

FCC CERTIFICATION TEST REPORT

FOR

Applicant	:	MAXMADE AUTO ELECTRONICS CO.,LTD.
Address	:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China
Equipment under Test	:	Car Audio
Model No.	:	AV-1327W-99
Trade Mark	:	N/A
FCC ID	:	2AT9B-AV-1327W-99
Manufacturer	:	MAXMADE AUTO ELECTRONICS CO.,LTD.
Address	:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park,
Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, **E-mail:** ddt@dgddt.com, <http://www.dgddt.com>

REPORT

TABLE OF CONTENTS

	Test report declares.....	4
1.	Summary of test results	6
2.	General test information	7
2.1.	Description of EUT	7
2.2.	Accessories of EUT	7
2.3.	Assistant equipment used for test.....	7
2.4.	Block diagram of EUT configuration for test.....	8
2.5.	Deviations of test standard.....	8
2.6.	Test environment conditions	9
2.7.	Test laboratory	9
2.8.	Measurement uncertainty	9
3.	Equipment used during test	10
4.	26dB Bandwidth, 6dB Bandwidth and 99% Bandwidth	11
4.1.	Block diagram of test setup.....	11
4.2.	Limits	11
4.3.	Test Procedure.....	11
4.4.	Test Result.....	12
4.5.	Original test data.....	13
5.	Duty Cycle.....	29
5.1.	Block diagram of test setup.....	29
5.2.	Limit	29
5.3.	Test procedure	29
5.4.	Test result	30
5.5.	Original test data.....	30
6.	Maximum Output Power	37
6.1.	Block diagram of test setup.....	37
6.2.	Limits	37
6.3.	Test Procedure.....	37
6.4.	Test Result.....	37
7.	Power Spectral Density	38
7.1.	Block diagram of test setup.....	38
7.2.	Limits	38
7.3.	Test Procedure.....	38
7.4.	Test Result.....	39
7.5.	Original test data.....	39
8.	Frequency Stability Measurement.....	46
8.1.	Limit of Frequency Stability	46

8.2.	Measuring Instruments	46
8.3.	Test Procedures.....	46
8.4.	Test Setup.....	46
8.5.	Test Result.....	46
9.	Emissions in restricted frequency bands	52
9.1.	Block diagram of test setup	52
9.2.	Limit	53
9.3.	Test Procedure.....	54
9.4.	Test result	56
10.	Band Edge Compliance	83
10.1.	Block diagram of test setup	83
10.2.	Limit	83
10.3.	Test Procedure.....	83
10.4.	Test result	83
11.	Power Line Conducted Emission	99
11.1.	Block diagram of test setup.....	99
11.2.	Power Line Conducted Emission Limits (Class B)	99
11.3.	Test Procedure.....	99
11.4.	Test Result.....	100
12.	Antenna Requirements	101
12.1.	Limit	101
12.2.	Result.....	101
13.	Dynamic Frequency Selection	102
13.1.	Applicability of DFS requirements.....	102
13.2.	Limit	103
13.3.	Parameters of radar test waveforms.....	103
13.4.	Calibration of radar waveform.....	104
13.5.	Channel closing transmission time, channel move time and non-occupancy period.	105
13.6.	Test setup	106
13.7.	Test result	106
14.	Test setup photograph.....	107
15.	Photos of the EUT	109

Test Report Declare

Applicant	:	MAXMADE AUTO ELECTRONICS CO.,LTD.
Address	:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China
Equipment under Test	:	Car Audio
Model No.	:	AV-1327W-99
Trade Mark	:	N/A
Manufacturer	:	MAXMADE AUTO ELECTRONICS CO.,LTD.
Address	:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart E

Test procedure used:

ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	DDT-R22070625-2E03		
Date of Receipt:	Jul. 11, 2022	Date of Test:	Jul. 11, 2022 ~ Sep. 27, 2022

Prepared By:**Johnny Wang/Engineer****Approved By:****Damon Hu/EMC Manager**

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Sep. 27, 2022	

1. Summary of test results

The EUT have been tested according to the applicable standards as referenced below.

Description of Test Item	Standard	Results
6/26db Bandwidth and 99% Bandwidth	FCC 15.407 (e)	Pass
Maximum Conducted Output Power	FCC 15.407 (a)	Pass
Power Spectral Density	FCC 15.407 (a)	Pass
Frequency Stability Measurement	FCC 15.407 (g)	Pass
Emissions in restricted frequency bands	FCC 15.407 (a) FCC 15.209 FCC 15.205	Pass
Band Edge Compliance	FCC 15.407 (a) FCC 15.209 FCC 15.205	Pass
Power Line Conducted Emission	FCC 15.207	N/A
Antenna requirement	FCC 15.203	Pass
Dynamic Frequency Selection	FCC 15.407 (h)	N/A

Note: N/A is an abbreviation for Not Applicable and means this test item is not applicable for this device according to the technology characteristic of device.

2. General test information

2.1. Description of EUT

EUT* Name	: Car Audio
Model Number	: AV-1327W-99
EUT function description	: Please reference user manual of this device
Power supply	: DC 12V
Radio Technology	: IEEE 802.11a/n/ac
FCC Operation frequency	: IEEE 802.11a: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11ac HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT80: 5210MHz, 5775MHz
Modulation	: IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transmitter rate	: IEEE 802.11a: up to 54 Mbps IEEE 802.11n HT20: up to 72.2 Mbps IEEE 802.11n HT40: up to 150 Mbps IEEE 802.11ac HT20: up to 86.6 Mbps IEEE 802.11ac HT40: up to 200 Mbps IEEE 802.11ac HT80: up to 433.3 Mbps
Antenna Gain	: FPC antenna, maximum PK gain: 7.12 dBi
Sample Type	: Series production
Sample Number	: S22070625-01 for conductive S22070625-02 for radiation

Note 1: EUT is the ab. of equipment under test.

Note 2: According exploratory explorer test, The 802.11n HT20/n HT40 mode are the same attribute with the 802.11ac VHT20/ac VHT40 mode, so choose the 802.11n HT20/n HT40 mode to test and report.

2.2. Accessories of EUT

Assistant equipment	Manufacturer	Model number	Other
N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test



Test software: Putty.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Tested mode, channel, and data rate information				
Mode	Setting Tx Power	data rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11a	/	6	CH36	5180
	/	6	CH40	5200
	/	6	CH48	5240
	/	6	CH149	5745
	/	6	CH157	5785
	/	6	CH165	5825
IEEE 802.11n HT20	/	MCS 0	CH36	5180
	/	MCS 0	CH40	5200
	/	MCS 0	CH48	5240
	/	MCS 0	CH149	5745
	/	MCS 0	CH157	5785
	/	MCS 0	CH165	5825
IEEE 802.11n HT40	40	MCS 0	CH38	5190
	40	MCS 0	CH46	5230
	40	MCS 0	CH151	5755
	40	MCS 0	CH159	5795
IEEE 802.11ac HT20	/	MCS 0	CH36	5180
	/	MCS 0	CH40	5200
	/	MCS 0	CH48	5240
	/	MCS 0	CH149	5745
	/	MCS 0	CH157	5785
	/	MCS 0	CH165	5825
IEEE 802.11ac HT40	45	MCS 0	CH38	5190
	45	MCS 0	CH46	5230
	45	MCS 0	CH151	5755
	45	MCS 0	CH159	5795
IEEE 802.11ac HT80	/	MCS 0	CH42	5210
	/	MCS 0	CH155	5775

Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	+21 °C to +25 °C
Humidity range:	40% to 75%
Pressure range:	86 kPa to 106 kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

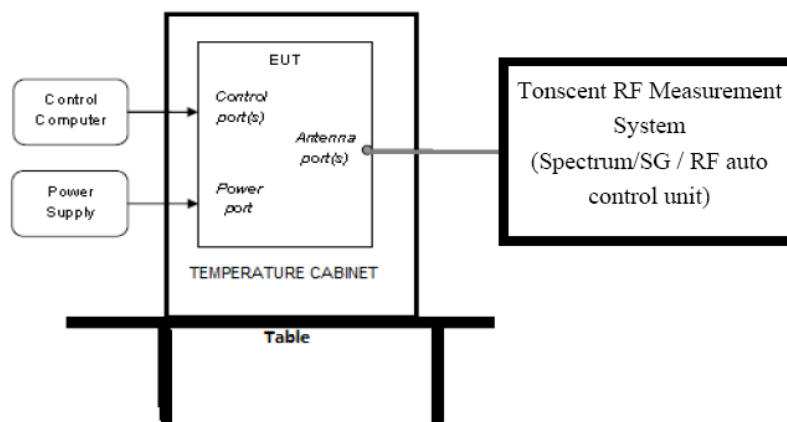
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz); 1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz); 1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7 × 10 ⁻⁸ (Antenna couple method) 5.5 × 10 ⁻⁸ (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6GHz); 1.40 dB (3.6 GHz ≤ f < 8 GHz) 1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW<20kHz)	3×10 ⁻⁸
Temperature	0.4℃
Humidity	2%
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V) 4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-40GHz)	4.10 dB (1-6 GHz) 4.40 dB (6 GHz-18 GHz) 3.54 dB (18 GHz-26 GHz) 4.30 dB (26 GHz-40 GHz)
Uncertainty for Power line conduction emission test	3.32 dB (150 kHz-30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment used during test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑RF Connected Test (Tonscend RF Measurement System 4#)					
Signal & Spectrum analyzer	R&S	FSV3044	101173	Apr. 13, 2022	1 Year
Wideband Radio Communication tester	R&S	CMW500	120259	May 26, 2022	1 Year
EXG Analog Signal Generator	KEYSIGHT	N5173A	MY62152058	May 26, 2022	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Oct. 15, 2021	1 Year
RF Control Unit	Tonsend	JS0806-2	21I8060485	May 28, 2022	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	May 26, 2022	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.3.2.22	N/A	N/A
☑Radiation 3#chamber					
EMI Test Receiver	R&S	ESU26	100472	May 19, 2022	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	May 17, 2022	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 19, 2021	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 19, 2022	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Aug. 07, 2021	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 22, 2022	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120 D	02468	Nov. 29, 2021	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 06, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Sep. 02, 2021	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Aug. 17, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Apr. 11, 2022	1 Year
Test software	Audix	E3	V 6.1.1.1	N/A	N/A
☑Power Line Conducted Emissions Test 1#					
Test Receiver	R&S	ESCI	100551	Sep. 02, 2021	1 Year
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year
LISN 1	R&S	ENV216	101109	Sep. 07, 2021	1 Year
LISN 1	R&S	ENV216	101109	Aug. 26, 2022	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 07, 2021	1 Year
LISN 2	R&S	ESH2-Z5	100309	Aug. 26, 2022	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Sep. 02, 2021	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Aug. 26, 2022	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Sep. 02, 2021	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Aug. 26, 2022	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

4. 26dB Bandwidth, 6dB Bandwidth and 99% Bandwidth

4.1. Block diagram of test setup



4.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Bandwidth	26 dB Bandwidth	5150-5250
	26 dB Bandwidth	5250-5350
	26 dB Bandwidth	5470-5725
	Minimum 500kHz 6dB Bandwidth	5725-5850

4.3. Test Procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth: RBW=100 kHz For 26 dB Bandwidth: approximately 1% of the emission bandwidth.
VBW	For 6 dB Bandwidth: VBW=300 kHz For 26 dB Bandwidth: >3 RBW
Trace	Max hold
Sweep	Auto couple

(2) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB and 6 dB relative to the maximum level measured in the fundamental emission.

4.4. Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.729	5171.652	5188.380	---	Pass
		5200	16.878	5191.536	5208.414	---	Pass
		5240	16.908	5231.533	5248.442	---	Pass
		5745	16.925	5736.521	5753.446	---	Pass
		5785	16.798	5776.600	5793.398	---	Pass
		5825	16.878	5816.550	5833.428	---	Pass
11N20SISO	Ant1	5180	16.758	5171.645	5188.402	---	Pass
		5200	16.770	5191.610	5208.380	---	Pass
		5240	17.805	5231.079	5248.884	---	Pass
		5745	17.836	5736.074	5753.910	---	Pass
		5785	17.745	5776.131	5793.876	---	Pass
		5825	17.747	5816.115	5833.862	---	Pass
11N40SISO	Ant1	5190	36.018	5172.004	5208.022	---	Pass
		5230	36.007	5211.997	5248.004	---	Pass
		5755	36.025	5736.958	5772.983	---	Pass
		5795	36.131	5776.899	5813.030	---	Pass
11AC80SISO	Ant1	5210	75.232	5172.418	5247.651	---	Pass
		5775	75.255	5737.360	5812.615	---	Pass

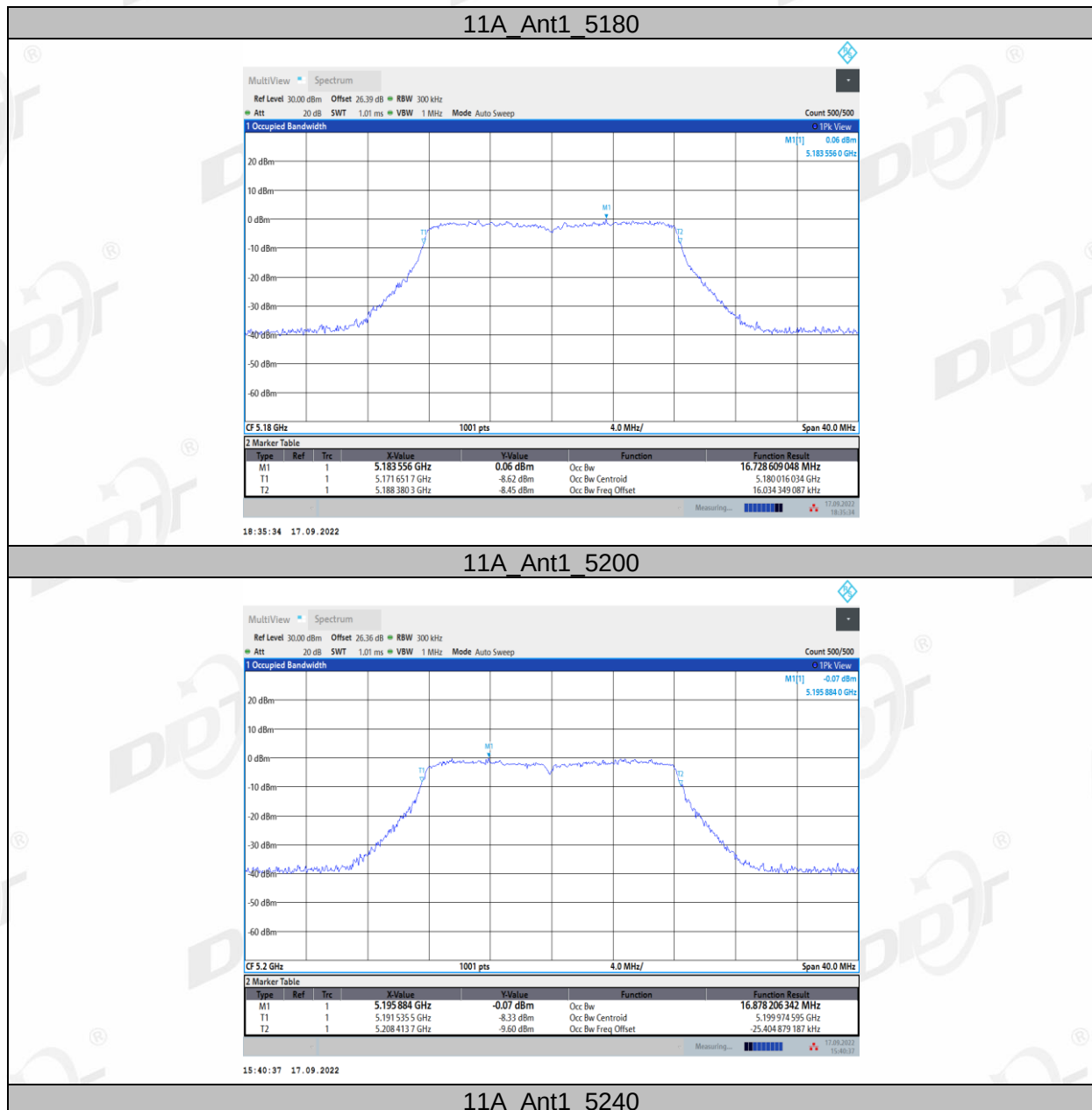
Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	21.24	5169.36	5190.60	---	Pass
		5200	21.48	5189.20	5210.68	---	Pass
		5240	21.40	5229.32	5250.72	---	Pass
		5745	21.32	5734.28	5755.60	---	Pass
		5785	20.92	5774.52	5795.44	---	Pass
		5825	23.24	5813.28	5836.52	---	Pass
11N20SISO	Ant1	5180	21.32	5169.20	5190.52	---	Pass
		5200	21.04	5189.44	5210.48	---	Pass
		5240	21.60	5229.16	5250.76	---	Pass
		5745	21.44	5734.16	5755.60	---	Pass
		5785	21.48	5774.32	5795.80	---	Pass
		5825	21.64	5814.32	5835.96	---	Pass
11N40SISO	Ant1	5190	40.96	5169.84	5210.80	---	Pass
		5230	40.96	5209.52	5250.48	---	Pass
		5755	40.48	5734.68	5775.16	---	Pass
		5795	41.28	5774.36	5815.64	---	Pass
11AC80SISO	Ant1	5210	80.32	5170.00	5250.32	---	Pass
		5775	80.64	5734.84	5815.48	---	Pass

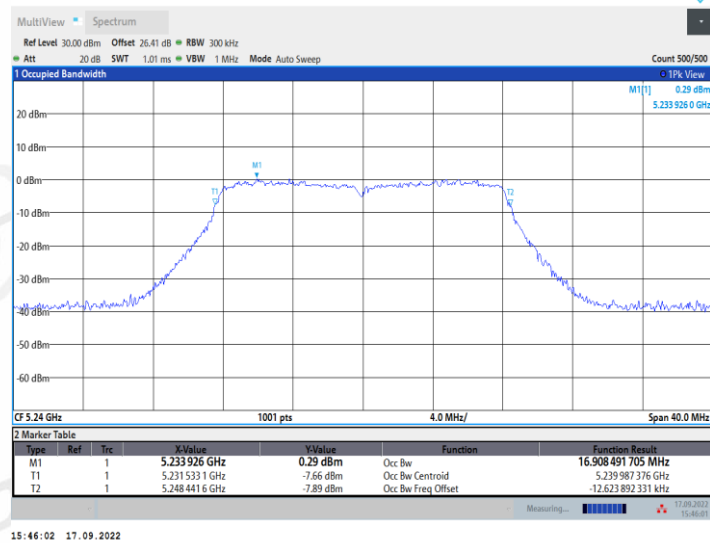
Test Mode	Antenna	Frequency [MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.32	5736.80	5753.12	0.5	PASS
		5785	16.32	5776.80	5793.12	0.5	PASS
		5825	16.32	5816.80	5833.12	0.5	PASS
11N20SISO	Ant1	5745	17.08	5736.40	5753.48	0.5	PASS

		5785	17.08	5776.40	5793.48	0.5	PASS
		5825	16.92	5816.56	5833.48	0.5	PASS
11N40SISO	Ant1	5755	35.20	5737.40	5772.60	0.5	PASS
		5795	35.20	5777.40	5812.60	0.5	PASS
11AC80SISO	Ant1	5775	75.20	5737.40	5812.60	0.5	PASS

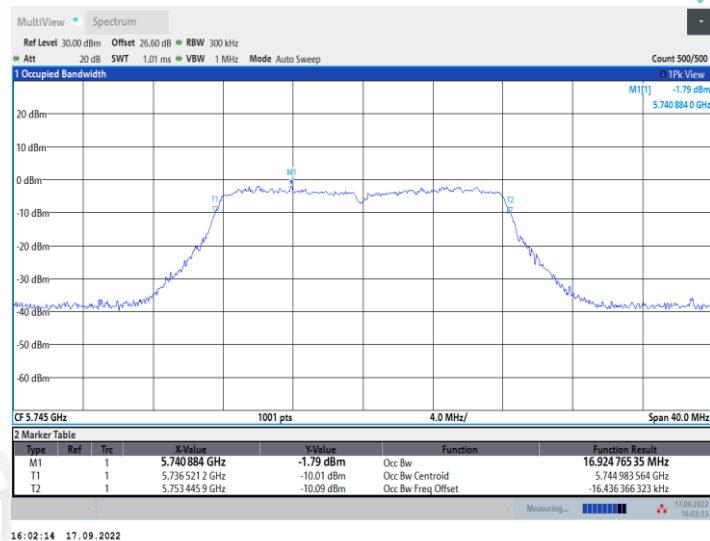
4.5. Original test data

99% OBW:

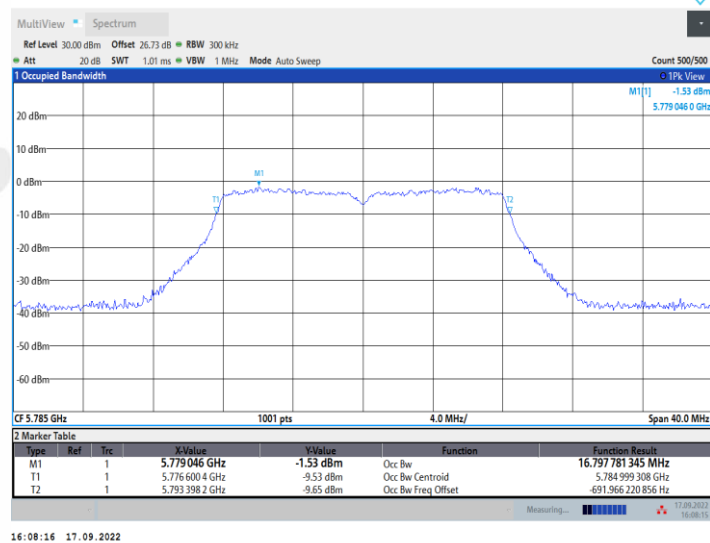




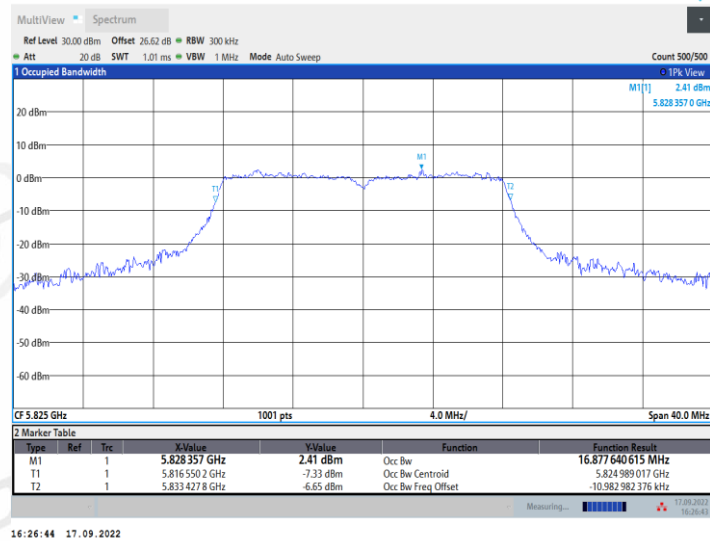
11A_Ant1_5745



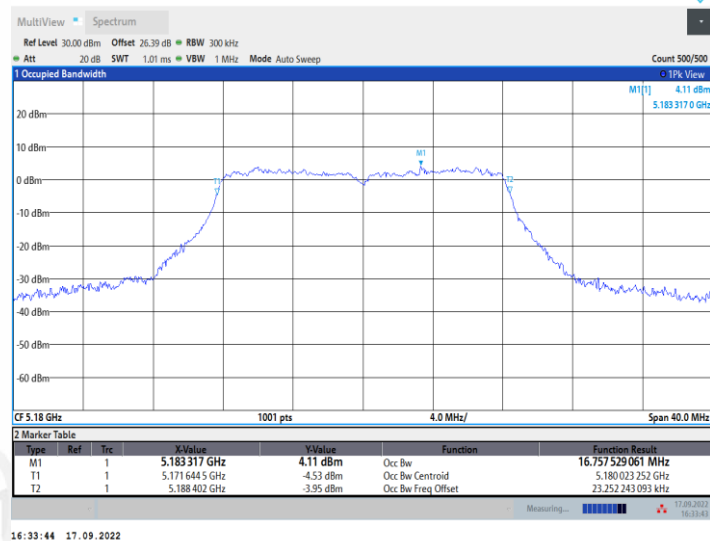
11A_Ant1_5785



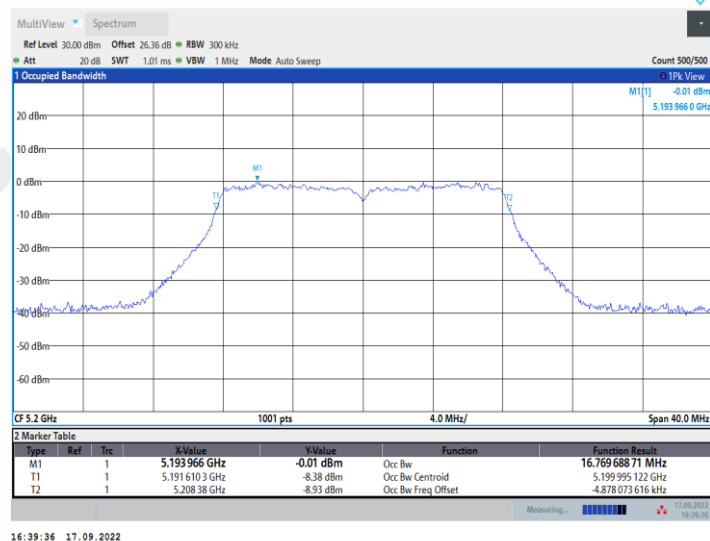
11A_Ant1_5825



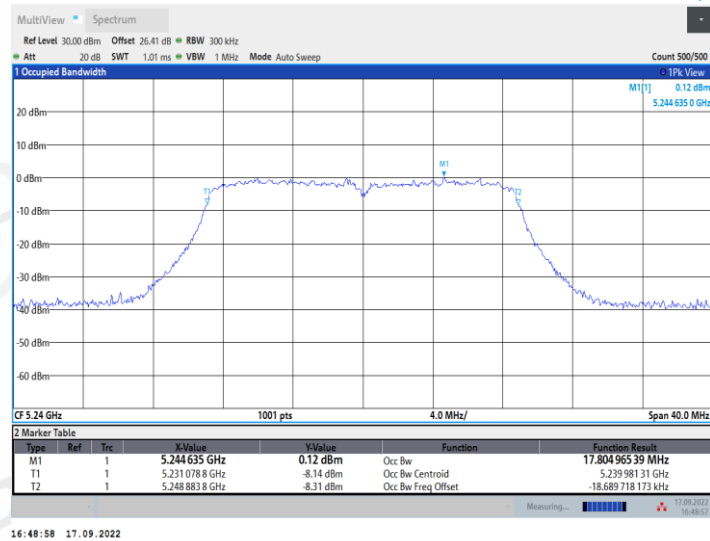
11N20SISO_Ant1_5180



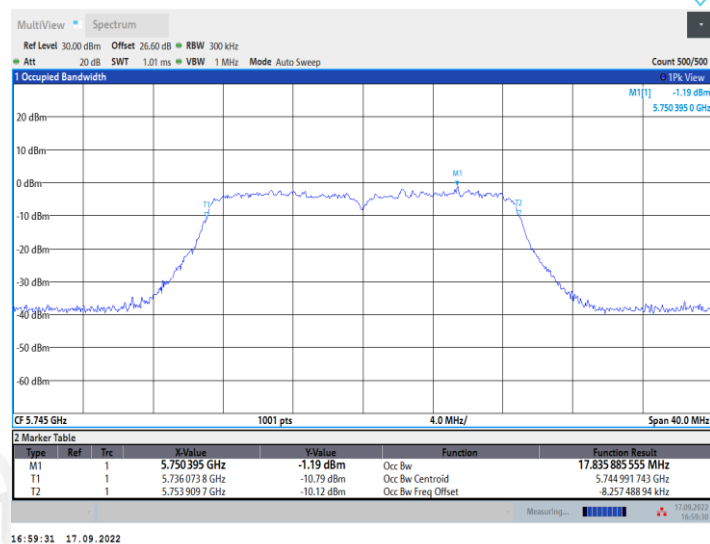
11N20SISO_Ant1_5200



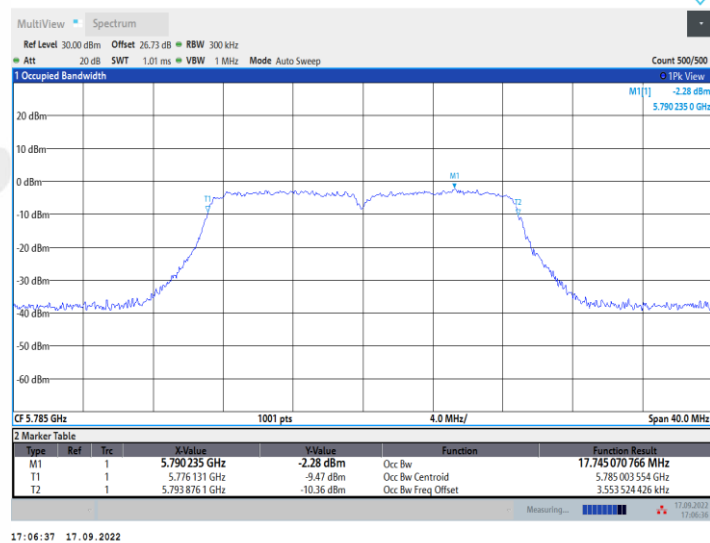
11N20SISO_Ant1_5240



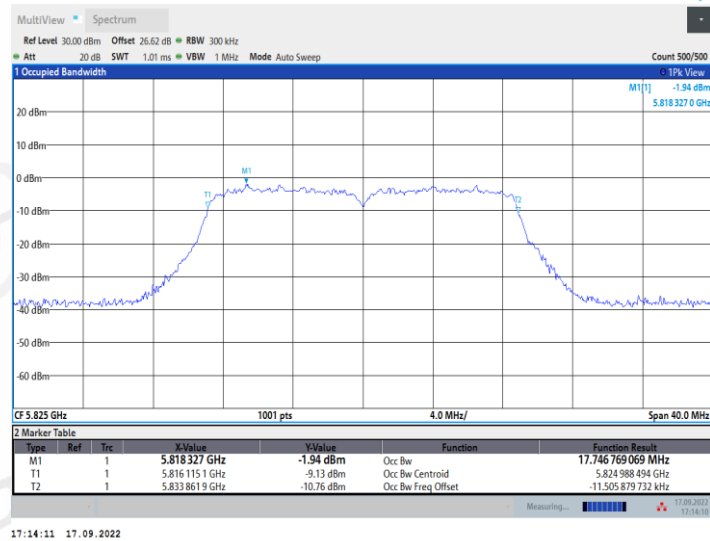
11N20SISO_Ant1_5745



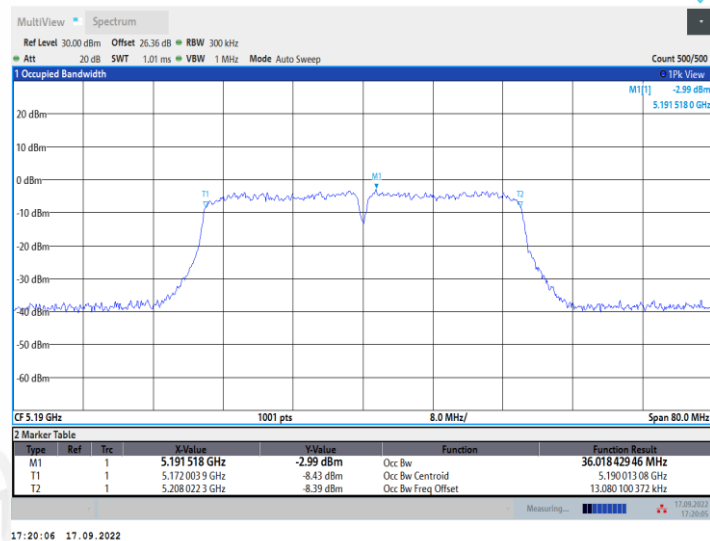
11N20SISO_Ant1_5785



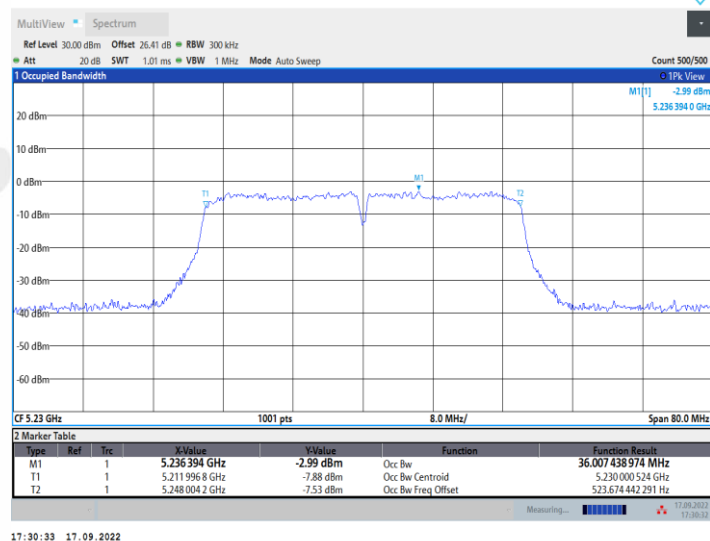
11N20SISO_Ant1_5825



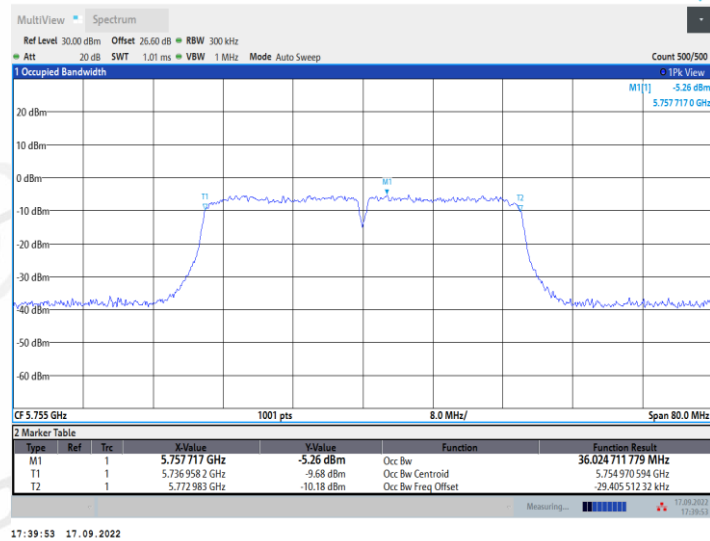
11N40SISO_Ant1_5190



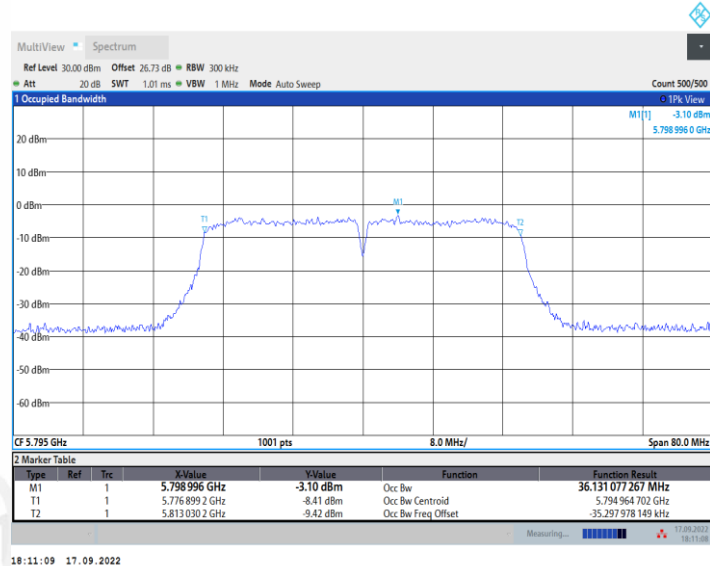
11N40SISO_Ant1_5230



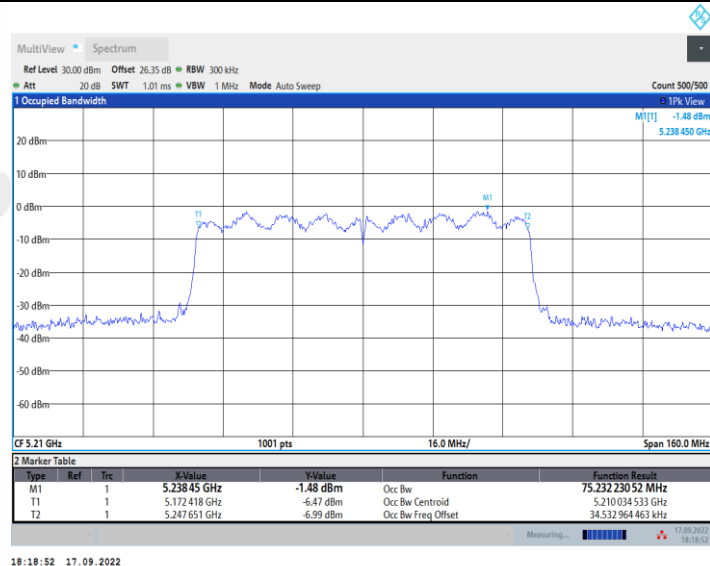
11N40SISO_Ant1_5755



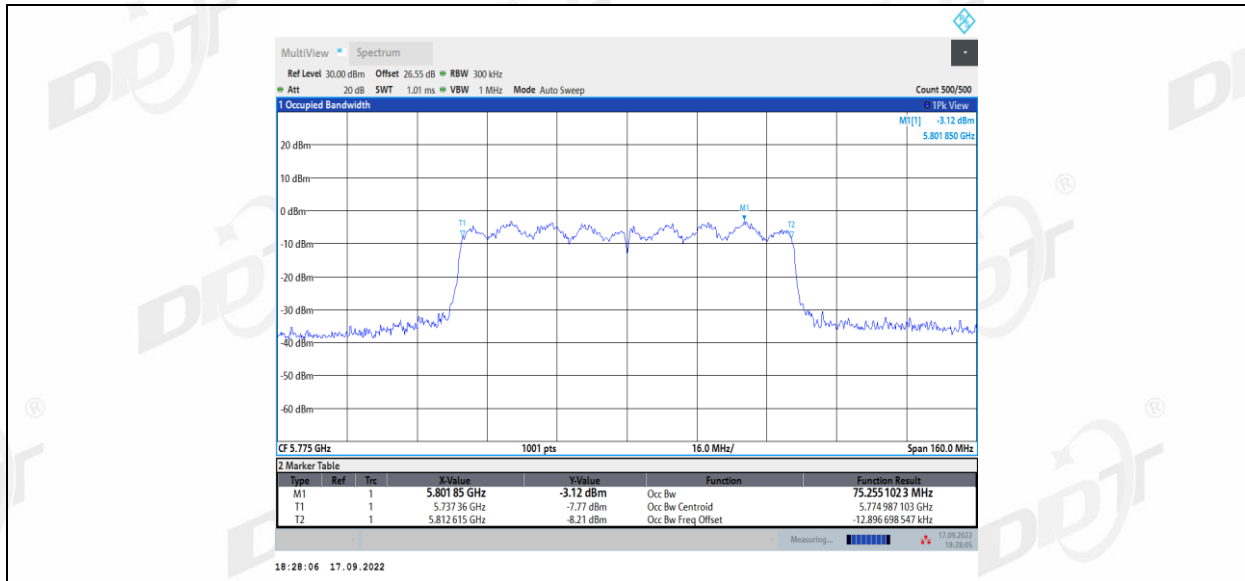
11N40SISO_Ant1_5795



11AC80SISO_Ant1_5210

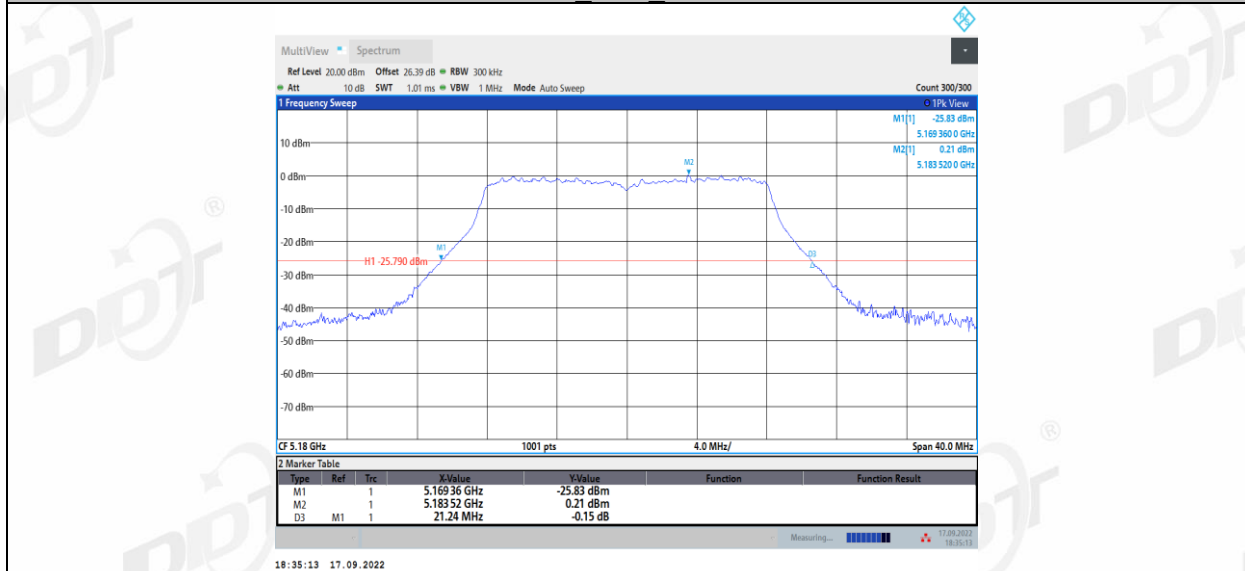


11AC80SISO_Ant1_5775

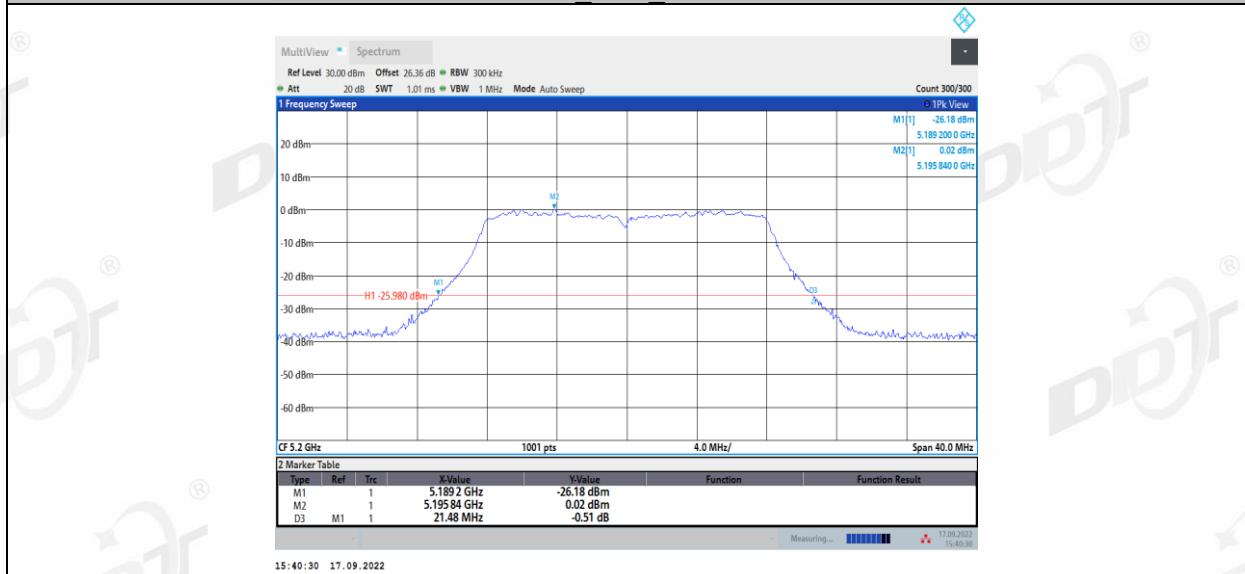


26db EBW:

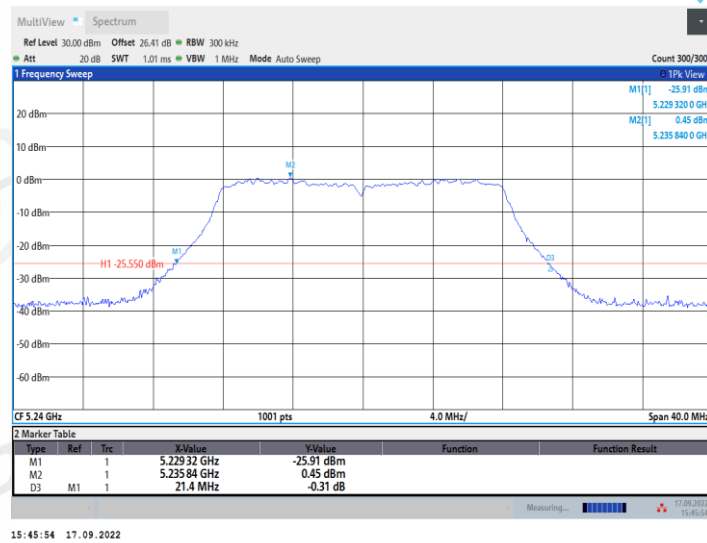
11A Ant1_5180



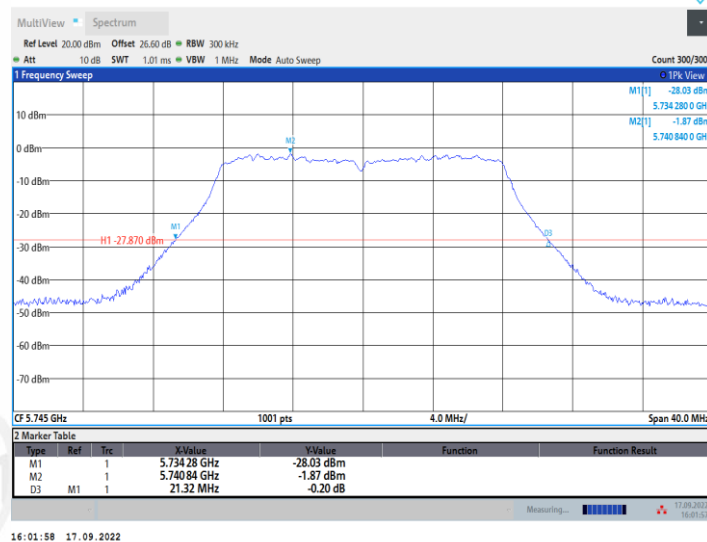
11A Ant1_5200



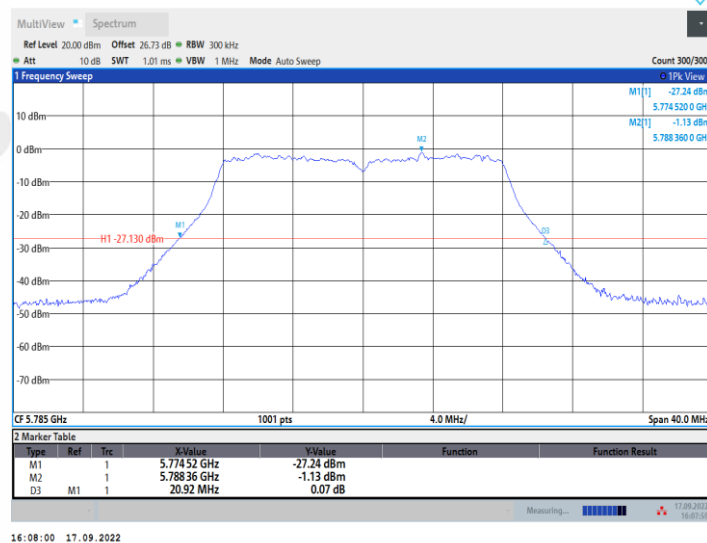
11A_Ant1_5240



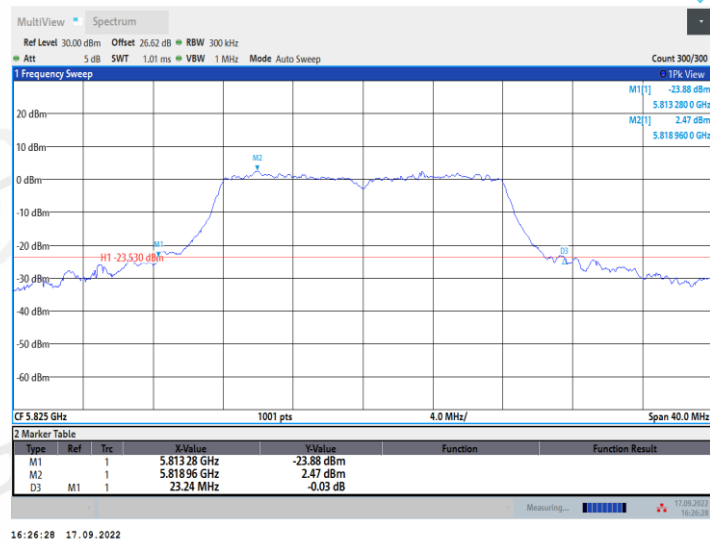
11A_Ant1_5745



11A_Ant1_5785

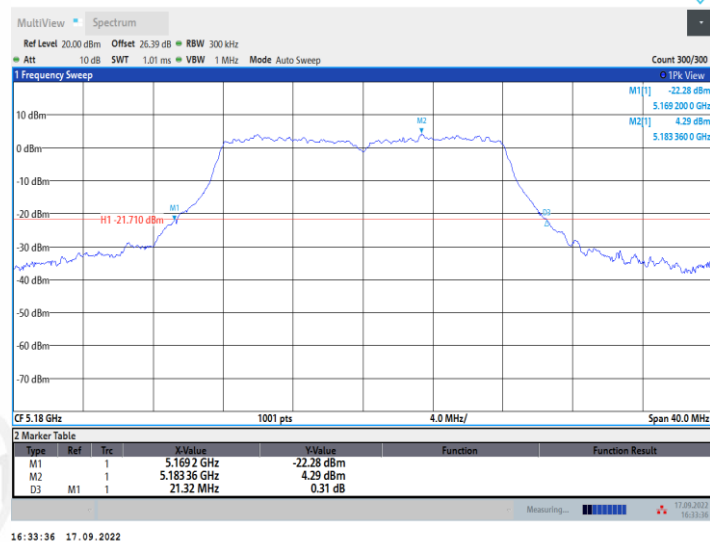


11A_Ant1_5825



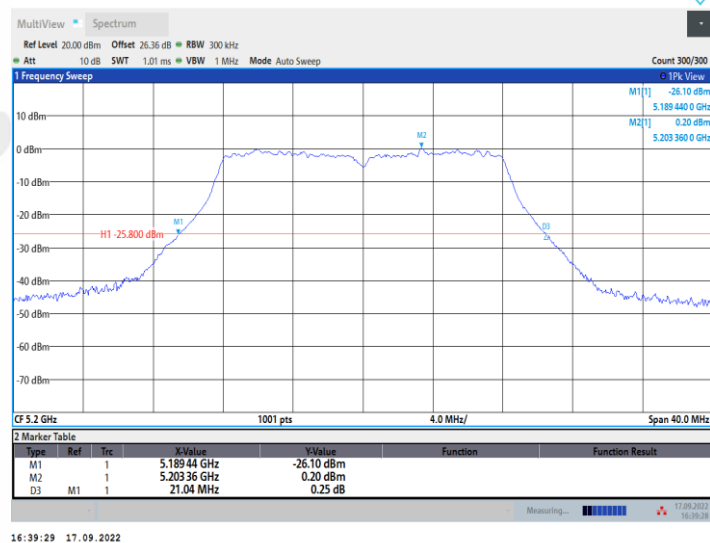
16:26:28 17.09.2022

11N20SISO_Ant1_5180



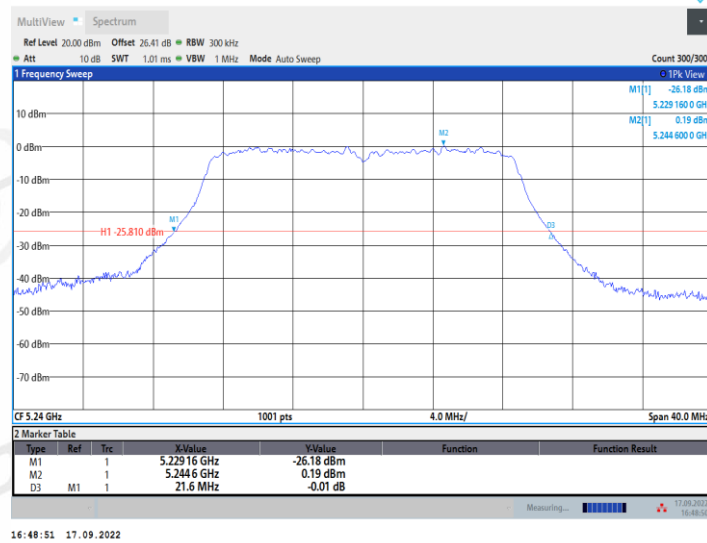
16:33:36 17.09.2022

11N20SISO_Ant1_5200



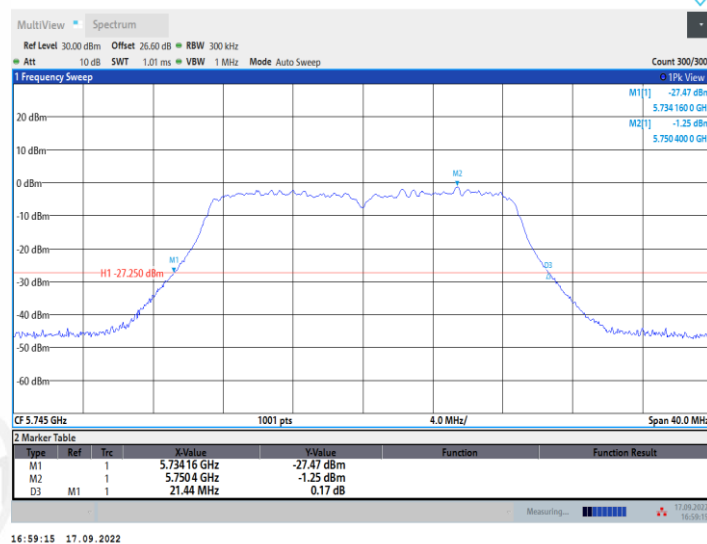
16:39:29 17.09.2022

11N20SISO_Ant1_5240



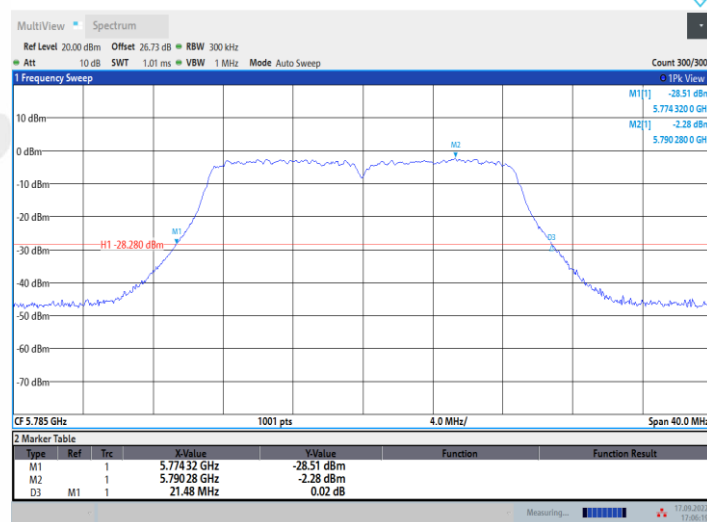
16:48:51 17.09.2022

11N20SISO_Ant1_5745



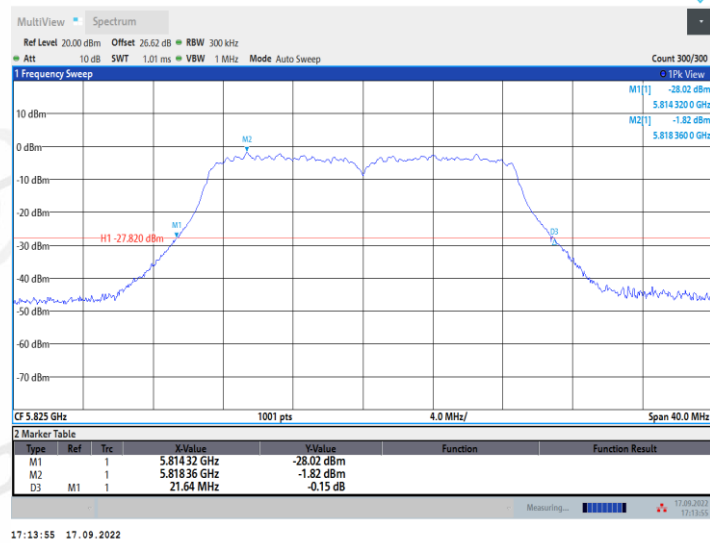
16:59:15 17.09.2022

11N20SISO_Ant1_5785



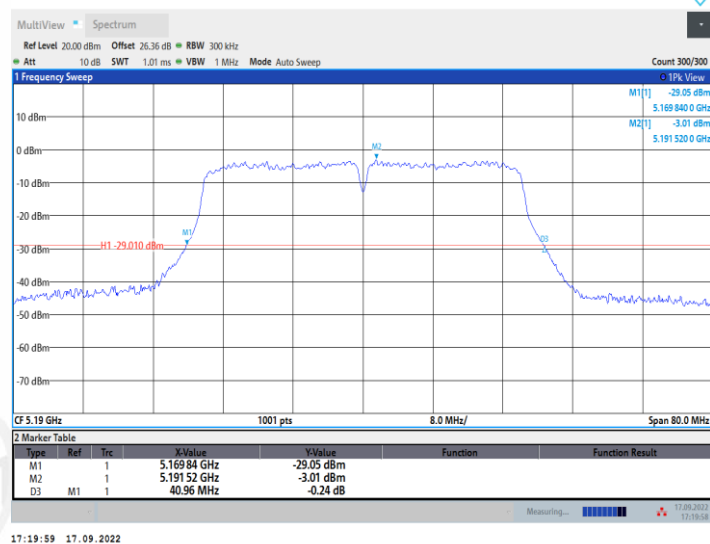
17:06:20 17.09.2022

11N20SISO_Ant1_5825



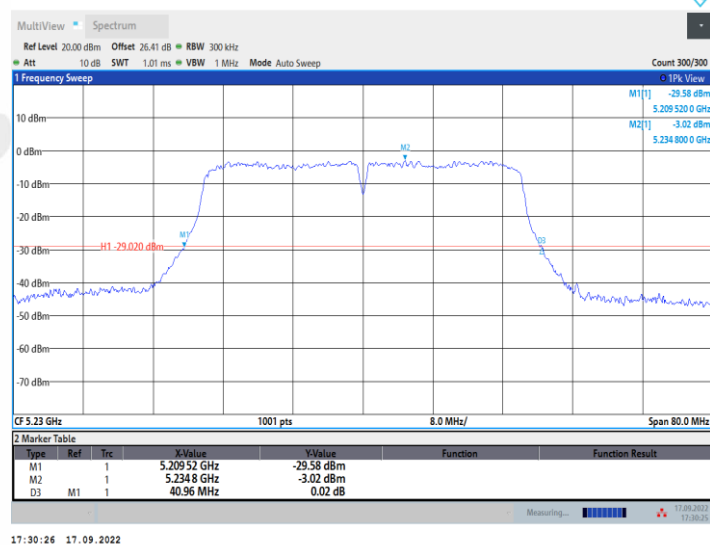
17:13:55 17.09.2022

11N40SISO_Ant1_5190



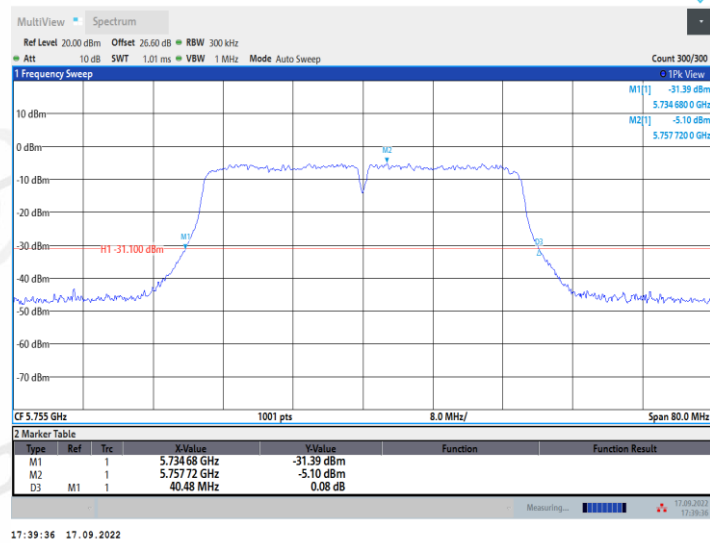
17:19:59 17.09.2022

11N40SISO_Ant1_5230

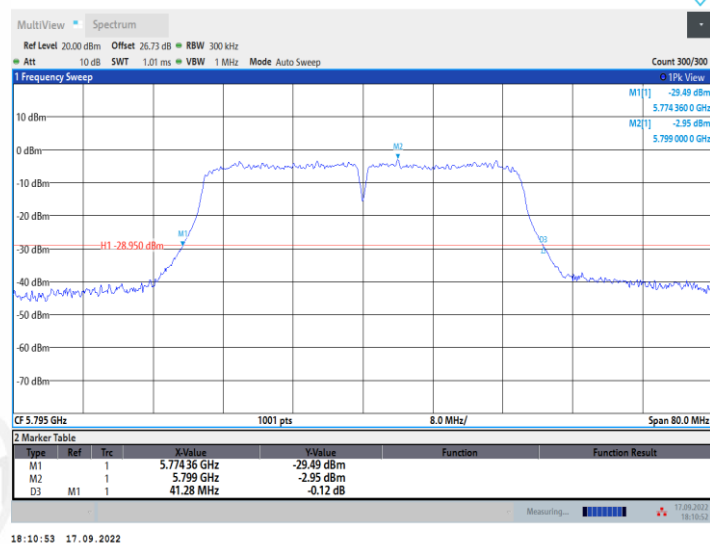


17:30:26 17.09.2022

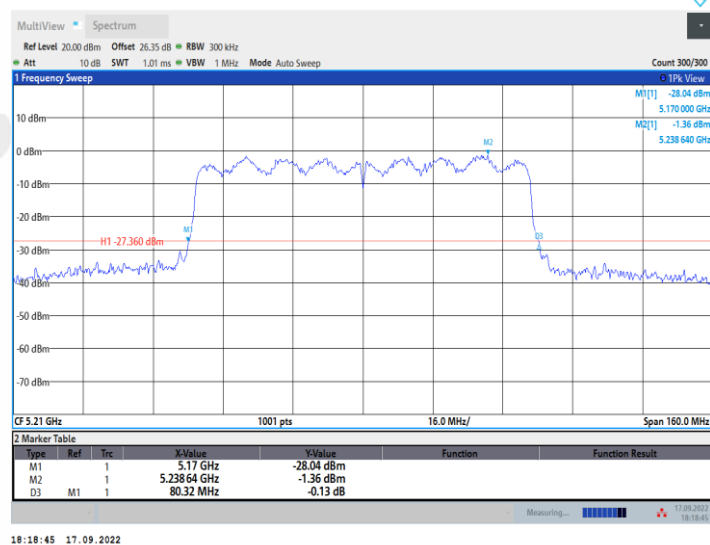
11N40SISO_Ant1_5755



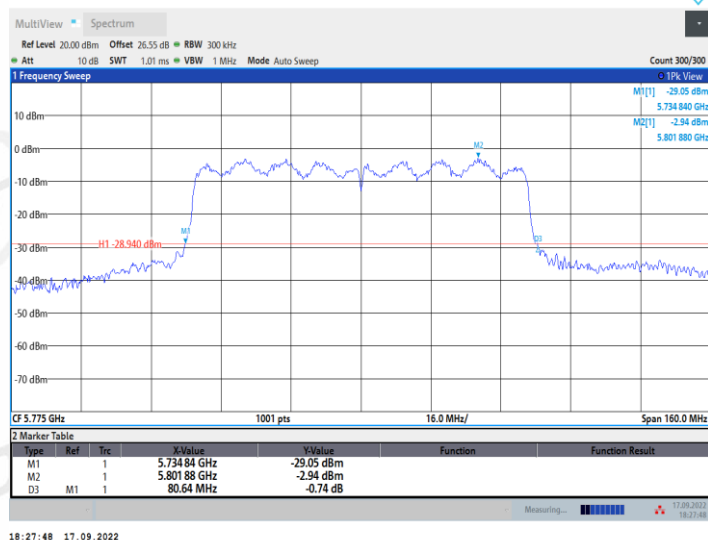
11N40SISO_Ant1_5795



11AC80SISO_Ant1_5210

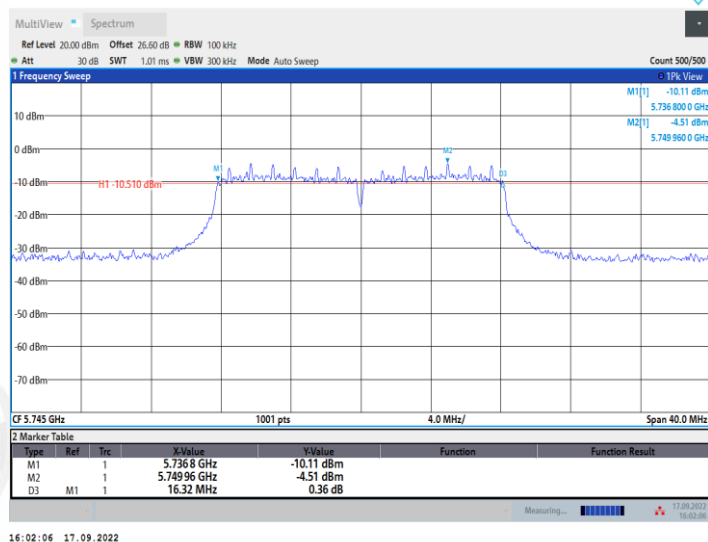


11AC80SISO_Ant1_5775

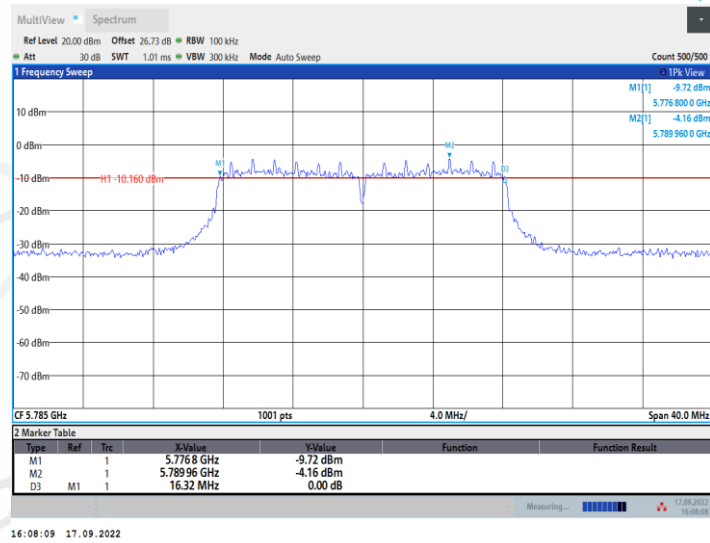


6db EBW:

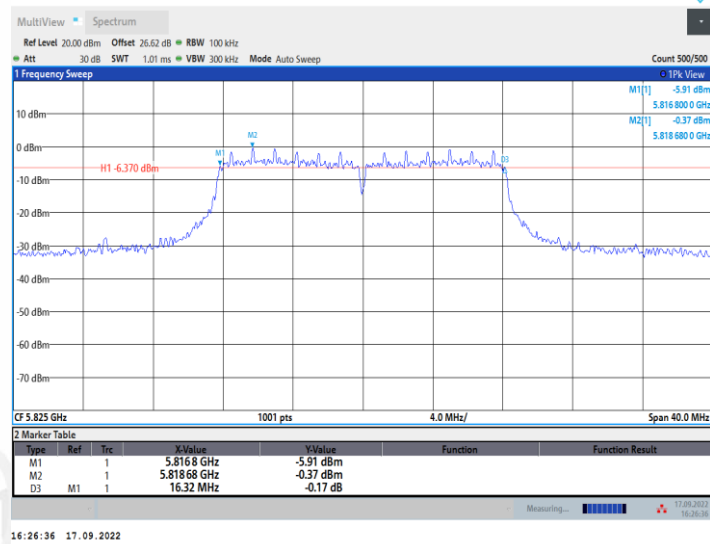
11A_Ant1_5745



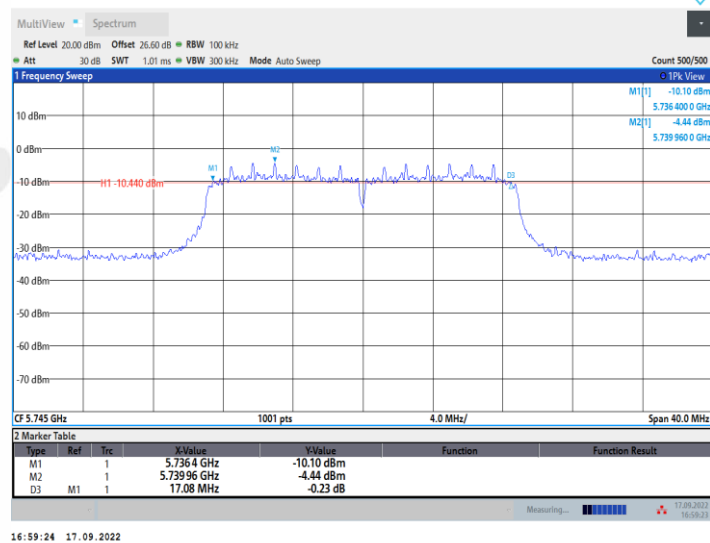
11A_Ant1_5785



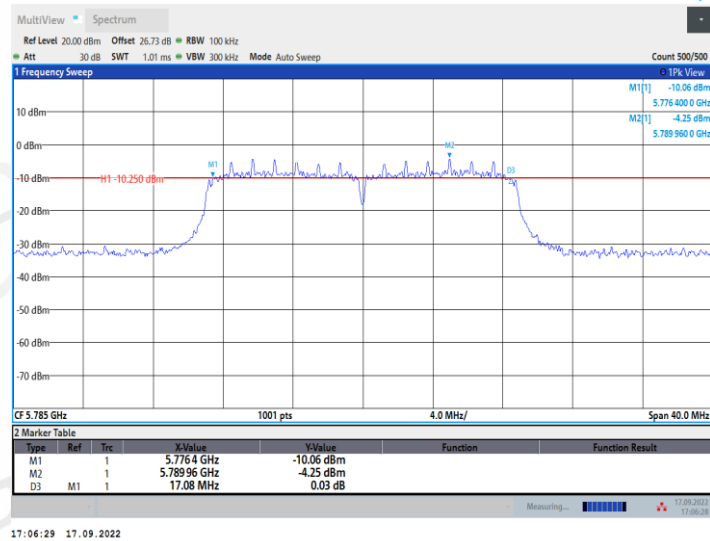
11A_Ant1_5825



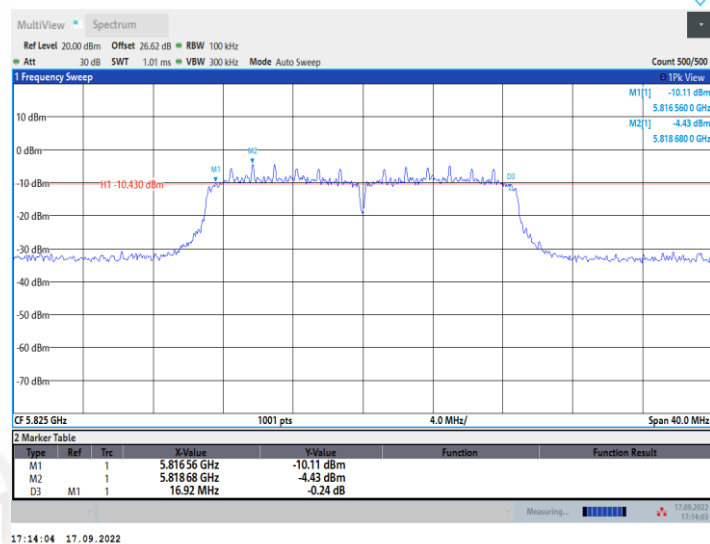
11N20SISO_Ant1_5745



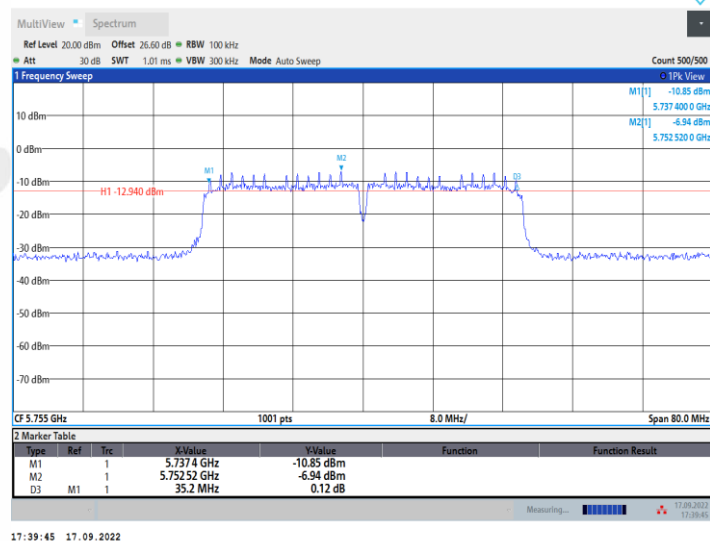
11N20SISO_Ant1_5785



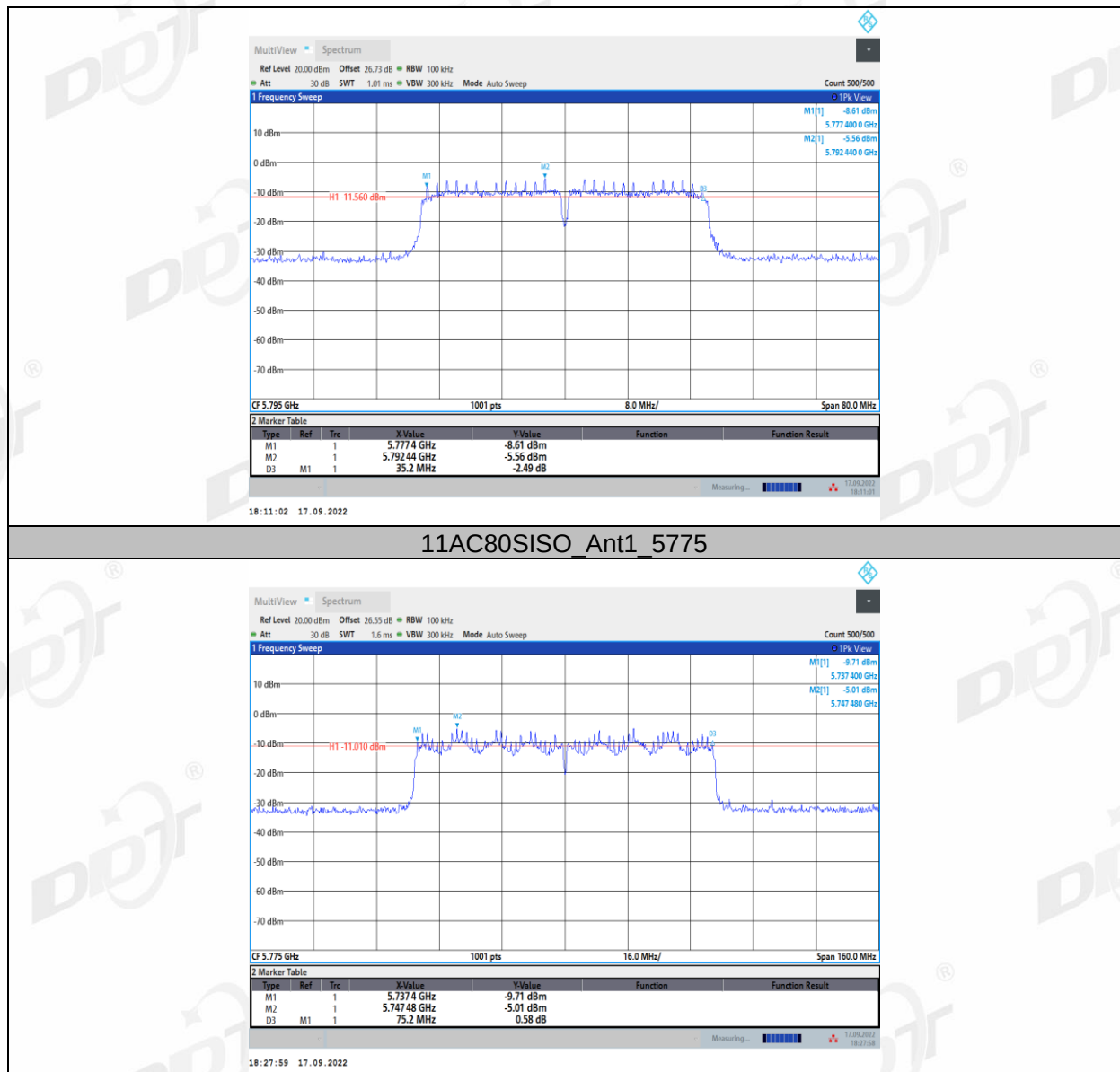
11N20SISO_Ant1_5825



11N40SISO_Ant1_5755

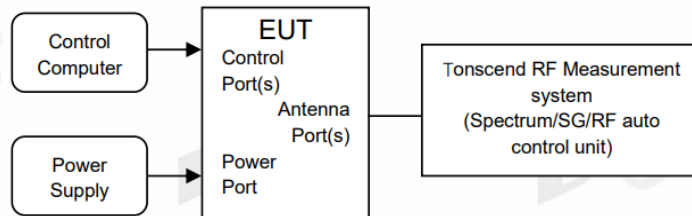


11N40SISO_Ant1_5795



5. Duty Cycle

5.1. Block diagram of test setup



5.2. Limit

Just for Report.

5.3. Test procedure

- (1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, The cable loss and attenuator loss have been put into spectrum analyzer as amplitude offset.

set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the middle hopping channel.

Resolution BW: 10 MHz.

Video BW: 10 MHz.

Span: Zero span.

Detector: Peak.

Trace Mode: Max Hold.

Sweep: Video Trigger

- (2) When the trace is complete, measure the sending time of 1 burst and the duty cycle of 1 burst cycle.

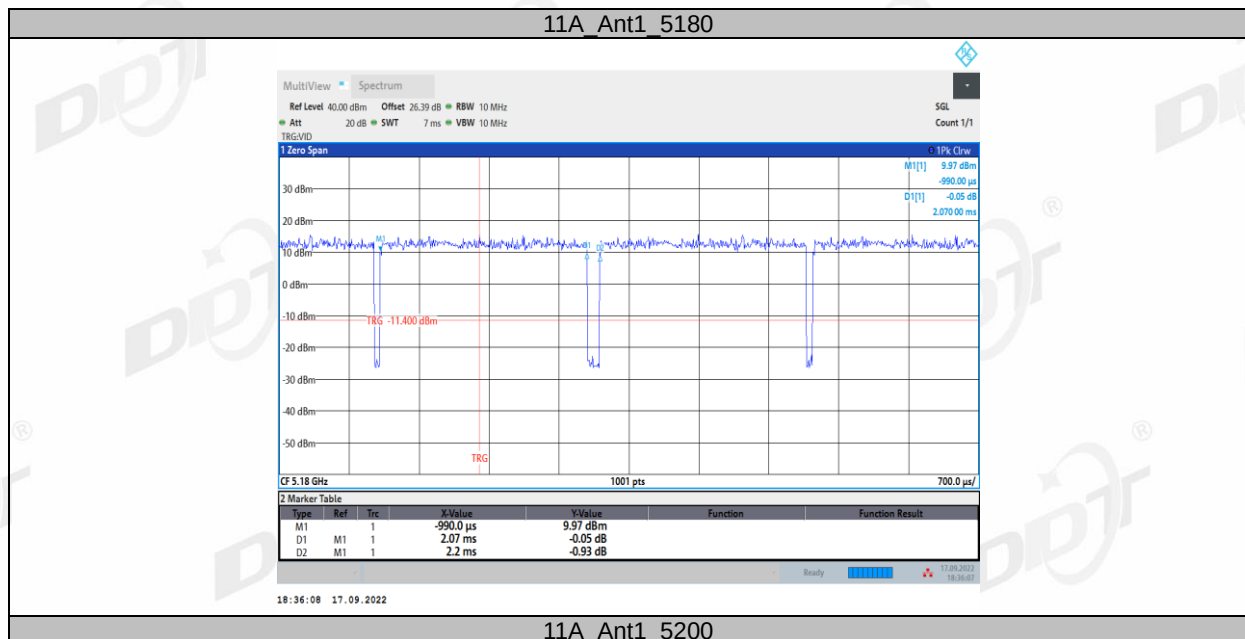
- (3) Calculate dwell time follow below formula:

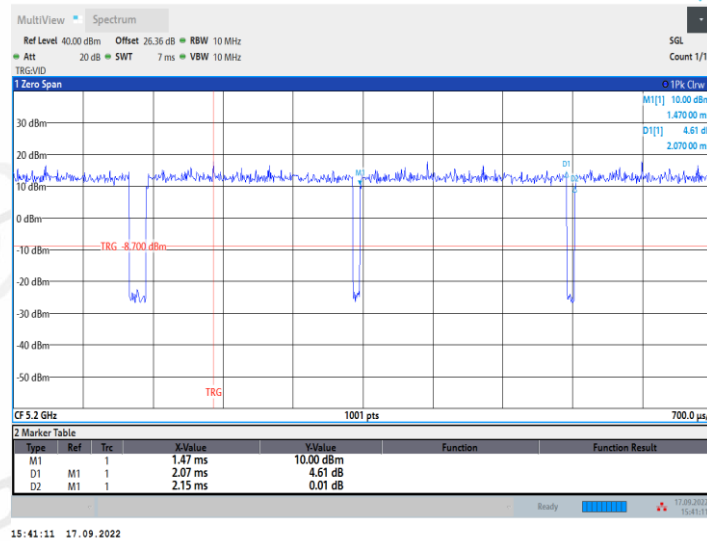
Duty cycle= Pulse's on time / Burst cycle

5.4. Test result

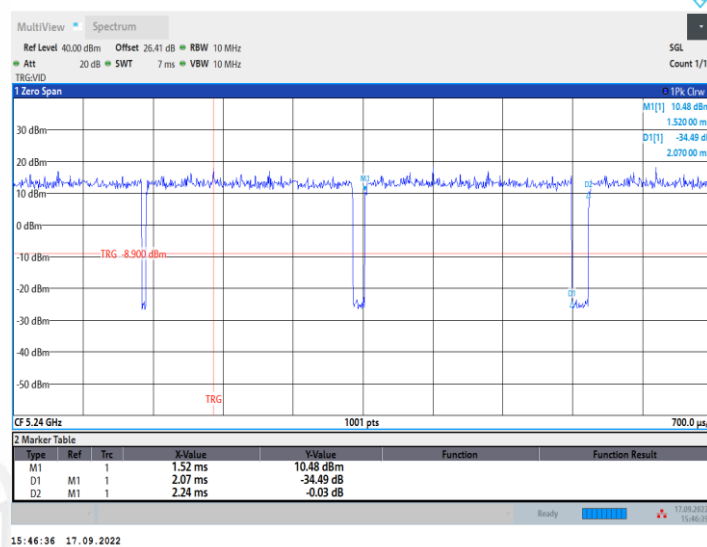
Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	2.07	2.20	94.09
		5200	2.07	2.15	96.28
		5240	2.07	2.24	92.41
		5745	2.08	2.24	92.86
		5785	2.07	2.18	94.95
		5825	2.08	2.23	93.27
11N20SISO	Ant1	5180	2.07	2.22	93.24
		5200	2.06	2.15	95.81
		5240	1.91	2.03	94.09
		5745	1.92	1.98	96.97
		5785	0.00	0.00	100
		5825	1.93	2.09	92.34
11N40SISO	Ant1	5190	0.95	1.11	85.59
		5230	0.94	1.05	89.52
		5755	0.95	1.12	84.82
		5795	0.95	1.06	89.62
11AC80SISO	Ant1	5210	0.46	0.62	74.19
		5775	0.46	0.62	74.19

5.5. Original test data

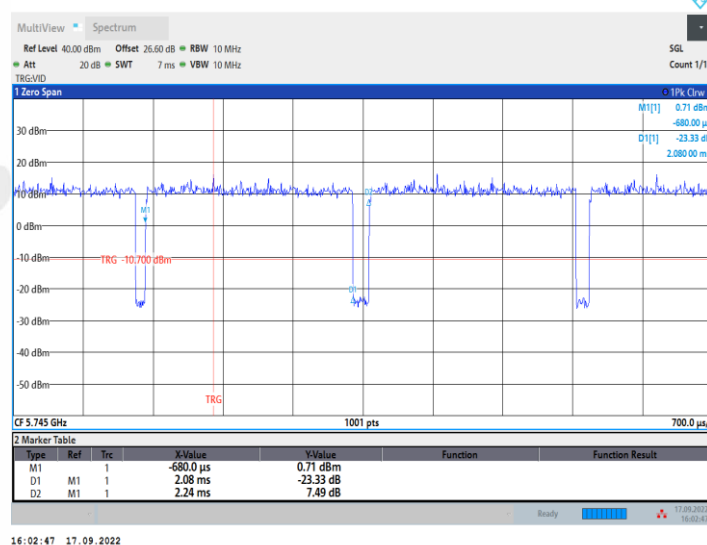




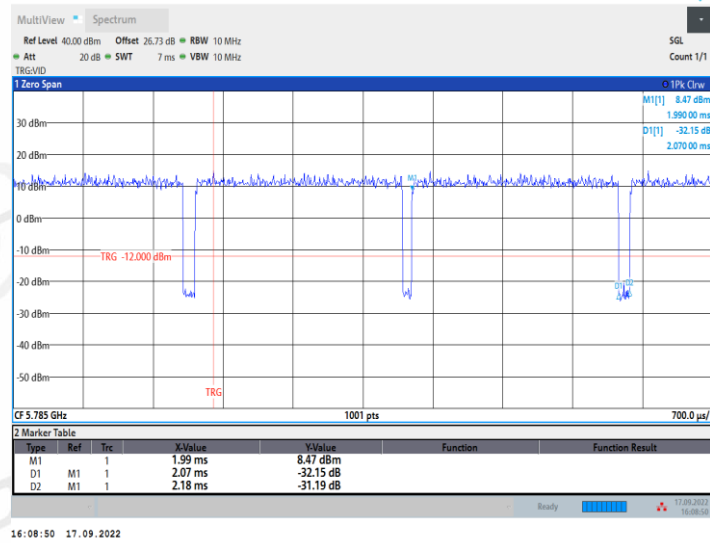
11A_Ant1_5240



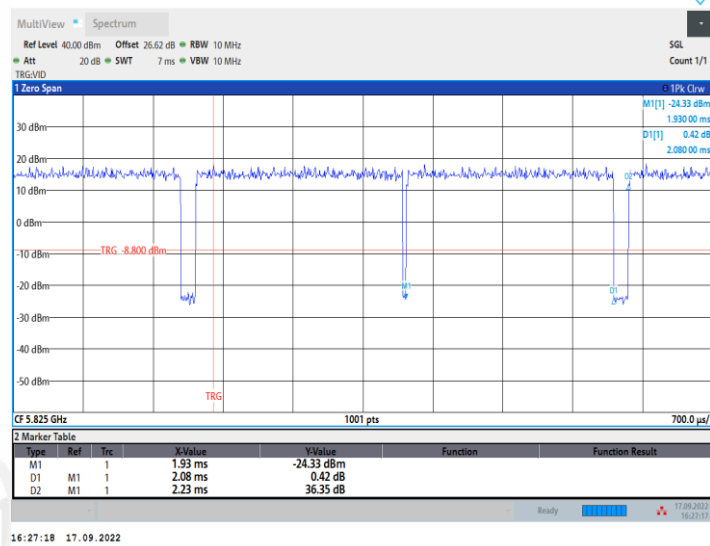
11A_Ant1_5745



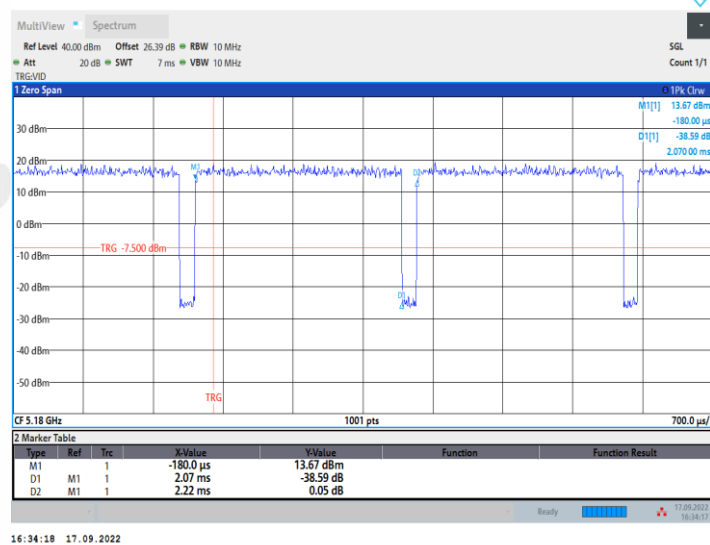
11A_Ant1_5785



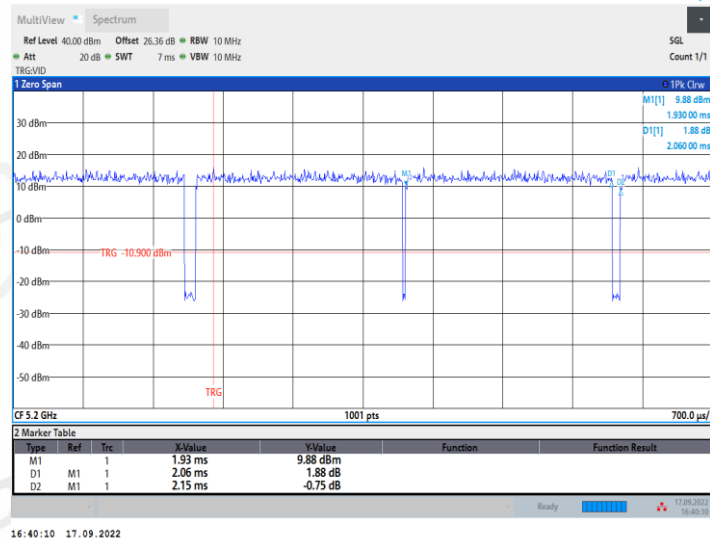
11A_Ant1_5825



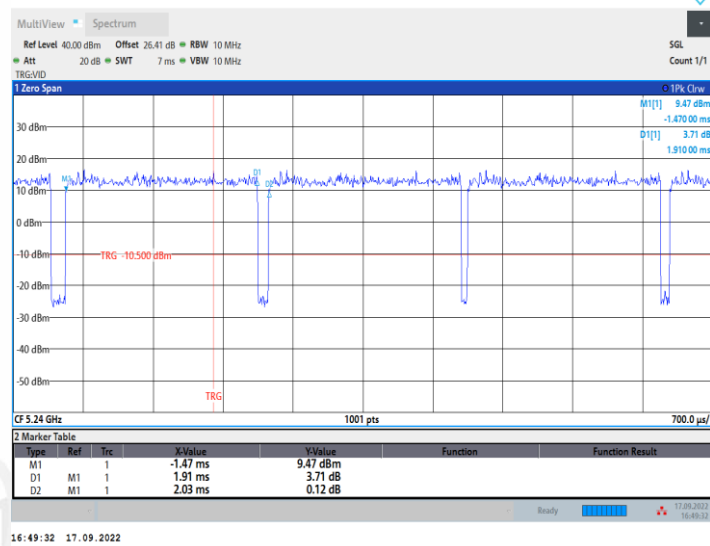
11N20SISO_Ant1_5180



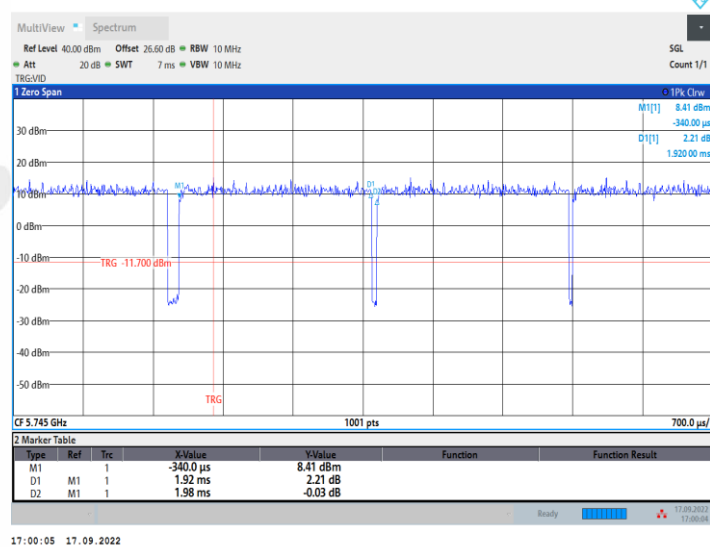
11N20SISO_Ant1_5200



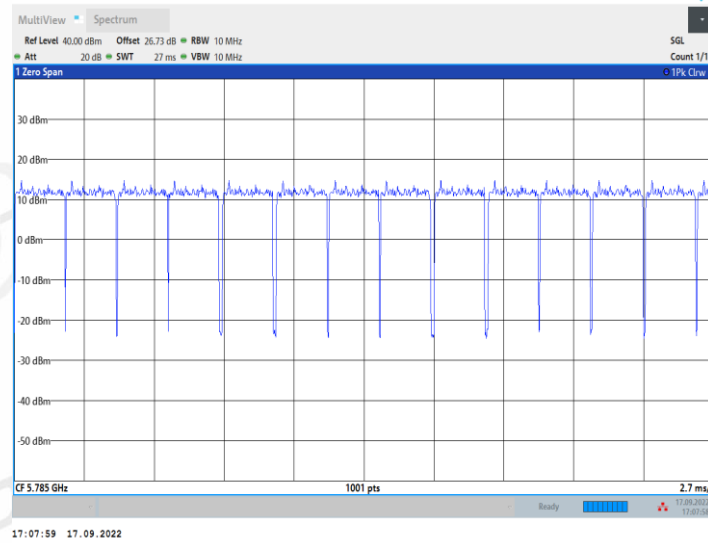
11N20SISO_Ant1_5240



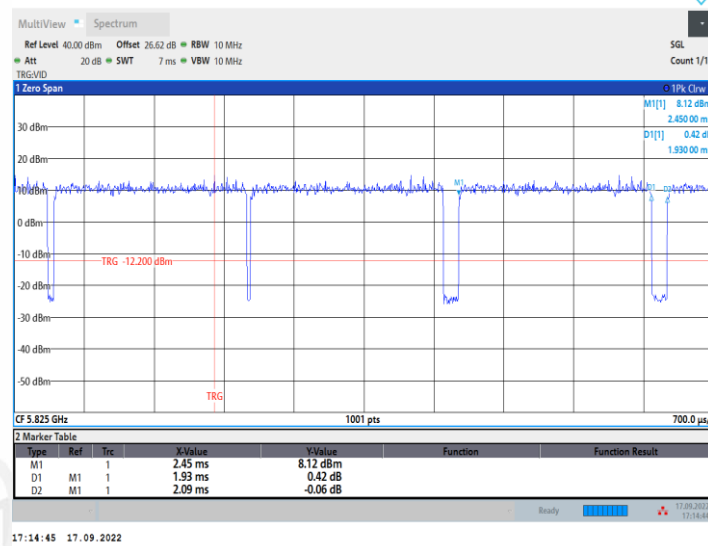
11N20SISO_Ant1_5745



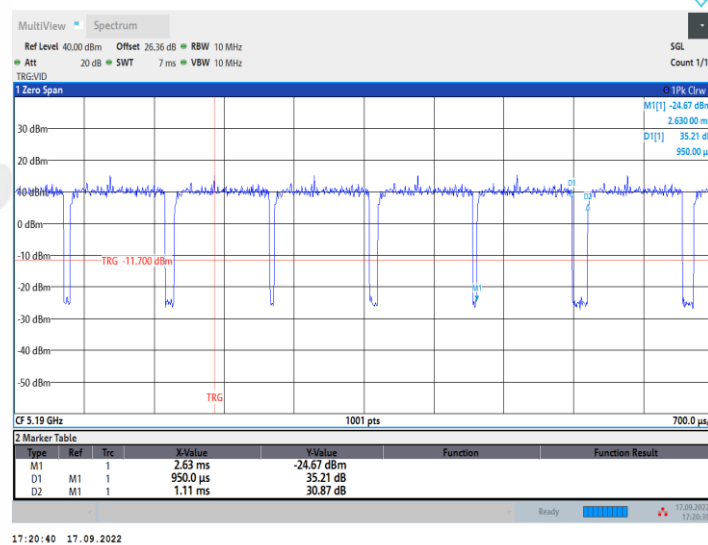
11N20SISO_Ant1_5785



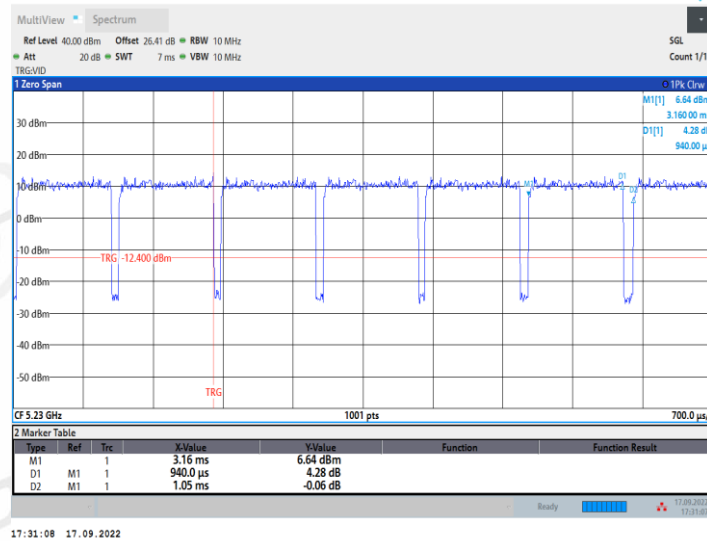
11N20SISO_Ant1_5825



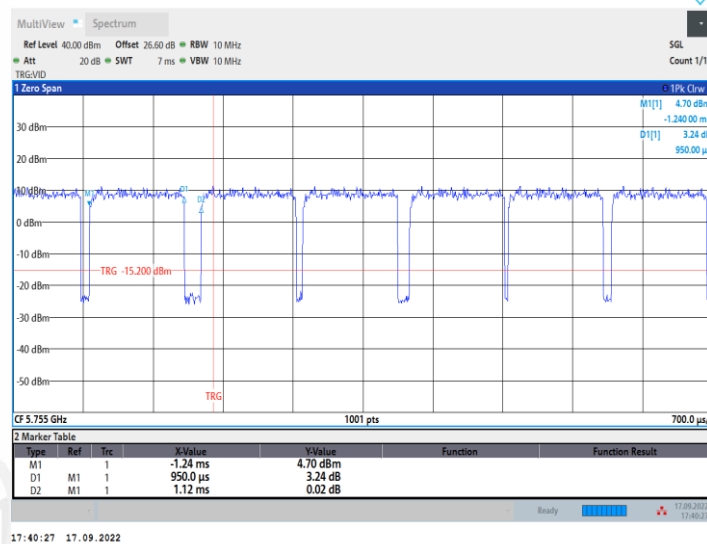
11N40SISO_Ant1_5190



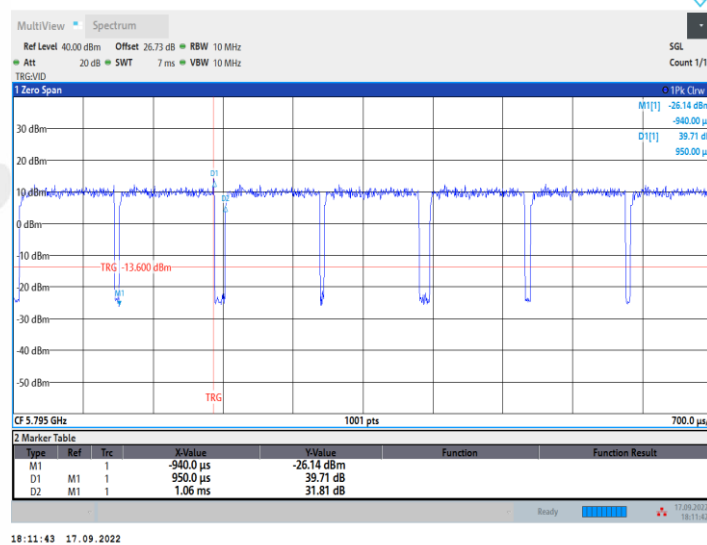
11N40SISO_Ant1_5230



11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



11AC80SISO_Ant1_5210



6. Maximum Output Power

6.1. Block diagram of test setup

Same as section 4.1

6.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	For FCC client devices: 250 mW (24 dBm)	5150-5250
	For RSS: e.i.r.p. power: not exceed 200 mW (23 dBm) or $10 + 10 \log_{10} B$, whichever is less	
	1 Watt (30 dBm)	5725-5850

6.3. Test Procedure

Connect each EUT's antenna output to power sensor by RF cable and attenuator
Measure the output power by power sensor.

6.4. Test Result

Test Mode	Antenna	Frequency[MHz]	Channel Power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	8.62	94.09	0.26	8.88	≤22.88	PASS
		5200	8.65	96.28	0.16	8.81	≤22.88	PASS
		5240	8.93	92.41	0.34	9.27	≤22.88	PASS
		5745	6.67	92.86	0.32	6.99	≤28.88	PASS
		5785	7.03	94.95	0.23	7.26	≤28.88	PASS
		5825	10.98	93.27	0.30	11.28	≤28.88	PASS
11N20SISO	Ant1	5180	12.43	93.24	0.30	12.73	≤22.88	PASS
		5200	8.64	95.81	0.19	8.83	≤22.88	PASS
		5240	8.90	94.09	0.26	9.16	≤22.88	PASS
		5745	6.85	96.97	0.13	6.98	≤28.88	PASS
		5785	6.90	100.00	0.00	6.90	≤28.88	PASS
		5825	6.68	92.34	0.35	7.03	≤28.88	PASS
11N40SISO	Ant1	5190	8.89	85.59	0.68	9.57	≤22.88	PASS
		5230	9.34	89.52	0.48	9.82	≤22.88	PASS
		5755	7.26	84.82	0.72	7.98	≤28.88	PASS
		5795	8.48	89.62	0.48	8.96	≤28.88	PASS
11AC80SISO	Ant1	5210	12.52	74.19	1.30	13.82	≤22.88	PASS
		5775	10.88	74.19	1.30	12.18	≤28.88	PASS

7. Power Spectral Density

7.1. Block diagram of test setup

Same with 4.1

7.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	For FCC: Other than Mobile and portable:17 dBm/MHz Mobile and portable client devices:11 dBm/MHz	5150-5250
	For RSS eirp:10 dBm/MHz	
	30 dBm/500 kHz	5725-5850

7.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW.

Connect the UUT to the spectrum analyser and use the following settings:

5150 MHz~5250 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1MHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

5725 MHz-5850 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

7.4. Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-2.54	≤9.88	PASS
		5200	-2.67	≤9.88	PASS
		5240	-2.11	≤9.88	PASS
		5745	-7.33	≤28.88	PASS
		5785	-7.25	≤28.88	PASS
		5825	-3.07	≤28.88	PASS
11N20SISO	Ant1	5180	1.29	≤9.88	PASS
		5200	-2.50	≤9.88	PASS
		5240	-2.69	≤9.88	PASS
		5745	-7.65	≤28.88	PASS
		5785	-7.66	≤28.88	PASS
		5825	-7.76	≤28.88	PASS
11N40SISO	Ant1	5190	-5.50	≤9.88	PASS
		5230	-5.39	≤9.88	PASS
		5755	-9.87	≤28.88	PASS
		5795	-9.07	≤28.88	PASS
11AC80SISO	Ant1	5210	-3.24	≤9.88	PASS
		5775	-7.98	≤28.88	PASS

Note: The Duty Cycle Factor is compensated in the graph.

7.5. Original test data

