RADIO TEST REPORT

Applicant	:	DSP Solutions, Inc.
Address of Applicant	:	3451 Lunar Court · Oxnard, CA 93030
Manufacturer	:	DSP Solutions International
Address of Manufacturer	:	Room 810, Building A, Reith Center, No. 9030 Shennan Road, Nanshan District, Shenzhen, China
Trade Mark	:	Modus
Equipment under Test	:	Receiver
Model No.	:	AIM-10, AIM-12, AIM-15, AIM-10T, AIM-12T, AIM-15T
FCC ID	:	2BQAF-AIMRECEIVER
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart E, ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01, 662911 D01 Multiple Transmitter Output v02r01,
Report No.	:	DDT-RE25062523-2E04
Issue Date	:	2025/08/03
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Manufacturer	:	DSP Solutions International
Address of Manufacturer	:	Room 810, Building A, Reith Center, No. 9030 Shennan Road, Nanshan District, Shenzhen, China

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart E,
ANSI C63.10:2013,
789033 D02 General U-NII Test Procedures New Rules v02r01,
662911 D01 Multiple Transmitter Output v02r01,

We Declare:

The equipment described above is tested by Guangdong 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 Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE25062523-2E04		
Date of Receipt:	2025/03/14	**Date of Test:**	2025/03/14 - 2025/07/18

Created: Zoe Peng	Reviewed: Ella Gong	Approved: Damon Hu
Zoe Peng	Ella Gong	GUANGDONG DONGDIAN TESTING SERVICE CO.,LTD. 广东东电检测技术有限公司 Certificate and Report Seal 检验检测专用章
2025/07/20	2025/07/20	2025/07/20

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

Revision History

Version	Revision Content	Issue Date	Approved
---	Initial issue	2025/08/03	Damon Hu

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	6/26db Bandwidth and 99% Bandwidth	FCC 15.407 (e)	/	Pass
2	Output Power	FCC 15.407 (a)	/	Pass
3	Power Spectral Density	FCC 15.407 (a)	/	Pass
4	Frequency Stability Measurement	FCC 15.407 (g)	/	Pass
5	Radiated Emission	FCC 15.407 (b); FCC 15.209; FCC 15.205	/	Pass
6	Band Edge Compliance	FCC 15.407 (b); FCC 15.209; FCC 15.205	/	Pass
7	Power Line Conducted Emissions	FCC Part 15: 15.207(a)	/	NA
8	Antenna Requirement	FCC Part 15: 15.203	/	Pass
9	Dynamic Frequency Selection	FCC 15.407 (h)	/	Pass
Note: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.				

2. General Test Information

2.1. Description of EUT

EUT Name	:	Receiver
Model Number	:	AIM-10, AIM-12, AIM-15, AIM-10T, AIM-12T, AIM-15T
Difference of model number	:	Except for the model name, other electronic components and appearance are the same, so the test model is AIM-10.
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 9-16V
Hardware Version	:	/
Software Version	:	/
Antenna Type	:	Internal PCB Antenna
Max Antenna Gain(dBi)	:	Bluetooth: 2.35dBi 2.4 GHz WiFi: 2.35dBi 5 GHz WiFi: 4.27dBi

Radio Technology	:	IEEE 802.11a/n/ac
Operation frequency	:	U-NII-3: 5745 MHz to 5825 MHz
Modulation	:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)

Channel information							
IEEE 802.11a IEEE 802.11n (HT20) IEEE 802.11ac (VHT20)		IEEE 802.11n (HT40) IEEE802.11ac (VHT40)		IEEE 802.11ac (VHT80)		/	
UNII-3							
149	5745	151	5755	155	5775	/	/
153	5765	159	5795	/	/	/	/
157	5785	/	/	/	/	/	/
161	5805	/	/	/	/	/	/
165	5825	/	/	/	/	/	/

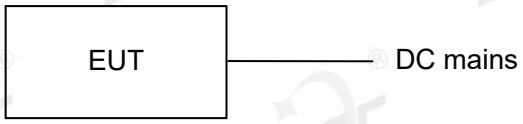
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

“⊠” means to be chosen or applicable; “□” means don’t to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
/	/	/	/

2.3. Block diagram of EUT configuration for test



2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:
Test software: QRCT4.exe
The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.
The pathloss of external cable: 2 dB (According to the manufacturer's claims)

Tested mode, Tx Power Setting, Data rate, Channel, and Frequency				
Tested mode	Tx Power Setting	Data rate (Mpbs) (see Note)	Test Channel	Frequency (MHz)
IEEE 802.11a	Default	6	LCH: CH149	5745
	Default	6	MCH: CH157	5785
	Default	6	HCH: CH165	5825
IEEE 802.11n HT20	Default	MCS 0	LCH: CH149	5745
	Default	MCS 0	MCH: CH157	5785
	Default	MCS 0	HCH: CH165	5825
IEEE 802.11n HT40	Default	MCS 0	LCH: CH151	5755
	Default	MCS 0	HCH: CH159	5795
IEEE 802.11ac VHT20	Default	MCS 0	LCH: CH149	5745
	Default	MCS 0	MCH: CH157	5785
	Default	MCS 0	HCH: CH165	5825
IEEE 802.11 ac VHT40	Default	MCS 0	LCH: CH151	5755
	Default	MCS 0	HCH: CH159	5795
IEEE 802.11ac VHT80	Default	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:	-20℃ to +65 ℃
Humidity range:	20% to 75%
Pressure range:	86 kPa to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, 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-20240, G-20118

2.8. Measurement uncertainty

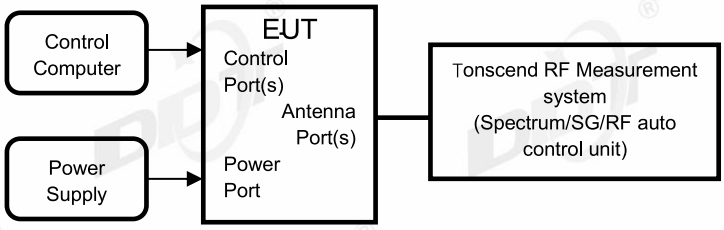
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	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 (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	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	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
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 Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☒RF Connected Test (RF Measurement System 3#)				
SIGNAL ANALYZER	R&S	FSV40	101407	2025/07/08
Wideband Radio Communication Tester	R&S	CMW500	117491	2026/03/28
EXG Analog Signal Generator	KEYSIGHT	N5173B	MY62153058	2025/07/08
MXG Vector Signal Generator	Agilent	N5182A	MY48180912	2026/03/28
RF Control Unit	Tonscend	JS0806-2	20C8060230	2026/03/28
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2026/03/28
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. 26dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
26 dB Bandwidth	---	5150 - 5250
	---	5250 - 5350
	---	For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 5725

4.3. Test procedure

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

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	approximately 1% of the emission bandwidth.
VBW	> RBW
Trace	Max hold
Sweep	Auto couple

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 relative to the maximum level measured in the fundamental emission.

4.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	22.96	5733.64	5756.60	---	---
		5785	22.68	5773.48	5796.16	---	---
		5825	25.28	5812.56	5837.84	---	---
11N20SISO	Ant1	5745	23.40	5733.32	5756.72	---	---
		5785	24.20	5772.72	5796.92	---	---
		5825	27.48	5811.24	5838.72	---	---
11N40SISO	Ant1	5755	41.92	5734.04	5775.96	---	---
		5795	42.72	5773.48	5816.20	---	---
11AC20SISO	Ant1	5745	23.76	5733.44	5757.20	---	---
		5785	25.20	5772.40	5797.60	---	---
		5825	27.84	5811.20	5839.04	---	---
11AC40SISO	Ant1	5755	42.16	5733.88	5776.04	---	---
		5795	42.32	5773.72	5816.04	---	---
11AC80SISO	Ant1	5775	84.16	5733.08	5817.24	---	---

4.5. Test graphs

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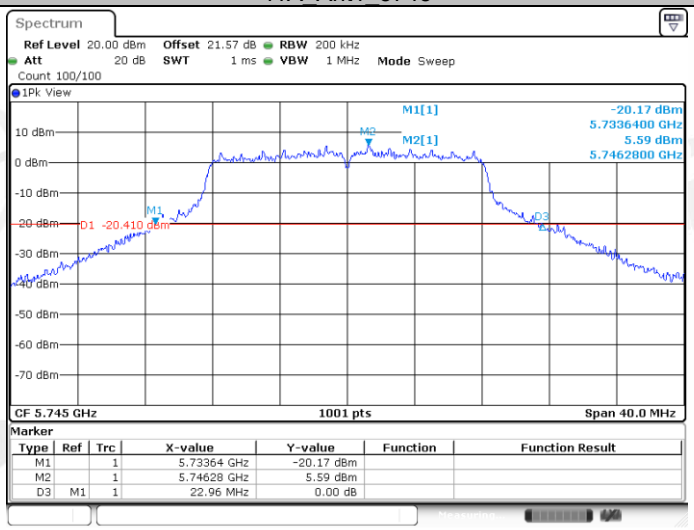

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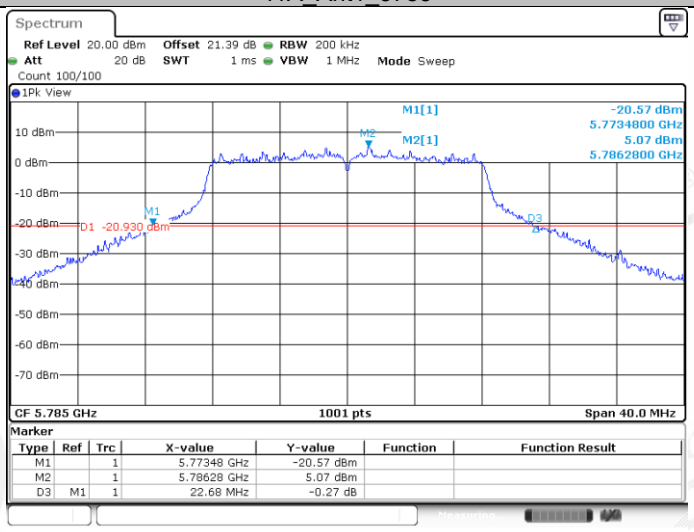

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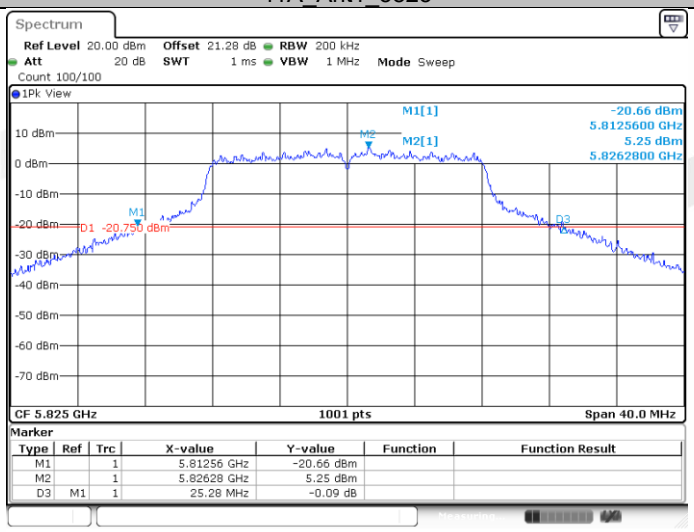

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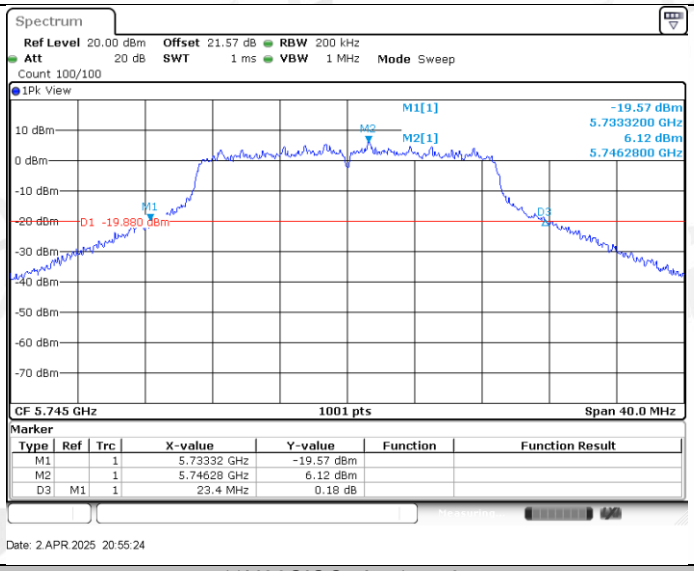

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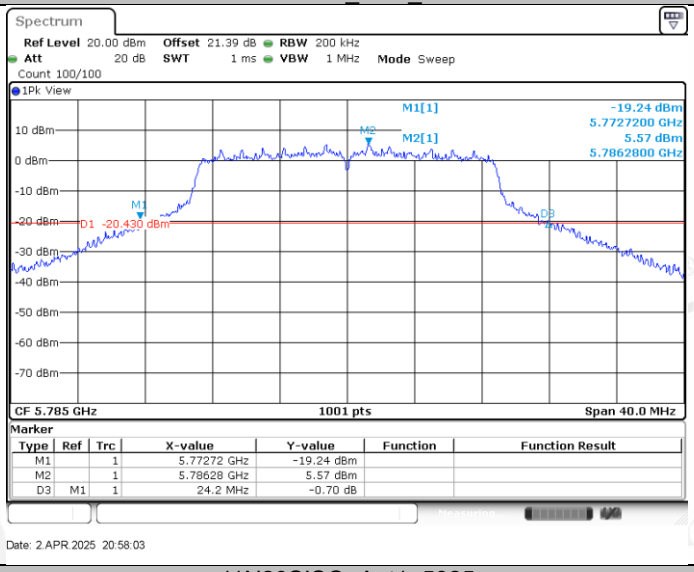

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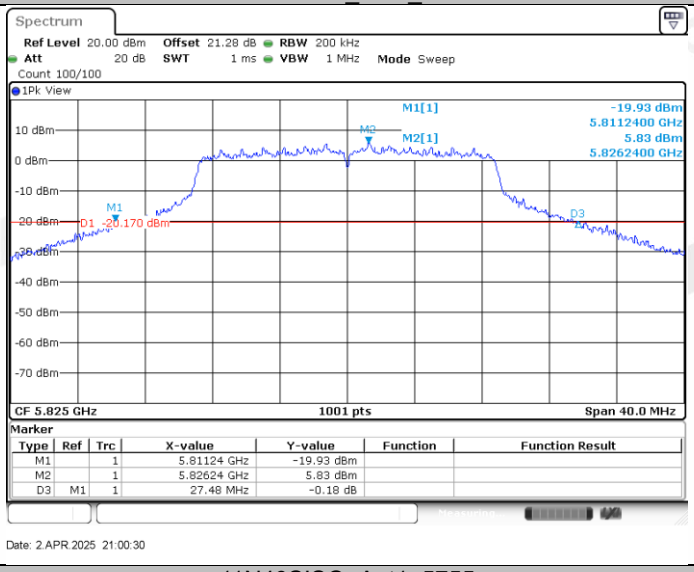

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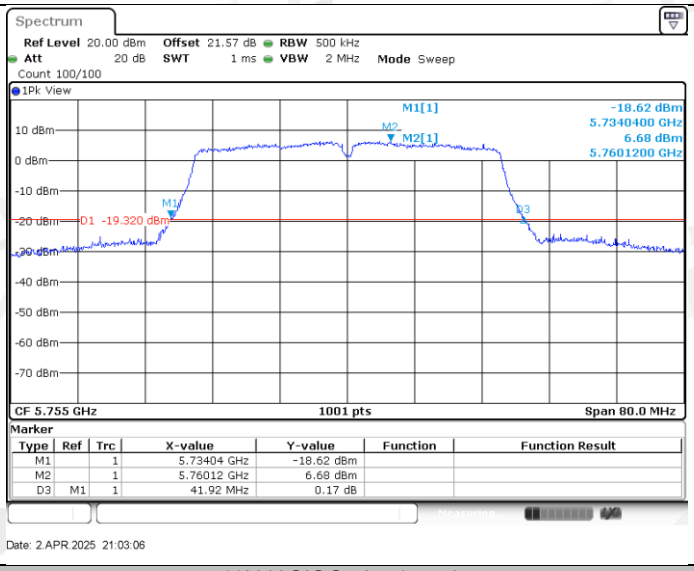

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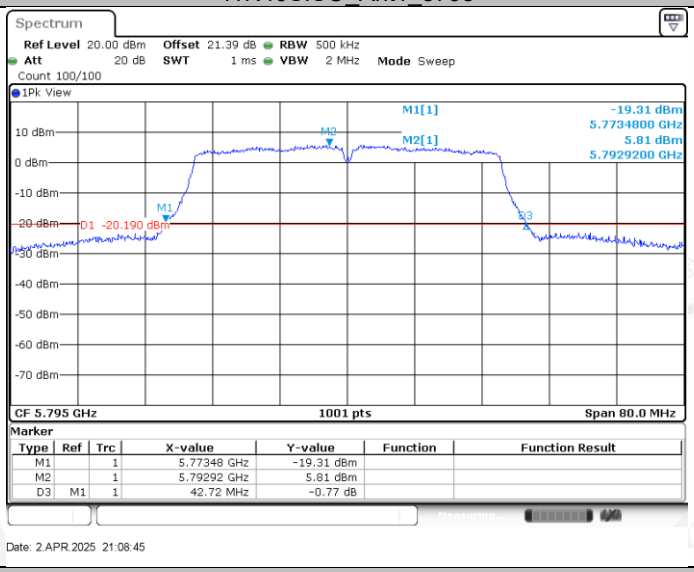

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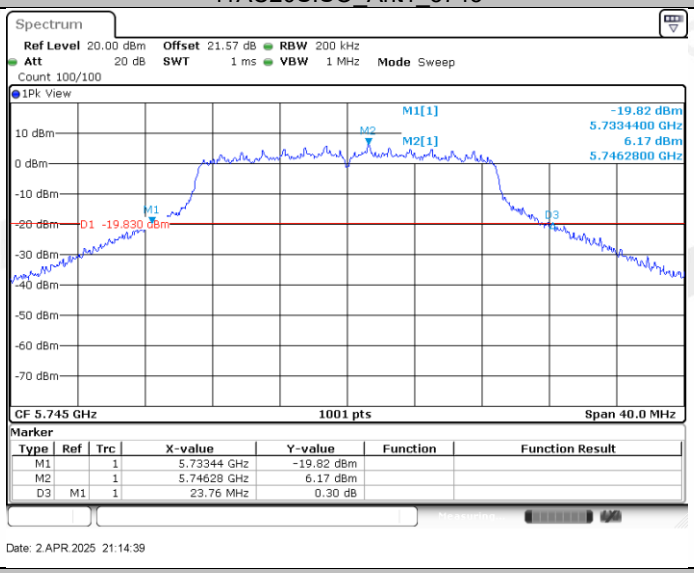

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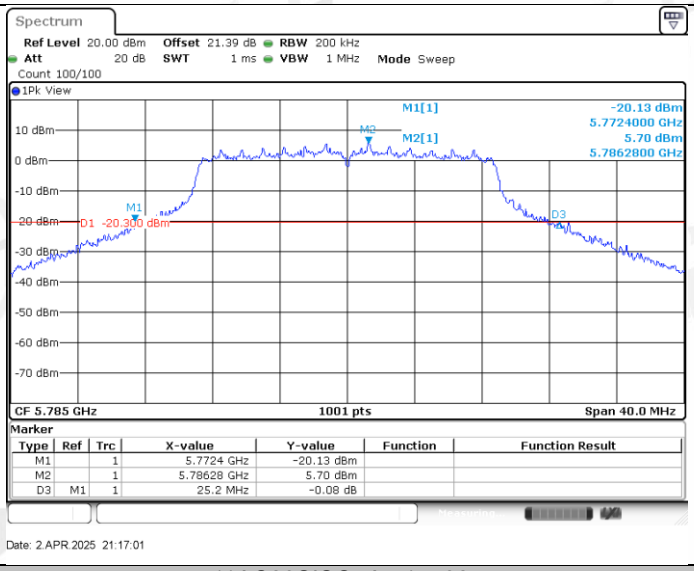

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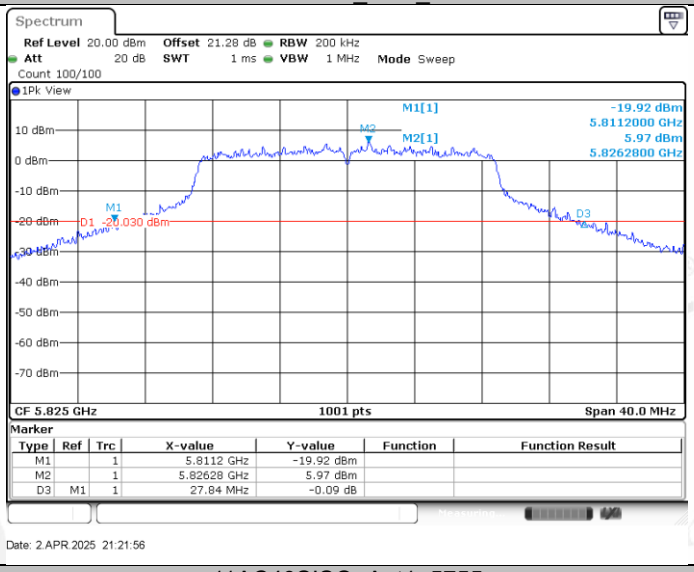

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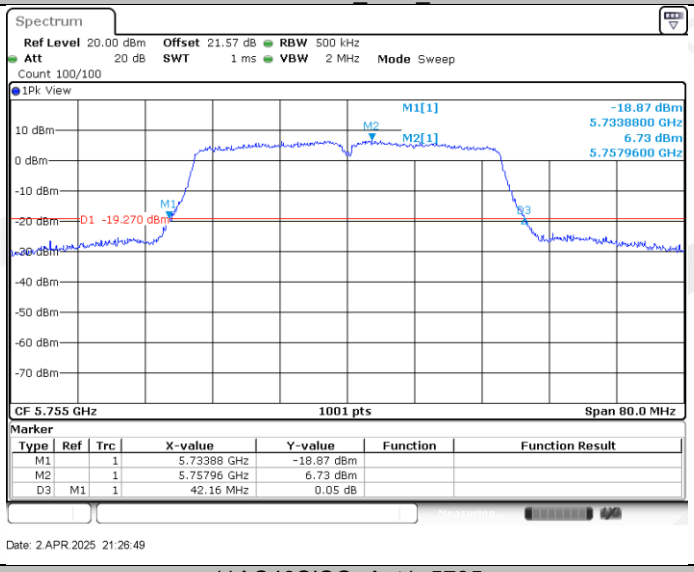

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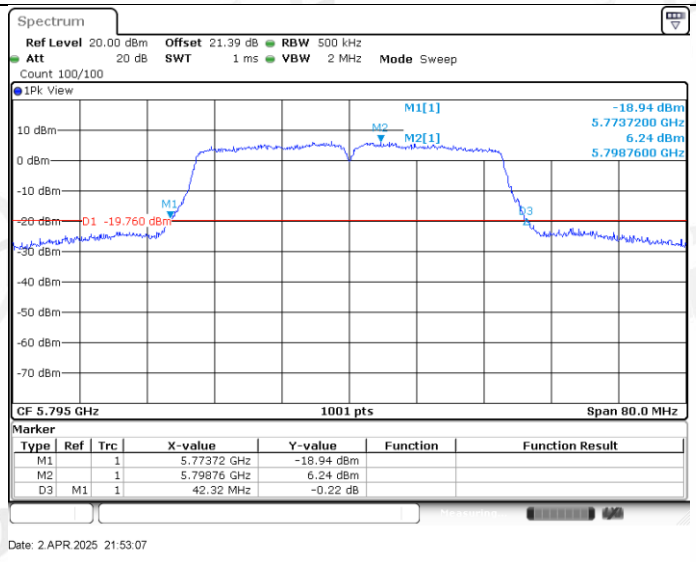

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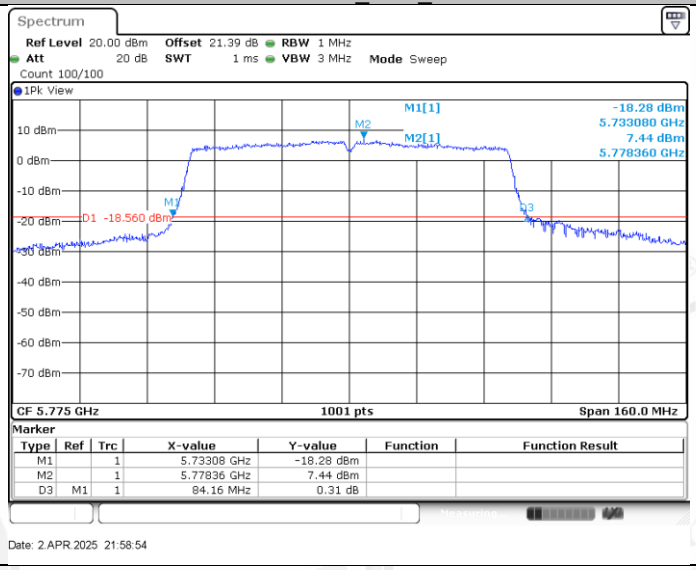
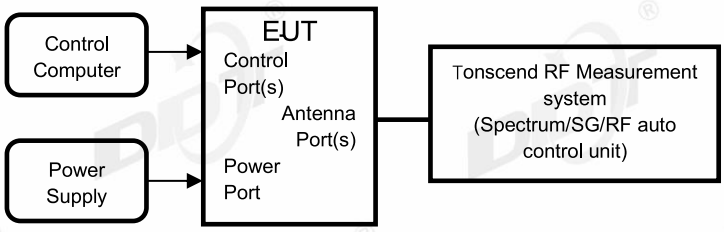


5. 6dB Bandwidth

5.1. Block diagram of test setup



5.2. Limits

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

5.3. Test procedure

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

Center Frequency	The center 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

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 6 dB relative to the maximum level measured in the fundamental emission.

5.4. Test result B4

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

Test Mode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.88	5737.24	5753.12	0.5	PASS
		5785	16.28	5776.84	5793.12	0.5	PASS
		5825	15.92	5817.20	5833.12	0.5	PASS
11N20SISO	Ant1	5745	15.96	5737.40	5753.36	0.5	PASS
		5785	15.72	5777.40	5793.12	0.5	PASS
		5825	17.20	5816.56	5833.76	0.5	PASS
11N40SISO	Ant1	5755	35.76	5737.40	5773.16	0.5	PASS
		5795	36.32	5776.84	5813.16	0.5	PASS
11AC20SISO	Ant1	5745	15.72	5737.40	5753.12	0.5	PASS
		5785	15.40	5777.48	5792.88	0.5	PASS
		5825	17.28	5816.48	5833.76	0.5	PASS
11AC40SISO	Ant1	5755	35.36	5737.40	5772.76	0.5	PASS
		5795	36.08	5776.84	5812.92	0.5	PASS
11AC80SISO	Ant1	5775	75.20	5737.40	5812.60	0.5	PASS

5.5. Test graphs B4

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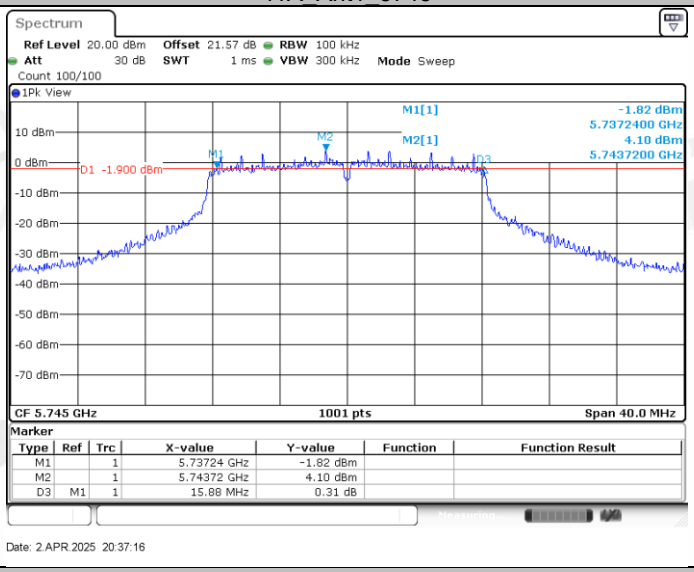
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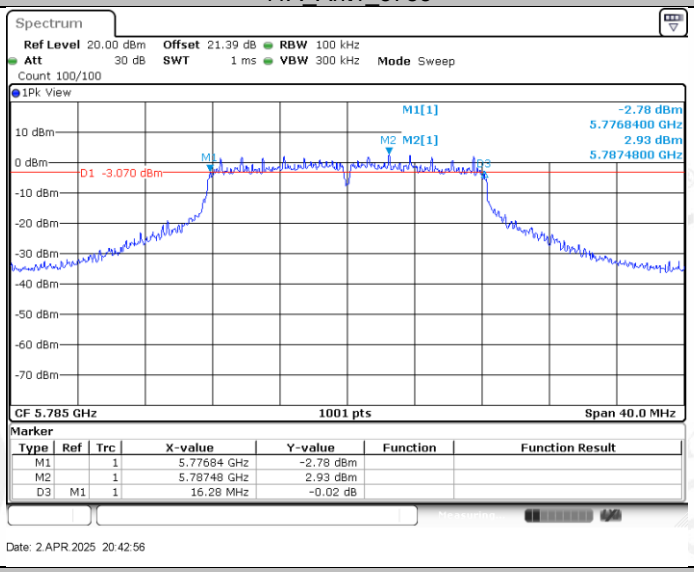
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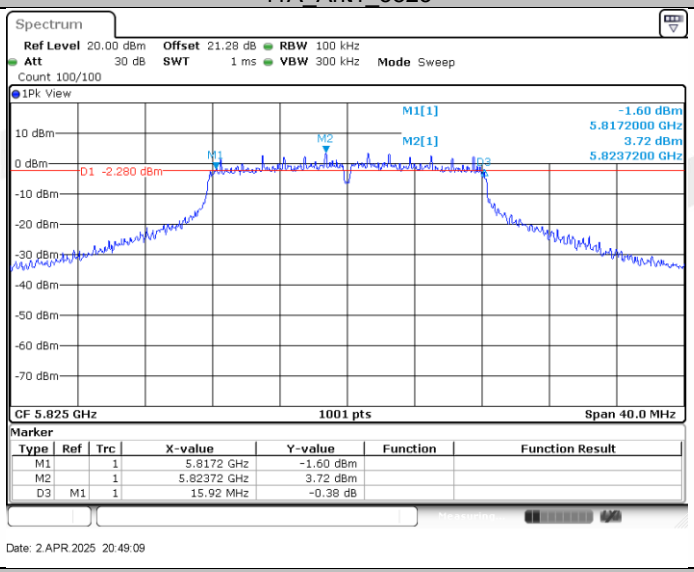
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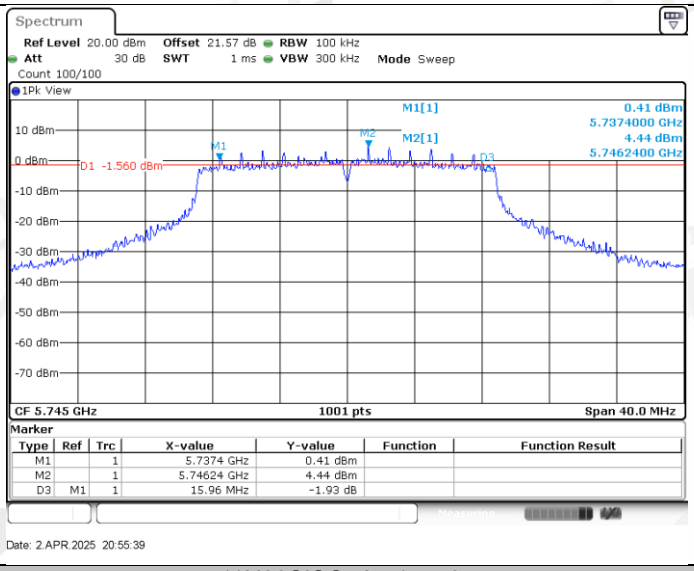

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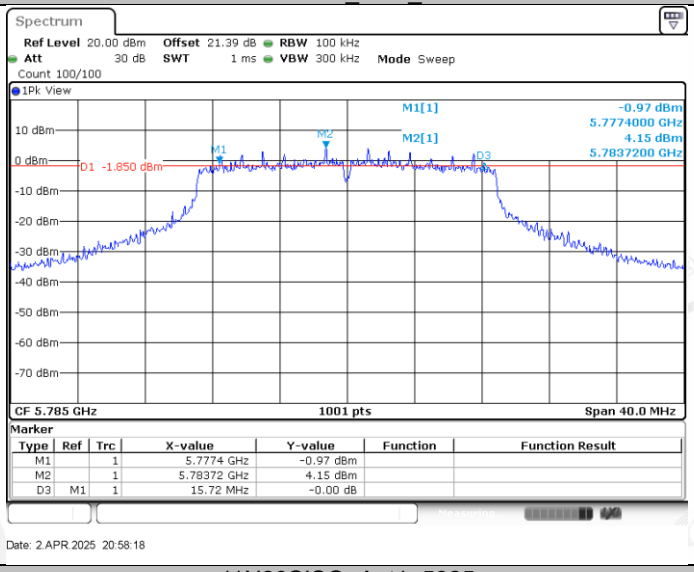

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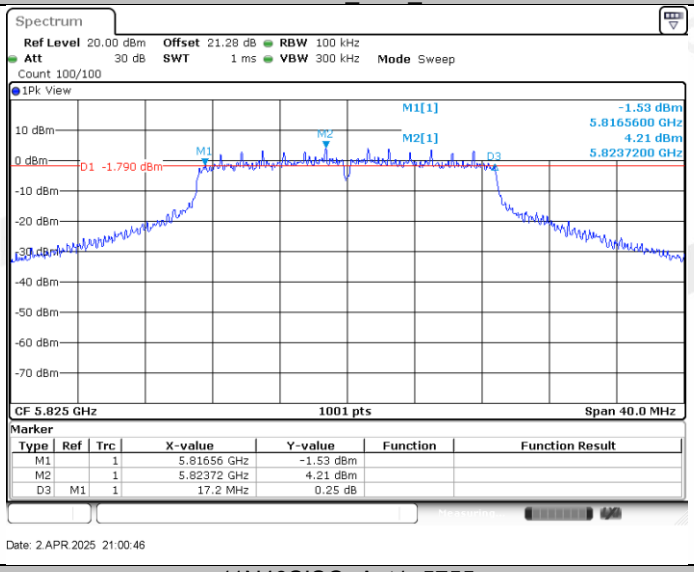

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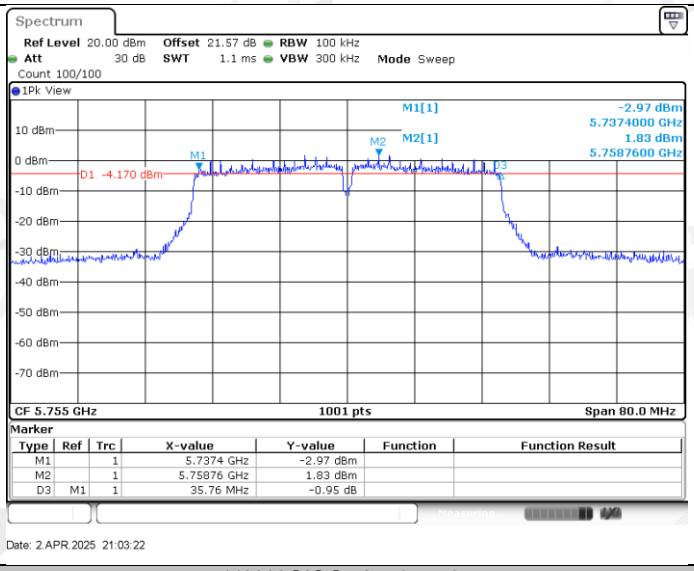

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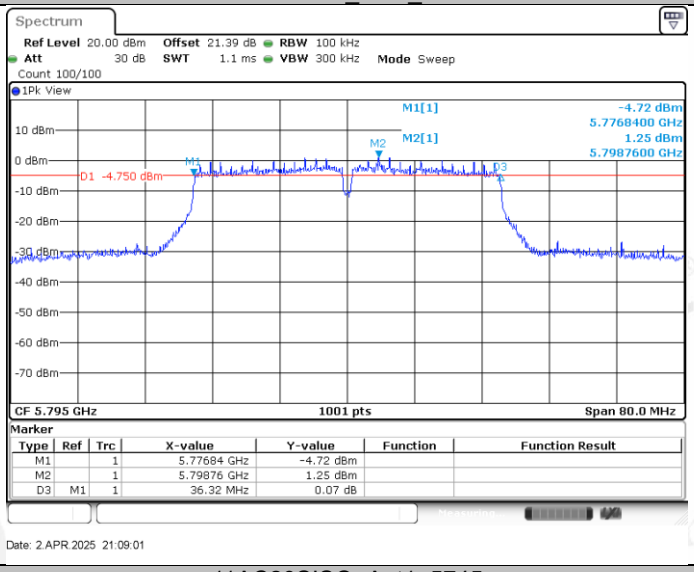
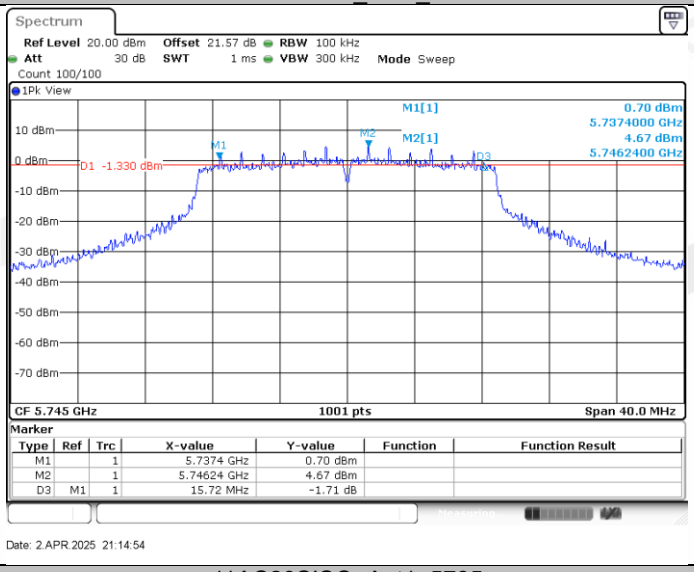
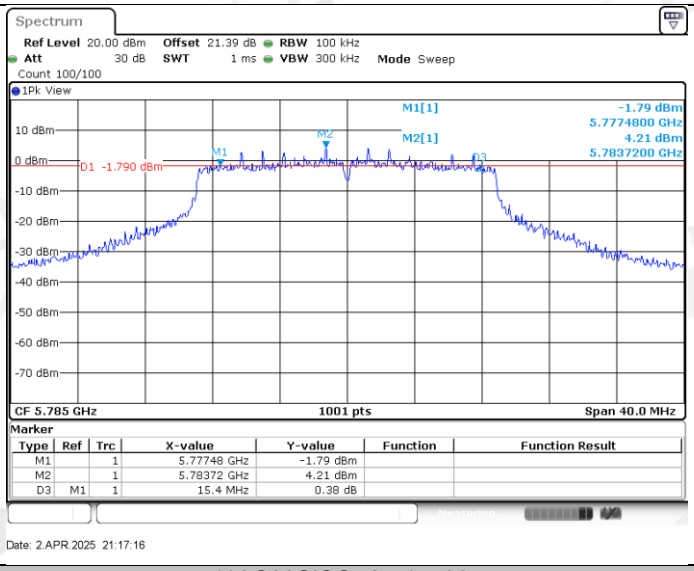


11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



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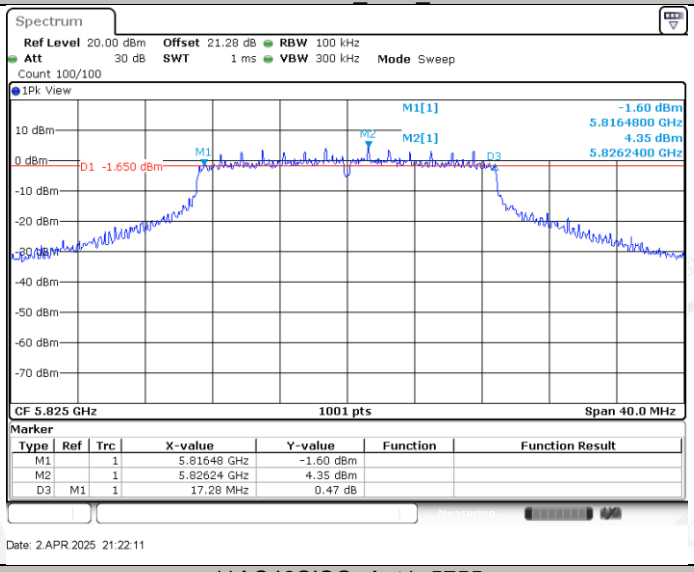

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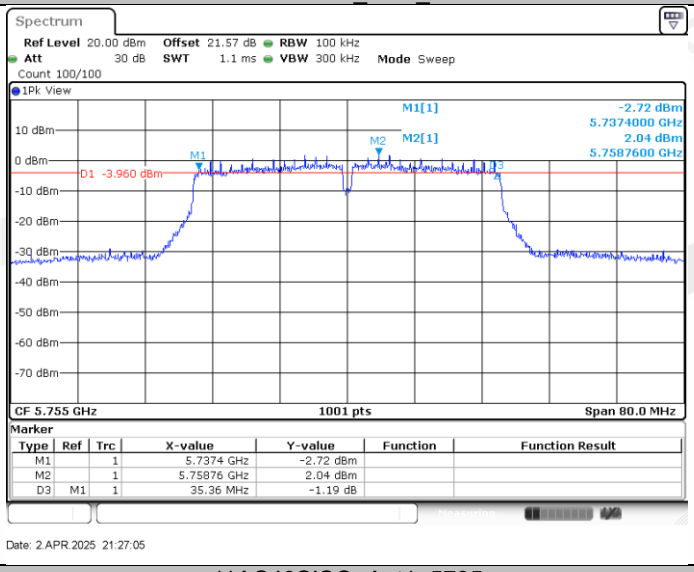
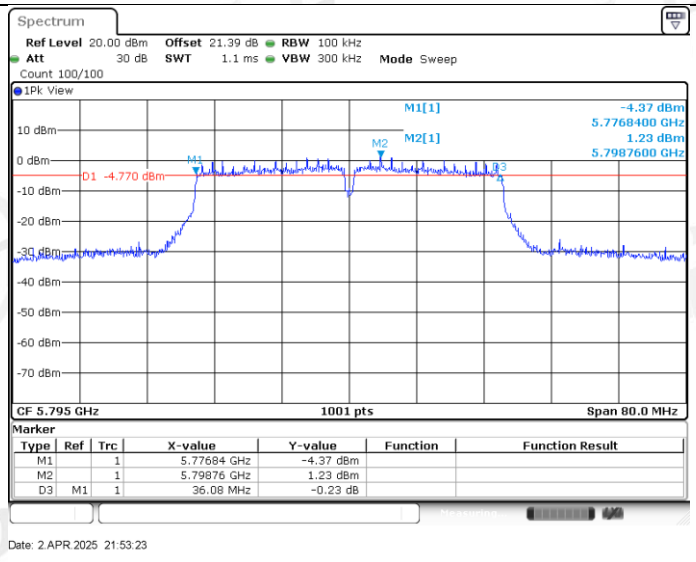
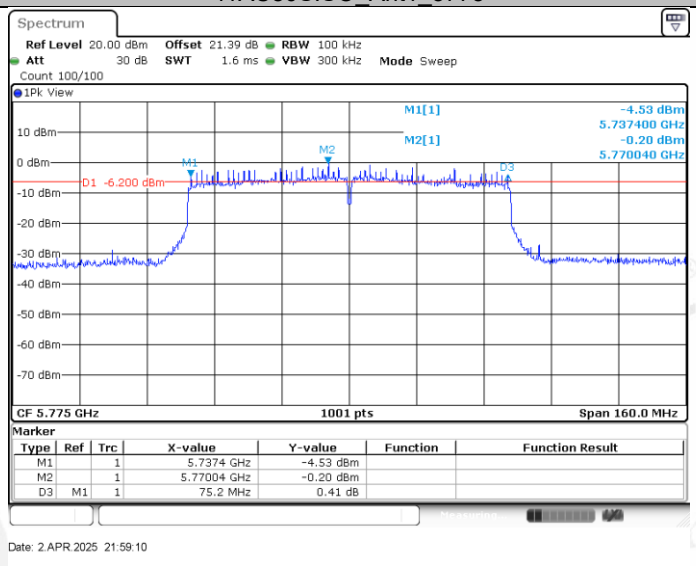


11AC40SISO_Ant1_5795

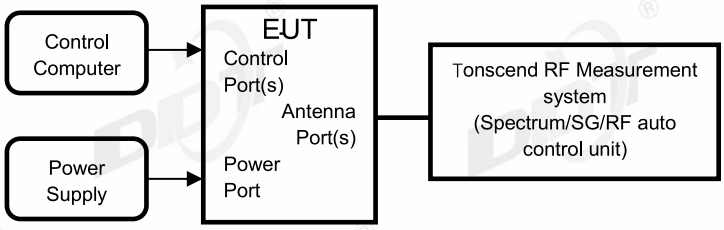


11AC80SISO_Ant1_5775



6. 99% Bandwidth

6.1. Block diagram of test setup



6.2. Limits

Just for Report.

6.3. Test procedure

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

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	1% to 5% of the OBW
VBW	approximately three times the RBW
Trace	Max hold

Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

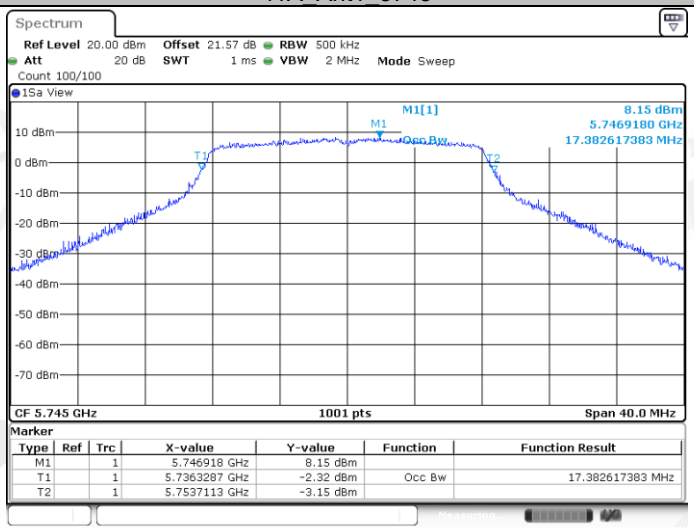
6.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

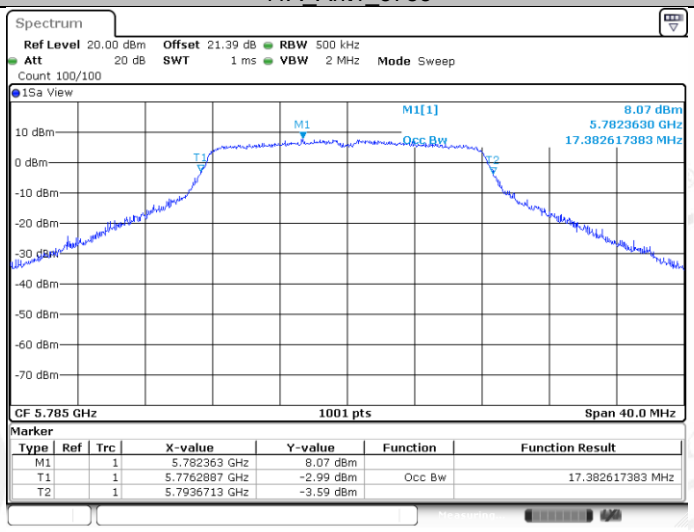
Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	17.383	5736.3287	5753.7113	---	---
		5785	17.383	5776.2887	5793.6713	---	---
		5825	17.622	5816.2488	5833.8711	---	---
11N20SISO	Ant1	5745	18.462	5735.7692	5754.2308	---	---
		5785	18.501	5775.7293	5794.2308	---	---
		5825	18.821	5815.6494	5834.4705	---	---
11N40SISO	Ant1	5755	36.603	5736.6983	5773.3017	---	---
		5795	36.683	5776.6184	5813.3017	---	---
11AC20SISO	Ant1	5745	18.462	5735.8092	5754.2707	---	---
		5785	18.541	5775.6893	5794.2308	---	---
		5825	18.901	5815.6094	5834.5105	---	---
11AC40SISO	Ant1	5755	36.523	5736.7782	5773.3017	---	---
		5795	36.683	5776.6184	5813.3017	---	---
11AC80SISO	Ant1	5775	76.244	5736.9580	5813.2018	---	---

6.5. Test graphs

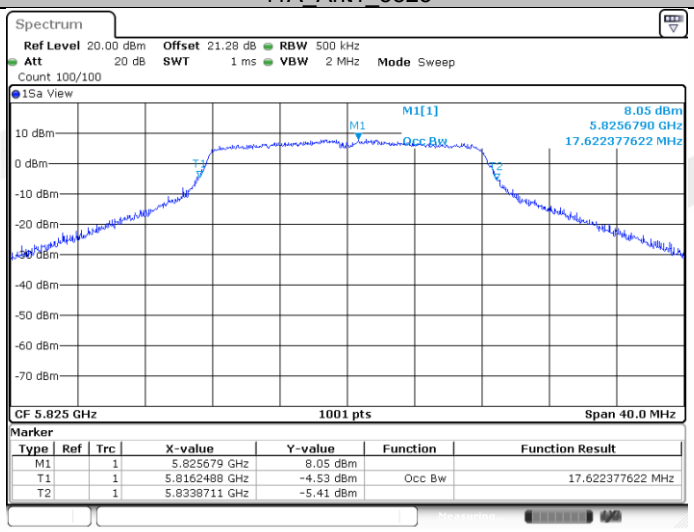
11A_Ant1_5745



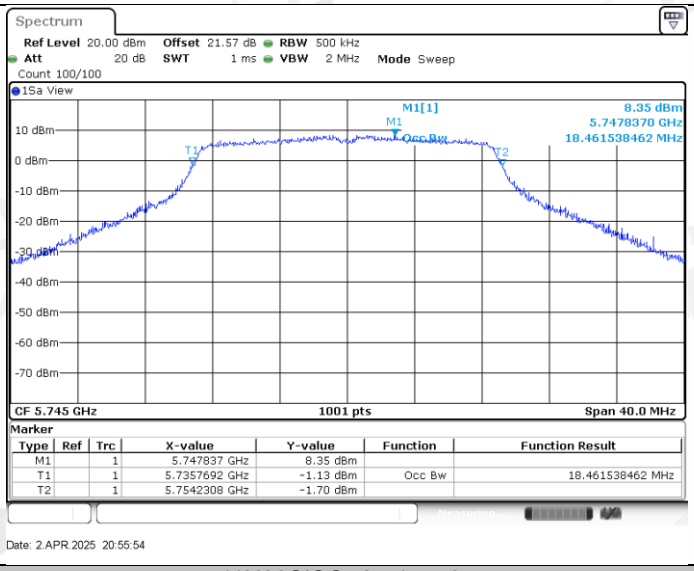
11A_Ant1_5785



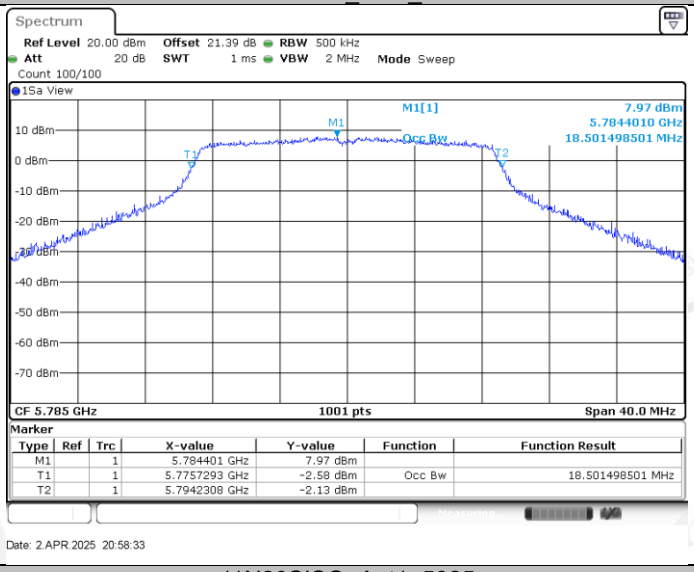
11A_Ant1_5825



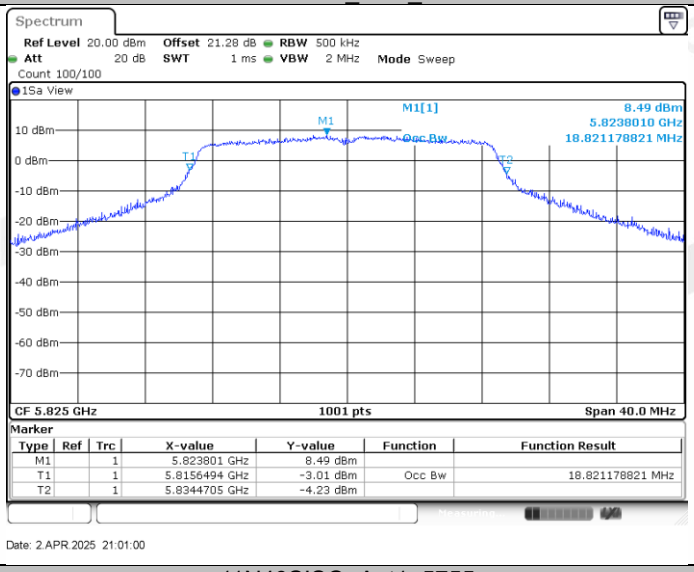
11N20SISO_Ant1_5745



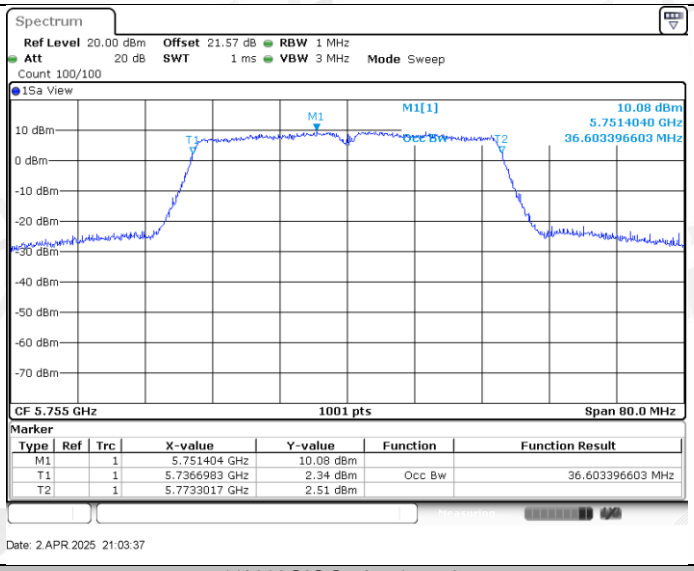
11N20SISO_Ant1_5785



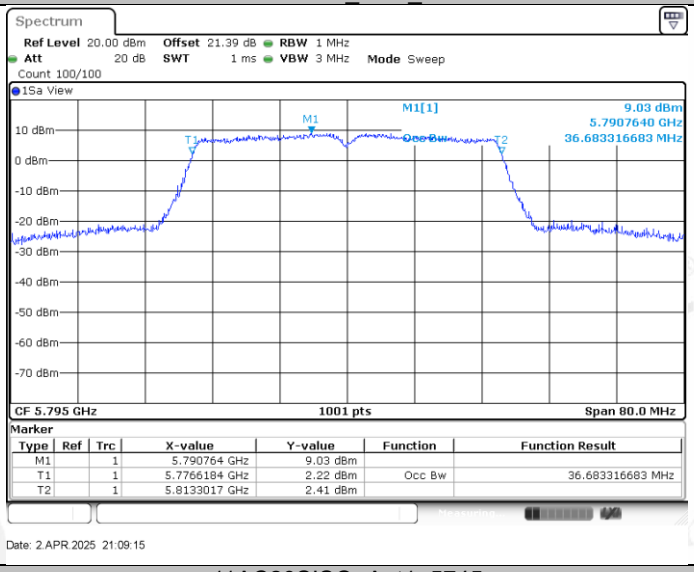
11N20SISO_Ant1_5825



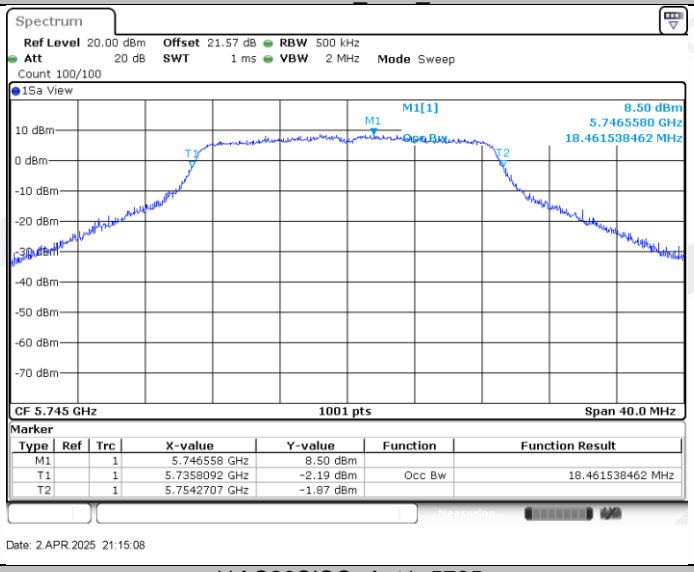
11N40SISO_Ant1_5755



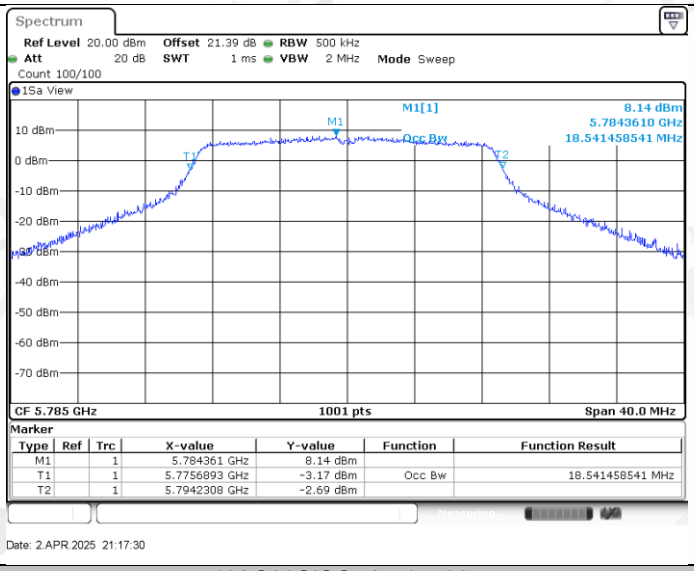
11N40SISO_Ant1_5795



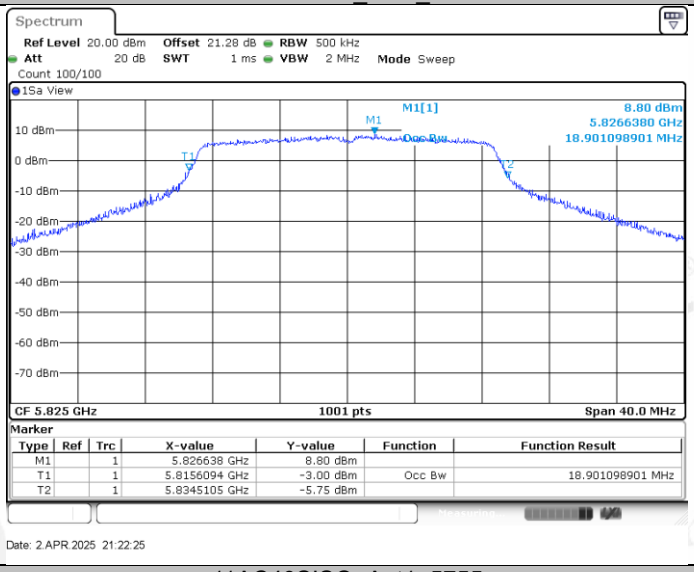
11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



11AC20SISO_Ant1_5825



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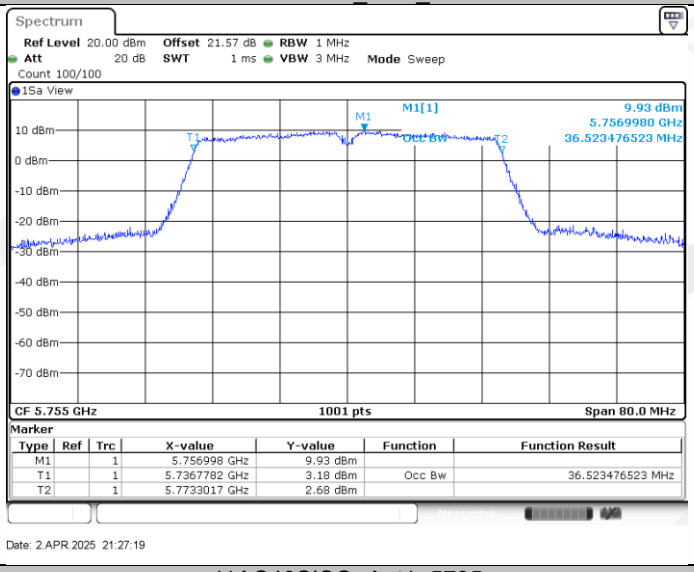
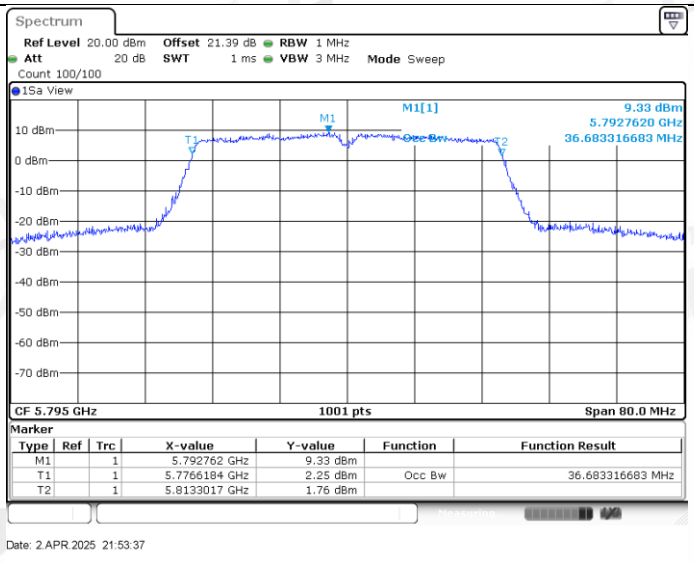
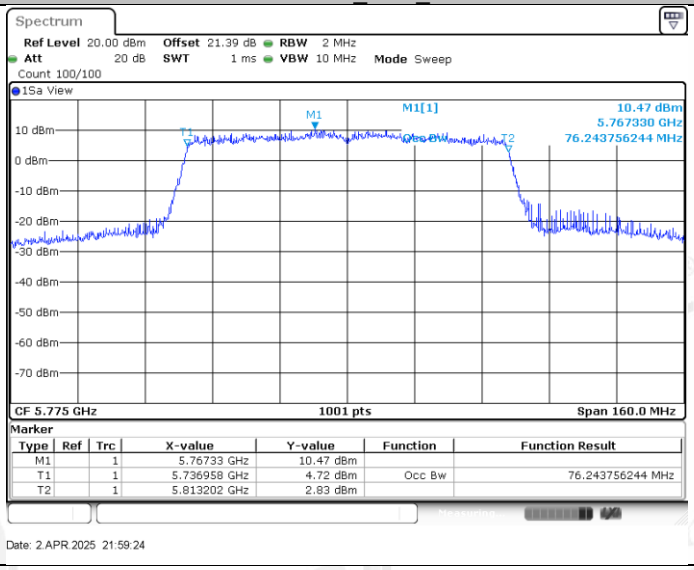


11AC40SISO_Ant1_5795

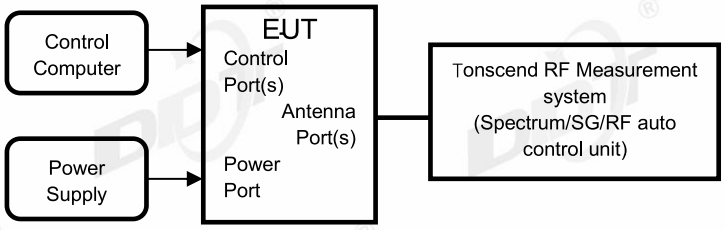


11AC80SISO_Ant1_5775



7. Duty Cycle

7.1. Block diagram of test setup



7.2. Limit

Just for Report.

7.3. 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: Clear Write.
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

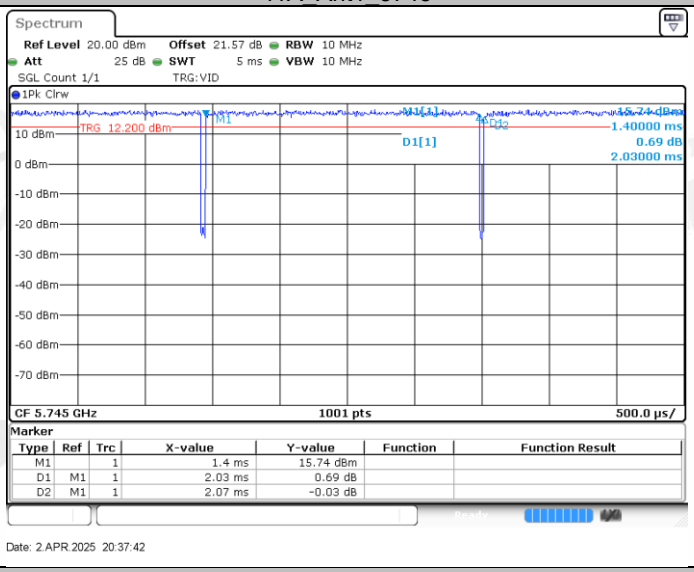
7.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

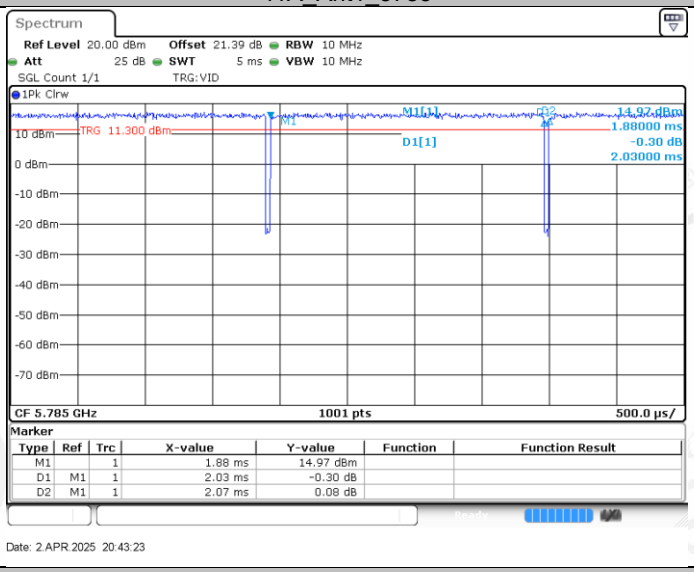
Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5745	2.03	2.07	98.07
		5785	2.03	2.07	98.07
		5825	2.03	2.07	98.07
11N20SISO	Ant1	5745	1.89	1.93	97.93
		5785	1.89	1.93	97.93
		5825	1.89	1.93	97.93
11N40SISO	Ant1	5755	0.93	0.96	96.88
		5795	0.93	0.97	95.88
11AC20SISO	Ant1	5745	1.91	1.94	98.45
		5785	1.91	1.94	98.45
		5825	1.91	1.94	98.45
11AC40SISO	Ant1	5755	0.93	0.97	95.88
		5795	0.94	0.98	95.92
11AC80SISO	Ant1	5775	0.45	0.49	91.84

7.5. Test graphs

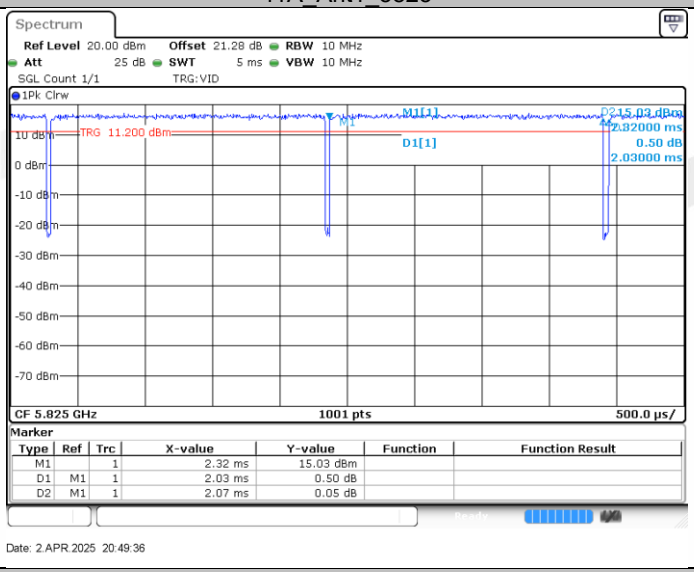
11A_Ant1_5745



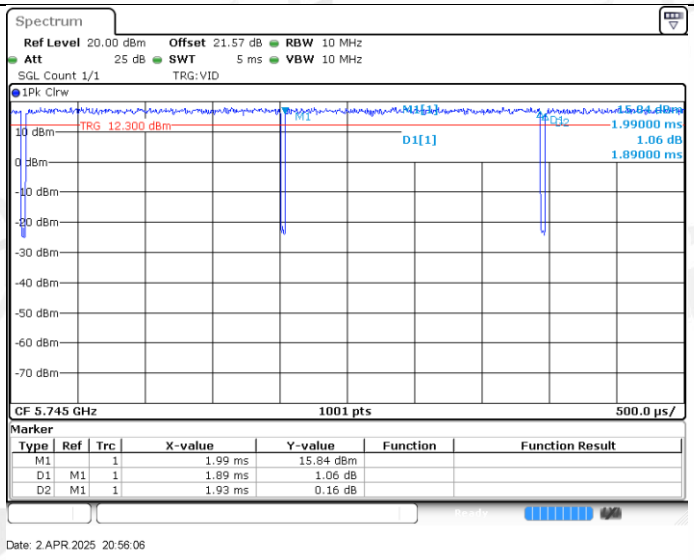
11A_Ant1_5785



11A_Ant1_5825



11N20SISO_Ant1_5745



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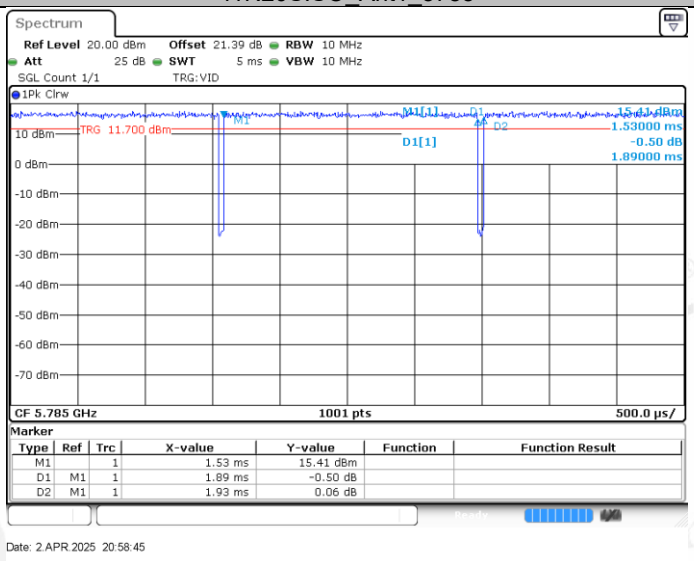

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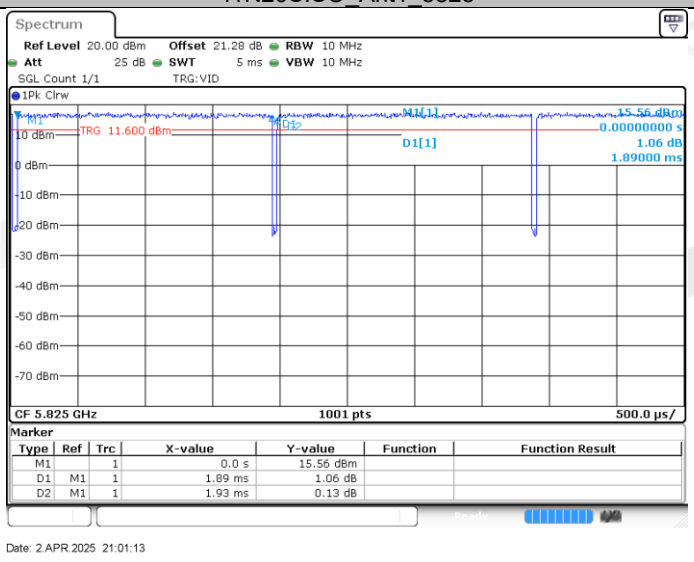

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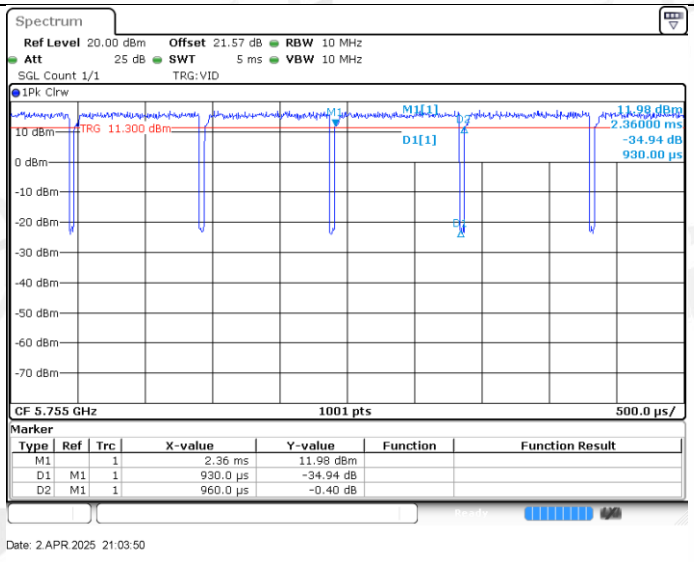
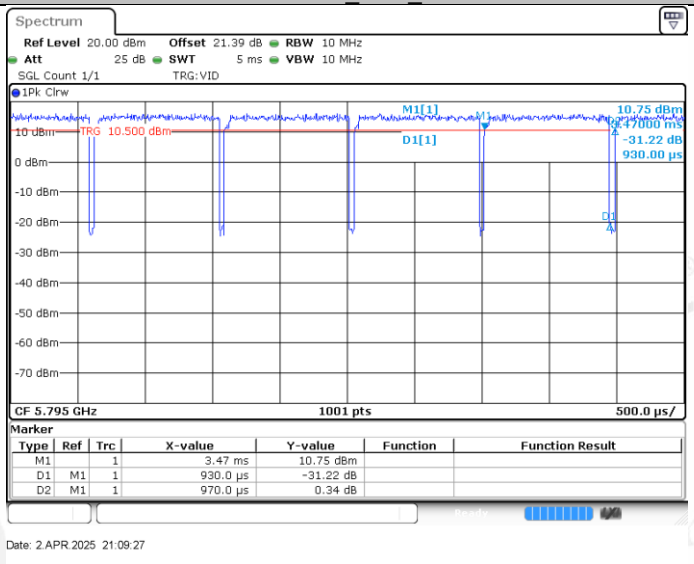
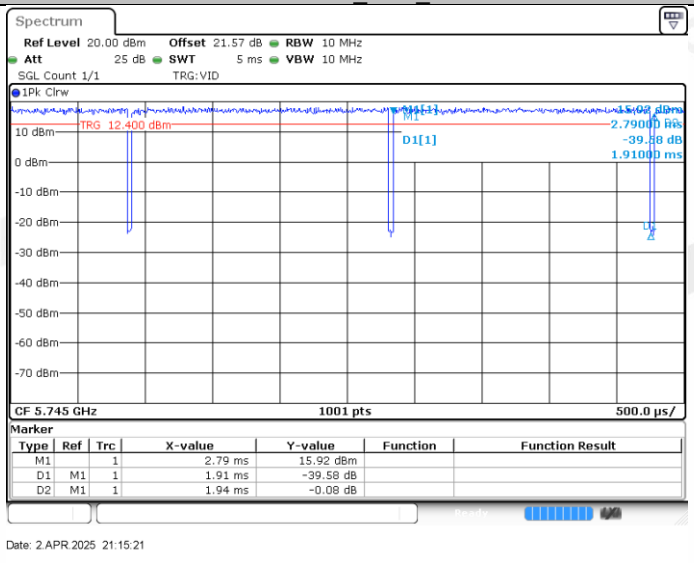


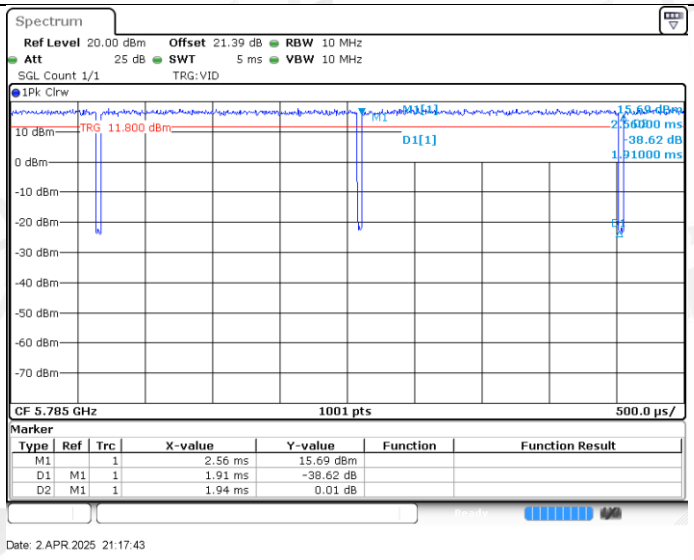
11N40SISO_Ant1_5795



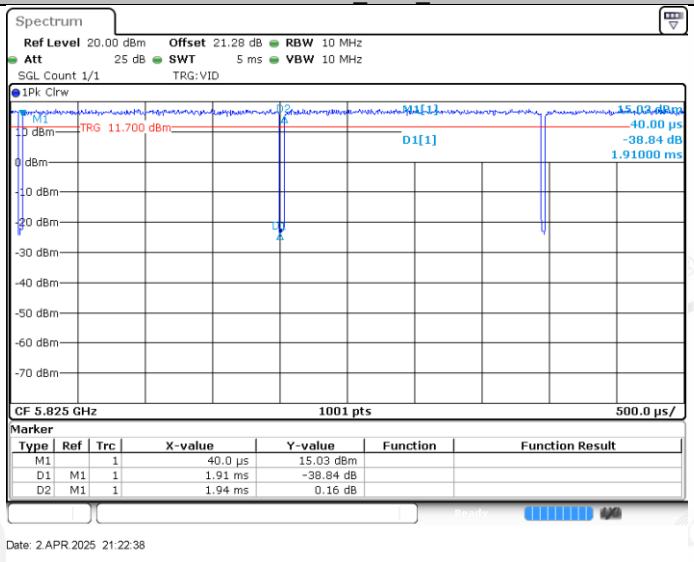
11AC20SISO_Ant1_5745



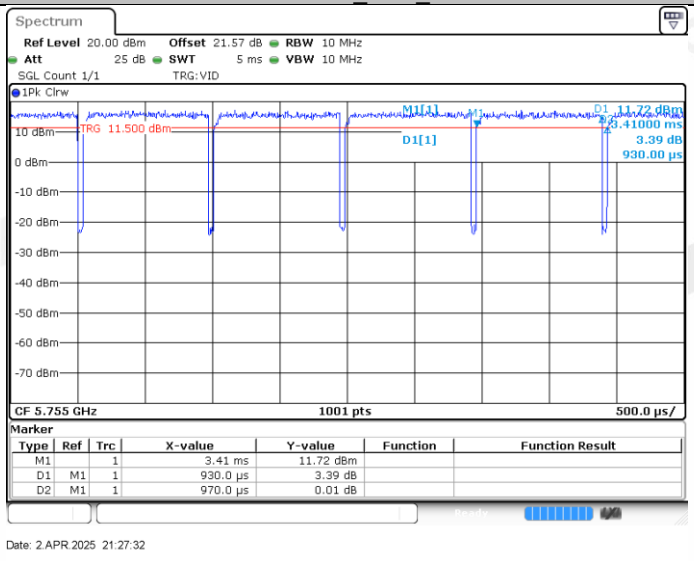
11AC20SISO_Ant1_5785



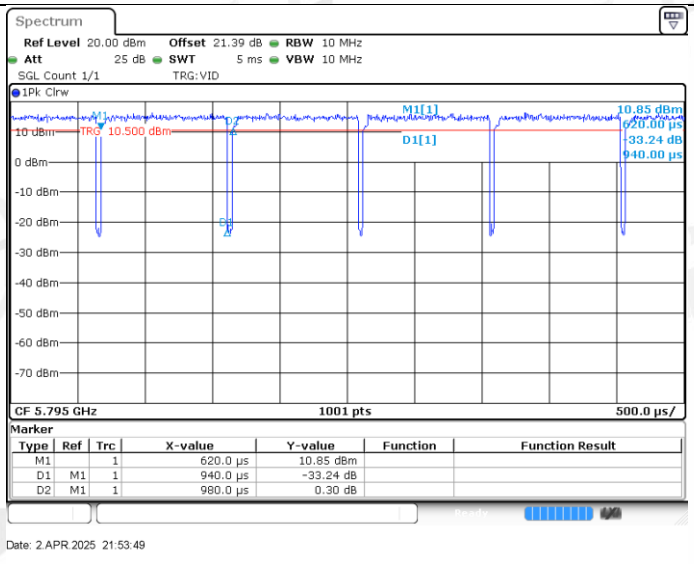
11AC20SISO_Ant1_5825



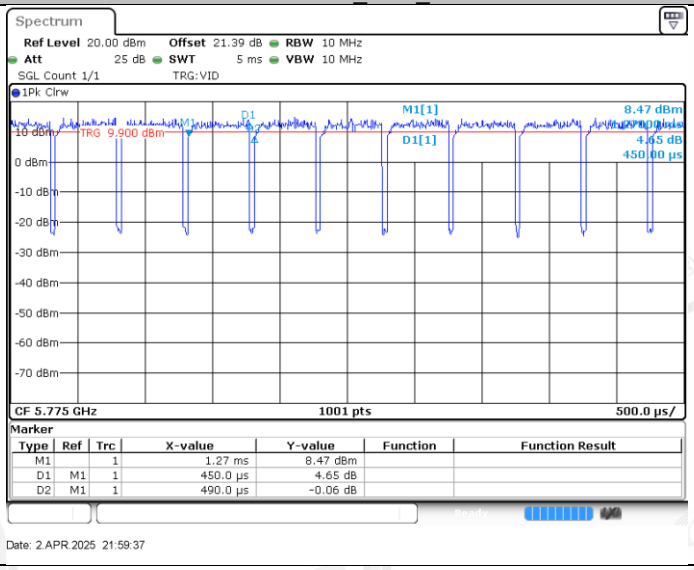
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795

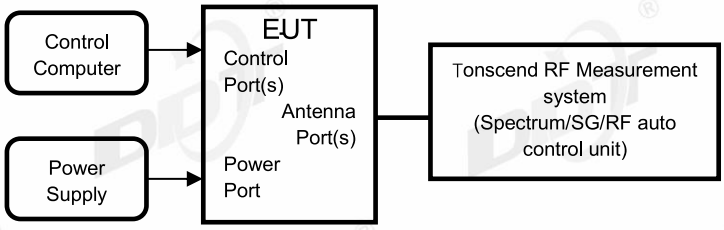


11AC80SISO_Ant1_5775



8. Maximum Output Power

8.1. Block diagram of test setup



8.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Maximum Output Power	For FCC: outdoor access point: 1 W(30 dBm) indoor access point: 1 W(30 dBm) fixed point-to-point access points1 W(30 dBm) client devices: 250 mW (24 dBm)	5150-5250
	For FCC: 250 mW (24 dBm) or 11 + 10 $\log_{10}$ B	5250-5350
	For FCC: 250 mW (24 dBm) or 11 + 10 $\log_{10}$ B	5470 - 5725
	1 Watt (30 dBm)	5725-5850
Note 1：For FCC: B=26 bandwidth.		

8.3. Test procedure

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

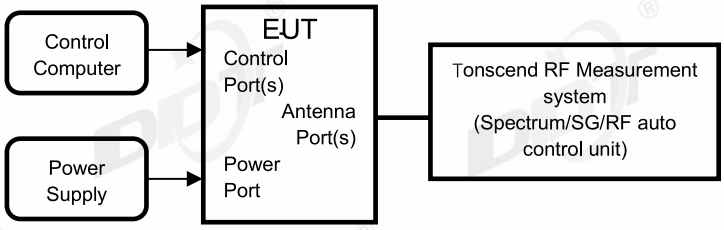
8.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

Test Mode	Ant.	Freq(MHz)	Channel Powert [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	FCC Limit [dBm]	EIRP [dBm]	Verdict
11A	Ant1	5745	14.67	98.07	0.08	14.75	≤30.00	19.02	PASS
		5785	14.13	98.07	0.08	14.21	≤30.00	18.48	PASS
		5825	14.50	98.07	0.08	14.58	≤30.00	18.85	PASS
11N20SISO	Ant1	5745	14.85	97.93	0.09	14.94	≤30.00	19.21	PASS
		5785	14.60	97.93	0.09	14.69	≤30.00	18.96	PASS
		5825	15.04	97.93	0.09	15.13	≤30.00	19.40	PASS
11N40SISO	Ant1	5755	15.61	96.88	0.14	15.75	≤30.00	20.02	PASS
		5795	15.13	95.88	0.18	15.31	≤30.00	19.58	PASS
11AC20SISO	Ant1	5745	15.05	98.45	0.07	15.12	≤30.00	19.39	PASS
		5785	14.71	98.45	0.07	14.78	≤30.00	19.05	PASS
		5825	15.15	98.45	0.07	15.22	≤30.00	19.49	PASS
11AC40SISO	Ant1	5755	15.69	95.88	0.18	15.87	≤30.00	20.14	PASS
		5795	15.12	95.92	0.18	15.30	≤30.00	19.57	PASS
11AC80SISO	Ant1	5775	15.14	91.84	0.37	15.51	≤30.00	19.78	PASS

9. Power Spectral Density

9.1. Block diagram of test setup



9.2. 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
	11 dBm/MHz	5250-5350
	11 dBm/MHz	5470 - 5725
	30 dBm/500 kHz	5725-5850

9.3. 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, 5250 MHz~5350 MHz, 5470 MHz~5725 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1MHz
VBW	≥3 × 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	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

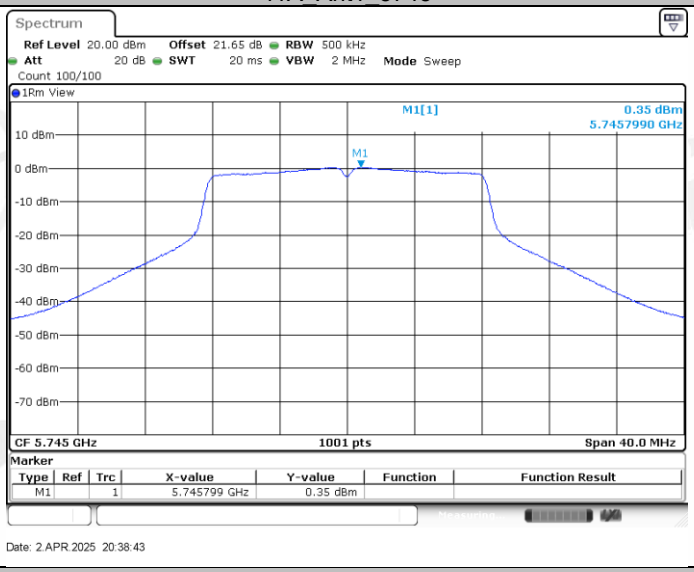
9.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

TestMode	Antenna	Freq(MHz)	Result [dBm/500 kHz]	Limit [dBm/500 kHz]	Verdict
11A	Ant1	5745	0.35	≤30.00	PASS
		5785	-0.28	≤30.00	PASS
		5825	-0.04	≤30.00	PASS
11N20SISO	Ant1	5745	0.37	≤30.00	PASS
		5785	-0.08	≤30.00	PASS
		5825	0.31	≤30.00	PASS
11N40SISO	Ant1	5755	-1.86	≤30.00	PASS
		5795	-2.58	≤30.00	PASS
11AC20SISO	Ant1	5745	0.49	≤30.00	PASS
		5785	0.05	≤30.00	PASS
		5825	0.26	≤30.00	PASS
11AC40SISO	Ant1	5755	-1.77	≤30.00	PASS
		5795	-2.55	≤30.00	PASS
11AC80SISO	Ant1	5775	-5.46	≤30.00	PASS

Note：1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
2.The Duty Cycle Factor is compensated in the graph.

9.5. Test graphs

11A_Ant1_5745

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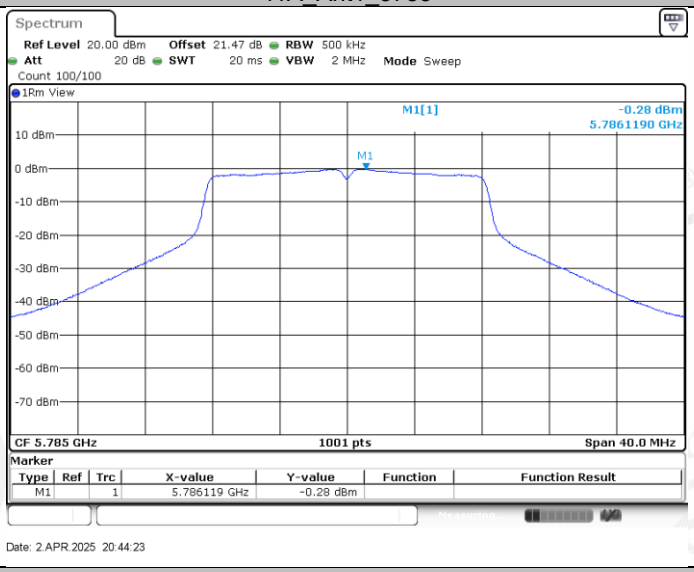
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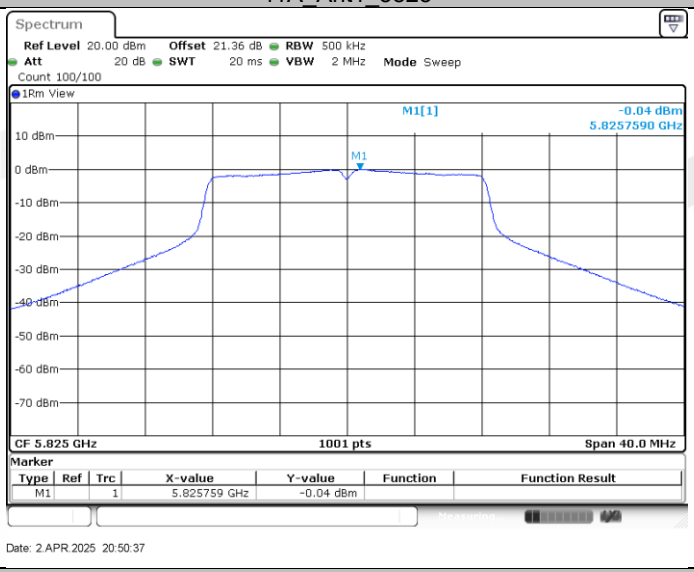
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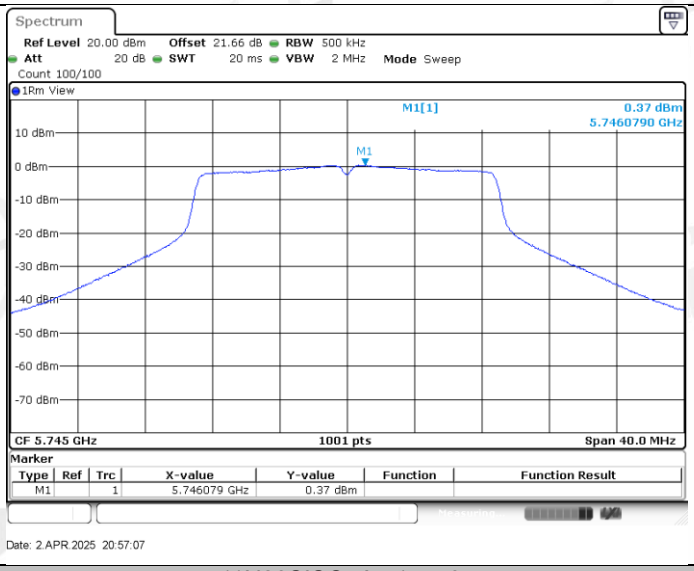

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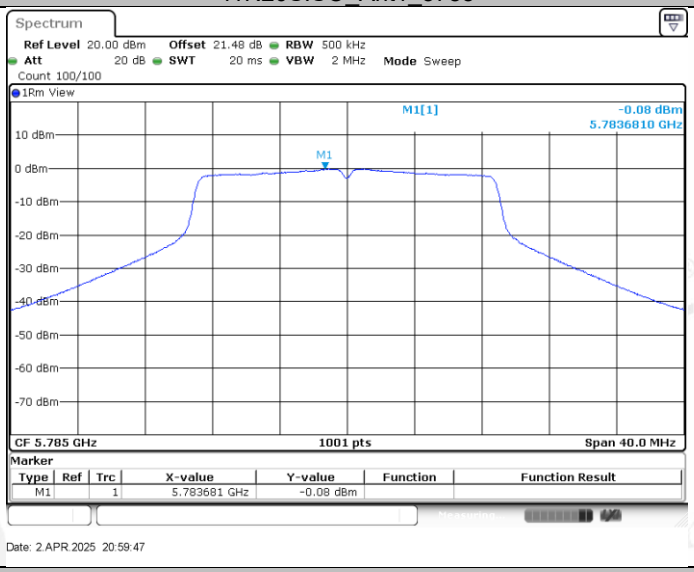

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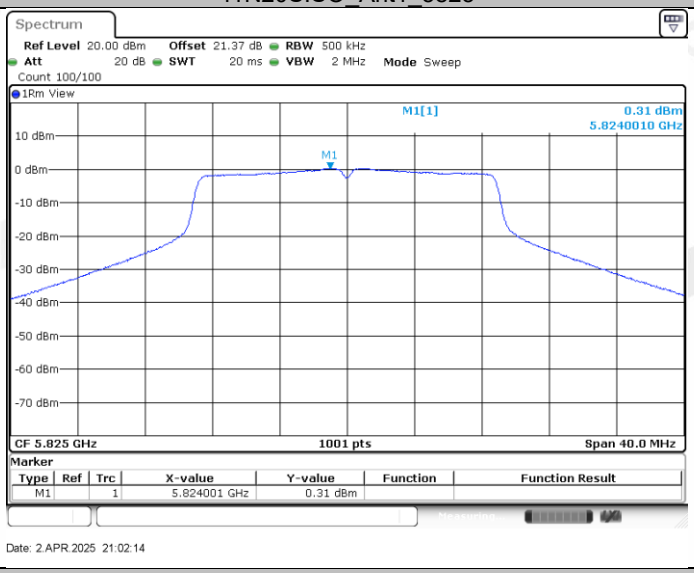
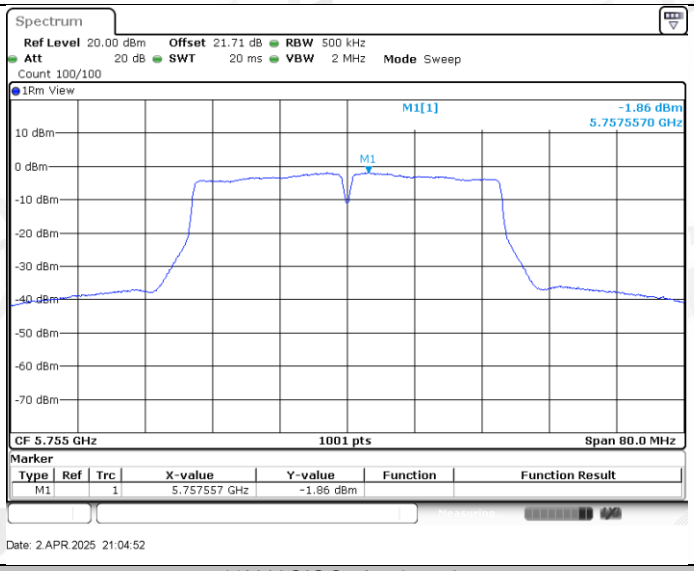


11N40SISO_Ant1_5755



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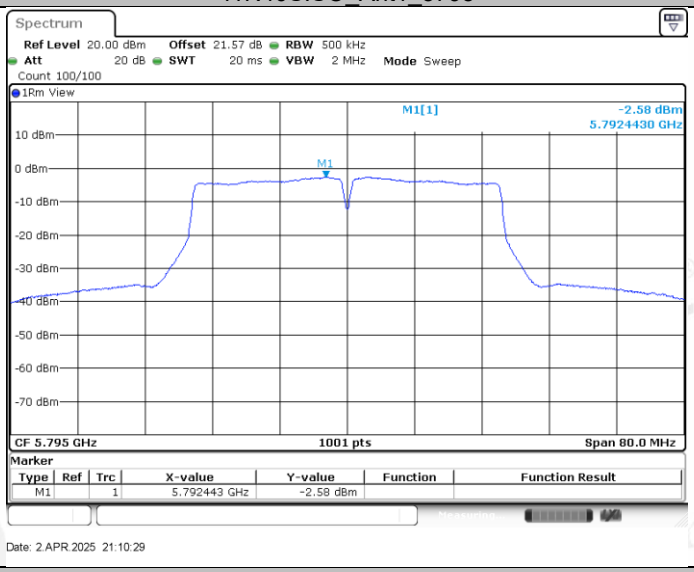

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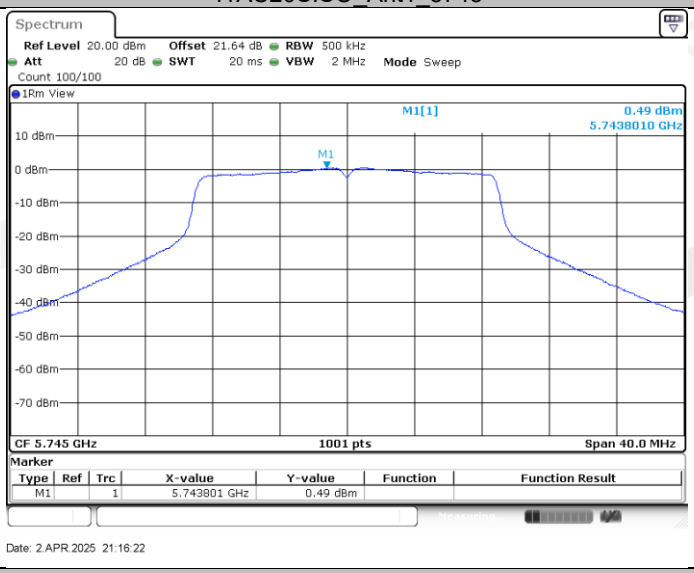

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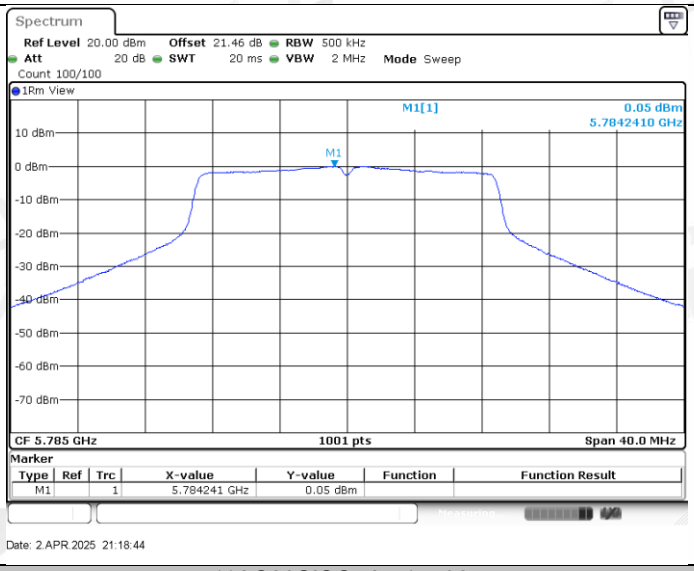

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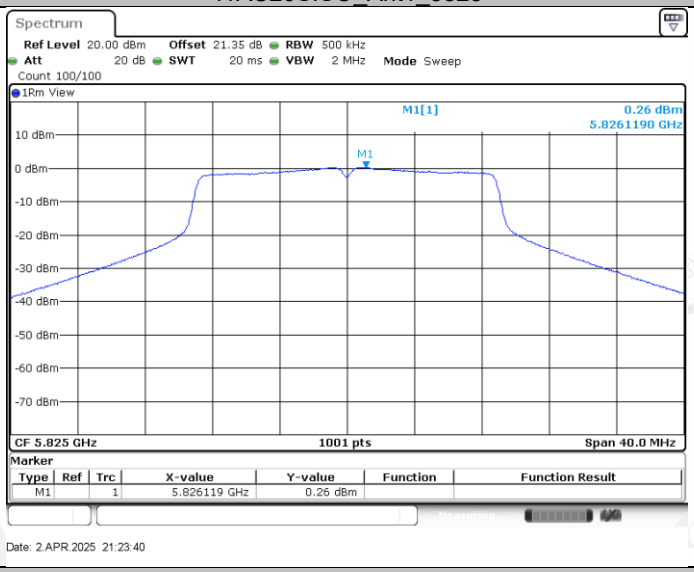
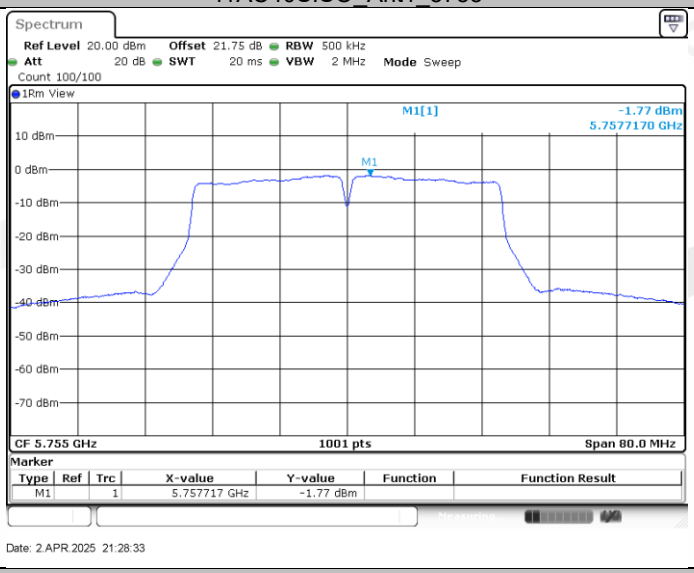


11AC40SISO_Ant1_5755



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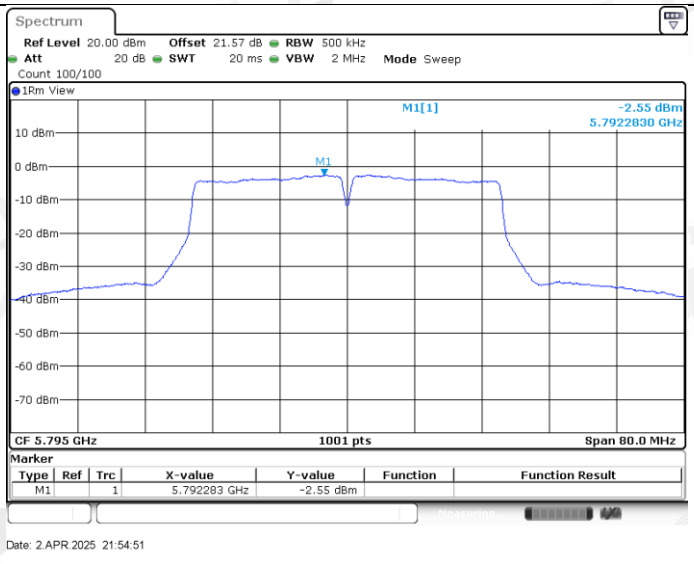
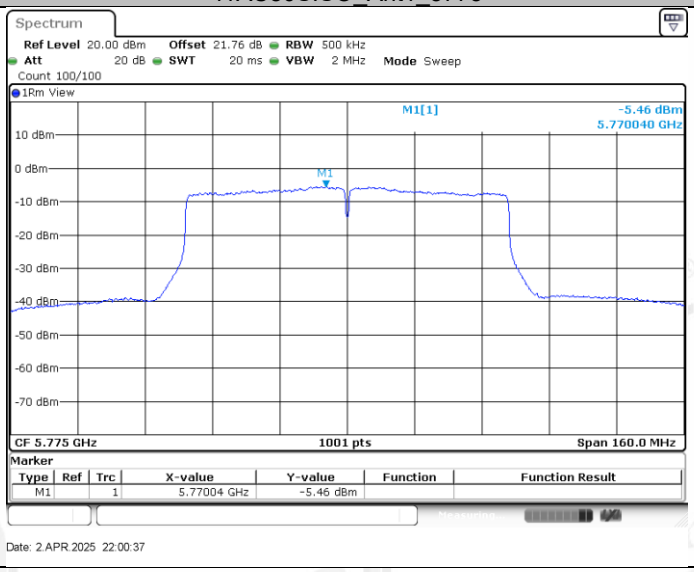


11AC80SISO_Ant1_5775



10. Frequency Stability Measurement

10.1. Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

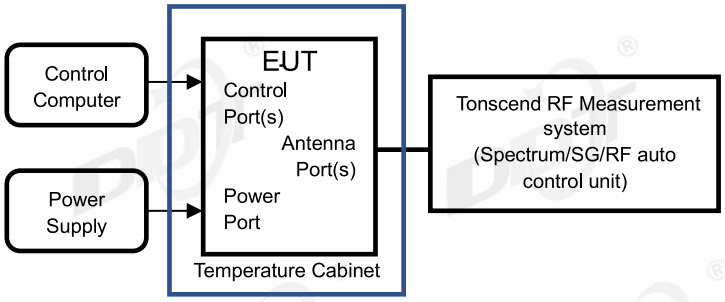
10.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

10.3. Test procedures

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

10.4. Test setup



10.5. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.2℃,37.4%RH	Test Date:	2025.04.02
Test Power Supply:	DC 12V	Sample Number:	S25031304-001

Voltage								
Test Mode	Antenna	Frequency[MHz]	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5745	NV	NT	-20000.00	-3.481288	20	PASS
			LV	NT	-20000.00	-3.481288	20	PASS
			HV	NT	-20000.00	-3.481288	20	PASS
		5785	NV	NT	-40000.00	-6.914434	20	PASS
			LV	NT	-20000.00	-3.457217	20	PASS
			HV	NT	-20000.00	-3.457217	20	PASS
		5825	NV	NT	-20000.00	-3.433476	20	PASS
			LV	NT	-20000.00	-3.433476	20	PASS
			HV	NT	-40000.00	-6.866953	20	PASS
11N40SISO	Ant1	5755	NV	NT	-40000.00	-6.950478	20	PASS
			LV	NT	-40000.00	-6.950478	20	PASS
			HV	NT	-40000.00	-6.950478	20	PASS
		5795	NV	NT	-40000.00	-6.902502	20	PASS
			LV	NT	-40000.00	-6.902502	20	PASS
			HV	NT	-40000.00	-6.902502	20	PASS
11AC80SISO	Ant1	5775	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS

Temperature								
Test Mode	Antenna	Frequency[MHz]	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5745	NV	-20	-20000.00	-3.481288	20	PASS
			NV	-10	-20000.00	-3.481288	20	PASS
			NV	0	-20000.00	-3.481288	20	PASS
			NV	10	-20000.00	-3.481288	20	PASS
			NV	20	-20000.00	-3.481288	20	PASS
			NV	30	-20000.00	-3.481288	20	PASS
			NV	40	-20000.00	-3.481288	20	PASS
			NV	50	-20000.00	-3.481288	20	PASS
			NV	65	-40000.00	-6.962576	20	PASS
		5785	NV	-20	-20000.00	-3.457217	20	PASS
			NV	-10	-40000.00	-6.914434	20	PASS
			NV	0	-20000.00	-3.457217	20	PASS
			NV	10	-40000.00	-6.914434	20	PASS
			NV	20	-40000.00	-6.914434	20	PASS
			NV	30	-20000.00	-3.457217	20	PASS
			NV	40	-40000.00	-6.914434	20	PASS
			NV	50	-20000.00	-3.457217	20	PASS
			NV	65	-20000.00	-3.457217	20	PASS
		5825	NV	-20	-20000.00	-3.433476	20	PASS
			NV	-10	-20000.00	-3.433476	20	PASS
			NV	0	-20000.00	-3.433476	20	PASS
			NV	10	-20000.00	-3.433476	20	PASS
			NV	20	-20000.00	-3.433476	20	PASS
			NV	30	-40000.00	-6.866953	20	PASS
			NV	40	-40000.00	-6.866953	20	PASS
			NV	50	-40000.00	-6.866953	20	PASS
			NV	65	-40000.00	-6.866953	20	PASS
11N40SISO	Ant1	5755	NV	-20	0.00	0.000000	20	PASS
			NV	-10	-40000.00	-6.950478	20	PASS
			NV	0	-80000.00	-13.900956	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	-40000.00	-6.950478	20	PASS

			NV	30	-40000.00	-6.950478	20	PASS
			NV	40	-40000.00	-6.950478	20	PASS
			NV	50	-40000.00	-6.950478	20	PASS
			NV	65	-40000.00	-6.950478	20	PASS
		5795	NV	-20	-40000.00	-6.902502	20	PASS
			NV	-10	-40000.00	-6.902502	20	PASS
			NV	0	-40000.00	-6.902502	20	PASS
			NV	10	-40000.00	-6.902502	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-40000.00	-6.902502	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-40000.00	-6.902502	20	PASS
			NV	65	-40000.00	-6.902502	20	PASS
11AC80SISO	Ant1	5775	NV	-20	-80000.00	-13.852814	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	65	0.00	0.000000	20	PASS

11. Dynamic Frequency Selection

11.1. Applicability of DFS requirements

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	☐Master	☒Client Without Radar Detection	☐Client with Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	☐Master Device or Client with Radar Detection	☒Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	☐Master Device or Client with Radar Detection	☒Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

11.2. Limit

(1) DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

(2) DFS Response Requirements

Table 4: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

11.3. Parameters of radar test waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Table 5 Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A Test B	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.
Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a
Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A

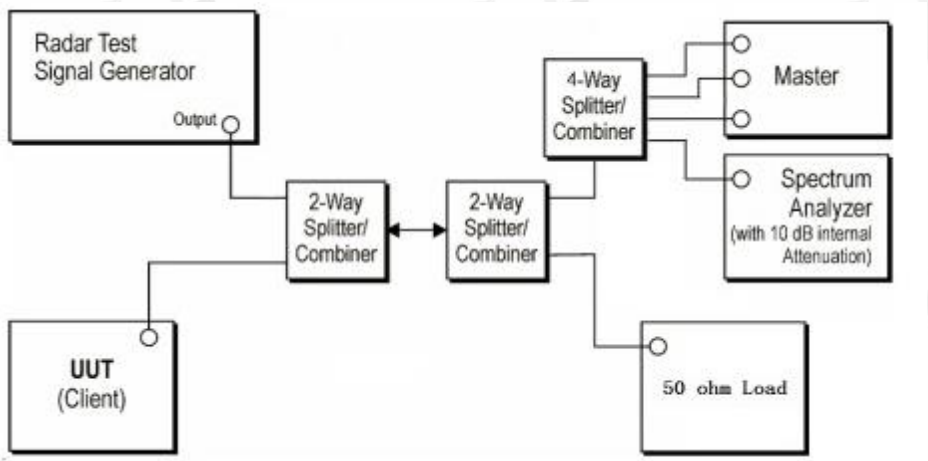
A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B. Test aggregate is average of the percentage of successful detections of short pulse radar types 1-4

11.4. Calibration of radar waveform

Radar Waveform Calibration Procedure:

(1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master
(2) The interference Radar Detection Threshold Level is -62dBm + 0dBi +1dB = -61dBm that had been taken into account the output power range and antenna gain.
(3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process there were no transmissions by either the master or client device. The spectrum analyzer was switched to the zero spans (time domain) at the frequency of the radar waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The spectrum analyzer had offset -1.0dB to compensate RF cable loss 1.0dB.
(4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was - -62dBm + 0dBi +1dB = -61dBm. Capture the spectrum analyzer plots on short pulse radar waveform.

Conducted Calibration Setup:



Note: 1. Use the software "Web" to set the frequency channel.
2. EUT is not support TPC and not with Radar detection.

11.5. Channel closing transmission time, channel move time and non-occupancy period

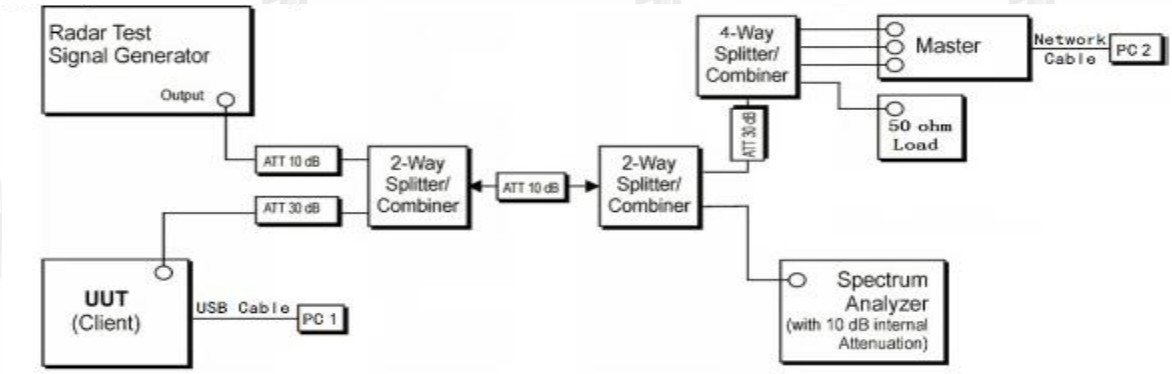
Block diagram of test setup Test Procedure:

(1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
(2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.
(3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
(4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Test Software in order to properly load the network for the entire period of the test.
(5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
(6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.
(7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the
(8) spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals)

showing a U-NII transmission and Dwell is the dwell time per bin.
Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

11.6. Test setup

Setup for Client with injection at the Master



11.7. Test result

Not applicable. EUT only supports the 5725MHz-5850 MHz frequency band.

12. Antenna Requirements

12.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

12.2. Result

The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.