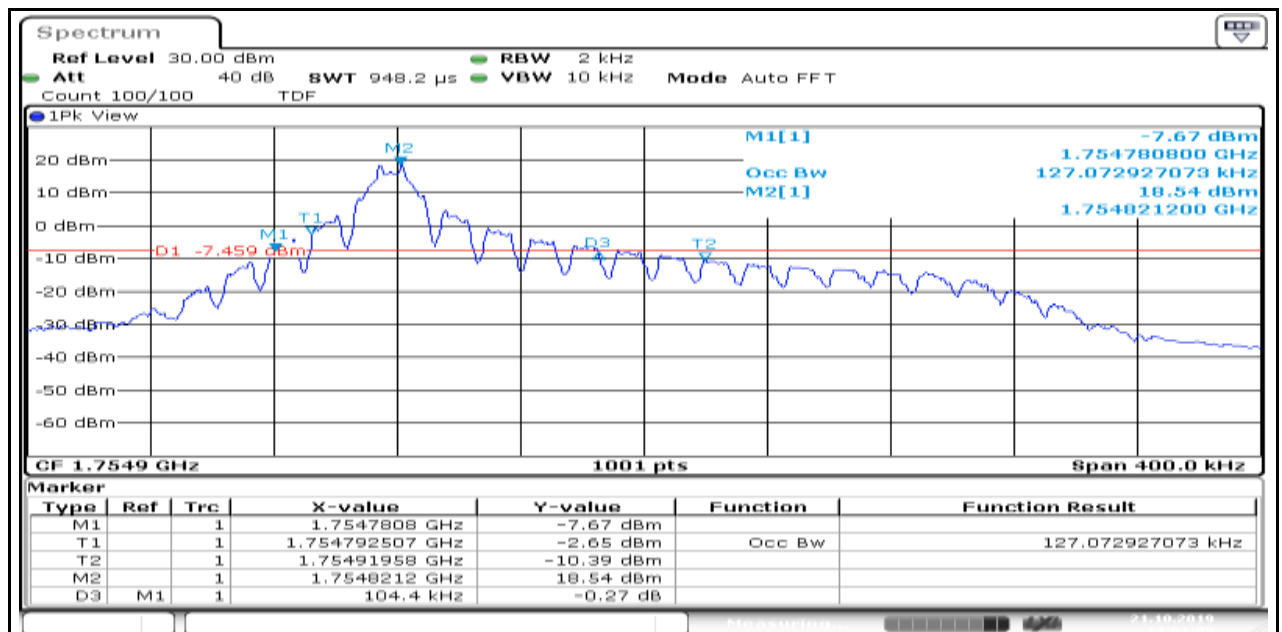
Band4_Stand-Alone_NaN_QPSK_20175_12@0_15kHz_0.250_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20175-12@0@15kHz-QPSK-NTNV-2019102110531.Gif_



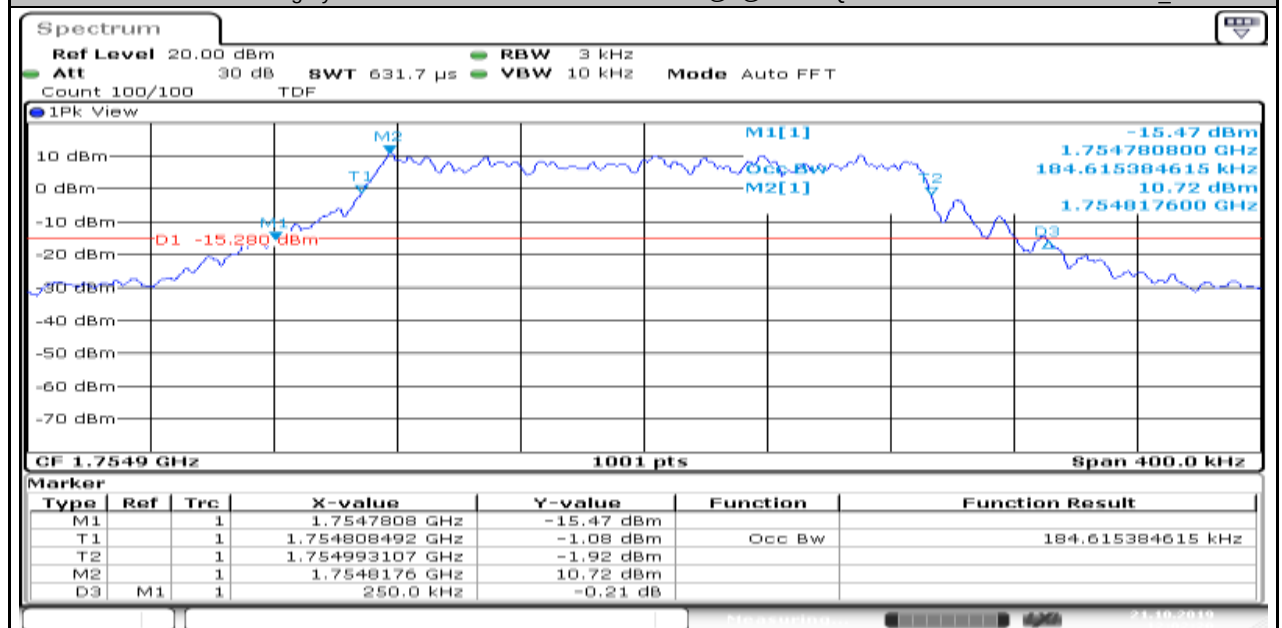
Band4_Stand-Alone_NaN_QPSK_20399_1@0_3.75kHz_0.037_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20399-1@0@3.75kHz-QPSK-NTNV-20191021145853.Gif_



Band4_Stand-Alone_NaN_QPSK_20399_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20399-1@0@15kHz-QPSK-NTNV-20191021125246.Gif_

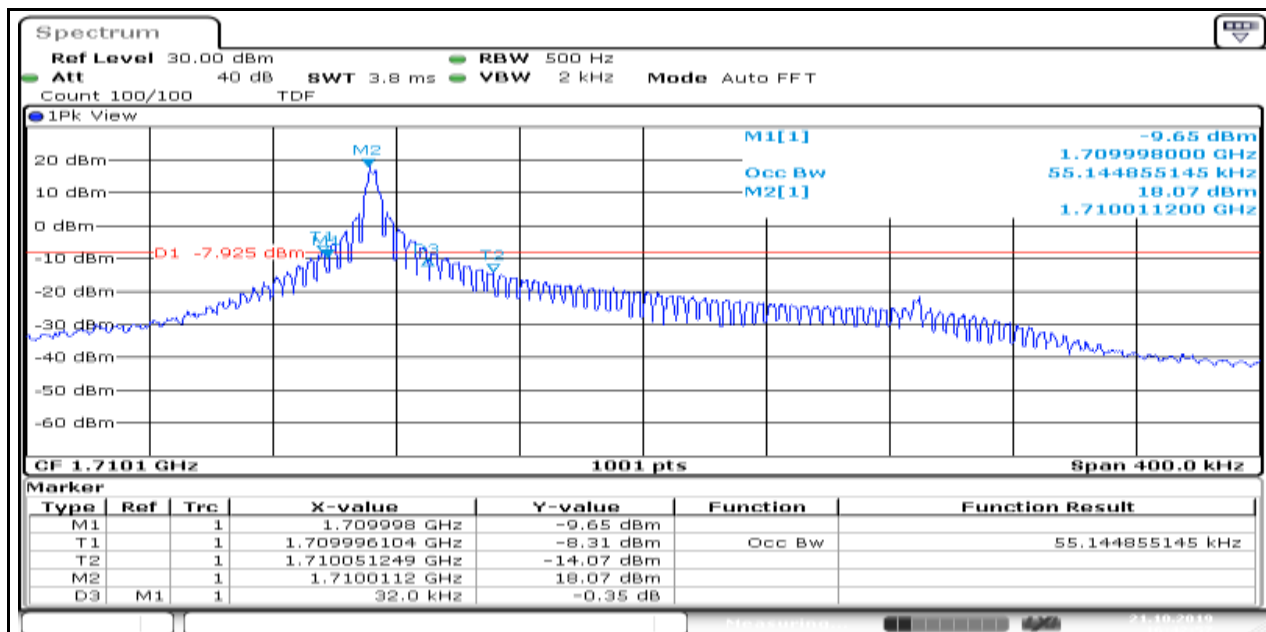


Band4_Stand-Alone_NaN_QPSK_20399_12@0_15kHz_0.250_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20399-12@0@15kHz-QPSK-NTNV-20191021105358.Gif_



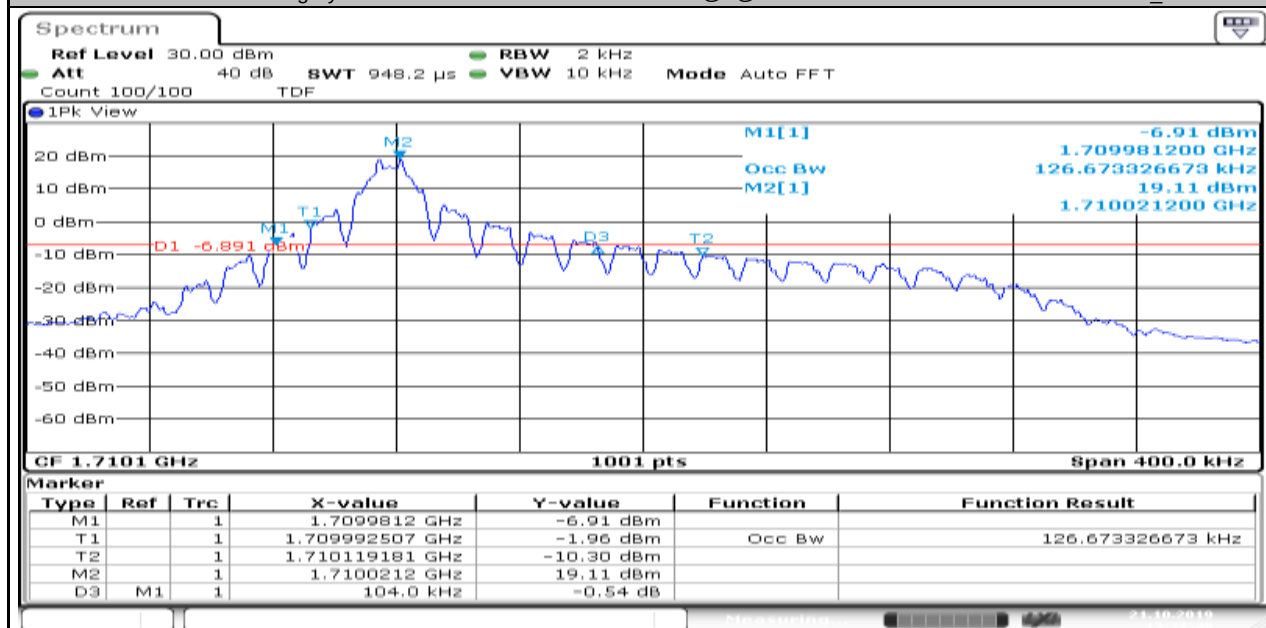
Band4_Stand-Alone_NaN_BPSK_19951_1@0_3.75kHz_0.032_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-19951-1@0@3.75kHz-BPSK-NTNV-20191021153435.Gif_

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Date: 21.OCT.2019 16:42:57

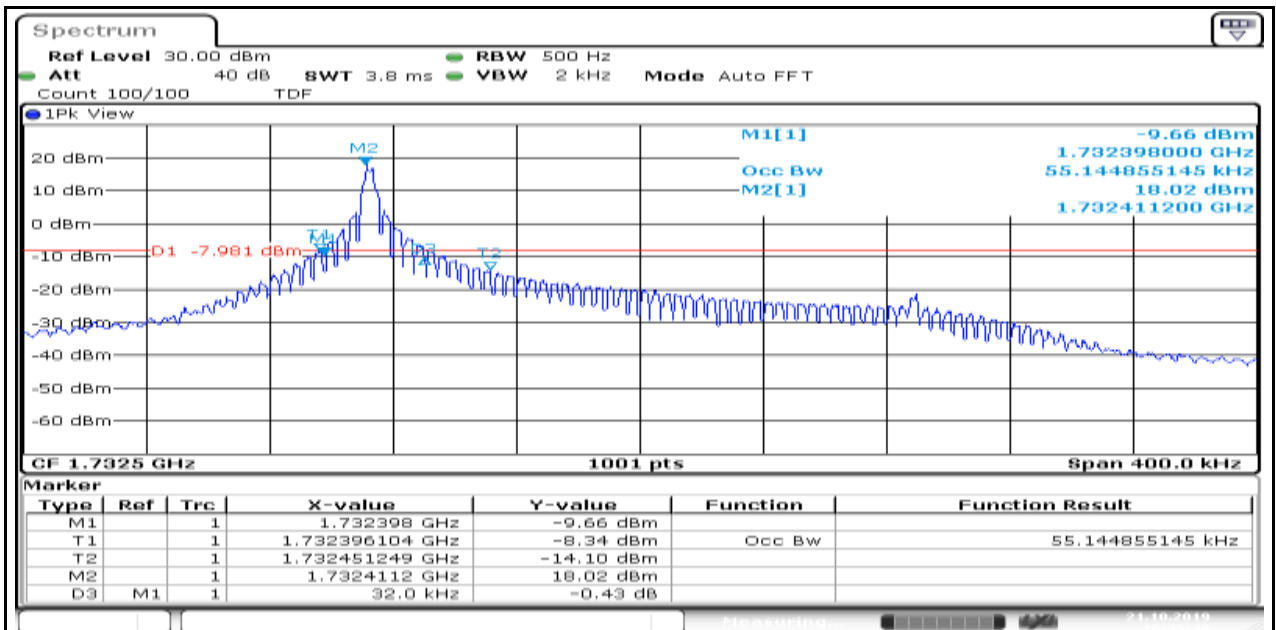
Band4_Stand-Alone_NaN_BPSK_19951_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-19951-1@0@15kHz-BPSK-NTNV-20191021121928.Gif_



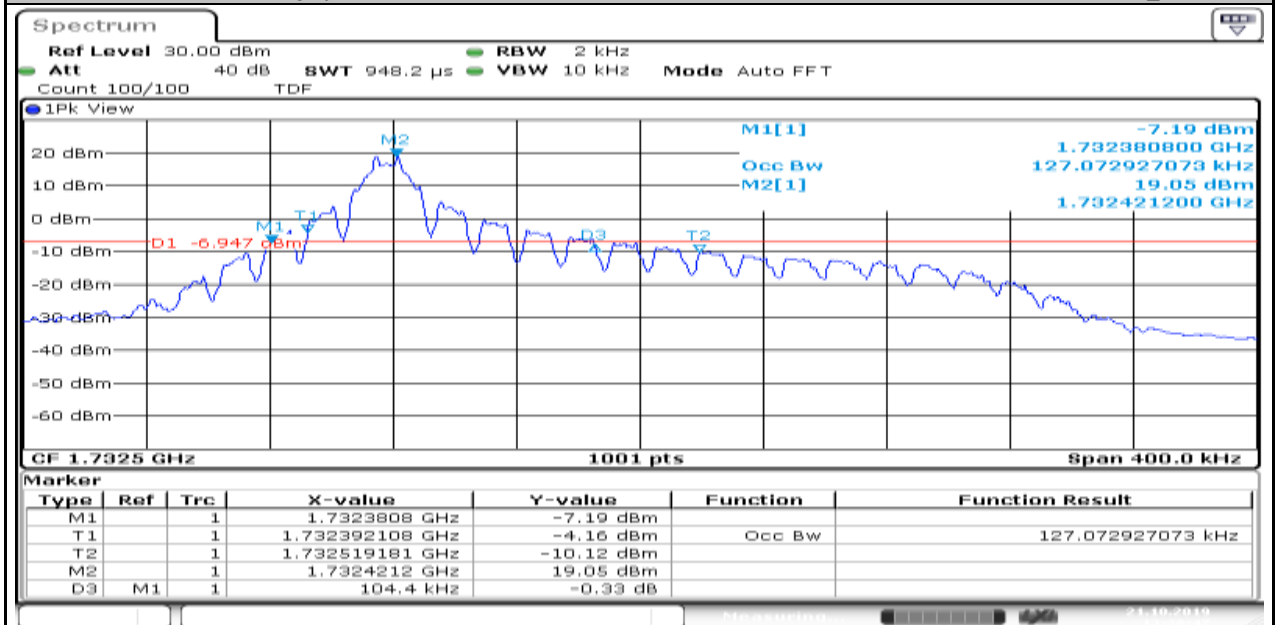
Date: 21.OCT.2019 13:27:50

Band4_Stand-Alone_NaN_BPSK_20175_1@0_3.75kHz_0.032_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20175-1@0@3.75kHz-BPSK-NTNV-20191021153718.Gif_

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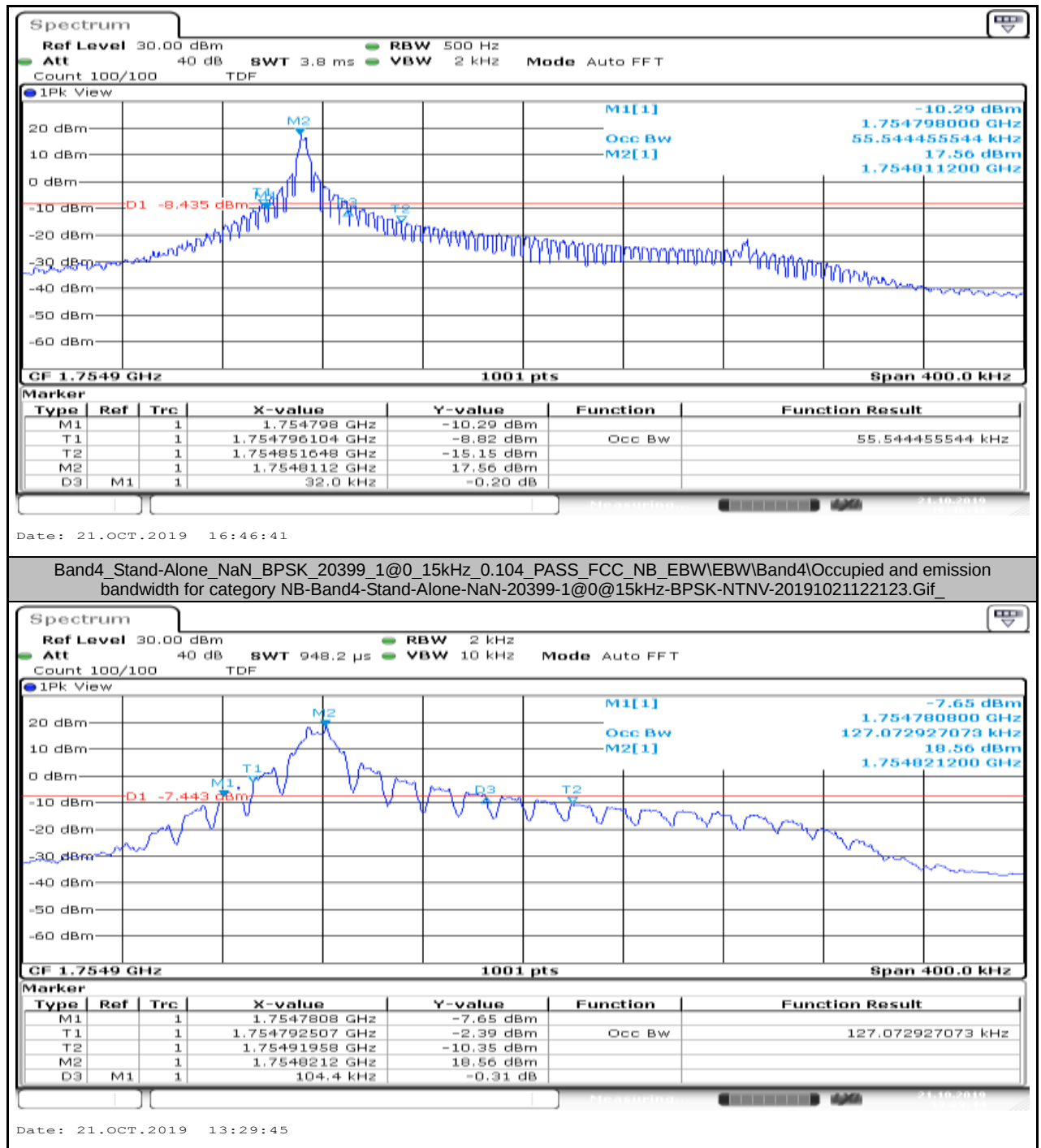


Band4_Stand-Alone_NaN_BPSK_20175_1@0_15kHz_0.104_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20175-1@0@15kHz-BPSK-NTNV-20191021122025.Gif_



Band4_Stand-Alone_NaN_BPSK_20399_1@0_3.75kHz_0.032_PASS_FCC_NB_EBW\EBW\Band4\Occupied and emission bandwidth for category NB-Band4-Stand-Alone-NaN-20399-1@0@3.75kHz-BPSK-NTNV-20191021153819.Gif_

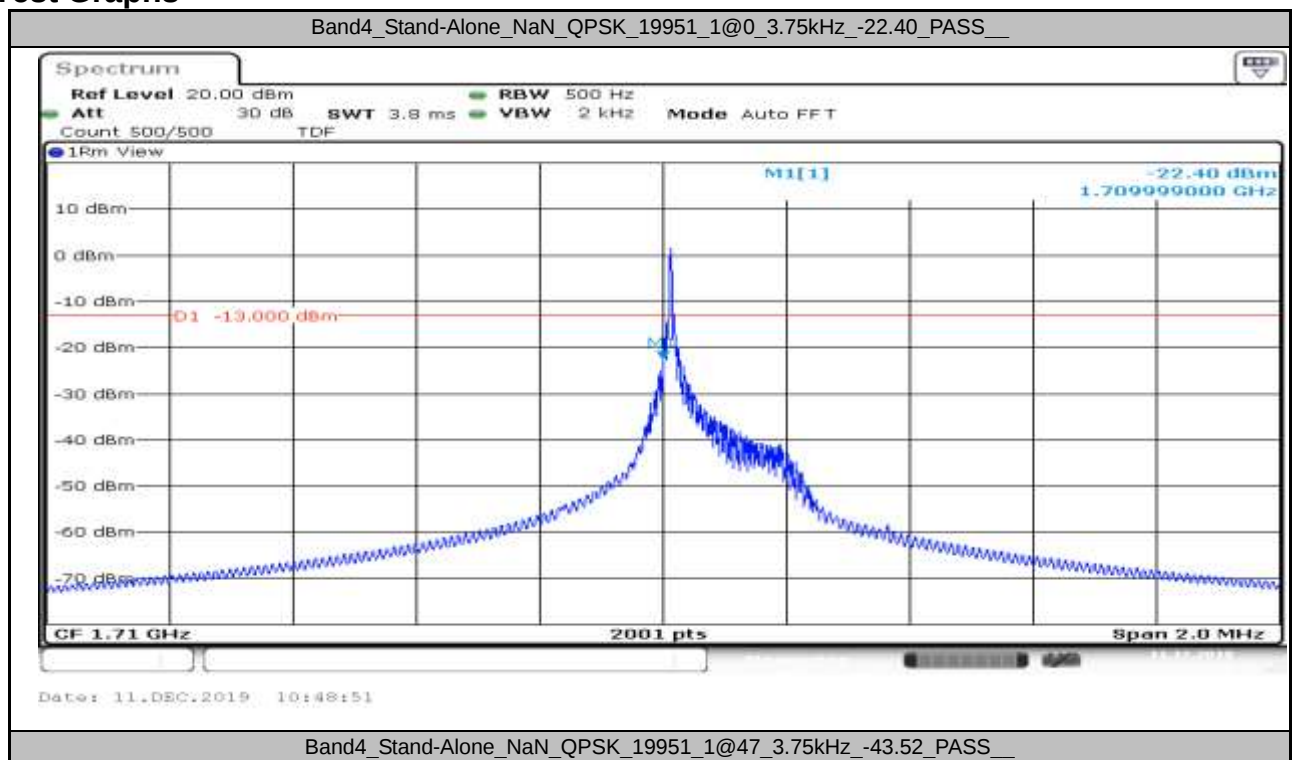
Produkte
Products

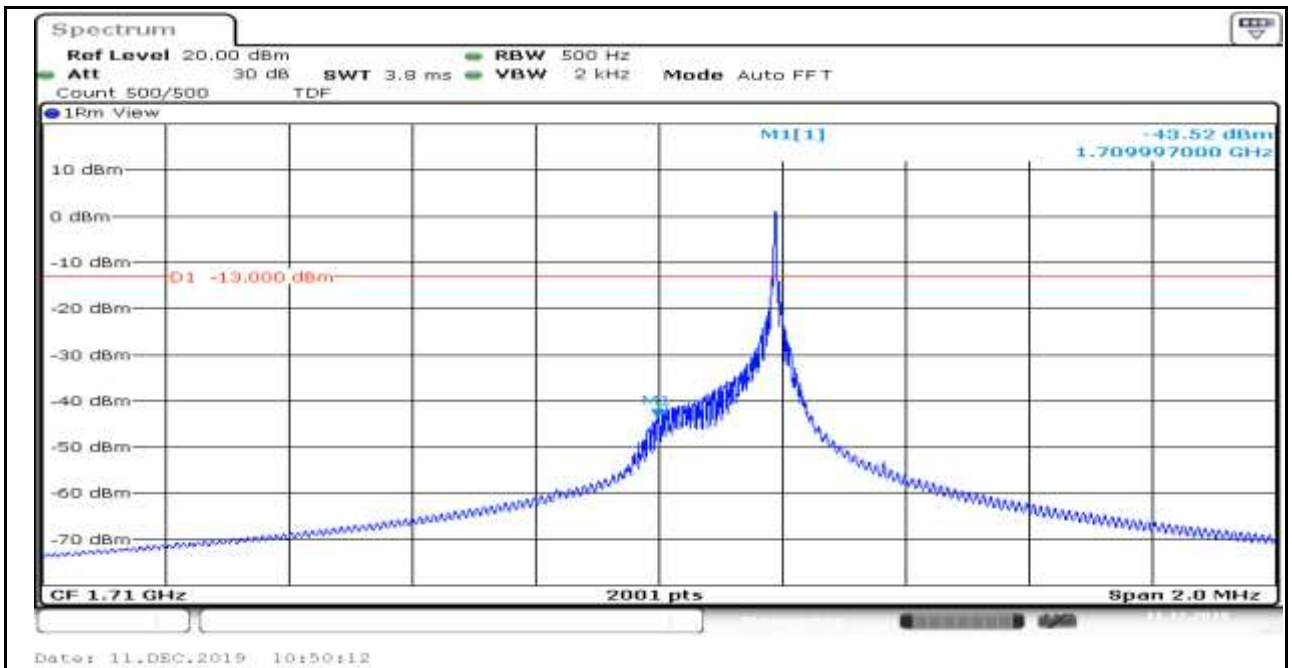


Appendix B.4: Band Edge for NB Test Result

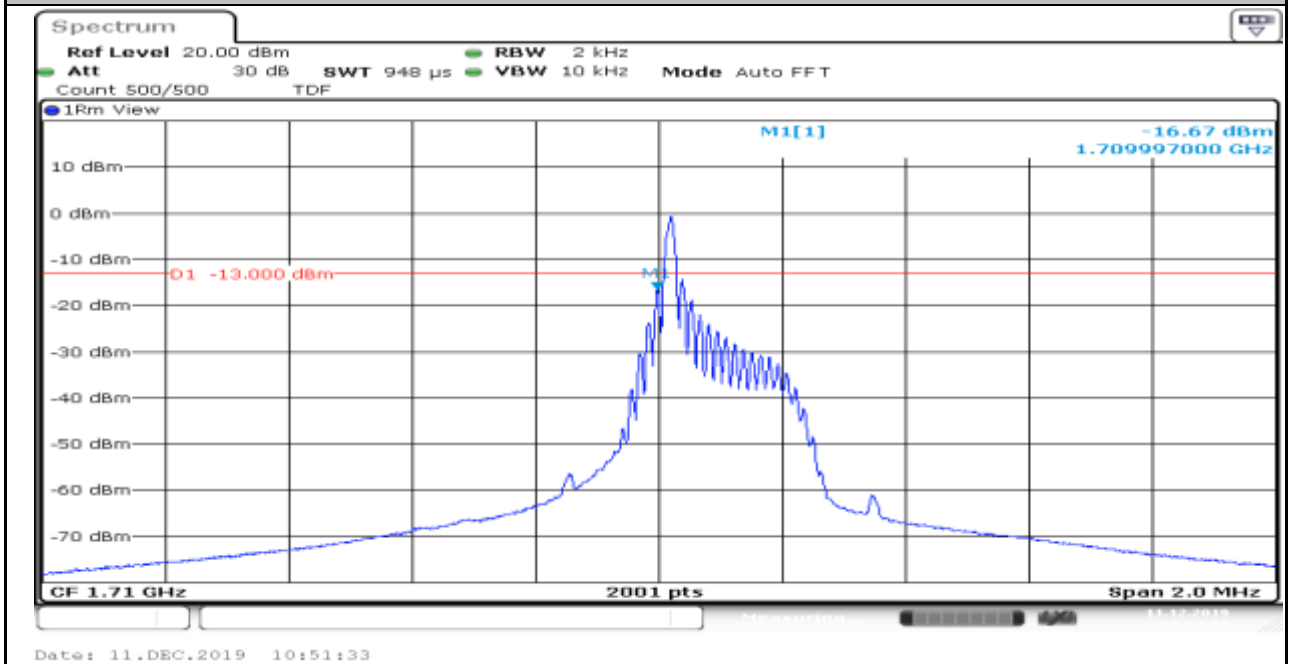
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	-22.40	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@47	3.75kHz	-43.52	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	15kHz	-16.67	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@11	15kHz	-34.49	PASS
Band4	Stand-Alone	NaN	QPSK	19951	12@0	15kHz	-33.11	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@11	15kHz	-16.42	PASS
Band4	Stand-Alone	NaN	QPSK	20399	12@0	15kHz	-30.01	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	15kHz	-35.13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@47	3.75kHz	-21.43	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	-43.36	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	3.75kHz	-20.81	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@11	15kHz	-33.74	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	-14.73	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@47	3.75kHz	-42.77	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	-34.24	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@47	3.75kHz	-21.21	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	3.75kHz	-42.71	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@11	15kHz	-15.45	PASS

Test Graphs

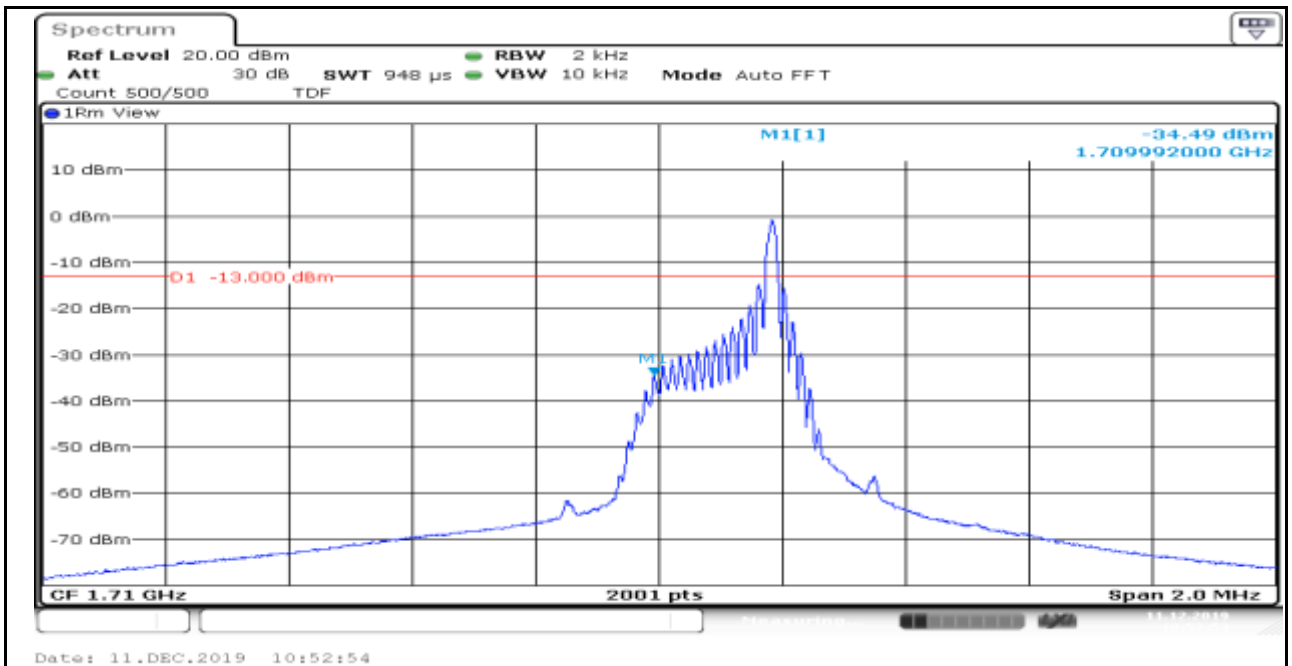




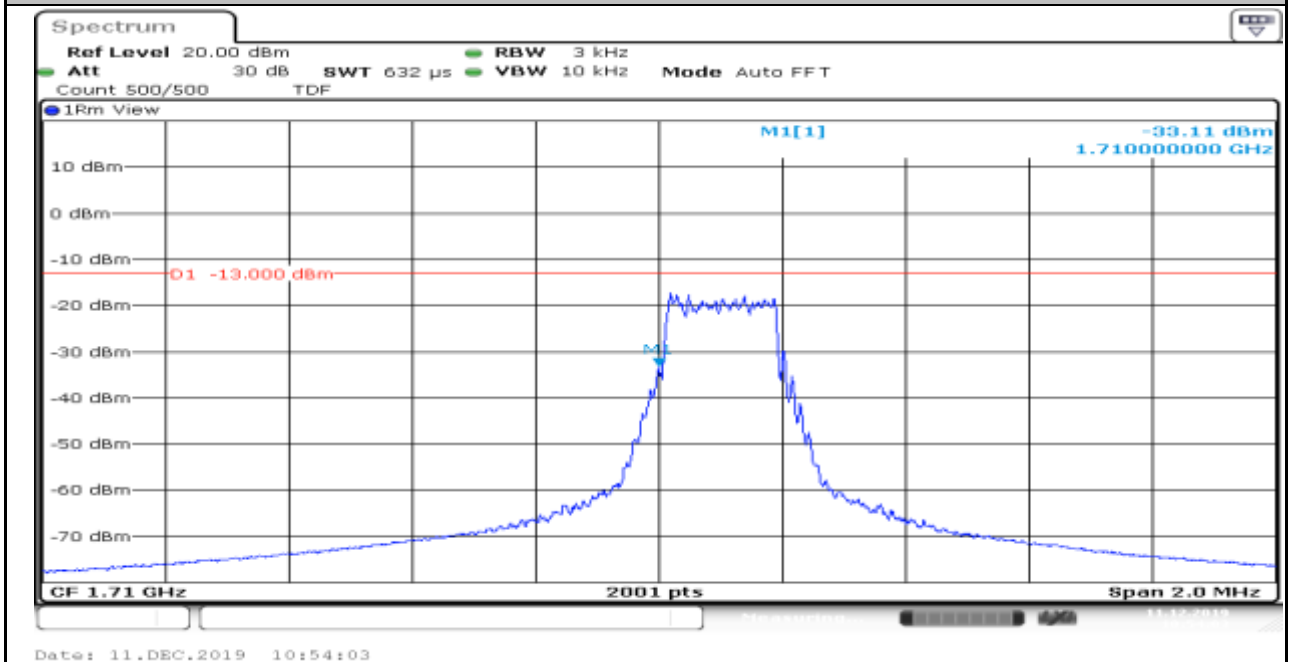
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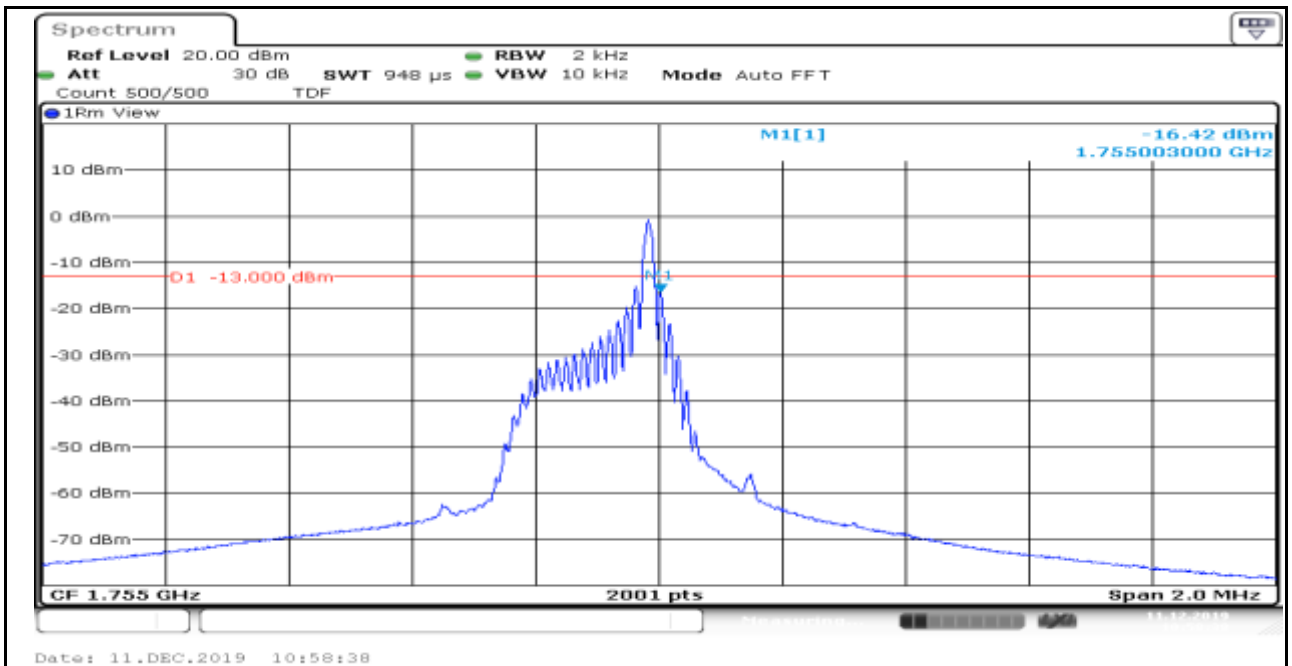
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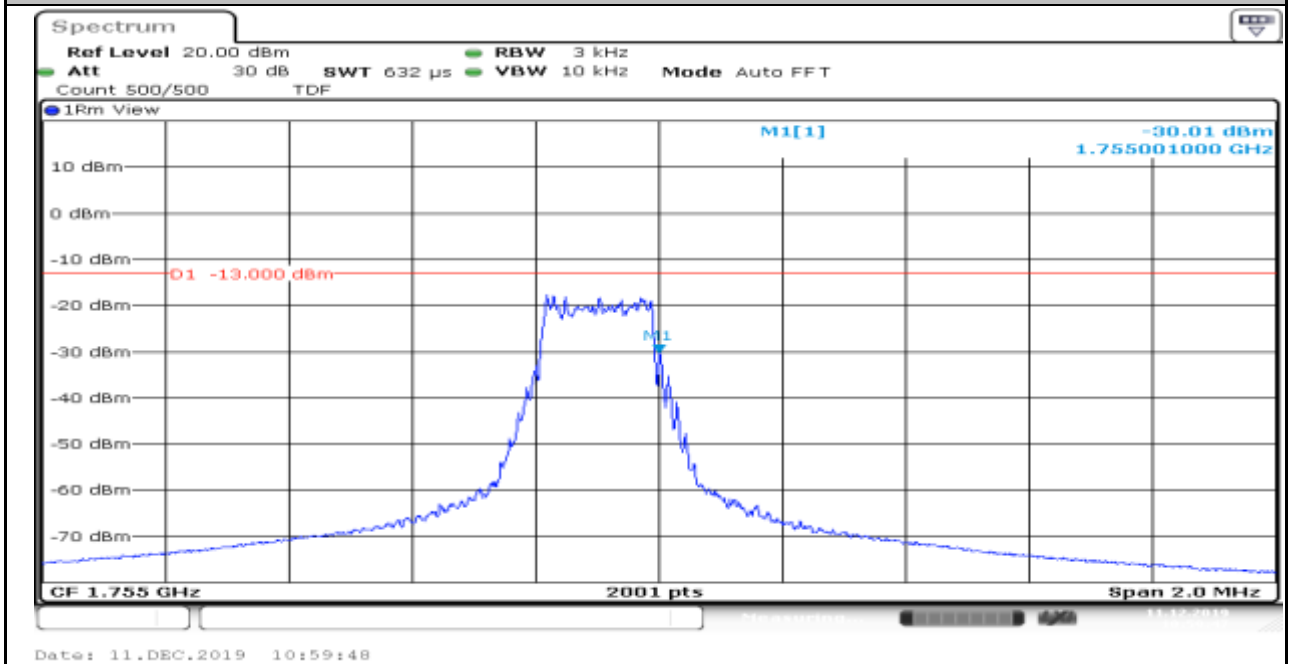
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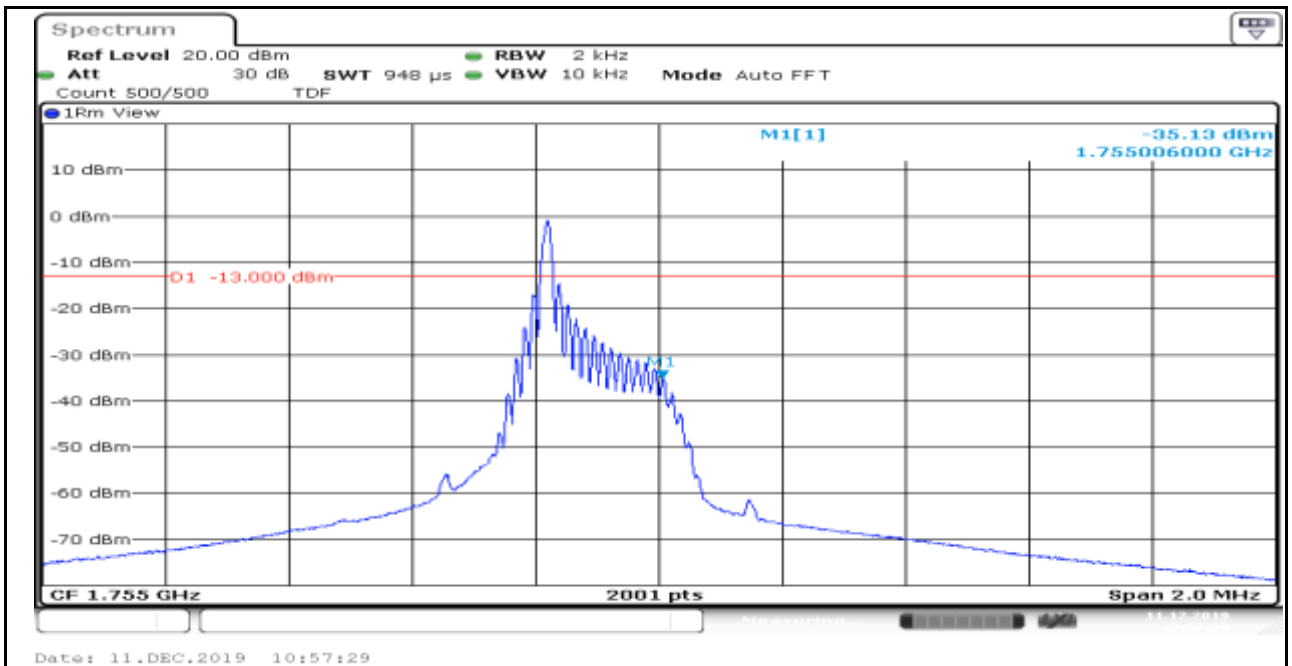
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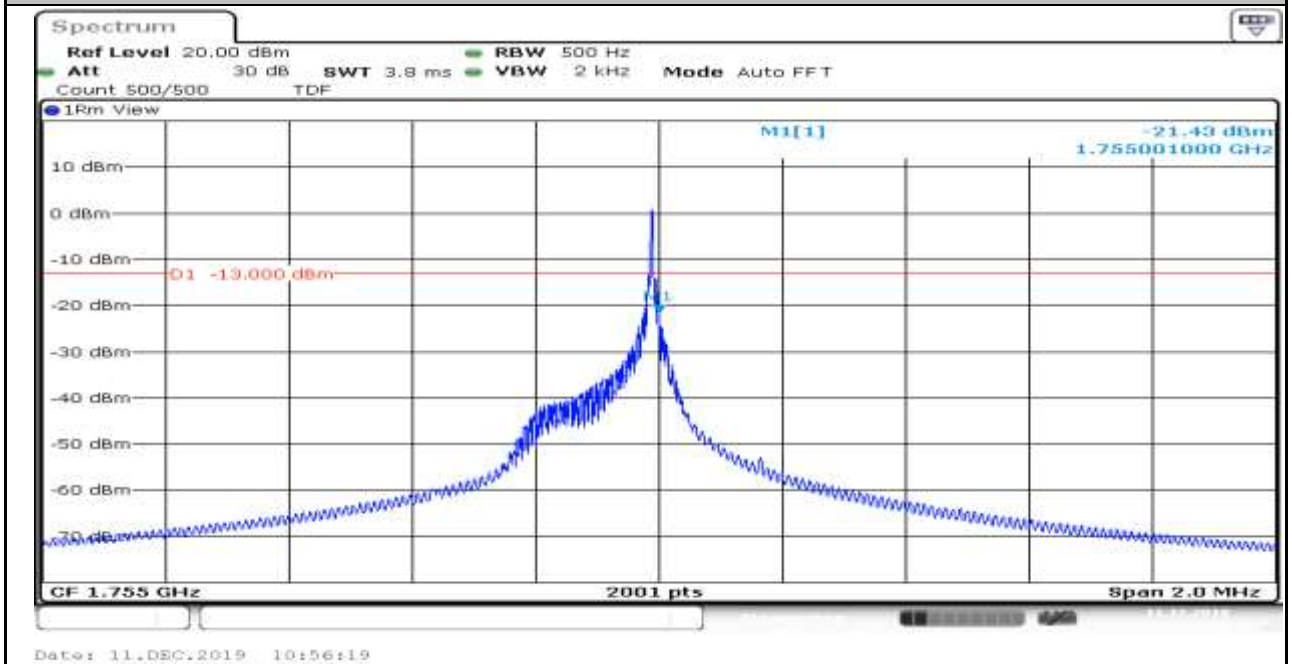
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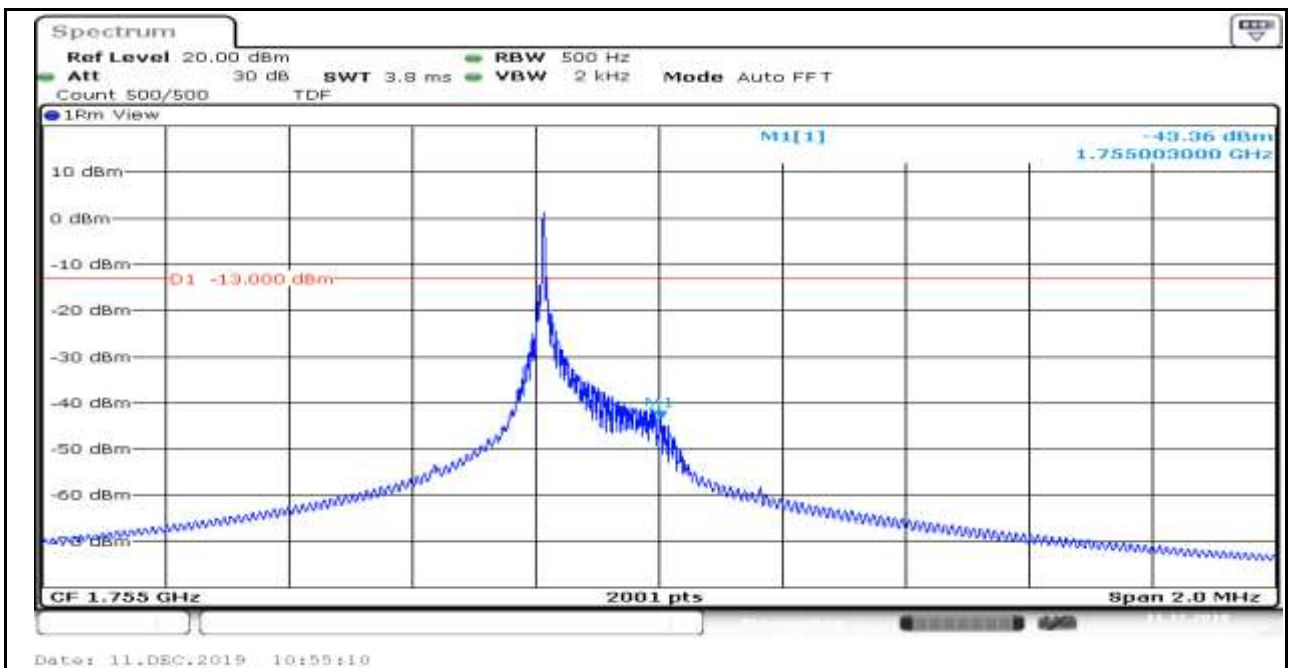
Band4_Stand-Alone_NaN_QPSK_20399_1@0_15kHz_-35.13_PASS__



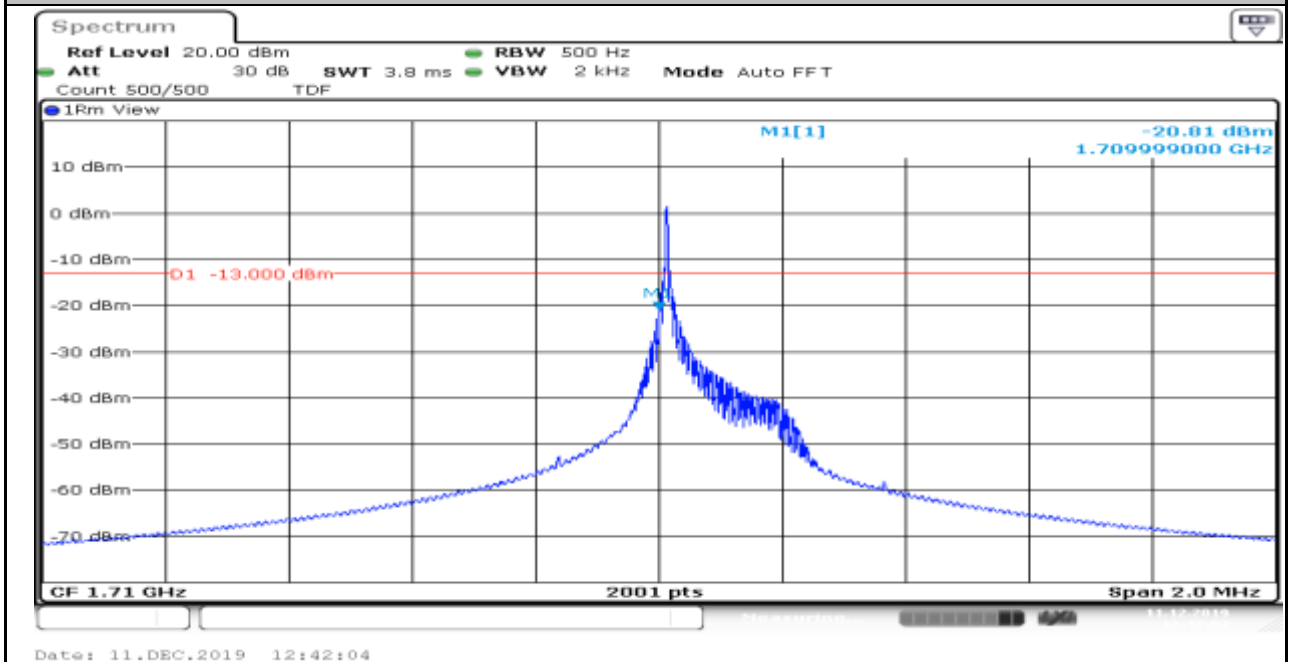
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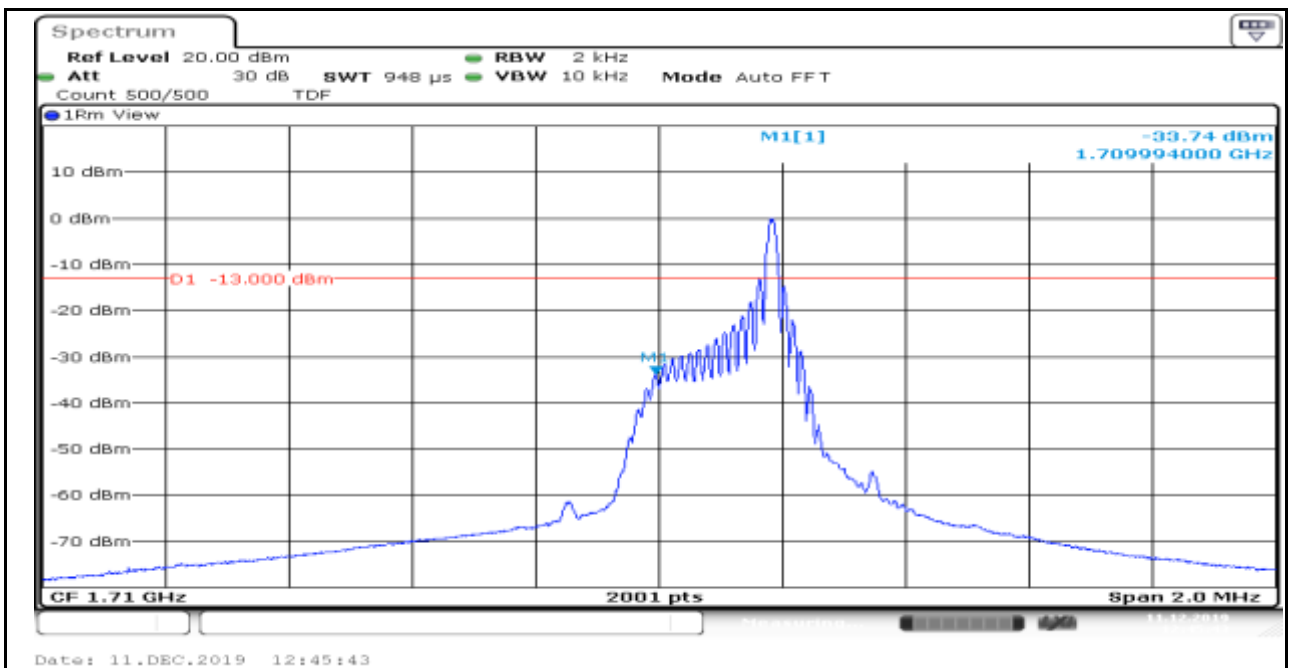
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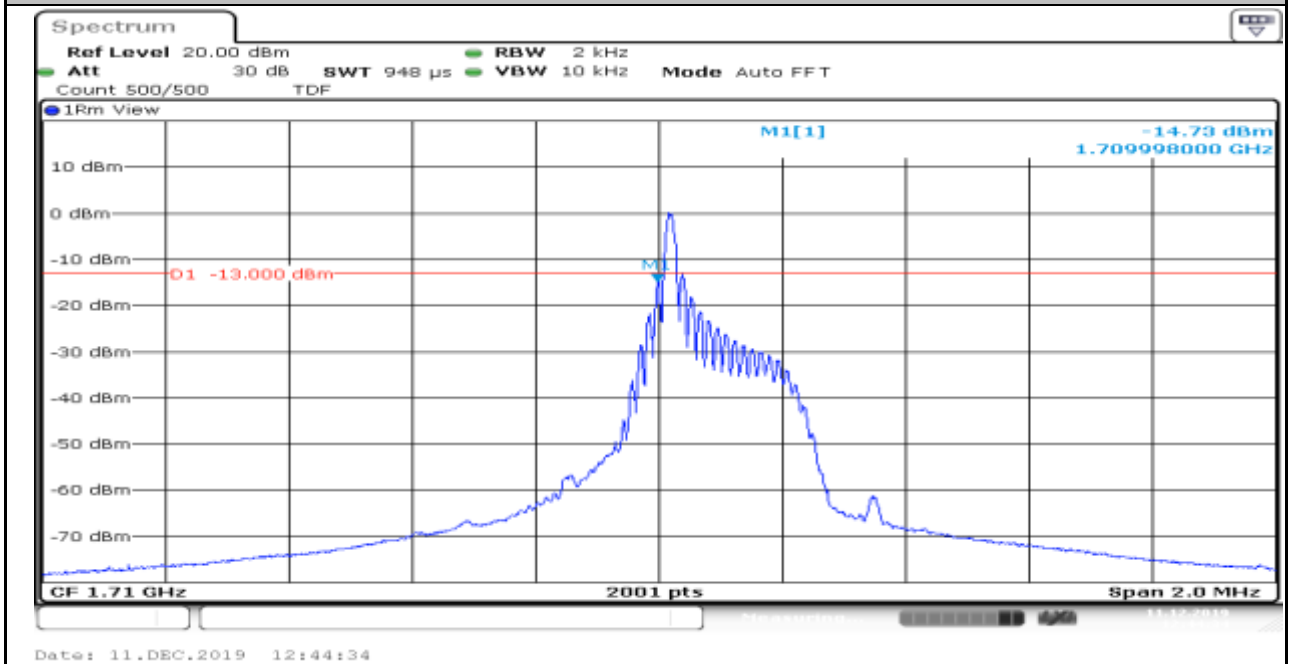
Band4_Stand-Alone_NaN_BPSK_19951_1@0_3.75kHz_-20.81_PASS__



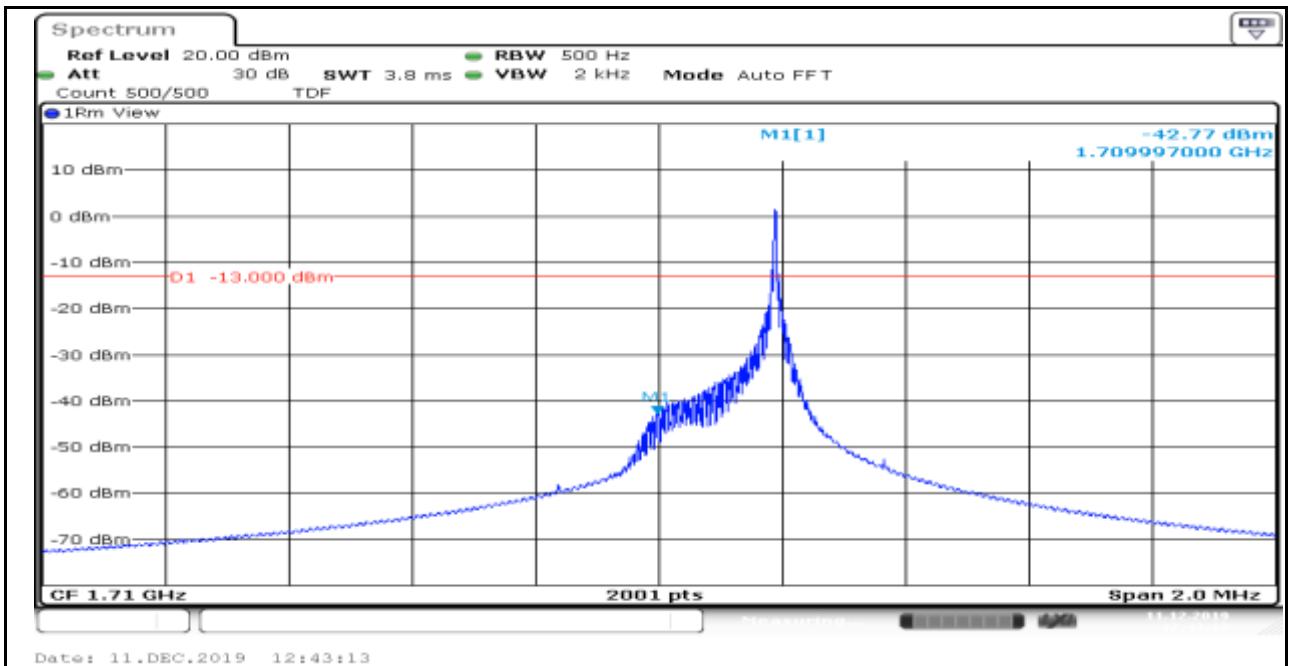
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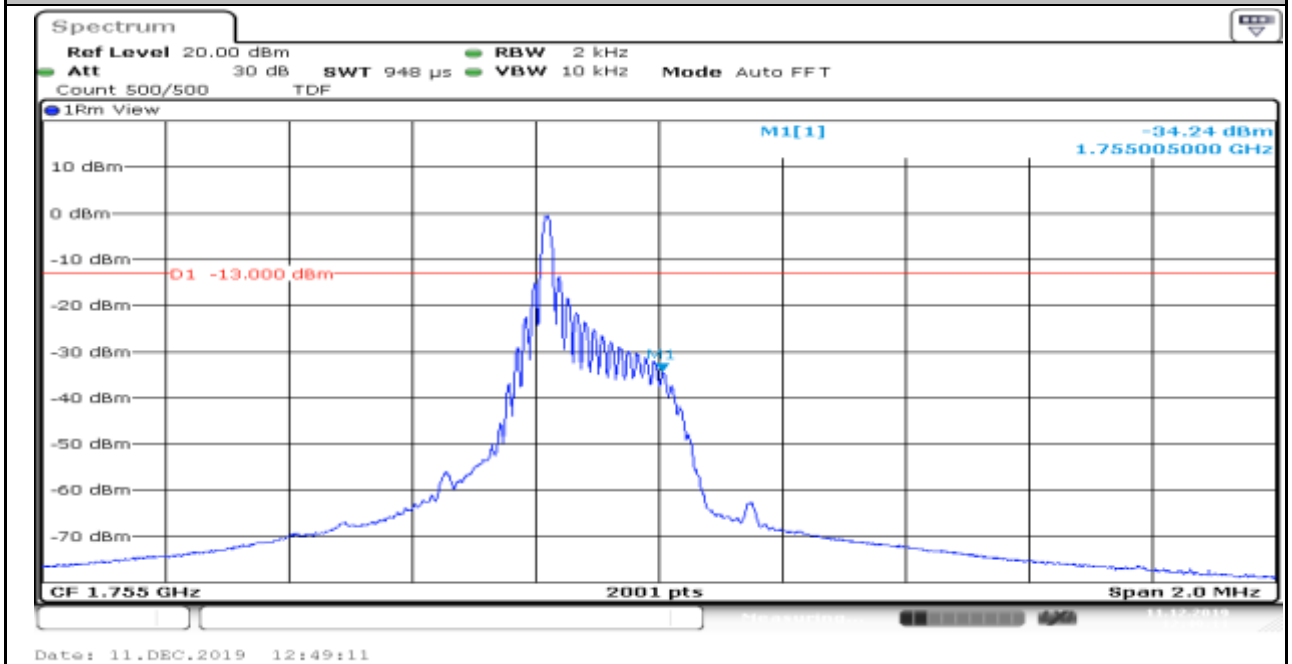
Band4_Stand-Alone_NaN_BPSK_19951_1@0_15kHz_-14.73_PASS__



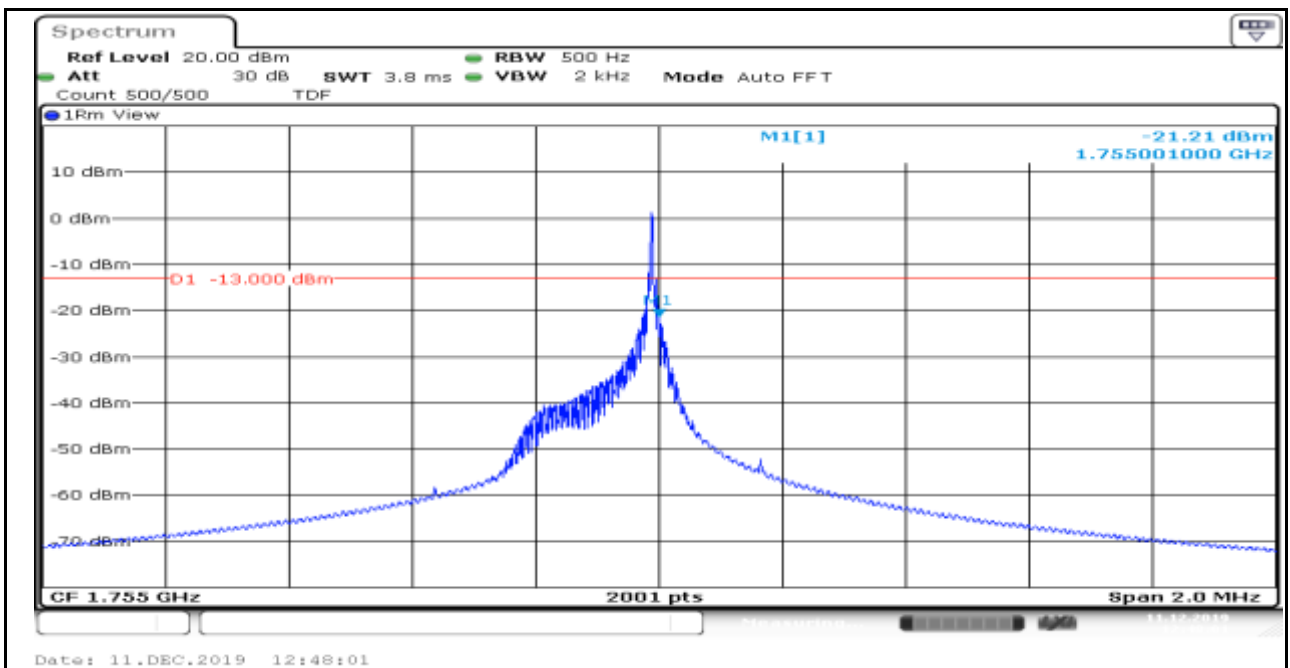
Band4_Stand-Alone_NaN_BPSK_19951_1@47_3.75kHz_-42.77_PASS__



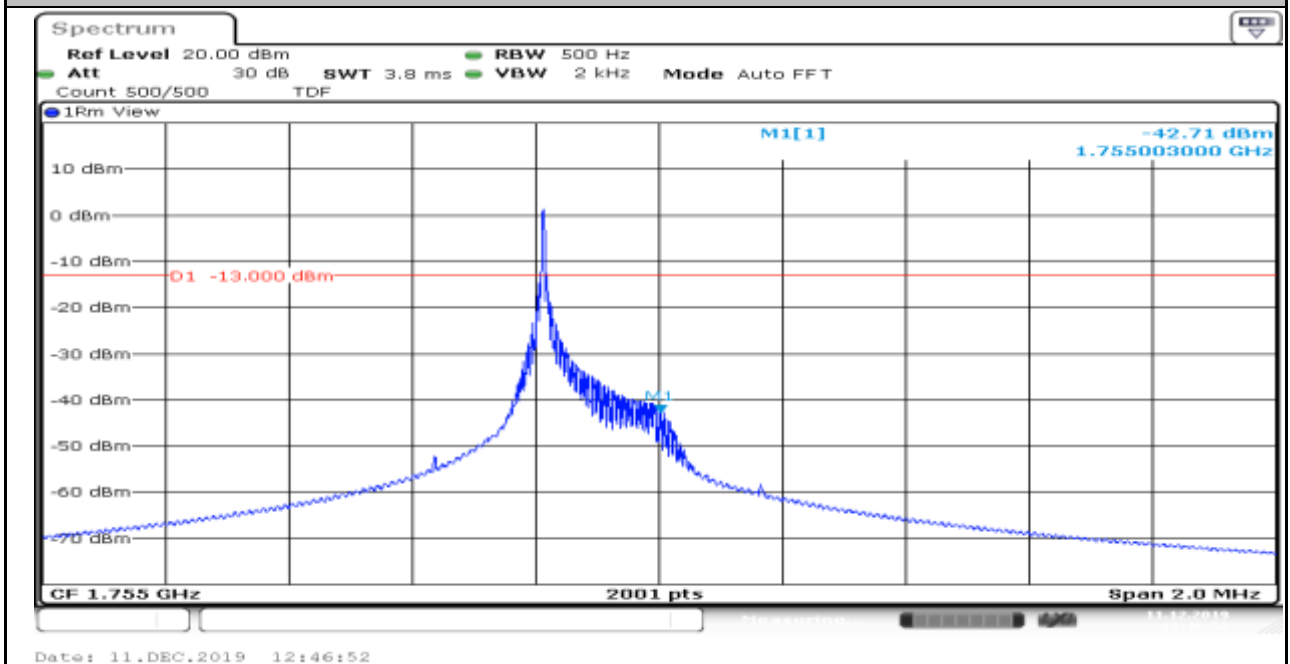
Band4_Stand-Alone_NaN_BPSK_20399_1@0_15kHz_-34.24_PASS__



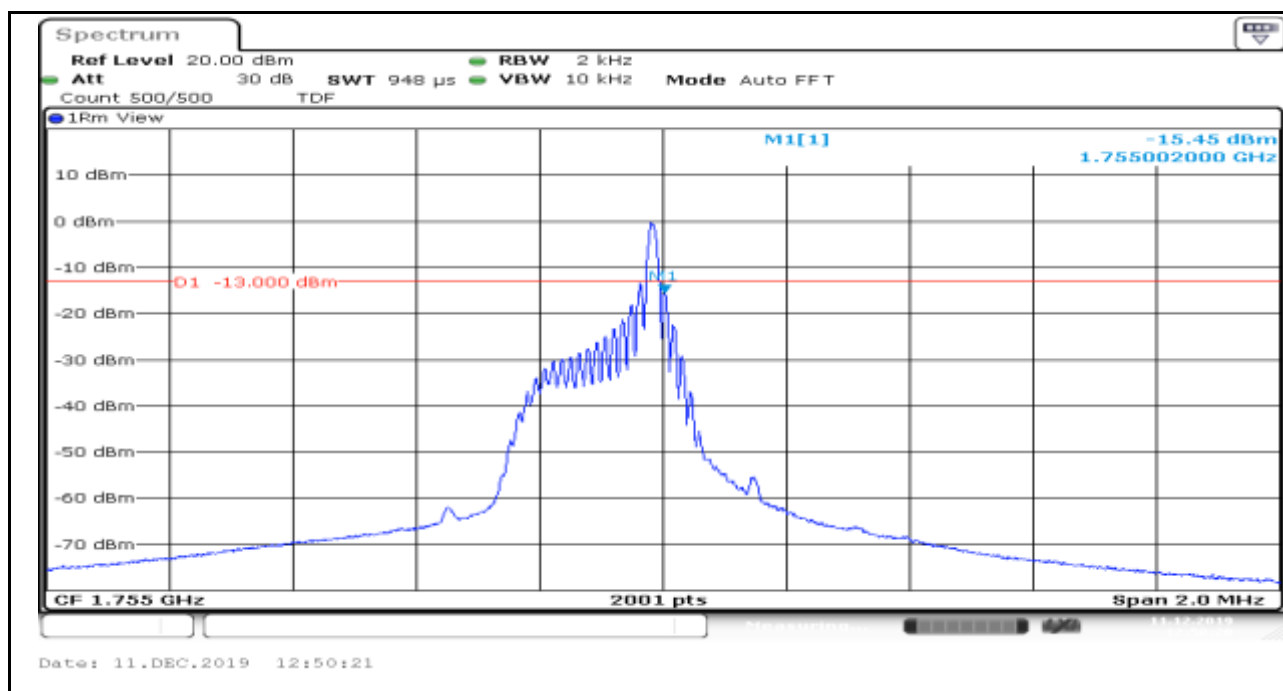
Band4_Stand-Alone_NaN_BPSK_20399_1@47_3.75kHz_-21.21_PASS__



Band4_Stand-Alone_NaN_BPSK_20399_1@0_3.75kHz_-42.71_PASS__



Band4_Stand-Alone_NaN_BPSK_20399_1@11_15kHz_-15.45_PASS__



Appendix B.5: Conducted Spurious Emission for NB Test Result

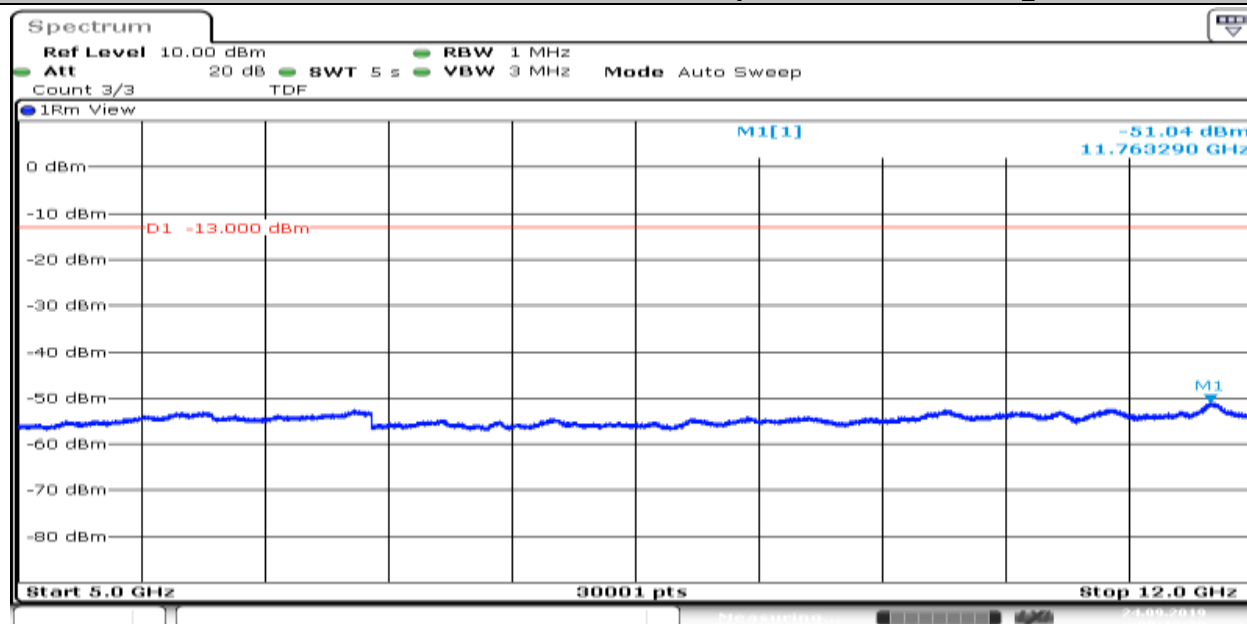
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band4	Stand-Alone	NaN	QPSK	19951	12@0	15kHz	5000	12000	5000~12000MHz@-51.04dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	12@0	15kHz	30	1000	30~1000MHz@-36.66dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	12@0	15kHz	12000	26500	12000~26500MHz@-45.75dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	12@0	15kHz	1000	5000	1000~5000MHz@-38.13dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	30	1000	30~1000MHz@-37.02dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	1000	5000	1000~5000MHz@-40.1dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	5000	12000	5000~12000MHz@-44.82dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@0	3.75kHz	12000	26500	12000~26500MHz@-45.84dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@47	3.75kHz	30	1000	30~1000MHz@-36.66dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@47	3.75kHz	1000	5000	1000~5000MHz@-39.58dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@47	3.75kHz	5000	12000	5000~12000MHz@-44.8dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	19951	1@47	3.75kHz	12000	26500	12000~26500MHz@-45.62dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	12@0	15kHz	12000	26500	12000~26500MHz@-45.69dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	12@0	15kHz	30	1000	30~1000MHz@-37.04dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	12000	26500	12000~26500MHz@-45.82dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	12@0	15kHz	5000	12000	5000~12000MHz@-47.16dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	12@0	15kHz	1000	5000	1000~5000MHz@-40.15dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	12000	26500	12000~26500MHz@-45.85dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	30	1000	30~1000MHz@-36.79dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	5000	12000	5000~12000MHz@-44.64dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	1000	5000	1000~5000MHz@-40.27dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	5000	12000	5000~12000MHz@-44.51dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	30	1000	30~1000MHz@-37.11dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	1000	5000	1000~5000MHz@-40.2dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	12@0	15kHz	12000	26500	12000~26500MHz@-45.58dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	12@0	15kHz	1000	5000	1000~5000MHz@-40.26dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@47	3.75kHz	12000	26500	12000~26500MHz@-45.92dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	12000	26500	12000~26500MHz@-45.6dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	30	1000	30~1000MHz@-35.58dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	1000	5000	1000~5000MHz@-40.13dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@0	3.75kHz	5000	12000	5000~12000MHz@-44.26dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@47	3.75kHz	5000	12000	5000~12000MHz@-44.14dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@47	3.75kHz	1000	5000	1000~5000MHz@-39.9dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	12@0	15kHz	30	1000	30~1000MHz@-36.67dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	1@47	3.75kHz	30	1000	30~1000MHz@-37.05dBm	-13	PASS
Band4	Stand-Alone	NaN	QPSK	20399	12@0	15kHz	5000	12000	5000~12000MHz@-50.84dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@11	15kHz	30	1000	30~1000MHz@-37.23dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	30	1000	30~1000MHz@-36.69dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	1000	5000	1000~5000MHz@-40.18dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	5000	12000	5000~12000MHz@-44.27dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@0	15kHz	12000	26500	12000~26500MHz@-45.77dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@11	15kHz	12000	26500	12000~26500MHz@-45.67dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@11	15kHz	5000	12000	5000~12000MHz@-43.99dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	19951	1@11	15kHz	1000	5000	1000~5000MHz@-39dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	30	1000	30~1000MHz@-36.78dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	1000	5000	1000~5000MHz@-39.72dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	5000	12000	5000~12000MHz@-43.76dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@0	15kHz	12000	26500	12000~26500MHz@-45.68dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@11	15kHz	30	1000	30~1000MHz@-36.47dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@11	15kHz	1000	5000	1000~5000MHz@-39.75dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@11	15kHz	12000	26500	12000~26500MHz@-45.62dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20175	1@11	15kHz	5000	12000	5000~12000MHz@-43.52dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	5000	12000	5000~12000MHz@-50.85dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	1000	5000	1000~5000MHz@-39.55dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	12000	26500	12000~26500MHz@-45.68dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@11	15kHz	30	1000	30~1000MHz@-36.7dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@11	15kHz	1000	5000	1000~5000MHz@-39.66dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@11	15kHz	5000	12000	5000~12000MHz@-43.5dBm	-13	PASS

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Band4	Stand-Alone	NaN	BPSK	20399	1@11	15kHz	12000	26500	12000-26500MHz@-45.63dBm	-13	PASS
Band4	Stand-Alone	NaN	BPSK	20399	1@0	15kHz	30	1000	30-1000MHz@-36.6dBm	-13	PASS

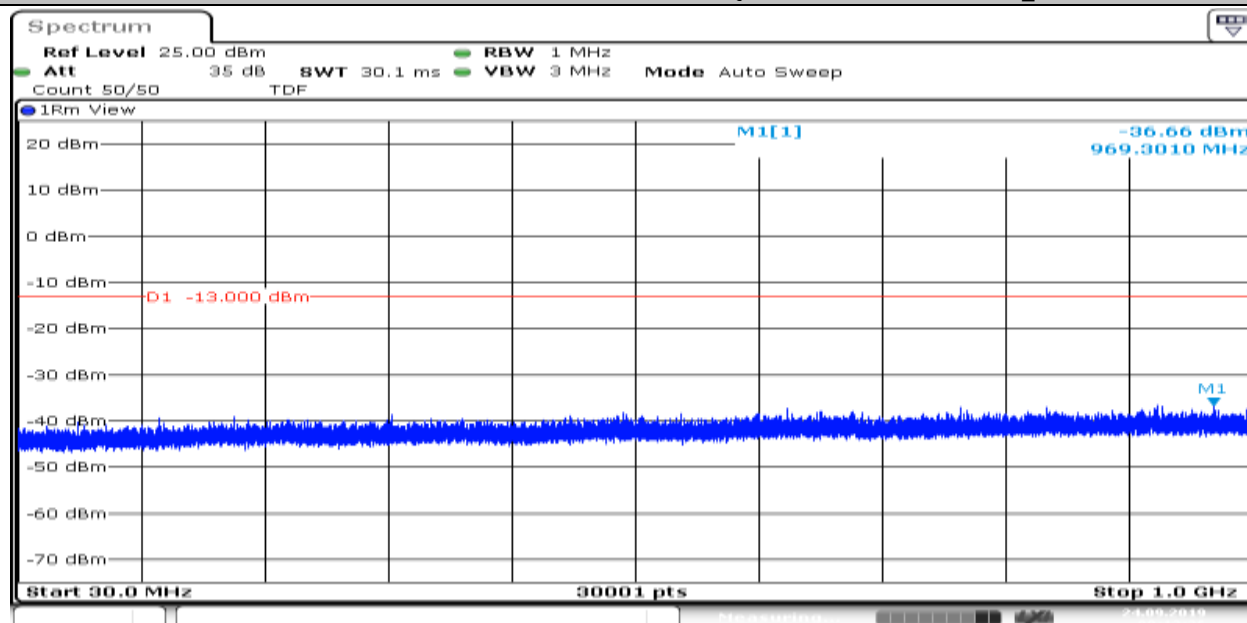
Test Graphs

Band4_Stand-Alone_NaN_QPSK_19951_12@0_15kHz_5000_12000_5000-12000MHz@-51.04dBm_-13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category NB-Band4-Stand-Alone-NaN-19951-12@0@15kHz-QPSK-NTNV-20199248522.Gif_



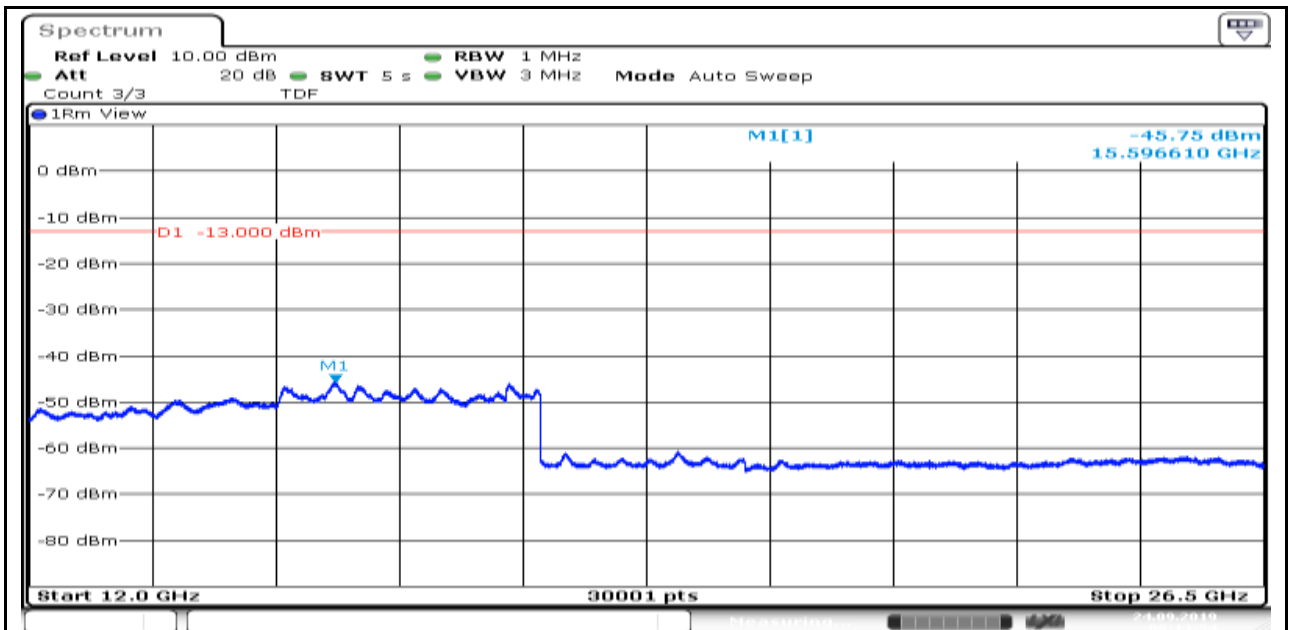
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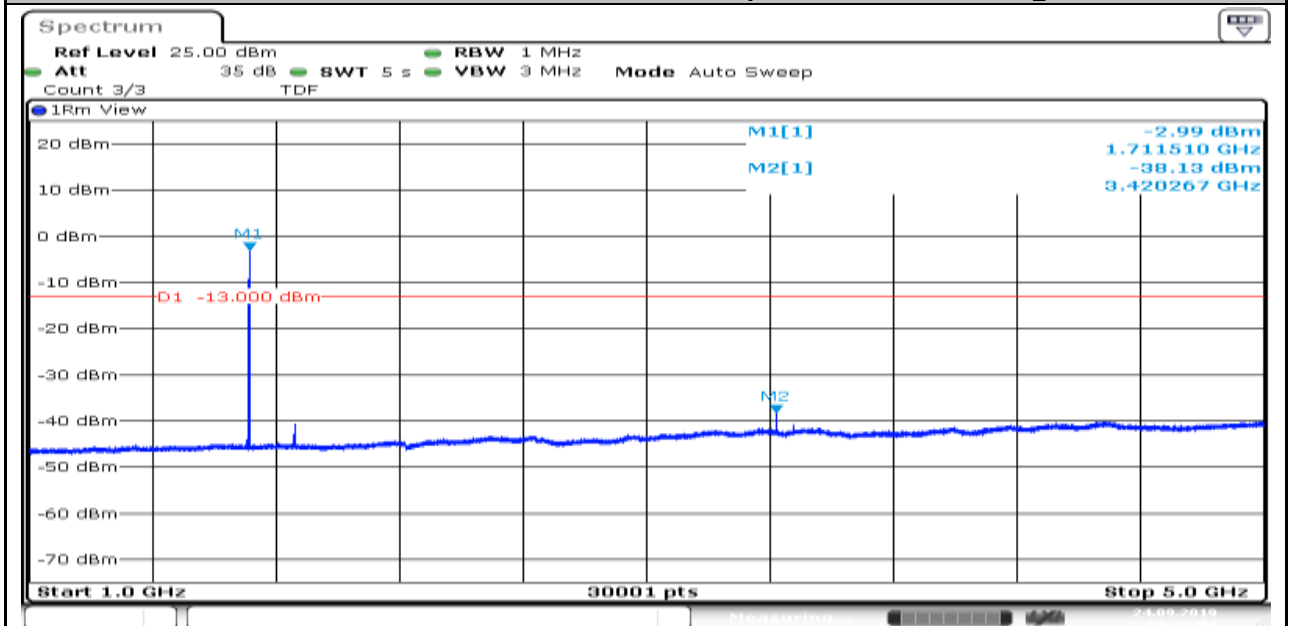


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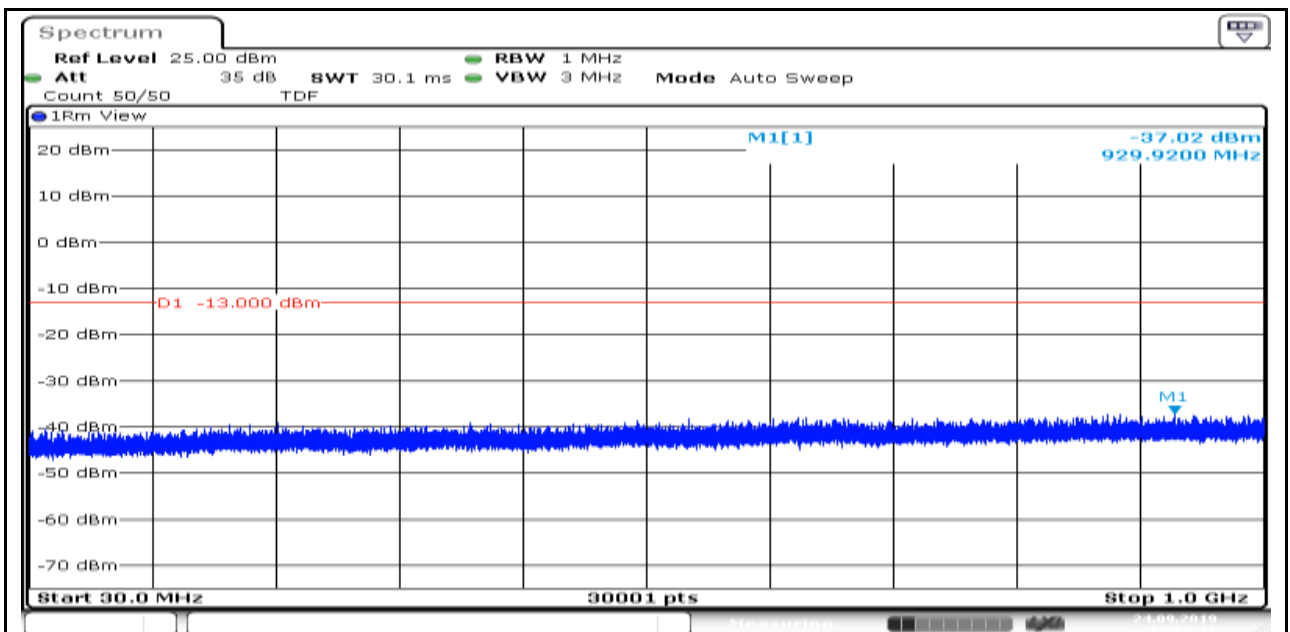
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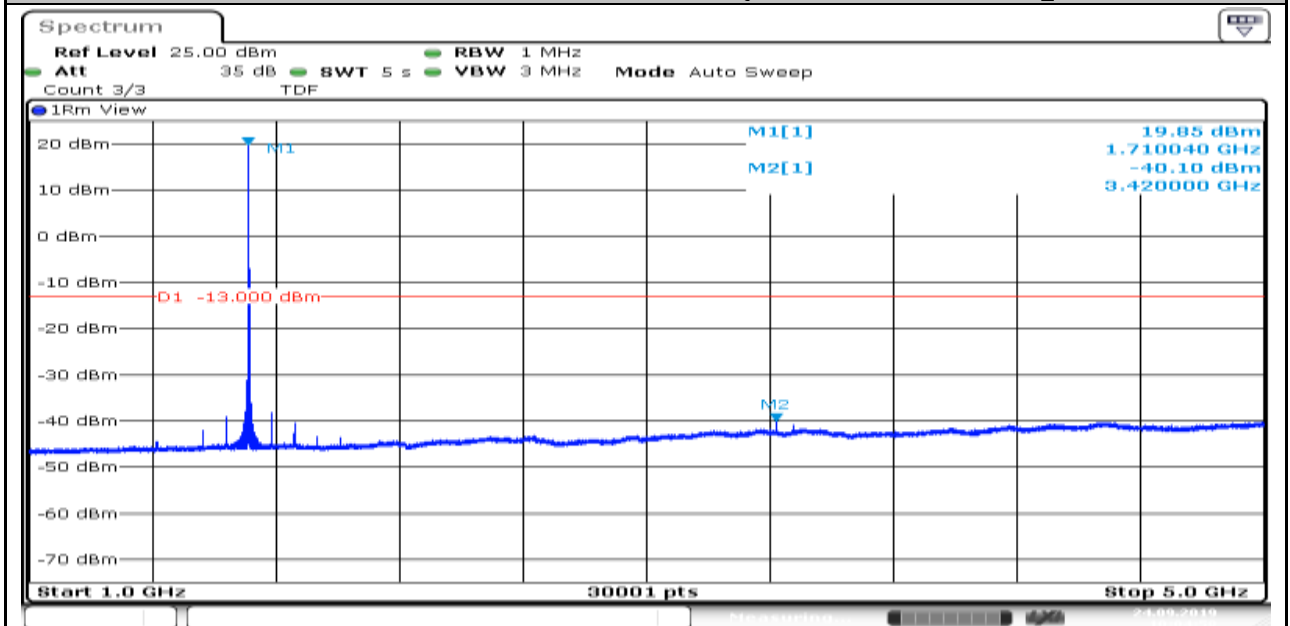
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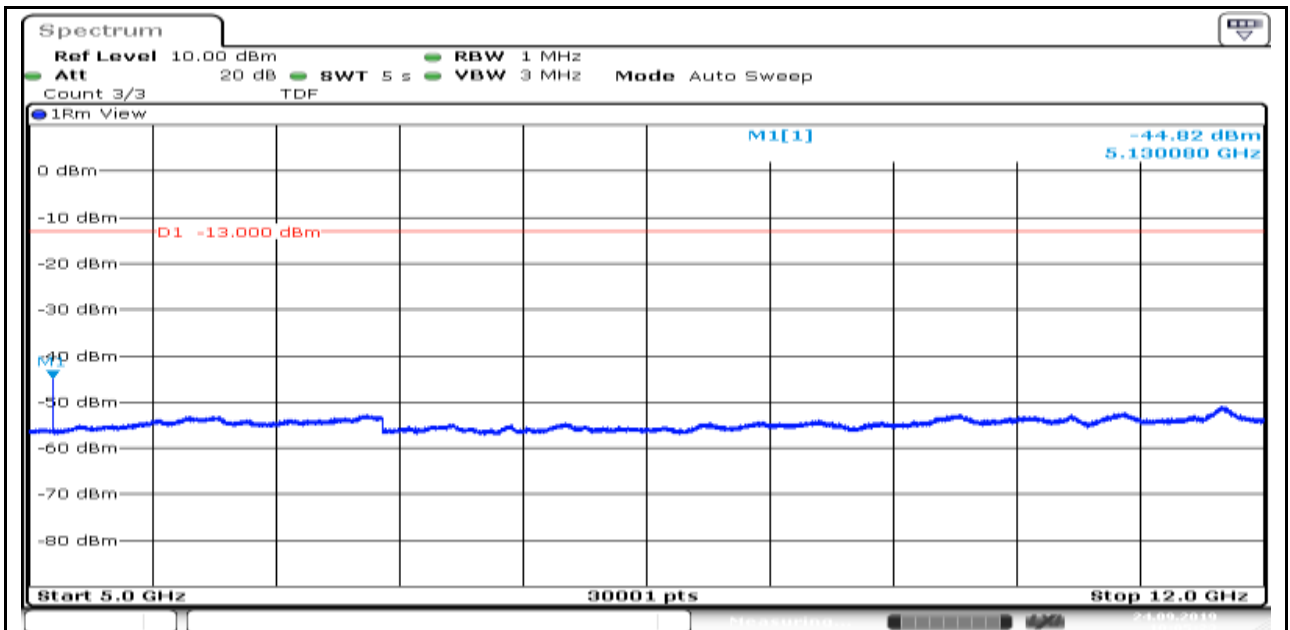
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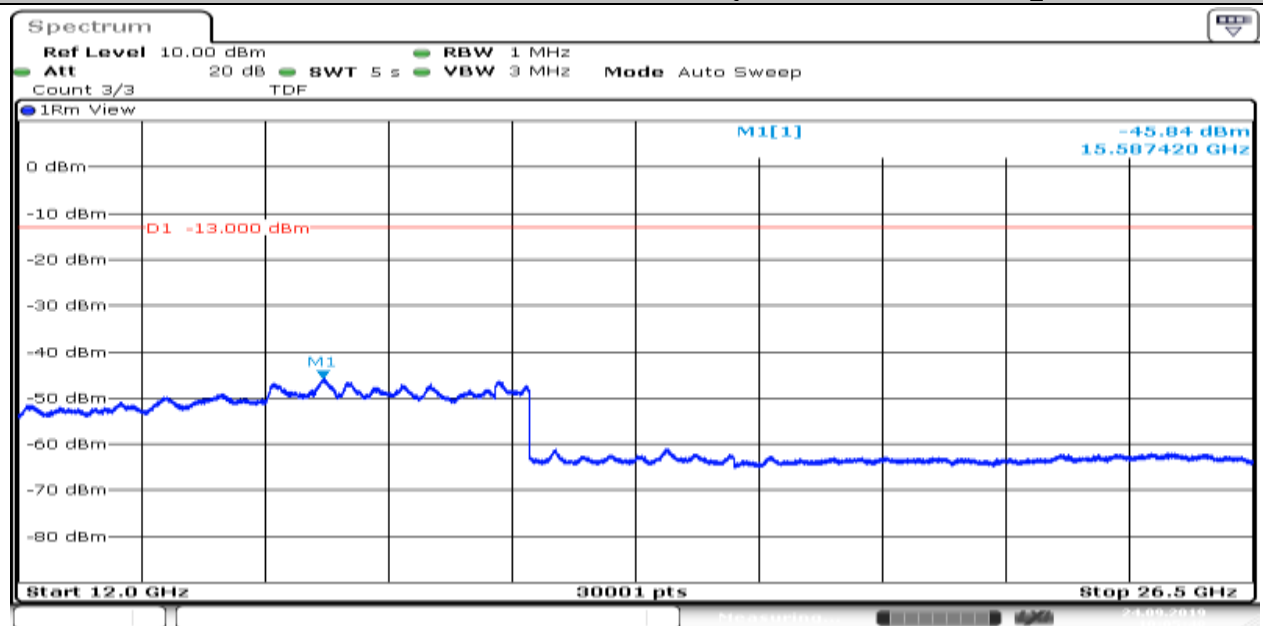
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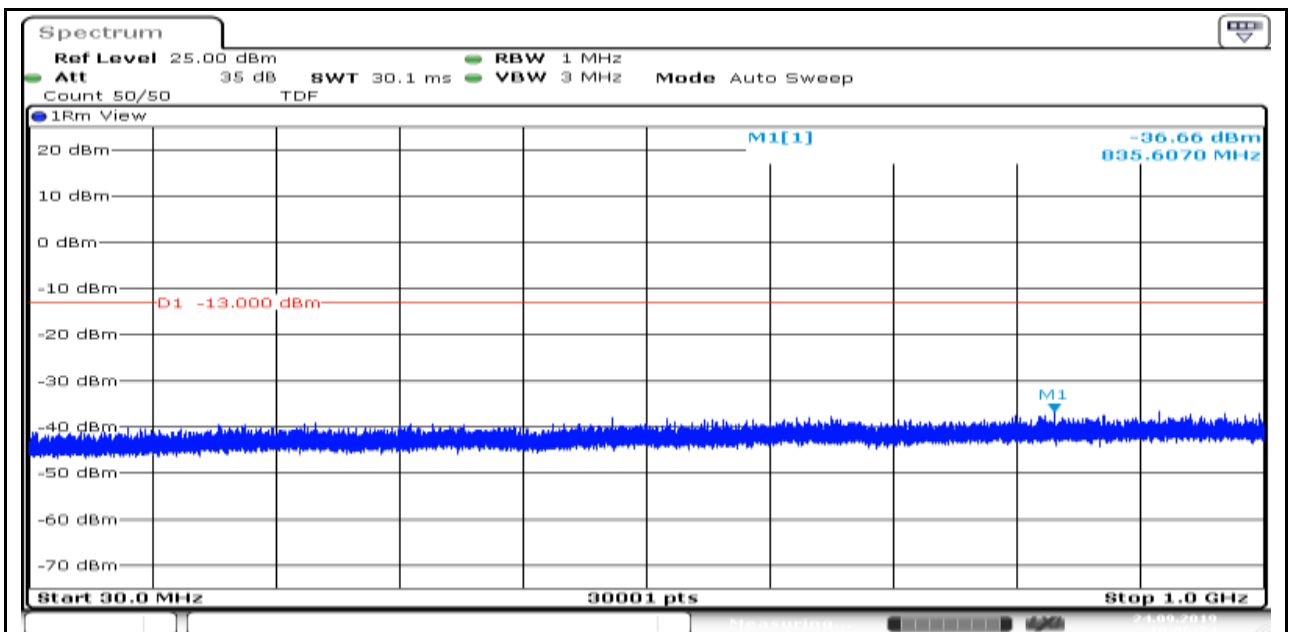
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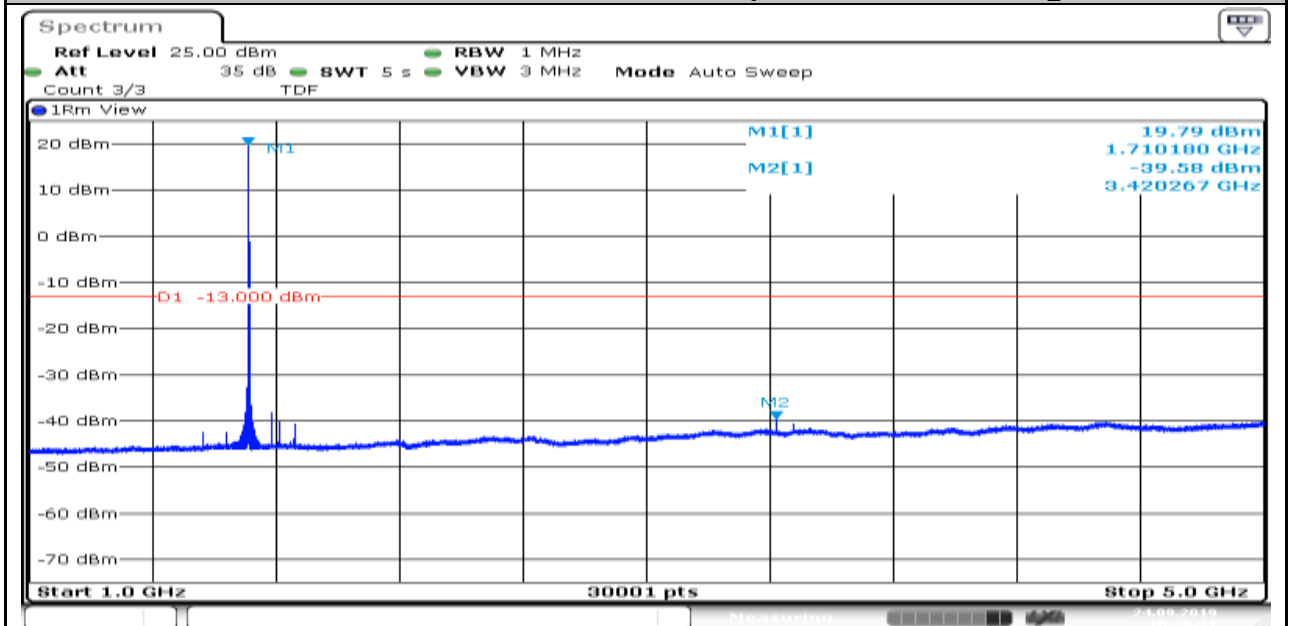
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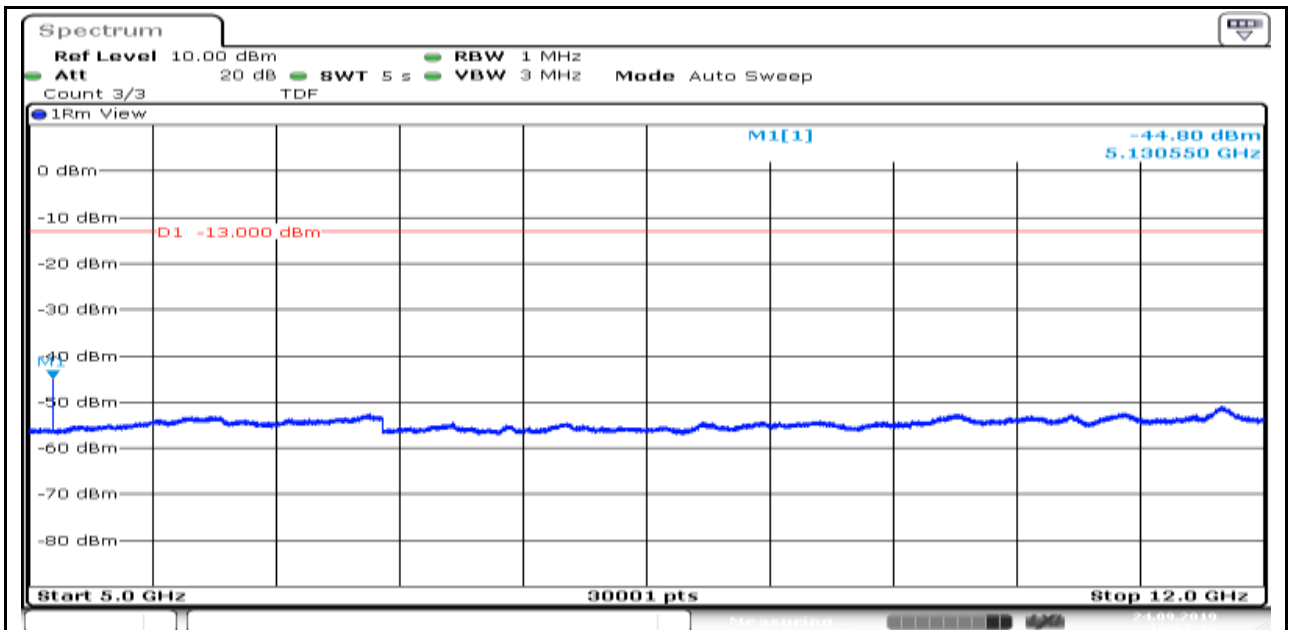
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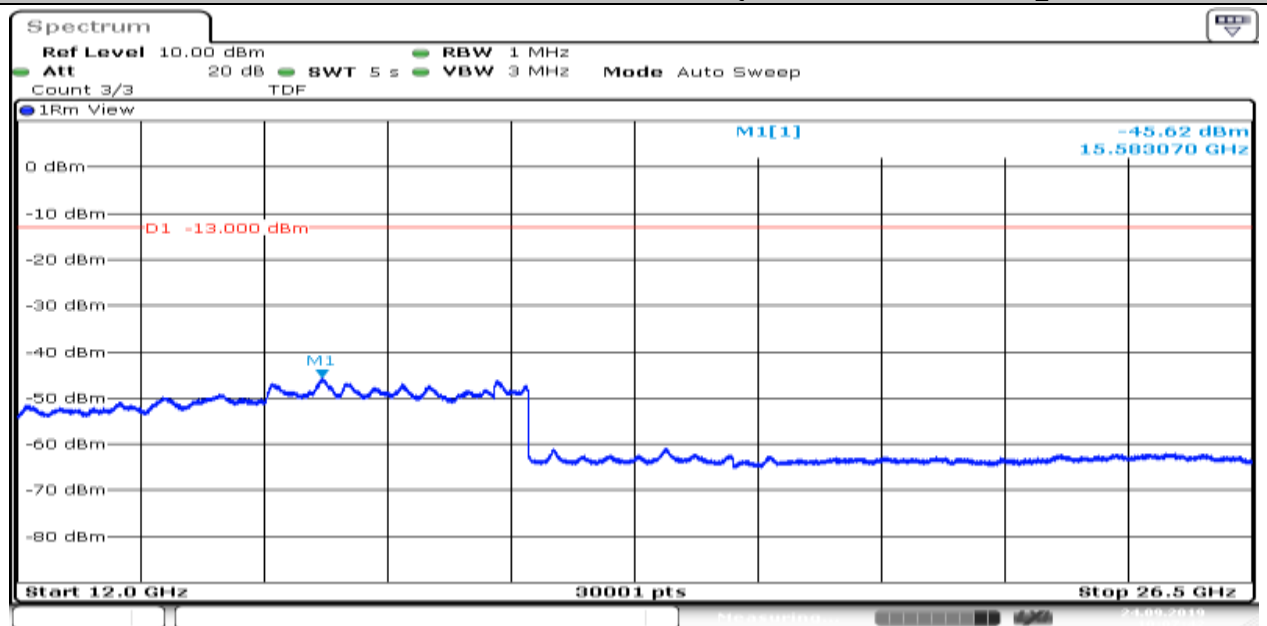
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NB-Band4-Stand-Alone-NaN-19951-1@47@3.75kHz-QPSK-NTNV-201992485844.Gif_



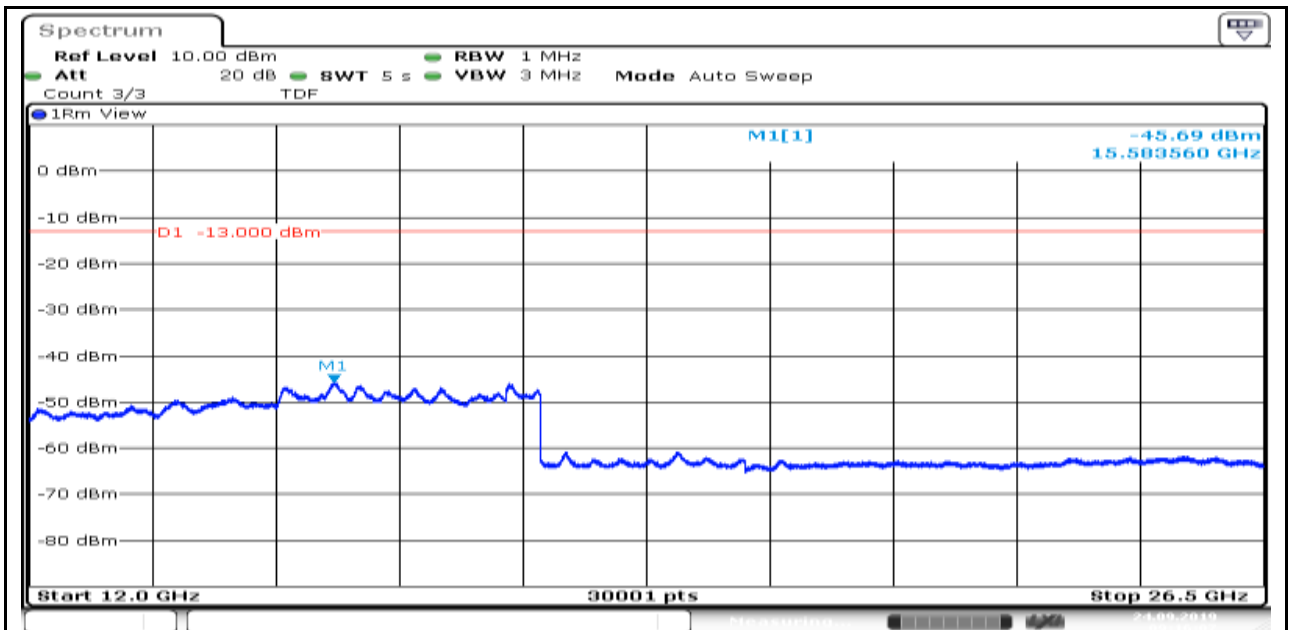
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NB-Band4-Stand-Alone-NaN-19951-1@47@3.75kHz-QPSK-NTNV-201992485910.Gif_



Band4_Stand-Alone_NaN_QPSK_19951_1@47_3.75kHz_12000_26500_12000-26500MHz@-45.62dBm_-13_PASS_FCC_ME910
G1\FCC_NBIOT_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category
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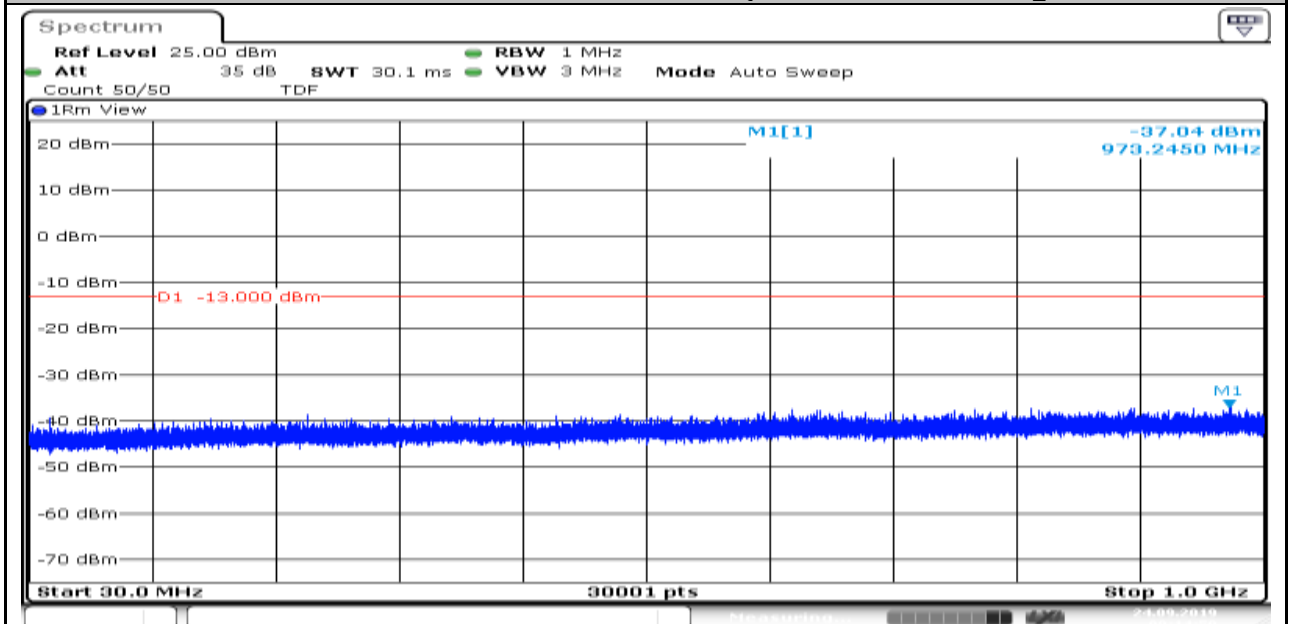


Band4_Stand-Alone_NaN_QPSK_20175_12@0_15kHz_12000_26500_12000-26500MHz@-45.69dBm_-13_PASS_FCC_ME910G1
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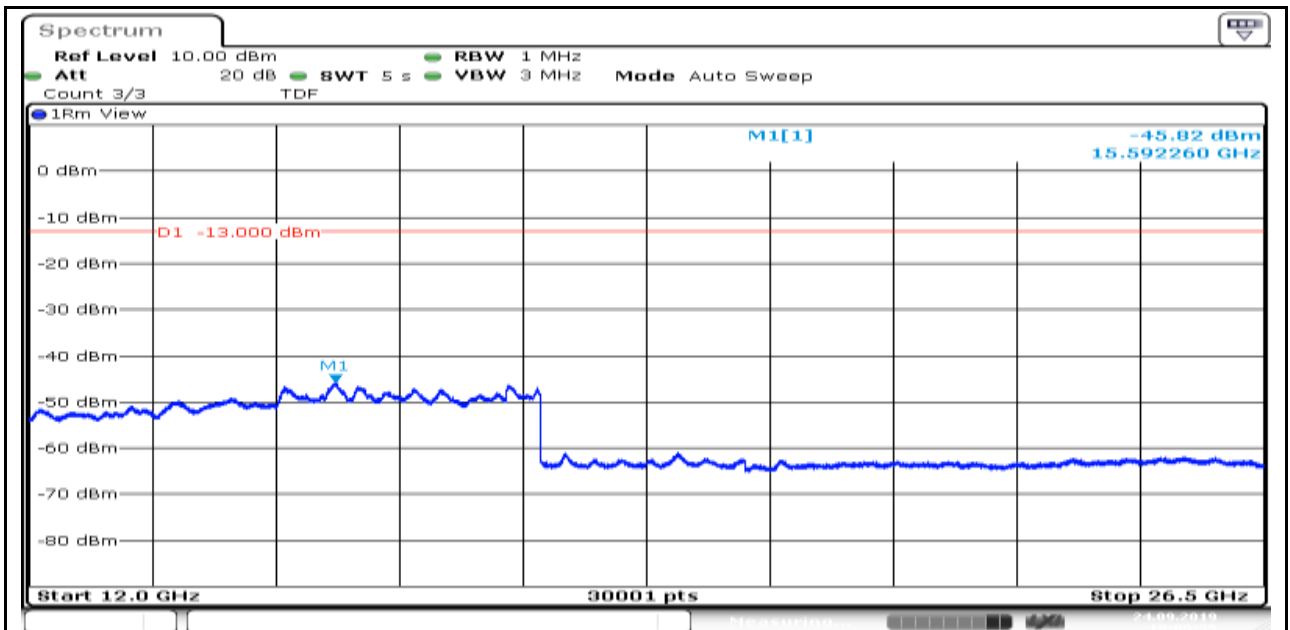
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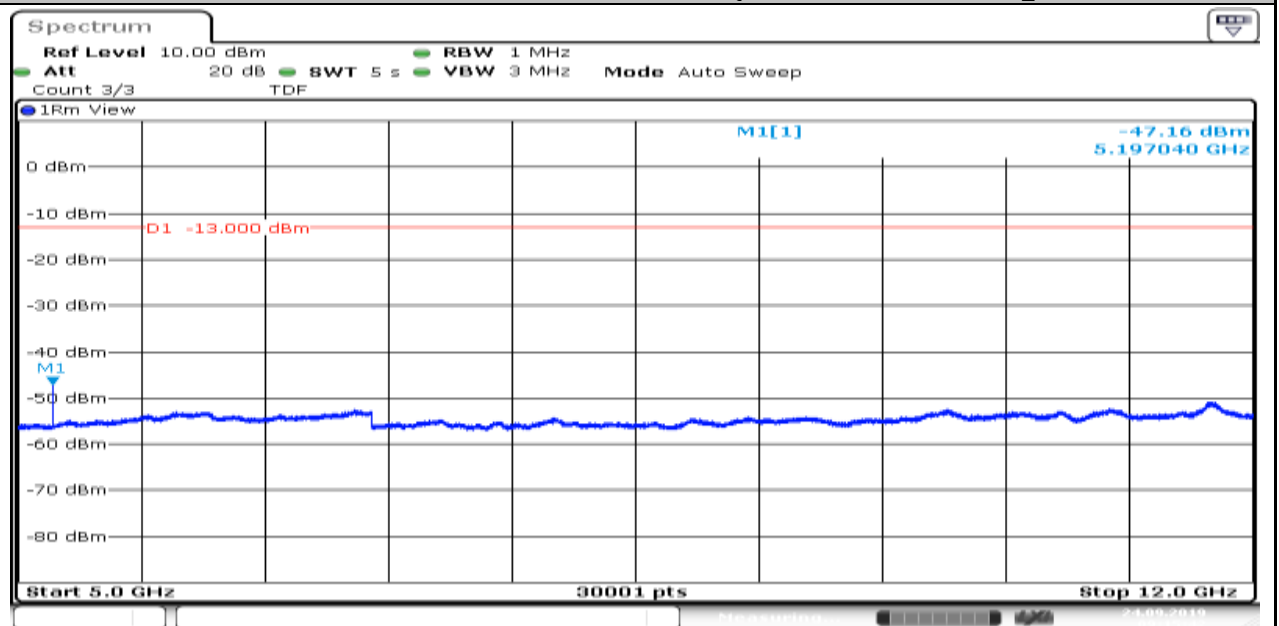


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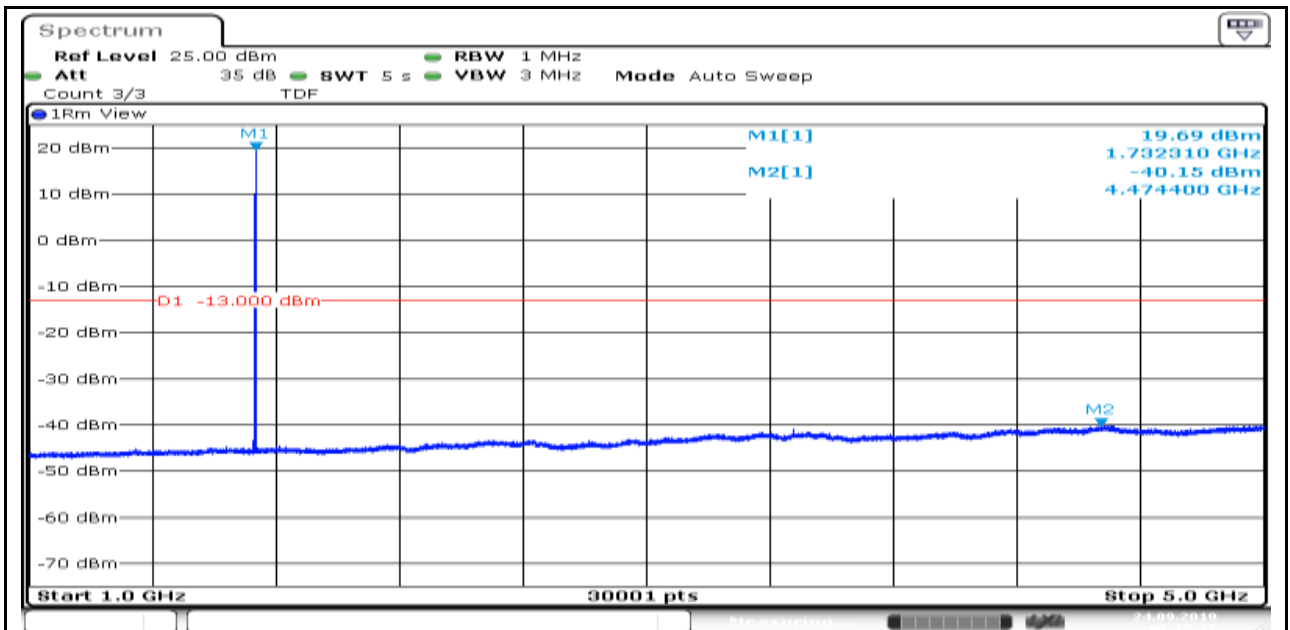
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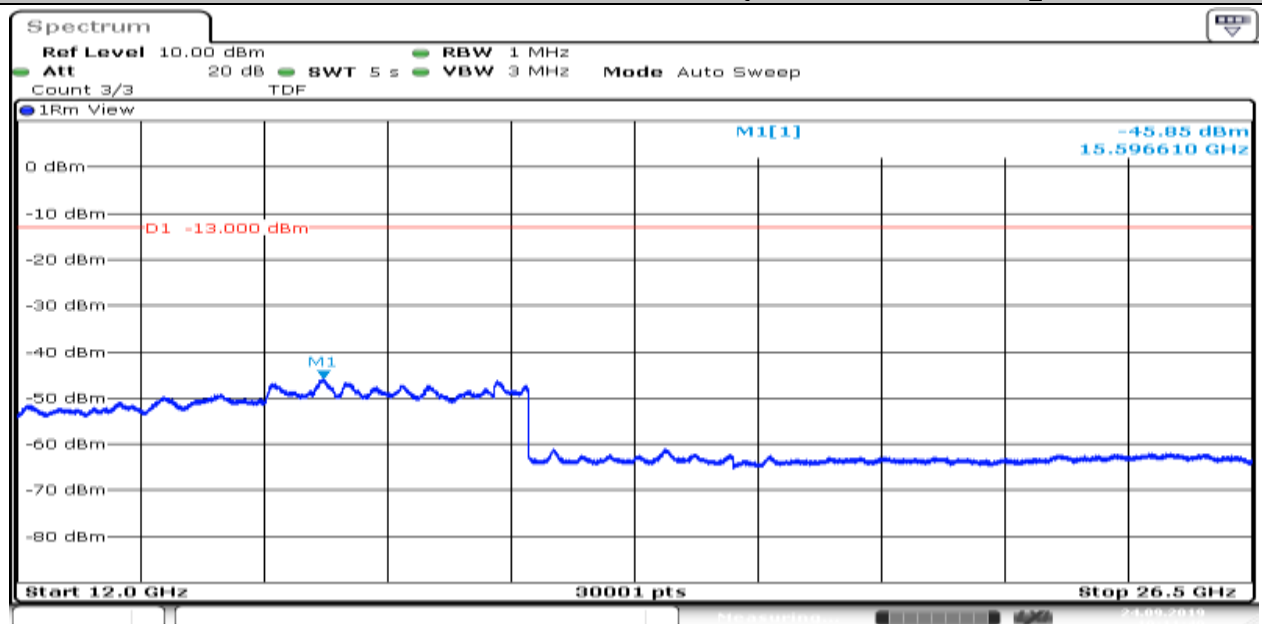
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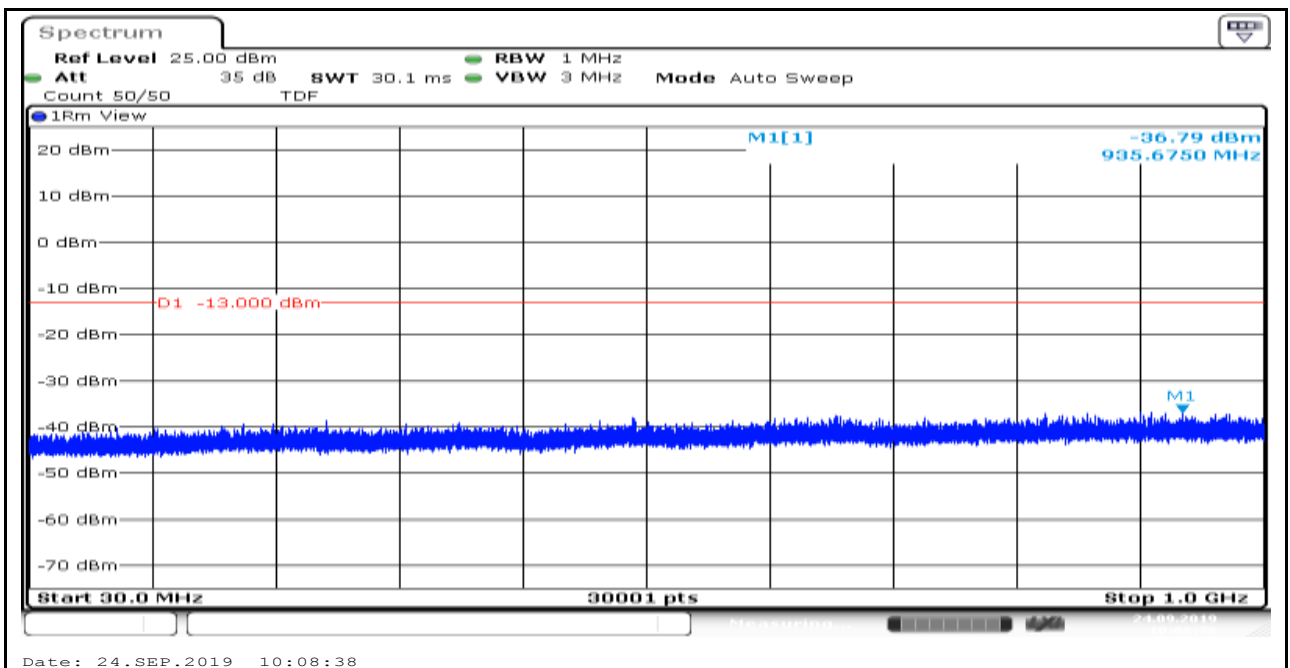
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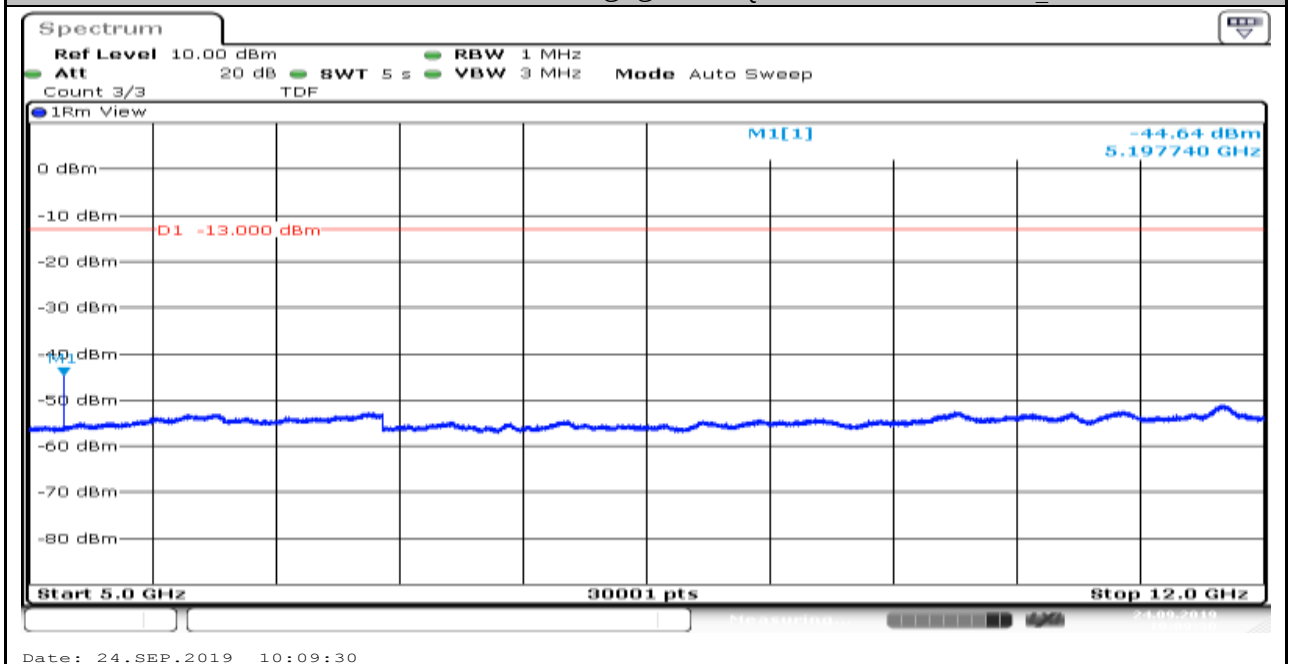
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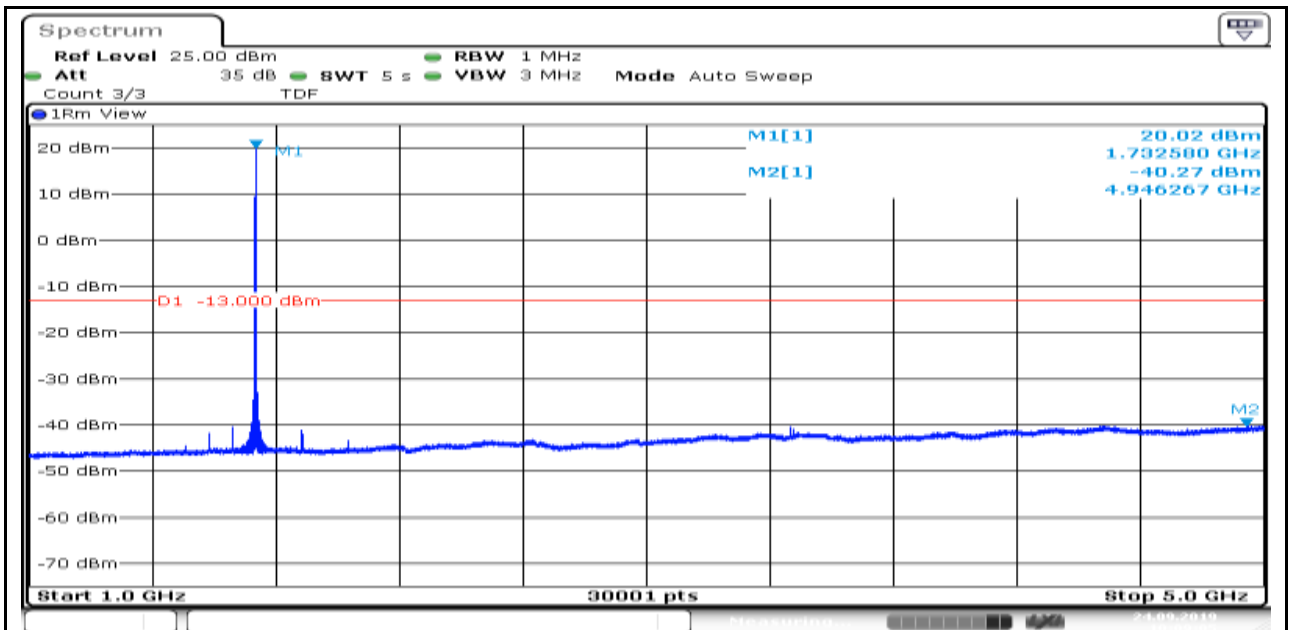
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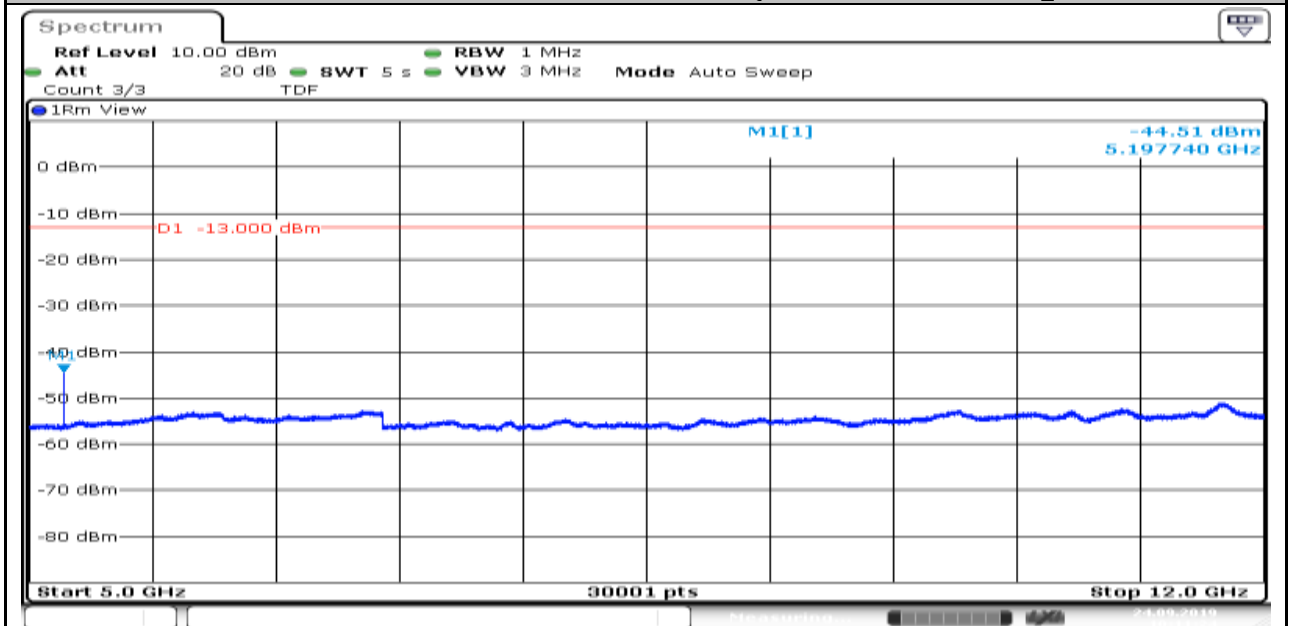
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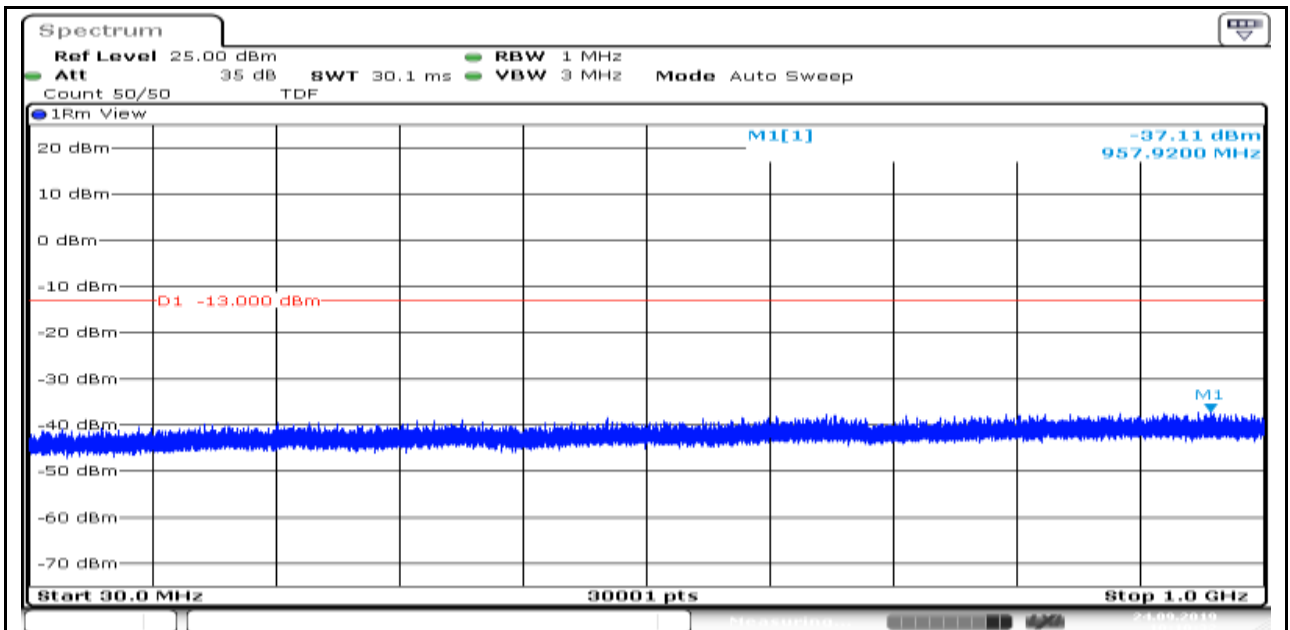
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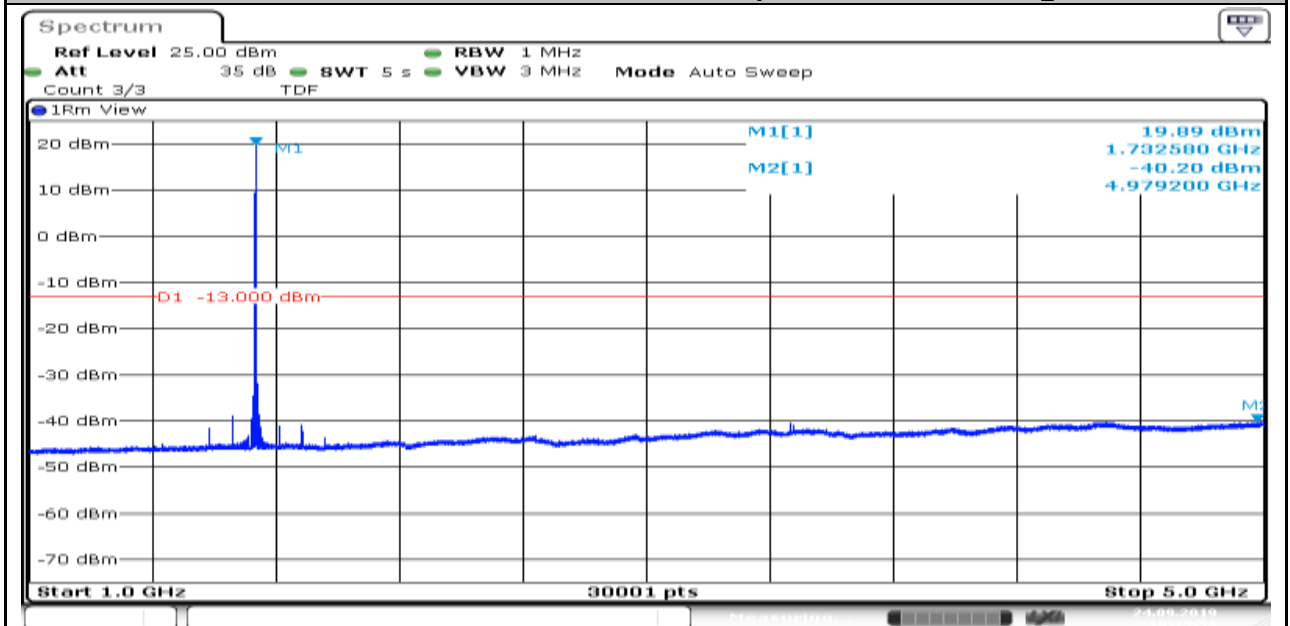
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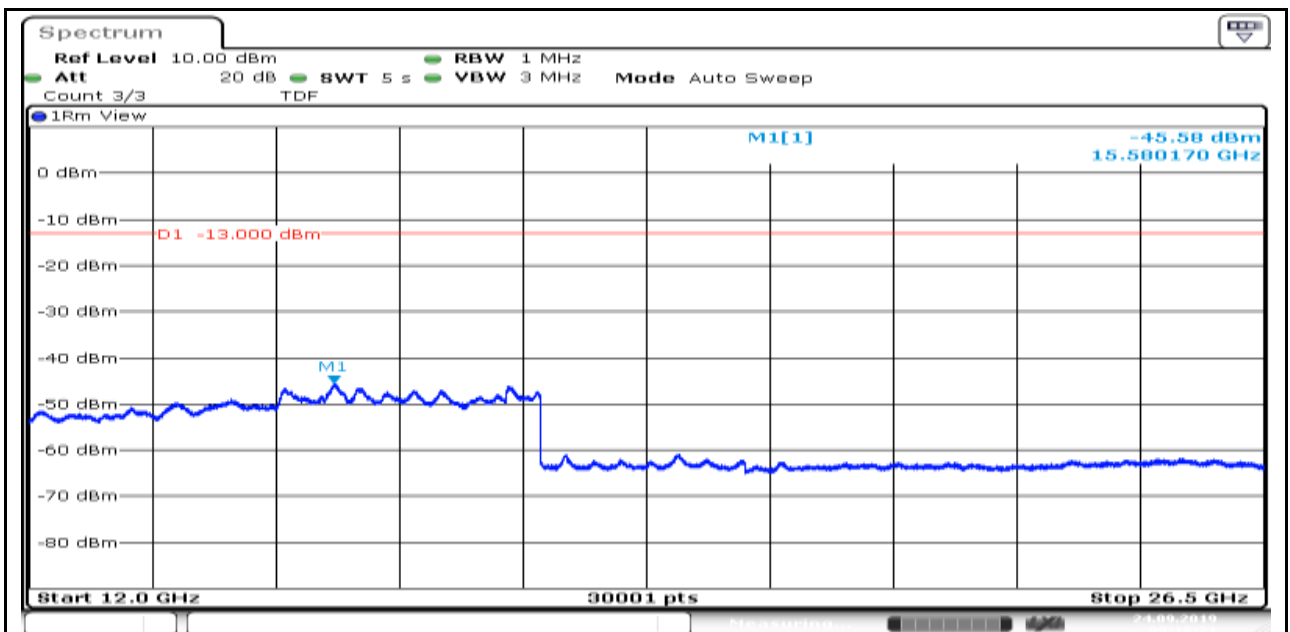
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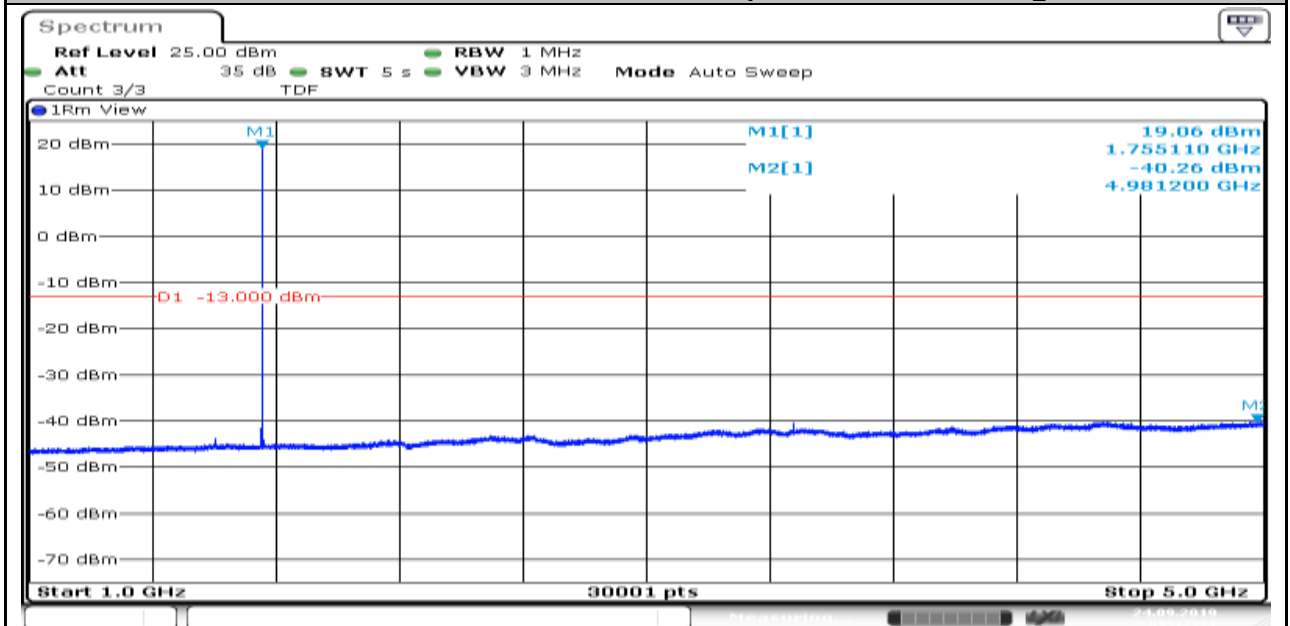
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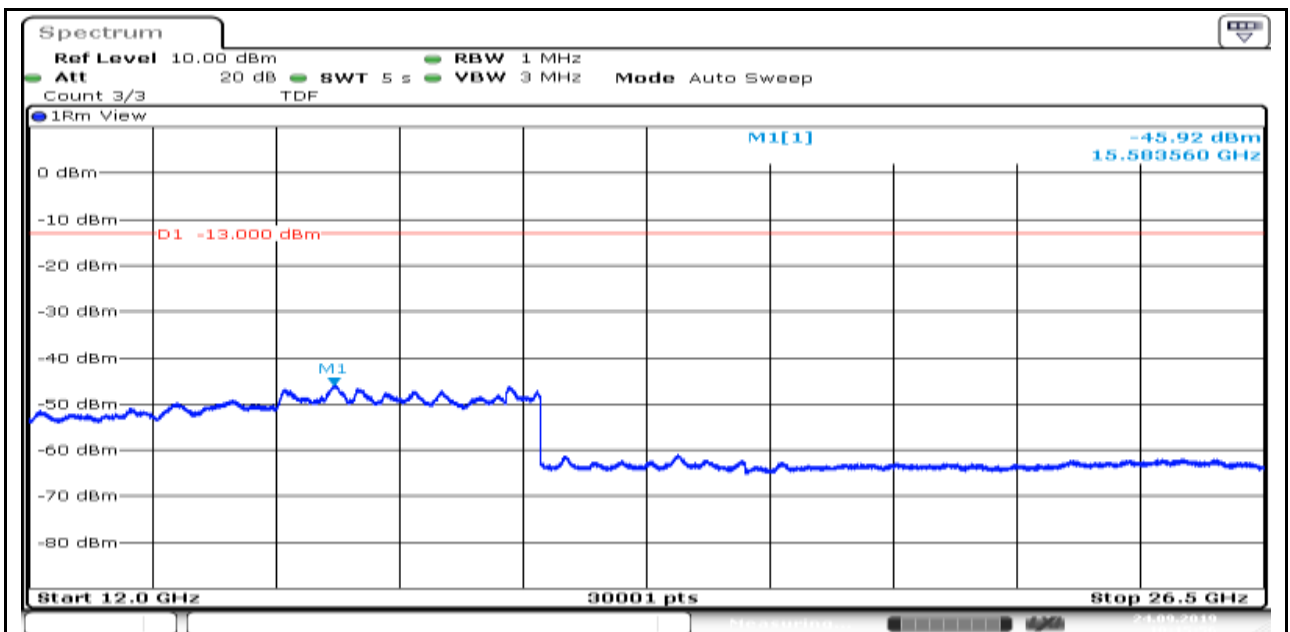
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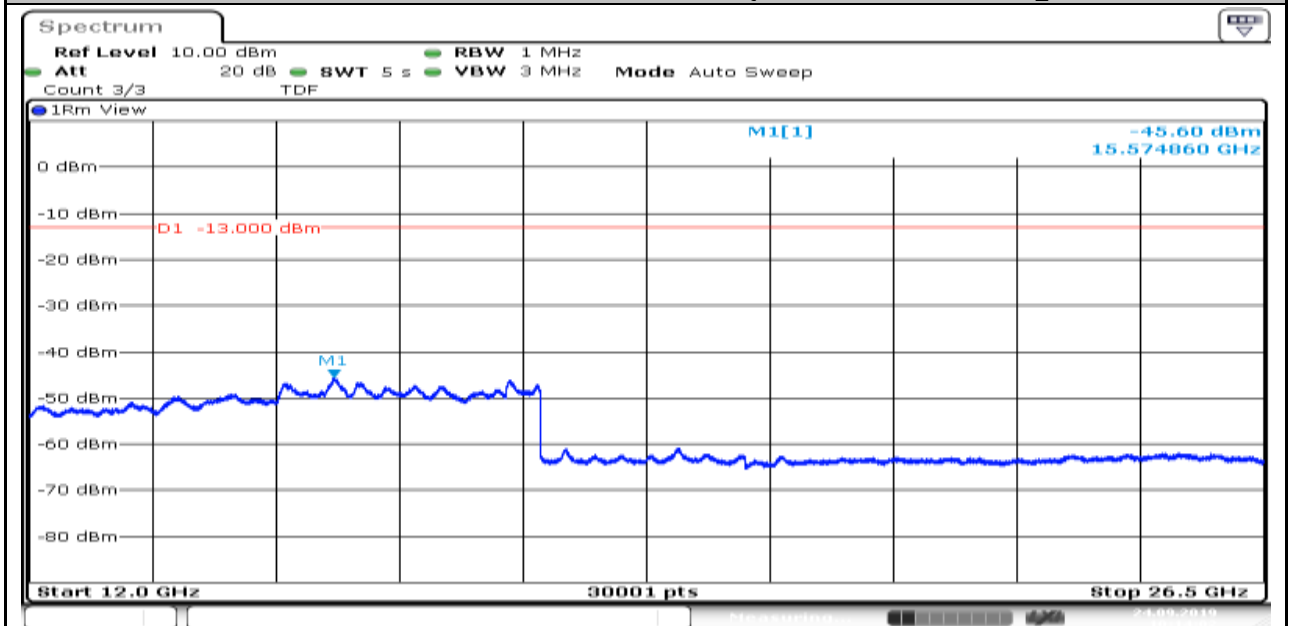
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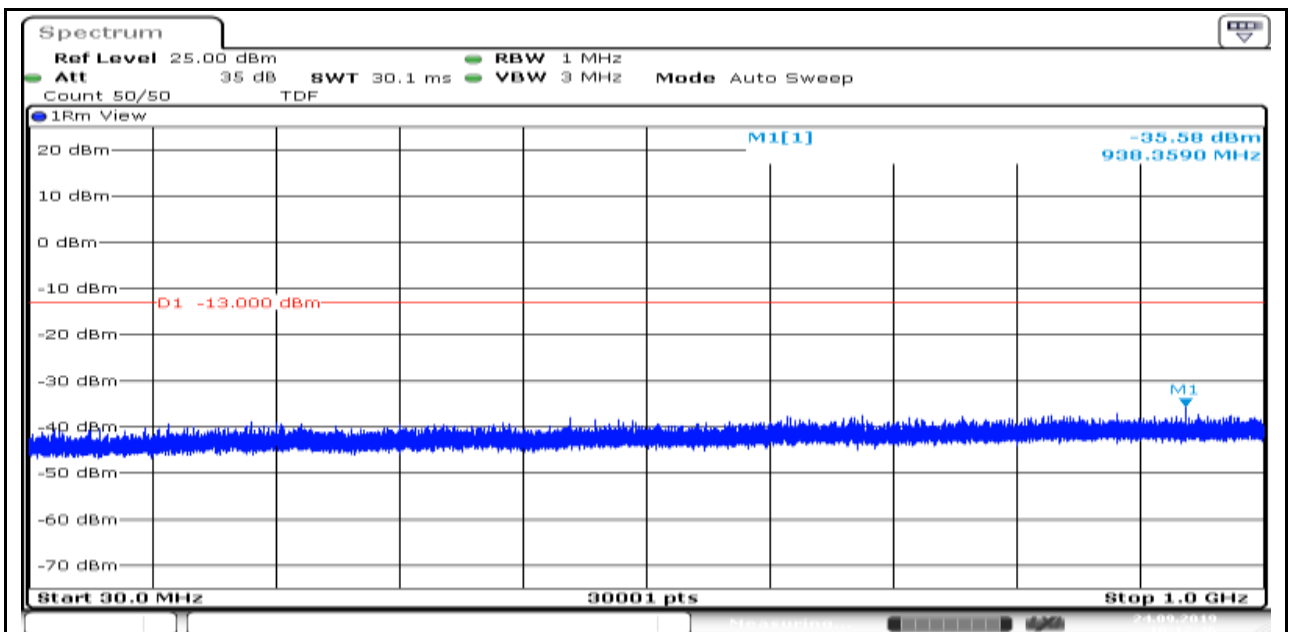
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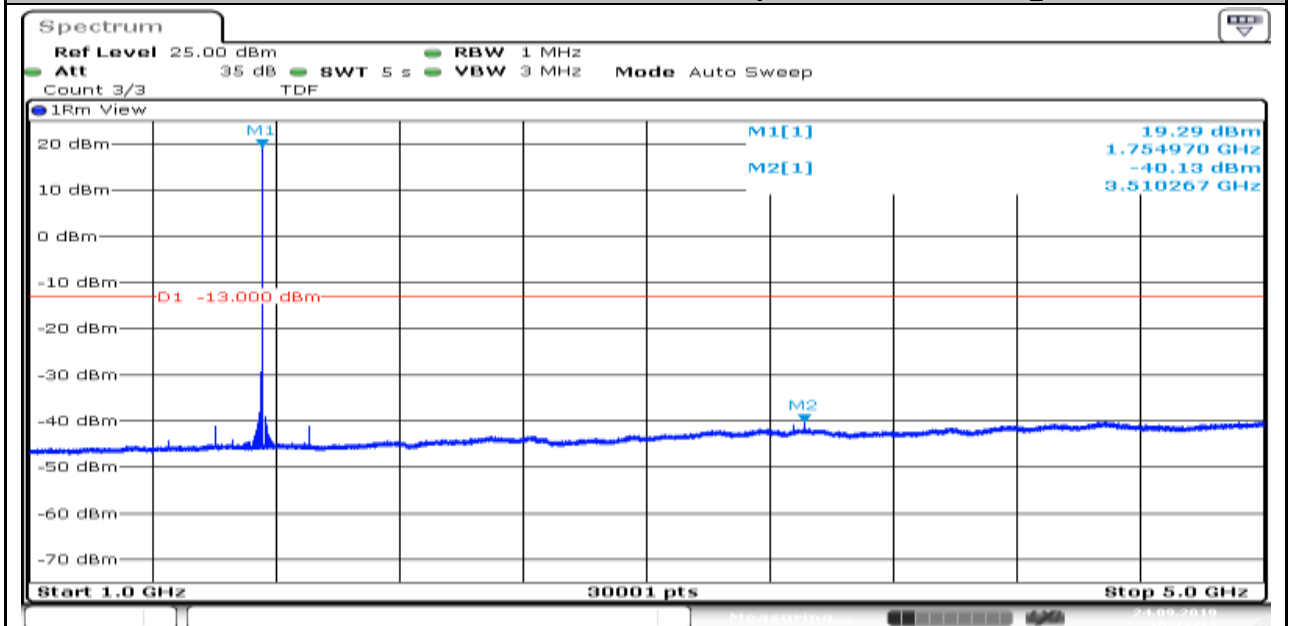
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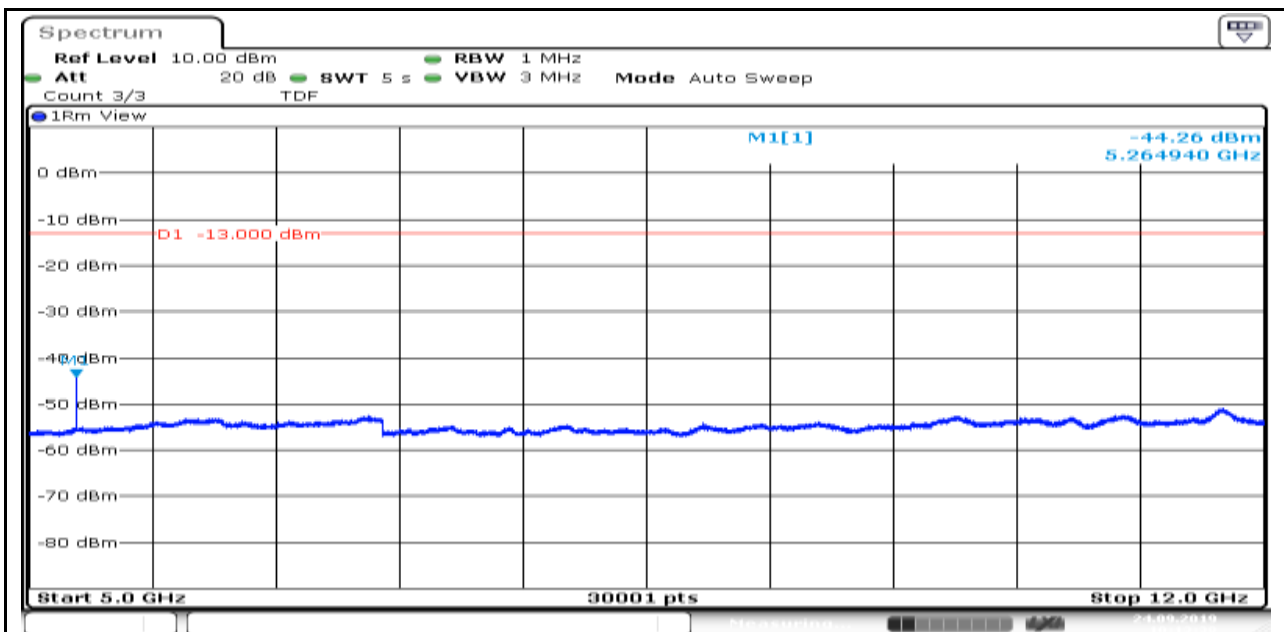
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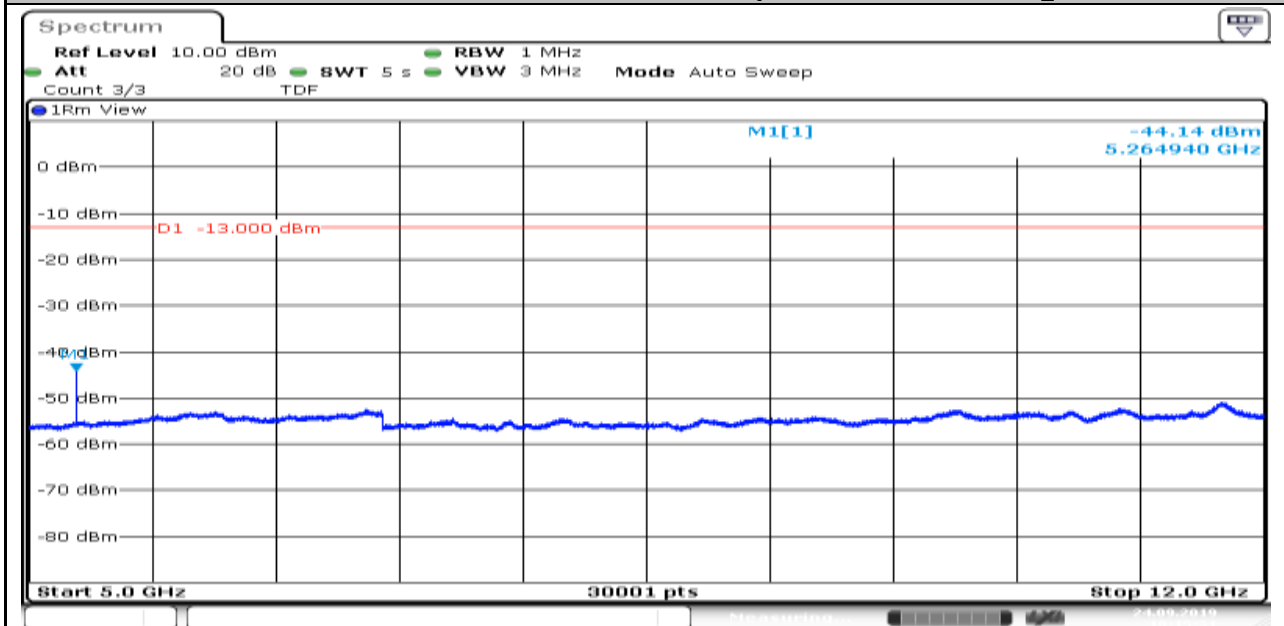
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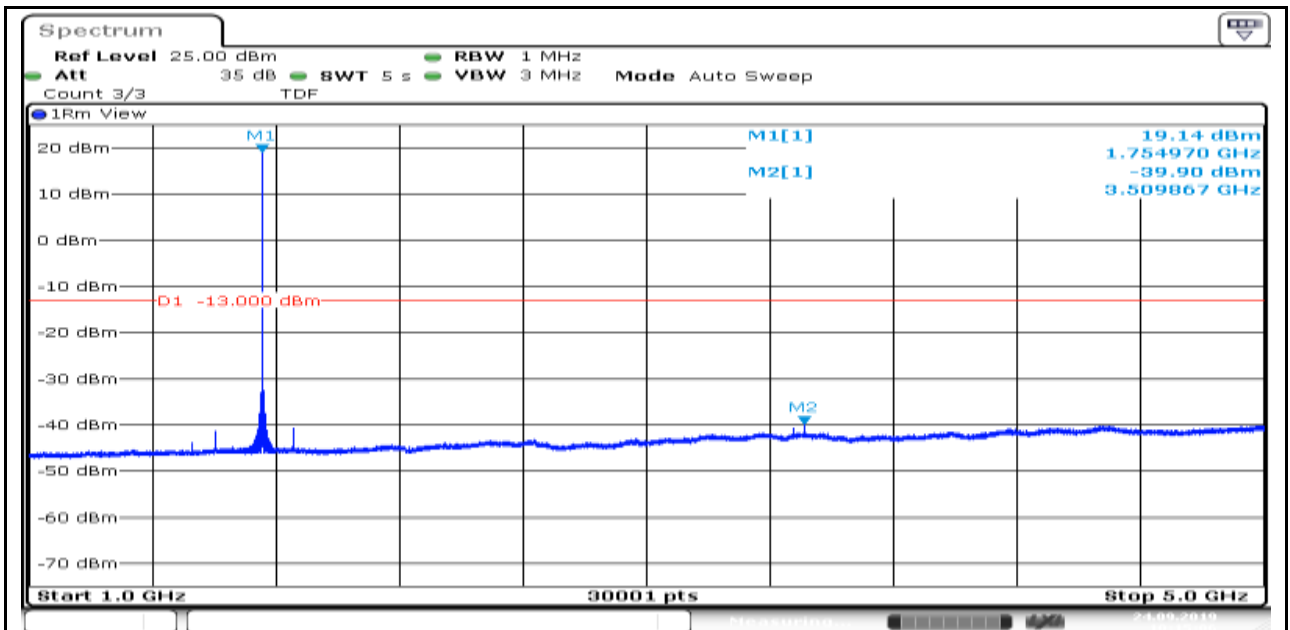
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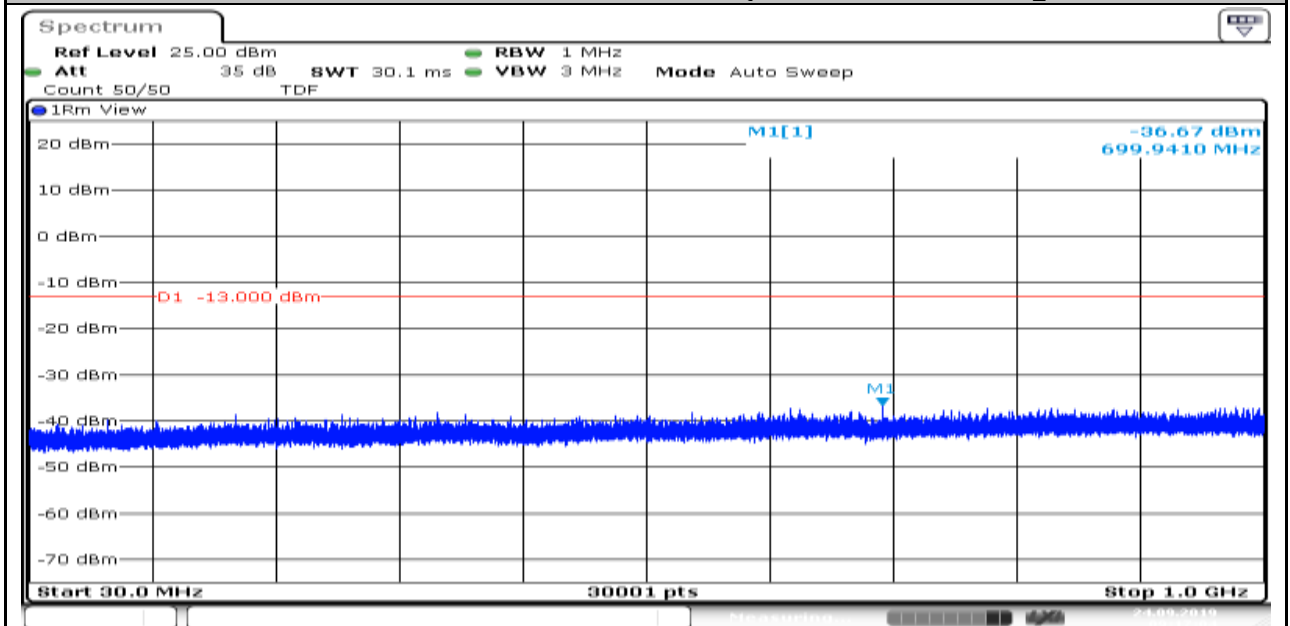
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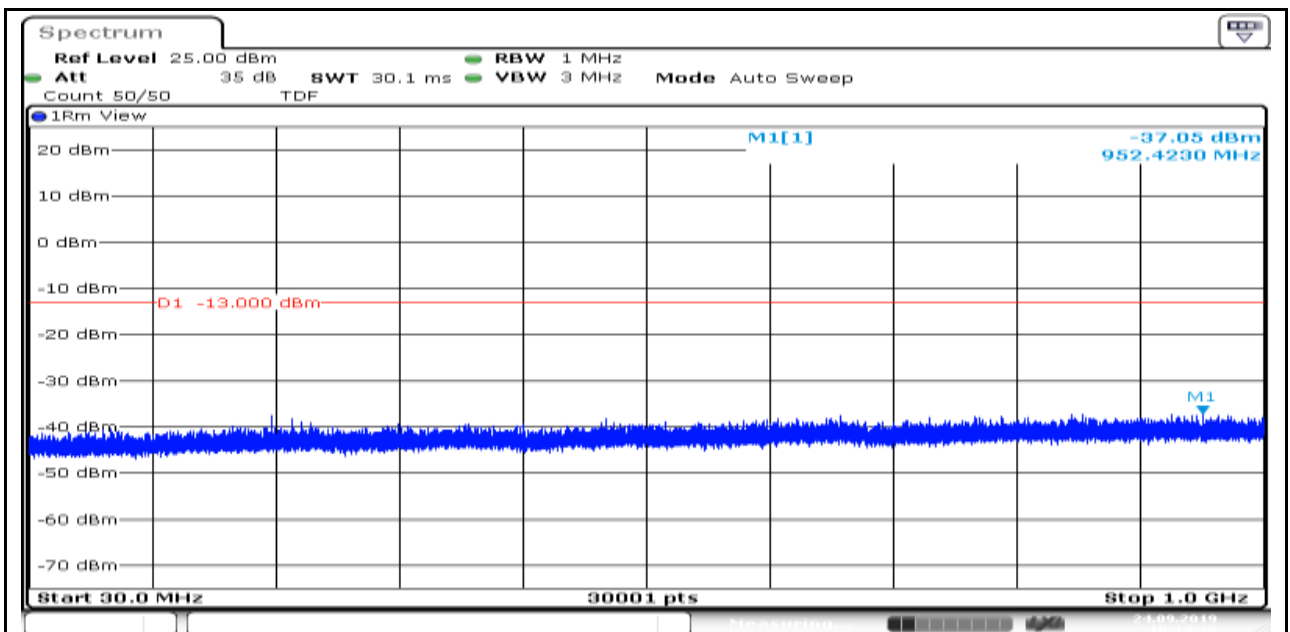
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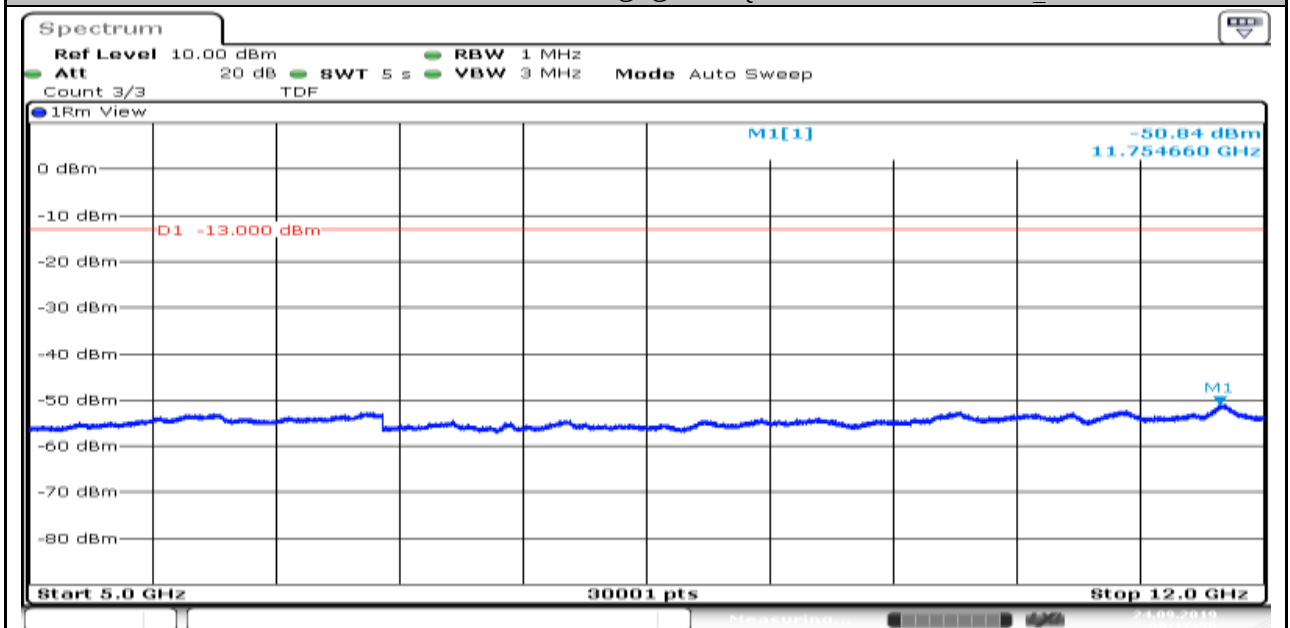
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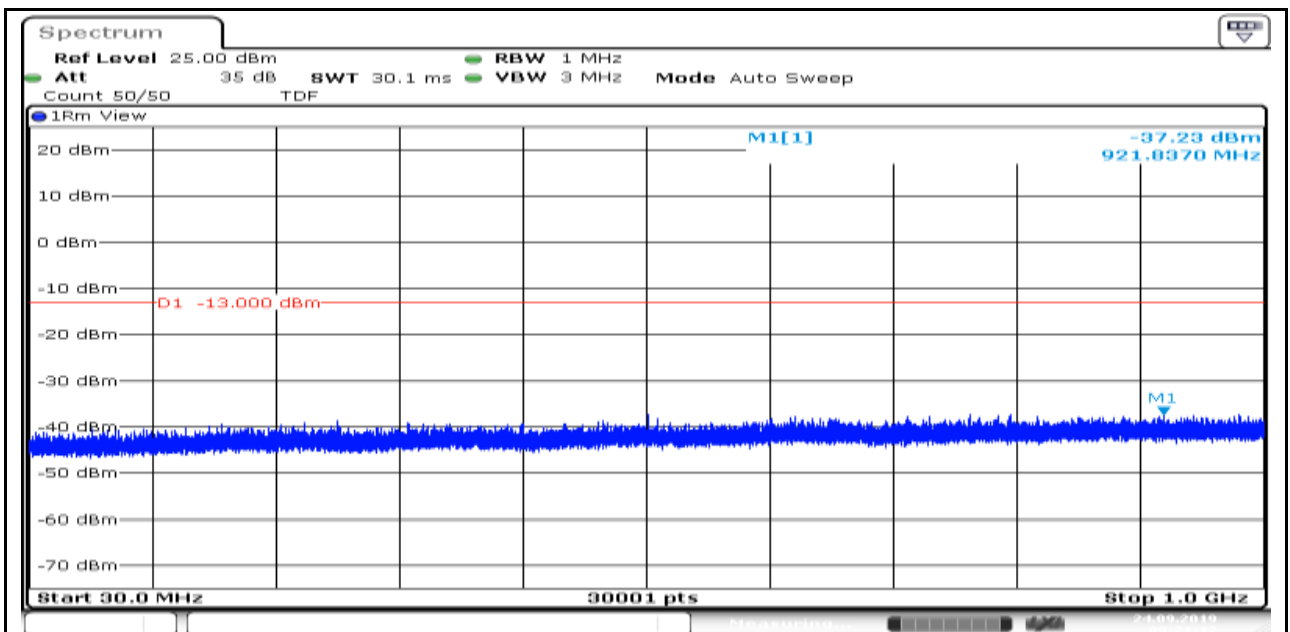
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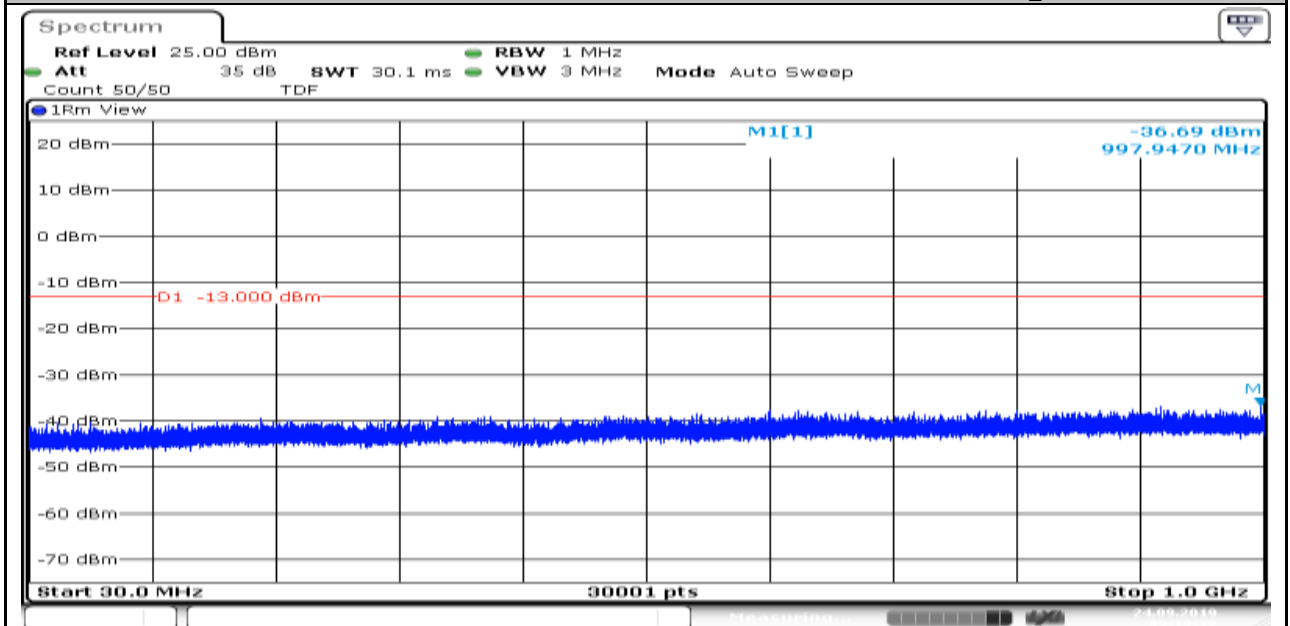
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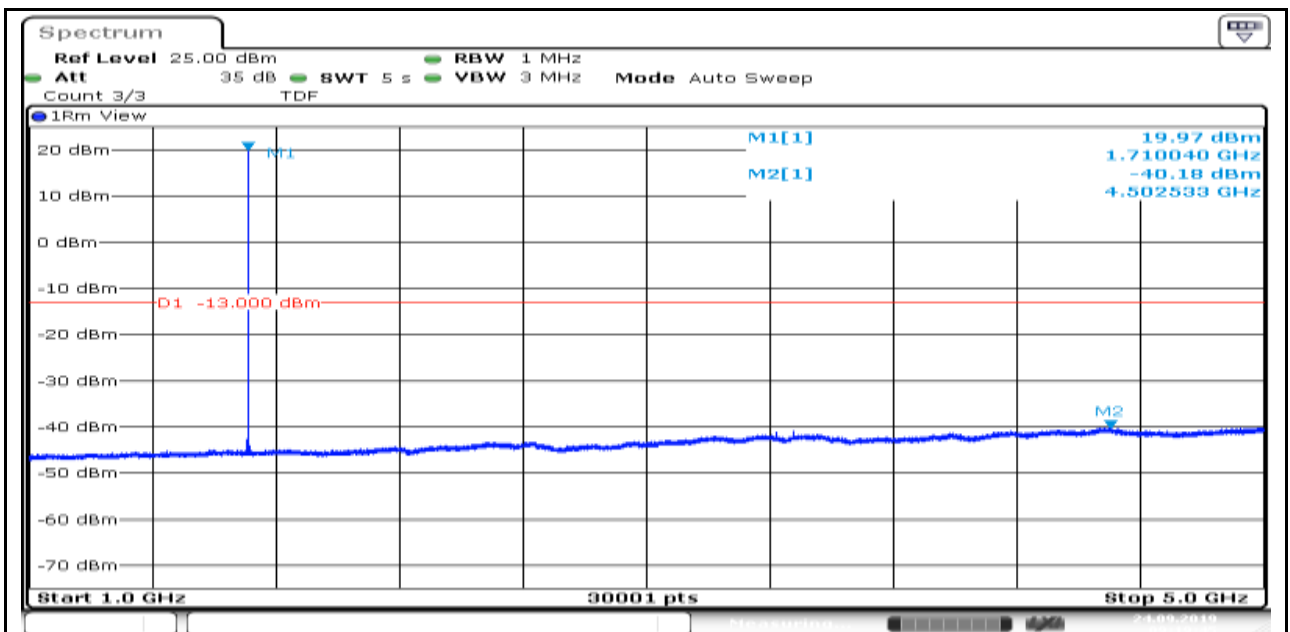
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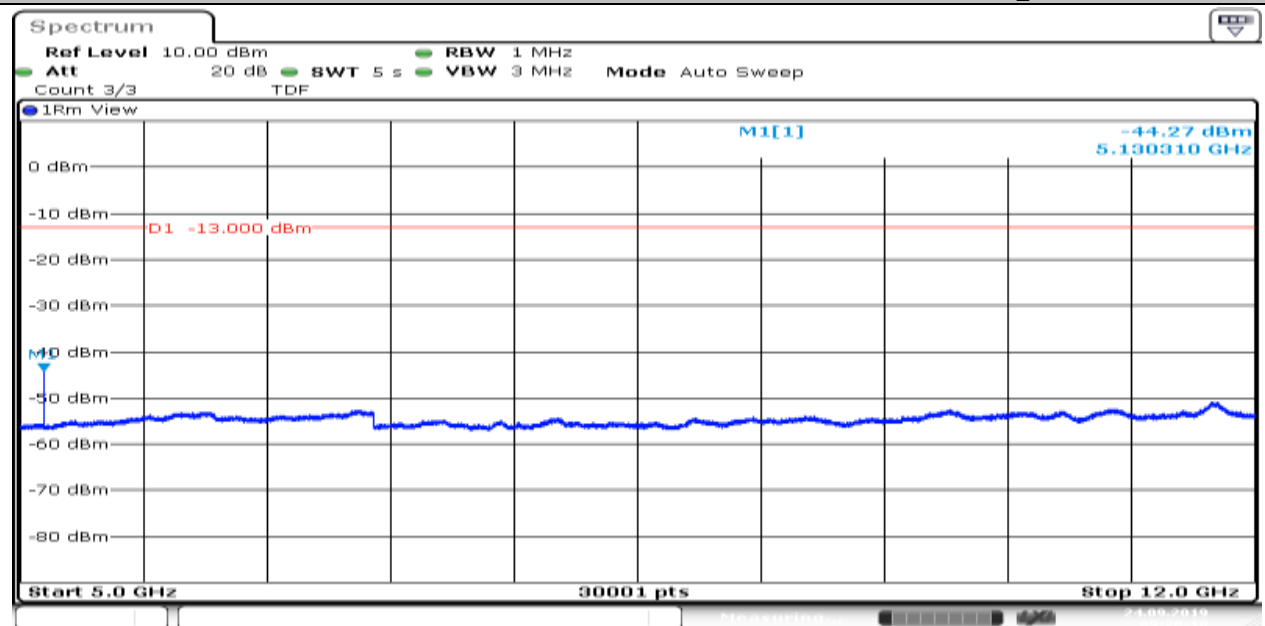
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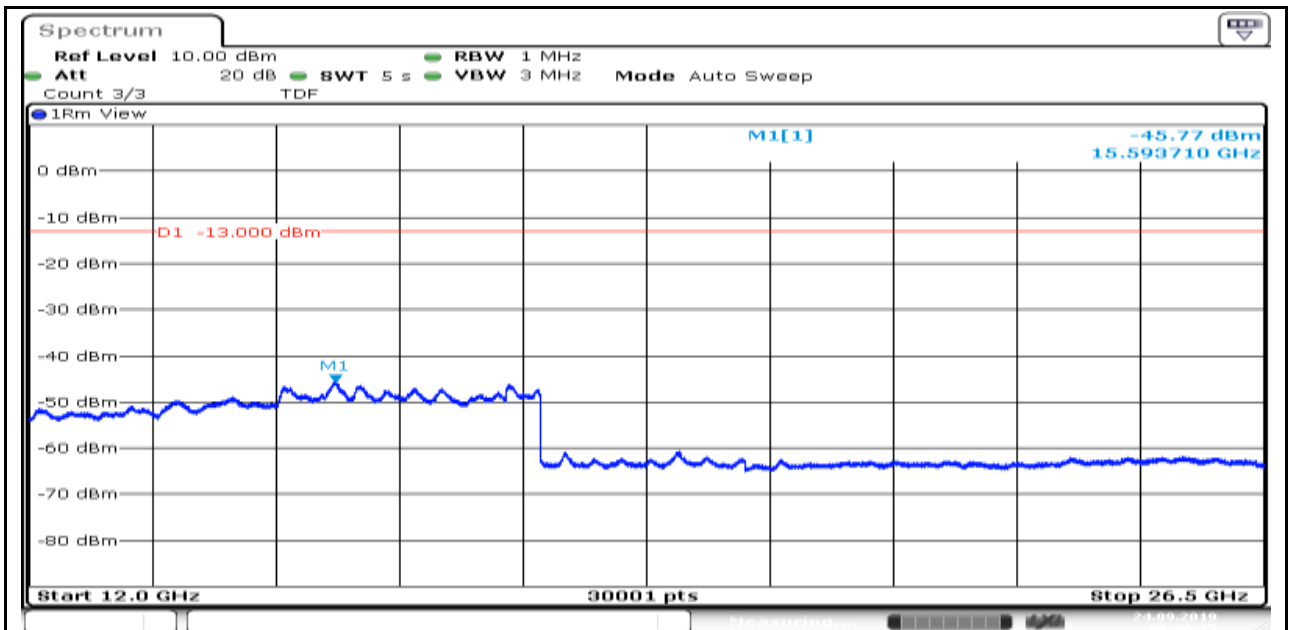
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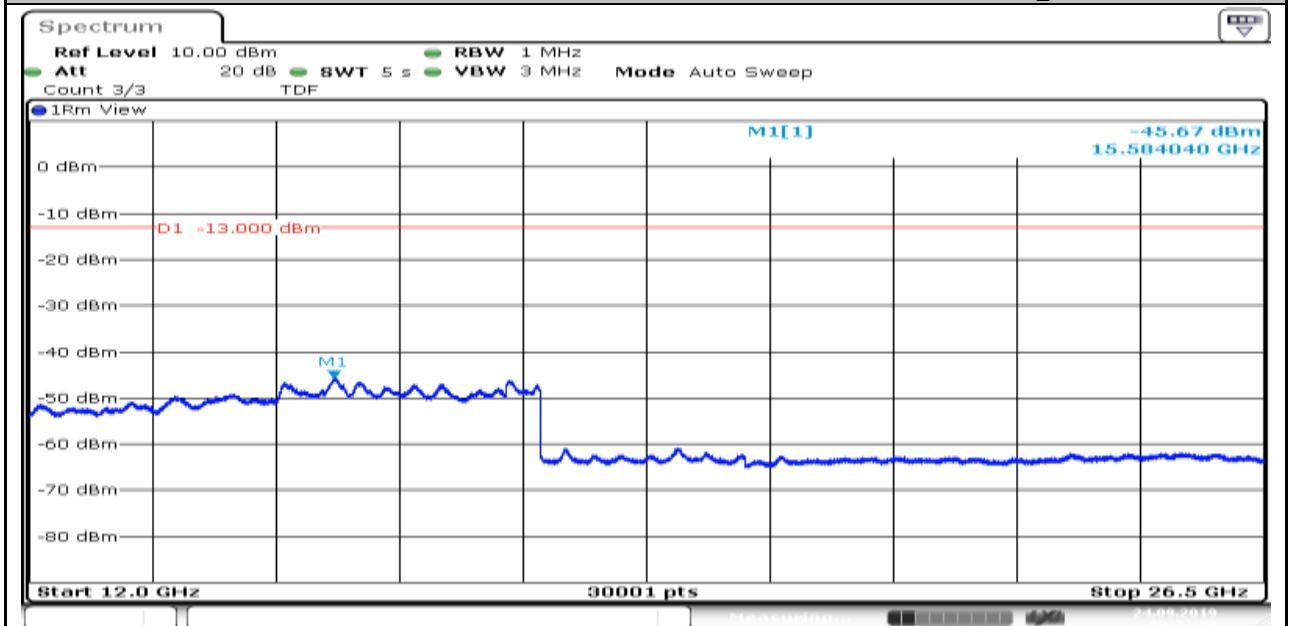
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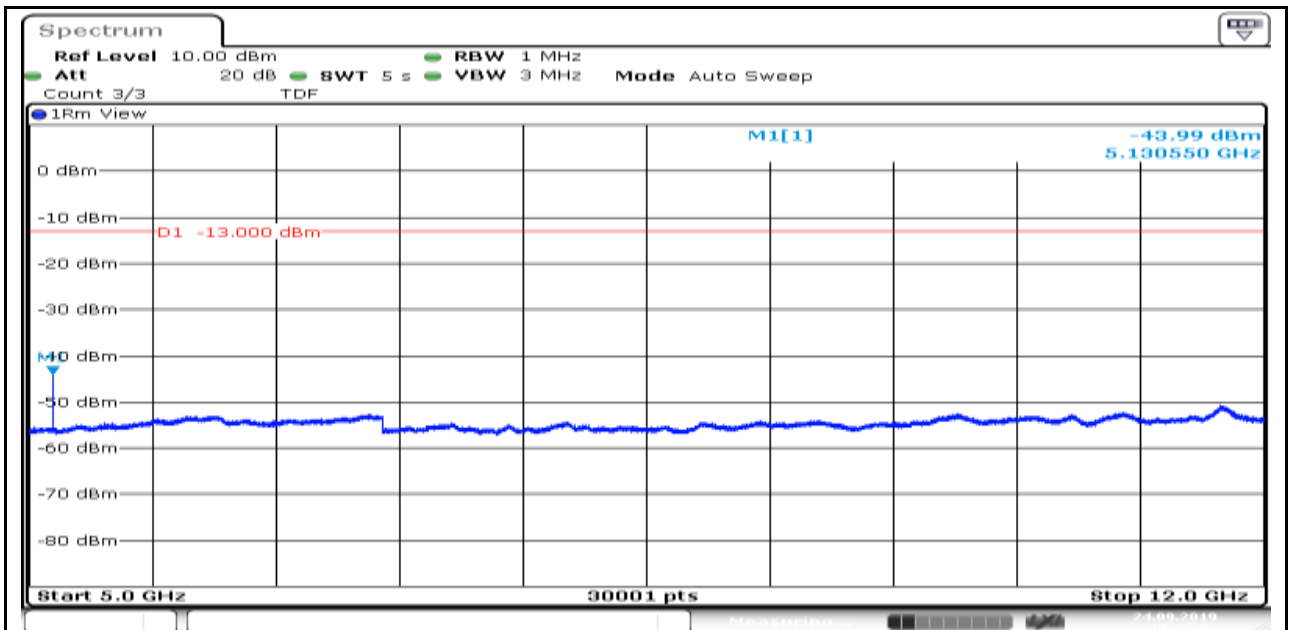
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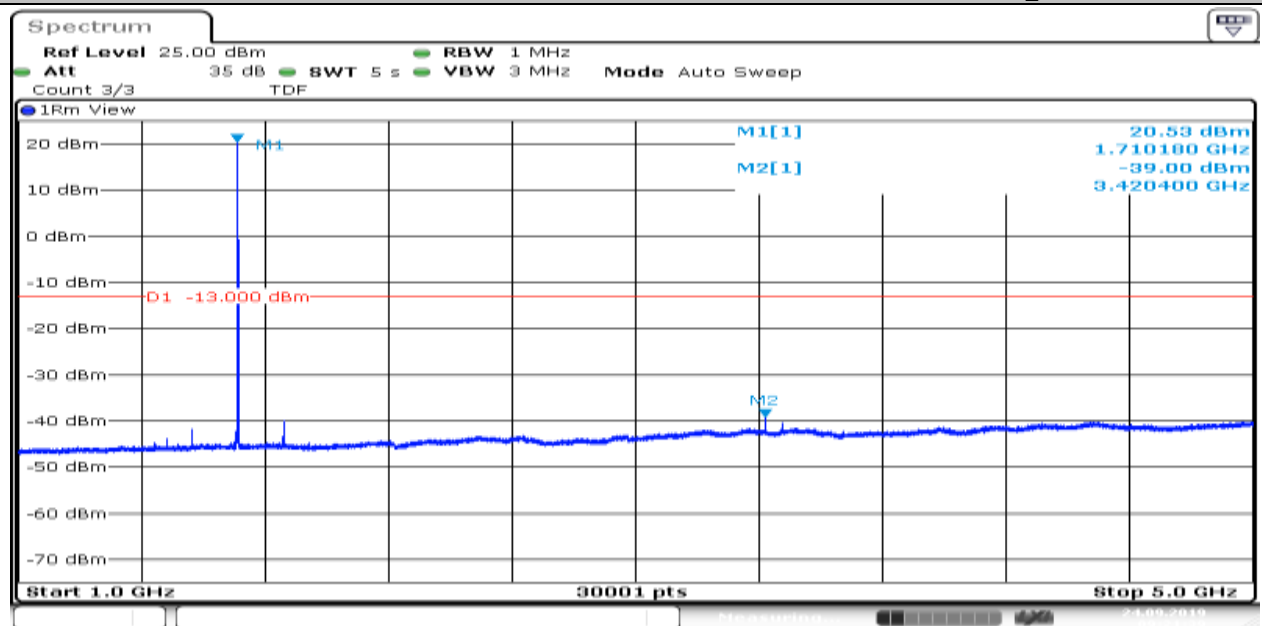
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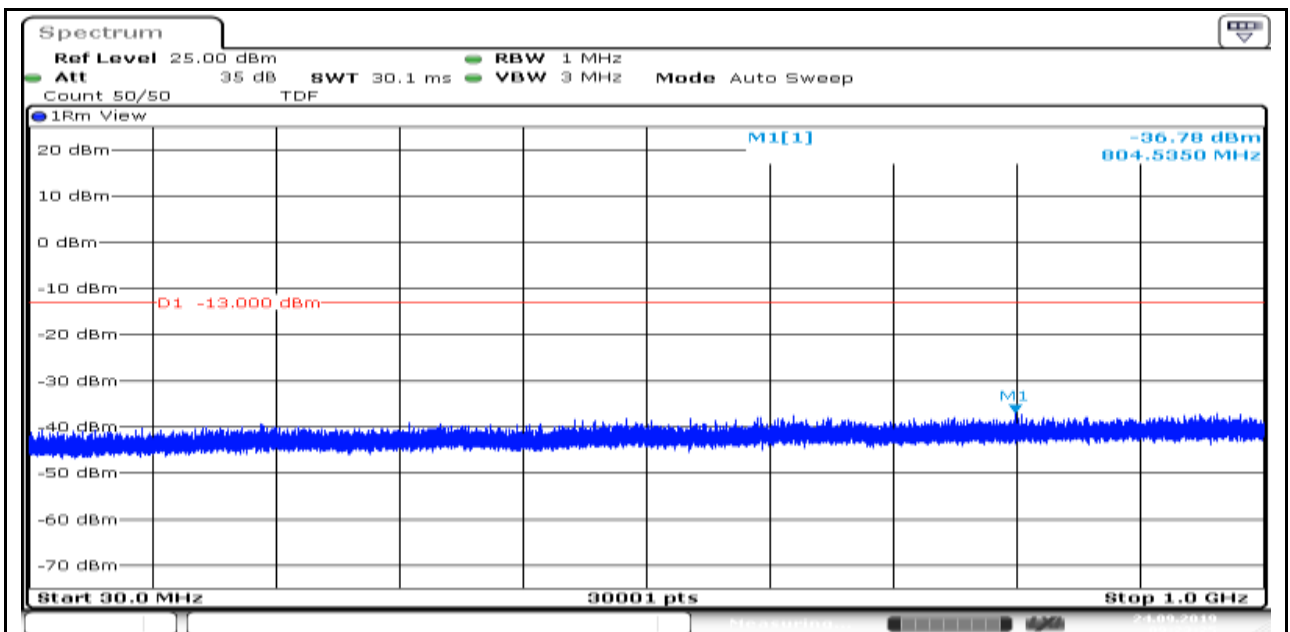
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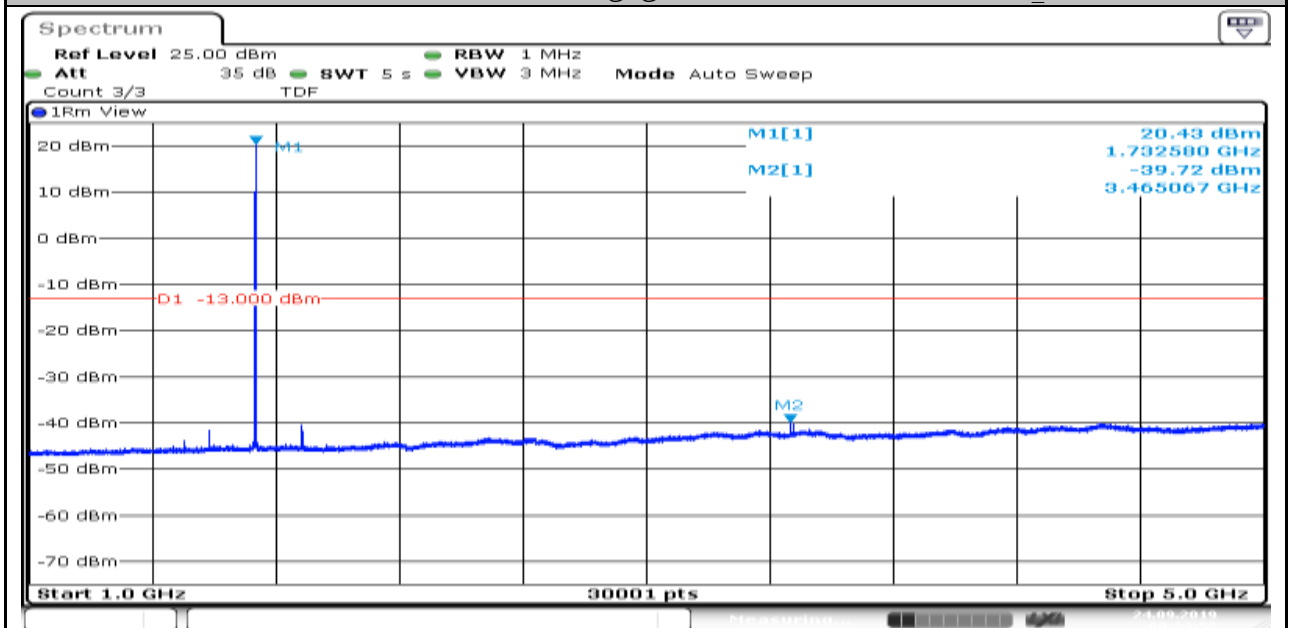
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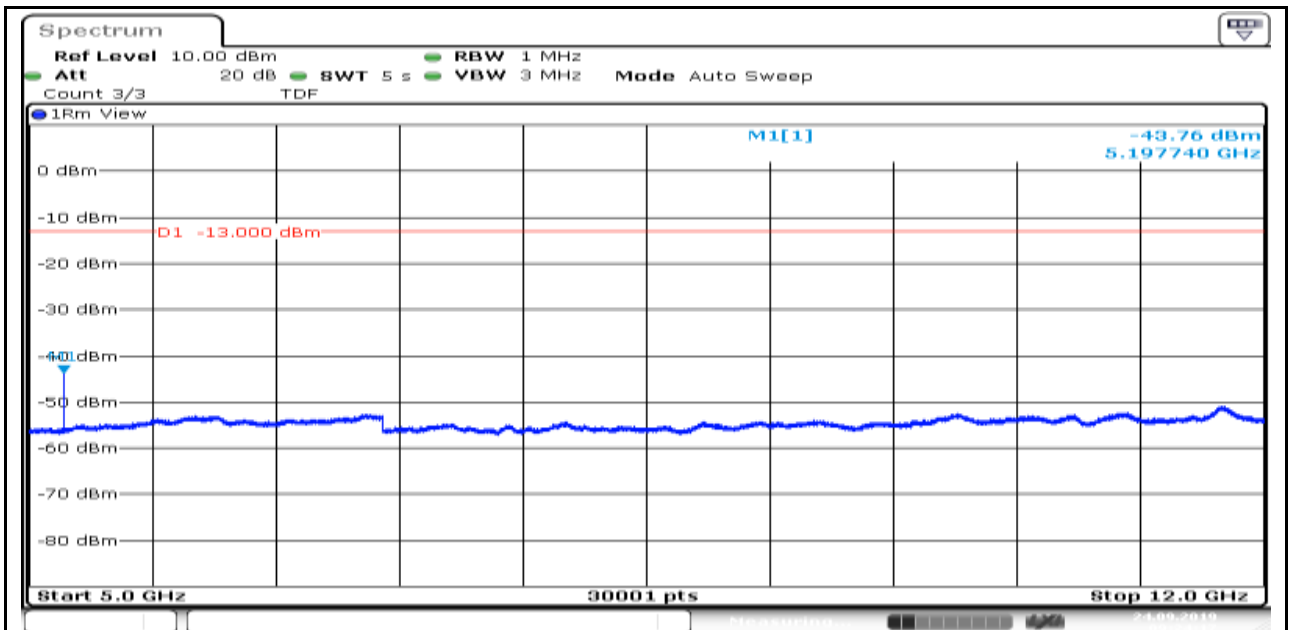
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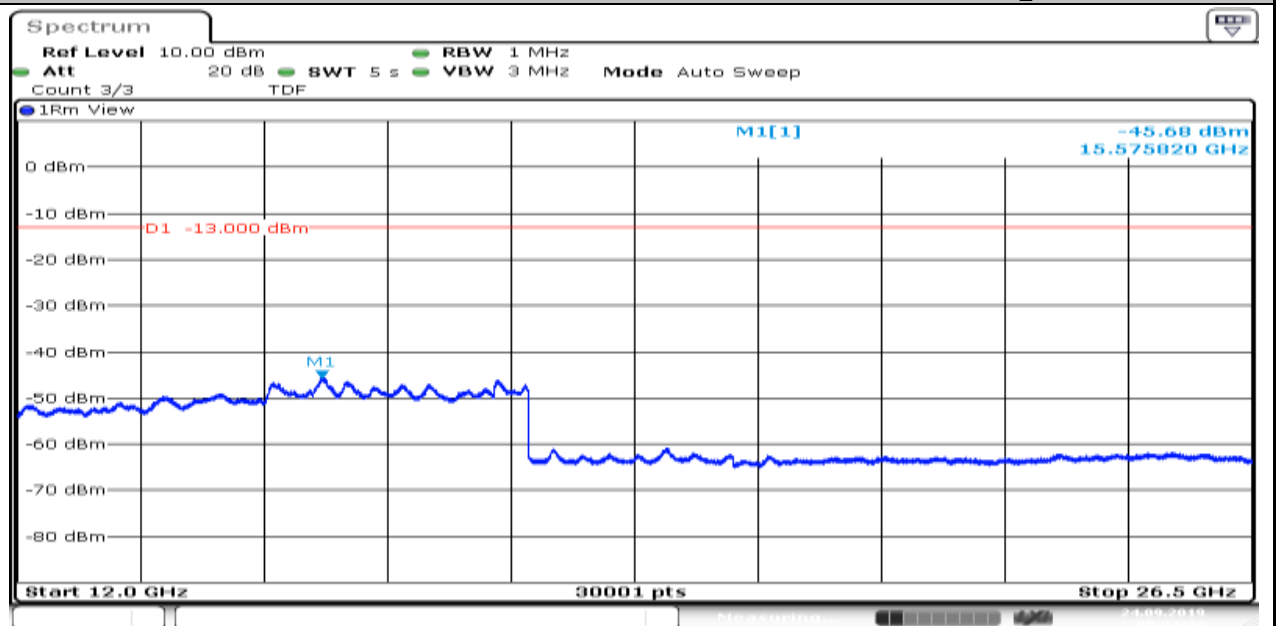
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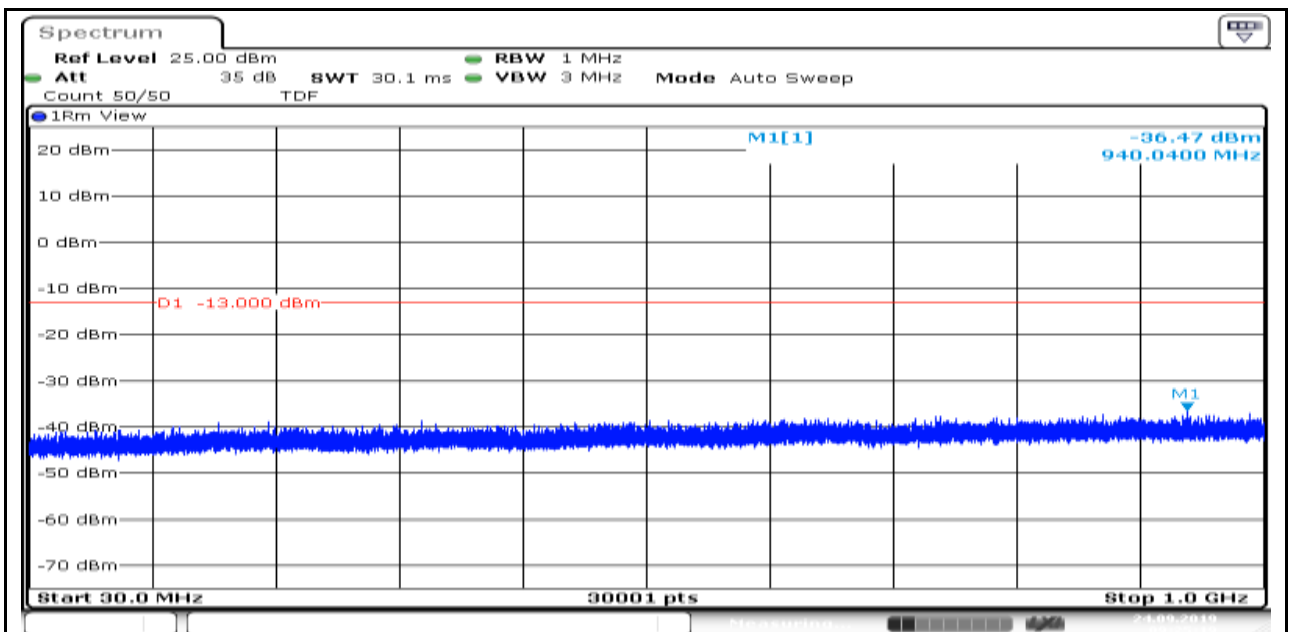
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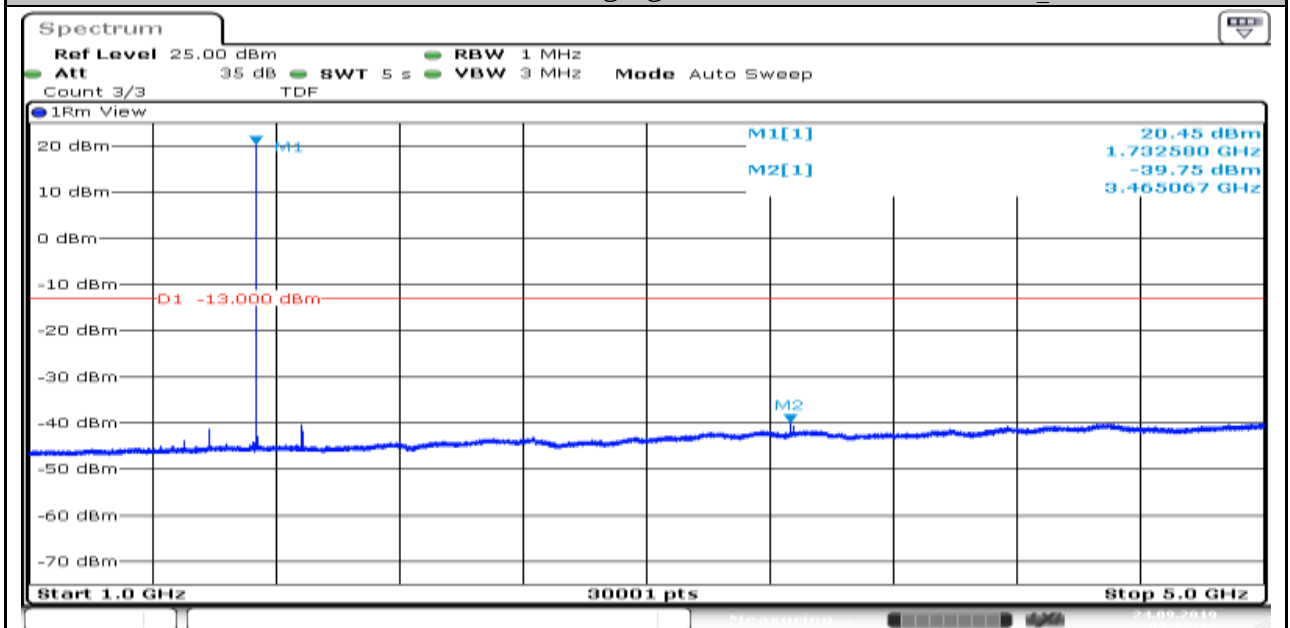
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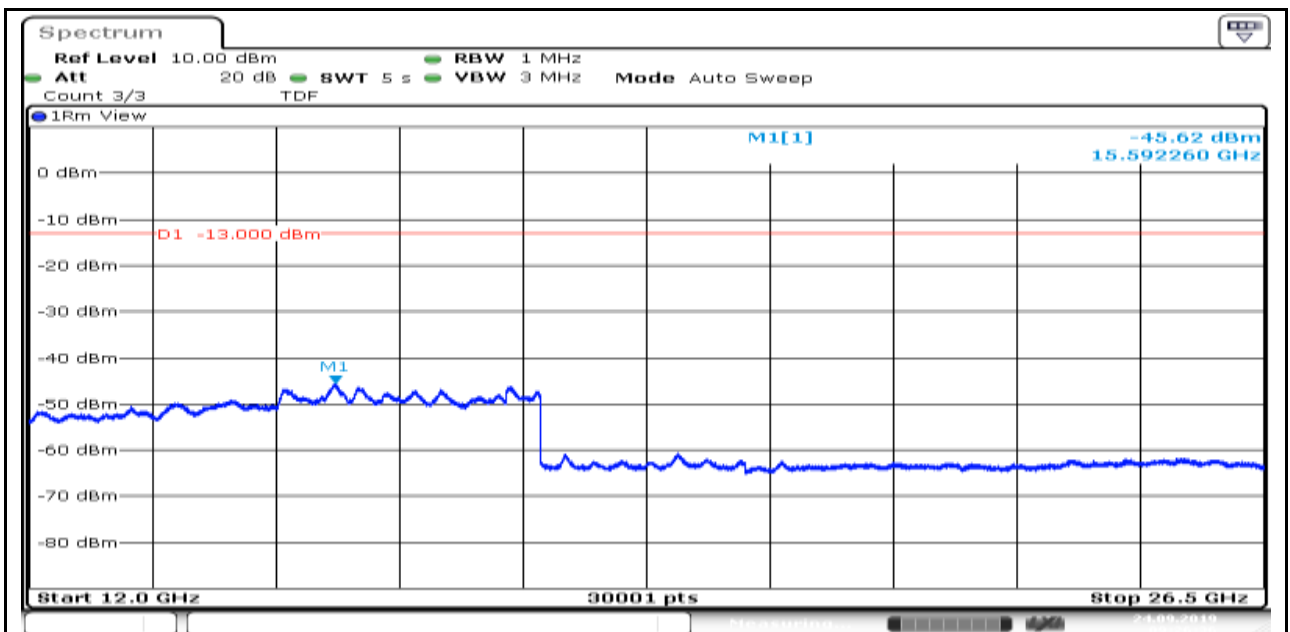
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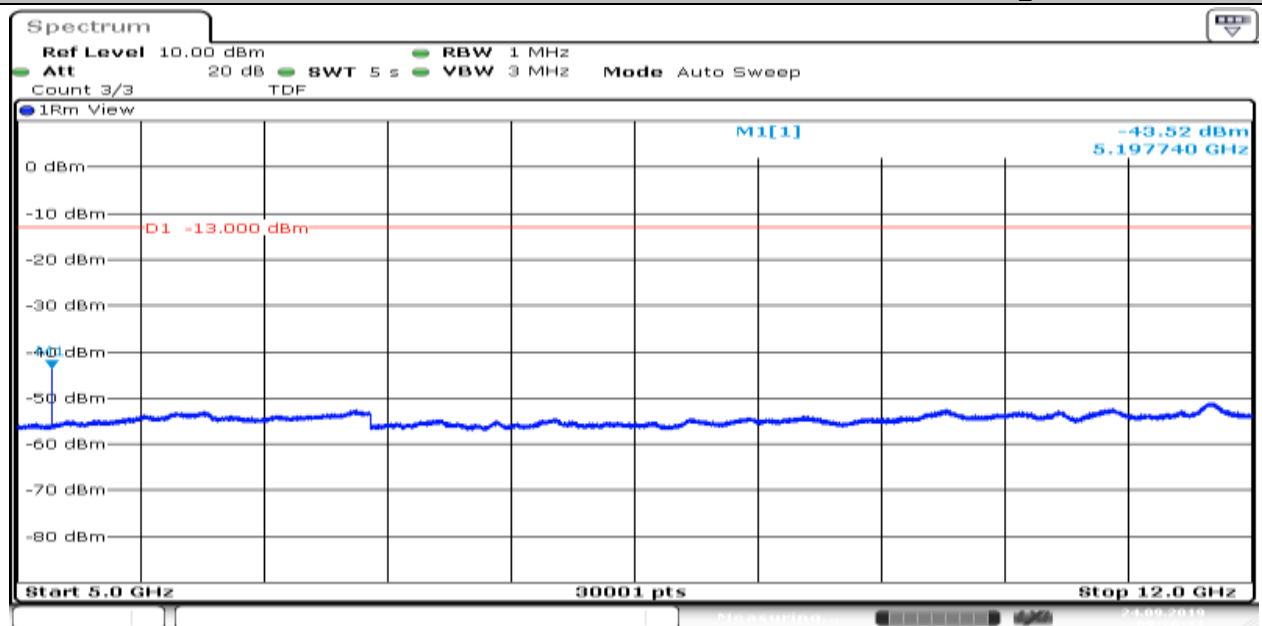
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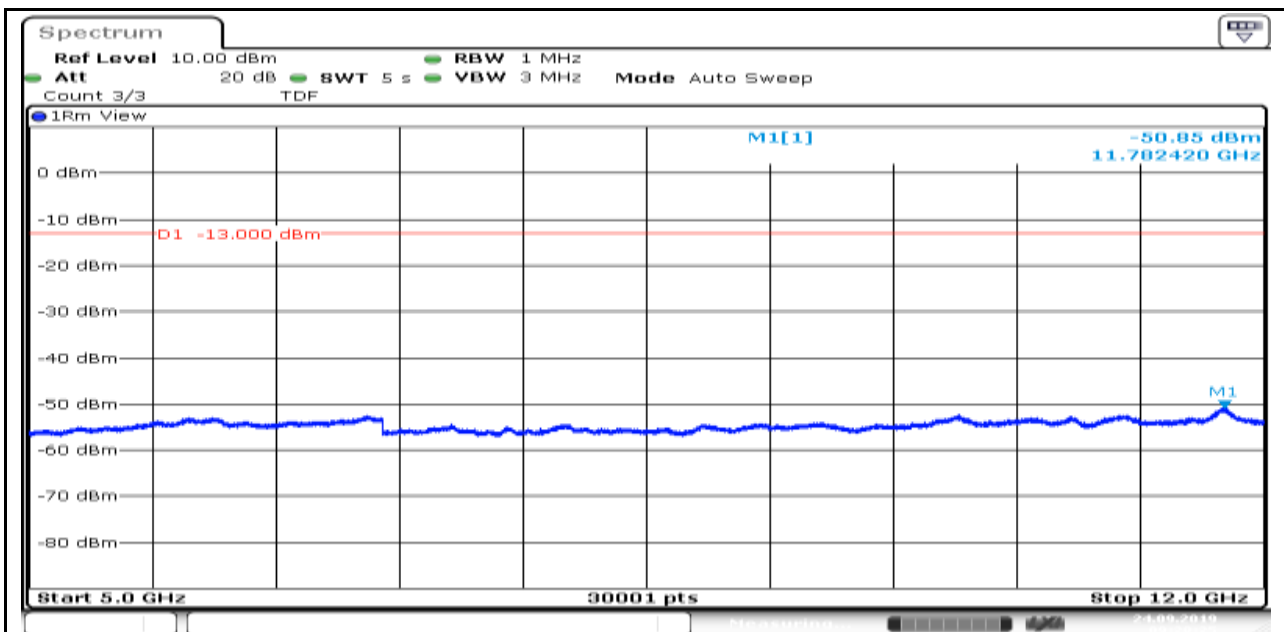
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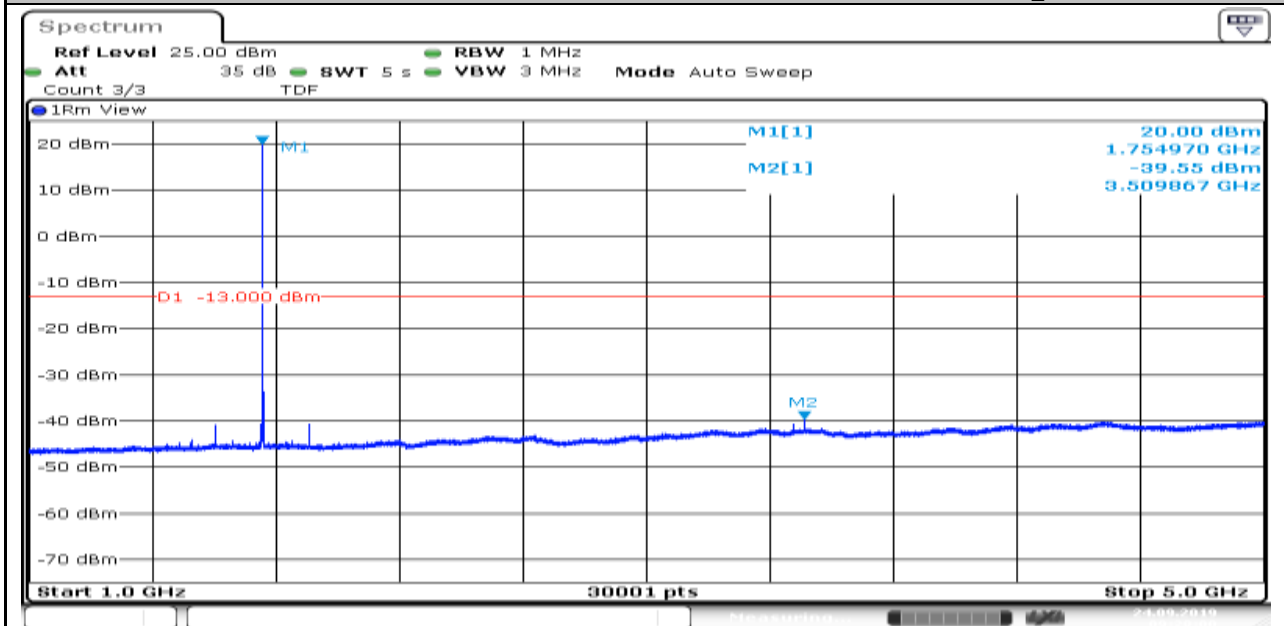
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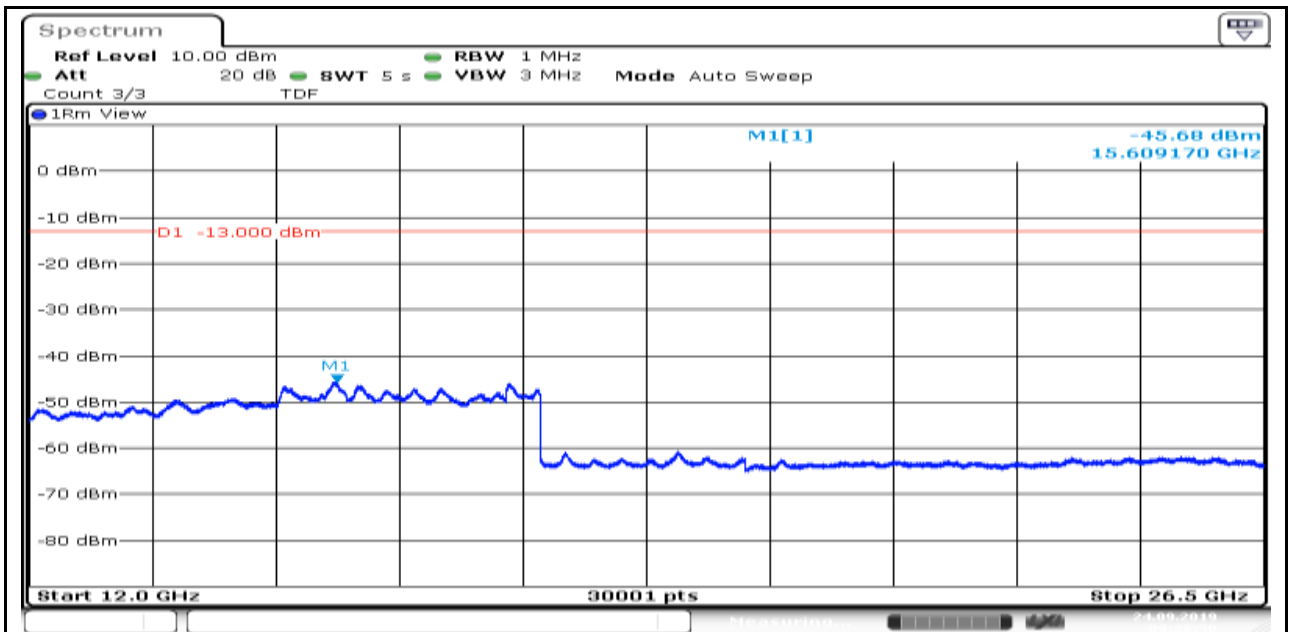
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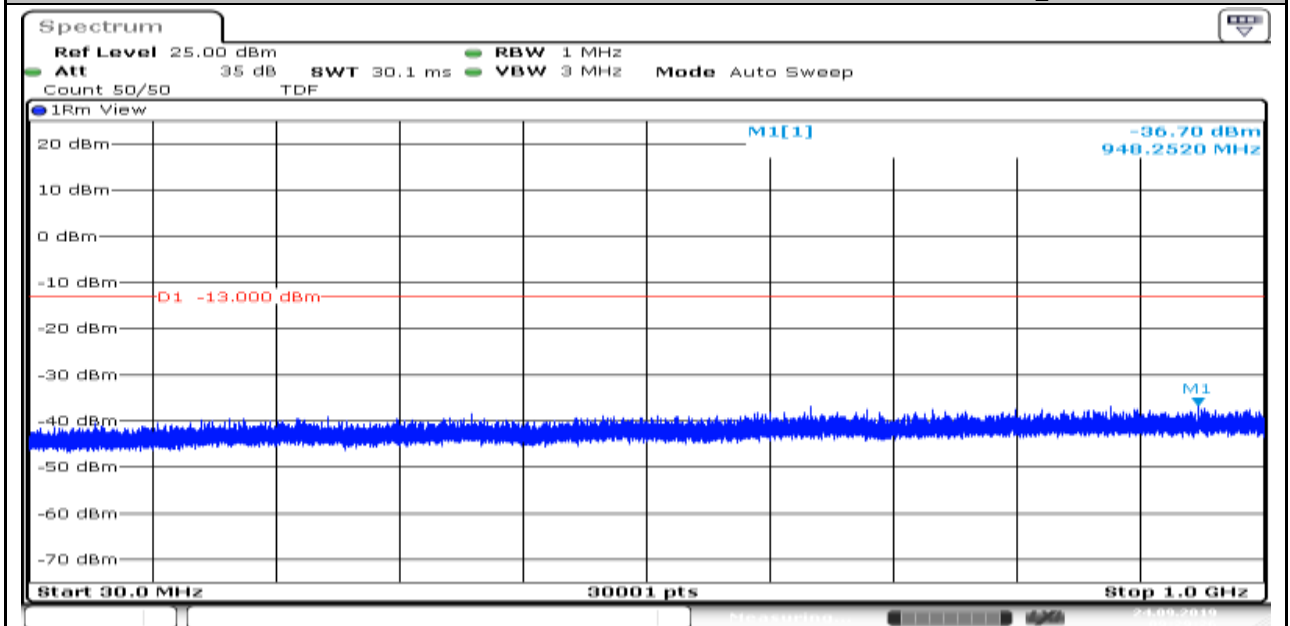
Band4_Stand-Alone_NaN_BPSK_20399_1@0_15kHz_1000_5000_1000~5000MHz@-39.55dBm_-13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category NB-Band4-Stand-Alone-NaN-20399-1@0@15kHz-BPSK-NTNV-201992481953.Gif_



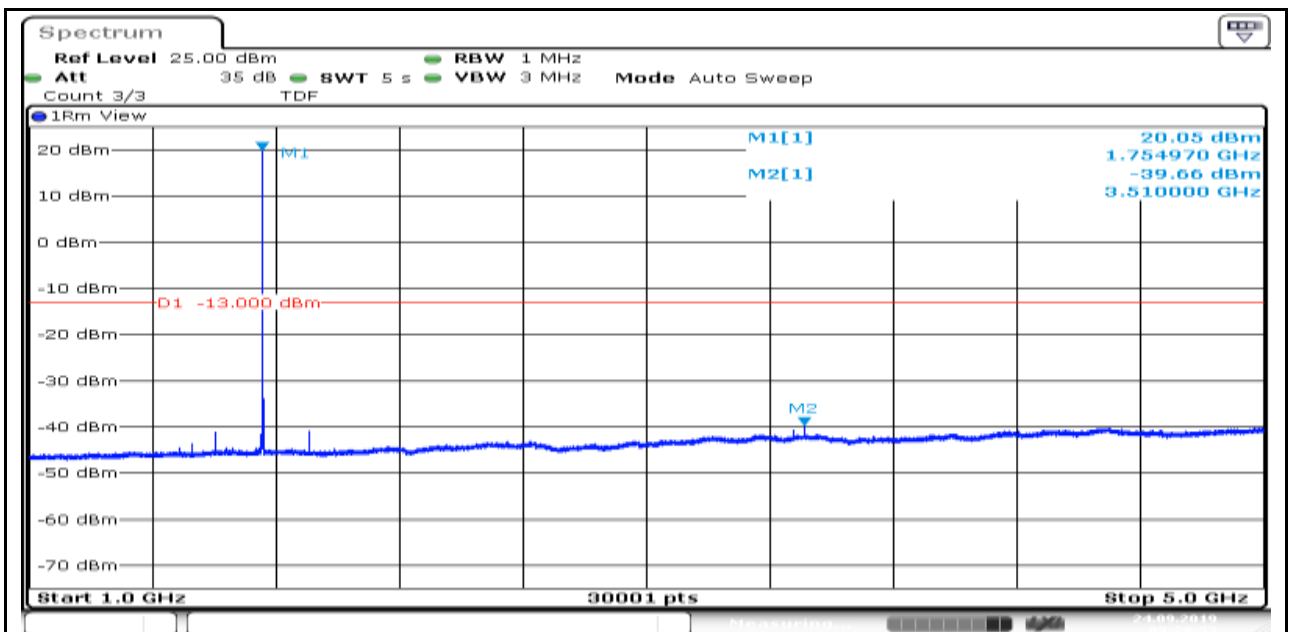
Band4_Stand-Alone_NaN_BPSK_20399_1@0_15kHz_12000_26500_12000~26500MHz@-45.68dBm_-13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category NB-Band4-Stand-Alone-NaN-20399-1@0@15kHz-BPSK-NTNV-201992482043.Gif_



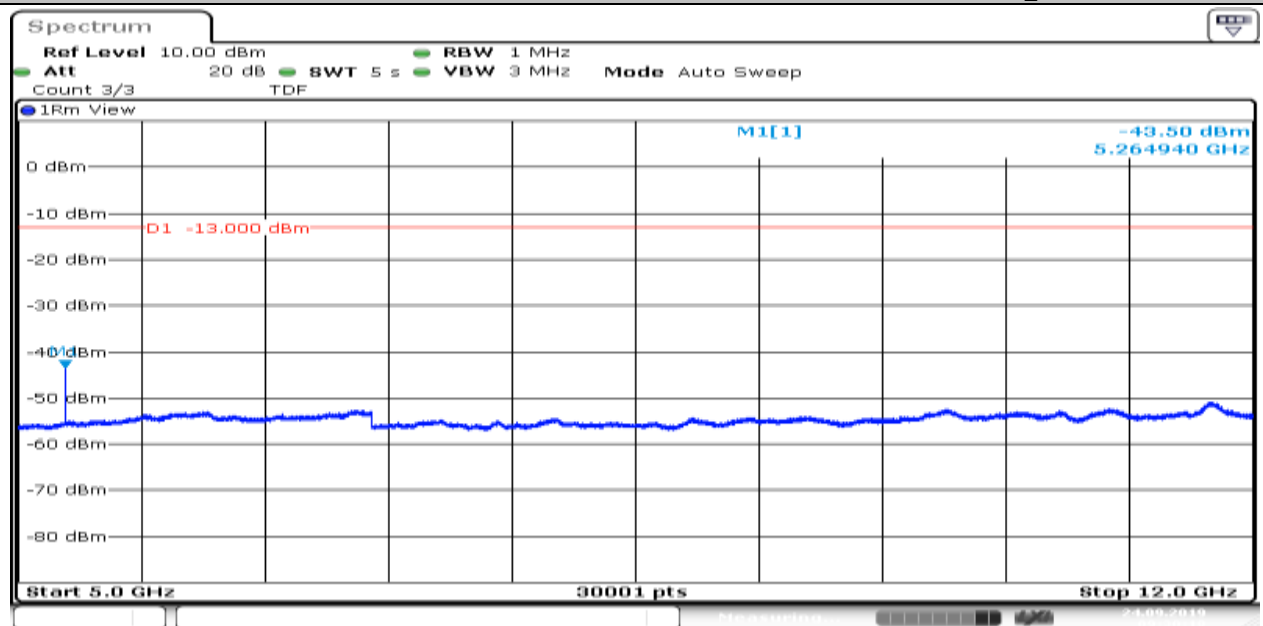
Band4_Stand-Alone_NaN_BPSK_20399_1@11_15kHz_30_1000_30-1000MHz@-36.7dBm_-13_PASS_FCC_ME910G1\FCC_NBIO
T_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category
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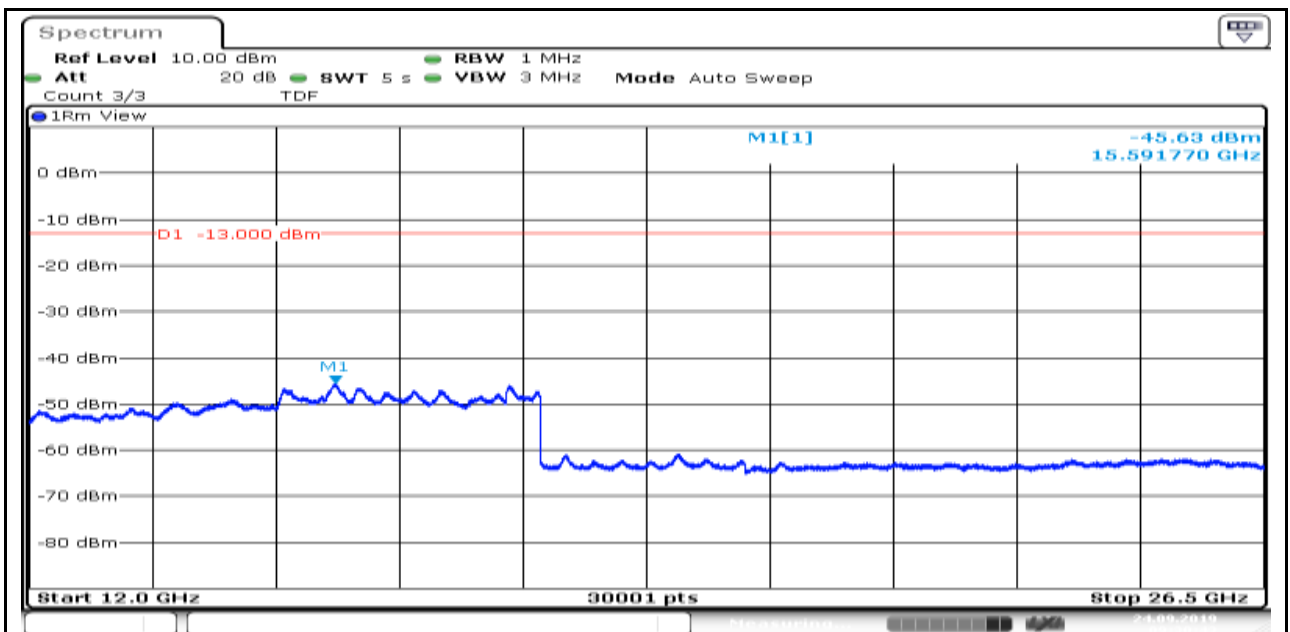
Band4_Stand-Alone_NaN_BPSK_20399_1@11_15kHz_1000_5000_1000-5000MHz@-39.66dBm_-13_PASS_FCC_ME910G1\FCC
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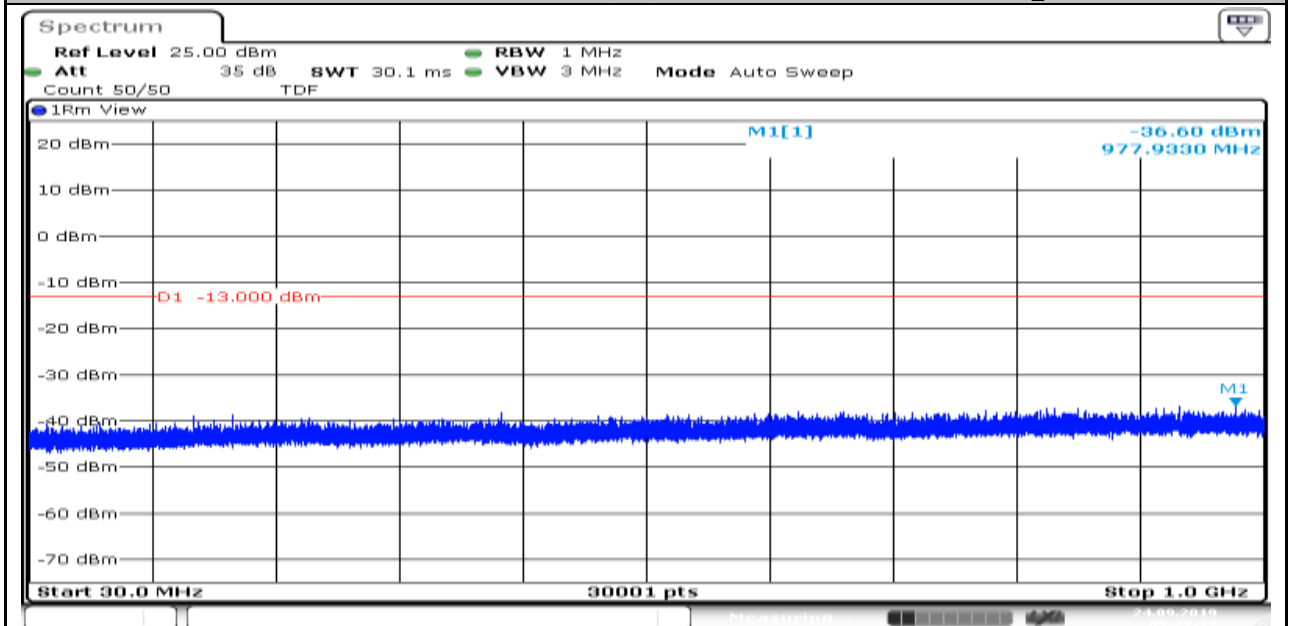
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Band4_Stand-Alone_NaN_BPSK_20399_1@11_15kHz_12000_26500_12000-26500MHz@-45.63dBm_-13_PASS_FCC_ME910G1\FC
FCC_NBIOT_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category
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Band4_Stand-Alone_NaN_BPSK_20399_1@0_15kHz_30_1000_30~1000MHz@-36.6dBm_-13_PASS_FCC_ME910G1\FCC_NBIO
T_eMTC_NVNT\Band4\Spurious emission at antenna terminals for category
NB-Band4-Stand-Alone-NaN-20399-1@0@15kHz-BPSK-NTNV-201992481926.Gif_



Appendix B.6: Frequency Stability for NB Test Result

Voltage												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	HV	NT	-48.52	-0.028006	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	LV	NT	-47.69	-0.027527	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	NT	-40.28	-0.023250	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	HV	NT	-40.38	-0.023307	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	LV	NT	-44.09	-0.025449	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	NT	-44.83	-0.025876	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	HV	NT	-30.60	-0.017662	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	LV	NT	-27.14	-0.015665	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	NT	-27.41	-0.015821	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	HV	NT	-30.93	-0.017853	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	LV	NT	-26.66	-0.015388	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	NT	-28.61	-0.016514	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	50	-26.56	-0.015330	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	-30	-15.86	-0.009154	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	30	-29.25	-0.016883	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	20	-16.19	-0.009345	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	10	-26.56	-0.015330	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	0	-10.87	-0.006274	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	-10	-21.00	-0.012121	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	50	7.45	0.004300	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	-30	-24.91	-0.014378	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	-30	-44.39	-0.025622	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	40	-21.46	-0.012387	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	30	-14.85	-0.008571	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	20	-28.27	-0.016317	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	10	-34.07	-0.019665	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	0	-21.46	-0.012387	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	-10	-26.32	-0.015192	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	-20	-20.57	-0.011873	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	-20	-11.99	-0.006921	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	50	-45.59	-0.026315	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	40	-46.26	-0.026701	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	30	-46.99	-0.027123	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	20	-50.10	-0.028918	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	10	-49.87	-0.028785	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	0	-45.33	-0.026165	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	-10	-48.38	-0.027925	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	40	-19.48	-0.011244	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	-30	-44.69	-0.025795	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	50	-50.00	-0.028860	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	40	-44.50	-0.025685	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	30	-41.33	-0.023856	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	20	-44.52	-0.025697	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	10	-42.14	-0.024323	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	0	-43.03	-0.024837	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	-10	-46.12	-0.026620	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	-20	-41.43	-0.023913	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	-20	-52.10	-0.030072	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	-40	-51.74	-0.029864	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	60	-30.13	-0.017391	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	70	-23.99	-0.013847	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	80	-36.45	-0.021039	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	85	-37.89	-0.021870	±2.5	PASS

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Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	-40	-19.34	-0.011163	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	60	-27.39	-0.015810	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	70	-10.39	-0.005997	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	3.75kHz	NV	-40	-50.05	-0.028889	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@47	3.75kHz	NV	85	-8.18	-0.004722	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	85	-38.60	-0.022280	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	60	-38.12	-0.022003	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	70	-57.59	-0.033241	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	80	-33.32	-0.019232	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@0	15kHz	NV	85	-56.71	-0.032733	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	-40	-49.62	-0.028641	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	60	-61.20	-0.035325	±2.5	PASS
Band4	Stand-Alone	NaN	QPSK	20175	1@11	15kHz	NV	70	-43.14	-0.024900	±2.5	PASS

Appendix C: Test Results of Band 5 for NB-IoT operation

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Appendix C.1: RF Power Output and Effective (Isotropic) Radiated Power Output Data for NB

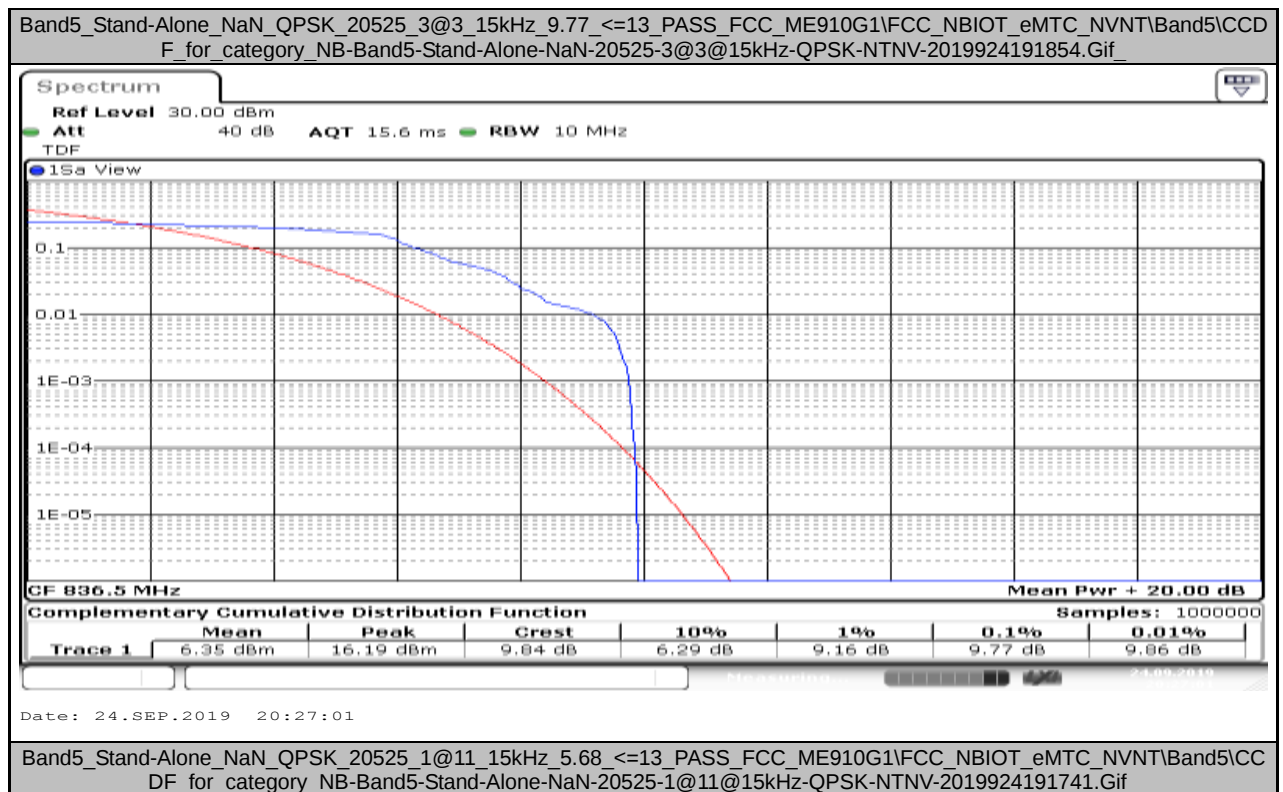
Test Result

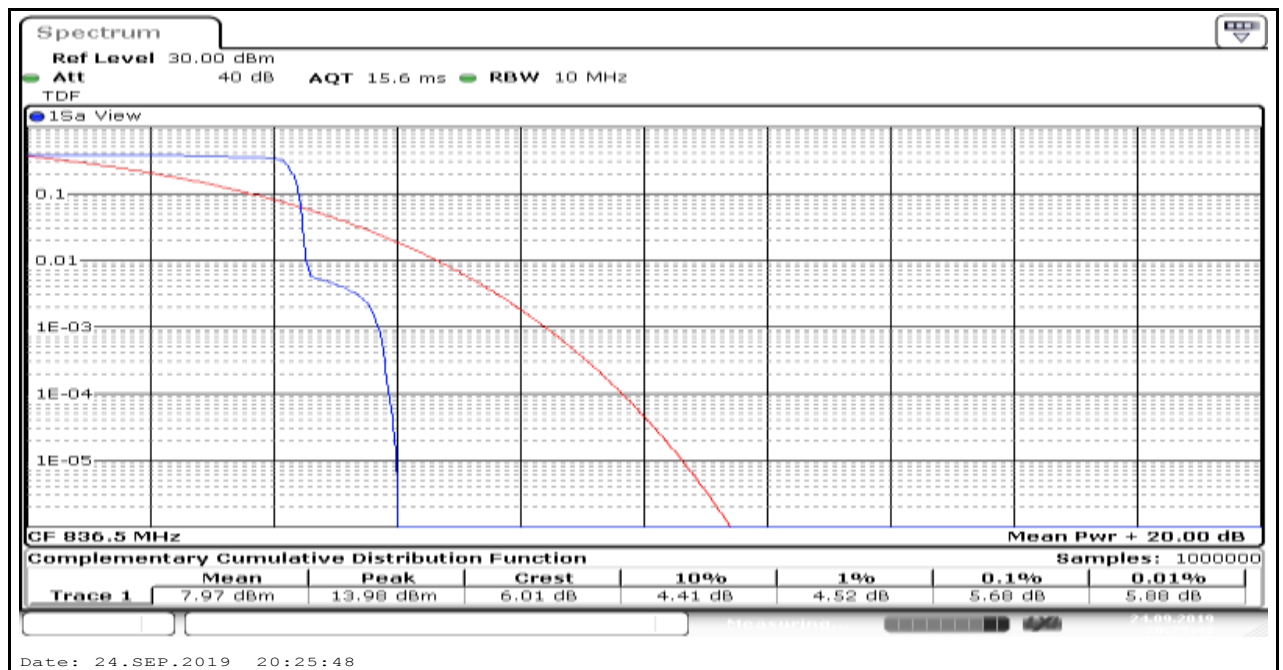
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result	ERP		Limit (watts)		Verdict
							dBm	dBm	Watts	FCC	ISED	
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	11.83	11.82	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	15kHz	11.89	11.88	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@11	15kHz	11.8	11.79	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	3@3	15kHz	11.77	11.76	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	11.88	11.87	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20402	1@11	15kHz	20.7	20.69	0.117	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20402	1@47	3.75kHz	20.37	20.36	0.109	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20402	3@3	15kHz	21.01	21	0.126	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20402	1@0	15kHz	20.79	20.78	0.120	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20402	1@0	3.75kHz	20.38	20.37	0.109	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	20.21	20.2	0.105	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	20.71	20.7	0.117	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	20.75	20.74	0.119	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	3@3	15kHz	21.07	21.06	0.128	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	20.14	20.13	0.103	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20648	1@0	15kHz	20.56	20.55	0.114	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20648	1@0	3.75kHz	20.13	20.12	0.103	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20648	1@47	3.75kHz	19.99	19.98	0.100	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20648	1@11	15kHz	20.48	20.47	0.111	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20648	3@3	15kHz	20.73	20.72	0.118	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	3@3	15kHz	11.58	11.57	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@11	15kHz	11.57	11.56	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	11.7	11.69	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	15kHz	11.79	11.78	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	11.63	11.62	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	3@3	15kHz	11.68	11.67	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	11.78	11.77	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	11.8	11.79	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	3.75kHz	11.84	11.83	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@47	3.75kHz	11.87	11.86	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20402	3@3	15kHz	21.02	21.01	0.126	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20402	1@11	15kHz	20.68	20.67	0.117	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20402	1@0	15kHz	20.71	20.7	0.117	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20402	1@47	3.75kHz	20.27	20.26	0.106	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20402	1@0	3.75kHz	20.32	20.31	0.107	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	20.52	20.51	0.112	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	20.6	20.59	0.115	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@47	3.75kHz	20.23	20.22	0.105	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	3@3	15kHz	21.07	21.06	0.128	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	3.75kHz	20.28	20.27	0.106	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20648	1@11	15kHz	20.35	20.34	0.108	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20648	1@47	3.75kHz	19.98	19.97	0.099	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20648	3@3	15kHz	20.84	20.83	0.121	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20648	1@0	15kHz	20.38	20.37	0.109	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20648	1@0	3.75kHz	20.07	20.06	0.101	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	11.72	11.71	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@47	3.75kHz	11.58	11.57	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	11.63	11.62	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	3.75kHz	11.64	11.63	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	3@3	15kHz	11.58	11.57	0.014	7	11.5	PASS

Appendix C.2: Peak-to-Average Ratio(CCDF) for NB Test Result

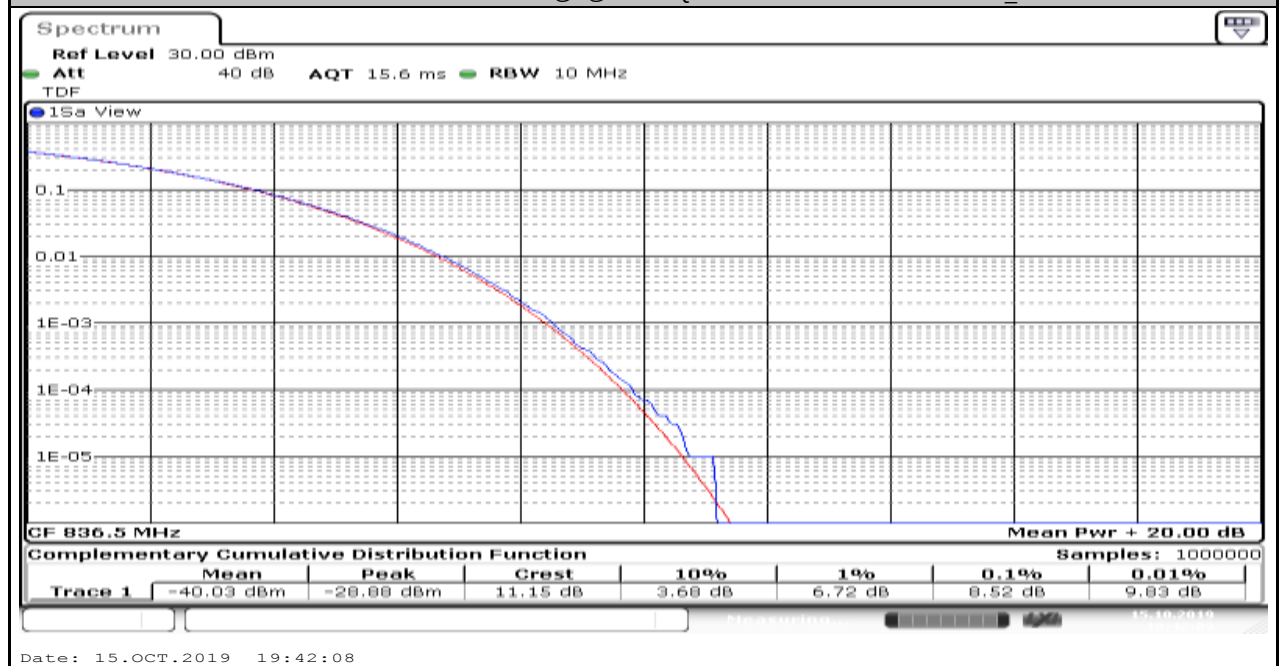
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band5	Stand-Alone	NaN	QPSK	20525	3@3	15kHz	9.77	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	5.68	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	8.52	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	1.86	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	10.32	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	3@3	15kHz	9.77	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	9.97	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	1.62	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@47	3.75kHz	2.09	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	3.75kHz	8.35	<=13	PASS

Test Graphs

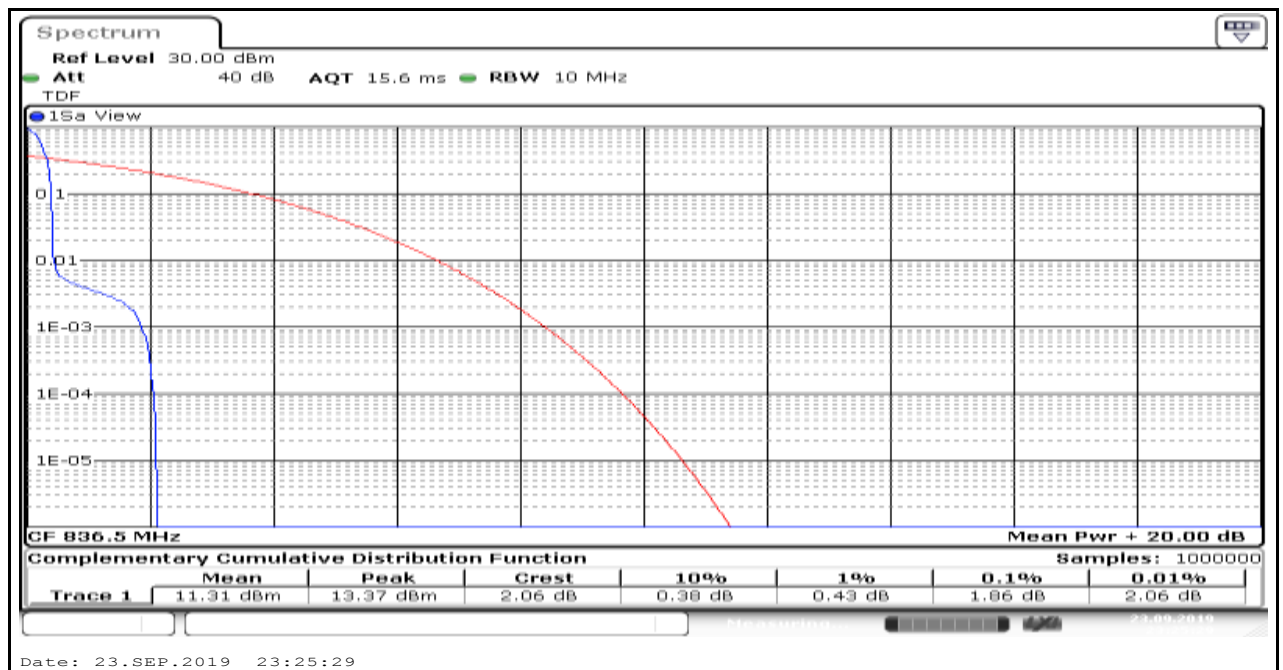




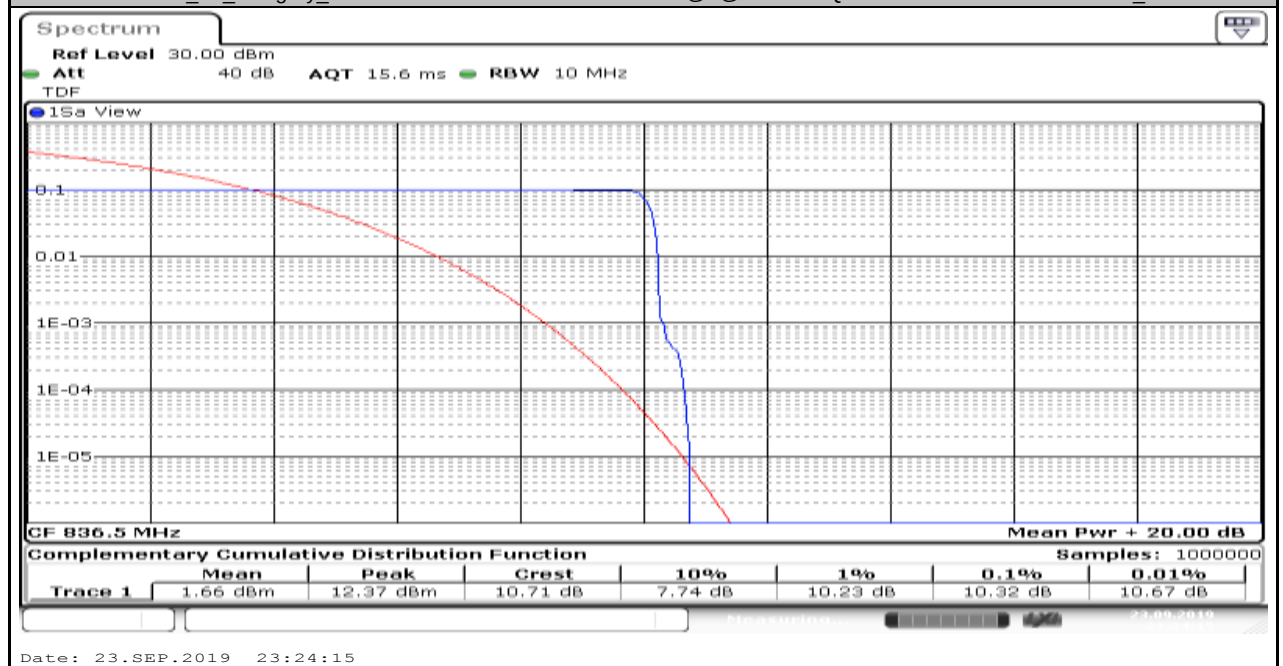
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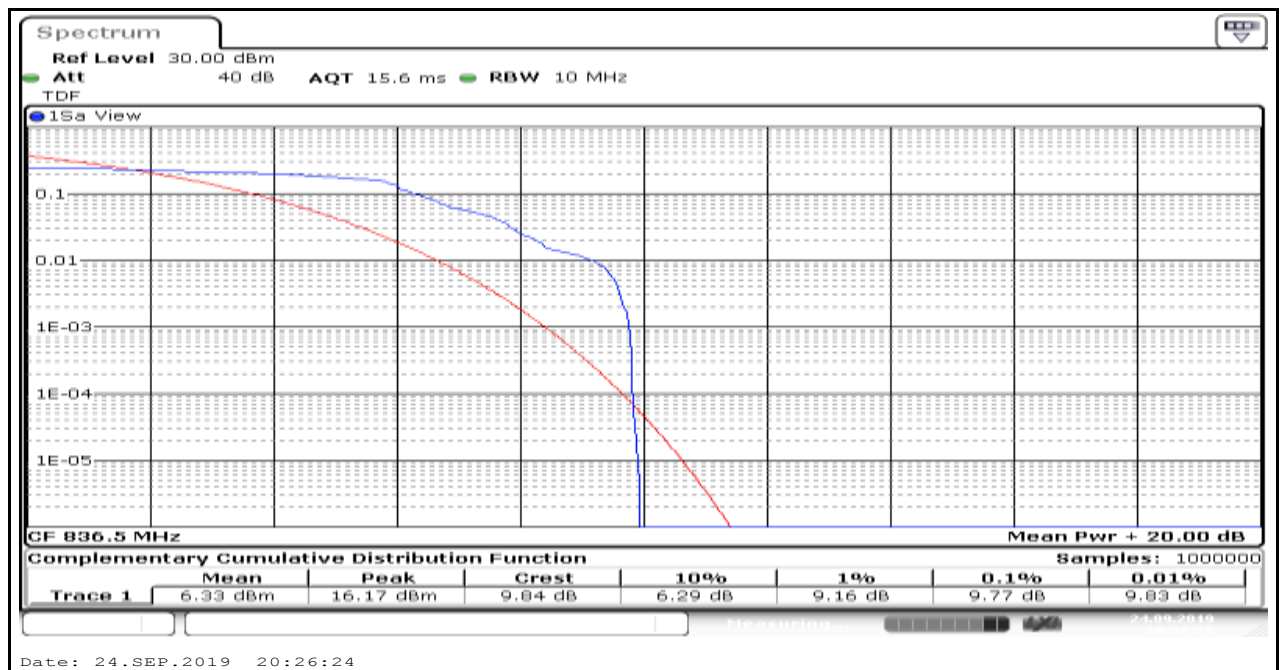
Band5_Stand-Alone_NaN_QPSK_20525_1@47_3.75kHz_1.86 <=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CCDF_for_category_NB-Band5_Stand-Alone-NaN-20525-1@47@3.75kHz-QPSK-NTNV-2019923221722.Gif_



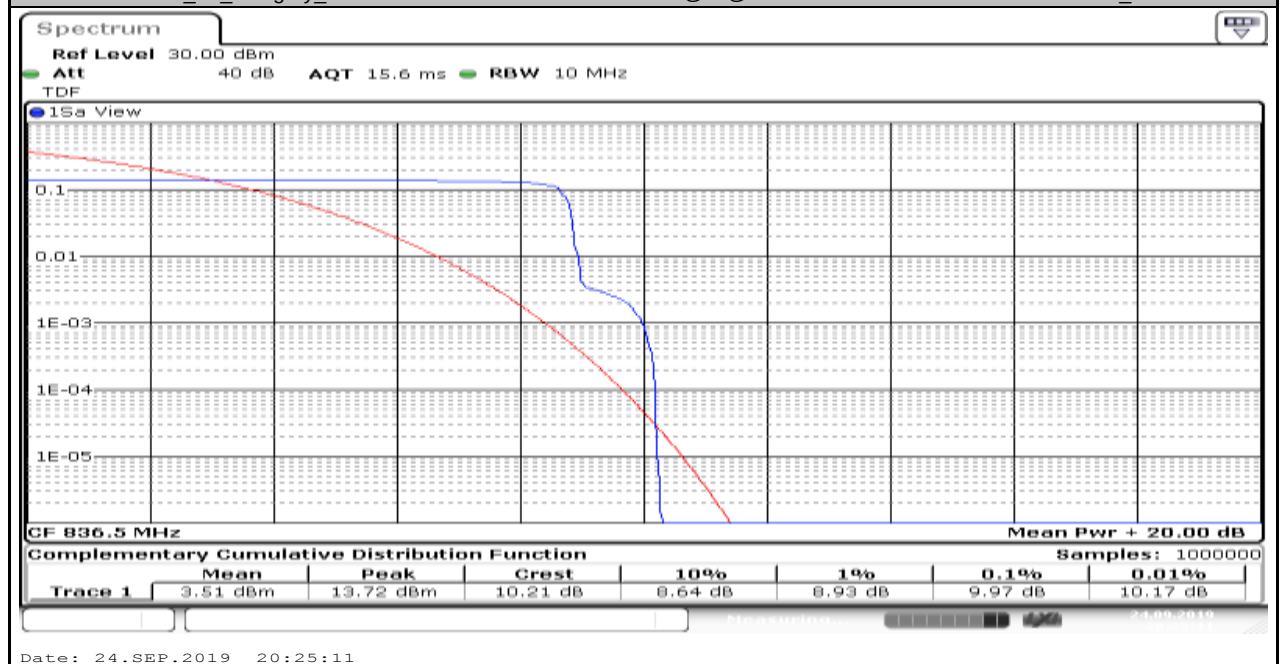
Band5_Stand-Alone_NaN_QPSK_20525_1@0_3.75kHz_10.32_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CCDF_for_category_NB-Band5-Stand-Alone-NaN-20525-1@0@3.75kHz-QPSK-NTNV-201992322168.Gif_



Band5_Stand-Alone_NaN_BPSK_20525_3@3_15kHz_9.77_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CCDF_for_category_NB-Band5-Stand-Alone-NaN-20525-3@3@15kHz-BPSK-NTNV-2019924191817.Gif_

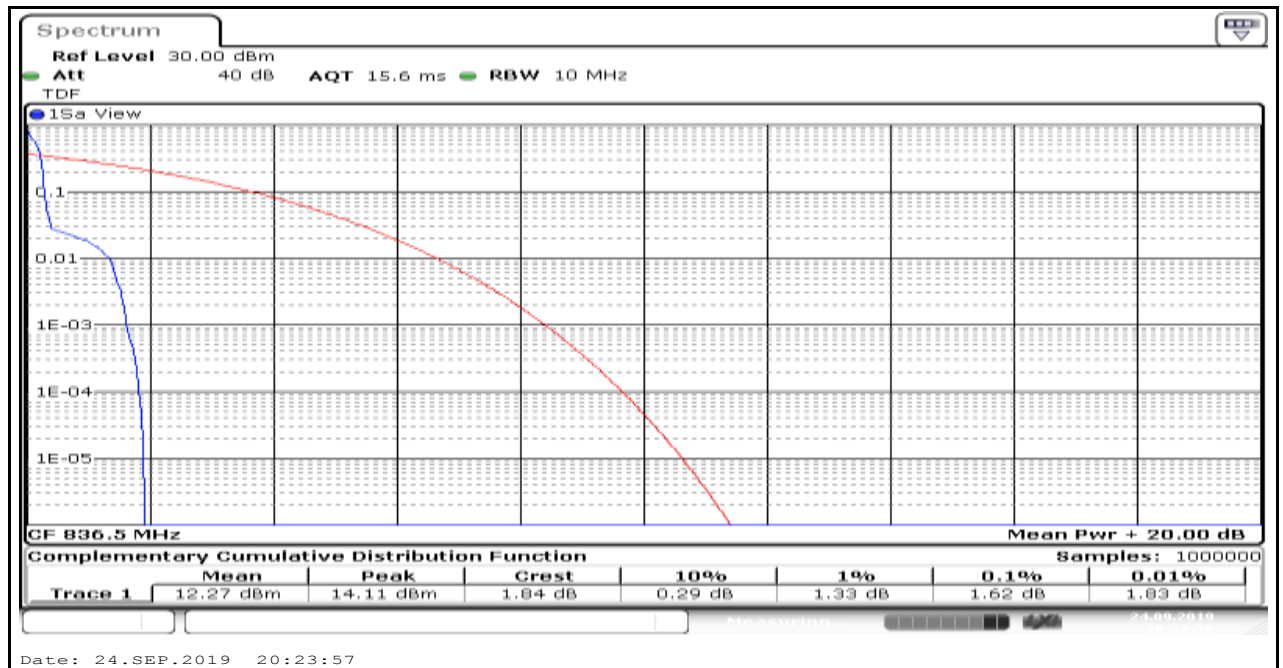


Band5_Stand-Alone_NaN_BPSK_20525_1@11_15kHz_9.97_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CCDF_for_category_NB-Band5-Stand-Alone-NaN-20525-1@11@15kHz-BPSK-NTNV-201992419174.Gif

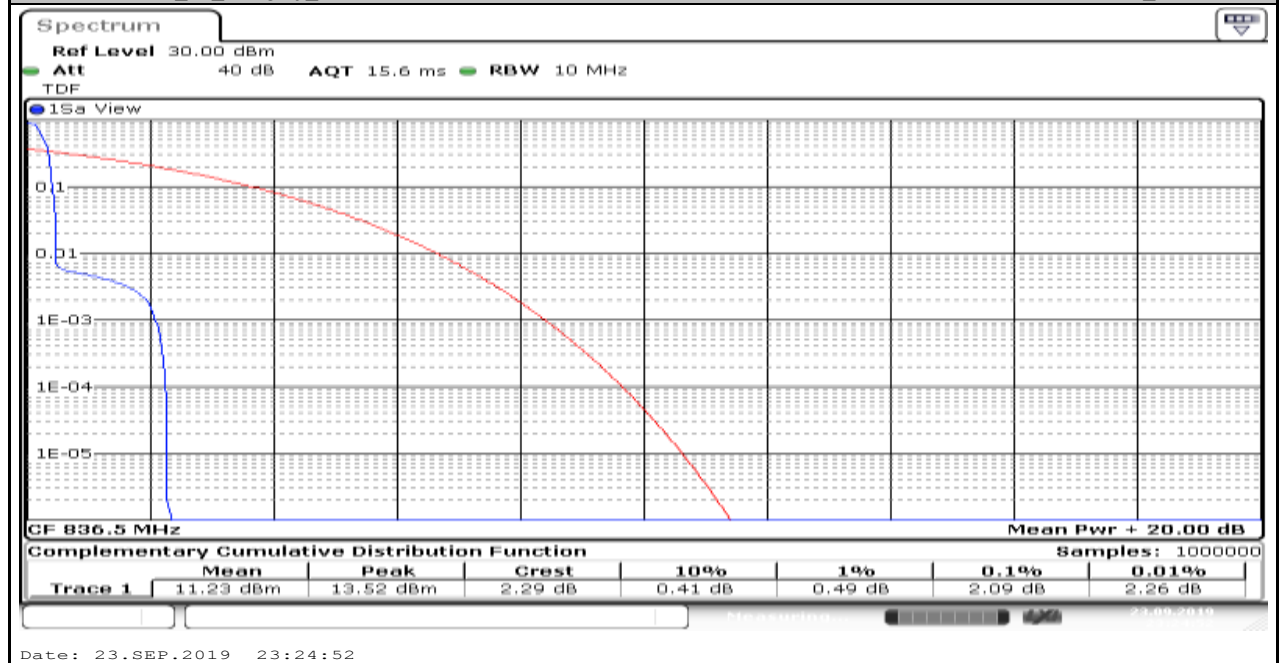


Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_1.62_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CCDF_for_category_NB-Band5-Stand-Alone-NaN-20525-1@0@15kHz-BPSK-NTNV-2019924191550.Gif

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Band5_Stand-Alone_NaN_BPSK_20525_1@47_3.75kHz_2.09_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CDF_for_category_NB-Band5-Stand-Alone-NaN-20525-1@47@3.75kHz-BPSK-NTNV-2019923221645.Gif_



Band5_Stand-Alone_NaN_BPSK_20525_1@0_3.75kHz_8.35_<=13_PASS_FCC_ME910G1\FCC_NBIOT_eMTC_NVNT\Band5\CDF_for_category_NB-Band5-Stand-Alone-NaN-20525-1@0@3.75kHz-BPSK-NTNV-2019923221532.Gif_

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